

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011
Permit 273561

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102		2. OGRID Number 6137
4. Property Code 323153		3. API Number 30-015-46403
5. Property Name LONE TREE DRAW 14 13 STATE COM		6. Well No. 621H

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
E	14	21S	27E		1685	N	280	W	Eddy

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
A	13	21S	27E	A	800	N	20	E	Eddy

9. Pool Information

ALACRAN HILLS UPPER WOLFCAMP OIL	98314

Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3256
16. Multiple N	17. Proposed Depth 19500	18. Formation Wolfcamp	19. Contractor	20. Spud Date 2/4/2021
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	325	274	0
Int1	9.875	7.625	29.7	8648	1208	0
Prod	6.75	5.5	20	19500	761	0

Casing/Cement Program: Additional Comments

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	5000	
Blind	5000	5000	
Double Ram	5000	5000	
Annular	5000	5000	
Blind	5000	5000	
Double Ram	5000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable. Signature:	OIL CONSERVATION DIVISION
Printed Name: Electronically filed by Jeff Walla	Approved By: Raymond Podany
Title: Supervisor Land	Title: Geologist
Email Address: Jeff.Walla@dmv.com	Approved Date: 10/21/2019 Expiration Date: 10/21/2021
Date: 10/18/2019 Phone: 575-748-9925	Conditions of Approval Attached

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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number	² Pool Code 98314	³ Pool Name ALACRAN HILLS UPPER WOLFCAMP
⁴ Property Code	⁵ Property Name LONE TREE DRAW 14-13 STATE COM	⁶ Well Number 621H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3255.6

¹⁰ Surface Location

UL or lot no. E	Section 14	Township 21 S	Range 27 E	Lot Idn	Feet from the 1685	North/South line NORTH	Feet from the 280	East/West line WEST	County EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 13	Township 21 S	Range 27 E	Lot Idn	Feet from the 800	North/South line NORTH	Feet from the 20	East/West line EAST	County EDDY

¹² Dedicated Acres 320	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Erin Workman</i> 10/15/19 Signature Date Erin Workman Printed Name Erin.workman@dmv.com E-mail Address			
¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. MAY 6, 2019 Date of Survey <i>FILMON F. JARAMILLO</i> Signature and Seal of Professional Surveyor Certificate Number: FILMON F. JARAMILLO, PLS 12797 SURVEY NO. 7256			

Intent ☒ As Drilled ☐

API #

Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: LONE TREE DRAW 14-13 STATE COM	Well Number 621H

Kick Off Point (KOP)

UL	Section 14	Township 21S	Range 27E	Lot	Feet 875	From N/S NORTH	Feet 50	From E/W WEST	County EDDY
Latitude 32.485064					Longitude -104.168930			NAD 83	

First Take Point (FTP)

UL D	Section 14	Township 21S	Range 27E	Lot	Feet 800	From N/S NORTH	Feet 100	From E/W WEST	County EDDY
Latitude 32.4852937					Longitude 104.1687754			NAD 83	

Last Take Point (LTP)

UL A	Section 13	Township 21S	Range 27E	Lot	Feet 800	From N/S NORTH	Feet 100	From E/W EAST	County EDDY
Latitude 32.4854207					Longitude 104.1347585			NAD 83	

Is this well the defining well for the Horizontal Spacing Unit? ☐ YES

Is this well an infill well? ☐ NO

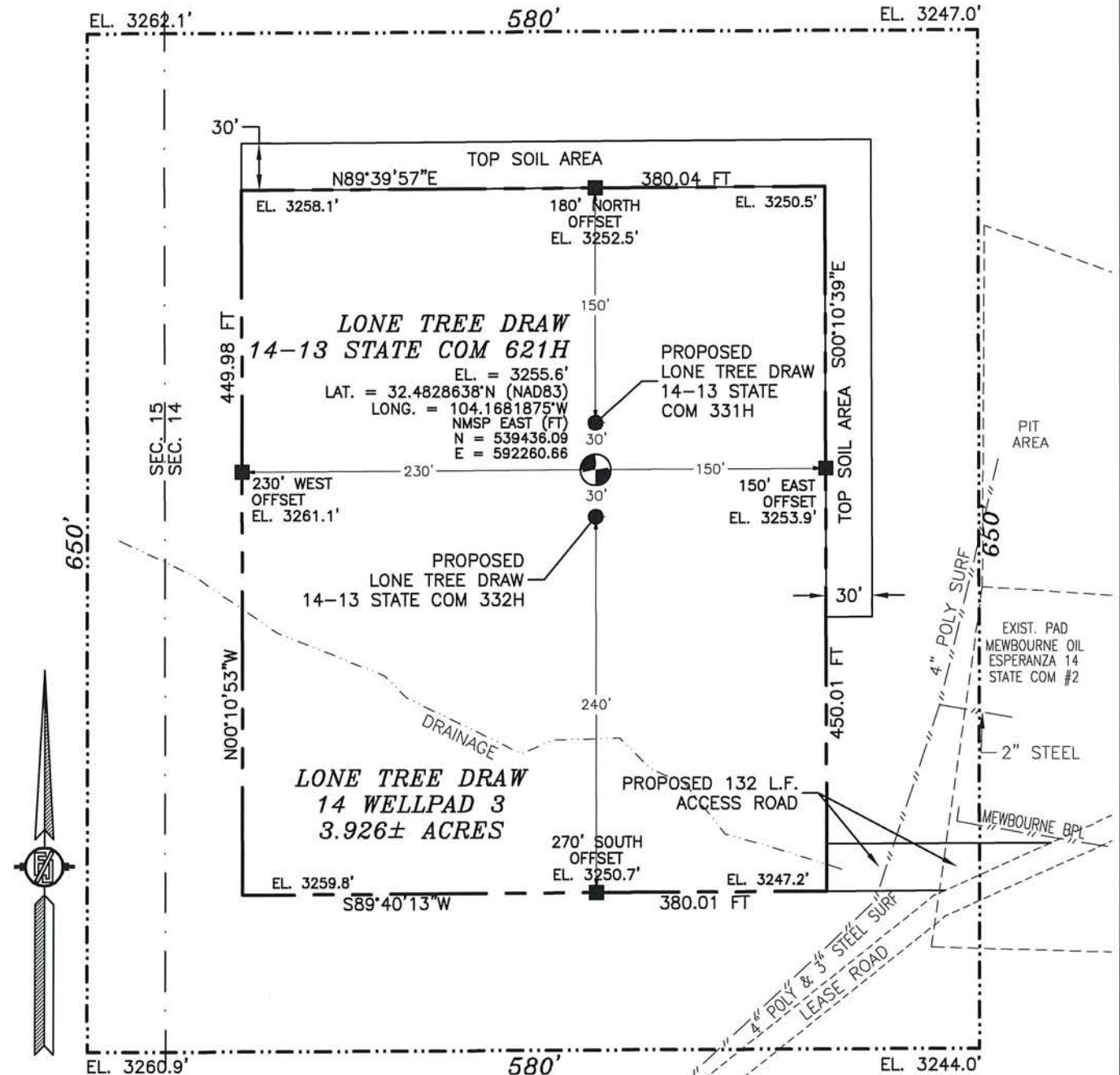
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

Operator Name:	Property Name:	Well Number

KZ 06/29/2018

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP



010 50 100 200

SCALE 1" = 100'

DIRECTIONS TO LOCATION

FROM CR. 206 (ILLINOIS CAMP) AND CR. 600 (RAINS)
GO EAST ON CR. 600 2.2 MILES, BEND LEFT AND GO
NORTHEAST 0.1 MILES, TURN RIGHT AND GO SOUTHEAST
0.52 MILES, BEND LEFT AND GO EAST 0.9 MILES, TURN
RIGHT AND GO SOUTH 0.5 MILES, TURN RIGHT AND GO
SOUTHWEST 0.33 MILES TO ROAD SURVEY AND FOLLOW
FLAGS WEST 132' TO THE SOUTHEAST PAD CORNER
FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
LONE TREE DRAW 14-13 STATE COM 621H
LOCATED 1685 FT. FROM THE NORTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 14, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

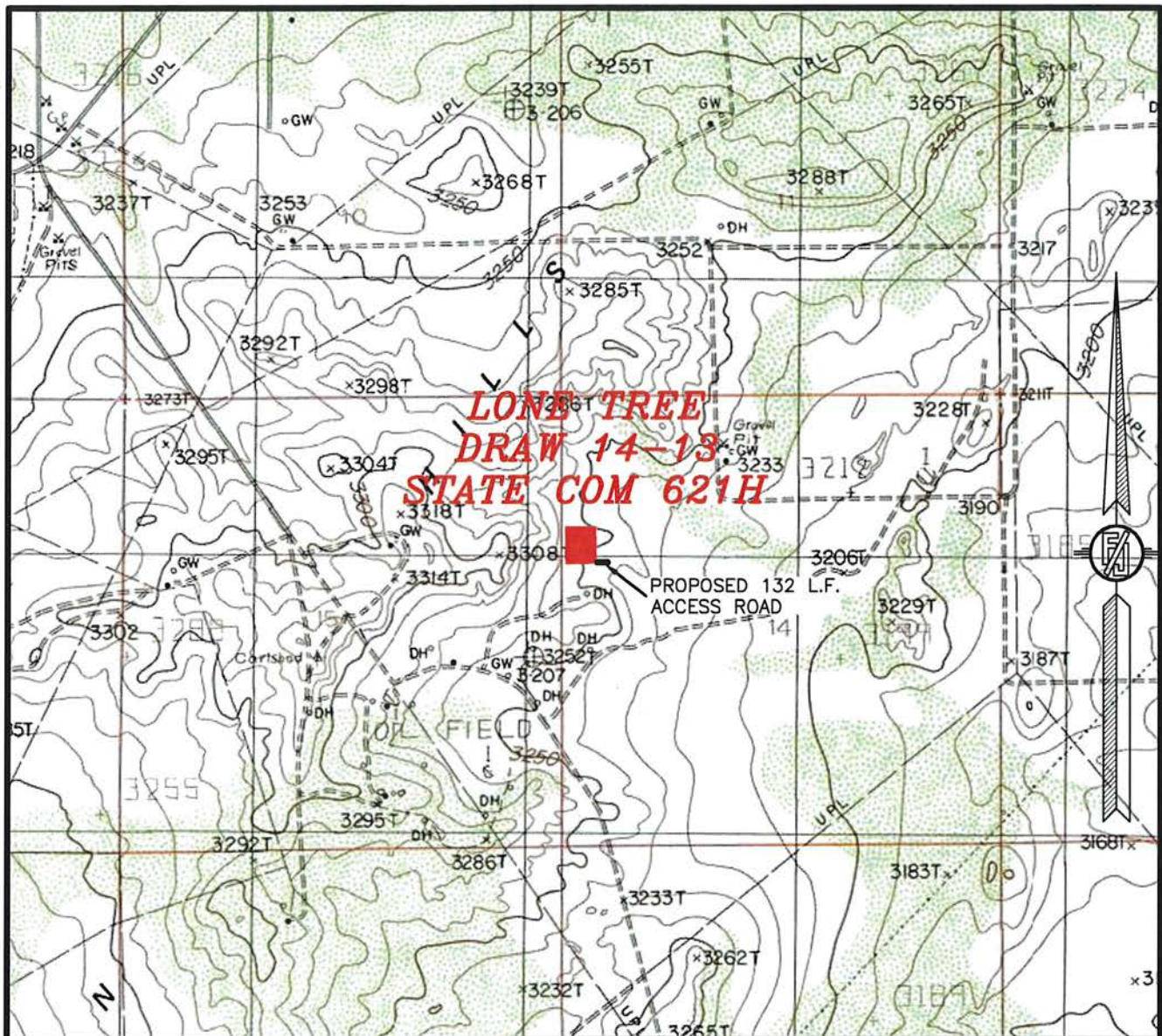
MAY 6, 2019

SURVEY NO. 7256

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341

CARLSBAD, NEW MEXICO

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO
 LOCATION VERIFICATION MAP



USGS QUAD MAP:
 CARLSBAD EAST

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
LONE TREE DRAW 14-13 STATE COM 621H

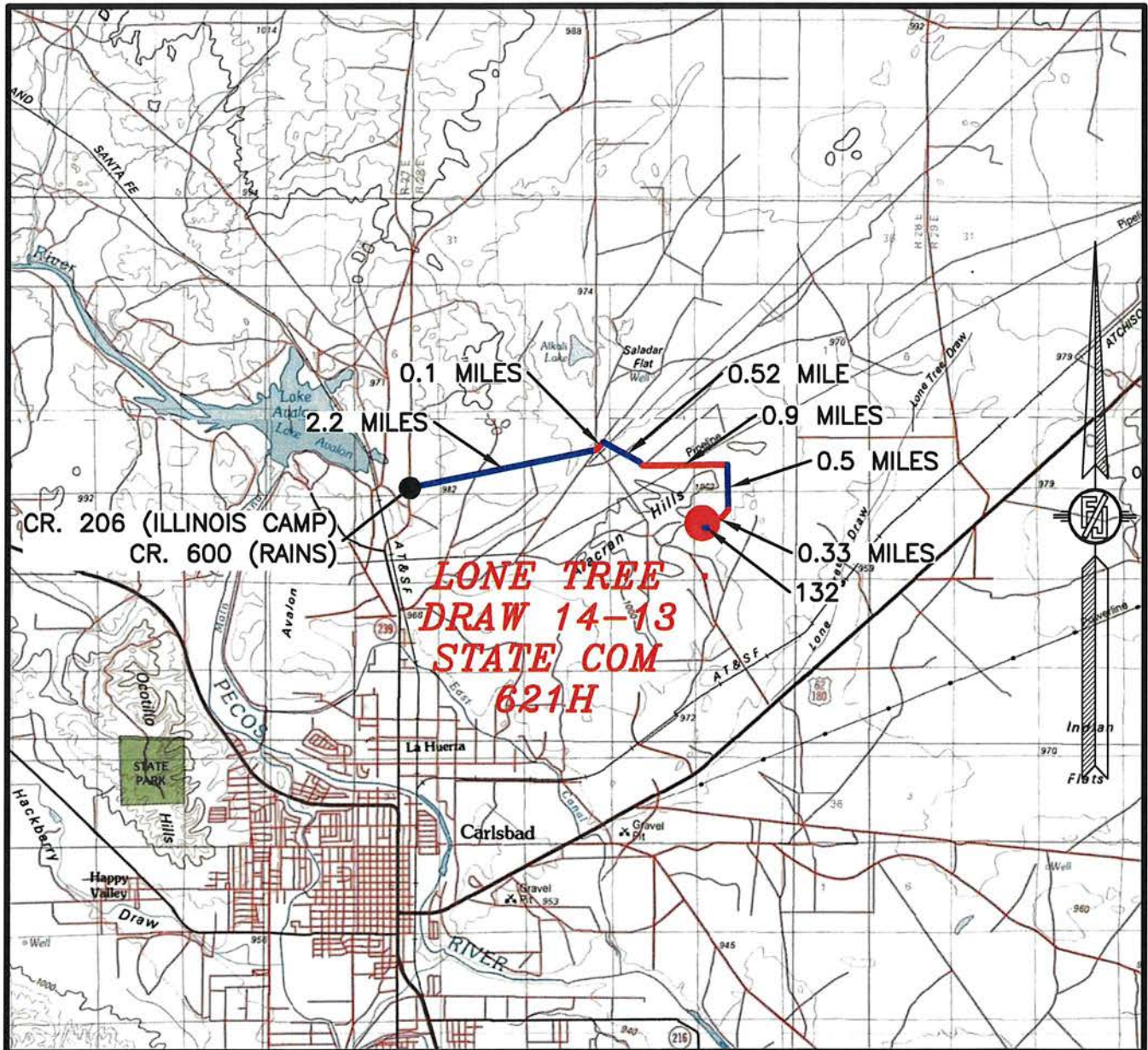
LOCATED 1685 FT. FROM THE NORTH LINE
 AND 280 FT. FROM THE WEST LINE OF
 SECTION 14, TOWNSHIP 21 SOUTH,
 RANGE 27 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

MAY 6, 2019

SURVEY NO. 7256

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DIRECTIONS TO LOCATION

FROM CR. 206 (ILLINOIS CAMP) AND CR. 600 (RAINS)
GO EAST ON CR. 600 2.2 MILES, BEND LEFT AND GO
NORTHEAST 0.1 MILES, TURN RIGHT AND GO SOUTHEAST
0.52 MILES, BEND LEFT AND GO EAST 0.9 MILES, TURN
RIGHT AND GO SOUTH 0.5 MILES, TURN RIGHT AND GO
SOUTHWEST 0.33 MILES TO ROAD SURVEY AND FOLLOW
FLAGS WEST 132' TO THE SOUTHEAST PAD CORNER
FOR THIS LOCATION.

**DEVON ENERGY PRODUCTION COMPANY, L.P.
LONE TREE DRAW 14-13 STATE COM 621H**

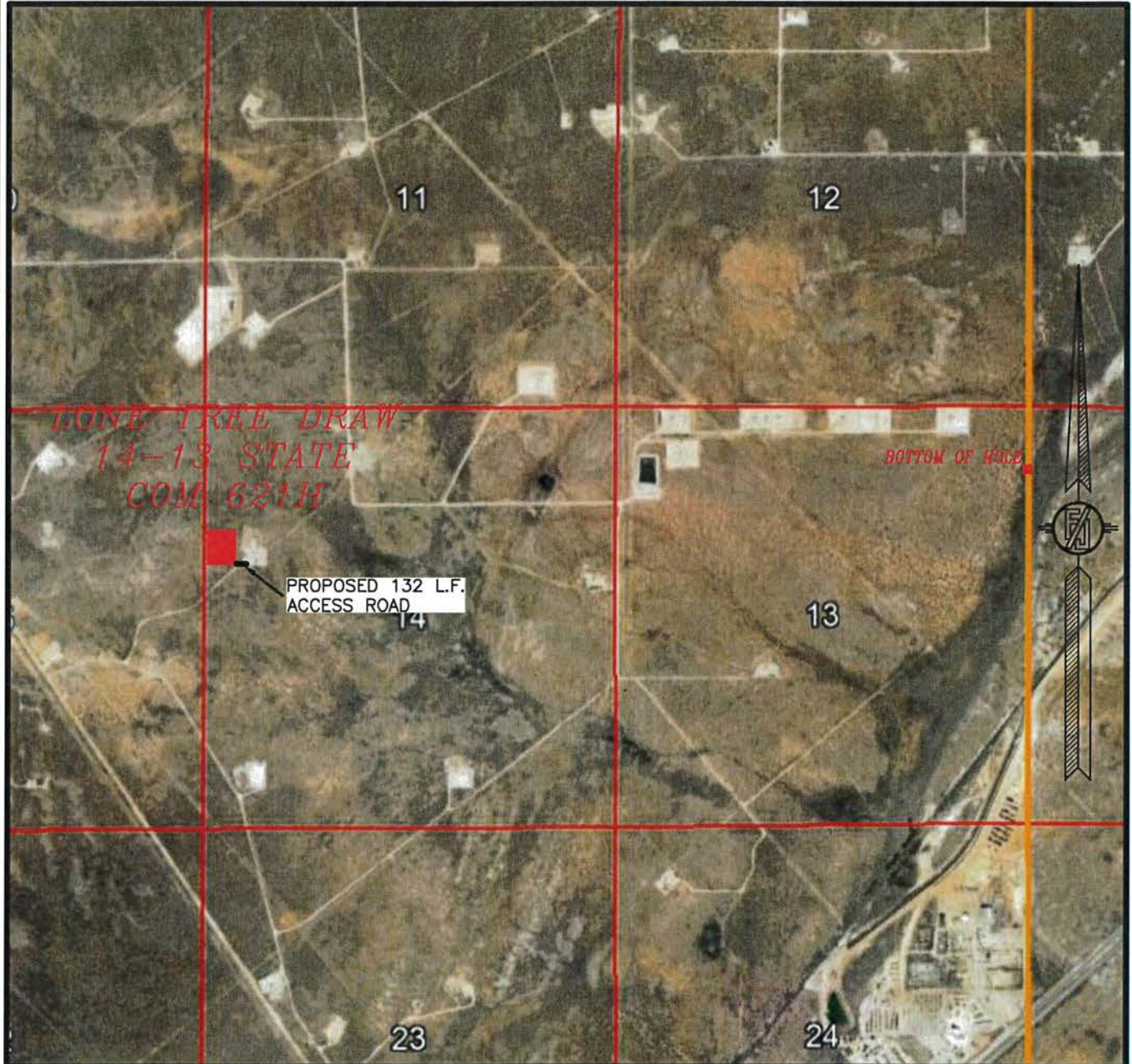
LOCATED 1685 FT. FROM THE NORTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 14, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 6, 2019

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SURVEY NO. 7256

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAR. 2016

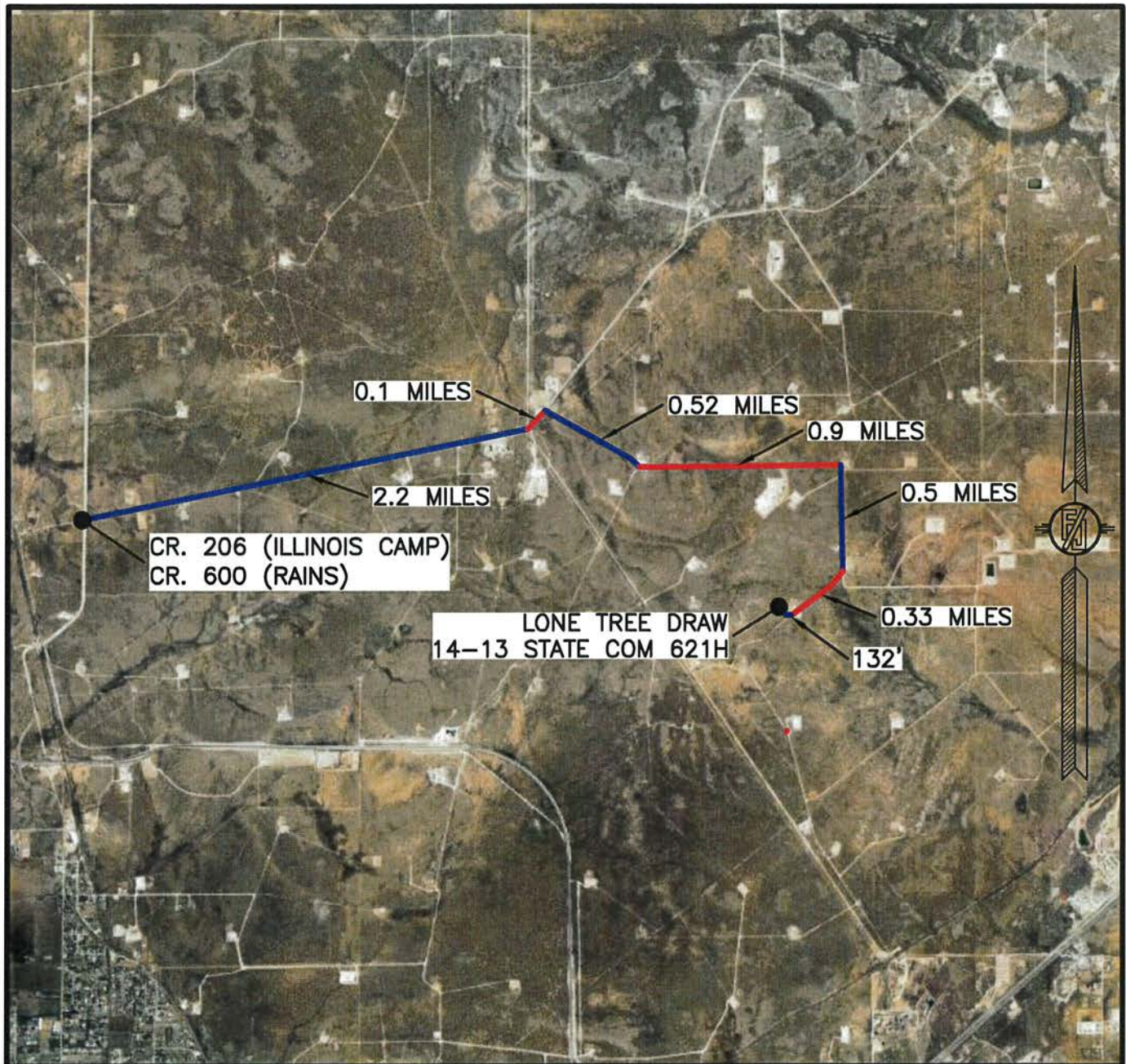
DEVON ENERGY PRODUCTION COMPANY, L.P.
LONE TREE DRAW 14-13 STATE COM 621H
LOCATED 1685 FT. FROM THE NORTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 14, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 6, 2019

SURVEY NO. 7256

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
AERIAL ACCESS ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
MAR. 2016

DEVON ENERGY PRODUCTION COMPANY, L.P.
LONE TREE DRAW 14-13 STATE COM 621H

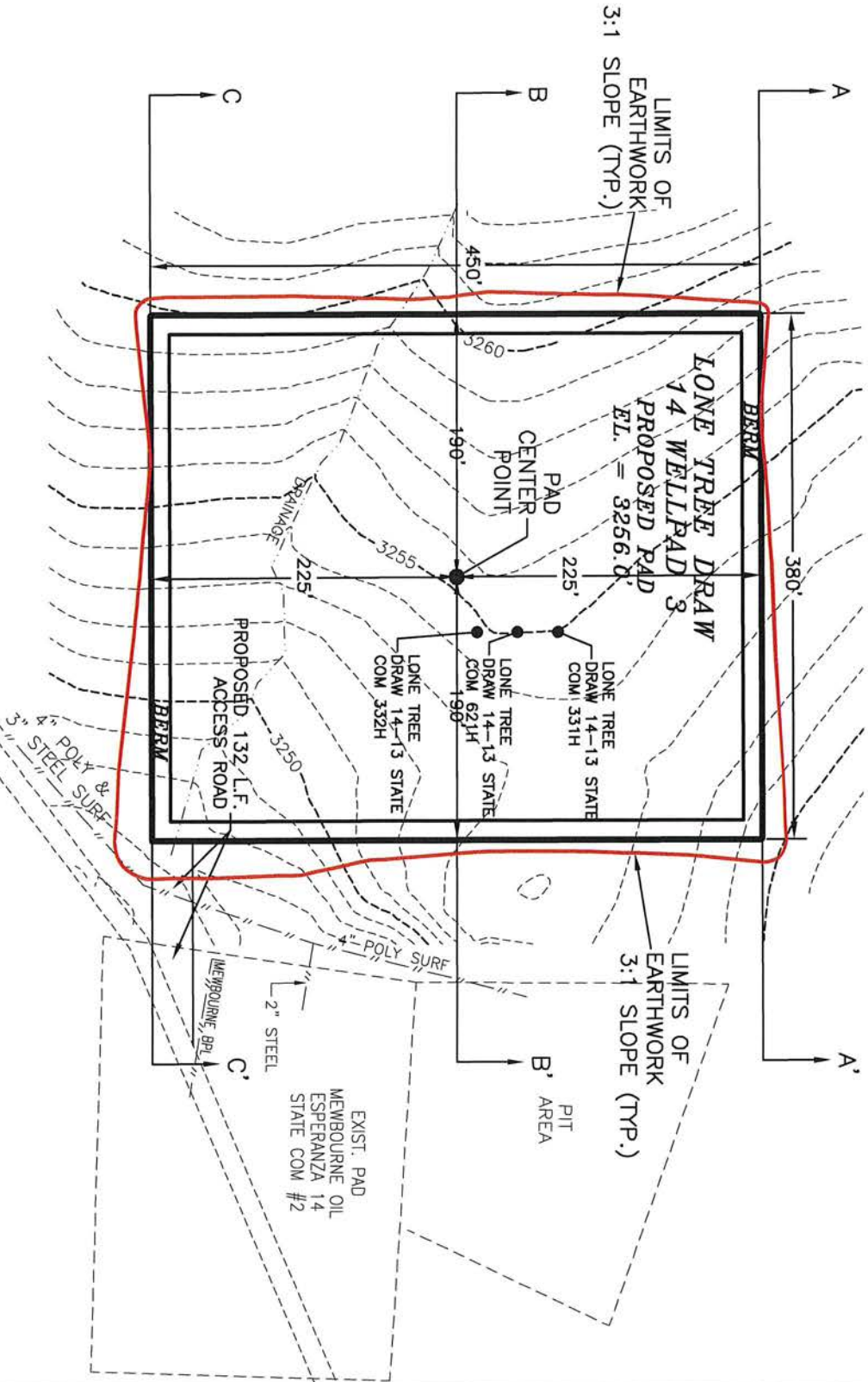
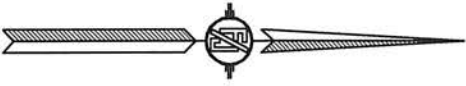
LOCATED 1685 FT. FROM THE NORTH LINE
AND 280 FT. FROM THE WEST LINE OF
SECTION 14, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 6, 2019

SURVEY NO. 7256

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 PAD GRADING AND CROSS SECTIONS
 FOR LONE TREE DRAW 14-13 STATE COM 621H
 SECTION 14, TOWNSHIP 21 SOUTH,
 RANGE 27 EAST, N.M.P.M.
 EDDY COUNTY, STATE OF NEW MEXICO

CUT	FILL	NET
4268 CU. YD	14843 CU. YD	10575 CU. YD (FILL)

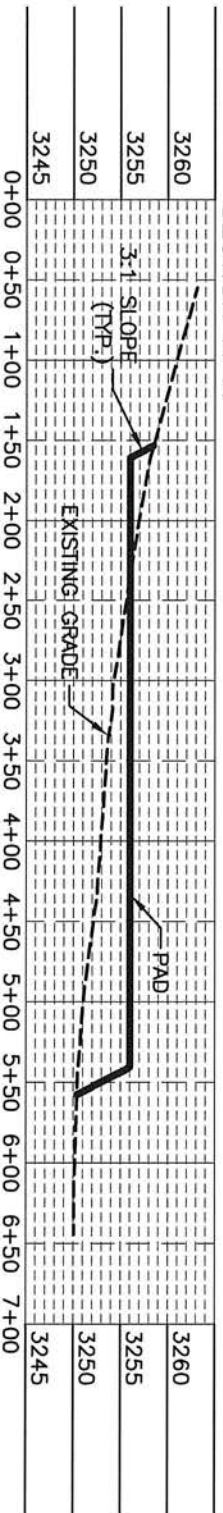
EARTHWORK QUANTITIES ARE ESTIMATED

MAY 6, 2019
 MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

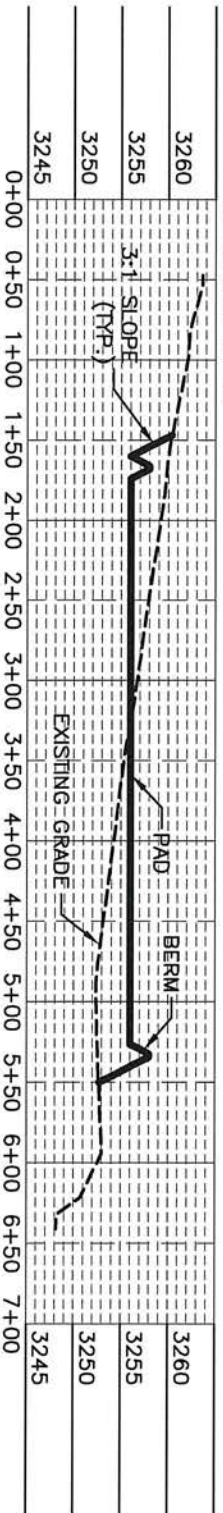
SHEET 1-2
 SURVEY NO. 7256

CROSS-SECTIONS

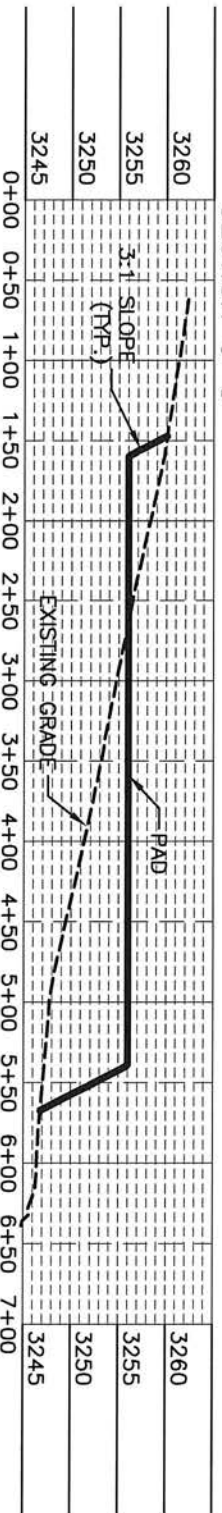
SECTION A-A'



SECTION B-B'



SECTION C-C'



012 60 120 240
SCALE 1" = 120' - 1" = 20' VER

DEVON ENERGY PRODUCTION COMPANY, L.P.
PAD GRADING AND CROSS SECTIONS
FOR LONE TREE DRAW 14-13 STATE COM 621H

SECTION 14, TOWNSHIP 21 SOUTH,
RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

MAY 6, 2019

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 2-2 SURVEY NO. 7256

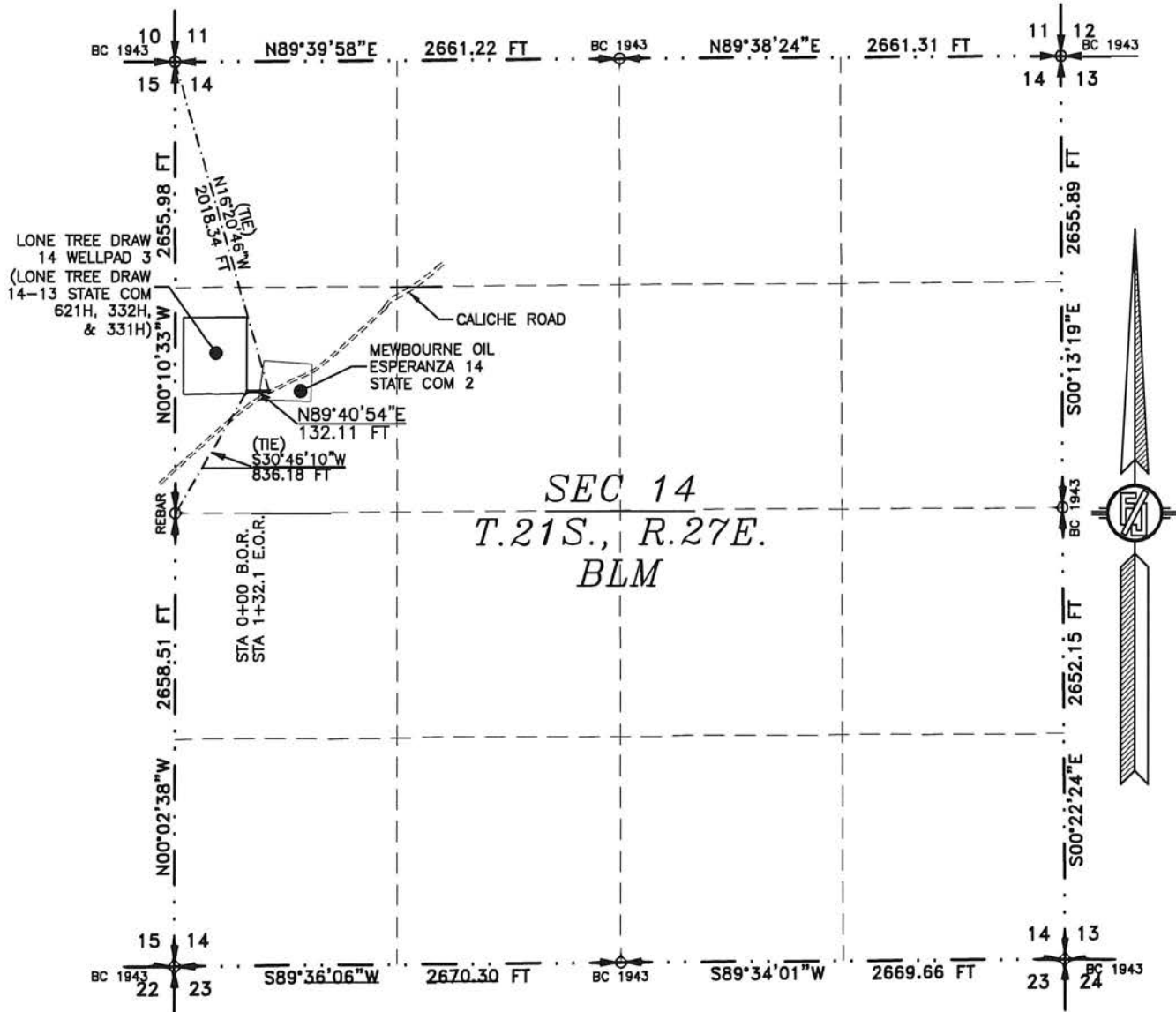
CUT	FILL	NET
4268 CU. YD	14843 CU. YD	10575 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

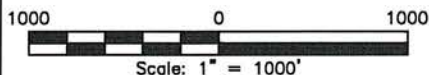
ACCESS ROAD PLAT

ACCESS ROAD FOR LONE TREE DRAW 14 WELLPAD 3
(LONE TREE DRAW 14-13 STATE COM 621H, 332H, & 331H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 6, 2019



SEE NEXT SHEET (2-2) FOR DESCRIPTION



GENERAL NOTES

- 1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.
- 2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 1-2

MADRON SURVEYING, INC. CARLSBAD, NEW MEXICO

SURVEYOR CERTIFICATE

I, FILMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD, NEW MEXICO, THIS 21 DAY OF MAY 2019

FILMON F. JARAMILLO, PLS. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 7256

ACCESS ROAD PLAT

ACCESS ROAD FOR LONE TREE DRAW 14 WELLPAD 3
(LONE TREE DRAW 14-13 STATE COM 621H, 332H, & 331H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
MAY 6, 2019

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., EDDY COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SW/4 NW/4 OF SAID SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M., WHENCE THE WEST QUARTER CORNER OF SAID SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS S30°46'10"W, A DISTANCE OF 836.18 FEET;
THENCE N89°40'54"E A DISTANCE OF 132.11 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE NORTHWEST CORNER OF SAID SECTION 14, TOWNSHIP 21 SOUTH, RANGE 27 EAST, N.M.P.M. BEARS N16°20'46"W, A DISTANCE OF 2018.34 FEET;

SAID STRIP OF LAND BEING 132.11 FEET OR 8.01 RODS IN LENGTH, CONTAINING 0.091 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SW/4 NW/4 132.11 L.F. 8.01 RODS 0.091 ACRES

SURVEYOR CERTIFICATE

I, FILIMON F. JARAMILLO, A NEW MEXICO PROFESSIONAL SURVEYOR NO. 12797, HEREBY CERTIFY THAT I HAVE CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR LAND SURVEYING IN THE STATE OF NEW MEXICO.

IN WITNESS WHEREOF, THIS CERTIFICATE IS EXECUTED AT CARLSBAD,

NEW MEXICO, THIS 21 DAY OF MAY 2019

Filimon F. Jaramillo
FILIMON F. JARAMILLO PLS. 12797

MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 7256

GENERAL NOTES

1.) THE INTENT OF THIS ROUTE SURVEY IS TO ACQUIRE AN EASEMENT.

2.) BASIS OF BEARING AND DISTANCE IS NMSP EAST (NAD83) MODIFIED TO SURFACE COORDINATES. NAD 83 (FEET) AND NAVD 88 (FEET) COORDINATE SYSTEMS USED IN THE SURVEY.

SHEET: 2-2

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 **CARLSBAD, NEW MEXICO**

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 10/21/2019

☒ Original

Operator & OGRID No.: [6137] DEVON ENERGY PRODUCTION COMPANY, LP

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
LONE TREE DRAW 14 13 STATE COM #621H	30-015-46403	E-14-21S-27E	1685N 0280W	10	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP High Pressure gathering system located in Eddy County, New Mexico. It will require 21120' of pipeline to connect the facility to High Pressure gathering system. DEVON ENERGY PRODUCTION COMPANY, LP provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, DEVON ENERGY PRODUCTION COMPANY, LP and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 19, Twn. 19S, Rng. 32E, Eddy County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is DEVON ENERGY PRODUCTION COMPANY, LP's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 273561

PERMIT COMMENTS

Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102		API Number: 30-015-46403
		Well: LONE TREE DRAW 14 13 STATE COM #621H

Created By	Comment	Comment Date

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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Conditions

Permit 273561

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102		API Number: 30-015-46403
		Well: LONE TREE DRAW 14 13 STATE COM #621H

OCD Reviewer	Condition
rpodany	Will require a directional survey with the C-104
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 14-T21S-R27E

Lone Tree Draw 14-13 State Com 621H

Wellbore #1

Permit Plan 1

Anticollision Report

09 October, 2019

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/9/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	10,202.00	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1	

Summary							
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning	
Offset Well - Wellbore - Design			Between Centres (ft)	Between Ellipses (ft)			
Sec 13-T21S-R27E							
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,078.39	7,144.21	2,180.93	2,111.00	31.187	CC	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,100.00	7,144.60	2,181.03	2,110.90	31.100	ES	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	18,800.00	18,800.00	3,484.32	3,277.00	16.807	SF	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,076.58	7,846.67	1,578.35	1,514.57	24.745	CC	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,100.00	7,846.77	1,578.53	1,514.54	24.668	ES	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,400.00	7,848.11	1,611.15	1,544.67	24.237	SF	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	14,947.33	7,876.00	1,308.17	1,208.20	13.086	CC, ES	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	15,100.00	7,876.00	1,317.04	1,215.39	12.956	SF	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	14,700.00	14,700.00	4,014.52	3,917.67	41.451	ES	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	15,049.69	5,518.72	3,999.58	3,939.99	67.123	CC	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	16,200.00	16,200.00	4,156.76	4,017.05	29.754	SF	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,500.00	16,500.00	4,007.79	3,885.35	32.731	ES	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,851.53	5,617.15	3,992.48	3,918.98	54.318	CC	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	19,300.00	19,300.00	4,682.49	4,499.03	25.524	SF	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,535.31	8,227.17	1,210.78	1,133.15	15.595	CC, ES	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,800.00	8,230.79	1,239.37	1,158.34	15.294	SF	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	15,934.02	5,613.24	4,040.53	3,973.72	60.480	CC	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	16,000.00	5,612.84	4,041.06	3,973.71	59.998	ES	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	17,400.00	5,603.40	4,298.24	4,220.35	55.178	SF	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,548.74	8,502.69	1,238.31	1,161.67	16.157	CC, ES	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,700.00	8,501.71	1,247.52	1,169.35	15.959	SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,700.00	14,700.00	4,065.55	3,965.43	40.607	ES, SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,902.86	5,289.29	4,061.93	4,004.03	70.147	CC	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	14,956.60	6,978.42	2,130.71	2,053.33	27.538	CC, ES	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	15,400.00	6,978.42	2,176.35	2,094.83	26.695	SF	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,096.85	8,967.40	2,461.55	2,178.65	8.701	CC	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,100.00	8,967.40	2,461.55	2,178.59	8.699	ES	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,400.00	8,967.40	2,480.14	2,192.28	8.616	SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 14-T21S-R27E						
Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1	10,802.18	9,033.89	162.61	80.28	1.975	Minor Risk, CC, ES, SF
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,350.00	2,328.40	2,961.62	2,918.68	68.971	CC
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,500.00	2,478.38	2,963.57	2,917.84	64.817	ES
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	10,700.00	9,038.40	3,898.38	3,716.42	21.424	SF
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,350.00	2,325.40	401.35	345.23	7.152	CC
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,600.00	2,575.32	404.62	342.66	6.530	ES
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	9,500.00	9,035.40	944.55	727.25	4.347	Alert, SF
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	2,000.00	2,000.70	30.02	16.09	2.155	Minor Risk, CC, ES
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	19,500.32	19,325.89	422.06	37.23	1.097	Major Risk, SF
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,350.00	2,349.40	29.99	13.56	1.826	Minor Risk, CC
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,400.00	2,400.60	30.20	13.41	1.799	Minor Risk, ES
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	19,500.32	19,285.26	537.29	123.25	1.298	Major Risk, SF
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	7,162.27	7,392.62	1,265.14	1,212.34	23.958	CC
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	19,500.32	19,312.03	1,415.97	986.74	3.299	Alert, ES, SF
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,350.00	2,338.90	1,558.66	1,542.27	95.093	CC
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,400.00	2,388.90	1,558.87	1,542.12	93.075	ES
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	19,500.32	19,294.07	2,264.39	1,831.03	5.225	SF
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	10,978.08	10,835.72	3,065.19	2,946.70	25.868	CC
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,400.00	19,158.00	3,154.13	2,640.49	6.141	ES
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,500.32	19,158.00	3,156.57	2,641.39	6.127	SF
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	19,100.00	19,172.00	4,208.36	3,718.97	8.599	SF
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	11,600.00	8,813.68	4,938.33	4,853.24	58.034	SF
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,350.00	2,338.30	1,588.67	1,572.28	96.937	CC
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,400.00	2,388.30	1,588.88	1,572.13	94.879	ES
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	19,500.32	19,456.84	2,760.09	2,325.81	6.355	SF
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,118.35	8,999.40	3,758.23	3,551.88	18.212	CC
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,200.00	8,999.40	3,759.12	3,551.28	18.087	ES
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	13,100.00	8,999.40	3,884.32	3,662.12	17.481	SF
Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1	600.00	566.40	1,536.70	1,384.48	10.095	CC, ES, SF

Offset Design												Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1		Offset Site Error:		5.00 ft	
Survey Program:												111-GYRO-NS-CT, 6243-MWD+HDGM		Offset Well Error:		0.50 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.00	0.00	0.00	0.00	0.50	5.02	77.58	1,577.86	7,166.10	7,338.08								
100.00	100.00	20.86	20.86	0.52	5.03	77.58	1,577.86	7,166.12	7,337.78	7,332.24	5.54	1,323.845					
200.00	200.00	87.28	87.28	0.70	5.03	77.58	1,577.86	7,166.37	7,338.15	7,332.43	5.73	1,280.996					
300.00	300.00	300.00	198.29	0.99	5.09	77.58	1,577.85	7,166.94	7,338.65	7,332.57	6.08	1,207.491					
400.00	400.00	267.96	267.96	1.31	5.07	77.59	1,577.60	7,167.35	7,339.20	7,332.81	6.38	1,149.847					
500.00	500.00	544.17	544.09	1.65	5.30	77.63	1,571.87	7,168.17	7,339.35	7,332.41	6.94	1,056.814					
600.00	600.00	635.07	634.96	1.99	5.41	77.65	1,569.72	7,167.19	7,337.81	7,330.41	7.40	991.654					
700.00	700.00	737.48	737.33	2.34	5.56	77.66	1,567.30	7,166.34	7,336.49	7,328.59	7.89	929.614					
800.00	800.00	843.87	843.69	2.69	5.73	77.68	1,564.85	7,165.19	7,334.94	7,326.53	8.41	871.888					
900.00	900.00	950.34	950.13	3.04	5.92	77.70	1,562.57	7,164.00	7,333.39	7,324.43	8.95	819.030					
1,000.00	1,000.00	1,056.44	1,056.20	3.40	6.12	77.71	1,560.48	7,162.65	7,331.72	7,322.21	9.51	770.788					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft	
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,100.00	1,100.00	1,229.98	1,229.68	3.75	6.49	77.73	1,556.68	7,159.52	7,329.48	7,319.25	10.23	716.304		
1,200.00	1,200.00	1,396.95	1,396.54	4.11	6.89	77.75	1,553.19	7,154.83	7,326.27	7,315.30	10.97	667.835		
1,300.00	1,300.00	1,509.37	1,508.87	4.46	7.17	77.76	1,550.74	7,151.04	7,322.51	7,310.91	11.60	631.262		
1,400.00	1,400.00	1,615.58	1,614.98	4.82	7.45	77.78	1,548.17	7,147.44	7,318.68	7,306.46	12.23	598.642		
1,500.00	1,500.00	1,696.88	1,696.22	5.18	7.67	77.79	1,546.36	7,144.70	7,314.92	7,302.13	12.79	571.703		
1,600.00	1,600.00	1,787.61	1,786.88	5.53	7.92	77.80	1,544.44	7,141.84	7,311.39	7,297.99	13.39	545.852		
1,700.00	1,700.00	1,873.17	1,872.38	5.89	8.16	77.81	1,542.51	7,139.26	7,307.97	7,293.99	13.99	522.532		
1,800.00	1,800.00	2,046.34	2,045.39	6.25	8.66	77.84	1,537.69	7,133.65	7,304.25	7,289.42	14.83	492.610		
1,900.00	1,900.00	2,179.39	2,178.25	6.61	9.07	77.87	1,532.31	7,128.71	7,299.78	7,284.21	15.57	468.768		
2,000.00	2,000.00	2,280.94	2,279.63	6.96	9.39	77.89	1,528.35	7,124.59	7,294.99	7,278.76	16.23	449.425		
2,100.00	2,100.00	2,383.19	2,381.72	7.32	9.71	77.92	1,524.40	7,120.44	7,290.21	7,273.31	16.90	431.433		
2,200.00	2,200.00	2,503.48	2,501.81	7.68	10.10	77.94	1,520.11	7,115.17	7,285.16	7,267.54	17.62	413.455		
2,300.00	2,300.00	2,581.66	2,579.87	8.04	10.35	77.96	1,517.21	7,111.84	7,280.22	7,262.00	18.22	399.561		
2,350.00	2,350.00	2,617.61	2,615.76	8.22	10.47	77.97	1,515.77	7,110.42	7,277.88	7,259.36	18.51	393.132		
2,400.00	2,400.00	2,653.55	2,651.65	8.39	10.59	94.04	1,514.28	7,109.09	7,275.64	7,256.84	18.80	386.906		
2,500.00	2,499.98	2,802.17	2,800.03	8.75	11.08	94.14	1,508.24	7,103.21	7,271.05	7,251.43	19.63	370.482		
2,600.00	2,599.92	2,906.94	2,904.62	9.11	11.43	94.24	1,504.36	7,098.49	7,266.13	7,245.81	20.31	357.693		
2,700.00	2,699.78	2,987.86	2,985.41	9.47	11.70	94.34	1,501.43	7,094.94	7,261.49	7,240.56	20.93	346.944		
2,800.00	2,799.54	3,074.77	3,072.18	9.82	12.00	94.45	1,498.04	7,091.46	7,257.28	7,235.71	21.57	336.513		
2,900.00	2,899.16	3,191.60	3,188.84	10.18	12.39	94.59	1,493.95	7,086.56	7,253.12	7,230.83	22.30	325.294		
3,000.00	2,998.61	3,287.64	3,284.74	10.54	12.72	94.73	1,490.83	7,082.33	7,248.99	7,226.02	22.96	315.667		
3,100.00	3,097.86	3,392.84	3,389.78	10.89	13.08	94.89	1,487.31	7,077.82	7,245.11	7,221.44	23.66	306.193		
3,200.00	3,196.89	3,495.46	3,492.24	11.25	13.43	95.06	1,484.12	7,073.20	7,241.24	7,216.89	24.35	297.346		
3,295.74	3,291.45	3,589.26	3,585.91	11.59	13.76	95.23	1,481.38	7,068.94	7,237.73	7,212.73	25.00	289.486		
3,300.00	3,295.65	3,593.45	3,590.09	11.61	13.77	95.23	1,481.25	7,068.75	7,237.58	7,212.55	25.03	289.145		
3,400.00	3,394.29	3,691.98	3,688.48	11.97	14.11	95.37	1,478.53	7,064.26	7,234.04	7,208.32	25.71	281.342		
3,500.00	3,492.94	3,779.79	3,776.18	12.33	14.42	95.50	1,476.32	7,060.26	7,230.60	7,204.23	26.36	274.281		
3,600.00	3,591.58	3,879.23	3,875.48	12.69	14.76	95.64	1,473.99	7,055.79	7,227.29	7,200.24	27.05	267.184		
3,700.00	3,690.22	3,971.12	3,967.26	13.05	15.08	95.77	1,472.17	7,051.61	7,224.04	7,196.32	27.72	260.654		
3,800.00	3,788.86	4,059.29	4,055.33	13.41	15.38	95.89	1,470.26	7,047.73	7,220.95	7,192.58	28.37	254.521		
3,900.00	3,887.50	4,152.15	4,148.08	13.77	15.70	96.02	1,468.41	7,043.74	7,218.02	7,188.98	29.04	248.535		
4,000.00	3,986.14	4,239.09	4,234.93	14.14	15.99	96.13	1,467.75	7,039.89	7,215.23	7,185.54	29.69	242.988		
4,100.00	4,084.78	4,312.26	4,308.03	14.50	16.24	96.22	1,468.13	7,036.65	7,212.71	7,182.41	30.30	238.033		
4,200.00	4,183.42	4,387.80	4,383.50	14.87	16.48	96.30	1,469.34	7,033.51	7,210.64	7,179.72	30.92	233.228		
4,300.00	4,282.06	4,300.00	4,537.73	15.24	16.20	96.47	1,472.32	7,026.45	7,208.23	7,177.24	30.99	232.591		
4,400.00	4,380.70	4,617.85	4,613.24	15.60	17.24	96.55	1,473.89	7,022.64	7,205.52	7,173.11	32.40	222.358		
4,500.00	4,479.34	4,670.64	4,665.98	15.97	17.41	96.61	1,474.47	7,020.50	7,203.53	7,170.58	32.95	218.612		
4,600.00	4,577.98	4,733.98	4,729.28	16.34	17.63	96.69	1,474.61	7,018.35	7,202.12	7,168.59	33.53	214.783		
4,700.00	4,676.62	4,857.25	4,852.49	16.71	18.04	96.86	1,473.55	7,014.49	7,200.80	7,166.49	34.31	209.866		
4,800.00	4,775.27	4,934.46	4,929.66	17.08	18.31	96.96	1,472.82	7,012.10	7,199.55	7,164.61	34.94	206.049		
4,900.00	4,873.91	5,047.59	5,042.73	17.45	18.69	97.11	1,471.23	7,008.74	7,198.39	7,162.70	35.69	201.687		
5,000.00	4,972.55	5,151.53	5,146.61	17.82	19.05	97.25	1,469.97	7,005.42	7,197.08	7,160.67	36.41	197.661		
5,100.00	5,071.19	5,276.24	5,271.23	18.19	19.47	97.41	1,470.31	7,001.04	7,195.76	7,158.57	37.20	193.445		
5,200.00	5,169.83	5,428.22	5,423.05	18.56	19.99	97.58	1,472.22	6,994.19	7,193.53	7,155.46	38.07	188.941		
5,300.00	5,268.47	5,484.17	5,478.94	18.93	20.18	97.65	1,472.58	6,991.77	7,191.50	7,152.87	38.64	186.133		
5,400.00	5,367.11	5,576.08	5,570.79	19.31	20.49	97.76	1,472.88	6,988.24	7,189.93	7,150.61	39.32	182.867		
5,500.00	5,465.75	5,668.21	5,662.84	19.68	20.81	97.87	1,473.68	6,984.61	7,188.38	7,148.38	40.00	179.707		
5,600.00	5,564.39	5,759.50	5,754.05	20.05	21.11	97.97	1,475.26	6,981.02	7,186.99	7,146.31	40.68	176.666		
5,700.00	5,663.03	6,595.00	6,563.53	20.42	22.73	99.76	1,374.82	6,922.56	7,178.73	7,136.31	42.42	169.212		
5,800.00	5,761.67	6,626.00	6,588.32	20.80	22.75	99.93	1,356.23	6,921.70	7,168.43	7,125.57	42.86	167.249		
5,900.00	5,860.31	6,626.00	6,588.32	21.17	22.75	99.93	1,356.23	6,921.70	7,159.32	7,116.04	43.28	165.416		
6,000.00	5,958.96	6,640.99	6,599.90	21.54	22.76	100.02	1,346.71	6,921.59	7,151.49	7,107.79	43.70	163.632		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,100.00	6,057.60	6,658.00	6,612.69	21.92	22.77	100.13	1,335.50	6,921.75	7,145.00	7,100.87	44.13	161.922		
6,200.00	6,156.24	6,658.00	6,612.69	22.29	22.77	100.13	1,335.50	6,921.75	7,139.77	7,095.24	44.53	160.337		
6,300.00	6,254.88	6,677.81	6,627.07	22.67	22.79	100.26	1,321.88	6,922.26	7,135.83	7,090.89	44.95	158.760		
6,400.00	6,353.52	6,689.00	6,634.91	23.04	22.80	100.33	1,313.91	6,922.67	7,133.18	7,087.83	45.35	157.288		
6,500.00	6,452.16	6,710.03	6,649.20	23.42	22.81	100.47	1,298.52	6,923.62	7,131.79	7,086.03	45.76	155.837		
6,559.26	6,510.61	6,721.00	6,656.44	23.64	22.82	100.54	1,290.30	6,924.20	7,131.57	7,085.57	46.01	155.017		
6,600.00	6,550.80	6,721.00	6,656.44	23.79	22.82	100.54	1,290.30	6,924.20	7,131.69	7,085.53	46.16	154.502		
6,700.00	6,649.44	6,740.07	6,668.69	24.17	22.84	100.68	1,275.73	6,925.34	7,132.87	7,086.31	46.56	153.186		
6,800.00	6,748.08	6,766.15	6,684.75	24.54	22.86	100.86	1,255.26	6,927.13	7,135.36	7,088.38	46.98	151.889		
6,900.00	6,846.72	6,799.33	6,703.97	24.92	22.90	101.10	1,228.32	6,929.48	7,138.97	7,091.57	47.41	150.588		
7,000.00	6,945.36	6,816.00	6,713.08	25.29	22.92	101.22	1,214.42	6,930.74	7,143.88	7,096.08	47.80	149.456		
7,100.00	7,044.00	6,827.76	6,719.29	25.67	22.93	101.31	1,204.47	6,931.68	7,150.11	7,101.93	48.18	148.415		
7,200.00	7,142.65	6,847.00	6,729.03	26.04	22.96	101.45	1,187.96	6,933.32	7,157.68	7,109.11	48.57	147.379		
7,300.00	7,241.29	6,847.00	6,729.03	26.42	22.96	101.45	1,187.96	6,933.32	7,166.56	7,117.66	48.90	146.557		
7,400.00	7,339.93	6,859.95	6,735.31	26.79	22.97	101.55	1,176.69	6,934.48	7,176.78	7,127.51	49.26	145.685		
7,500.00	7,438.57	6,878.00	6,743.75	27.17	23.00	101.69	1,160.83	6,936.17	7,188.34	7,138.71	49.63	144.829		
7,571.77	7,509.37	6,878.00	6,743.75	27.44	23.00	101.69	1,160.83	6,936.17	7,197.44	7,147.58	49.86	144.362		
7,600.00	7,537.23	6,880.81	6,745.02	27.55	23.01	101.76	1,158.35	6,936.44	7,201.19	7,151.23	49.95	144.160		
7,700.00	7,636.18	6,904.17	6,755.34	27.92	23.05	102.15	1,137.50	6,938.67	7,214.94	7,164.61	50.33	143.356		
7,800.00	7,735.48	6,910.00	6,757.82	28.29	23.06	102.41	1,132.26	6,939.22	7,229.43	7,178.79	50.64	142.775		
7,900.00	7,835.05	6,926.62	6,764.65	28.65	23.09	102.76	1,117.19	6,940.82	7,244.65	7,193.68	50.97	142.134		
8,000.00	7,934.83	6,942.00	6,770.61	29.01	23.13	103.11	1,103.09	6,942.34	7,260.62	7,209.33	51.29	141.563		
8,100.00	8,034.74	6,948.49	6,773.01	29.36	23.14	103.40	1,097.10	6,942.99	7,277.29	7,225.72	51.57	141.128		
8,202.27	8,137.00	6,965.52	6,778.96	29.72	23.19	87.76	1,081.23	6,944.66	7,295.03	7,243.15	51.88	140.624		
8,300.00	8,234.73	6,973.00	6,781.41	30.06	23.21	87.81	1,074.20	6,945.38	7,312.91	7,260.78	52.13	140.285		
8,400.00	8,334.73	6,973.00	6,781.41	30.41	23.21	87.81	1,074.20	6,945.38	7,332.50	7,280.15	52.35	140.064		
8,500.00	8,434.73	6,987.70	6,786.01	30.75	23.25	87.92	1,060.31	6,946.83	7,353.32	7,300.70	52.63	139.721		
8,552.31	8,487.04	6,990.62	6,786.90	30.94	23.26	87.94	1,057.54	6,947.12	7,364.74	7,311.99	52.75	139.613		
8,600.00	8,534.68	7,005.00	6,791.14	31.10	23.31	-1.58	1,043.89	6,948.64	7,373.56	7,320.65	52.90	139.375		
8,650.00	8,584.26	7,005.00	6,791.14	31.26	23.31	-1.57	1,043.89	6,948.64	7,378.83	7,325.84	52.99	139.242		
8,700.00	8,633.10	7,005.00	6,791.14	31.43	23.31	-1.56	1,043.89	6,948.64	7,380.09	7,327.01	53.08	139.048		
8,750.00	8,680.83	7,005.00	6,791.14	31.58	23.31	-1.57	1,043.89	6,948.64	7,377.33	7,324.18	53.15	138.795		
8,800.00	8,727.09	7,005.00	6,791.14	31.74	23.31	-1.59	1,043.89	6,948.64	7,370.57	7,317.34	53.22	138.489		
8,850.00	8,771.52	7,005.00	6,791.14	31.89	23.31	-1.62	1,043.89	6,948.64	7,359.84	7,306.56	53.28	138.131		
8,900.00	8,813.78	7,005.00	6,791.14	32.04	23.31	-1.66	1,043.89	6,948.64	7,345.21	7,291.88	53.33	137.725		
8,950.00	8,853.56	7,005.00	6,791.14	32.18	23.31	-1.72	1,043.89	6,948.64	7,326.78	7,273.40	53.37	137.274		
9,000.00	8,890.55	7,005.00	6,791.14	32.32	23.31	-1.80	1,043.89	6,948.64	7,304.64	7,251.24	53.40	136.779		
9,050.00	8,924.46	7,005.00	6,791.14	32.47	23.31	-1.90	1,043.89	6,948.64	7,278.94	7,225.52	53.43	136.244		
9,100.00	8,955.05	7,018.98	6,794.98	32.63	23.35	-1.88	1,030.54	6,950.17	7,249.76	7,196.26	53.50	135.508		
9,150.00	8,982.08	7,020.95	6,795.50	32.79	23.36	-2.01	1,028.65	6,950.39	7,217.41	7,163.90	53.51	134.875		
9,200.00	9,005.34	7,022.78	6,795.97	32.97	23.37	-2.17	1,026.90	6,950.60	7,182.04	7,128.53	53.51	134.208		
9,250.00	9,024.65	7,036.00	6,799.19	33.17	23.42	-2.24	1,014.16	6,952.08	7,143.93	7,090.37	53.56	133.382		
9,300.00	9,039.87	7,036.00	6,799.19	33.38	23.42	-2.54	1,014.16	6,952.08	7,103.22	7,049.67	53.54	132.670		
9,350.00	9,050.89	7,036.00	6,799.19	33.62	23.42	-2.94	1,014.16	6,952.08	7,060.22	7,006.71	53.52	131.926		
9,400.00	9,057.61	7,036.00	6,799.19	33.87	23.42	-3.52	1,014.16	6,952.08	7,015.25	6,961.76	53.49	131.154		
9,452.31	9,060.00	7,036.00	6,799.19	34.15	23.42	-4.47	1,014.16	6,952.08	6,966.41	6,912.95	53.46	130.314		
9,500.00	9,060.00	7,036.00	6,799.19	34.42	23.42	-4.47	1,014.16	6,952.08	6,921.17	6,867.74	53.43	129.540		
9,600.00	9,060.00	7,036.00	6,799.19	35.09	23.42	-4.47	1,014.16	6,952.08	6,826.43	6,773.07	53.36	127.929		
9,700.00	9,060.00	7,036.00	6,799.19	35.86	23.42	-4.47	1,014.16	6,952.08	6,731.84	6,678.54	53.29	126.314		
9,800.00	9,060.00	7,036.00	6,799.19	36.72	23.42	-4.47	1,014.16	6,952.08	6,637.40	6,584.17	53.23	124.696		
9,900.00	9,060.00	7,036.00	6,799.19	37.69	23.42	-4.47	1,014.16	6,952.08	6,543.13	6,489.97	53.16	123.076		
10,000.00	9,060.00	7,036.00	6,799.19	38.73	23.42	-4.47	1,014.16	6,952.08	6,449.04	6,395.94	53.10	121.452		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,100.00	9,060.00	7,036.00	6,799.19	39.86	23.42	-4.47	1,014.16	6,952.08	6,355.12	6,302.08	53.04	119.826		
10,140.22	9,060.00	7,036.00	6,799.19	40.33	23.42	-4.47	1,014.16	6,952.08	6,317.40	6,264.38	53.01	119.170		
10,200.00	9,060.00	7,036.00	6,799.19	41.05	23.42	-7.65	1,014.16	6,952.08	6,261.41	6,208.44	52.97	118.196		
10,300.00	9,060.00	7,036.00	6,799.19	42.31	23.42	-12.77	1,014.16	6,952.08	6,168.06	6,115.15	52.92	116.564		
10,400.00	9,060.00	7,036.00	6,799.19	43.64	23.42	-17.60	1,014.16	6,952.08	6,075.21	6,022.35	52.86	114.929		
10,507.23	9,060.00	7,036.00	6,799.19	45.11	23.42	-22.39	1,014.16	6,952.08	5,976.36	5,923.55	52.81	113.167		
10,600.00	9,060.00	7,051.56	6,802.52	46.43	23.48	-18.01	999.07	6,953.89	5,890.95	5,838.10	52.84	111.483		
10,700.00	9,060.00	7,054.06	6,803.01	47.91	23.49	-13.40	996.63	6,954.19	5,798.83	5,746.01	52.81	109.799		
10,800.00	9,060.00	7,068.00	6,805.46	49.42	23.54	-8.40	983.02	6,955.88	5,706.74	5,653.91	52.83	108.019		
10,900.00	9,060.00	7,068.00	6,805.46	50.97	23.54	-3.68	983.02	6,955.88	5,614.59	5,561.80	52.79	106.362		
11,000.00	9,060.00	7,068.00	6,805.46	52.55	23.54	1.00	983.02	6,955.88	5,522.63	5,469.89	52.74	104.711		
11,100.00	9,060.00	7,068.00	6,805.46	54.14	23.54	5.57	983.02	6,955.88	5,430.97	5,378.28	52.69	103.070		
11,207.23	9,060.00	7,068.00	6,805.46	55.87	23.54	10.29	983.02	6,955.88	5,333.19	5,280.55	52.64	101.320		
11,300.00	9,060.00	7,068.00	6,805.46	57.39	23.54	6.30	983.02	6,955.88	5,248.89	5,196.30	52.59	99.803		
11,400.00	9,060.00	7,068.00	6,805.46	59.06	23.54	2.01	983.02	6,955.88	5,158.20	5,105.65	52.55	98.153		
11,506.63	9,060.00	7,068.00	6,805.46	60.88	23.54	-2.50	983.02	6,955.88	5,061.82	5,009.30	52.52	96.379		
11,600.00	9,060.00	7,068.00	6,805.46	62.49	23.54	-2.50	983.02	6,955.88	4,977.79	4,925.29	52.50	94.819		
11,700.00	9,060.00	7,068.00	6,805.46	64.24	23.54	-2.50	983.02	6,955.88	4,888.17	4,835.69	52.48	93.145		
11,800.00	9,060.00	7,068.00	6,805.46	66.01	23.54	-2.50	983.02	6,955.88	4,798.95	4,746.49	52.47	91.466		
11,900.00	9,060.00	7,068.00	6,805.46	67.79	23.54	-2.50	983.02	6,955.88	4,710.17	4,657.71	52.46	89.784		
12,000.00	9,060.00	7,068.00	6,805.46	69.58	23.54	-2.50	983.02	6,955.88	4,621.85	4,569.39	52.46	88.098		
12,100.00	9,060.00	7,068.00	6,805.46	71.39	23.54	-2.50	983.02	6,955.88	4,534.01	4,481.54	52.47	86.409		
12,200.00	9,060.00	7,068.00	6,805.46	73.21	23.54	-2.50	983.02	6,955.88	4,446.69	4,394.20	52.49	84.716		
12,300.00	9,060.00	7,068.00	6,805.46	75.05	23.54	-2.50	983.02	6,955.88	4,359.91	4,307.39	52.52	83.019		
12,400.00	9,060.00	7,068.00	6,805.46	76.89	23.54	-2.50	983.02	6,955.88	4,273.71	4,221.15	52.56	81.318		
12,500.00	9,060.00	7,068.00	6,805.46	78.74	23.54	-2.50	983.02	6,955.88	4,188.12	4,135.52	52.60	79.615		
12,600.00	9,060.00	7,068.00	6,805.46	80.61	23.54	-2.50	983.02	6,955.88	4,103.19	4,050.52	52.67	77.908		
12,700.00	9,060.00	7,081.21	6,807.34	82.48	23.60	-2.16	970.04	6,957.51	4,018.81	3,966.03	52.78	76.146		
12,800.00	9,060.00	7,082.85	6,807.54	84.36	23.61	-2.12	968.43	6,957.70	3,935.26	3,882.39	52.87	74.432		
12,900.00	9,060.00	7,084.48	6,807.73	86.24	23.62	-2.07	966.82	6,957.90	3,852.50	3,799.52	52.98	72.719		
13,000.00	9,060.00	7,086.10	6,807.91	88.14	23.62	-2.03	965.22	6,958.10	3,770.56	3,717.46	53.10	71.005		
13,100.00	9,060.00	7,099.00	6,809.13	90.04	23.68	-1.70	952.48	6,959.66	3,689.63	3,636.36	53.27	69.266		
13,200.00	9,060.00	7,099.00	6,809.13	91.94	23.68	-1.70	952.48	6,959.66	3,609.50	3,556.07	53.42	67.562		
13,300.00	9,060.00	7,099.00	6,809.13	93.86	23.68	-1.70	952.48	6,959.66	3,530.38	3,476.78	53.60	65.861		
13,400.00	9,060.00	7,099.00	6,809.13	95.77	23.68	-1.70	952.48	6,959.66	3,452.35	3,398.54	53.81	64.164		
13,500.00	9,060.00	7,099.00	6,809.13	97.70	23.68	-1.70	952.48	6,959.66	3,375.48	3,321.45	54.03	62.472		
13,600.00	9,060.00	7,099.00	6,809.13	99.62	23.68	-1.70	952.48	6,959.66	3,299.84	3,245.56	54.28	60.789		
13,700.00	9,060.00	7,099.00	6,809.13	101.56	23.68	-1.70	952.48	6,959.66	3,225.54	3,170.97	54.56	59.115		
13,800.00	9,060.00	7,099.00	6,809.13	103.49	23.68	-1.70	952.48	6,959.66	3,152.65	3,097.78	54.87	57.453		
13,900.00	9,060.00	7,099.00	6,809.13	105.43	23.68	-1.70	952.48	6,959.66	3,081.29	3,026.08	55.21	55.807		
14,000.00	9,060.00	7,099.00	6,809.13	107.38	23.68	-1.70	952.48	6,959.66	3,011.56	2,955.97	55.58	54.180		
14,100.00	9,060.00	7,099.00	6,809.13	109.33	23.68	-1.70	952.48	6,959.66	2,943.57	2,887.58	55.99	52.575		
14,200.00	9,060.00	7,099.00	6,809.13	111.28	23.68	-1.70	952.48	6,959.66	2,877.45	2,821.03	56.43	50.996		
14,300.00	9,060.00	7,110.67	6,809.88	113.23	23.74	-1.40	940.91	6,961.01	2,813.23	2,756.35	56.89	49.453		
14,400.00	9,060.00	7,112.84	6,809.99	115.19	23.75	-1.34	938.76	6,961.25	2,751.21	2,693.82	57.39	47.941		
14,500.00	9,060.00	7,114.95	6,810.09	117.15	23.76	-1.28	936.67	6,961.49	2,691.47	2,633.55	57.92	46.469		
14,600.00	9,060.00	7,116.99	6,810.18	119.11	23.77	-1.23	934.63	6,961.71	2,634.16	2,575.67	58.49	45.040		
14,700.00	9,060.00	7,128.00	6,810.49	121.08	23.82	-0.94	923.69	6,962.86	2,579.52	2,520.45	59.07	43.668		
14,800.00	9,060.00	7,128.00	6,810.49	123.05	23.82	-0.94	923.69	6,962.86	2,527.55	2,467.85	59.70	42.338		
14,900.00	9,060.00	7,128.00	6,810.49	125.02	23.82	-0.94	923.69	6,962.86	2,478.53	2,418.17	60.36	41.063		
15,000.00	9,060.00	7,128.00	6,810.49	126.99	23.82	-0.94	923.69	6,962.86	2,432.63	2,371.58	61.05	39.849		
15,100.00	9,060.00	7,128.00	6,810.49	128.97	23.82	-0.94	923.69	6,962.86	2,390.04	2,328.28	61.76	38.698		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,200.00	9,060.00	7,128.00	6,810.49	130.95	23.82	-0.94	923.69	6,962.86	2,350.93	2,288.43	62.50	37.613	
15,300.00	9,060.00	7,128.00	6,810.49	132.93	23.82	-0.94	923.69	6,962.86	2,315.48	2,252.21	63.27	36.598	
15,400.00	9,060.00	7,128.00	6,810.49	134.91	23.82	-0.94	923.69	6,962.86	2,283.87	2,219.81	64.06	35.654	
15,500.00	9,060.00	7,128.00	6,810.49	136.89	23.82	-0.94	923.69	6,962.86	2,256.24	2,191.37	64.87	34.782	
15,600.00	9,060.00	7,128.00	6,810.49	138.88	23.82	-0.94	923.69	6,962.86	2,232.76	2,167.06	65.70	33.983	
15,700.00	9,060.00	7,128.00	6,810.49	140.86	23.82	-0.94	923.69	6,962.86	2,213.55	2,146.99	66.56	33.256	
15,800.00	9,060.00	7,128.00	6,810.49	142.85	23.82	-0.94	923.69	6,962.86	2,198.73	2,131.29	67.44	32.603	
15,900.00	9,060.00	7,141.03	6,810.58	144.84	23.88	-0.60	910.72	6,964.16	2,188.20	2,119.90	68.30	32.039	
16,000.00	9,060.00	7,142.82	6,810.57	146.83	23.89	-0.55	908.94	6,964.34	2,182.33	2,113.13	69.21	31.533	
16,078.39	9,060.00	7,144.21	6,810.56	148.40	23.90	-0.52	907.56	6,964.48	2,180.93	2,111.00	69.93	31.187 CC	
16,100.00	9,060.00	7,144.60	6,810.56	148.83	23.90	-0.51	907.18	6,964.51	2,181.03	2,110.90	70.13	31.100 ES	
16,200.00	9,060.00	7,146.36	6,810.54	150.82	23.91	-0.46	905.43	6,964.69	2,184.31	2,113.26	71.06	30.741	
16,300.00	9,060.00	7,159.00	6,810.25	152.82	23.98	-0.13	892.84	6,965.91	2,192.27	2,120.31	71.96	30.467	
16,400.00	9,060.00	7,159.00	6,810.25	154.81	23.98	-0.13	892.84	6,965.91	2,204.57	2,131.71	72.86	30.257	
16,500.00	9,060.00	7,159.00	6,810.25	156.81	23.98	-0.13	892.84	6,965.91	2,221.31	2,147.57	73.74	30.124	
16,600.00	9,060.00	7,159.00	6,810.25	158.81	23.98	-0.13	892.84	6,965.91	2,242.39	2,167.81	74.57	30.069	
16,700.00	9,060.00	7,159.00	6,810.25	160.81	23.98	-0.13	892.84	6,965.91	2,267.68	2,192.32	75.36	30.092	
16,800.00	9,060.00	7,159.00	6,810.25	162.81	23.98	-0.13	892.84	6,965.91	2,297.06	2,220.97	76.08	30.191	
16,900.00	9,060.00	7,159.00	6,810.25	164.82	23.98	-0.13	892.84	6,965.91	2,330.36	2,253.61	76.75	30.364	
17,000.00	9,060.00	7,159.00	6,810.25	166.82	23.98	-0.13	892.84	6,965.91	2,367.41	2,290.07	77.34	30.610	
17,100.00	9,060.00	7,159.00	6,810.25	168.82	23.98	-0.13	892.84	6,965.91	2,408.06	2,330.19	77.87	30.925	
17,200.00	9,060.00	7,159.00	6,810.25	170.83	23.98	-0.13	892.84	6,965.91	2,452.10	2,373.78	78.33	31.306	
17,300.00	9,060.00	7,173.69	6,809.72	172.84	24.06	0.25	878.24	6,967.31	2,499.30	2,420.56	78.73	31.743	
17,400.00	9,060.00	7,177.72	6,809.56	174.84	24.08	0.36	874.23	6,967.69	2,549.57	2,470.50	79.08	32.242	
17,500.00	9,060.00	7,181.72	6,809.40	176.85	24.10	0.46	870.24	6,968.07	2,602.71	2,523.35	79.36	32.795	
17,600.00	9,060.00	7,185.71	6,809.23	178.86	24.12	0.57	866.28	6,968.45	2,658.53	2,578.93	79.60	33.400	
17,700.00	9,060.00	7,189.67	6,809.05	180.87	24.14	0.67	862.34	6,968.82	2,716.88	2,637.09	79.78	34.053	
17,800.00	9,060.00	7,193.61	6,808.87	182.88	24.17	0.77	858.42	6,969.19	2,777.59	2,697.66	79.93	34.750	
17,900.00	9,060.00	7,197.52	6,808.68	184.89	24.19	0.88	854.53	6,969.56	2,840.52	2,760.48	80.04	35.489	
18,000.00	9,060.00	7,201.41	6,808.49	186.90	24.21	0.98	850.66	6,969.92	2,905.51	2,825.40	80.11	36.267	
18,100.00	9,060.00	7,205.28	6,808.30	188.92	24.23	1.08	846.81	6,970.28	2,972.44	2,892.28	80.16	37.081	
18,200.00	9,060.00	7,209.13	6,808.10	190.93	24.25	1.18	842.99	6,970.64	3,041.18	2,960.99	80.18	37.928	
18,300.00	9,060.00	7,222.00	6,807.39	192.94	24.33	1.51	830.19	6,971.83	3,111.62	3,031.39	80.24	38.781	
18,400.00	9,060.00	7,222.00	6,807.39	194.96	24.33	1.51	830.19	6,971.83	3,183.60	3,103.41	80.20	39.698	
18,500.00	9,060.00	7,222.00	6,807.39	196.97	24.33	1.51	830.19	6,971.83	3,257.06	3,176.92	80.14	40.642	
18,600.00	9,060.00	7,231.57	6,806.85	198.99	24.38	1.76	820.68	6,972.72	3,331.90	3,251.76	80.14	41.577	
18,700.00	9,060.00	7,520.93	6,806.31	201.00	26.44	9.24	532.99	7,002.09	3,407.68	3,323.16	84.52	40.317	
18,800.00	9,060.00	18,800.00	6,805.17	203.02	281.84	8.44	563.85	6,998.56	3,484.32	3,277.00	207.31	16.807 SF	
18,900.00	9,060.00	18,900.00	6,805.47	205.04	284.28	8.68	554.62	6,999.58	3,562.17	3,352.43	209.75	16.983	
19,000.00	9,060.00	7,525.49	6,806.44	207.06	26.48	9.36	528.46	7,002.59	3,641.00	3,556.74	84.27	43.207	
19,100.00	9,060.00	7,530.63	6,806.62	209.07	26.53	9.49	523.36	7,003.17	3,720.87	3,636.62	84.25	44.163	
19,200.00	9,060.00	7,535.71	6,806.79	211.09	26.57	9.62	518.32	7,003.75	3,801.68	3,717.45	84.23	45.134	
19,300.00	9,060.00	7,540.72	6,806.96	213.11	26.61	9.74	513.34	7,004.31	3,883.37	3,799.17	84.20	46.119	
19,400.00	9,060.00	7,545.66	6,807.12	215.13	26.65	9.87	508.44	7,004.86	3,965.89	3,881.72	84.17	47.115	
19,500.32	9,060.00	7,550.55	6,807.27	217.16	26.69	9.99	503.58	7,005.41	4,049.45	3,965.31	84.14	48.127	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.24	1,120.51	5,898.45	6,004.31					
100.00	100.00	31.15	31.15	0.52	5.00	79.24	1,120.45	5,898.47	6,003.95	5,998.43	5.52	1,088.077		
200.00	200.00	319.08	319.01	0.70	5.08	79.25	1,119.36	5,894.01	6,002.23	5,996.45	5.78	1,037.993		
300.00	300.00	395.00	394.88	0.99	5.14	79.23	1,120.22	5,891.52	5,999.24	5,993.12	6.12	980.126		
400.00	400.00	453.31	453.17	1.31	5.19	79.23	1,120.63	5,890.09	5,996.94	5,990.45	6.49	923.552		
500.00	500.00	535.97	535.82	1.65	5.27	79.22	1,120.98	5,888.49	5,995.11	5,988.20	6.92	866.858		
600.00	600.00	609.42	609.25	1.99	5.36	79.21	1,121.49	5,887.25	5,993.59	5,986.24	7.35	815.566		
700.00	700.00	691.98	691.80	2.34	5.48	79.21	1,122.28	5,886.21	5,992.52	5,984.71	7.81	767.266		
800.00	800.00	793.49	793.30	2.69	5.63	79.19	1,123.29	5,885.02	5,991.57	5,983.25	8.32	720.322		
900.00	900.00	938.15	937.94	3.04	5.89	79.18	1,124.07	5,882.95	5,990.29	5,981.37	8.93	671.134		
1,000.00	1,000.00	1,013.40	1,013.18	3.40	6.04	79.18	1,124.42	5,881.78	5,988.83	5,979.40	9.43	635.326		
1,100.00	1,100.00	1,070.12	1,069.90	3.75	6.15	79.17	1,124.76	5,881.15	5,987.85	5,977.95	9.90	605.055		
1,177.38	1,177.38	1,111.00	1,110.78	4.03	6.24	79.17	1,125.03	5,880.95	5,987.60	5,977.34	10.26	583.772		
1,200.00	1,200.00	1,128.31	1,128.09	4.11	6.27	79.17	1,125.16	5,880.93	5,987.60	5,977.23	10.37	577.215		
1,300.00	1,300.00	1,193.92	1,193.70	4.46	6.41	79.16	1,125.81	5,881.06	5,987.98	5,977.11	10.87	550.929		
1,400.00	1,400.00	1,262.68	1,262.45	4.82	6.56	79.16	1,126.61	5,881.56	5,988.91	5,977.53	11.37	526.529		
1,500.00	1,500.00	1,389.07	1,388.83	5.18	6.85	79.15	1,127.62	5,882.87	5,990.13	5,978.11	12.02	498.415		
1,600.00	1,600.00	1,468.88	1,468.63	5.53	7.04	79.15	1,127.93	5,883.52	5,991.02	5,978.45	12.56	476.866		
1,700.00	1,700.00	1,581.56	1,581.30	5.89	7.31	79.15	1,127.93	5,884.73	5,992.07	5,978.88	13.19	454.124		
1,800.00	1,800.00	1,692.39	1,692.13	6.25	7.59	79.15	1,127.64	5,885.71	5,992.90	5,979.07	13.83	433.247		
1,900.00	1,900.00	1,825.80	1,825.54	6.61	7.94	79.15	1,127.69	5,886.10	5,993.16	5,978.61	14.54	412.074		
2,000.00	2,000.00	1,919.63	1,919.37	6.96	8.20	79.16	1,127.46	5,886.30	5,993.32	5,978.16	15.16	395.428		
2,100.00	2,100.00	2,016.12	2,015.86	7.32	8.47	79.15	1,127.80	5,886.52	5,993.61	5,977.82	15.78	379.737		
2,200.00	2,200.00	2,168.73	2,168.46	7.68	8.91	79.15	1,128.28	5,886.31	5,993.57	5,976.99	16.58	361.495		
2,300.00	2,300.00	2,271.83	2,271.56	8.04	9.21	79.15	1,128.40	5,885.53	5,992.84	5,975.60	17.24	347.632		
2,350.00	2,350.00	2,306.62	2,306.35	8.22	9.31	79.15	1,128.35	5,885.36	5,992.59	5,975.07	17.52	342.048		
2,400.00	2,400.00	2,343.01	2,342.74	8.39	9.42	95.19	1,128.25	5,885.28	5,992.48	5,974.67	17.81	336.560		
2,424.04	2,424.04	2,364.72	2,364.45	8.48	9.48	95.19	1,128.19	5,885.26	5,992.47	5,974.52	17.95	333.764		
2,500.00	2,499.98	2,437.89	2,437.62	8.75	9.69	95.21	1,128.12	5,885.23	5,992.56	5,974.12	18.44	324.972		
2,600.00	2,599.92	2,559.17	2,558.90	9.11	10.06	95.24	1,128.26	5,884.59	5,992.33	5,973.16	19.16	312.718		
2,603.56	2,603.48	2,561.38	2,561.12	9.12	10.07	95.24	1,128.26	5,884.58	5,992.33	5,973.14	19.18	312.401		
2,700.00	2,699.78	2,621.38	2,621.11	9.47	10.25	95.27	1,128.43	5,884.49	5,992.69	5,972.99	19.71	304.070		
2,800.00	2,799.54	2,731.69	2,731.42	9.82	10.43	95.33	1,128.56	5,884.63	5,993.49	5,973.25	20.24	296.054		
2,900.00	2,899.16	2,810.79	2,810.52	10.18	10.46	95.39	1,128.66	5,884.64	5,994.38	5,973.75	20.63	290.563		
3,000.00	2,998.61	2,872.00	2,871.72	10.54	10.47	95.42	1,129.81	5,884.93	5,996.14	5,975.14	20.99	285.604		
3,100.00	3,097.86	2,916.86	2,916.54	10.89	10.48	95.43	1,131.35	5,885.37	5,998.83	5,977.47	21.36	280.845		
3,200.00	3,196.89	2,966.00	2,965.63	11.25	10.50	95.44	1,133.68	5,886.07	6,002.48	5,980.75	21.73	276.284		
3,295.74	3,291.45	3,027.56	3,027.06	11.59	10.52	95.46	1,137.45	5,887.24	6,006.80	5,984.71	22.09	271.936		
3,300.00	3,295.65	3,030.10	3,029.59	11.61	10.52	95.46	1,137.62	5,887.29	6,007.01	5,984.91	22.11	271.748		
3,400.00	3,394.29	3,106.93	3,106.18	11.97	10.56	95.53	1,143.35	5,889.07	6,012.23	5,989.73	22.50	267.235		
3,500.00	3,492.94	3,207.22	3,206.14	12.33	10.62	95.62	1,151.29	5,891.42	6,017.59	5,994.67	22.92	262.564		
3,600.00	3,591.58	3,313.72	3,312.26	12.69	10.70	95.71	1,159.82	5,893.80	6,022.88	5,999.52	23.36	257.834		
3,700.00	3,690.22	3,424.81	3,423.01	13.05	10.80	95.80	1,168.31	5,896.19	6,028.03	6,004.21	23.82	253.060		
3,800.00	3,788.86	3,487.97	3,485.94	13.41	10.86	95.86	1,173.39	5,897.58	6,033.35	6,009.11	24.24	248.873		
3,900.00	3,887.50	3,531.00	3,528.76	13.77	10.91	95.89	1,177.53	5,898.69	6,039.40	6,014.76	24.64	245.086		
4,000.00	3,986.14	3,589.26	3,586.65	14.14	10.98	95.92	1,183.84	5,900.55	6,046.23	6,021.17	25.07	241.188		
4,100.00	4,084.78	3,654.20	3,651.08	14.50	11.07	95.96	1,191.52	5,903.17	6,053.93	6,028.42	25.51	237.331		
4,200.00	4,183.42	3,788.50	3,784.28	14.87	11.26	96.02	1,207.84	5,908.31	6,061.56	6,035.49	26.07	232.486		
4,300.00	4,282.06	3,936.84	3,931.47	15.24	11.51	96.09	1,225.77	5,912.61	6,068.15	6,041.46	26.69	227.369		
4,400.00	4,380.70	4,002.00	3,996.05	15.60	11.62	96.11	1,234.23	5,914.54	6,075.02	6,047.86	27.16	223.655		
4,500.00	4,479.34	4,190.00	4,182.44	15.97	11.99	96.19	1,258.40	5,918.55	6,080.85	6,052.94	27.91	217.886		
4,600.00	4,577.98	4,255.97	4,247.86	16.34	12.13	96.21	1,266.80	5,919.59	6,086.50	6,058.10	28.41	214.244		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,700.00	4,676.62	4,369.31	4,360.14	16.71	12.38	96.25	1,282.06	5,922.25	6,092.93	6,063.91	29.03	209.899		
4,800.00	4,775.27	4,418.95	4,409.35	17.08	12.50	96.27	1,288.53	5,923.38	6,099.26	6,069.76	29.50	206.747		
4,900.00	4,873.91	4,472.00	4,461.89	17.45	12.63	96.29	1,295.58	5,925.17	6,106.54	6,076.55	29.98	203.670		
5,000.00	4,972.55	4,534.79	4,524.06	17.82	12.78	96.31	1,304.02	5,927.70	6,114.52	6,084.02	30.49	200.517		
5,100.00	5,071.19	4,678.15	4,666.07	18.19	13.14	96.36	1,322.84	5,933.36	6,122.50	6,091.27	31.23	196.058		
5,200.00	5,169.83	4,724.11	4,711.54	18.56	13.27	96.38	1,329.25	5,935.21	6,130.50	6,098.79	31.71	193.351		
5,300.00	5,268.47	4,815.79	4,802.10	18.93	13.53	96.40	1,343.05	5,939.10	6,139.03	6,106.70	32.32	189.932		
5,400.00	5,367.11	4,970.26	4,954.81	19.31	13.97	96.43	1,365.55	5,944.98	6,147.06	6,113.92	33.14	185.489		
5,500.00	5,465.75	5,104.40	5,087.58	19.68	14.37	96.47	1,384.09	5,949.21	6,154.31	6,120.41	33.90	181.519		
5,600.00	5,564.39	5,235.91	5,217.91	20.05	14.76	96.52	1,401.32	5,952.84	6,161.07	6,126.40	34.67	177.719		
5,700.00	5,663.03	5,331.84	5,313.04	20.42	15.05	96.56	1,413.44	5,955.44	6,167.71	6,132.38	35.32	174.603		
5,800.00	5,761.67	5,465.25	5,445.49	20.80	15.46	96.62	1,429.11	5,958.32	6,173.55	6,137.45	36.10	171.000		
5,900.00	5,860.31	5,567.07	5,546.54	21.17	15.77	96.67	1,441.38	5,960.70	6,179.74	6,142.96	36.79	167.992		
6,000.00	5,958.96	5,651.10	5,630.02	21.54	16.04	96.71	1,450.76	5,962.59	6,185.72	6,148.31	37.41	165.328		
6,100.00	6,057.60	5,754.84	5,732.99	21.92	16.37	96.76	1,463.15	5,965.29	6,192.17	6,154.06	38.11	162.467		
6,200.00	6,156.24	5,847.75	5,825.30	22.29	16.66	96.81	1,473.50	5,967.48	6,198.25	6,159.48	38.78	159.845		
6,300.00	6,254.88	5,955.03	5,932.01	22.67	17.00	96.88	1,484.02	5,970.56	6,204.65	6,165.17	39.48	157.148		
6,400.00	6,353.52	6,034.47	6,010.47	23.04	18.13	97.22	1,510.08	5,973.54	6,208.38	6,167.38	41.01	151.398		
6,500.00	6,452.16	6,151.30	6,127.19	23.42	18.46	97.35	1,514.89	5,972.17	6,209.95	6,168.24	41.71	148.867		
6,600.00	6,550.80	6,275.80	6,251.21	23.79	21.51	105.32	801.32	5,964.63	6,209.92	6,165.02	44.90	138.320		
6,700.00	6,649.44	6,370.70	6,346.10	24.17	21.47	105.28	806.41	5,964.48	6,199.87	6,154.56	45.31	136.843		
6,800.00	6,748.08	6,469.00	6,445.84	24.54	21.39	105.17	818.11	5,964.17	6,191.42	6,145.76	45.66	135.585		
6,900.00	6,846.72	6,568.00	6,544.84	24.92	21.39	105.17	818.11	5,964.17	6,184.55	6,138.45	46.10	134.168		
7,000.00	6,945.36	6,667.00	6,643.84	25.29	21.39	105.17	818.11	5,964.17	6,179.28	6,132.76	46.52	132.835		
7,100.00	7,044.00	6,766.00	6,742.84	25.67	21.32	105.07	829.31	5,963.90	6,175.61	6,128.75	46.86	131.786		
7,200.00	7,142.65	6,865.16	6,841.50	26.04	21.28	105.01	835.94	5,963.75	6,173.55	6,126.33	47.22	130.729		
7,278.47	7,220.05	6,964.02	6,940.27	26.34	21.24	104.96	841.07	5,963.63	6,173.06	6,125.55	47.50	129.950		
7,300.00	7,241.29	6,985.62	6,961.23	26.42	21.23	104.95	842.47	5,963.61	6,173.09	6,125.51	47.58	129.744		
7,400.00	7,339.93	7,084.00	7,060.05	26.79	21.19	104.89	849.09	5,963.47	6,174.24	6,126.32	47.92	128.832		
7,500.00	7,438.57	7,183.00	7,159.05	27.17	21.19	104.89	849.09	5,963.47	6,177.00	6,128.70	48.30	127.879		
7,571.77	7,509.37	7,282.00	7,258.05	27.44	21.19	104.89	849.09	5,963.47	6,179.98	6,131.41	48.57	127.240		
7,600.00	7,537.23	7,381.00	7,357.05	27.55	21.19	104.90	849.09	5,963.47	6,181.35	6,132.68	48.67	126.998		
7,700.00	7,636.18	7,480.09	7,456.63	27.92	21.12	104.87	861.00	5,963.26	6,186.78	6,137.82	48.96	126.368		
7,800.00	7,735.48	7,579.81	7,556.54	28.29	21.11	104.95	863.27	5,963.22	6,193.16	6,143.88	49.29	125.653		
7,900.00	7,835.05	7,678.45	7,655.48	28.65	21.10	105.04	864.63	5,963.20	6,200.48	6,150.87	49.61	124.988		
8,000.00	7,934.83	7,777.91	7,754.45	29.01	21.09	105.15	865.17	5,963.19	6,208.72	6,158.80	49.92	124.373		
8,100.00	8,034.74	7,877.12	7,853.66	29.36	21.10	105.29	864.96	5,963.20	6,217.87	6,167.65	50.22	123.808		
8,202.27	8,137.00	7,976.04	7,952.58	29.72	21.10	89.41	864.04	5,963.21	6,228.18	6,177.66	50.52	123.282		
8,300.00	8,234.73	8,075.20	8,051.75	30.06	21.11	89.42	862.88	5,963.23	6,239.22	6,188.43	50.79	122.833		
8,400.00	8,334.73	8,175.32	8,151.87	30.41	21.11	89.43	861.76	5,963.25	6,252.09	6,201.02	51.07	122.431		
8,500.00	8,434.73	8,275.38	8,251.93	30.75	21.12	89.44	860.71	5,963.26	6,266.52	6,215.20	51.33	122.086		
8,552.31	8,487.04	7,374.00	7,350.55	30.94	21.19	89.55	849.09	5,963.47	6,274.74	6,223.21	51.53	121.775		
8,600.00	8,534.68	7,473.00	7,449.55	31.10	21.19	-0.11	849.09	5,963.47	6,280.59	6,228.95	51.64	121.627		
8,650.00	8,584.26	7,572.00	7,548.55	31.26	21.19	-0.11	849.09	5,963.47	6,282.87	6,231.12	51.74	121.420		
8,700.00	8,633.10	7,671.00	7,647.55	31.43	21.19	-0.11	849.09	5,963.47	6,281.18	6,229.33	51.85	121.151		
8,750.00	8,680.83	7,770.00	7,746.55	31.58	21.19	-0.11	849.09	5,963.47	6,275.54	6,223.60	51.94	120.824		
8,800.00	8,727.09	7,869.00	7,845.55	31.74	21.19	-0.12	849.09	5,963.47	6,265.98	6,213.95	52.02	120.442		
8,850.00	8,771.52	7,968.00	7,944.55	31.89	21.19	-0.12	849.09	5,963.47	6,252.55	6,200.45	52.10	120.010		
8,900.00	8,813.78	8,067.00	8,043.55	32.04	21.19	-0.12	849.09	5,963.47	6,235.33	6,183.17	52.17	119.531		
8,950.00	8,853.56	8,166.00	8,142.55	32.18	21.19	-0.13	849.09	5,963.47	6,214.42	6,162.20	52.22	119.006		
9,000.00	8,890.55	8,265.00	8,241.55	32.32	21.19	-0.13	849.09	5,963.47	6,189.95	6,137.69	52.26	118.439		
9,050.00	8,924.46	8,364.00	8,340.55	32.47	21.19	-0.14	849.09	5,963.47	6,162.06	6,109.76	52.30	117.831		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals		Offset Site Error:		5.00 ft	
Survey Program:													106-MWD+IGRF, 2746-MWD+IGRF		Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)							
9,100.00	8,955.05	7,828.00	7,415.05	32.63	21.19	-0.15	849.09	5,963.47	6,130.91	6,078.59	52.32	117.185						
9,150.00	8,982.08	7,828.00	7,415.05	32.79	21.19	-0.17	849.09	5,963.47	6,096.70	6,044.37	52.33	116.503						
9,200.00	9,005.34	7,828.00	7,415.05	32.97	21.19	-0.18	849.09	5,963.47	6,059.63	6,007.30	52.33	115.787						
9,250.00	9,024.65	7,828.00	7,415.05	33.17	21.19	-0.20	849.09	5,963.47	6,019.95	5,967.62	52.33	115.038						
9,300.00	9,039.87	7,828.00	7,415.05	33.38	21.19	-0.23	849.09	5,963.47	5,977.89	5,925.57	52.32	114.259						
9,350.00	9,050.89	7,828.00	7,415.05	33.62	21.19	-0.28	849.09	5,963.47	5,933.74	5,881.43	52.30	113.451						
9,400.00	9,057.61	7,828.00	7,415.05	33.87	21.19	-0.34	849.09	5,963.47	5,887.78	5,835.50	52.28	112.616						
9,452.31	9,060.00	7,828.00	7,415.05	34.15	21.19	-0.45	849.09	5,963.47	5,838.11	5,785.85	52.26	111.715						
9,500.00	9,060.00	7,828.00	7,415.05	34.42	21.19	-0.45	849.09	5,963.47	5,792.21	5,739.98	52.24	110.886						
9,600.00	9,060.00	7,828.00	7,415.05	35.09	21.19	-0.45	849.09	5,963.47	5,696.06	5,643.88	52.18	109.156						
9,700.00	9,060.00	7,828.00	7,415.05	35.86	21.19	-0.45	849.09	5,963.47	5,600.05	5,547.92	52.13	107.425						
9,800.00	9,060.00	7,828.00	7,415.05	36.72	21.19	-0.45	849.09	5,963.47	5,504.17	5,452.10	52.08	105.693						
9,900.00	9,060.00	7,828.00	7,415.05	37.69	21.19	-0.45	849.09	5,963.47	5,408.45	5,356.42	52.02	103.960						
10,000.00	9,060.00	7,828.00	7,415.05	38.73	21.19	-0.45	849.09	5,963.47	5,312.88	5,260.91	51.97	102.227						
10,100.00	9,060.00	7,828.00	7,415.05	39.86	21.19	-0.45	849.09	5,963.47	5,217.48	5,165.56	51.92	100.493						
10,140.22	9,060.00	7,828.00	7,415.05	40.33	21.19	-0.45	849.09	5,963.47	5,179.16	5,127.26	51.90	99.795						
10,200.00	9,060.00	7,828.00	7,415.05	41.05	21.19	-4.15	849.09	5,963.47	5,122.26	5,070.40	51.87	98.759						
10,300.00	9,060.00	7,828.00	7,415.05	42.31	21.19	-10.16	849.09	5,963.47	5,027.31	4,975.49	51.81	97.026						
10,400.00	9,060.00	7,828.00	7,415.05	43.64	21.19	-15.82	849.09	5,963.47	4,932.75	4,880.99	51.76	95.295						
10,507.23	9,060.00	7,836.41	7,415.28	45.11	21.25	-21.15	840.69	5,963.64	4,831.96	4,780.20	51.76	93.351						
10,600.00	9,060.00	7,842.20	7,415.43	46.43	21.28	-16.24	834.90	5,963.77	4,744.98	4,693.23	51.75	91.683						
10,700.00	9,060.00	7,846.89	7,415.55	47.91	21.31	-10.80	830.21	5,963.87	4,651.15	4,599.41	51.74	89.897						
10,800.00	9,060.00	7,849.92	7,415.63	49.42	21.33	-5.33	827.18	5,963.95	4,557.33	4,505.62	51.71	88.129						
10,900.00	9,060.00	7,851.24	7,415.66	50.97	21.34	0.06	825.87	5,963.98	4,463.67	4,412.00	51.67	86.382						
11,000.00	9,060.00	7,850.80	7,415.65	52.55	21.34	5.26	826.31	5,963.97	4,370.29	4,318.66	51.62	84.658						
11,100.00	9,060.00	7,848.56	7,415.59	54.14	21.32	10.18	828.55	5,963.91	4,277.32	4,225.76	51.56	82.958						
11,207.23	9,060.00	7,844.10	7,415.48	55.87	21.30	15.07	833.01	5,963.81	4,178.26	4,126.78	51.48	81.160						
11,300.00	9,060.00	7,840.05	7,415.37	57.39	21.27	10.68	837.05	5,963.72	4,092.89	4,041.47	51.42	79.604						
11,400.00	9,060.00	7,837.38	7,415.30	59.06	21.25	5.98	839.72	5,963.66	4,000.99	3,949.63	51.36	77.902						
11,506.63	9,060.00	7,836.53	7,415.28	60.88	21.25	1.07	840.57	5,963.65	3,903.27	3,851.96	51.32	76.064						
11,600.00	9,060.00	7,836.70	7,415.29	62.49	21.25	1.08	840.39	5,963.65	3,818.06	3,766.78	51.29	74.447						
11,700.00	9,060.00	7,836.90	7,415.29	64.24	21.25	1.09	840.20	5,963.65	3,727.24	3,675.98	51.26	72.716						
11,800.00	9,060.00	7,837.10	7,415.30	66.01	21.25	1.09	840.00	5,963.66	3,636.89	3,585.66	51.23	70.986						
11,900.00	9,060.00	7,837.30	7,415.30	67.79	21.25	1.10	839.80	5,963.66	3,547.07	3,495.85	51.22	69.258						
12,000.00	9,060.00	7,837.51	7,415.31	69.58	21.25	1.11	839.59	5,963.67	3,457.80	3,406.59	51.20	67.530						
12,100.00	9,060.00	7,837.72	7,415.31	71.39	21.25	1.12	839.38	5,963.67	3,369.13	3,317.93	51.20	65.805						
12,200.00	9,060.00	7,837.93	7,415.32	73.21	21.26	1.12	839.17	5,963.68	3,281.12	3,229.92	51.20	64.081						
12,300.00	9,060.00	7,838.15	7,415.32	75.05	21.26	1.13	838.95	5,963.68	3,193.81	3,142.60	51.22	62.359						
12,400.00	9,060.00	7,838.37	7,415.33	76.89	21.26	1.14	838.73	5,963.68	3,107.27	3,056.03	51.24	60.639						
12,500.00	9,060.00	7,838.60	7,415.34	78.74	21.26	1.15	838.50	5,963.69	3,021.56	2,970.28	51.28	58.923						
12,600.00	9,060.00	7,838.83	7,415.34	80.61	21.26	1.16	838.27	5,963.69	2,936.75	2,885.42	51.33	57.210						
12,700.00	9,060.00	7,839.07	7,415.35	82.48	21.26	1.17	838.03	5,963.70	2,852.93	2,801.53	51.40	55.501						
12,800.00	9,060.00	7,839.31	7,415.36	84.36	21.26	1.17	837.79	5,963.71	2,770.18	2,718.69	51.49	53.798						
12,900.00	9,060.00	7,839.56	7,415.36	86.24	21.27	1.18	837.54	5,963.71	2,688.61	2,637.00	51.60	52.101						
13,000.00	9,060.00	7,839.81	7,415.37	88.14	21.27	1.19	837.29	5,963.72	2,608.31	2,556.57	51.74	50.411						
13,100.00	9,060.00	7,840.07	7,415.38	90.04	21.27	1.20	837.03	5,963.72	2,529.42	2,477.52	51.90	48.732						
13,200.00	9,060.00	7,840.34	7,415.38	91.94	21.27	1.21	836.76	5,963.73	2,452.08	2,399.97	52.10	47.064						
13,300.00	9,060.00	7,840.61	7,415.39	93.86	21.27	1.22	836.49	5,963.73	2,376.42	2,324.09	52.33	45.411						
13,400.00	9,060.00	7,840.88	7,415.40	95.77	21.27	1.23	836.22	5,963.74	2,302.62	2,250.02	52.60	43.777						
13,500.00	9,060.00	7,841.17	7,415.40	97.70	21.28	1.24	835.93	5,963.75	2,230.86	2,177.95	52.91	42.164						
13,600.00	9,060.00	7,841.46	7,415.41	99.62	21.28	1.25	835.65	5,963.75	2,161.35	2,108.09	53.26	40.578						
13,700.00	9,060.00	7,841.75	7,415.42	101.56	21.28	1.26	835.35	5,963.76	2,094.31	2,040.64	53.67	39.024						

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	7,842.05	7,415.43	103.49	21.28	1.27	835.05	5,963.77	2,029.98	1,975.86	54.12	37.509		
13,900.00	9,060.00	7,842.36	7,415.43	105.43	21.28	1.29	834.74	5,963.77	1,968.63	1,914.00	54.63	36.039		
14,000.00	9,060.00	7,842.68	7,415.44	107.38	21.29	1.30	834.42	5,963.78	1,910.55	1,855.36	55.18	34.621		
14,100.00	9,060.00	7,843.01	7,415.45	109.33	21.29	1.31	834.09	5,963.79	1,856.04	1,800.24	55.80	33.265		
14,200.00	9,060.00	7,843.34	7,415.46	111.28	21.29	1.32	833.76	5,963.79	1,805.43	1,748.97	56.46	31.977		
14,300.00	9,060.00	7,843.68	7,415.47	113.23	21.29	1.33	833.42	5,963.80	1,759.05	1,701.88	57.17	30.767		
14,400.00	9,060.00	7,844.03	7,415.48	115.19	21.30	1.35	833.07	5,963.81	1,717.25	1,659.32	57.93	29.643		
14,500.00	9,060.00	7,844.39	7,415.49	117.15	21.30	1.36	832.71	5,963.82	1,680.37	1,621.64	58.73	28.612		
14,600.00	9,060.00	7,844.76	7,415.50	119.11	21.30	1.37	832.34	5,963.83	1,648.73	1,589.17	59.56	27.680		
14,700.00	9,060.00	7,845.14	7,415.51	121.08	21.30	1.39	831.96	5,963.83	1,622.65	1,562.23	60.42	26.854		
14,800.00	9,060.00	7,845.53	7,415.52	123.05	21.30	1.40	831.57	5,963.84	1,602.40	1,541.10	61.31	26.137		
14,900.00	9,060.00	7,845.93	7,415.53	125.02	21.31	1.41	831.17	5,963.85	1,588.20	1,526.00	62.20	25.533		
15,000.00	9,060.00	7,846.34	7,415.54	126.99	21.31	1.43	830.76	5,963.86	1,580.21	1,517.11	63.10	25.043		
15,076.58	9,060.00	7,846.67	7,415.54	128.51	21.31	1.44	830.44	5,963.87	1,578.35	1,514.57	63.78	24.745 CC		
15,100.00	9,060.00	7,846.77	7,415.55	128.97	21.31	1.45	830.34	5,963.87	1,578.53	1,514.54	63.99	24.668 ES		
15,200.00	9,060.00	7,847.20	7,415.56	130.95	21.32	1.46	829.90	5,963.88	1,583.17	1,518.31	64.86	24.409		
15,300.00	9,060.00	7,847.65	7,415.57	132.93	21.32	1.48	829.46	5,963.89	1,594.09	1,528.40	65.69	24.266		
15,400.00	9,060.00	7,848.11	7,415.58	134.91	21.32	1.49	829.00	5,963.90	1,611.15	1,544.67	66.48	24.237 SF		
15,500.00	9,060.00	7,848.58	7,415.59	136.89	21.32	1.51	828.52	5,963.91	1,634.16	1,566.97	67.19	24.320		
15,600.00	9,060.00	7,849.07	7,415.60	138.88	21.33	1.53	828.03	5,963.93	1,662.88	1,595.04	67.84	24.512		
15,700.00	9,060.00	7,849.57	7,415.62	140.86	21.33	1.55	827.53	5,963.94	1,697.01	1,628.61	68.40	24.810		
15,800.00	9,060.00	7,850.09	7,415.63	142.85	21.33	1.57	827.01	5,963.95	1,736.24	1,667.36	68.88	25.207		
15,900.00	9,060.00	7,850.63	7,415.64	144.84	21.34	1.59	826.48	5,963.96	1,780.23	1,710.96	69.27	25.699		
16,000.00	9,060.00	7,851.18	7,415.66	146.83	21.34	1.61	825.93	5,963.97	1,828.63	1,759.05	69.58	26.279		
16,100.00	9,060.00	7,851.75	7,415.67	148.83	21.35	1.63	825.36	5,963.99	1,881.11	1,811.29	69.82	26.941		
16,200.00	9,060.00	7,852.34	7,415.68	150.82	21.35	1.65	824.77	5,964.00	1,937.33	1,867.34	69.99	27.679		
16,300.00	9,060.00	7,852.95	7,415.70	152.82	21.35	1.67	824.16	5,964.02	1,996.98	1,926.88	70.10	28.486		
16,400.00	9,060.00	7,853.58	7,415.71	154.81	21.36	1.69	823.53	5,964.03	2,059.76	1,989.59	70.17	29.356		
16,500.00	9,060.00	7,854.23	7,415.73	156.81	21.36	1.72	822.88	5,964.05	2,125.39	2,055.21	70.18	30.283		
16,600.00	9,060.00	7,854.91	7,415.75	158.81	21.37	1.74	822.20	5,964.06	2,193.62	2,123.45	70.17	31.263		
16,700.00	9,060.00	7,855.61	7,415.76	160.81	21.37	1.77	821.50	5,964.08	2,264.21	2,194.09	70.12	32.291		
16,800.00	9,060.00	7,856.33	7,415.78	162.81	21.38	1.79	820.78	5,964.10	2,336.94	2,266.89	70.05	33.361		
16,900.00	9,060.00	7,857.08	7,415.80	164.82	21.38	1.82	820.03	5,964.12	2,411.63	2,341.67	69.96	34.470		
17,000.00	9,060.00	7,857.87	7,415.82	166.82	21.38	1.85	819.24	5,964.14	2,488.10	2,418.24	69.86	35.614		
17,100.00	9,060.00	7,858.68	7,415.84	168.82	21.39	1.88	818.43	5,964.16	2,566.19	2,496.43	69.75	36.790		
17,200.00	9,060.00	7,859.73	7,415.86	170.83	21.40	1.92	817.38	5,964.18	2,645.75	2,576.11	69.64	37.993		
17,300.00	9,060.00	7,861.02	7,415.89	172.84	21.41	1.96	816.09	5,964.22	2,726.66	2,657.14	69.52	39.220		
17,400.00	9,060.00	7,862.45	7,415.92	174.84	21.42	2.01	814.66	5,964.25	2,808.79	2,739.39	69.40	40.470		
17,500.00	9,060.00	7,864.04	7,415.96	176.85	21.43	2.07	813.07	5,964.30	2,892.06	2,822.77	69.29	41.740		
17,600.00	9,060.00	7,865.83	7,416.00	178.86	21.44	2.14	811.29	5,964.34	2,976.35	2,907.17	69.17	43.027		
17,700.00	9,060.00	7,867.84	7,416.04	180.87	21.45	2.21	809.28	5,964.40	3,061.58	2,992.52	69.06	44.329		
17,800.00	9,060.00	7,870.13	7,416.09	182.88	21.47	2.29	806.98	5,964.46	3,147.69	3,078.73	68.96	45.645		
17,900.00	9,060.00	7,872.76	7,416.15	184.89	21.49	2.39	804.35	5,964.54	3,234.59	3,165.73	68.86	46.971		
18,000.00	9,060.00	7,875.82	7,416.21	186.90	21.51	2.50	801.31	5,964.63	3,322.23	3,253.46	68.77	48.306		
18,100.00	9,060.00	7,879.40	7,416.28	188.92	21.53	2.63	797.73	5,964.74	3,410.55	3,341.86	68.70	49.647		
18,200.00	9,060.00	7,883.66	7,416.36	190.93	21.56	2.78	793.47	5,964.88	3,499.50	3,430.87	68.63	50.992		
18,300.00	9,060.00	7,888.81	7,416.46	192.94	21.60	2.97	788.32	5,965.05	3,589.02	3,520.45	68.58	52.337		
18,400.00	9,060.00	18,400.00	7,416.25	194.96	102.28	2.61	798.35	5,964.75	3,679.08	3,541.61	137.47	26.763		
18,500.00	9,060.00	18,500.00	7,416.28	196.97	103.08	2.65	797.17	5,964.78	3,769.65	3,631.30	138.35	27.248		
18,600.00	9,060.00	18,600.00	7,416.30	198.99	103.87	2.69	796.00	5,964.82	3,860.68	3,721.46	139.22	27.731		
18,700.00	9,060.00	18,700.00	7,416.33	201.00	104.67	2.73	794.83	5,964.85	3,952.15	3,812.07	140.08	28.213		
18,800.00	9,060.00	18,800.00	7,416.35	203.02	105.46	2.78	793.65	5,964.89	4,044.02	3,903.09	140.93	28.694		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals												Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,900.00	9,060.00	18,900.00	7,416.38	205.04	106.25	2.82	792.48	5,964.92	4,136.27	3,994.49	141.78	29.173	
19,000.00	9,060.00	7,895.25	7,416.56	207.06	21.65	3.20	781.89	5,965.27	4,228.86	4,160.77	68.09	62.108	
19,100.00	9,060.00	7,896.39	7,416.58	209.07	21.66	3.25	780.74	5,965.31	4,321.78	4,253.74	68.04	63.517	
19,200.00	9,060.00	7,897.54	7,416.60	211.09	21.67	3.29	779.60	5,965.35	4,415.02	4,347.02	68.00	64.927	
19,300.00	9,060.00	7,898.69	7,416.62	213.11	21.68	3.33	778.44	5,965.38	4,508.54	4,440.58	67.96	66.339	
19,400.00	9,060.00	7,899.85	7,416.63	215.13	21.69	3.37	777.29	5,965.42	4,602.34	4,534.41	67.93	67.752	
19,500.32	9,060.00	7,901.02	7,416.65	217.16	21.70	3.41	776.12	5,965.46	4,696.69	4,628.79	67.90	69.170	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot		Offset Site Error: 5.00 ft	
Survey Program: 18-GYRO-NS-CT														Offset Well Error: 0.50 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10							
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719				
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830				
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136				
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138				
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071				
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393				
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588				
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365				
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235				
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783				
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522				
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356				
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598				
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396				
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816				
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495				
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810				
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492				
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077				
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919				
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751				
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600				
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466				
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553				
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265				
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166				
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786				
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382				
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961				
2,800.00	2,799.54	2,759.56	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918				
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227				
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202				
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622				
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583				
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027				
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738				
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740				
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823				
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354				
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169				
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681				
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928				
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391				
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958				
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848				
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993				
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353				
4,400.00	4,380.70	4,326.65	4,326.54	15.60	15.69	93.30	1,571.52	5,782.75	6,001.91	5,970.63	31.28	191.866				
4,500.00	4,479.34	4,448.29	4,448.18	15.97	16.10	93.49	1,571.66	5,782.02	6,002.33	5,970.27	32.05	187.267				
4,600.00	4,577.98	4,559.15	4,559.03	16.34	16.47	93.66	1,571.40	5,781.11	6,002.50	5,969.71	32.79	183.068				
4,700.00	4,676.62	4,661.36	4,661.24	16.71	16.81	93.82	1,571.37	5,780.08	6,002.58	5,969.08	33.50	179.196				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	4,754.35	4,754.23	17.08	17.12	93.96	1,571.65	5,779.09	6,002.73	5,968.55	34.18	175.635		
4,900.00	4,873.91	4,843.75	4,843.62	17.45	17.42	94.10	1,572.03	5,778.25	6,003.05	5,968.21	34.85	172.274		
5,000.00	4,972.55	4,917.04	4,916.90	17.82	17.66	94.21	1,572.40	5,777.70	6,003.65	5,968.19	35.46	169.299		
5,100.00	5,071.19	4,979.31	4,979.17	18.19	17.87	94.30	1,572.78	5,777.62	6,004.86	5,968.82	36.04	166.616		
5,200.00	5,169.83	5,070.23	5,070.09	18.56	18.18	94.44	1,573.09	5,777.86	6,006.48	5,969.76	36.72	163.597		
5,300.00	5,268.47	5,152.21	5,152.08	18.93	18.45	94.57	1,573.09	5,778.32	6,008.33	5,970.97	37.36	160.822		
5,400.00	5,367.11	5,238.14	5,238.00	19.31	18.74	94.71	1,572.93	5,779.04	6,010.48	5,972.46	38.02	158.091		
5,500.00	5,465.75	5,339.17	5,339.03	19.68	19.08	94.87	1,572.80	5,779.99	6,012.78	5,974.05	38.73	155.247		
5,600.00	5,564.39	5,475.90	5,475.75	20.05	19.54	95.08	1,573.39	5,780.61	6,014.76	5,975.19	39.56	152.023		
5,700.00	5,663.03	5,599.25	5,599.10	20.42	19.96	95.26	1,574.02	5,780.50	6,016.26	5,975.91	40.35	149.088		
5,800.00	5,761.67	5,695.79	5,695.64	20.80	20.29	95.41	1,574.39	5,780.20	6,017.58	5,976.53	41.05	146.582		
5,900.00	5,860.31	5,785.09	5,784.94	21.17	20.59	95.54	1,574.73	5,780.07	6,019.09	5,977.36	41.73	144.248		
6,000.00	5,958.96	5,874.18	5,874.03	21.54	20.89	95.68	1,574.99	5,780.09	6,020.79	5,978.39	42.40	141.994		
6,100.00	6,057.60	5,976.20	5,976.05	21.92	21.24	95.84	1,575.02	5,780.26	6,022.64	5,979.52	43.12	139.670		
6,200.00	6,156.24	6,075.37	6,075.21	22.29	21.57	96.00	1,574.75	5,780.38	6,024.43	5,980.60	43.83	137.449		
6,300.00	6,254.88	6,180.28	6,180.12	22.67	21.93	96.17	1,573.80	5,780.61	6,026.25	5,981.69	44.56	135.238		
6,400.00	6,353.52	6,268.06	6,267.89	23.04	22.22	96.32	1,572.65	5,780.85	6,028.12	5,982.89	45.23	133.270		
6,500.00	6,452.16	6,355.38	6,355.20	23.42	22.52	96.46	1,571.61	5,781.26	6,030.24	5,984.34	45.90	131.369		
6,600.00	6,550.80	6,429.06	6,428.88	23.79	22.77	96.58	1,570.80	5,781.78	6,032.67	5,986.14	46.53	129.661		
6,700.00	6,649.44	6,496.77	6,496.58	24.17	23.00	96.70	1,570.09	5,782.59	6,035.63	5,988.50	47.13	128.069		
6,800.00	6,748.08	6,566.30	6,566.10	24.54	23.24	96.81	1,569.53	5,783.78	6,039.16	5,991.42	47.74	126.513		
6,900.00	6,846.72	6,672.57	6,672.35	24.92	23.61	96.99	1,568.70	5,785.78	6,042.92	5,994.45	48.47	124.665		
7,000.00	6,945.36	6,780.34	6,780.09	25.29	23.97	97.17	1,567.66	5,787.60	6,046.51	5,997.29	49.22	122.855		
7,100.00	7,044.00	6,876.98	6,876.72	25.67	24.31	97.32	1,567.26	5,789.16	6,050.16	6,000.24	49.92	121.195		
7,200.00	7,142.65	6,969.27	6,969.01	26.04	24.62	97.46	1,567.49	5,790.49	6,053.79	6,003.18	50.61	119.617		
7,300.00	7,241.29	7,034.05	7,033.77	26.42	24.84	97.56	1,567.78	5,791.69	6,057.90	6,006.70	51.20	118.319		
7,400.00	7,339.93	7,097.67	7,097.37	26.79	25.06	97.66	1,568.08	5,793.24	6,062.61	6,010.82	51.78	117.074		
7,500.00	7,438.57	7,162.22	7,161.89	27.17	25.29	97.76	1,568.29	5,795.19	6,067.91	6,015.54	52.37	115.864		
7,571.77	7,509.37	7,208.74	7,208.38	27.44	25.45	97.83	1,568.25	5,796.84	6,072.09	6,019.30	52.79	115.019		
7,600.00	7,537.23	7,227.96	7,227.59	27.55	25.51	97.89	1,568.18	5,797.59	6,073.80	6,020.84	52.96	114.685		
7,700.00	7,636.18	7,303.05	7,302.60	27.92	25.77	98.09	1,567.46	5,800.75	6,079.91	6,026.33	53.58	113.470		
7,800.00	7,735.48	7,389.70	7,389.16	28.29	26.08	98.30	1,566.16	5,804.73	6,085.99	6,031.75	54.24	112.202		
7,900.00	7,835.05	7,476.64	7,475.99	28.65	26.38	98.47	1,565.04	5,808.86	6,091.91	6,037.01	54.90	110.968		
8,000.00	7,934.83	7,563.46	7,562.63	29.01	26.70	98.72	1,562.60	5,817.66	6,096.49	6,040.38	56.11	108.652		
8,100.00	8,034.74	7,651.42	7,650.55	29.36	27.06	98.81	1,561.63	5,820.26	6,099.47	6,042.65	56.82	107.343		
8,202.27	8,137.00	7,739.00	7,738.11	29.72	27.42	82.83	1,561.12	5,821.70	6,102.22	6,044.85	57.37	106.366		
8,300.00	8,234.73	7,826.00	7,825.11	30.06	27.77	82.83	1,561.12	5,821.70	6,105.99	6,048.31	57.68	105.866		
8,400.00	8,334.73	7,913.00	7,912.11	30.41	28.12	82.83	1,561.12	5,821.70	6,111.45	6,053.47	57.98	105.408		
8,500.00	8,434.73	8,000.00	8,000.11	30.75	28.47	82.83	1,561.12	5,821.70	6,118.55	6,060.28	58.27	105.005		
8,552.31	8,487.04	8,087.00	8,087.11	30.94	28.77	82.83	1,561.12	5,821.70	6,122.91	6,064.49	58.42	104.815		
8,600.00	8,534.68	8,174.00	8,174.11	31.10	29.07	-6.80	1,561.12	5,821.70	6,125.31	6,066.76	58.54	104.630		
8,650.00	8,584.26	8,261.00	8,261.11	31.26	29.37	-6.82	1,561.12	5,821.70	6,123.99	6,065.32	58.67	104.388		
8,700.00	8,633.10	8,348.00	8,348.11	31.43	29.67	-6.88	1,561.12	5,821.70	6,118.75	6,059.97	58.78	104.092		
8,750.00	8,680.83	8,435.00	8,435.11	31.58	29.97	-6.99	1,561.12	5,821.70	6,109.63	6,050.74	58.89	103.744		
8,800.00	8,727.09	8,522.00	8,522.11	31.74	30.27	-7.16	1,561.12	5,821.70	6,096.68	6,037.69	58.99	103.349		
8,850.00	8,771.52	8,609.00	8,609.11	31.89	30.57	-7.38	1,561.12	5,821.70	6,079.97	6,020.89	59.08	102.909		
8,900.00	8,813.78	8,696.00	8,696.11	32.04	30.87	-7.67	1,561.12	5,821.70	6,059.59	6,000.43	59.16	102.427		
8,950.00	8,853.56	8,783.00	8,783.11	32.18	31.17	-8.05	1,561.12	5,821.70	6,035.68	5,976.45	59.23	101.905		
9,000.00	8,890.55	8,870.00	8,870.11	32.32	31.47	-8.52	1,561.12	5,821.70	6,008.36	5,949.08	59.29	101.346		
9,050.00	8,924.46	8,957.00	8,957.11	32.47	31.77	-9.11	1,561.12	5,821.70	5,977.80	5,918.47	59.33	100.753		
9,100.00	8,955.05	9,044.00	9,044.11	32.63	32.07	-9.86	1,561.12	5,821.70	5,944.19	5,884.83	59.37	100.126		
9,150.00	8,982.08	9,131.00	9,131.11	32.79	32.37	-10.81	1,561.12	5,821.70	5,907.73	5,848.34	59.39	99.469		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	7,876.00	7,875.11	32.97	27.77	-12.06	1,561.12	5,821.70	5,868.65	5,809.24	59.41	98.784		
9,250.00	9,024.65	7,876.00	7,875.11	33.17	27.77	-13.71	1,561.12	5,821.70	5,827.20	5,767.78	59.42	98.072		
9,300.00	9,039.87	7,876.00	7,875.11	33.38	27.77	-15.99	1,561.12	5,821.70	5,783.64	5,724.22	59.42	97.336		
9,350.00	9,050.89	7,876.00	7,875.11	33.62	27.77	-19.27	1,561.12	5,821.70	5,738.26	5,678.84	59.42	96.578		
9,400.00	9,057.61	7,876.00	7,875.11	33.87	27.77	-24.29	1,561.12	5,821.70	5,691.37	5,631.96	59.41	95.801		
9,452.31	9,060.00	7,876.00	7,875.11	34.15	27.77	-33.17	1,561.12	5,821.70	5,641.04	5,581.65	59.40	94.968		
9,500.00	9,060.00	7,876.00	7,875.11	34.42	27.77	-33.17	1,561.12	5,821.70	5,594.70	5,535.31	59.39	94.203		
9,600.00	9,060.00	7,876.00	7,875.11	35.09	27.77	-33.17	1,561.12	5,821.70	5,497.60	5,438.23	59.37	92.601		
9,700.00	9,060.00	7,876.00	7,875.11	35.86	27.77	-33.17	1,561.12	5,821.70	5,400.60	5,341.25	59.35	90.994		
9,800.00	9,060.00	7,876.00	7,875.11	36.72	27.77	-33.17	1,561.12	5,821.70	5,303.71	5,244.38	59.34	89.383		
9,900.00	9,060.00	7,876.00	7,875.11	37.69	27.77	-33.17	1,561.12	5,821.70	5,206.95	5,147.62	59.33	87.766		
10,000.00	9,060.00	7,876.00	7,875.11	38.73	27.77	-33.17	1,561.12	5,821.70	5,110.30	5,050.98	59.32	86.144		
10,100.00	9,060.00	7,876.00	7,875.11	39.86	27.77	-33.17	1,561.12	5,821.70	5,013.79	4,954.47	59.32	84.517		
10,140.22	9,060.00	7,876.00	7,875.11	40.33	27.77	-33.17	1,561.12	5,821.70	4,975.01	4,915.69	59.32	83.861		
10,200.00	9,060.00	7,876.00	7,875.11	41.05	27.77	-36.62	1,561.12	5,821.70	4,917.52	4,858.19	59.33	82.885		
10,300.00	9,060.00	7,876.00	7,875.11	42.31	27.77	-41.66	1,561.12	5,821.70	4,821.95	4,762.59	59.35	81.242		
10,400.00	9,060.00	7,876.00	7,875.11	43.64	27.77	-45.90	1,561.12	5,821.70	4,727.29	4,667.89	59.40	79.586		
10,507.23	9,060.00	7,876.00	7,875.11	45.11	27.77	-49.71	1,561.12	5,821.70	4,627.01	4,567.53	59.48	77.790		
10,600.00	9,060.00	7,876.00	7,875.11	46.43	27.77	-46.53	1,561.12	5,821.70	4,540.56	4,480.98	59.57	76.218		
10,700.00	9,060.00	7,876.00	7,875.11	47.91	27.77	-42.68	1,561.12	5,821.70	4,446.77	4,387.10	59.68	74.512		
10,800.00	9,060.00	7,876.00	7,875.11	49.42	27.77	-38.37	1,561.12	5,821.70	4,352.45	4,292.67	59.78	72.805		
10,900.00	9,060.00	7,876.00	7,875.11	50.97	27.77	-33.55	1,561.12	5,821.70	4,257.66	4,197.78	59.88	71.103		
11,000.00	9,060.00	7,876.00	7,875.11	52.55	27.77	-28.24	1,561.12	5,821.70	4,162.50	4,102.54	59.97	69.414		
11,100.00	9,060.00	7,876.00	7,875.11	54.14	27.77	-22.47	1,561.12	5,821.70	4,067.07	4,007.03	60.04	67.744		
11,207.23	9,060.00	7,876.00	7,875.11	55.87	27.77	-15.85	1,561.12	5,821.70	3,964.53	3,904.45	60.09	65.978		
11,300.00	9,060.00	7,876.00	7,875.11	57.39	27.77	-21.46	1,561.12	5,821.70	3,876.00	3,815.87	60.14	64.452		
11,400.00	9,060.00	7,876.00	7,875.11	59.06	27.77	-26.90	1,561.12	5,821.70	3,781.20	3,720.97	60.23	62.781		
11,506.63	9,060.00	7,876.00	7,875.11	60.88	27.77	-32.01	1,561.12	5,821.70	3,681.00	3,620.62	60.38	60.967		
11,600.00	9,060.00	7,876.00	7,875.11	62.49	27.77	-32.01	1,561.12	5,821.70	3,593.87	3,533.33	60.54	59.360		
11,700.00	9,060.00	7,876.00	7,875.11	64.24	27.77	-32.01	1,561.12	5,821.70	3,500.92	3,440.18	60.75	57.633		
11,800.00	9,060.00	7,876.00	7,875.11	66.01	27.77	-32.01	1,561.12	5,821.70	3,408.37	3,347.40	60.97	55.899		
11,900.00	9,060.00	7,876.00	7,875.11	67.79	27.77	-32.01	1,561.12	5,821.70	3,316.25	3,255.02	61.23	54.160		
12,000.00	9,060.00	7,876.00	7,875.11	69.58	27.77	-32.01	1,561.12	5,821.70	3,224.60	3,163.08	61.52	52.416		
12,100.00	9,060.00	7,876.00	7,875.11	71.39	27.77	-32.01	1,561.12	5,821.70	3,133.46	3,071.62	61.84	50.667		
12,200.00	9,060.00	7,876.00	7,875.11	73.21	27.77	-32.01	1,561.12	5,821.70	3,042.88	2,980.67	62.21	48.915		
12,300.00	9,060.00	7,876.00	7,875.11	75.05	27.77	-32.01	1,561.12	5,821.70	2,952.91	2,890.29	62.62	47.160		
12,400.00	9,060.00	7,876.00	7,875.11	76.89	27.77	-32.01	1,561.12	5,821.70	2,863.60	2,800.53	63.07	45.403		
12,500.00	9,060.00	7,876.00	7,875.11	78.74	27.77	-32.01	1,561.12	5,821.70	2,775.02	2,711.44	63.58	43.647		
12,600.00	9,060.00	7,876.00	7,875.11	80.61	27.77	-32.01	1,561.12	5,821.70	2,687.24	2,623.10	64.14	41.894		
12,700.00	9,060.00	7,876.00	7,875.11	82.48	27.77	-32.01	1,561.12	5,821.70	2,600.35	2,535.57	64.77	40.145		
12,800.00	9,060.00	7,876.00	7,875.11	84.36	27.77	-32.01	1,561.12	5,821.70	2,514.43	2,448.95	65.47	38.403		
12,900.00	9,060.00	7,876.00	7,875.11	86.24	27.77	-32.01	1,561.12	5,821.70	2,429.58	2,363.33	66.25	36.672		
13,000.00	9,060.00	7,876.00	7,875.11	88.14	27.77	-32.01	1,561.12	5,821.70	2,345.93	2,278.82	67.11	34.956		
13,100.00	9,060.00	7,876.00	7,875.11	90.04	27.77	-32.01	1,561.12	5,821.70	2,263.61	2,195.55	68.06	33.259		
13,200.00	9,060.00	7,876.00	7,875.11	91.94	27.77	-32.01	1,561.12	5,821.70	2,182.77	2,113.66	69.11	31.586		
13,300.00	9,060.00	7,876.00	7,875.11	93.86	27.77	-32.01	1,561.12	5,821.70	2,103.57	2,033.31	70.26	29.942		
13,400.00	9,060.00	7,876.00	7,875.11	95.77	27.77	-32.01	1,561.12	5,821.70	2,026.21	1,954.70	71.51	28.333		
13,500.00	9,060.00	7,876.00	7,875.11	97.70	27.77	-32.01	1,561.12	5,821.70	1,950.91	1,878.03	72.89	26.766		
13,600.00	9,060.00	7,876.00	7,875.11	99.62	27.77	-32.01	1,561.12	5,821.70	1,877.92	1,803.54	74.38	25.248		
13,700.00	9,060.00	7,876.00	7,875.11	101.56	27.77	-32.01	1,561.12	5,821.70	1,807.52	1,731.53	75.99	23.786		
13,800.00	9,060.00	7,876.00	7,875.11	103.49	27.77	-32.01	1,561.12	5,821.70	1,740.02	1,662.30	77.72	22.388		
13,900.00	9,060.00	7,876.00	7,875.11	105.43	27.77	-32.01	1,561.12	5,821.70	1,675.77	1,596.20	79.57	21.061		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	7,876.00	7,875.11	107.38	27.77	-32.01	1,561.12	5,821.70	1,615.16	1,533.64	81.51	19.814		
14,100.00	9,060.00	7,876.00	7,875.11	109.33	27.77	-32.01	1,561.12	5,821.70	1,558.61	1,475.06	83.55	18.654		
14,200.00	9,060.00	7,876.00	7,875.11	111.28	27.77	-32.01	1,561.12	5,821.70	1,506.59	1,420.93	85.66	17.588		
14,300.00	9,060.00	7,876.00	7,875.11	113.23	27.77	-32.01	1,561.12	5,821.70	1,459.57	1,371.76	87.80	16.623		
14,400.00	9,060.00	7,876.00	7,875.11	115.19	27.77	-32.01	1,561.12	5,821.70	1,418.05	1,328.10	89.96	15.764		
14,500.00	9,060.00	7,876.00	7,875.11	117.15	27.77	-32.01	1,561.12	5,821.70	1,382.53	1,290.46	92.07	15.016		
14,600.00	9,060.00	7,876.00	7,875.11	119.11	27.77	-32.01	1,561.12	5,821.70	1,353.49	1,259.38	94.11	14.382		
14,700.00	9,060.00	7,876.00	7,875.11	121.08	27.77	-32.01	1,561.12	5,821.70	1,331.34	1,235.31	96.03	13.864		
14,800.00	9,060.00	7,876.00	7,875.11	123.05	27.77	-32.01	1,561.12	5,821.70	1,316.44	1,218.66	97.78	13.464		
14,900.00	9,060.00	7,876.00	7,875.11	125.02	27.77	-32.01	1,561.12	5,821.70	1,309.02	1,209.70	99.32	13.180		
14,947.33	9,060.00	7,876.00	7,875.11	125.95	27.77	-32.01	1,561.12	5,821.70	1,308.17	1,208.20	99.96	13.086 CC, ES		
15,000.00	9,060.00	7,876.00	7,875.11	126.99	27.77	-32.01	1,561.12	5,821.70	1,309.23	1,208.61	100.62	13.012		
15,100.00	9,060.00	7,876.00	7,875.11	128.97	27.77	-32.01	1,561.12	5,821.70	1,317.04	1,215.39	101.65	12.956 SF		
15,200.00	9,060.00	7,876.00	7,875.11	130.95	27.77	-32.01	1,561.12	5,821.70	1,332.34	1,229.94	102.41	13.010		
15,300.00	9,060.00	7,876.00	7,875.11	132.93	27.77	-32.01	1,561.12	5,821.70	1,354.87	1,251.99	102.88	13.170		
15,400.00	9,060.00	7,876.00	7,875.11	134.91	27.77	-32.01	1,561.12	5,821.70	1,384.27	1,281.20	103.07	13.430		
15,500.00	9,060.00	7,876.00	7,875.11	136.89	27.77	-32.01	1,561.12	5,821.70	1,420.12	1,317.11	103.01	13.786		
15,600.00	9,060.00	7,876.00	7,875.11	138.88	27.77	-32.01	1,561.12	5,821.70	1,461.94	1,359.21	102.73	14.231		
15,700.00	9,060.00	7,876.00	7,875.11	140.86	27.77	-32.01	1,561.12	5,821.70	1,509.24	1,406.99	102.25	14.760		
15,800.00	9,060.00	7,876.00	7,875.11	142.85	27.77	-32.01	1,561.12	5,821.70	1,561.52	1,459.90	101.62	15.366		
15,900.00	9,060.00	7,876.00	7,875.11	144.84	27.77	-32.01	1,561.12	5,821.70	1,618.29	1,517.42	100.87	16.043		
16,000.00	9,060.00	7,876.00	7,875.11	146.83	27.77	-32.01	1,561.12	5,821.70	1,679.11	1,579.07	100.03	16.785		
16,100.00	9,060.00	7,876.00	7,875.11	148.83	27.77	-32.01	1,561.12	5,821.70	1,743.54	1,644.41	99.14	17.587		
16,200.00	9,060.00	7,876.00	7,875.11	150.82	27.77	-32.01	1,561.12	5,821.70	1,811.21	1,713.00	98.20	18.443		
16,300.00	9,060.00	7,876.00	7,875.11	152.82	27.77	-32.01	1,561.12	5,821.70	1,881.76	1,784.50	97.26	19.348		
16,400.00	9,060.00	7,876.00	7,875.11	154.81	27.77	-32.01	1,561.12	5,821.70	1,954.88	1,858.57	96.31	20.298		
16,500.00	9,060.00	7,876.00	7,875.11	156.81	27.77	-32.01	1,561.12	5,821.70	2,030.29	1,934.92	95.37	21.288		
16,600.00	9,060.00	7,876.00	7,875.11	158.81	27.77	-32.01	1,561.12	5,821.70	2,107.75	2,013.29	94.45	22.315		
16,700.00	9,060.00	7,876.00	7,875.11	160.81	27.77	-32.01	1,561.12	5,821.70	2,187.04	2,093.47	93.56	23.375		
16,800.00	9,060.00	7,876.00	7,875.11	162.81	27.77	-32.01	1,561.12	5,821.70	2,267.97	2,175.26	92.70	24.464		
16,900.00	9,060.00	7,876.00	7,875.11	164.82	27.77	-32.01	1,561.12	5,821.70	2,350.36	2,258.48	91.88	25.581		
17,000.00	9,060.00	7,876.00	7,875.11	166.82	27.77	-32.01	1,561.12	5,821.70	2,434.08	2,342.99	91.09	26.722		
17,100.00	9,060.00	7,876.00	7,875.11	168.82	27.77	-32.01	1,561.12	5,821.70	2,518.98	2,428.65	90.33	27.885		
17,200.00	9,060.00	7,876.00	7,875.11	170.83	27.77	-32.01	1,561.12	5,821.70	2,604.96	2,515.34	89.62	29.068		
17,300.00	9,060.00	7,876.00	7,875.11	172.84	27.77	-32.01	1,561.12	5,821.70	2,691.90	2,602.97	88.93	30.268		
17,400.00	9,060.00	7,876.00	7,875.11	174.84	27.77	-32.01	1,561.12	5,821.70	2,779.73	2,691.44	88.29	31.485		
17,500.00	9,060.00	7,876.00	7,875.11	176.85	27.77	-32.01	1,561.12	5,821.70	2,868.35	2,780.67	87.67	32.716		
17,600.00	9,060.00	7,876.00	7,875.11	178.86	27.77	-32.01	1,561.12	5,821.70	2,957.69	2,870.60	87.09	33.960		
17,700.00	9,060.00	7,876.00	7,875.11	180.87	27.77	-32.01	1,561.12	5,821.70	3,047.70	2,961.16	86.54	35.216		
17,800.00	9,060.00	7,876.00	7,875.11	182.88	27.77	-32.01	1,561.12	5,821.70	3,138.31	3,052.29	86.02	36.482		
17,900.00	9,060.00	7,876.00	7,875.11	184.89	27.77	-32.01	1,561.12	5,821.70	3,229.48	3,143.95	85.53	37.758		
18,000.00	9,060.00	7,876.00	7,875.11	186.90	27.77	-32.01	1,561.12	5,821.70	3,321.16	3,236.09	85.07	39.042		
18,100.00	9,060.00	7,876.00	7,875.11	188.92	27.77	-32.01	1,561.12	5,821.70	3,413.30	3,328.67	84.63	40.333		
18,200.00	9,060.00	7,876.00	7,875.11	190.93	27.77	-32.01	1,561.12	5,821.70	3,505.87	3,421.66	84.21	41.631		
18,300.00	9,060.00	7,876.00	7,875.11	192.94	27.77	-32.01	1,561.12	5,821.70	3,598.84	3,515.02	83.82	42.935		
18,400.00	9,060.00	7,876.00	7,875.11	194.96	27.77	-32.01	1,561.12	5,821.70	3,692.18	3,608.73	83.45	44.244		
18,500.00	9,060.00	7,876.00	7,875.11	196.97	27.77	-32.01	1,561.12	5,821.70	3,785.86	3,702.76	83.10	45.557		
18,600.00	9,060.00	7,876.00	7,875.11	198.99	27.77	-32.01	1,561.12	5,821.70	3,879.86	3,797.08	82.77	46.874		
18,700.00	9,060.00	7,876.00	7,875.11	201.00	27.77	-32.01	1,561.12	5,821.70	3,974.14	3,891.68	82.46	48.195		
18,800.00	9,060.00	7,876.00	7,875.11	203.02	27.77	-32.01	1,561.12	5,821.70	4,068.70	3,986.54	82.17	49.518		
18,900.00	9,060.00	7,876.00	7,875.11	205.04	27.77	-32.01	1,561.12	5,821.70	4,163.52	4,081.63	81.89	50.844		
19,000.00	9,060.00	7,876.00	7,875.11	207.06	27.77	-32.01	1,561.12	5,821.70	4,258.57	4,176.94	81.63	52.172		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	7,876.00	7,875.11	209.07	27.77	-32.01	1,561.12	5,821.70	4,353.84	4,272.46	81.38	53.501	
19,200.00	9,060.00	7,876.00	7,875.11	211.09	27.77	-32.01	1,561.12	5,821.70	4,449.32	4,368.18	81.14	54.832	
19,300.00	9,060.00	7,876.00	7,875.11	213.11	27.77	-32.01	1,561.12	5,821.70	4,545.00	4,464.07	80.92	56.163	
19,400.00	9,060.00	7,876.00	7,875.11	215.13	27.77	-32.01	1,561.12	5,821.70	4,640.86	4,560.14	80.72	57.495	
19,500.32	9,060.00	7,876.00	7,875.11	217.16	27.77	-32.01	1,561.12	5,821.70	4,737.19	4,656.67	80.52	58.832	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10					
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719		
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830		
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136		
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138		
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071		
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393		
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588		
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365		
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235		
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783		
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522		
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356		
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598		
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396		
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816		
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495		
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810		
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492		
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077		
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919		
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751		
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600		
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466		
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553		
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265		
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166		
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786		
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382		
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961		
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918		
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227		
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202		
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622		
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583		
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027		
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738		
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740		
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823		
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354		
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169		
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681		
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928		
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391		
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958		
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848		
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993		
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353		
4,400.00	4,380.70	4,325.80	4,325.69	15.60	15.69	93.30	1,571.51	5,782.76	6,001.91	5,970.64	31.28	191.883		
4,500.00	4,479.34	4,369.00	4,368.89	15.97	15.76	93.37	1,571.55	5,782.60	6,002.81	5,971.10	31.71	189.304		
4,600.00	4,577.98	4,687.00	4,677.89	16.34	15.84	94.43	1,510.79	5,792.56	6,003.27	5,971.13	32.14	186.796		
4,700.00	4,676.62	4,718.00	4,705.14	16.71	15.86	94.61	1,496.18	5,794.84	6,002.13	5,969.60	32.53	184.483		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,736.82	4,712.94	4,733.28	4,718.25	16.85	15.87	94.71	1,488.45	5,796.17	6,002.02	5,969.33	32.69	183.631		
4,800.00	4,775.27	4,751.00	4,733.22	17.08	15.88	94.82	1,479.14	5,797.91	6,002.31	5,969.37	32.94	182.246		
4,900.00	4,873.91	4,751.00	4,733.22	17.45	15.88	94.82	1,479.14	5,797.91	6,003.97	5,970.67	33.30	180.287		
5,000.00	4,972.55	4,782.00	4,758.73	17.82	15.90	95.02	1,461.92	5,801.64	6,007.10	5,973.40	33.70	178.262		
5,100.00	5,071.19	4,782.00	4,758.73	18.19	15.90	95.02	1,461.92	5,801.64	6,011.72	5,977.67	34.05	176.545		
5,200.00	5,169.83	4,814.00	4,783.86	18.56	15.95	95.25	1,442.69	5,806.33	6,017.82	5,983.37	34.45	174.700		
5,300.00	5,268.47	4,826.82	4,793.55	18.93	15.97	95.34	1,434.54	5,808.39	6,025.35	5,990.53	34.81	173.091		
5,400.00	5,367.11	4,846.00	4,807.60	19.31	16.00	95.49	1,421.90	5,811.64	6,034.34	5,999.16	35.18	171.532		
5,500.00	5,465.75	4,864.00	4,820.31	19.68	16.03	95.63	1,409.57	5,814.85	6,044.80	6,009.25	35.55	170.059		
5,600.00	5,564.39	4,878.00	4,829.88	20.05	16.06	95.74	1,399.69	5,817.45	6,056.71	6,020.82	35.90	168.732		
5,700.00	5,663.03	4,892.43	4,839.45	20.42	16.09	95.85	1,389.26	5,820.23	6,070.13	6,033.88	36.24	167.477		
5,800.00	5,761.67	4,910.00	4,850.69	20.80	16.14	96.00	1,376.23	5,823.78	6,085.08	6,048.48	36.60	166.281		
5,900.00	5,860.31	4,910.00	4,850.69	21.17	16.14	96.00	1,376.23	5,823.78	6,101.51	6,064.62	36.89	165.400		
6,000.00	5,958.96	4,942.00	4,870.04	21.54	16.22	96.27	1,351.65	5,830.53	6,119.43	6,082.15	37.28	164.158		
6,100.00	6,057.60	4,942.00	4,870.04	21.92	16.22	96.27	1,351.65	5,830.53	6,138.79	6,101.24	37.56	163.456		
6,200.00	6,156.24	4,942.00	4,870.04	22.29	16.22	96.27	1,351.65	5,830.53	6,159.71	6,121.89	37.83	162.844		
6,300.00	6,254.88	4,959.16	4,879.80	22.67	16.28	96.41	1,338.05	5,834.31	6,182.03	6,143.88	38.15	162.042		
6,400.00	6,353.52	4,973.00	4,887.34	23.04	16.32	96.53	1,326.90	5,837.50	6,205.93	6,167.47	38.46	161.378		
6,500.00	6,452.16	4,973.00	4,887.34	23.42	16.32	96.53	1,326.90	5,837.50	6,231.23	6,192.53	38.70	161.008		
6,600.00	6,550.80	4,985.65	4,893.98	23.79	16.37	96.64	1,316.56	5,840.46	6,258.01	6,219.01	38.99	160.495		
6,700.00	6,649.44	5,005.00	4,903.67	24.17	16.44	96.82	1,300.43	5,844.98	6,286.17	6,246.87	39.30	159.942		
6,800.00	6,748.08	5,005.00	4,903.67	24.54	16.44	96.82	1,300.43	5,844.98	6,315.73	6,276.20	39.53	159.791		
6,900.00	6,846.72	5,017.61	4,909.69	24.92	16.49	96.93	1,289.74	5,847.94	6,346.66	6,306.86	39.80	159.471		
7,000.00	6,945.36	5,024.50	4,912.87	25.29	16.52	96.99	1,283.86	5,849.56	6,378.99	6,338.95	40.04	159.325		
7,100.00	7,044.00	5,037.00	4,918.48	25.67	16.58	97.10	1,273.09	5,852.54	6,412.70	6,372.40	40.30	159.140		
7,200.00	7,142.65	5,037.00	4,918.48	26.04	16.58	97.10	1,273.09	5,852.54	6,447.72	6,407.23	40.49	159.246		
7,300.00	7,241.29	5,037.00	4,918.48	26.42	16.58	97.10	1,273.09	5,852.54	6,484.10	6,443.43	40.68	159.411		
7,400.00	7,339.93	5,049.95	4,924.06	26.79	16.64	97.22	1,261.82	5,855.65	6,521.75	6,480.83	40.92	159.373		
7,500.00	7,438.57	5,055.82	4,926.51	27.17	16.66	97.27	1,256.67	5,857.06	6,560.71	6,519.58	41.12	159.531		
7,571.77	7,509.37	5,068.00	4,931.44	27.44	16.72	97.39	1,245.93	5,860.00	6,589.47	6,548.16	41.31	159.522		
7,600.00	7,537.23	5,068.00	4,931.44	27.55	16.72	97.57	1,245.93	5,860.00	6,600.92	6,559.57	41.35	159.619		
7,700.00	7,636.18	5,068.00	4,931.44	27.92	16.72	98.24	1,245.93	5,860.00	6,642.12	6,600.60	41.51	160.001		
7,800.00	7,735.48	5,068.00	4,931.44	28.29	16.72	98.93	1,245.93	5,860.00	6,684.21	6,642.55	41.66	160.439		
7,900.00	7,835.05	5,084.84	4,937.90	28.65	16.81	99.79	1,230.92	5,864.03	6,727.10	6,685.20	41.89	160.575		
8,000.00	7,934.83	5,099.00	4,943.00	29.01	16.88	100.63	1,218.13	5,867.36	6,770.77	6,728.67	42.10	160.822		
8,100.00	8,034.74	5,107.74	4,946.00	29.36	16.93	101.43	1,210.17	5,869.38	6,815.14	6,772.87	42.27	161.213		
8,202.27	8,137.00	5,195.00	4,970.67	29.72	17.45	86.93	1,128.37	5,886.72	6,861.10	6,818.19	42.91	159.887		
8,300.00	8,234.73	5,195.00	4,970.67	30.06	17.45	86.93	1,128.37	5,886.72	6,905.68	6,862.66	43.02	160.533		
8,400.00	8,334.73	5,195.00	4,970.67	30.41	17.45	86.93	1,128.37	5,886.72	6,952.42	6,909.30	43.12	161.228		
8,500.00	8,434.73	5,210.12	4,973.84	30.75	17.55	87.06	1,113.78	5,889.15	7,000.19	6,956.87	43.32	161.596		
8,552.31	8,487.04	5,212.09	4,974.22	30.94	17.57	87.08	1,111.88	5,889.46	7,025.63	6,982.25	43.38	161.943		
8,600.00	8,534.68	5,213.87	4,974.56	31.10	17.58	-2.45	1,110.15	5,889.74	7,047.34	7,003.90	43.43	162.257		
8,650.00	8,584.26	5,227.00	4,976.84	31.26	17.67	-2.26	1,097.38	5,891.75	7,066.56	7,023.01	43.55	162.280		
8,700.00	8,633.10	5,227.00	4,976.84	31.43	17.67	-2.19	1,097.38	5,891.75	7,081.94	7,038.37	43.57	162.540		
8,750.00	8,680.83	5,227.00	4,976.84	31.58	17.67	-2.15	1,097.38	5,891.75	7,093.45	7,049.86	43.59	162.734		
8,800.00	8,727.09	5,227.00	4,976.84	31.74	17.67	-2.12	1,097.38	5,891.75	7,101.02	7,057.42	43.60	162.865		
8,850.00	8,771.52	5,227.00	4,976.84	31.89	17.67	-2.11	1,097.38	5,891.75	7,104.61	7,061.00	43.60	162.935		
8,900.00	8,813.78	5,227.00	4,976.84	32.04	17.67	-2.11	1,097.38	5,891.75	7,104.19	7,060.59	43.60	162.944		
8,950.00	8,853.56	5,227.00	4,976.84	32.18	17.67	-2.12	1,097.38	5,891.75	7,099.77	7,056.19	43.58	162.896		
9,000.00	8,890.55	5,227.00	4,976.84	32.32	17.67	-2.16	1,097.38	5,891.75	7,091.38	7,047.81	43.56	162.789		
9,050.00	8,924.46	5,227.00	4,976.84	32.47	17.67	-2.20	1,097.38	5,891.75	7,079.06	7,035.53	43.53	162.624		
9,100.00	8,955.05	5,227.00	4,976.84	32.63	17.67	-2.27	1,097.38	5,891.75	7,062.88	7,019.39	43.49	162.402		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,227.00	4,976.84	32.79	17.67	-2.36	1,097.38	5,891.75	7,042.95	6,999.51	43.44	162.122		
9,200.00	9,005.34	5,227.00	4,976.84	32.97	17.67	-2.47	1,097.38	5,891.75	7,019.39	6,976.00	43.39	161.785		
9,250.00	9,024.65	5,227.00	4,976.84	33.17	17.67	-2.62	1,097.38	5,891.75	6,992.33	6,949.01	43.33	161.390		
9,300.00	9,039.87	5,239.90	4,978.76	33.38	17.75	-2.66	1,084.77	5,893.64	6,961.88	6,918.54	43.34	160.639		
9,350.00	9,050.89	5,241.34	4,978.96	33.62	17.76	-2.86	1,083.35	5,893.85	6,928.35	6,885.07	43.28	160.097		
9,400.00	9,057.61	5,242.68	4,979.13	33.87	17.77	-3.13	1,082.04	5,894.04	6,891.89	6,848.68	43.21	159.499		
9,452.31	9,060.00	5,243.96	4,979.30	34.15	17.78	-3.49	1,080.78	5,894.22	6,850.87	6,807.73	43.14	158.814		
9,500.00	9,060.00	5,245.08	4,979.44	34.42	17.79	-3.48	1,079.68	5,894.38	6,812.27	6,769.20	43.07	158.173		
9,600.00	9,060.00	5,259.00	4,981.01	35.09	17.89	-3.28	1,065.98	5,896.29	6,731.77	6,688.79	42.99	156.604		
9,700.00	9,060.00	5,259.00	4,981.01	35.86	17.89	-3.28	1,065.98	5,896.29	6,651.72	6,608.89	42.83	155.322		
9,800.00	9,060.00	5,259.00	4,981.01	36.72	17.89	-3.28	1,065.98	5,896.29	6,572.21	6,529.54	42.67	154.024		
9,900.00	9,060.00	5,259.00	4,981.01	37.69	17.89	-3.28	1,065.98	5,896.29	6,493.26	6,450.74	42.52	152.706		
10,000.00	9,060.00	5,259.00	4,981.01	38.73	17.89	-3.28	1,065.98	5,896.29	6,414.91	6,372.53	42.38	151.369		
10,100.00	9,060.00	5,259.00	4,981.01	39.86	17.89	-3.28	1,065.98	5,896.29	6,337.16	6,294.92	42.25	150.009		
10,140.22	9,060.00	5,259.00	4,981.01	40.33	17.89	-3.28	1,065.98	5,896.29	6,306.07	6,263.87	42.19	149.456		
10,200.00	9,060.00	5,259.00	4,981.01	41.05	17.89	-4.72	1,065.98	5,896.29	6,260.08	6,217.96	42.12	148.625		
10,300.00	9,060.00	5,259.00	4,981.01	42.31	17.89	-7.06	1,065.98	5,896.29	6,183.82	6,141.81	42.01	147.207		
10,400.00	9,060.00	5,259.00	4,981.01	43.64	17.89	-9.33	1,065.98	5,896.29	6,108.53	6,066.62	41.91	145.746		
10,507.23	9,060.00	5,259.00	4,981.01	45.11	17.89	-11.66	1,065.98	5,896.29	6,029.03	5,987.20	41.83	144.124		
10,600.00	9,060.00	5,259.00	4,981.01	46.43	17.89	-9.69	1,065.98	5,896.29	5,960.97	5,919.19	41.78	142.676		
10,700.00	9,060.00	5,259.00	4,981.01	47.91	17.89	-7.58	1,065.98	5,896.29	5,887.98	5,846.25	41.73	141.089		
10,800.00	9,060.00	5,274.38	4,982.28	49.42	18.00	-5.27	1,050.79	5,898.33	5,815.30	5,773.53	41.77	139.229		
10,900.00	9,060.00	5,275.96	4,982.39	50.97	18.01	-3.19	1,049.23	5,898.53	5,743.34	5,701.60	41.74	137.597		
11,000.00	9,060.00	5,277.12	4,982.46	52.55	18.02	-1.14	1,048.09	5,898.68	5,672.10	5,630.38	41.72	135.966		
11,100.00	9,060.00	5,291.00	4,983.12	54.14	18.12	1.04	1,034.34	5,900.48	5,601.81	5,560.05	41.76	134.152		
11,207.23	9,060.00	5,291.00	4,983.12	55.87	18.12	3.11	1,034.34	5,900.48	5,527.36	5,485.61	41.74	132.418		
11,300.00	9,060.00	5,291.00	4,983.12	57.39	18.12	1.37	1,034.34	5,900.48	5,463.82	5,422.08	41.74	130.887		
11,400.00	9,060.00	5,291.00	4,983.12	59.06	18.12	-0.47	1,034.34	5,900.48	5,396.23	5,354.45	41.77	129.180		
11,506.63	9,060.00	5,291.00	4,983.12	60.88	18.12	-2.37	1,034.34	5,900.48	5,325.30	5,283.47	41.83	127.296		
11,600.00	9,060.00	5,291.00	4,983.12	62.49	18.12	-2.37	1,034.34	5,900.48	5,264.23	5,222.31	41.91	125.602		
11,700.00	9,060.00	5,291.00	4,983.12	64.24	18.12	-2.37	1,034.34	5,900.48	5,199.88	5,157.86	42.02	123.757		
11,800.00	9,060.00	5,291.00	4,983.12	66.01	18.12	-2.37	1,034.34	5,900.48	5,136.67	5,094.52	42.14	121.882		
11,900.00	9,060.00	5,291.00	4,983.12	67.79	18.12	-2.37	1,034.34	5,900.48	5,074.64	5,032.35	42.30	119.979		
12,000.00	9,060.00	5,291.00	4,983.12	69.58	18.12	-2.37	1,034.34	5,900.48	5,013.84	4,971.37	42.47	118.049		
12,100.00	9,060.00	5,291.00	4,983.12	71.39	18.12	-2.37	1,034.34	5,900.48	4,954.32	4,911.65	42.67	116.098		
12,200.00	9,060.00	5,291.00	4,983.12	73.21	18.12	-2.37	1,034.34	5,900.48	4,896.11	4,853.21	42.90	114.127		
12,300.00	9,060.00	5,291.00	4,983.12	75.05	18.12	-2.37	1,034.34	5,900.48	4,839.27	4,796.12	43.15	112.140		
12,400.00	9,060.00	5,291.00	4,983.12	76.89	18.12	-2.37	1,034.34	5,900.48	4,783.85	4,740.41	43.43	110.143		
12,500.00	9,060.00	5,291.00	4,983.12	78.74	18.12	-2.37	1,034.34	5,900.48	4,729.89	4,686.15	43.74	108.138		
12,600.00	9,060.00	5,291.00	4,983.12	80.61	18.12	-2.37	1,034.34	5,900.48	4,677.44	4,633.37	44.07	106.131		
12,700.00	9,060.00	5,291.00	4,983.12	82.48	18.12	-2.37	1,034.34	5,900.48	4,626.57	4,582.14	44.43	104.127		
12,800.00	9,060.00	5,298.44	4,983.33	84.36	18.18	-2.26	1,026.96	5,901.44	4,577.27	4,532.44	44.83	102.097		
12,900.00	9,060.00	5,300.09	4,983.36	86.24	18.19	-2.24	1,025.32	5,901.66	4,529.66	4,484.42	45.25	100.110		
13,000.00	9,060.00	5,309.00	4,983.50	88.14	18.26	-2.11	1,016.50	5,902.84	4,483.82	4,438.12	45.70	98.118		
13,100.00	9,060.00	5,309.00	4,983.50	90.04	18.26	-2.11	1,016.50	5,902.84	4,439.69	4,393.53	46.16	96.182		
13,200.00	9,060.00	5,309.00	4,983.50	91.94	18.26	-2.11	1,016.50	5,902.84	4,397.39	4,350.75	46.65	94.272		
13,300.00	9,060.00	5,309.00	4,983.50	93.86	18.26	-2.11	1,016.50	5,902.84	4,356.98	4,309.83	47.16	92.393		
13,400.00	9,060.00	5,309.00	4,983.50	95.77	18.26	-2.11	1,016.50	5,902.84	4,318.51	4,270.82	47.69	90.549		
13,500.00	9,060.00	5,309.00	4,983.50	97.70	18.26	-2.11	1,016.50	5,902.84	4,282.03	4,233.78	48.25	88.744		
13,600.00	9,060.00	5,309.00	4,983.50	99.62	18.26	-2.11	1,016.50	5,902.84	4,247.59	4,198.76	48.83	86.982		
13,700.00	9,060.00	5,309.00	4,983.50	101.56	18.26	-2.11	1,016.50	5,902.84	4,215.24	4,165.80	49.44	85.267		
13,800.00	9,060.00	5,309.00	4,983.50	103.49	18.26	-2.11	1,016.50	5,902.84	4,185.03	4,134.97	50.06	83.600		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,330.89	4,983.66	105.43	18.43	-1.80	994.82	5,905.88	4,156.86	4,106.14	50.72	81.964	
14,000.00	9,060.00	5,335.93	4,983.67	107.38	18.47	-1.73	989.83	5,906.61	4,131.00	4,079.62	51.38	80.403	
14,100.00	9,060.00	5,341.14	4,983.69	109.33	18.51	-1.65	984.68	5,907.37	4,107.39	4,055.33	52.06	78.897	
14,200.00	9,060.00	5,346.53	4,983.69	111.28	18.56	-1.58	979.34	5,908.17	4,086.07	4,033.32	52.76	77.449	
14,300.00	9,060.00	5,352.12	4,983.69	113.23	18.60	-1.50	973.82	5,909.02	4,067.09	4,013.62	53.47	76.059	
14,400.00	9,060.00	5,373.00	4,983.60	115.19	18.77	-1.20	953.20	5,912.30	4,050.53	3,996.32	54.21	74.717	
14,500.00	9,060.00	5,373.00	4,983.60	117.15	18.77	-1.20	953.20	5,912.30	4,036.26	3,981.30	54.95	73.449	
14,600.00	9,060.00	14,600.00	4,983.97	119.11	108.64	-0.51	904.95	5,920.57	4,024.12	3,928.05	96.07	41.888	
14,700.00	9,060.00	14,700.00	4,984.09	121.08	109.64	-0.29	890.01	5,923.13	4,014.52	3,917.67	96.85	41.451 ES	
14,800.00	9,060.00	5,493.65	4,984.85	123.05	19.86	0.51	834.33	5,932.89	4,007.24	3,949.74	57.50	69.686	
14,900.00	9,060.00	5,503.66	4,985.03	125.02	19.96	0.65	824.48	5,934.67	4,002.34	3,944.01	58.33	68.617	
15,000.00	9,060.00	5,513.71	4,985.19	126.99	20.06	0.79	814.60	5,936.46	3,999.88	3,940.72	59.17	67.604	
15,049.69	9,060.00	5,518.72	4,985.27	127.98	20.11	0.86	809.67	5,937.35	3,999.58	3,939.99	59.59	67.123 CC	
15,100.00	9,060.00	5,523.80	4,985.34	128.97	20.16	0.93	804.67	5,938.25	3,999.89	3,939.88	60.01	66.649	
15,200.00	9,060.00	5,533.93	4,985.48	130.95	20.26	1.07	794.70	5,940.06	4,002.36	3,941.49	60.87	65.751	
15,300.00	9,060.00	5,544.11	4,985.60	132.93	20.36	1.22	784.69	5,941.88	4,007.28	3,945.54	61.74	64.910	
15,400.00	9,060.00	5,562.00	4,985.77	134.91	20.53	1.47	767.09	5,945.09	4,014.65	3,952.01	62.64	64.088	
15,500.00	9,060.00	5,566.02	4,985.80	136.89	20.58	1.53	763.13	5,945.82	4,024.44	3,960.95	63.49	63.388	
15,600.00	9,060.00	5,581.94	4,985.94	138.88	20.74	1.75	747.48	5,948.67	4,036.63	3,972.23	64.40	62.681	
15,700.00	9,060.00	5,597.75	4,986.07	140.86	20.91	1.98	731.92	5,951.49	4,051.19	3,985.88	65.31	62.028	
15,800.00	9,060.00	5,613.46	4,986.20	142.85	21.07	2.20	716.47	5,954.29	4,068.09	4,001.87	66.22	61.430	
15,900.00	9,060.00	15,900.00	4,987.25	144.84	143.06	3.28	641.24	5,968.47	4,087.25	3,959.30	127.95	31.944	
16,000.00	9,060.00	5,799.86	4,990.19	146.83	23.17	4.82	533.72	5,990.65	4,108.60	4,039.11	69.49	59.125	
16,100.00	9,060.00	5,845.48	4,992.15	148.83	23.72	5.46	489.13	6,000.14	4,131.60	4,060.78	70.82	58.338	
16,200.00	9,060.00	16,200.00	4,991.84	150.82	153.44	5.35	496.92	5,998.47	4,156.76	4,017.05	139.70	29.754 SF	
16,300.00	9,060.00	5,846.00	4,992.17	152.82	23.72	5.47	488.63	6,000.25	4,184.18	4,111.79	72.39	57.799	
16,400.00	9,060.00	5,846.00	4,992.17	154.81	23.72	5.47	488.63	6,000.25	4,213.78	4,140.64	73.14	57.610	
16,500.00	9,060.00	5,846.00	4,992.17	156.81	23.72	5.47	488.63	6,000.25	4,245.54	4,171.66	73.87	57.471	
16,600.00	9,060.00	5,876.89	4,993.41	158.81	24.10	5.90	458.41	6,006.52	4,279.05	4,204.06	74.99	57.059	
16,700.00	9,060.00	5,882.81	4,993.61	160.81	24.18	5.98	452.61	6,007.70	4,314.82	4,239.05	75.76	56.952	
16,800.00	9,060.00	5,888.64	4,993.78	162.81	24.25	6.06	446.89	6,008.85	4,352.56	4,276.05	76.51	56.891	
16,900.00	9,060.00	5,894.40	4,993.94	164.82	24.32	6.15	441.25	6,009.98	4,392.24	4,315.01	77.23	56.874	
17,000.00	9,060.00	5,900.06	4,994.08	166.82	24.39	6.22	435.70	6,011.08	4,433.79	4,355.86	77.92	56.900	
17,100.00	9,060.00	5,905.65	4,994.21	168.82	24.46	6.30	430.21	6,012.17	4,477.17	4,398.57	78.59	56.967	
17,200.00	9,060.00	5,939.00	4,994.68	170.83	24.87	6.77	397.47	6,018.48	4,522.59	4,442.92	79.67	56.764	
17,300.00	9,060.00	5,939.00	4,994.68	172.84	24.87	6.77	397.47	6,018.48	4,569.37	4,489.16	80.21	56.967	
17,400.00	9,060.00	5,939.00	4,994.68	174.84	24.87	6.77	397.47	6,018.48	4,617.84	4,537.11	80.72	57.206	
17,500.00	9,060.00	5,939.00	4,994.68	176.85	24.87	6.77	397.47	6,018.48	4,667.94	4,586.73	81.21	57.480	
17,600.00	9,060.00	5,939.00	4,994.68	178.86	24.87	6.77	397.47	6,018.48	4,719.64	4,637.97	81.67	57.789	
17,700.00	9,060.00	5,939.00	4,994.68	180.87	24.87	6.77	397.47	6,018.48	4,772.87	4,690.76	82.11	58.130	
17,800.00	9,060.00	5,939.00	4,994.68	182.88	24.87	6.77	397.47	6,018.48	4,827.59	4,745.07	82.52	58.502	
17,900.00	9,060.00	5,939.00	4,994.68	184.89	24.87	6.77	397.47	6,018.48	4,883.74	4,800.83	82.91	58.905	
18,000.00	9,060.00	5,939.00	4,994.68	186.90	24.87	6.77	397.47	6,018.48	4,941.27	4,858.00	83.28	59.336	
18,100.00	9,060.00	5,939.00	4,994.68	188.92	24.87	6.77	397.47	6,018.48	5,000.15	4,916.52	83.62	59.795	
18,200.00	9,060.00	5,939.00	4,994.68	190.93	24.87	6.77	397.47	6,018.48	5,060.31	4,976.37	83.95	60.280	
18,300.00	9,060.00	5,939.00	4,994.68	192.94	24.87	6.77	397.47	6,018.48	5,121.72	5,037.47	84.25	60.790	
18,400.00	9,060.00	5,939.00	4,994.68	194.96	24.87	6.77	397.47	6,018.48	5,184.34	5,099.80	84.54	61.325	
18,500.00	9,060.00	5,939.00	4,994.68	196.97	24.87	6.77	397.47	6,018.48	5,248.11	5,163.30	84.81	61.882	
18,600.00	9,060.00	5,975.56	4,994.70	198.99	25.32	7.28	361.49	6,024.97	5,312.49	5,226.77	85.72	61.974	
18,700.00	9,060.00	5,979.31	4,994.68	201.00	25.37	7.33	357.80	6,025.61	5,378.35	5,292.32	86.03	62.518	
18,800.00	9,060.00	5,982.97	4,994.65	203.02	25.41	7.38	354.19	6,026.22	5,445.23	5,358.91	86.32	63.081	
18,900.00	9,060.00	5,986.55	4,994.62	205.04	25.46	7.43	350.66	6,026.81	5,513.11	5,426.52	86.60	63.664	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbore #2										Offset Site Error:	5.00 ft
Survey Program:		18-GYRO-NS-CT, 4369-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	5,990.06	4,994.58	207.06	25.50	7.48	347.20	6,027.38	5,581.95	5,495.09	86.86	64.264	
19,100.00	9,060.00	5,993.49	4,994.54	209.07	25.55	7.53	343.81	6,027.94	5,651.71	5,564.60	87.11	64.882	
19,200.00	9,060.00	5,996.85	4,994.49	211.09	25.59	7.58	340.50	6,028.48	5,722.36	5,635.01	87.34	65.516	
19,300.00	9,060.00	6,034.00	4,993.74	213.11	26.05	8.09	303.79	6,034.11	5,794.29	5,706.06	88.23	65.675	
19,400.00	9,060.00	6,034.00	4,993.74	215.13	26.05	8.09	303.79	6,034.11	5,866.54	5,778.16	88.38	66.381	
19,500.32	9,060.00	6,034.00	4,993.74	217.16	26.05	8.09	303.79	6,034.11	5,939.83	5,851.31	88.52	67.103	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,911.18				
100.00	100.00	13.81	13.81	0.52	5.02	77.36	1,731.24	7,718.92	7,910.69	7,905.14	5.54	1,427.216	
200.00	200.00	134.92	134.92	0.70	5.03	77.36	1,731.43	7,718.68	7,910.52	7,904.79	5.73	1,380.208	
300.00	300.00	260.04	260.03	0.99	5.05	77.35	1,731.94	7,718.00	7,910.09	7,904.05	6.03	1,311.157	
400.00	400.00	368.41	368.40	1.31	5.09	77.35	1,731.87	7,717.17	7,909.32	7,902.92	6.40	1,235.287	
500.00	500.00	452.05	452.04	1.65	5.15	77.35	1,731.53	7,716.73	7,908.72	7,901.92	6.80	1,163.752	
600.00	600.00	548.61	548.60	1.99	5.23	77.36	1,731.06	7,716.38	7,908.26	7,901.03	7.22	1,094.606	
700.00	700.00	658.53	658.52	2.34	5.35	77.36	1,730.43	7,715.92	7,907.72	7,900.03	7.69	1,027.790	
800.00	800.00	758.98	758.96	2.69	5.49	77.36	1,729.61	7,715.47	7,907.11	7,898.93	8.18	967.035	
900.00	900.00	839.49	839.47	3.04	5.61	77.37	1,729.01	7,715.19	7,906.60	7,897.96	8.65	914.199	
1,000.00	1,000.00	938.38	938.36	3.40	5.77	77.37	1,728.57	7,715.01	7,906.33	7,897.16	9.16	862.728	
1,100.00	1,100.00	1,036.78	1,036.75	3.75	5.94	77.37	1,728.05	7,714.76	7,905.96	7,896.27	9.70	815.405	
1,200.00	1,200.00	1,169.31	1,169.28	4.11	6.20	77.37	1,728.01	7,713.99	7,905.38	7,895.07	10.31	766.672	
1,300.00	1,300.00	1,240.90	1,240.87	4.46	6.35	77.37	1,728.24	7,713.57	7,904.86	7,894.04	10.82	730.743	
1,400.00	1,400.00	1,325.66	1,325.63	4.82	6.54	77.37	1,728.52	7,713.29	7,904.61	7,893.25	11.36	695.864	
1,500.00	1,500.00	1,422.34	1,422.31	5.18	6.76	77.37	1,728.77	7,713.08	7,904.46	7,892.52	11.94	662.173	
1,600.00	1,600.00	1,568.81	1,568.78	5.53	7.11	77.36	1,729.37	7,712.26	7,903.99	7,891.34	12.65	624.981	
1,700.00	1,700.00	1,654.80	1,654.76	5.89	7.33	77.36	1,729.56	7,711.57	7,903.27	7,890.05	13.22	597.822	
1,800.00	1,800.00	1,727.76	1,727.72	6.25	7.52	77.36	1,729.44	7,711.34	7,902.91	7,889.15	13.77	574.118	
1,900.00	1,900.00	1,813.49	1,813.45	6.61	7.74	77.36	1,729.05	7,711.34	7,902.80	7,888.46	14.35	550.799	
1,921.72	1,921.72	1,833.16	1,833.12	6.68	7.79	77.36	1,728.94	7,711.36	7,902.80	7,888.32	14.48	545.856	
2,000.00	2,000.00	1,902.53	1,902.49	6.96	7.98	77.37	1,728.60	7,711.47	7,902.84	7,887.90	14.94	528.831	
2,100.00	2,100.00	1,993.92	1,993.87	7.32	8.23	77.37	1,727.78	7,711.85	7,903.05	7,887.49	15.55	508.186	
2,200.00	2,200.00	2,116.41	2,116.36	7.68	8.57	77.38	1,726.59	7,712.18	7,903.09	7,886.84	16.25	486.287	
2,300.00	2,300.00	2,215.69	2,215.63	8.04	8.86	77.39	1,725.79	7,712.27	7,903.01	7,886.11	16.89	467.830	
2,350.00	2,350.00	2,263.18	2,263.12	8.22	9.00	77.39	1,725.70	7,712.28	7,902.99	7,885.78	17.21	459.242	
2,376.67	2,376.67	2,290.33	2,290.27	8.31	9.07	93.43	1,725.66	7,712.28	7,902.99	7,885.61	17.38	454.644	
2,400.00	2,400.00	2,314.07	2,314.02	8.39	9.14	93.43	1,725.61	7,712.28	7,902.99	7,885.46	17.54	450.692	
2,500.00	2,499.98	2,413.70	2,413.65	8.75	9.44	93.44	1,725.37	7,712.30	7,903.06	7,884.88	18.18	434.612	
2,600.00	2,599.92	2,507.61	2,507.55	9.11	9.72	93.47	1,724.98	7,712.39	7,903.28	7,884.46	18.82	419.956	
2,700.00	2,699.78	2,604.38	2,604.32	9.47	10.01	93.51	1,724.32	7,712.61	7,903.67	7,884.20	19.47	406.033	
2,800.00	2,799.54	2,706.40	2,706.34	9.82	10.32	93.56	1,723.75	7,712.82	7,904.17	7,884.04	20.13	392.649	
2,900.00	2,899.16	2,824.56	2,824.49	10.18	10.68	93.63	1,723.02	7,712.89	7,904.65	7,883.80	20.85	379.155	
3,000.00	2,998.61	2,922.64	2,922.58	10.54	10.98	93.70	1,722.80	7,712.73	7,905.11	7,883.61	21.51	367.555	
3,100.00	3,097.86	3,011.81	3,011.75	10.89	11.26	93.77	1,722.78	7,712.68	7,905.84	7,883.70	22.14	357.066	
3,200.00	3,196.89	3,122.46	3,122.40	11.25	11.61	93.87	1,722.92	7,712.56	7,906.70	7,883.86	22.84	346.107	
3,295.74	3,291.45	3,197.88	3,197.81	11.59	11.85	93.95	1,723.46	7,712.30	7,907.59	7,884.16	23.42	337.582	
3,300.00	3,295.65	3,200.16	3,200.09	11.61	11.85	93.95	1,723.48	7,712.30	7,907.64	7,884.19	23.45	337.262	
3,400.00	3,394.29	3,257.20	3,257.13	11.97	12.03	94.01	1,723.98	7,712.43	7,909.18	7,885.19	23.98	329.763	
3,500.00	3,492.94	3,333.61	3,333.54	12.33	12.27	94.10	1,724.48	7,712.94	7,911.15	7,886.57	24.58	321.789	
3,600.00	3,591.58	3,470.50	3,470.43	12.69	12.71	94.26	1,724.55	7,713.82	7,913.01	7,887.63	25.38	311.760	
3,700.00	3,690.22	3,568.72	3,568.65	13.05	13.03	94.38	1,724.17	7,714.32	7,914.69	7,888.63	26.06	303.733	
3,800.00	3,788.86	3,669.32	3,669.24	13.41	13.35	94.51	1,723.54	7,714.87	7,916.40	7,889.65	26.74	295.998	
3,900.00	3,887.50	3,785.00	3,785.08	13.77	21.55	103.08	740.77	7,748.92	7,907.14	7,872.15	34.99	226.011	
4,000.00	3,986.14	5,754.59	4,977.91	14.14	21.25	102.86	771.09	7,746.56	7,896.22	7,861.12	35.10	224.936	
4,100.00	4,084.78	5,749.01	4,977.90	14.50	21.20	102.82	776.65	7,746.15	7,886.66	7,851.20	35.46	222.408	
4,200.00	4,183.42	5,743.34	4,977.90	14.87	21.14	102.78	782.31	7,745.74	7,878.35	7,842.54	35.81	219.989	
4,300.00	4,282.06	5,737.56	4,977.92	15.24	21.09	102.74	788.07	7,745.32	7,871.29	7,835.13	36.16	217.678	
4,400.00	4,380.70	5,731.67	4,977.94	15.60	21.03	102.70	793.95	7,744.91	7,865.48	7,828.97	36.50	215.472	
4,500.00	4,479.34	5,725.67	4,977.97	15.97	20.97	102.66	799.93	7,744.49	7,860.92	7,824.08	36.84	213.370	
4,600.00	4,577.98	5,719.56	4,978.01	16.34	20.91	102.61	806.03	7,744.08	7,857.62	7,820.45	37.17	211.369	
4,700.00	4,676.62	5,694.00	4,978.30	16.71	20.66	102.43	831.53	7,742.42	7,855.65	7,818.33	37.32	210.522	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	5,694.00	4,978.30	17.08	20.66	102.43	831.53	7,742.42	7,854.83	7,817.13	37.70	208.355		
4,814.06	4,789.13	5,694.00	4,978.30	17.13	20.66	102.43	831.53	7,742.42	7,854.82	7,817.07	37.75	208.058		
4,900.00	4,873.91	5,694.00	4,978.30	17.45	20.66	102.43	831.53	7,742.42	7,855.29	7,817.21	38.08	206.289		
5,000.00	4,972.55	5,694.00	4,978.30	17.82	20.66	102.43	831.53	7,742.42	7,857.02	7,818.57	38.45	204.322		
5,100.00	5,071.19	5,679.87	4,978.49	18.19	20.54	102.33	845.63	7,741.54	7,860.01	7,821.31	38.70	203.123		
5,200.00	5,169.83	5,666.33	4,978.64	18.56	20.41	102.23	859.15	7,740.71	7,864.23	7,825.30	38.94	201.968		
5,300.00	5,268.47	5,653.14	4,978.76	18.93	20.29	102.13	872.32	7,739.90	7,869.70	7,830.52	39.18	200.868		
5,400.00	5,367.11	5,640.28	4,978.84	19.31	20.18	102.04	885.15	7,739.12	7,876.41	7,836.99	39.42	199.822		
5,500.00	5,465.75	5,627.75	4,978.90	19.68	20.06	101.95	897.66	7,738.36	7,884.35	7,844.69	39.65	198.831		
5,600.00	5,564.39	5,615.53	4,978.93	20.05	19.95	101.86	909.85	7,737.63	7,893.52	7,853.63	39.89	197.894		
5,700.00	5,663.03	5,603.00	4,978.93	20.42	19.84	101.77	922.36	7,736.89	7,903.92	7,863.81	40.11	197.039		
5,800.00	5,761.67	5,603.00	4,978.93	20.80	19.84	101.77	922.36	7,736.89	7,915.56	7,875.12	40.45	195.700		
5,900.00	5,860.31	5,603.00	4,978.93	21.17	19.84	101.77	922.36	7,736.89	7,928.45	7,887.67	40.78	194.442		
6,000.00	5,958.96	5,603.00	4,978.93	21.54	19.84	101.77	922.36	7,736.89	7,942.57	7,901.47	41.10	193.260		
6,100.00	6,057.60	5,603.00	4,978.93	21.92	19.84	101.77	922.36	7,736.89	7,957.93	7,916.51	41.41	192.152		
6,200.00	6,156.24	5,603.00	4,978.93	22.29	19.84	101.77	922.36	7,736.89	7,974.51	7,932.78	41.73	191.117		
6,300.00	6,254.88	5,603.00	4,978.93	22.67	19.84	101.77	922.36	7,736.89	7,992.30	7,950.27	42.03	190.152		
6,400.00	6,353.52	5,572.57	4,979.03	23.04	19.59	101.55	952.74	7,735.26	8,011.10	7,969.02	42.08	190.379		
6,500.00	6,452.16	5,567.96	4,979.07	23.42	19.55	101.52	957.35	7,735.04	8,031.23	7,988.90	42.34	189.702		
6,600.00	6,550.80	5,563.29	4,979.11	23.79	19.51	101.49	962.01	7,734.83	8,052.55	8,009.97	42.59	189.088		
6,700.00	6,649.44	5,558.56	4,979.16	24.17	19.47	101.45	966.74	7,734.62	8,075.05	8,032.22	42.83	188.534		
6,800.00	6,748.08	5,553.77	4,979.21	24.54	19.43	101.42	971.53	7,734.42	8,098.70	8,055.63	43.07	188.040		
6,900.00	6,846.72	5,548.91	4,979.27	24.92	19.39	101.38	976.39	7,734.23	8,123.51	8,080.21	43.30	187.604		
7,000.00	6,945.36	5,543.98	4,979.34	25.29	19.35	101.35	981.31	7,734.04	8,149.46	8,105.93	43.53	187.223		
7,100.00	7,044.00	5,513.00	4,979.91	25.67	19.09	101.13	1,012.27	7,733.07	8,176.68	8,133.14	43.54	187.802		
7,200.00	7,142.65	5,513.00	4,979.91	26.04	19.09	101.13	1,012.27	7,733.07	8,204.83	8,161.03	43.80	187.345		
7,300.00	7,241.29	5,513.00	4,979.91	26.42	19.09	101.13	1,012.27	7,733.07	8,234.09	8,190.05	44.05	186.941		
7,400.00	7,339.93	5,513.00	4,979.91	26.79	19.09	101.13	1,012.27	7,733.07	8,264.46	8,220.17	44.29	186.588		
7,500.00	7,438.57	5,513.00	4,979.91	27.17	19.09	101.13	1,012.27	7,733.07	8,295.93	8,251.40	44.53	186.285		
7,571.77	7,509.37	5,513.00	4,979.91	27.44	19.09	101.13	1,012.27	7,733.07	8,319.18	8,274.48	44.70	186.097		
7,600.00	7,537.23	5,513.00	4,979.91	27.55	19.09	101.27	1,012.27	7,733.07	8,328.46	8,283.69	44.77	186.030		
7,700.00	7,636.18	5,513.00	4,979.91	27.92	19.09	101.79	1,012.27	7,733.07	8,361.69	8,316.70	45.00	185.826		
7,800.00	7,735.48	5,513.00	4,979.91	28.29	19.09	102.32	1,012.27	7,733.07	8,395.49	8,350.27	45.22	185.673		
7,900.00	7,835.05	5,513.00	4,979.91	28.65	19.09	102.85	1,012.27	7,733.07	8,429.81	8,384.39	45.43	185.570		
8,000.00	7,934.83	5,513.00	4,979.91	29.01	19.09	103.39	1,012.27	7,733.07	8,464.63	8,419.00	45.63	185.513		
8,100.00	8,034.74	5,513.00	4,979.91	29.36	19.09	103.94	1,012.27	7,733.07	8,499.92	8,454.10	45.82	185.502		
8,202.27	8,137.00	5,513.00	4,979.91	29.72	19.09	88.47	1,012.27	7,733.07	8,536.46	8,490.45	46.01	185.535		
8,300.00	8,234.73	5,513.00	4,979.91	30.06	19.09	88.47	1,012.27	7,733.07	8,572.08	8,525.89	46.18	185.604		
8,400.00	8,334.73	5,513.00	4,979.91	30.41	19.09	88.47	1,012.27	7,733.07	8,609.52	8,563.16	46.36	185.709		
8,500.00	8,434.73	5,513.00	4,979.91	30.75	19.09	88.47	1,012.27	7,733.07	8,647.95	8,601.42	46.53	185.847		
8,552.31	8,487.04	5,513.00	4,979.91	30.94	19.09	88.47	1,012.27	7,733.07	8,668.44	8,621.82	46.62	185.932		
8,600.00	8,534.68	5,513.00	4,979.91	31.10	19.09	-1.15	1,012.27	7,733.07	8,685.52	8,638.83	46.69	186.006		
8,650.00	8,584.26	5,487.43	4,980.59	31.26	18.90	-1.29	1,037.83	7,732.54	8,699.54	8,652.96	46.59	186.742		
8,700.00	8,633.10	5,486.89	4,980.61	31.43	18.89	-1.27	1,038.36	7,732.53	8,709.70	8,663.05	46.65	186.716		
8,750.00	8,680.83	5,486.38	4,980.63	31.58	18.89	-1.26	1,038.87	7,732.52	8,715.84	8,669.14	46.70	186.626		
8,800.00	8,727.09	5,485.90	4,980.64	31.74	18.89	-1.26	1,039.36	7,732.52	8,717.91	8,671.16	46.75	186.475		
8,850.00	8,771.52	5,485.44	4,980.66	31.89	18.88	-1.27	1,039.82	7,732.51	8,715.92	8,669.12	46.79	186.267		
8,900.00	8,813.78	5,485.01	4,980.67	32.04	18.88	-1.29	1,040.24	7,732.50	8,709.86	8,663.03	46.83	186.006		
8,950.00	8,853.56	5,484.62	4,980.68	32.18	18.88	-1.31	1,040.64	7,732.50	8,699.78	8,652.93	46.85	185.692		
9,000.00	8,890.55	5,484.26	4,980.70	32.32	18.87	-1.35	1,040.99	7,732.49	8,685.73	8,638.87	46.87	185.330		
9,050.00	8,924.46	5,483.95	4,980.71	32.47	18.87	-1.40	1,041.30	7,732.49	8,667.82	8,620.95	46.87	184.921		
9,100.00	8,955.05	5,483.69	4,980.71	32.63	18.87	-1.46	1,041.56	7,732.48	8,646.15	8,599.27	46.87	184.465		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,483.48	4,980.72	32.79	18.87	-1.54	1,041.77	7,732.48	8,620.85	8,573.99	46.86	183.965		
9,200.00	9,005.34	5,483.33	4,980.73	32.97	18.87	-1.64	1,041.92	7,732.48	8,592.09	8,545.25	46.84	183.420		
9,250.00	9,024.65	5,483.23	4,980.73	33.17	18.87	-1.76	1,042.02	7,732.48	8,560.06	8,513.24	46.82	182.833		
9,300.00	9,039.87	5,483.19	4,980.73	33.38	18.87	-1.92	1,042.06	7,732.48	8,524.96	8,478.17	46.79	182.204		
9,350.00	9,050.89	5,483.21	4,980.73	33.62	18.87	-2.13	1,042.04	7,732.48	8,487.02	8,440.27	46.75	181.534		
9,400.00	9,057.61	5,483.30	4,980.73	33.87	18.87	-2.40	1,041.95	7,732.48	8,446.50	8,399.79	46.71	180.822		
9,452.31	9,060.00	5,483.46	4,980.72	34.15	18.87	-2.79	1,041.80	7,732.48	8,401.64	8,354.97	46.67	180.033		
9,500.00	9,060.00	5,483.63	4,980.72	34.42	18.87	-2.79	1,041.62	7,732.48	8,359.72	8,313.09	46.62	179.303		
9,600.00	9,060.00	5,484.02	4,980.70	35.09	18.87	-2.78	1,041.24	7,732.49	8,272.01	8,225.49	46.53	177.792		
9,700.00	9,060.00	5,484.41	4,980.69	35.86	18.87	-2.78	1,040.84	7,732.49	8,184.59	8,138.16	46.43	176.268		
9,800.00	9,060.00	5,484.82	4,980.68	36.72	18.88	-2.77	1,040.43	7,732.50	8,097.47	8,051.12	46.34	174.728		
9,900.00	9,060.00	5,485.24	4,980.66	37.69	18.88	-2.77	1,040.01	7,732.51	8,010.64	7,964.38	46.26	173.174		
10,000.00	9,060.00	5,485.68	4,980.65	38.73	18.88	-2.76	1,039.57	7,732.51	7,924.12	7,877.94	46.18	171.603		
10,100.00	9,060.00	5,486.13	4,980.63	39.86	18.89	-2.75	1,039.12	7,732.52	7,837.93	7,791.82	46.10	170.016		
10,140.22	9,060.00	5,486.32	4,980.63	40.33	18.89	-2.75	1,038.93	7,732.52	7,803.35	7,757.27	46.07	169.372		
10,200.00	9,060.00	5,486.91	4,980.61	41.05	18.89	-4.73	1,038.35	7,732.53	7,752.08	7,706.05	46.03	168.404		
10,300.00	9,060.00	5,489.30	4,980.54	42.31	18.91	-7.95	1,035.95	7,732.57	7,666.72	7,620.74	45.98	166.735		
10,400.00	9,060.00	5,493.55	4,980.41	43.64	18.94	-11.04	1,031.71	7,732.65	7,581.97	7,536.02	45.95	165.002		
10,507.23	9,060.00	5,513.00	4,979.91	45.11	19.09	-14.02	1,012.27	7,733.07	7,491.94	7,445.92	46.02	162.787		
10,600.00	9,060.00	5,513.00	4,979.91	46.43	19.09	-11.26	1,012.27	7,733.07	7,414.39	7,368.40	45.99	161.218		
10,700.00	9,060.00	5,513.00	4,979.91	47.91	19.09	-8.26	1,012.27	7,733.07	7,330.84	7,284.87	45.96	159.503		
10,800.00	9,060.00	5,513.00	4,979.91	49.42	19.09	-5.26	1,012.27	7,733.07	7,247.42	7,201.48	45.94	157.773		
10,900.00	9,060.00	5,513.00	4,979.91	50.97	19.09	-2.27	1,012.27	7,733.07	7,164.25	7,118.33	45.91	156.035		
11,000.00	9,060.00	5,513.00	4,979.91	52.55	19.09	0.68	1,012.27	7,733.07	7,081.43	7,035.53	45.90	154.292		
11,100.00	9,060.00	5,513.00	4,979.91	54.14	19.09	3.58	1,012.27	7,733.07	6,999.09	6,953.21	45.88	152.545		
11,207.23	9,060.00	5,513.00	4,979.91	55.87	19.09	6.61	1,012.27	7,733.07	6,911.46	6,865.58	45.87	150.668		
11,300.00	9,060.00	5,513.00	4,979.91	57.39	19.09	4.04	1,012.27	7,733.07	6,836.10	6,790.22	45.87	149.023		
11,400.00	9,060.00	5,501.19	4,980.20	59.06	19.00	1.12	1,024.07	7,732.80	6,755.20	6,709.38	45.82	147.423		
11,506.63	9,060.00	5,500.16	4,980.22	60.88	18.99	-1.78	1,025.10	7,732.77	6,669.47	6,623.62	45.85	145.461		
11,600.00	9,060.00	5,500.35	4,980.22	62.49	18.99	-1.77	1,024.92	7,732.78	6,594.92	6,549.03	45.90	143.693		
11,700.00	9,060.00	5,500.56	4,980.21	64.24	19.00	-1.77	1,024.71	7,732.78	6,515.62	6,469.66	45.96	141.778		
11,800.00	9,060.00	5,500.78	4,980.21	66.01	19.00	-1.77	1,024.49	7,732.79	6,436.89	6,390.86	46.03	139.839		
11,900.00	9,060.00	5,501.01	4,980.20	67.79	19.00	-1.76	1,024.25	7,732.79	6,358.76	6,312.64	46.12	137.877		
12,000.00	9,060.00	5,501.25	4,980.19	69.58	19.00	-1.76	1,024.01	7,732.80	6,281.25	6,235.03	46.22	135.893		
12,100.00	9,060.00	5,501.51	4,980.19	71.39	19.00	-1.76	1,023.75	7,732.80	6,204.38	6,158.04	46.34	133.887		
12,200.00	9,060.00	5,501.78	4,980.18	73.21	19.01	-1.75	1,023.48	7,732.81	6,128.19	6,081.71	46.48	131.860		
12,300.00	9,060.00	5,502.07	4,980.17	75.05	19.01	-1.75	1,023.19	7,732.81	6,052.68	6,006.05	46.63	129.813		
12,400.00	9,060.00	5,502.38	4,980.16	76.89	19.01	-1.74	1,022.88	7,732.82	5,977.89	5,931.10	46.79	127.747		
12,500.00	9,060.00	5,502.70	4,980.16	78.74	19.01	-1.74	1,022.56	7,732.83	5,903.85	5,856.87	46.98	125.664		
12,600.00	9,060.00	5,503.05	4,980.15	80.61	19.01	-1.73	1,022.21	7,732.84	5,830.59	5,783.40	47.19	123.565		
12,700.00	9,060.00	5,503.42	4,980.14	82.48	19.02	-1.73	1,021.85	7,732.84	5,758.13	5,710.71	47.41	121.452		
12,800.00	9,060.00	5,503.81	4,980.13	84.36	19.02	-1.72	1,021.45	7,732.85	5,686.50	5,638.84	47.65	119.328		
12,900.00	9,060.00	5,504.23	4,980.12	86.24	19.02	-1.72	1,021.03	7,732.86	5,615.74	5,567.82	47.92	117.193		
13,000.00	9,060.00	5,504.68	4,980.11	88.14	19.03	-1.71	1,020.58	7,732.87	5,545.88	5,497.68	48.20	115.051		
13,100.00	9,060.00	5,505.17	4,980.09	90.04	19.03	-1.70	1,020.10	7,732.88	5,476.96	5,428.45	48.51	112.905		
13,200.00	9,060.00	5,505.69	4,980.08	91.94	19.03	-1.70	1,019.57	7,732.89	5,409.01	5,360.17	48.84	110.756		
13,300.00	9,060.00	5,506.26	4,980.07	93.86	19.04	-1.69	1,019.01	7,732.91	5,342.06	5,292.87	49.19	108.608		
13,400.00	9,060.00	5,506.87	4,980.05	95.77	19.04	-1.68	1,018.39	7,732.92	5,276.16	5,226.60	49.56	106.464		
13,500.00	9,060.00	5,507.54	4,980.03	97.70	19.05	-1.67	1,017.72	7,732.94	5,211.35	5,161.40	49.95	104.326		
13,600.00	9,060.00	5,508.28	4,980.02	99.62	19.05	-1.66	1,016.99	7,732.96	5,147.66	5,097.29	50.37	102.198		
13,700.00	9,060.00	5,509.08	4,980.00	101.56	19.06	-1.65	1,016.19	7,732.97	5,085.14	5,034.33	50.81	100.084		
13,800.00	9,060.00	5,509.97	4,979.98	103.49	19.07	-1.63	1,015.30	7,733.00	5,023.84	4,972.57	51.27	97.986		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,510.95	4,979.95	105.43	19.07	-1.62	1,014.31	7,733.02	4,963.79	4,912.03	51.76	95.907	
14,000.00	9,060.00	5,512.05	4,979.93	107.38	19.08	-1.60	1,013.22	7,733.05	4,905.04	4,852.78	52.26	93.851	
14,100.00	9,060.00	5,513.28	4,979.90	109.33	19.09	-1.59	1,011.99	7,733.08	4,847.65	4,794.86	52.79	91.822	
14,200.00	9,060.00	5,514.67	4,979.87	111.28	19.10	-1.57	1,010.60	7,733.11	4,791.66	4,738.31	53.35	89.821	
14,300.00	9,060.00	5,516.25	4,979.84	113.23	19.11	-1.54	1,009.02	7,733.16	4,737.11	4,683.19	53.92	87.853	
14,400.00	9,060.00	5,518.07	4,979.80	115.19	19.13	-1.52	1,007.20	7,733.21	4,684.07	4,629.55	54.52	85.920	
14,500.00	9,060.00	5,520.19	4,979.76	117.15	19.14	-1.49	1,005.09	7,733.26	4,632.57	4,577.44	55.13	84.025	
14,600.00	9,060.00	5,522.67	4,979.71	119.11	19.16	-1.45	1,002.60	7,733.33	4,582.68	4,526.91	55.77	82.170	
14,700.00	9,060.00	5,525.63	4,979.65	121.08	19.19	-1.41	999.64	7,733.42	4,534.45	4,478.02	56.43	80.358	
14,800.00	9,060.00	5,529.22	4,979.59	123.05	19.21	-1.36	996.06	7,733.53	4,487.92	4,430.82	57.10	78.592	
14,900.00	9,060.00	14,900.00	4,980.86	125.02	91.84	-1.95	1,037.18	7,732.86	4,443.10	4,336.85	106.25	41.818	
15,000.00	9,060.00	15,000.00	4,980.90	126.99	92.62	-1.96	1,038.08	7,732.85	4,400.16	4,293.32	106.84	41.185	
15,100.00	9,060.00	15,100.00	4,980.93	128.97	93.40	-1.97	1,038.98	7,732.84	4,359.08	4,251.65	107.43	40.576	
15,200.00	9,060.00	15,200.00	4,980.97	130.95	94.18	-1.99	1,039.88	7,732.83	4,319.93	4,211.90	108.03	39.989	
15,300.00	9,060.00	15,300.00	4,981.00	132.93	94.96	-2.00	1,040.78	7,732.82	4,282.75	4,174.12	108.63	39.425	
15,400.00	9,060.00	15,400.00	4,981.04	134.91	95.74	-2.01	1,041.68	7,732.82	4,247.61	4,138.37	109.24	38.882	
15,500.00	9,060.00	5,535.87	4,979.46	136.89	19.28	-1.26	989.42	7,733.75	4,214.63	4,152.37	62.26	67.697	
15,600.00	9,060.00	5,539.53	4,979.40	138.88	19.31	-1.21	985.76	7,733.88	4,183.69	4,120.64	63.05	66.357	
15,700.00	9,060.00	5,543.86	4,979.34	140.86	19.35	-1.15	981.43	7,734.04	4,154.93	4,091.08	63.85	65.074	
15,800.00	9,060.00	5,549.07	4,979.27	142.85	19.39	-1.07	976.23	7,734.23	4,128.39	4,063.73	64.66	63.847	
15,900.00	9,060.00	5,555.44	4,979.19	144.84	19.44	-0.98	969.86	7,734.49	4,104.11	4,038.63	65.48	62.676	
16,000.00	9,060.00	5,563.42	4,979.11	146.83	19.51	-0.87	961.89	7,734.83	4,082.14	4,015.83	66.31	61.560	
16,100.00	9,060.00	5,573.71	4,979.02	148.83	19.60	-0.72	951.61	7,735.31	4,062.50	3,995.35	67.15	60.498	
16,200.00	9,060.00	5,587.47	4,978.95	150.82	19.71	-0.52	937.87	7,736.01	4,045.23	3,977.23	68.00	59.485	
16,300.00	9,060.00	5,606.81	4,978.94	152.82	19.87	-0.25	918.56	7,737.12	4,030.35	3,961.48	68.88	58.515	
16,400.00	9,060.00	16,400.00	4,979.30	154.81	112.76	-0.78	955.81	7,735.47	4,017.77	3,896.31	121.45	33.081	
16,500.00	9,060.00	16,500.00	4,979.27	156.81	113.63	-0.74	953.34	7,735.57	4,007.79	3,885.35	122.45	32.731 ES	
16,600.00	9,060.00	5,603.00	4,978.93	158.81	19.84	-0.30	922.36	7,736.89	4,000.40	3,929.03	71.37	56.052	
16,700.00	9,060.00	5,603.00	4,978.93	160.81	19.84	-0.30	922.36	7,736.89	3,995.37	3,923.17	72.20	55.335	
16,800.00	9,060.00	5,603.00	4,978.93	162.81	19.84	-0.30	922.36	7,736.89	3,992.85	3,919.81	73.03	54.670	
16,851.53	9,060.00	5,617.15	4,978.93	163.85	19.97	-0.10	908.24	7,737.73	3,992.48	3,918.98	73.50	54.318 CC	
16,900.00	9,060.00	5,618.37	4,978.92	164.82	19.98	-0.08	907.02	7,737.80	3,992.77	3,918.87	73.91	54.025	
17,000.00	9,060.00	5,620.90	4,978.92	166.82	20.00	-0.04	904.49	7,737.95	3,995.24	3,920.50	74.74	53.459	
17,100.00	9,060.00	5,623.44	4,978.91	168.82	20.03	-0.01	901.96	7,738.11	4,000.19	3,924.64	75.56	52.943	
17,200.00	9,060.00	5,625.98	4,978.90	170.83	20.05	0.03	899.42	7,738.26	4,007.64	3,931.27	76.37	52.477	
17,300.00	9,060.00	5,628.54	4,978.90	172.84	20.07	0.07	896.87	7,738.41	4,017.56	3,940.39	77.17	52.061	
17,400.00	9,060.00	5,631.10	4,978.89	174.84	20.09	0.10	894.31	7,738.57	4,029.94	3,951.98	77.96	51.694	
17,500.00	9,060.00	5,633.68	4,978.88	176.85	20.12	0.14	891.74	7,738.72	4,044.74	3,966.02	78.73	51.377	
17,600.00	9,060.00	5,636.27	4,978.86	178.86	20.14	0.18	889.15	7,738.88	4,061.96	3,982.48	79.48	51.107	
17,700.00	9,060.00	5,638.86	4,978.85	180.87	20.16	0.21	886.56	7,739.03	4,081.54	4,001.33	80.21	50.885	
17,800.00	9,060.00	5,641.47	4,978.84	182.88	20.19	0.25	883.96	7,739.19	4,103.47	4,022.55	80.92	50.709	
17,900.00	9,060.00	5,644.09	4,978.82	184.89	20.21	0.29	881.35	7,739.35	4,127.71	4,046.10	81.61	50.579	
18,000.00	9,060.00	5,646.72	4,978.80	186.90	20.24	0.33	878.72	7,739.51	4,154.21	4,071.94	82.27	50.495	
18,100.00	9,060.00	5,649.35	4,978.78	188.92	20.26	0.36	876.09	7,739.67	4,182.93	4,100.02	82.90	50.455	
18,200.00	9,060.00	5,652.00	4,978.77	190.93	20.28	0.40	873.45	7,739.83	4,213.82	4,130.31	83.51	50.457	
18,300.00	9,060.00	5,654.66	4,978.74	192.94	20.31	0.44	870.79	7,739.99	4,246.84	4,162.75	84.09	50.502	
18,400.00	9,060.00	5,657.33	4,978.72	194.96	20.33	0.48	868.13	7,740.16	4,281.94	4,197.30	84.65	50.587	
18,500.00	9,060.00	5,660.01	4,978.70	196.97	20.36	0.52	865.45	7,740.32	4,319.07	4,233.90	85.17	50.712	
18,600.00	9,060.00	5,662.71	4,978.67	198.99	20.38	0.56	862.76	7,740.49	4,358.17	4,272.51	85.66	50.875	
18,700.00	9,060.00	5,665.41	4,978.65	201.00	20.41	0.59	860.07	7,740.65	4,399.20	4,313.07	86.13	51.075	
18,800.00	9,060.00	5,668.12	4,978.62	203.02	20.43	0.63	857.36	7,740.82	4,442.10	4,355.53	86.57	51.312	
18,900.00	9,060.00	18,900.00	4,978.23	205.04	153.62	1.45	800.76	7,744.62	4,486.80	4,311.94	174.86	25.659	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		233-GYRO-NS-CT, 4541-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	19,000.00	4,978.21	207.06	154.64	1.52	795.39	7,745.01	4,533.22	4,356.18	177.04	25.606	
19,100.00	9,060.00	19,100.00	4,978.20	209.07	155.65	1.60	790.02	7,745.39	4,581.34	4,402.14	179.20	25.566	
19,200.00	9,060.00	19,200.00	4,978.19	211.09	156.66	1.68	784.65	7,745.78	4,631.11	4,449.77	181.34	25.539	
19,300.00	9,060.00	19,300.00	4,978.17	213.11	157.68	1.75	779.27	7,746.16	4,682.49	4,499.03	183.46	25.524 SF	
19,400.00	9,060.00	5,815.44	4,978.33	215.13	21.86	2.74	710.43	7,751.41	4,735.40	4,645.61	89.79	52.740	
19,500.32	9,060.00	5,820.51	4,978.36	217.16	21.91	2.81	705.38	7,751.83	4,789.92	4,699.82	90.10	53.162	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.34	1,585.65	8,424.46	8,572.80					
100.00	100.00	17.01	17.01	0.52	5.00	79.34	1,585.64	8,424.46	8,572.38	8,566.87	5.52	1,553.588		
200.00	200.00	120.85	120.85	0.70	5.01	79.34	1,585.11	8,424.51	8,572.34	8,566.63	5.71	1,501.871		
285.14	285.14	201.15	201.14	0.94	5.03	79.35	1,584.72	8,424.55	8,572.30	8,566.33	5.97	1,436.223		
300.00	300.00	213.65	213.65	0.99	5.03	79.35	1,584.70	8,424.55	8,572.30	8,566.28	6.02	1,424.241		
400.00	400.00	301.05	301.05	1.31	5.07	79.35	1,584.95	8,424.61	8,572.42	8,566.03	6.38	1,342.856		
500.00	500.00	397.87	397.86	1.65	5.14	79.34	1,585.59	8,424.69	8,572.62	8,565.83	6.79	1,262.661		
600.00	600.00	498.10	498.09	1.99	5.24	79.34	1,586.36	8,424.75	8,572.82	8,565.60	7.23	1,186.214		
700.00	700.00	592.45	592.44	2.34	5.34	79.33	1,587.15	8,424.83	8,573.06	8,565.38	7.68	1,115.844		
800.00	800.00	685.74	685.72	2.69	5.47	79.33	1,588.06	8,424.96	8,573.38	8,565.22	8.16	1,050.929		
900.00	900.00	786.57	786.54	3.04	5.62	79.32	1,589.19	8,425.12	8,573.74	8,565.08	8.66	989.720		
1,000.00	1,000.00	897.63	897.60	3.40	5.81	79.31	1,590.68	8,425.16	8,574.03	8,564.82	9.20	931.491		
1,100.00	1,100.00	986.10	986.06	3.75	5.97	79.30	1,591.99	8,425.14	8,574.28	8,564.56	9.72	881.852		
1,200.00	1,200.00	1,070.18	1,070.13	4.11	6.14	79.29	1,593.45	8,425.25	8,574.73	8,564.48	10.24	837.020		
1,300.00	1,300.00	1,145.88	1,145.81	4.46	6.29	79.28	1,594.66	8,425.53	8,575.39	8,564.63	10.76	797.157		
1,400.00	1,400.00	1,235.78	1,235.71	4.82	6.49	79.28	1,595.86	8,426.16	8,576.33	8,565.02	11.31	758.328		
1,500.00	1,500.00	1,402.55	1,402.46	5.18	6.88	79.26	1,598.32	8,426.62	8,576.87	8,564.82	12.05	711.602		
1,600.00	1,600.00	1,481.96	1,481.85	5.53	7.07	79.25	1,599.60	8,426.59	8,577.14	8,564.54	12.60	680.551		
1,700.00	1,700.00	1,553.16	1,553.04	5.89	7.25	79.24	1,600.77	8,426.78	8,577.71	8,564.57	13.14	652.877		
1,800.00	1,800.00	1,626.36	1,626.23	6.25	7.44	79.24	1,601.92	8,427.23	8,578.60	8,564.92	13.68	626.967		
1,900.00	1,900.00	1,766.63	1,766.48	6.61	7.81	79.22	1,604.21	8,428.14	8,579.59	8,565.18	14.41	595.371		
2,000.00	2,000.00	1,863.88	1,863.72	6.96	8.08	79.21	1,605.87	8,428.43	8,580.20	8,565.17	15.03	570.793		
2,100.00	2,100.00	1,953.18	1,953.00	7.32	8.32	79.20	1,607.49	8,428.74	8,580.89	8,565.25	15.64	548.757		
2,200.00	2,200.00	2,052.69	2,052.49	7.68	8.60	79.19	1,609.49	8,429.04	8,581.57	8,565.29	16.28	527.273		
2,300.00	2,300.00	2,113.11	2,112.90	8.04	8.78	79.18	1,610.64	8,429.42	8,582.54	8,565.73	16.81	510.702		
2,350.00	2,350.00	2,226.00	2,225.77	8.22	9.11	79.17	1,612.80	8,430.01	8,583.00	8,565.69	17.31	495.779		
2,400.00	2,400.00	2,264.41	2,264.16	8.39	9.22	95.20	1,613.64	8,430.02	8,583.25	8,565.64	17.60	487.592		
2,500.00	2,499.98	2,320.50	2,320.24	8.75	9.39	95.19	1,614.89	8,430.27	8,584.26	8,566.14	18.12	473.617		
2,600.00	2,599.92	2,395.94	2,395.66	9.11	9.61	95.18	1,616.56	8,430.92	8,585.84	8,567.13	18.71	459.011		
2,700.00	2,699.78	2,569.56	2,569.23	9.47	10.14	95.20	1,620.57	8,431.39	8,586.81	8,567.22	19.59	438.425		
2,800.00	2,799.54	2,639.51	2,639.16	9.82	10.35	95.21	1,622.37	8,431.58	8,588.19	8,568.04	20.15	426.119		
2,900.00	2,899.16	2,730.48	2,730.09	10.18	10.63	95.23	1,624.75	8,432.04	8,589.97	8,569.18	20.79	413.187		
3,000.00	2,998.61	2,834.53	2,834.11	10.54	10.95	95.27	1,627.60	8,432.49	8,591.87	8,570.40	21.47	400.221		
3,100.00	3,097.86	2,909.46	2,909.01	10.89	11.19	95.29	1,629.65	8,432.87	8,594.03	8,571.97	22.06	389.631		
3,200.00	3,196.89	2,963.46	2,962.99	11.25	11.36	95.30	1,631.00	8,433.43	8,596.82	8,574.24	22.58	380.715		
3,295.74	3,291.45	3,131.46	3,130.92	11.59	11.89	95.43	1,635.28	8,434.61	8,599.24	8,575.79	23.45	366.634		
3,300.00	3,295.65	3,134.68	3,134.14	11.61	11.90	95.43	1,635.36	8,434.63	8,599.35	8,575.87	23.48	366.241		
3,400.00	3,394.29	3,215.71	3,215.14	11.97	12.16	95.50	1,637.45	8,435.08	8,601.96	8,577.87	24.10	356.999		
3,500.00	3,492.94	3,304.92	3,304.32	12.33	12.44	95.59	1,639.80	8,435.72	8,604.76	8,580.02	24.74	347.819		
3,600.00	3,591.58	3,400.20	3,399.57	12.69	12.75	95.68	1,642.32	8,436.47	8,607.65	8,582.25	25.41	338.814		
3,700.00	3,690.22	3,700.00	3,628.58	13.05	13.72	95.89	1,647.61	8,436.98	8,610.14	8,583.40	26.74	322.030		
3,800.00	3,788.86	3,686.33	3,685.63	13.41	13.68	95.95	1,648.20	8,436.54	8,611.51	8,584.46	27.05	318.297		
3,900.00	3,887.50	3,731.50	3,730.79	13.77	13.83	96.00	1,647.98	8,437.04	8,614.00	8,586.44	27.56	312.508		
4,000.00	3,986.14	3,849.56	3,848.82	14.14	14.21	96.12	1,649.08	8,437.99	8,616.76	8,588.45	28.31	304.336		
4,100.00	4,084.78	3,915.00	3,914.25	14.50	14.43	96.18	1,650.47	8,438.43	8,619.50	8,590.61	28.89	298.339		
4,200.00	4,183.42	3,964.09	3,963.33	14.87	14.59	96.23	1,651.40	8,439.02	8,622.72	8,593.30	29.42	293.127		
4,300.00	4,282.06	4,061.84	4,061.06	15.24	14.91	96.33	1,653.00	8,440.39	8,626.21	8,596.11	30.10	286.548		
4,400.00	4,380.70	4,178.92	4,178.12	15.60	15.30	96.45	1,654.12	8,441.94	8,629.55	8,598.69	30.86	279.659		
4,500.00	4,479.34	4,270.71	4,269.90	15.97	15.60	96.55	1,653.80	8,443.29	8,632.85	8,601.32	31.53	273.818		
4,600.00	4,577.98	4,353.32	4,352.49	16.34	15.87	96.64	1,654.53	8,444.46	8,636.32	8,604.15	32.17	268.472		
4,700.00	4,676.62	4,700.00	4,647.67	16.71	17.03	96.84	1,656.04	8,446.62	8,639.63	8,605.94	33.69	256.419		
4,800.00	4,775.27	4,631.54	4,630.68	17.08	16.80	96.93	1,657.10	8,446.71	8,642.00	8,608.16	33.83	255.425		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,671.00	4,670.14	17.45	16.93	96.97	1,657.48	8,447.07	8,645.08	8,610.74	34.33	251.805		
5,000.00	4,972.55	4,791.28	4,790.41	17.82	17.33	97.09	1,658.78	8,448.38	8,648.37	8,613.26	35.11	246.356		
5,100.00	5,071.19	4,890.63	4,889.74	18.19	17.67	97.19	1,659.97	8,449.36	8,651.60	8,615.80	35.81	241.610		
5,200.00	5,169.83	4,987.31	4,986.42	18.56	17.99	97.29	1,661.13	8,450.24	8,654.80	8,618.30	36.50	237.100		
5,300.00	5,268.47	5,100.96	5,100.05	18.93	18.38	97.41	1,662.32	8,451.46	8,658.18	8,620.93	37.26	232.396		
5,400.00	5,367.11	5,208.20	5,207.28	19.31	18.74	97.51	1,663.52	8,452.15	8,661.14	8,623.16	37.99	227.994		
5,500.00	5,465.75	5,368.75	5,367.82	19.68	19.28	97.68	1,664.68	8,452.86	8,663.92	8,625.02	38.90	222.710		
5,600.00	5,564.39	5,487.01	5,486.08	20.05	19.68	97.80	1,665.46	8,452.82	8,666.22	8,626.55	39.67	218.445		
5,700.00	5,663.03	5,585.23	5,584.30	20.42	20.01	97.90	1,666.00	8,452.65	8,668.40	8,628.03	40.38	214.694		
5,800.00	5,761.67	5,674.76	5,673.83	20.80	20.32	98.00	1,666.53	8,452.57	8,670.70	8,629.65	41.05	211.223		
5,900.00	5,860.31	6,099.81	6,098.77	21.17	21.76	98.43	1,669.08	8,444.66	8,671.54	8,628.71	42.83	202.444		
6,000.00	5,958.96	6,156.78	6,155.70	21.54	21.95	98.49	1,669.03	8,442.67	8,670.46	8,627.06	43.41	199.754		
6,100.00	6,057.60	6,225.28	6,224.16	21.92	22.18	98.56	1,668.95	8,440.59	8,669.85	8,625.84	44.01	196.978		
6,184.11	6,140.57	6,271.00	6,269.87	22.23	22.34	98.61	1,668.80	8,439.31	8,669.60	8,625.12	44.49	194.879		
6,200.00	6,156.24	6,271.00	6,269.87	22.29	22.34	98.61	1,668.80	8,439.31	8,669.62	8,625.07	44.55	194.614		
6,300.00	6,254.88	6,271.00	6,269.87	22.67	22.34	98.61	1,668.80	8,439.31	8,670.38	8,625.45	44.93	192.986		
6,400.00	6,353.52	6,311.02	6,309.88	23.04	22.47	98.65	1,668.75	8,438.67	8,671.75	8,626.31	45.44	190.848		
6,500.00	6,452.16	6,531.35	6,530.18	23.42	23.22	98.90	1,667.56	8,437.68	8,674.54	8,627.98	46.56	186.324		
6,600.00	6,550.80	6,625.89	6,624.67	23.79	23.54	99.01	1,665.26	8,436.27	8,675.32	8,628.07	47.25	183.596		
6,700.00	6,649.44	6,703.39	6,702.15	24.17	23.80	99.11	1,663.29	8,435.15	8,676.19	8,628.29	47.89	181.163		
6,800.00	6,748.08	6,811.00	7,763.66	24.54	28.21	104.58	996.13	8,418.45	8,676.89	8,624.51	52.38	165.655		
6,900.00	6,846.72	8,141.00	7,763.66	24.92	28.21	104.58	996.13	8,418.45	8,668.79	8,615.98	52.81	164.143		
7,000.00	6,945.36	8,129.31	7,763.04	25.29	28.12	104.50	1,007.79	8,418.03	8,661.82	8,608.68	53.14	162.995		
7,100.00	7,044.00	8,125.56	7,762.80	25.67	28.08	104.48	1,011.53	8,417.91	8,656.00	8,602.47	53.53	161.697		
7,200.00	7,142.65	8,122.10	7,762.58	26.04	28.05	104.45	1,014.98	8,417.80	8,651.33	8,597.41	53.92	160.450		
7,300.00	7,241.29	8,110.00	7,761.68	26.42	27.95	104.37	1,027.04	8,417.43	8,647.82	8,593.60	54.23	159.472		
7,400.00	7,339.93	8,110.00	7,761.68	26.79	27.95	104.37	1,027.04	8,417.43	8,645.45	8,590.82	54.63	158.247		
7,500.00	7,438.57	8,110.00	7,761.68	27.17	27.95	104.37	1,027.04	8,417.43	8,644.23	8,589.20	55.03	157.079		
7,555.30	7,493.11	8,110.00	7,761.68	27.38	27.95	104.37	1,027.04	8,417.43	8,644.06	8,588.81	55.25	156.457		
7,571.77	7,509.37	8,110.00	7,761.68	27.44	27.95	104.37	1,027.04	8,417.43	8,644.07	8,588.76	55.31	156.275		
7,600.00	7,537.23	8,110.00	7,761.68	27.55	27.95	104.37	1,027.04	8,417.43	8,644.15	8,588.72	55.42	155.966		
7,700.00	7,636.18	8,110.00	7,761.68	27.92	27.95	104.38	1,027.04	8,417.43	8,644.73	8,588.93	55.81	154.907		
7,800.00	7,735.48	8,110.00	7,761.68	28.29	27.95	104.40	1,027.04	8,417.43	8,645.83	8,589.65	56.18	153.900		
7,900.00	7,835.05	8,110.00	7,761.68	28.65	27.95	104.42	1,027.04	8,417.43	8,647.42	8,590.89	56.54	152.945		
8,000.00	7,934.83	8,110.00	7,761.68	29.01	27.95	104.45	1,027.04	8,417.43	8,649.53	8,592.64	56.89	152.041		
8,100.00	8,034.74	8,110.00	7,761.68	29.36	27.95	104.49	1,027.04	8,417.43	8,652.13	8,594.91	57.23	151.188		
8,202.27	8,137.00	8,110.00	7,761.68	29.72	27.95	88.50	1,027.04	8,417.43	8,655.31	8,597.75	57.56	150.365		
8,300.00	8,234.73	8,110.00	7,761.68	30.06	27.95	88.50	1,027.04	8,417.43	8,659.16	8,601.28	57.87	149.625		
8,400.00	8,334.73	8,110.00	7,761.68	30.41	27.95	88.50	1,027.04	8,417.43	8,664.22	8,606.04	58.18	148.911		
8,500.00	8,434.73	8,110.00	7,761.68	30.75	27.95	88.50	1,027.04	8,417.43	8,670.44	8,611.95	58.49	148.241		
8,552.31	8,487.04	8,110.00	7,761.68	30.94	27.95	88.50	1,027.04	8,417.43	8,674.15	8,615.51	58.65	147.907		
8,600.00	8,534.68	8,110.00	7,761.68	31.10	27.95	-1.16	1,027.04	8,417.43	8,675.83	8,617.05	58.78	147.593		
8,650.00	8,584.26	8,110.00	7,761.68	31.26	27.95	-1.17	1,027.04	8,417.43	8,673.61	8,614.69	58.92	147.218		
8,700.00	8,633.10	8,110.00	7,761.68	31.43	27.95	-1.18	1,027.04	8,417.43	8,667.33	8,608.28	59.05	146.790		
8,750.00	8,680.83	8,110.00	7,761.68	31.58	27.95	-1.20	1,027.04	8,417.43	8,657.03	8,597.86	59.17	146.315		
8,800.00	8,727.09	8,121.96	7,762.57	31.74	28.05	-1.15	1,015.13	8,417.79	8,642.74	8,583.36	59.38	145.548		
8,850.00	8,771.52	8,122.76	7,762.62	31.89	28.06	-1.18	1,014.33	8,417.82	8,624.61	8,565.12	59.49	144.975		
8,900.00	8,813.78	8,123.54	7,762.67	32.04	28.07	-1.23	1,013.55	8,417.84	8,602.73	8,543.14	59.59	144.368		
8,950.00	8,853.56	8,124.29	7,762.72	32.18	28.07	-1.29	1,012.80	8,417.87	8,577.24	8,517.56	59.68	143.730		
9,000.00	8,890.55	8,125.01	7,762.77	32.32	28.08	-1.36	1,012.08	8,417.89	8,548.30	8,488.54	59.75	143.063		
9,050.00	8,924.46	8,125.70	7,762.81	32.47	28.08	-1.46	1,011.39	8,417.91	8,516.09	8,456.27	59.82	142.372		
9,100.00	8,955.05	8,126.35	7,762.85	32.63	28.09	-1.59	1,010.74	8,417.93	8,480.83	8,420.96	59.87	141.659		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,150.00	8,982.08	8,126.97	7,762.89	32.79	28.10	-1.75	1,010.13	8,417.95	8,442.74	8,382.83	59.91	140.926				
9,200.00	9,005.34	8,127.54	7,762.93	32.97	28.10	-1.97	1,009.56	8,417.97	8,402.08	8,342.14	59.94	140.176				
9,250.00	9,024.65	8,128.07	7,762.96	33.17	28.10	-2.28	1,009.03	8,417.99	8,359.13	8,299.17	59.96	139.411				
9,300.00	9,039.87	8,128.55	7,762.99	33.38	28.11	-2.72	1,008.55	8,418.01	8,314.18	8,254.20	59.97	138.631				
9,350.00	9,050.89	8,128.98	7,763.02	33.62	28.11	-3.40	1,008.12	8,418.02	8,267.54	8,207.56	59.98	137.840				
9,400.00	9,057.61	8,129.37	7,763.04	33.87	28.12	-4.59	1,007.73	8,418.03	8,219.53	8,159.55	59.98	137.038				
9,452.31	9,060.00	8,141.00	7,763.66	34.15	28.21	-6.81	996.13	8,418.45	8,168.27	8,108.20	60.07	135.977				
9,500.00	9,060.00	8,141.00	7,763.66	34.42	28.21	-6.81	996.13	8,418.45	8,121.12	8,061.05	60.06	135.207				
9,600.00	9,060.00	8,141.00	7,763.66	35.09	28.21	-6.81	996.13	8,418.45	8,022.27	7,962.22	60.05	133.599				
9,700.00	9,060.00	8,141.00	7,763.66	35.86	28.21	-6.81	996.13	8,418.45	7,923.45	7,863.42	60.03	131.989				
9,800.00	9,060.00	8,141.00	7,763.66	36.72	28.21	-6.81	996.13	8,418.45	7,824.66	7,764.64	60.02	130.376				
9,900.00	9,060.00	8,141.00	7,763.66	37.69	28.21	-6.81	996.13	8,418.45	7,725.90	7,665.90	60.00	128.762				
10,000.00	9,060.00	8,141.00	7,763.66	38.73	28.21	-6.81	996.13	8,418.45	7,627.17	7,567.18	59.99	127.145				
10,100.00	9,060.00	8,141.00	7,763.66	39.86	28.21	-6.81	996.13	8,418.45	7,528.48	7,468.50	59.98	125.527				
10,140.22	9,060.00	8,141.00	7,763.66	40.33	28.21	-6.81	996.13	8,418.45	7,488.79	7,428.82	59.97	124.875				
10,200.00	9,060.00	8,141.00	7,763.66	41.05	28.21	-13.82	996.13	8,418.45	7,429.84	7,369.87	59.96	123.907				
10,300.00	9,060.00	8,141.00	7,763.66	42.31	28.21	-24.48	996.13	8,418.45	7,331.37	7,271.42	59.95	122.288				
10,400.00	9,060.00	8,141.00	7,763.66	43.64	28.21	-33.47	996.13	8,418.45	7,233.21	7,173.27	59.94	120.669				
10,507.23	9,060.00	8,141.00	7,763.66	45.11	28.21	-41.27	996.13	8,418.45	7,128.45	7,068.52	59.94	118.931				
10,600.00	9,060.00	8,141.00	7,763.66	46.43	28.21	-34.72	996.13	8,418.45	7,037.91	6,977.97	59.94	117.420				
10,700.00	9,060.00	8,152.43	7,764.15	47.91	28.31	-25.96	984.71	8,418.88	6,939.94	6,879.91	60.04	115.596				
10,800.00	9,060.00	8,155.48	7,764.26	49.42	28.34	-16.14	981.67	8,419.00	6,841.74	6,781.68	60.06	113.910				
10,900.00	9,060.00	8,157.13	7,764.32	50.97	28.36	-5.46	980.02	8,419.06	6,743.41	6,683.34	60.07	112.250				
11,000.00	9,060.00	8,157.37	7,764.32	52.55	28.36	5.38	979.78	8,419.07	6,645.07	6,585.00	60.07	110.617				
11,100.00	9,060.00	8,156.20	7,764.28	54.14	28.35	15.64	980.95	8,419.03	6,546.84	6,486.78	60.06	109.012				
11,207.23	9,060.00	8,153.36	7,764.18	55.87	28.32	25.37	983.78	8,418.92	6,441.77	6,381.75	60.02	107.323				
11,300.00	9,060.00	8,150.80	7,764.09	57.39	28.30	16.94	986.34	8,418.82	6,350.94	6,290.94	59.99	105.859				
11,400.00	9,060.00	8,149.40	7,764.03	59.06	28.29	7.15	987.74	8,418.77	6,252.90	6,192.92	59.98	104.250				
11,506.63	9,060.00	8,149.48	7,764.04	60.88	28.29	-3.50	987.66	8,418.77	6,148.33	6,088.35	59.98	102.505				
11,600.00	9,060.00	8,150.26	7,764.07	62.49	28.29	-3.46	986.88	8,418.80	6,056.83	5,996.84	59.99	100.964				
11,700.00	9,060.00	8,151.10	7,764.10	64.24	28.30	-3.42	986.05	8,418.83	5,958.89	5,898.89	60.00	99.313				
11,800.00	9,060.00	8,151.94	7,764.13	66.01	28.31	-3.39	985.20	8,418.86	5,861.02	5,801.01	60.01	97.662				
11,900.00	9,060.00	8,152.79	7,764.16	67.79	28.32	-3.35	984.36	8,418.90	5,763.23	5,703.20	60.03	96.011				
12,000.00	9,060.00	8,153.64	7,764.19	69.58	28.32	-3.31	983.51	8,418.93	5,665.51	5,605.47	60.04	94.359				
12,100.00	9,060.00	8,154.49	7,764.23	71.39	28.33	-3.27	982.66	8,418.96	5,567.88	5,507.82	60.06	92.707				
12,200.00	9,060.00	8,155.35	7,764.26	73.21	28.34	-3.22	981.80	8,418.99	5,470.32	5,410.25	60.08	91.054				
12,300.00	9,060.00	8,156.21	7,764.28	75.05	28.35	-3.18	980.94	8,419.03	5,372.86	5,312.76	60.10	89.402				
12,400.00	9,060.00	8,157.08	7,764.31	76.89	28.35	-3.14	980.07	8,419.06	5,275.49	5,215.37	60.12	87.749				
12,500.00	9,060.00	8,157.95	7,764.34	78.74	28.36	-3.10	979.20	8,419.09	5,178.23	5,118.08	60.14	86.097				
12,600.00	9,060.00	8,158.83	7,764.37	80.61	28.37	-3.06	978.33	8,419.13	5,081.06	5,020.89	60.17	84.444				
12,700.00	9,060.00	8,159.71	7,764.40	82.48	28.38	-3.02	977.45	8,419.16	4,984.01	4,923.82	60.20	82.791				
12,800.00	9,060.00	8,160.59	7,764.42	84.36	28.39	-2.98	976.56	8,419.20	4,887.08	4,826.85	60.23	81.139				
12,900.00	9,060.00	8,161.48	7,764.45	86.24	28.39	-2.94	975.68	8,419.23	4,790.28	4,730.01	60.27	79.487				
13,000.00	9,060.00	8,162.37	7,764.48	88.14	28.40	-2.89	974.79	8,419.27	4,693.61	4,633.30	60.30	77.835				
13,100.00	9,060.00	8,163.27	7,764.50	90.04	28.41	-2.85	973.89	8,419.30	4,597.08	4,536.73	60.34	76.183				
13,200.00	9,060.00	8,164.17	7,764.53	91.94	28.42	-2.81	972.99	8,419.33	4,500.70	4,440.31	60.39	74.531				
13,300.00	9,060.00	8,172.00	7,764.71	93.86	28.49	-2.44	965.17	8,419.64	4,404.49	4,344.01	60.48	72.820				
13,400.00	9,060.00	8,172.00	7,764.71	95.77	28.49	-2.44	965.17	8,419.64	4,308.44	4,247.91	60.53	71.179				
13,500.00	9,060.00	8,172.00	7,764.71	97.70	28.49	-2.44	965.17	8,419.64	4,212.58	4,152.00	60.58	69.538				
13,600.00	9,060.00	8,172.00	7,764.71	99.62	28.49	-2.44	965.17	8,419.64	4,116.91	4,056.28	60.63	67.897				
13,700.00	9,060.00	8,172.00	7,764.71	101.56	28.49	-2.44	965.17	8,419.64	4,021.45	3,960.76	60.70	66.256				
13,800.00	9,060.00	8,172.00	7,764.71	103.49	28.49	-2.44	965.17	8,419.64	3,926.22	3,865.46	60.76	64.615				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,900.00	9,060.00	8,172.00	7,764.71	105.43	28.49	-2.44	965.17	8,419.64	3,831.23	3,770.39	60.84	62.975		
14,000.00	9,060.00	8,172.00	7,764.71	107.38	28.49	-2.44	965.17	8,419.64	3,736.51	3,675.59	60.92	61.334		
14,100.00	9,060.00	8,173.21	7,764.73	109.33	28.50	-2.38	963.96	8,419.69	3,642.06	3,581.04	61.02	59.687		
14,200.00	9,060.00	8,175.52	7,764.77	111.28	28.52	-2.27	961.65	8,419.78	3,547.92	3,486.78	61.13	58.034		
14,300.00	9,060.00	8,177.74	7,764.81	113.23	28.54	-2.17	959.43	8,419.86	3,454.10	3,392.84	61.26	56.384		
14,400.00	9,060.00	8,179.88	7,764.85	115.19	28.56	-2.07	957.29	8,419.94	3,360.65	3,299.25	61.40	54.738		
14,500.00	9,060.00	8,181.95	7,764.88	117.15	28.58	-1.97	955.23	8,420.02	3,267.57	3,206.03	61.54	53.094		
14,600.00	9,060.00	8,183.94	7,764.91	119.11	28.59	-1.88	953.24	8,420.10	3,174.92	3,113.22	61.70	51.454		
14,700.00	9,060.00	8,185.87	7,764.94	121.08	28.61	-1.79	951.31	8,420.17	3,082.73	3,020.84	61.88	49.817		
14,800.00	9,060.00	8,187.73	7,764.96	123.05	28.63	-1.70	949.45	8,420.24	2,991.03	2,928.96	62.07	48.184		
14,900.00	9,060.00	8,189.53	7,764.98	125.02	28.65	-1.61	947.66	8,420.30	2,899.89	2,837.60	62.29	46.557		
15,000.00	9,060.00	8,191.27	7,765.00	126.99	28.66	-1.53	945.92	8,420.36	2,809.34	2,746.82	62.52	44.934		
15,100.00	9,060.00	8,192.95	7,765.02	128.97	28.68	-1.45	944.24	8,420.42	2,719.46	2,656.68	62.78	43.318		
15,200.00	9,060.00	8,194.58	7,765.04	130.95	28.69	-1.37	942.61	8,420.48	2,630.30	2,567.24	63.06	41.709		
15,300.00	9,060.00	8,196.16	7,765.06	132.93	28.71	-1.30	941.03	8,420.54	2,541.95	2,478.58	63.38	40.108		
15,400.00	9,060.00	8,197.69	7,765.07	134.91	28.72	-1.23	939.50	8,420.59	2,454.50	2,390.77	63.72	38.518		
15,500.00	9,060.00	8,199.17	7,765.08	136.89	28.73	-1.16	938.01	8,420.64	2,368.04	2,303.93	64.11	36.939		
15,600.00	9,060.00	8,200.61	7,765.09	138.88	28.75	-1.09	936.58	8,420.69	2,282.68	2,218.15	64.53	35.375		
15,700.00	9,060.00	8,202.01	7,765.10	140.86	28.76	-1.02	935.18	8,420.74	2,198.55	2,133.56	64.99	33.829		
15,800.00	9,060.00	8,203.37	7,765.11	142.85	28.77	-0.96	933.82	8,420.79	2,115.81	2,050.31	65.50	32.302		
15,900.00	9,060.00	8,204.72	7,765.12	144.84	28.78	-0.90	932.47	8,420.83	2,034.62	1,968.56	66.06	30.800		
16,000.00	9,060.00	8,206.10	7,765.13	146.83	28.80	-0.83	931.09	8,420.88	1,955.17	1,888.50	66.67	29.327		
16,100.00	9,060.00	8,207.48	7,765.14	148.83	28.81	-0.76	929.71	8,420.92	1,877.68	1,810.35	67.33	27.889		
16,200.00	9,060.00	8,208.86	7,765.14	150.82	28.82	-0.70	928.34	8,420.97	1,802.41	1,734.37	68.04	26.491		
16,300.00	9,060.00	8,210.23	7,765.15	152.82	28.84	-0.63	926.96	8,421.02	1,729.64	1,660.84	68.80	25.140		
16,400.00	9,060.00	8,211.61	7,765.16	154.81	28.85	-0.57	925.59	8,421.06	1,659.71	1,590.11	69.60	23.846		
16,500.00	9,060.00	8,212.98	7,765.17	156.81	28.86	-0.50	924.22	8,421.11	1,593.00	1,522.56	70.44	22.616		
16,600.00	9,060.00	8,214.35	7,765.17	158.81	28.88	-0.44	922.84	8,421.16	1,529.91	1,458.61	71.29	21.459		
16,700.00	9,060.00	8,215.73	7,765.18	160.81	28.89	-0.37	921.47	8,421.20	1,470.92	1,398.77	72.15	20.387		
16,800.00	9,060.00	8,217.10	7,765.18	162.81	28.90	-0.31	920.10	8,421.25	1,416.53	1,343.55	72.98	19.409		
16,900.00	9,060.00	8,218.47	7,765.19	164.82	28.92	-0.24	918.73	8,421.29	1,367.31	1,293.54	73.77	18.535		
17,000.00	9,060.00	8,219.84	7,765.20	166.82	28.93	-0.18	917.36	8,421.34	1,323.82	1,249.34	74.47	17.775		
17,100.00	9,060.00	8,221.21	7,765.20	168.82	28.94	-0.12	915.99	8,421.39	1,286.64	1,211.56	75.09	17.136		
17,200.00	9,060.00	8,222.58	7,765.21	170.83	28.95	-0.05	914.62	8,421.43	1,256.35	1,180.74	75.60	16.618		
17,300.00	9,060.00	8,223.95	7,765.21	172.84	28.97	0.01	913.25	8,421.48	1,233.43	1,157.36	76.07	16.214		
17,400.00	9,060.00	8,225.32	7,765.22	174.84	28.98	0.08	911.88	8,421.52	1,218.32	1,141.73	76.59	15.908		
17,500.00	9,060.00	8,226.69	7,765.22	176.85	28.99	0.14	910.51	8,421.57	1,211.30	1,133.99	77.31	15.668		
17,535.31	9,060.00	8,227.17	7,765.22	177.56	29.00	0.17	910.03	8,421.59	1,210.78	1,133.15	77.64	15.595 CC, ES		
17,600.00	9,060.00	8,228.06	7,765.22	178.86	29.01	0.21	909.15	8,421.62	1,212.51	1,134.16	78.35	15.476		
17,700.00	9,060.00	8,229.42	7,765.23	180.87	29.02	0.27	907.78	8,421.66	1,221.93	1,142.28	79.65	15.342		
17,800.00	9,060.00	8,230.79	7,765.23	182.88	29.03	0.34	906.42	8,421.71	1,239.37	1,158.34	81.04	15.294 SF		
17,900.00	9,060.00	8,232.15	7,765.23	184.89	29.05	0.40	905.05	8,421.75	1,264.50	1,182.17	82.33	15.359		
18,000.00	9,060.00	8,233.52	7,765.24	186.90	29.06	0.47	903.69	8,421.80	1,296.87	1,213.46	83.42	15.547		
18,100.00	9,060.00	8,234.88	7,765.24	188.92	29.07	0.53	902.33	8,421.85	1,335.96	1,251.71	84.25	15.857		
18,200.00	9,060.00	8,236.25	7,765.24	190.93	29.09	0.60	900.96	8,421.89	1,381.20	1,296.36	84.83	16.281		
18,300.00	9,060.00	8,237.61	7,765.24	192.94	29.10	0.66	899.60	8,421.94	1,432.00	1,346.81	85.18	16.811		
18,400.00	9,060.00	8,238.97	7,765.25	194.96	29.11	0.73	898.24	8,421.98	1,487.79	1,402.46	85.33	17.435		
18,500.00	9,060.00	8,240.33	7,765.25	196.97	29.12	0.79	896.88	8,422.03	1,548.03	1,462.71	85.32	18.144		
18,600.00	9,060.00	8,241.69	7,765.25	198.99	29.14	0.85	895.52	8,422.07	1,612.24	1,527.05	85.18	18.926		
18,700.00	9,060.00	8,243.05	7,765.25	201.00	29.15	0.92	894.16	8,422.12	1,679.94	1,594.99	84.95	19.775		
18,800.00	9,060.00	8,244.41	7,765.25	203.02	29.16	0.98	892.80	8,422.17	1,750.74	1,666.09	84.65	20.682		
18,900.00	9,060.00	8,245.77	7,765.25	205.04	29.18	1.05	891.44	8,422.21	1,824.27	1,739.97	84.30	21.639		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals										Offset Site Error:	5.00 ft
Survey Program:		81-GYRO-NS, 7138-MWD+IGRF										Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	8,247.13	7,765.25	207.06	29.19	1.11	890.09	8,422.26	1,900.22	1,816.29	83.93	22.642	
19,100.00	9,060.00	8,248.49	7,765.25	209.07	29.20	1.18	888.73	8,422.30	1,978.31	1,894.78	83.53	23.683	
19,200.00	9,060.00	8,249.84	7,765.25	211.09	29.22	1.24	887.37	8,422.35	2,058.29	1,975.16	83.13	24.759	
19,300.00	9,060.00	8,251.20	7,765.25	213.11	29.23	1.30	886.02	8,422.39	2,139.96	2,057.23	82.73	25.865	
19,400.00	9,060.00	8,252.55	7,765.25	215.13	29.24	1.37	884.66	8,422.44	2,223.13	2,140.78	82.34	26.998	
19,500.32	9,060.00	8,253.91	7,765.25	217.16	29.25	1.43	883.31	8,422.48	2,307.90	2,225.93	81.97	28.157	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.07	1,576.15	6,866.20	7,045.13					
100.00	100.00	21.35	21.35	0.52	5.03	77.07	1,576.17	6,866.21	7,044.81	7,039.26	5.54	1,270.988		
200.00	200.00	91.59	91.59	0.70	5.03	77.07	1,576.54	6,866.37	7,045.15	7,039.42	5.73	1,229.833		
300.00	300.00	209.93	209.93	0.99	5.05	77.06	1,577.41	6,866.73	7,045.61	7,039.57	6.04	1,166.700		
400.00	400.00	288.02	288.01	1.31	5.09	77.06	1,578.29	6,866.91	7,046.08	7,039.68	6.40	1,101.605		
500.00	500.00	411.74	411.71	1.65	5.17	77.04	1,580.34	6,867.03	7,046.56	7,039.74	6.82	1,033.290		
600.00	600.00	509.89	509.86	1.99	5.27	77.03	1,581.66	6,867.00	7,046.83	7,039.57	7.26	971.090		
700.00	700.00	585.16	585.11	2.34	5.35	77.02	1,582.68	6,867.13	7,047.30	7,039.61	7.69	916.403		
800.00	800.00	700.14	700.08	2.69	5.50	77.01	1,584.76	6,867.34	7,047.89	7,039.70	8.19	860.123		
900.00	900.00	801.34	801.26	3.04	5.66	76.99	1,586.57	6,867.36	7,048.31	7,039.61	8.70	809.979		
1,000.00	1,000.00	871.04	870.95	3.40	5.78	76.98	1,587.76	6,867.54	7,048.94	7,039.77	9.17	768.470		
1,100.00	1,100.00	1,052.16	1,052.03	3.75	6.12	76.95	1,591.23	6,867.46	7,049.43	7,039.56	9.87	714.413		
1,200.00	1,200.00	1,210.09	1,209.93	4.11	6.45	76.93	1,593.64	6,865.70	7,048.68	7,038.13	10.55	667.862		
1,300.00	1,300.00	1,317.87	1,317.70	4.46	6.69	76.92	1,594.82	6,864.09	7,047.47	7,036.32	11.15	631.954		
1,400.00	1,400.00	1,400.00	1,399.82	4.82	6.88	76.91	1,595.42	6,863.02	7,046.36	7,034.66	11.70	602.226		
1,500.00	1,500.00	1,532.83	1,532.62	5.18	7.21	76.90	1,596.59	6,861.04	7,045.10	7,032.72	12.38	569.018		
1,600.00	1,600.00	1,635.46	1,635.23	5.53	7.47	76.89	1,597.85	6,859.17	7,043.60	7,030.60	13.00	541.825		
1,700.00	1,700.00	1,700.00	1,768.10	5.89	7.64	76.87	1,599.34	6,856.49	7,041.90	7,028.37	13.52	520.661		
1,800.00	1,800.00	1,870.37	1,870.08	6.25	8.10	76.86	1,600.02	6,854.07	7,039.74	7,025.40	14.34	490.921		
1,900.00	1,900.00	1,900.00	1,982.53	6.61	8.18	76.85	1,600.55	6,851.54	7,037.65	7,022.87	14.78	476.223		
2,000.00	2,000.00	2,058.11	2,057.77	6.96	8.62	76.85	1,600.77	6,849.80	7,035.52	7,019.94	15.58	451.629		
2,100.00	2,100.00	2,149.88	2,149.52	7.32	8.88	76.84	1,601.01	6,848.33	7,033.99	7,017.79	16.20	434.257		
2,200.00	2,200.00	2,248.41	2,248.04	7.68	9.17	76.84	1,600.90	6,846.43	7,032.09	7,015.25	16.84	417.563		
2,300.00	2,300.00	2,310.89	2,310.51	8.04	9.35	76.84	1,601.12	6,845.49	7,030.70	7,013.31	17.38	404.470		
2,350.00	2,350.00	2,347.32	2,346.93	8.22	9.46	76.83	1,601.26	6,845.07	7,030.18	7,012.51	17.67	397.880		
2,400.00	2,400.00	2,383.75	2,383.37	8.39	9.57	92.88	1,601.33	6,844.73	7,029.76	7,011.81	17.96	391.502		
2,500.00	2,499.98	2,493.43	2,493.04	8.75	9.90	92.90	1,601.36	6,843.86	7,029.09	7,010.45	18.64	377.097		
2,600.00	2,599.92	2,651.85	2,651.44	9.11	10.38	92.95	1,601.11	6,841.63	7,027.80	7,008.33	19.47	360.871		
2,700.00	2,699.78	2,759.98	2,759.55	9.47	10.71	93.01	1,600.64	6,839.76	7,026.29	7,006.13	20.16	348.493		
2,800.00	2,799.54	2,854.69	2,854.25	9.82	11.00	93.08	1,600.29	6,838.05	7,024.82	7,004.01	20.81	337.558		
2,900.00	2,899.16	2,929.56	2,929.11	10.18	11.24	93.15	1,600.03	6,836.84	7,023.65	7,002.25	21.40	328.207		
3,000.00	2,998.61	3,000.00	2,999.54	10.54	11.46	93.21	1,599.86	6,836.08	7,023.09	7,001.11	21.98	319.570		
3,100.00	3,097.86	3,115.07	3,114.61	10.89	11.82	93.33	1,599.77	6,834.91	7,022.78	7,000.09	22.69	309.447		
3,200.00	3,196.89	3,240.37	3,239.89	11.25	12.22	93.47	1,599.88	6,832.98	7,022.11	6,998.66	23.45	299.477		
3,295.74	3,291.45	3,327.20	3,326.71	11.59	12.50	93.59	1,599.75	6,831.60	7,021.51	6,997.44	24.07	291.748		
3,300.00	3,295.65	3,330.48	3,330.00	11.61	12.51	93.59	1,599.74	6,831.55	7,021.49	6,997.40	24.09	291.435		
3,400.00	3,394.29	3,410.73	3,410.24	11.97	12.77	93.70	1,599.55	6,830.51	7,021.20	6,996.49	24.71	284.160		
3,500.00	3,492.94	6,337.07	4,971.01	12.33	28.52	108.82	-9.63	6,814.68	7,019.21	6,979.15	40.06	175.218		
3,600.00	3,591.58	6,333.51	4,970.90	12.69	28.47	108.79	-6.07	6,814.76	7,002.84	6,962.38	40.47	173.048		
3,700.00	3,690.22	6,329.93	4,970.79	13.05	28.43	108.76	-2.50	6,814.86	6,987.86	6,946.99	40.87	170.971		
3,800.00	3,788.86	6,326.34	4,970.68	13.41	28.39	108.73	1.08	6,814.95	6,974.27	6,933.00	41.27	168.985		
3,900.00	3,887.50	6,322.74	4,970.57	13.77	28.35	108.70	4.68	6,815.06	6,962.09	6,920.42	41.67	167.089		
4,000.00	3,986.14	6,319.12	4,970.47	14.14	28.30	108.67	8.30	6,815.16	6,951.32	6,909.26	42.06	165.280		
4,100.00	4,084.78	6,315.49	4,970.36	14.50	28.26	108.64	11.93	6,815.28	6,941.96	6,899.52	42.44	163.558		
4,200.00	4,183.42	6,311.84	4,970.26	14.87	28.22	108.61	15.57	6,815.39	6,934.03	6,891.20	42.82	161.921		
4,300.00	4,282.06	6,280.00	4,969.39	15.24	27.84	108.35	47.38	6,816.62	6,927.72	6,884.86	42.87	161.610		
4,400.00	4,380.70	6,280.00	4,969.39	15.60	27.84	108.35	47.38	6,816.62	6,922.60	6,879.32	43.28	159.955		
4,500.00	4,479.34	6,280.00	4,969.39	15.97	27.84	108.35	47.38	6,816.62	6,918.92	6,875.24	43.68	158.388		
4,600.00	4,577.98	6,280.00	4,969.39	16.34	27.84	108.35	47.38	6,816.62	6,916.68	6,872.60	44.08	156.904		
4,700.00	4,676.62	6,280.00	4,969.39	16.71	27.84	108.35	47.38	6,816.62	6,915.89	6,871.42	44.47	155.503		
4,704.73	4,681.29	6,280.00	4,969.39	16.73	27.84	108.35	47.38	6,816.62	6,915.89	6,871.40	44.49	155.439		
4,800.00	4,775.27	6,280.00	4,969.39	17.08	27.84	108.35	47.38	6,816.62	6,916.55	6,871.69	44.86	154.182		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,280.00	4,969.39	17.45	27.84	108.35	47.38	6,816.62	6,918.65	6,873.41	45.24	152.940		
5,000.00	4,972.55	6,280.00	4,969.39	17.82	27.84	108.35	47.38	6,816.62	6,922.19	6,876.58	45.61	151.774		
5,100.00	5,071.19	6,274.46	4,969.26	18.19	27.77	108.30	52.91	6,816.86	6,927.17	6,881.27	45.91	150.891		
5,200.00	5,169.83	6,261.70	4,968.95	18.56	27.63	108.20	65.65	6,817.43	6,933.58	6,887.46	46.12	150.345		
5,300.00	5,268.47	5,955.68	4,963.82	18.93	24.17	105.69	371.50	6,824.31	6,940.83	6,897.79	43.04	161.273		
5,400.00	5,367.11	5,948.42	4,963.66	19.31	24.09	105.63	378.76	6,824.32	6,949.46	6,906.16	43.30	160.486		
5,500.00	5,465.75	5,941.18	4,963.49	19.68	24.02	105.57	386.00	6,824.35	6,959.50	6,915.94	43.56	159.768		
5,600.00	5,564.39	5,933.95	4,963.33	20.05	23.94	105.51	393.23	6,824.38	6,970.95	6,927.14	43.81	159.116		
5,700.00	5,663.03	5,926.73	4,963.16	20.42	23.86	105.45	400.45	6,824.42	6,983.80	6,939.75	44.05	158.530		
5,800.00	5,761.67	5,919.53	4,963.00	20.80	23.78	105.39	407.65	6,824.46	6,998.04	6,953.75	44.29	158.007		
5,900.00	5,860.31	5,901.00	4,962.57	21.17	23.58	105.24	426.17	6,824.61	7,013.68	6,969.29	44.40	157.979		
6,000.00	5,958.96	5,901.00	4,962.57	21.54	23.58	105.24	426.17	6,824.61	7,030.66	6,985.97	44.69	157.306		
6,100.00	6,057.60	5,895.76	4,962.45	21.92	23.53	105.20	431.40	6,824.65	7,049.02	7,004.09	44.93	156.886		
6,200.00	6,156.24	5,883.19	4,962.16	22.29	23.40	105.09	443.97	6,824.77	7,068.73	7,023.64	45.08	156.789		
6,300.00	6,254.88	5,870.53	4,961.88	22.67	23.26	104.99	456.63	6,824.89	7,089.77	7,044.54	45.23	156.748		
6,400.00	6,353.52	5,857.78	4,961.60	23.04	23.13	104.88	469.37	6,825.01	7,112.12	7,066.75	45.37	156.765		
6,500.00	6,452.16	5,845.00	4,959.09	23.42	22.98	104.77	482.11	6,825.13	7,135.74	7,083.74	45.50	156.782		
6,600.00	6,550.80	5,832.24	4,956.12	23.79	22.83	104.66	494.85	6,824.44	7,160.49	7,116.41	44.08	162.428		
6,700.00	6,649.44	5,819.48	4,953.78	24.17	22.68	104.55	507.59	6,824.30	7,186.46	7,142.20	44.26	162.372		
6,800.00	6,748.08	5,806.72	4,951.44	24.54	22.53	104.44	520.33	6,824.17	7,213.71	7,169.28	44.43	162.368		
6,900.00	6,846.72	5,793.96	4,949.10	24.92	22.38	104.33	533.07	6,824.04	7,242.22	7,197.63	44.59	162.415		
7,000.00	6,945.36	5,781.20	4,946.76	25.29	22.23	104.22	545.81	6,823.92	7,271.98	7,227.23	44.75	162.513		
7,100.00	7,044.00	5,768.44	4,944.42	25.67	22.08	104.11	558.55	6,823.80	7,302.98	7,258.08	44.90	162.659		
7,200.00	7,142.64	5,755.68	4,942.08	26.04	21.93	104.00	571.29	6,823.69	7,335.19	7,290.15	45.04	162.852		
7,300.00	7,241.28	5,742.92	4,939.74	26.42	21.78	103.89	584.03	6,823.58	7,368.62	7,323.43	45.18	163.080		
7,400.00	7,339.92	5,730.16	4,937.40	26.79	21.63	103.78	596.77	6,823.44	7,403.22	7,357.92	45.30	163.422		
7,500.00	7,438.56	5,717.40	4,935.06	27.17	21.48	103.67	609.51	6,823.30	7,439.00	7,393.58	45.41	163.811		
7,571.77	7,509.37	5,699.84	4,932.56	27.44	21.33	103.56	622.25	6,823.21	7,465.38	7,419.89	45.49	164.118		
7,600.00	7,537.23	5,587.34	4,952.44	27.55	20.48	102.83	739.62	6,823.17	7,475.90	7,430.38	45.52	164.243		
7,700.00	7,636.18	5,578.33	4,952.08	27.92	20.40	103.35	748.64	6,823.06	7,513.54	7,467.91	45.63	164.670		
7,800.00	7,735.48	5,571.49	4,951.81	28.29	20.34	103.90	755.46	6,822.98	7,551.74	7,505.99	45.75	165.073		
7,900.00	7,835.05	5,566.90	4,951.63	28.65	20.30	104.47	760.05	6,822.93	7,590.49	7,544.61	45.88	165.449		
8,000.00	7,934.83	5,564.59	4,951.54	29.01	20.28	105.07	762.36	6,822.90	7,629.75	7,583.74	46.02	165.796		
8,100.00	8,034.74	5,564.61	4,951.54	29.36	20.28	105.70	762.34	6,822.90	7,669.50	7,623.33	46.17	166.113		
8,202.27	8,137.00	5,567.11	4,951.64	29.72	20.30	90.33	759.84	6,822.93	7,710.60	7,664.26	46.34	166.401		
8,300.00	8,234.73	5,570.73	4,951.78	30.06	20.34	90.36	756.22	6,822.97	7,750.61	7,704.11	46.50	166.674		
8,400.00	8,334.73	5,574.49	4,951.93	30.41	20.37	90.39	752.47	6,823.02	7,792.60	7,745.93	46.67	166.985		
8,500.00	8,434.73	5,578.31	4,952.08	30.75	20.40	90.42	748.65	6,823.06	7,835.64	7,788.81	46.83	167.327		
8,552.31	8,487.04	5,580.33	4,952.16	30.94	20.42	90.43	746.63	6,823.08	7,858.56	7,811.65	46.91	167.517		
8,600.00	8,534.68	5,582.19	4,952.24	31.10	20.44	0.76	744.77	6,823.11	7,877.91	7,830.93	46.98	167.687		
8,650.00	8,584.26	5,584.17	4,952.31	31.26	20.46	0.75	742.79	6,823.13	7,894.50	7,847.46	47.04	167.819		
8,700.00	8,633.10	5,586.17	4,952.40	31.43	20.47	0.75	740.80	6,823.16	7,907.21	7,860.11	47.10	167.887		
8,750.00	8,680.83	5,588.16	4,952.48	31.58	20.49	0.75	738.81	6,823.18	7,915.96	7,868.81	47.15	167.892		
8,800.00	8,727.09	5,590.14	4,952.56	31.74	20.51	0.76	736.83	6,823.21	7,920.70	7,873.51	47.19	167.840		
8,850.00	8,771.52	5,592.09	4,952.64	31.89	20.53	0.77	734.89	6,823.23	7,921.40	7,874.17	47.23	167.732		
8,900.00	8,813.78	5,593.99	4,952.71	32.04	20.54	0.79	732.99	6,823.25	7,918.06	7,870.80	47.25	167.571		
8,950.00	8,853.56	5,595.83	4,952.79	32.18	20.56	0.82	731.15	6,823.28	7,910.69	7,863.42	47.27	167.359		
9,000.00	8,890.55	5,597.59	4,952.86	32.32	20.58	0.85	729.39	6,823.30	7,899.34	7,852.07	47.27	167.098		
9,050.00	8,924.46	5,599.26	4,952.93	32.47	20.59	0.88	727.72	6,823.32	7,884.08	7,836.81	47.27	166.789		
9,100.00	8,955.05	5,600.83	4,953.00	32.63	20.60	0.93	726.15	6,823.34	7,865.01	7,817.75	47.26	166.434		
9,150.00	8,982.08	5,602.27	4,953.06	32.79	20.62	0.98	724.71	6,823.36	7,842.24	7,795.01	47.23	166.032		
9,200.00	9,005.34	5,603.58	4,953.11	32.97	20.63	1.05	723.40	6,823.38	7,815.91	7,768.71	47.20	165.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,604.75	4,953.16	33.17	20.64	1.13	722.24	6,823.39	7,786.20	7,739.03	47.16	165.093		
9,300.00	9,039.87	5,605.75	4,953.20	33.38	20.65	1.23	721.23	6,823.41	7,753.28	7,706.16	47.12	164.556		
9,350.00	9,050.89	5,606.59	4,953.24	33.62	20.66	1.36	720.39	6,823.42	7,717.37	7,670.30	47.06	163.976		
9,400.00	9,057.61	5,607.26	4,953.26	33.87	20.66	1.52	719.73	6,823.42	7,678.70	7,631.70	47.01	163.351		
9,452.31	9,060.00	5,607.76	4,953.28	34.15	20.67	1.74	719.23	6,823.43	7,635.58	7,588.63	46.94	162.651		
9,500.00	9,060.00	5,608.12	4,953.30	34.42	20.67	1.74	718.87	6,823.44	7,595.15	7,548.26	46.88	162.001		
9,600.00	9,060.00	5,608.88	4,953.33	35.09	20.68	1.76	718.11	6,823.45	7,510.65	7,463.90	46.75	160.658		
9,700.00	9,060.00	5,609.65	4,953.36	35.86	20.68	1.77	717.34	6,823.46	7,426.53	7,379.91	46.62	159.303		
9,800.00	9,060.00	5,610.43	4,953.40	36.72	20.69	1.78	716.56	6,823.47	7,342.81	7,296.32	46.49	157.935		
9,900.00	9,060.00	5,611.21	4,953.43	37.69	20.70	1.79	715.78	6,823.48	7,259.51	7,213.14	46.37	156.554		
10,000.00	9,060.00	5,612.01	4,953.46	38.73	20.70	1.80	714.99	6,823.49	7,176.63	7,130.38	46.25	155.157		
10,100.00	9,060.00	5,612.80	4,953.50	39.86	20.71	1.81	714.19	6,823.50	7,094.20	7,048.05	46.14	153.746		
10,140.22	9,060.00	5,613.13	4,953.51	40.33	20.71	1.82	713.87	6,823.50	7,061.16	7,015.06	46.10	153.173		
10,200.00	9,060.00	5,614.28	4,953.56	41.05	20.72	0.13	712.71	6,823.52	7,012.21	6,966.17	46.04	152.301		
10,300.00	9,060.00	5,619.23	4,953.77	42.31	20.77	-2.62	707.77	6,823.59	6,930.69	6,884.72	45.97	150.756		
10,400.00	9,060.00	5,628.00	4,954.15	43.64	20.85	-5.24	699.01	6,823.71	6,849.75	6,803.82	45.94	149.105		
10,507.23	9,060.00	5,633.36	4,954.37	45.11	20.90	-8.03	693.66	6,823.79	6,763.75	6,717.86	45.89	147.393		
10,600.00	9,060.00	5,641.44	4,954.72	46.43	20.98	-5.49	685.58	6,823.91	6,689.82	6,643.94	45.88	145.819		
10,700.00	9,060.00	5,647.80	4,954.99	47.91	21.04	-2.80	679.23	6,824.00	6,610.46	6,564.61	45.85	144.163		
10,800.00	9,060.00	5,651.67	4,955.15	49.42	21.08	-0.18	675.36	6,824.06	6,531.56	6,485.74	45.82	142.551		
10,900.00	9,060.00	5,653.01	4,955.21	50.97	21.09	2.36	674.03	6,824.08	6,453.24	6,407.47	45.77	140.981		
11,000.00	9,060.00	5,651.79	4,955.16	52.55	21.08	4.80	675.25	6,824.07	6,375.61	6,329.89	45.72	139.453		
11,100.00	9,060.00	5,647.97	4,954.99	54.14	21.04	7.13	679.06	6,824.01	6,298.80	6,253.15	45.66	137.963		
11,207.23	9,060.00	5,640.96	4,954.70	55.87	20.98	9.50	686.06	6,823.90	6,217.48	6,171.90	45.58	136.402		
11,300.00	9,060.00	5,634.66	4,954.43	57.39	20.92	7.33	692.35	6,823.81	6,147.78	6,102.25	45.53	135.025		
11,400.00	9,060.00	5,630.33	4,954.25	59.06	20.88	5.03	696.68	6,823.74	6,073.04	6,027.54	45.51	133.450		
11,506.63	9,060.00	5,634.50	4,954.44	60.88	20.90	2.73	692.51	6,823.80	5,993.93	5,948.37	45.56	131.568		
11,600.00	9,060.00	5,634.15	4,954.42	62.49	20.90	2.73	692.87	6,823.79	5,925.30	5,879.71	45.59	129.965		
11,700.00	9,060.00	5,633.77	4,954.40	64.24	20.90	2.72	693.25	6,823.79	5,852.55	5,806.91	45.64	128.223		
11,800.00	9,060.00	5,633.38	4,954.39	66.01	20.89	2.72	693.63	6,823.78	5,780.62	5,734.91	45.71	126.456		
11,900.00	9,060.00	5,632.99	4,954.37	67.79	20.89	2.71	694.02	6,823.78	5,709.54	5,663.74	45.80	124.663		
12,000.00	9,060.00	5,632.59	4,954.35	69.58	20.89	2.71	694.42	6,823.77	5,639.33	5,593.42	45.91	122.846		
12,100.00	9,060.00	5,632.20	4,954.34	71.39	20.88	2.70	694.82	6,823.77	5,570.03	5,524.00	46.03	121.005		
12,200.00	9,060.00	5,631.79	4,954.32	73.21	20.88	2.70	695.22	6,823.76	5,501.68	5,455.50	46.18	119.143		
12,300.00	9,060.00	5,631.39	4,954.30	75.05	20.88	2.69	695.62	6,823.76	5,434.30	5,387.96	46.34	117.262		
12,400.00	9,060.00	5,630.98	4,954.28	76.89	20.87	2.68	696.03	6,823.75	5,367.95	5,321.42	46.53	115.362		
12,500.00	9,060.00	5,630.56	4,954.26	78.74	20.87	2.68	696.45	6,823.74	5,302.65	5,255.91	46.74	113.446		
12,600.00	9,060.00	5,630.14	4,954.25	80.61	20.87	2.67	696.87	6,823.74	5,238.44	5,191.47	46.97	111.517		
12,700.00	9,060.00	5,629.72	4,954.23	82.48	20.86	2.67	697.29	6,823.73	5,175.37	5,128.14	47.23	109.578		
12,800.00	9,060.00	5,629.29	4,954.21	84.36	20.86	2.66	697.72	6,823.73	5,113.48	5,065.97	47.51	107.632		
12,900.00	9,060.00	5,628.86	4,954.19	86.24	20.85	2.65	698.15	6,823.72	5,052.81	5,005.00	47.81	105.681		
13,000.00	9,060.00	5,628.43	4,954.17	88.14	20.85	2.65	698.58	6,823.71	4,993.41	4,945.27	48.14	103.730		
13,100.00	9,060.00	5,627.99	4,954.15	90.04	20.85	2.64	699.02	6,823.71	4,935.31	4,886.82	48.49	101.781		
13,200.00	9,060.00	5,627.54	4,954.13	91.94	20.84	2.64	699.47	6,823.70	4,878.58	4,829.71	48.86	99.839		
13,300.00	9,060.00	5,627.09	4,954.11	93.86	20.84	2.63	699.92	6,823.69	4,823.25	4,773.99	49.26	97.907		
13,400.00	9,060.00	5,626.63	4,954.09	95.77	20.83	2.62	700.37	6,823.69	4,769.38	4,719.69	49.69	95.989		
13,500.00	9,060.00	5,626.17	4,954.07	97.70	20.83	2.62	700.83	6,823.68	4,717.01	4,666.87	50.13	94.088		
13,600.00	9,060.00	5,625.71	4,954.05	99.62	20.83	2.61	701.30	6,823.68	4,666.19	4,615.59	50.60	92.209		
13,700.00	9,060.00	5,625.24	4,954.03	101.56	20.82	2.60	701.76	6,823.67	4,616.99	4,565.89	51.10	90.354		
13,800.00	9,060.00	5,624.77	4,954.01	103.49	20.82	2.60	702.24	6,823.66	4,569.44	4,517.82	51.62	88.528		
13,900.00	9,060.00	5,624.29	4,953.99	105.43	20.81	2.59	702.72	6,823.66	4,523.60	4,471.45	52.16	86.734		
14,000.00	9,060.00	5,623.80	4,953.97	107.38	20.81	2.58	703.20	6,823.65	4,479.53	4,426.81	52.72	84.974		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	5,623.31	4,953.95	109.33	20.81	2.58	703.69	6,823.64	4,437.27	4,383.97	53.30	83.253	
14,200.00	9,060.00	5,622.81	4,953.93	111.28	20.80	2.57	704.19	6,823.64	4,396.88	4,342.98	53.90	81.573	
14,300.00	9,060.00	5,622.31	4,953.90	113.23	20.80	2.56	704.69	6,823.63	4,358.42	4,303.89	54.52	79.936	
14,400.00	9,060.00	5,621.80	4,953.88	115.19	20.79	2.55	705.20	6,823.62	4,321.92	4,266.75	55.17	78.344	
14,500.00	9,060.00	5,621.29	4,953.86	117.15	20.79	2.55	705.71	6,823.61	4,287.45	4,231.62	55.83	76.800	
14,600.00	9,060.00	5,620.77	4,953.84	119.11	20.78	2.54	706.23	6,823.61	4,255.04	4,198.54	56.50	75.305	
14,700.00	9,060.00	5,620.25	4,953.82	121.08	20.78	2.53	706.75	6,823.60	4,224.76	4,167.56	57.20	73.862	
14,800.00	9,060.00	5,619.72	4,953.79	123.05	20.77	2.53	707.28	6,823.59	4,196.64	4,138.73	57.91	72.470	
14,900.00	9,060.00	5,619.18	4,953.77	125.02	20.77	2.52	707.82	6,823.59	4,170.73	4,112.10	58.63	71.131	
15,000.00	9,060.00	5,618.64	4,953.75	126.99	20.76	2.51	708.36	6,823.58	4,147.07	4,087.70	59.37	69.846	
15,100.00	9,060.00	5,618.09	4,953.72	128.97	20.76	2.50	708.91	6,823.57	4,125.70	4,065.57	60.13	68.616	
15,200.00	9,060.00	5,617.53	4,953.70	130.95	20.75	2.49	709.47	6,823.56	4,106.66	4,045.76	60.89	67.439	
15,300.00	9,060.00	5,616.97	4,953.68	132.93	20.75	2.49	710.03	6,823.55	4,089.97	4,028.29	61.67	66.318	
15,400.00	9,060.00	5,616.40	4,953.65	134.91	20.74	2.48	710.60	6,823.55	4,075.66	4,013.20	62.46	65.251	
15,500.00	9,060.00	5,615.82	4,953.63	136.89	20.74	2.47	711.17	6,823.54	4,063.77	4,000.51	63.26	64.240	
15,600.00	9,060.00	5,615.24	4,953.60	138.88	20.73	2.46	711.75	6,823.53	4,054.31	3,990.24	64.07	63.282	
15,700.00	9,060.00	5,614.65	4,953.58	140.86	20.73	2.45	712.34	6,823.52	4,047.30	3,982.42	64.88	62.380	
15,800.00	9,060.00	5,614.05	4,953.55	142.85	20.72	2.44	712.94	6,823.52	4,042.75	3,977.05	65.70	61.532	
15,900.00	9,060.00	5,613.45	4,953.53	144.84	20.72	2.44	713.54	6,823.51	4,040.67	3,974.14	66.53	60.738	
15,934.02	9,060.00	5,613.24	4,953.52	145.52	20.72	2.43	713.75	6,823.50	4,040.53	3,973.72	66.81	60.480 CC	
16,000.00	9,060.00	5,612.84	4,953.50	146.83	20.71	2.43	714.16	6,823.50	4,041.06	3,973.71	67.35	59.998 ES	
16,100.00	9,060.00	5,612.22	4,953.47	148.83	20.71	2.42	714.77	6,823.49	4,043.93	3,975.75	68.18	59.312	
16,200.00	9,060.00	5,611.59	4,953.45	150.82	20.70	2.41	715.40	6,823.48	4,049.27	3,980.27	69.01	58.681	
16,300.00	9,060.00	5,610.96	4,953.42	152.82	20.69	2.40	716.04	6,823.47	4,057.07	3,987.24	69.83	58.103	
16,400.00	9,060.00	5,610.31	4,953.39	154.81	20.69	2.39	716.68	6,823.47	4,067.31	3,996.67	70.64	57.578	
16,500.00	9,060.00	5,609.66	4,953.36	156.81	20.68	2.38	717.33	6,823.46	4,079.97	4,008.53	71.44	57.107	
16,600.00	9,060.00	5,609.00	4,953.34	158.81	20.68	2.37	717.99	6,823.45	4,095.04	4,022.81	72.24	56.689	
16,700.00	9,060.00	5,608.33	4,953.31	160.81	20.67	2.36	718.65	6,823.44	4,112.49	4,039.47	73.01	56.324	
16,800.00	9,060.00	5,607.66	4,953.28	162.81	20.67	2.35	719.33	6,823.43	4,132.28	4,058.51	73.78	56.011	
16,900.00	9,060.00	5,606.97	4,953.25	164.82	20.66	2.34	720.02	6,823.42	4,154.39	4,079.87	74.52	55.749	
17,000.00	9,060.00	5,606.28	4,953.22	166.82	20.65	2.33	720.71	6,823.41	4,178.77	4,103.53	75.24	55.537	
17,100.00	9,060.00	5,605.57	4,953.19	168.82	20.65	2.32	721.41	6,823.40	4,205.39	4,129.45	75.94	55.376	
17,200.00	9,060.00	5,604.86	4,953.16	170.83	20.64	2.31	722.13	6,823.39	4,234.21	4,157.59	76.62	55.262	
17,300.00	9,060.00	5,604.14	4,953.13	172.84	20.63	2.30	722.85	6,823.38	4,265.17	4,187.90	77.27	55.197	
17,400.00	9,060.00	5,603.40	4,953.10	174.84	20.63	2.29	723.58	6,823.37	4,298.24	4,220.35	77.90	55.178 SF	
17,500.00	9,060.00	5,602.66	4,953.07	176.85	20.62	2.28	724.32	6,823.36	4,333.37	4,254.87	78.50	55.204	
17,600.00	9,060.00	5,601.91	4,953.04	178.86	20.61	2.27	725.07	6,823.35	4,370.50	4,291.43	79.07	55.273	
17,700.00	9,060.00	5,601.15	4,953.01	180.87	20.61	2.26	725.84	6,823.34	4,409.59	4,329.97	79.62	55.386	
17,800.00	9,060.00	5,600.37	4,952.98	182.88	20.60	2.25	726.61	6,823.33	4,450.58	4,370.44	80.13	55.539	
17,900.00	9,060.00	5,599.59	4,952.94	184.89	20.59	2.24	727.39	6,823.32	4,493.42	4,412.80	80.62	55.732	
18,000.00	9,060.00	5,598.79	4,952.91	186.90	20.59	2.23	728.19	6,823.31	4,538.06	4,456.97	81.09	55.964	
18,100.00	9,060.00	5,597.99	4,952.88	188.92	20.58	2.22	728.99	6,823.30	4,584.45	4,502.93	81.53	56.233	
18,200.00	9,060.00	5,597.17	4,952.84	190.93	20.57	2.21	729.81	6,823.29	4,632.54	4,550.60	81.94	56.537	
18,300.00	9,060.00	5,596.34	4,952.81	192.94	20.56	2.19	730.64	6,823.28	4,682.26	4,599.94	82.32	56.876	
18,400.00	9,060.00	5,595.50	4,952.78	194.96	20.56	2.18	731.48	6,823.27	4,733.58	4,650.89	82.69	57.248	
18,500.00	9,060.00	5,594.64	4,952.74	196.97	20.55	2.17	732.33	6,823.26	4,786.43	4,703.41	83.02	57.652	
18,600.00	9,060.00	5,593.78	4,952.70	198.99	20.54	2.16	733.20	6,823.25	4,840.78	4,757.44	83.34	58.086	
18,700.00	9,060.00	5,592.90	4,952.67	201.00	20.53	2.14	734.08	6,823.24	4,896.56	4,812.93	83.63	58.550	
18,800.00	9,060.00	5,592.00	4,952.63	203.02	20.53	2.13	734.97	6,823.23	4,953.73	4,869.83	83.90	59.042	
18,900.00	9,060.00	5,591.10	4,952.60	205.04	20.52	2.12	735.87	6,823.22	5,012.25	4,928.10	84.15	59.561	
19,000.00	9,060.00	5,590.18	4,952.56	207.06	20.51	2.11	736.79	6,823.21	5,072.06	4,987.68	84.39	60.106	
19,100.00	9,060.00	5,589.24	4,952.52	209.07	20.50	2.09	737.73	6,823.19	5,133.13	5,048.53	84.60	60.676	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,588.30	4,952.48	211.09	20.49	2.08	738.67	6,823.18	5,195.40	5,110.60	84.80	61.270	
19,300.00	9,060.00	5,587.33	4,952.44	213.11	20.48	2.07	739.64	6,823.17	5,258.83	5,173.86	84.98	61.886	
19,400.00	9,060.00	5,586.36	4,952.40	215.13	20.48	2.05	740.61	6,823.16	5,323.39	5,238.25	85.14	62.525	
19,500.32	9,060.00	5,585.36	4,952.36	217.16	20.47	2.04	741.61	6,823.15	5,389.24	5,303.95	85.29	63.187	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,910.99					
100.00	100.00	28.73	28.73	0.52	5.03	77.36	1,731.24	7,718.93	7,910.69	7,905.15	5.54	1,427.192		
200.00	200.00	128.36	128.36	0.70	5.03	77.36	1,731.29	7,718.99	7,910.77	7,905.04	5.73	1,380.028		
300.00	300.00	254.70	254.70	0.99	5.07	77.36	1,731.70	7,718.73	7,910.63	7,904.58	6.06	1,306.040		
400.00	400.00	419.80	419.80	1.31	5.18	77.35	1,731.62	7,717.69	7,910.06	7,903.57	6.49	1,219.440		
500.00	500.00	601.22	601.17	1.65	5.37	77.37	1,729.12	7,714.96	7,908.18	7,901.16	7.01	1,127.749		
600.00	600.00	667.79	667.73	1.99	5.46	77.37	1,728.08	7,713.88	7,906.24	7,898.80	7.44	1,062.161		
700.00	700.00	745.22	745.15	2.34	5.57	77.38	1,727.35	7,712.82	7,904.69	7,896.79	7.90	1,000.152		
800.00	800.00	851.52	851.44	2.69	5.74	77.38	1,726.73	7,711.42	7,903.29	7,894.87	8.42	938.147		
900.00	900.00	985.58	985.47	3.04	5.98	77.38	1,726.31	7,709.12	7,901.55	7,892.53	9.02	876.288		
1,000.00	1,000.00	1,063.07	1,062.95	3.40	6.13	77.38	1,726.22	7,707.67	7,899.70	7,890.18	9.52	829.591		
1,100.00	1,100.00	1,100.00	1,256.38	3.75	6.21	77.38	1,725.12	7,703.93	7,897.93	7,887.98	9.95	793.766		
1,200.00	1,200.00	1,400.00	1,399.74	4.11	6.89	77.39	1,721.94	7,699.73	7,894.48	7,883.51	10.98	719.311		
1,300.00	1,300.00	1,472.97	1,472.65	4.46	7.07	77.41	1,719.75	7,697.82	7,891.27	7,879.76	11.51	685.581		
1,400.00	1,400.00	1,548.20	1,547.83	4.82	7.27	77.42	1,717.54	7,696.08	7,888.37	7,876.31	12.06	654.286		
1,500.00	1,500.00	1,649.59	1,649.15	5.18	7.53	77.44	1,714.61	7,693.99	7,885.74	7,873.06	12.68	622.134		
1,600.00	1,600.00	1,750.48	1,749.97	5.53	7.81	77.45	1,711.75	7,691.65	7,882.85	7,869.55	13.30	592.666		
1,700.00	1,700.00	1,844.03	1,843.46	5.89	8.07	77.47	1,709.18	7,689.69	7,880.20	7,866.29	13.91	566.389		
1,800.00	1,800.00	1,978.72	1,978.06	6.25	8.45	77.49	1,705.17	7,686.56	7,877.29	7,862.64	14.65	537.835		
1,900.00	1,900.00	2,132.92	2,132.12	6.61	8.91	77.52	1,700.43	7,681.98	7,873.67	7,858.23	15.44	509.790		
2,000.00	2,000.00	2,200.00	2,199.14	6.96	9.11	77.53	1,698.51	7,679.84	7,869.98	7,853.98	16.00	491.872		
2,100.00	2,100.00	2,273.94	2,273.02	7.32	9.33	77.54	1,696.41	7,677.77	7,866.66	7,850.08	16.58	474.545		
2,200.00	2,200.00	2,368.43	2,367.45	7.68	9.62	77.56	1,693.60	7,675.54	7,863.71	7,846.49	17.22	456.715		
2,300.00	2,300.00	2,455.12	2,454.07	8.04	9.89	77.57	1,691.00	7,673.47	7,860.74	7,842.90	17.84	440.658		
2,350.00	2,350.00	2,492.82	2,491.74	8.22	10.01	77.58	1,689.92	7,672.65	7,859.36	7,841.23	18.13	433.432		
2,400.00	2,400.00	2,541.86	2,540.75	8.39	10.16	93.64	1,688.55	7,671.61	7,858.05	7,839.59	18.46	425.643		
2,500.00	2,499.98	2,642.86	2,641.69	8.75	10.47	93.70	1,685.76	7,669.46	7,855.48	7,836.35	19.13	410.649		
2,600.00	2,599.92	2,732.75	2,731.53	9.11	10.76	93.76	1,683.39	7,667.54	7,853.06	7,833.30	19.77	397.317		
2,700.00	2,699.78	2,810.48	2,809.22	9.47	10.95	93.82	1,681.54	7,666.03	7,850.99	7,830.68	20.31	386.561		
2,800.00	2,799.54	2,887.17	2,885.89	9.82	11.07	93.88	1,680.39	7,664.61	7,849.34	7,828.55	20.79	377.592		
2,900.00	2,899.16	3,304.35	3,302.53	10.18	11.25	94.11	1,686.85	7,648.16	7,847.88	7,826.59	21.29	368.562		
3,000.00	2,998.61	3,403.47	3,401.29	10.54	11.30	94.19	1,691.55	7,641.07	7,842.61	7,820.91	21.71	361.284		
3,100.00	3,097.86	3,504.25	3,501.69	10.89	11.37	94.29	1,696.29	7,633.85	7,837.45	7,815.32	22.13	354.087		
3,200.00	3,196.89	3,602.27	3,599.35	11.25	11.45	94.39	1,700.92	7,626.83	7,832.44	7,809.86	22.57	347.015		
3,295.74	3,291.45	3,696.78	3,693.52	11.59	11.54	94.51	1,705.40	7,620.08	7,827.78	7,804.78	23.00	340.335		
3,300.00	3,295.65	3,701.14	3,697.85	11.61	11.54	94.51	1,705.61	7,619.76	7,827.58	7,804.56	23.02	340.037		
3,400.00	3,394.29	3,802.48	3,798.81	11.97	11.65	94.59	1,710.55	7,612.47	7,822.78	7,799.30	23.48	333.122		
3,500.00	3,492.94	3,899.43	3,895.39	12.33	11.75	94.66	1,715.32	7,605.49	7,817.99	7,794.04	23.95	326.374		
3,600.00	3,591.58	3,961.00	3,956.73	12.69	11.83	94.70	1,718.30	7,601.09	7,813.35	7,788.96	24.39	320.299		
3,700.00	3,690.22	4,023.97	4,019.49	13.05	11.91	94.75	1,721.46	7,596.88	7,809.19	7,784.35	24.84	314.355		
3,800.00	3,788.86	4,183.09	4,178.14	13.41	12.12	94.88	1,728.09	7,586.94	7,805.35	7,779.93	25.42	307.061		
3,900.00	3,887.50	4,246.00	4,240.89	13.77	12.22	94.94	1,729.88	7,582.78	7,800.88	7,775.00	25.88	301.420		
4,000.00	3,986.14	4,293.32	4,288.10	14.14	12.29	94.98	1,731.32	7,579.90	7,797.04	7,770.72	26.32	296.194		
4,100.00	4,084.78	4,340.00	4,334.69	14.50	12.36	95.02	1,732.98	7,577.59	7,794.13	7,767.37	26.77	291.186		
4,200.00	4,183.42	4,390.30	4,384.91	14.87	12.44	95.06	1,734.93	7,575.40	7,791.90	7,764.68	27.22	286.269		
4,300.00	4,282.06	4,481.44	4,475.89	15.24	12.59	95.14	1,738.54	7,571.53	7,789.94	7,762.20	27.74	280.830		
4,400.00	4,380.70	4,577.13	4,571.43	15.60	12.76	95.23	1,742.24	7,567.54	7,788.04	7,759.77	28.27	275.446		
4,500.00	4,479.34	4,673.19	4,667.34	15.97	12.93	95.31	1,745.96	7,563.58	7,786.22	7,757.40	28.82	270.186		
4,600.00	4,577.98	4,766.30	4,760.31	16.34	13.11	95.39	1,749.45	7,559.80	7,784.45	7,755.09	29.36	265.106		
4,700.00	4,676.62	4,859.83	4,853.70	16.71	13.29	95.47	1,752.90	7,556.13	7,782.81	7,752.89	29.92	260.152		
4,800.00	4,775.27	4,962.05	4,955.78	17.08	13.49	95.57	1,756.66	7,552.12	7,781.20	7,750.71	30.49	255.177		
4,900.00	4,873.91	5,052.45	5,046.05	17.45	13.68	95.65	1,759.92	7,548.58	7,779.60	7,748.55	31.05	250.527		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,266.22	5,259.39	17.82	14.15	95.83	1,768.85	7,538.66	7,777.46	7,745.57	31.88	243.925		
5,100.00	5,071.19	5,359.85	5,352.77	18.19	14.36	95.90	1,773.26	7,533.49	7,774.52	7,742.05	32.47	239.427		
5,200.00	5,169.83	5,462.85	5,455.52	18.56	14.61	95.99	1,777.86	7,527.93	7,771.68	7,738.59	33.08	234.905		
5,300.00	5,268.47	5,541.85	5,534.34	18.93	14.80	96.05	1,781.10	7,523.76	7,768.90	7,735.26	33.65	230.895		
5,400.00	5,367.11	5,627.21	5,619.54	19.31	15.01	96.13	1,784.28	7,519.55	7,766.42	7,732.19	34.23	226.907		
5,500.00	5,465.75	5,723.64	5,715.78	19.68	15.25	96.21	1,787.88	7,514.88	7,764.04	7,729.21	34.84	222.861		
5,600.00	5,564.39	5,809.39	5,801.39	20.05	15.47	96.29	1,790.89	7,510.82	7,761.75	7,726.32	35.43	219.093		
5,700.00	5,663.03	6,096.79	6,088.07	20.42	16.23	96.54	1,800.82	7,493.44	7,757.79	7,721.27	36.52	212.407		
5,800.00	5,761.67	6,147.98	6,139.09	20.80	16.37	96.58	1,803.03	7,489.94	7,753.59	7,716.55	37.04	209.328		
5,900.00	5,860.31	6,256.43	6,247.19	21.17	16.67	96.67	1,807.82	7,482.77	7,749.66	7,711.95	37.71	205.527		
6,000.00	5,958.96	6,374.08	6,364.49	21.54	17.01	96.77	1,812.24	7,474.74	7,745.42	7,707.02	38.40	201.704		
6,100.00	6,057.60	6,420.00	6,410.26	21.92	17.14	96.81	1,814.20	7,471.57	7,741.39	7,702.48	38.91	198.965		
6,200.00	6,156.24	6,479.11	6,469.18	22.29	17.31	96.85	1,817.09	7,467.80	7,737.93	7,698.47	39.45	196.131		
6,300.00	6,254.88	6,514.00	6,503.96	22.67	17.41	96.88	1,818.98	7,465.86	7,735.31	7,695.38	39.93	193.717		
6,400.00	6,353.52	6,580.56	6,570.35	23.04	17.60	96.93	1,822.47	7,462.60	7,733.30	7,692.81	40.50	190.967		
6,500.00	6,452.16	8,661.63	7,754.67	23.42	25.59	106.49	711.53	7,437.40	7,728.12	7,679.58	48.53	159.239		
6,600.00	6,550.80	8,643.00	7,754.88	23.79	25.43	106.35	730.15	7,437.05	7,715.45	7,666.65	48.80	158.098		
6,700.00	6,649.44	8,643.00	7,754.88	24.17	25.43	106.35	730.15	7,437.05	7,704.02	7,654.79	49.23	156.484		
6,800.00	6,748.08	8,630.50	7,755.02	24.54	25.33	106.26	742.66	7,436.84	7,693.86	7,644.31	49.55	155.265		
6,900.00	6,846.72	8,620.13	7,755.08	24.92	25.25	106.18	753.02	7,436.68	7,684.97	7,635.08	49.89	154.048		
7,000.00	6,945.36	8,610.25	7,755.10	25.29	25.16	106.11	762.90	7,436.54	7,677.34	7,627.12	50.22	152.877		
7,100.00	7,044.00	8,600.84	7,755.09	25.67	25.09	106.04	772.31	7,436.42	7,670.99	7,620.44	50.55	151.751		
7,200.00	7,142.65	8,591.85	7,755.04	26.04	25.01	105.97	781.30	7,436.31	7,665.93	7,615.05	50.88	150.671		
7,300.00	7,241.29	8,583.26	7,754.97	26.42	24.95	105.91	789.89	7,436.22	7,662.14	7,610.94	51.20	149.637		
7,400.00	7,339.93	8,575.05	7,754.87	26.79	24.88	105.85	798.10	7,436.14	7,659.65	7,608.12	51.53	148.649		
7,500.00	7,438.57	8,567.18	7,754.75	27.17	24.81	105.79	805.96	7,436.08	7,658.44	7,606.59	51.85	147.708		
7,545.42	7,483.37	8,549.00	7,754.38	27.34	24.67	105.66	824.14	7,435.95	7,658.35	7,606.48	51.87	147.644		
7,571.77	7,509.37	8,549.00	7,754.38	27.44	24.67	105.66	824.14	7,435.95	7,658.39	7,606.42	51.97	147.361		
7,600.00	7,537.23	8,549.00	7,754.38	27.55	24.67	105.66	824.14	7,435.95	7,658.51	7,606.44	52.08	147.063		
7,700.00	7,636.18	8,549.00	7,754.38	27.92	24.67	105.67	824.14	7,435.95	7,659.32	7,606.88	52.45	146.043		
7,800.00	7,735.48	8,530.57	7,753.96	28.29	24.53	105.55	842.57	7,435.83	7,660.73	7,608.07	52.66	145.471		
7,900.00	7,835.05	8,446.52	7,752.29	28.65	23.90	104.95	926.59	7,434.71	7,662.66	7,610.30	52.37	146.330		
8,000.00	7,934.83	8,440.22	7,752.18	29.01	23.85	104.94	932.88	7,434.59	7,665.21	7,612.55	52.66	145.569		
8,100.00	8,034.74	8,437.29	7,752.13	29.36	23.83	104.97	935.82	7,434.54	7,668.38	7,615.42	52.96	144.794		
8,202.27	8,137.00	8,437.83	7,752.14	29.72	23.84	88.99	935.27	7,434.55	7,672.27	7,618.98	53.28	143.989		
8,300.00	8,234.73	8,440.11	7,752.18	30.06	23.85	89.01	933.00	7,434.59	7,676.92	7,623.32	53.60	143.237		
8,400.00	8,334.73	8,442.47	7,752.22	30.41	23.87	89.02	930.64	7,434.64	7,682.96	7,629.05	53.91	142.517		
8,500.00	8,434.73	8,444.86	7,752.26	30.75	23.88	89.04	928.25	7,434.68	7,690.29	7,636.08	54.22	141.845		
8,552.31	8,487.04	8,446.12	7,752.28	30.94	23.89	89.05	926.99	7,434.70	7,694.64	7,640.27	54.37	141.512		
8,600.00	8,534.68	8,447.31	7,752.30	31.10	23.90	-0.60	925.80	7,434.72	7,696.94	7,642.43	54.51	141.197		
8,650.00	8,584.26	8,448.63	7,752.32	31.26	23.91	-0.59	924.48	7,434.75	7,695.40	7,640.75	54.65	140.817		
8,700.00	8,633.10	8,700.00	7,753.38	31.43	25.81	-0.21	872.76	7,435.39	7,689.70	7,633.04	56.66	135.708		
8,750.00	8,680.83	8,750.00	7,753.40	31.58	26.20	-0.20	871.68	7,435.40	7,680.14	7,622.98	57.15	134.379		
8,800.00	8,727.09	8,800.00	7,753.42	31.74	26.58	-0.20	870.62	7,435.41	7,666.64	7,609.00	57.63	133.024		
8,850.00	8,771.52	8,850.00	7,753.44	31.89	26.96	-0.20	869.57	7,435.42	7,649.28	7,591.18	58.10	131.648		
8,900.00	8,813.78	8,900.00	7,753.46	32.04	27.34	-0.19	868.54	7,435.43	7,628.18	7,569.62	58.56	130.255		
8,950.00	8,853.56	8,950.00	7,753.48	32.18	27.73	-0.20	867.54	7,435.45	7,603.47	7,544.45	59.01	128.846		
9,000.00	8,890.55	9,000.00	7,753.50	32.32	28.11	-0.20	866.58	7,435.46	7,575.29	7,515.84	59.45	127.426		
9,050.00	8,924.46	8,549.00	7,754.38	32.47	24.67	0.22	824.14	7,435.95	7,543.94	7,487.82	56.12	134.433		
9,100.00	8,955.05	8,549.00	7,754.38	32.63	24.67	0.23	824.14	7,435.95	7,509.38	7,453.22	56.16	133.720		
9,150.00	8,982.08	8,549.00	7,754.38	32.79	24.67	0.26	824.14	7,435.95	7,471.96	7,415.77	56.19	132.983		
9,200.00	9,005.34	8,549.00	7,754.38	32.97	24.67	0.29	824.14	7,435.95	7,431.92	7,375.71	56.21	132.222		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,250.00	9,024.65	8,549.00	7,754.38	33.17	24.67	0.34	824.14	7,435.95	7,389.53	7,333.31	56.22	131.440	
9,300.00	9,039.87	8,549.00	7,754.38	33.38	24.67	0.40	824.14	7,435.95	7,345.06	7,288.84	56.22	130.639	
9,350.00	9,050.89	8,549.00	7,754.38	33.62	24.67	0.49	824.14	7,435.95	7,298.83	7,242.61	56.22	129.821	
9,400.00	9,057.61	8,549.00	7,754.38	33.87	24.67	0.65	824.14	7,435.95	7,251.15	7,194.94	56.22	128.986	
9,452.31	9,060.00	8,549.00	7,754.38	34.15	24.67	0.99	824.14	7,435.95	7,200.09	7,143.89	56.21	128.098	
9,500.00	9,060.00	8,549.00	7,754.38	34.42	24.67	0.99	824.14	7,435.95	7,153.12	7,096.92	56.20	127.283	
9,600.00	9,060.00	8,549.00	7,754.38	35.09	24.67	0.99	824.14	7,435.95	7,054.65	6,998.47	56.18	125.582	
9,700.00	9,060.00	8,549.00	7,754.38	35.86	24.67	0.99	824.14	7,435.95	6,956.22	6,900.06	56.15	123.880	
9,800.00	9,060.00	9,800.00	7,753.67	36.72	34.27	-0.61	858.74	7,435.55	6,857.75	6,792.25	65.50	104.704	
9,900.00	9,060.00	9,900.00	7,753.68	37.69	35.04	-0.59	858.16	7,435.56	6,759.41	6,693.19	66.22	102.070	
10,000.00	9,060.00	10,000.00	7,753.69	38.73	35.82	-0.56	857.59	7,435.56	6,661.13	6,594.18	66.95	99.495	
10,100.00	9,060.00	10,100.00	7,753.70	39.86	36.59	-0.53	857.01	7,435.57	6,562.90	6,495.22	67.68	96.975	
10,140.22	9,060.00	10,140.22	7,753.71	40.33	36.90	-0.52	856.78	7,435.57	6,523.40	6,455.43	67.97	95.977	
10,200.00	9,060.00	10,200.00	7,753.73	41.05	37.36	-6.61	855.81	7,435.58	6,464.73	6,396.32	68.40	94.510	
10,300.00	9,060.00	10,300.00	7,753.82	42.31	38.14	-16.15	851.41	7,435.63	6,366.69	6,297.56	69.13	92.101	
10,400.00	9,060.00	10,400.00	7,753.98	43.64	38.91	-24.59	843.52	7,435.73	6,268.90	6,199.05	69.85	89.747	
10,507.23	9,060.00	10,507.23	7,754.24	45.11	39.75	-32.25	831.21	7,435.87	6,164.48	6,093.85	70.63	87.282	
10,600.00	9,060.00	10,600.00	7,754.46	46.43	40.47	-25.01	820.32	7,436.00	6,074.21	6,002.91	71.30	85.192	
10,700.00	9,060.00	8,572.03	7,754.83	47.91	24.85	-15.92	801.11	7,436.12	5,976.56	5,920.42	56.14	106.459	
10,800.00	9,060.00	8,574.10	7,754.85	49.42	24.87	-6.85	799.05	7,436.13	5,878.86	5,822.72	56.14	104.713	
10,900.00	9,060.00	8,574.61	7,754.86	50.97	24.87	2.36	798.54	7,436.14	5,781.14	5,725.01	56.13	102.990	
11,000.00	9,060.00	8,573.54	7,754.85	52.55	24.87	11.21	799.60	7,436.13	5,683.54	5,627.43	56.11	101.290	
11,100.00	9,060.00	8,570.88	7,754.81	54.14	24.84	19.34	802.27	7,436.11	5,586.17	5,530.09	56.08	99.613	
11,207.23	9,060.00	11,207.23	7,754.41	55.87	45.18	26.41	823.05	7,435.97	5,482.23	5,406.53	75.70	72.420	
11,300.00	9,060.00	11,300.00	7,754.22	57.39	45.91	19.37	831.78	7,435.86	5,392.34	5,315.96	76.37	70.606	
11,400.00	9,060.00	11,400.00	7,754.10	59.06	46.68	11.33	837.83	7,435.79	5,295.27	5,218.17	77.10	68.684	
11,506.63	9,060.00	11,506.63	7,754.05	60.88	47.51	2.58	840.45	7,435.76	5,191.70	5,113.84	77.86	66.676	
11,600.00	9,060.00	11,600.00	7,754.03	62.49	48.24	2.55	841.01	7,435.76	5,101.08	5,022.54	78.54	64.952	
11,700.00	9,060.00	11,700.00	7,754.02	64.24	49.02	2.52	841.61	7,435.75	5,004.13	4,924.87	79.25	63.140	
11,800.00	9,060.00	11,800.00	7,754.01	66.01	49.80	2.50	842.20	7,435.74	4,907.30	4,827.33	79.97	61.363	
11,900.00	9,060.00	11,900.00	7,754.00	67.79	50.58	2.47	842.80	7,435.74	4,810.60	4,729.92	80.69	59.621	
12,000.00	9,060.00	12,000.00	7,753.98	69.58	51.35	2.44	843.40	7,435.73	4,714.05	4,632.65	81.40	57.912	
12,100.00	9,060.00	12,100.00	7,753.97	71.39	52.13	2.41	843.99	7,435.72	4,617.63	4,535.52	82.11	56.235	
12,200.00	9,060.00	12,200.00	7,753.96	73.21	52.91	2.39	844.59	7,435.71	4,521.38	4,438.55	82.82	54.591	
12,300.00	9,060.00	12,300.00	7,753.95	75.05	53.69	2.36	845.19	7,435.71	4,425.29	4,341.75	83.53	52.977	
12,400.00	9,060.00	8,568.31	7,754.85	76.89	24.81	4.22	804.84	7,436.04	4,329.41	4,273.36	56.05	77.240	
12,500.00	9,060.00	8,564.67	7,754.76	78.74	24.79	4.05	808.48	7,436.03	4,233.70	4,177.66	56.04	75.548	
12,600.00	9,060.00	8,561.25	7,754.68	80.61	24.76	3.90	811.89	7,436.01	4,138.18	4,082.15	56.03	73.851	
12,700.00	9,060.00	8,558.05	7,754.60	82.48	24.73	3.75	815.10	7,436.00	4,042.88	3,986.85	56.03	72.151	
12,800.00	9,060.00	8,555.03	7,754.53	84.36	24.71	3.61	818.12	7,435.99	3,947.82	3,891.78	56.04	70.447	
12,900.00	9,060.00	8,552.18	7,754.46	86.24	24.69	3.48	820.96	7,435.97	3,853.00	3,796.95	56.05	68.739	
13,000.00	9,060.00	8,549.49	7,754.39	88.14	24.67	3.35	823.65	7,435.96	3,758.45	3,702.38	56.07	67.029	
13,100.00	9,060.00	8,546.95	7,754.33	90.04	24.65	3.24	826.19	7,435.94	3,664.19	3,608.09	56.10	65.316	
13,200.00	9,060.00	8,544.53	7,754.28	91.94	24.63	3.12	828.60	7,435.93	3,570.24	3,514.11	56.13	63.601	
13,300.00	9,060.00	8,542.25	7,754.22	93.86	24.62	3.02	830.89	7,435.91	3,476.63	3,420.45	56.18	61.884	
13,400.00	9,060.00	8,540.07	7,754.17	95.77	24.60	2.92	833.06	7,435.90	3,383.38	3,327.14	56.24	60.165	
13,500.00	9,060.00	8,538.01	7,754.13	97.70	24.58	2.82	835.13	7,435.88	3,290.53	3,234.23	56.30	58.444	
13,600.00	9,060.00	8,536.04	7,754.08	99.62	24.57	2.73	837.10	7,435.87	3,198.11	3,141.72	56.38	56.722	
13,700.00	9,060.00	8,534.16	7,754.04	101.56	24.55	2.64	838.98	7,435.86	3,106.15	3,049.68	56.48	54.999	
13,800.00	9,060.00	8,532.37	7,754.00	103.49	24.54	2.56	840.77	7,435.84	3,014.71	2,958.13	56.59	53.276	
13,900.00	9,060.00	8,530.65	7,753.96	105.43	24.53	2.48	842.48	7,435.83	2,923.83	2,867.12	56.71	51.553	
14,000.00	9,060.00	8,529.01	7,753.92	107.38	24.51	2.41	844.12	7,435.82	2,833.56	2,776.70	56.86	49.831	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,527.44	7,753.89	109.33	24.50	2.33	845.69	7,435.80	2,743.97	2,686.94	57.04	48.110		
14,200.00	9,060.00	8,525.94	7,753.85	111.28	24.49	2.26	847.19	7,435.79	2,655.12	2,597.89	57.23	46.392		
14,300.00	9,060.00	8,524.50	7,753.82	113.23	24.48	2.20	848.64	7,435.78	2,567.09	2,509.63	57.46	44.676		
14,400.00	9,060.00	8,523.11	7,753.79	115.19	24.47	2.13	850.02	7,435.77	2,479.97	2,422.25	57.72	42.966		
14,500.00	9,060.00	8,521.78	7,753.76	117.15	24.46	2.07	851.35	7,435.75	2,393.85	2,335.83	58.02	41.262		
14,600.00	9,060.00	8,520.50	7,753.73	119.11	24.45	2.01	852.63	7,435.74	2,308.85	2,250.50	58.35	39.567		
14,700.00	9,060.00	8,519.27	7,753.71	121.08	24.44	1.96	853.86	7,435.73	2,225.10	2,166.36	58.74	37.883		
14,800.00	9,060.00	8,518.08	7,753.68	123.05	24.43	1.90	855.05	7,435.72	2,142.74	2,083.57	59.17	36.213		
14,900.00	9,060.00	8,516.94	7,753.65	125.02	24.42	1.85	856.19	7,435.71	2,061.95	2,002.28	59.66	34.561		
15,000.00	9,060.00	8,515.84	7,753.63	126.99	24.42	1.80	857.29	7,435.70	1,982.90	1,922.69	60.21	32.931		
15,100.00	9,060.00	8,514.77	7,753.61	128.97	24.41	1.75	858.36	7,435.69	1,905.82	1,844.99	60.83	31.328		
15,200.00	9,060.00	8,513.75	7,753.59	130.95	24.40	1.70	859.39	7,435.68	1,830.96	1,769.44	61.53	29.759		
15,300.00	9,060.00	8,512.75	7,753.56	132.93	24.39	1.65	860.38	7,435.67	1,758.61	1,696.31	62.30	28.230		
15,400.00	9,060.00	8,511.79	7,753.54	134.91	24.38	1.61	861.34	7,435.66	1,689.07	1,625.93	63.14	26.749		
15,500.00	9,060.00	8,510.87	7,753.52	136.89	24.38	1.57	862.26	7,435.65	1,622.72	1,558.65	64.07	25.326		
15,600.00	9,060.00	8,509.97	7,753.51	138.88	24.37	1.53	863.16	7,435.64	1,559.96	1,494.88	65.08	23.969		
15,700.00	9,060.00	8,509.10	7,753.49	140.86	24.36	1.49	864.03	7,435.63	1,501.25	1,435.08	66.17	22.688		
15,800.00	9,060.00	8,508.26	7,753.47	142.85	24.36	1.45	864.87	7,435.62	1,447.07	1,379.75	67.32	21.495		
15,900.00	9,060.00	8,507.44	7,753.45	144.84	24.35	1.41	865.69	7,435.61	1,397.95	1,329.42	68.53	20.398		
16,000.00	9,060.00	8,506.65	7,753.44	146.83	24.35	1.37	866.48	7,435.60	1,354.45	1,284.65	69.79	19.407		
16,100.00	9,060.00	8,505.88	7,753.42	148.83	24.34	1.34	867.25	7,435.59	1,317.11	1,246.04	71.07	18.531		
16,200.00	9,060.00	8,505.13	7,753.40	150.82	24.33	1.30	868.00	7,435.59	1,286.48	1,214.11	72.37	17.777		
16,300.00	9,060.00	8,504.41	7,753.39	152.82	24.33	1.27	868.72	7,435.58	1,263.05	1,189.40	73.65	17.149		
16,400.00	9,060.00	8,503.70	7,753.37	154.81	24.32	1.24	869.42	7,435.57	1,247.21	1,172.31	74.90	16.652		
16,500.00	9,060.00	8,503.02	7,753.36	156.81	24.32	1.20	870.11	7,435.56	1,239.27	1,163.18	76.09	16.287		
16,548.74	9,060.00	8,502.69	7,753.35	157.79	24.32	1.19	870.43	7,435.56	1,238.31	1,161.67	76.64	16.157 CC, ES		
16,600.00	9,060.00	8,502.36	7,753.35	158.81	24.31	1.17	870.77	7,435.55	1,239.37	1,162.18	77.19	16.056		
16,700.00	9,060.00	8,501.71	7,753.33	160.81	24.31	1.14	871.42	7,435.55	1,247.52	1,169.35	78.17	15.959 SF		
16,800.00	9,060.00	8,501.08	7,753.32	162.81	24.30	1.11	872.05	7,435.54	1,263.55	1,184.55	79.00	15.994		
16,900.00	9,060.00	8,500.47	7,753.31	164.82	24.30	1.09	872.66	7,435.53	1,287.17	1,207.52	79.65	16.160		
17,000.00	9,060.00	8,499.87	7,753.29	166.82	24.29	1.06	873.26	7,435.52	1,317.97	1,237.86	80.12	16.451		
17,100.00	9,060.00	8,499.29	7,753.28	168.82	24.29	1.03	873.84	7,435.52	1,355.47	1,275.07	80.40	16.860		
17,200.00	9,060.00	8,498.73	7,753.27	170.83	24.29	1.01	874.40	7,435.51	1,399.12	1,318.62	80.51	17.379		
17,300.00	9,060.00	8,498.17	7,753.26	172.84	24.28	0.98	874.95	7,435.50	1,448.38	1,367.91	80.46	18.000		
17,400.00	9,060.00	8,497.64	7,753.25	174.84	24.28	0.96	875.49	7,435.50	1,502.68	1,422.38	80.30	18.714		
17,500.00	9,060.00	8,497.11	7,753.24	176.85	24.27	0.93	876.02	7,435.49	1,561.50	1,481.47	80.03	19.512		
17,600.00	9,060.00	8,496.60	7,753.23	178.86	24.27	0.91	876.53	7,435.48	1,624.35	1,544.67	79.69	20.385		
17,700.00	9,060.00	8,496.10	7,753.22	180.87	24.27	0.88	877.03	7,435.48	1,690.79	1,611.50	79.29	21.325		
17,800.00	9,060.00	8,495.61	7,753.21	182.88	24.26	0.86	877.51	7,435.47	1,760.40	1,681.55	78.85	22.325		
17,900.00	9,060.00	8,495.14	7,753.20	184.89	24.26	0.84	877.99	7,435.47	1,832.83	1,754.43	78.40	23.378		
18,000.00	9,060.00	8,494.67	7,753.19	186.90	24.25	0.82	878.45	7,435.46	1,907.75	1,829.81	77.94	24.478		
18,100.00	9,060.00	8,494.22	7,753.18	188.92	24.25	0.80	878.91	7,435.45	1,984.88	1,907.41	77.47	25.620		
18,200.00	9,060.00	8,493.77	7,753.17	190.93	24.25	0.78	879.35	7,435.45	2,063.97	1,986.96	77.02	26.799		
18,300.00	9,060.00	8,493.34	7,753.16	192.94	24.24	0.76	879.79	7,435.44	2,144.82	2,068.24	76.57	28.010		
18,400.00	9,060.00	8,492.91	7,753.15	194.96	24.24	0.74	880.21	7,435.44	2,227.21	2,151.07	76.14	29.250		
18,500.00	9,060.00	8,492.50	7,753.14	196.97	24.24	0.72	880.63	7,435.43	2,311.00	2,235.27	75.73	30.516		
18,600.00	9,060.00	8,492.09	7,753.14	198.99	24.24	0.70	881.03	7,435.43	2,396.03	2,320.69	75.34	31.803		
18,700.00	9,060.00	8,491.70	7,753.13	201.00	24.23	0.68	881.43	7,435.42	2,482.18	2,407.21	74.97	33.111		
18,800.00	9,060.00	8,491.31	7,753.12	203.02	24.23	0.66	881.82	7,435.42	2,569.33	2,494.71	74.61	34.435		
18,900.00	9,060.00	8,490.93	7,753.11	205.04	24.23	0.64	882.20	7,435.41	2,657.38	2,583.10	74.28	35.775		
19,000.00	9,060.00	8,490.55	7,753.11	207.06	24.22	0.63	882.57	7,435.41	2,746.25	2,672.29	73.97	37.127		
19,100.00	9,060.00	8,490.19	7,753.10	209.07	24.22	0.61	882.94	7,435.40	2,835.87	2,762.19	73.68	38.491		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	8,489.83	7,753.09	211.09	24.22	0.59	883.29	7,435.40	2,926.16	2,852.76	73.40	39.866	
19,300.00	9,060.00	8,489.48	7,753.08	213.11	24.22	0.58	883.65	7,435.39	3,017.06	2,943.91	73.14	41.248	
19,400.00	9,060.00	8,489.14	7,753.08	215.13	24.21	0.56	883.99	7,435.39	3,108.52	3,035.61	72.90	42.639	
19,500.32	9,060.00	8,488.80	7,753.07	217.16	24.21	0.55	884.33	7,435.38	3,200.78	3,128.10	72.68	44.040	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	6,436.00	4,944.58	10.89	29.67	110.65	-193.54	5,686.70	6,016.33	5,977.45	38.88	154.738		
3,200.00	3,196.89	6,436.00	4,944.58	11.25	29.67	110.91	-193.54	5,686.70	5,989.85	5,950.47	39.38	152.095		
3,295.74	3,291.45	6,436.00	4,944.58	11.59	29.67	111.14	-193.54	5,686.70	5,966.53	5,926.67	39.86	149.686		
3,300.00	3,295.65	6,436.00	4,944.58	11.61	29.67	111.14	-193.54	5,686.70	5,965.54	5,925.66	39.88	149.582		
3,400.00	3,394.29	6,436.00	4,944.58	11.97	29.67	111.14	-193.54	5,686.70	5,943.09	5,902.71	40.38	147.185		
3,500.00	3,492.94	6,436.00	4,944.58	12.33	29.67	111.14	-193.54	5,686.70	5,922.25	5,881.38	40.87	144.897		
3,600.00	3,591.58	6,436.00	4,944.58	12.69	29.67	111.14	-193.54	5,686.70	5,903.03	5,861.66	41.36	142.718		
3,700.00	3,690.22	6,436.00	4,944.58	13.05	29.67	111.14	-193.54	5,686.70	5,885.44	5,843.59	41.85	140.645		
3,800.00	3,788.86	6,436.00	4,944.58	13.41	29.67	111.14	-193.54	5,686.70	5,869.50	5,827.18	42.33	138.676		
3,900.00	3,887.50	6,436.00	4,944.58	13.77	29.67	111.14	-193.54	5,686.70	5,855.23	5,812.43	42.80	136.810		
4,000.00	3,986.14	6,436.00	4,944.58	14.14	29.67	111.14	-193.54	5,686.70	5,842.64	5,799.37	43.26	135.043		
4,100.00	4,084.78	6,436.00	4,944.58	14.50	29.67	111.14	-193.54	5,686.70	5,831.73	5,788.01	43.72	133.376		
4,200.00	4,183.42	6,436.00	4,944.58	14.87	29.67	111.14	-193.54	5,686.70	5,822.52	5,778.35	44.18	131.804		
4,300.00	4,282.06	6,399.64	4,944.27	15.24	29.24	110.78	-157.25	5,688.85	5,814.56	5,770.38	44.18	131.596		
4,400.00	4,380.70	6,395.82	4,944.26	15.60	29.19	110.74	-153.44	5,689.12	5,808.67	5,764.10	44.57	130.317		
4,500.00	4,479.34	6,391.93	4,944.26	15.97	29.14	110.71	-149.56	5,689.39	5,804.49	5,759.54	44.95	129.126		
4,600.00	4,577.98	6,387.97	4,944.27	16.34	29.10	110.67	-145.61	5,689.68	5,802.02	5,756.70	45.32	128.023		
4,694.33	4,671.04	6,384.17	4,944.29	16.69	29.05	110.63	-141.82	5,689.96	5,801.26	5,755.60	45.66	127.059		
4,700.00	4,676.62	6,383.94	4,944.29	16.71	29.05	110.63	-141.59	5,689.98	5,801.26	5,755.58	45.68	127.004		
4,800.00	4,775.27	6,379.84	4,944.31	17.08	29.00	110.59	-137.50	5,690.29	5,802.21	5,756.19	46.02	126.069		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,375.66	4,944.34	17.45	28.95	110.55	-133.33	5,690.62	5,804.88	5,758.52	46.36	125.215		
5,000.00	4,972.55	6,341.00	4,944.83	17.82	28.54	110.21	-98.81	5,693.66	5,809.55	5,763.23	46.32	125.424		
5,100.00	5,071.19	6,341.00	4,944.83	18.19	28.54	110.21	-98.81	5,693.66	5,815.55	5,768.87	46.68	124.576		
5,200.00	5,169.83	6,341.00	4,944.83	18.56	28.54	110.21	-98.81	5,693.66	5,823.26	5,776.22	47.04	123.806		
5,300.00	5,268.47	6,341.00	4,944.83	18.93	28.54	110.21	-98.81	5,693.66	5,832.67	5,785.29	47.38	123.113		
5,400.00	5,367.11	6,341.00	4,944.83	19.31	28.54	110.21	-98.81	5,693.66	5,843.77	5,796.07	47.71	122.495		
5,500.00	5,465.75	6,341.00	4,944.83	19.68	28.54	110.21	-98.81	5,693.66	5,856.57	5,808.54	48.02	121.949		
5,600.00	5,564.39	6,341.00	4,944.83	20.05	28.54	110.21	-98.81	5,693.66	5,871.04	5,822.71	48.33	121.475		
5,700.00	5,663.03	6,341.00	4,944.83	20.42	28.54	110.21	-98.81	5,693.66	5,887.17	5,838.55	48.63	121.069		
5,800.00	5,761.67	6,341.00	4,944.83	20.80	28.54	110.21	-98.81	5,693.66	5,904.96	5,856.05	48.91	120.731		
5,900.00	5,860.31	6,317.10	4,945.35	21.17	28.26	109.98	-75.03	5,695.98	5,924.29	5,875.38	48.91	121.135		
6,000.00	5,958.96	6,306.89	4,945.58	21.54	28.14	109.88	-64.87	5,697.00	5,945.24	5,896.19	49.05	121.206		
6,100.00	6,057.60	6,296.62	4,945.81	21.92	28.02	109.78	-54.66	5,698.04	5,967.77	5,918.58	49.18	121.336		
6,200.00	6,156.24	6,026.18	4,943.70	22.29	24.94	107.14	214.87	5,718.29	5,991.69	5,945.29	46.39	129.146		
6,300.00	6,254.88	6,018.26	4,943.44	22.67	24.86	107.06	222.78	5,718.67	6,016.68	5,970.14	46.55	129.259		
6,400.00	6,353.52	6,010.17	4,943.19	23.04	24.77	106.99	230.85	5,719.07	6,043.21	5,996.52	46.69	129.435		
6,500.00	6,452.16	6,001.92	4,942.94	23.42	24.68	106.91	239.09	5,719.49	6,071.26	6,024.44	46.82	129.674		
6,600.00	6,550.80	5,993.49	4,942.70	23.79	24.59	106.82	247.50	5,719.92	6,100.80	6,053.86	46.94	129.973		
6,700.00	6,649.44	5,984.89	4,942.47	24.17	24.49	106.74	256.08	5,720.37	6,131.80	6,084.76	47.05	130.332		
6,800.00	6,748.08	6,000.00	4,941.49	24.54	33.17	106.29	302.34	5,722.78	6,164.23	6,108.56	55.67	110.733		
6,900.00	6,846.72	6,900.00	4,941.23	24.92	34.24	106.15	316.05	5,723.46	6,198.03	6,141.16	56.86	109.000		
7,000.00	6,945.36	5,865.21	4,940.16	25.29	23.22	105.57	375.59	5,726.40	6,233.35	6,186.98	46.37	134.432		
7,100.00	7,044.00	5,843.98	4,939.88	25.67	23.01	105.37	396.80	5,727.31	6,269.79	6,223.46	46.33	135.326		
7,200.00	7,142.65	5,822.38	4,939.62	26.04	22.79	105.16	418.38	5,728.23	6,307.56	6,261.28	46.28	136.277		
7,300.00	7,241.29	5,800.41	4,939.38	26.42	22.56	104.94	440.33	5,729.14	6,346.63	6,300.40	46.23	137.285		
7,400.00	7,339.93	5,778.06	4,939.17	26.79	22.34	104.73	462.65	5,730.05	6,386.98	6,340.81	46.17	138.349		
7,500.00	7,438.57	5,774.00	4,939.13	27.17	22.30	104.69	466.71	5,730.21	6,428.59	6,382.32	46.27	138.930		
7,571.77	7,509.37	5,774.00	4,939.13	27.44	22.30	104.69	466.71	5,730.21	6,459.25	6,412.87	46.37	139.289		
7,600.00	7,537.23	5,774.00	4,939.13	27.55	22.30	104.88	466.71	5,730.21	6,471.46	6,425.05	46.41	139.436		
7,700.00	7,636.18	5,774.00	4,939.13	27.92	22.30	105.59	466.71	5,730.21	6,515.13	6,468.58	46.54	139.986		
7,800.00	7,735.48	5,774.00	4,939.13	28.29	22.30	106.30	466.71	5,730.21	6,559.40	6,512.74	46.66	140.575		
7,900.00	7,835.05	5,774.00	4,939.13	28.65	22.30	107.02	466.71	5,730.21	6,604.24	6,557.47	46.77	141.204		
8,000.00	7,934.83	5,774.00	4,939.13	29.01	22.30	107.75	466.71	5,730.21	6,649.60	6,602.73	46.87	141.869		
8,100.00	8,034.74	5,774.00	4,939.13	29.36	22.30	108.48	466.71	5,730.21	6,695.44	6,648.48	46.96	142.569		
8,202.27	8,137.00	5,774.00	4,939.13	29.72	22.30	93.20	466.71	5,730.21	6,742.78	6,695.73	47.05	143.318		
8,300.00	8,234.73	5,774.00	4,939.13	30.06	22.30	93.20	466.71	5,730.21	6,788.78	6,741.65	47.12	144.065		
8,400.00	8,334.73	5,774.00	4,939.13	30.41	22.30	93.20	466.71	5,730.21	6,836.97	6,789.77	47.20	144.858		
8,500.00	8,434.73	5,774.00	4,939.13	30.75	22.30	93.20	466.71	5,730.21	6,886.27	6,839.00	47.27	145.681		
8,552.31	8,487.04	5,774.00	4,939.13	30.94	22.30	93.20	466.71	5,730.21	6,912.49	6,865.19	47.31	146.123		
8,600.00	8,534.68	5,774.00	4,939.13	31.10	22.30	3.39	466.71	5,730.21	6,934.93	6,887.60	47.33	146.523		
8,650.00	8,584.26	5,774.00	4,939.13	31.26	22.30	3.26	466.71	5,730.21	6,954.91	6,907.57	47.34	146.902		
8,700.00	8,633.10	5,774.00	4,939.13	31.43	22.30	3.16	466.71	5,730.21	6,971.14	6,923.79	47.35	147.221		
8,750.00	8,680.83	5,774.00	4,939.13	31.58	22.30	3.09	466.71	5,730.21	6,983.53	6,936.18	47.35	147.482		
8,800.00	8,727.09	5,774.00	4,939.13	31.74	22.30	3.05	466.71	5,730.21	6,992.01	6,944.66	47.34	147.687		
8,850.00	8,771.52	5,774.00	4,939.13	31.89	22.30	3.02	466.71	5,730.21	6,996.51	6,949.19	47.33	147.836		
8,900.00	8,813.78	5,774.00	4,939.13	32.04	22.30	3.02	466.71	5,730.21	6,997.03	6,949.73	47.30	147.930		
8,950.00	8,853.56	5,774.00	4,939.13	32.18	22.30	3.04	466.71	5,730.21	6,993.54	6,946.28	47.26	147.969		
9,000.00	8,890.55	5,774.00	4,939.13	32.32	22.30	3.08	466.71	5,730.21	6,986.08	6,938.87	47.22	147.954		
9,050.00	8,924.46	5,774.00	4,939.13	32.47	22.30	3.14	466.71	5,730.21	6,974.69	6,927.53	47.16	147.883		
9,100.00	8,955.05	5,747.83	4,938.92	32.63	22.04	3.00	492.85	5,731.38	6,959.31	6,912.43	46.88	148.449		
9,150.00	8,982.08	5,747.05	4,938.92	32.79	22.03	3.11	493.64	5,731.41	6,940.27	6,893.47	46.80	148.286		
9,200.00	9,005.34	5,746.20	4,938.91	32.97	22.03	3.24	494.49	5,731.46	6,917.58	6,870.86	46.72	148.066		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,745.28	4,938.91	33.17	22.02	3.41	495.40	5,731.50	6,891.36	6,844.73	46.63	147.791		
9,300.00	9,039.87	5,744.32	4,938.90	33.38	22.01	3.62	496.37	5,731.55	6,861.78	6,815.25	46.53	147.458		
9,350.00	9,050.89	5,743.30	4,938.89	33.62	22.00	3.90	497.38	5,731.60	6,829.02	6,782.59	46.43	147.067		
9,400.00	9,057.61	5,742.25	4,938.88	33.87	21.99	4.25	498.43	5,731.65	6,793.29	6,746.96	46.33	146.617		
9,452.31	9,060.00	5,741.10	4,938.88	34.15	21.98	4.73	499.57	5,731.71	6,752.98	6,706.75	46.23	146.083		
9,500.00	9,060.00	5,740.04	4,938.87	34.42	21.97	4.71	500.63	5,731.77	6,714.99	6,668.87	46.13	145.577		
9,600.00	9,060.00	5,737.77	4,938.85	35.09	21.94	4.68	502.90	5,731.88	6,635.76	6,589.85	45.91	144.537		
9,700.00	9,060.00	5,735.44	4,938.84	35.86	21.92	4.65	505.23	5,732.01	6,557.09	6,511.39	45.70	143.487		
9,800.00	9,060.00	5,733.05	4,938.82	36.72	21.90	4.62	507.62	5,732.14	6,479.00	6,433.51	45.49	142.423		
9,900.00	9,060.00	5,730.59	4,938.81	37.69	21.87	4.58	510.07	5,732.27	6,401.53	6,356.24	45.29	141.346		
10,000.00	9,060.00	5,728.06	4,938.79	38.73	21.85	4.55	512.60	5,732.41	6,324.68	6,279.59	45.09	140.253		
10,100.00	9,060.00	5,725.46	4,938.78	39.86	21.82	4.51	515.19	5,732.55	6,248.49	6,203.58	44.91	139.143		
10,140.22	9,060.00	5,724.40	4,938.77	40.33	21.81	4.50	516.26	5,732.61	6,218.03	6,173.19	44.83	138.692		
10,200.00	9,060.00	5,723.06	4,938.76	41.05	21.80	3.11	517.60	5,732.69	6,172.94	6,128.21	44.73	138.009		
10,300.00	9,060.00	5,721.98	4,938.75	42.31	21.79	0.83	518.68	5,732.75	6,097.98	6,053.42	44.57	136.829		
10,400.00	9,060.00	5,722.41	4,938.76	43.64	21.79	-1.38	518.24	5,732.73	6,023.72	5,979.30	44.42	135.598		
10,507.23	9,060.00	5,724.63	4,938.77	45.11	21.82	-3.67	516.03	5,732.60	5,945.00	5,900.71	44.29	134.220		
10,600.00	9,060.00	5,726.71	4,938.78	46.43	21.84	-1.68	513.95	5,732.48	5,877.62	5,833.43	44.19	133.000		
10,700.00	9,060.00	5,727.47	4,938.79	47.91	21.84	0.40	513.19	5,732.44	5,805.71	5,761.62	44.09	131.687		
10,800.00	9,060.00	5,726.61	4,938.78	49.42	21.84	2.41	514.05	5,732.49	5,734.65	5,690.67	43.99	130.376		
10,900.00	9,060.00	5,724.06	4,938.77	50.97	21.81	4.33	516.59	5,732.63	5,664.57	5,620.69	43.89	129.067		
11,000.00	9,060.00	5,719.74	4,938.74	52.55	21.77	6.17	520.91	5,732.88	5,595.60	5,551.80	43.80	127.759		
11,100.00	9,060.00	5,713.56	4,938.71	54.14	21.71	7.91	527.07	5,733.25	5,527.83	5,484.11	43.72	126.450		
11,207.23	9,060.00	5,704.79	4,938.66	55.87	21.62	9.67	535.83	5,733.79	5,456.65	5,413.01	43.64	125.041		
11,300.00	9,060.00	5,680.00	4,938.56	57.39	21.38	7.75	560.56	5,735.46	5,396.08	5,352.61	43.46	124.148		
11,400.00	9,060.00	5,680.00	4,938.56	59.06	21.38	6.07	560.56	5,735.46	5,331.36	5,287.86	43.49	122.577		
11,506.63	9,060.00	5,680.00	4,938.56	60.88	21.38	4.30	560.56	5,735.46	5,263.25	5,219.70	43.54	120.873		
11,600.00	9,060.00	5,680.00	4,938.56	62.49	21.38	4.30	560.56	5,735.46	5,204.55	5,160.95	43.61	119.356		
11,700.00	9,060.00	5,680.00	4,938.56	64.24	21.38	4.30	560.56	5,735.46	5,142.83	5,099.13	43.69	117.701		
11,800.00	9,060.00	5,680.00	4,938.56	66.01	21.38	4.30	560.56	5,735.46	5,082.32	5,038.52	43.81	116.015		
11,900.00	9,060.00	5,680.00	4,938.56	67.79	21.38	4.30	560.56	5,735.46	5,023.08	4,979.13	43.95	114.301		
12,000.00	9,060.00	5,680.00	4,938.56	69.58	21.38	4.30	560.56	5,735.46	4,965.14	4,921.03	44.11	112.561		
12,100.00	9,060.00	5,680.00	4,938.56	71.39	21.38	4.30	560.56	5,735.46	4,908.56	4,864.26	44.30	110.799		
12,200.00	9,060.00	5,680.00	4,938.56	73.21	21.38	4.30	560.56	5,735.46	4,853.38	4,808.86	44.52	109.016		
12,300.00	9,060.00	5,680.00	4,938.56	75.05	21.38	4.30	560.56	5,735.46	4,799.64	4,754.88	44.77	107.218		
12,400.00	9,060.00	5,652.78	4,938.48	76.89	21.13	3.92	587.69	5,737.68	4,747.20	4,702.36	44.84	105.865		
12,500.00	9,060.00	5,648.57	4,938.47	78.74	21.09	3.87	591.89	5,738.07	4,696.45	4,651.34	45.11	104.106		
12,600.00	9,060.00	5,644.11	4,938.46	80.61	21.05	3.80	596.32	5,738.50	4,647.29	4,601.88	45.41	102.344		
12,700.00	9,060.00	5,639.38	4,938.45	82.48	21.01	3.74	601.03	5,738.97	4,599.76	4,554.03	45.73	100.584		
12,800.00	9,060.00	5,634.37	4,938.44	84.36	20.96	3.67	606.01	5,739.48	4,553.92	4,507.84	46.08	98.831		
12,900.00	9,060.00	5,629.03	4,938.43	86.24	20.92	3.59	611.32	5,740.05	4,509.82	4,463.37	46.45	97.090		
13,000.00	9,060.00	5,623.35	4,938.42	88.14	20.86	3.51	616.97	5,740.68	4,467.51	4,420.66	46.85	95.364		
13,100.00	9,060.00	5,617.28	4,938.41	90.04	20.81	3.43	623.00	5,741.38	4,427.03	4,379.77	47.27	93.659		
13,200.00	9,060.00	5,610.78	4,938.41	91.94	20.75	3.34	629.45	5,742.16	4,388.44	4,340.73	47.71	91.980		
13,300.00	9,060.00	5,585.00	4,938.39	93.86	20.51	2.98	655.00	5,745.55	4,351.87	4,303.82	48.05	90.569		
13,400.00	9,060.00	5,585.00	4,938.39	95.77	20.51	2.98	655.00	5,745.55	4,317.15	4,268.56	48.59	88.852		
13,500.00	9,060.00	5,585.00	4,938.39	97.70	20.51	2.98	655.00	5,745.55	4,284.47	4,235.32	49.15	87.172		
13,600.00	9,060.00	5,585.00	4,938.39	99.62	20.51	2.98	655.00	5,745.55	4,253.90	4,204.17	49.73	85.532		
13,700.00	9,060.00	5,585.00	4,938.39	101.56	20.51	2.98	655.00	5,745.55	4,225.47	4,175.13	50.34	83.935		
13,800.00	9,060.00	5,585.00	4,938.39	103.49	20.51	2.98	655.00	5,745.55	4,199.24	4,148.27	50.97	82.384		
13,900.00	9,060.00	5,559.86	4,938.31	105.43	20.29	2.63	679.88	5,749.15	4,175.06	4,123.59	51.46	81.127		
14,000.00	9,060.00	5,552.69	4,938.25	107.38	20.23	2.53	686.98	5,750.19	4,153.21	4,101.12	52.09	79.734		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	5,545.40	4,938.18	109.33	20.17	2.43	694.19	5,751.26	4,133.64	4,080.90	52.73	78.388		
14,200.00	9,060.00	5,538.02	4,938.09	111.28	20.11	2.33	701.49	5,752.35	4,116.37	4,062.98	53.40	77.092		
14,300.00	9,060.00	5,530.52	4,937.98	113.23	20.04	2.22	708.90	5,753.47	4,101.44	4,047.37	54.07	75.848		
14,400.00	9,060.00	5,522.92	4,937.86	115.19	19.98	2.12	716.42	5,754.61	4,088.87	4,034.10	54.77	74.655		
14,500.00	9,060.00	5,515.20	4,937.72	117.15	19.91	2.01	724.05	5,755.78	4,078.69	4,023.21	55.48	73.516		
14,600.00	9,060.00	5,490.00	4,937.15	119.11	19.69	1.66	748.94	5,759.67	4,070.98	4,014.87	56.11	72.554		
14,700.00	9,060.00	14,700.00	4,937.18	121.08	99.99	1.68	747.58	5,759.47	4,065.55	3,965.43	100.12	40.607 ES, SF		
14,800.00	9,060.00	5,494.69	4,937.27	123.05	19.73	1.72	744.31	5,758.94	4,062.57	4,004.87	57.70	70.403		
14,900.00	9,060.00	5,289.38	4,936.26	125.02	18.18	-1.13	947.48	5,788.07	4,061.93	4,004.05	57.88	70.174		
14,902.86	9,060.00	5,289.29	4,936.27	125.08	18.18	-1.14	947.58	5,788.08	4,061.93	4,004.03	57.91	70.147 CC		
15,000.00	9,060.00	5,275.00	4,936.47	126.99	18.08	-1.34	961.76	5,789.78	4,063.15	4,004.47	58.68	69.242		
15,100.00	9,060.00	5,275.00	4,936.47	128.97	18.08	-1.34	961.76	5,789.78	4,066.72	4,007.23	59.49	68.361		
15,200.00	9,060.00	5,275.00	4,936.47	130.95	18.08	-1.34	961.76	5,789.78	4,072.74	4,012.44	60.30	67.542		
15,300.00	9,060.00	5,275.00	4,936.47	132.93	18.08	-1.34	961.76	5,789.78	4,081.21	4,020.10	61.11	66.784		
15,400.00	9,060.00	5,275.00	4,936.47	134.91	18.08	-1.34	961.76	5,789.78	4,092.10	4,030.18	61.92	66.089		
15,500.00	9,060.00	5,275.00	4,936.47	136.89	18.08	-1.34	961.76	5,789.78	4,105.40	4,042.68	62.72	65.455		
15,600.00	9,060.00	5,275.00	4,936.47	138.88	18.08	-1.34	961.76	5,789.78	4,121.09	4,057.57	63.52	64.882		
15,700.00	9,060.00	5,275.00	4,936.47	140.86	18.08	-1.34	961.76	5,789.78	4,139.13	4,074.83	64.30	64.371		
15,800.00	9,060.00	5,275.00	4,936.47	142.85	18.08	-1.34	961.76	5,789.78	4,159.50	4,094.43	65.07	63.920		
15,900.00	9,060.00	5,275.00	4,936.47	144.84	18.08	-1.34	961.76	5,789.78	4,182.16	4,116.33	65.83	63.529		
16,000.00	9,060.00	5,275.00	4,936.47	146.83	18.08	-1.34	961.76	5,789.78	4,207.08	4,140.51	66.57	63.196		
16,100.00	9,060.00	5,275.00	4,936.47	148.83	18.08	-1.34	961.76	5,789.78	4,234.21	4,166.92	67.29	62.921		
16,200.00	9,060.00	5,275.00	4,936.47	150.82	18.08	-1.34	961.76	5,789.78	4,263.52	4,195.52	68.00	62.703		
16,300.00	9,060.00	5,275.00	4,936.47	152.82	18.08	-1.34	961.76	5,789.78	4,294.95	4,226.28	68.68	62.540		
16,400.00	9,060.00	5,275.00	4,936.47	154.81	18.08	-1.34	961.76	5,789.78	4,328.47	4,259.14	69.33	62.430		
16,500.00	9,060.00	5,275.00	4,936.47	156.81	18.08	-1.34	961.76	5,789.78	4,364.02	4,294.05	69.97	62.372		
16,600.00	9,060.00	5,260.42	4,936.34	158.81	17.99	-1.54	976.25	5,791.44	4,401.28	4,330.71	70.57	62.367		
16,700.00	9,060.00	5,259.32	4,936.31	160.81	17.98	-1.55	977.34	5,791.56	4,440.71	4,369.55	71.15	62.409		
16,800.00	9,060.00	5,258.23	4,936.27	162.81	17.97	-1.57	978.42	5,791.68	4,482.02	4,410.30	71.71	62.498		
16,900.00	9,060.00	5,244.00	4,935.58	164.82	17.88	-1.77	992.55	5,793.18	4,525.38	4,453.14	72.25	62.639		
17,000.00	9,060.00	5,244.00	4,935.58	166.82	17.88	-1.77	992.55	5,793.18	4,570.27	4,497.51	72.75	62.817		
17,100.00	9,060.00	5,244.00	4,935.58	168.82	17.88	-1.77	992.55	5,793.18	4,616.88	4,543.64	73.24	63.038		
17,200.00	9,060.00	5,244.00	4,935.58	170.83	17.88	-1.77	992.55	5,793.18	4,665.17	4,591.47	73.70	63.299		
17,300.00	9,060.00	5,244.00	4,935.58	172.84	17.88	-1.77	992.55	5,793.18	4,715.09	4,640.95	74.14	63.599		
17,400.00	9,060.00	5,244.00	4,935.58	174.84	17.88	-1.77	992.55	5,793.18	4,766.58	4,692.03	74.55	63.937		
17,500.00	9,060.00	5,244.00	4,935.58	176.85	17.88	-1.77	992.55	5,793.18	4,819.60	4,744.66	74.94	64.310		
17,600.00	9,060.00	5,244.00	4,935.58	178.86	17.88	-1.77	992.55	5,793.18	4,874.10	4,798.78	75.31	64.718		
17,700.00	9,060.00	5,244.00	4,935.58	180.87	17.88	-1.77	992.55	5,793.18	4,930.02	4,854.35	75.66	65.159		
17,800.00	9,060.00	5,244.00	4,935.58	182.88	17.88	-1.77	992.55	5,793.18	4,987.31	4,911.32	75.99	65.631		
17,900.00	9,060.00	5,244.00	4,935.58	184.89	17.88	-1.77	992.55	5,793.18	5,045.94	4,969.64	76.30	66.133		
18,000.00	9,060.00	5,244.00	4,935.58	186.90	17.88	-1.77	992.55	5,793.18	5,105.86	5,029.27	76.59	66.664		
18,100.00	9,060.00	5,244.00	4,935.58	188.92	17.88	-1.77	992.55	5,793.18	5,167.01	5,090.15	76.86	67.223		
18,200.00	9,060.00	5,244.00	4,935.58	190.93	17.88	-1.77	992.55	5,793.18	5,229.37	5,152.25	77.12	67.809		
18,300.00	9,060.00	5,244.00	4,935.58	192.94	17.88	-1.77	992.55	5,793.18	5,292.87	5,215.51	77.36	68.419		
18,400.00	9,060.00	5,244.00	4,935.58	194.96	17.88	-1.77	992.55	5,793.18	5,357.50	5,279.91	77.58	69.054		
18,500.00	9,060.00	5,244.00	4,935.58	196.97	17.88	-1.77	992.55	5,793.18	5,423.19	5,345.40	77.79	69.712		
18,600.00	9,060.00	5,244.00	4,935.58	198.99	17.88	-1.77	992.55	5,793.18	5,489.92	5,411.93	77.99	70.392		
18,700.00	9,060.00	5,230.48	4,934.60	201.00	17.80	-1.96	1,005.97	5,794.57	5,557.58	5,479.41	78.17	71.099		
18,800.00	9,060.00	5,227.84	4,934.38	203.02	17.78	-1.99	1,008.59	5,794.85	5,626.24	5,547.90	78.34	71.822		
18,900.00	9,060.00	5,225.19	4,934.17	205.04	17.76	-2.03	1,011.21	5,795.12	5,695.82	5,617.33	78.49	72.563		
19,000.00	9,060.00	5,212.00	4,932.98	207.06	17.68	-2.21	1,024.28	5,796.49	5,766.34	5,687.70	78.64	73.327		
19,100.00	9,060.00	5,212.00	4,932.98	209.07	17.68	-2.21	1,024.28	5,796.49	5,837.65	5,758.87	78.78	74.104		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - ST01 - ST01												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,212.00	4,932.98	211.09	17.68	-2.21	1,024.28	5,796.49	5,909.79	5,830.88	78.90	74.898	
19,300.00	9,060.00	5,212.00	4,932.98	213.11	17.68	-2.21	1,024.28	5,796.49	5,982.73	5,903.71	79.02	75.708	
19,400.00	9,060.00	5,212.00	4,932.98	215.13	17.68	-2.21	1,024.28	5,796.49	6,056.44	5,977.31	79.13	76.533	
19,500.32	9,060.00	5,212.00	4,932.98	217.16	17.68	-2.21	1,024.28	5,796.49	6,131.14	6,051.90	79.24	77.376	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	2,963.31	2,962.72	10.89	11.41	91.61	1,538.28	5,826.32	6,027.67	6,005.39	22.29	270.450		
3,200.00	3,196.89	3,064.85	3,064.26	11.25	11.73	91.74	1,537.56	5,827.72	6,029.26	6,006.30	22.96	262.552		
3,295.74	3,291.45	3,150.88	3,150.27	11.59	12.01	91.86	1,537.08	5,828.91	6,030.91	6,007.33	23.58	255.783		
3,300.00	3,295.65	3,154.46	3,153.86	11.61	12.02	91.86	1,537.06	5,828.97	6,030.99	6,007.38	23.60	255.499		
3,400.00	3,394.29	3,236.81	3,236.19	11.97	12.28	92.00	1,536.72	5,830.27	6,033.01	6,008.78	24.22	249.047		
3,500.00	3,492.94	3,323.56	3,322.93	12.33	12.56	92.14	1,536.53	5,831.86	6,035.35	6,010.49	24.86	242.770		
3,600.00	3,591.58	3,438.24	3,437.59	12.69	12.93	92.32	1,536.61	5,833.85	6,037.74	6,012.15	25.59	235.946		
3,700.00	3,690.22	3,550.89	3,550.24	13.05	13.29	92.50	1,536.94	5,835.32	6,039.79	6,013.47	26.31	229.524		
3,800.00	3,788.86	3,657.02	3,656.35	13.41	13.63	92.66	1,537.43	5,836.55	6,041.78	6,014.76	27.02	223.600		
3,900.00	3,887.50	3,755.76	3,755.08	13.77	13.95	92.81	1,538.19	5,837.53	6,043.74	6,016.04	27.70	218.151		
4,000.00	3,986.14	3,859.66	3,858.98	14.14	14.29	92.96	1,539.25	5,838.48	6,045.71	6,017.30	28.41	212.822		
4,100.00	4,084.78	3,958.42	3,957.73	14.50	14.61	93.11	1,540.26	5,839.34	6,047.68	6,018.59	29.10	207.857		
4,200.00	4,183.42	4,074.77	4,074.07	14.87	14.99	93.28	1,541.33	5,840.15	6,049.50	6,019.66	29.84	202.709		
4,300.00	4,282.06	4,177.09	4,176.39	15.24	15.33	93.43	1,542.20	5,840.76	6,051.25	6,020.70	30.55	198.099		
4,400.00	4,380.70	4,282.82	4,282.11	15.60	15.68	93.59	1,543.08	5,841.25	6,052.92	6,021.65	31.26	193.615		
4,500.00	4,479.34	4,383.67	4,382.95	15.97	16.01	93.74	1,543.91	5,841.67	6,054.56	6,022.60	31.96	189.418		
4,600.00	4,577.98	4,482.04	4,481.32	16.34	16.34	93.89	1,544.66	5,842.06	6,056.23	6,023.57	32.66	185.441		
4,700.00	4,676.62	4,582.53	4,581.81	16.71	16.67	94.04	1,545.45	5,842.47	6,057.95	6,024.59	33.36	181.587		
4,800.00	4,775.27	4,688.25	4,687.52	17.08	17.02	94.19	1,546.26	5,842.82	6,059.63	6,025.55	34.08	177.793		
4,900.00	4,873.91	4,797.17	4,796.44	17.45	17.39	94.36	1,547.07	5,843.02	6,061.21	6,026.40	34.82	174.095		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,897.54	4,896.81	17.82	17.72	94.50	1,547.90	5,843.08	6,062.73	6,027.21	35.52	170.681		
5,100.00	5,071.19	4,986.09	4,985.36	18.19	18.02	94.63	1,548.84	5,843.16	6,064.36	6,028.17	36.19	167.580		
5,200.00	5,169.83	5,060.40	5,059.65	18.56	18.27	94.74	1,549.88	5,843.39	6,066.30	6,029.49	36.81	164.811		
5,300.00	5,268.47	5,140.93	5,140.17	18.93	18.54	94.85	1,551.23	5,843.91	6,068.66	6,031.21	37.45	162.052		
5,400.00	5,367.11	5,228.17	5,227.39	19.31	18.83	94.97	1,552.88	5,844.65	6,071.29	6,033.17	38.11	159.294		
5,500.00	5,465.75	5,335.87	5,335.07	19.68	19.20	95.12	1,555.05	5,845.63	6,074.05	6,035.20	38.85	156.348		
5,600.00	5,564.39	5,445.88	5,445.06	20.05	19.57	95.27	1,557.18	5,846.33	6,076.55	6,036.96	39.59	153.471		
5,700.00	5,663.03	5,543.00	5,542.15	20.42	19.90	95.41	1,559.13	5,846.89	6,079.05	6,038.76	40.30	150.863		
5,800.00	5,761.67	5,659.99	5,659.12	20.80	20.29	95.57	1,561.06	5,847.53	6,081.49	6,040.43	41.07	148.094		
5,900.00	5,860.31	5,743.61	5,742.74	21.17	20.58	95.69	1,561.86	5,848.06	6,083.93	6,042.21	41.72	145.826		
6,000.00	5,958.96	5,863.00	5,862.13	21.54	20.98	95.88	1,561.91	5,848.96	6,086.37	6,043.87	42.50	143.212		
6,100.00	6,057.60	5,990.84	5,989.96	21.92	21.42	96.08	1,560.72	5,849.65	6,088.50	6,045.19	43.31	140.590		
6,200.00	6,156.24	6,136.22	6,135.32	22.29	21.91	96.33	1,558.68	5,849.56	6,089.99	6,045.82	44.17	137.869		
6,300.00	6,254.88	6,389.58	6,388.62	22.67	22.76	96.73	1,556.21	5,845.06	6,090.01	6,044.63	45.38	134.193		
6,400.00	6,353.52	6,473.36	6,472.35	23.04	23.05	96.87	1,554.88	5,842.56	6,088.75	6,042.70	46.04	132.244		
6,500.00	6,452.16	6,562.52	6,561.46	23.42	23.35	97.02	1,553.00	5,840.31	6,087.89	6,041.17	46.72	130.308		
6,600.00	6,550.80	6,642.29	6,641.19	23.79	23.62	97.16	1,551.06	5,838.39	6,087.16	6,039.80	47.37	128.511		
6,682.55	6,632.22	6,696.95	6,695.82	24.10	23.80	97.25	1,549.91	5,837.31	6,086.97	6,039.11	47.87	127.169		
6,700.00	6,649.44	6,711.90	6,710.77	24.17	23.85	97.27	1,549.62	5,837.04	6,086.98	6,038.99	47.98	126.861		
6,800.00	6,748.08	6,816.45	6,815.28	24.54	24.21	97.45	1,547.84	5,835.25	6,087.14	6,038.42	48.71	124.966		
6,900.00	6,846.72	6,957.73	6,956.51	24.92	24.69	97.68	1,545.46	5,831.79	6,086.54	6,036.98	49.56	122.815		
6,959.59	6,905.50	6,978.42	6,977.18	25.14	24.76	97.72	1,545.14	5,831.25	6,086.28	6,036.43	49.86	122.073		
7,000.00	6,945.36	6,978.42	6,977.18	25.29	24.76	97.72	1,545.14	5,831.25	6,086.42	6,036.40	50.01	121.696		
7,100.00	7,044.00	6,978.42	6,977.18	25.67	24.76	97.72	1,545.14	5,831.25	6,087.90	6,037.51	50.39	120.814		
7,200.00	7,142.65	6,978.42	6,977.18	26.04	24.76	97.72	1,545.14	5,831.25	6,091.03	6,040.27	50.76	120.003		
7,300.00	7,241.29	6,978.42	6,977.18	26.42	24.76	97.72	1,545.14	5,831.25	6,095.80	6,044.68	51.11	119.261		
7,400.00	7,339.93	6,978.42	6,977.18	26.79	24.76	97.72	1,545.14	5,831.25	6,102.20	6,050.74	51.46	118.587		
7,500.00	7,438.57	6,978.42	6,977.18	27.17	24.76	97.72	1,545.14	5,831.25	6,110.23	6,058.44	51.79	117.979		
7,571.77	7,509.37	6,978.42	6,977.18	27.44	24.76	97.72	1,545.14	5,831.25	6,116.99	6,064.97	52.02	117.582		
7,600.00	7,537.23	6,978.42	6,977.18	27.55	24.76	97.76	1,545.14	5,831.25	6,119.87	6,067.76	52.11	117.435		
7,700.00	7,636.18	6,978.42	6,977.18	27.92	24.76	97.92	1,545.14	5,831.25	6,130.86	6,078.44	52.42	116.956		
7,800.00	7,735.48	6,978.42	6,977.18	28.29	24.76	98.11	1,545.14	5,831.25	6,143.11	6,090.40	52.71	116.541		
7,900.00	7,835.05	6,978.42	6,977.18	28.65	24.76	98.31	1,545.14	5,831.25	6,156.59	6,103.60	52.99	116.189		
8,000.00	7,934.83	6,978.42	6,977.18	29.01	24.76	98.53	1,545.14	5,831.25	6,171.29	6,118.04	53.25	115.898		
8,100.00	8,034.74	6,978.42	6,977.18	29.36	24.76	98.77	1,545.14	5,831.25	6,187.19	6,133.69	53.49	115.666		
8,202.27	8,137.00	6,978.42	6,977.18	29.72	24.76	82.99	1,545.14	5,831.25	6,204.66	6,150.94	53.73	115.489		
8,300.00	8,234.73	6,978.42	6,977.18	30.06	24.76	82.99	1,545.14	5,831.25	6,222.69	6,168.75	53.94	115.372		
8,400.00	8,334.73	6,978.42	6,977.18	30.41	24.76	82.99	1,545.14	5,831.25	6,242.66	6,188.52	54.14	115.303		
8,500.00	8,434.73	6,978.42	6,977.18	30.75	24.76	82.99	1,545.14	5,831.25	6,264.17	6,209.83	54.34	115.285		
8,552.31	8,487.04	6,978.42	6,977.18	30.94	24.76	82.99	1,545.14	5,831.25	6,276.03	6,221.59	54.43	115.295		
8,600.00	8,534.68	6,978.42	6,977.18	31.10	24.76	-6.56	1,545.14	5,831.25	6,285.27	6,230.75	54.52	115.292		
8,650.00	8,584.26	6,978.42	6,977.18	31.26	24.76	-6.49	1,545.14	5,831.25	6,291.16	6,236.56	54.59	115.239		
8,700.00	8,633.10	6,978.42	6,977.18	31.43	24.76	-6.47	1,545.14	5,831.25	6,293.12	6,238.45	54.66	115.126		
8,750.00	8,680.83	6,978.42	6,977.18	31.58	24.76	-6.49	1,545.14	5,831.25	6,291.14	6,236.42	54.73	114.956		
8,800.00	8,727.09	6,978.42	6,977.18	31.74	24.76	-6.56	1,545.14	5,831.25	6,285.24	6,230.46	54.78	114.730		
8,850.00	8,771.52	6,978.42	6,977.18	31.89	24.76	-6.68	1,545.14	5,831.25	6,275.45	6,220.62	54.83	114.453		
8,900.00	8,813.78	6,978.42	6,977.18	32.04	24.76	-6.84	1,545.14	5,831.25	6,261.83	6,206.96	54.87	114.125		
8,950.00	8,853.56	6,978.42	6,977.18	32.18	24.76	-7.07	1,545.14	5,831.25	6,244.45	6,189.55	54.90	113.749		
9,000.00	8,890.55	6,978.42	6,977.18	32.32	24.76	-7.36	1,545.14	5,831.25	6,223.41	6,168.50	54.92	113.326		
9,050.00	8,924.46	6,978.42	6,977.18	32.47	24.76	-7.73	1,545.14	5,831.25	6,198.85	6,143.92	54.93	112.859		
9,100.00	8,955.05	6,978.42	6,977.18	32.63	24.76	-8.20	1,545.14	5,831.25	6,170.90	6,115.97	54.93	112.349		
9,150.00	8,982.08	6,978.42	6,977.18	32.79	24.76	-8.78	1,545.14	5,831.25	6,139.73	6,084.81	54.92	111.797		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	6,978.42	6,977.18	32.97	24.76	-9.53	1,545.14	5,831.25	6,105.54	6,050.63	54.90	111.205		
9,250.00	9,024.65	6,978.42	6,977.18	33.17	24.76	-10.49	1,545.14	5,831.25	6,068.53	6,013.65	54.88	110.575		
9,300.00	9,039.87	6,978.42	6,977.18	33.38	24.76	-11.74	1,545.14	5,831.25	6,028.94	5,974.09	54.85	109.907		
9,350.00	9,050.89	6,978.42	6,977.18	33.62	24.76	-13.42	1,545.14	5,831.25	5,987.02	5,932.20	54.82	109.204		
9,400.00	9,057.61	6,978.42	6,977.18	33.87	24.76	-15.75	1,545.14	5,831.25	5,943.05	5,888.25	54.79	108.467		
9,452.31	9,060.00	6,978.42	6,977.18	34.15	24.76	-19.34	1,545.14	5,831.25	5,895.16	5,840.40	54.76	107.662		
9,500.00	9,060.00	6,978.42	6,977.18	34.42	24.76	-19.34	1,545.14	5,831.25	5,850.75	5,796.02	54.72	106.916		
9,600.00	9,060.00	6,978.42	6,977.18	35.09	24.76	-19.34	1,545.14	5,831.25	5,757.80	5,703.15	54.65	105.360		
9,700.00	9,060.00	6,978.42	6,977.18	35.86	24.76	-19.34	1,545.14	5,831.25	5,665.09	5,610.52	54.58	103.798		
9,800.00	9,060.00	6,978.42	6,977.18	36.72	24.76	-19.34	1,545.14	5,831.25	5,572.64	5,518.13	54.51	102.231		
9,900.00	9,060.00	6,978.42	6,977.18	37.69	24.76	-19.34	1,545.14	5,831.25	5,480.45	5,426.00	54.45	100.658		
10,000.00	9,060.00	6,978.42	6,977.18	38.73	24.76	-19.34	1,545.14	5,831.25	5,388.54	5,334.15	54.39	99.078		
10,100.00	9,060.00	6,978.42	6,977.18	39.86	24.76	-19.34	1,545.14	5,831.25	5,296.92	5,242.59	54.33	97.493		
10,140.22	9,060.00	6,978.42	6,977.18	40.33	24.76	-19.34	1,545.14	5,831.25	5,260.15	5,205.84	54.31	96.853		
10,200.00	9,060.00	6,978.42	6,977.18	41.05	24.76	-21.81	1,545.14	5,831.25	5,205.70	5,151.42	54.28	95.899		
10,300.00	9,060.00	6,978.42	6,977.18	42.31	24.76	-25.68	1,545.14	5,831.25	5,115.32	5,061.07	54.25	94.292		
10,400.00	9,060.00	6,978.42	6,977.18	43.64	24.76	-29.21	1,545.14	5,831.25	5,025.98	4,971.74	54.24	92.663		
10,507.23	9,060.00	6,978.42	6,977.18	45.11	24.76	-32.63	1,545.14	5,831.25	4,931.53	4,877.27	54.26	90.888		
10,600.00	9,060.00	6,978.42	6,977.18	46.43	24.76	-29.76	1,545.14	5,831.25	4,850.30	4,796.00	54.30	89.328		
10,700.00	9,060.00	6,978.42	6,977.18	47.91	24.76	-26.51	1,545.14	5,831.25	4,762.39	4,708.05	54.34	87.638		
10,800.00	9,060.00	6,978.42	6,977.18	49.42	24.76	-23.12	1,545.14	5,831.25	4,674.23	4,619.84	54.38	85.949		
10,900.00	9,060.00	6,978.42	6,977.18	50.97	24.76	-19.60	1,545.14	5,831.25	4,585.89	4,531.47	54.42	84.269		
11,000.00	9,060.00	6,978.42	6,977.18	52.55	24.76	-16.00	1,545.14	5,831.25	4,497.48	4,443.03	54.44	82.607		
11,100.00	9,060.00	6,978.42	6,977.18	54.14	24.76	-12.34	1,545.14	5,831.25	4,409.10	4,354.65	54.45	80.969		
11,207.23	9,060.00	6,978.42	6,977.18	55.87	24.76	-8.39	1,545.14	5,831.25	4,314.51	4,260.07	54.44	79.246		
11,300.00	9,060.00	6,978.42	6,977.18	57.39	24.76	-11.73	1,545.14	5,831.25	4,233.14	4,178.70	54.44	77.757		
11,400.00	9,060.00	6,978.42	6,977.18	59.06	24.76	-15.13	1,545.14	5,831.25	4,146.30	4,091.83	54.47	76.119		
11,506.63	9,060.00	6,978.42	6,977.18	60.88	24.76	-18.53	1,545.14	5,831.25	4,054.90	4,000.34	54.55	74.331		
11,600.00	9,060.00	6,978.42	6,977.18	62.49	24.76	-18.53	1,545.14	5,831.25	3,975.76	3,921.10	54.66	72.742		
11,700.00	9,060.00	6,978.42	6,977.18	64.24	24.76	-18.53	1,545.14	5,831.25	3,891.70	3,836.91	54.79	71.034		
11,800.00	9,060.00	6,978.42	6,977.18	66.01	24.76	-18.53	1,545.14	5,831.25	3,808.41	3,753.47	54.94	69.319		
11,900.00	9,060.00	6,978.42	6,977.18	67.79	24.76	-18.53	1,545.14	5,831.25	3,725.95	3,670.83	55.12	67.600		
12,000.00	9,060.00	6,978.42	6,977.18	69.58	24.76	-18.53	1,545.14	5,831.25	3,644.36	3,589.04	55.32	65.876		
12,100.00	9,060.00	6,978.42	6,977.18	71.39	24.76	-18.53	1,545.14	5,831.25	3,563.71	3,508.16	55.55	64.149		
12,200.00	9,060.00	6,978.42	6,977.18	73.21	24.76	-18.53	1,545.14	5,831.25	3,484.07	3,428.25	55.82	62.420		
12,300.00	9,060.00	6,978.42	6,977.18	75.05	24.76	-18.53	1,545.14	5,831.25	3,405.50	3,349.39	56.11	60.692		
12,400.00	9,060.00	6,978.42	6,977.18	76.89	24.76	-18.53	1,545.14	5,831.25	3,328.08	3,271.64	56.44	58.967		
12,500.00	9,060.00	6,978.42	6,977.18	78.74	24.76	-18.53	1,545.14	5,831.25	3,251.89	3,195.08	56.80	57.247		
12,600.00	9,060.00	6,978.42	6,977.18	80.61	24.76	-18.53	1,545.14	5,831.25	3,177.02	3,119.81	57.21	55.534		
12,700.00	9,060.00	6,978.42	6,977.18	82.48	24.76	-18.53	1,545.14	5,831.25	3,103.57	3,045.92	57.65	53.833		
12,800.00	9,060.00	6,978.42	6,977.18	84.36	24.76	-18.53	1,545.14	5,831.25	3,031.64	2,973.50	58.14	52.146		
12,900.00	9,060.00	6,978.42	6,977.18	86.24	24.76	-18.53	1,545.14	5,831.25	2,961.33	2,902.67	58.67	50.478		
13,000.00	9,060.00	6,978.42	6,977.18	88.14	24.76	-18.53	1,545.14	5,831.25	2,892.78	2,833.54	59.24	48.833		
13,100.00	9,060.00	6,978.42	6,977.18	90.04	24.76	-18.53	1,545.14	5,831.25	2,826.10	2,766.25	59.86	47.214		
13,200.00	9,060.00	6,978.42	6,977.18	91.94	24.76	-18.53	1,545.14	5,831.25	2,761.44	2,700.92	60.52	45.628		
13,300.00	9,060.00	6,978.42	6,977.18	93.86	24.76	-18.53	1,545.14	5,831.25	2,698.93	2,637.70	61.23	44.078		
13,400.00	9,060.00	6,978.42	6,977.18	95.77	24.76	-18.53	1,545.14	5,831.25	2,638.73	2,576.74	61.99	42.570		
13,500.00	9,060.00	6,978.42	6,977.18	97.70	24.76	-18.53	1,545.14	5,831.25	2,581.00	2,518.22	62.78	41.109		
13,600.00	9,060.00	6,978.42	6,977.18	99.62	24.76	-18.53	1,545.14	5,831.25	2,525.92	2,462.29	63.63	39.699		
13,700.00	9,060.00	6,978.42	6,977.18	101.56	24.76	-18.53	1,545.14	5,831.25	2,473.65	2,409.14	64.51	38.346		
13,800.00	9,060.00	6,978.42	6,977.18	103.49	24.76	-18.53	1,545.14	5,831.25	2,424.38	2,358.95	65.43	37.055		
13,900.00	9,060.00	6,978.42	6,977.18	105.43	24.76	-18.53	1,545.14	5,831.25	2,378.30	2,311.92	66.38	35.829		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	6,978.42	6,977.18	107.38	24.76	-18.53	1,545.14	5,831.25	2,335.59	2,268.23	67.36	34.672		
14,100.00	9,060.00	6,978.42	6,977.18	109.33	24.76	-18.53	1,545.14	5,831.25	2,296.45	2,228.08	68.37	33.588		
14,200.00	9,060.00	6,978.42	6,977.18	111.28	24.76	-18.53	1,545.14	5,831.25	2,261.05	2,191.65	69.40	32.580		
14,300.00	9,060.00	6,978.42	6,977.18	113.23	24.76	-18.53	1,545.14	5,831.25	2,229.58	2,159.14	70.44	31.650		
14,400.00	9,060.00	6,978.42	6,977.18	115.19	24.76	-18.53	1,545.14	5,831.25	2,202.21	2,130.70	71.50	30.800		
14,500.00	9,060.00	6,978.42	6,977.18	117.15	24.76	-18.53	1,545.14	5,831.25	2,179.08	2,106.51	72.56	30.029		
14,600.00	9,060.00	6,978.42	6,977.18	119.11	24.76	-18.53	1,545.14	5,831.25	2,160.34	2,086.71	73.63	29.340		
14,700.00	9,060.00	6,978.42	6,977.18	121.08	24.76	-18.53	1,545.14	5,831.25	2,146.10	2,071.41	74.69	28.732		
14,800.00	9,060.00	6,978.42	6,977.18	123.05	24.76	-18.53	1,545.14	5,831.25	2,136.45	2,060.70	75.75	28.204		
14,900.00	9,060.00	6,978.42	6,977.18	125.02	24.76	-18.53	1,545.14	5,831.25	2,131.46	2,054.66	76.79	27.756		
14,956.60	9,060.00	6,978.42	6,977.18	126.14	24.76	-18.53	1,545.14	5,831.25	2,130.71	2,053.33	77.37	27.538	CC, ES	
15,000.00	9,060.00	6,978.42	6,977.18	126.99	24.76	-18.53	1,545.14	5,831.25	2,131.15	2,053.33	77.81	27.387		
15,100.00	9,060.00	6,978.42	6,977.18	128.97	24.76	-18.53	1,545.14	5,831.25	2,135.53	2,056.72	78.81	27.098		
15,200.00	9,060.00	6,978.42	6,977.18	130.95	24.76	-18.53	1,545.14	5,831.25	2,144.56	2,064.80	79.76	26.887		
15,300.00	9,060.00	6,978.42	6,977.18	132.93	24.76	-18.53	1,545.14	5,831.25	2,158.20	2,077.53	80.67	26.753		
15,400.00	9,060.00	6,978.42	6,977.18	134.91	24.76	-18.53	1,545.14	5,831.25	2,176.35	2,094.83	81.53	26.695	SF	
15,500.00	9,060.00	6,978.42	6,977.18	136.89	24.76	-18.53	1,545.14	5,831.25	2,198.91	2,116.59	82.32	26.713		
15,600.00	9,060.00	6,978.42	6,977.18	138.88	24.76	-18.53	1,545.14	5,831.25	2,225.73	2,142.70	83.03	26.805		
15,700.00	9,060.00	6,978.42	6,977.18	140.86	24.76	-18.53	1,545.14	5,831.25	2,256.67	2,172.99	83.68	26.968		
15,800.00	9,060.00	6,978.42	6,977.18	142.85	24.76	-18.53	1,545.14	5,831.25	2,291.56	2,207.31	84.25	27.200		
15,900.00	9,060.00	6,978.42	6,977.18	144.84	24.76	-18.53	1,545.14	5,831.25	2,330.22	2,245.48	84.74	27.499		
16,000.00	9,060.00	6,978.42	6,977.18	146.83	24.76	-18.53	1,545.14	5,831.25	2,372.47	2,287.32	85.15	27.862		
16,100.00	9,060.00	6,978.42	6,977.18	148.83	24.76	-18.53	1,545.14	5,831.25	2,418.12	2,332.62	85.49	28.285		
16,200.00	9,060.00	6,978.42	6,977.18	150.82	24.76	-18.53	1,545.14	5,831.25	2,466.97	2,381.21	85.76	28.766		
16,300.00	9,060.00	6,978.42	6,977.18	152.82	24.76	-18.53	1,545.14	5,831.25	2,518.86	2,432.89	85.97	29.301		
16,400.00	9,060.00	6,978.42	6,977.18	154.81	24.76	-18.53	1,545.14	5,831.25	2,573.58	2,487.47	86.11	29.887		
16,500.00	9,060.00	6,978.42	6,977.18	156.81	24.76	-18.53	1,545.14	5,831.25	2,630.97	2,544.77	86.20	30.521		
16,600.00	9,060.00	6,978.42	6,977.18	158.81	24.76	-18.53	1,545.14	5,831.25	2,690.85	2,604.61	86.24	31.201		
16,700.00	9,060.00	6,978.42	6,977.18	160.81	24.76	-18.53	1,545.14	5,831.25	2,753.07	2,666.82	86.24	31.923		
16,800.00	9,060.00	6,978.42	6,977.18	162.81	24.76	-18.53	1,545.14	5,831.25	2,817.45	2,731.25	86.20	32.684		
16,900.00	9,060.00	6,978.42	6,977.18	164.82	24.76	-18.53	1,545.14	5,831.25	2,883.87	2,797.74	86.13	33.483		
17,000.00	9,060.00	6,978.42	6,977.18	166.82	24.76	-18.53	1,545.14	5,831.25	2,952.19	2,866.16	86.03	34.315		
17,100.00	9,060.00	6,978.42	6,977.18	168.82	24.76	-18.53	1,545.14	5,831.25	3,022.27	2,936.36	85.91	35.180		
17,200.00	9,060.00	6,978.42	6,977.18	170.83	24.76	-18.53	1,545.14	5,831.25	3,093.99	3,008.22	85.77	36.075		
17,300.00	9,060.00	6,978.42	6,977.18	172.84	24.76	-18.53	1,545.14	5,831.25	3,167.25	3,081.64	85.61	36.998		
17,400.00	9,060.00	6,978.42	6,977.18	174.84	24.76	-18.53	1,545.14	5,831.25	3,241.93	3,156.50	85.43	37.946		
17,500.00	9,060.00	6,978.42	6,977.18	176.85	24.76	-18.53	1,545.14	5,831.25	3,317.95	3,232.70	85.25	38.919		
17,600.00	9,060.00	6,978.42	6,977.18	178.86	24.76	-18.53	1,545.14	5,831.25	3,395.22	3,310.15	85.06	39.914		
17,700.00	9,060.00	6,978.42	6,977.18	180.87	24.76	-18.53	1,545.14	5,831.25	3,473.64	3,388.77	84.87	40.931		
17,800.00	9,060.00	6,978.42	6,977.18	182.88	24.76	-18.53	1,545.14	5,831.25	3,553.15	3,468.48	84.67	41.966		
17,900.00	9,060.00	6,978.42	6,977.18	184.89	24.76	-18.53	1,545.14	5,831.25	3,633.67	3,549.20	84.46	43.020		
18,000.00	9,060.00	6,978.42	6,977.18	186.90	24.76	-18.53	1,545.14	5,831.25	3,715.13	3,630.87	84.26	44.091		
18,100.00	9,060.00	6,978.42	6,977.18	188.92	24.76	-18.53	1,545.14	5,831.25	3,797.49	3,713.43	84.06	45.177		
18,200.00	9,060.00	6,978.42	6,977.18	190.93	24.76	-18.53	1,545.14	5,831.25	3,880.67	3,796.81	83.86	46.277		
18,300.00	9,060.00	6,978.42	6,977.18	192.94	24.76	-18.53	1,545.14	5,831.25	3,964.63	3,880.97	83.66	47.392		
18,400.00	9,060.00	6,978.42	6,977.18	194.96	24.76	-18.53	1,545.14	5,831.25	4,049.31	3,965.85	83.46	48.518		
18,500.00	9,060.00	6,978.42	6,977.18	196.97	24.76	-18.53	1,545.14	5,831.25	4,134.69	4,051.42	83.27	49.656		
18,600.00	9,060.00	6,978.42	6,977.18	198.99	24.76	-18.53	1,545.14	5,831.25	4,220.70	4,137.62	83.08	50.805		
18,700.00	9,060.00	6,978.42	6,977.18	201.00	24.76	-18.53	1,545.14	5,831.25	4,307.32	4,224.43	82.89	51.964		
18,800.00	9,060.00	6,978.42	6,977.18	203.02	24.76	-18.53	1,545.14	5,831.25	4,394.50	4,311.79	82.71	53.132		
18,900.00	9,060.00	6,978.42	6,977.18	205.04	24.76	-18.53	1,545.14	5,831.25	4,482.23	4,399.69	82.53	54.309		
19,000.00	9,060.00	6,978.42	6,977.18	207.06	24.76	-18.53	1,545.14	5,831.25	4,570.45	4,488.09	82.36	55.493		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,100.00	9,060.00	6,978.42	6,977.18	209.07	24.76	-18.53	1,545.14	5,831.25	4,659.15	4,576.96	82.19	56.684	
19,200.00	9,060.00	6,978.42	6,977.18	211.09	24.76	-18.53	1,545.14	5,831.25	4,748.30	4,666.27	82.03	57.883	
19,300.00	9,060.00	6,978.42	6,977.18	213.11	24.76	-18.53	1,545.14	5,831.25	4,837.88	4,756.00	81.88	59.087	
19,400.00	9,060.00	6,978.42	6,977.18	215.13	24.76	-18.53	1,545.14	5,831.25	4,927.85	4,846.13	81.73	60.297	
19,500.32	9,060.00	6,978.42	6,977.18	217.16	24.76	-18.53	1,545.14	5,831.25	5,018.50	4,936.92	81.58	61.516	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	102.62	-1,573.01	7,026.75	7,201.26					
100.00	100.00	12.60	7.40	0.52	5.03	102.62	-1,573.01	7,026.75	7,200.67	7,195.12	5.54	1,299.092		
200.00	200.00	107.40	107.40	0.70	5.23	102.62	-1,573.01	7,026.75	7,200.67	7,194.73	5.93	1,213.433		
300.00	300.00	207.40	207.40	0.99	5.83	102.62	-1,573.01	7,026.75	7,200.67	7,193.85	6.82	1,056.417		
400.00	400.00	307.40	307.40	1.31	6.71	102.62	-1,573.01	7,026.75	7,200.67	7,192.65	8.02	897.697		
500.00	500.00	407.40	407.40	1.65	7.79	102.62	-1,573.01	7,026.75	7,200.67	7,191.24	9.43	763.483		
600.00	600.00	507.40	507.40	1.99	8.98	102.62	-1,573.01	7,026.75	7,200.67	7,189.70	10.97	656.346		
700.00	700.00	607.40	607.40	2.34	10.25	102.62	-1,573.01	7,026.75	7,200.67	7,188.07	12.59	571.756		
800.00	800.00	707.40	707.40	2.69	11.58	102.62	-1,573.01	7,026.75	7,200.67	7,186.39	14.27	504.502		
900.00	900.00	807.40	807.40	3.04	12.95	102.62	-1,573.01	7,026.75	7,200.67	7,184.68	15.99	450.316		
1,000.00	1,000.00	907.40	907.40	3.40	14.34	102.62	-1,573.01	7,026.75	7,200.67	7,182.93	17.74	406.011		
1,100.00	1,100.00	1,007.40	1,007.40	3.75	15.75	102.62	-1,573.01	7,026.75	7,200.67	7,181.17	19.50	369.260		
1,200.00	1,200.00	1,107.40	1,107.40	4.11	17.17	102.62	-1,573.01	7,026.75	7,200.67	7,179.39	21.28	338.368		
1,300.00	1,300.00	1,207.40	1,207.40	4.46	18.61	102.62	-1,573.01	7,026.75	7,200.67	7,177.59	23.07	312.088		
1,400.00	1,400.00	1,307.40	1,307.40	4.82	20.05	102.62	-1,573.01	7,026.75	7,200.67	7,175.79	24.87	289.488		
1,500.00	1,500.00	1,407.40	1,407.40	5.18	21.51	102.62	-1,573.01	7,026.75	7,200.67	7,173.98	26.68	269.867		
1,600.00	1,600.00	1,507.40	1,507.40	5.53	22.96	102.62	-1,573.01	7,026.75	7,200.67	7,172.17	28.50	252.683		
1,700.00	1,700.00	1,607.40	1,607.40	5.89	24.43	102.62	-1,573.01	7,026.75	7,200.67	7,170.35	30.32	237.519		
1,800.00	1,800.00	1,707.40	1,707.40	6.25	25.89	102.62	-1,573.01	7,026.75	7,200.67	7,168.53	32.14	224.044		
1,900.00	1,900.00	1,807.40	1,807.40	6.61	27.36	102.62	-1,573.01	7,026.75	7,200.67	7,166.70	33.97	211.994		
2,000.00	2,000.00	1,907.40	1,907.40	6.96	28.83	102.62	-1,573.01	7,026.75	7,200.67	7,164.87	35.80	201.158		
2,100.00	2,100.00	2,007.40	2,007.40	7.32	30.31	102.62	-1,573.01	7,026.75	7,200.67	7,163.04	37.63	191.364		
2,200.00	2,200.00	2,107.40	2,107.40	7.68	31.78	102.62	-1,573.01	7,026.75	7,200.67	7,161.20	39.46	182.469		
2,300.00	2,300.00	2,207.40	2,207.40	8.04	33.26	102.62	-1,573.01	7,026.75	7,200.67	7,159.37	41.30	174.356		
2,350.00	2,350.00	2,257.40	2,257.40	8.22	34.00	102.62	-1,573.01	7,026.75	7,200.67	7,158.45	42.22	170.562		
2,400.00	2,400.00	2,307.40	2,307.40	8.39	34.74	118.66	-1,573.01	7,026.75	7,200.77	7,157.64	43.14	166.932		
2,500.00	2,499.98	2,407.38	2,407.38	8.75	36.22	118.66	-1,573.01	7,026.75	7,201.61	7,156.63	44.97	160.129		
2,600.00	2,599.92	2,507.32	2,507.32	9.11	37.71	118.67	-1,573.01	7,026.75	7,203.28	7,156.47	46.81	153.879		
2,700.00	2,699.78	2,607.18	2,607.18	9.47	39.19	118.69	-1,573.01	7,026.75	7,205.80	7,157.15	48.65	148.119		
2,800.00	2,799.54	2,706.94	2,706.94	9.82	40.67	118.71	-1,573.01	7,026.75	7,209.15	7,158.67	50.48	142.798		
2,900.00	2,899.16	2,806.56	2,806.56	10.18	42.15	118.73	-1,573.01	7,026.75	7,213.35	7,161.03	52.32	137.871		
3,000.00	2,998.61	2,906.01	2,906.01	10.54	43.63	118.76	-1,573.01	7,026.75	7,218.40	7,164.25	54.15	133.298		
3,100.00	3,097.86	3,005.26	3,005.26	10.89	45.10	118.79	-1,573.01	7,026.75	7,224.30	7,168.32	55.98	129.045		
3,200.00	3,196.89	3,104.29	3,104.29	11.25	46.57	118.83	-1,573.01	7,026.75	7,231.06	7,173.25	57.81	125.081		
3,295.74	3,291.45	3,198.85	3,198.85	11.59	47.98	118.87	-1,573.01	7,026.75	7,238.34	7,178.78	59.56	121.534		
3,300.00	3,295.65	3,203.05	3,203.05	11.61	48.04	118.87	-1,573.01	7,026.75	7,238.68	7,179.04	59.64	121.381		
3,400.00	3,394.29	3,301.69	3,301.69	11.97	49.51	118.98	-1,573.01	7,026.75	7,246.71	7,185.25	61.46	117.908		
3,500.00	3,492.94	3,400.34	3,400.34	12.33	50.98	119.10	-1,573.01	7,026.75	7,254.77	7,191.48	63.29	114.634		
3,600.00	3,591.58	3,498.98	3,498.98	12.69	52.45	119.21	-1,573.01	7,026.75	7,262.86	7,197.74	65.11	111.540		
3,700.00	3,690.22	3,597.62	3,597.62	13.05	53.92	119.32	-1,573.01	7,026.75	7,270.97	7,204.03	66.94	108.614		
3,800.00	3,788.86	3,696.26	3,696.26	13.41	55.39	119.43	-1,573.01	7,026.75	7,279.12	7,210.34	68.77	105.842		
3,900.00	3,887.50	3,794.90	3,794.90	13.77	56.86	119.54	-1,573.01	7,026.75	7,287.29	7,216.68	70.61	103.212		
4,000.00	3,986.14	3,893.54	3,893.54	14.14	58.33	119.65	-1,573.01	7,026.75	7,295.49	7,223.05	72.44	100.714		
4,100.00	4,084.78	3,992.18	3,992.18	14.50	59.80	119.76	-1,573.01	7,026.75	7,303.72	7,229.45	74.27	98.338		
4,200.00	4,183.42	4,090.82	4,090.82	14.87	61.27	119.88	-1,573.01	7,026.75	7,311.97	7,235.87	76.11	96.076		
4,300.00	4,282.06	4,189.46	4,189.46	15.24	62.74	119.99	-1,573.01	7,026.75	7,320.26	7,242.31	77.94	93.920		
4,400.00	4,380.70	4,288.10	4,288.10	15.60	64.21	120.10	-1,573.01	7,026.75	7,328.57	7,248.79	79.78	91.862		
4,500.00	4,479.34	4,386.74	4,386.74	15.97	65.69	120.21	-1,573.01	7,026.75	7,336.90	7,255.29	81.61	89.897		
4,600.00	4,577.98	4,485.38	4,485.38	16.34	67.16	120.32	-1,573.01	7,026.75	7,345.27	7,261.82	83.45	88.017		
4,700.00	4,676.62	4,584.02	4,584.02	16.71	68.63	120.43	-1,573.01	7,026.75	7,353.66	7,268.37	85.29	86.218		
4,800.00	4,775.27	4,682.67	4,682.67	17.08	70.10	120.53	-1,573.01	7,026.75	7,362.08	7,274.95	87.13	84.495		
4,900.00	4,873.91	4,781.31	4,781.31	17.45	71.57	120.64	-1,573.01	7,026.75	7,370.53	7,281.56	88.97	82.843		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,879.95	4,879.95	17.82	73.05	120.75	-1,573.01	7,026.75	7,379.00	7,288.19	90.81	81.258		
5,100.00	5,071.19	4,978.59	4,978.59	18.19	74.52	120.86	-1,573.01	7,026.75	7,387.50	7,294.85	92.65	79.735		
5,200.00	5,169.83	5,077.23	5,077.23	18.56	75.99	120.97	-1,573.01	7,026.75	7,396.03	7,301.54	94.49	78.272		
5,300.00	5,268.47	5,175.87	5,175.87	18.93	77.46	121.08	-1,573.01	7,026.75	7,404.58	7,308.25	96.33	76.864		
5,400.00	5,367.11	5,274.51	5,274.51	19.31	78.94	121.18	-1,573.01	7,026.75	7,413.16	7,314.99	98.18	75.510		
5,500.00	5,465.75	5,373.15	5,373.15	19.68	80.41	121.29	-1,573.01	7,026.75	7,421.77	7,321.75	100.02	74.205		
5,600.00	5,564.39	5,471.79	5,471.79	20.05	81.88	121.40	-1,573.01	7,026.75	7,430.40	7,328.54	101.86	72.947		
5,700.00	5,663.03	5,570.43	5,570.43	20.42	83.36	121.51	-1,573.01	7,026.75	7,439.06	7,335.36	103.70	71.734		
5,800.00	5,761.67	5,669.07	5,669.07	20.80	84.83	121.61	-1,573.01	7,026.75	7,447.75	7,342.20	105.55	70.563		
5,900.00	5,860.31	5,767.71	5,767.71	21.17	86.30	121.72	-1,573.01	7,026.75	7,456.46	7,349.07	107.39	69.433		
6,000.00	5,958.96	5,866.36	5,866.36	21.54	87.78	121.83	-1,573.01	7,026.75	7,465.19	7,355.96	109.23	68.341		
6,100.00	6,057.60	5,965.00	5,965.00	21.92	89.25	121.93	-1,573.01	7,026.75	7,473.96	7,362.88	111.08	67.285		
6,200.00	6,156.24	6,063.64	6,063.64	22.29	90.72	122.04	-1,573.01	7,026.75	7,482.75	7,369.82	112.92	66.264		
6,300.00	6,254.88	6,162.28	6,162.28	22.67	92.20	122.14	-1,573.01	7,026.75	7,491.56	7,376.79	114.77	65.275		
6,400.00	6,353.52	6,260.92	6,260.92	23.04	93.67	122.25	-1,573.01	7,026.75	7,500.40	7,383.79	116.61	64.318		
6,500.00	6,452.16	6,359.56	6,359.56	23.42	95.15	122.35	-1,573.01	7,026.75	7,509.27	7,390.81	118.46	63.391		
6,600.00	6,550.80	6,458.20	6,458.20	23.79	96.62	122.46	-1,573.01	7,026.75	7,518.16	7,397.86	120.30	62.493		
6,700.00	6,649.44	6,556.84	6,556.84	24.17	98.09	122.56	-1,573.01	7,026.75	7,527.08	7,404.93	122.15	61.621		
6,800.00	6,748.08	6,655.48	6,655.48	24.54	99.57	122.67	-1,573.01	7,026.75	7,536.02	7,412.02	124.00	60.776		
6,900.00	6,846.72	6,754.12	6,754.12	24.92	101.04	122.77	-1,573.01	7,026.75	7,544.99	7,419.14	125.84	59.956		
7,000.00	6,945.36	6,852.76	6,852.76	25.29	102.52	122.87	-1,573.01	7,026.75	7,553.98	7,426.29	127.69	59.159		
7,100.00	7,044.00	6,951.40	6,951.40	25.67	103.99	122.98	-1,573.01	7,026.75	7,563.00	7,433.46	129.54	58.386		
7,200.00	7,142.65	7,050.05	7,050.05	26.04	105.47	123.08	-1,573.01	7,026.75	7,572.04	7,440.66	131.38	57.634		
7,300.00	7,241.29	7,148.69	7,148.69	26.42	106.94	123.18	-1,573.01	7,026.75	7,581.11	7,447.88	133.23	56.903		
7,400.00	7,339.93	7,247.33	7,247.33	26.79	108.41	123.29	-1,573.01	7,026.75	7,590.20	7,455.12	135.08	56.192		
7,500.00	7,438.57	7,345.97	7,345.97	27.17	109.89	123.39	-1,573.01	7,026.75	7,599.31	7,462.39	136.92	55.501		
7,571.77	7,509.37	7,416.77	7,416.77	27.44	110.95	123.46	-1,573.01	7,026.75	7,605.87	7,467.62	138.25	55.016		
7,600.00	7,537.23	7,444.63	7,444.63	27.55	111.36	123.52	-1,573.01	7,026.75	7,608.40	7,469.63	138.77	54.827		
7,700.00	7,636.18	7,543.58	7,543.58	27.92	112.84	123.71	-1,573.01	7,026.75	7,616.43	7,475.81	140.62	54.163		
7,800.00	7,735.48	7,642.88	7,642.88	28.29	114.33	123.87	-1,573.01	7,026.75	7,623.04	7,480.57	142.47	53.506		
7,900.00	7,835.05	7,742.45	7,742.45	28.65	115.82	123.99	-1,573.01	7,026.75	7,628.19	7,483.87	144.32	52.856		
8,000.00	7,934.83	7,842.23	7,842.23	29.01	117.31	124.08	-1,573.01	7,026.75	7,631.89	7,485.72	146.17	52.212		
8,100.00	8,034.74	7,942.14	7,942.14	29.36	118.80	124.13	-1,573.01	7,026.75	7,634.13	7,486.11	148.02	51.575		
8,202.27	8,137.00	8,044.40	8,044.40	29.72	120.33	108.11	-1,573.01	7,026.75	7,634.89	7,484.99	149.91	50.931		
8,300.00	8,234.73	8,142.13	8,142.13	30.06	121.79	108.11	-1,573.01	7,026.75	7,634.89	7,483.19	151.71	50.327		
8,400.00	8,334.73	8,242.13	8,242.13	30.41	123.29	108.11	-1,573.01	7,026.75	7,634.89	7,481.35	153.55	49.723		
8,500.00	8,434.73	8,342.13	8,342.13	30.75	124.78	108.11	-1,573.01	7,026.75	7,634.89	7,479.50	155.39	49.134		
8,552.31	8,487.04	8,394.44	8,394.44	30.94	125.56	108.11	-1,573.01	7,026.75	7,634.89	7,478.54	156.35	48.831		
8,600.00	8,534.68	8,442.08	8,442.08	31.10	126.28	18.51	-1,573.01	7,026.75	7,633.01	7,475.79	157.23	48.548		
8,650.00	8,584.26	8,491.66	8,491.66	31.26	127.02	18.72	-1,573.01	7,026.75	7,627.01	7,468.89	158.13	48.233		
8,700.00	8,633.10	8,540.50	8,540.50	31.43	127.75	19.08	-1,573.01	7,026.75	7,616.94	7,457.93	159.01	47.902		
8,750.00	8,680.83	8,588.23	8,588.23	31.58	128.46	19.60	-1,573.01	7,026.75	7,602.87	7,443.00	159.87	47.557		
8,800.00	8,727.09	8,634.49	8,634.49	31.74	129.15	20.31	-1,573.01	7,026.75	7,584.91	7,424.21	160.70	47.200		
8,850.00	8,771.52	8,678.92	8,678.92	31.89	129.82	21.22	-1,573.01	7,026.75	7,563.21	7,401.72	161.49	46.834		
8,900.00	8,813.78	8,721.18	8,721.18	32.04	130.45	22.39	-1,573.01	7,026.75	7,537.92	7,375.69	162.24	46.463		
8,950.00	8,853.56	8,760.96	8,760.96	32.18	131.04	23.85	-1,573.01	7,026.75	7,509.26	7,346.32	162.93	46.088		
9,000.00	8,890.55	8,797.95	8,797.95	32.32	131.60	25.68	-1,573.01	7,026.75	7,477.43	7,313.85	163.58	45.711		
9,050.00	8,924.46	8,831.86	8,831.86	32.47	132.10	27.99	-1,573.01	7,026.75	7,442.70	7,278.53	164.17	45.335		
9,100.00	8,955.05	8,862.45	8,862.45	32.63	132.56	30.89	-1,573.01	7,026.75	7,405.32	7,240.62	164.70	44.963		
9,150.00	8,982.08	8,889.48	8,889.48	32.79	132.97	34.59	-1,573.01	7,026.75	7,365.58	7,200.41	165.17	44.595		
9,200.00	9,005.34	8,912.74	8,912.74	32.97	133.31	39.34	-1,573.01	7,026.75	7,323.80	7,158.23	165.57	44.234		
9,250.00	9,024.65	8,932.05	8,932.05	33.17	133.60	45.49	-1,573.01	7,026.75	7,280.30	7,114.39	165.91	43.881		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,947.27	8,947.27	33.38	133.83	53.44	-1,573.01	7,026.75	7,235.40	7,069.22	166.18	43.538		
9,350.00	9,050.89	8,958.29	8,958.29	33.62	133.99	63.54	-1,573.01	7,026.75	7,189.46	7,023.07	166.39	43.208		
9,400.00	9,057.61	8,965.01	8,965.01	33.87	134.10	75.77	-1,573.01	7,026.75	7,142.83	6,976.30	166.54	42.890		
9,452.31	9,060.00	8,967.40	8,967.40	34.15	134.13	90.00	-1,573.01	7,026.75	7,093.70	6,927.08	166.62	42.574		
9,500.00	9,060.00	8,967.40	8,967.40	34.42	134.13	90.00	-1,573.01	7,026.75	7,048.88	6,882.21	166.67	42.293		
9,600.00	9,060.00	8,967.40	8,967.40	35.09	134.13	90.00	-1,573.01	7,026.75	6,955.02	6,788.24	166.78	41.702		
9,700.00	9,060.00	8,967.40	8,967.40	35.86	134.13	90.00	-1,573.01	7,026.75	6,861.33	6,694.42	166.91	41.107		
9,800.00	9,060.00	8,967.40	8,967.40	36.72	134.13	90.00	-1,573.01	7,026.75	6,767.83	6,600.76	167.07	40.509		
9,900.00	9,060.00	8,967.40	8,967.40	37.69	134.13	90.00	-1,573.01	7,026.75	6,674.51	6,507.26	167.25	39.907		
10,000.00	9,060.00	8,967.40	8,967.40	38.73	134.13	90.00	-1,573.01	7,026.75	6,581.40	6,413.94	167.46	39.302		
10,100.00	9,060.00	8,967.40	8,967.40	39.86	134.13	90.00	-1,573.01	7,026.75	6,488.48	6,320.79	167.69	38.693		
10,140.22	9,060.00	8,967.40	8,967.40	40.33	134.13	90.00	-1,573.01	7,026.75	6,451.17	6,283.37	167.79	38.447		
10,200.00	9,060.00	8,967.40	8,967.40	41.05	134.13	90.00	-1,573.01	7,026.75	6,395.55	6,227.60	167.95	38.080		
10,300.00	9,060.00	8,967.40	8,967.40	42.31	134.13	90.00	-1,573.01	7,026.75	6,301.67	6,133.46	168.22	37.462		
10,400.00	9,060.00	8,967.40	8,967.40	43.64	134.13	90.00	-1,573.01	7,026.75	6,206.82	6,038.33	168.48	36.839		
10,507.23	9,060.00	8,967.40	8,967.40	45.11	134.13	90.00	-1,573.01	7,026.75	6,104.10	5,935.34	168.76	36.170		
10,600.00	9,060.00	8,967.40	8,967.40	46.43	134.13	90.00	-1,573.01	7,026.75	6,015.29	5,846.27	169.02	35.589		
10,700.00	9,060.00	8,967.40	8,967.40	47.91	134.13	90.00	-1,573.01	7,026.75	5,920.74	5,751.39	169.35	34.961		
10,800.00	9,060.00	8,967.40	8,967.40	49.42	134.13	90.00	-1,573.01	7,026.75	5,827.60	5,657.85	169.75	34.331		
10,900.00	9,060.00	8,967.40	8,967.40	50.97	134.13	90.00	-1,573.01	7,026.75	5,736.04	5,565.83	170.22	33.698		
11,000.00	9,060.00	8,967.40	8,967.40	52.55	134.13	90.00	-1,573.01	7,026.75	5,646.27	5,475.50	170.77	33.064		
11,100.00	9,060.00	8,967.40	8,967.40	54.14	134.13	90.00	-1,573.01	7,026.75	5,558.48	5,387.07	171.40	32.429		
11,207.23	9,060.00	8,967.40	8,967.40	55.87	134.13	90.00	-1,573.01	7,026.75	5,466.77	5,294.58	172.19	31.748		
11,300.00	9,060.00	8,967.40	8,967.40	57.39	134.13	90.00	-1,573.01	7,026.75	5,388.00	5,215.07	172.94	31.156		
11,400.00	9,060.00	8,967.40	8,967.40	59.06	134.13	90.00	-1,573.01	7,026.75	5,301.85	5,128.09	173.76	30.513		
11,506.63	9,060.00	8,967.40	8,967.40	60.88	134.13	90.00	-1,573.01	7,026.75	5,208.58	5,033.93	174.65	29.823		
11,600.00	9,060.00	8,967.40	8,967.40	62.49	134.13	90.00	-1,573.01	7,026.75	5,126.48	4,951.03	175.46	29.218		
11,700.00	9,060.00	8,967.40	8,967.40	64.24	134.13	90.00	-1,573.01	7,026.75	5,038.99	4,862.62	176.38	28.570		
11,800.00	9,060.00	8,967.40	8,967.40	66.01	134.13	90.00	-1,573.01	7,026.75	4,951.98	4,774.62	177.36	27.921		
11,900.00	9,060.00	8,967.40	8,967.40	67.79	134.13	90.00	-1,573.01	7,026.75	4,865.46	4,687.06	178.40	27.273		
12,000.00	9,060.00	8,967.40	8,967.40	69.58	134.13	90.00	-1,573.01	7,026.75	4,779.47	4,599.96	179.51	26.625		
12,100.00	9,060.00	8,967.40	8,967.40	71.39	134.13	90.00	-1,573.01	7,026.75	4,694.04	4,513.35	180.68	25.979		
12,200.00	9,060.00	8,967.40	8,967.40	73.21	134.13	90.00	-1,573.01	7,026.75	4,609.19	4,427.26	181.93	25.335		
12,300.00	9,060.00	8,967.40	8,967.40	75.05	134.13	90.00	-1,573.01	7,026.75	4,524.96	4,341.71	183.24	24.694		
12,400.00	9,060.00	8,967.40	8,967.40	76.89	134.13	90.00	-1,573.01	7,026.75	4,441.38	4,256.75	184.63	24.055		
12,500.00	9,060.00	8,967.40	8,967.40	78.74	134.13	90.00	-1,573.01	7,026.75	4,358.50	4,172.40	186.10	23.420		
12,600.00	9,060.00	8,967.40	8,967.40	80.61	134.13	90.00	-1,573.01	7,026.75	4,276.35	4,088.70	187.64	22.790		
12,700.00	9,060.00	8,967.40	8,967.40	82.48	134.13	90.00	-1,573.01	7,026.75	4,194.97	4,005.70	189.27	22.164		
12,800.00	9,060.00	8,967.40	8,967.40	84.36	134.13	90.00	-1,573.01	7,026.75	4,114.41	3,923.43	190.98	21.544		
12,900.00	9,060.00	8,967.40	8,967.40	86.24	134.13	90.00	-1,573.01	7,026.75	4,034.73	3,841.96	192.77	20.930		
13,000.00	9,060.00	8,967.40	8,967.40	88.14	134.13	90.00	-1,573.01	7,026.75	3,955.96	3,761.31	194.65	20.323		
13,100.00	9,060.00	8,967.40	8,967.40	90.04	134.13	90.00	-1,573.01	7,026.75	3,878.18	3,681.56	196.62	19.724		
13,200.00	9,060.00	8,967.40	8,967.40	91.94	134.13	90.00	-1,573.01	7,026.75	3,801.44	3,602.75	198.69	19.133		
13,300.00	9,060.00	8,967.40	8,967.40	93.86	134.13	90.00	-1,573.01	7,026.75	3,725.79	3,524.95	200.84	18.551		
13,400.00	9,060.00	8,967.40	8,967.40	95.77	134.13	90.00	-1,573.01	7,026.75	3,651.33	3,448.24	203.09	17.979		
13,500.00	9,060.00	8,967.40	8,967.40	97.70	134.13	90.00	-1,573.01	7,026.75	3,578.10	3,372.67	205.44	17.417		
13,600.00	9,060.00	8,967.40	8,967.40	99.62	134.13	90.00	-1,573.01	7,026.75	3,506.20	3,298.32	207.88	16.867		
13,700.00	9,060.00	8,967.40	8,967.40	101.56	134.13	90.00	-1,573.01	7,026.75	3,435.71	3,225.29	210.42	16.328		
13,800.00	9,060.00	8,967.40	8,967.40	103.49	134.13	90.00	-1,573.01	7,026.75	3,366.71	3,153.65	213.05	15.802		
13,900.00	9,060.00	8,967.40	8,967.40	105.43	134.13	90.00	-1,573.01	7,026.75	3,299.29	3,083.51	215.79	15.290		
14,000.00	9,060.00	8,967.40	8,967.40	107.38	134.13	90.00	-1,573.01	7,026.75	3,233.57	3,014.96	218.61	14.791		
14,100.00	9,060.00	8,967.40	8,967.40	109.33	134.13	90.00	-1,573.01	7,026.75	3,169.64	2,948.11	221.53	14.308		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,200.00	9,060.00	8,967.40	8,967.40	111.28	134.13	90.00	-1,573.01	7,026.75	3,107.61	2,883.07	224.54	13.840		
14,300.00	9,060.00	8,967.40	8,967.40	113.23	134.13	90.00	-1,573.01	7,026.75	3,047.60	2,819.97	227.63	13.388		
14,400.00	9,060.00	8,967.40	8,967.40	115.19	134.13	90.00	-1,573.01	7,026.75	2,989.73	2,758.93	230.80	12.954		
14,500.00	9,060.00	8,967.40	8,967.40	117.15	134.13	90.00	-1,573.01	7,026.75	2,934.13	2,700.10	234.03	12.537		
14,600.00	9,060.00	8,967.40	8,967.40	119.11	134.13	90.00	-1,573.01	7,026.75	2,880.93	2,643.59	237.33	12.139		
14,700.00	9,060.00	8,967.40	8,967.40	121.08	134.13	90.00	-1,573.01	7,026.75	2,830.26	2,589.58	240.68	11.759		
14,800.00	9,060.00	8,967.40	8,967.40	123.05	134.13	90.00	-1,573.01	7,026.75	2,782.27	2,538.20	244.07	11.399		
14,900.00	9,060.00	8,967.40	8,967.40	125.02	134.13	90.00	-1,573.01	7,026.75	2,737.09	2,489.61	247.48	11.060		
15,000.00	9,060.00	8,967.40	8,967.40	126.99	134.13	90.00	-1,573.01	7,026.75	2,694.86	2,443.97	250.90	10.741		
15,100.00	9,060.00	8,967.40	8,967.40	128.97	134.13	90.00	-1,573.01	7,026.75	2,655.73	2,401.43	254.30	10.443		
15,200.00	9,060.00	8,967.40	8,967.40	130.95	134.13	90.00	-1,573.01	7,026.75	2,619.84	2,362.16	257.67	10.167		
15,300.00	9,060.00	8,967.40	8,967.40	132.93	134.13	90.00	-1,573.01	7,026.75	2,587.31	2,326.32	260.99	9.913		
15,400.00	9,060.00	8,967.40	8,967.40	134.91	134.13	90.00	-1,573.01	7,026.75	2,558.28	2,294.04	264.24	9.682		
15,500.00	9,060.00	8,967.40	8,967.40	136.89	134.13	90.00	-1,573.01	7,026.75	2,532.87	2,265.49	267.38	9.473		
15,600.00	9,060.00	8,967.40	8,967.40	138.88	134.13	90.00	-1,573.01	7,026.75	2,511.19	2,240.78	270.41	9.287		
15,700.00	9,060.00	8,967.40	8,967.40	140.86	134.13	90.00	-1,573.01	7,026.75	2,493.33	2,220.04	273.29	9.124		
15,800.00	9,060.00	8,967.40	8,967.40	142.85	134.13	90.00	-1,573.01	7,026.75	2,479.38	2,203.38	276.00	8.983		
15,900.00	9,060.00	8,967.40	8,967.40	144.84	134.13	90.00	-1,573.01	7,026.75	2,469.40	2,190.88	278.53	8.866		
16,000.00	9,060.00	8,967.40	8,967.40	146.83	134.13	90.00	-1,573.01	7,026.75	2,463.45	2,182.60	280.85	8.771		
16,096.85	9,060.00	8,967.40	8,967.40	148.76	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.65	282.90	8.701 CC		
16,100.00	9,060.00	8,967.40	8,967.40	148.83	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.59	282.96	8.699 ES		
16,200.00	9,060.00	8,967.40	8,967.40	150.82	134.13	90.00	-1,573.01	7,026.75	2,463.71	2,178.87	284.83	8.650		
16,300.00	9,060.00	8,967.40	8,967.40	152.82	134.13	90.00	-1,573.01	7,026.75	2,469.91	2,183.45	286.47	8.622		
16,400.00	9,060.00	8,967.40	8,967.40	154.81	134.13	90.00	-1,573.01	7,026.75	2,480.14	2,192.28	287.86	8.616 SF		
16,500.00	9,060.00	8,967.40	8,967.40	156.81	134.13	90.00	-1,573.01	7,026.75	2,494.34	2,205.34	289.00	8.631		
16,600.00	9,060.00	8,967.40	8,967.40	158.81	134.13	90.00	-1,573.01	7,026.75	2,512.44	2,222.54	289.91	8.666		
16,700.00	9,060.00	8,967.40	8,967.40	160.81	134.13	90.00	-1,573.01	7,026.75	2,534.36	2,243.79	290.58	8.722		
16,800.00	9,060.00	8,967.40	8,967.40	162.81	134.13	90.00	-1,573.01	7,026.75	2,560.01	2,268.99	291.01	8.797		
16,900.00	9,060.00	8,967.40	8,967.40	164.82	134.13	90.00	-1,573.01	7,026.75	2,589.26	2,298.02	291.24	8.891		
17,000.00	9,060.00	8,967.40	8,967.40	166.82	134.13	90.00	-1,573.01	7,026.75	2,622.00	2,330.75	291.26	9.002		
17,100.00	9,060.00	8,967.40	8,967.40	168.82	134.13	90.00	-1,573.01	7,026.75	2,658.11	2,367.02	291.09	9.132		
17,200.00	9,060.00	8,967.40	8,967.40	170.83	134.13	90.00	-1,573.01	7,026.75	2,697.44	2,406.69	290.74	9.278		
17,300.00	9,060.00	8,967.40	8,967.40	172.84	134.13	90.00	-1,573.01	7,026.75	2,739.85	2,449.61	290.24	9.440		
17,400.00	9,060.00	8,967.40	8,967.40	174.84	134.13	90.00	-1,573.01	7,026.75	2,785.21	2,495.61	289.61	9.617		
17,500.00	9,060.00	8,967.40	8,967.40	176.85	134.13	90.00	-1,573.01	7,026.75	2,833.38	2,544.54	288.84	9.809		
17,600.00	9,060.00	8,967.40	8,967.40	178.86	134.13	90.00	-1,573.01	7,026.75	2,884.21	2,596.24	287.97	10.016		
17,700.00	9,060.00	8,967.40	8,967.40	180.87	134.13	90.00	-1,573.01	7,026.75	2,937.57	2,650.56	287.01	10.235		
17,800.00	9,060.00	8,967.40	8,967.40	182.88	134.13	90.00	-1,573.01	7,026.75	2,993.32	2,707.35	285.97	10.467		
17,900.00	9,060.00	8,967.40	8,967.40	184.89	134.13	90.00	-1,573.01	7,026.75	3,051.32	2,766.46	284.86	10.712		
18,000.00	9,060.00	8,967.40	8,967.40	186.90	134.13	90.00	-1,573.01	7,026.75	3,111.46	2,827.76	283.70	10.967		
18,100.00	9,060.00	8,967.40	8,967.40	188.92	134.13	90.00	-1,573.01	7,026.75	3,173.62	2,891.12	282.50	11.234		
18,200.00	9,060.00	8,967.40	8,967.40	190.93	134.13	90.00	-1,573.01	7,026.75	3,237.66	2,956.41	281.26	11.511		
18,300.00	9,060.00	8,967.40	8,967.40	192.94	134.13	90.00	-1,573.01	7,026.75	3,303.50	3,023.50	280.00	11.798		
18,400.00	9,060.00	8,967.40	8,967.40	194.96	134.13	90.00	-1,573.01	7,026.75	3,371.01	3,092.29	278.72	12.095		
18,500.00	9,060.00	8,967.40	8,967.40	196.97	134.13	90.00	-1,573.01	7,026.75	3,440.11	3,162.68	277.43	12.400		
18,600.00	9,060.00	8,967.40	8,967.40	198.99	134.13	90.00	-1,573.01	7,026.75	3,510.70	3,234.55	276.14	12.713		
18,700.00	9,060.00	8,967.40	8,967.40	201.00	134.13	90.00	-1,573.01	7,026.75	3,582.68	3,307.83	274.86	13.035		
18,800.00	9,060.00	8,967.40	8,967.40	203.02	134.13	90.00	-1,573.01	7,026.75	3,655.99	3,382.42	273.57	13.364		
18,900.00	9,060.00	8,967.40	8,967.40	205.04	134.13	90.00	-1,573.01	7,026.75	3,730.53	3,458.23	272.30	13.700		
19,000.00	9,060.00	8,967.40	8,967.40	207.06	134.13	90.00	-1,573.01	7,026.75	3,806.25	3,535.20	271.04	14.043		
19,100.00	9,060.00	8,967.40	8,967.40	209.07	134.13	90.00	-1,573.01	7,026.75	3,883.06	3,613.26	269.80	14.392		
19,200.00	9,060.00	8,967.40	8,967.40	211.09	134.13	90.00	-1,573.01	7,026.75	3,960.91	3,692.33	268.58	14.748		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,967.40	8,967.40	213.11	134.13	90.00	-1,573.01	7,026.75	4,039.73	3,772.36	267.37	15.109	
19,400.00	9,060.00	8,967.40	8,967.40	215.13	134.13	90.00	-1,573.01	7,026.75	4,119.47	3,853.28	266.19	15.476	
19,500.32	9,060.00	8,967.40	8,967.40	217.16	134.13	90.00	-1,573.01	7,026.75	4,200.34	3,935.31	265.02	15.849	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	58.50	1,038.14	1,693.77	1,986.84					
100.00	100.00	64.70	64.70	0.52	10.00	58.50	1,038.04	1,693.92	1,986.68	1,976.16	10.52	188.880		
200.00	200.00	167.21	167.20	0.70	10.01	58.52	1,037.53	1,694.54	1,986.94	1,976.24	10.71	185.530		
300.00	300.00	276.71	276.70	0.99	10.03	58.55	1,036.61	1,694.95	1,986.83	1,975.81	11.02	180.343		
400.00	400.00	386.96	386.94	1.31	10.07	58.59	1,034.99	1,695.13	1,986.20	1,974.83	11.38	174.601		
500.00	500.00	499.41	499.36	1.65	10.12	58.66	1,032.44	1,695.12	1,985.01	1,973.25	11.77	168.711		
600.00	600.00	595.76	595.67	1.99	10.18	58.72	1,029.75	1,695.16	1,983.59	1,971.42	12.17	163.004		
700.00	700.00	700.66	700.53	2.34	10.26	58.79	1,026.83	1,695.17	1,982.16	1,969.56	12.59	157.393		
800.00	800.00	798.62	798.45	2.69	10.34	58.87	1,023.86	1,695.23	1,980.64	1,967.61	13.03	152.027		
900.00	900.00	900.59	900.36	3.04	10.44	58.96	1,020.48	1,695.46	1,979.12	1,965.64	13.48	146.821		
1,000.00	1,000.00	999.08	998.79	3.40	10.55	59.04	1,017.18	1,695.69	1,977.60	1,963.66	13.94	141.859		
1,100.00	1,100.00	1,100.28	1,099.94	3.75	10.67	59.13	1,013.79	1,695.94	1,976.08	1,961.67	14.42	137.077		
1,200.00	1,200.00	1,196.68	1,196.28	4.11	10.80	59.21	1,010.65	1,696.18	1,974.63	1,959.73	14.90	132.559		
1,300.00	1,300.00	1,293.57	1,293.12	4.46	10.93	59.30	1,007.45	1,696.64	1,973.35	1,957.96	15.39	128.244		
1,400.00	1,400.00	1,387.76	1,387.25	4.82	11.07	59.39	1,004.24	1,697.38	1,972.29	1,956.41	15.88	124.162		
1,500.00	1,500.00	1,484.92	1,484.35	5.18	11.23	59.48	1,001.06	1,698.33	1,971.47	1,955.07	16.40	120.246		
1,600.00	1,600.00	1,579.44	1,578.82	5.53	11.38	59.58	997.99	1,699.45	1,970.84	1,953.93	16.91	116.547		
1,700.00	1,700.00	1,678.15	1,677.47	5.89	11.56	59.68	994.84	1,700.82	1,970.42	1,952.98	17.44	112.979		
1,800.00	1,800.00	1,780.52	1,779.78	6.25	11.75	59.78	991.51	1,702.22	1,969.97	1,951.98	17.99	109.526		
1,900.00	1,900.00	1,882.06	1,881.25	6.61	11.94	59.89	988.05	1,703.56	1,969.39	1,950.86	18.54	106.229		
2,000.00	2,000.00	1,981.36	1,980.48	6.96	12.14	59.99	984.65	1,704.86	1,968.80	1,949.71	19.10	103.103		
2,100.00	2,100.00	2,073.05	2,072.11	7.32	12.33	60.09	981.53	1,706.24	1,968.42	1,948.78	19.64	100.208		
2,200.00	2,200.00	2,177.73	2,176.72	7.68	12.55	60.20	978.16	1,708.00	1,968.28	1,948.05	20.22	97.322		
2,300.00	2,300.00	2,275.85	2,274.80	8.04	12.77	60.28	975.53	1,709.06	1,967.89	1,947.09	20.80	94.629		
2,350.00	2,350.00	2,323.50	2,322.44	8.22	12.87	60.31	974.56	1,709.50	1,967.78	1,946.70	21.08	93.350		
2,400.00	2,400.00	2,371.35	2,370.28	8.39	12.98	76.39	973.74	1,709.91	1,967.68	1,946.32	21.36	92.101		
2,500.00	2,499.98	2,470.57	2,469.49	8.75	13.20	76.48	972.47	1,710.64	1,967.27	1,945.33	21.94	89.650		
2,600.00	2,599.92	2,568.64	2,567.55	9.11	13.42	76.62	971.56	1,711.17	1,966.48	1,943.96	22.52	87.305		
2,700.00	2,699.78	2,673.59	2,672.50	9.47	13.67	76.81	970.88	1,711.59	1,965.31	1,942.18	23.13	84.986		
2,800.00	2,799.54	2,772.79	2,771.69	9.82	13.90	77.04	970.21	1,711.72	1,963.51	1,939.79	23.72	82.790		
2,900.00	2,899.16	2,873.53	2,872.44	10.18	14.15	77.33	969.70	1,711.84	1,961.43	1,937.12	24.32	80.662		
3,000.00	2,998.61	2,972.58	2,971.48	10.54	14.39	77.66	969.31	1,711.82	1,958.95	1,934.03	24.92	78.621		
3,100.00	3,097.86	3,069.50	3,068.40	10.89	14.63	78.02	969.27	1,711.70	1,956.24	1,930.72	25.51	76.672		
3,200.00	3,196.89	3,167.91	3,166.81	11.25	14.88	78.44	969.33	1,711.64	1,953.35	1,927.22	26.12	74.782		
3,295.74	3,291.45	3,262.21	3,261.12	11.59	15.12	78.89	969.36	1,711.60	1,950.35	1,923.64	26.71	73.033		
3,300.00	3,295.65	3,266.39	3,265.29	11.61	15.13	78.91	969.36	1,711.60	1,950.21	1,923.48	26.73	72.956		
3,400.00	3,394.29	3,362.87	3,361.77	11.97	15.39	79.36	969.57	1,711.53	1,947.10	1,919.76	27.34	71.215		
3,500.00	3,492.94	3,462.26	3,461.16	12.33	15.65	79.83	969.94	1,711.47	1,944.21	1,916.25	27.96	69.526		
3,600.00	3,591.58	3,561.40	3,560.30	12.69	15.91	80.28	970.48	1,711.23	1,941.36	1,912.77	28.59	67.902		
3,700.00	3,690.22	3,659.02	3,657.92	13.05	16.18	80.73	971.01	1,711.04	1,938.68	1,909.46	29.22	66.353		
3,800.00	3,788.86	3,759.89	3,758.78	13.41	16.45	81.20	971.55	1,710.86	1,936.13	1,906.27	29.86	64.846		
3,900.00	3,887.50	3,863.77	3,862.67	13.77	16.74	81.67	972.26	1,710.35	1,933.49	1,902.98	30.51	63.374		
4,000.00	3,986.14	3,964.80	3,963.69	14.14	17.03	82.14	972.91	1,709.63	1,930.75	1,899.59	31.16	61.968		
4,100.00	4,084.78	4,063.92	4,062.80	14.50	17.31	82.59	973.64	1,708.83	1,928.10	1,896.29	31.80	60.626		
4,200.00	4,183.42	4,162.49	4,161.37	14.87	17.59	83.04	974.36	1,708.04	1,925.56	1,893.11	32.45	59.338		
4,300.00	4,282.06	4,264.09	4,262.97	15.24	17.88	83.50	975.10	1,707.19	1,923.11	1,890.00	33.11	58.083		
4,400.00	4,380.70	4,361.35	4,360.22	15.60	18.16	83.94	975.84	1,706.23	1,920.66	1,886.90	33.76	56.893		
4,500.00	4,479.34	4,458.52	4,457.37	15.97	18.45	84.38	976.71	1,705.40	1,918.51	1,884.09	34.41	55.752		
4,600.00	4,577.98	4,559.08	4,557.93	16.34	18.74	84.84	977.60	1,704.52	1,916.45	1,881.37	35.08	54.638		
4,700.00	4,676.62	4,658.63	4,657.47	16.71	19.04	85.29	978.62	1,703.50	1,914.41	1,878.67	35.74	53.566		
4,800.00	4,775.27	4,757.08	4,755.91	17.08	19.33	85.74	979.62	1,702.50	1,912.51	1,876.11	36.40	52.538		
4,900.00	4,873.91	4,859.18	4,857.99	17.45	19.64	86.20	980.55	1,701.46	1,910.69	1,873.61	37.08	51.532		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,959.95	4,958.76	17.82	19.94	86.66	981.30	1,700.26	1,908.78	1,871.03	37.75	50.562		
5,100.00	5,071.19	5,058.85	5,057.65	18.19	20.24	87.12	981.97	1,699.11	1,906.98	1,868.56	38.42	49.634		
5,200.00	5,169.83	5,157.17	5,155.96	18.56	20.54	87.58	982.60	1,697.96	1,905.30	1,866.21	39.09	48.741		
5,300.00	5,268.47	5,255.88	5,254.67	18.93	20.84	88.04	983.15	1,696.88	1,903.79	1,864.02	39.76	47.879		
5,400.00	5,367.11	5,351.89	5,350.67	19.31	21.13	88.49	983.59	1,695.87	1,902.42	1,861.99	40.43	47.057		
5,500.00	5,465.75	5,447.29	5,446.07	19.68	21.43	88.95	983.98	1,695.12	1,901.41	1,860.31	41.09	46.270		
5,600.00	5,564.39	5,544.40	5,543.18	20.05	21.73	89.43	983.64	1,694.67	1,900.62	1,858.86	41.76	45.508		
5,700.00	5,663.03	5,640.63	5,639.39	20.42	22.02	89.94	982.56	1,694.56	1,900.09	1,857.66	42.44	44.776		
5,800.00	5,761.67	5,737.55	5,736.31	20.80	22.33	90.46	981.19	1,694.64	1,899.84	1,856.73	43.11	44.069		
5,900.00	5,860.31	5,840.03	5,838.77	21.17	22.65	91.01	979.62	1,694.74	1,899.74	1,855.94	43.80	43.369		
6,000.00	5,958.96	5,961.41	5,960.13	21.54	23.03	91.66	977.84	1,694.03	1,899.20	1,854.65	44.55	42.627		
6,100.00	6,057.60	6,079.16	6,077.84	21.92	23.40	92.29	975.77	1,691.78	1,897.44	1,852.15	45.29	41.895		
6,200.00	6,156.24	6,180.69	6,179.32	22.29	23.72	92.85	973.29	1,689.45	1,895.35	1,849.36	45.98	41.218		
6,300.00	6,254.88	6,271.97	6,270.53	22.67	24.01	93.38	970.23	1,687.66	1,893.54	1,846.89	46.65	40.589		
6,400.00	6,353.52	6,366.34	6,364.83	23.04	24.32	93.93	967.00	1,686.17	1,892.28	1,844.95	47.33	39.980		
6,500.00	6,452.16	6,469.34	6,467.77	23.42	24.65	94.53	963.69	1,684.48	1,891.20	1,843.17	48.03	39.373		
6,600.00	6,550.80	6,566.94	6,565.31	23.79	24.96	95.07	961.27	1,682.49	1,890.08	1,841.36	48.72	38.794		
6,700.00	6,649.44	6,656.95	6,655.29	24.17	25.25	95.57	959.32	1,680.85	1,889.40	1,840.02	49.39	38.258		
6,747.24	6,696.04	6,698.45	6,696.78	24.34	25.38	95.79	958.46	1,680.25	1,889.32	1,839.62	49.70	38.016		
6,800.00	6,748.08	6,746.99	6,745.30	24.54	25.54	96.06	957.48	1,679.66	1,889.39	1,839.34	50.05	37.748		
6,900.00	6,846.72	6,835.99	6,834.28	24.92	25.83	96.55	955.67	1,678.83	1,889.94	1,839.23	50.71	37.266		
7,000.00	6,945.36	6,918.54	6,916.81	25.29	26.10	97.01	953.88	1,678.63	1,891.32	1,839.97	51.36	36.828		
7,100.00	7,044.00	6,994.39	6,992.64	25.67	26.34	97.44	952.25	1,679.25	1,893.92	1,841.95	51.97	36.443		
7,200.00	7,142.65	7,092.54	7,090.76	26.04	26.66	97.98	950.33	1,680.67	1,897.32	1,844.66	52.66	36.028		
7,300.00	7,241.29	7,188.27	7,186.47	26.42	26.97	98.51	948.55	1,682.06	1,900.91	1,847.57	53.35	35.634		
7,400.00	7,339.93	7,282.04	7,280.20	26.79	27.28	99.03	946.62	1,683.61	1,904.87	1,850.84	54.02	35.261		
7,500.00	7,438.57	7,377.32	7,375.44	27.17	27.59	99.56	944.59	1,685.40	1,909.20	1,854.50	54.71	34.900		
7,571.77	7,509.37	7,450.67	7,448.77	27.44	27.83	99.96	943.31	1,686.77	1,912.45	1,857.23	55.21	34.637		
7,600.00	7,537.23	7,480.47	7,478.56	27.55	27.93	100.13	942.89	1,687.27	1,913.68	1,858.26	55.42	34.532		
7,700.00	7,636.18	7,577.71	7,575.78	27.92	28.25	100.64	941.77	1,688.81	1,917.79	1,861.69	56.10	34.183		
7,800.00	7,735.48	7,673.36	7,671.41	28.29	28.56	101.07	940.65	1,690.49	1,921.69	1,864.91	56.78	33.845		
7,900.00	7,835.05	7,769.65	7,767.68	28.65	28.88	101.42	939.54	1,692.34	1,925.33	1,867.87	57.45	33.511		
8,000.00	7,934.83	7,869.01	7,867.02	29.01	29.20	101.68	939.11	1,694.31	1,928.59	1,870.46	58.13	33.174		
8,100.00	8,034.74	7,985.45	7,983.43	29.36	29.58	101.81	940.33	1,696.10	1,931.03	1,872.15	58.88	32.796		
8,202.27	8,137.00	8,095.01	8,092.98	29.72	29.94	85.79	941.94	1,696.90	1,932.17	1,872.57	59.60	32.419		
8,300.00	8,234.73	8,201.50	8,199.46	30.06	30.29	85.76	942.85	1,697.34	1,932.63	1,872.34	60.29	32.055		
8,400.00	8,334.73	8,327.25	8,325.21	30.41	30.70	85.76	943.01	1,696.87	1,932.28	1,871.23	61.06	31.648		
8,500.00	8,434.73	8,448.86	8,446.78	30.75	31.11	85.82	940.52	1,694.79	1,930.38	1,868.58	61.80	31.235		
8,552.31	8,487.04	8,501.92	8,499.80	30.94	31.28	85.87	939.06	1,693.71	1,929.21	1,867.06	62.16	31.037		
8,600.00	8,534.68	8,537.37	8,535.23	31.10	31.40	-3.79	938.08	1,693.10	1,926.32	1,863.88	62.44	30.850		
8,650.00	8,584.26	8,574.78	8,572.63	31.26	31.53	-3.82	937.08	1,692.68	1,919.36	1,856.64	62.73	30.598		
8,700.00	8,633.10	8,612.28	8,610.11	31.43	31.65	-3.88	936.09	1,692.50	1,908.43	1,845.42	63.01	30.288		
8,750.00	8,680.83	8,650.28	8,648.10	31.58	31.78	-3.98	935.10	1,692.51	1,893.56	1,830.27	63.29	29.921		
8,800.00	8,727.09	8,687.24	8,685.05	31.74	31.90	-4.12	934.15	1,692.71	1,874.82	1,811.27	63.55	29.503		
8,850.00	8,771.52	8,727.40	8,725.19	31.89	32.04	-4.32	933.12	1,693.10	1,852.31	1,788.50	63.81	29.027		
8,900.00	8,813.78	8,768.08	8,765.86	32.04	32.17	-4.58	932.14	1,693.54	1,826.07	1,762.00	64.07	28.502		
8,950.00	8,853.56	8,808.70	8,806.47	32.18	32.31	-4.93	931.21	1,694.01	1,796.26	1,731.94	64.31	27.929		
9,000.00	8,890.55	8,856.47	8,854.23	32.32	32.47	-5.42	930.30	1,694.37	1,762.94	1,698.37	64.57	27.301		
9,050.00	8,924.46	8,899.80	8,897.55	32.47	32.61	-6.08	929.68	1,694.44	1,726.33	1,661.53	64.80	26.640		
9,100.00	8,955.05	8,930.97	8,928.72	32.63	32.72	-6.95	929.30	1,694.40	1,686.82	1,621.85	64.98	25.960		
9,150.00	8,982.08	8,958.44	8,956.18	32.79	32.81	-8.14	928.94	1,694.35	1,644.81	1,579.68	65.13	25.255		
9,200.00	9,005.34	8,982.04	8,979.79	32.97	32.89	-9.84	928.63	1,694.30	1,600.61	1,535.36	65.25	24.530		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,001.60	8,999.34	33.17	32.95	-12.42	928.37	1,694.26	1,554.57	1,489.22	65.35	23.787		
9,300.00	9,039.87	9,016.33	9,014.07	33.38	33.00	-16.66	928.16	1,694.23	1,507.05	1,441.63	65.43	23.034		
9,350.00	9,050.89	9,027.01	9,024.76	33.62	33.04	-24.67	928.02	1,694.21	1,458.41	1,392.93	65.48	22.272		
9,400.00	9,057.61	9,033.51	9,031.25	33.87	33.06	-43.26	927.93	1,694.19	1,409.03	1,343.51	65.51	21.507		
9,452.31	9,060.00	9,035.75	9,033.49	34.15	33.07	-92.01	927.90	1,694.19	1,356.97	1,291.44	65.53	20.708		
9,500.00	9,060.00	9,035.67	9,033.41	34.42	33.07	-91.97	927.90	1,694.19	1,309.46	1,243.93	65.53	19.981		
9,600.00	9,060.00	9,035.48	9,033.22	35.09	33.07	-91.88	927.90	1,694.19	1,209.89	1,144.35	65.55	18.458		
9,700.00	9,060.00	9,035.30	9,033.04	35.86	33.07	-91.79	927.90	1,694.19	1,110.40	1,044.83	65.56	16.936		
9,800.00	9,060.00	9,035.12	9,032.86	36.72	33.07	-91.70	927.91	1,694.19	1,011.01	945.42	65.59	15.414		
9,900.00	9,060.00	9,034.94	9,032.68	37.69	33.06	-91.61	927.91	1,694.19	911.75	846.12	65.63	13.893		
10,000.00	9,060.00	9,034.75	9,032.49	38.73	33.06	-91.52	927.91	1,694.19	812.67	746.98	65.68	12.373		
10,100.00	9,060.00	9,034.57	9,032.31	39.86	33.06	-91.43	927.91	1,694.19	713.84	648.08	65.76	10.855		
10,140.22	9,060.00	9,034.49	9,032.23	40.33	33.06	-91.39	927.91	1,694.19	674.19	608.38	65.81	10.245		
10,200.00	9,060.00	9,034.39	9,032.13	41.05	33.06	-91.21	927.92	1,694.19	615.52	549.62	65.90	9.340		
10,300.00	9,060.00	9,034.26	9,032.00	42.31	33.06	-91.00	927.92	1,694.19	518.66	452.48	66.17	7.838		
10,400.00	9,060.00	9,034.17	9,031.91	43.64	33.06	-90.88	927.92	1,694.19	424.48	357.71	66.77	6.357		
10,507.23	9,060.00	9,034.13	9,031.87	45.11	33.06	-90.80	927.92	1,694.19	329.29	260.99	68.29	4.822 Alert		
10,600.00	9,060.00	9,034.10	9,031.84	46.43	33.06	-90.83	927.92	1,694.19	254.92	183.73	71.19	3.581 Alert		
10,700.00	9,060.00	9,034.02	9,031.76	47.91	33.06	-90.82	927.92	1,694.19	190.50	113.58	76.92	2.477 Minor Risk		
10,800.00	9,060.00	9,033.90	9,031.64	49.42	33.06	-90.79	927.92	1,694.19	162.63	80.33	82.30	1.976 Minor Risk		
10,802.18	9,060.00	9,033.89	9,031.63	49.46	33.06	-90.79	927.92	1,694.19	162.61	80.28	82.34	1.975 Minor Risk, CC, ES, SF		
10,900.00	9,060.00	9,033.72	9,031.46	50.97	33.06	-90.72	927.92	1,694.19	188.33	108.61	79.72	2.362 Minor Risk		
11,000.00	9,060.00	9,033.50	9,031.24	52.55	33.06	-90.62	927.93	1,694.19	251.68	177.15	74.52	3.377 Alert		
11,100.00	9,060.00	9,033.22	9,030.96	54.14	33.06	-90.51	927.93	1,694.19	331.71	260.62	71.08	4.666 Alert		
11,207.23	9,060.00	9,032.88	9,030.62	55.87	33.06	-90.37	927.94	1,694.20	425.37	356.39	68.98	6.167		
11,300.00	9,060.00	9,032.57	9,030.32	57.39	33.06	-90.30	927.94	1,694.20	510.64	442.68	67.96	7.514		
11,400.00	9,060.00	9,032.29	9,030.03	59.06	33.06	-90.23	927.94	1,694.20	606.00	538.64	67.37	8.996		
11,506.63	9,060.00	9,032.04	9,029.78	60.88	33.05	-90.17	927.95	1,694.20	709.95	642.92	67.03	10.592		
11,600.00	9,060.00	9,031.85	9,029.59	62.49	33.05	-90.08	927.95	1,694.20	801.85	735.00	66.85	11.995		
11,700.00	9,060.00	9,031.64	9,029.38	64.24	33.05	-89.99	927.95	1,694.20	900.61	833.90	66.72	13.499		
11,800.00	9,060.00	9,031.43	9,029.17	66.01	33.05	-89.90	927.96	1,694.20	999.62	933.00	66.63	15.003		
11,900.00	9,060.00	9,031.22	9,028.96	67.79	33.05	-89.81	927.96	1,694.20	1,098.81	1,032.25	66.57	16.507		
12,000.00	9,060.00	9,031.01	9,028.75	69.58	33.05	-89.72	927.96	1,694.20	1,198.14	1,131.61	66.52	18.011		
12,100.00	9,060.00	9,030.80	9,028.54	71.39	33.05	-89.63	927.96	1,694.20	1,297.56	1,231.07	66.50	19.514		
12,200.00	9,060.00	9,030.59	9,028.33	73.21	33.05	-89.54	927.97	1,694.20	1,397.07	1,330.59	66.48	21.015		
12,300.00	9,060.00	9,030.37	9,028.11	75.05	33.05	-89.45	927.97	1,694.20	1,496.65	1,430.18	66.47	22.516		
12,400.00	9,060.00	9,030.16	9,027.90	76.89	33.05	-89.36	927.97	1,694.20	1,596.28	1,529.80	66.47	24.015		
12,500.00	9,060.00	9,029.95	9,027.69	78.74	33.05	-89.26	927.98	1,694.20	1,695.95	1,629.47	66.48	25.512		
12,600.00	9,060.00	9,029.73	9,027.47	80.61	33.05	-89.17	927.98	1,694.20	1,795.65	1,729.17	66.49	27.008		
12,700.00	9,060.00	9,029.52	9,027.26	82.48	33.05	-89.08	927.98	1,694.20	1,895.39	1,828.89	66.50	28.502		
12,800.00	9,060.00	9,029.30	9,027.04	84.36	33.05	-88.99	927.98	1,694.20	1,995.16	1,928.64	66.52	29.994		
12,900.00	9,060.00	9,029.08	9,026.83	86.24	33.04	-88.89	927.99	1,694.20	2,094.95	2,028.41	66.54	31.485		
13,000.00	9,060.00	9,028.87	9,026.61	88.14	33.04	-88.80	927.99	1,694.20	2,194.75	2,128.19	66.56	32.973		
13,100.00	9,060.00	9,028.65	9,026.39	90.04	33.04	-88.71	927.99	1,694.20	2,294.58	2,227.99	66.59	34.460		
13,200.00	9,060.00	9,028.43	9,026.17	91.94	33.04	-88.61	928.00	1,694.20	2,394.41	2,327.80	66.61	35.944		
13,300.00	9,060.00	9,028.21	9,025.95	93.86	33.04	-88.52	928.00	1,694.20	2,494.27	2,427.62	66.64	37.426		
13,400.00	9,060.00	9,027.99	9,025.73	95.77	33.04	-88.42	928.00	1,694.20	2,594.13	2,527.45	66.68	38.906		
13,500.00	9,060.00	9,027.77	9,025.51	97.70	33.04	-88.33	928.01	1,694.20	2,694.00	2,627.29	66.71	40.384		
13,600.00	9,060.00	9,027.55	9,025.29	99.62	33.04	-88.24	928.01	1,694.21	2,793.88	2,727.14	66.74	41.859		
13,700.00	9,060.00	9,027.33	9,025.07	101.56	33.04	-88.14	928.01	1,694.21	2,893.77	2,826.99	66.78	43.332		
13,800.00	9,060.00	9,027.11	9,024.85	103.49	33.04	-88.04	928.02	1,694.21	2,993.67	2,926.85	66.82	44.802		
13,900.00	9,060.00	9,026.88	9,024.63	105.43	33.04	-87.95	928.02	1,694.21	3,093.57	3,026.72	66.86	46.270		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	9,026.66	9,024.40	107.38	33.04	-87.85	928.02	1,694.21	3,193.48	3,126.58	66.90	47.736		
14,100.00	9,060.00	9,026.44	9,024.18	109.33	33.04	-87.76	928.02	1,694.21	3,293.40	3,226.46	66.94	49.198		
14,200.00	9,060.00	9,026.21	9,023.95	111.28	33.04	-87.66	928.03	1,694.21	3,393.32	3,326.34	66.98	50.658		
14,300.00	9,060.00	9,025.99	9,023.73	113.23	33.03	-87.56	928.03	1,694.21	3,493.24	3,426.22	67.03	52.115		
14,400.00	9,060.00	9,025.76	9,023.50	115.19	33.03	-87.47	928.03	1,694.21	3,593.17	3,526.10	67.07	53.570		
14,500.00	9,060.00	9,025.53	9,023.27	117.15	33.03	-87.37	928.04	1,694.21	3,693.11	3,625.99	67.12	55.021		
14,600.00	9,060.00	9,025.31	9,023.05	119.11	33.03	-87.27	928.04	1,694.21	3,793.04	3,725.87	67.17	56.470		
14,700.00	9,060.00	9,025.08	9,022.82	121.08	33.03	-87.17	928.04	1,694.21	3,892.98	3,825.76	67.22	57.916		
14,800.00	9,060.00	9,024.85	9,022.59	123.05	33.03	-87.08	928.05	1,694.21	3,992.93	3,925.66	67.27	59.359		
14,900.00	9,060.00	9,024.62	9,022.36	125.02	33.03	-86.98	928.05	1,694.21	4,092.87	4,025.55	67.32	60.798		
15,000.00	9,060.00	9,024.39	9,022.13	126.99	33.03	-86.88	928.05	1,694.21	4,192.82	4,125.45	67.37	62.235		
15,100.00	9,060.00	9,024.16	9,021.90	128.97	33.03	-86.78	928.06	1,694.21	4,292.77	4,225.35	67.42	63.669		
15,200.00	9,060.00	9,023.93	9,021.67	130.95	33.03	-86.68	928.06	1,694.21	4,392.72	4,325.24	67.48	65.099		
15,300.00	9,060.00	9,023.69	9,021.43	132.93	33.03	-86.58	928.06	1,694.21	4,492.68	4,425.14	67.53	66.527		
15,400.00	9,060.00	9,023.46	9,021.20	134.91	33.03	-86.48	928.07	1,694.21	4,592.63	4,525.05	67.59	67.951		
15,500.00	9,060.00	9,023.23	9,020.97	136.89	33.03	-86.38	928.07	1,694.21	4,692.59	4,624.95	67.64	69.371		
15,600.00	9,060.00	9,022.99	9,020.73	138.88	33.02	-86.28	928.07	1,694.21	4,792.55	4,724.85	67.70	70.789		
15,700.00	9,060.00	9,022.76	9,020.50	140.86	33.02	-86.18	928.07	1,694.21	4,892.51	4,824.75	67.76	72.203		
15,800.00	9,060.00	9,022.52	9,020.26	142.85	33.02	-86.08	928.08	1,694.22	4,992.48	4,924.66	67.82	73.614		
15,900.00	9,060.00	9,022.28	9,020.02	144.84	33.02	-85.98	928.08	1,694.22	5,092.44	5,024.56	67.88	75.021		
16,000.00	9,060.00	9,022.04	9,019.79	146.83	33.02	-85.88	928.08	1,694.22	5,192.41	5,124.47	67.94	76.425		
16,100.00	9,060.00	9,021.81	9,019.55	148.83	33.02	-85.77	928.09	1,694.22	5,292.38	5,224.37	68.00	77.825		
16,200.00	9,060.00	9,021.57	9,019.31	150.82	33.02	-85.67	928.09	1,694.22	5,392.35	5,324.28	68.07	79.222		
16,300.00	9,060.00	9,021.33	9,019.07	152.82	33.02	-85.57	928.09	1,694.22	5,492.32	5,424.19	68.13	80.615		
16,400.00	9,060.00	9,021.09	9,018.83	154.81	33.02	-85.47	928.10	1,694.22	5,592.29	5,524.09	68.19	82.005		
16,500.00	9,060.00	9,020.85	9,018.59	156.81	33.02	-85.36	928.10	1,694.22	5,692.26	5,624.00	68.26	83.391		
16,600.00	9,060.00	9,020.60	9,018.35	158.81	33.02	-85.26	928.10	1,694.22	5,792.23	5,723.90	68.33	84.774		
16,700.00	9,060.00	9,020.36	9,018.10	160.81	33.02	-85.16	928.11	1,694.22	5,892.20	5,823.81	68.39	86.152		
16,800.00	9,060.00	9,020.12	9,017.86	162.81	33.02	-85.05	928.11	1,694.22	5,992.18	5,923.72	68.46	87.527		
16,900.00	9,060.00	9,019.87	9,017.61	164.82	33.01	-84.95	928.11	1,694.22	6,092.15	6,023.63	68.53	88.899		
17,000.00	9,060.00	9,019.63	9,017.37	166.82	33.01	-84.85	928.12	1,694.22	6,192.13	6,123.53	68.60	90.266		
17,100.00	9,060.00	9,019.38	9,017.12	168.82	33.01	-84.74	928.12	1,694.22	6,292.11	6,223.44	68.67	91.630		
17,200.00	9,060.00	9,019.14	9,016.88	170.83	33.01	-84.64	928.12	1,694.22	6,392.09	6,323.35	68.74	92.990		
17,300.00	9,060.00	9,018.89	9,016.63	172.84	33.01	-84.53	928.13	1,694.22	6,492.06	6,423.25	68.81	94.346		
17,400.00	9,060.00	9,018.64	9,016.38	174.84	33.01	-84.43	928.13	1,694.22	6,592.04	6,523.16	68.88	95.698		
17,500.00	9,060.00	9,018.39	9,016.13	176.85	33.01	-84.32	928.13	1,694.22	6,692.02	6,623.07	68.96	97.046		
17,600.00	9,060.00	9,018.14	9,015.88	178.86	33.01	-84.21	928.14	1,694.22	6,792.00	6,722.97	69.03	98.390		
17,700.00	9,060.00	9,017.89	9,015.63	180.87	33.01	-84.11	928.14	1,694.22	6,891.98	6,822.88	69.11	99.731		
17,800.00	9,060.00	9,017.64	9,015.38	182.88	33.01	-84.00	928.15	1,694.22	6,991.96	6,922.78	69.18	101.067		
17,900.00	9,060.00	9,017.39	9,015.13	184.89	33.01	-83.89	928.15	1,694.23	7,091.95	7,022.69	69.26	102.400		
18,000.00	9,060.00	9,017.13	9,014.88	186.90	33.01	-83.79	928.15	1,694.23	7,191.93	7,122.59	69.33	103.728		
18,100.00	9,060.00	9,016.88	9,014.62	188.92	33.00	-83.68	928.16	1,694.23	7,291.91	7,222.50	69.41	105.052		
18,200.00	9,060.00	9,016.63	9,014.37	190.93	33.00	-83.57	928.16	1,694.23	7,391.90	7,322.40	69.49	106.373		
18,300.00	9,060.00	9,016.37	9,014.11	192.94	33.00	-83.46	928.16	1,694.23	7,491.88	7,422.31	69.57	107.689		
18,400.00	9,060.00	9,016.11	9,013.86	194.96	33.00	-83.36	928.17	1,694.23	7,591.86	7,522.21	69.65	109.001		
18,500.00	9,060.00	9,015.86	9,013.60	196.97	33.00	-83.25	928.17	1,694.23	7,691.85	7,622.12	69.73	110.309		
18,600.00	9,060.00	9,015.60	9,013.34	198.99	33.00	-83.14	928.17	1,694.23	7,791.83	7,722.02	69.81	111.613		
18,700.00	9,060.00	9,015.34	9,013.08	201.00	33.00	-83.03	928.18	1,694.23	7,891.82	7,821.92	69.89	112.913		
18,800.00	9,060.00	9,015.08	9,012.82	203.02	33.00	-82.92	928.18	1,694.23	7,991.80	7,921.83	69.98	114.209		
18,900.00	9,060.00	9,014.82	9,012.56	205.04	33.00	-82.81	928.18	1,694.23	8,091.79	8,021.73	70.06	115.500		
19,000.00	9,060.00	9,014.56	9,012.30	207.06	33.00	-82.70	928.19	1,694.23	8,191.78	8,121.63	70.14	116.787		
19,100.00	9,060.00	9,014.30	9,012.04	209.07	33.00	-82.59	928.19	1,694.23	8,291.76	8,221.54	70.23	118.071		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	9,014.03	9,011.78	211.09	32.99	-82.48	928.19	1,694.23	8,391.75	8,321.44	70.31	119.349	
19,300.00	9,060.00	9,013.77	9,011.51	213.11	32.99	-82.37	928.20	1,694.23	8,491.74	8,421.34	70.40	120.624	
19,400.00	9,060.00	9,013.51	9,011.25	215.13	32.99	-82.26	928.20	1,694.23	8,591.72	8,521.24	70.48	121.895	
19,500.32	9,060.00	9,013.24	9,010.98	217.16	32.99	-82.14	928.21	1,694.23	8,692.03	8,621.46	70.57	123.165	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	172.62	-2,937.12	380.22	2,961.70					
100.00	100.00	78.40	78.40	0.52	1.14	172.62	-2,937.12	380.22	2,961.62	2,959.97	1.66	1,786.635		
200.00	200.00	178.40	178.40	0.70	2.57	172.62	-2,937.12	380.22	2,961.62	2,958.35	3.27	904.804		
300.00	300.00	278.40	278.40	0.99	4.05	172.62	-2,937.12	380.22	2,961.62	2,956.59	5.04	587.858		
400.00	400.00	378.40	378.40	1.31	5.54	172.62	-2,937.12	380.22	2,961.62	2,954.78	6.85	432.416		
500.00	500.00	478.40	478.40	1.65	7.03	172.62	-2,937.12	380.22	2,961.62	2,952.95	8.68	341.246		
600.00	600.00	578.40	578.40	1.99	8.53	172.62	-2,937.12	380.22	2,961.62	2,951.11	10.52	281.580		
700.00	700.00	678.40	678.40	2.34	10.02	172.62	-2,937.12	380.22	2,961.62	2,949.26	12.36	239.574		
800.00	800.00	778.40	778.40	2.69	11.52	172.62	-2,937.12	380.22	2,961.62	2,947.42	14.21	208.428		
900.00	900.00	878.40	878.40	3.04	13.02	172.62	-2,937.12	380.22	2,961.62	2,945.57	16.06	184.425		
1,000.00	1,000.00	978.40	978.40	3.40	14.51	172.62	-2,937.12	380.22	2,961.62	2,943.72	17.91	165.366		
1,100.00	1,100.00	1,078.40	1,078.40	3.75	16.01	172.62	-2,937.12	380.22	2,961.62	2,941.86	19.76	149.870		
1,200.00	1,200.00	1,178.40	1,178.40	4.11	17.51	172.62	-2,937.12	380.22	2,961.62	2,940.01	21.61	137.025		
1,300.00	1,300.00	1,278.40	1,278.40	4.46	19.00	172.62	-2,937.12	380.22	2,961.62	2,938.16	23.47	126.205		
1,400.00	1,400.00	1,378.40	1,378.40	4.82	20.50	172.62	-2,937.12	380.22	2,961.62	2,936.30	25.32	116.966		
1,500.00	1,500.00	1,478.40	1,478.40	5.18	22.00	172.62	-2,937.12	380.22	2,961.62	2,934.45	27.17	108.986		
1,600.00	1,600.00	1,578.40	1,578.40	5.53	23.49	172.62	-2,937.12	380.22	2,961.62	2,932.60	29.03	102.025		
1,700.00	1,700.00	1,678.40	1,678.40	5.89	24.99	172.62	-2,937.12	380.22	2,961.62	2,930.74	30.88	95.898		
1,800.00	1,800.00	1,778.40	1,778.40	6.25	26.49	172.62	-2,937.12	380.22	2,961.62	2,928.89	32.74	90.466		
1,900.00	1,900.00	1,878.40	1,878.40	6.61	27.99	172.62	-2,937.12	380.22	2,961.62	2,927.03	34.59	85.615		
2,000.00	2,000.00	1,978.40	1,978.40	6.96	29.48	172.62	-2,937.12	380.22	2,961.62	2,925.18	36.45	81.258		
2,100.00	2,100.00	2,078.40	2,078.40	7.32	30.98	172.62	-2,937.12	380.22	2,961.62	2,923.32	38.30	77.322		
2,200.00	2,200.00	2,178.40	2,178.40	7.68	32.48	172.62	-2,937.12	380.22	2,961.62	2,921.47	40.16	73.750		
2,300.00	2,300.00	2,278.40	2,278.40	8.04	33.98	172.62	-2,937.12	380.22	2,961.62	2,919.61	42.01	70.494		
2,350.00	2,350.00	2,328.40	2,328.40	8.22	34.72	172.62	-2,937.12	380.22	2,961.62	2,918.68	42.94	68.971 CC		
2,400.00	2,400.00	2,378.40	2,378.40	8.39	35.47	-171.34	-2,937.12	380.22	2,961.84	2,917.97	43.87	67.518		
2,500.00	2,499.98	2,478.38	2,478.38	8.75	36.97	-171.34	-2,937.12	380.22	2,963.57	2,917.84	45.72	64.817 ES		
2,600.00	2,599.92	2,578.32	2,578.32	9.11	38.47	-171.34	-2,937.12	380.22	2,967.02	2,919.44	47.58	62.364		
2,700.00	2,699.78	2,678.18	2,678.18	9.47	39.96	-171.35	-2,937.12	380.22	2,972.19	2,922.76	49.43	60.131		
2,800.00	2,799.54	2,777.94	2,777.94	9.82	41.46	-171.36	-2,937.12	380.22	2,979.09	2,927.81	51.28	58.095		
2,900.00	2,899.16	2,877.56	2,877.56	10.18	42.95	-171.37	-2,937.12	380.22	2,987.70	2,934.58	53.13	56.235		
3,000.00	2,998.61	2,977.01	2,977.01	10.54	44.44	-171.39	-2,937.12	380.22	2,998.04	2,943.07	54.97	54.535		
3,100.00	3,097.86	3,076.26	3,076.26	10.89	45.92	-171.40	-2,937.12	380.22	3,010.09	2,953.27	56.82	52.978		
3,200.00	3,196.89	3,175.29	3,175.29	11.25	47.41	-171.42	-2,937.12	380.22	3,023.86	2,965.20	58.66	51.552		
3,295.74	3,291.45	3,269.85	3,269.85	11.59	48.82	-171.44	-2,937.12	380.22	3,038.63	2,978.22	60.41	50.297		
3,300.00	3,295.65	3,274.05	3,274.05	11.61	48.89	-171.44	-2,937.12	380.22	3,039.33	2,978.83	60.49	50.243		
3,400.00	3,394.29	3,372.69	3,372.69	11.97	50.36	-171.49	-2,937.12	380.22	3,055.58	2,993.26	62.33	49.026		
3,500.00	3,492.94	3,471.34	3,471.34	12.33	51.84	-171.54	-2,937.12	380.22	3,071.84	3,007.68	64.16	47.878		
3,600.00	3,591.58	3,569.98	3,569.98	12.69	53.32	-171.58	-2,937.12	380.22	3,088.10	3,022.10	65.99	46.794		
3,700.00	3,690.22	3,668.62	3,668.62	13.05	54.80	-171.63	-2,937.12	380.22	3,104.36	3,036.53	67.83	45.767		
3,800.00	3,788.86	3,767.26	3,767.26	13.41	56.27	-171.67	-2,937.12	380.22	3,120.62	3,050.95	69.67	44.794		
3,900.00	3,887.50	3,865.90	3,865.90	13.77	57.75	-171.71	-2,937.12	380.22	3,136.88	3,065.38	71.50	43.870		
4,000.00	3,986.14	3,964.54	3,964.54	14.14	59.23	-171.76	-2,937.12	380.22	3,153.15	3,079.81	73.34	42.993		
4,100.00	4,084.78	4,063.18	4,063.18	14.50	60.70	-171.80	-2,937.12	380.22	3,169.41	3,094.23	75.18	42.158		
4,200.00	4,183.42	4,161.82	4,161.82	14.87	62.18	-171.84	-2,937.12	380.22	3,185.68	3,108.66	77.02	41.362		
4,300.00	4,282.06	4,260.46	4,260.46	15.24	63.66	-171.88	-2,937.12	380.22	3,201.95	3,123.09	78.86	40.604		
4,400.00	4,380.70	4,359.10	4,359.10	15.60	65.14	-171.92	-2,937.12	380.22	3,218.22	3,137.53	80.70	39.879		
4,500.00	4,479.34	4,457.74	4,457.74	15.97	66.61	-171.96	-2,937.12	380.22	3,234.50	3,151.96	82.54	39.187		
4,600.00	4,577.98	4,556.38	4,556.38	16.34	68.09	-172.00	-2,937.12	380.22	3,250.77	3,166.39	84.38	38.525		
4,700.00	4,676.62	4,655.02	4,655.02	16.71	69.57	-172.04	-2,937.12	380.22	3,267.05	3,180.83	86.22	37.891		
4,800.00	4,775.27	4,753.67	4,753.67	17.08	71.05	-172.08	-2,937.12	380.22	3,283.33	3,195.26	88.06	37.283		
4,900.00	4,873.91	4,852.31	4,852.31	17.45	72.52	-172.12	-2,937.12	380.22	3,299.61	3,209.70	89.91	36.700		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,950.95	4,950.95	17.82	74.00	-172.16	-2,937.12	380.22	3,315.89	3,224.14	91.75	36.141		
5,100.00	5,071.19	5,049.59	5,049.59	18.19	75.48	-172.20	-2,937.12	380.22	3,332.17	3,238.58	93.59	35.603		
5,200.00	5,169.83	5,148.23	5,148.23	18.56	76.95	-172.24	-2,937.12	380.22	3,348.46	3,253.02	95.44	35.086		
5,300.00	5,268.47	5,246.87	5,246.87	18.93	78.43	-172.28	-2,937.12	380.22	3,364.74	3,267.46	97.28	34.588		
5,400.00	5,367.11	5,345.51	5,345.51	19.31	79.91	-172.31	-2,937.12	380.22	3,381.03	3,281.91	99.12	34.109		
5,500.00	5,465.75	5,444.15	5,444.15	19.68	81.39	-172.35	-2,937.12	380.22	3,397.32	3,296.35	100.97	33.648		
5,600.00	5,564.39	5,542.79	5,542.79	20.05	82.86	-172.39	-2,937.12	380.22	3,413.61	3,310.79	102.81	33.202		
5,700.00	5,663.03	5,641.43	5,641.43	20.42	84.34	-172.42	-2,937.12	380.22	3,429.90	3,325.24	104.66	32.773		
5,800.00	5,761.67	5,740.07	5,740.07	20.80	85.82	-172.46	-2,937.12	380.22	3,446.19	3,339.69	106.50	32.358		
5,900.00	5,860.31	5,838.71	5,838.71	21.17	87.29	-172.50	-2,937.12	380.22	3,462.48	3,354.14	108.35	31.957		
6,000.00	5,958.96	5,937.36	5,937.36	21.54	88.77	-172.53	-2,937.12	380.22	3,478.78	3,368.59	110.19	31.570		
6,100.00	6,057.60	6,036.00	6,036.00	21.92	90.25	-172.57	-2,937.12	380.22	3,495.08	3,383.04	112.04	31.196		
6,200.00	6,156.24	6,134.64	6,134.64	22.29	91.73	-172.60	-2,937.12	380.22	3,511.37	3,397.49	113.88	30.833		
6,300.00	6,254.88	6,233.28	6,233.28	22.67	93.20	-172.64	-2,937.12	380.22	3,527.67	3,411.94	115.73	30.482		
6,400.00	6,353.52	6,331.92	6,331.92	23.04	94.68	-172.67	-2,937.12	380.22	3,543.97	3,426.40	117.58	30.142		
6,500.00	6,452.16	6,430.56	6,430.56	23.42	96.16	-172.70	-2,937.12	380.22	3,560.27	3,440.85	119.42	29.813		
6,600.00	6,550.80	6,529.20	6,529.20	23.79	97.64	-172.74	-2,937.12	380.22	3,576.58	3,455.31	121.27	29.493		
6,700.00	6,649.44	6,627.84	6,627.84	24.17	99.11	-172.77	-2,937.12	380.22	3,592.88	3,469.76	123.12	29.183		
6,800.00	6,748.08	6,726.48	6,726.48	24.54	100.59	-172.80	-2,937.12	380.22	3,609.18	3,484.22	124.96	28.882		
6,900.00	6,846.72	6,825.12	6,825.12	24.92	102.07	-172.84	-2,937.12	380.22	3,625.49	3,498.68	126.81	28.590		
7,000.00	6,945.36	6,923.76	6,923.76	25.29	103.54	-172.87	-2,937.12	380.22	3,641.80	3,513.14	128.66	28.306		
7,100.00	7,044.00	7,022.40	7,022.40	25.67	105.02	-172.90	-2,937.12	380.22	3,658.11	3,527.60	130.50	28.031		
7,200.00	7,142.65	7,121.05	7,121.05	26.04	106.50	-172.93	-2,937.12	380.22	3,674.41	3,542.06	132.35	27.763		
7,300.00	7,241.29	7,219.69	7,219.69	26.42	107.98	-172.96	-2,937.12	380.22	3,690.73	3,556.53	134.20	27.502		
7,400.00	7,339.93	7,318.33	7,318.33	26.79	109.45	-172.99	-2,937.12	380.22	3,707.04	3,570.99	136.05	27.248		
7,500.00	7,438.57	7,416.97	7,416.97	27.17	110.93	-173.02	-2,937.12	380.22	3,723.35	3,585.46	137.89	27.002		
7,571.77	7,509.37	7,487.77	7,487.77	27.44	111.99	-173.05	-2,937.12	380.22	3,735.06	3,595.84	139.22	26.828		
7,600.00	7,537.23	7,515.63	7,515.63	27.55	112.41	-173.06	-2,937.12	380.22	3,739.56	3,599.82	139.74	26.760		
7,700.00	7,636.18	7,614.58	7,614.58	27.92	113.89	-173.12	-2,937.12	380.22	3,753.87	3,612.27	141.59	26.512		
7,800.00	7,735.48	7,713.88	7,713.88	28.29	115.38	-173.16	-2,937.12	380.22	3,765.59	3,622.15	143.45	26.251		
7,900.00	7,835.05	7,813.45	7,813.45	28.65	116.87	-173.19	-2,937.12	380.22	3,774.74	3,629.44	145.30	25.979		
8,000.00	7,934.83	7,913.23	7,913.23	29.01	118.36	-173.21	-2,937.12	380.22	3,781.29	3,634.14	147.15	25.696		
8,100.00	8,034.74	8,013.14	8,013.14	29.36	119.86	-173.23	-2,937.12	380.22	3,785.25	3,636.24	149.01	25.403		
8,202.27	8,137.00	8,115.40	8,115.40	29.72	121.39	170.73	-2,937.12	380.22	3,786.61	3,635.71	150.90	25.094		
8,300.00	8,234.73	8,213.13	8,213.13	30.06	122.85	170.73	-2,937.12	380.22	3,786.61	3,633.91	152.70	24.798		
8,400.00	8,334.73	8,313.13	8,313.13	30.41	124.35	170.73	-2,937.12	380.22	3,786.61	3,632.06	154.55	24.501		
8,500.00	8,434.73	8,413.13	8,413.13	30.75	125.85	170.73	-2,937.12	380.22	3,786.61	3,630.22	156.39	24.212		
8,552.31	8,487.04	8,465.44	8,465.44	30.94	126.63	170.73	-2,937.12	380.22	3,786.61	3,629.25	157.36	24.063		
8,600.00	8,534.68	8,513.08	8,513.08	31.10	127.35	81.13	-2,937.12	380.22	3,786.30	3,628.07	158.23	23.928		
8,650.00	8,584.26	8,562.66	8,562.66	31.26	128.09	81.32	-2,937.12	380.22	3,785.33	3,626.19	159.14	23.786		
8,700.00	8,633.10	8,611.50	8,611.50	31.43	128.82	81.63	-2,937.12	380.22	3,783.72	3,623.68	160.03	23.643		
8,750.00	8,680.83	8,659.23	8,659.23	31.58	129.54	82.06	-2,937.12	380.22	3,781.51	3,620.61	160.91	23.501		
8,800.00	8,727.09	8,705.49	8,705.49	31.74	130.23	82.60	-2,937.12	380.22	3,778.78	3,617.03	161.76	23.361		
8,850.00	8,771.52	8,749.92	8,749.92	31.89	130.89	83.22	-2,937.12	380.22	3,775.61	3,613.03	162.58	23.224		
8,900.00	8,813.78	8,792.18	8,792.18	32.04	131.53	83.91	-2,937.12	380.22	3,772.08	3,608.71	163.36	23.090		
8,950.00	8,853.56	8,831.96	8,831.96	32.18	132.12	84.65	-2,937.12	380.22	3,768.30	3,604.18	164.11	22.962		
9,000.00	8,890.55	8,868.95	8,868.95	32.32	132.68	85.42	-2,937.12	380.22	3,764.38	3,599.56	164.83	22.839		
9,050.00	8,924.46	8,902.86	8,902.86	32.47	133.18	86.20	-2,937.12	380.22	3,760.45	3,594.95	165.50	22.722		
9,100.00	8,955.05	8,933.45	8,933.45	32.63	133.64	86.95	-2,937.12	380.22	3,756.60	3,590.48	166.13	22.613		
9,150.00	8,982.08	8,960.48	8,960.48	32.79	134.05	87.66	-2,937.12	380.22	3,752.97	3,586.25	166.72	22.511		
9,200.00	9,005.34	8,983.74	8,983.74	32.97	134.40	88.31	-2,937.12	380.22	3,749.65	3,582.38	167.26	22.418		
9,250.00	9,024.65	9,003.05	9,003.05	33.17	134.68	88.87	-2,937.12	380.22	3,746.74	3,578.97	167.77	22.333		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,300.00	9,039.87	9,018.27	9,018.27	33.38	134.91	89.33	-2,937.12	380.22	3,744.34	3,576.11	168.23	22.257	
9,350.00	9,050.89	9,029.29	9,029.29	33.62	135.08	89.68	-2,937.12	380.22	3,742.50	3,573.85	168.65	22.192	
9,400.00	9,057.61	9,036.01	9,036.01	33.87	135.18	89.91	-2,937.12	380.22	3,741.28	3,572.26	169.01	22.136	
9,452.31	9,060.00	9,038.40	9,038.40	34.15	135.21	90.00	-2,937.12	380.22	3,740.70	3,571.36	169.34	22.090	
9,467.38	9,060.00	9,038.40	9,038.40	34.24	135.21	90.00	-2,937.12	380.22	3,740.67	3,571.24	169.43	22.078	
9,500.00	9,060.00	9,038.40	9,038.40	34.42	135.21	90.00	-2,937.12	380.22	3,740.81	3,571.19	169.62	22.054	
9,600.00	9,060.00	9,038.40	9,038.40	35.09	135.21	90.00	-2,937.12	380.22	3,743.02	3,572.72	170.30	21.979	
9,700.00	9,060.00	9,038.40	9,038.40	35.86	135.21	90.00	-2,937.12	380.22	3,747.90	3,576.83	171.07	21.909	
9,800.00	9,060.00	9,038.40	9,038.40	36.72	135.21	90.00	-2,937.12	380.22	3,755.43	3,583.51	171.92	21.844	
9,900.00	9,060.00	9,038.40	9,038.40	37.69	135.21	90.00	-2,937.12	380.22	3,765.61	3,592.75	172.85	21.785	
10,000.00	9,060.00	9,038.40	9,038.40	38.73	135.21	90.00	-2,937.12	380.22	3,778.40	3,604.55	173.85	21.734	
10,100.00	9,060.00	9,038.40	9,038.40	39.86	135.21	90.00	-2,937.12	380.22	3,793.79	3,618.89	174.89	21.692	
10,140.22	9,060.00	9,038.40	9,038.40	40.33	135.21	90.00	-2,937.12	380.22	3,800.70	3,625.38	175.33	21.678	
10,200.00	9,060.00	9,038.40	9,038.40	41.05	135.21	90.00	-2,937.12	380.22	3,811.13	3,635.14	175.99	21.656	
10,300.00	9,060.00	9,038.40	9,038.40	42.31	135.21	90.00	-2,937.12	380.22	3,827.85	3,650.73	177.12	21.611	
10,400.00	9,060.00	9,038.40	9,038.40	43.64	135.21	90.00	-2,937.12	380.22	3,843.67	3,665.37	178.30	21.557	
10,507.23	9,060.00	9,038.40	9,038.40	45.11	135.21	90.00	-2,937.12	380.22	3,859.63	3,680.03	179.60	21.491	
10,600.00	9,060.00	9,038.40	9,038.40	46.43	135.21	90.00	-2,937.12	380.22	3,875.55	3,694.81	180.73	21.443	
10,700.00	9,060.00	9,038.40	9,038.40	47.91	135.21	90.00	-2,937.12	380.22	3,898.38	3,716.42	181.96	21.424 SF	
10,800.00	9,060.00	9,038.40	9,038.40	49.42	135.21	90.00	-2,937.12	380.22	3,926.99	3,743.81	183.18	21.438	
10,900.00	9,060.00	9,038.40	9,038.40	50.97	135.21	90.00	-2,937.12	380.22	3,961.20	3,776.83	184.37	21.486	
11,000.00	9,060.00	9,038.40	9,038.40	52.55	135.21	90.00	-2,937.12	380.22	4,000.83	3,815.31	185.52	21.566	
11,100.00	9,060.00	9,038.40	9,038.40	54.14	135.21	90.00	-2,937.12	380.22	4,045.67	3,859.05	186.63	21.678	
11,207.23	9,060.00	9,038.40	9,038.40	55.87	135.21	90.00	-2,937.12	380.22	4,099.30	3,911.54	187.76	21.833	
11,300.00	9,060.00	9,038.40	9,038.40	57.39	135.21	90.00	-2,937.12	380.22	4,147.57	3,958.86	188.71	21.978	
11,400.00	9,060.00	9,038.40	9,038.40	59.06	135.21	90.00	-2,937.12	380.22	4,198.43	4,008.69	189.74	22.128	
11,506.63	9,060.00	9,038.40	9,038.40	60.88	135.21	90.00	-2,937.12	380.22	4,251.29	4,060.46	190.83	22.278	
11,600.00	9,060.00	9,038.40	9,038.40	62.49	135.21	90.00	-2,937.12	380.22	4,297.73	4,105.96	191.77	22.410	
11,700.00	9,060.00	9,038.40	9,038.40	64.24	135.21	90.00	-2,937.12	380.22	4,349.14	4,156.38	192.76	22.563	
11,800.00	9,060.00	9,038.40	9,038.40	66.01	135.21	90.00	-2,937.12	380.22	4,402.23	4,208.51	193.71	22.725	
11,900.00	9,060.00	9,038.40	9,038.40	67.79	135.21	90.00	-2,937.12	380.22	4,456.92	4,262.28	194.64	22.898	
12,000.00	9,060.00	9,038.40	9,038.40	69.58	135.21	90.00	-2,937.12	380.22	4,513.17	4,317.64	195.53	23.081	
12,100.00	9,060.00	9,038.40	9,038.40	71.39	135.21	90.00	-2,937.12	380.22	4,570.91	4,374.52	196.40	23.274	
12,200.00	9,060.00	9,038.40	9,038.40	73.21	135.21	90.00	-2,937.12	380.22	4,630.10	4,432.87	197.23	23.476	
12,300.00	9,060.00	9,038.40	9,038.40	75.05	135.21	90.00	-2,937.12	380.22	4,690.67	4,492.63	198.03	23.686	
12,400.00	9,060.00	9,038.40	9,038.40	76.89	135.21	90.00	-2,937.12	380.22	4,752.57	4,553.76	198.81	23.905	
12,500.00	9,060.00	9,038.40	9,038.40	78.74	135.21	90.00	-2,937.12	380.22	4,815.75	4,616.19	199.55	24.132	
12,600.00	9,060.00	9,038.40	9,038.40	80.61	135.21	90.00	-2,937.12	380.22	4,880.16	4,679.89	200.27	24.368	
12,700.00	9,060.00	9,038.40	9,038.40	82.48	135.21	90.00	-2,937.12	380.22	4,945.76	4,744.80	200.96	24.610	
12,800.00	9,060.00	9,038.40	9,038.40	84.36	135.21	90.00	-2,937.12	380.22	5,012.49	4,810.86	201.63	24.860	
12,900.00	9,060.00	9,038.40	9,038.40	86.24	135.21	90.00	-2,937.12	380.22	5,080.32	4,878.05	202.27	25.117	
13,000.00	9,060.00	9,038.40	9,038.40	88.14	135.21	90.00	-2,937.12	380.22	5,149.19	4,946.31	202.88	25.380	
13,100.00	9,060.00	9,038.40	9,038.40	90.04	135.21	90.00	-2,937.12	380.22	5,219.07	5,015.60	203.47	25.650	
13,200.00	9,060.00	9,038.40	9,038.40	91.94	135.21	90.00	-2,937.12	380.22	5,289.92	5,085.88	204.04	25.926	
13,300.00	9,060.00	9,038.40	9,038.40	93.86	135.21	90.00	-2,937.12	380.22	5,361.70	5,157.12	204.58	26.208	
13,400.00	9,060.00	9,038.40	9,038.40	95.77	135.21	90.00	-2,937.12	380.22	5,434.37	5,229.26	205.11	26.495	
13,500.00	9,060.00	9,038.40	9,038.40	97.70	135.21	90.00	-2,937.12	380.22	5,507.90	5,302.29	205.61	26.788	
13,600.00	9,060.00	9,038.40	9,038.40	99.62	135.21	90.00	-2,937.12	380.22	5,582.25	5,376.15	206.09	27.086	
13,700.00	9,060.00	9,038.40	9,038.40	101.56	135.21	90.00	-2,937.12	380.22	5,657.39	5,450.83	206.56	27.389	
13,800.00	9,060.00	9,038.40	9,038.40	103.49	135.21	90.00	-2,937.12	380.22	5,733.29	5,526.28	207.00	27.697	
13,900.00	9,060.00	9,038.40	9,038.40	105.43	135.21	90.00	-2,937.12	380.22	5,809.92	5,602.48	207.43	28.009	
14,000.00	9,060.00	9,038.40	9,038.40	107.38	135.21	90.00	-2,937.12	380.22	5,887.25	5,679.40	207.85	28.325	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	9,038.40	9,038.40	109.33	135.21	90.00	-2,937.12	380.22	5,965.25	5,757.01	208.24	28.646	
14,200.00	9,060.00	9,038.40	9,038.40	111.28	135.21	90.00	-2,937.12	380.22	6,043.90	5,835.28	208.62	28.970	
14,300.00	9,060.00	9,038.40	9,038.40	113.23	135.21	90.00	-2,937.12	380.22	6,123.18	5,914.19	208.99	29.299	
14,400.00	9,060.00	9,038.40	9,038.40	115.19	135.21	90.00	-2,937.12	380.22	6,203.05	5,993.71	209.34	29.631	
14,500.00	9,060.00	9,038.40	9,038.40	117.15	135.21	90.00	-2,937.12	380.22	6,283.50	6,073.82	209.68	29.967	
14,600.00	9,060.00	9,038.40	9,038.40	119.11	135.21	90.00	-2,937.12	380.22	6,364.51	6,154.50	210.01	30.306	
14,700.00	9,060.00	9,038.40	9,038.40	121.08	135.21	90.00	-2,937.12	380.22	6,446.05	6,235.72	210.33	30.648	
14,800.00	9,060.00	9,038.40	9,038.40	123.05	135.21	90.00	-2,937.12	380.22	6,528.10	6,317.47	210.63	30.993	
14,900.00	9,060.00	9,038.40	9,038.40	125.02	135.21	90.00	-2,937.12	380.22	6,610.64	6,399.72	210.92	31.341	
15,000.00	9,060.00	9,038.40	9,038.40	126.99	135.21	90.00	-2,937.12	380.22	6,693.67	6,482.46	211.21	31.693	
15,100.00	9,060.00	9,038.40	9,038.40	128.97	135.21	90.00	-2,937.12	380.22	6,777.15	6,565.67	211.48	32.046	
15,200.00	9,060.00	9,038.40	9,038.40	130.95	135.21	90.00	-2,937.12	380.22	6,861.07	6,649.33	211.74	32.403	
15,300.00	9,060.00	9,038.40	9,038.40	132.93	135.21	90.00	-2,937.12	380.22	6,945.42	6,733.42	212.00	32.762	
15,400.00	9,060.00	9,038.40	9,038.40	134.91	135.21	90.00	-2,937.12	380.22	7,030.17	6,817.93	212.24	33.124	
15,500.00	9,060.00	9,038.40	9,038.40	136.89	135.21	90.00	-2,937.12	380.22	7,115.33	6,902.85	212.48	33.487	
15,600.00	9,060.00	9,038.40	9,038.40	138.88	135.21	90.00	-2,937.12	380.22	7,200.86	6,988.16	212.71	33.853	
15,700.00	9,060.00	9,038.40	9,038.40	140.86	135.21	90.00	-2,937.12	380.22	7,286.77	7,073.84	212.93	34.221	
15,800.00	9,060.00	9,038.40	9,038.40	142.85	135.21	90.00	-2,937.12	380.22	7,373.03	7,159.88	213.14	34.592	
15,900.00	9,060.00	9,038.40	9,038.40	144.84	135.21	90.00	-2,937.12	380.22	7,459.63	7,246.28	213.35	34.964	
16,000.00	9,060.00	9,038.40	9,038.40	146.83	135.21	90.00	-2,937.12	380.22	7,546.57	7,333.01	213.55	35.338	
16,100.00	9,060.00	9,038.40	9,038.40	148.83	135.21	90.00	-2,937.12	380.22	7,633.82	7,420.07	213.75	35.714	
16,200.00	9,060.00	9,038.40	9,038.40	150.82	135.21	90.00	-2,937.12	380.22	7,721.38	7,507.44	213.94	36.092	
16,300.00	9,060.00	9,038.40	9,038.40	152.82	135.21	90.00	-2,937.12	380.22	7,809.24	7,595.12	214.12	36.471	
16,400.00	9,060.00	9,038.40	9,038.40	154.81	135.21	90.00	-2,937.12	380.22	7,897.39	7,683.10	214.30	36.852	
16,500.00	9,060.00	9,038.40	9,038.40	156.81	135.21	90.00	-2,937.12	380.22	7,985.82	7,771.35	214.47	37.235	
16,600.00	9,060.00	9,038.40	9,038.40	158.81	135.21	90.00	-2,937.12	380.22	8,074.52	7,859.88	214.64	37.619	
16,700.00	9,060.00	9,038.40	9,038.40	160.81	135.21	90.00	-2,937.12	380.22	8,163.48	7,948.68	214.80	38.004	
16,800.00	9,060.00	9,038.40	9,038.40	162.81	135.21	90.00	-2,937.12	380.22	8,252.70	8,037.74	214.96	38.391	
16,900.00	9,060.00	9,038.40	9,038.40	164.82	135.21	90.00	-2,937.12	380.22	8,342.16	8,127.04	215.12	38.780	
17,000.00	9,060.00	9,038.40	9,038.40	166.82	135.21	90.00	-2,937.12	380.22	8,431.85	8,216.58	215.27	39.169	
17,100.00	9,060.00	9,038.40	9,038.40	168.82	135.21	90.00	-2,937.12	380.22	8,521.78	8,306.36	215.41	39.560	
17,200.00	9,060.00	9,038.40	9,038.40	170.83	135.21	90.00	-2,937.12	380.22	8,611.92	8,396.37	215.56	39.952	
17,300.00	9,060.00	9,038.40	9,038.40	172.84	135.21	90.00	-2,937.12	380.22	8,702.29	8,486.59	215.70	40.345	
17,400.00	9,060.00	9,038.40	9,038.40	174.84	135.21	90.00	-2,937.12	380.22	8,792.86	8,577.02	215.83	40.739	
17,500.00	9,060.00	9,038.40	9,038.40	176.85	135.21	90.00	-2,937.12	380.22	8,883.63	8,667.66	215.97	41.135	
17,600.00	9,060.00	9,038.40	9,038.40	178.86	135.21	90.00	-2,937.12	380.22	8,974.60	8,758.50	216.09	41.531	
17,700.00	9,060.00	9,038.40	9,038.40	180.87	135.21	90.00	-2,937.12	380.22	9,065.76	8,849.54	216.22	41.928	
17,800.00	9,060.00	9,038.40	9,038.40	182.88	135.21	90.00	-2,937.12	380.22	9,157.10	8,940.76	216.35	42.326	
17,900.00	9,060.00	9,038.40	9,038.40	184.89	135.21	90.00	-2,937.12	380.22	9,248.63	9,032.16	216.47	42.725	
18,000.00	9,060.00	9,038.40	9,038.40	186.90	135.21	90.00	-2,937.12	380.22	9,340.32	9,123.74	216.58	43.125	
18,100.00	9,060.00	9,038.40	9,038.40	188.92	135.21	90.00	-2,937.12	380.22	9,432.19	9,215.49	216.70	43.526	
18,200.00	9,060.00	9,038.40	9,038.40	190.93	135.21	90.00	-2,937.12	380.22	9,524.22	9,307.40	216.81	43.928	
18,300.00	9,060.00	9,038.40	9,038.40	192.94	135.21	90.00	-2,937.12	380.22	9,616.41	9,399.48	216.93	44.330	
18,400.00	9,060.00	9,038.40	9,038.40	194.96	135.21	90.00	-2,937.12	380.22	9,708.75	9,491.71	217.04	44.734	
18,500.00	9,060.00	9,038.40	9,038.40	196.97	135.21	90.00	-2,937.12	380.22	9,801.24	9,584.10	217.14	45.137	
18,600.00	9,060.00	9,038.40	9,038.40	198.99	135.21	90.00	-2,937.12	380.22	9,893.88	9,676.63	217.25	45.542	
18,700.00	9,060.00	9,038.40	9,038.40	201.00	135.21	90.00	-2,937.12	380.22	9,986.66	9,769.31	217.35	45.947	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	110.53	-140.75	375.86	402.10					
100.00	100.00	75.40	75.40	0.52	10.09	110.53	-140.75	375.86	401.35	390.74	10.60	37.846		
200.00	200.00	175.40	175.40	0.70	10.55	110.53	-140.75	375.86	401.35	390.10	11.25	35.684		
300.00	300.00	275.40	275.40	0.99	11.35	110.53	-140.75	375.86	401.35	389.01	12.34	32.530		
400.00	400.00	375.40	375.40	1.31	12.44	110.53	-140.75	375.86	401.35	387.60	13.75	29.199		
500.00	500.00	475.40	475.40	1.65	13.74	110.53	-140.75	375.86	401.35	385.97	15.38	26.093		
600.00	600.00	575.40	575.40	1.99	15.19	110.53	-140.75	375.86	401.35	384.16	17.18	23.355		
700.00	700.00	675.40	675.40	2.34	16.77	110.53	-140.75	375.86	401.35	382.24	19.11	21.003		
800.00	800.00	775.40	775.40	2.69	18.43	110.53	-140.75	375.86	401.35	380.22	21.12	18.999		
900.00	900.00	875.40	875.40	3.04	20.16	110.53	-140.75	375.86	401.35	378.14	23.21	17.294		
1,000.00	1,000.00	975.40	975.40	3.40	21.94	110.53	-140.75	375.86	401.35	376.01	25.34	15.838		
1,100.00	1,100.00	1,075.40	1,075.40	3.75	23.76	110.53	-140.75	375.86	401.35	373.83	27.51	14.587		
1,200.00	1,200.00	1,175.40	1,175.40	4.11	25.61	110.53	-140.75	375.86	401.35	371.63	29.72	13.504		
1,300.00	1,300.00	1,275.40	1,275.40	4.46	27.49	110.53	-140.75	375.86	401.35	369.40	31.95	12.562		
1,400.00	1,400.00	1,375.40	1,375.40	4.82	29.38	110.53	-140.75	375.86	401.35	367.15	34.20	11.735		
1,500.00	1,500.00	1,475.40	1,475.40	5.18	31.29	110.53	-140.75	375.86	401.35	364.88	36.47	11.006		
1,600.00	1,600.00	1,575.40	1,575.40	5.53	33.21	110.53	-140.75	375.86	401.35	362.60	38.75	10.358		
1,700.00	1,700.00	1,675.40	1,675.40	5.89	35.15	110.53	-140.75	375.86	401.35	360.31	41.04	9.780		
1,800.00	1,800.00	1,775.40	1,775.40	6.25	37.09	110.53	-140.75	375.86	401.35	358.01	43.34	9.260		
1,900.00	1,900.00	1,875.40	1,875.40	6.61	39.05	110.53	-140.75	375.86	401.35	355.70	45.65	8.792		
2,000.00	2,000.00	1,975.40	1,975.40	6.96	41.00	110.53	-140.75	375.86	401.35	353.38	47.97	8.367		
2,100.00	2,100.00	2,075.40	2,075.40	7.32	42.97	110.53	-140.75	375.86	401.35	351.06	50.29	7.981		
2,200.00	2,200.00	2,175.40	2,175.40	7.68	44.94	110.53	-140.75	375.86	401.35	348.73	52.62	7.628		
2,300.00	2,300.00	2,275.40	2,275.40	8.04	46.91	110.53	-140.75	375.86	401.35	346.40	54.95	7.304		
2,350.00	2,350.00	2,325.40	2,325.40	8.22	47.90	110.53	-140.75	375.86	401.35	345.23	56.12	7.152 CC		
2,400.00	2,400.00	2,375.40	2,375.40	8.39	48.89	126.59	-140.75	375.86	401.48	344.19	57.29	7.008		
2,500.00	2,499.98	2,475.38	2,475.38	8.75	50.87	126.79	-140.75	375.86	402.52	342.90	59.62	6.751		
2,600.00	2,599.92	2,575.32	2,575.32	9.11	52.86	127.16	-140.75	375.86	404.62	342.66	61.96	6.530 ES		
2,700.00	2,699.78	2,675.18	2,675.18	9.47	54.84	127.72	-140.75	375.86	407.81	343.50	64.31	6.342		
2,800.00	2,799.54	2,774.94	2,774.94	9.82	56.83	128.46	-140.75	375.86	412.12	345.47	66.65	6.184		
2,900.00	2,899.16	2,874.56	2,874.56	10.18	58.82	129.35	-140.75	375.86	417.60	348.62	68.99	6.053		
3,000.00	2,998.61	2,974.01	2,974.01	10.54	60.80	130.39	-140.75	375.86	424.33	353.00	71.33	5.949		
3,100.00	3,097.86	3,073.26	3,073.26	10.89	62.78	131.55	-140.75	375.86	432.35	358.69	73.66	5.869		
3,200.00	3,196.89	3,172.29	3,172.29	11.25	64.76	132.82	-140.75	375.86	441.75	365.75	76.00	5.813		
3,295.74	3,291.45	3,266.85	3,266.85	11.59	66.65	134.13	-140.75	375.86	452.10	373.87	78.23	5.779		
3,300.00	3,295.65	3,271.05	3,271.05	11.61	66.73	134.19	-140.75	375.86	452.59	374.26	78.33	5.778		
3,400.00	3,394.29	3,369.69	3,369.69	11.97	68.71	135.64	-140.75	375.86	464.27	383.61	80.66	5.756		
3,500.00	3,492.94	3,468.34	3,468.34	12.33	70.68	137.01	-140.75	375.86	476.23	393.24	82.99	5.739		
3,600.00	3,591.58	3,566.98	3,566.98	12.69	72.66	138.32	-140.75	375.86	488.45	403.13	85.32	5.725		
3,700.00	3,690.22	3,665.62	3,665.62	13.05	74.64	139.56	-140.75	375.86	500.92	413.26	87.66	5.715		
3,800.00	3,788.86	3,764.26	3,764.26	13.41	76.62	140.74	-140.75	375.86	513.60	423.61	89.99	5.707		
3,900.00	3,887.50	3,862.90	3,862.90	13.77	78.59	141.87	-140.75	375.86	526.50	434.16	92.33	5.702		
4,000.00	3,986.14	3,961.54	3,961.54	14.14	80.57	142.94	-140.75	375.86	539.58	444.91	94.67	5.699		
4,100.00	4,084.78	4,060.18	4,060.18	14.50	82.56	143.96	-140.75	375.86	552.85	455.83	97.02	5.699		
4,200.00	4,183.42	4,158.82	4,158.82	14.87	84.54	144.94	-140.75	375.86	566.28	466.92	99.36	5.699		
4,300.00	4,282.06	4,257.46	4,257.46	15.24	86.52	145.87	-140.75	375.86	579.86	478.16	101.70	5.702		
4,400.00	4,380.70	4,356.10	4,356.10	15.60	88.50	146.75	-140.75	375.86	593.59	489.54	104.05	5.705		
4,500.00	4,479.34	4,454.74	4,454.74	15.97	90.49	147.60	-140.75	375.86	607.45	501.06	106.39	5.709		
4,600.00	4,577.98	4,553.38	4,553.38	16.34	92.47	148.41	-140.75	375.86	621.44	512.70	108.74	5.715		
4,700.00	4,676.62	4,652.02	4,652.02	16.71	94.45	149.18	-140.75	375.86	635.55	524.46	111.09	5.721		
4,800.00	4,775.27	4,750.67	4,750.67	17.08	96.44	149.92	-140.75	375.86	649.76	536.32	113.44	5.728		
4,900.00	4,873.91	4,849.31	4,849.31	17.45	98.42	150.63	-140.75	375.86	664.08	548.29	115.79	5.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:		10.00 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
5,000.00	4,972.55	4,947.95	4,947.95	17.82	100.41	151.31	-140.75	375.86	678.49	560.35	118.14	5.743					
5,100.00	5,071.19	5,046.59	5,046.59	18.19	102.40	151.96	-140.75	375.86	693.00	572.50	120.49	5.751					
5,200.00	5,169.83	5,145.23	5,145.23	18.56	104.38	152.58	-140.75	375.86	707.58	584.74	122.84	5.760					
5,300.00	5,268.47	5,243.87	5,243.87	18.93	106.37	153.18	-140.75	375.86	722.25	597.05	125.20	5.769					
5,400.00	5,367.11	5,342.51	5,342.51	19.31	108.36	153.75	-140.75	375.86	736.99	609.44	127.55	5.778					
5,500.00	5,465.75	5,441.15	5,441.15	19.68	110.34	154.31	-140.75	375.86	751.80	621.90	129.90	5.787					
5,600.00	5,564.39	5,539.79	5,539.79	20.05	112.33	154.84	-140.75	375.86	766.68	634.42	132.26	5.797					
5,700.00	5,663.03	5,638.43	5,638.43	20.42	114.32	155.35	-140.75	375.86	781.62	647.00	134.61	5.806					
5,800.00	5,761.67	5,737.07	5,737.07	20.80	116.31	155.84	-140.75	375.86	796.61	659.65	136.97	5.816					
5,900.00	5,860.31	5,835.71	5,835.71	21.17	118.30	156.31	-140.75	375.86	811.67	672.34	139.32	5.826					
6,000.00	5,958.96	5,934.36	5,934.36	21.54	120.28	156.77	-140.75	375.86	826.77	685.09	141.68	5.836					
6,100.00	6,057.60	6,033.00	6,033.00	21.92	122.27	157.21	-140.75	375.86	841.93	697.89	144.04	5.845					
6,200.00	6,156.24	6,131.64	6,131.64	22.29	124.26	157.64	-140.75	375.86	857.13	710.74	146.39	5.855					
6,300.00	6,254.88	6,230.28	6,230.28	22.67	126.25	158.05	-140.75	375.86	872.38	723.63	148.75	5.865					
6,400.00	6,353.52	6,328.92	6,328.92	23.04	128.24	158.44	-140.75	375.86	887.67	736.56	151.11	5.874					
6,500.00	6,452.16	6,427.56	6,427.56	23.42	130.23	158.82	-140.75	375.86	903.00	749.53	153.47	5.884					
6,600.00	6,550.80	6,526.20	6,526.20	23.79	132.22	159.19	-140.75	375.86	918.37	762.54	155.83	5.894					
6,700.00	6,649.44	6,624.84	6,624.84	24.17	134.21	159.55	-140.75	375.86	933.77	775.58	158.19	5.903					
6,800.00	6,748.08	6,723.48	6,723.48	24.54	136.20	159.90	-140.75	375.86	949.21	788.66	160.54	5.912					
6,900.00	6,846.72	6,822.12	6,822.12	24.92	138.19	160.23	-140.75	375.86	964.68	801.77	162.90	5.922					
7,000.00	6,945.36	6,920.76	6,920.76	25.29	140.18	160.56	-140.75	375.86	980.18	814.92	165.26	5.931					
7,100.00	7,044.00	7,019.40	7,019.40	25.67	142.17	160.87	-140.75	375.86	995.71	828.09	167.62	5.940					
7,200.00	7,142.65	7,118.05	7,118.05	26.04	144.17	161.18	-140.75	375.86	1,011.27	841.29	169.99	5.949					
7,300.00	7,241.29	7,216.69	7,216.69	26.42	146.16	161.47	-140.75	375.86	1,026.86	854.52	172.35	5.958					
7,400.00	7,339.93	7,315.33	7,315.33	26.79	148.15	161.76	-140.75	375.86	1,042.48	867.77	174.71	5.967					
7,500.00	7,438.57	7,413.97	7,413.97	27.17	150.14	162.04	-140.75	375.86	1,058.11	881.05	177.07	5.976					
7,571.77	7,509.37	7,484.77	7,484.77	27.44	151.57	162.23	-140.75	375.86	1,069.35	890.59	178.76	5.982					
7,600.00	7,537.23	7,512.63	7,512.63	27.55	152.13	162.32	-140.75	375.86	1,073.68	894.25	179.43	5.984					
7,700.00	7,636.18	7,611.58	7,611.58	27.92	154.13	162.62	-140.75	375.86	1,087.43	905.63	181.80	5.982					
7,800.00	7,735.48	7,710.88	7,710.88	28.29	156.13	162.85	-140.75	375.86	1,098.72	914.55	184.17	5.966					
7,900.00	7,835.05	7,810.45	7,810.45	28.65	158.14	163.03	-140.75	375.86	1,107.52	920.98	186.54	5.937					
8,000.00	7,934.83	7,910.23	7,910.23	29.01	160.16	163.16	-140.75	375.86	1,113.84	924.93	188.91	5.896					
8,100.00	8,034.74	8,010.14	8,010.14	29.36	162.18	163.23	-140.75	375.86	1,117.65	926.37	191.29	5.843					
8,202.27	8,137.00	8,112.40	8,112.40	29.72	164.24	147.22	-140.75	375.86	1,118.97	925.25	193.71	5.776					
8,300.00	8,234.73	8,210.13	8,210.13	30.06	166.22	147.22	-140.75	375.86	1,118.97	922.94	196.02	5.708					
8,400.00	8,334.73	8,310.13	8,310.13	30.41	168.23	147.22	-140.75	375.86	1,118.97	920.57	198.39	5.640					
8,500.00	8,434.73	8,410.13	8,410.13	30.75	170.25	147.22	-140.75	375.86	1,118.97	918.20	200.76	5.574					
8,552.31	8,487.04	8,462.44	8,462.44	30.94	171.31	147.22	-140.75	375.86	1,118.97	916.96	202.00	5.539					
8,600.00	8,534.68	8,510.08	8,510.08	31.10	172.27	57.73	-140.75	375.86	1,117.90	914.78	203.12	5.504					
8,650.00	8,584.26	8,559.66	8,559.66	31.26	173.28	58.29	-140.75	375.86	1,114.53	910.25	204.28	5.456					
8,700.00	8,633.10	8,608.50	8,608.50	31.43	174.26	59.24	-140.75	375.86	1,108.93	903.50	205.43	5.398					
8,750.00	8,680.83	8,656.23	8,656.23	31.58	175.23	60.55	-140.75	375.86	1,101.22	894.68	206.54	5.332					
8,800.00	8,727.09	8,702.49	8,702.49	31.74	176.16	62.23	-140.75	375.86	1,091.60	883.97	207.62	5.258					
8,850.00	8,771.52	8,746.92	8,746.92	31.89	177.06	64.25	-140.75	375.86	1,080.29	871.63	208.66	5.177					
8,900.00	8,813.78	8,789.18	8,789.18	32.04	177.91	66.58	-140.75	375.86	1,067.58	857.92	209.66	5.092					
8,950.00	8,853.56	8,828.96	8,828.96	32.18	178.71	69.16	-140.75	375.86	1,053.81	843.20	210.60	5.004					
9,000.00	8,890.55	8,865.95	8,865.95	32.32	179.46	71.93	-140.75	375.86	1,039.32	827.82	211.50	4.914 Alert					
9,050.00	8,924.46	8,899.86	8,899.86	32.47	180.15	74.80	-140.75	375.86	1,024.53	812.19	212.34	4.825 Alert					
9,100.00	8,955.05	8,930.45	8,930.45	32.63	180.77	77.67	-140.75	375.86	1,009.85	796.74	213.12	4.738 Alert					
9,150.00	8,982.08	8,957.48	8,957.48	32.79	181.31	80.44	-140.75	375.86	995.73	781.88	213.85	4.656 Alert					
9,200.00	9,005.34	8,980.74	8,980.74	32.97	181.78	83.01	-140.75	375.86	982.60	768.07	214.52	4.580 Alert					
9,250.00	9,024.65	9,000.05	9,000.05	33.17	182.17	85.28	-140.75	375.86	970.87	755.72	215.14	4.513 Alert					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,015.27	9,015.27	33.38	182.48	87.17	-140.75	375.86	960.93	745.22	215.71	4.455	Alert	
9,350.00	9,050.89	9,026.29	9,026.29	33.62	182.70	88.61	-140.75	375.86	953.11	736.91	216.21	4.408	Alert	
9,400.00	9,057.61	9,033.01	9,033.01	33.87	182.84	89.56	-140.75	375.86	947.68	731.04	216.64	4.375	Alert	
9,452.31	9,060.00	9,035.40	9,035.40	34.15	182.89	90.00	-140.75	375.86	944.73	727.73	217.00	4.354	Alert	
9,479.62	9,060.00	9,035.40	9,035.40	34.31	182.89	90.00	-140.75	375.86	944.33	727.16	217.17	4.348	Alert	
9,500.00	9,060.00	9,035.40	9,035.40	34.42	182.89	90.00	-140.75	375.86	944.55	727.25	217.30	4.347	Alert, SF	
9,600.00	9,060.00	9,035.40	9,035.40	35.09	182.89	90.00	-140.75	375.86	951.98	734.02	217.96	4.368	Alert	
9,700.00	9,060.00	9,035.40	9,035.40	35.86	182.89	90.00	-140.75	375.86	969.71	751.09	218.62	4.436	Alert	
9,800.00	9,060.00	9,035.40	9,035.40	36.72	182.89	90.00	-140.75	375.86	997.20	777.95	219.25	4.548	Alert	
9,900.00	9,060.00	9,035.40	9,035.40	37.69	182.89	90.00	-140.75	375.86	1,033.68	813.86	219.81	4.703	Alert	
10,000.00	9,060.00	9,035.40	9,035.40	38.73	182.89	90.00	-140.75	375.86	1,078.22	857.93	220.30	4.894	Alert	
10,100.00	9,060.00	9,035.40	9,035.40	39.86	182.89	90.00	-140.75	375.86	1,129.89	909.19	220.70	5.120		
10,140.22	9,060.00	9,035.40	9,035.40	40.33	182.89	90.00	-140.75	375.86	1,152.46	931.63	220.84	5.219		
10,200.00	9,060.00	9,035.40	9,035.40	41.05	182.89	90.00	-140.75	375.86	1,187.24	966.22	221.02	5.372		
10,300.00	9,060.00	9,035.40	9,035.40	42.31	182.89	90.00	-140.75	375.86	1,247.50	1,026.22	221.28	5.638		
10,400.00	9,060.00	9,035.40	9,035.40	43.64	182.89	90.00	-140.75	375.86	1,310.01	1,088.52	221.49	5.915		
10,507.23	9,060.00	9,035.40	9,035.40	45.11	182.89	90.00	-140.75	375.86	1,379.09	1,157.43	221.66	6.222		
10,600.00	9,060.00	9,035.40	9,035.40	46.43	182.89	90.00	-140.75	375.86	1,442.47	1,220.70	221.77	6.504		
10,700.00	9,060.00	9,035.40	9,035.40	47.91	182.89	90.00	-140.75	375.86	1,516.42	1,294.57	221.85	6.835		
10,800.00	9,060.00	9,035.40	9,035.40	49.42	182.89	90.00	-140.75	375.86	1,595.36	1,373.45	221.91	7.189		
10,900.00	9,060.00	9,035.40	9,035.40	50.97	182.89	90.00	-140.75	375.86	1,678.48	1,456.54	221.94	7.563		
11,000.00	9,060.00	9,035.40	9,035.40	52.55	182.89	90.00	-140.75	375.86	1,765.11	1,543.15	221.96	7.952		
11,100.00	9,060.00	9,035.40	9,035.40	54.14	182.89	90.00	-140.75	375.86	1,854.65	1,632.68	221.97	8.356		
11,207.23	9,060.00	9,035.40	9,035.40	55.87	182.89	90.00	-140.75	375.86	1,953.33	1,731.36	221.97	8.800		
11,300.00	9,060.00	9,035.40	9,035.40	57.39	182.89	90.00	-140.75	375.86	2,039.49	1,817.52	221.97	9.188		
11,400.00	9,060.00	9,035.40	9,035.40	59.06	182.89	90.00	-140.75	375.86	2,131.76	1,909.80	221.96	9.604		
11,506.63	9,060.00	9,035.40	9,035.40	60.88	182.89	90.00	-140.75	375.86	2,229.44	2,007.48	221.96	10.044		
11,600.00	9,060.00	9,035.40	9,035.40	62.49	182.89	90.00	-140.75	375.86	2,314.96	2,093.00	221.96	10.430		
11,700.00	9,060.00	9,035.40	9,035.40	64.24	182.89	90.00	-140.75	375.86	2,407.19	2,185.24	221.95	10.846		
11,800.00	9,060.00	9,035.40	9,035.40	66.01	182.89	90.00	-140.75	375.86	2,500.02	2,278.07	221.95	11.264		
11,900.00	9,060.00	9,035.40	9,035.40	67.79	182.89	90.00	-140.75	375.86	2,593.39	2,371.44	221.95	11.685		
12,000.00	9,060.00	9,035.40	9,035.40	69.58	182.89	90.00	-140.75	375.86	2,687.23	2,465.28	221.94	12.108		
12,100.00	9,060.00	9,035.40	9,035.40	71.39	182.89	90.00	-140.75	375.86	2,781.50	2,559.56	221.94	12.533		
12,200.00	9,060.00	9,035.40	9,035.40	73.21	182.89	90.00	-140.75	375.86	2,876.16	2,654.22	221.94	12.959		
12,300.00	9,060.00	9,035.40	9,035.40	75.05	182.89	90.00	-140.75	375.86	2,971.17	2,749.22	221.94	13.387		
12,400.00	9,060.00	9,035.40	9,035.40	76.89	182.89	90.00	-140.75	375.86	3,066.49	2,844.55	221.94	13.817		
12,500.00	9,060.00	9,035.40	9,035.40	78.74	182.89	90.00	-140.75	375.86	3,162.11	2,940.16	221.95	14.247		
12,600.00	9,060.00	9,035.40	9,035.40	80.61	182.89	90.00	-140.75	375.86	3,257.98	3,036.03	221.95	14.679		
12,700.00	9,060.00	9,035.40	9,035.40	82.48	182.89	90.00	-140.75	375.86	3,354.10	3,132.14	221.96	15.111		
12,800.00	9,060.00	9,035.40	9,035.40	84.36	182.89	90.00	-140.75	375.86	3,450.44	3,228.47	221.97	15.545		
12,900.00	9,060.00	9,035.40	9,035.40	86.24	182.89	90.00	-140.75	375.86	3,546.98	3,325.01	221.98	15.979		
13,000.00	9,060.00	9,035.40	9,035.40	88.14	182.89	90.00	-140.75	375.86	3,643.71	3,421.72	221.99	16.414		
13,100.00	9,060.00	9,035.40	9,035.40	90.04	182.89	90.00	-140.75	375.86	3,740.61	3,518.61	222.00	16.850		
13,200.00	9,060.00	9,035.40	9,035.40	91.94	182.89	90.00	-140.75	375.86	3,837.67	3,615.66	222.01	17.286		
13,300.00	9,060.00	9,035.40	9,035.40	93.86	182.89	90.00	-140.75	375.86	3,934.88	3,712.85	222.03	17.723		
13,400.00	9,060.00	9,035.40	9,035.40	95.77	182.89	90.00	-140.75	375.86	4,032.22	3,810.18	222.04	18.160		
13,500.00	9,060.00	9,035.40	9,035.40	97.70	182.89	90.00	-140.75	375.86	4,129.69	3,907.63	222.06	18.597		
13,600.00	9,060.00	9,035.40	9,035.40	99.62	182.89	90.00	-140.75	375.86	4,227.28	4,005.20	222.08	19.035		
13,700.00	9,060.00	9,035.40	9,035.40	101.56	182.89	90.00	-140.75	375.86	4,324.98	4,102.88	222.10	19.473		
13,800.00	9,060.00	9,035.40	9,035.40	103.49	182.89	90.00	-140.75	375.86	4,422.78	4,200.66	222.12	19.911		
13,900.00	9,060.00	9,035.40	9,035.40	105.43	182.89	90.00	-140.75	375.86	4,520.68	4,298.53	222.15	20.350		
14,000.00	9,060.00	9,035.40	9,035.40	107.38	182.89	90.00	-140.75	375.86	4,618.66	4,396.49	222.17	20.789		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	9,035.40	9,035.40	109.33	182.89	90.00	-140.75	375.86	4,716.74	4,494.54	222.20	21.228		
14,200.00	9,060.00	9,035.40	9,035.40	111.28	182.89	90.00	-140.75	375.86	4,814.89	4,592.66	222.22	21.667		
14,300.00	9,060.00	9,035.40	9,035.40	113.23	182.89	90.00	-140.75	375.86	4,913.11	4,690.86	222.25	22.106		
14,400.00	9,060.00	9,035.40	9,035.40	115.19	182.89	90.00	-140.75	375.86	5,011.41	4,789.13	222.28	22.545		
14,500.00	9,060.00	9,035.40	9,035.40	117.15	182.89	90.00	-140.75	375.86	5,109.77	4,887.46	222.31	22.985		
14,600.00	9,060.00	9,035.40	9,035.40	119.11	182.89	90.00	-140.75	375.86	5,208.20	4,985.85	222.34	23.424		
14,700.00	9,060.00	9,035.40	9,035.40	121.08	182.89	90.00	-140.75	375.86	5,306.68	5,084.30	222.38	23.863		
14,800.00	9,060.00	9,035.40	9,035.40	123.05	182.89	90.00	-140.75	375.86	5,405.22	5,182.81	222.41	24.303		
14,900.00	9,060.00	9,035.40	9,035.40	125.02	182.89	90.00	-140.75	375.86	5,503.81	5,281.37	222.45	24.742		
15,000.00	9,060.00	9,035.40	9,035.40	126.99	182.89	90.00	-140.75	375.86	5,602.45	5,379.97	222.48	25.182		
15,100.00	9,060.00	9,035.40	9,035.40	128.97	182.89	90.00	-140.75	375.86	5,701.14	5,478.62	222.52	25.621		
15,200.00	9,060.00	9,035.40	9,035.40	130.95	182.89	90.00	-140.75	375.86	5,799.88	5,577.32	222.56	26.060		
15,300.00	9,060.00	9,035.40	9,035.40	132.93	182.89	90.00	-140.75	375.86	5,898.65	5,676.06	222.60	26.499		
15,400.00	9,060.00	9,035.40	9,035.40	134.91	182.89	90.00	-140.75	375.86	5,997.47	5,774.83	222.64	26.938		
15,500.00	9,060.00	9,035.40	9,035.40	136.89	182.89	90.00	-140.75	375.86	6,096.33	5,873.65	222.68	27.377		
15,600.00	9,060.00	9,035.40	9,035.40	138.88	182.89	90.00	-140.75	375.86	6,195.22	5,972.50	222.72	27.816		
15,700.00	9,060.00	9,035.40	9,035.40	140.86	182.89	90.00	-140.75	375.86	6,294.15	6,071.38	222.77	28.254		
15,800.00	9,060.00	9,035.40	9,035.40	142.85	182.89	90.00	-140.75	375.86	6,393.11	6,170.30	222.81	28.693		
15,900.00	9,060.00	9,035.40	9,035.40	144.84	182.89	90.00	-140.75	375.86	6,492.10	6,269.24	222.86	29.131		
16,000.00	9,060.00	9,035.40	9,035.40	146.83	182.89	90.00	-140.75	375.86	6,591.12	6,368.22	222.90	29.569		
16,100.00	9,060.00	9,035.40	9,035.40	148.83	182.89	90.00	-140.75	375.86	6,690.18	6,467.23	222.95	30.007		
16,200.00	9,060.00	9,035.40	9,035.40	150.82	182.89	90.00	-140.75	375.86	6,789.26	6,566.26	223.00	30.445		
16,300.00	9,060.00	9,035.40	9,035.40	152.82	182.89	90.00	-140.75	375.86	6,888.36	6,665.31	223.05	30.883		
16,400.00	9,060.00	9,035.40	9,035.40	154.81	182.89	90.00	-140.75	375.86	6,987.50	6,764.40	223.10	31.320		
16,500.00	9,060.00	9,035.40	9,035.40	156.81	182.89	90.00	-140.75	375.86	7,086.65	6,863.50	223.15	31.757		
16,600.00	9,060.00	9,035.40	9,035.40	158.81	182.89	90.00	-140.75	375.86	7,185.83	6,962.63	223.20	32.194		
16,700.00	9,060.00	9,035.40	9,035.40	160.81	182.89	90.00	-140.75	375.86	7,285.03	7,061.78	223.26	32.631		
16,800.00	9,060.00	9,035.40	9,035.40	162.81	182.89	90.00	-140.75	375.86	7,384.26	7,160.95	223.31	33.067		
16,900.00	9,060.00	9,035.40	9,035.40	164.82	182.89	90.00	-140.75	375.86	7,483.50	7,260.14	223.37	33.503		
17,000.00	9,060.00	9,035.40	9,035.40	166.82	182.89	90.00	-140.75	375.86	7,582.77	7,359.35	223.42	33.939		
17,100.00	9,060.00	9,035.40	9,035.40	168.82	182.89	90.00	-140.75	375.86	7,682.05	7,458.57	223.48	34.375		
17,200.00	9,060.00	9,035.40	9,035.40	170.83	182.89	90.00	-140.75	375.86	7,781.35	7,557.82	223.54	34.810		
17,300.00	9,060.00	9,035.40	9,035.40	172.84	182.89	90.00	-140.75	375.86	7,880.67	7,657.08	223.59	35.245		
17,400.00	9,060.00	9,035.40	9,035.40	174.84	182.89	90.00	-140.75	375.86	7,980.01	7,756.36	223.65	35.680		
17,500.00	9,060.00	9,035.40	9,035.40	176.85	182.89	90.00	-140.75	375.86	8,079.36	7,855.65	223.71	36.115		
17,600.00	9,060.00	9,035.40	9,035.40	178.86	182.89	90.00	-140.75	375.86	8,178.73	7,954.96	223.77	36.549		
17,700.00	9,060.00	9,035.40	9,035.40	180.87	182.89	90.00	-140.75	375.86	8,278.11	8,054.28	223.84	36.983		
17,800.00	9,060.00	9,035.40	9,035.40	182.88	182.89	90.00	-140.75	375.86	8,377.51	8,153.61	223.90	37.417		
17,900.00	9,060.00	9,035.40	9,035.40	184.89	182.89	90.00	-140.75	375.86	8,476.92	8,252.96	223.96	37.850		
18,000.00	9,060.00	9,035.40	9,035.40	186.90	182.89	90.00	-140.75	375.86	8,576.35	8,352.33	224.02	38.283		
18,100.00	9,060.00	9,035.40	9,035.40	188.92	182.89	90.00	-140.75	375.86	8,675.79	8,451.70	224.09	38.716		
18,200.00	9,060.00	9,035.40	9,035.40	190.93	182.89	90.00	-140.75	375.86	8,775.24	8,551.09	224.15	39.148		
18,300.00	9,060.00	9,035.40	9,035.40	192.94	182.89	90.00	-140.75	375.86	8,874.71	8,650.49	224.22	39.580		
18,400.00	9,060.00	9,035.40	9,035.40	194.96	182.89	90.00	-140.75	375.86	8,974.18	8,749.90	224.29	40.012		
18,500.00	9,060.00	9,035.40	9,035.40	196.97	182.89	90.00	-140.75	375.86	9,073.67	8,849.32	224.36	40.443		
18,600.00	9,060.00	9,035.40	9,035.40	198.99	182.89	90.00	-140.75	375.86	9,173.17	8,948.75	224.42	40.874		
18,700.00	9,060.00	9,035.40	9,035.40	201.00	182.89	90.00	-140.75	375.86	9,272.68	9,048.19	224.49	41.305		
18,800.00	9,060.00	9,035.40	9,035.40	203.02	182.89	90.00	-140.75	375.86	9,372.20	9,147.64	224.56	41.735		
18,900.00	9,060.00	9,035.40	9,035.40	205.04	182.89	90.00	-140.75	375.86	9,471.73	9,247.10	224.63	42.165		
19,000.00	9,060.00	9,035.40	9,035.40	207.06	182.89	90.00	-140.75	375.86	9,571.27	9,346.57	224.71	42.595		
19,100.00	9,060.00	9,035.40	9,035.40	209.07	182.89	90.00	-140.75	375.86	9,670.82	9,446.04	224.78	43.024		
19,200.00	9,060.00	9,035.40	9,035.40	211.09	182.89	90.00	-140.75	375.86	9,770.38	9,545.53	224.85	43.453		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	9,035.40	9,035.40	213.11	182.89	90.00	-140.75	375.86	9,869.95	9,645.02	224.92	43.881	
19,400.00	9,060.00	9,035.40	9,035.40	215.13	182.89	90.00	-140.75	375.86	9,969.52	9,744.53	225.00	44.309	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.70	0.70	0.50	0.50	-0.19	30.02	-0.10	30.02				
100.00	100.00	100.70	100.70	0.52	0.52	-0.19	30.02	-0.10	30.02	28.98	1.04	28.972	
200.00	200.00	200.70	200.70	0.70	0.70	-0.19	30.02	-0.10	30.02	28.61	1.41	21.352	
300.00	300.00	300.70	300.70	0.99	0.99	-0.19	30.02	-0.10	30.02	28.04	1.98	15.186	
400.00	400.00	400.70	400.70	1.31	1.31	-0.19	30.02	-0.10	30.02	27.40	2.62	11.456	
500.00	500.00	500.70	500.70	1.65	1.65	-0.19	30.02	-0.10	30.02	26.73	3.29	9.112	
600.00	600.00	600.70	600.70	1.99	1.99	-0.19	30.02	-0.10	30.02	26.04	3.98	7.536	
700.00	700.00	700.70	700.70	2.34	2.34	-0.19	30.02	-0.10	30.02	25.34	4.68	6.413	
800.00	800.00	800.70	800.70	2.69	2.69	-0.19	30.02	-0.10	30.02	24.64	5.38	5.576	
900.00	900.00	900.70	900.70	3.04	3.05	-0.19	30.02	-0.10	30.02	23.93	6.09	4.930 Alert	
1,000.00	1,000.00	1,000.70	1,000.70	3.40	3.40	-0.19	30.02	-0.10	30.02	23.22	6.80	4.416 Alert	
1,100.00	1,100.00	1,100.70	1,100.70	3.75	3.76	-0.19	30.02	-0.10	30.02	22.51	7.51	3.999 Alert	
1,200.00	1,200.00	1,200.70	1,200.70	4.11	4.11	-0.19	30.02	-0.10	30.02	21.80	8.22	3.653 Alert	
1,300.00	1,300.00	1,300.70	1,300.70	4.46	4.47	-0.19	30.02	-0.10	30.02	21.09	8.93	3.361 Alert	
1,400.00	1,400.00	1,400.70	1,400.70	4.82	4.82	-0.19	30.02	-0.10	30.02	20.38	9.64	3.113 Alert	
1,500.00	1,500.00	1,500.70	1,500.70	5.18	5.18	-0.19	30.02	-0.10	30.02	19.66	10.36	2.899 Alert	
1,600.00	1,600.00	1,600.70	1,600.70	5.53	5.54	-0.19	30.02	-0.10	30.02	18.95	11.07	2.712 Alert	
1,700.00	1,700.00	1,700.70	1,700.70	5.89	5.89	-0.19	30.02	-0.10	30.02	18.24	11.78	2.547 Alert	
1,800.00	1,800.00	1,800.70	1,800.70	6.25	6.25	-0.19	30.02	-0.10	30.02	17.52	12.50	2.402 Minor Risk	
1,900.00	1,900.00	1,900.70	1,900.70	6.61	6.61	-0.19	30.02	-0.10	30.02	16.81	13.21	2.272 Minor Risk	
2,000.00	2,000.00	2,000.70	2,000.70	6.96	6.97	-0.19	30.02	-0.10	30.02	16.09	13.93	2.155 Minor Risk, CC, ES	
2,100.00	2,100.00	2,100.18	2,100.17	7.32	7.32	-0.52	30.88	-0.28	30.88	16.24	14.64	2.109 Minor Risk	
2,200.00	2,200.00	2,199.59	2,199.55	7.68	7.68	-1.38	33.42	-0.81	33.45	18.10	15.35	2.180 Minor Risk	
2,300.00	2,300.00	2,298.89	2,298.76	8.04	8.03	-2.56	37.65	-1.69	37.74	21.69	16.05	2.351 Minor Risk	
2,350.00	2,350.00	2,348.48	2,348.26	8.22	8.21	-3.20	40.39	-2.25	40.53	24.13	16.40	2.471 Minor Risk	
2,400.00	2,400.00	2,398.03	2,397.71	8.39	8.39	12.27	43.55	-2.91	43.54	26.79	16.75	2.600 Alert	
2,500.00	2,499.98	2,497.04	2,496.42	8.75	8.74	11.44	51.12	-4.48	49.57	32.13	17.44	2.842 Alert	
2,600.00	2,599.92	2,595.96	2,594.89	9.11	9.09	10.93	60.34	-6.40	55.61	37.49	18.13	3.068 Alert	
2,700.00	2,699.78	2,694.77	2,693.07	9.47	9.45	10.63	71.21	-8.66	61.66	42.85	18.81	3.278 Alert	
2,800.00	2,799.54	2,793.48	2,790.95	9.82	9.80	10.50	83.73	-11.26	67.70	48.22	19.48	3.475 Alert	
2,900.00	2,899.16	2,892.09	2,888.49	10.18	10.15	10.49	97.88	-14.20	73.74	53.58	20.16	3.658 Alert	
3,000.00	2,998.61	2,990.59	2,985.67	10.54	10.50	10.57	113.65	-17.47	79.77	58.95	20.82	3.831 Alert	
3,100.00	3,097.86	3,089.00	3,082.45	10.89	10.86	10.73	131.04	-21.09	85.80	64.31	21.49	3.993 Alert	
3,200.00	3,196.89	3,188.41	3,179.99	11.25	11.21	10.98	149.84	-24.99	91.39	69.20	22.19	4.119 Alert	
3,295.74	3,291.45	3,284.07	3,273.84	11.59	11.56	11.38	168.00	-28.76	95.21	72.33	22.88	4.162 Alert	
3,300.00	3,295.65	3,288.33	3,278.01	11.61	11.58	11.40	168.81	-28.93	95.35	72.44	22.91	4.162 Alert	
3,400.00	3,394.29	3,388.27	3,376.06	11.97	11.94	11.89	187.78	-32.87	98.53	74.89	23.64	4.169 Alert	
3,500.00	3,492.94	3,488.22	3,474.11	12.33	12.31	12.35	206.75	-36.81	101.72	77.35	24.36	4.175 Alert	
3,600.00	3,591.58	3,588.16	3,572.16	12.69	12.67	12.78	225.72	-40.75	104.91	79.82	25.09	4.181 Alert	
3,700.00	3,690.22	3,688.11	3,670.21	13.05	13.04	13.19	244.69	-44.70	108.11	82.29	25.83	4.186 Alert	
3,800.00	3,788.86	3,788.06	3,768.26	13.41	13.41	13.57	263.66	-48.64	111.32	84.76	26.56	4.191 Alert	
3,900.00	3,887.50	3,888.00	3,866.31	13.77	13.78	13.93	282.63	-52.58	114.53	87.23	27.30	4.196 Alert	
4,000.00	3,986.14	3,987.95	3,964.36	14.14	14.15	14.27	301.60	-56.52	117.74	89.71	28.03	4.200 Alert	
4,100.00	4,084.78	4,087.89	4,062.41	14.50	14.52	14.60	320.57	-60.46	120.96	92.19	28.77	4.204 Alert	
4,200.00	4,183.42	4,187.84	4,160.46	14.87	14.90	14.90	339.54	-64.40	124.18	94.67	29.51	4.208 Alert	
4,300.00	4,282.06	4,287.79	4,258.51	15.24	15.27	15.20	358.51	-68.34	127.41	97.16	30.25	4.212 Alert	
4,400.00	4,380.70	4,387.73	4,356.56	15.60	15.65	15.47	377.48	-72.28	130.63	99.64	30.99	4.215 Alert	
4,500.00	4,479.34	4,487.68	4,454.61	15.97	16.02	15.74	396.45	-76.22	133.87	102.13	31.74	4.218 Alert	
4,600.00	4,577.98	4,587.62	4,552.66	16.34	16.40	15.99	415.42	-80.16	137.10	104.62	32.48	4.221 Alert	
4,700.00	4,676.62	4,687.57	4,650.71	16.71	16.77	16.23	434.39	-84.10	140.34	107.11	33.22	4.224 Alert	
4,800.00	4,775.27	4,787.52	4,748.76	17.08	17.15	16.46	453.36	-88.04	143.57	109.61	33.97	4.227 Alert	
4,900.00	4,873.91	4,887.46	4,846.81	17.45	17.53	16.67	472.33	-91.99	146.82	112.10	34.72	4.229 Alert	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,987.41	4,944.86	17.82	17.91	16.88	491.30	-95.93	150.06	114.60	35.46	4.231	Alert	
5,100.00	5,071.19	5,087.35	5,042.91	18.19	18.28	17.08	510.27	-99.87	153.30	117.09	36.21	4.234	Alert	
5,200.00	5,169.83	5,187.30	5,140.96	18.56	18.66	17.28	529.24	-103.81	156.55	119.59	36.96	4.236	Alert	
5,300.00	5,268.47	5,287.25	5,239.01	18.93	19.04	17.46	548.21	-107.75	159.80	122.09	37.71	4.238	Alert	
5,400.00	5,367.11	5,387.19	5,337.06	19.31	19.42	17.64	567.18	-111.69	163.05	124.59	38.46	4.240	Alert	
5,500.00	5,465.75	5,487.14	5,435.11	19.68	19.80	17.81	586.15	-115.63	166.30	127.09	39.21	4.242	Alert	
5,600.00	5,564.39	5,587.08	5,533.16	20.05	20.18	17.97	605.12	-119.57	169.55	129.59	39.96	4.243	Alert	
5,700.00	5,663.03	5,687.03	5,631.21	20.42	20.56	18.13	624.09	-123.51	172.81	132.10	40.71	4.245	Alert	
5,800.00	5,761.67	5,786.98	5,729.26	20.80	20.94	18.28	643.06	-127.45	176.06	134.60	41.46	4.247	Alert	
5,900.00	5,860.31	5,886.92	5,827.31	21.17	21.33	18.42	662.03	-131.39	179.32	137.11	42.21	4.248	Alert	
6,000.00	5,958.96	5,986.87	5,925.36	21.54	21.71	18.57	681.00	-135.34	182.57	139.61	42.96	4.250	Alert	
6,100.00	6,057.60	6,086.81	6,023.41	21.92	22.09	18.70	699.97	-139.28	185.83	142.12	43.72	4.251	Alert	
6,200.00	6,156.24	6,186.76	6,121.46	22.29	22.47	18.83	718.94	-143.22	189.09	144.62	44.47	4.252	Alert	
6,300.00	6,254.88	6,286.70	6,219.51	22.67	22.85	18.96	737.91	-147.16	192.35	147.13	45.22	4.254	Alert	
6,400.00	6,353.52	6,386.65	6,317.56	23.04	23.24	19.08	756.88	-151.10	195.62	149.64	45.98	4.255	Alert	
6,500.00	6,452.16	6,486.60	6,415.61	23.42	23.62	19.20	775.85	-155.04	198.88	152.15	46.73	4.256	Alert	
6,600.00	6,550.80	6,586.54	6,513.66	23.79	24.00	19.31	794.82	-158.98	202.14	154.66	47.48	4.257	Alert	
6,700.00	6,649.44	6,686.49	6,611.71	24.17	24.38	19.43	813.79	-162.92	205.41	157.17	48.24	4.258	Alert	
6,800.00	6,748.08	6,786.43	6,709.76	24.54	24.77	19.53	832.76	-166.86	208.67	159.68	48.99	4.259	Alert	
6,900.00	6,846.72	6,886.38	6,807.81	24.92	25.15	19.64	851.73	-170.80	211.94	162.19	49.75	4.260	Alert	
7,000.00	6,945.36	6,986.33	6,905.86	25.29	25.53	19.74	870.70	-174.74	215.20	164.70	50.50	4.261	Alert	
7,100.00	7,044.00	7,086.27	7,003.91	25.67	25.92	19.84	889.67	-178.68	218.47	167.21	51.26	4.262	Alert	
7,200.00	7,142.65	7,186.22	7,101.96	26.04	26.30	19.93	908.64	-182.63	221.74	169.72	52.02	4.263	Alert	
7,300.00	7,241.29	7,286.16	7,200.01	26.42	26.68	20.02	927.61	-186.57	225.00	172.23	52.77	4.264	Alert	
7,400.00	7,339.93	7,386.11	7,298.06	26.79	27.07	20.11	946.58	-190.51	228.27	174.75	53.53	4.265	Alert	
7,500.00	7,438.57	7,486.06	7,396.11	27.17	27.45	20.20	965.55	-194.45	231.54	177.26	54.28	4.265	Alert	
7,571.77	7,509.37	7,557.79	7,466.49	27.44	27.73	20.26	979.16	-197.28	233.89	179.06	54.83	4.266	Alert	
7,600.00	7,537.23	7,586.00	7,494.16	27.55	27.84	20.28	984.51	-198.39	234.91	179.87	55.04	4.268	Alert	
7,700.00	7,636.18	7,685.86	7,592.13	27.92	28.22	20.22	1,003.47	-202.33	240.10	184.31	55.79	4.303	Alert	
7,800.00	7,735.48	7,785.56	7,689.93	28.29	28.60	19.97	1,022.39	-206.26	247.74	191.20	56.54	4.382	Alert	
7,900.00	7,835.05	7,885.02	7,787.51	28.65	28.99	19.55	1,041.27	-210.18	257.85	200.57	57.28	4.502	Alert	
8,000.00	7,934.83	7,984.18	7,884.79	29.01	29.37	18.99	1,060.09	-214.09	270.43	212.42	58.01	4.662	Alert	
8,100.00	8,034.74	8,082.98	7,981.71	29.36	29.75	18.33	1,078.84	-217.98	285.50	226.76	58.74	4.861	Alert	
8,202.27	8,137.00	8,183.56	8,080.38	29.72	30.14	1.55	1,097.93	-221.95	303.50	244.03	59.47	5.103		
8,300.00	8,234.73	8,279.43	8,174.44	30.06	30.51	0.77	1,116.13	-225.73	321.99	261.82	60.17	5.352		
8,400.00	8,334.73	8,377.47	8,270.63	30.41	30.88	0.10	1,134.74	-229.40	340.96	280.08	60.88	5.600		
8,500.00	8,434.73	8,474.47	8,365.49	30.75	31.24	1.22	1,153.16	-222.50	360.09	298.52	61.58	5.848		
8,552.31	8,487.04	8,523.54	8,412.69	30.94	31.41	2.72	1,162.36	-212.81	370.45	308.54	61.91	5.984		
8,600.00	8,534.68	8,567.10	8,453.78	31.10	31.56	-84.43	1,170.39	-200.79	380.23	318.07	62.17	6.116		
8,650.00	8,584.26	8,612.06	8,495.10	31.26	31.70	-81.94	1,178.49	-185.09	390.68	328.27	62.41	6.260		
8,700.00	8,633.10	8,656.35	8,534.51	31.43	31.83	-79.62	1,186.23	-166.44	401.17	338.55	62.62	6.407		
8,750.00	8,680.83	8,700.07	8,571.91	31.58	31.95	-77.46	1,193.60	-145.05	411.59	348.79	62.79	6.555		
8,800.00	8,727.09	8,743.28	8,607.18	31.74	32.06	-75.46	1,200.58	-121.11	421.80	358.86	62.94	6.702		
8,850.00	8,771.52	8,786.03	8,640.24	31.89	32.17	-73.63	1,207.14	-94.82	431.70	368.64	63.06	6.846		
8,900.00	8,813.78	8,828.40	8,671.01	32.04	32.26	-71.97	1,213.27	-66.36	441.17	378.01	63.17	6.984		
8,950.00	8,853.56	8,870.43	8,699.41	32.18	32.35	-70.46	1,218.95	-35.92	450.14	386.87	63.26	7.115		
9,000.00	8,890.55	8,912.16	8,725.36	32.32	32.45	-69.12	1,224.17	-3.67	458.49	395.14	63.36	7.237		
9,050.00	8,924.46	8,953.64	8,748.81	32.47	32.55	-67.93	1,228.91	30.21	466.17	402.71	63.46	7.345		
9,100.00	8,955.05	8,994.92	8,769.68	32.63	32.66	-66.89	1,233.16	65.55	473.11	409.51	63.59	7.440		
9,150.00	8,982.08	9,036.01	8,787.94	32.79	32.80	-66.00	1,236.92	102.17	479.23	415.48	63.75	7.517		
9,200.00	9,005.34	9,076.97	8,803.51	32.97	32.96	-65.25	1,240.16	139.90	484.50	420.54	63.96	7.576		
9,250.00	9,024.65	9,117.81	8,816.37	33.17	33.13	-64.65	1,242.88	178.55	488.86	424.66	64.20	7.614		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.00	9,039.87	9,158.56	8,826.47	33.38	33.32	-64.19	1,245.07	217.96	492.29	427.79	64.51	7.632	
9,350.00	9,050.89	9,199.25	8,833.79	33.62	33.52	-63.86	1,246.72	257.95	494.76	429.89	64.87	7.627	
9,400.00	9,057.61	9,239.90	8,838.30	33.87	33.73	-63.67	1,247.84	298.32	496.25	430.96	65.29	7.601	
9,452.31	9,060.00	9,282.41	8,840.00	34.15	33.96	-63.62	1,248.42	340.78	496.74	430.95	65.79	7.550	
9,454.79	9,060.00	9,284.53	8,840.00	34.16	33.97	-63.62	1,248.43	342.79	496.74	430.93	65.82	7.547	
9,500.00	9,060.00	9,329.62	8,840.00	34.42	34.25	-63.62	1,248.70	388.00	496.74	430.39	66.35	7.486	
9,600.00	9,060.00	9,429.62	8,840.00	35.09	34.92	-63.62	1,249.29	488.00	496.74	429.08	67.66	7.342	
9,700.00	9,060.00	9,529.62	8,840.00	35.86	35.69	-63.62	1,249.88	587.99	496.74	427.60	69.14	7.184	
9,800.00	9,060.00	9,629.62	8,840.00	36.72	36.57	-63.62	1,250.48	687.99	496.74	425.95	70.80	7.017	
9,900.00	9,060.00	9,729.62	8,840.00	37.69	37.53	-63.62	1,251.07	787.99	496.74	424.14	72.60	6.842	
10,000.00	9,060.00	9,829.62	8,840.00	38.73	38.58	-63.62	1,251.67	887.99	496.74	422.19	74.55	6.663	
10,100.00	9,060.00	9,929.62	8,840.00	39.86	39.70	-63.62	1,252.26	987.99	496.74	420.11	76.63	6.482	
10,140.22	9,060.00	9,969.85	8,840.00	40.33	40.17	-63.62	1,252.50	1,028.21	496.74	419.24	77.50	6.409	
10,200.00	9,060.00	10,029.62	8,840.00	41.05	40.90	-63.65	1,252.85	1,087.98	497.30	418.45	78.85	6.307	
10,300.00	9,060.00	10,129.54	8,840.00	42.31	42.16	-63.81	1,253.44	1,187.90	500.74	419.50	81.24	6.164	
10,400.00	9,060.00	10,229.27	8,840.00	43.64	43.47	-64.12	1,254.04	1,287.63	507.31	423.51	83.81	6.053	
10,507.23	9,060.00	10,335.84	8,840.00	45.11	44.94	-64.59	1,254.67	1,394.20	517.88	431.14	86.74	5.970	
10,600.00	9,060.00	10,428.03	8,840.00	46.43	46.25	-65.16	1,255.22	1,486.39	527.27	437.91	89.36	5.900	
10,700.00	9,060.00	10,527.72	8,840.00	47.91	47.72	-65.57	1,255.81	1,586.08	534.38	442.16	92.22	5.795	
10,800.00	9,060.00	10,627.62	8,840.00	49.42	49.23	-65.79	1,256.40	1,685.98	538.33	443.24	95.09	5.661	
10,900.00	9,060.00	10,727.62	8,840.00	50.97	50.77	-65.83	1,256.99	1,785.97	539.10	441.14	97.97	5.503	
11,000.00	9,060.00	10,827.58	8,840.00	52.55	52.35	-65.70	1,257.59	1,885.93	536.69	435.86	100.83	5.323	
11,100.00	9,060.00	10,927.38	8,840.00	54.14	53.96	-65.38	1,258.18	1,985.73	531.11	427.45	103.65	5.124	
11,207.23	9,060.00	11,034.09	8,840.00	55.87	55.72	-64.82	1,258.81	2,092.44	521.63	415.02	106.61	4.893 Alert	
11,300.00	9,060.00	11,126.40	8,840.00	57.39	57.26	-64.45	1,259.36	2,184.74	513.25	404.08	109.17	4.701 Alert	
11,400.00	9,060.00	11,226.17	8,840.00	59.06	58.94	-64.18	1,259.95	2,284.52	507.27	395.22	112.05	4.527 Alert	
11,506.63	9,060.00	11,332.75	8,840.00	60.88	60.77	-64.05	1,260.58	2,391.09	504.36	389.08	115.28	4.375 Alert	
11,600.00	9,060.00	11,426.11	8,840.00	62.49	62.39	-63.99	1,261.14	2,484.45	503.37	385.18	118.19	4.259 Alert	
11,700.00	9,060.00	11,526.10	8,840.00	64.24	64.14	-63.94	1,261.73	2,584.44	502.32	380.98	121.34	4.140 Alert	
11,800.00	9,060.00	11,626.10	8,840.00	66.01	65.91	-63.88	1,262.33	2,684.43	501.27	376.75	124.51	4.026 Alert	
11,900.00	9,060.00	11,726.09	8,840.00	67.79	67.69	-63.82	1,262.92	2,784.42	500.21	372.50	127.71	3.917 Alert	
12,000.00	9,060.00	11,826.08	8,840.00	69.58	69.49	-63.76	1,263.51	2,884.42	499.16	368.22	130.94	3.812 Alert	
12,100.00	9,060.00	11,926.08	8,840.00	71.39	71.30	-63.70	1,264.11	2,984.41	498.11	363.92	134.19	3.712 Alert	
12,200.00	9,060.00	12,026.07	8,840.00	73.21	73.12	-63.64	1,264.70	3,084.40	497.06	359.61	137.45	3.616 Alert	
12,300.00	9,060.00	12,126.06	8,840.00	75.05	74.96	-63.58	1,265.29	3,184.39	496.01	355.27	140.74	3.524 Alert	
12,400.00	9,060.00	12,226.06	8,840.00	76.89	76.80	-63.52	1,265.89	3,284.38	494.96	350.92	144.04	3.436 Alert	
12,500.00	9,060.00	12,326.05	8,840.00	78.74	78.66	-63.46	1,266.48	3,384.37	493.91	346.56	147.35	3.352 Alert	
12,600.00	9,060.00	12,426.04	8,840.00	80.61	80.53	-63.40	1,267.07	3,484.36	492.86	342.18	150.68	3.271 Alert	
12,700.00	9,060.00	12,526.04	8,840.00	82.48	82.40	-63.34	1,267.67	3,584.36	491.81	337.79	154.02	3.193 Alert	
12,800.00	9,060.00	12,626.03	8,840.00	84.36	84.28	-63.27	1,268.26	3,684.35	490.76	333.39	157.38	3.118 Alert	
12,900.00	9,060.00	12,726.02	8,840.00	86.24	86.17	-63.21	1,268.85	3,784.34	489.72	328.98	160.74	3.047 Alert	
13,000.00	9,060.00	12,826.02	8,840.00	88.14	88.07	-63.15	1,269.45	3,884.33	488.67	324.56	164.11	2.978 Alert	
13,100.00	9,060.00	12,926.01	8,840.00	90.04	89.97	-63.09	1,270.04	3,984.32	487.62	320.13	167.50	2.911 Alert	
13,200.00	9,060.00	13,026.00	8,840.00	91.94	91.88	-63.03	1,270.63	4,084.31	486.58	315.69	170.89	2.847 Alert	
13,300.00	9,060.00	13,125.99	8,840.00	93.86	93.79	-62.96	1,271.23	4,184.30	485.53	311.25	174.28	2.786 Alert	
13,400.00	9,060.00	13,225.99	8,840.00	95.77	95.71	-62.90	1,271.82	4,284.30	484.49	306.80	177.69	2.727 Alert	
13,500.00	9,060.00	13,325.98	8,840.00	97.70	97.64	-62.84	1,272.41	4,384.29	483.45	302.35	181.10	2.670 Alert	
13,600.00	9,060.00	13,425.97	8,840.00	99.62	99.57	-62.77	1,273.01	4,484.28	482.40	297.89	184.51	2.614 Alert	
13,700.00	9,060.00	13,525.97	8,840.00	101.56	101.50	-62.71	1,273.60	4,584.27	481.36	293.43	187.93	2.561 Alert	
13,800.00	9,060.00	13,625.96	8,840.00	103.49	103.44	-62.64	1,274.19	4,684.26	480.32	288.96	191.35	2.510 Alert	
13,900.00	9,060.00	13,725.95	8,840.00	105.43	105.38	-62.58	1,274.79	4,784.25	479.28	284.49	194.78	2.461 Minor Risk	
14,000.00	9,060.00	13,825.95	8,840.00	107.38	107.33	-62.52	1,275.38	4,884.24	478.24	280.02	198.21	2.413 Minor Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	13,925.94	8,840.00	109.33	109.28	-62.45	1,275.97	4,984.23	477.20	275.55	201.65	2.366 Minor Risk		
14,200.00	9,060.00	14,025.93	8,840.00	111.28	111.24	-62.39	1,276.57	5,084.23	476.16	271.07	205.08	2.322 Minor Risk		
14,300.00	9,060.00	14,125.93	8,840.00	113.23	113.19	-62.32	1,277.16	5,184.22	475.12	266.60	208.52	2.279 Minor Risk		
14,400.00	9,060.00	14,225.92	8,840.00	115.19	115.15	-62.25	1,277.75	5,284.21	474.08	262.12	211.96	2.237 Minor Risk		
14,500.00	9,060.00	14,325.91	8,840.00	117.15	117.12	-62.19	1,278.35	5,384.20	473.04	257.64	215.40	2.196 Minor Risk		
14,600.00	9,060.00	14,425.91	8,840.00	119.11	119.08	-62.12	1,278.94	5,484.19	472.00	253.16	218.84	2.157 Minor Risk		
14,700.00	9,060.00	14,525.90	8,840.00	121.08	121.05	-62.05	1,279.53	5,584.18	470.97	248.68	222.29	2.119 Minor Risk		
14,800.00	9,060.00	14,625.89	8,840.00	123.05	123.02	-61.99	1,280.13	5,684.17	469.93	244.20	225.73	2.082 Minor Risk		
14,900.00	9,060.00	14,725.88	8,840.00	125.02	125.00	-61.92	1,280.72	5,784.17	468.90	239.72	229.18	2.046 Minor Risk		
15,000.00	9,060.00	14,825.88	8,840.00	126.99	126.97	-61.85	1,281.31	5,884.16	467.86	235.24	232.62	2.011 Minor Risk		
15,100.00	9,060.00	14,925.87	8,840.00	128.97	128.95	-61.78	1,281.91	5,984.15	466.83	230.77	236.06	1.978 Minor Risk		
15,200.00	9,060.00	15,025.86	8,840.00	130.95	130.93	-61.72	1,282.50	6,084.14	465.80	226.29	239.51	1.945 Minor Risk		
15,300.00	9,060.00	15,125.86	8,840.00	132.93	132.91	-61.65	1,283.09	6,184.13	464.76	221.82	242.95	1.913 Minor Risk		
15,400.00	9,060.00	15,225.85	8,840.00	134.91	134.90	-61.58	1,283.69	6,284.12	463.73	217.34	246.39	1.882 Minor Risk		
15,500.00	9,060.00	15,325.84	8,840.00	136.89	136.88	-61.51	1,284.28	6,384.11	462.70	212.87	249.83	1.852 Minor Risk		
15,600.00	9,060.00	15,425.84	8,840.00	138.88	138.87	-61.44	1,284.87	6,484.11	461.67	208.40	253.27	1.823 Minor Risk		
15,700.00	9,060.00	15,525.83	8,840.00	140.86	140.86	-61.37	1,285.47	6,584.10	460.64	203.93	256.71	1.794 Minor Risk		
15,800.00	9,060.00	15,625.82	8,840.00	142.85	142.85	-61.30	1,286.06	6,684.09	459.61	199.47	260.14	1.767 Minor Risk		
15,900.00	9,060.00	15,725.82	8,840.00	144.84	144.84	-61.23	1,286.65	6,784.08	458.58	195.01	263.58	1.740 Minor Risk		
16,000.00	9,060.00	15,825.81	8,840.00	146.83	146.84	-61.16	1,287.25	6,884.07	457.56	190.55	267.01	1.714 Minor Risk		
16,100.00	9,060.00	15,925.80	8,840.00	148.83	148.83	-61.09	1,287.84	6,984.06	456.53	186.09	270.44	1.688 Minor Risk		
16,200.00	9,060.00	16,025.80	8,840.00	150.82	150.83	-61.02	1,288.43	7,084.05	455.50	181.64	273.87	1.663 Minor Risk		
16,300.00	9,060.00	16,125.79	8,840.00	152.82	152.83	-60.95	1,289.03	7,184.04	454.48	177.19	277.29	1.639 Minor Risk		
16,400.00	9,060.00	16,225.78	8,840.00	154.81	154.83	-60.87	1,289.62	7,284.04	453.45	172.74	280.71	1.615 Minor Risk		
16,500.00	9,060.00	16,325.77	8,840.00	156.81	156.83	-60.80	1,290.21	7,384.03	452.43	168.30	284.13	1.592 Minor Risk		
16,600.00	9,060.00	16,425.77	8,840.00	158.81	158.83	-60.73	1,290.81	7,484.02	451.40	163.86	287.55	1.570 Minor Risk		
16,700.00	9,060.00	16,525.76	8,840.00	160.81	160.83	-60.66	1,291.40	7,584.01	450.38	159.42	290.96	1.548 Minor Risk		
16,800.00	9,060.00	16,625.75	8,840.00	162.81	162.83	-60.58	1,291.99	7,684.00	449.36	154.99	294.37	1.527 Minor Risk		
16,900.00	9,060.00	16,725.75	8,840.00	164.82	164.84	-60.51	1,292.59	7,783.99	448.34	150.56	297.78	1.506 Minor Risk		
17,000.00	9,060.00	16,825.74	8,840.00	166.82	166.85	-60.44	1,293.18	7,883.98	447.32	146.14	301.18	1.485 Major Risk		
17,100.00	9,060.00	16,925.73	8,840.00	168.82	168.85	-60.36	1,293.77	7,983.98	446.30	141.72	304.58	1.465 Major Risk		
17,200.00	9,060.00	17,025.73	8,840.00	170.83	170.86	-60.29	1,294.37	8,083.97	445.28	137.30	307.98	1.446 Major Risk		
17,300.00	9,060.00	17,125.72	8,840.00	172.84	172.87	-60.21	1,294.96	8,183.96	444.26	132.89	311.37	1.427 Major Risk		
17,400.00	9,060.00	17,225.71	8,840.00	174.84	174.88	-60.14	1,295.55	8,283.95	443.24	128.48	314.76	1.408 Major Risk		
17,500.00	9,060.00	17,325.71	8,840.00	176.85	176.89	-60.06	1,296.15	8,383.94	442.23	124.08	318.14	1.390 Major Risk		
17,600.00	9,060.00	17,425.70	8,840.00	178.86	178.90	-59.98	1,296.74	8,483.93	441.21	119.69	321.52	1.372 Major Risk		
17,700.00	9,060.00	17,525.69	8,840.00	180.87	180.91	-59.91	1,297.33	8,583.92	440.20	115.30	324.90	1.355 Major Risk		
17,800.00	9,060.00	17,625.69	8,840.00	182.88	182.92	-59.83	1,297.93	8,683.92	439.18	110.91	328.27	1.338 Major Risk		
17,900.00	9,060.00	17,725.68	8,840.00	184.89	184.94	-59.75	1,298.52	8,783.91	438.17	106.53	331.64	1.321 Major Risk		
18,000.00	9,060.00	17,825.67	8,840.00	186.90	186.95	-59.68	1,299.11	8,883.90	437.16	102.15	335.00	1.305 Major Risk		
18,100.00	9,060.00	17,925.66	8,840.00	188.92	188.97	-59.60	1,299.71	8,983.89	436.14	97.78	338.36	1.289 Major Risk		
18,200.00	9,060.00	18,025.66	8,840.00	190.93	190.98	-59.52	1,300.30	9,083.88	435.13	93.42	341.71	1.273 Major Risk		
18,300.00	9,060.00	18,125.65	8,840.00	192.94	193.00	-59.44	1,300.89	9,183.87	434.12	89.06	345.06	1.258 Major Risk		
18,400.00	9,060.00	18,225.64	8,840.00	194.96	195.02	-59.36	1,301.49	9,283.86	433.11	84.71	348.40	1.243 Major Risk		
18,500.00	9,060.00	18,325.64	8,840.00	196.97	197.03	-59.28	1,302.08	9,383.85	432.10	80.36	351.74	1.228 Major Risk		
18,600.00	9,060.00	18,425.63	8,840.00	198.99	199.05	-59.20	1,302.67	9,483.85	431.10	76.02	355.08	1.214 Major Risk		
18,700.00	9,060.00	18,525.62	8,840.00	201.00	201.07	-59.12	1,303.27	9,583.84	430.09	71.69	358.40	1.200 Major Risk		
18,800.00	9,060.00	18,625.62	8,840.00	203.02	203.09	-59.04	1,303.86	9,683.83	429.08	67.36	361.73	1.186 Major Risk		
18,900.00	9,060.00	18,725.61	8,840.00	205.04	205.11	-58.96	1,304.45	9,783.82	428.08	63.04	365.04	1.173 Major Risk		
19,000.00	9,060.00	18,825.60	8,840.00	207.06	207.13	-58.88	1,305.05	9,883.81	427.07	58.72	368.35	1.159 Major Risk		
19,100.00	9,060.00	18,925.60	8,840.00	209.07	209.15	-58.80	1,305.64	9,983.80	426.07	54.41	371.66	1.146 Major Risk		
19,200.00	9,060.00	19,025.59	8,840.00	211.09	211.17	-58.72	1,306.23	10,083.79	425.07	50.11	374.96	1.134 Major Risk		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,300.00	9,060.00	19,125.58	8,840.00	213.11	213.19	-58.64	1,306.83	10,183.79	424.07	45.81	378.25	1.121	Major Risk
19,400.00	9,060.00	19,225.58	8,840.00	215.13	215.21	-58.55	1,307.42	10,283.78	423.06	41.52	381.54	1.109	Major Risk
19,500.32	9,060.00	19,325.89	8,840.00	217.16	217.24	-58.47	1,308.02	10,384.09	422.06	37.23	384.84	1.097	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.60	-0.60	0.50	0.50	179.85	-29.99	0.08	29.99				
100.00	100.00	100.60	99.40	0.52	0.52	179.85	-29.99	0.08	29.99	28.95	1.04	28.946	
200.00	200.00	200.60	199.40	0.70	0.70	179.85	-29.99	0.08	29.99	28.58	1.41	21.334	
300.00	300.00	300.60	299.40	0.99	0.99	179.85	-29.99	0.08	29.99	28.01	1.98	15.173	
400.00	400.00	400.60	399.40	1.31	1.31	179.85	-29.99	0.08	29.99	27.37	2.62	11.446	
500.00	500.00	500.60	499.40	1.65	1.65	179.85	-29.99	0.08	29.99	26.70	3.29	9.104	
600.00	600.00	600.60	599.40	1.99	1.99	179.85	-29.99	0.08	29.99	26.01	3.98	7.529	
700.00	700.00	700.60	699.40	2.34	2.34	179.85	-29.99	0.08	29.99	25.31	4.68	6.407	
800.00	800.00	800.60	799.40	2.69	2.69	179.85	-29.99	0.08	29.99	24.61	5.38	5.571	
900.00	900.00	900.60	899.40	3.04	3.05	179.85	-29.99	0.08	29.99	23.90	6.09	4.925 Alert	
1,000.00	1,000.00	1,000.60	999.40	3.40	3.40	179.85	-29.99	0.08	29.99	23.19	6.80	4.412 Alert	
1,100.00	1,100.00	1,100.60	1,099.40	3.75	3.75	179.85	-29.99	0.08	29.99	22.48	7.51	3.995 Alert	
1,200.00	1,200.00	1,200.60	1,199.40	4.11	4.11	179.85	-29.99	0.08	29.99	21.77	8.22	3.649 Alert	
1,300.00	1,300.00	1,300.60	1,299.40	4.46	4.47	179.85	-29.99	0.08	29.99	21.06	8.93	3.358 Alert	
1,400.00	1,400.00	1,400.60	1,399.40	4.82	4.82	179.85	-29.99	0.08	29.99	20.35	9.64	3.110 Alert	
1,500.00	1,500.00	1,500.60	1,499.40	5.18	5.18	179.85	-29.99	0.08	29.99	19.63	10.36	2.896 Alert	
1,600.00	1,600.00	1,600.60	1,599.40	5.53	5.54	179.85	-29.99	0.08	29.99	18.92	11.07	2.709 Alert	
1,700.00	1,700.00	1,700.60	1,699.40	5.89	5.89	179.85	-29.99	0.08	29.99	18.21	11.78	2.545 Alert	
1,800.00	1,800.00	1,800.60	1,799.40	6.25	6.25	179.85	-29.99	0.08	29.99	17.49	12.50	2.399 Minor Risk	
1,900.00	1,900.00	1,900.60	1,899.40	6.61	6.61	179.85	-29.99	0.08	29.99	16.78	13.21	2.270 Minor Risk	
2,000.00	2,000.00	2,000.60	1,999.40	6.96	6.97	179.85	-29.99	0.08	29.99	16.06	13.93	2.153 Minor Risk	
2,100.00	2,100.00	2,100.60	2,099.40	7.32	7.32	179.85	-29.99	0.08	29.99	15.35	14.64	2.048 Minor Risk	
2,200.00	2,200.00	2,200.60	2,199.40	7.68	7.68	179.85	-29.99	0.08	29.99	14.63	15.36	1.953 Minor Risk	
2,300.00	2,300.00	2,300.60	2,299.40	8.04	8.04	179.85	-29.99	0.08	29.99	13.92	16.07	1.866 Minor Risk	
2,350.00	2,350.00	2,349.40	2,349.40	8.22	8.21	179.85	-29.99	0.08	29.99	13.56	16.43	1.826 Minor Risk, CC	
2,400.00	2,400.00	2,400.60	2,399.40	8.39	8.40	-164.23	-29.99	0.08	30.20	13.41	16.79	1.799 Minor Risk, ES	
2,500.00	2,499.98	2,500.62	2,499.38	8.75	8.75	-165.07	-29.99	0.08	31.88	14.38	17.51	1.821 Minor Risk	
2,600.00	2,599.92	2,600.68	2,599.32	9.11	9.11	-166.53	-29.99	0.08	35.27	17.05	18.22	1.936 Minor Risk	
2,700.00	2,699.78	2,699.18	2,699.18	9.47	9.46	-168.25	-29.99	0.08	40.37	21.44	18.93	2.133 Minor Risk	
2,800.00	2,799.54	2,799.68	2,799.68	9.82	9.82	-169.54	-29.24	-0.35	46.44	26.79	19.64	2.364 Minor Risk	
2,900.00	2,899.16	2,900.28	2,900.24	10.18	10.18	-170.10	-26.95	-1.65	52.63	32.27	20.35	2.586 Alert	
3,000.00	2,998.61	3,000.99	3,000.85	10.54	10.54	-170.15	-23.12	-3.82	58.93	37.87	21.06	2.798 Alert	
3,100.00	3,097.86	3,101.78	3,101.45	10.89	10.90	-169.83	-17.75	-6.87	65.33	43.57	21.76	3.002 Alert	
3,200.00	3,196.89	3,202.67	3,202.03	11.25	11.26	-169.25	-10.83	-10.80	71.85	49.39	22.46	3.199 Alert	
3,295.74	3,291.45	3,301.22	3,297.71	11.59	11.61	-168.56	-2.96	-15.27	78.36	55.21	23.15	3.385 Alert	
3,300.00	3,295.65	3,303.03	3,301.94	11.61	11.62	-168.54	-2.61	-15.47	78.67	55.51	23.17	3.396 Alert	
3,400.00	3,394.29	3,402.75	3,401.19	11.97	11.97	-168.00	5.76	-20.22	86.09	62.20	23.88	3.604 Alert	
3,500.00	3,492.94	3,502.47	3,500.45	12.33	12.33	-167.55	14.13	-24.97	93.51	68.91	24.60	3.801 Alert	
3,600.00	3,591.58	3,602.19	3,599.71	12.69	12.68	-167.17	22.49	-29.72	100.94	75.62	25.32	3.986 Alert	
3,700.00	3,690.22	3,701.91	3,698.96	13.05	13.04	-166.84	30.86	-34.47	108.37	82.33	26.04	4.161 Alert	
3,800.00	3,788.86	3,801.64	3,798.22	13.41	13.40	-166.55	39.22	-39.23	115.80	89.04	26.76	4.327 Alert	
3,900.00	3,887.50	3,901.36	3,897.48	13.77	13.76	-166.30	47.59	-43.98	123.24	95.75	27.48	4.484 Alert	
4,000.00	3,986.14	4,001.08	3,996.73	14.14	14.12	-166.07	55.95	-48.73	130.67	102.47	28.21	4.633 Alert	
4,100.00	4,084.78	4,100.80	4,095.99	14.50	14.47	-165.87	64.32	-53.48	138.11	109.18	28.93	4.774 Alert	
4,200.00	4,183.42	4,200.52	4,195.25	14.87	14.83	-165.69	72.68	-58.23	145.55	115.90	29.66	4.908 Alert	
4,300.00	4,282.06	4,300.25	4,294.50	15.24	15.19	-165.53	81.05	-62.98	153.00	122.61	30.38	5.036	
4,400.00	4,380.70	4,400.03	4,393.76	15.60	15.55	-165.38	89.42	-67.73	160.44	129.33	31.11	5.157	
4,500.00	4,479.34	4,499.69	4,493.02	15.97	15.91	-165.24	97.78	-72.48	167.89	136.05	31.84	5.273	
4,600.00	4,577.98	4,599.41	4,592.27	16.34	16.27	-165.12	106.15	-77.23	175.33	142.77	32.57	5.384	
4,700.00	4,676.62	4,700.87	4,691.53	16.71	16.64	-165.01	114.51	-81.98	182.78	149.48	33.30	5.489	
4,800.00	4,775.27	4,801.15	4,790.79	17.08	17.00	-164.90	122.88	-86.73	190.22	156.19	34.03	5.589	
4,900.00	4,873.91	4,901.42	4,890.04	17.45	17.36	-164.81	131.24	-91.48	197.67	162.91	34.76	5.686	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,001.70	4,989.30	17.82	17.72	-164.72	139.61	-96.24	205.12	169.62	35.50	5.779		
5,100.00	5,071.19	5,101.98	5,088.56	18.19	18.09	-164.63	147.97	-100.99	212.57	176.34	36.23	5.867		
5,200.00	5,169.83	5,202.26	5,187.81	18.56	18.45	-164.56	156.34	-105.74	220.02	183.05	36.96	5.952		
5,300.00	5,268.47	5,302.54	5,287.07	18.93	18.81	-164.48	164.71	-110.49	227.47	189.77	37.70	6.034		
5,400.00	5,367.11	5,402.82	5,386.33	19.31	19.18	-164.42	173.07	-115.24	234.92	196.49	38.43	6.113		
5,500.00	5,465.75	5,503.09	5,485.58	19.68	19.54	-164.35	181.44	-119.99	242.37	203.20	39.17	6.188		
5,600.00	5,564.39	5,603.37	5,584.84	20.05	19.90	-164.29	189.80	-124.74	249.82	209.92	39.90	6.261		
5,700.00	5,663.03	5,703.65	5,684.10	20.42	20.27	-164.24	198.17	-129.49	257.27	216.63	40.64	6.331		
5,800.00	5,761.67	5,803.93	5,783.35	20.80	20.63	-164.18	206.53	-134.24	264.72	223.35	41.37	6.399		
5,900.00	5,860.31	5,904.21	5,882.61	21.17	20.99	-164.13	214.90	-138.99	272.17	230.06	42.11	6.464		
6,000.00	5,958.96	5,995.52	5,981.87	21.54	21.33	-164.09	223.26	-143.74	279.62	236.81	42.81	6.532		
6,100.00	6,057.60	6,104.76	6,081.12	21.92	21.72	-164.04	231.63	-148.49	287.07	243.49	43.58	6.587		
6,200.00	6,156.24	6,205.04	6,180.38	22.29	22.09	-164.00	240.00	-153.24	294.52	250.21	44.32	6.646		
6,300.00	6,254.88	6,305.32	6,279.63	22.67	22.45	-163.96	248.36	-158.00	301.97	256.92	45.05	6.703		
6,400.00	6,353.52	6,405.60	6,378.89	23.04	22.81	-163.92	256.73	-162.75	309.43	263.64	45.79	6.758		
6,500.00	6,452.16	6,505.88	6,478.15	23.42	23.18	-163.88	265.09	-167.50	316.88	270.35	46.53	6.811		
6,600.00	6,550.80	6,606.15	6,577.40	23.79	23.54	-163.85	273.46	-172.25	324.33	277.07	47.26	6.862		
6,700.00	6,649.44	6,706.43	6,676.66	24.17	23.91	-163.81	281.82	-177.00	331.78	283.78	48.00	6.912		
6,800.00	6,748.08	6,806.71	6,775.92	24.54	24.27	-163.78	290.19	-181.75	339.23	290.50	48.74	6.960		
6,900.00	6,846.72	6,906.99	6,875.17	24.92	24.64	-163.75	298.55	-186.50	346.69	297.21	49.48	7.007		
7,000.00	6,945.36	7,007.27	6,974.43	25.29	25.00	-163.72	306.92	-191.25	354.14	303.92	50.22	7.052		
7,100.00	7,044.00	7,107.55	7,073.69	25.67	25.37	-163.69	315.29	-196.00	361.59	310.64	50.95	7.096		
7,200.00	7,142.65	7,207.82	7,172.94	26.04	25.73	-163.66	323.65	-200.75	369.04	317.35	51.69	7.139		
7,300.00	7,241.29	7,291.90	7,272.20	26.42	26.04	-163.64	332.02	-205.50	376.50	324.12	52.37	7.189		
7,400.00	7,339.93	7,408.38	7,371.46	26.79	26.46	-163.61	340.38	-210.25	383.95	330.78	53.17	7.221		
7,500.00	7,438.57	7,508.66	7,470.71	27.17	26.83	-163.59	348.75	-215.01	391.40	337.49	53.91	7.260		
7,571.77	7,509.37	7,562.92	7,541.95	27.44	27.02	-163.57	354.75	-218.42	396.75	342.38	54.38	7.296		
7,600.00	7,537.23	7,591.07	7,569.98	27.55	27.13	-163.57	357.11	-219.76	398.76	344.17	54.58	7.305		
7,700.00	7,636.18	7,684.93	7,663.45	27.92	27.47	-163.54	364.51	-223.95	404.78	349.48	55.30	7.320		
7,800.00	7,735.48	7,776.33	7,754.64	28.29	27.80	-163.56	369.87	-227.00	410.27	354.29	55.98	7.329		
7,900.00	7,835.05	7,867.65	7,845.87	28.65	28.12	-163.63	373.34	-228.97	415.34	358.70	56.64	7.333		
8,000.00	7,934.83	7,958.88	7,937.08	29.01	28.45	-163.76	374.91	-229.86	419.96	362.69	57.27	7.333		
8,100.00	8,034.74	8,055.95	8,034.14	29.36	28.79	-163.91	375.01	-229.92	423.67	365.73	57.95	7.311		
8,202.27	8,137.00	8,158.20	8,136.40	29.72	29.16	179.99	375.01	-229.92	424.99	366.32	58.67	7.244		
8,300.00	8,234.73	8,255.93	8,234.13	30.06	29.50	179.99	375.01	-229.92	424.99	365.63	59.36	7.160		
8,400.00	8,334.73	8,356.00	8,334.20	30.41	29.85	179.95	375.01	-229.66	424.99	364.93	60.06	7.076		
8,435.88	8,370.61	8,391.89	8,370.01	30.53	29.97	179.66	375.02	-227.47	424.98	364.68	60.30	7.048		
8,500.00	8,434.73	8,454.83	8,432.24	30.75	30.18	178.41	375.08	-218.22	425.09	364.38	60.71	7.002		
8,552.31	8,487.04	8,504.22	8,480.13	30.94	30.35	176.80	375.15	-206.22	425.56	364.56	61.00	6.976		
8,600.00	8,534.68	8,547.79	8,521.39	31.10	30.49	85.40	375.23	-192.24	426.47	365.24	61.23	6.965		
8,650.00	8,584.26	8,592.57	8,562.55	31.26	30.63	83.63	375.34	-174.65	427.83	366.41	61.42	6.965		
8,700.00	8,633.10	8,636.51	8,601.50	31.43	30.77	81.92	375.46	-154.32	429.55	367.98	61.57	6.977		
8,750.00	8,680.83	8,679.69	8,638.14	31.58	30.91	80.28	375.60	-131.49	431.57	369.91	61.66	6.999		
8,800.00	8,727.09	8,722.20	8,672.43	31.74	31.04	78.72	375.75	-106.39	433.83	372.13	61.70	7.032		
8,850.00	8,771.52	8,764.09	8,704.31	31.89	31.17	77.25	375.91	-79.23	436.26	374.57	61.68	7.073		
8,900.00	8,813.78	8,805.44	8,733.75	32.04	31.30	75.88	376.08	-50.20	438.79	377.17	61.62	7.120		
8,950.00	8,853.56	8,846.30	8,760.71	32.18	31.44	74.61	376.27	-19.51	441.36	379.83	61.53	7.173		
9,000.00	8,890.55	8,886.73	8,785.16	32.32	31.58	73.45	376.46	12.67	443.91	382.49	61.42	7.228		
9,050.00	8,924.46	8,926.78	8,807.10	32.47	31.72	72.40	376.66	46.17	446.37	385.07	61.29	7.282		
9,100.00	8,955.05	8,966.50	8,826.48	32.63	31.87	71.46	376.86	80.83	448.68	387.50	61.18	7.333		
9,150.00	8,982.08	9,005.94	8,843.31	32.79	32.03	70.64	377.08	116.49	450.81	389.71	61.10	7.378		
9,200.00	9,005.34	9,045.14	8,857.57	32.97	32.20	69.94	377.30	153.00	452.70	391.63	61.07	7.412		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,250.00	9,024.65	9,084.14	8,869.24	33.17	32.38	69.36	377.52	190.20	454.31	393.21	61.11	7.435				
9,300.00	9,039.87	9,122.99	8,878.33	33.38	32.57	68.90	377.74	227.96	455.62	394.40	61.22	7.442				
9,350.00	9,050.89	9,161.71	8,884.82	33.62	32.77	68.57	377.97	266.13	456.60	395.17	61.42	7.434				
9,400.00	9,057.61	9,200.00	8,888.68	33.87	32.98	68.36	378.20	304.22	457.22	395.50	61.72	7.408				
9,452.31	9,060.00	9,241.30	8,890.00	34.15	33.21	68.27	378.44	345.49	457.48	395.34	62.15	7.361				
9,500.00	9,060.00	9,288.99	8,890.00	34.42	33.50	68.27	378.73	393.18	457.48	394.83	62.65	7.302				
9,600.00	9,060.00	9,388.99	8,890.00	35.09	34.19	68.27	379.33	493.17	457.48	393.60	63.88	7.162				
9,700.00	9,060.00	9,488.99	8,890.00	35.86	34.98	68.27	379.92	593.17	457.47	392.17	65.30	7.006				
9,800.00	9,060.00	9,588.99	8,890.00	36.72	35.87	68.27	380.52	693.17	457.47	390.56	66.91	6.837				
9,900.00	9,060.00	9,688.99	8,890.00	37.69	36.86	68.27	381.12	793.17	457.47	388.76	68.71	6.658				
10,000.00	9,060.00	9,788.99	8,890.00	38.73	37.93	68.27	381.71	893.17	457.47	386.81	70.66	6.474				
10,100.00	9,060.00	9,888.99	8,890.00	39.86	39.08	68.27	382.31	993.16	457.46	384.70	72.77	6.287				
10,140.22	9,060.00	9,929.21	8,890.00	40.33	39.56	68.27	382.55	1,033.39	457.46	383.81	73.65	6.211				
10,200.00	9,060.00	9,988.99	8,890.00	41.05	40.30	68.23	382.91	1,093.16	456.88	381.89	74.99	6.092				
10,300.00	9,060.00	10,088.91	8,890.00	42.31	41.58	68.03	383.50	1,193.08	453.32	376.05	77.27	5.867				
10,400.00	9,060.00	10,188.63	8,890.00	43.64	42.92	67.62	384.10	1,292.80	446.54	366.98	79.57	5.612				
10,507.23	9,060.00	10,304.79	8,890.00	45.11	44.55	66.95	384.73	1,399.38	435.73	353.60	82.13	5.306				
10,600.00	9,060.00	10,387.40	8,890.00	46.43	45.75	66.48	385.28	1,491.57	426.20	342.05	84.15	5.065				
10,700.00	9,060.00	10,487.09	8,890.00	47.91	47.23	66.12	385.88	1,591.25	419.03	332.41	86.63	4.837	Alert			
10,800.00	9,060.00	10,586.99	8,890.00	49.42	48.76	65.91	386.48	1,691.15	415.07	325.79	89.28	4.649	Alert			
10,874.32	9,060.00	10,661.30	8,890.00	50.57	49.92	65.86	386.92	1,765.47	414.19	322.81	91.38	4.532	Alert			
10,900.00	9,060.00	10,686.98	8,890.00	50.97	50.33	65.86	387.07	1,791.14	414.29	322.17	92.13	4.497	Alert			
11,000.00	9,060.00	10,786.94	8,890.00	52.55	51.93	65.99	387.67	1,891.10	416.71	321.55	95.16	4.379	Alert			
11,100.00	9,060.00	10,886.75	8,890.00	54.14	53.55	66.29	388.26	1,990.91	422.31	323.94	98.37	4.293	Alert			
11,207.23	9,060.00	11,006.54	8,890.00	55.87	55.54	66.77	388.90	2,097.62	431.89	329.69	102.20	4.226	Alert			
11,300.00	9,060.00	11,085.77	8,890.00	57.39	56.88	67.31	389.45	2,189.92	440.43	335.23	105.19	4.187	Alert			
11,400.00	9,060.00	11,185.54	8,890.00	59.06	58.58	67.68	390.05	2,289.69	446.56	337.98	108.58	4.113	Alert			
11,506.63	9,060.00	11,307.89	8,890.00	60.88	60.70	67.86	390.68	2,396.26	449.55	337.18	112.37	4.001	Alert			
11,600.00	9,060.00	11,385.48	8,890.00	62.49	62.06	67.91	391.24	2,489.63	450.56	335.37	115.19	3.911	Alert			
11,700.00	9,060.00	11,485.47	8,890.00	64.24	63.82	67.97	391.84	2,589.62	451.64	333.12	118.53	3.810	Alert			
11,800.00	9,060.00	11,585.47	8,890.00	66.01	65.60	68.03	392.43	2,689.61	452.73	330.83	121.89	3.714	Alert			
11,900.00	9,060.00	11,685.46	8,890.00	67.79	67.40	68.08	393.03	2,789.60	453.81	328.52	125.29	3.622	Alert			
12,000.00	9,060.00	11,785.45	8,890.00	69.58	69.21	68.14	393.63	2,889.59	454.90	326.18	128.72	3.534	Alert			
12,100.00	9,060.00	11,885.44	8,890.00	71.39	71.03	68.19	394.23	2,989.58	455.98	323.81	132.17	3.450	Alert			
12,200.00	9,060.00	11,985.44	8,890.00	73.21	72.86	68.24	394.82	3,089.58	457.07	321.42	135.65	3.369	Alert			
12,300.00	9,060.00	12,085.43	8,890.00	75.05	74.71	68.30	395.42	3,189.57	458.15	319.00	139.15	3.292	Alert			
12,400.00	9,060.00	12,185.42	8,890.00	76.89	76.57	68.35	396.02	3,289.56	459.24	316.57	142.67	3.219	Alert			
12,500.00	9,060.00	12,285.42	8,890.00	78.74	78.43	68.41	396.61	3,389.55	460.33	314.11	146.22	3.148	Alert			
12,600.00	9,060.00	12,385.41	8,890.00	80.61	80.31	68.46	397.21	3,489.54	461.42	311.64	149.78	3.081	Alert			
12,700.00	9,060.00	12,485.40	8,890.00	82.48	82.19	68.51	397.81	3,589.53	462.50	309.14	153.36	3.016	Alert			
12,800.00	9,060.00	12,585.40	8,890.00	84.36	84.08	68.57	398.40	3,689.52	463.59	306.64	156.96	2.954	Alert			
12,900.00	9,060.00	12,685.39	8,890.00	86.24	85.97	68.62	399.00	3,789.52	464.68	304.11	160.57	2.894	Alert			
13,000.00	9,060.00	12,785.38	8,890.00	88.14	87.88	68.67	399.60	3,889.51	465.77	301.57	164.19	2.837	Alert			
13,100.00	9,060.00	12,885.38	8,890.00	90.04	89.79	68.72	400.19	3,989.50	466.86	299.02	167.83	2.782	Alert			
13,200.00	9,060.00	12,985.37	8,890.00	91.94	91.70	68.78	400.79	4,089.49	467.95	296.46	171.49	2.729	Alert			
13,300.00	9,060.00	13,085.36	8,890.00	93.86	93.63	68.83	401.39	4,189.48	469.04	293.88	175.15	2.678	Alert			
13,400.00	9,060.00	13,185.36	8,890.00	95.77	95.55	68.88	401.98	4,289.47	470.13	291.30	178.83	2.629	Alert			
13,500.00	9,060.00	13,285.35	8,890.00	97.70	97.48	68.93	402.58	4,389.46	471.22	288.70	182.52	2.582	Alert			
13,600.00	9,060.00	13,385.34	8,890.00	99.62	99.42	68.98	403.18	4,489.45	472.31	286.09	186.22	2.536	Alert			
13,700.00	9,060.00	13,485.34	8,890.00	101.56	101.36	69.03	403.77	4,589.45	473.40	283.47	189.93	2.493	Minor Risk			
13,800.00	9,060.00	13,585.33	8,890.00	103.49	103.31	69.08	404.37	4,689.44	474.50	280.85	193.65	2.450	Minor Risk			
13,900.00	9,060.00	13,685.32	8,890.00	105.43	105.25	69.13	404.97	4,789.43	475.59	278.21	197.38	2.410	Minor Risk			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,000.00	9,060.00	13,785.31	8,890.00	107.38	107.21	69.18	405.56	4,889.42	476.68	275.57	201.12	2.370 Minor Risk	
14,100.00	9,060.00	13,885.31	8,890.00	109.33	109.16	69.23	406.16	4,989.41	477.77	272.91	204.86	2.332 Minor Risk	
14,200.00	9,060.00	13,985.30	8,890.00	111.28	111.12	69.28	406.76	5,089.40	478.87	270.25	208.61	2.295 Minor Risk	
14,300.00	9,060.00	14,085.29	8,890.00	113.23	113.08	69.33	407.35	5,189.39	479.96	267.59	212.37	2.260 Minor Risk	
14,400.00	9,060.00	14,185.29	8,890.00	115.19	115.05	69.38	407.95	5,289.39	481.06	264.91	216.14	2.226 Minor Risk	
14,500.00	9,060.00	14,285.28	8,890.00	117.15	117.01	69.43	408.55	5,389.38	482.15	262.23	219.92	2.192 Minor Risk	
14,600.00	9,060.00	14,385.27	8,890.00	119.11	118.98	69.48	409.14	5,489.37	483.25	259.55	223.70	2.160 Minor Risk	
14,700.00	9,060.00	14,485.27	8,890.00	121.08	120.96	69.53	409.74	5,589.36	484.34	256.85	227.49	2.129 Minor Risk	
14,800.00	9,060.00	14,585.26	8,890.00	123.05	122.93	69.57	410.34	5,689.35	485.44	254.15	231.28	2.099 Minor Risk	
14,900.00	9,060.00	14,685.25	8,890.00	125.02	124.91	69.62	410.94	5,789.34	486.53	251.45	235.08	2.070 Minor Risk	
15,000.00	9,060.00	14,785.25	8,890.00	126.99	126.89	69.67	411.53	5,889.33	487.63	248.74	238.89	2.041 Minor Risk	
15,100.00	9,060.00	14,885.24	8,890.00	128.97	128.87	69.72	412.13	5,989.33	488.73	246.02	242.70	2.014 Minor Risk	
15,200.00	9,060.00	14,985.23	8,890.00	130.95	130.85	69.77	412.73	6,089.32	489.82	243.30	246.52	1.987 Minor Risk	
15,300.00	9,060.00	15,085.23	8,890.00	132.93	132.84	69.81	413.32	6,189.31	490.92	240.58	250.34	1.961 Minor Risk	
15,400.00	9,060.00	15,185.22	8,890.00	134.91	134.83	69.86	413.92	6,289.30	492.02	237.85	254.17	1.936 Minor Risk	
15,500.00	9,060.00	15,285.21	8,890.00	136.89	136.82	69.91	414.52	6,389.29	493.12	235.11	258.00	1.911 Minor Risk	
15,600.00	9,060.00	15,385.21	8,890.00	138.88	138.81	69.95	415.11	6,489.28	494.21	232.38	261.84	1.887 Minor Risk	
15,700.00	9,060.00	15,485.20	8,890.00	140.86	140.80	70.00	415.71	6,589.27	495.31	229.63	265.68	1.864 Minor Risk	
15,800.00	9,060.00	15,585.19	8,890.00	142.85	142.79	70.05	416.31	6,689.27	496.41	226.89	269.52	1.842 Minor Risk	
15,900.00	9,060.00	15,685.18	8,890.00	144.84	144.79	70.09	416.90	6,789.26	497.51	224.14	273.37	1.820 Minor Risk	
16,000.00	9,060.00	15,785.18	8,890.00	146.83	146.79	70.14	417.50	6,889.25	498.61	221.38	277.23	1.799 Minor Risk	
16,100.00	9,060.00	15,885.17	8,890.00	148.83	148.78	70.18	418.10	6,989.24	499.71	218.62	281.09	1.778 Minor Risk	
16,200.00	9,060.00	15,985.16	8,890.00	150.82	150.78	70.23	418.69	7,089.23	500.81	215.86	284.95	1.758 Minor Risk	
16,300.00	9,060.00	16,085.16	8,890.00	152.82	152.78	70.27	419.29	7,189.22	501.91	213.10	288.81	1.738 Minor Risk	
16,400.00	9,060.00	16,185.15	8,890.00	154.81	154.79	70.32	419.89	7,289.21	503.01	210.33	292.68	1.719 Minor Risk	
16,500.00	9,060.00	16,285.14	8,890.00	156.81	156.79	70.36	420.48	7,389.20	504.11	207.56	296.56	1.700 Minor Risk	
16,600.00	9,060.00	16,385.14	8,890.00	158.81	158.79	70.41	421.08	7,489.20	505.21	204.78	300.43	1.682 Minor Risk	
16,700.00	9,060.00	16,485.13	8,890.00	160.81	160.80	70.45	421.68	7,589.19	506.32	202.00	304.31	1.664 Minor Risk	
16,800.00	9,060.00	16,585.12	8,890.00	162.81	162.80	70.50	422.27	7,689.18	507.42	199.22	308.19	1.646 Minor Risk	
16,900.00	9,060.00	16,685.12	8,890.00	164.82	164.81	70.54	422.87	7,789.17	508.52	196.44	312.08	1.629 Minor Risk	
17,000.00	9,060.00	16,785.11	8,890.00	166.82	166.82	70.58	423.47	7,889.16	509.62	193.65	315.97	1.613 Minor Risk	
17,100.00	9,060.00	16,885.10	8,890.00	168.83	168.83	70.63	424.06	7,989.15	510.73	190.86	319.86	1.597 Minor Risk	
17,200.00	9,060.00	16,985.10	8,890.00	170.83	170.84	70.67	424.66	8,089.14	511.83	188.07	323.76	1.581 Minor Risk	
17,300.00	9,060.00	17,085.09	8,890.00	172.84	172.85	70.71	425.26	8,189.14	512.93	185.28	327.66	1.565 Minor Risk	
17,400.00	9,060.00	17,185.08	8,890.00	174.84	174.86	70.76	425.85	8,289.13	514.04	182.48	331.56	1.550 Minor Risk	
17,500.00	9,060.00	17,285.08	8,890.00	176.85	176.87	70.80	426.45	8,389.12	515.14	179.68	335.46	1.536 Minor Risk	
17,600.00	9,060.00	17,385.07	8,890.00	178.86	178.89	70.84	427.05	8,489.11	516.25	176.88	339.37	1.521 Minor Risk	
17,700.00	9,060.00	17,485.06	8,890.00	180.87	180.90	70.89	427.65	8,589.10	517.35	174.08	343.28	1.507 Minor Risk	
17,800.00	9,060.00	17,585.06	8,890.00	182.88	182.91	70.93	428.24	8,689.09	518.46	171.27	347.19	1.493 Major Risk	
17,900.00	9,060.00	17,685.05	8,890.00	184.89	184.93	70.97	428.84	8,789.08	519.56	168.46	351.10	1.480 Major Risk	
18,000.00	9,060.00	17,785.04	8,890.00	186.90	186.94	71.01	429.44	8,889.08	520.67	165.65	355.02	1.467 Major Risk	
18,100.00	9,060.00	17,885.03	8,890.00	188.92	188.96	71.05	430.03	8,989.07	521.77	162.84	358.94	1.454 Major Risk	
18,200.00	9,060.00	17,985.03	8,890.00	190.93	190.98	71.10	430.63	9,089.06	522.88	160.02	362.86	1.441 Major Risk	
18,300.00	9,060.00	18,085.02	8,890.00	192.94	193.00	71.14	431.23	9,189.05	523.98	157.20	366.78	1.429 Major Risk	
18,400.00	9,060.00	18,185.01	8,890.00	194.96	195.01	71.18	431.82	9,289.04	525.09	154.38	370.71	1.416 Major Risk	
18,500.00	9,060.00	18,285.01	8,890.00	196.97	197.03	71.22	432.42	9,389.03	526.20	151.56	374.63	1.405 Major Risk	
18,600.00	9,060.00	18,385.00	8,890.00	198.99	199.05	71.26	433.02	9,489.02	527.31	148.74	378.57	1.393 Major Risk	
18,700.00	9,060.00	18,484.99	8,890.00	201.00	201.07	71.30	433.61	9,589.02	528.41	145.92	382.50	1.381 Major Risk	
18,800.00	9,060.00	18,584.99	8,890.00	203.02	203.09	71.34	434.21	9,689.01	529.52	143.09	386.43	1.370 Major Risk	
18,900.00	9,060.00	18,684.98	8,890.00	205.04	205.11	71.38	434.81	9,789.00	530.63	140.26	390.37	1.359 Major Risk	
19,000.00	9,060.00	18,784.97	8,890.00	207.06	207.14	71.42	435.40	9,888.99	531.74	137.43	394.31	1.349 Major Risk	
19,100.00	9,060.00	18,884.97	8,890.00	209.07	209.16	71.46	436.00	9,988.98	532.85	134.60	398.25	1.338 Major Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,200.00	9,060.00	18,984.96	8,890.00	211.09	211.18	71.50	436.60	10,088.97	533.95	131.76	402.19	1.328	Major Risk
19,300.00	9,060.00	19,084.95	8,890.00	213.11	213.20	71.54	437.19	10,188.96	535.06	128.93	406.13	1.317	Major Risk
19,400.00	9,060.00	19,184.95	8,890.00	215.13	215.23	71.58	437.79	10,288.96	536.17	126.09	410.08	1.307	Major Risk
19,500.32	9,060.00	19,285.26	8,890.00	217.16	217.26	71.62	438.39	10,389.26	537.29	123.25	414.04	1.298	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,528.68	3.38	1,528.72					
100.00	100.00	89.20	89.20	0.52	0.51	179.87	-1,528.68	3.38	1,528.69	1,527.65	1.03	1,481.382		
200.00	200.00	189.20	189.20	0.70	0.68	179.87	-1,528.68	3.38	1,528.69	1,527.31	1.38	1,109.682		
300.00	300.00	289.20	289.20	0.99	0.95	179.87	-1,528.68	3.38	1,528.69	1,526.75	1.94	787.379		
400.00	400.00	389.20	389.20	1.31	1.27	179.87	-1,528.68	3.38	1,528.69	1,526.10	2.58	591.944		
500.00	500.00	489.20	489.20	1.65	1.61	179.87	-1,528.68	3.38	1,528.69	1,525.43	3.26	469.595		
600.00	600.00	589.20	589.20	1.99	1.95	179.87	-1,528.68	3.38	1,528.69	1,524.74	3.94	387.622		
700.00	700.00	689.20	689.20	2.34	2.30	179.87	-1,528.68	3.38	1,528.69	1,524.05	4.64	329.400		
800.00	800.00	789.20	789.20	2.69	2.65	179.87	-1,528.68	3.38	1,528.69	1,523.34	5.34	286.102		
900.00	900.00	889.20	889.20	3.04	3.01	179.87	-1,528.68	3.38	1,528.69	1,522.64	6.05	252.721		
1,000.00	1,000.00	989.20	989.20	3.40	3.36	179.87	-1,528.68	3.38	1,528.69	1,521.93	6.76	226.236		
1,100.00	1,100.00	1,089.20	1,089.20	3.75	3.71	179.87	-1,528.68	3.38	1,528.69	1,521.22	7.47	204.730		
1,200.00	1,200.00	1,189.20	1,189.20	4.11	4.07	179.87	-1,528.68	3.38	1,528.69	1,520.51	8.18	186.929		
1,300.00	1,300.00	1,289.20	1,289.20	4.46	4.43	179.87	-1,528.68	3.38	1,528.69	1,519.80	8.89	171.958		
1,400.00	1,400.00	1,389.20	1,389.20	4.82	4.78	179.87	-1,528.68	3.38	1,528.69	1,519.08	9.60	159.195		
1,500.00	1,500.00	1,489.20	1,489.20	5.18	5.14	179.87	-1,528.68	3.38	1,528.69	1,518.37	10.32	148.187		
1,600.00	1,600.00	1,589.20	1,589.20	5.53	5.50	179.87	-1,528.68	3.38	1,528.69	1,517.66	11.03	138.597		
1,700.00	1,700.00	1,689.20	1,689.20	5.89	5.85	179.87	-1,528.68	3.38	1,528.69	1,516.94	11.74	130.169		
1,800.00	1,800.00	1,789.20	1,789.20	6.25	6.21	179.87	-1,528.68	3.38	1,528.69	1,516.23	12.46	122.704		
1,900.00	1,900.00	1,889.20	1,889.20	6.61	6.57	179.87	-1,528.68	3.38	1,528.69	1,515.51	13.17	116.046		
2,000.00	2,000.00	1,989.20	1,989.20	6.96	6.92	179.87	-1,528.68	3.38	1,528.69	1,514.80	13.89	110.072		
2,100.00	2,100.00	2,120.58	2,120.57	7.32	7.39	179.88	-1,527.45	3.10	1,527.77	1,513.06	14.71	103.840		
2,200.00	2,200.00	2,255.62	2,255.53	7.68	7.88	179.92	-1,523.12	2.12	1,524.57	1,509.02	15.54	98.084		
2,300.00	2,300.00	2,390.38	2,390.08	8.04	8.36	179.98	-1,515.72	0.44	1,519.07	1,502.71	16.37	92.819		
2,350.00	2,350.00	2,457.60	2,457.12	8.22	8.60	-179.97	-1,510.87	-0.66	1,515.47	1,498.69	16.77	90.348		
2,400.00	2,400.00	2,524.73	2,524.00	8.39	8.84	-163.90	-1,505.27	-1.93	1,511.50	1,494.32	17.18	87.987		
2,500.00	2,499.98	2,658.74	2,657.29	8.75	9.32	-163.83	-1,491.79	-4.99	1,503.12	1,485.14	17.98	83.593		
2,600.00	2,599.92	2,792.39	2,789.87	9.11	9.79	-163.76	-1,475.33	-8.72	1,494.14	1,475.36	18.77	79.582		
2,700.00	2,699.78	2,925.68	2,921.66	9.47	10.27	-163.69	-1,455.92	-13.13	1,484.57	1,465.01	19.56	75.902		
2,800.00	2,799.54	3,058.58	3,052.56	9.82	10.75	-163.62	-1,433.59	-18.19	1,474.42	1,454.09	20.33	72.509		
2,900.00	2,899.16	3,191.06	3,182.50	10.18	11.22	-163.54	-1,408.39	-23.91	1,463.69	1,442.59	21.10	69.367		
3,000.00	2,998.61	3,308.49	3,280.78	10.54	11.65	-163.50	-1,388.10	-28.51	1,453.45	1,431.57	21.88	66.423		
3,100.00	3,097.86	3,408.87	3,378.24	10.89	12.02	-163.47	-1,367.98	-33.07	1,444.87	1,422.27	22.61	63.917		
3,200.00	3,196.89	3,509.11	3,475.83	11.25	12.38	-163.46	-1,347.84	-37.64	1,437.96	1,414.63	23.33	61.633		
3,295.74	3,291.45	3,586.50	3,569.37	11.59	12.67	-163.46	-1,328.53	-42.02	1,432.91	1,408.96	23.96	59.806		
3,300.00	3,295.65	3,609.25	3,573.53	11.61	12.75	-163.46	-1,327.67	-42.21	1,432.72	1,408.67	24.06	59.552		
3,400.00	3,394.29	3,709.35	3,671.26	11.97	13.12	-163.46	-1,307.50	-46.79	1,428.25	1,403.46	24.79	57.617		
3,500.00	3,492.94	3,809.45	3,769.00	12.33	13.49	-163.45	-1,287.33	-51.37	1,423.78	1,398.26	25.52	55.789		
3,600.00	3,591.58	3,909.55	3,866.73	12.69	13.87	-163.45	-1,267.15	-55.94	1,419.30	1,393.05	26.26	54.058		
3,700.00	3,690.22	4,009.65	3,964.47	13.05	14.24	-163.45	-1,246.98	-60.52	1,414.83	1,387.84	26.99	52.418		
3,800.00	3,788.86	4,109.75	4,062.20	13.41	14.62	-163.44	-1,226.81	-65.09	1,410.36	1,382.63	27.73	50.863		
3,900.00	3,887.50	4,190.15	4,159.94	13.77	14.92	-163.44	-1,206.63	-69.67	1,405.88	1,377.49	28.39	49.513		
4,000.00	3,986.14	4,309.95	4,257.67	14.14	15.37	-163.43	-1,186.46	-74.24	1,401.41	1,372.20	29.21	47.980		
4,100.00	4,084.78	4,389.95	4,355.41	14.50	15.67	-163.43	-1,166.28	-78.82	1,396.93	1,367.06	29.87	46.760		
4,200.00	4,183.42	4,489.85	4,453.14	14.87	16.05	-163.43	-1,146.11	-83.40	1,392.46	1,361.84	30.62	45.480		
4,300.00	4,282.06	4,589.75	4,550.88	15.24	16.43	-163.42	-1,125.94	-87.97	1,387.99	1,356.63	31.36	44.260		
4,400.00	4,380.70	4,689.65	4,648.61	15.60	16.81	-163.42	-1,105.76	-92.55	1,383.51	1,351.41	32.10	43.094		
4,500.00	4,479.34	4,789.55	4,746.35	15.97	17.19	-163.41	-1,085.59	-97.12	1,379.04	1,346.19	32.85	41.980		
4,600.00	4,577.98	4,889.45	4,844.08	16.34	17.57	-163.41	-1,065.42	-101.70	1,374.57	1,340.97	33.60	40.915		
4,700.00	4,676.62	4,989.35	4,941.82	16.71	17.95	-163.40	-1,045.24	-106.28	1,370.09	1,335.75	34.34	39.894		
4,800.00	4,775.27	5,089.25	5,039.55	17.08	18.33	-163.40	-1,025.07	-110.85	1,365.62	1,330.53	35.09	38.917		
4,900.00	4,873.91	5,189.15	5,137.28	17.45	18.71	-163.39	-1,004.89	-115.43	1,361.15	1,325.31	35.84	37.979		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,289.05	5,235.02	17.82	19.09	-163.39	-984.72	-120.00	1,356.67	1,320.08	36.59	37.079		
5,100.00	5,071.19	5,388.95	5,332.75	18.19	19.48	-163.39	-964.55	-124.58	1,352.20	1,314.86	37.34	36.214		
5,200.00	5,169.83	5,488.85	5,430.49	18.56	19.86	-163.38	-944.37	-129.16	1,347.73	1,309.64	38.09	35.383		
5,300.00	5,268.47	5,588.75	5,528.22	18.93	20.24	-163.38	-924.20	-133.73	1,343.25	1,304.41	38.84	34.584		
5,400.00	5,367.11	5,688.65	5,628.96	19.31	20.63	-163.37	-904.03	-138.31	1,338.78	1,299.19	39.59	33.814		
5,500.00	5,465.75	5,788.55	5,723.69	19.68	21.01	-163.37	-883.85	-142.88	1,334.30	1,293.96	40.34	33.073		
5,600.00	5,564.39	5,888.45	5,821.43	20.05	21.40	-163.36	-863.68	-147.46	1,329.83	1,288.73	41.10	32.358		
5,700.00	5,663.03	5,988.35	5,919.16	20.42	21.78	-163.36	-843.51	-152.04	1,325.36	1,283.51	41.85	31.669		
5,800.00	5,761.67	6,088.25	6,016.90	20.80	22.17	-163.35	-823.33	-156.61	1,320.88	1,278.28	42.60	31.004		
5,900.00	5,860.31	6,188.15	6,114.63	21.17	22.55	-163.35	-803.16	-161.19	1,316.41	1,273.05	43.36	30.361		
6,000.00	5,958.96	6,288.05	6,212.37	21.54	22.94	-163.34	-782.98	-165.76	1,311.94	1,267.82	44.11	29.741		
6,100.00	6,057.60	6,387.95	6,310.10	21.92	23.32	-163.34	-762.81	-170.34	1,307.46	1,262.60	44.87	29.141		
6,200.00	6,156.24	6,487.85	6,407.83	22.29	23.71	-163.33	-742.64	-174.91	1,302.99	1,257.37	45.62	28.560		
6,300.00	6,254.88	6,587.75	6,505.57	22.67	24.10	-163.33	-722.46	-179.49	1,298.52	1,252.14	46.38	27.999		
6,400.00	6,353.52	6,687.65	6,603.30	23.04	24.48	-163.32	-702.29	-184.07	1,294.04	1,246.91	47.13	27.455		
6,500.00	6,452.16	6,787.55	6,701.04	23.42	24.87	-163.32	-682.12	-188.64	1,289.57	1,241.68	47.89	26.928		
6,600.00	6,550.80	6,887.45	6,798.77	23.79	25.26	-163.31	-661.94	-193.22	1,285.10	1,236.45	48.65	26.417		
6,700.00	6,649.44	6,987.35	6,896.51	24.17	25.64	-163.31	-641.77	-197.79	1,280.62	1,231.22	49.40	25.922		
6,800.00	6,748.08	7,087.25	6,994.24	24.54	26.03	-163.30	-621.59	-202.37	1,276.15	1,225.99	50.16	25.441		
6,900.00	6,846.72	7,187.15	7,091.98	24.92	26.42	-163.30	-601.42	-206.95	1,271.68	1,220.76	50.92	24.975		
7,000.00	6,945.36	7,286.93	7,173.04	25.29	26.74	-163.30	-585.06	-210.66	1,267.68	1,216.02	51.66	24.541		
7,100.00	7,044.00	7,345.53	7,247.35	25.67	27.03	-163.31	-571.51	-213.73	1,265.52	1,213.15	52.37	24.165		
7,162.27	7,105.43	7,392.62	7,293.78	25.90	27.21	-163.33	-563.80	-215.48	1,265.14	1,212.34	52.81	23.958 CC		
7,200.00	7,142.65	7,421.16	7,321.95	26.04	27.31	-163.35	-559.40	-216.48	1,265.28	1,212.21	53.07	23.843		
7,300.00	7,241.29	7,500.00	7,399.97	26.42	27.61	-163.39	-548.30	-218.99	1,266.97	1,213.22	53.76	23.569		
7,400.00	7,339.93	7,572.27	7,471.67	26.79	27.88	-163.45	-539.52	-220.99	1,270.58	1,216.18	54.40	23.355		
7,500.00	7,438.57	7,647.64	7,546.62	27.17	28.15	-163.53	-531.76	-222.75	1,276.12	1,221.08	55.04	23.185		
7,571.77	7,509.37	7,700.00	7,598.77	27.44	28.34	-163.59	-527.23	-223.77	1,281.28	1,225.80	55.48	23.095		
7,600.00	7,537.23	7,722.80	7,621.51	27.55	28.42	-163.63	-525.47	-224.17	1,283.48	1,227.82	55.66	23.060		
7,700.00	7,636.18	7,800.00	7,698.53	27.92	28.70	-163.75	-520.50	-225.30	1,290.90	1,234.63	56.27	22.943		
7,800.00	7,735.48	7,872.83	7,771.28	28.29	28.95	-163.85	-517.21	-226.05	1,297.71	1,240.89	56.82	22.837		
7,900.00	7,835.05	7,947.74	7,846.17	28.65	29.21	-163.94	-515.24	-226.49	1,303.93	1,246.56	57.37	22.728		
8,000.00	7,934.83	8,025.60	7,924.03	29.01	29.48	-164.02	-514.68	-226.62	1,309.54	1,251.62	57.92	22.610		
8,100.00	8,034.74	8,125.52	8,023.94	29.36	29.81	-164.09	-514.68	-226.62	1,313.37	1,254.75	58.62	22.406		
8,202.27	8,137.00	8,227.78	8,126.20	29.72	30.16	179.85	-514.68	-226.62	1,314.69	1,255.36	59.33	22.160		
8,300.00	8,234.73	8,325.51	8,223.93	30.06	30.50	179.85	-514.68	-226.62	1,314.69	1,254.68	60.00	21.910		
8,400.00	8,334.73	8,425.75	8,324.05	30.41	30.83	179.71	-514.66	-223.25	1,314.68	1,253.99	60.69	21.663		
8,409.41	8,344.15	8,435.11	8,333.35	30.44	30.86	179.66	-514.66	-222.17	1,314.68	1,253.93	60.75	21.641		
8,500.00	8,434.73	8,522.57	8,418.96	30.75	31.14	178.90	-514.55	-204.71	1,314.81	1,253.49	61.32	21.442		
8,552.31	8,487.04	8,570.07	8,464.06	30.94	31.29	178.25	-514.46	-189.83	1,315.13	1,253.52	61.62	21.344		
8,600.00	8,534.68	8,611.68	8,502.42	31.10	31.41	87.91	-514.37	-173.76	1,315.67	1,253.82	61.86	21.269		
8,650.00	8,584.26	8,654.32	8,540.43	31.26	31.53	87.20	-514.25	-154.44	1,316.44	1,254.34	62.09	21.201		
8,700.00	8,633.10	8,696.08	8,576.16	31.43	31.65	86.52	-514.12	-132.84	1,317.37	1,255.06	62.31	21.142		
8,750.00	8,680.83	8,737.05	8,609.59	31.58	31.76	85.87	-513.98	-109.18	1,318.45	1,255.94	62.51	21.092		
8,800.00	8,727.09	8,777.32	8,640.72	31.74	31.87	85.23	-513.83	-83.65	1,319.64	1,256.95	62.70	21.048		
8,850.00	8,771.52	8,816.96	8,669.54	31.89	31.97	84.63	-513.67	-56.44	1,320.91	1,258.04	62.87	21.010		
8,900.00	8,813.78	8,856.06	8,696.05	32.04	32.07	84.06	-513.50	-27.72	1,322.23	1,259.20	63.03	20.976		
8,950.00	8,853.56	8,894.67	8,720.26	32.18	32.18	83.53	-513.32	2.36	1,323.57	1,260.37	63.20	20.944		
9,000.00	8,890.55	8,932.85	8,742.15	32.32	32.29	83.04	-513.13	33.64	1,324.89	1,261.53	63.36	20.910		
9,050.00	8,924.46	8,970.67	8,761.72	32.47	32.40	82.59	-512.94	65.98	1,326.17	1,262.63	63.54	20.872		
9,100.00	8,955.05	9,008.16	8,778.99	32.63	32.52	82.18	-512.74	99.25	1,327.37	1,263.64	63.73	20.828		
9,150.00	8,982.08	9,045.38	8,793.93	32.79	32.66	81.82	-512.54	133.33	1,328.48	1,264.53	63.95	20.775		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	9,082.36	8,806.57	32.97	32.80	81.51	-512.33	168.08	1,329.47	1,265.27	64.19	20.710		
9,250.00	9,024.65	9,119.16	8,816.88	33.17	32.96	81.25	-512.12	203.40	1,330.31	1,265.83	64.48	20.632		
9,300.00	9,039.87	9,155.80	8,824.88	33.38	33.12	81.04	-511.91	239.15	1,331.00	1,266.20	64.80	20.539		
9,350.00	9,050.89	9,192.33	8,830.57	33.62	33.30	80.89	-511.69	275.22	1,331.52	1,266.35	65.17	20.431		
9,400.00	9,057.61	9,228.78	8,833.94	33.87	33.49	80.79	-511.48	311.51	1,331.85	1,266.27	65.58	20.308		
9,452.31	9,060.00	9,268.07	8,835.00	34.15	33.70	80.75	-511.24	350.78	1,332.00	1,265.94	66.06	20.163		
9,500.00	9,060.00	9,315.76	8,835.00	34.42	33.98	80.75	-510.96	398.47	1,332.00	1,265.39	66.61	19.997		
9,600.00	9,060.00	9,415.76	8,835.00	35.09	34.65	80.75	-510.36	498.47	1,332.00	1,264.08	67.92	19.612		
9,700.00	9,060.00	9,515.76	8,835.00	35.86	35.43	80.75	-509.77	598.47	1,332.00	1,262.56	69.44	19.183		
9,800.00	9,060.00	9,615.76	8,835.00	36.72	36.32	80.75	-509.17	698.47	1,331.99	1,260.84	71.15	18.720		
9,900.00	9,060.00	9,715.76	8,835.00	37.69	37.29	80.75	-508.57	798.47	1,331.99	1,258.94	73.05	18.233		
10,000.00	9,060.00	9,815.76	8,835.00	38.73	38.36	80.75	-507.98	898.46	1,331.99	1,256.86	75.12	17.731		
10,100.00	9,060.00	9,915.76	8,835.00	39.86	39.50	80.75	-507.38	998.46	1,331.99	1,254.64	77.35	17.220		
10,140.22	9,060.00	9,955.99	8,835.00	40.33	39.98	80.75	-507.14	1,038.69	1,331.98	1,253.69	78.29	17.014		
10,200.00	9,060.00	10,015.76	8,835.00	41.05	40.71	80.74	-506.79	1,098.46	1,331.37	1,251.65	79.72	16.701		
10,300.00	9,060.00	10,115.68	8,835.00	42.31	41.98	80.70	-506.19	1,198.38	1,327.58	1,245.37	82.21	16.149		
10,400.00	9,060.00	10,215.41	8,835.00	43.64	43.32	80.63	-505.60	1,298.10	1,320.36	1,235.55	84.81	15.568		
10,507.23	9,060.00	10,321.99	8,835.00	45.11	44.80	80.50	-504.96	1,404.68	1,308.81	1,221.11	87.70	14.924		
10,600.00	9,060.00	10,414.18	8,835.00	46.43	46.13	80.46	-504.41	1,496.87	1,298.59	1,208.30	90.29	14.383		
10,700.00	9,060.00	10,513.87	8,835.00	47.91	47.60	80.43	-503.82	1,596.55	1,290.87	1,197.70	93.18	13.854		
10,800.00	9,060.00	10,613.77	8,835.00	49.42	49.13	80.41	-503.22	1,696.45	1,286.60	1,190.44	96.16	13.379		
10,874.30	9,060.00	10,688.06	8,835.00	50.57	50.28	80.41	-502.78	1,770.74	1,285.65	1,187.21	98.44	13.060		
10,900.00	9,060.00	10,713.76	8,835.00	50.97	50.68	80.41	-502.63	1,796.44	1,285.76	1,186.53	99.23	12.957		
11,000.00	9,060.00	10,813.72	8,835.00	52.55	52.28	80.42	-502.03	1,896.40	1,288.37	1,186.00	102.37	12.585		
11,100.00	9,060.00	10,913.52	8,835.00	54.14	53.90	80.45	-501.44	1,996.20	1,294.41	1,188.84	105.57	12.261		
11,207.23	9,060.00	11,020.24	8,835.00	55.87	55.66	80.49	-500.80	2,102.91	1,304.71	1,195.65	109.05	11.964		
11,300.00	9,060.00	11,112.54	8,835.00	57.39	57.21	80.58	-500.25	2,195.22	1,313.84	1,201.74	112.11	11.719		
11,400.00	9,060.00	11,212.32	8,835.00	59.06	58.91	80.65	-499.66	2,294.99	1,320.39	1,204.93	115.46	11.436		
11,506.63	9,060.00	11,318.89	8,835.00	60.88	60.74	80.69	-499.02	2,401.56	1,323.58	1,204.49	119.08	11.115		
11,600.00	9,060.00	11,412.25	8,835.00	62.49	62.37	80.69	-498.46	2,494.93	1,324.66	1,202.36	122.29	10.832		
11,700.00	9,060.00	11,512.25	8,835.00	64.24	64.13	80.70	-497.87	2,594.92	1,325.81	1,200.04	125.77	10.542		
11,800.00	9,060.00	11,612.24	8,835.00	66.01	65.90	80.71	-497.27	2,694.91	1,326.97	1,197.69	129.28	10.265		
11,900.00	9,060.00	11,712.23	8,835.00	67.79	67.70	80.72	-496.68	2,794.90	1,328.12	1,195.31	132.81	10.000		
12,000.00	9,060.00	11,812.23	8,835.00	69.58	69.50	80.73	-496.08	2,894.89	1,329.28	1,192.90	136.38	9.747		
12,100.00	9,060.00	11,912.22	8,835.00	71.39	71.32	80.73	-495.49	2,994.88	1,330.43	1,190.46	139.97	9.505		
12,200.00	9,060.00	12,012.21	8,835.00	73.21	73.15	80.74	-494.89	3,094.87	1,331.59	1,188.00	143.59	9.274		
12,300.00	9,060.00	12,112.21	8,835.00	75.05	74.99	80.75	-494.29	3,194.86	1,332.74	1,185.51	147.23	9.052		
12,400.00	9,060.00	12,212.20	8,835.00	76.89	76.84	80.76	-493.70	3,294.86	1,333.90	1,183.01	150.89	8.840		
12,500.00	9,060.00	12,312.19	8,835.00	78.74	78.70	80.77	-493.10	3,394.85	1,335.05	1,180.48	154.57	8.637		
12,600.00	9,060.00	12,412.19	8,835.00	80.61	80.57	80.77	-492.51	3,494.84	1,336.21	1,177.94	158.26	8.443		
12,700.00	9,060.00	12,512.18	8,835.00	82.48	82.45	80.78	-491.91	3,594.83	1,337.36	1,175.38	161.98	8.256		
12,800.00	9,060.00	12,612.17	8,835.00	84.36	84.34	80.79	-491.31	3,694.82	1,338.52	1,172.81	165.71	8.078		
12,900.00	9,060.00	12,712.17	8,835.00	86.24	86.23	80.80	-490.72	3,794.81	1,339.67	1,170.22	169.45	7.906		
13,000.00	9,060.00	12,812.16	8,835.00	88.14	88.13	80.81	-490.12	3,894.80	1,340.83	1,167.62	173.21	7.741		
13,100.00	9,060.00	12,912.15	8,835.00	90.04	90.04	80.81	-489.53	3,994.80	1,341.98	1,165.00	176.98	7.583		
13,200.00	9,060.00	13,012.14	8,835.00	91.94	91.95	80.82	-488.93	4,094.79	1,343.14	1,162.37	180.76	7.430		
13,300.00	9,060.00	13,112.14	8,835.00	93.86	93.87	80.83	-488.33	4,194.78	1,344.29	1,159.73	184.56	7.284		
13,400.00	9,060.00	13,212.13	8,835.00	95.77	95.79	80.84	-487.74	4,294.77	1,345.45	1,157.08	188.36	7.143		
13,500.00	9,060.00	13,312.12	8,835.00	97.70	97.72	80.85	-487.14	4,394.76	1,346.60	1,154.42	192.18	7.007		
13,600.00	9,060.00	13,412.12	8,835.00	99.62	99.66	80.85	-486.55	4,494.75	1,347.76	1,151.75	196.00	6.876		
13,700.00	9,060.00	13,512.11	8,835.00	101.56	101.59	80.86	-485.95	4,594.74	1,348.91	1,149.07	199.84	6.750		
13,800.00	9,060.00	13,612.10	8,835.00	103.49	103.54	80.87	-485.36	4,694.74	1,350.07	1,146.39	203.68	6.628		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,900.00	9,060.00	13,712.10	8,835.00	105.43	105.48	80.88	-484.76	4,794.73	1,351.22	1,143.69	207.53	6.511				
14,000.00	9,060.00	13,812.09	8,835.00	107.38	107.43	80.89	-484.16	4,894.72	1,352.38	1,140.99	211.39	6.398				
14,100.00	9,060.00	13,912.08	8,835.00	109.33	109.38	80.89	-483.57	4,994.71	1,353.53	1,138.28	215.25	6.288				
14,200.00	9,060.00	14,012.08	8,835.00	111.28	111.34	80.90	-482.97	5,094.70	1,354.69	1,135.57	219.13	6.182				
14,300.00	9,060.00	14,112.07	8,835.00	113.23	113.30	80.91	-482.38	5,194.69	1,355.85	1,132.84	223.00	6.080				
14,400.00	9,060.00	14,212.06	8,835.00	115.19	115.26	80.92	-481.78	5,294.68	1,357.00	1,130.11	226.89	5.981				
14,500.00	9,060.00	14,312.06	8,835.00	117.15	117.23	80.93	-481.18	5,394.68	1,358.16	1,127.38	230.78	5.885				
14,600.00	9,060.00	14,412.05	8,835.00	119.11	119.20	80.93	-480.59	5,494.67	1,359.31	1,124.64	234.67	5.792				
14,700.00	9,060.00	14,512.04	8,835.00	121.08	121.17	80.94	-479.99	5,594.66	1,360.47	1,121.89	238.57	5.703				
14,800.00	9,060.00	14,612.04	8,835.00	123.05	123.14	80.95	-479.40	5,694.65	1,361.62	1,119.14	242.48	5.615				
14,900.00	9,060.00	14,712.03	8,835.00	125.02	125.12	80.96	-478.80	5,794.64	1,362.78	1,116.39	246.39	5.531				
15,000.00	9,060.00	14,812.02	8,835.00	126.99	127.09	80.96	-478.20	5,894.63	1,363.94	1,113.63	250.30	5.449				
15,100.00	9,060.00	14,912.01	8,835.00	128.97	129.07	80.97	-477.61	5,994.62	1,365.09	1,110.87	254.22	5.370				
15,200.00	9,060.00	15,012.01	8,835.00	130.95	131.06	80.98	-477.01	6,094.61	1,366.25	1,108.10	258.15	5.292				
15,300.00	9,060.00	15,112.00	8,835.00	132.93	133.04	80.99	-476.42	6,194.61	1,367.40	1,105.33	262.08	5.218				
15,400.00	9,060.00	15,211.99	8,835.00	134.91	135.03	80.99	-475.82	6,294.60	1,368.56	1,102.55	266.01	5.145				
15,500.00	9,060.00	15,311.99	8,835.00	136.89	137.01	81.00	-475.23	6,394.59	1,369.71	1,099.77	269.94	5.074				
15,600.00	9,060.00	15,411.98	8,835.00	138.88	139.00	81.01	-474.63	6,494.58	1,370.87	1,096.99	273.88	5.005				
15,700.00	9,060.00	15,511.97	8,835.00	140.86	140.99	81.02	-474.03	6,594.57	1,372.03	1,094.20	277.82	4.938	Alert			
15,800.00	9,060.00	15,611.97	8,835.00	142.85	142.99	81.03	-473.44	6,694.56	1,373.18	1,091.41	281.77	4.873	Alert			
15,900.00	9,060.00	15,711.96	8,835.00	144.84	144.98	81.03	-472.84	6,794.55	1,374.34	1,088.62	285.72	4.810	Alert			
16,000.00	9,060.00	15,811.95	8,835.00	146.83	146.98	81.04	-472.25	6,894.55	1,375.49	1,085.83	289.67	4.749	Alert			
16,100.00	9,060.00	15,911.95	8,835.00	148.83	148.97	81.05	-471.65	6,994.54	1,376.65	1,083.03	293.62	4.689	Alert			
16,200.00	9,060.00	16,011.94	8,835.00	150.82	150.97	81.06	-471.05	7,094.53	1,377.81	1,080.23	297.58	4.630	Alert			
16,300.00	9,060.00	16,111.93	8,835.00	152.82	152.97	81.06	-470.46	7,194.52	1,378.96	1,077.42	301.54	4.573	Alert			
16,400.00	9,060.00	16,211.93	8,835.00	154.81	154.97	81.07	-469.86	7,294.51	1,380.12	1,074.62	305.50	4.518	Alert			
16,500.00	9,060.00	16,311.92	8,835.00	156.81	156.97	81.08	-469.27	7,394.50	1,381.27	1,071.81	309.46	4.463	Alert			
16,600.00	9,060.00	16,411.91	8,835.00	158.81	158.97	81.09	-468.67	7,494.49	1,382.43	1,069.00	313.43	4.411	Alert			
16,700.00	9,060.00	16,511.91	8,835.00	160.81	160.98	81.09	-468.07	7,594.49	1,383.59	1,066.19	317.40	4.359	Alert			
16,800.00	9,060.00	16,611.90	8,835.00	162.81	162.98	81.10	-467.48	7,694.48	1,384.74	1,063.37	321.37	4.309	Alert			
16,900.00	9,060.00	16,711.89	8,835.00	164.82	164.99	81.11	-466.88	7,794.47	1,385.90	1,060.55	325.34	4.260	Alert			
17,000.00	9,060.00	16,811.88	8,835.00	166.82	167.00	81.12	-466.29	7,894.46	1,387.05	1,057.73	329.32	4.212	Alert			
17,100.00	9,060.00	16,911.88	8,835.00	168.82	169.00	81.12	-465.69	7,994.45	1,388.21	1,054.91	333.30	4.165	Alert			
17,200.00	9,060.00	17,011.87	8,835.00	170.83	171.01	81.13	-465.10	8,094.44	1,389.37	1,052.09	337.28	4.119	Alert			
17,300.00	9,060.00	17,111.86	8,835.00	172.84	173.02	81.14	-464.50	8,194.43	1,390.52	1,049.27	341.26	4.075	Alert			
17,400.00	9,060.00	17,211.86	8,835.00	174.84	175.03	81.15	-463.90	8,294.43	1,391.68	1,046.44	345.24	4.031	Alert			
17,500.00	9,060.00	17,311.85	8,835.00	176.85	177.04	81.15	-463.31	8,394.42	1,392.84	1,043.61	349.23	3.988	Alert			
17,600.00	9,060.00	17,411.84	8,835.00	178.86	179.06	81.16	-462.71	8,494.41	1,393.99	1,040.78	353.21	3.947	Alert			
17,700.00	9,060.00	17,511.84	8,835.00	180.87	181.07	81.17	-462.12	8,594.40	1,395.15	1,037.95	357.20	3.906	Alert			
17,800.00	9,060.00	17,611.83	8,835.00	182.88	183.08	81.18	-461.52	8,694.39	1,396.30	1,035.11	361.19	3.866	Alert			
17,900.00	9,060.00	17,711.82	8,835.00	184.89	185.10	81.18	-460.92	8,794.38	1,397.46	1,032.28	365.18	3.827	Alert			
18,000.00	9,060.00	17,811.82	8,835.00	186.90	187.11	81.19	-460.33	8,894.37	1,398.62	1,029.44	369.17	3.789	Alert			
18,100.00	9,060.00	17,911.81	8,835.00	188.92	189.13	81.20	-459.73	8,994.36	1,399.77	1,026.61	373.17	3.751	Alert			
18,200.00	9,060.00	18,011.80	8,835.00	190.93	191.14	81.20	-459.14	9,094.36	1,400.93	1,023.77	377.16	3.714	Alert			
18,300.00	9,060.00	18,111.80	8,835.00	192.94	193.16	81.21	-458.54	9,194.35	1,402.09	1,020.93	381.16	3.678	Alert			
18,400.00	9,060.00	18,211.79	8,835.00	194.96	195.18	81.22	-457.95	9,294.34	1,403.24	1,018.08	385.16	3.643	Alert			
18,500.00	9,060.00	18,311.78	8,835.00	196.97	197.20	81.23	-457.35	9,394.33	1,404.40	1,015.24	389.16	3.609	Alert			
18,600.00	9,060.00	18,411.78	8,835.00	198.99	199.22	81.23	-456.75	9,494.32	1,405.56	1,012.40	393.16	3.575	Alert			
18,700.00	9,060.00	18,511.77	8,835.00	201.00	201.23	81.24	-456.16	9,594.31	1,406.71	1,009.55	397.16	3.542	Alert			
18,800.00	9,060.00	18,611.76	8,835.00	203.02	203.25	81.25	-455.56	9,694.30	1,407.87	1,006.71	401.16	3.509	Alert			
18,900.00	9,060.00	18,711.75	8,835.00	205.04	205.28	81.26	-454.97	9,794.30	1,409.03	1,003.86	405.17	3.478	Alert			
19,000.00	9,060.00	18,811.75	8,835.00	207.06	207.30	81.26	-454.37	9,894.29	1,410.18	1,001.01	409.17	3.446	Alert			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	18,911.74	8,835.00	209.07	209.32	81.27	-453.77	9,994.28	1,411.34	998.16	413.18	3.416	Alert
19,200.00	9,060.00	19,011.73	8,835.00	211.09	211.34	81.28	-453.18	10,094.27	1,412.50	995.31	417.19	3.386	Alert
19,300.00	9,060.00	19,111.73	8,835.00	213.11	213.36	81.28	-452.58	10,194.26	1,413.65	992.46	421.20	3.356	Alert
19,400.00	9,060.00	19,211.72	8,835.00	215.13	215.38	81.29	-451.99	10,294.25	1,414.81	989.60	425.21	3.327	Alert
19,500.32	9,060.00	19,312.03	8,835.00	217.16	217.41	81.30	-451.39	10,394.56	1,415.97	986.74	429.23	3.299	Alert, ES, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,558.65	3.44	1,558.70				
100.00	100.00	88.90	88.90	0.52	0.51	179.87	-1,558.65	3.44	1,558.66	1,557.63	1.03	1,510.563	
200.00	200.00	188.90	188.90	0.70	0.67	179.87	-1,558.65	3.44	1,558.66	1,557.28	1.38	1,132.031	
300.00	300.00	288.90	288.90	0.99	0.95	179.87	-1,558.65	3.44	1,558.66	1,556.72	1.94	803.194	
400.00	400.00	388.90	388.90	1.31	1.27	179.87	-1,558.65	3.44	1,558.66	1,556.08	2.58	603.780	
500.00	500.00	488.90	488.90	1.65	1.61	179.87	-1,558.65	3.44	1,558.66	1,555.40	3.25	478.951	
600.00	600.00	588.90	588.90	1.99	1.95	179.87	-1,558.65	3.44	1,558.66	1,554.71	3.94	395.326	
700.00	700.00	688.90	688.90	2.34	2.30	179.87	-1,558.65	3.44	1,558.66	1,554.02	4.64	335.934	
800.00	800.00	788.90	788.90	2.69	2.65	179.87	-1,558.65	3.44	1,558.66	1,553.31	5.34	291.769	
900.00	900.00	888.90	888.90	3.04	3.00	179.87	-1,558.65	3.44	1,558.66	1,552.61	6.05	257.720	
1,000.00	1,000.00	988.90	988.90	3.40	3.36	179.87	-1,558.65	3.44	1,558.66	1,551.90	6.76	230.708	
1,100.00	1,100.00	1,088.90	1,088.90	3.75	3.71	179.87	-1,558.65	3.44	1,558.66	1,551.19	7.47	208.774	
1,200.00	1,200.00	1,188.90	1,188.90	4.11	4.07	179.87	-1,558.65	3.44	1,558.66	1,550.48	8.18	190.619	
1,300.00	1,300.00	1,288.90	1,288.90	4.46	4.42	179.87	-1,558.65	3.44	1,558.66	1,549.77	8.89	175.350	
1,400.00	1,400.00	1,388.90	1,388.90	4.82	4.78	179.87	-1,558.65	3.44	1,558.66	1,549.06	9.60	162.334	
1,500.00	1,500.00	1,488.90	1,488.90	5.18	5.14	179.87	-1,558.65	3.44	1,558.66	1,548.34	10.31	151.108	
1,600.00	1,600.00	1,588.90	1,588.90	5.53	5.49	179.87	-1,558.65	3.44	1,558.66	1,547.63	11.03	141.328	
1,700.00	1,700.00	1,688.90	1,688.90	5.89	5.85	179.87	-1,558.65	3.44	1,558.66	1,546.91	11.74	132.733	
1,800.00	1,800.00	1,788.90	1,788.90	6.25	6.21	179.87	-1,558.65	3.44	1,558.66	1,546.20	12.46	125.120	
1,900.00	1,900.00	1,888.90	1,888.90	6.61	6.57	179.87	-1,558.65	3.44	1,558.66	1,545.48	13.17	118.331	
2,000.00	2,000.00	1,988.90	1,988.90	6.96	6.92	179.87	-1,558.65	3.44	1,558.66	1,544.77	13.89	112.238	
2,100.00	2,100.00	2,088.90	2,088.90	7.32	7.28	179.87	-1,558.65	3.44	1,558.66	1,544.05	14.60	106.741	
2,200.00	2,200.00	2,188.90	2,188.90	7.68	7.64	179.87	-1,558.65	3.44	1,558.66	1,543.34	15.32	101.756	
2,300.00	2,300.00	2,288.90	2,288.90	8.04	8.00	179.87	-1,558.65	3.44	1,558.66	1,542.62	16.03	97.215	
2,350.00	2,350.00	2,338.90	2,338.90	8.22	8.18	179.87	-1,558.65	3.44	1,558.66	1,542.27	16.39	95.093 CC	
2,400.00	2,400.00	2,388.90	2,388.90	8.39	8.35	-164.09	-1,558.65	3.44	1,558.87	1,542.12	16.75	93.075 ES	
2,500.00	2,499.98	2,488.88	2,488.88	8.75	8.71	-164.10	-1,558.65	3.44	1,560.55	1,543.08	17.46	89.360	
2,600.00	2,599.92	2,588.82	2,588.82	9.11	9.07	-164.13	-1,558.65	3.44	1,563.90	1,545.72	18.18	86.030	
2,700.00	2,699.78	2,688.68	2,688.68	9.47	9.43	-164.17	-1,558.65	3.44	1,568.94	1,550.04	18.89	83.042	
2,800.00	2,799.54	2,788.44	2,788.44	9.82	9.78	-164.22	-1,558.65	3.44	1,575.65	1,556.04	19.61	80.359	
2,900.00	2,899.16	2,888.06	2,888.06	10.18	10.14	-164.28	-1,558.65	3.44	1,584.04	1,563.72	20.32	77.950	
3,000.00	2,998.61	2,987.51	2,987.51	10.54	10.50	-164.35	-1,558.65	3.44	1,594.11	1,573.07	21.03	75.786	
3,100.00	3,097.86	3,086.76	3,086.76	10.89	10.85	-164.44	-1,558.65	3.44	1,605.85	1,584.11	21.75	73.845	
3,200.00	3,196.89	3,185.79	3,185.79	11.25	11.21	-164.54	-1,558.65	3.44	1,619.27	1,596.81	22.46	72.103	
3,295.74	3,291.45	3,280.35	3,280.35	11.59	11.55	-164.64	-1,558.65	3.44	1,633.69	1,610.55	23.14	70.607	
3,300.00	3,295.65	3,284.55	3,284.55	11.61	11.56	-164.64	-1,558.65	3.44	1,634.36	1,611.20	23.17	70.543	
3,400.00	3,394.29	3,383.19	3,383.19	11.97	11.91	-164.79	-1,558.65	3.44	1,650.23	1,626.35	23.88	69.112	
3,500.00	3,492.94	3,481.84	3,481.84	12.33	12.27	-164.94	-1,558.65	3.44	1,666.11	1,641.52	24.59	67.761	
3,600.00	3,591.58	3,580.48	3,580.48	12.69	12.62	-165.09	-1,558.65	3.44	1,681.99	1,656.69	25.30	66.484	
3,700.00	3,690.22	3,679.12	3,679.12	13.05	12.97	-165.23	-1,558.65	3.44	1,697.89	1,671.88	26.01	65.275	
3,800.00	3,788.86	3,777.76	3,777.76	13.41	13.33	-165.37	-1,558.65	3.44	1,713.80	1,687.07	26.72	64.129	
3,900.00	3,887.50	3,876.40	3,876.40	13.77	13.68	-165.51	-1,558.65	3.44	1,729.71	1,702.28	27.44	63.041	
4,000.00	3,986.14	3,975.04	3,975.04	14.14	14.03	-165.64	-1,558.65	3.44	1,745.64	1,717.49	28.15	62.007	
4,100.00	4,084.78	4,087.76	4,087.76	14.50	14.43	-165.77	-1,558.32	2.85	1,761.28	1,732.36	28.92	60.906	
4,200.00	4,183.42	4,205.69	4,205.64	14.87	14.85	-165.85	-1,556.84	0.23	1,775.90	1,746.21	29.70	59.801	
4,300.00	4,282.06	4,324.01	4,323.84	15.24	15.26	-165.85	-1,554.15	-4.53	1,789.46	1,758.98	30.48	58.716	
4,400.00	4,380.70	4,438.11	4,437.68	15.60	15.66	-165.79	-1,550.44	-11.09	1,801.97	1,770.73	31.24	57.680	
4,500.00	4,479.34	4,537.34	4,536.65	15.97	16.01	-165.72	-1,546.90	-17.35	1,814.17	1,782.21	31.96	56.771	
4,600.00	4,577.98	4,636.57	4,635.62	16.34	16.36	-165.65	-1,543.37	-23.60	1,826.37	1,793.70	32.67	55.900	
4,700.00	4,676.62	4,735.80	4,734.59	16.71	16.71	-165.59	-1,539.84	-29.85	1,838.57	1,805.18	33.39	55.065	
4,800.00	4,775.27	4,835.03	4,833.57	17.08	17.06	-165.52	-1,536.30	-36.10	1,850.78	1,816.67	34.11	54.264	
4,900.00	4,873.91	4,934.26	4,932.54	17.45	17.41	-165.46	-1,532.77	-42.35	1,862.99	1,828.16	34.83	53.495	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,033.49	5,031.51	17.82	17.77	-165.40	-1,529.24	-48.61	1,875.20	1,839.65	35.54	52.756		
5,100.00	5,071.19	5,132.72	5,130.48	18.19	18.12	-165.33	-1,525.70	-54.86	1,887.41	1,851.14	36.26	52.046		
5,200.00	5,169.83	5,231.95	5,229.45	18.56	18.47	-165.27	-1,522.17	-61.11	1,899.62	1,862.64	36.98	51.362		
5,300.00	5,268.47	5,331.18	5,328.42	18.93	18.82	-165.21	-1,518.63	-67.36	1,911.84	1,874.13	37.71	50.704		
5,400.00	5,367.11	5,430.41	5,427.39	19.31	19.17	-165.15	-1,515.10	-73.61	1,924.06	1,885.63	38.43	50.069		
5,500.00	5,465.75	5,529.64	5,526.36	19.68	19.53	-165.09	-1,511.57	-79.87	1,936.28	1,897.13	39.15	49.457		
5,600.00	5,564.39	5,628.87	5,625.33	20.05	19.88	-165.03	-1,508.03	-86.12	1,948.50	1,908.63	39.87	48.867		
5,700.00	5,663.03	5,728.10	5,724.30	20.42	20.23	-164.98	-1,504.50	-92.37	1,960.73	1,920.13	40.60	48.298		
5,800.00	5,761.67	5,827.33	5,823.27	20.80	20.59	-164.92	-1,500.97	-98.62	1,972.96	1,931.64	41.32	47.747		
5,900.00	5,860.31	5,926.57	5,922.24	21.17	20.94	-164.86	-1,497.43	-104.87	1,985.18	1,943.14	42.04	47.216		
6,000.00	5,958.96	6,025.80	6,021.21	21.54	21.30	-164.81	-1,493.90	-111.12	1,997.42	1,954.65	42.77	46.702		
6,100.00	6,057.60	6,125.03	6,120.18	21.92	21.65	-164.75	-1,490.37	-117.38	2,009.65	1,966.15	43.49	46.204		
6,200.00	6,156.24	6,224.26	6,219.15	22.29	22.01	-164.70	-1,486.83	-123.63	2,021.88	1,977.66	44.22	45.723		
6,300.00	6,254.88	6,323.49	6,318.12	22.67	22.36	-164.64	-1,483.30	-129.88	2,034.12	1,989.17	44.95	45.256		
6,400.00	6,353.52	6,422.72	6,417.09	23.04	22.72	-164.59	-1,479.76	-136.13	2,046.36	2,000.68	45.67	44.805		
6,500.00	6,452.16	6,521.95	6,516.06	23.42	23.07	-164.54	-1,476.23	-142.38	2,058.60	2,012.20	46.40	44.367		
6,600.00	6,550.80	6,621.18	6,615.03	23.79	23.43	-164.48	-1,472.70	-148.64	2,070.84	2,023.71	47.13	43.942		
6,700.00	6,649.44	6,720.41	6,714.00	24.17	23.78	-164.43	-1,469.16	-154.89	2,083.08	2,035.23	47.85	43.530		
6,800.00	6,748.08	6,819.64	6,812.97	24.54	24.14	-164.38	-1,465.63	-161.14	2,095.33	2,046.74	48.58	43.130		
6,900.00	6,846.72	6,918.87	6,911.94	24.92	24.49	-164.33	-1,462.10	-167.39	2,107.57	2,058.26	49.31	42.742		
7,000.00	6,945.36	7,018.10	7,010.91	25.29	24.85	-164.28	-1,458.56	-173.64	2,119.82	2,069.78	50.04	42.365		
7,100.00	7,044.00	7,117.33	7,109.88	25.67	25.20	-164.23	-1,455.03	-179.90	2,132.07	2,081.30	50.77	41.998		
7,200.00	7,142.65	7,216.56	7,208.85	26.04	25.56	-164.19	-1,451.49	-186.15	2,144.32	2,092.83	51.49	41.642		
7,300.00	7,241.29	7,315.79	7,307.82	26.42	25.92	-164.14	-1,447.96	-192.40	2,156.57	2,104.35	52.22	41.295		
7,400.00	7,339.93	7,415.02	7,406.79	26.79	26.27	-164.09	-1,444.43	-198.65	2,168.83	2,115.87	52.95	40.958		
7,500.00	7,438.57	7,514.25	7,505.76	27.17	26.63	-164.04	-1,440.89	-204.90	2,181.08	2,127.40	53.68	40.630		
7,571.77	7,509.37	7,585.48	7,576.80	27.44	26.89	-164.01	-1,438.36	-209.39	2,189.88	2,135.67	54.21	40.399		
7,600.00	7,537.23	7,613.50	7,604.75	27.55	26.99	-164.01	-1,437.36	-211.16	2,193.24	2,138.83	54.41	40.308		
7,700.00	7,636.18	7,712.93	7,703.92	27.92	27.34	-163.99	-1,433.82	-217.42	2,203.54	2,148.40	55.14	39.963		
7,800.00	7,735.48	7,791.92	7,782.75	28.29	27.63	-163.98	-1,431.34	-221.80	2,211.78	2,156.00	55.78	39.652		
7,900.00	7,835.05	7,869.49	7,860.25	28.65	27.91	-163.98	-1,429.69	-224.73	2,218.50	2,162.09	56.40	39.332		
8,000.00	7,934.83	7,947.11	7,937.84	29.01	28.18	-164.00	-1,428.81	-226.28	2,223.71	2,166.69	57.02	38.999		
8,100.00	8,034.74	8,032.92	8,023.64	29.36	28.49	-164.03	-1,428.65	-226.56	2,227.34	2,169.68	57.66	38.626		
8,202.27	8,137.00	8,135.17	8,125.90	29.72	28.85	179.91	-1,428.65	-226.56	2,228.66	2,170.27	58.39	38.171		
8,300.00	8,234.73	8,232.90	8,223.63	30.06	29.20	179.91	-1,428.65	-226.56	2,228.66	2,169.58	59.07	37.726		
8,400.00	8,334.73	8,332.90	8,323.63	30.41	29.55	179.91	-1,428.65	-226.56	2,228.66	2,168.88	59.78	37.282		
8,500.00	8,434.73	8,435.48	8,425.85	30.75	29.90	179.73	-1,428.58	-219.64	2,228.60	2,168.13	60.48	36.852		
8,552.31	8,487.04	8,487.58	8,476.88	30.94	30.07	179.47	-1,428.46	-209.23	2,228.56	2,167.73	60.83	36.637		
8,576.06	8,510.78	8,510.65	8,499.14	31.02	30.15	89.66	-1,428.40	-203.15	2,228.55	2,167.57	60.98	36.545		
8,600.00	8,534.68	8,533.69	8,521.10	31.10	30.22	89.52	-1,428.32	-196.19	2,228.56	2,167.42	61.14	36.453		
8,650.00	8,584.26	8,581.10	8,565.32	31.26	30.38	89.22	-1,428.13	-179.13	2,228.60	2,167.16	61.45	36.270		
8,700.00	8,633.10	8,627.64	8,607.20	31.43	30.53	88.93	-1,427.91	-158.87	2,228.68	2,166.93	61.75	36.094		
8,750.00	8,680.83	8,673.36	8,646.62	31.58	30.67	88.66	-1,427.65	-135.73	2,228.80	2,166.76	62.04	35.925		
8,800.00	8,727.09	8,718.35	8,683.48	31.74	30.81	88.39	-1,427.37	-109.96	2,228.94	2,166.61	62.33	35.762		
8,850.00	8,771.52	8,762.66	8,717.70	31.89	30.96	88.13	-1,427.06	-81.84	2,229.10	2,166.49	62.61	35.605		
8,900.00	8,813.78	8,806.36	8,749.22	32.04	31.10	87.89	-1,426.73	-51.59	2,229.28	2,166.39	62.88	35.450		
8,950.00	8,853.56	8,849.50	8,778.00	32.18	31.24	87.66	-1,426.38	-19.45	2,229.46	2,166.30	63.16	35.297		
9,000.00	8,890.55	8,892.15	8,803.98	32.32	31.39	87.45	-1,426.00	14.35	2,229.64	2,166.19	63.45	35.141		
9,050.00	8,924.46	8,934.34	8,827.15	32.47	31.55	87.25	-1,425.62	49.60	2,229.81	2,166.07	63.74	34.981		
9,100.00	8,955.05	8,976.15	8,847.48	32.63	31.71	87.08	-1,425.21	86.12	2,229.96	2,165.91	64.05	34.814		
9,150.00	8,982.08	9,017.60	8,864.95	32.79	31.89	86.92	-1,424.80	123.69	2,230.09	2,165.70	64.38	34.638		
9,200.00	9,005.34	9,058.75	8,879.57	32.97	32.07	86.78	-1,424.38	162.14	2,230.18	2,165.44	64.74	34.450		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,100.00	8,891.42	33.17	32.26	86.67	-1,423.94	201.65	2,230.24	2,165.12	65.12	34.248		
9,300.00	9,039.87	9,140.31	8,900.22	33.38	32.47	86.57	-1,423.51	240.97	2,230.26	2,164.72	65.53	34.033		
9,350.00	9,050.89	9,180.80	8,906.26	33.62	32.68	86.50	-1,423.07	281.00	2,230.22	2,164.25	65.98	33.803		
9,400.00	9,057.61	9,221.15	8,909.45	33.87	32.91	86.45	-1,422.63	321.21	2,230.14	2,163.70	66.45	33.563		
9,452.31	9,060.00	9,267.37	8,910.00	34.15	33.18	86.43	-1,422.12	367.43	2,229.99	2,162.99	67.00	33.286		
9,500.00	9,060.00	9,315.06	8,910.00	34.42	33.48	86.43	-1,421.60	415.11	2,229.74	2,162.17	67.57	32.997		
9,600.00	9,060.00	9,415.06	8,910.00	35.09	34.19	86.43	-1,420.50	515.11	2,229.24	2,160.29	68.95	32.333		
9,700.00	9,060.00	9,515.06	8,910.00	35.86	35.01	86.43	-1,419.40	615.10	2,228.73	2,158.20	70.53	31.600		
9,800.00	9,060.00	9,615.06	8,910.00	36.72	35.93	86.43	-1,418.30	715.09	2,228.23	2,155.92	72.31	30.815		
9,900.00	9,060.00	9,715.06	8,910.00	37.69	36.93	86.43	-1,417.20	815.08	2,227.72	2,153.45	74.27	29.995		
10,000.00	9,060.00	9,815.06	8,910.00	38.73	38.02	86.42	-1,416.10	915.08	2,227.22	2,150.82	76.40	29.152		
10,100.00	9,060.00	9,915.06	8,910.00	39.86	39.19	86.42	-1,415.00	1,015.07	2,226.71	2,148.03	78.68	28.299		
10,140.22	9,060.00	9,955.28	8,910.00	40.33	39.68	86.42	-1,414.56	1,055.29	2,226.51	2,146.86	79.65	27.955		
10,200.00	9,060.00	10,015.05	8,910.00	41.05	40.43	86.42	-1,413.90	1,115.05	2,225.58	2,144.48	81.11	27.440		
10,300.00	9,060.00	10,114.95	8,910.00	42.31	41.72	86.41	-1,412.80	1,214.95	2,221.26	2,137.59	83.66	26.550		
10,400.00	9,060.00	10,214.64	8,910.00	43.64	43.08	86.39	-1,411.70	1,314.63	2,213.45	2,127.12	86.33	25.640		
10,507.23	9,060.00	10,321.16	8,910.00	45.11	44.58	86.35	-1,410.53	1,421.14	2,201.23	2,111.93	89.30	24.650		
10,600.00	9,060.00	10,413.29	8,910.00	46.43	45.93	86.35	-1,409.52	1,513.27	2,190.42	2,098.47	91.95	23.821		
10,700.00	9,060.00	10,512.94	8,910.00	47.91	47.42	86.34	-1,408.42	1,612.92	2,182.12	2,087.21	94.91	22.991		
10,800.00	9,060.00	10,612.82	8,910.00	49.42	48.96	86.34	-1,407.32	1,712.79	2,177.29	2,079.33	97.95	22.228		
10,888.73	9,060.00	10,701.54	8,910.00	50.80	50.36	86.34	-1,406.35	1,801.50	2,175.92	2,075.20	100.72	21.604		
10,900.00	9,060.00	10,712.80	8,910.00	50.97	50.54	86.34	-1,406.22	1,812.77	2,175.94	2,074.87	101.07	21.528		
11,000.00	9,060.00	10,812.78	8,910.00	52.55	52.14	86.34	-1,405.13	1,912.73	2,178.07	2,073.82	104.25	20.892		
11,100.00	9,060.00	10,912.61	8,910.00	54.14	53.78	86.34	-1,404.03	2,012.56	2,183.69	2,076.20	107.48	20.317		
11,207.23	9,060.00	11,019.37	8,910.00	55.87	55.56	86.35	-1,402.85	2,119.32	2,193.57	2,082.58	110.99	19.764		
11,300.00	9,060.00	11,111.73	8,910.00	57.39	57.12	86.37	-1,401.84	2,211.66	2,202.35	2,088.28	114.06	19.308		
11,400.00	9,060.00	11,211.53	8,910.00	59.06	58.83	86.39	-1,400.74	2,311.47	2,208.46	2,091.02	117.44	18.805		
11,506.63	9,060.00	11,318.12	8,910.00	60.88	60.68	86.40	-1,399.57	2,418.05	2,211.15	2,090.05	121.10	18.258		
11,600.00	9,060.00	11,411.49	8,910.00	62.49	62.31	86.40	-1,398.54	2,511.41	2,211.77	2,087.42	124.35	17.787		
11,700.00	9,060.00	11,511.49	8,910.00	64.24	64.08	86.40	-1,397.44	2,611.40	2,212.44	2,084.58	127.86	17.303		
11,800.00	9,060.00	11,611.49	8,910.00	66.01	65.87	86.40	-1,396.34	2,711.39	2,213.10	2,081.70	131.41	16.842		
11,900.00	9,060.00	11,711.48	8,910.00	67.79	67.67	86.40	-1,395.24	2,811.39	2,213.77	2,078.79	134.98	16.400		
12,000.00	9,060.00	11,811.48	8,910.00	69.58	69.48	86.40	-1,394.14	2,911.38	2,214.44	2,075.85	138.59	15.979		
12,100.00	9,060.00	11,911.48	8,910.00	71.39	71.31	86.40	-1,393.04	3,011.37	2,215.10	2,072.88	142.22	15.576		
12,200.00	9,060.00	12,011.48	8,910.00	73.21	73.14	86.41	-1,391.94	3,111.36	2,215.77	2,069.90	145.87	15.190		
12,300.00	9,060.00	12,111.47	8,910.00	75.05	74.99	86.41	-1,390.84	3,211.35	2,216.43	2,066.89	149.54	14.821		
12,400.00	9,060.00	12,211.47	8,910.00	76.89	76.85	86.41	-1,389.74	3,311.35	2,217.10	2,063.86	153.24	14.468		
12,500.00	9,060.00	12,311.47	8,910.00	78.74	78.72	86.41	-1,388.64	3,411.34	2,217.76	2,060.81	156.95	14.130		
12,600.00	9,060.00	12,411.47	8,910.00	80.61	80.60	86.41	-1,387.54	3,511.33	2,218.43	2,057.74	160.69	13.806		
12,700.00	9,060.00	12,511.47	8,910.00	82.48	82.48	86.41	-1,386.44	3,611.32	2,219.09	2,054.65	164.44	13.495		
12,800.00	9,060.00	12,611.46	8,910.00	84.36	84.37	86.41	-1,385.34	3,711.31	2,219.76	2,051.55	168.20	13.197		
12,900.00	9,060.00	12,711.46	8,910.00	86.24	86.27	86.41	-1,384.24	3,811.30	2,220.42	2,048.44	171.98	12.911		
13,000.00	9,060.00	12,811.46	8,910.00	88.14	88.18	86.41	-1,383.14	3,911.30	2,221.09	2,045.31	175.77	12.636		
13,100.00	9,060.00	12,911.46	8,910.00	90.04	90.09	86.42	-1,382.04	4,011.29	2,221.75	2,042.17	179.58	12.372		
13,200.00	9,060.00	13,011.45	8,910.00	91.94	92.00	86.42	-1,380.95	4,111.28	2,222.42	2,039.02	183.40	12.118		
13,300.00	9,060.00	13,111.45	8,910.00	93.86	93.93	86.42	-1,379.85	4,211.27	2,223.08	2,035.86	187.23	11.874		
13,400.00	9,060.00	13,211.45	8,910.00	95.77	95.85	86.42	-1,378.75	4,311.26	2,223.75	2,032.68	191.06	11.639		
13,500.00	9,060.00	13,311.45	8,910.00	97.70	97.79	86.42	-1,377.65	4,411.25	2,224.41	2,029.50	194.91	11.412		
13,600.00	9,060.00	13,411.45	8,910.00	99.62	99.72	86.42	-1,376.55	4,511.25	2,225.08	2,026.31	198.77	11.194		
13,700.00	9,060.00	13,511.44	8,910.00	101.56	101.67	86.42	-1,375.45	4,611.24	2,225.74	2,023.10	202.64	10.984		
13,800.00	9,060.00	13,611.44	8,910.00	103.49	103.61	86.42	-1,374.35	4,711.23	2,226.41	2,019.89	206.51	10.781		
13,900.00	9,060.00	13,711.44	8,910.00	105.43	105.56	86.42	-1,373.25	4,811.22	2,227.07	2,016.68	210.40	10.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
14,000.00	9,060.00	13,811.44	8,910.00	107.38	107.51	86.43	-1,372.15	4,911.21	2,227.74	2,013.45	214.29	10.396				
14,100.00	9,060.00	13,911.43	8,910.00	109.33	109.47	86.43	-1,371.05	5,011.20	2,228.40	2,010.22	218.18	10.213				
14,200.00	9,060.00	14,011.43	8,910.00	111.28	111.43	86.43	-1,369.95	5,111.20	2,229.07	2,006.98	222.09	10.037				
14,300.00	9,060.00	14,111.43	8,910.00	113.23	113.39	86.43	-1,368.85	5,211.19	2,229.73	2,003.73	226.00	9.866				
14,400.00	9,060.00	14,211.43	8,910.00	115.19	115.35	86.43	-1,367.75	5,311.18	2,230.40	2,000.48	229.92	9.701				
14,500.00	9,060.00	14,311.43	8,910.00	117.15	117.32	86.43	-1,366.65	5,411.17	2,231.06	1,997.23	233.84	9.541				
14,600.00	9,060.00	14,411.42	8,910.00	119.11	119.29	86.43	-1,365.55	5,511.16	2,231.73	1,993.96	237.77	9.386				
14,700.00	9,060.00	14,511.42	8,910.00	121.08	121.27	86.43	-1,364.45	5,611.15	2,232.39	1,990.70	241.70	9.236				
14,800.00	9,060.00	14,611.42	8,910.00	123.05	123.24	86.43	-1,363.35	5,711.15	2,233.06	1,987.42	245.64	9.091				
14,900.00	9,060.00	14,711.42	8,910.00	125.02	125.22	86.43	-1,362.25	5,811.14	2,233.72	1,984.15	249.58	8.950				
15,000.00	9,060.00	14,811.41	8,910.00	126.99	127.20	86.44	-1,361.15	5,911.13	2,234.39	1,980.86	253.52	8.813				
15,100.00	9,060.00	14,911.41	8,910.00	128.97	129.18	86.44	-1,360.05	6,011.12	2,235.05	1,977.58	257.47	8.681				
15,200.00	9,060.00	15,011.41	8,910.00	130.95	131.16	86.44	-1,358.95	6,111.11	2,235.72	1,974.29	261.43	8.552				
15,300.00	9,060.00	15,111.41	8,910.00	132.93	133.15	86.44	-1,357.85	6,211.11	2,236.38	1,971.00	265.39	8.427				
15,400.00	9,060.00	15,211.41	8,910.00	134.91	135.14	86.44	-1,356.75	6,311.10	2,237.05	1,967.70	269.35	8.305				
15,500.00	9,060.00	15,311.40	8,910.00	136.89	137.12	86.44	-1,355.65	6,411.09	2,237.71	1,964.40	273.32	8.187				
15,600.00	9,060.00	15,411.40	8,910.00	138.88	139.11	86.44	-1,354.55	6,511.08	2,238.38	1,961.09	277.29	8.072				
15,700.00	9,060.00	15,511.40	8,910.00	140.86	141.11	86.44	-1,353.45	6,611.07	2,239.04	1,957.79	281.26	7.961				
15,800.00	9,060.00	15,611.40	8,910.00	142.85	143.10	86.44	-1,352.35	6,711.06	2,239.71	1,954.48	285.23	7.852				
15,900.00	9,060.00	15,711.39	8,910.00	144.84	145.10	86.45	-1,351.25	6,811.06	2,240.37	1,951.16	289.21	7.746				
16,000.00	9,060.00	15,811.39	8,910.00	146.83	147.09	86.45	-1,350.15	6,911.05	2,241.04	1,947.85	293.19	7.644				
16,100.00	9,060.00	15,911.39	8,910.00	148.83	149.09	86.45	-1,349.05	7,011.04	2,241.71	1,944.53	297.18	7.543				
16,200.00	9,060.00	16,011.39	8,910.00	150.82	151.09	86.45	-1,347.95	7,111.03	2,242.37	1,941.21	301.16	7.446				
16,300.00	9,060.00	16,111.39	8,910.00	152.82	153.09	86.45	-1,346.85	7,211.02	2,243.04	1,937.88	305.15	7.351				
16,400.00	9,060.00	16,211.38	8,910.00	154.81	155.09	86.45	-1,345.75	7,311.01	2,243.70	1,934.56	309.15	7.258				
16,500.00	9,060.00	16,311.38	8,910.00	156.81	157.09	86.45	-1,344.65	7,411.01	2,244.37	1,931.23	313.14	7.167				
16,600.00	9,060.00	16,411.38	8,910.00	158.81	159.10	86.45	-1,343.55	7,511.00	2,245.03	1,927.89	317.14	7.079				
16,700.00	9,060.00	16,511.38	8,910.00	160.81	161.10	86.45	-1,342.46	7,610.99	2,245.70	1,924.56	321.13	6.993				
16,800.00	9,060.00	16,611.37	8,910.00	162.81	163.11	86.45	-1,341.36	7,710.98	2,246.36	1,921.23	325.13	6.909				
16,900.00	9,060.00	16,711.37	8,910.00	164.82	165.11	86.46	-1,340.26	7,810.97	2,247.03	1,917.89	329.14	6.827				
17,000.00	9,060.00	16,811.37	8,910.00	166.82	167.12	86.46	-1,339.16	7,910.96	2,247.69	1,914.55	333.14	6.747				
17,100.00	9,060.00	16,911.37	8,910.00	168.82	169.13	86.46	-1,338.06	8,010.96	2,248.36	1,911.21	337.15	6.669				
17,200.00	9,060.00	17,011.37	8,910.00	170.83	171.14	86.46	-1,336.96	8,110.95	2,249.02	1,907.87	341.16	6.592				
17,300.00	9,060.00	17,111.36	8,910.00	172.84	173.15	86.46	-1,335.86	8,210.94	2,249.69	1,904.52	345.17	6.518				
17,400.00	9,060.00	17,211.36	8,910.00	174.84	175.16	86.46	-1,334.76	8,310.93	2,250.35	1,901.17	349.18	6.445				
17,500.00	9,060.00	17,311.36	8,910.00	176.85	177.17	86.46	-1,333.66	8,410.92	2,251.02	1,897.83	353.19	6.373				
17,600.00	9,060.00	17,411.36	8,910.00	178.86	179.18	86.46	-1,332.56	8,510.92	2,251.68	1,894.48	357.21	6.304				
17,700.00	9,060.00	17,511.35	8,910.00	180.87	181.20	86.46	-1,331.46	8,610.91	2,252.35	1,891.13	361.22	6.235				
17,800.00	9,060.00	17,611.35	8,910.00	182.88	183.21	86.47	-1,330.36	8,710.90	2,253.01	1,887.77	365.24	6.169				
17,900.00	9,060.00	17,711.35	8,910.00	184.89	185.23	86.47	-1,329.26	8,810.89	2,253.68	1,884.42	369.26	6.103				
18,000.00	9,060.00	17,811.35	8,910.00	186.90	187.24	86.47	-1,328.16	8,910.88	2,254.34	1,881.06	373.28	6.039				
18,100.00	9,060.00	17,911.35	8,910.00	188.92	189.26	86.47	-1,327.06	9,010.87	2,255.01	1,877.71	377.30	5.977				
18,200.00	9,060.00	18,011.34	8,910.00	190.93	191.27	86.47	-1,325.96	9,110.87	2,255.67	1,874.35	381.32	5.915				
18,300.00	9,060.00	18,111.34	8,910.00	192.94	193.29	86.47	-1,324.86	9,210.86	2,256.34	1,870.99	385.35	5.855				
18,400.00	9,060.00	18,211.34	8,910.00	194.96	195.31	86.47	-1,323.76	9,310.85	2,257.00	1,867.63	389.38	5.796				
18,500.00	9,060.00	18,311.34	8,910.00	196.97	197.33	86.47	-1,322.66	9,410.84	2,257.67	1,864.27	393.40	5.739				
18,600.00	9,060.00	18,411.33	8,910.00	198.99	199.35	86.47	-1,321.56	9,510.83	2,258.33	1,860.90	397.43	5.682				
18,700.00	9,060.00	18,511.33	8,910.00	201.00	201.37	86.47	-1,320.46	9,610.82	2,259.00	1,857.54	401.46	5.627				
18,800.00	9,060.00	18,611.33	8,910.00	203.02	203.39	86.48	-1,319.36	9,710.82	2,259.66	1,854.18	405.49	5.573				
18,900.00	9,060.00	18,711.33	8,910.00	205.04	205.41	86.48	-1,318.26	9,810.81	2,260.33	1,850.81	409.52	5.519				
19,000.00	9,060.00	18,811.33	8,910.00	207.06	207.43	86.48	-1,317.16	9,910.80	2,260.99	1,847.44	413.55	5.467				
19,100.00	9,060.00	18,911.32	8,910.00	209.07	209.45	86.48	-1,316.06	10,010.79	2,261.66	1,844.07	417.59	5.416				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	19,011.32	8,910.00	211.09	211.47	86.48	-1,314.96	10,110.78	2,262.32	1,840.71	421.62	5.366	
19,300.00	9,060.00	19,111.32	8,910.00	213.11	213.49	86.48	-1,313.86	10,210.77	2,262.99	1,837.34	425.65	5.316	
19,400.00	9,060.00	19,211.32	8,910.00	215.13	215.52	86.48	-1,312.76	10,310.77	2,263.66	1,833.96	429.69	5.268	
19,500.32	9,060.00	19,294.07	8,910.00	217.16	217.19	86.48	-1,311.85	10,393.51	2,264.39	1,831.03	433.36	5.225 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.53	4.53	0.50	0.50	-178.58	-3,232.90	-80.25	3,233.89					
100.00	100.00	101.00	101.00	0.52	0.53	-178.58	-3,232.96	-80.14	3,233.95	3,232.91	1.05	3,091.497		
200.00	200.00	197.47	197.47	0.70	0.60	-178.59	-3,233.13	-79.83	3,234.12	3,232.82	1.30	2,481.671		
300.00	300.00	293.93	293.93	0.99	0.70	-178.59	-3,233.41	-79.31	3,234.40	3,232.71	1.69	1,911.525		
400.00	400.00	390.39	390.39	1.31	0.83	-178.61	-3,233.80	-78.60	3,234.79	3,232.65	2.14	1,513.876		
500.00	500.00	481.18	481.17	1.65	1.04	-178.62	-3,234.31	-77.79	3,235.34	3,232.65	2.68	1,206.047		
600.00	600.00	581.75	581.74	1.99	1.36	-178.64	-3,235.16	-76.99	3,236.15	3,232.80	3.35	964.944		
700.00	700.00	685.09	685.06	2.34	1.71	-178.65	-3,235.81	-76.25	3,236.77	3,232.72	4.05	798.735		
800.00	800.00	789.60	789.57	2.69	2.08	-178.66	-3,236.41	-75.56	3,237.32	3,232.56	4.76	679.444		
900.00	900.00	875.60	875.57	3.04	2.38	-178.67	-3,236.99	-75.25	3,237.99	3,232.57	5.42	597.771		
1,000.00	1,000.00	1,004.14	1,004.10	3.40	2.82	-178.68	-3,237.62	-74.40	3,238.47	3,232.25	6.22	520.713		
1,100.00	1,100.00	1,112.40	1,112.36	3.75	3.20	-178.70	-3,237.43	-73.70	3,238.28	3,231.33	6.95	465.922		
1,200.00	1,200.00	1,214.90	1,214.86	4.11	3.56	-178.71	-3,237.21	-72.83	3,238.04	3,230.38	7.66	422.515		
1,300.00	1,300.00	1,330.80	1,330.74	4.46	3.96	-178.74	-3,236.64	-71.28	3,237.53	3,229.10	8.42	384.288		
1,400.00	1,400.00	1,433.14	1,433.08	4.82	4.32	-178.76	-3,235.78	-70.06	3,236.67	3,227.53	9.14	354.192		
1,500.00	1,500.00	1,522.35	1,522.28	5.18	4.63	-178.78	-3,235.18	-68.82	3,235.96	3,226.15	9.81	329.887		
1,600.00	1,600.00	1,632.75	1,632.66	5.53	5.02	-178.80	-3,234.44	-67.52	3,235.27	3,224.71	10.55	306.517		
1,700.00	1,700.00	1,723.81	1,723.71	5.89	5.34	-178.82	-3,233.86	-66.53	3,234.60	3,223.37	11.23	287.942		
1,800.00	1,800.00	1,830.98	1,830.87	6.25	5.72	-178.85	-3,233.11	-65.08	3,233.87	3,221.90	11.97	270.155		
1,900.00	1,900.00	1,928.44	1,928.33	6.61	6.07	-178.87	-3,232.39	-63.72	3,233.11	3,220.43	12.67	255.103		
2,000.00	2,000.00	2,038.89	2,038.76	6.96	6.46	-178.90	-3,231.55	-62.29	3,232.33	3,218.91	13.42	240.832		
2,100.00	2,100.00	2,163.65	2,163.51	7.32	6.89	-178.90	-3,229.68	-61.73	3,230.81	3,216.60	14.21	227.340		
2,200.00	2,200.00	2,260.89	2,260.73	7.68	7.23	-178.90	-3,227.89	-61.82	3,228.96	3,214.06	14.90	216.664		
2,300.00	2,300.00	2,359.73	2,359.55	8.04	7.57	-178.90	-3,226.21	-62.13	3,227.28	3,211.68	15.60	206.879		
2,350.00	2,350.00	2,409.91	2,409.72	8.22	7.74	-178.89	-3,225.35	-62.32	3,226.42	3,210.47	15.95	202.268		
2,400.00	2,400.00	2,459.53	2,459.33	8.39	7.91	-162.85	-3,224.51	-62.47	3,225.78	3,209.48	16.30	197.890		
2,448.27	2,448.26	2,506.02	2,505.82	8.57	8.07	-162.85	-3,223.73	-62.58	3,225.57	3,208.94	16.63	193.913		
2,500.00	2,499.98	2,554.99	2,554.78	8.75	8.24	-162.86	-3,222.94	-62.68	3,225.82	3,208.83	16.99	189.881		
2,600.00	2,599.92	2,643.71	2,643.49	9.11	8.55	-162.87	-3,221.70	-62.58	3,227.76	3,210.10	17.66	182.801		
2,700.00	2,699.78	2,743.86	2,743.64	9.47	8.90	-162.89	-3,220.55	-62.20	3,231.61	3,213.24	18.37	175.958		
2,800.00	2,799.54	2,843.54	2,843.31	9.82	9.25	-162.91	-3,219.33	-62.48	3,237.05	3,217.98	19.07	169.742		
2,900.00	2,899.16	2,900.00	2,982.17	10.18	9.44	-162.94	-3,216.94	-62.87	3,243.71	3,224.09	19.62	165.316		
3,000.00	2,998.61	3,146.85	3,146.47	10.54	10.31	-163.00	-3,210.72	-63.54	3,249.71	3,228.87	20.83	155.985		
3,100.00	3,097.86	3,247.94	3,247.47	10.89	10.66	-163.03	-3,206.26	-63.87	3,256.99	3,235.44	21.55	151.161		
3,200.00	3,196.89	3,342.96	3,342.38	11.25	11.00	-163.07	-3,202.02	-64.18	3,265.88	3,243.64	22.24	146.848		
3,295.74	3,291.45	4,008.93	4,001.24	11.59	13.40	-163.30	-3,114.86	-79.50	3,267.22	3,242.69	24.54	133.155		
3,300.00	3,295.65	4,014.31	4,006.48	11.61	13.43	-163.30	-3,113.70	-79.78	3,266.97	3,242.40	24.57	132.967		
3,400.00	3,394.29	4,095.04	4,085.17	11.97	13.73	-163.29	-3,096.19	-84.24	3,261.03	3,235.79	25.24	129.195		
3,500.00	3,492.94	4,153.00	4,141.80	12.33	13.95	-163.27	-3,084.34	-87.59	3,256.30	3,230.44	25.86	125.926		
3,600.00	3,591.58	4,303.98	4,289.29	12.69	14.54	-163.26	-3,052.92	-94.96	3,251.10	3,224.39	26.71	121.741		
3,700.00	3,690.22	4,386.33	4,369.68	13.05	14.86	-163.26	-3,035.39	-98.49	3,245.53	3,218.15	27.39	118.502		
3,800.00	3,788.86	4,475.18	4,456.57	13.41	15.21	-163.26	-3,017.28	-102.40	3,240.83	3,212.74	28.09	115.380		
3,900.00	3,887.50	4,605.67	4,584.03	13.77	15.73	-163.29	-2,989.68	-106.87	3,235.31	3,206.42	28.89	111.980		
4,000.00	3,886.14	4,686.70	4,663.18	14.14	16.06	-163.31	-2,972.46	-109.06	3,229.76	3,200.18	29.58	109.197		
4,100.00	4,084.78	4,762.46	4,737.30	14.50	16.36	-163.34	-2,956.95	-111.11	3,224.98	3,194.73	30.25	106.610		
4,200.00	4,183.42	4,875.47	4,847.99	14.87	16.82	-163.37	-2,934.37	-114.32	3,220.75	3,189.74	31.02	103.839		
4,300.00	4,282.06	4,978.16	4,948.41	15.24	17.23	-163.43	-2,912.95	-115.75	3,215.57	3,183.81	31.76	101.249		
4,400.00	4,380.70	5,046.48	5,015.32	15.60	17.51	-163.47	-2,899.15	-116.34	3,211.09	3,178.67	32.42	99.059		
4,500.00	4,479.34	5,105.00	5,072.76	15.97	17.75	-163.51	-2,887.99	-117.05	3,207.76	3,174.71	33.04	97.072		
4,600.00	4,577.98	5,182.81	5,149.27	16.34	18.06	-163.55	-2,873.90	-118.17	3,205.40	3,171.68	33.72	95.051		
4,700.00	4,676.62	5,268.41	5,233.55	16.71	18.41	-163.59	-2,858.98	-119.63	3,203.72	3,169.30	34.42	93.073		
4,800.00	4,775.27	5,385.93	5,349.25	17.08	18.88	-163.64	-2,838.52	-121.95	3,202.09	3,166.88	35.21	90.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	5,448.92	5,411.29	17.45	19.13	-163.68	-2,827.64	-123.00	3,200.59	3,164.74	35.85	89.289		
5,000.00	4,972.55	5,527.30	5,488.63	17.82	19.45	-163.72	-2,815.00	-124.23	3,200.20	3,163.68	36.52	87.622		
5,100.00	5,071.19	5,719.60	5,677.92	18.19	20.23	-163.88	-2,781.24	-123.73	3,198.25	3,160.73	37.52	85.251		
5,200.00	5,169.83	5,805.93	5,762.78	18.56	20.58	-163.96	-2,765.35	-123.26	3,195.56	3,157.34	38.22	83.607		
5,300.00	5,268.47	5,900.00	5,904.49	18.93	18.47	-164.06	-2,737.48	-124.31	3,191.91	3,155.26	36.65	87.088		
5,400.00	5,367.11	6,026.22	5,978.79	19.31	21.49	-164.08	-2,722.42	-126.44	3,187.90	3,148.14	39.76	80.173		
5,500.00	5,465.75	6,104.27	6,055.44	19.68	21.82	-164.09	-2,708.04	-129.62	3,185.17	3,144.72	40.45	78.744		
5,600.00	5,564.39	6,273.44	6,221.29	20.05	22.53	-164.10	-2,675.54	-136.89	3,181.85	3,140.47	41.38	76.903		
5,700.00	5,663.03	6,398.71	6,343.58	20.42	23.06	-164.09	-2,649.01	-142.92	3,176.29	3,134.10	42.19	75.292		
5,800.00	5,761.67	6,502.34	6,444.72	20.80	23.51	-164.09	-2,627.02	-147.81	3,170.77	3,127.82	42.95	73.833		
5,900.00	5,860.31	6,564.35	6,505.29	21.17	23.77	-164.10	-2,613.90	-150.01	3,165.44	3,121.84	43.60	72.599		
6,000.00	5,958.96	6,628.00	6,567.76	21.54	24.04	-164.12	-2,601.87	-151.81	3,162.01	3,117.76	44.26	71.446		
6,100.00	6,057.60	6,666.56	6,605.73	21.92	24.20	-164.14	-2,595.16	-152.61	3,159.93	3,115.09	44.84	70.475		
6,200.00	6,156.24	6,779.73	6,717.24	22.29	24.67	-164.21	-2,575.89	-153.42	3,158.74	3,113.12	45.62	69.240		
6,300.00	6,254.88	6,957.86	6,891.95	22.67	25.42	-164.34	-2,541.21	-154.51	3,154.51	3,107.94	46.57	67.731		
6,400.00	6,353.52	7,021.50	6,954.38	23.04	25.69	-164.39	-2,528.87	-154.76	3,150.85	3,103.62	47.23	66.713		
6,500.00	6,452.16	7,125.05	7,056.07	23.42	26.12	-164.46	-2,509.35	-155.80	3,147.78	3,099.79	47.99	65.595		
6,600.00	6,550.80	7,250.50	7,179.03	23.79	26.66	-164.52	-2,484.62	-157.89	3,143.75	3,094.95	48.80	64.416		
6,700.00	6,649.44	7,297.00	7,224.62	24.17	26.86	-164.55	-2,475.46	-158.65	3,140.20	3,090.79	49.41	63.548		
6,800.00	6,748.08	7,360.05	7,286.60	24.54	27.12	-164.58	-2,463.93	-159.53	3,137.96	3,087.90	50.06	62.684		
6,900.00	6,846.72	7,438.88	7,364.38	24.92	27.45	-164.63	-2,451.18	-160.36	3,137.52	3,086.77	50.75	61.827		
7,000.00	6,945.36	7,526.80	7,451.09	25.29	27.81	-164.69	-2,436.62	-161.33	3,136.83	3,085.38	51.46	60.960		
7,008.93	6,954.18	7,531.79	7,456.01	25.32	27.83	-164.69	-2,435.83	-161.39	3,136.83	3,085.32	51.51	60.894		
7,100.00	7,044.00	7,583.00	7,506.62	25.67	28.04	-164.72	-2,428.05	-162.06	3,137.41	3,085.34	52.07	60.254		
7,200.00	7,142.65	7,622.18	7,545.43	26.04	28.19	-164.74	-2,422.71	-162.69	3,139.66	3,087.04	52.61	59.672		
7,300.00	7,241.29	7,678.00	7,600.88	26.42	28.41	-164.77	-2,416.41	-163.86	3,143.94	3,090.73	53.20	59.093		
7,400.00	7,339.93	7,766.65	7,689.03	26.79	28.75	-164.81	-2,407.16	-165.34	3,149.31	3,095.41	53.90	58.427		
7,500.00	7,438.57	7,831.94	7,753.96	27.17	28.99	-164.86	-2,400.32	-165.50	3,154.77	3,100.26	54.51	57.872		
7,571.77	7,509.37	7,868.00	7,789.86	27.44	29.13	-164.90	-2,396.89	-165.17	3,159.46	3,104.55	54.91	57.542		
7,600.00	7,537.23	7,888.57	7,810.34	27.55	29.20	-164.93	-2,395.07	-164.84	3,161.38	3,106.30	55.08	57.392		
7,700.00	7,636.18	7,938.39	7,860.00	27.92	29.39	-165.01	-2,391.21	-163.63	3,167.63	3,112.01	55.61	56.958		
7,800.00	7,735.48	8,000.42	7,921.88	28.29	29.61	-165.10	-2,387.35	-161.72	3,172.84	3,116.66	56.18	56.476		
7,900.00	7,835.05	8,082.87	8,004.21	28.65	29.90	-165.16	-2,382.95	-161.32	3,176.40	3,119.57	56.82	55.898		
8,000.00	7,934.83	8,177.59	8,098.78	29.01	30.23	-165.17	-2,377.96	-162.51	3,177.50	3,119.98	57.52	55.244		
8,100.00	8,034.74	8,249.00	8,170.12	29.36	30.49	-165.17	-2,374.87	-163.35	3,176.93	3,118.83	58.10	54.677		
8,202.27	8,137.00	8,337.96	8,259.01	29.72	30.79	178.82	-2,371.60	-164.59	3,174.44	3,115.68	58.76	54.021		
8,300.00	8,234.73	8,437.36	8,358.21	30.06	31.13	178.74	-2,367.81	-160.40	3,170.80	3,111.35	59.45	53.334		
8,400.00	8,334.73	8,538.27	8,456.52	30.41	31.46	178.36	-2,363.20	-139.27	3,166.66	3,106.53	60.14	52.657		
8,500.00	8,434.73	8,600.08	8,513.31	30.75	31.64	177.92	-2,360.58	-115.14	3,163.53	3,102.89	60.64	52.168		
8,552.31	8,487.04	8,630.00	8,539.42	30.94	31.72	177.65	-2,359.59	-100.58	3,162.60	3,101.71	60.89	51.940		
8,600.00	8,534.68	8,630.00	8,539.42	31.10	31.72	88.04	-2,359.59	-100.58	3,162.17	3,101.19	60.98	51.852		
8,629.74	8,564.23	8,645.36	8,552.41	31.20	31.75	87.92	-2,359.22	-92.39	3,162.07	3,100.96	61.11	51.747		
8,650.00	8,584.26	8,650.67	8,556.83	31.26	31.76	87.87	-2,359.13	-89.44	3,162.11	3,100.95	61.17	51.698		
8,700.00	8,633.10	8,677.00	8,578.17	31.43	31.83	87.65	-2,358.98	-74.04	3,162.62	3,101.26	61.37	51.536		
8,750.00	8,680.83	8,677.00	8,578.17	31.58	31.83	87.58	-2,358.98	-74.04	3,163.36	3,101.92	61.44	51.489		
8,800.00	8,727.09	8,694.63	8,591.98	31.74	31.86	87.37	-2,359.10	-63.08	3,164.57	3,102.98	61.59	51.382		
8,850.00	8,771.52	8,725.00	8,614.96	31.89	31.92	87.10	-2,359.66	-43.23	3,166.18	3,104.38	61.80	51.233		
8,900.00	8,813.78	8,749.29	8,632.51	32.04	31.96	86.85	-2,360.20	-26.46	3,167.89	3,105.91	61.99	51.107		
8,950.00	8,853.56	8,890.48	8,720.96	32.18	32.17	86.16	-2,359.47	83.34	3,168.40	3,105.52	62.87	50.393		
9,000.00	8,890.55	8,920.74	8,737.44	32.32	32.22	86.01	-2,358.84	108.70	3,168.46	3,105.31	63.15	50.175		
9,050.00	8,924.46	8,980.96	8,766.86	32.47	32.32	85.77	-2,357.32	161.20	3,168.29	3,104.61	63.68	49.754		
9,100.00	8,955.05	9,066.42	8,802.74	32.63	32.62	85.51	-2,354.08	238.69	3,167.51	3,103.01	64.51	49.105		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	9,097.41	8,814.31	32.79	32.83	85.53	-2,352.69	267.40	3,166.25	3,101.34	64.91	48.778		
9,200.00	9,005.34	9,127.42	8,824.47	32.97	33.06	85.58	-2,351.43	295.60	3,164.96	3,099.62	65.34	48.435		
9,250.00	9,024.65	9,154.00	8,832.51	33.17	33.30	85.66	-2,350.40	320.92	3,163.66	3,097.89	65.77	48.100		
9,300.00	9,039.87	9,190.68	8,842.19	33.38	33.66	85.77	-2,349.07	356.27	3,162.32	3,095.96	66.36	47.653		
9,350.00	9,050.89	9,251.74	8,855.50	33.62	34.33	85.92	-2,346.81	415.81	3,160.78	3,093.49	67.29	46.971		
9,400.00	9,057.61	9,400.00	8,873.30	33.87	36.27	86.20	-2,339.99	538.10	3,158.46	3,088.93	69.54	45.422		
9,452.31	9,060.00	9,446.80	8,879.75	34.15	36.98	86.63	-2,334.45	608.81	3,154.52	3,083.98	70.54	44.717		
9,500.00	9,060.00	9,492.28	8,883.19	34.42	37.66	86.69	-2,330.84	654.01	3,150.80	3,079.29	71.51	44.061		
9,600.00	9,060.00	9,548.94	8,886.95	35.09	38.59	86.75	-2,326.74	710.40	3,143.75	3,070.65	73.11	43.003		
9,700.00	9,060.00	9,613.06	8,890.58	35.86	39.68	86.81	-2,322.88	774.29	3,137.97	3,063.01	74.96	41.863		
9,800.00	9,060.00	9,677.00	8,893.34	36.72	40.80	86.86	-2,319.55	838.09	3,133.18	3,056.24	76.94	40.722		
9,900.00	9,060.00	9,727.42	8,894.81	37.69	41.74	86.89	-2,317.57	888.45	3,129.77	3,050.96	78.82	39.710		
10,000.00	9,060.00	9,773.64	8,895.54	38.73	42.60	86.90	-2,316.57	934.65	3,128.10	3,047.42	80.68	38.770		
10,100.00	9,060.00	9,860.65	8,896.36	39.86	44.31	86.91	-2,315.57	1,021.65	3,127.50	3,043.99	83.50	37.454		
10,140.22	9,060.00	9,901.45	8,896.80	40.33	45.14	86.92	-2,315.19	1,062.44	3,127.34	3,042.53	84.81	36.876		
10,200.00	9,060.00	9,964.34	8,897.76	41.05	46.43	86.94	-2,314.57	1,125.33	3,126.44	3,039.61	86.82	36.009		
10,300.00	9,060.00	10,038.02	8,898.67	42.31	47.99	86.95	-2,314.12	1,199.00	3,122.52	3,032.89	89.63	34.837		
10,400.00	9,060.00	10,200.27	8,899.04	43.64	51.56	86.93	-2,312.18	1,361.23	3,114.65	3,020.06	94.59	32.927		
10,507.23	9,060.00	10,352.72	8,899.80	45.11	55.06	86.91	-2,307.72	1,513.62	3,100.48	3,000.89	99.59	31.132		
10,600.00	9,060.00	10,438.50	8,901.35	46.43	57.08	86.94	-2,304.70	1,599.32	3,087.35	2,984.42	102.93	29.995		
10,700.00	9,060.00	10,519.86	8,903.20	47.91	59.04	86.98	-2,302.13	1,680.62	3,076.87	2,970.53	106.34	28.934		
10,800.00	9,060.00	10,626.65	8,906.06	49.42	61.63	87.03	-2,299.05	1,787.32	3,070.12	2,959.66	110.46	27.793		
10,900.00	9,060.00	10,752.23	8,911.63	50.97	64.74	87.14	-2,294.70	1,912.71	3,066.17	2,951.02	115.15	26.626		
10,978.08	9,060.00	10,835.72	8,915.26	52.20	66.83	87.21	-2,291.45	1,996.05	3,065.19	2,946.70	118.49	25.868 CC		
11,000.00	9,060.00	10,860.81	8,916.25	52.55	67.47	87.22	-2,290.42	2,021.11	3,065.26	2,945.79	119.48	25.656		
11,100.00	9,060.00	10,957.04	8,919.40	54.14	69.91	87.28	-2,286.34	2,117.20	3,067.58	2,944.06	123.52	24.834		
11,207.23	9,060.00	11,045.03	8,921.76	55.87	72.16	87.33	-2,283.06	2,205.09	3,074.53	2,947.02	127.51	24.112		
11,300.00	9,060.00	11,106.00	8,923.84	57.39	73.72	87.37	-2,281.07	2,265.99	3,081.28	2,950.70	130.58	23.597		
11,400.00	9,060.00	11,161.15	8,925.77	59.06	75.15	87.42	-2,279.95	2,321.10	3,086.48	2,952.85	133.64	23.096		
11,506.63	9,060.00	11,219.22	8,927.39	60.88	76.66	87.45	-2,279.98	2,379.15	3,090.16	2,953.27	136.89	22.575		
11,600.00	9,060.00	11,334.31	8,931.25	62.49	79.67	87.53	-2,280.56	2,494.17	3,092.18	2,950.61	141.57	21.842		
11,700.00	9,060.00	11,423.87	8,935.33	64.24	82.03	87.60	-2,280.13	2,583.63	3,093.34	2,947.66	145.68	21.234		
11,800.00	9,060.00	11,486.00	8,937.44	66.01	83.67	87.64	-2,281.08	2,645.72	3,096.24	2,947.23	149.01	20.779		
11,900.00	9,060.00	11,562.25	8,939.02	67.79	85.69	87.67	-2,282.96	2,721.93	3,100.23	2,947.47	152.76	20.295		
12,000.00	9,060.00	11,651.64	8,939.81	69.58	88.07	87.69	-2,284.93	2,811.30	3,104.17	2,947.25	156.91	19.783		
12,100.00	9,060.00	11,819.23	8,940.02	71.39	92.55	87.70	-2,287.67	2,978.85	3,107.75	2,944.36	163.39	19.021		
12,200.00	9,060.00	11,989.90	8,937.15	73.21	97.15	87.65	-2,285.53	3,149.47	3,108.10	2,938.20	169.91	18.293		
12,234.52	9,060.00	12,016.84	8,936.61	73.85	97.88	87.64	-2,285.00	3,176.40	3,108.06	2,936.81	171.26	18.149		
12,300.00	9,060.00	12,068.80	8,935.90	75.05	99.28	87.63	-2,284.17	3,228.36	3,108.21	2,934.37	173.84	17.880		
12,400.00	9,060.00	12,152.99	8,934.91	76.89	101.56	87.61	-2,283.22	3,312.53	3,108.90	2,930.96	177.94	17.472		
12,500.00	9,060.00	12,272.82	8,932.96	78.74	104.83	87.57	-2,281.93	3,432.34	3,109.68	2,926.61	183.08	16.986		
12,600.00	9,060.00	12,400.25	8,932.75	80.61	108.30	87.57	-2,279.10	3,559.74	3,109.15	2,920.71	188.44	16.499		
12,696.03	9,060.00	12,478.41	8,933.95	82.40	110.44	87.59	-2,277.50	3,637.87	3,108.82	2,916.46	192.36	16.161		
12,700.00	9,060.00	12,481.40	8,934.01	82.48	110.52	87.59	-2,277.45	3,640.85	3,108.82	2,916.30	192.52	16.148		
12,800.00	9,060.00	12,558.78	8,936.09	84.36	112.64	87.63	-2,276.50	3,718.20	3,109.24	2,912.75	196.50	15.823		
12,900.00	9,060.00	12,642.32	8,938.07	86.24	114.94	87.67	-2,275.98	3,801.72	3,110.29	2,909.63	200.66	15.500		
13,000.00	9,060.00	12,763.33	8,940.90	88.14	118.27	87.72	-2,275.53	3,922.69	3,111.66	2,905.72	205.93	15.110		
13,100.00	9,060.00	12,905.56	8,946.34	90.04	122.20	87.82	-2,272.66	4,064.79	3,111.11	2,899.28	211.83	14.687		
13,200.00	9,060.00	13,028.38	8,952.14	91.94	125.59	87.93	-2,269.18	4,187.42	3,109.84	2,892.68	217.16	14.321		
13,300.00	9,060.00	13,103.00	8,954.95	93.86	127.65	87.98	-2,267.11	4,261.96	3,108.72	2,887.58	221.13	14.058		
13,380.06	9,060.00	13,162.85	8,956.28	95.39	129.31	88.00	-2,265.86	4,321.78	3,108.40	2,884.10	224.31	13.858		
13,400.00	9,060.00	13,176.84	8,956.43	95.77	129.70	88.00	-2,265.63	4,335.76	3,108.42	2,883.35	225.07	13.811		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,500.00	9,060.00	13,293.88	8,956.51	97.70	132.94	88.01	-2,263.69	4,452.79	3,108.57	2,878.31	230.26	13.500		
13,600.00	9,060.00	13,399.35	8,955.94	99.62	135.87	87.99	-2,261.35	4,558.23	3,108.13	2,873.01	235.12	13.219		
13,700.00	9,060.00	13,494.22	8,957.13	101.56	138.51	88.02	-2,259.31	4,653.07	3,107.70	2,868.02	239.69	12.966		
13,800.00	9,060.00	13,593.23	8,959.66	103.49	141.27	88.06	-2,257.26	4,752.03	3,107.31	2,862.93	244.39	12.715		
13,867.68	9,060.00	13,650.54	8,960.94	104.81	142.87	88.09	-2,256.20	4,809.31	3,107.20	2,859.91	247.29	12.565		
13,900.00	9,060.00	13,680.07	8,961.49	105.43	143.69	88.10	-2,255.72	4,838.83	3,107.23	2,858.48	248.74	12.492		
14,000.00	9,060.00	13,801.34	8,965.12	107.38	147.07	88.16	-2,253.28	4,960.02	3,106.86	2,852.75	254.11	12.227		
14,100.00	9,060.00	13,885.77	8,968.35	109.33	149.43	88.22	-2,251.45	5,044.37	3,106.37	2,847.96	258.41	12.021		
14,106.65	9,060.00	13,889.63	8,968.49	109.46	149.54	88.23	-2,251.39	5,048.22	3,106.37	2,847.72	258.64	12.010		
14,200.00	9,060.00	13,943.86	8,970.27	111.28	151.06	88.26	-2,250.83	5,102.42	3,106.95	2,845.03	261.92	11.862		
14,300.00	9,060.00	14,043.42	8,973.05	113.23	153.84	88.31	-2,250.59	5,201.94	3,108.40	2,841.72	266.67	11.656		
14,400.00	9,060.00	14,147.81	8,975.61	115.19	156.77	88.36	-2,250.06	5,306.30	3,109.58	2,838.01	271.58	11.450		
14,500.00	9,060.00	14,279.48	8,978.85	117.15	160.46	88.42	-2,248.50	5,437.92	3,110.06	2,832.77	277.30	11.216		
14,600.00	9,060.00	14,397.56	8,981.47	119.11	163.77	88.47	-2,246.45	5,555.95	3,110.05	2,827.45	282.60	11.005		
14,700.00	9,060.00	14,492.60	8,983.62	121.08	166.44	88.51	-2,244.26	5,650.94	3,109.46	2,822.23	287.24	10.825		
14,800.00	9,060.00	14,603.95	8,986.10	123.05	169.56	88.55	-2,242.07	5,762.24	3,109.24	2,816.89	292.35	10.635		
14,900.00	9,060.00	14,692.27	8,988.36	125.02	172.04	88.59	-2,240.02	5,850.51	3,108.63	2,811.83	296.80	10.474		
14,936.73	9,060.00	14,720.00	8,989.01	125.75	172.82	88.60	-2,239.50	5,878.23	3,108.57	2,810.27	298.30	10.421		
15,000.00	9,060.00	14,749.56	8,989.71	126.99	173.65	88.62	-2,239.15	5,907.78	3,108.91	2,808.59	300.32	10.352		
15,100.00	9,060.00	14,815.00	8,991.43	128.97	175.50	88.65	-2,239.57	5,973.19	3,111.01	2,806.96	304.05	10.232		
15,200.00	9,060.00	14,892.07	8,993.32	130.95	177.67	88.69	-2,240.77	6,050.23	3,114.11	2,805.99	308.12	10.107		
15,300.00	9,060.00	15,005.94	8,995.48	132.93	180.88	88.73	-2,241.85	6,164.07	3,116.78	2,803.40	313.38	9.946		
15,400.00	9,060.00	15,091.37	8,997.05	134.91	183.29	88.76	-2,242.70	6,249.49	3,119.50	2,801.79	317.72	9.818		
15,500.00	9,060.00	15,226.61	9,000.30	136.89	187.10	88.82	-2,243.71	6,384.68	3,121.99	2,798.33	323.66	9.646		
15,600.00	9,060.00	15,357.51	9,003.88	138.88	190.79	88.88	-2,243.11	6,515.53	3,123.21	2,793.79	329.43	9.481		
15,700.00	9,060.00	15,483.58	9,007.96	140.86	194.35	88.96	-2,241.51	6,641.52	3,123.66	2,788.63	335.03	9.324		
15,800.00	9,060.00	15,578.89	9,010.31	142.85	197.04	89.00	-2,239.96	6,736.79	3,123.75	2,784.05	339.71	9.195		
15,900.00	9,060.00	15,664.45	9,012.19	144.84	199.46	89.04	-2,238.82	6,822.32	3,124.15	2,780.05	344.10	9.079		
16,000.00	9,060.00	15,841.69	9,019.93	146.83	204.45	89.18	-2,233.89	6,999.31	3,122.70	2,771.55	351.15	8.893		
16,100.00	9,060.00	15,902.40	9,022.20	148.83	206.17	89.22	-2,232.00	7,059.94	3,121.36	2,766.49	354.87	8.796		
16,138.15	9,060.00	15,922.18	9,022.67	149.59	206.73	89.23	-2,231.60	7,079.71	3,121.25	2,765.08	356.17	8.763		
16,200.00	9,060.00	15,954.96	9,023.14	150.82	207.65	89.24	-2,231.18	7,112.48	3,121.54	2,763.26	358.28	8.713		
16,300.00	9,060.00	16,035.35	9,023.67	152.82	209.93	89.25	-2,230.77	7,192.88	3,122.79	2,760.28	362.51	8.614		
16,400.00	9,060.00	16,112.84	9,023.85	154.81	212.12	89.25	-2,230.88	7,270.36	3,124.70	2,758.08	366.62	8.523		
16,500.00	9,060.00	16,237.27	9,023.63	156.81	215.64	89.25	-2,231.33	7,394.79	3,126.89	2,754.66	372.22	8.401		
16,600.00	9,060.00	16,315.57	9,023.11	158.81	217.86	89.24	-2,231.37	7,473.09	3,128.71	2,752.34	376.37	8.313		
16,700.00	9,060.00	16,465.59	9,021.54	160.81	222.11	89.21	-2,230.87	7,623.10	3,130.19	2,747.44	382.75	8.178		
16,800.00	9,060.00	16,563.61	9,020.62	162.81	224.88	89.19	-2,229.54	7,721.10	3,130.62	2,743.10	387.52	8.079		
16,900.00	9,060.00	16,644.59	9,020.70	164.82	227.18	89.19	-2,228.95	7,802.08	3,131.64	2,739.86	391.78	7.993		
17,000.00	9,060.00	16,741.53	9,022.35	166.82	229.93	89.23	-2,228.57	7,899.00	3,132.98	2,736.46	396.53	7.901		
17,100.00	9,060.00	16,843.86	9,024.80	168.82	232.83	89.27	-2,228.12	8,001.30	3,134.28	2,732.84	401.45	7.807		
17,200.00	9,060.00	16,947.05	9,026.78	170.83	235.75	89.31	-2,227.65	8,104.47	3,135.57	2,729.17	406.39	7.716		
17,300.00	9,060.00	17,049.81	9,028.77	172.84	238.67	89.34	-2,226.97	8,207.21	3,136.65	2,725.32	411.33	7.626		
17,400.00	9,060.00	17,146.43	9,031.77	174.84	241.41	89.40	-2,226.42	8,303.79	3,137.81	2,721.73	416.08	7.541		
17,500.00	9,060.00	17,245.79	9,034.72	176.85	244.23	89.45	-2,225.92	8,403.10	3,139.04	2,718.13	420.91	7.458		
17,600.00	9,060.00	17,350.74	9,037.72	178.86	247.21	89.51	-2,225.32	8,508.01	3,140.21	2,714.29	425.92	7.373		
17,700.00	9,060.00	17,462.14	9,040.50	180.87	250.37	89.56	-2,224.39	8,619.37	3,141.12	2,709.99	431.13	7.286		
17,800.00	9,060.00	17,567.19	9,042.71	182.88	253.35	89.60	-2,223.20	8,724.38	3,141.74	2,705.60	436.14	7.204		
17,900.00	9,060.00	17,682.55	9,044.43	184.89	256.63	89.63	-2,221.33	8,839.71	3,141.85	2,700.40	441.45	7.117		
18,000.00	9,060.00	17,758.00	9,044.31	186.90	258.77	89.63	-2,220.42	8,915.16	3,142.38	2,696.82	445.56	7.053		
18,100.00	9,060.00	17,828.92	9,043.50	188.92	260.78	89.61	-2,220.16	8,986.08	3,143.76	2,694.26	449.51	6.994		
18,200.00	9,060.00	17,950.14	9,043.88	190.93	264.23	89.62	-2,219.99	9,107.29	3,145.43	2,690.40	455.03	6.913		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,300.00	9,060.00	18,039.85	9,046.55	192.94	266.78	89.67	-2,219.56	9,196.95	3,146.69	2,687.12	459.57	6.847	
18,400.00	9,060.00	18,161.68	9,050.52	194.96	270.24	89.74	-2,218.55	9,318.72	3,147.58	2,682.47	465.11	6.767	
18,500.00	9,060.00	18,242.04	9,052.61	196.97	272.52	89.78	-2,218.00	9,399.04	3,148.64	2,679.27	469.37	6.708	
18,600.00	9,060.00	18,334.64	9,054.56	198.99	275.16	89.82	-2,217.76	9,491.62	3,150.15	2,676.15	474.00	6.646	
18,700.00	9,060.00	18,447.31	9,056.11	201.00	278.36	89.84	-2,217.16	9,604.28	3,151.35	2,672.08	479.26	6.575	
18,800.00	9,060.00	18,528.62	9,056.22	203.02	280.67	89.85	-2,217.01	9,685.59	3,152.91	2,669.38	483.54	6.521	
18,900.00	9,060.00	18,653.75	9,055.33	205.04	284.23	89.83	-2,216.16	9,810.71	3,153.93	2,664.74	489.19	6.447	
19,000.00	9,060.00	18,758.70	9,055.72	207.06	287.22	89.84	-2,215.53	9,915.66	3,155.11	2,660.91	494.20	6.384	
19,100.00	9,060.00	18,907.88	9,058.29	209.07	291.46	89.88	-2,212.92	10,064.80	3,155.11	2,654.59	500.51	6.304	
19,200.00	9,060.00	18,987.23	9,059.50	211.09	293.71	89.91	-2,211.27	10,144.11	3,154.76	2,649.98	504.78	6.250	
19,300.00	9,060.00	19,108.37	9,061.25	213.11	297.16	89.94	-2,208.68	10,265.22	3,154.40	2,644.14	510.26	6.182	
19,373.20	9,060.00	19,158.00	9,061.95	214.59	298.57	89.95	-2,207.50	10,314.83	3,154.01	2,640.87	513.14	6.147	
19,400.00	9,060.00	19,158.00	9,061.95	215.13	298.57	89.95	-2,207.50	10,314.83	3,154.13	2,640.49	513.64	6.141 ES	
19,500.32	9,060.00	19,158.00	9,061.95	217.16	298.57	89.95	-2,207.50	10,314.83	3,156.57	2,641.39	515.18	6.127 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.964		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.230		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.897		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.893		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.596		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.575		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,986.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.905		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.386		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,765.62	5,763.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,864.90	5,862.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,964.80	5,962.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.017		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.673		
9,350.00	9,050.89	9,350.00	9,294.90	33.62	32.86	93.00	-3,346.21	375.96	4,158.16	4,095.06	63.10	65.896		
9,400.00	9,057.61	9,966.67	9,298.04	33.87	37.27	93.02	-3,340.28	507.75	4,155.81	4,084.67	71.14	58.418		
9,452.31	9,060.00	10,020.82	9,299.73	34.15	38.12	93.26	-3,337.37	561.79	4,153.27	4,080.99	72.28	57.460		
9,500.00	9,060.00	10,051.00	9,300.79	34.42	38.59	93.28	-3,335.70	591.91	4,151.07	4,078.03	73.03	56.837		
9,600.00	9,060.00	10,106.91	9,302.58	35.09	39.54	93.31	-3,333.05	647.73	4,147.20	4,072.54	74.66	55.549		
9,700.00	9,060.00	10,157.71	9,303.73	35.86	40.41	93.32	-3,331.40	698.49	4,144.64	4,068.33	76.31	54.311		
9,800.00	9,060.00	10,236.40	9,305.24	36.72	41.83	93.35	-3,329.46	777.14	4,142.89	4,064.28	78.61	52.699		
9,900.00	9,060.00	10,297.12	9,307.09	37.69	42.99	93.37	-3,328.36	837.82	4,141.85	4,061.11	80.74	51.299		
9,963.47	9,060.00	10,338.00	9,309.29	38.35	43.78	93.40	-3,327.90	878.64	4,141.71	4,059.52	82.19	50.394		
10,000.00	9,060.00	10,368.00	9,311.25	38.73	44.38	93.43	-3,327.65	908.57	4,141.76	4,058.58	83.17	49.798		
10,100.00	9,060.00	10,477.61	9,319.12	39.86	46.62	93.54	-3,326.68	1,017.89	4,141.91	4,055.37	86.53	47.866		
10,140.22	9,060.00	10,532.36	9,322.76	40.33	47.77	93.59	-3,326.00	1,072.52	4,141.81	4,053.66	88.15	46.988		
10,200.00	9,060.00	10,590.90	9,325.90	41.05	49.04	93.63	-3,325.23	1,130.97	4,140.96	4,050.82	90.14	45.940		
10,300.00	9,060.00	10,659.14	9,328.39	42.31	50.54	93.68	-3,324.54	1,199.16	4,137.01	4,044.11	92.90	44.532		
10,400.00	9,060.00	10,719.00	9,329.83	43.64	51.88	93.71	-3,324.71	1,259.00	4,130.68	4,035.12	95.55	43.230		
10,507.23	9,060.00	10,791.83	9,331.29	45.11	53.56	93.75	-3,325.59	1,331.81	4,121.00	4,022.31	98.69	41.758		
10,600.00	9,060.00	10,928.83	9,334.28	46.43	56.76	93.79	-3,327.05	1,468.77	4,112.39	4,009.17	103.22	39.842		
10,700.00	9,060.00	10,997.51	9,335.79	47.91	58.41	93.81	-3,327.69	1,537.43	4,106.19	3,999.86	106.33	38.618		
10,800.00	9,060.00	11,160.69	9,339.49	49.42	62.39	93.86	-3,327.90	1,700.56	4,102.61	3,990.79	111.82	36.690		
10,871.08	9,060.00	11,239.90	9,341.54	50.52	64.36	93.89	-3,327.47	1,779.75	4,101.81	3,986.93	114.88	35.706		
10,900.00	9,060.00	11,273.38	9,342.44	50.97	65.19	93.90	-3,327.23	1,813.21	4,101.94	3,985.78	116.16	35.314		
11,000.00	9,060.00	11,369.64	9,345.25	52.55	67.62	93.94	-3,326.47	1,909.43	4,104.59	3,984.44	120.14	34.164		
11,100.00	9,060.00	11,451.97	9,347.30	54.14	69.71	93.97	-3,326.07	1,991.74	4,110.99	3,987.16	123.83	33.200		
11,207.23	9,060.00	11,540.18	9,348.11	55.87	71.97	93.99	-3,326.16	2,079.94	4,122.20	3,994.40	127.80	32.254		
11,300.00	9,060.00	11,617.29	9,348.82	57.39	73.96	93.98	-3,326.54	2,157.05	4,132.50	4,001.20	131.30	31.474		
11,400.00	9,060.00	11,712.20	9,349.73	59.06	76.43	93.97	-3,327.32	2,251.95	4,140.59	4,005.17	135.43	30.574		
11,506.63	9,060.00	11,839.47	9,351.03	60.88	79.77	93.98	-3,328.02	2,379.20	4,145.12	4,004.54	140.58	29.486		
11,600.00	9,060.00	11,972.35	9,352.63	62.49	83.28	94.00	-3,327.78	2,512.08	4,146.68	4,000.99	145.70	28.461		
11,700.00	9,060.00	12,075.32	9,354.56	64.24	86.01	94.02	-3,327.03	2,615.02	4,147.85	3,997.68	150.17	27.621		
11,800.00	9,060.00	12,190.76	9,357.75	66.01	89.10	94.07	-3,325.92	2,730.42	4,148.86	3,993.86	155.00	26.767		
11,900.00	9,060.00	11,900.00	9,363.70	67.79	81.27	94.15	-3,320.15	2,944.83	4,148.07	3,999.16	148.91	27.856		
12,000.00	9,060.00	12,527.00	9,366.82	69.58	98.13	94.20	-3,314.28	3,066.30	4,145.08	3,977.59	167.49	24.748		
12,100.00	9,060.00	12,587.50	9,367.80	71.39	99.76	94.21	-3,311.65	3,126.73	4,142.77	3,971.81	170.96	24.232		
12,200.00	9,060.00	12,655.98	9,368.22	73.21	101.62	94.22	-3,309.77	3,195.19	4,141.74	3,967.08	174.65	23.714		
12,300.00	9,060.00	12,742.10	9,368.28	75.05	103.97	94.22	-3,307.40	3,281.28	4,140.80	3,961.97	178.83	23.155		
12,340.15	9,060.00	12,760.93	9,368.26	75.79	104.48	94.22	-3,307.02	3,300.10	4,140.70	3,960.61	180.08	22.993		
12,400.00	9,060.00	12,789.00	9,368.21	76.89	105.25	94.22	-3,306.63	3,328.16	4,140.93	3,958.98	181.95	22.759		
12,500.00	9,060.00	12,850.97	9,368.11	78.74	106.94	94.22	-3,306.40	3,390.14	4,142.24	3,956.76	185.48	22.333		
12,600.00	9,060.00	12,926.48	9,368.19	80.61	109.01	94.22	-3,306.55	3,465.64	4,144.22	3,954.83	189.39	21.882		
12,700.00	9,060.00	13,002.00	9,369.37	82.48	111.09	94.23	-3,307.11	3,541.15	4,146.82	3,953.52	193.30	21.453		
12,800.00	9,060.00	13,114.17	9,372.12	84.36	114.17	94.27	-3,308.13	3,653.28	4,149.69	3,951.43	198.26	20.930		
12,900.00	9,060.00	13,267.52	9,375.59	86.24	118.40	94.31	-3,307.85	3,806.60	4,151.34	3,946.95	204.39	20.311		
13,000.00	9,060.00	13,339.75	9,377.10	88.14	120.40	94.33	-3,307.55	3,878.80	4,152.88	3,944.63	208.25	19.942		
13,100.00	9,060.00	13,449.05	9,379.72	90.04	123.43	94.37	-3,307.81	3,988.08	4,155.09	3,941.92	213.16	19.493		
13,200.00	9,060.00	13,534.21	9,382.35	91.94	125.79	94.40	-3,307.54	4,073.19	4,156.80	3,939.40	217.40	19.120		
13,300.00	9,060.00	13,680.54	9,386.57	93.86	129.85	94.46	-3,307.43	4,219.46	4,158.88	3,935.51	223.37	18.619		
13,400.00	9,060.00	13,791.90	9,389.24	95.77	132.95	94.49	-3,305.85	4,330.78	4,159.38	3,931.02	228.36	18.214		
13,500.00	9,060.00	13,858.00	9,389.88	97.70	134.79	94.50	-3,305.54	4,396.87	4,160.66	3,928.56	232.11	17.926		
13,600.00	9,060.00	13,931.09	9,389.24	99.62	136.83	94.49	-3,305.84	4,469.96	4,162.69	3,926.65	236.05	17.635		
13,700.00	9,060.00	14,002.70	9,387.80	101.56	138.83	94.47	-3,306.43	4,541.55	4,165.14	3,925.19	239.94	17.359		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	14,093.66	9,388.16	103.49	141.37	94.47	-3,307.70	4,632.50	4,168.31	3,923.91	244.40	17.055		
13,900.00	9,060.00	14,215.56	9,390.74	105.43	144.78	94.50	-3,308.66	4,754.36	4,171.00	3,921.24	249.75	16.700		
14,000.00	9,060.00	14,450.24	9,401.86	107.38	151.33	94.65	-3,304.78	4,988.72	4,170.90	3,912.69	258.21	16.153		
14,100.00	9,060.00	14,572.50	9,408.25	109.33	154.75	94.74	-3,300.90	5,110.76	4,169.91	3,906.41	263.51	15.825		
14,200.00	9,060.00	14,680.06	9,412.71	111.28	157.75	94.81	-3,297.19	5,218.16	4,168.57	3,900.15	268.43	15.530		
14,300.00	9,060.00	14,761.21	9,416.07	113.23	160.02	94.85	-3,294.44	5,299.19	4,167.32	3,894.68	272.64	15.285		
14,400.00	9,060.00	14,828.37	9,417.86	115.19	161.90	94.88	-3,292.71	5,366.31	4,166.75	3,890.26	276.49	15.070		
14,415.97	9,060.00	14,838.06	9,418.00	115.50	162.18	94.88	-3,292.52	5,375.99	4,166.74	3,889.67	277.07	15.038		
14,500.00	9,060.00	14,889.03	9,418.09	117.15	163.61	94.88	-3,291.81	5,426.95	4,167.07	3,886.93	280.14	14.875		
14,600.00	9,060.00	14,979.38	9,417.60	119.11	166.15	94.87	-3,291.17	5,517.30	4,168.07	3,883.44	284.63	14.644		
14,700.00	9,060.00	15,111.10	9,419.07	121.08	169.85	94.89	-3,289.65	5,649.00	4,168.80	3,878.51	290.28	14.361		
14,800.00	9,060.00	15,301.02	9,423.99	123.05	175.19	94.96	-3,284.47	5,838.77	4,168.13	3,870.66	297.47	14.012		
14,900.00	9,060.00	15,412.35	9,428.25	125.02	178.32	95.02	-3,279.93	5,949.93	4,166.16	3,863.66	302.50	13.772		
15,000.00	9,060.00	15,498.93	9,431.40	126.99	180.75	95.07	-3,276.14	6,036.37	4,163.91	3,857.01	306.90	13.568		
15,100.00	9,060.00	15,546.25	9,432.65	128.97	182.08	95.09	-3,274.62	6,083.65	4,162.71	3,852.46	310.25	13.417		
15,147.58	9,060.00	15,570.00	9,433.10	129.91	182.75	95.09	-3,274.10	6,107.39	4,162.58	3,850.72	311.86	13.347		
15,200.00	9,060.00	15,618.08	9,433.86	130.95	184.10	95.10	-3,273.23	6,155.46	4,162.62	3,848.38	314.24	13.246		
15,300.00	9,060.00	15,300.00	9,435.68	132.93	175.13	95.13	-3,270.53	6,280.25	4,162.34	3,855.09	307.26	13.547		
15,400.00	9,060.00	15,829.70	9,436.42	134.91	190.07	95.14	-3,268.39	6,367.00	4,161.76	3,837.64	324.12	12.840		
15,500.00	9,060.00	15,933.86	9,435.77	136.89	193.01	95.13	-3,266.56	6,471.14	4,161.72	3,832.69	329.03	12.648		
15,545.36	9,060.00	15,967.81	9,435.54	137.79	193.97	95.13	-3,265.90	6,505.08	4,161.62	3,830.73	330.89	12.577		
15,600.00	9,060.00	15,997.45	9,435.47	138.88	194.81	95.13	-3,265.47	6,534.72	4,161.78	3,828.98	332.81	12.505		
15,700.00	9,060.00	16,058.40	9,435.74	140.86	196.53	95.13	-3,265.10	6,595.67	4,162.93	3,826.44	336.48	12.372		
15,800.00	9,060.00	16,188.45	9,436.61	142.85	200.21	95.14	-3,264.36	6,725.71	4,164.20	3,822.06	342.15	12.171		
15,900.00	9,060.00	16,269.67	9,437.40	144.84	202.51	95.15	-3,263.43	6,806.92	4,164.98	3,818.57	346.41	12.023		
16,000.00	9,060.00	16,328.00	9,438.62	146.83	204.17	95.17	-3,263.46	6,865.24	4,166.87	3,816.89	349.98	11.906		
16,100.00	9,060.00	16,387.08	9,440.45	148.83	205.84	95.19	-3,264.01	6,924.29	4,169.76	3,816.21	353.55	11.794		
16,200.00	9,060.00	16,513.19	9,445.99	150.82	209.41	95.26	-3,265.32	7,050.27	4,173.02	3,813.90	359.12	11.620		
16,300.00	9,060.00	16,604.11	9,450.90	152.82	211.99	95.33	-3,265.73	7,141.06	4,175.72	3,812.10	363.62	11.484		
16,400.00	9,060.00	16,718.40	9,457.60	154.81	215.22	95.41	-3,266.18	7,255.15	4,178.43	3,809.61	368.82	11.329		
16,500.00	9,060.00	16,831.36	9,464.65	156.81	218.42	95.51	-3,266.15	7,367.89	4,180.75	3,806.79	373.97	11.179		
16,600.00	9,060.00	16,963.23	9,470.46	158.81	222.15	95.58	-3,265.87	7,499.63	4,182.78	3,803.10	379.68	11.017		
16,700.00	9,060.00	17,057.56	9,473.07	160.81	224.83	95.62	-3,265.22	7,593.91	4,184.13	3,799.81	384.31	10.887		
16,800.00	9,060.00	17,167.43	9,472.08	162.81	227.95	95.60	-3,265.13	7,703.77	4,185.72	3,796.30	389.43	10.748		
16,900.00	9,060.00	17,230.03	9,470.61	164.82	229.73	95.58	-3,265.20	7,766.36	4,187.42	3,794.26	393.16	10.651		
17,000.00	9,060.00	17,292.17	9,470.23	166.82	231.49	95.57	-3,265.90	7,828.49	4,190.19	3,793.35	396.84	10.559		
17,100.00	9,060.00	17,426.71	9,474.04	168.82	235.32	95.62	-3,267.00	7,962.96	4,193.09	3,790.40	402.69	10.413		
17,200.00	9,060.00	17,523.42	9,477.50	170.83	238.06	95.67	-3,267.01	8,059.61	4,195.21	3,787.82	407.39	10.298		
17,300.00	9,060.00	17,610.81	9,480.14	172.84	240.55	95.70	-3,267.54	8,146.96	4,197.85	3,786.04	411.82	10.193		
17,400.00	9,060.00	17,768.58	9,483.08	174.84	245.03	95.73	-3,267.79	8,304.70	4,200.01	3,781.66	418.34	10.040		
17,500.00	9,060.00	17,849.00	9,484.32	176.85	247.32	95.75	-3,267.41	8,385.11	4,201.47	3,778.88	422.59	9.942		
17,600.00	9,060.00	17,889.40	9,487.89	178.86	248.41	95.80	-3,267.30	8,425.32	4,203.92	3,778.39	425.53	9.879		
17,700.00	9,060.00	17,700.00	9,506.21	180.87	243.31	96.04	-3,267.27	8,502.58	4,207.92	3,785.69	422.23	9.966		
17,800.00	9,060.00	18,269.68	9,519.81	182.88	259.00	96.22	-3,265.25	8,801.68	4,209.88	3,769.99	439.89	9.570		
17,900.00	9,060.00	18,406.04	9,521.45	184.89	262.87	96.25	-3,260.67	8,937.96	4,208.42	3,762.76	445.65	9.443		
18,000.00	9,060.00	18,507.48	9,522.39	186.90	265.74	96.26	-3,256.84	9,039.32	4,206.52	3,756.01	450.50	9.337		
18,100.00	9,060.00	18,584.67	9,523.84	188.92	267.93	96.29	-3,254.05	9,116.45	4,204.89	3,750.17	454.72	9.247		
18,200.00	9,060.00	18,683.43	9,527.84	190.93	270.73	96.34	-3,250.62	9,215.07	4,203.64	3,744.17	459.47	9.149		
18,300.00	9,060.00	18,767.62	9,532.05	192.94	273.12	96.40	-3,247.67	9,299.10	4,202.46	3,738.63	463.83	9.060		
18,400.00	9,060.00	18,926.85	9,541.01	194.96	277.62	96.53	-3,241.30	9,457.94	4,200.90	3,730.81	470.08	8.936		
18,500.00	9,060.00	19,039.02	9,548.23	196.97	280.79	96.63	-3,235.84	9,569.75	4,198.56	3,723.44	475.12	8.837		
18,600.00	9,060.00	19,159.47	9,556.91	198.99	284.19	96.76	-3,229.10	9,689.70	4,195.56	3,715.23	480.33	8.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,700.00	9,060.00	19,172.00	9,557.83	201.00	284.54	96.77	-3,228.38	9,702.17	4,193.37	3,710.46	482.91	8.684	
18,742.61	9,060.00	19,172.00	9,557.83	201.86	284.54	96.77	-3,228.38	9,702.17	4,193.15	3,709.35	483.80	8.667	
18,800.00	9,060.00	19,172.00	9,557.83	203.02	284.54	96.77	-3,228.38	9,702.17	4,193.55	3,708.61	484.93	8.648	
18,900.00	9,060.00	19,172.00	9,557.83	205.04	284.54	96.77	-3,228.38	9,702.17	4,196.11	3,709.42	486.69	8.622	
19,000.00	9,060.00	19,172.00	9,557.83	207.06	284.54	96.77	-3,228.38	9,702.17	4,201.05	3,712.87	488.17	8.606	
19,100.00	9,060.00	19,172.00	9,557.83	209.07	284.54	96.77	-3,228.38	9,702.17	4,208.36	3,718.97	489.38	8.599 SF	
19,200.00	9,060.00	19,172.00	9,557.83	211.09	284.54	96.77	-3,228.38	9,702.17	4,218.03	3,727.70	490.32	8.603	
19,300.00	9,060.00	19,172.00	9,557.83	213.11	284.54	96.77	-3,228.38	9,702.17	4,230.04	3,739.05	490.99	8.615	
19,400.00	9,060.00	19,172.00	9,557.83	215.13	284.54	96.77	-3,228.38	9,702.17	4,244.37	3,752.98	491.40	8.637	
19,500.32	9,060.00	19,172.00	9,557.83	217.16	284.54	96.77	-3,228.38	9,702.17	4,261.06	3,769.52	491.54	8.669	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.965		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.231		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.898		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.894		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.597		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.576		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.906		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.387		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.018		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.674		
9,350.00	9,050.89	8,829.90	8,826.40	33.62	30.24	88.02	-3,333.66	-190.87	4,165.21	4,101.60	63.61	65.483		
9,400.00	9,057.61	8,835.35	8,831.85	33.87	30.26	87.48	-3,333.96	-190.94	4,171.29	4,107.42	63.88	65.300		
9,452.31	9,060.00	8,836.90	8,833.39	34.15	30.26	86.81	-3,334.04	-190.96	4,178.09	4,113.93	64.16	65.121		
9,500.00	9,060.00	8,836.36	8,832.85	34.42	30.26	86.81	-3,334.01	-190.95	4,184.73	4,120.30	64.42	64.957		
9,600.00	9,060.00	8,835.24	8,831.73	35.09	30.26	86.79	-3,333.95	-190.94	4,200.38	4,135.33	65.05	64.571		
9,700.00	9,060.00	8,834.12	8,830.62	35.86	30.25	86.78	-3,333.89	-190.92	4,218.34	4,152.57	65.77	64.141		
9,800.00	9,060.00	8,833.01	8,829.50	36.72	30.25	86.76	-3,333.83	-190.91	4,238.59	4,172.03	66.56	63.681		
9,900.00	9,060.00	8,831.89	8,828.39	37.69	30.24	86.74	-3,333.77	-190.90	4,261.08	4,193.66	67.42	63.202		
10,000.00	9,060.00	8,830.78	8,827.28	38.73	30.24	86.73	-3,333.71	-190.88	4,285.80	4,217.46	68.34	62.713		
10,100.00	9,060.00	8,829.67	8,826.17	39.86	30.24	86.71	-3,333.65	-190.87	4,312.69	4,243.38	69.31	62.226		
10,140.22	9,060.00	8,829.22	8,825.73	40.33	30.23	86.71	-3,333.63	-190.87	4,324.11	4,254.40	69.71	62.033		
10,200.00	9,060.00	8,828.59	8,825.09	41.05	30.23	86.72	-3,333.59	-190.86	4,341.12	4,270.80	70.31	61.739		
10,300.00	9,060.00	8,827.67	8,824.17	42.31	30.23	86.74	-3,333.54	-190.85	4,368.60	4,297.23	71.37	61.212		
10,400.00	9,060.00	8,826.92	8,823.42	43.64	30.23	86.76	-3,333.50	-190.84	4,394.84	4,322.38	72.46	60.649		
10,507.23	9,060.00	8,826.30	8,822.80	45.11	30.22	86.78	-3,333.47	-190.83	4,421.60	4,347.93	73.67	60.015		
10,600.00	9,060.00	8,825.77	8,822.28	46.43	30.22	86.75	-3,333.44	-190.82	4,446.49	4,371.75	74.74	59.492		
10,700.00	9,060.00	8,825.05	8,821.56	47.91	30.22	86.70	-3,333.40	-190.81	4,478.50	4,402.62	75.89	59.015		
10,800.00	9,060.00	8,824.16	8,820.67	49.42	30.22	86.64	-3,333.35	-190.80	4,515.75	4,438.73	77.02	58.631		
10,900.00	9,060.00	8,823.10	8,819.61	50.97	30.21	86.57	-3,333.30	-190.79	4,558.05	4,479.92	78.13	58.341		
11,000.00	9,060.00	8,821.89	8,818.40	52.55	30.21	86.49	-3,333.23	-190.78	4,605.22	4,526.02	79.20	58.146		
11,100.00	9,060.00	8,820.51	8,817.02	54.14	30.20	86.39	-3,333.16	-190.76	4,657.06	4,576.82	80.23	58.044		
11,207.23	9,060.00	8,818.86	8,815.37	55.87	30.20	86.27	-3,333.07	-190.74	4,717.57	4,636.29	81.29	58.037		
11,300.00	9,060.00	8,817.42	8,813.94	57.39	30.19	86.34	-3,332.99	-190.72	4,771.45	4,689.27	82.17	58.065		
11,400.00	9,060.00	8,816.03	8,812.55	59.06	30.19	86.40	-3,332.92	-190.71	4,828.12	4,744.98	83.14	58.070		
11,506.63	9,060.00	8,814.73	8,811.25	60.88	30.18	86.47	-3,332.85	-190.69	4,886.94	4,802.75	84.19	58.049		
11,600.00	9,060.00	8,813.68	8,810.20	62.49	30.18	86.46	-3,332.79	-190.68	4,938.33	4,853.24	85.09	58.034 SF		
11,700.00	9,060.00	8,812.55	8,809.07	64.24	30.17	86.44	-3,332.73	-190.66	4,994.72	4,908.67	86.05	58.047		
11,800.00	9,060.00	8,812.00	8,808.53	66.01	30.17	86.44	-3,332.70	-190.66	5,052.46	4,965.48	86.98	58.088		
11,900.00	9,060.00	8,812.00	8,808.53	67.79	30.17	86.44	-3,332.70	-190.66	5,111.50	5,023.61	87.89	58.158		
12,000.00	9,060.00	8,812.00	8,808.53	69.58	30.17	86.44	-3,332.70	-190.66	5,171.80	5,083.02	88.78	58.255		
12,100.00	9,060.00	8,812.00	8,808.53	71.39	30.17	86.44	-3,332.70	-190.66	5,233.32	5,143.68	89.64	58.380		
12,200.00	9,060.00	8,812.00	8,808.53	73.21	30.17	86.44	-3,332.70	-190.66	5,296.01	5,205.53	90.48	58.530		
12,300.00	9,060.00	8,812.00	8,808.53	75.05	30.17	86.44	-3,332.70	-190.66	5,359.83	5,268.53	91.30	58.705		
12,400.00	9,060.00	8,812.00	8,808.53	76.89	30.17	86.44	-3,332.70	-190.66	5,424.75	5,332.66	92.09	58.904		
12,500.00	9,060.00	8,812.00	8,808.53	78.74	30.17	86.44	-3,332.70	-190.66	5,490.72	5,397.86	92.86	59.126		
12,600.00	9,060.00	8,812.00	8,808.53	80.61	30.17	86.44	-3,332.70	-190.66	5,557.71	5,464.10	93.61	59.369		
12,700.00	9,060.00	8,812.00	8,808.53	82.48	30.17	86.44	-3,332.70	-190.66	5,625.68	5,531.34	94.34	59.633		
12,800.00	9,060.00	8,812.00	8,808.53	84.36	30.17	86.44	-3,332.70	-190.66	5,694.59	5,599.55	95.04	59.917		
12,900.00	9,060.00	8,812.00	8,808.53	86.24	30.17	86.44	-3,332.70	-190.66	5,764.41	5,668.69	95.72	60.220		
13,000.00	9,060.00	8,812.00	8,808.53	88.14	30.17	86.44	-3,332.70	-190.66	5,835.11	5,738.73	96.38	60.540		
13,100.00	9,060.00	8,812.00	8,808.53	90.04	30.17	86.44	-3,332.70	-190.66	5,906.66	5,809.64	97.02	60.878		
13,200.00	9,060.00	8,812.00	8,808.53	91.94	30.17	86.44	-3,332.70	-190.66	5,979.03	5,881.38	97.65	61.232		
13,300.00	9,060.00	8,812.00	8,808.53	93.86	30.17	86.44	-3,332.70	-190.66	6,052.18	5,953.93	98.25	61.602		
13,400.00	9,060.00	8,812.00	8,808.53	95.77	30.17	86.44	-3,332.70	-190.66	6,126.09	6,027.26	98.83	61.986		
13,500.00	9,060.00	8,812.00	8,808.53	97.70	30.17	86.44	-3,332.70	-190.66	6,200.73	6,101.34	99.39	62.385		
13,600.00	9,060.00	8,812.00	8,808.53	99.62	30.17	86.44	-3,332.70	-190.66	6,276.08	6,176.14	99.94	62.798		
13,700.00	9,060.00	8,812.00	8,808.53	101.56	30.17	86.44	-3,332.70	-190.66	6,352.11	6,251.64	100.47	63.223		
13,800.00	9,060.00	8,812.00	8,808.53	103.49	30.17	86.44	-3,332.70	-190.66	6,428.79	6,327.81	100.98	63.661		
13,900.00	9,060.00	8,812.00	8,808.53	105.43	30.17	86.44	-3,332.70	-190.66	6,506.11	6,404.63	101.48	64.111		
14,000.00	9,060.00	8,795.90	8,792.45	107.38	30.11	86.21	-3,331.86	-190.47	6,584.00	6,482.11	101.89	64.618		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,795.22	8,791.78	109.33	30.11	86.20	-3,331.83	-190.46	6,662.52	6,560.16	102.36	65.091		
14,200.00	9,060.00	8,794.56	8,791.11	111.28	30.11	86.19	-3,331.80	-190.46	6,741.60	6,638.80	102.81	65.575		
14,300.00	9,060.00	8,793.89	8,790.44	113.23	30.11	86.18	-3,331.76	-190.45	6,821.24	6,718.00	103.24	66.069		
14,400.00	9,060.00	8,793.23	8,789.78	115.19	30.11	86.17	-3,331.73	-190.44	6,901.40	6,797.74	103.67	66.573		
14,500.00	9,060.00	8,792.57	8,789.12	117.15	30.10	86.16	-3,331.70	-190.43	6,982.08	6,878.00	104.08	67.085		
14,600.00	9,060.00	8,791.91	8,788.47	119.11	30.10	86.16	-3,331.66	-190.43	7,063.25	6,958.77	104.48	67.606		
14,700.00	9,060.00	8,791.26	8,787.82	121.08	30.10	86.15	-3,331.63	-190.42	7,144.89	7,040.03	104.86	68.136		
14,800.00	9,060.00	8,790.61	8,787.17	123.05	30.10	86.14	-3,331.60	-190.41	7,227.00	7,121.76	105.24	68.673		
14,900.00	9,060.00	8,789.97	8,786.52	125.02	30.09	86.13	-3,331.56	-190.40	7,309.56	7,203.95	105.60	69.218		
15,000.00	9,060.00	8,789.32	8,785.88	126.99	30.09	86.12	-3,331.53	-190.40	7,392.54	7,286.59	105.96	69.770		
15,100.00	9,060.00	8,788.68	8,785.24	128.97	30.09	86.11	-3,331.50	-190.39	7,475.94	7,369.64	106.30	70.329		
15,200.00	9,060.00	8,788.05	8,784.61	130.95	30.09	86.10	-3,331.47	-190.38	7,559.75	7,453.11	106.63	70.895		
15,300.00	9,060.00	8,787.41	8,783.98	132.93	30.08	86.09	-3,331.44	-190.38	7,643.94	7,536.98	106.96	71.467		
15,400.00	9,060.00	8,786.78	8,783.35	134.91	30.08	86.08	-3,331.41	-190.37	7,728.51	7,621.24	107.27	72.046		
15,500.00	9,060.00	8,786.16	8,782.72	136.89	30.08	86.07	-3,331.37	-190.36	7,813.44	7,705.86	107.58	72.630		
15,600.00	9,060.00	8,785.53	8,782.10	138.88	30.08	86.07	-3,331.34	-190.36	7,898.73	7,790.85	107.88	73.220		
15,700.00	9,060.00	8,784.91	8,781.48	140.86	30.08	86.06	-3,331.31	-190.35	7,984.36	7,876.19	108.17	73.815		
15,800.00	9,060.00	8,784.30	8,780.86	142.85	30.07	86.05	-3,331.28	-190.34	8,070.32	7,961.87	108.45	74.416		
15,900.00	9,060.00	8,783.68	8,780.25	144.84	30.07	86.04	-3,331.25	-190.34	8,156.59	8,047.87	108.72	75.021		
16,000.00	9,060.00	8,783.07	8,779.64	146.83	30.07	86.03	-3,331.22	-190.33	8,243.18	8,134.19	108.99	75.631		
16,100.00	9,060.00	8,782.46	8,779.03	148.83	30.07	86.02	-3,331.19	-190.32	8,330.07	8,220.82	109.25	76.246		
16,200.00	9,060.00	8,781.85	8,778.42	150.82	30.06	86.01	-3,331.16	-190.32	8,417.25	8,307.75	109.51	76.866		
16,300.00	9,060.00	8,781.25	8,777.82	152.82	30.06	86.01	-3,331.13	-190.31	8,504.71	8,394.96	109.75	77.489		
16,400.00	9,060.00	8,780.65	8,777.22	154.81	30.06	86.00	-3,331.10	-190.30	8,592.45	8,482.45	110.00	78.117		
16,500.00	9,060.00	8,780.05	8,776.63	156.81	30.06	85.99	-3,331.07	-190.30	8,680.45	8,570.22	110.23	78.748		
16,600.00	9,060.00	8,779.46	8,776.03	158.81	30.06	85.98	-3,331.04	-190.29	8,768.71	8,658.25	110.46	79.383		
16,700.00	9,060.00	8,778.87	8,775.44	160.81	30.05	85.97	-3,331.02	-190.28	8,857.22	8,746.53	110.68	80.022		
16,800.00	9,060.00	8,778.28	8,774.85	162.81	30.05	85.96	-3,330.99	-190.28	8,945.96	8,835.06	110.90	80.664		
16,900.00	9,060.00	8,777.69	8,774.27	164.82	30.05	85.96	-3,330.96	-190.27	9,034.95	8,923.83	111.12	81.310		
17,000.00	9,060.00	8,777.11	8,773.69	166.82	30.05	85.95	-3,330.93	-190.27	9,124.16	9,012.83	111.33	81.959		
17,100.00	9,060.00	8,776.53	8,773.11	168.82	30.05	85.94	-3,330.90	-190.26	9,213.60	9,102.06	111.53	82.610		
17,200.00	9,060.00	8,775.95	8,772.53	170.83	30.04	85.93	-3,330.87	-190.25	9,303.24	9,191.51	111.73	83.265		
17,300.00	9,060.00	8,775.38	8,771.95	172.84	30.04	85.92	-3,330.85	-190.25	9,393.10	9,281.18	111.93	83.923		
17,400.00	9,060.00	8,774.81	8,771.38	174.84	30.04	85.92	-3,330.82	-190.24	9,483.16	9,371.05	112.12	84.583		
17,500.00	9,060.00	8,774.24	8,770.81	176.85	30.04	85.91	-3,330.79	-190.24	9,573.42	9,461.12	112.30	85.246		
17,600.00	9,060.00	8,773.67	8,770.25	178.86	30.04	85.90	-3,330.76	-190.23	9,663.87	9,551.38	112.49	85.911		
17,700.00	9,060.00	8,773.11	8,769.68	180.87	30.03	85.89	-3,330.74	-190.22	9,754.51	9,641.84	112.67	86.579		
17,800.00	9,060.00	8,772.54	8,769.12	182.88	30.03	85.88	-3,330.71	-190.22	9,845.33	9,732.48	112.84	87.249		
17,900.00	9,060.00	8,771.99	8,768.57	184.89	30.03	85.88	-3,330.68	-190.21	9,936.32	9,823.31	113.01	87.921		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,588.66	3.49	1,588.71					
100.00	100.00	88.30	88.30	0.52	0.51	179.87	-1,588.66	3.49	1,588.67	1,587.64	1.03	1,539.926		
200.00	200.00	188.30	188.30	0.70	0.67	179.87	-1,588.66	3.49	1,588.67	1,587.29	1.38	1,155.037		
300.00	300.00	288.30	288.30	0.99	0.95	179.87	-1,588.66	3.49	1,588.67	1,586.73	1.94	819.432		
400.00	400.00	388.30	388.30	1.31	1.27	179.87	-1,588.66	3.49	1,588.67	1,586.09	2.58	615.877		
500.00	500.00	488.30	488.30	1.65	1.61	179.87	-1,588.66	3.49	1,588.67	1,585.41	3.25	488.480		
600.00	600.00	588.30	588.30	1.99	1.95	179.87	-1,588.66	3.49	1,588.67	1,584.73	3.94	403.150		
700.00	700.00	688.30	688.30	2.34	2.30	179.87	-1,588.66	3.49	1,588.67	1,584.03	4.64	342.557		
800.00	800.00	788.30	788.30	2.69	2.65	179.87	-1,588.66	3.49	1,588.67	1,583.33	5.34	297.504		
900.00	900.00	888.30	888.30	3.04	3.00	179.87	-1,588.66	3.49	1,588.67	1,582.62	6.05	262.775		
1,000.00	1,000.00	988.30	988.30	3.40	3.36	179.87	-1,588.66	3.49	1,588.67	1,581.91	6.75	235.224		
1,100.00	1,100.00	1,088.30	1,088.30	3.75	3.71	179.87	-1,588.66	3.49	1,588.67	1,581.20	7.46	212.854		
1,200.00	1,200.00	1,188.30	1,188.30	4.11	4.07	179.87	-1,588.66	3.49	1,588.67	1,580.49	8.17	194.340		
1,300.00	1,300.00	1,288.30	1,288.30	4.46	4.42	179.87	-1,588.66	3.49	1,588.67	1,579.78	8.89	178.770		
1,400.00	1,400.00	1,388.30	1,388.30	4.82	4.78	179.87	-1,588.66	3.49	1,588.67	1,579.07	9.60	165.496		
1,500.00	1,500.00	1,488.30	1,488.30	5.18	5.14	179.87	-1,588.66	3.49	1,588.67	1,578.35	10.31	154.049		
1,600.00	1,600.00	1,588.30	1,588.30	5.53	5.49	179.87	-1,588.66	3.49	1,588.67	1,577.64	11.03	144.077		
1,700.00	1,700.00	1,688.30	1,688.30	5.89	5.85	179.87	-1,588.66	3.49	1,588.67	1,576.93	11.74	135.313		
1,800.00	1,800.00	1,788.30	1,788.30	6.25	6.21	179.87	-1,588.66	3.49	1,588.67	1,576.21	12.46	127.551		
1,900.00	1,900.00	1,888.30	1,888.30	6.61	6.56	179.87	-1,588.66	3.49	1,588.67	1,575.50	13.17	120.629		
2,000.00	2,000.00	1,988.30	1,988.30	6.96	6.92	179.87	-1,588.66	3.49	1,588.67	1,574.78	13.88	114.417		
2,100.00	2,100.00	2,088.30	2,088.30	7.32	7.28	179.87	-1,588.66	3.49	1,588.67	1,574.07	14.60	108.812		
2,200.00	2,200.00	2,188.30	2,188.30	7.68	7.64	179.87	-1,588.66	3.49	1,588.67	1,573.35	15.32	103.730		
2,300.00	2,300.00	2,288.30	2,288.30	8.04	7.99	179.87	-1,588.66	3.49	1,588.67	1,572.64	16.03	99.100		
2,350.00	2,350.00	2,338.30	2,338.30	8.22	8.17	179.87	-1,588.66	3.49	1,588.67	1,572.28	16.39	96.937 CC		
2,400.00	2,400.00	2,388.30	2,388.30	8.39	8.35	-164.09	-1,588.66	3.49	1,588.88	1,572.13	16.75	94.879 ES		
2,500.00	2,499.98	2,488.28	2,488.28	8.75	8.71	-164.10	-1,588.66	3.49	1,590.56	1,573.09	17.46	91.090		
2,600.00	2,599.92	2,571.72	2,571.72	9.11	9.00	-164.11	-1,589.04	3.24	1,594.37	1,576.26	18.10	88.064		
2,700.00	2,699.78	2,652.81	2,652.79	9.47	9.27	-164.10	-1,590.35	2.35	1,601.02	1,582.29	18.73	85.488		
2,800.00	2,799.54	2,733.64	2,733.57	9.82	9.53	-164.07	-1,592.61	0.82	1,610.51	1,591.16	19.34	83.256		
2,900.00	2,899.16	2,814.11	2,813.95	10.18	9.80	-164.03	-1,595.79	-1.33	1,622.82	1,602.86	19.96	81.315		
3,000.00	2,998.61	2,894.13	2,893.82	10.54	10.06	-163.97	-1,599.89	-4.10	1,637.94	1,617.38	20.57	79.640		
3,100.00	3,097.86	2,980.38	2,979.82	10.89	10.35	-163.90	-1,605.24	-7.73	1,655.78	1,634.58	21.20	78.103		
3,200.00	3,196.89	3,078.41	3,077.56	11.25	10.68	-163.82	-1,611.55	-11.99	1,675.50	1,653.62	21.88	76.571		
3,295.74	3,291.45	3,171.95	3,170.82	11.59	10.99	-163.77	-1,617.57	-16.06	1,695.92	1,673.39	22.53	75.259		
3,300.00	3,295.65	3,176.10	3,174.96	11.61	11.00	-163.77	-1,617.83	-16.24	1,696.86	1,674.30	22.56	75.201		
3,400.00	3,394.29	3,273.63	3,272.19	11.97	11.33	-163.77	-1,624.10	-20.48	1,718.97	1,695.73	23.25	73.947		
3,500.00	3,492.94	3,371.15	3,369.42	12.33	11.66	-163.78	-1,630.38	-24.73	1,741.08	1,717.15	23.93	72.756		
3,600.00	3,591.58	3,468.68	3,466.65	12.69	12.00	-163.79	-1,636.65	-28.97	1,763.19	1,738.57	24.62	71.625		
3,700.00	3,690.22	3,566.20	3,563.88	13.05	12.33	-163.80	-1,642.92	-33.21	1,785.30	1,760.00	25.31	70.549		
3,800.00	3,788.86	3,663.73	3,661.11	13.41	12.67	-163.80	-1,649.19	-37.46	1,807.41	1,781.41	26.00	69.526		
3,900.00	3,887.50	3,761.25	3,758.34	13.77	13.00	-163.81	-1,655.46	-41.70	1,829.52	1,802.83	26.69	68.550		
4,000.00	3,986.14	3,858.78	3,855.57	14.14	13.34	-163.82	-1,661.74	-45.94	1,851.63	1,824.25	27.38	67.620		
4,100.00	4,084.78	3,956.30	3,952.80	14.50	13.68	-163.82	-1,668.01	-50.19	1,873.74	1,845.66	28.08	66.732		
4,200.00	4,183.42	4,053.83	4,050.03	14.87	14.02	-163.83	-1,674.28	-54.43	1,895.85	1,867.07	28.78	65.883		
4,300.00	4,282.06	4,151.35	4,147.26	15.24	14.36	-163.84	-1,680.55	-58.67	1,917.96	1,888.49	29.47	65.072		
4,400.00	4,380.70	4,248.88	4,244.49	15.60	14.70	-163.84	-1,686.83	-62.91	1,940.07	1,909.90	30.17	64.296		
4,500.00	4,479.34	4,346.40	4,341.72	15.97	15.04	-163.85	-1,693.10	-67.16	1,962.18	1,931.31	30.88	63.552		
4,600.00	4,577.98	4,443.93	4,438.95	16.34	15.38	-163.85	-1,699.37	-71.40	1,984.29	1,952.71	31.58	62.840		
4,700.00	4,676.62	4,541.45	4,536.19	16.71	15.73	-163.86	-1,705.64	-75.64	2,006.40	1,974.12	32.28	62.156		
4,800.00	4,775.27	4,638.98	4,633.42	17.08	16.07	-163.86	-1,711.91	-79.89	2,028.51	1,995.53	32.98	61.499		
4,900.00	4,873.91	4,736.50	4,730.65	17.45	16.42	-163.87	-1,718.19	-84.13	2,050.62	2,016.93	33.69	60.869		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,834.03	4,827.88	17.82	16.76	-163.88	-1,724.46	-88.37	2,072.73	2,038.34	34.40	60.263		
5,100.00	5,071.19	4,931.55	4,925.11	18.19	17.11	-163.88	-1,730.73	-92.61	2,094.84	2,059.74	35.10	59.679		
5,200.00	5,169.83	5,029.08	5,022.34	18.56	17.45	-163.89	-1,737.00	-96.86	2,116.95	2,081.14	35.81	59.118		
5,300.00	5,268.47	5,126.60	5,119.57	18.93	17.80	-163.89	-1,743.27	-101.10	2,139.06	2,102.54	36.52	58.577		
5,400.00	5,367.11	5,224.13	5,216.80	19.31	18.15	-163.90	-1,749.55	-105.34	2,161.17	2,123.95	37.23	58.055		
5,500.00	5,465.75	5,321.65	5,314.03	19.68	18.49	-163.90	-1,755.82	-109.59	2,183.28	2,145.35	37.94	57.552		
5,600.00	5,564.39	5,419.18	5,411.26	20.05	18.84	-163.90	-1,762.09	-113.83	2,205.39	2,166.75	38.65	57.067		
5,700.00	5,663.03	5,516.70	5,508.49	20.42	19.19	-163.91	-1,768.36	-118.07	2,227.50	2,188.15	39.36	56.598		
5,800.00	5,761.67	5,614.23	5,605.72	20.80	19.54	-163.91	-1,774.63	-122.31	2,249.61	2,209.54	40.07	56.145		
5,900.00	5,860.31	5,711.75	5,702.95	21.17	19.89	-163.92	-1,780.91	-126.56	2,271.72	2,230.94	40.78	55.708		
6,000.00	5,958.96	5,809.28	5,800.18	21.54	20.24	-163.92	-1,787.18	-130.80	2,293.83	2,252.34	41.49	55.284		
6,100.00	6,057.60	5,906.80	5,897.41	21.92	20.59	-163.93	-1,793.45	-135.04	2,315.94	2,273.74	42.20	54.874		
6,200.00	6,156.24	6,004.33	5,994.64	22.29	20.94	-163.93	-1,799.72	-139.29	2,338.05	2,295.13	42.92	54.477		
6,300.00	6,254.88	6,101.85	6,091.87	22.67	21.29	-163.94	-1,806.00	-143.53	2,360.16	2,316.53	43.63	54.093		
6,400.00	6,353.52	6,200.62	6,189.10	23.04	21.64	-163.94	-1,812.27	-147.77	2,382.27	2,337.92	44.35	53.715		
6,500.00	6,452.16	6,303.10	6,286.33	23.42	22.01	-163.94	-1,818.54	-152.01	2,404.38	2,359.30	45.08	53.333		
6,600.00	6,550.80	6,394.43	6,383.56	23.79	22.34	-163.95	-1,824.81	-156.26	2,426.49	2,380.72	45.78	53.009		
6,700.00	6,649.44	6,508.05	6,480.80	24.17	22.75	-163.95	-1,831.08	-160.50	2,448.60	2,402.06	46.55	52.604		
6,800.00	6,748.08	6,589.48	6,578.03	24.54	23.04	-163.95	-1,837.36	-164.74	2,470.71	2,423.51	47.21	52.338		
6,900.00	6,846.72	6,687.00	6,675.26	24.92	23.39	-163.96	-1,843.63	-168.99	2,492.82	2,444.90	47.92	52.018		
7,000.00	6,945.36	6,784.53	6,772.49	25.29	23.74	-163.96	-1,849.90	-173.23	2,514.93	2,466.30	48.64	51.706		
7,100.00	7,044.00	6,882.05	6,869.72	25.67	24.09	-163.97	-1,856.17	-177.47	2,537.05	2,487.69	49.36	51.403		
7,200.00	7,142.65	6,979.58	6,966.95	26.04	24.45	-163.97	-1,862.44	-181.71	2,559.16	2,509.08	50.07	51.109		
7,300.00	7,241.29	7,077.10	7,064.18	26.42	24.80	-163.97	-1,868.72	-185.96	2,581.27	2,530.48	50.79	50.822		
7,400.00	7,339.93	7,174.63	7,161.41	26.79	25.15	-163.98	-1,874.99	-190.20	2,603.38	2,551.87	51.51	50.543		
7,500.00	7,438.57	7,272.15	7,258.64	27.17	25.50	-163.98	-1,881.26	-194.44	2,625.49	2,573.26	52.23	50.272		
7,571.77	7,509.37	7,342.15	7,328.42	27.44	25.75	-163.98	-1,885.76	-197.49	2,641.36	2,588.61	52.74	50.081		
7,600.00	7,537.23	7,369.70	7,355.89	27.55	25.85	-164.01	-1,887.53	-198.69	2,647.50	2,594.55	52.94	50.005		
7,700.00	7,636.18	7,467.63	7,453.53	27.92	26.21	-164.08	-1,893.83	-202.95	2,667.68	2,614.02	53.66	49.713		
7,800.00	7,735.48	7,566.04	7,551.65	28.29	26.56	-164.13	-1,900.16	-207.23	2,685.40	2,631.02	54.38	49.383		
7,900.00	7,835.05	7,664.86	7,650.16	28.65	26.92	-164.16	-1,906.52	-211.53	2,700.63	2,645.53	55.10	49.017		
8,000.00	7,934.83	7,764.01	7,749.01	29.01	27.28	-164.15	-1,912.89	-215.84	2,713.37	2,657.56	55.81	48.618		
8,100.00	8,034.74	7,867.34	7,852.03	29.36	27.66	-164.12	-1,919.53	-220.33	2,723.61	2,667.07	56.54	48.170		
8,202.27	8,137.00	8,116.74	8,101.15	29.72	28.55	179.92	-1,928.48	-226.39	2,728.59	2,670.64	57.95	47.086		
8,300.00	8,234.73	8,238.62	8,223.03	30.06	28.96	179.93	-1,928.66	-226.51	2,728.67	2,669.94	58.72	46.469		
8,400.00	8,334.73	8,338.62	8,323.03	30.41	29.30	179.93	-1,928.66	-226.51	2,728.67	2,669.26	59.41	45.929		
8,500.00	8,434.73	8,438.62	8,423.03	30.75	29.64	179.93	-1,928.66	-226.51	2,728.67	2,668.57	60.10	45.402		
8,552.31	8,487.04	8,490.93	8,475.34	30.94	29.82	179.93	-1,928.66	-226.51	2,728.67	2,668.20	60.46	45.131		
8,600.00	8,534.68	8,540.15	8,524.55	31.10	29.98	90.29	-1,928.65	-225.59	2,728.67	2,667.88	60.79	44.887		
8,650.00	8,584.26	8,592.73	8,576.83	31.26	30.16	90.32	-1,928.59	-220.20	2,728.65	2,667.52	61.13	44.636		
8,700.00	8,633.10	8,645.42	8,628.51	31.43	30.33	90.35	-1,928.48	-210.02	2,728.60	2,667.14	61.47	44.391		
8,750.00	8,680.83	8,698.20	8,679.12	31.58	30.50	90.37	-1,928.32	-195.11	2,728.54	2,666.74	61.80	44.152		
8,800.00	8,727.09	8,751.04	8,728.20	31.74	30.66	90.39	-1,928.10	-175.58	2,728.45	2,666.32	62.12	43.920		
8,850.00	8,771.52	8,803.92	8,775.31	31.89	30.82	90.41	-1,927.84	-151.59	2,728.33	2,665.89	62.44	43.693		
8,900.00	8,813.78	8,856.82	8,820.01	32.04	30.97	90.42	-1,927.53	-123.36	2,728.20	2,665.44	62.76	43.471		
8,950.00	8,853.56	8,909.70	8,861.91	32.18	31.12	90.43	-1,927.17	-91.14	2,728.04	2,664.97	63.07	43.251		
9,000.00	8,890.55	8,962.54	8,900.64	32.32	31.26	90.44	-1,926.78	-55.22	2,727.86	2,664.47	63.39	43.030		
9,050.00	8,924.46	9,015.31	8,935.85	32.47	31.42	90.44	-1,926.35	-15.93	2,727.67	2,663.95	63.72	42.804		
9,100.00	8,955.05	9,068.00	8,967.25	32.63	31.59	90.44	-1,925.88	26.35	2,727.46	2,663.39	64.07	42.568		
9,150.00	8,982.08	9,120.57	8,994.58	32.79	31.77	90.43	-1,925.39	71.24	2,727.23	2,662.79	64.44	42.319		
9,200.00	9,005.34	9,173.02	9,017.63	32.97	31.96	90.43	-1,924.87	118.32	2,726.99	2,662.15	64.84	42.054		
9,250.00	9,024.65	9,225.30	9,036.23	33.17	32.18	90.41	-1,924.33	167.16	2,726.75	2,661.47	65.28	41.770		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,277.41	9,050.27	33.38	32.42	90.40	-1,923.78	217.33	2,726.49	2,660.74	65.75	41.468		
9,350.00	9,050.89	9,329.34	9,059.66	33.62	32.68	90.38	-1,923.22	268.37	2,726.23	2,659.97	66.26	41.147		
9,400.00	9,057.61	9,381.06	9,064.38	33.87	32.96	90.36	-1,922.65	319.86	2,725.96	2,659.16	66.79	40.811		
9,452.31	9,060.00	9,434.16	9,065.00	34.15	33.27	90.35	-1,922.07	372.95	2,725.68	2,658.29	67.39	40.444		
9,500.00	9,060.00	9,481.85	9,065.00	34.42	33.56	90.35	-1,921.54	420.63	2,725.44	2,657.47	67.97	40.096		
9,600.00	9,060.00	9,581.85	9,065.00	35.09	34.27	90.35	-1,920.44	520.62	2,724.93	2,655.58	69.36	39.289		
9,700.00	9,060.00	9,681.85	9,065.00	35.86	35.09	90.35	-1,919.34	620.62	2,724.43	2,653.48	70.95	38.401		
9,800.00	9,060.00	9,781.85	9,065.00	36.72	36.00	90.35	-1,918.24	720.61	2,723.92	2,651.18	72.73	37.450		
9,900.00	9,060.00	9,881.85	9,065.00	37.69	37.01	90.35	-1,917.14	820.60	2,723.41	2,648.71	74.70	36.457		
10,000.00	9,060.00	9,981.84	9,065.00	38.73	38.10	90.35	-1,916.04	920.60	2,722.90	2,646.07	76.84	35.437		
10,100.00	9,060.00	10,081.84	9,065.00	39.86	39.26	90.35	-1,914.94	1,020.59	2,722.40	2,643.27	79.13	34.405		
10,140.22	9,060.00	10,122.07	9,065.00	40.33	39.75	90.35	-1,914.50	1,060.81	2,722.19	2,642.10	80.09	33.989		
10,200.00	9,060.00	10,181.83	9,065.00	41.05	40.50	90.35	-1,913.84	1,120.57	2,721.27	2,639.71	81.56	33.366		
10,300.00	9,060.00	10,281.74	9,065.00	42.31	41.80	90.35	-1,912.74	1,220.47	2,716.93	2,632.81	84.12	32.298		
10,400.00	9,060.00	10,381.42	9,065.00	43.64	43.15	90.35	-1,911.64	1,320.15	2,709.11	2,622.31	86.79	31.213		
10,507.23	9,060.00	10,487.94	9,065.00	45.11	44.65	90.36	-1,910.47	1,426.66	2,696.86	2,607.09	89.77	30.042		
10,600.00	9,060.00	10,580.08	9,065.00	46.43	45.99	90.36	-1,909.45	1,518.79	2,686.03	2,593.60	92.43	29.059		
10,700.00	9,060.00	10,679.73	9,065.00	47.91	47.49	90.36	-1,908.36	1,618.43	2,677.71	2,582.31	95.40	28.068		
10,800.00	9,060.00	10,779.60	9,065.00	49.42	49.02	90.36	-1,907.26	1,718.31	2,672.87	2,574.42	98.45	27.149		
10,888.75	9,060.00	10,868.34	9,065.00	50.80	50.42	90.36	-1,906.28	1,807.04	2,671.49	2,570.27	101.22	26.393		
10,900.00	9,060.00	10,879.59	9,065.00	50.97	50.60	90.36	-1,906.16	1,818.29	2,671.52	2,569.94	101.57	26.301		
11,000.00	9,060.00	10,979.56	9,065.00	52.55	52.21	90.36	-1,905.06	1,918.25	2,673.65	2,568.90	104.76	25.522		
11,100.00	9,060.00	11,079.40	9,065.00	54.14	53.84	90.36	-1,903.96	2,018.08	2,679.28	2,571.29	107.99	24.810		
11,207.23	9,060.00	11,186.16	9,065.00	55.87	55.62	90.36	-1,902.78	2,124.84	2,689.18	2,577.68	111.50	24.119		
11,300.00	9,060.00	11,278.51	9,065.00	57.39	57.18	90.36	-1,901.77	2,217.18	2,697.98	2,583.40	114.58	23.547		
11,400.00	9,060.00	11,378.32	9,065.00	59.06	58.89	90.35	-1,900.67	2,316.98	2,704.10	2,586.15	117.96	22.924		
11,506.63	9,060.00	11,484.91	9,065.00	60.88	60.73	90.35	-1,899.50	2,423.57	2,706.80	2,585.18	121.62	22.256		
11,600.00	9,060.00	11,578.28	9,065.00	62.49	62.37	90.35	-1,898.47	2,516.93	2,707.42	2,582.55	124.87	21.681		
11,700.00	9,060.00	11,678.27	9,065.00	64.24	64.14	90.35	-1,897.37	2,616.92	2,708.09	2,579.69	128.39	21.092		
11,800.00	9,060.00	11,778.27	9,065.00	66.01	65.92	90.35	-1,896.27	2,716.91	2,708.75	2,576.81	131.94	20.530		
11,900.00	9,060.00	11,878.27	9,065.00	67.79	67.72	90.35	-1,895.17	2,816.91	2,709.42	2,573.90	135.52	19.993		
12,000.00	9,060.00	11,978.27	9,065.00	69.58	69.53	90.35	-1,894.07	2,916.90	2,710.08	2,570.95	139.13	19.479		
12,100.00	9,060.00	12,078.27	9,065.00	71.39	71.36	90.35	-1,892.97	3,016.89	2,710.75	2,567.98	142.76	18.988		
12,200.00	9,060.00	12,178.26	9,065.00	73.21	73.20	90.35	-1,891.87	3,116.88	2,711.41	2,564.99	146.42	18.518		
12,300.00	9,060.00	12,278.26	9,065.00	75.05	75.04	90.35	-1,890.77	3,216.87	2,712.08	2,561.98	150.10	18.068		
12,400.00	9,060.00	12,378.26	9,065.00	76.89	76.90	90.35	-1,889.67	3,316.86	2,712.74	2,558.94	153.80	17.638		
12,500.00	9,060.00	12,478.26	9,065.00	78.74	78.77	90.35	-1,888.56	3,416.86	2,713.41	2,555.89	157.52	17.225		
12,600.00	9,060.00	12,578.25	9,065.00	80.61	80.64	90.35	-1,887.46	3,516.85	2,714.08	2,552.81	161.26	16.830		
12,700.00	9,060.00	12,678.25	9,065.00	82.48	82.53	90.35	-1,886.36	3,616.84	2,714.74	2,549.72	165.02	16.451		
12,800.00	9,060.00	12,778.25	9,065.00	84.36	84.42	90.35	-1,885.26	3,716.83	2,715.41	2,546.62	168.79	16.088		
12,900.00	9,060.00	12,878.25	9,065.00	86.24	86.32	90.35	-1,884.16	3,816.82	2,716.07	2,543.50	172.57	15.739		
13,000.00	9,060.00	12,978.25	9,065.00	88.14	88.22	90.35	-1,883.06	3,916.81	2,716.74	2,540.37	176.37	15.404		
13,100.00	9,060.00	13,078.24	9,065.00	90.04	90.13	90.35	-1,881.96	4,016.81	2,717.40	2,537.22	180.18	15.082		
13,200.00	9,060.00	13,178.24	9,065.00	91.94	92.05	90.35	-1,880.86	4,116.80	2,718.07	2,534.07	184.00	14.772		
13,300.00	9,060.00	13,278.24	9,065.00	93.86	93.97	90.35	-1,879.76	4,216.79	2,718.74	2,530.90	187.84	14.474		
13,400.00	9,060.00	13,378.24	9,065.00	95.77	95.90	90.35	-1,878.66	4,316.78	2,719.40	2,527.72	191.68	14.187		
13,500.00	9,060.00	13,478.23	9,065.00	97.70	97.83	90.35	-1,877.56	4,416.77	2,720.07	2,524.53	195.54	13.911		
13,600.00	9,060.00	13,578.23	9,065.00	99.62	99.77	90.35	-1,876.46	4,516.77	2,720.73	2,521.33	199.40	13.644		
13,700.00	9,060.00	13,678.23	9,065.00	101.56	101.71	90.35	-1,875.36	4,616.76	2,721.40	2,518.12	203.27	13.388		
13,800.00	9,060.00	13,778.23	9,065.00	103.49	103.65	90.35	-1,874.26	4,716.75	2,722.06	2,514.91	207.16	13.140		
13,900.00	9,060.00	13,878.23	9,065.00	105.43	105.60	90.35	-1,873.16	4,816.74	2,722.73	2,511.68	211.05	12.901		
14,000.00	9,060.00	13,978.22	9,065.00	107.38	107.55	90.35	-1,872.06	4,916.73	2,723.39	2,508.45	214.94	12.670		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	14,078.22	9,065.00	109.33	109.51	90.35	-1,870.96	5,016.72	2,724.06	2,505.22	218.84	12.447		
14,200.00	9,060.00	14,178.22	9,065.00	111.28	111.47	90.35	-1,869.86	5,116.72	2,724.73	2,501.97	222.76	12.232		
14,300.00	9,060.00	14,278.22	9,065.00	113.23	113.43	90.35	-1,868.76	5,216.71	2,725.39	2,498.72	226.67	12.024		
14,400.00	9,060.00	14,378.21	9,065.00	115.19	115.40	90.35	-1,867.66	5,316.70	2,726.06	2,495.46	230.59	11.822		
14,500.00	9,060.00	14,478.21	9,065.00	117.15	117.36	90.35	-1,866.55	5,416.69	2,726.72	2,492.20	234.52	11.627		
14,600.00	9,060.00	14,578.21	9,065.00	119.11	119.33	90.35	-1,865.45	5,516.68	2,727.39	2,488.93	238.46	11.438		
14,700.00	9,060.00	14,678.21	9,065.00	121.08	121.31	90.35	-1,864.35	5,616.67	2,728.05	2,485.66	242.39	11.255		
14,800.00	9,060.00	14,778.21	9,065.00	123.05	123.28	90.35	-1,863.25	5,716.67	2,728.72	2,482.38	246.34	11.077		
14,900.00	9,060.00	14,878.20	9,065.00	125.02	125.26	90.35	-1,862.15	5,816.66	2,729.39	2,479.10	250.29	10.905		
15,000.00	9,060.00	14,978.20	9,065.00	126.99	127.24	90.35	-1,861.05	5,916.65	2,730.05	2,475.81	254.24	10.738		
15,100.00	9,060.00	15,078.20	9,065.00	128.97	129.22	90.35	-1,859.95	6,016.64	2,730.72	2,472.52	258.20	10.576		
15,200.00	9,060.00	15,178.20	9,065.00	130.95	131.20	90.35	-1,858.85	6,116.63	2,731.38	2,469.23	262.16	10.419		
15,300.00	9,060.00	15,278.19	9,065.00	132.93	133.19	90.35	-1,857.75	6,216.62	2,732.05	2,465.93	266.12	10.266		
15,400.00	9,060.00	15,378.19	9,065.00	134.91	135.17	90.35	-1,856.65	6,316.62	2,732.71	2,462.62	270.09	10.118		
15,500.00	9,060.00	15,478.19	9,065.00	136.89	137.16	90.35	-1,855.55	6,416.61	2,733.38	2,459.32	274.06	9.974		
15,600.00	9,060.00	15,578.19	9,065.00	138.88	139.15	90.35	-1,854.45	6,516.60	2,734.04	2,456.01	278.04	9.833		
15,700.00	9,060.00	15,678.19	9,065.00	140.86	141.14	90.35	-1,853.35	6,616.59	2,734.71	2,452.69	282.02	9.697		
15,800.00	9,060.00	15,778.18	9,065.00	142.85	143.14	90.35	-1,852.25	6,716.58	2,735.38	2,449.38	286.00	9.564		
15,900.00	9,060.00	15,878.18	9,065.00	144.84	145.13	90.35	-1,851.15	6,816.57	2,736.04	2,446.06	289.98	9.435		
16,000.00	9,060.00	15,978.18	9,065.00	146.83	147.13	90.35	-1,850.05	6,916.57	2,736.71	2,442.74	293.97	9.309		
16,100.00	9,060.00	16,078.18	9,065.00	148.83	149.13	90.35	-1,848.95	7,016.56	2,737.37	2,439.41	297.96	9.187		
16,200.00	9,060.00	16,178.17	9,065.00	150.82	151.13	90.35	-1,847.85	7,116.55	2,738.04	2,436.08	301.95	9.068		
16,300.00	9,060.00	16,278.17	9,065.00	152.82	153.13	90.35	-1,846.75	7,216.54	2,738.70	2,432.75	305.95	8.951		
16,400.00	9,060.00	16,378.17	9,065.00	154.81	155.13	90.35	-1,845.65	7,316.53	2,739.37	2,429.42	309.95	8.838		
16,500.00	9,060.00	16,478.17	9,065.00	156.81	157.13	90.35	-1,844.54	7,416.53	2,740.03	2,426.09	313.95	8.728		
16,600.00	9,060.00	16,578.17	9,065.00	158.81	159.13	90.35	-1,843.44	7,516.52	2,740.70	2,422.75	317.95	8.620		
16,700.00	9,060.00	16,678.16	9,065.00	160.81	161.14	90.35	-1,842.34	7,616.51	2,741.37	2,419.41	321.96	8.515		
16,800.00	9,060.00	16,778.16	9,065.00	162.81	163.14	90.35	-1,841.24	7,716.50	2,742.03	2,416.07	325.96	8.412		
16,900.00	9,060.00	16,878.16	9,065.00	164.82	165.15	90.35	-1,840.14	7,816.49	2,742.70	2,412.73	329.97	8.312		
17,000.00	9,060.00	16,978.16	9,065.00	166.82	167.16	90.35	-1,839.04	7,916.48	2,743.36	2,409.38	333.98	8.214		
17,100.00	9,060.00	17,078.15	9,065.00	168.82	169.16	90.35	-1,837.94	8,016.48	2,744.03	2,406.03	338.00	8.119		
17,200.00	9,060.00	17,178.15	9,065.00	170.83	171.17	90.35	-1,836.84	8,116.47	2,744.69	2,402.68	342.01	8.025		
17,300.00	9,060.00	17,278.15	9,065.00	172.84	173.18	90.35	-1,835.74	8,216.46	2,745.36	2,399.33	346.03	7.934		
17,400.00	9,060.00	17,378.15	9,065.00	174.84	175.19	90.35	-1,834.64	8,316.45	2,746.03	2,395.98	350.04	7.845		
17,500.00	9,060.00	17,478.15	9,065.00	176.85	177.21	90.35	-1,833.54	8,416.44	2,746.69	2,392.63	354.06	7.758		
17,600.00	9,060.00	17,578.14	9,065.00	178.86	179.22	90.35	-1,832.44	8,516.43	2,747.36	2,389.27	358.09	7.672		
17,700.00	9,060.00	17,678.14	9,065.00	180.87	181.23	90.35	-1,831.34	8,616.43	2,748.02	2,385.91	362.11	7.589		
17,800.00	9,060.00	17,778.14	9,065.00	182.88	183.25	90.35	-1,830.24	8,716.42	2,748.69	2,382.56	366.13	7.507		
17,900.00	9,060.00	17,878.14	9,065.00	184.89	185.26	90.35	-1,829.14	8,816.41	2,749.35	2,379.20	370.16	7.428		
18,000.00	9,060.00	17,978.13	9,065.00	186.90	187.28	90.35	-1,828.04	8,916.40	2,750.02	2,375.83	374.19	7.349		
18,100.00	9,060.00	18,078.13	9,065.00	188.92	189.29	90.35	-1,826.94	9,016.39	2,750.68	2,372.47	378.21	7.273		
18,200.00	9,060.00	18,178.13	9,065.00	190.93	191.31	90.35	-1,825.84	9,116.38	2,751.35	2,369.11	382.24	7.198		
18,300.00	9,060.00	18,278.13	9,065.00	192.94	193.32	90.35	-1,824.74	9,216.38	2,752.02	2,365.74	386.27	7.125		
18,400.00	9,060.00	18,378.13	9,065.00	194.96	195.34	90.35	-1,823.64	9,316.37	2,752.68	2,362.38	390.31	7.053		
18,500.00	9,060.00	18,478.12	9,065.00	196.97	197.36	90.35	-1,822.53	9,416.36	2,753.35	2,359.01	394.34	6.982		
18,600.00	9,060.00	18,578.12	9,065.00	198.99	199.38	90.35	-1,821.43	9,516.35	2,754.01	2,355.64	398.37	6.913		
18,700.00	9,060.00	18,678.12	9,065.00	201.00	201.40	90.35	-1,820.33	9,616.34	2,754.68	2,352.27	402.41	6.845		
18,800.00	9,060.00	18,778.12	9,065.00	203.02	203.42	90.35	-1,819.23	9,716.34	2,755.34	2,348.90	406.45	6.779		
18,900.00	9,060.00	18,878.11	9,065.00	205.04	205.44	90.35	-1,818.13	9,816.33	2,756.01	2,345.53	410.48	6.714		
19,000.00	9,060.00	18,978.11	9,065.00	207.06	207.46	90.35	-1,817.03	9,916.32	2,756.68	2,342.15	414.52	6.650		
19,100.00	9,060.00	19,078.11	9,065.00	209.07	209.48	90.35	-1,815.93	10,016.31	2,757.34	2,338.78	418.56	6.588		
19,200.00	9,060.00	19,178.11	9,065.00	211.09	211.50	90.35	-1,814.83	10,116.30	2,758.01	2,335.40	422.60	6.526		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,278.11	9,065.00	213.11	213.52	90.35	-1,813.73	10,216.29	2,758.67	2,332.03	426.64	6.466	
19,400.00	9,060.00	19,378.10	9,065.00	215.13	215.55	90.35	-1,812.63	10,316.29	2,759.34	2,328.65	430.69	6.407	
19,500.32	9,060.00	19,456.84	9,065.00	217.16	217.14	90.35	-1,811.76	10,395.02	2,760.09	2,325.81	434.28	6.355 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	133.74	-2,939.76	3,071.78	4,252.26					
100.00	100.00	39.40	39.40	0.52	0.67	133.74	-2,939.76	3,071.78	4,251.83	4,250.64	1.18	3,591.107		
200.00	200.00	139.40	139.40	0.70	2.00	133.74	-2,939.76	3,071.78	4,251.83	4,249.12	2.70	1,572.717		
300.00	300.00	239.40	239.40	0.99	3.47	133.74	-2,939.76	3,071.78	4,251.83	4,247.37	4.46	953.521		
400.00	400.00	339.40	339.40	1.31	4.96	133.74	-2,939.76	3,071.78	4,251.83	4,245.56	6.27	678.389		
500.00	500.00	439.40	439.40	1.65	6.45	133.74	-2,939.76	3,071.78	4,251.83	4,243.73	8.10	525.157		
600.00	600.00	539.40	539.40	1.99	7.94	133.74	-2,939.76	3,071.78	4,251.83	4,241.89	9.93	427.974		
700.00	700.00	639.40	639.40	2.34	9.44	133.74	-2,939.76	3,071.78	4,251.83	4,240.05	11.78	360.979		
800.00	800.00	739.40	739.40	2.69	10.94	133.74	-2,939.76	3,071.78	4,251.83	4,238.20	13.63	312.045		
900.00	900.00	839.40	839.40	3.04	12.43	133.74	-2,939.76	3,071.78	4,251.83	4,236.35	15.47	274.756		
1,000.00	1,000.00	939.40	939.40	3.40	13.93	133.74	-2,939.76	3,071.78	4,251.83	4,234.50	17.33	245.408		
1,100.00	1,100.00	1,039.40	1,039.40	3.75	15.42	133.74	-2,939.76	3,071.78	4,251.83	4,232.65	19.18	221.712		
1,200.00	1,200.00	1,139.40	1,139.40	4.11	16.92	133.74	-2,939.76	3,071.78	4,251.83	4,230.80	21.03	202.182		
1,300.00	1,300.00	1,239.40	1,239.40	4.46	18.42	133.74	-2,939.76	3,071.78	4,251.83	4,228.94	22.88	185.809		
1,400.00	1,400.00	1,339.40	1,339.40	4.82	19.92	133.74	-2,939.76	3,071.78	4,251.83	4,227.09	24.74	171.886		
1,500.00	1,500.00	1,439.40	1,439.40	5.18	21.41	133.74	-2,939.76	3,071.78	4,251.83	4,225.24	26.59	159.903		
1,600.00	1,600.00	1,539.40	1,539.40	5.53	22.91	133.74	-2,939.76	3,071.78	4,251.83	4,223.38	28.44	149.479		
1,700.00	1,700.00	1,639.40	1,639.40	5.89	24.41	133.74	-2,939.76	3,071.78	4,251.83	4,221.53	30.30	140.331		
1,800.00	1,800.00	1,739.40	1,739.40	6.25	25.91	133.74	-2,939.76	3,071.78	4,251.83	4,219.67	32.15	132.236		
1,900.00	1,900.00	1,839.40	1,839.40	6.61	27.40	133.74	-2,939.76	3,071.78	4,251.83	4,217.82	34.01	125.024		
2,000.00	2,000.00	1,939.40	1,939.40	6.96	28.90	133.74	-2,939.76	3,071.78	4,251.83	4,215.96	35.86	118.558		
2,100.00	2,100.00	2,039.40	2,039.40	7.32	30.40	133.74	-2,939.76	3,071.78	4,251.83	4,214.11	37.72	112.727		
2,200.00	2,200.00	2,139.40	2,139.40	7.68	31.89	133.74	-2,939.76	3,071.78	4,251.83	4,212.25	39.57	107.443		
2,300.00	2,300.00	2,239.40	2,239.40	8.04	33.39	133.74	-2,939.76	3,071.78	4,251.83	4,210.40	41.43	102.631		
2,350.00	2,350.00	2,289.40	2,289.40	8.22	34.14	133.74	-2,939.76	3,071.78	4,251.83	4,209.47	42.36	100.384		
2,400.00	2,400.00	2,339.40	2,339.40	8.39	34.89	149.78	-2,939.76	3,071.78	4,252.01	4,208.73	43.28	98.237		
2,500.00	2,499.98	2,439.38	2,439.38	8.75	36.39	149.79	-2,939.76	3,071.78	4,253.52	4,208.39	45.14	94.235		
2,600.00	2,599.92	2,539.32	2,539.32	9.11	37.88	149.80	-2,939.76	3,071.78	4,256.54	4,209.55	46.99	90.583		
2,700.00	2,699.78	2,639.18	2,639.18	9.47	39.38	149.81	-2,939.76	3,071.78	4,261.06	4,212.22	48.84	87.241		
2,800.00	2,799.54	2,738.94	2,738.94	9.82	40.87	149.82	-2,939.76	3,071.78	4,267.10	4,216.41	50.69	84.176		
2,900.00	2,899.16	2,838.56	2,838.56	10.18	42.36	149.85	-2,939.76	3,071.78	4,274.64	4,222.10	52.54	81.360		
3,000.00	2,998.61	2,938.01	2,938.01	10.54	43.85	149.87	-2,939.76	3,071.78	4,283.69	4,229.31	54.38	78.767		
3,100.00	3,097.86	3,037.26	3,037.26	10.89	45.34	149.90	-2,939.76	3,071.78	4,294.25	4,238.03	56.23	76.375		
3,200.00	3,196.89	3,136.29	3,136.29	11.25	46.82	149.93	-2,939.76	3,071.78	4,306.32	4,248.26	58.06	74.165		
3,295.74	3,291.45	3,230.85	3,230.85	11.59	48.24	149.96	-2,939.76	3,071.78	4,319.30	4,259.48	59.82	72.205		
3,300.00	3,295.65	3,235.05	3,235.05	11.61	48.30	149.97	-2,939.76	3,071.78	4,319.91	4,260.01	59.90	72.120		
3,400.00	3,394.29	3,333.69	3,333.69	11.97	49.78	150.08	-2,939.76	3,071.78	4,334.19	4,272.46	61.73	70.212		
3,500.00	3,492.94	3,432.34	3,432.34	12.33	51.26	150.18	-2,939.76	3,071.78	4,348.48	4,284.92	63.56	68.412		
3,600.00	3,591.58	3,530.98	3,530.98	12.69	52.73	150.29	-2,939.76	3,071.78	4,362.80	4,297.40	65.40	66.712		
3,700.00	3,690.22	3,629.62	3,629.62	13.05	54.21	150.40	-2,939.76	3,071.78	4,377.12	4,309.89	67.23	65.104		
3,800.00	3,788.86	3,728.26	3,728.26	13.41	55.69	150.50	-2,939.76	3,071.78	4,391.46	4,322.39	69.07	63.582		
3,900.00	3,887.50	3,826.90	3,826.90	13.77	57.17	150.61	-2,939.76	3,071.78	4,405.82	4,334.91	70.90	62.137		
4,000.00	3,986.14	3,925.54	3,925.54	14.14	58.64	150.71	-2,939.76	3,071.78	4,420.19	4,347.45	72.74	60.765		
4,100.00	4,084.78	4,024.18	4,024.18	14.50	60.12	150.82	-2,939.76	3,071.78	4,434.57	4,359.99	74.58	59.461		
4,200.00	4,183.42	4,122.82	4,122.82	14.87	61.60	150.92	-2,939.76	3,071.78	4,448.97	4,372.55	76.42	58.218		
4,300.00	4,282.06	4,221.46	4,221.46	15.24	63.07	151.02	-2,939.76	3,071.78	4,463.39	4,385.13	78.26	57.034		
4,400.00	4,380.70	4,320.10	4,320.10	15.60	64.55	151.12	-2,939.76	3,071.78	4,477.81	4,397.71	80.10	55.904		
4,500.00	4,479.34	4,418.74	4,418.74	15.97	66.03	151.22	-2,939.76	3,071.78	4,492.25	4,410.31	81.94	54.825		
4,600.00	4,577.98	4,517.38	4,517.38	16.34	67.51	151.32	-2,939.76	3,071.78	4,506.71	4,422.93	83.78	53.793		
4,700.00	4,676.62	4,616.02	4,616.02	16.71	68.98	151.42	-2,939.76	3,071.78	4,521.17	4,435.55	85.62	52.805		
4,800.00	4,775.27	4,714.67	4,714.67	17.08	70.46	151.52	-2,939.76	3,071.78	4,535.66	4,448.19	87.46	51.859		
4,900.00	4,873.91	4,813.31	4,813.31	17.45	71.94	151.62	-2,939.76	3,071.78	4,550.15	4,460.85	89.30	50.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,911.95	4,911.95	17.82	73.42	151.72	-2,939.76	3,071.78	4,564.66	4,473.51	91.15	50.080		
5,100.00	5,071.19	5,010.59	5,010.59	18.19	74.89	151.81	-2,939.76	3,071.78	4,579.18	4,486.19	92.99	49.244		
5,200.00	5,169.83	5,109.23	5,109.23	18.56	76.37	151.91	-2,939.76	3,071.78	4,593.71	4,498.88	94.83	48.440		
5,300.00	5,268.47	5,207.87	5,207.87	18.93	77.85	152.01	-2,939.76	3,071.78	4,608.26	4,511.58	96.68	47.667		
5,400.00	5,367.11	5,306.51	5,306.51	19.31	79.32	152.10	-2,939.76	3,071.78	4,622.82	4,524.30	98.52	46.923		
5,500.00	5,465.75	5,405.15	5,405.15	19.68	80.80	152.20	-2,939.76	3,071.78	4,637.39	4,537.02	100.36	46.206		
5,600.00	5,564.39	5,503.79	5,503.79	20.05	82.28	152.29	-2,939.76	3,071.78	4,651.97	4,549.76	102.21	45.515		
5,700.00	5,663.03	5,602.43	5,602.43	20.42	83.76	152.38	-2,939.76	3,071.78	4,666.57	4,562.51	104.05	44.848		
5,800.00	5,761.67	5,701.07	5,701.07	20.80	85.23	152.48	-2,939.76	3,071.78	4,681.17	4,575.28	105.90	44.205		
5,900.00	5,860.31	5,799.71	5,799.71	21.17	86.71	152.57	-2,939.76	3,071.78	4,695.79	4,588.05	107.74	43.584		
6,000.00	5,958.96	5,898.36	5,898.36	21.54	88.19	152.66	-2,939.76	3,071.78	4,710.43	4,600.84	109.59	42.983		
6,100.00	6,057.60	5,997.00	5,997.00	21.92	89.67	152.75	-2,939.76	3,071.78	4,725.07	4,613.64	111.43	42.403		
6,200.00	6,156.24	6,095.64	6,095.64	22.29	91.14	152.84	-2,939.76	3,071.78	4,739.73	4,626.45	113.28	41.841		
6,300.00	6,254.88	6,194.28	6,194.28	22.67	92.62	152.93	-2,939.76	3,071.78	4,754.39	4,639.27	115.12	41.298		
6,400.00	6,353.52	6,292.92	6,292.92	23.04	94.10	153.02	-2,939.76	3,071.78	4,769.07	4,652.10	116.97	40.772		
6,500.00	6,452.16	6,391.56	6,391.56	23.42	95.57	153.11	-2,939.76	3,071.78	4,783.76	4,664.95	118.82	40.262		
6,600.00	6,550.80	6,490.20	6,490.20	23.79	97.05	153.20	-2,939.76	3,071.78	4,798.46	4,677.80	120.66	39.768		
6,700.00	6,649.44	6,588.84	6,588.84	24.17	98.53	153.29	-2,939.76	3,071.78	4,813.18	4,690.67	122.51	39.288		
6,800.00	6,748.08	6,687.48	6,687.48	24.54	100.01	153.38	-2,939.76	3,071.78	4,827.90	4,703.54	124.36	38.823		
6,900.00	6,846.72	6,786.12	6,786.12	24.92	101.48	153.46	-2,939.76	3,071.78	4,842.63	4,716.43	126.20	38.372		
7,000.00	6,945.36	6,884.76	6,884.76	25.29	102.96	153.55	-2,939.76	3,071.78	4,857.38	4,729.33	128.05	37.934		
7,100.00	7,044.00	6,983.40	6,983.40	25.67	104.44	153.64	-2,939.76	3,071.78	4,872.14	4,742.24	129.90	37.508		
7,200.00	7,142.65	7,082.05	7,082.05	26.04	105.92	153.72	-2,939.76	3,071.78	4,886.90	4,755.16	131.74	37.094		
7,300.00	7,241.29	7,180.69	7,180.69	26.42	107.39	153.81	-2,939.76	3,071.78	4,901.68	4,768.09	133.59	36.692		
7,400.00	7,339.93	7,279.33	7,279.33	26.79	108.87	153.89	-2,939.76	3,071.78	4,916.47	4,781.03	135.44	36.300		
7,500.00	7,438.57	7,377.97	7,377.97	27.17	110.35	153.97	-2,939.76	3,071.78	4,931.27	4,793.98	137.29	35.920		
7,571.77	7,509.37	7,448.77	7,448.77	27.44	111.41	154.03	-2,939.76	3,071.78	4,941.89	4,803.28	138.61	35.653		
7,600.00	7,537.23	7,476.63	7,476.63	27.55	111.83	154.08	-2,939.76	3,071.78	4,945.98	4,806.85	139.13	35.548		
7,700.00	7,636.18	7,575.58	7,575.58	27.92	113.31	154.24	-2,939.76	3,071.78	4,958.98	4,817.99	140.98	35.174		
7,800.00	7,735.48	7,674.88	7,674.88	28.29	114.79	154.37	-2,939.76	3,071.78	4,969.63	4,826.80	142.84	34.792		
7,900.00	7,835.05	7,774.45	7,774.45	28.65	116.29	154.47	-2,939.76	3,071.78	4,977.95	4,833.26	144.69	34.404		
8,000.00	7,934.83	7,874.23	7,874.23	29.01	117.78	154.54	-2,939.76	3,071.78	4,983.91	4,837.36	146.54	34.010		
8,100.00	8,034.74	7,974.14	7,974.14	29.36	119.28	154.58	-2,939.76	3,071.78	4,987.51	4,839.11	148.40	33.610		
8,202.27	8,137.00	8,076.40	8,076.40	29.72	120.81	138.56	-2,939.76	3,071.78	4,988.74	4,838.46	150.28	33.195		
8,300.00	8,234.73	8,174.13	8,174.13	30.06	122.27	138.56	-2,939.76	3,071.78	4,988.74	4,836.65	152.09	32.802		
8,400.00	8,334.73	8,274.13	8,274.13	30.41	123.77	138.56	-2,939.76	3,071.78	4,988.74	4,834.81	153.93	32.408		
8,500.00	8,434.73	8,374.13	8,374.13	30.75	125.27	138.56	-2,939.76	3,071.78	4,988.74	4,832.96	155.78	32.024		
8,552.31	8,487.04	8,426.44	8,426.44	30.94	126.05	138.56	-2,939.76	3,071.78	4,988.74	4,832.00	156.75	31.827		
8,600.00	8,534.68	8,474.08	8,474.08	31.10	126.76	49.01	-2,939.76	3,071.78	4,987.44	4,829.82	157.62	31.642		
8,650.00	8,584.26	8,523.66	8,523.66	31.26	127.51	49.39	-2,939.76	3,071.78	4,983.29	4,824.76	158.52	31.436		
8,700.00	8,633.10	8,572.50	8,572.50	31.43	128.24	50.01	-2,939.76	3,071.78	4,976.32	4,816.91	159.41	31.218		
8,750.00	8,680.83	8,620.23	8,620.23	31.58	128.95	50.91	-2,939.76	3,071.78	4,966.61	4,806.34	160.27	30.989		
8,800.00	8,727.09	8,666.49	8,666.49	31.74	129.64	52.07	-2,939.76	3,071.78	4,954.25	4,793.15	161.11	30.752		
8,850.00	8,771.52	8,710.92	8,710.92	31.89	130.31	53.51	-2,939.76	3,071.78	4,939.37	4,777.46	161.91	30.508		
8,900.00	8,813.78	8,753.18	8,753.18	32.04	130.94	55.23	-2,939.76	3,071.78	4,922.10	4,759.43	162.67	30.259		
8,950.00	8,853.56	8,792.96	8,792.96	32.18	131.54	57.24	-2,939.76	3,071.78	4,902.61	4,739.23	163.39	30.006		
9,000.00	8,890.55	8,829.95	8,829.95	32.32	132.09	59.55	-2,939.76	3,071.78	4,881.10	4,717.04	164.06	29.752		
9,050.00	8,924.46	8,863.86	8,863.86	32.47	132.60	62.14	-2,939.76	3,071.78	4,857.76	4,693.07	164.69	29.496		
9,100.00	8,955.05	8,894.45	8,894.45	32.63	133.06	65.01	-2,939.76	3,071.78	4,832.82	4,667.55	165.27	29.242		
9,150.00	8,982.08	8,921.48	8,921.48	32.79	133.46	68.14	-2,939.76	3,071.78	4,806.51	4,640.71	165.80	28.989		
9,200.00	9,005.34	8,944.74	8,944.74	32.97	133.81	71.50	-2,939.76	3,071.78	4,779.07	4,612.78	166.29	28.740		
9,250.00	9,024.65	8,964.05	8,964.05	33.17	134.10	75.04	-2,939.76	3,071.78	4,750.74	4,584.02	166.72	28.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,979.27	8,979.27	33.38	134.33	78.71	-2,939.76	3,071.78	4,721.78	4,554.67	167.11	28.255		
9,350.00	9,050.89	8,990.29	8,990.29	33.62	134.49	82.44	-2,939.76	3,071.78	4,692.44	4,524.99	167.45	28.023		
9,400.00	9,057.61	8,997.01	8,997.01	33.87	134.59	86.17	-2,939.76	3,071.78	4,662.97	4,495.22	167.74	27.798		
9,452.31	9,060.00	8,999.40	8,999.40	34.15	134.63	90.00	-2,939.76	3,071.78	4,632.25	4,464.25	168.00	27.573		
9,500.00	9,060.00	8,999.40	8,999.40	34.42	134.63	90.00	-2,939.76	3,071.78	4,604.55	4,436.34	168.22	27.373		
9,600.00	9,060.00	8,999.40	8,999.40	35.09	134.63	90.00	-2,939.76	3,071.78	4,547.54	4,378.79	168.74	26.949		
9,700.00	9,060.00	8,999.40	8,999.40	35.86	134.63	90.00	-2,939.76	3,071.78	4,492.03	4,322.66	169.37	26.522		
9,800.00	9,060.00	8,999.40	8,999.40	36.72	134.63	90.00	-2,939.76	3,071.78	4,438.08	4,267.98	170.10	26.091		
9,900.00	9,060.00	8,999.40	8,999.40	37.69	134.63	90.00	-2,939.76	3,071.78	4,385.75	4,214.82	170.93	25.659		
10,000.00	9,060.00	8,999.40	8,999.40	38.73	134.63	90.00	-2,939.76	3,071.78	4,335.09	4,163.23	171.85	25.225		
10,100.00	9,060.00	8,999.40	8,999.40	39.86	134.63	90.00	-2,939.76	3,071.78	4,286.17	4,113.29	172.88	24.793		
10,140.22	9,060.00	8,999.40	8,999.40	40.33	134.63	90.00	-2,939.76	3,071.78	4,266.99	4,093.67	173.32	24.620		
10,200.00	9,060.00	8,999.40	8,999.40	41.05	134.63	90.00	-2,939.76	3,071.78	4,238.49	4,064.49	173.99	24.360		
10,300.00	9,060.00	8,999.40	8,999.40	42.31	134.63	90.00	-2,939.76	3,071.78	4,189.81	4,014.63	175.18	23.917		
10,400.00	9,060.00	8,999.40	8,999.40	43.64	134.63	90.00	-2,939.76	3,071.78	4,139.90	3,963.47	176.43	23.464		
10,507.23	9,060.00	8,999.40	8,999.40	45.11	134.63	90.00	-2,939.76	3,071.78	4,085.04	3,907.20	177.84	22.970		
10,600.00	9,060.00	8,999.40	8,999.40	46.43	134.63	90.00	-2,939.76	3,071.78	4,039.06	3,859.94	179.12	22.549		
10,700.00	9,060.00	8,999.40	8,999.40	47.91	134.63	90.00	-2,939.76	3,071.78	3,994.33	3,813.72	180.61	22.116		
10,800.00	9,060.00	8,999.40	8,999.40	49.42	134.63	90.00	-2,939.76	3,071.78	3,954.82	3,772.63	182.18	21.708		
10,900.00	9,060.00	8,999.40	8,999.40	50.97	134.63	90.00	-2,939.76	3,071.78	3,920.73	3,736.89	183.84	21.327		
11,000.00	9,060.00	8,999.40	8,999.40	52.55	134.63	90.00	-2,939.76	3,071.78	3,892.26	3,706.69	185.57	20.975		
11,100.00	9,060.00	8,999.40	8,999.40	54.14	134.63	90.00	-2,939.76	3,071.78	3,869.56	3,682.21	187.35	20.654		
11,207.23	9,060.00	8,999.40	8,999.40	55.87	134.63	90.00	-2,939.76	3,071.78	3,851.78	3,662.48	189.31	20.347		
11,300.00	9,060.00	8,999.40	8,999.40	57.39	134.63	90.00	-2,939.76	3,071.78	3,838.98	3,647.96	191.02	20.097		
11,400.00	9,060.00	8,999.40	8,999.40	59.06	134.63	90.00	-2,939.76	3,071.78	3,824.32	3,631.43	192.89	19.827		
11,506.63	9,060.00	8,999.40	8,999.40	60.88	134.63	90.00	-2,939.76	3,071.78	3,807.69	3,612.80	194.89	19.538		
11,600.00	9,060.00	8,999.40	8,999.40	62.49	134.63	90.00	-2,939.76	3,071.78	3,793.81	3,597.16	196.65	19.292		
11,700.00	9,060.00	8,999.40	8,999.40	64.24	134.63	90.00	-2,939.76	3,071.78	3,781.45	3,582.90	198.54	19.046		
11,800.00	9,060.00	8,999.40	8,999.40	66.01	134.63	90.00	-2,939.76	3,071.78	3,771.69	3,571.26	200.43	18.818		
11,900.00	9,060.00	8,999.40	8,999.40	67.79	134.63	90.00	-2,939.76	3,071.78	3,764.57	3,562.26	202.31	18.608		
12,000.00	9,060.00	8,999.40	8,999.40	69.58	134.63	90.00	-2,939.76	3,071.78	3,760.10	3,555.92	204.18	18.416		
12,100.00	9,060.00	8,999.40	8,999.40	71.39	134.63	90.00	-2,939.76	3,071.78	3,758.28	3,552.26	206.02	18.242		
12,118.35	9,060.00	8,999.40	8,999.40	71.73	134.63	90.00	-2,939.76	3,071.78	3,758.23	3,551.88	206.36	18.212 CC		
12,200.00	9,060.00	8,999.40	8,999.40	73.21	134.63	90.00	-2,939.76	3,071.78	3,759.12	3,551.28	207.84	18.087 ES		
12,300.00	9,060.00	8,999.40	8,999.40	75.05	134.63	90.00	-2,939.76	3,071.78	3,762.62	3,553.00	209.62	17.950		
12,400.00	9,060.00	8,999.40	8,999.40	76.89	134.63	90.00	-2,939.76	3,071.78	3,768.77	3,557.41	211.37	17.831		
12,500.00	9,060.00	8,999.40	8,999.40	78.74	134.63	90.00	-2,939.76	3,071.78	3,777.56	3,564.49	213.07	17.729		
12,600.00	9,060.00	8,999.40	8,999.40	80.61	134.63	90.00	-2,939.76	3,071.78	3,788.97	3,574.25	214.73	17.646		
12,700.00	9,060.00	8,999.40	8,999.40	82.48	134.63	90.00	-2,939.76	3,071.78	3,802.98	3,586.65	216.33	17.579		
12,800.00	9,060.00	8,999.40	8,999.40	84.36	134.63	90.00	-2,939.76	3,071.78	3,819.55	3,601.66	217.89	17.530		
12,900.00	9,060.00	8,999.40	8,999.40	86.24	134.63	90.00	-2,939.76	3,071.78	3,838.66	3,619.27	219.38	17.497		
13,000.00	9,060.00	8,999.40	8,999.40	88.14	134.63	90.00	-2,939.76	3,071.78	3,860.26	3,639.44	220.82	17.481		
13,100.00	9,060.00	8,999.40	8,999.40	90.04	134.63	90.00	-2,939.76	3,071.78	3,884.32	3,662.12	222.21	17.481 SF		
13,200.00	9,060.00	8,999.40	8,999.40	91.94	134.63	90.00	-2,939.76	3,071.78	3,910.79	3,687.27	223.53	17.496		
13,300.00	9,060.00	8,999.40	8,999.40	93.86	134.63	90.00	-2,939.76	3,071.78	3,939.62	3,714.84	224.78	17.526		
13,400.00	9,060.00	8,999.40	8,999.40	95.77	134.63	90.00	-2,939.76	3,071.78	3,970.76	3,744.78	225.98	17.571		
13,500.00	9,060.00	8,999.40	8,999.40	97.70	134.63	90.00	-2,939.76	3,071.78	4,004.16	3,777.04	227.12	17.630		
13,600.00	9,060.00	8,999.40	8,999.40	99.62	134.63	90.00	-2,939.76	3,071.78	4,039.75	3,811.56	228.19	17.703		
13,700.00	9,060.00	8,999.40	8,999.40	101.56	134.63	90.00	-2,939.76	3,071.78	4,077.49	3,848.28	229.21	17.790		
13,800.00	9,060.00	8,999.40	8,999.40	103.49	134.63	90.00	-2,939.76	3,071.78	4,117.31	3,887.15	230.16	17.889		
13,900.00	9,060.00	8,999.40	8,999.40	105.43	134.63	90.00	-2,939.76	3,071.78	4,159.16	3,928.10	231.06	18.000		
14,000.00	9,060.00	8,999.40	8,999.40	107.38	134.63	90.00	-2,939.76	3,071.78	4,202.97	3,971.07	231.90	18.124		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,999.40	8,999.40	109.33	134.63	90.00	-2,939.76	3,071.78	4,248.68	4,015.99	232.69	18.259		
14,200.00	9,060.00	8,999.40	8,999.40	111.28	134.63	90.00	-2,939.76	3,071.78	4,296.23	4,062.81	233.42	18.406		
14,300.00	9,060.00	8,999.40	8,999.40	113.23	134.63	90.00	-2,939.76	3,071.78	4,345.56	4,111.46	234.10	18.563		
14,400.00	9,060.00	8,999.40	8,999.40	115.19	134.63	90.00	-2,939.76	3,071.78	4,396.62	4,161.88	234.73	18.730		
14,500.00	9,060.00	8,999.40	8,999.40	117.15	134.63	90.00	-2,939.76	3,071.78	4,449.33	4,214.01	235.32	18.908		
14,600.00	9,060.00	8,999.40	8,999.40	119.11	134.63	90.00	-2,939.76	3,071.78	4,503.65	4,267.79	235.86	19.095		
14,700.00	9,060.00	8,999.40	8,999.40	121.08	134.63	90.00	-2,939.76	3,071.78	4,559.52	4,323.16	236.36	19.291		
14,800.00	9,060.00	8,999.40	8,999.40	123.05	134.63	90.00	-2,939.76	3,071.78	4,616.88	4,380.06	236.82	19.496		
14,900.00	9,060.00	8,999.40	8,999.40	125.02	134.63	90.00	-2,939.76	3,071.78	4,675.67	4,438.43	237.24	19.709		
15,000.00	9,060.00	8,999.40	8,999.40	126.99	134.63	90.00	-2,939.76	3,071.78	4,735.84	4,498.22	237.62	19.930		
15,100.00	9,060.00	8,999.40	8,999.40	128.97	134.63	90.00	-2,939.76	3,071.78	4,797.35	4,559.38	237.97	20.160		
15,200.00	9,060.00	8,999.40	8,999.40	130.95	134.63	90.00	-2,939.76	3,071.78	4,860.13	4,621.85	238.28	20.396		
15,300.00	9,060.00	8,999.40	8,999.40	132.93	134.63	90.00	-2,939.76	3,071.78	4,924.14	4,685.58	238.57	20.640		
15,400.00	9,060.00	8,999.40	8,999.40	134.91	134.63	90.00	-2,939.76	3,071.78	4,989.34	4,750.52	238.83	20.891		
15,500.00	9,060.00	8,999.40	8,999.40	136.89	134.63	90.00	-2,939.76	3,071.78	5,055.68	4,816.62	239.06	21.148		
15,600.00	9,060.00	8,999.40	8,999.40	138.88	134.63	90.00	-2,939.76	3,071.78	5,123.10	4,883.84	239.26	21.412		
15,700.00	9,060.00	8,999.40	8,999.40	140.86	134.63	90.00	-2,939.76	3,071.78	5,191.58	4,952.14	239.44	21.682		
15,800.00	9,060.00	8,999.40	8,999.40	142.85	134.63	90.00	-2,939.76	3,071.78	5,261.07	5,021.47	239.60	21.957		
15,900.00	9,060.00	8,999.40	8,999.40	144.84	134.63	90.00	-2,939.76	3,071.78	5,331.53	5,091.78	239.74	22.239		
16,000.00	9,060.00	8,999.40	8,999.40	146.83	134.63	90.00	-2,939.76	3,071.78	5,402.92	5,163.05	239.86	22.525		
16,100.00	9,060.00	8,999.40	8,999.40	148.83	134.63	90.00	-2,939.76	3,071.78	5,475.20	5,235.24	239.97	22.817		
16,200.00	9,060.00	8,999.40	8,999.40	150.82	134.63	90.00	-2,939.76	3,071.78	5,548.35	5,308.30	240.05	23.113		
16,300.00	9,060.00	8,999.40	8,999.40	152.82	134.63	90.00	-2,939.76	3,071.78	5,622.32	5,382.20	240.12	23.414		
16,400.00	9,060.00	8,999.40	8,999.40	154.81	134.63	90.00	-2,939.76	3,071.78	5,697.09	5,456.91	240.18	23.720		
16,500.00	9,060.00	8,999.40	8,999.40	156.81	134.63	90.00	-2,939.76	3,071.78	5,772.62	5,532.40	240.22	24.030		
16,600.00	9,060.00	8,999.40	8,999.40	158.81	134.63	90.00	-2,939.76	3,071.78	5,848.89	5,608.63	240.26	24.344		
16,700.00	9,060.00	8,999.40	8,999.40	160.81	134.63	90.00	-2,939.76	3,071.78	5,925.86	5,685.58	240.28	24.663		
16,800.00	9,060.00	8,999.40	8,999.40	162.81	134.63	90.00	-2,939.76	3,071.78	6,003.51	5,763.22	240.29	24.985		
16,900.00	9,060.00	8,999.40	8,999.40	164.82	134.63	90.00	-2,939.76	3,071.78	6,081.82	5,841.53	240.29	25.311		
17,000.00	9,060.00	8,999.40	8,999.40	166.82	134.63	90.00	-2,939.76	3,071.78	6,160.75	5,920.47	240.28	25.640		
17,100.00	9,060.00	8,999.40	8,999.40	168.82	134.63	90.00	-2,939.76	3,071.78	6,240.28	6,000.02	240.26	25.973		
17,200.00	9,060.00	8,999.40	8,999.40	170.83	134.63	90.00	-2,939.76	3,071.78	6,320.40	6,080.16	240.24	26.309		
17,300.00	9,060.00	8,999.40	8,999.40	172.84	134.63	90.00	-2,939.76	3,071.78	6,401.08	6,160.87	240.21	26.648		
17,400.00	9,060.00	8,999.40	8,999.40	174.84	134.63	90.00	-2,939.76	3,071.78	6,482.29	6,242.12	240.18	26.990		
17,500.00	9,060.00	8,999.40	8,999.40	176.85	134.63	90.00	-2,939.76	3,071.78	6,564.03	6,323.89	240.13	27.335		
17,600.00	9,060.00	8,999.40	8,999.40	178.86	134.63	90.00	-2,939.76	3,071.78	6,646.26	6,406.17	240.09	27.683		
17,700.00	9,060.00	8,999.40	8,999.40	180.87	134.63	90.00	-2,939.76	3,071.78	6,728.98	6,488.94	240.04	28.033		
17,800.00	9,060.00	8,999.40	8,999.40	182.88	134.63	90.00	-2,939.76	3,071.78	6,812.15	6,572.17	239.98	28.386		
17,900.00	9,060.00	8,999.40	8,999.40	184.89	134.63	90.00	-2,939.76	3,071.78	6,895.78	6,655.86	239.92	28.742		
18,000.00	9,060.00	8,999.40	8,999.40	186.90	134.63	90.00	-2,939.76	3,071.78	6,979.84	6,739.97	239.86	29.100		
18,100.00	9,060.00	8,999.40	8,999.40	188.92	134.63	90.00	-2,939.76	3,071.78	7,064.31	6,824.51	239.80	29.460		
18,200.00	9,060.00	8,999.40	8,999.40	190.93	134.63	90.00	-2,939.76	3,071.78	7,149.18	6,909.45	239.73	29.822		
18,300.00	9,060.00	8,999.40	8,999.40	192.94	134.63	90.00	-2,939.76	3,071.78	7,234.44	6,994.78	239.66	30.187		
18,400.00	9,060.00	8,999.40	8,999.40	194.96	134.63	90.00	-2,939.76	3,071.78	7,320.07	7,080.48	239.59	30.553		
18,500.00	9,060.00	8,999.40	8,999.40	196.97	134.63	90.00	-2,939.76	3,071.78	7,406.06	7,166.55	239.51	30.921		
18,600.00	9,060.00	8,999.40	8,999.40	198.99	134.63	90.00	-2,939.76	3,071.78	7,492.40	7,252.97	239.44	31.292		
18,700.00	9,060.00	8,999.40	8,999.40	201.00	134.63	90.00	-2,939.76	3,071.78	7,579.08	7,339.72	239.36	31.664		
18,800.00	9,060.00	8,999.40	8,999.40	203.02	134.63	90.00	-2,939.76	3,071.78	7,666.08	7,426.80	239.28	32.038		
18,900.00	9,060.00	8,999.40	8,999.40	205.04	134.63	90.00	-2,939.76	3,071.78	7,753.39	7,514.19	239.20	32.414		
19,000.00	9,060.00	8,999.40	8,999.40	207.06	134.63	90.00	-2,939.76	3,071.78	7,841.01	7,601.88	239.12	32.791		
19,100.00	9,060.00	8,999.40	8,999.40	209.07	134.63	90.00	-2,939.76	3,071.78	7,928.92	7,689.87	239.04	33.169		
19,200.00	9,060.00	8,999.40	8,999.40	211.09	134.63	90.00	-2,939.76	3,071.78	8,017.11	7,778.15	238.96	33.550		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,999.40	8,999.40	213.11	134.63	90.00	-2,939.76	3,071.78	8,105.58	7,866.70	238.88	33.931	
19,400.00	9,060.00	8,999.40	8,999.40	215.13	134.63	90.00	-2,939.76	3,071.78	8,194.31	7,955.51	238.80	34.315	
19,500.32	9,060.00	8,999.40	8,999.40	217.16	134.63	90.00	-2,939.76	3,071.78	8,283.58	8,044.86	238.72	34.700	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	150.00	62.65	705.94	1,364.95	1,537.07					
100.00	100.00	66.40	66.40	0.52	150.00	62.65	705.94	1,364.95	1,536.70	1,386.18	150.52	10.209		
200.00	200.00	166.40	166.40	0.70	150.02	62.65	705.94	1,364.95	1,536.70	1,385.98	150.72	10.196		
300.00	300.00	266.40	266.40	0.99	150.05	62.65	705.94	1,364.95	1,536.70	1,385.66	151.04	10.174		
400.00	400.00	366.40	366.40	1.31	150.10	62.65	705.94	1,364.95	1,536.70	1,385.30	151.40	10.150		
500.00	500.00	466.40	466.40	1.65	150.16	62.65	705.94	1,364.95	1,536.70	1,384.90	151.80	10.123		
600.00	600.00	566.40	566.40	1.99	150.23	62.65	705.94	1,364.95	1,536.70	1,384.48	152.22	10.095	CC, ES, SF	
700.00	700.00	563.00	562.89	2.34	150.23	62.65	705.94	1,364.95	1,540.18	1,387.96	152.23	10.118		
800.00	800.00	563.00	562.89	2.69	150.23	62.65	705.94	1,364.95	1,550.12	1,398.50	151.61	10.224		
900.00	900.00	563.00	562.89	3.04	150.23	62.65	705.94	1,364.95	1,566.39	1,415.98	150.41	10.414		
1,000.00	1,000.00	563.00	562.89	3.40	150.23	62.65	705.94	1,364.95	1,588.80	1,440.14	148.65	10.688		
1,100.00	1,100.00	563.00	562.89	3.75	150.23	62.65	705.94	1,364.95	1,617.09	1,470.67	146.42	11.044		
1,200.00	1,200.00	563.00	562.89	4.11	150.23	62.65	705.94	1,364.95	1,650.96	1,507.18	143.78	11.483		
1,300.00	1,300.00	563.00	562.89	4.46	150.23	62.65	705.94	1,364.95	1,690.08	1,549.27	140.81	12.002		
1,400.00	1,400.00	563.00	562.89	4.82	150.23	62.65	705.94	1,364.95	1,734.09	1,596.50	137.60	12.603		
1,500.00	1,500.00	563.00	562.89	5.18	150.23	62.65	705.94	1,364.95	1,782.63	1,648.43	134.20	13.283		
1,600.00	1,600.00	563.00	562.89	5.53	150.23	62.65	705.94	1,364.95	1,835.34	1,704.65	130.70	14.043		
1,700.00	1,700.00	563.00	562.89	5.89	150.23	62.65	705.94	1,364.95	1,891.87	1,764.74	127.13	14.881		
1,800.00	1,800.00	563.00	562.89	6.25	150.23	62.65	705.94	1,364.95	1,951.89	1,828.33	123.56	15.797		
1,900.00	1,900.00	563.00	562.89	6.61	150.23	62.65	705.94	1,364.95	2,015.09	1,895.07	120.02	16.790		
2,000.00	2,000.00	563.00	562.89	6.96	150.23	62.65	705.94	1,364.95	2,081.18	1,964.64	116.53	17.859		
2,100.00	2,100.00	563.00	562.89	7.32	150.23	62.65	705.94	1,364.95	2,149.88	2,036.75	113.13	19.003		
2,200.00	2,200.00	563.00	562.89	7.68	150.23	62.65	705.94	1,364.95	2,220.97	2,111.14	109.83	20.222		
2,300.00	2,300.00	563.00	562.89	8.04	150.23	62.65	705.94	1,364.95	2,294.21	2,187.57	106.64	21.514		
2,350.00	2,350.00	563.00	562.89	8.22	150.23	62.65	705.94	1,364.95	2,331.58	2,226.49	105.09	22.187		
2,400.00	2,400.00	563.00	562.89	8.39	150.23	78.13	705.94	1,364.95	2,369.38	2,265.82	103.56	22.879		
2,500.00	2,499.98	563.00	562.89	8.75	150.23	76.96	705.94	1,364.95	2,446.13	2,345.54	100.60	24.316		
2,600.00	2,599.92	563.00	562.89	9.11	150.23	75.74	705.94	1,364.95	2,524.27	2,426.53	97.74	25.825		
2,700.00	2,699.78	563.00	562.89	9.47	150.23	74.48	705.94	1,364.95	2,603.65	2,508.64	95.00	27.405		
2,800.00	2,799.54	563.00	562.89	9.82	150.23	73.18	705.94	1,364.95	2,684.13	2,591.75	92.38	29.056		
2,900.00	2,899.16	563.00	562.89	10.18	150.23	71.84	705.94	1,364.95	2,765.60	2,675.73	89.86	30.775		
3,000.00	2,998.61	563.00	562.89	10.54	150.23	70.46	705.94	1,364.95	2,847.94	2,760.48	87.46	32.563		
3,100.00	3,097.86	563.00	562.89	10.89	150.23	69.06	705.94	1,364.95	2,931.07	2,845.91	85.16	34.417		
3,200.00	3,196.89	563.00	562.89	11.25	150.23	67.63	705.94	1,364.95	3,014.89	2,931.92	82.97	36.336		
3,295.74	3,291.45	563.00	562.89	11.59	150.23	66.24	705.94	1,364.95	3,095.71	3,014.74	80.97	38.232		
3,300.00	3,295.65	563.00	562.89	11.61	150.23	66.24	705.94	1,364.95	3,099.32	3,018.43	80.88	38.318		
3,400.00	3,394.29	563.00	562.89	11.97	150.23	66.24	705.94	1,364.95	3,184.49	3,105.58	78.90	40.360		
3,500.00	3,492.94	563.00	562.89	12.33	150.23	66.24	705.94	1,364.95	3,270.49	3,193.47	77.02	42.463		
3,600.00	3,591.58	563.00	562.89	12.69	150.23	66.24	705.94	1,364.95	3,357.28	3,282.04	75.23	44.626		
3,700.00	3,690.22	563.00	562.89	13.05	150.23	66.24	705.94	1,364.95	3,444.78	3,371.24	73.53	46.846		
3,800.00	3,788.86	563.00	562.89	13.41	150.23	66.24	705.94	1,364.95	3,532.94	3,461.02	71.92	49.122		
3,900.00	3,887.50	563.00	562.89	13.77	150.23	66.24	705.94	1,364.95	3,621.72	3,551.32	70.39	51.450		
4,000.00	3,986.14	563.00	562.89	14.14	150.23	66.24	705.94	1,364.95	3,711.07	3,642.12	68.94	53.829		
4,100.00	4,084.78	563.00	562.89	14.50	150.23	66.24	705.94	1,364.95	3,800.94	3,733.38	67.56	56.256		
4,200.00	4,183.42	563.00	562.89	14.87	150.23	66.24	705.94	1,364.95	3,891.32	3,825.06	66.26	58.730		
4,300.00	4,282.06	563.00	562.89	15.24	150.23	66.24	705.94	1,364.95	3,982.15	3,917.13	65.02	61.247		
4,400.00	4,380.70	563.00	562.89	15.60	150.23	66.24	705.94	1,364.95	4,073.41	4,009.57	63.84	63.805		
4,500.00	4,479.34	563.00	562.89	15.97	150.23	66.24	705.94	1,364.95	4,165.08	4,102.35	62.73	66.401		
4,600.00	4,577.98	563.00	562.89	16.34	150.23	66.24	705.94	1,364.95	4,257.12	4,195.45	61.67	69.034		
4,700.00	4,676.62	563.00	562.89	16.71	150.23	66.24	705.94	1,364.95	4,349.51	4,288.85	60.66	71.699		
4,800.00	4,775.27	563.00	562.89	17.08	150.23	66.24	705.94	1,364.95	4,442.23	4,382.52	59.71	74.395		
4,900.00	4,873.91	563.00	562.89	17.45	150.23	66.24	705.94	1,364.95	4,535.26	4,476.45	58.81	77.119		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	563.00	562.89	17.82	150.23	66.24	705.94	1,364.95	4,628.58	4,570.63	57.95	79.867		
5,100.00	5,071.19	563.00	562.89	18.19	150.23	66.24	705.94	1,364.95	4,722.18	4,665.03	57.14	82.638		
5,200.00	5,169.83	563.00	562.89	18.56	150.23	66.24	705.94	1,364.95	4,816.03	4,759.65	56.38	85.428		
5,300.00	5,268.47	563.00	562.89	18.93	150.23	66.24	705.94	1,364.95	4,910.12	4,854.47	55.65	88.235		
5,400.00	5,367.11	563.00	562.89	19.31	150.23	66.24	705.94	1,364.95	5,004.45	4,949.49	54.96	91.056		
5,500.00	5,465.75	563.00	562.89	19.68	150.23	66.24	705.94	1,364.95	5,098.98	5,044.68	54.31	93.888		
5,600.00	5,564.39	563.00	562.89	20.05	150.23	66.24	705.94	1,364.95	5,193.73	5,140.04	53.69	96.729		
5,700.00	5,663.03	563.00	562.89	20.42	150.23	66.24	705.94	1,364.95	5,288.67	5,235.55	53.11	99.575		
5,800.00	5,761.67	563.00	562.89	20.80	150.23	66.24	705.94	1,364.95	5,383.79	5,331.22	52.56	102.424		
5,900.00	5,860.31	563.00	562.89	21.17	150.23	66.24	705.94	1,364.95	5,479.08	5,427.04	52.05	105.274		
6,000.00	5,958.96	563.00	562.89	21.54	150.23	66.24	705.94	1,364.95	5,574.54	5,522.99	51.56	108.122		
6,100.00	6,057.60	563.00	562.89	21.92	150.23	66.24	705.94	1,364.95	5,670.16	5,619.06	51.10	110.965		
6,200.00	6,156.24	563.00	562.89	22.29	150.23	66.24	705.94	1,364.95	5,765.92	5,715.26	50.67	113.802		
6,300.00	6,254.88	563.00	562.89	22.67	150.23	66.24	705.94	1,364.95	5,861.83	5,811.57	50.26	116.628		
6,400.00	6,353.52	563.00	562.89	23.04	150.23	66.24	705.94	1,364.95	5,957.87	5,907.99	49.88	119.443		
6,500.00	6,452.16	563.00	562.89	23.42	150.23	66.24	705.94	1,364.95	6,054.04	6,004.52	49.52	122.244		
6,600.00	6,550.80	563.00	562.89	23.79	150.23	66.24	705.94	1,364.95	6,150.33	6,101.14	49.19	125.028		
6,700.00	6,649.44	563.00	562.89	24.17	150.23	66.24	705.94	1,364.95	6,246.74	6,197.86	48.88	127.794		
6,800.00	6,748.08	563.00	562.89	24.54	150.23	66.24	705.94	1,364.95	6,343.26	6,294.67	48.59	130.540		
6,900.00	6,846.72	563.00	562.89	24.92	150.23	66.24	705.94	1,364.95	6,439.88	6,391.56	48.32	133.263		
7,000.00	6,945.36	563.00	562.89	25.29	150.23	66.24	705.94	1,364.95	6,536.61	6,488.53	48.08	135.962		
7,100.00	7,044.00	563.00	562.89	25.67	150.23	66.24	705.94	1,364.95	6,633.44	6,585.59	47.85	138.635		
7,200.00	7,142.65	563.00	562.89	26.04	150.23	66.24	705.94	1,364.95	6,730.35	6,682.71	47.64	141.280		
7,300.00	7,241.29	563.00	562.89	26.42	150.23	66.24	705.94	1,364.95	6,827.36	6,779.91	47.45	143.895		
7,400.00	7,339.93	563.00	562.89	26.79	150.23	66.24	705.94	1,364.95	6,924.45	6,877.18	47.27	146.480		
7,500.00	7,438.57	563.00	562.89	27.17	150.23	66.24	705.94	1,364.95	7,021.62	6,974.51	47.11	149.033		
7,571.77	7,509.37	563.00	562.89	27.44	150.23	66.24	705.94	1,364.95	7,091.41	7,044.40	47.01	150.844		
7,600.00	7,537.23	563.00	562.89	27.55	150.23	67.89	705.94	1,364.95	7,118.88	7,071.91	46.97	151.554		
7,700.00	7,636.18	563.00	562.89	27.92	150.23	74.10	705.94	1,364.95	7,216.37	7,169.54	46.83	154.086		
7,800.00	7,735.48	563.00	562.89	28.29	150.23	80.83	705.94	1,364.95	7,314.09	7,267.39	46.69	156.647		
7,900.00	7,835.05	563.00	562.89	28.65	150.23	87.92	705.94	1,364.95	7,411.95	7,365.40	46.55	159.240		
8,000.00	7,934.83	563.00	562.89	29.01	150.23	95.18	705.94	1,364.95	7,509.88	7,463.48	46.40	161.865		
8,100.00	8,034.74	563.00	562.89	29.36	150.23	102.37	705.94	1,364.95	7,607.82	7,561.58	46.24	164.523		
8,202.27	8,137.00	563.00	562.89	29.72	150.23	93.37	705.94	1,364.95	7,707.92	7,661.84	46.08	167.273		
8,300.00	8,234.73	563.00	562.89	30.06	150.23	93.37	705.94	1,364.95	7,803.56	7,757.63	45.93	169.902		
8,400.00	8,334.73	563.00	562.89	30.41	150.23	93.37	705.94	1,364.95	7,901.47	7,855.68	45.79	172.562		
8,500.00	8,434.73	563.00	562.89	30.75	150.23	93.37	705.94	1,364.95	7,999.43	7,953.77	45.66	175.192		
8,552.31	8,487.04	563.00	562.89	30.94	150.23	93.37	705.94	1,364.95	8,050.69	8,005.09	45.60	176.555		
8,600.00	8,534.68	563.00	562.89	31.10	150.23	2.64	705.94	1,364.95	8,096.99	8,051.49	45.51	177.932		
8,650.00	8,584.26	563.00	562.89	31.26	150.23	2.03	705.94	1,364.95	8,144.37	8,099.04	45.33	179.660		
8,700.00	8,633.10	563.00	562.89	31.43	150.23	1.66	705.94	1,364.95	8,190.23	8,145.15	45.08	181.665		
8,750.00	8,680.83	563.00	562.89	31.58	150.23	1.41	705.94	1,364.95	8,234.25	8,189.48	44.77	183.942		
8,800.00	8,727.09	563.00	562.89	31.74	150.23	1.23	705.94	1,364.95	8,276.12	8,231.74	44.38	186.488		
8,850.00	8,771.52	563.00	562.89	31.89	150.23	1.10	705.94	1,364.95	8,315.56	8,271.63	43.93	189.300		
8,900.00	8,813.78	563.00	562.89	32.04	150.23	1.00	705.94	1,364.95	8,352.30	8,308.88	43.42	192.372		
8,950.00	8,853.56	563.00	562.89	32.18	150.23	0.93	705.94	1,364.95	8,386.11	8,343.26	42.85	195.701		
9,000.00	8,890.55	563.00	562.89	32.32	150.23	0.87	705.94	1,364.95	8,416.76	8,374.52	42.24	199.281		
9,050.00	8,924.46	563.00	562.89	32.47	150.23	0.82	705.94	1,364.95	8,444.06	8,402.48	41.58	203.102		
9,100.00	8,955.05	563.00	562.89	32.63	150.23	0.78	705.94	1,364.95	8,467.82	8,426.95	40.88	207.155		
9,150.00	8,982.08	563.00	562.89	32.79	150.23	0.75	705.94	1,364.95	8,487.91	8,447.77	40.15	211.427		
9,200.00	9,005.34	563.00	562.89	32.97	150.23	0.73	705.94	1,364.95	8,504.19	8,464.81	39.39	215.903		
9,250.00	9,024.65	563.00	562.89	33.17	150.23	0.71	705.94	1,364.95	8,516.57	8,477.96	38.61	220.564		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	563.00	562.89	33.38	150.23	0.70	705.94	1,364.95	8,524.96	8,487.14	37.82	225.388		
9,350.00	9,050.89	563.00	562.89	33.62	150.23	0.70	705.94	1,364.95	8,529.31	8,492.28	37.03	230.350		
9,400.00	9,057.61	563.00	562.89	33.87	150.23	0.70	705.94	1,364.95	8,529.60	8,493.37	36.23	235.423		
9,452.31	9,060.00	563.00	562.89	34.15	150.23	0.70	705.94	1,364.95	8,525.55	8,490.15	35.40	240.814		
9,500.00	9,060.00	563.00	562.89	34.42	150.23	0.70	705.94	1,364.95	8,519.97	8,485.31	34.66	245.841		
9,600.00	9,060.00	563.00	562.89	35.09	150.23	0.70	705.94	1,364.95	8,509.12	8,476.00	33.12	256.919		
9,700.00	9,060.00	563.00	562.89	35.86	150.23	0.70	705.94	1,364.95	8,499.43	8,467.81	31.63	268.719		
9,800.00	9,060.00	563.00	562.89	36.72	150.23	0.70	705.94	1,364.95	8,490.92	8,460.73	30.19	281.268		
9,900.00	9,060.00	563.00	562.89	37.69	150.23	0.70	705.94	1,364.95	8,483.57	8,454.77	28.80	294.558		
10,000.00	9,060.00	563.00	562.89	38.73	150.23	0.70	705.94	1,364.95	8,477.39	8,449.91	27.48	308.518		
10,100.00	9,060.00	563.00	562.89	39.86	150.23	0.70	705.94	1,364.95	8,472.39	8,446.15	26.24	322.913		
10,140.22	9,060.00	563.00	562.89	40.33	150.23	0.70	705.94	1,364.95	8,470.71	8,444.94	25.77	328.711		
10,200.00	9,060.00	563.00	562.89	41.05	150.23	0.66	705.94	1,364.95	8,468.56	8,443.45	25.12	337.171		
10,300.00	9,060.00	563.00	562.89	42.31	150.23	0.60	705.94	1,364.95	8,465.88	8,441.69	24.19	350.009		
10,400.00	9,060.00	563.00	562.89	43.64	150.23	0.57	705.94	1,364.95	8,464.33	8,440.69	23.64	358.047		
10,484.55	9,060.00	563.00	562.89	44.80	150.23	0.56	705.94	1,364.95	8,463.92	8,440.19	23.74	356.558		
10,507.23	9,060.00	563.00	562.89	45.11	150.23	0.57	705.94	1,364.95	8,463.95	8,440.08	23.88	354.491		
10,600.00	9,060.00	563.00	562.89	46.43	150.23	0.55	705.94	1,364.95	8,464.72	8,439.78	24.94	339.393		
10,700.00	9,060.00	563.00	562.89	47.91	150.23	0.51	705.94	1,364.95	8,466.71	8,440.02	26.69	317.254		
10,800.00	9,060.00	563.00	562.89	49.42	150.23	0.45	705.94	1,364.95	8,469.92	8,441.19	28.73	294.807		
10,900.00	9,060.00	563.00	562.89	50.97	150.23	0.36	705.94	1,364.95	8,474.33	8,443.42	30.91	274.134		
11,000.00	9,060.00	563.00	562.89	52.55	150.23	0.25	705.94	1,364.95	8,479.94	8,446.77	33.17	255.659		
11,100.00	9,060.00	563.00	562.89	54.14	150.23	0.11	705.94	1,364.95	8,486.74	8,451.27	35.47	239.288		
11,207.23	9,060.00	563.00	562.89	55.87	150.23	-0.06	705.94	1,364.95	8,495.34	8,457.38	37.96	223.813		
11,300.00	9,060.00	563.00	562.89	57.39	150.23	0.11	705.94	1,364.95	8,503.87	8,463.74	40.13	211.918		
11,400.00	9,060.00	563.00	562.89	59.06	150.23	0.32	705.94	1,364.95	8,514.17	8,471.69	42.48	200.423		
11,506.63	9,060.00	563.00	562.89	60.88	150.23	0.56	705.94	1,364.95	8,526.42	8,481.42	45.00	189.483		
11,600.00	9,060.00	563.00	562.89	62.49	150.23	0.56	705.94	1,364.95	8,538.20	8,491.00	47.21	180.870		
11,700.00	9,060.00	563.00	562.89	64.24	150.23	0.56	705.94	1,364.95	8,551.94	8,502.37	49.57	172.511		
11,800.00	9,060.00	563.00	562.89	66.01	150.23	0.56	705.94	1,364.95	8,566.82	8,514.88	51.94	164.938		
11,900.00	9,060.00	563.00	562.89	67.79	150.23	0.56	705.94	1,364.95	8,582.84	8,528.54	54.30	158.055		
12,000.00	9,060.00	563.00	562.89	69.58	150.23	0.56	705.94	1,364.95	8,600.00	8,543.34	56.66	151.778		
12,100.00	9,060.00	563.00	562.89	71.39	150.23	0.56	705.94	1,364.95	8,618.28	8,559.27	59.01	146.040		
12,200.00	9,060.00	563.00	562.89	73.21	150.23	0.56	705.94	1,364.95	8,637.68	8,576.32	61.36	140.778		
12,300.00	9,060.00	563.00	562.89	75.05	150.23	0.56	705.94	1,364.95	8,658.19	8,594.50	63.69	135.943		
12,400.00	9,060.00	563.00	562.89	76.89	150.23	0.56	705.94	1,364.95	8,679.81	8,613.79	66.01	131.488		
12,500.00	9,060.00	563.00	562.89	78.74	150.23	0.56	705.94	1,364.95	8,702.52	8,634.20	68.32	127.376		
12,600.00	9,060.00	563.00	562.89	80.61	150.23	0.56	705.94	1,364.95	8,726.31	8,655.70	70.62	123.573		
12,700.00	9,060.00	563.00	562.89	82.48	150.23	0.56	705.94	1,364.95	8,751.19	8,678.29	72.90	120.049		
12,800.00	9,060.00	563.00	562.89	84.36	150.23	0.56	705.94	1,364.95	8,777.13	8,701.97	75.16	116.778		
12,900.00	9,060.00	563.00	562.89	86.24	150.23	0.56	705.94	1,364.95	8,804.14	8,726.73	77.41	113.737		
13,000.00	9,060.00	563.00	562.89	88.14	150.23	0.56	705.94	1,364.95	8,832.19	8,752.55	79.64	110.905		
13,100.00	9,060.00	563.00	562.89	90.04	150.23	0.56	705.94	1,364.95	8,861.29	8,779.44	81.85	108.266		
13,200.00	9,060.00	563.00	562.89	91.94	150.23	0.56	705.94	1,364.95	8,891.41	8,807.37	84.04	105.802		
13,300.00	9,060.00	563.00	562.89	93.86	150.23	0.56	705.94	1,364.95	8,922.55	8,836.34	86.21	103.499		
13,400.00	9,060.00	563.00	562.89	95.77	150.23	0.56	705.94	1,364.95	8,954.70	8,866.34	88.36	101.345		
13,500.00	9,060.00	563.00	562.89	97.70	150.23	0.56	705.94	1,364.95	8,987.85	8,897.36	90.49	99.328		
13,600.00	9,060.00	563.00	562.89	99.62	150.23	0.56	705.94	1,364.95	9,021.98	8,929.39	92.59	97.438		
13,700.00	9,060.00	563.00	562.89	101.56	150.23	0.56	705.94	1,364.95	9,057.09	8,962.42	94.68	95.664		
13,800.00	9,060.00	563.00	562.89	103.49	150.23	0.56	705.94	1,364.95	9,093.17	8,996.43	96.74	94.000		
13,900.00	9,060.00	563.00	562.89	105.43	150.23	0.56	705.94	1,364.95	9,130.20	9,031.42	98.77	92.436		
14,000.00	9,060.00	563.00	562.89	107.38	150.23	0.56	705.94	1,364.95	9,168.17	9,067.38	100.79	90.967		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY												Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	563.00	562.89	109.33	150.23	0.56	705.94	1,364.95	9,207.06	9,104.29	102.78	89.585	
14,200.00	9,060.00	563.00	562.89	111.28	150.23	0.56	705.94	1,364.95	9,246.88	9,142.14	104.74	88.284	
14,300.00	9,060.00	563.00	562.89	113.23	150.23	0.56	705.94	1,364.95	9,287.60	9,180.92	106.68	87.061	
14,400.00	9,060.00	563.00	562.89	115.19	150.23	0.56	705.94	1,364.95	9,329.22	9,220.62	108.59	85.908	
14,500.00	9,060.00	563.00	562.89	117.15	150.23	0.56	705.94	1,364.95	9,371.72	9,261.23	110.49	84.823	
14,600.00	9,060.00	563.00	562.89	119.11	150.23	0.56	705.94	1,364.95	9,415.09	9,302.74	112.35	83.801	
14,700.00	9,060.00	563.00	562.89	121.08	150.23	0.56	705.94	1,364.95	9,459.31	9,345.12	114.19	82.838	
14,800.00	9,060.00	563.00	562.89	123.05	150.23	0.56	705.94	1,364.95	9,504.39	9,388.38	116.00	81.931	
14,900.00	9,060.00	563.00	562.89	125.02	150.23	0.56	705.94	1,364.95	9,550.30	9,432.50	117.79	81.076	
15,000.00	9,060.00	563.00	562.89	126.99	150.23	0.56	705.94	1,364.95	9,597.03	9,477.47	119.56	80.271	
15,100.00	9,060.00	563.00	562.89	128.97	150.23	0.56	705.94	1,364.95	9,644.57	9,523.27	121.30	79.512	
15,200.00	9,060.00	563.00	562.89	130.95	150.23	0.56	705.94	1,364.95	9,692.91	9,569.90	123.01	78.797	
15,300.00	9,060.00	563.00	562.89	132.93	150.23	0.56	705.94	1,364.95	9,742.03	9,617.33	124.70	78.125	
15,400.00	9,060.00	563.00	562.89	134.91	150.23	0.56	705.94	1,364.95	9,791.93	9,665.57	126.36	77.491	
15,500.00	9,060.00	563.00	562.89	136.89	150.23	0.56	705.94	1,364.95	9,842.60	9,714.60	128.00	76.895	
15,600.00	9,060.00	563.00	562.89	138.88	150.23	0.56	705.94	1,364.95	9,894.01	9,764.40	129.61	76.335	
15,700.00	9,060.00	563.00	562.89	140.86	150.23	0.56	705.94	1,364.95	9,946.17	9,814.97	131.20	75.808	
15,800.00	9,060.00	563.00	562.89	142.85	150.23	0.56	705.94	1,364.95	9,999.05	9,866.29	132.77	75.314	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

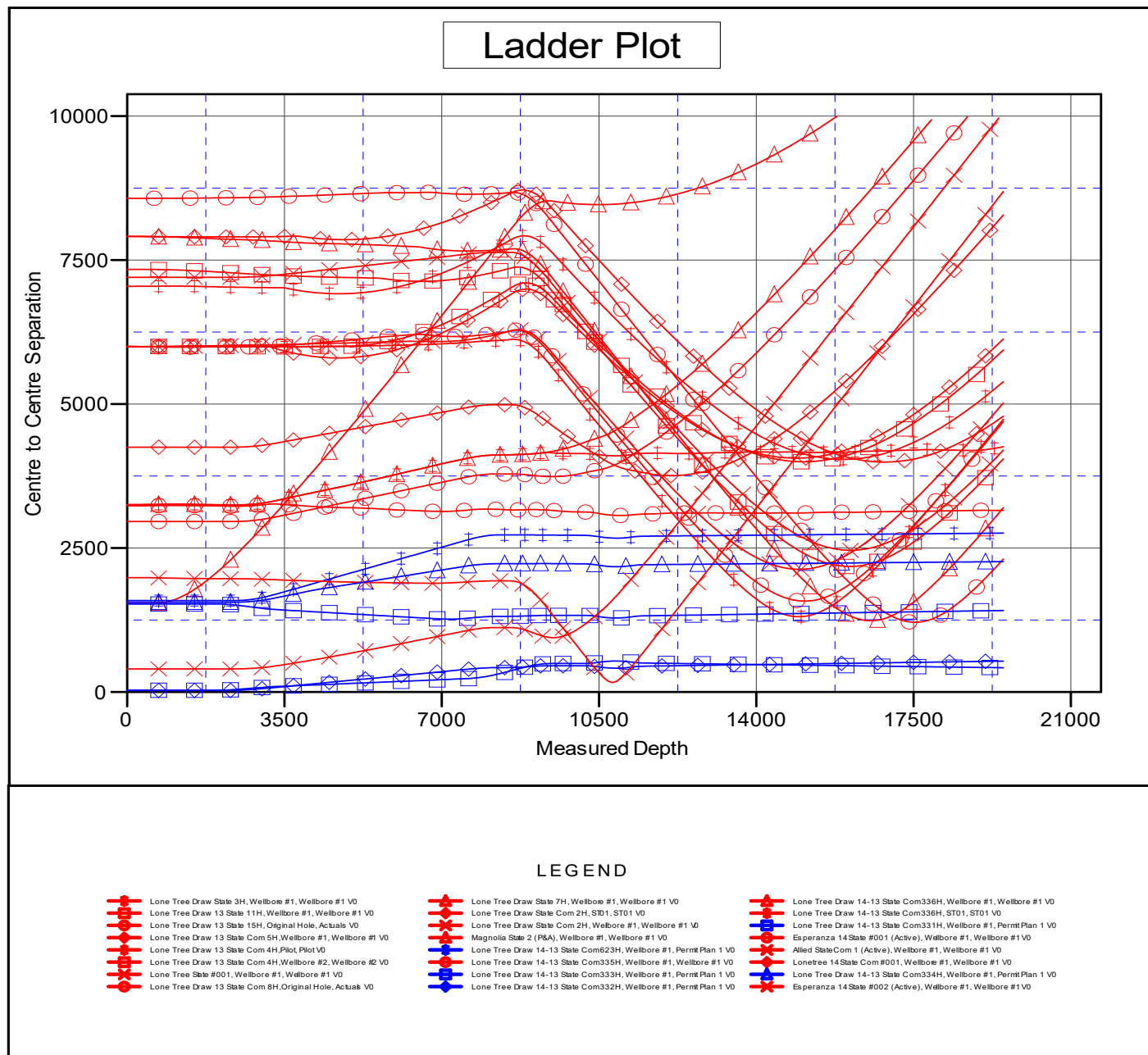
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

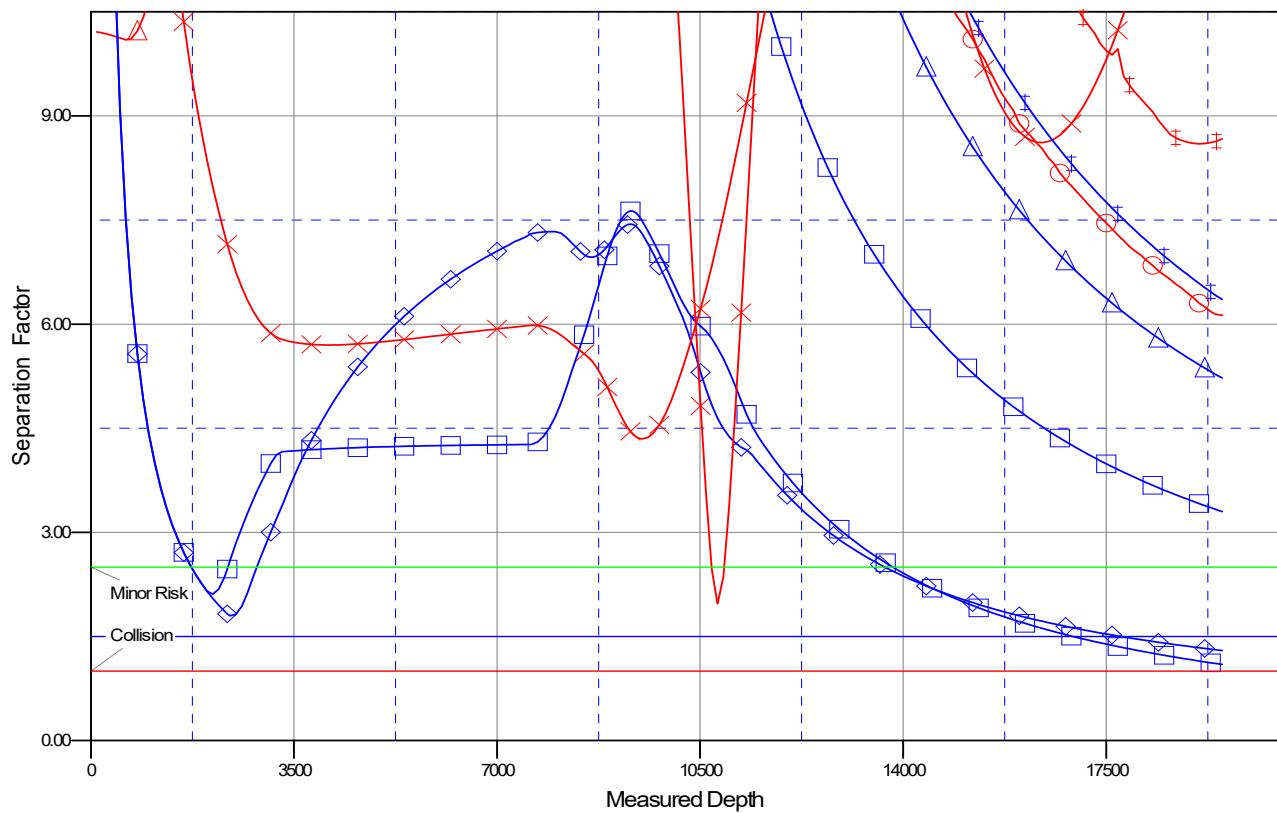
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

Lone Tree Draw State 3H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw State 7H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 336H, Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State 11H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw State Com 2H, ST01, ST01 V0	Lone Tree Draw 14-13 State Com 336H, ST01, ST01 V0
Lone Tree Draw 13 State 15H, Original Hole, Actual V0	Lone Tree Draw State Com 2H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 331H, Wellbore #1, Permit Plan 1 V0
Lone Tree Draw 13 State Com 5H, Wellbore #1, Wellbore #1 V0	Magnolia State 2 (P&A), Wellbore #1, Wellbore #1 V0	Esperanza 14 State #001 (Active), Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State Com 4H, Wellbore #2, Wellbore #2 V0	Lone Tree Draw 14-13 State Com 623H, Wellbore #1, Permit Plan 1 V0	Allied State Com 1 (Active), Wellbore #1, Wellbore #1 V0
Lone Tree State #001, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 335H, Wellbore #1, Wellbore #1 V0	Lone Tree 14 State Com #001, Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State Com 8H, Original Hole, Actual V0	Lone Tree Draw 14-13 State Com 333H, Wellbore #1, Permit Plan 1 V0	Lone Tree Draw 14-13 State Com 334H, Wellbore #1, Permit Plan 1 V0
	Lone Tree Draw 14-13 State Com 332H, Wellbore #1, Permit Plan 1 V0	Esperanza 14 State #002 (Active), Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 14-T21S-R27E

Lone Tree Draw 14-13 State Com 621H

Wellbore #1

Permit Plan 1

Anticollision Report

09 October, 2019

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/9/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	10,202.00	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1	

Summary							
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning	
Offset Well - Wellbore - Design							
Sec 13-T21S-R27E							
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,078.39	7,144.21	2,180.93	2,111.00	31.187	CC	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,100.00	7,144.60	2,181.03	2,110.90	31.100	ES	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	18,800.00	18,800.00	3,484.32	3,277.00	16.807	SF	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,076.58	7,846.67	1,578.35	1,514.57	24.745	CC	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,100.00	7,846.77	1,578.53	1,514.54	24.668	ES	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,400.00	7,848.11	1,611.15	1,544.67	24.237	SF	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	14,947.33	7,876.00	1,308.17	1,208.20	13.086	CC, ES	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	15,100.00	7,876.00	1,317.04	1,215.39	12.956	SF	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	14,700.00	14,700.00	4,014.52	3,917.67	41.451	ES	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	15,049.69	5,518.72	3,999.58	3,939.99	67.123	CC	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	16,200.00	16,200.00	4,156.76	4,017.05	29.754	SF	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,500.00	16,500.00	4,007.79	3,885.35	32.731	ES	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,851.53	5,617.15	3,992.48	3,918.98	54.318	CC	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	19,300.00	19,300.00	4,682.49	4,499.03	25.524	SF	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,535.31	8,227.17	1,210.78	1,133.15	15.595	CC, ES	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,800.00	8,230.79	1,239.37	1,158.34	15.294	SF	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	15,934.02	5,613.24	4,040.53	3,973.72	60.480	CC	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	16,000.00	5,612.84	4,041.06	3,973.71	59.998	ES	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	17,400.00	5,603.40	4,298.24	4,220.35	55.178	SF	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,548.74	8,502.69	1,238.31	1,161.67	16.157	CC, ES	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,700.00	8,501.71	1,247.52	1,169.35	15.959	SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,700.00	14,700.00	4,065.55	3,965.43	40.607	ES, SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,902.86	5,289.29	4,061.93	4,004.03	70.147	CC	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	14,956.60	6,978.42	2,130.71	2,053.33	27.538	CC, ES	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	15,400.00	6,978.42	2,176.35	2,094.83	26.695	SF	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,096.85	8,967.40	2,461.55	2,178.65	8.701	CC	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,100.00	8,967.40	2,461.55	2,178.59	8.699	ES	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,400.00	8,967.40	2,480.14	2,192.28	8.616	SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 14-T21S-R27E						
Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1	10,802.18	9,033.89	162.61	80.28	1.975	Minor Risk, CC, ES, SF
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,350.00	2,328.40	2,961.62	2,918.68	68.971	CC
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,500.00	2,478.38	2,963.57	2,917.84	64.817	ES
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	10,700.00	9,038.40	3,898.38	3,716.42	21.424	SF
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,350.00	2,325.40	401.35	345.23	7.152	CC
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,600.00	2,575.32	404.62	342.66	6.530	ES
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	9,500.00	9,035.40	944.55	727.25	4.347	Alert, SF
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	2,000.00	2,000.70	30.02	16.09	2.155	Minor Risk, CC, ES
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	19,500.32	19,325.89	422.06	37.23	1.097	Major Risk, SF
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,350.00	2,349.40	29.99	13.56	1.826	Minor Risk, CC
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,400.00	2,400.60	30.20	13.41	1.799	Minor Risk, ES
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	19,500.32	19,285.26	537.29	123.25	1.298	Major Risk, SF
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	7,162.27	7,392.62	1,265.14	1,212.34	23.958	CC
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	19,500.32	19,312.03	1,415.97	986.74	3.299	Alert, ES, SF
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,350.00	2,338.90	1,558.66	1,542.27	95.093	CC
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,400.00	2,388.90	1,558.87	1,542.12	93.075	ES
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	19,500.32	19,294.07	2,264.39	1,831.03	5.225	SF
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	10,978.08	10,835.72	3,065.19	2,946.70	25.868	CC
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,400.00	19,158.00	3,154.13	2,640.49	6.141	ES
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,500.32	19,158.00	3,156.57	2,641.39	6.127	SF
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	19,100.00	19,172.00	4,208.36	3,718.97	8.599	SF
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	11,600.00	8,813.68	4,938.33	4,853.24	58.034	SF
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,350.00	2,338.30	1,588.67	1,572.28	96.937	CC
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,400.00	2,388.30	1,588.88	1,572.13	94.879	ES
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	19,500.32	19,456.84	2,760.09	2,325.81	6.355	SF
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,118.35	8,999.40	3,758.23	3,551.88	18.212	CC
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,200.00	8,999.40	3,759.12	3,551.28	18.087	ES
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	13,100.00	8,999.40	3,884.32	3,662.12	17.481	SF
Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1	600.00	566.40	1,536.70	1,384.48	10.095	CC, ES, SF

Offset Design												Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1		Offset Site Error:		5.00 ft	
Survey Program:												111-GYRO-NS-CT, 6243-MWD+HDGM		Offset Well Error:		0.50 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.00	0.00	0.00	0.00	0.50	5.02	77.58	1,577.86	7,166.10	7,338.08								
100.00	100.00	20.86	20.86	0.52	5.03	77.58	1,577.86	7,166.12	7,337.78	7,332.24	5.54	1,323.845					
200.00	200.00	87.28	87.28	0.70	5.03	77.58	1,577.86	7,166.37	7,338.15	7,332.43	5.73	1,280.996					
300.00	300.00	300.00	198.29	0.99	5.09	77.58	1,577.85	7,166.94	7,338.65	7,332.57	6.08	1,207.491					
400.00	400.00	267.96	267.96	1.31	5.07	77.59	1,577.60	7,167.35	7,339.20	7,332.81	6.38	1,149.847					
500.00	500.00	544.17	544.09	1.65	5.30	77.63	1,571.87	7,168.17	7,339.35	7,332.41	6.94	1,056.814					
600.00	600.00	635.07	634.96	1.99	5.41	77.65	1,569.72	7,167.19	7,337.81	7,330.41	7.40	991.654					
700.00	700.00	737.48	737.33	2.34	5.56	77.66	1,567.30	7,166.34	7,336.49	7,328.59	7.89	929.614					
800.00	800.00	843.87	843.69	2.69	5.73	77.68	1,564.85	7,165.19	7,334.94	7,326.53	8.41	871.888					
900.00	900.00	950.34	950.13	3.04	5.92	77.70	1,562.57	7,164.00	7,333.39	7,324.43	8.95	819.030					
1,000.00	1,000.00	1,056.44	1,056.20	3.40	6.12	77.71	1,560.48	7,162.65	7,331.72	7,322.21	9.51	770.788					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,100.00	1,100.00	1,229.98	1,229.68	3.75	6.49	77.73	1,556.68	7,159.52	7,329.48	7,319.25	10.23	716.304		
1,200.00	1,200.00	1,396.95	1,396.54	4.11	6.89	77.75	1,553.19	7,154.83	7,326.27	7,315.30	10.97	667.835		
1,300.00	1,300.00	1,509.37	1,508.87	4.46	7.17	77.76	1,550.74	7,151.04	7,322.51	7,310.91	11.60	631.262		
1,400.00	1,400.00	1,615.58	1,614.98	4.82	7.45	77.78	1,548.17	7,147.44	7,318.68	7,306.46	12.23	598.642		
1,500.00	1,500.00	1,696.88	1,696.22	5.18	7.67	77.79	1,546.36	7,144.70	7,314.92	7,302.13	12.79	571.703		
1,600.00	1,600.00	1,787.61	1,786.88	5.53	7.92	77.80	1,544.44	7,141.84	7,311.39	7,297.99	13.39	545.852		
1,700.00	1,700.00	1,873.17	1,872.38	5.89	8.16	77.81	1,542.51	7,139.26	7,307.97	7,293.99	13.99	522.532		
1,800.00	1,800.00	2,046.34	2,045.39	6.25	8.66	77.84	1,537.69	7,133.65	7,304.25	7,289.42	14.83	492.610		
1,900.00	1,900.00	2,179.39	2,178.25	6.61	9.07	77.87	1,532.31	7,128.71	7,299.78	7,284.21	15.57	468.768		
2,000.00	2,000.00	2,280.94	2,279.63	6.96	9.39	77.89	1,528.35	7,124.59	7,294.99	7,278.76	16.23	449.425		
2,100.00	2,100.00	2,383.19	2,381.72	7.32	9.71	77.92	1,524.40	7,120.44	7,290.21	7,273.31	16.90	431.433		
2,200.00	2,200.00	2,503.48	2,501.81	7.68	10.10	77.94	1,520.11	7,115.17	7,285.16	7,267.54	17.62	413.455		
2,300.00	2,300.00	2,581.66	2,579.87	8.04	10.35	77.96	1,517.21	7,111.84	7,280.22	7,262.00	18.22	399.561		
2,350.00	2,350.00	2,617.61	2,615.76	8.22	10.47	77.97	1,515.77	7,110.42	7,277.88	7,259.36	18.51	393.132		
2,400.00	2,400.00	2,653.55	2,651.65	8.39	10.59	94.04	1,514.28	7,109.09	7,275.64	7,256.84	18.80	386.906		
2,500.00	2,499.98	2,802.17	2,800.03	8.75	11.08	94.14	1,508.24	7,103.21	7,271.05	7,251.43	19.63	370.482		
2,600.00	2,599.92	2,906.94	2,904.62	9.11	11.43	94.24	1,504.36	7,098.49	7,266.13	7,245.81	20.31	357.693		
2,700.00	2,699.78	2,987.86	2,985.41	9.47	11.70	94.34	1,501.43	7,094.94	7,261.49	7,240.56	20.93	346.944		
2,800.00	2,799.54	3,074.77	3,072.18	9.82	12.00	94.45	1,498.04	7,091.46	7,257.28	7,235.71	21.57	336.513		
2,900.00	2,899.16	3,191.60	3,188.84	10.18	12.39	94.59	1,493.95	7,086.56	7,253.12	7,230.83	22.30	325.294		
3,000.00	2,998.61	3,287.64	3,284.74	10.54	12.72	94.73	1,490.83	7,082.33	7,248.99	7,226.02	22.96	315.667		
3,100.00	3,097.86	3,392.84	3,389.78	10.89	13.08	94.89	1,487.31	7,077.82	7,245.11	7,221.44	23.66	306.193		
3,200.00	3,196.89	3,495.46	3,492.24	11.25	13.43	95.06	1,484.12	7,073.20	7,241.24	7,216.89	24.35	297.346		
3,295.74	3,291.45	3,589.26	3,585.91	11.59	13.76	95.23	1,481.38	7,068.94	7,237.73	7,212.73	25.00	289.486		
3,300.00	3,295.65	3,593.45	3,590.09	11.61	13.77	95.23	1,481.25	7,068.75	7,237.58	7,212.55	25.03	289.145		
3,400.00	3,394.29	3,691.98	3,688.48	11.97	14.11	95.37	1,478.53	7,064.26	7,234.04	7,208.32	25.71	281.342		
3,500.00	3,492.94	3,779.79	3,776.18	12.33	14.42	95.50	1,476.32	7,060.26	7,230.60	7,204.23	26.36	274.281		
3,600.00	3,591.58	3,879.23	3,875.48	12.69	14.76	95.64	1,473.99	7,055.79	7,227.29	7,200.24	27.05	267.184		
3,700.00	3,690.22	3,971.12	3,967.26	13.05	15.08	95.77	1,472.17	7,051.61	7,224.04	7,196.32	27.72	260.654		
3,800.00	3,788.86	4,059.29	4,055.33	13.41	15.38	95.89	1,470.26	7,047.73	7,220.95	7,192.58	28.37	254.521		
3,900.00	3,887.50	4,152.15	4,148.08	13.77	15.70	96.02	1,468.41	7,043.74	7,218.02	7,188.98	29.04	248.535		
4,000.00	3,986.14	4,239.09	4,234.93	14.14	15.99	96.13	1,467.75	7,039.89	7,215.23	7,185.54	29.69	242.988		
4,100.00	4,084.78	4,312.26	4,308.03	14.50	16.24	96.22	1,468.13	7,036.65	7,212.71	7,182.41	30.30	238.033		
4,200.00	4,183.42	4,387.80	4,383.50	14.87	16.48	96.30	1,469.34	7,033.51	7,210.64	7,179.72	30.92	233.228		
4,300.00	4,282.06	4,300.00	4,537.73	15.24	16.20	96.47	1,472.32	7,026.45	7,208.23	7,177.24	30.99	232.591		
4,400.00	4,380.70	4,617.85	4,613.24	15.60	17.24	96.55	1,473.89	7,022.64	7,205.52	7,173.11	32.40	222.358		
4,500.00	4,479.34	4,670.64	4,665.98	15.97	17.41	96.61	1,474.47	7,020.50	7,203.53	7,170.58	32.95	218.612		
4,600.00	4,577.98	4,733.98	4,729.28	16.34	17.63	96.69	1,474.61	7,018.35	7,202.12	7,168.59	33.53	214.783		
4,700.00	4,676.62	4,857.25	4,852.49	16.71	18.04	96.86	1,473.55	7,014.49	7,200.80	7,166.49	34.31	209.866		
4,800.00	4,775.27	4,934.46	4,929.66	17.08	18.31	96.96	1,472.82	7,012.10	7,199.55	7,164.61	34.94	206.049		
4,900.00	4,873.91	5,047.59	5,042.73	17.45	18.69	97.11	1,471.23	7,008.74	7,198.39	7,162.70	35.69	201.687		
5,000.00	4,972.55	5,151.53	5,146.61	17.82	19.05	97.25	1,469.97	7,005.42	7,197.08	7,160.67	36.41	197.661		
5,100.00	5,071.19	5,276.24	5,271.23	18.19	19.47	97.41	1,470.31	7,001.04	7,195.76	7,158.57	37.20	193.445		
5,200.00	5,169.83	5,428.22	5,423.05	18.56	19.99	97.58	1,472.22	6,994.19	7,193.53	7,155.46	38.07	188.941		
5,300.00	5,268.47	5,484.17	5,478.94	18.93	20.18	97.65	1,472.58	6,991.77	7,191.50	7,152.87	38.64	186.133		
5,400.00	5,367.11	5,576.08	5,570.79	19.31	20.49	97.76	1,472.88	6,988.24	7,189.93	7,150.61	39.32	182.867		
5,500.00	5,465.75	5,668.21	5,662.84	19.68	20.81	97.87	1,473.68	6,984.61	7,188.38	7,148.38	40.00	179.707		
5,600.00	5,564.39	5,759.50	5,754.05	20.05	21.11	97.97	1,475.26	6,981.02	7,186.99	7,146.31	40.68	176.666		
5,700.00	5,663.03	5,850.00	5,845.53	20.42	22.73	99.76	1,374.82	6,922.56	7,178.73	7,136.31	42.42	169.212		
5,800.00	5,761.67	6,626.00	6,588.32	20.80	22.75	99.93	1,356.23	6,921.70	7,168.43	7,125.57	42.86	167.249		
5,900.00	5,860.31	6,626.00	6,588.32	21.17	22.75	99.93	1,356.23	6,921.70	7,159.32	7,116.04	43.28	165.416		
6,000.00	5,958.96	6,640.99	6,599.90	21.54	22.76	100.02	1,346.71	6,921.59	7,151.49	7,107.79	43.70	163.632		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,100.00	6,057.60	6,658.00	6,612.69	21.92	22.77	100.13	1,335.50	6,921.75	7,145.00	7,100.87	44.13	161.922		
6,200.00	6,156.24	6,658.00	6,612.69	22.29	22.77	100.13	1,335.50	6,921.75	7,139.77	7,095.24	44.53	160.337		
6,300.00	6,254.88	6,677.81	6,627.07	22.67	22.79	100.26	1,321.88	6,922.26	7,135.83	7,090.89	44.95	158.760		
6,400.00	6,353.52	6,689.00	6,634.91	23.04	22.80	100.33	1,313.91	6,922.67	7,133.18	7,087.83	45.35	157.288		
6,500.00	6,452.16	6,710.03	6,649.20	23.42	22.81	100.47	1,298.52	6,923.62	7,131.79	7,086.03	45.76	155.837		
6,559.26	6,510.61	6,721.00	6,656.44	23.64	22.82	100.54	1,290.30	6,924.20	7,131.57	7,085.57	46.01	155.017		
6,600.00	6,550.80	6,721.00	6,656.44	23.79	22.82	100.54	1,290.30	6,924.20	7,131.69	7,085.53	46.16	154.502		
6,700.00	6,649.44	6,740.07	6,668.69	24.17	22.84	100.68	1,275.73	6,925.34	7,132.87	7,086.31	46.56	153.186		
6,800.00	6,748.08	6,766.15	6,684.75	24.54	22.86	100.86	1,255.26	6,927.13	7,135.36	7,088.38	46.98	151.889		
6,900.00	6,846.72	6,799.33	6,703.97	24.92	22.90	101.10	1,228.32	6,929.48	7,138.97	7,091.57	47.41	150.588		
7,000.00	6,945.36	6,816.00	6,713.08	25.29	22.92	101.22	1,214.42	6,930.74	7,143.88	7,096.08	47.80	149.456		
7,100.00	7,044.00	6,827.76	6,719.29	25.67	22.93	101.31	1,204.47	6,931.68	7,150.11	7,101.93	48.18	148.415		
7,200.00	7,142.65	6,847.00	6,729.03	26.04	22.96	101.45	1,187.96	6,933.32	7,157.68	7,109.11	48.57	147.379		
7,300.00	7,241.29	6,847.00	6,729.03	26.42	22.96	101.45	1,187.96	6,933.32	7,166.56	7,117.66	48.90	146.557		
7,400.00	7,339.93	6,859.95	6,735.31	26.79	22.97	101.55	1,176.69	6,934.48	7,176.78	7,127.51	49.26	145.685		
7,500.00	7,438.57	6,878.00	6,743.75	27.17	23.00	101.69	1,160.83	6,936.17	7,188.34	7,138.71	49.63	144.829		
7,571.77	7,509.37	6,878.00	6,743.75	27.44	23.00	101.69	1,160.83	6,936.17	7,197.44	7,147.58	49.86	144.362		
7,600.00	7,537.23	6,880.81	6,745.02	27.55	23.01	101.76	1,158.35	6,936.44	7,201.19	7,151.23	49.95	144.160		
7,700.00	7,636.18	6,904.17	6,755.34	27.92	23.05	102.15	1,137.50	6,938.67	7,214.94	7,164.61	50.33	143.356		
7,800.00	7,735.48	6,910.00	6,757.82	28.29	23.06	102.41	1,132.26	6,939.22	7,229.43	7,178.79	50.64	142.775		
7,900.00	7,835.05	6,926.62	6,764.65	28.65	23.09	102.76	1,117.19	6,940.82	7,244.65	7,193.68	50.97	142.134		
8,000.00	7,934.83	6,942.00	6,770.61	29.01	23.13	103.11	1,103.09	6,942.34	7,260.62	7,209.33	51.29	141.563		
8,100.00	8,034.74	6,948.49	6,773.01	29.36	23.14	103.40	1,097.10	6,942.99	7,277.29	7,225.72	51.57	141.128		
8,202.27	8,137.00	6,965.52	6,778.96	29.72	23.19	87.76	1,081.23	6,944.66	7,295.03	7,243.15	51.88	140.624		
8,300.00	8,234.73	6,973.00	6,781.41	30.06	23.21	87.81	1,074.20	6,945.38	7,312.91	7,260.78	52.13	140.285		
8,400.00	8,334.73	6,973.00	6,781.41	30.41	23.21	87.81	1,074.20	6,945.38	7,332.50	7,280.15	52.35	140.064		
8,500.00	8,434.73	6,987.70	6,786.01	30.75	23.25	87.92	1,060.31	6,946.83	7,353.32	7,300.70	52.63	139.721		
8,552.31	8,487.04	6,990.62	6,786.90	30.94	23.26	87.94	1,057.54	6,947.12	7,364.74	7,311.99	52.75	139.613		
8,600.00	8,534.68	7,005.00	6,791.14	31.10	23.31	-1.58	1,043.89	6,948.64	7,373.56	7,320.65	52.90	139.375		
8,650.00	8,584.26	7,005.00	6,791.14	31.26	23.31	-1.57	1,043.89	6,948.64	7,378.83	7,325.84	52.99	139.242		
8,700.00	8,633.10	7,005.00	6,791.14	31.43	23.31	-1.56	1,043.89	6,948.64	7,380.09	7,327.01	53.08	139.048		
8,750.00	8,680.83	7,005.00	6,791.14	31.58	23.31	-1.57	1,043.89	6,948.64	7,377.33	7,324.18	53.15	138.795		
8,800.00	8,727.09	7,005.00	6,791.14	31.74	23.31	-1.59	1,043.89	6,948.64	7,370.57	7,317.34	53.22	138.489		
8,850.00	8,771.52	7,005.00	6,791.14	31.89	23.31	-1.62	1,043.89	6,948.64	7,359.84	7,306.56	53.28	138.131		
8,900.00	8,813.78	7,005.00	6,791.14	32.04	23.31	-1.66	1,043.89	6,948.64	7,345.21	7,291.88	53.33	137.725		
8,950.00	8,853.56	7,005.00	6,791.14	32.18	23.31	-1.72	1,043.89	6,948.64	7,326.78	7,273.40	53.37	137.274		
9,000.00	8,890.55	7,005.00	6,791.14	32.32	23.31	-1.80	1,043.89	6,948.64	7,304.64	7,251.24	53.40	136.779		
9,050.00	8,924.46	7,005.00	6,791.14	32.47	23.31	-1.90	1,043.89	6,948.64	7,278.94	7,225.52	53.43	136.244		
9,100.00	8,955.05	7,018.98	6,794.98	32.63	23.35	-1.88	1,030.54	6,950.17	7,249.76	7,196.26	53.50	135.508		
9,150.00	8,982.08	7,020.95	6,795.50	32.79	23.36	-2.01	1,028.65	6,950.39	7,217.41	7,163.90	53.51	134.875		
9,200.00	9,005.34	7,022.78	6,795.97	32.97	23.37	-2.17	1,026.90	6,950.60	7,182.04	7,128.53	53.51	134.208		
9,250.00	9,024.65	7,036.00	6,799.19	33.17	23.42	-2.24	1,014.16	6,952.08	7,143.93	7,090.37	53.56	133.382		
9,300.00	9,039.87	7,036.00	6,799.19	33.38	23.42	-2.54	1,014.16	6,952.08	7,103.22	7,049.67	53.54	132.670		
9,350.00	9,050.89	7,036.00	6,799.19	33.62	23.42	-2.94	1,014.16	6,952.08	7,060.22	7,006.71	53.52	131.926		
9,400.00	9,057.61	7,036.00	6,799.19	33.87	23.42	-3.52	1,014.16	6,952.08	7,015.25	6,961.76	53.49	131.154		
9,452.31	9,060.00	7,036.00	6,799.19	34.15	23.42	-4.47	1,014.16	6,952.08	6,966.41	6,912.95	53.46	130.314		
9,500.00	9,060.00	7,036.00	6,799.19	34.42	23.42	-4.47	1,014.16	6,952.08	6,921.17	6,867.74	53.43	129.540		
9,600.00	9,060.00	7,036.00	6,799.19	35.09	23.42	-4.47	1,014.16	6,952.08	6,826.43	6,773.07	53.36	127.929		
9,700.00	9,060.00	7,036.00	6,799.19	35.86	23.42	-4.47	1,014.16	6,952.08	6,731.84	6,678.54	53.29	126.314		
9,800.00	9,060.00	7,036.00	6,799.19	36.72	23.42	-4.47	1,014.16	6,952.08	6,637.40	6,584.17	53.23	124.696		
9,900.00	9,060.00	7,036.00	6,799.19	37.69	23.42	-4.47	1,014.16	6,952.08	6,543.13	6,489.97	53.16	123.076		
10,000.00	9,060.00	7,036.00	6,799.19	38.73	23.42	-4.47	1,014.16	6,952.08	6,449.04	6,395.94	53.10	121.452		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,100.00	9,060.00	7,036.00	6,799.19	39.86	23.42	-4.47	1,014.16	6,952.08	6,355.12	6,302.08	53.04	119.826		
10,140.22	9,060.00	7,036.00	6,799.19	40.33	23.42	-4.47	1,014.16	6,952.08	6,317.40	6,264.38	53.01	119.170		
10,200.00	9,060.00	7,036.00	6,799.19	41.05	23.42	-7.65	1,014.16	6,952.08	6,261.41	6,208.44	52.97	118.196		
10,300.00	9,060.00	7,036.00	6,799.19	42.31	23.42	-12.77	1,014.16	6,952.08	6,168.06	6,115.15	52.92	116.564		
10,400.00	9,060.00	7,036.00	6,799.19	43.64	23.42	-17.60	1,014.16	6,952.08	6,075.21	6,022.35	52.86	114.929		
10,507.23	9,060.00	7,036.00	6,799.19	45.11	23.42	-22.39	1,014.16	6,952.08	5,976.36	5,923.55	52.81	113.167		
10,600.00	9,060.00	7,051.56	6,802.52	46.43	23.48	-18.01	999.07	6,953.89	5,890.95	5,838.10	52.84	111.483		
10,700.00	9,060.00	7,054.06	6,803.01	47.91	23.49	-13.40	996.63	6,954.19	5,798.83	5,746.01	52.81	109.799		
10,800.00	9,060.00	7,068.00	6,805.46	49.42	23.54	-8.40	983.02	6,955.88	5,706.74	5,653.91	52.83	108.019		
10,900.00	9,060.00	7,068.00	6,805.46	50.97	23.54	-3.68	983.02	6,955.88	5,614.59	5,561.80	52.79	106.362		
11,000.00	9,060.00	7,068.00	6,805.46	52.55	23.54	1.00	983.02	6,955.88	5,522.63	5,469.89	52.74	104.711		
11,100.00	9,060.00	7,068.00	6,805.46	54.14	23.54	5.57	983.02	6,955.88	5,430.97	5,378.28	52.69	103.070		
11,207.23	9,060.00	7,068.00	6,805.46	55.87	23.54	10.29	983.02	6,955.88	5,333.19	5,280.55	52.64	101.320		
11,300.00	9,060.00	7,068.00	6,805.46	57.39	23.54	6.30	983.02	6,955.88	5,248.89	5,196.30	52.59	99.803		
11,400.00	9,060.00	7,068.00	6,805.46	59.06	23.54	2.01	983.02	6,955.88	5,158.20	5,105.65	52.55	98.153		
11,506.63	9,060.00	7,068.00	6,805.46	60.88	23.54	-2.50	983.02	6,955.88	5,061.82	5,009.30	52.52	96.379		
11,600.00	9,060.00	7,068.00	6,805.46	62.49	23.54	-2.50	983.02	6,955.88	4,977.79	4,925.29	52.50	94.819		
11,700.00	9,060.00	7,068.00	6,805.46	64.24	23.54	-2.50	983.02	6,955.88	4,888.17	4,835.69	52.48	93.145		
11,800.00	9,060.00	7,068.00	6,805.46	66.01	23.54	-2.50	983.02	6,955.88	4,798.95	4,746.49	52.47	91.466		
11,900.00	9,060.00	7,068.00	6,805.46	67.79	23.54	-2.50	983.02	6,955.88	4,710.17	4,657.71	52.46	89.784		
12,000.00	9,060.00	7,068.00	6,805.46	69.58	23.54	-2.50	983.02	6,955.88	4,621.85	4,569.39	52.46	88.098		
12,100.00	9,060.00	7,068.00	6,805.46	71.39	23.54	-2.50	983.02	6,955.88	4,534.01	4,481.54	52.47	86.409		
12,200.00	9,060.00	7,068.00	6,805.46	73.21	23.54	-2.50	983.02	6,955.88	4,446.69	4,394.20	52.49	84.716		
12,300.00	9,060.00	7,068.00	6,805.46	75.05	23.54	-2.50	983.02	6,955.88	4,359.91	4,307.39	52.52	83.019		
12,400.00	9,060.00	7,068.00	6,805.46	76.89	23.54	-2.50	983.02	6,955.88	4,273.71	4,221.15	52.56	81.318		
12,500.00	9,060.00	7,068.00	6,805.46	78.74	23.54	-2.50	983.02	6,955.88	4,188.12	4,135.52	52.60	79.615		
12,600.00	9,060.00	7,068.00	6,805.46	80.61	23.54	-2.50	983.02	6,955.88	4,103.19	4,050.52	52.67	77.908		
12,700.00	9,060.00	7,081.21	6,807.34	82.48	23.60	-2.16	970.04	6,957.51	4,018.81	3,966.03	52.78	76.146		
12,800.00	9,060.00	7,082.85	6,807.54	84.36	23.61	-2.12	968.43	6,957.70	3,935.26	3,882.39	52.87	74.432		
12,900.00	9,060.00	7,084.48	6,807.73	86.24	23.62	-2.07	966.82	6,957.90	3,852.50	3,799.52	52.98	72.719		
13,000.00	9,060.00	7,086.10	6,807.91	88.14	23.62	-2.03	965.22	6,958.10	3,770.56	3,717.46	53.10	71.005		
13,100.00	9,060.00	7,099.00	6,809.13	90.04	23.68	-1.70	952.48	6,959.66	3,689.63	3,636.36	53.27	69.266		
13,200.00	9,060.00	7,099.00	6,809.13	91.94	23.68	-1.70	952.48	6,959.66	3,609.50	3,556.07	53.42	67.562		
13,300.00	9,060.00	7,099.00	6,809.13	93.86	23.68	-1.70	952.48	6,959.66	3,530.38	3,476.78	53.60	65.861		
13,400.00	9,060.00	7,099.00	6,809.13	95.77	23.68	-1.70	952.48	6,959.66	3,452.35	3,398.54	53.81	64.164		
13,500.00	9,060.00	7,099.00	6,809.13	97.70	23.68	-1.70	952.48	6,959.66	3,375.48	3,321.45	54.03	62.472		
13,600.00	9,060.00	7,099.00	6,809.13	99.62	23.68	-1.70	952.48	6,959.66	3,299.84	3,245.56	54.28	60.789		
13,700.00	9,060.00	7,099.00	6,809.13	101.56	23.68	-1.70	952.48	6,959.66	3,225.54	3,170.97	54.56	59.115		
13,800.00	9,060.00	7,099.00	6,809.13	103.49	23.68	-1.70	952.48	6,959.66	3,152.65	3,097.78	54.87	57.453		
13,900.00	9,060.00	7,099.00	6,809.13	105.43	23.68	-1.70	952.48	6,959.66	3,081.29	3,026.08	55.21	55.807		
14,000.00	9,060.00	7,099.00	6,809.13	107.38	23.68	-1.70	952.48	6,959.66	3,011.56	2,955.97	55.58	54.180		
14,100.00	9,060.00	7,099.00	6,809.13	109.33	23.68	-1.70	952.48	6,959.66	2,943.57	2,887.58	55.99	52.575		
14,200.00	9,060.00	7,099.00	6,809.13	111.28	23.68	-1.70	952.48	6,959.66	2,877.45	2,821.03	56.43	50.996		
14,300.00	9,060.00	7,110.67	6,809.88	113.23	23.74	-1.40	940.91	6,961.01	2,813.23	2,756.35	56.89	49.453		
14,400.00	9,060.00	7,112.84	6,809.99	115.19	23.75	-1.34	938.76	6,961.25	2,751.21	2,693.82	57.39	47.941		
14,500.00	9,060.00	7,114.95	6,810.09	117.15	23.76	-1.28	936.67	6,961.49	2,691.47	2,633.55	57.92	46.469		
14,600.00	9,060.00	7,116.99	6,810.18	119.11	23.77	-1.23	934.63	6,961.71	2,634.16	2,575.67	58.49	45.040		
14,700.00	9,060.00	7,128.00	6,810.49	121.08	23.82	-0.94	923.69	6,962.86	2,579.52	2,520.45	59.07	43.668		
14,800.00	9,060.00	7,128.00	6,810.49	123.05	23.82	-0.94	923.69	6,962.86	2,527.55	2,467.85	59.70	42.338		
14,900.00	9,060.00	7,128.00	6,810.49	125.02	23.82	-0.94	923.69	6,962.86	2,478.53	2,418.17	60.36	41.063		
15,000.00	9,060.00	7,128.00	6,810.49	126.99	23.82	-0.94	923.69	6,962.86	2,432.63	2,371.58	61.05	39.849		
15,100.00	9,060.00	7,128.00	6,810.49	128.97	23.82	-0.94	923.69	6,962.86	2,390.04	2,328.28	61.76	38.698		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,200.00	9,060.00	7,128.00	6,810.49	130.95	23.82	-0.94	923.69	6,962.86	2,350.93	2,288.43	62.50	37.613	
15,300.00	9,060.00	7,128.00	6,810.49	132.93	23.82	-0.94	923.69	6,962.86	2,315.48	2,252.21	63.27	36.598	
15,400.00	9,060.00	7,128.00	6,810.49	134.91	23.82	-0.94	923.69	6,962.86	2,283.87	2,219.81	64.06	35.654	
15,500.00	9,060.00	7,128.00	6,810.49	136.89	23.82	-0.94	923.69	6,962.86	2,256.24	2,191.37	64.87	34.782	
15,600.00	9,060.00	7,128.00	6,810.49	138.88	23.82	-0.94	923.69	6,962.86	2,232.76	2,167.06	65.70	33.983	
15,700.00	9,060.00	7,128.00	6,810.49	140.86	23.82	-0.94	923.69	6,962.86	2,213.55	2,146.99	66.56	33.256	
15,800.00	9,060.00	7,128.00	6,810.49	142.85	23.82	-0.94	923.69	6,962.86	2,198.73	2,131.29	67.44	32.603	
15,900.00	9,060.00	7,141.03	6,810.58	144.84	23.88	-0.60	910.72	6,964.16	2,188.20	2,119.90	68.30	32.039	
16,000.00	9,060.00	7,142.82	6,810.57	146.83	23.89	-0.55	908.94	6,964.34	2,182.33	2,113.13	69.21	31.533	
16,078.39	9,060.00	7,144.21	6,810.56	148.40	23.90	-0.52	907.56	6,964.48	2,180.93	2,111.00	69.93	31.187 CC	
16,100.00	9,060.00	7,144.60	6,810.56	148.83	23.90	-0.51	907.18	6,964.51	2,181.03	2,110.90	70.13	31.100 ES	
16,200.00	9,060.00	7,146.36	6,810.54	150.82	23.91	-0.46	905.43	6,964.69	2,184.31	2,113.26	71.06	30.741	
16,300.00	9,060.00	7,159.00	6,810.25	152.82	23.98	-0.13	892.84	6,965.91	2,192.27	2,120.31	71.96	30.467	
16,400.00	9,060.00	7,159.00	6,810.25	154.81	23.98	-0.13	892.84	6,965.91	2,204.57	2,131.71	72.86	30.257	
16,500.00	9,060.00	7,159.00	6,810.25	156.81	23.98	-0.13	892.84	6,965.91	2,221.31	2,147.57	73.74	30.124	
16,600.00	9,060.00	7,159.00	6,810.25	158.81	23.98	-0.13	892.84	6,965.91	2,242.39	2,167.81	74.57	30.069	
16,700.00	9,060.00	7,159.00	6,810.25	160.81	23.98	-0.13	892.84	6,965.91	2,267.68	2,192.32	75.36	30.092	
16,800.00	9,060.00	7,159.00	6,810.25	162.81	23.98	-0.13	892.84	6,965.91	2,297.06	2,220.97	76.08	30.191	
16,900.00	9,060.00	7,159.00	6,810.25	164.82	23.98	-0.13	892.84	6,965.91	2,330.36	2,253.61	76.75	30.364	
17,000.00	9,060.00	7,159.00	6,810.25	166.82	23.98	-0.13	892.84	6,965.91	2,367.41	2,290.07	77.34	30.610	
17,100.00	9,060.00	7,159.00	6,810.25	168.82	23.98	-0.13	892.84	6,965.91	2,408.06	2,330.19	77.87	30.925	
17,200.00	9,060.00	7,159.00	6,810.25	170.83	23.98	-0.13	892.84	6,965.91	2,452.10	2,373.78	78.33	31.306	
17,300.00	9,060.00	7,173.69	6,809.72	172.84	24.06	0.25	878.24	6,967.31	2,499.30	2,420.56	78.73	31.743	
17,400.00	9,060.00	7,177.72	6,809.56	174.84	24.08	0.36	874.23	6,967.69	2,549.57	2,470.50	79.08	32.242	
17,500.00	9,060.00	7,181.72	6,809.40	176.85	24.10	0.46	870.24	6,968.07	2,602.71	2,523.35	79.36	32.795	
17,600.00	9,060.00	7,185.71	6,809.23	178.86	24.12	0.57	866.28	6,968.45	2,658.53	2,578.93	79.60	33.400	
17,700.00	9,060.00	7,189.67	6,809.05	180.87	24.14	0.67	862.34	6,968.82	2,716.88	2,637.09	79.78	34.053	
17,800.00	9,060.00	7,193.61	6,808.87	182.88	24.17	0.77	858.42	6,969.19	2,777.59	2,697.66	79.93	34.750	
17,900.00	9,060.00	7,197.52	6,808.68	184.89	24.19	0.88	854.53	6,969.56	2,840.52	2,760.48	80.04	35.489	
18,000.00	9,060.00	7,201.41	6,808.49	186.90	24.21	0.98	850.66	6,969.92	2,905.51	2,825.40	80.11	36.267	
18,100.00	9,060.00	7,205.28	6,808.30	188.92	24.23	1.08	846.81	6,970.28	2,972.44	2,892.28	80.16	37.081	
18,200.00	9,060.00	7,209.13	6,808.10	190.93	24.25	1.18	842.99	6,970.64	3,041.18	2,960.99	80.18	37.928	
18,300.00	9,060.00	7,222.00	6,807.39	192.94	24.33	1.51	830.19	6,971.83	3,111.62	3,031.39	80.24	38.781	
18,400.00	9,060.00	7,222.00	6,807.39	194.96	24.33	1.51	830.19	6,971.83	3,183.60	3,103.41	80.20	39.698	
18,500.00	9,060.00	7,222.00	6,807.39	196.97	24.33	1.51	830.19	6,971.83	3,257.06	3,176.92	80.14	40.642	
18,600.00	9,060.00	7,231.57	6,806.85	198.99	24.38	1.76	820.68	6,972.72	3,331.90	3,251.76	80.14	41.577	
18,700.00	9,060.00	7,520.93	6,806.31	201.00	26.44	9.24	532.99	7,002.09	3,407.68	3,323.16	84.52	40.317	
18,800.00	9,060.00	18,800.00	6,805.17	203.02	281.84	8.44	563.85	6,998.56	3,484.32	3,277.00	207.31	16.807 SF	
18,900.00	9,060.00	18,900.00	6,805.47	205.04	284.28	8.68	554.62	6,999.58	3,562.17	3,352.43	209.75	16.983	
19,000.00	9,060.00	7,525.49	6,806.44	207.06	26.48	9.36	528.46	7,002.59	3,641.00	3,556.74	84.27	43.207	
19,100.00	9,060.00	7,530.63	6,806.62	209.07	26.53	9.49	523.36	7,003.17	3,720.87	3,636.62	84.25	44.163	
19,200.00	9,060.00	7,535.71	6,806.79	211.09	26.57	9.62	518.32	7,003.75	3,801.68	3,717.45	84.23	45.134	
19,300.00	9,060.00	7,540.72	6,806.96	213.11	26.61	9.74	513.34	7,004.31	3,883.37	3,799.17	84.20	46.119	
19,400.00	9,060.00	7,545.66	6,807.12	215.13	26.65	9.87	508.44	7,004.86	3,965.89	3,881.72	84.17	47.115	
19,500.32	9,060.00	7,550.55	6,807.27	217.16	26.69	9.99	503.58	7,005.41	4,049.45	3,965.31	84.14	48.127	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.24	1,120.51	5,898.45	6,004.31					
100.00	100.00	31.15	31.15	0.52	5.00	79.24	1,120.45	5,898.47	6,003.95	5,998.43	5.52	1,088.077		
200.00	200.00	319.08	319.01	0.70	5.08	79.25	1,119.36	5,894.01	6,002.23	5,996.45	5.78	1,037.993		
300.00	300.00	395.00	394.88	0.99	5.14	79.23	1,120.22	5,891.52	5,999.24	5,993.12	6.12	980.126		
400.00	400.00	453.31	453.17	1.31	5.19	79.23	1,120.63	5,890.09	5,996.94	5,990.45	6.49	923.552		
500.00	500.00	535.97	535.82	1.65	5.27	79.22	1,120.98	5,888.49	5,995.11	5,988.20	6.92	866.858		
600.00	600.00	609.42	609.25	1.99	5.36	79.21	1,121.49	5,887.25	5,993.59	5,986.24	7.35	815.566		
700.00	700.00	691.98	691.80	2.34	5.48	79.21	1,122.28	5,886.21	5,992.52	5,984.71	7.81	767.266		
800.00	800.00	793.49	793.30	2.69	5.63	79.19	1,123.29	5,885.02	5,991.57	5,983.25	8.32	720.322		
900.00	900.00	938.15	937.94	3.04	5.89	79.18	1,124.07	5,882.95	5,990.29	5,981.37	8.93	671.134		
1,000.00	1,000.00	1,013.40	1,013.18	3.40	6.04	79.18	1,124.42	5,881.78	5,988.83	5,979.40	9.43	635.326		
1,100.00	1,100.00	1,070.12	1,069.90	3.75	6.15	79.17	1,124.76	5,881.15	5,987.85	5,977.95	9.90	605.055		
1,177.38	1,177.38	1,111.00	1,110.78	4.03	6.24	79.17	1,125.03	5,880.95	5,987.60	5,977.34	10.26	583.772		
1,200.00	1,200.00	1,128.31	1,128.09	4.11	6.27	79.17	1,125.16	5,880.93	5,987.60	5,977.23	10.37	577.215		
1,300.00	1,300.00	1,193.92	1,193.70	4.46	6.41	79.16	1,125.81	5,881.06	5,987.98	5,977.11	10.87	550.929		
1,400.00	1,400.00	1,262.68	1,262.45	4.82	6.56	79.16	1,126.61	5,881.56	5,988.91	5,977.53	11.37	526.529		
1,500.00	1,500.00	1,389.07	1,388.83	5.18	6.85	79.15	1,127.62	5,882.87	5,990.13	5,978.11	12.02	498.415		
1,600.00	1,600.00	1,468.88	1,468.63	5.53	7.04	79.15	1,127.93	5,883.52	5,991.02	5,978.45	12.56	476.866		
1,700.00	1,700.00	1,581.56	1,581.30	5.89	7.31	79.15	1,127.93	5,884.73	5,992.07	5,978.88	13.19	454.124		
1,800.00	1,800.00	1,692.39	1,692.13	6.25	7.59	79.15	1,127.64	5,885.71	5,992.90	5,979.07	13.83	433.247		
1,900.00	1,900.00	1,825.80	1,825.54	6.61	7.94	79.15	1,127.69	5,886.10	5,993.16	5,978.61	14.54	412.074		
2,000.00	2,000.00	1,919.63	1,919.37	6.96	8.20	79.16	1,127.46	5,886.30	5,993.32	5,978.16	15.16	395.428		
2,100.00	2,100.00	2,016.12	2,015.86	7.32	8.47	79.15	1,127.80	5,886.52	5,993.61	5,977.82	15.78	379.737		
2,200.00	2,200.00	2,168.73	2,168.46	7.68	8.91	79.15	1,128.28	5,886.31	5,993.57	5,976.99	16.58	361.495		
2,300.00	2,300.00	2,271.83	2,271.56	8.04	9.21	79.15	1,128.40	5,885.53	5,992.84	5,975.60	17.24	347.632		
2,350.00	2,350.00	2,306.62	2,306.35	8.22	9.31	79.15	1,128.35	5,885.36	5,992.59	5,975.07	17.52	342.048		
2,400.00	2,400.00	2,343.01	2,342.74	8.39	9.42	95.19	1,128.25	5,885.28	5,992.48	5,974.67	17.81	336.560		
2,424.04	2,424.04	2,364.72	2,364.45	8.48	9.48	95.19	1,128.19	5,885.26	5,992.47	5,974.52	17.95	333.764		
2,500.00	2,499.98	2,437.89	2,437.62	8.75	9.69	95.21	1,128.12	5,885.23	5,992.56	5,974.12	18.44	324.972		
2,600.00	2,599.92	2,559.17	2,558.90	9.11	10.06	95.24	1,128.26	5,884.59	5,992.33	5,973.16	19.16	312.718		
2,603.56	2,603.48	2,561.38	2,561.12	9.12	10.07	95.24	1,128.26	5,884.58	5,992.33	5,973.14	19.18	312.401		
2,700.00	2,699.78	2,621.38	2,621.11	9.47	10.25	95.27	1,128.43	5,884.49	5,992.69	5,972.99	19.71	304.070		
2,800.00	2,799.54	2,731.69	2,731.42	9.82	10.43	95.33	1,128.56	5,884.63	5,993.49	5,973.25	20.24	296.054		
2,900.00	2,899.16	2,810.79	2,810.52	10.18	10.46	95.39	1,128.66	5,884.64	5,994.38	5,973.75	20.63	290.563		
3,000.00	2,998.61	2,872.00	2,871.72	10.54	10.47	95.42	1,129.81	5,884.93	5,996.14	5,975.14	20.99	285.604		
3,100.00	3,097.86	2,916.86	2,916.54	10.89	10.48	95.43	1,131.35	5,885.37	5,998.83	5,977.47	21.36	280.845		
3,200.00	3,196.89	2,966.00	2,965.63	11.25	10.50	95.44	1,133.68	5,886.07	6,002.48	5,980.75	21.73	276.284		
3,295.74	3,291.45	3,027.56	3,027.06	11.59	10.52	95.46	1,137.45	5,887.24	6,006.80	5,984.71	22.09	271.936		
3,300.00	3,295.65	3,030.10	3,029.59	11.61	10.52	95.46	1,137.62	5,887.29	6,007.01	5,984.91	22.11	271.748		
3,400.00	3,394.29	3,106.93	3,106.18	11.97	10.56	95.53	1,143.35	5,889.07	6,012.23	5,989.73	22.50	267.235		
3,500.00	3,492.94	3,207.22	3,206.14	12.33	10.62	95.62	1,151.29	5,891.42	6,017.59	5,994.67	22.92	262.564		
3,600.00	3,591.58	3,313.72	3,312.26	12.69	10.70	95.71	1,159.82	5,893.80	6,022.88	5,999.52	23.36	257.834		
3,700.00	3,690.22	3,424.81	3,423.01	13.05	10.80	95.80	1,168.31	5,896.19	6,028.03	6,004.21	23.82	253.060		
3,800.00	3,788.86	3,487.97	3,485.94	13.41	10.86	95.86	1,173.39	5,897.58	6,033.35	6,009.11	24.24	248.873		
3,900.00	3,887.50	3,531.00	3,528.76	13.77	10.91	95.89	1,177.53	5,898.69	6,039.40	6,014.76	24.64	245.086		
4,000.00	3,986.14	3,589.26	3,586.65	14.14	10.98	95.92	1,183.84	5,900.55	6,046.23	6,021.17	25.07	241.188		
4,100.00	4,084.78	3,654.20	3,651.08	14.50	11.07	95.96	1,191.52	5,903.17	6,053.93	6,028.42	25.51	237.331		
4,200.00	4,183.42	3,788.50	3,784.28	14.87	11.26	96.02	1,207.84	5,908.31	6,061.56	6,035.49	26.07	232.486		
4,300.00	4,282.06	3,936.84	3,931.47	15.24	11.51	96.09	1,225.77	5,912.61	6,068.15	6,041.46	26.69	227.369		
4,400.00	4,380.70	4,002.00	3,996.05	15.60	11.62	96.11	1,234.23	5,914.54	6,075.02	6,047.86	27.16	223.655		
4,500.00	4,479.34	4,190.00	4,182.44	15.97	11.99	96.19	1,258.40	5,918.55	6,080.85	6,052.94	27.91	217.886		
4,600.00	4,577.98	4,255.97	4,247.86	16.34	12.13	96.21	1,266.80	5,919.59	6,086.50	6,058.10	28.41	214.244		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
4,700.00	4,676.62	4,369.31	4,360.14	16.71	12.38	96.25	1,282.06	5,922.25	6,092.93	6,063.91	29.03	209.899				
4,800.00	4,775.27	4,418.95	4,409.35	17.08	12.50	96.27	1,288.53	5,923.38	6,099.26	6,069.76	29.50	206.747				
4,900.00	4,873.91	4,472.00	4,461.89	17.45	12.63	96.29	1,295.58	5,925.17	6,106.54	6,076.55	29.98	203.670				
5,000.00	4,972.55	4,534.79	4,524.06	17.82	12.78	96.31	1,304.02	5,927.70	6,114.52	6,084.02	30.49	200.517				
5,100.00	5,071.19	4,678.15	4,666.07	18.19	13.14	96.36	1,322.84	5,933.36	6,122.50	6,091.27	31.23	196.058				
5,200.00	5,169.83	4,724.11	4,711.54	18.56	13.27	96.38	1,329.25	5,935.21	6,130.50	6,098.79	31.71	193.351				
5,300.00	5,268.47	4,815.79	4,802.10	18.93	13.53	96.40	1,343.05	5,939.10	6,139.03	6,106.70	32.32	189.932				
5,400.00	5,367.11	4,970.26	4,954.81	19.31	13.97	96.43	1,365.55	5,944.98	6,147.06	6,113.92	33.14	185.489				
5,500.00	5,465.75	5,104.40	5,087.58	19.68	14.37	96.47	1,384.09	5,949.21	6,154.31	6,120.41	33.90	181.519				
5,600.00	5,564.39	5,235.91	5,217.91	20.05	14.76	96.52	1,401.32	5,952.84	6,161.07	6,126.40	34.67	177.719				
5,700.00	5,663.03	5,331.84	5,313.04	20.42	15.05	96.56	1,413.44	5,955.44	6,167.71	6,132.38	35.32	174.603				
5,800.00	5,761.67	5,465.25	5,445.49	20.80	15.46	96.62	1,429.11	5,958.32	6,173.55	6,137.45	36.10	171.000				
5,900.00	5,860.31	5,567.07	5,546.54	21.17	15.77	96.67	1,441.38	5,960.70	6,179.74	6,142.96	36.79	167.992				
6,000.00	5,958.96	5,651.10	5,630.02	21.54	16.04	96.71	1,450.76	5,962.59	6,185.72	6,148.31	37.41	165.328				
6,100.00	6,057.60	5,754.84	5,732.99	21.92	16.37	96.76	1,463.15	5,965.29	6,192.17	6,154.06	38.11	162.467				
6,200.00	6,156.24	5,847.75	5,825.30	22.29	16.66	96.81	1,473.50	5,967.48	6,198.25	6,159.48	38.78	159.845				
6,300.00	6,254.88	5,955.03	5,932.01	22.67	17.00	96.88	1,484.02	5,970.56	6,204.65	6,165.17	39.48	157.148				
6,400.00	6,353.52	6,034.47	6,010.47	23.04	18.13	97.22	1,510.08	5,973.54	6,208.38	6,167.38	41.01	151.398				
6,500.00	6,452.16	6,151.30	6,127.19	23.42	18.46	97.35	1,514.89	5,972.17	6,209.95	6,168.24	41.71	148.867				
6,600.00	6,550.80	7,875.80	7,416.21	23.79	21.51	105.32	801.32	5,964.63	6,209.92	6,165.02	44.90	138.320				
6,700.00	6,649.44	7,870.70	7,416.10	24.17	21.47	105.28	806.41	5,964.48	6,199.87	6,154.56	45.31	136.843				
6,800.00	6,748.08	7,859.00	7,415.84	24.54	21.39	105.17	818.11	5,964.17	6,191.42	6,145.76	45.66	135.585				
6,900.00	6,846.72	7,859.00	7,415.84	24.92	21.39	105.17	818.11	5,964.17	6,184.55	6,138.45	46.10	134.168				
7,000.00	6,945.36	7,859.00	7,415.84	25.29	21.39	105.17	818.11	5,964.17	6,179.28	6,132.76	46.52	132.835				
7,100.00	7,044.00	7,847.80	7,415.57	25.67	21.32	105.07	829.31	5,963.90	6,175.61	6,128.75	46.86	131.786				
7,200.00	7,142.65	7,841.16	7,415.40	26.04	21.28	105.01	835.94	5,963.75	6,173.55	6,126.33	47.22	130.729				
7,278.47	7,220.05	7,836.02	7,415.27	26.34	21.24	104.96	841.07	5,963.63	6,173.06	6,125.55	47.50	129.950				
7,300.00	7,241.29	7,834.62	7,415.23	26.42	21.23	104.95	842.47	5,963.61	6,173.09	6,125.51	47.58	129.744				
7,400.00	7,339.93	7,828.00	7,415.05	26.79	21.19	104.89	849.09	5,963.47	6,174.24	6,126.32	47.92	128.832				
7,500.00	7,438.57	7,828.00	7,415.05	27.17	21.19	104.89	849.09	5,963.47	6,177.00	6,128.70	48.30	127.879				
7,571.77	7,509.37	7,828.00	7,415.05	27.44	21.19	104.89	849.09	5,963.47	6,179.98	6,131.41	48.57	127.240				
7,600.00	7,537.23	7,828.00	7,415.05	27.55	21.19	104.90	849.09	5,963.47	6,181.35	6,132.68	48.67	126.998				
7,700.00	7,636.18	7,816.09	7,414.63	27.92	21.12	104.87	861.00	5,963.26	6,186.78	6,137.82	48.96	126.368				
7,800.00	7,735.48	7,813.81	7,414.54	28.29	21.11	104.95	863.27	5,963.22	6,193.16	6,143.88	49.29	125.653				
7,900.00	7,835.05	7,812.45	7,414.48	28.65	21.10	105.04	864.63	5,963.20	6,200.48	6,150.87	49.61	124.988				
8,000.00	7,934.83	7,811.91	7,414.45	29.01	21.09	105.15	865.17	5,963.19	6,208.72	6,158.80	49.92	124.373				
8,100.00	8,034.74	7,812.12	7,414.46	29.36	21.10	105.29	864.96	5,963.20	6,217.87	6,167.65	50.22	123.808				
8,202.27	8,137.00	7,813.04	7,414.50	29.72	21.10	89.41	864.04	5,963.21	6,228.18	6,177.66	50.52	123.282				
8,300.00	8,234.73	7,814.20	7,414.55	30.06	21.11	89.42	862.88	5,963.23	6,239.22	6,188.43	50.79	122.833				
8,400.00	8,334.73	7,815.32	7,414.60	30.41	21.11	89.43	861.76	5,963.25	6,252.09	6,201.02	51.07	122.431				
8,500.00	8,434.73	7,816.38	7,414.65	30.75	21.12	89.44	860.71	5,963.26	6,266.52	6,215.20	51.33	122.086				
8,552.31	8,487.04	7,828.00	7,415.05	30.94	21.19	89.55	849.09	5,963.47	6,274.74	6,223.21	51.53	121.775				
8,600.00	8,534.68	7,828.00	7,415.05	31.10	21.19	-0.11	849.09	5,963.47	6,280.59	6,228.95	51.64	121.627				
8,650.00	8,584.26	7,828.00	7,415.05	31.26	21.19	-0.11	849.09	5,963.47	6,282.87	6,231.12	51.74	121.420				
8,700.00	8,633.10	7,828.00	7,415.05	31.43	21.19	-0.11	849.09	5,963.47	6,281.18	6,229.33	51.85	121.151				
8,750.00	8,680.83	7,828.00	7,415.05	31.58	21.19	-0.11	849.09	5,963.47	6,275.54	6,223.60	51.94	120.824				
8,800.00	8,727.09	7,828.00	7,415.05	31.74	21.19	-0.12	849.09	5,963.47	6,265.98	6,213.95	52.02	120.442				
8,850.00	8,771.52	7,828.00	7,415.05	31.89	21.19	-0.12	849.09	5,963.47	6,252.55	6,200.45	52.10	120.010				
8,900.00	8,813.78	7,828.00	7,415.05	32.04	21.19	-0.12	849.09	5,963.47	6,235.33	6,183.17	52.17	119.531				
8,950.00	8,853.56	7,828.00	7,415.05	32.18	21.19	-0.13	849.09	5,963.47	6,214.42	6,162.20	52.22	119.006				
9,000.00	8,890.55	7,828.00	7,415.05	32.32	21.19	-0.13	849.09	5,963.47	6,189.95	6,137.69	52.26	118.439				
9,050.00	8,924.46	7,828.00	7,415.05	32.47	21.19	-0.14	849.09	5,963.47	6,162.06	6,109.76	52.30	117.831				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,100.00	8,955.05	7,828.00	7,415.05	32.63	21.19	-0.15	849.09	5,963.47	6,130.91	6,078.59	52.32	117.185		
9,150.00	8,982.08	7,828.00	7,415.05	32.79	21.19	-0.17	849.09	5,963.47	6,096.70	6,044.37	52.33	116.503		
9,200.00	9,005.34	7,828.00	7,415.05	32.97	21.19	-0.18	849.09	5,963.47	6,059.63	6,007.30	52.33	115.787		
9,250.00	9,024.65	7,828.00	7,415.05	33.17	21.19	-0.20	849.09	5,963.47	6,019.95	5,967.62	52.33	115.038		
9,300.00	9,039.87	7,828.00	7,415.05	33.38	21.19	-0.23	849.09	5,963.47	5,977.89	5,925.57	52.32	114.259		
9,350.00	9,050.89	7,828.00	7,415.05	33.62	21.19	-0.28	849.09	5,963.47	5,933.74	5,881.43	52.30	113.451		
9,400.00	9,057.61	7,828.00	7,415.05	33.87	21.19	-0.34	849.09	5,963.47	5,887.78	5,835.50	52.28	112.616		
9,452.31	9,060.00	7,828.00	7,415.05	34.15	21.19	-0.45	849.09	5,963.47	5,838.11	5,785.85	52.26	111.715		
9,500.00	9,060.00	7,828.00	7,415.05	34.42	21.19	-0.45	849.09	5,963.47	5,792.21	5,739.98	52.24	110.886		
9,600.00	9,060.00	7,828.00	7,415.05	35.09	21.19	-0.45	849.09	5,963.47	5,696.06	5,643.88	52.18	109.156		
9,700.00	9,060.00	7,828.00	7,415.05	35.86	21.19	-0.45	849.09	5,963.47	5,600.05	5,547.92	52.13	107.425		
9,800.00	9,060.00	7,828.00	7,415.05	36.72	21.19	-0.45	849.09	5,963.47	5,504.17	5,452.10	52.08	105.693		
9,900.00	9,060.00	7,828.00	7,415.05	37.69	21.19	-0.45	849.09	5,963.47	5,408.45	5,356.42	52.02	103.960		
10,000.00	9,060.00	7,828.00	7,415.05	38.73	21.19	-0.45	849.09	5,963.47	5,312.88	5,260.91	51.97	102.227		
10,100.00	9,060.00	7,828.00	7,415.05	39.86	21.19	-0.45	849.09	5,963.47	5,217.48	5,165.56	51.92	100.493		
10,140.22	9,060.00	7,828.00	7,415.05	40.33	21.19	-0.45	849.09	5,963.47	5,179.16	5,127.26	51.90	99.795		
10,200.00	9,060.00	7,828.00	7,415.05	41.05	21.19	-4.15	849.09	5,963.47	5,122.26	5,070.40	51.87	98.759		
10,300.00	9,060.00	7,828.00	7,415.05	42.31	21.19	-10.16	849.09	5,963.47	5,027.31	4,975.49	51.81	97.026		
10,400.00	9,060.00	7,828.00	7,415.05	43.64	21.19	-15.82	849.09	5,963.47	4,932.75	4,880.99	51.76	95.295		
10,507.23	9,060.00	7,836.41	7,415.28	45.11	21.25	-21.15	840.69	5,963.64	4,831.96	4,780.20	51.76	93.351		
10,600.00	9,060.00	7,842.20	7,415.43	46.43	21.28	-16.24	834.90	5,963.77	4,744.98	4,693.23	51.75	91.683		
10,700.00	9,060.00	7,846.89	7,415.55	47.91	21.31	-10.80	830.21	5,963.87	4,651.15	4,599.41	51.74	89.897		
10,800.00	9,060.00	7,849.92	7,415.63	49.42	21.33	-5.33	827.18	5,963.95	4,557.33	4,505.62	51.71	88.129		
10,900.00	9,060.00	7,851.24	7,415.66	50.97	21.34	0.06	825.87	5,963.98	4,463.67	4,412.00	51.67	86.382		
11,000.00	9,060.00	7,850.80	7,415.65	52.55	21.34	5.26	826.31	5,963.97	4,370.29	4,318.66	51.62	84.658		
11,100.00	9,060.00	7,848.56	7,415.59	54.14	21.32	10.18	828.55	5,963.91	4,277.32	4,225.76	51.56	82.958		
11,207.23	9,060.00	7,844.10	7,415.48	55.87	21.30	15.07	833.01	5,963.81	4,178.26	4,126.78	51.48	81.160		
11,300.00	9,060.00	7,840.05	7,415.37	57.39	21.27	10.68	837.05	5,963.72	4,092.89	4,041.47	51.42	79.604		
11,400.00	9,060.00	7,837.38	7,415.30	59.06	21.25	5.98	839.72	5,963.66	4,000.99	3,949.63	51.36	77.902		
11,506.63	9,060.00	7,836.53	7,415.28	60.88	21.25	1.07	840.57	5,963.65	3,903.27	3,851.96	51.32	76.064		
11,600.00	9,060.00	7,836.70	7,415.29	62.49	21.25	1.08	840.39	5,963.65	3,818.06	3,766.78	51.29	74.447		
11,700.00	9,060.00	7,836.90	7,415.29	64.24	21.25	1.09	840.20	5,963.65	3,727.24	3,675.98	51.26	72.716		
11,800.00	9,060.00	7,837.10	7,415.30	66.01	21.25	1.09	840.00	5,963.66	3,636.89	3,585.66	51.23	70.986		
11,900.00	9,060.00	7,837.30	7,415.30	67.79	21.25	1.10	839.80	5,963.66	3,547.07	3,495.85	51.22	69.258		
12,000.00	9,060.00	7,837.51	7,415.31	69.58	21.25	1.11	839.59	5,963.67	3,457.80	3,406.59	51.20	67.530		
12,100.00	9,060.00	7,837.72	7,415.31	71.39	21.25	1.12	839.38	5,963.67	3,369.13	3,317.93	51.20	65.805		
12,200.00	9,060.00	7,837.93	7,415.32	73.21	21.26	1.12	839.17	5,963.68	3,281.12	3,229.92	51.20	64.081		
12,300.00	9,060.00	7,838.15	7,415.32	75.05	21.26	1.13	838.95	5,963.68	3,193.81	3,142.60	51.22	62.359		
12,400.00	9,060.00	7,838.37	7,415.33	76.89	21.26	1.14	838.73	5,963.68	3,107.27	3,056.03	51.24	60.639		
12,500.00	9,060.00	7,838.60	7,415.34	78.74	21.26	1.15	838.50	5,963.69	3,021.56	2,970.28	51.28	58.923		
12,600.00	9,060.00	7,838.83	7,415.34	80.61	21.26	1.16	838.27	5,963.69	2,936.75	2,885.42	51.33	57.210		
12,700.00	9,060.00	7,839.07	7,415.35	82.48	21.26	1.17	838.03	5,963.70	2,852.93	2,801.53	51.40	55.501		
12,800.00	9,060.00	7,839.31	7,415.36	84.36	21.26	1.17	837.79	5,963.71	2,770.18	2,718.69	51.49	53.798		
12,900.00	9,060.00	7,839.56	7,415.36	86.24	21.27	1.18	837.54	5,963.71	2,688.61	2,637.00	51.60	52.101		
13,000.00	9,060.00	7,839.81	7,415.37	88.14	21.27	1.19	837.29	5,963.72	2,608.31	2,556.57	51.74	50.411		
13,100.00	9,060.00	7,840.07	7,415.38	90.04	21.27	1.20	837.03	5,963.72	2,529.42	2,477.52	51.90	48.732		
13,200.00	9,060.00	7,840.34	7,415.38	91.94	21.27	1.21	836.76	5,963.73	2,452.08	2,399.97	52.10	47.064		
13,300.00	9,060.00	7,840.61	7,415.39	93.86	21.27	1.22	836.49	5,963.73	2,376.42	2,324.09	52.33	45.411		
13,400.00	9,060.00	7,840.88	7,415.40	95.77	21.27	1.23	836.22	5,963.74	2,302.62	2,250.02	52.60	43.777		
13,500.00	9,060.00	7,841.17	7,415.40	97.70	21.28	1.24	835.93	5,963.75	2,230.86	2,177.95	52.91	42.164		
13,600.00	9,060.00	7,841.46	7,415.41	99.62	21.28	1.25	835.65	5,963.75	2,161.35	2,108.09	53.26	40.578		
13,700.00	9,060.00	7,841.75	7,415.42	101.56	21.28	1.26	835.35	5,963.76	2,094.31	2,040.64	53.67	39.024		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	7,842.05	7,415.43	103.49	21.28	1.27	835.05	5,963.77	2,029.98	1,975.86	54.12	37.509		
13,900.00	9,060.00	7,842.36	7,415.43	105.43	21.28	1.29	834.74	5,963.77	1,968.63	1,914.00	54.63	36.039		
14,000.00	9,060.00	7,842.68	7,415.44	107.38	21.29	1.30	834.42	5,963.78	1,910.55	1,855.36	55.18	34.621		
14,100.00	9,060.00	7,843.01	7,415.45	109.33	21.29	1.31	834.09	5,963.79	1,856.04	1,800.24	55.80	33.265		
14,200.00	9,060.00	7,843.34	7,415.46	111.28	21.29	1.32	833.76	5,963.79	1,805.43	1,748.97	56.46	31.977		
14,300.00	9,060.00	7,843.68	7,415.47	113.23	21.29	1.33	833.42	5,963.80	1,759.05	1,701.88	57.17	30.767		
14,400.00	9,060.00	7,844.03	7,415.48	115.19	21.30	1.35	833.07	5,963.81	1,717.25	1,659.32	57.93	29.643		
14,500.00	9,060.00	7,844.39	7,415.49	117.15	21.30	1.36	832.71	5,963.82	1,680.37	1,621.64	58.73	28.612		
14,600.00	9,060.00	7,844.76	7,415.50	119.11	21.30	1.37	832.34	5,963.83	1,648.73	1,589.17	59.56	27.680		
14,700.00	9,060.00	7,845.14	7,415.51	121.08	21.30	1.39	831.96	5,963.83	1,622.65	1,562.23	60.42	26.854		
14,800.00	9,060.00	7,845.53	7,415.52	123.05	21.30	1.40	831.57	5,963.84	1,602.40	1,541.10	61.31	26.137		
14,900.00	9,060.00	7,845.93	7,415.53	125.02	21.31	1.41	831.17	5,963.85	1,588.20	1,526.00	62.20	25.533		
15,000.00	9,060.00	7,846.34	7,415.54	126.99	21.31	1.43	830.76	5,963.86	1,580.21	1,517.11	63.10	25.043		
15,076.58	9,060.00	7,846.67	7,415.54	128.51	21.31	1.44	830.44	5,963.87	1,578.35	1,514.57	63.78	24.745 CC		
15,100.00	9,060.00	7,846.77	7,415.55	128.97	21.31	1.45	830.34	5,963.87	1,578.53	1,514.54	63.99	24.668 ES		
15,200.00	9,060.00	7,847.20	7,415.56	130.95	21.32	1.46	829.90	5,963.88	1,583.17	1,518.31	64.86	24.409		
15,300.00	9,060.00	7,847.65	7,415.57	132.93	21.32	1.48	829.46	5,963.89	1,594.09	1,528.40	65.69	24.266		
15,400.00	9,060.00	7,848.11	7,415.58	134.91	21.32	1.49	829.00	5,963.90	1,611.15	1,544.67	66.48	24.237 SF		
15,500.00	9,060.00	7,848.58	7,415.59	136.89	21.32	1.51	828.52	5,963.91	1,634.16	1,566.97	67.19	24.320		
15,600.00	9,060.00	7,849.07	7,415.60	138.88	21.33	1.53	828.03	5,963.93	1,662.88	1,595.04	67.84	24.512		
15,700.00	9,060.00	7,849.57	7,415.62	140.86	21.33	1.55	827.53	5,963.94	1,697.01	1,628.61	68.40	24.810		
15,800.00	9,060.00	7,850.09	7,415.63	142.85	21.33	1.57	827.01	5,963.95	1,736.24	1,667.36	68.88	25.207		
15,900.00	9,060.00	7,850.63	7,415.64	144.84	21.34	1.59	826.48	5,963.96	1,780.23	1,710.96	69.27	25.699		
16,000.00	9,060.00	7,851.18	7,415.66	146.83	21.34	1.61	825.93	5,963.97	1,828.63	1,759.05	69.58	26.279		
16,100.00	9,060.00	7,851.75	7,415.67	148.83	21.35	1.63	825.36	5,963.99	1,881.11	1,811.29	69.82	26.941		
16,200.00	9,060.00	7,852.34	7,415.68	150.82	21.35	1.65	824.77	5,964.00	1,937.33	1,867.34	69.99	27.679		
16,300.00	9,060.00	7,852.95	7,415.70	152.82	21.35	1.67	824.16	5,964.02	1,996.98	1,926.88	70.10	28.486		
16,400.00	9,060.00	7,853.58	7,415.71	154.81	21.36	1.69	823.53	5,964.03	2,059.76	1,989.59	70.17	29.356		
16,500.00	9,060.00	7,854.23	7,415.73	156.81	21.36	1.72	822.88	5,964.05	2,125.39	2,055.21	70.18	30.283		
16,600.00	9,060.00	7,854.91	7,415.75	158.81	21.37	1.74	822.20	5,964.06	2,193.62	2,123.45	70.17	31.263		
16,700.00	9,060.00	7,855.61	7,415.76	160.81	21.37	1.77	821.50	5,964.08	2,264.21	2,194.09	70.12	32.291		
16,800.00	9,060.00	7,856.33	7,415.78	162.81	21.38	1.79	820.78	5,964.10	2,336.94	2,266.89	70.05	33.361		
16,900.00	9,060.00	7,857.08	7,415.80	164.82	21.38	1.82	820.03	5,964.12	2,411.63	2,341.67	69.96	34.470		
17,000.00	9,060.00	7,857.87	7,415.82	166.82	21.38	1.85	819.24	5,964.14	2,488.10	2,418.24	69.86	35.614		
17,100.00	9,060.00	7,858.68	7,415.84	168.82	21.39	1.88	818.43	5,964.16	2,566.19	2,496.43	69.75	36.790		
17,200.00	9,060.00	7,859.73	7,415.86	170.83	21.40	1.92	817.38	5,964.18	2,645.75	2,576.11	69.64	37.993		
17,300.00	9,060.00	7,861.02	7,415.89	172.84	21.41	1.96	816.09	5,964.22	2,726.66	2,657.14	69.52	39.220		
17,400.00	9,060.00	7,862.45	7,415.92	174.84	21.42	2.01	814.66	5,964.25	2,808.79	2,739.39	69.40	40.470		
17,500.00	9,060.00	7,864.04	7,415.96	176.85	21.43	2.07	813.07	5,964.30	2,892.06	2,822.77	69.29	41.740		
17,600.00	9,060.00	7,865.83	7,416.00	178.86	21.44	2.14	811.29	5,964.34	2,976.35	2,907.17	69.17	43.027		
17,700.00	9,060.00	7,867.84	7,416.04	180.87	21.45	2.21	809.28	5,964.40	3,061.58	2,992.52	69.06	44.329		
17,800.00	9,060.00	7,870.13	7,416.09	182.88	21.47	2.29	806.98	5,964.46	3,147.69	3,078.73	68.96	45.645		
17,900.00	9,060.00	7,872.76	7,416.15	184.89	21.49	2.39	804.35	5,964.54	3,234.59	3,165.73	68.86	46.971		
18,000.00	9,060.00	7,875.82	7,416.21	186.90	21.51	2.50	801.31	5,964.63	3,322.23	3,253.46	68.77	48.306		
18,100.00	9,060.00	7,879.40	7,416.28	188.92	21.53	2.63	797.73	5,964.74	3,410.55	3,341.86	68.70	49.647		
18,200.00	9,060.00	7,883.66	7,416.36	190.93	21.56	2.78	793.47	5,964.88	3,499.50	3,430.87	68.63	50.992		
18,300.00	9,060.00	7,888.81	7,416.46	192.94	21.60	2.97	788.32	5,965.05	3,589.02	3,520.45	68.58	52.337		
18,400.00	9,060.00	18,400.00	7,416.25	194.96	102.28	2.61	798.35	5,964.75	3,679.08	3,541.61	137.47	26.763		
18,500.00	9,060.00	18,500.00	7,416.28	196.97	103.08	2.65	797.17	5,964.78	3,769.65	3,631.30	138.35	27.248		
18,600.00	9,060.00	18,600.00	7,416.30	198.99	103.87	2.69	796.00	5,964.82	3,860.68	3,721.46	139.22	27.731		
18,700.00	9,060.00	18,700.00	7,416.33	201.00	104.67	2.73	794.83	5,964.85	3,952.15	3,812.07	140.08	28.213		
18,800.00	9,060.00	18,800.00	7,416.35	203.02	105.46	2.78	793.65	5,964.89	4,044.02	3,903.09	140.93	28.694		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals												Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,900.00	9,060.00	18,900.00	7,416.38	205.04	106.25	2.82	792.48	5,964.92	4,136.27	3,994.49	141.78	29.173	
19,000.00	9,060.00	7,895.25	7,416.56	207.06	21.65	3.20	781.89	5,965.27	4,228.86	4,160.77	68.09	62.108	
19,100.00	9,060.00	7,896.39	7,416.58	209.07	21.66	3.25	780.74	5,965.31	4,321.78	4,253.74	68.04	63.517	
19,200.00	9,060.00	7,897.54	7,416.60	211.09	21.67	3.29	779.60	5,965.35	4,415.02	4,347.02	68.00	64.927	
19,300.00	9,060.00	7,898.69	7,416.62	213.11	21.68	3.33	778.44	5,965.38	4,508.54	4,440.58	67.96	66.339	
19,400.00	9,060.00	7,899.85	7,416.63	215.13	21.69	3.37	777.29	5,965.42	4,602.34	4,534.41	67.93	67.752	
19,500.32	9,060.00	7,901.02	7,416.65	217.16	21.70	3.41	776.12	5,965.46	4,696.69	4,628.79	67.90	69.170	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10				
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719	
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830	
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136	
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138	
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071	
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393	
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588	
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365	
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235	
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783	
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522	
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356	
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598	
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396	
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816	
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495	
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810	
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492	
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077	
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919	
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751	
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600	
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466	
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553	
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265	
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166	
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786	
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382	
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961	
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918	
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227	
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202	
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622	
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583	
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027	
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738	
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740	
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823	
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354	
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169	
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681	
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928	
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391	
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958	
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848	
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993	
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353	
4,400.00	4,380.70	4,326.65	4,326.54	15.60	15.69	93.30	1,571.52	5,782.75	6,001.91	5,970.63	31.28	191.866	
4,500.00	4,479.34	4,448.29	4,448.18	15.97	16.10	93.49	1,571.66	5,782.02	6,002.33	5,970.27	32.05	187.267	
4,600.00	4,577.98	4,559.15	4,559.03	16.34	16.47	93.66	1,571.40	5,781.11	6,002.50	5,969.71	32.79	183.068	
4,700.00	4,676.62	4,661.36	4,661.24	16.71	16.81	93.82	1,571.37	5,780.08	6,002.58	5,969.08	33.50	179.196	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	4,754.35	4,754.23	17.08	17.12	93.96	1,571.65	5,779.09	6,002.73	5,968.55	34.18	175.635		
4,900.00	4,873.91	4,843.75	4,843.62	17.45	17.42	94.10	1,572.03	5,778.25	6,003.05	5,968.21	34.85	172.274		
5,000.00	4,972.55	4,917.04	4,916.90	17.82	17.66	94.21	1,572.40	5,777.70	6,003.65	5,968.19	35.46	169.299		
5,100.00	5,071.19	4,979.31	4,979.17	18.19	17.87	94.30	1,572.78	5,777.62	6,004.86	5,968.82	36.04	166.616		
5,200.00	5,169.83	5,070.23	5,070.09	18.56	18.18	94.44	1,573.09	5,777.86	6,006.48	5,969.76	36.72	163.597		
5,300.00	5,268.47	5,152.21	5,152.08	18.93	18.45	94.57	1,573.09	5,778.32	6,008.33	5,970.97	37.36	160.822		
5,400.00	5,367.11	5,238.14	5,238.00	19.31	18.74	94.71	1,572.93	5,779.04	6,010.48	5,972.46	38.02	158.091		
5,500.00	5,465.75	5,339.17	5,339.03	19.68	19.08	94.87	1,572.80	5,779.99	6,012.78	5,974.05	38.73	155.247		
5,600.00	5,564.39	5,475.90	5,475.75	20.05	19.54	95.08	1,573.39	5,780.61	6,014.76	5,975.19	39.56	152.023		
5,700.00	5,663.03	5,599.25	5,599.10	20.42	19.96	95.26	1,574.02	5,780.50	6,016.26	5,975.91	40.35	149.088		
5,800.00	5,761.67	5,695.79	5,695.64	20.80	20.29	95.41	1,574.39	5,780.20	6,017.58	5,976.53	41.05	146.582		
5,900.00	5,860.31	5,785.09	5,784.94	21.17	20.59	95.54	1,574.73	5,780.07	6,019.09	5,977.36	41.73	144.248		
6,000.00	5,958.96	5,874.18	5,874.03	21.54	20.89	95.68	1,574.99	5,780.09	6,020.79	5,978.39	42.40	141.994		
6,100.00	6,057.60	5,976.20	5,976.05	21.92	21.24	95.84	1,575.02	5,780.26	6,022.64	5,979.52	43.12	139.670		
6,200.00	6,156.24	6,075.37	6,075.21	22.29	21.57	96.00	1,574.75	5,780.38	6,024.43	5,980.60	43.83	137.449		
6,300.00	6,254.88	6,180.28	6,180.12	22.67	21.93	96.17	1,573.80	5,780.61	6,026.25	5,981.69	44.56	135.238		
6,400.00	6,353.52	6,268.06	6,267.89	23.04	22.22	96.32	1,572.65	5,780.85	6,028.12	5,982.89	45.23	133.270		
6,500.00	6,452.16	6,355.38	6,355.20	23.42	22.52	96.46	1,571.61	5,781.26	6,030.24	5,984.34	45.90	131.369		
6,600.00	6,550.80	6,429.06	6,428.88	23.79	22.77	96.58	1,570.80	5,781.78	6,032.67	5,986.14	46.53	129.661		
6,700.00	6,649.44	6,496.77	6,496.58	24.17	23.00	96.70	1,570.09	5,782.59	6,035.63	5,988.50	47.13	128.069		
6,800.00	6,748.08	6,566.30	6,566.10	24.54	23.24	96.81	1,569.53	5,783.78	6,039.16	5,991.42	47.74	126.513		
6,900.00	6,846.72	6,672.57	6,672.35	24.92	23.61	96.99	1,568.70	5,785.78	6,042.92	5,994.45	48.47	124.665		
7,000.00	6,945.36	6,780.34	6,780.09	25.29	23.97	97.17	1,567.66	5,787.60	6,046.51	5,997.29	49.22	122.855		
7,100.00	7,044.00	6,876.98	6,876.72	25.67	24.31	97.32	1,567.26	5,789.16	6,050.16	6,000.24	49.92	121.195		
7,200.00	7,142.65	6,969.27	6,969.01	26.04	24.62	97.46	1,567.49	5,790.49	6,053.79	6,003.18	50.61	119.617		
7,300.00	7,241.29	7,034.05	7,033.77	26.42	24.84	97.56	1,567.78	5,791.69	6,057.90	6,006.70	51.20	118.319		
7,400.00	7,339.93	7,097.67	7,097.37	26.79	25.06	97.66	1,568.08	5,793.24	6,062.61	6,010.82	51.78	117.074		
7,500.00	7,438.57	7,162.22	7,161.89	27.17	25.29	97.76	1,568.29	5,795.19	6,067.91	6,015.54	52.37	115.864		
7,571.77	7,509.37	7,208.74	7,208.38	27.44	25.45	97.83	1,568.25	5,796.84	6,072.09	6,019.30	52.79	115.019		
7,600.00	7,537.23	7,227.96	7,227.59	27.55	25.51	97.89	1,568.18	5,797.59	6,073.80	6,020.84	52.96	114.685		
7,700.00	7,636.18	7,303.05	7,302.60	27.92	25.77	98.09	1,567.46	5,800.75	6,079.91	6,026.33	53.58	113.470		
7,800.00	7,735.48	7,389.70	7,389.16	28.29	26.08	98.30	1,566.16	5,804.73	6,085.99	6,031.75	54.24	112.202		
7,900.00	7,835.05	7,476.64	7,475.99	28.65	26.38	98.47	1,565.04	5,808.86	6,091.91	6,037.01	54.90	110.968		
8,000.00	7,934.83	7,563.46	7,562.63	29.01	26.70	98.72	1,562.60	5,817.66	6,096.49	6,040.38	56.11	108.652		
8,100.00	8,034.74	7,651.42	7,650.55	29.36	27.06	98.81	1,561.63	5,820.26	6,099.47	6,042.65	56.82	107.343		
8,202.27	8,137.00	7,740.00	7,739.11	29.72	27.44	82.83	1,561.12	5,821.70	6,102.22	6,044.85	57.37	106.366		
8,300.00	8,234.73	7,828.00	7,827.11	30.06	27.77	82.83	1,561.12	5,821.70	6,105.99	6,048.31	57.68	105.866		
8,400.00	8,334.73	7,918.00	7,917.11	30.41	27.77	82.83	1,561.12	5,821.70	6,111.45	6,053.47	57.98	105.408		
8,500.00	8,434.73	8,008.00	8,007.11	30.75	27.77	82.83	1,561.12	5,821.70	6,118.55	6,060.28	58.27	105.005		
8,552.31	8,487.04	8,098.00	8,097.11	30.94	27.77	82.83	1,561.12	5,821.70	6,122.91	6,064.49	58.42	104.815		
8,600.00	8,534.68	8,188.00	8,187.11	31.10	27.77	-6.80	1,561.12	5,821.70	6,125.31	6,066.76	58.54	104.630		
8,650.00	8,584.26	8,278.00	8,277.11	31.26	27.77	-6.82	1,561.12	5,821.70	6,123.99	6,065.32	58.67	104.388		
8,700.00	8,633.10	8,368.00	8,367.11	31.43	27.77	-6.88	1,561.12	5,821.70	6,118.75	6,059.97	58.78	104.092		
8,750.00	8,680.83	8,458.00	8,457.11	31.58	27.77	-6.99	1,561.12	5,821.70	6,109.63	6,050.74	58.89	103.744		
8,800.00	8,727.09	8,548.00	8,547.11	31.74	27.77	-7.16	1,561.12	5,821.70	6,096.68	6,037.69	58.99	103.349		
8,850.00	8,771.52	8,638.00	8,637.11	31.89	27.77	-7.38	1,561.12	5,821.70	6,079.97	6,020.89	59.08	102.909		
8,900.00	8,813.78	8,728.00	8,727.11	32.04	27.77	-7.67	1,561.12	5,821.70	6,059.59	6,000.43	59.16	102.427		
8,950.00	8,853.56	8,818.00	8,817.11	32.18	27.77	-8.05	1,561.12	5,821.70	6,035.68	5,976.45	59.23	101.905		
9,000.00	8,890.55	8,908.00	8,907.11	32.32	27.77	-8.52	1,561.12	5,821.70	6,008.36	5,949.08	59.29	101.346		
9,050.00	8,924.46	8,998.00	8,997.11	32.47	27.77	-9.11	1,561.12	5,821.70	5,977.80	5,918.47	59.33	100.753		
9,100.00	8,955.05	9,088.00	9,087.11	32.63	27.77	-9.86	1,561.12	5,821.70	5,944.19	5,884.83	59.37	100.126		
9,150.00	8,982.08	9,178.00	9,177.11	32.79	27.77	-10.81	1,561.12	5,821.70	5,907.73	5,848.34	59.39	99.469		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	7,876.00	7,875.11	32.97	27.77	-12.06	1,561.12	5,821.70	5,868.65	5,809.24	59.41	98.784		
9,250.00	9,024.65	7,876.00	7,875.11	33.17	27.77	-13.71	1,561.12	5,821.70	5,827.20	5,767.78	59.42	98.072		
9,300.00	9,039.87	7,876.00	7,875.11	33.38	27.77	-15.99	1,561.12	5,821.70	5,783.64	5,724.22	59.42	97.336		
9,350.00	9,050.89	7,876.00	7,875.11	33.62	27.77	-19.27	1,561.12	5,821.70	5,738.26	5,678.84	59.42	96.578		
9,400.00	9,057.61	7,876.00	7,875.11	33.87	27.77	-24.29	1,561.12	5,821.70	5,691.37	5,631.96	59.41	95.801		
9,452.31	9,060.00	7,876.00	7,875.11	34.15	27.77	-33.17	1,561.12	5,821.70	5,641.04	5,581.65	59.40	94.968		
9,500.00	9,060.00	7,876.00	7,875.11	34.42	27.77	-33.17	1,561.12	5,821.70	5,594.70	5,535.31	59.39	94.203		
9,600.00	9,060.00	7,876.00	7,875.11	35.09	27.77	-33.17	1,561.12	5,821.70	5,497.60	5,438.23	59.37	92.601		
9,700.00	9,060.00	7,876.00	7,875.11	35.86	27.77	-33.17	1,561.12	5,821.70	5,400.60	5,341.25	59.35	90.994		
9,800.00	9,060.00	7,876.00	7,875.11	36.72	27.77	-33.17	1,561.12	5,821.70	5,303.71	5,244.38	59.34	89.383		
9,900.00	9,060.00	7,876.00	7,875.11	37.69	27.77	-33.17	1,561.12	5,821.70	5,206.95	5,147.62	59.33	87.766		
10,000.00	9,060.00	7,876.00	7,875.11	38.73	27.77	-33.17	1,561.12	5,821.70	5,110.30	5,050.98	59.32	86.144		
10,100.00	9,060.00	7,876.00	7,875.11	39.86	27.77	-33.17	1,561.12	5,821.70	5,013.79	4,954.47	59.32	84.517		
10,140.22	9,060.00	7,876.00	7,875.11	40.33	27.77	-33.17	1,561.12	5,821.70	4,975.01	4,915.69	59.32	83.861		
10,200.00	9,060.00	7,876.00	7,875.11	41.05	27.77	-36.62	1,561.12	5,821.70	4,917.52	4,858.19	59.33	82.885		
10,300.00	9,060.00	7,876.00	7,875.11	42.31	27.77	-41.66	1,561.12	5,821.70	4,821.95	4,762.59	59.35	81.242		
10,400.00	9,060.00	7,876.00	7,875.11	43.64	27.77	-45.90	1,561.12	5,821.70	4,727.29	4,667.89	59.40	79.586		
10,507.23	9,060.00	7,876.00	7,875.11	45.11	27.77	-49.71	1,561.12	5,821.70	4,627.01	4,567.53	59.48	77.790		
10,600.00	9,060.00	7,876.00	7,875.11	46.43	27.77	-46.53	1,561.12	5,821.70	4,540.56	4,480.98	59.57	76.218		
10,700.00	9,060.00	7,876.00	7,875.11	47.91	27.77	-42.68	1,561.12	5,821.70	4,446.77	4,387.10	59.68	74.512		
10,800.00	9,060.00	7,876.00	7,875.11	49.42	27.77	-38.37	1,561.12	5,821.70	4,352.45	4,292.67	59.78	72.805		
10,900.00	9,060.00	7,876.00	7,875.11	50.97	27.77	-33.55	1,561.12	5,821.70	4,257.66	4,197.78	59.88	71.103		
11,000.00	9,060.00	7,876.00	7,875.11	52.55	27.77	-28.24	1,561.12	5,821.70	4,162.50	4,102.54	59.97	69.414		
11,100.00	9,060.00	7,876.00	7,875.11	54.14	27.77	-22.47	1,561.12	5,821.70	4,067.07	4,007.03	60.04	67.744		
11,207.23	9,060.00	7,876.00	7,875.11	55.87	27.77	-15.85	1,561.12	5,821.70	3,964.53	3,904.45	60.09	65.978		
11,300.00	9,060.00	7,876.00	7,875.11	57.39	27.77	-21.46	1,561.12	5,821.70	3,876.00	3,815.87	60.14	64.452		
11,400.00	9,060.00	7,876.00	7,875.11	59.06	27.77	-26.90	1,561.12	5,821.70	3,781.20	3,720.97	60.23	62.781		
11,506.63	9,060.00	7,876.00	7,875.11	60.88	27.77	-32.01	1,561.12	5,821.70	3,681.00	3,620.62	60.38	60.967		
11,600.00	9,060.00	7,876.00	7,875.11	62.49	27.77	-32.01	1,561.12	5,821.70	3,593.87	3,533.33	60.54	59.360		
11,700.00	9,060.00	7,876.00	7,875.11	64.24	27.77	-32.01	1,561.12	5,821.70	3,500.92	3,440.18	60.75	57.633		
11,800.00	9,060.00	7,876.00	7,875.11	66.01	27.77	-32.01	1,561.12	5,821.70	3,408.37	3,347.40	60.97	55.899		
11,900.00	9,060.00	7,876.00	7,875.11	67.79	27.77	-32.01	1,561.12	5,821.70	3,316.25	3,255.02	61.23	54.160		
12,000.00	9,060.00	7,876.00	7,875.11	69.58	27.77	-32.01	1,561.12	5,821.70	3,224.60	3,163.08	61.52	52.416		
12,100.00	9,060.00	7,876.00	7,875.11	71.39	27.77	-32.01	1,561.12	5,821.70	3,133.46	3,071.62	61.84	50.667		
12,200.00	9,060.00	7,876.00	7,875.11	73.21	27.77	-32.01	1,561.12	5,821.70	3,042.88	2,980.67	62.21	48.915		
12,300.00	9,060.00	7,876.00	7,875.11	75.05	27.77	-32.01	1,561.12	5,821.70	2,952.91	2,890.29	62.62	47.160		
12,400.00	9,060.00	7,876.00	7,875.11	76.89	27.77	-32.01	1,561.12	5,821.70	2,863.60	2,800.53	63.07	45.403		
12,500.00	9,060.00	7,876.00	7,875.11	78.74	27.77	-32.01	1,561.12	5,821.70	2,775.02	2,711.44	63.58	43.647		
12,600.00	9,060.00	7,876.00	7,875.11	80.61	27.77	-32.01	1,561.12	5,821.70	2,687.24	2,623.10	64.14	41.894		
12,700.00	9,060.00	7,876.00	7,875.11	82.48	27.77	-32.01	1,561.12	5,821.70	2,600.35	2,535.57	64.77	40.145		
12,800.00	9,060.00	7,876.00	7,875.11	84.36	27.77	-32.01	1,561.12	5,821.70	2,514.43	2,448.95	65.47	38.403		
12,900.00	9,060.00	7,876.00	7,875.11	86.24	27.77	-32.01	1,561.12	5,821.70	2,429.58	2,363.33	66.25	36.672		
13,000.00	9,060.00	7,876.00	7,875.11	88.14	27.77	-32.01	1,561.12	5,821.70	2,345.93	2,278.82	67.11	34.956		
13,100.00	9,060.00	7,876.00	7,875.11	90.04	27.77	-32.01	1,561.12	5,821.70	2,263.61	2,195.55	68.06	33.259		
13,200.00	9,060.00	7,876.00	7,875.11	91.94	27.77	-32.01	1,561.12	5,821.70	2,182.77	2,113.66	69.11	31.586		
13,300.00	9,060.00	7,876.00	7,875.11	93.86	27.77	-32.01	1,561.12	5,821.70	2,103.57	2,033.31	70.26	29.942		
13,400.00	9,060.00	7,876.00	7,875.11	95.77	27.77	-32.01	1,561.12	5,821.70	2,026.21	1,954.70	71.51	28.333		
13,500.00	9,060.00	7,876.00	7,875.11	97.70	27.77	-32.01	1,561.12	5,821.70	1,950.91	1,878.03	72.89	26.766		
13,600.00	9,060.00	7,876.00	7,875.11	99.62	27.77	-32.01	1,561.12	5,821.70	1,877.92	1,803.54	74.38	25.248		
13,700.00	9,060.00	7,876.00	7,875.11	101.56	27.77	-32.01	1,561.12	5,821.70	1,807.52	1,731.53	75.99	23.786		
13,800.00	9,060.00	7,876.00	7,875.11	103.49	27.77	-32.01	1,561.12	5,821.70	1,740.02	1,662.30	77.72	22.388		
13,900.00	9,060.00	7,876.00	7,875.11	105.43	27.77	-32.01	1,561.12	5,821.70	1,675.77	1,596.20	79.57	21.061		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot		Offset Site Error: 5.00 ft	
Survey Program: 18-GYRO-NS-CT													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
14,000.00	9,060.00	7,876.00	7,875.11	107.38	27.77	-32.01	1,561.12	5,821.70	1,615.16	1,533.64	81.51	19.814	13.086 CC, ES			
14,100.00	9,060.00	7,876.00	7,875.11	109.33	27.77	-32.01	1,561.12	5,821.70	1,558.61	1,475.06	83.55	18.654				
14,200.00	9,060.00	7,876.00	7,875.11	111.28	27.77	-32.01	1,561.12	5,821.70	1,506.59	1,420.93	85.66	17.588				
14,300.00	9,060.00	7,876.00	7,875.11	113.23	27.77	-32.01	1,561.12	5,821.70	1,459.57	1,371.76	87.80	16.623				
14,400.00	9,060.00	7,876.00	7,875.11	115.19	27.77	-32.01	1,561.12	5,821.70	1,418.05	1,328.10	89.96	15.764				
14,500.00	9,060.00	7,876.00	7,875.11	117.15	27.77	-32.01	1,561.12	5,821.70	1,382.53	1,290.46	92.07	15.016				
14,600.00	9,060.00	7,876.00	7,875.11	119.11	27.77	-32.01	1,561.12	5,821.70	1,353.49	1,259.38	94.11	14.382				
14,700.00	9,060.00	7,876.00	7,875.11	121.08	27.77	-32.01	1,561.12	5,821.70	1,331.34	1,235.31	96.03	13.864				
14,800.00	9,060.00	7,876.00	7,875.11	123.05	27.77	-32.01	1,561.12	5,821.70	1,316.44	1,218.66	97.78	13.464				
14,900.00	9,060.00	7,876.00	7,875.11	125.02	27.77	-32.01	1,561.12	5,821.70	1,309.02	1,209.70	99.32	13.180				
14,947.33	9,060.00	7,876.00	7,875.11	125.95	27.77	-32.01	1,561.12	5,821.70	1,308.17	1,208.20	99.96					
15,000.00	9,060.00	7,876.00	7,875.11	126.99	27.77	-32.01	1,561.12	5,821.70	1,309.23	1,208.61	100.62	13.012				
15,100.00	9,060.00	7,876.00	7,875.11	128.97	27.77	-32.01	1,561.12	5,821.70	1,317.04	1,215.39	101.65	12.956 SF				
15,200.00	9,060.00	7,876.00	7,875.11	130.95	27.77	-32.01	1,561.12	5,821.70	1,332.34	1,229.94	102.41	13.010				
15,300.00	9,060.00	7,876.00	7,875.11	132.93	27.77	-32.01	1,561.12	5,821.70	1,354.87	1,251.99	102.88	13.170				
15,400.00	9,060.00	7,876.00	7,875.11	134.91	27.77	-32.01	1,561.12	5,821.70	1,384.27	1,281.20	103.07	13.430				
15,500.00	9,060.00	7,876.00	7,875.11	136.89	27.77	-32.01	1,561.12	5,821.70	1,420.12	1,317.11	103.01	13.786				
15,600.00	9,060.00	7,876.00	7,875.11	138.88	27.77	-32.01	1,561.12	5,821.70	1,461.94	1,359.21	102.73	14.231				
15,700.00	9,060.00	7,876.00	7,875.11	140.86	27.77	-32.01	1,561.12	5,821.70	1,509.24	1,406.99	102.25	14.760				
15,800.00	9,060.00	7,876.00	7,875.11	142.85	27.77	-32.01	1,561.12	5,821.70	1,561.52	1,459.90	101.62	15.366				
15,900.00	9,060.00	7,876.00	7,875.11	144.84	27.77	-32.01	1,561.12	5,821.70	1,618.29	1,517.42	100.87	16.043				
16,000.00	9,060.00	7,876.00	7,875.11	146.83	27.77	-32.01	1,561.12	5,821.70	1,679.11	1,579.07	100.03	16.785				
16,100.00	9,060.00	7,876.00	7,875.11	148.83	27.77	-32.01	1,561.12	5,821.70	1,743.54	1,644.41	99.14	17.587				
16,200.00	9,060.00	7,876.00	7,875.11	150.82	27.77	-32.01	1,561.12	5,821.70	1,811.21	1,713.00	98.20	18.443				
16,300.00	9,060.00	7,876.00	7,875.11	152.82	27.77	-32.01	1,561.12	5,821.70	1,881.76	1,784.50	97.26	19.348				
16,400.00	9,060.00	7,876.00	7,875.11	154.81	27.77	-32.01	1,561.12	5,821.70	1,954.88	1,858.57	96.31	20.298				
16,500.00	9,060.00	7,876.00	7,875.11	156.81	27.77	-32.01	1,561.12	5,821.70	2,030.29	1,934.92	95.37	21.288				
16,600.00	9,060.00	7,876.00	7,875.11	158.81	27.77	-32.01	1,561.12	5,821.70	2,107.75	2,013.29	94.45	22.315				
16,700.00	9,060.00	7,876.00	7,875.11	160.81	27.77	-32.01	1,561.12	5,821.70	2,187.04	2,093.47	93.56	23.375				
16,800.00	9,060.00	7,876.00	7,875.11	162.81	27.77	-32.01	1,561.12	5,821.70	2,267.97	2,175.26	92.70	24.464				
16,900.00	9,060.00	7,876.00	7,875.11	164.82	27.77	-32.01	1,561.12	5,821.70	2,350.36	2,258.48	91.88	25.581				
17,000.00	9,060.00	7,876.00	7,875.11	166.82	27.77	-32.01	1,561.12	5,821.70	2,434.08	2,342.99	91.09	26.722				
17,100.00	9,060.00	7,876.00	7,875.11	168.82	27.77	-32.01	1,561.12	5,821.70	2,518.98	2,428.65	90.33	27.885				
17,200.00	9,060.00	7,876.00	7,875.11	170.83	27.77	-32.01	1,561.12	5,821.70	2,604.96	2,515.34	89.62	29.068				
17,300.00	9,060.00	7,876.00	7,875.11	172.84	27.77	-32.01	1,561.12	5,821.70	2,691.90	2,602.97	88.93	30.268				
17,400.00	9,060.00	7,876.00	7,875.11	174.84	27.77	-32.01	1,561.12	5,821.70	2,779.73	2,691.44	88.29	31.485				
17,500.00	9,060.00	7,876.00	7,875.11	176.85	27.77	-32.01	1,561.12	5,821.70	2,868.35	2,780.67	87.67	32.716				
17,600.00	9,060.00	7,876.00	7,875.11	178.86	27.77	-32.01	1,561.12	5,821.70	2,957.69	2,870.60	87.09	33.960				
17,700.00	9,060.00	7,876.00	7,875.11	180.87	27.77	-32.01	1,561.12	5,821.70	3,047.70	2,961.16	86.54	35.216				
17,800.00	9,060.00	7,876.00	7,875.11	182.88	27.77	-32.01	1,561.12	5,821.70	3,138.31	3,052.29	86.02	36.482				
17,900.00	9,060.00	7,876.00	7,875.11	184.89	27.77	-32.01	1,561.12	5,821.70	3,229.48	3,143.95	85.53	37.758				
18,000.00	9,060.00	7,876.00	7,875.11	186.90	27.77	-32.01	1,561.12	5,821.70	3,321.16	3,236.09	85.07	39.042				
18,100.00	9,060.00	7,876.00	7,875.11	188.92	27.77	-32.01	1,561.12	5,821.70	3,413.30	3,328.67	84.63	40.333				
18,200.00	9,060.00	7,876.00	7,875.11	190.93	27.77	-32.01	1,561.12	5,821.70	3,505.87	3,421.66	84.21	41.631				
18,300.00	9,060.00	7,876.00	7,875.11	192.94	27.77	-32.01	1,561.12	5,821.70	3,598.84	3,515.02	83.82	42.935				
18,400.00	9,060.00	7,876.00	7,875.11	194.96	27.77	-32.01	1,561.12	5,821.70	3,692.18	3,608.73	83.45	44.244				
18,500.00	9,060.00	7,876.00	7,875.11	196.97	27.77	-32.01	1,561.12	5,821.70	3,785.86	3,702.76	83.10	45.557				
18,600.00	9,060.00	7,876.00	7,875.11	198.99	27.77	-32.01	1,561.12	5,821.70	3,879.86	3,797.08	82.77	46.874				
18,700.00	9,060.00	7,876.00	7,875.11	201.00	27.77	-32.01	1,561.12	5,821.70	3,974.14	3,891.68	82.46	48.195				
18,800.00	9,060.00	7,876.00	7,875.11	203.02	27.77	-32.01	1,561.12	5,821.70	4,068.70	3,986.54	82.17	49.518				
18,900.00	9,060.00	7,876.00	7,875.11	205.04	27.77	-32.01	1,561.12	5,821.70	4,163.52	4,081.63	81.89	50.844				
19,000.00	9,060.00	7,876.00	7,875.11	207.06	27.77	-32.01	1,561.12	5,821.70	4,258.57	4,176.94	81.63	52.172				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	7,876.00	7,875.11	209.07	27.77	-32.01	1,561.12	5,821.70	4,353.84	4,272.46	81.38	53.501	
19,200.00	9,060.00	7,876.00	7,875.11	211.09	27.77	-32.01	1,561.12	5,821.70	4,449.32	4,368.18	81.14	54.832	
19,300.00	9,060.00	7,876.00	7,875.11	213.11	27.77	-32.01	1,561.12	5,821.70	4,545.00	4,464.07	80.92	56.163	
19,400.00	9,060.00	7,876.00	7,875.11	215.13	27.77	-32.01	1,561.12	5,821.70	4,640.86	4,560.14	80.72	57.495	
19,500.32	9,060.00	7,876.00	7,875.11	217.16	27.77	-32.01	1,561.12	5,821.70	4,737.19	4,656.67	80.52	58.832	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10					
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719		
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830		
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136		
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138		
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071		
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393		
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588		
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365		
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235		
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783		
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522		
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356		
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598		
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396		
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816		
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495		
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810		
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492		
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077		
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919		
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751		
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600		
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466		
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553		
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265		
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166		
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786		
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382		
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961		
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918		
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227		
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202		
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622		
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583		
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027		
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738		
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740		
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823		
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354		
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169		
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681		
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928		
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391		
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958		
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848		
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993		
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353		
4,400.00	4,380.70	4,325.80	4,325.69	15.60	15.69	93.30	1,571.51	5,782.76	6,001.91	5,970.64	31.28	191.883		
4,500.00	4,479.34	4,369.00	4,368.89	15.97	15.76	93.37	1,571.55	5,782.60	6,002.81	5,971.10	31.71	189.304		
4,600.00	4,577.98	4,687.00	4,677.89	16.34	15.84	94.43	1,510.79	5,792.56	6,003.27	5,971.13	32.14	186.796		
4,700.00	4,676.62	4,718.00	4,705.14	16.71	15.86	94.61	1,496.18	5,794.84	6,002.13	5,969.60	32.53	184.483		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,736.82	4,712.94	4,733.28	4,718.25	16.85	15.87	94.71	1,488.45	5,796.17	6,002.02	5,969.33	32.69	183.631		
4,800.00	4,775.27	4,751.00	4,733.22	17.08	15.88	94.82	1,479.14	5,797.91	6,002.31	5,969.37	32.94	182.246		
4,900.00	4,873.91	4,751.00	4,733.22	17.45	15.88	94.82	1,479.14	5,797.91	6,003.97	5,970.67	33.30	180.287		
5,000.00	4,972.55	4,782.00	4,758.73	17.82	15.90	95.02	1,461.92	5,801.64	6,007.10	5,973.40	33.70	178.262		
5,100.00	5,071.19	4,782.00	4,758.73	18.19	15.90	95.02	1,461.92	5,801.64	6,011.72	5,977.67	34.05	176.545		
5,200.00	5,169.83	4,814.00	4,783.86	18.56	15.95	95.25	1,442.69	5,806.33	6,017.82	5,983.37	34.45	174.700		
5,300.00	5,268.47	4,826.82	4,793.55	18.93	15.97	95.34	1,434.54	5,808.39	6,025.35	5,990.53	34.81	173.091		
5,400.00	5,367.11	4,846.00	4,807.60	19.31	16.00	95.49	1,421.90	5,811.64	6,034.34	5,999.16	35.18	171.532		
5,500.00	5,465.75	4,864.00	4,820.31	19.68	16.03	95.63	1,409.57	5,814.85	6,044.80	6,009.25	35.55	170.059		
5,600.00	5,564.39	4,878.00	4,829.88	20.05	16.06	95.74	1,399.69	5,817.45	6,056.71	6,020.82	35.90	168.732		
5,700.00	5,663.03	4,892.43	4,839.45	20.42	16.09	95.85	1,389.26	5,820.23	6,070.13	6,033.88	36.24	167.477		
5,800.00	5,761.67	4,910.00	4,850.69	20.80	16.14	96.00	1,376.23	5,823.78	6,085.08	6,048.48	36.60	166.281		
5,900.00	5,860.31	4,910.00	4,850.69	21.17	16.14	96.00	1,376.23	5,823.78	6,101.51	6,064.62	36.89	165.400		
6,000.00	5,958.96	4,942.00	4,870.04	21.54	16.22	96.27	1,351.65	5,830.53	6,119.43	6,082.15	37.28	164.158		
6,100.00	6,057.60	4,942.00	4,870.04	21.92	16.22	96.27	1,351.65	5,830.53	6,138.79	6,101.24	37.56	163.456		
6,200.00	6,156.24	4,942.00	4,870.04	22.29	16.22	96.27	1,351.65	5,830.53	6,159.71	6,121.89	37.83	162.844		
6,300.00	6,254.88	4,959.16	4,879.80	22.67	16.28	96.41	1,338.05	5,834.31	6,182.03	6,143.88	38.15	162.042		
6,400.00	6,353.52	4,973.00	4,887.34	23.04	16.32	96.53	1,326.90	5,837.50	6,205.93	6,167.47	38.46	161.378		
6,500.00	6,452.16	4,973.00	4,887.34	23.42	16.32	96.53	1,326.90	5,837.50	6,231.23	6,192.53	38.70	161.008		
6,600.00	6,550.80	4,985.65	4,893.98	23.79	16.37	96.64	1,316.56	5,840.46	6,258.01	6,219.01	38.99	160.495		
6,700.00	6,649.44	5,005.00	4,903.67	24.17	16.44	96.82	1,300.43	5,844.98	6,286.17	6,246.87	39.30	159.942		
6,800.00	6,748.08	5,005.00	4,903.67	24.54	16.44	96.82	1,300.43	5,844.98	6,315.73	6,276.20	39.53	159.791		
6,900.00	6,846.72	5,017.61	4,909.69	24.92	16.49	96.93	1,289.74	5,847.94	6,346.66	6,306.86	39.80	159.471		
7,000.00	6,945.36	5,024.50	4,912.87	25.29	16.52	96.99	1,283.86	5,849.56	6,378.99	6,338.95	40.04	159.325		
7,100.00	7,044.00	5,037.00	4,918.48	25.67	16.58	97.10	1,273.09	5,852.54	6,412.70	6,372.40	40.30	159.140		
7,200.00	7,142.65	5,037.00	4,918.48	26.04	16.58	97.10	1,273.09	5,852.54	6,447.72	6,407.23	40.49	159.246		
7,300.00	7,241.29	5,037.00	4,918.48	26.42	16.58	97.10	1,273.09	5,852.54	6,484.10	6,443.43	40.68	159.411		
7,400.00	7,339.93	5,049.95	4,924.06	26.79	16.64	97.22	1,261.82	5,855.65	6,521.75	6,480.83	40.92	159.373		
7,500.00	7,438.57	5,055.82	4,926.51	27.17	16.66	97.27	1,256.67	5,857.06	6,560.71	6,519.58	41.12	159.531		
7,571.77	7,509.37	5,068.00	4,931.44	27.44	16.72	97.39	1,245.93	5,860.00	6,589.47	6,548.16	41.31	159.522		
7,600.00	7,537.23	5,068.00	4,931.44	27.55	16.72	97.57	1,245.93	5,860.00	6,600.92	6,559.57	41.35	159.619		
7,700.00	7,636.18	5,068.00	4,931.44	27.92	16.72	98.24	1,245.93	5,860.00	6,642.12	6,600.60	41.51	160.001		
7,800.00	7,735.48	5,068.00	4,931.44	28.29	16.72	98.93	1,245.93	5,860.00	6,684.21	6,642.55	41.66	160.439		
7,900.00	7,835.05	5,084.84	4,937.90	28.65	16.81	99.79	1,230.92	5,864.03	6,727.10	6,685.20	41.89	160.575		
8,000.00	7,934.83	5,099.00	4,943.00	29.01	16.88	100.63	1,218.13	5,867.36	6,770.77	6,728.67	42.10	160.822		
8,100.00	8,034.74	5,107.74	4,946.00	29.36	16.93	101.43	1,210.17	5,869.38	6,815.14	6,772.87	42.27	161.213		
8,202.27	8,137.00	5,195.00	4,970.67	29.72	17.45	86.93	1,128.37	5,886.72	6,861.10	6,818.19	42.91	159.887		
8,300.00	8,234.73	5,195.00	4,970.67	30.06	17.45	86.93	1,128.37	5,886.72	6,905.68	6,862.66	43.02	160.533		
8,400.00	8,334.73	5,195.00	4,970.67	30.41	17.45	86.93	1,128.37	5,886.72	6,952.42	6,909.30	43.12	161.228		
8,500.00	8,434.73	5,210.12	4,973.84	30.75	17.55	87.06	1,113.78	5,889.15	7,000.19	6,956.87	43.32	161.596		
8,552.31	8,487.04	5,212.09	4,974.22	30.94	17.57	87.08	1,111.88	5,889.46	7,025.63	6,982.25	43.38	161.943		
8,600.00	8,534.68	5,213.87	4,974.56	31.10	17.58	-2.45	1,110.15	5,889.74	7,047.34	7,003.90	43.43	162.257		
8,650.00	8,584.26	5,227.00	4,976.84	31.26	17.67	-2.26	1,097.38	5,891.75	7,066.56	7,023.01	43.55	162.280		
8,700.00	8,633.10	5,227.00	4,976.84	31.43	17.67	-2.19	1,097.38	5,891.75	7,081.94	7,038.37	43.57	162.540		
8,750.00	8,680.83	5,227.00	4,976.84	31.58	17.67	-2.15	1,097.38	5,891.75	7,093.45	7,049.86	43.59	162.734		
8,800.00	8,727.09	5,227.00	4,976.84	31.74	17.67	-2.12	1,097.38	5,891.75	7,101.02	7,057.42	43.60	162.865		
8,850.00	8,771.52	5,227.00	4,976.84	31.89	17.67	-2.11	1,097.38	5,891.75	7,104.61	7,061.00	43.60	162.935		
8,900.00	8,813.78	5,227.00	4,976.84	32.04	17.67	-2.11	1,097.38	5,891.75	7,104.19	7,060.59	43.60	162.944		
8,950.00	8,853.56	5,227.00	4,976.84	32.18	17.67	-2.12	1,097.38	5,891.75	7,099.77	7,056.19	43.58	162.896		
9,000.00	8,890.55	5,227.00	4,976.84	32.32	17.67	-2.16	1,097.38	5,891.75	7,091.38	7,047.81	43.56	162.789		
9,050.00	8,924.46	5,227.00	4,976.84	32.47	17.67	-2.20	1,097.38	5,891.75	7,079.06	7,035.53	43.53	162.624		
9,100.00	8,955.05	5,227.00	4,976.84	32.63	17.67	-2.27	1,097.38	5,891.75	7,062.88	7,019.39	43.49	162.402		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,227.00	4,976.84	32.79	17.67	-2.36	1,097.38	5,891.75	7,042.95	6,999.51	43.44	162.122		
9,200.00	9,005.34	5,227.00	4,976.84	32.97	17.67	-2.47	1,097.38	5,891.75	7,019.39	6,976.00	43.39	161.785		
9,250.00	9,024.65	5,227.00	4,976.84	33.17	17.67	-2.62	1,097.38	5,891.75	6,992.33	6,949.01	43.33	161.390		
9,300.00	9,039.87	5,239.90	4,978.76	33.38	17.75	-2.66	1,084.77	5,893.64	6,961.88	6,918.54	43.34	160.639		
9,350.00	9,050.89	5,241.34	4,978.96	33.62	17.76	-2.86	1,083.35	5,893.85	6,928.35	6,885.07	43.28	160.097		
9,400.00	9,057.61	5,242.68	4,979.13	33.87	17.77	-3.13	1,082.04	5,894.04	6,891.89	6,848.68	43.21	159.499		
9,452.31	9,060.00	5,243.96	4,979.30	34.15	17.78	-3.49	1,080.78	5,894.22	6,850.87	6,807.73	43.14	158.814		
9,500.00	9,060.00	5,245.08	4,979.44	34.42	17.79	-3.48	1,079.68	5,894.38	6,812.27	6,769.20	43.07	158.173		
9,600.00	9,060.00	5,259.00	4,981.01	35.09	17.89	-3.28	1,065.98	5,896.29	6,731.77	6,688.79	42.99	156.604		
9,700.00	9,060.00	5,259.00	4,981.01	35.86	17.89	-3.28	1,065.98	5,896.29	6,651.72	6,608.89	42.83	155.322		
9,800.00	9,060.00	5,259.00	4,981.01	36.72	17.89	-3.28	1,065.98	5,896.29	6,572.21	6,529.54	42.67	154.024		
9,900.00	9,060.00	5,259.00	4,981.01	37.69	17.89	-3.28	1,065.98	5,896.29	6,493.26	6,450.74	42.52	152.706		
10,000.00	9,060.00	5,259.00	4,981.01	38.73	17.89	-3.28	1,065.98	5,896.29	6,414.91	6,372.53	42.38	151.369		
10,100.00	9,060.00	5,259.00	4,981.01	39.86	17.89	-3.28	1,065.98	5,896.29	6,337.16	6,294.92	42.25	150.009		
10,140.22	9,060.00	5,259.00	4,981.01	40.33	17.89	-3.28	1,065.98	5,896.29	6,306.07	6,263.87	42.19	149.456		
10,200.00	9,060.00	5,259.00	4,981.01	41.05	17.89	-4.72	1,065.98	5,896.29	6,260.08	6,217.96	42.12	148.625		
10,300.00	9,060.00	5,259.00	4,981.01	42.31	17.89	-7.06	1,065.98	5,896.29	6,183.82	6,141.81	42.01	147.207		
10,400.00	9,060.00	5,259.00	4,981.01	43.64	17.89	-9.33	1,065.98	5,896.29	6,108.53	6,066.62	41.91	145.746		
10,507.23	9,060.00	5,259.00	4,981.01	45.11	17.89	-11.66	1,065.98	5,896.29	6,029.03	5,987.20	41.83	144.124		
10,600.00	9,060.00	5,259.00	4,981.01	46.43	17.89	-9.69	1,065.98	5,896.29	5,960.97	5,919.19	41.78	142.676		
10,700.00	9,060.00	5,259.00	4,981.01	47.91	17.89	-7.58	1,065.98	5,896.29	5,887.98	5,846.25	41.73	141.089		
10,800.00	9,060.00	5,274.38	4,982.28	49.42	18.00	-5.27	1,050.79	5,898.33	5,815.30	5,773.53	41.77	139.229		
10,900.00	9,060.00	5,275.96	4,982.39	50.97	18.01	-3.19	1,049.23	5,898.53	5,743.34	5,701.60	41.74	137.597		
11,000.00	9,060.00	5,277.12	4,982.46	52.55	18.02	-1.14	1,048.09	5,898.68	5,672.10	5,630.38	41.72	135.966		
11,100.00	9,060.00	5,291.00	4,983.12	54.14	18.12	1.04	1,034.34	5,900.48	5,601.81	5,560.05	41.76	134.152		
11,207.23	9,060.00	5,291.00	4,983.12	55.87	18.12	3.11	1,034.34	5,900.48	5,527.36	5,485.61	41.74	132.418		
11,300.00	9,060.00	5,291.00	4,983.12	57.39	18.12	1.37	1,034.34	5,900.48	5,463.82	5,422.08	41.74	130.887		
11,400.00	9,060.00	5,291.00	4,983.12	59.06	18.12	-0.47	1,034.34	5,900.48	5,396.23	5,354.45	41.77	129.180		
11,506.63	9,060.00	5,291.00	4,983.12	60.88	18.12	-2.37	1,034.34	5,900.48	5,325.30	5,283.47	41.83	127.296		
11,600.00	9,060.00	5,291.00	4,983.12	62.49	18.12	-2.37	1,034.34	5,900.48	5,264.23	5,222.31	41.91	125.602		
11,700.00	9,060.00	5,291.00	4,983.12	64.24	18.12	-2.37	1,034.34	5,900.48	5,199.88	5,157.86	42.02	123.757		
11,800.00	9,060.00	5,291.00	4,983.12	66.01	18.12	-2.37	1,034.34	5,900.48	5,136.67	5,094.52	42.14	121.882		
11,900.00	9,060.00	5,291.00	4,983.12	67.79	18.12	-2.37	1,034.34	5,900.48	5,074.64	5,032.35	42.30	119.979		
12,000.00	9,060.00	5,291.00	4,983.12	69.58	18.12	-2.37	1,034.34	5,900.48	5,013.84	4,971.37	42.47	118.049		
12,100.00	9,060.00	5,291.00	4,983.12	71.39	18.12	-2.37	1,034.34	5,900.48	4,954.32	4,911.65	42.67	116.098		
12,200.00	9,060.00	5,291.00	4,983.12	73.21	18.12	-2.37	1,034.34	5,900.48	4,896.11	4,853.21	42.90	114.127		
12,300.00	9,060.00	5,291.00	4,983.12	75.05	18.12	-2.37	1,034.34	5,900.48	4,839.27	4,796.12	43.15	112.140		
12,400.00	9,060.00	5,291.00	4,983.12	76.89	18.12	-2.37	1,034.34	5,900.48	4,783.85	4,740.41	43.43	110.143		
12,500.00	9,060.00	5,291.00	4,983.12	78.74	18.12	-2.37	1,034.34	5,900.48	4,729.89	4,686.15	43.74	108.138		
12,600.00	9,060.00	5,291.00	4,983.12	80.61	18.12	-2.37	1,034.34	5,900.48	4,677.44	4,633.37	44.07	106.131		
12,700.00	9,060.00	5,291.00	4,983.12	82.48	18.12	-2.37	1,034.34	5,900.48	4,626.57	4,582.14	44.43	104.127		
12,800.00	9,060.00	5,298.44	4,983.33	84.36	18.18	-2.26	1,026.96	5,901.44	4,577.27	4,532.44	44.83	102.097		
12,900.00	9,060.00	5,300.09	4,983.36	86.24	18.19	-2.24	1,025.32	5,901.66	4,529.66	4,484.42	45.25	100.110		
13,000.00	9,060.00	5,309.00	4,983.50	88.14	18.26	-2.11	1,016.50	5,902.84	4,483.82	4,438.12	45.70	98.118		
13,100.00	9,060.00	5,309.00	4,983.50	90.04	18.26	-2.11	1,016.50	5,902.84	4,439.69	4,393.53	46.16	96.182		
13,200.00	9,060.00	5,309.00	4,983.50	91.94	18.26	-2.11	1,016.50	5,902.84	4,397.39	4,350.75	46.65	94.272		
13,300.00	9,060.00	5,309.00	4,983.50	93.86	18.26	-2.11	1,016.50	5,902.84	4,356.98	4,309.83	47.16	92.393		
13,400.00	9,060.00	5,309.00	4,983.50	95.77	18.26	-2.11	1,016.50	5,902.84	4,318.51	4,270.82	47.69	90.549		
13,500.00	9,060.00	5,309.00	4,983.50	97.70	18.26	-2.11	1,016.50	5,902.84	4,282.03	4,233.78	48.25	88.744		
13,600.00	9,060.00	5,309.00	4,983.50	99.62	18.26	-2.11	1,016.50	5,902.84	4,247.59	4,198.76	48.83	86.982		
13,700.00	9,060.00	5,309.00	4,983.50	101.56	18.26	-2.11	1,016.50	5,902.84	4,215.24	4,165.80	49.44	85.267		
13,800.00	9,060.00	5,309.00	4,983.50	103.49	18.26	-2.11	1,016.50	5,902.84	4,185.03	4,134.97	50.06	83.600		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,330.89	4,983.66	105.43	18.43	-1.80	994.82	5,905.88	4,156.86	4,106.14	50.72	81.964	
14,000.00	9,060.00	5,335.93	4,983.67	107.38	18.47	-1.73	989.83	5,906.61	4,131.00	4,079.62	51.38	80.403	
14,100.00	9,060.00	5,341.14	4,983.69	109.33	18.51	-1.65	984.68	5,907.37	4,107.39	4,055.33	52.06	78.897	
14,200.00	9,060.00	5,346.53	4,983.69	111.28	18.56	-1.58	979.34	5,908.17	4,086.07	4,033.32	52.76	77.449	
14,300.00	9,060.00	5,352.12	4,983.69	113.23	18.60	-1.50	973.82	5,909.02	4,067.09	4,013.62	53.47	76.059	
14,400.00	9,060.00	5,373.00	4,983.60	115.19	18.77	-1.20	953.20	5,912.30	4,050.53	3,996.32	54.21	74.717	
14,500.00	9,060.00	5,373.00	4,983.60	117.15	18.77	-1.20	953.20	5,912.30	4,036.26	3,981.30	54.95	73.449	
14,600.00	9,060.00	14,600.00	4,983.97	119.11	108.64	-0.51	904.95	5,920.57	4,024.12	3,928.05	96.07	41.888	
14,700.00	9,060.00	14,700.00	4,984.09	121.08	109.64	-0.29	890.01	5,923.13	4,014.52	3,917.67	96.85	41.451 ES	
14,800.00	9,060.00	5,493.65	4,984.85	123.05	19.86	0.51	834.33	5,932.89	4,007.24	3,949.74	57.50	69.686	
14,900.00	9,060.00	5,503.66	4,985.03	125.02	19.96	0.65	824.48	5,934.67	4,002.34	3,944.01	58.33	68.617	
15,000.00	9,060.00	5,513.71	4,985.19	126.99	20.06	0.79	814.60	5,936.46	3,999.88	3,940.72	59.17	67.604	
15,049.69	9,060.00	5,518.72	4,985.27	127.98	20.11	0.86	809.67	5,937.35	3,999.58	3,939.99	59.59	67.123 CC	
15,100.00	9,060.00	5,523.80	4,985.34	128.97	20.16	0.93	804.67	5,938.25	3,999.89	3,939.88	60.01	66.649	
15,200.00	9,060.00	5,533.93	4,985.48	130.95	20.26	1.07	794.70	5,940.06	4,002.36	3,941.49	60.87	65.751	
15,300.00	9,060.00	5,544.11	4,985.60	132.93	20.36	1.22	784.69	5,941.88	4,007.28	3,945.54	61.74	64.910	
15,400.00	9,060.00	5,562.00	4,985.77	134.91	20.53	1.47	767.09	5,945.09	4,014.65	3,952.01	62.64	64.088	
15,500.00	9,060.00	5,566.02	4,985.80	136.89	20.58	1.53	763.13	5,945.82	4,024.44	3,960.95	63.49	63.388	
15,600.00	9,060.00	5,581.94	4,985.94	138.88	20.74	1.75	747.48	5,948.67	4,036.63	3,972.23	64.40	62.681	
15,700.00	9,060.00	5,597.75	4,986.07	140.86	20.91	1.98	731.92	5,951.49	4,051.19	3,985.88	65.31	62.028	
15,800.00	9,060.00	5,613.46	4,986.20	142.85	21.07	2.20	716.47	5,954.29	4,068.09	4,001.87	66.22	61.430	
15,900.00	9,060.00	15,900.00	4,987.25	144.84	143.06	3.28	641.24	5,968.47	4,087.25	3,959.30	127.95	31.944	
16,000.00	9,060.00	5,799.86	4,990.19	146.83	23.17	4.82	533.72	5,990.65	4,108.60	4,039.11	69.49	59.125	
16,100.00	9,060.00	5,845.48	4,992.15	148.83	23.72	5.46	489.13	6,000.14	4,131.60	4,060.78	70.82	58.338	
16,200.00	9,060.00	16,200.00	4,991.84	150.82	153.44	5.35	496.92	5,998.47	4,156.76	4,017.05	139.70	29.754 SF	
16,300.00	9,060.00	5,846.00	4,992.17	152.82	23.72	5.47	488.63	6,000.25	4,184.18	4,111.79	72.39	57.799	
16,400.00	9,060.00	5,846.00	4,992.17	154.81	23.72	5.47	488.63	6,000.25	4,213.78	4,140.64	73.14	57.610	
16,500.00	9,060.00	5,846.00	4,992.17	156.81	23.72	5.47	488.63	6,000.25	4,245.54	4,171.66	73.87	57.471	
16,600.00	9,060.00	5,876.89	4,993.41	158.81	24.10	5.90	458.41	6,006.52	4,279.05	4,204.06	74.99	57.059	
16,700.00	9,060.00	5,882.81	4,993.61	160.81	24.18	5.98	452.61	6,007.70	4,314.82	4,239.05	75.76	56.952	
16,800.00	9,060.00	5,888.64	4,993.78	162.81	24.25	6.06	446.89	6,008.85	4,352.56	4,276.05	76.51	56.891	
16,900.00	9,060.00	5,894.40	4,993.94	164.82	24.32	6.15	441.25	6,009.98	4,392.24	4,315.01	77.23	56.874	
17,000.00	9,060.00	5,900.06	4,994.08	166.82	24.39	6.22	435.70	6,011.08	4,433.79	4,355.86	77.92	56.900	
17,100.00	9,060.00	5,905.65	4,994.21	168.82	24.46	6.30	430.21	6,012.17	4,477.17	4,398.57	78.59	56.967	
17,200.00	9,060.00	5,939.00	4,994.68	170.83	24.87	6.77	397.47	6,018.48	4,522.59	4,442.92	79.67	56.764	
17,300.00	9,060.00	5,939.00	4,994.68	172.84	24.87	6.77	397.47	6,018.48	4,569.37	4,489.16	80.21	56.967	
17,400.00	9,060.00	5,939.00	4,994.68	174.84	24.87	6.77	397.47	6,018.48	4,617.84	4,537.11	80.72	57.206	
17,500.00	9,060.00	5,939.00	4,994.68	176.85	24.87	6.77	397.47	6,018.48	4,667.94	4,586.73	81.21	57.480	
17,600.00	9,060.00	5,939.00	4,994.68	178.86	24.87	6.77	397.47	6,018.48	4,719.64	4,637.97	81.67	57.789	
17,700.00	9,060.00	5,939.00	4,994.68	180.87	24.87	6.77	397.47	6,018.48	4,772.87	4,690.76	82.11	58.130	
17,800.00	9,060.00	5,939.00	4,994.68	182.88	24.87	6.77	397.47	6,018.48	4,827.59	4,745.07	82.52	58.502	
17,900.00	9,060.00	5,939.00	4,994.68	184.89	24.87	6.77	397.47	6,018.48	4,883.74	4,800.83	82.91	58.905	
18,000.00	9,060.00	5,939.00	4,994.68	186.90	24.87	6.77	397.47	6,018.48	4,941.27	4,858.00	83.28	59.336	
18,100.00	9,060.00	5,939.00	4,994.68	188.92	24.87	6.77	397.47	6,018.48	5,000.15	4,916.52	83.62	59.795	
18,200.00	9,060.00	5,939.00	4,994.68	190.93	24.87	6.77	397.47	6,018.48	5,060.31	4,976.37	83.95	60.280	
18,300.00	9,060.00	5,939.00	4,994.68	192.94	24.87	6.77	397.47	6,018.48	5,121.72	5,037.47	84.25	60.790	
18,400.00	9,060.00	5,939.00	4,994.68	194.96	24.87	6.77	397.47	6,018.48	5,184.34	5,099.80	84.54	61.325	
18,500.00	9,060.00	5,939.00	4,994.68	196.97	24.87	6.77	397.47	6,018.48	5,248.11	5,163.30	84.81	61.882	
18,600.00	9,060.00	5,975.56	4,994.70	198.99	25.32	7.28	361.49	6,024.97	5,312.49	5,226.77	85.72	61.974	
18,700.00	9,060.00	5,979.31	4,994.68	201.00	25.37	7.33	357.80	6,025.61	5,378.35	5,292.32	86.03	62.518	
18,800.00	9,060.00	5,982.97	4,994.65	203.02	25.41	7.38	354.19	6,026.22	5,445.23	5,358.91	86.32	63.081	
18,900.00	9,060.00	5,986.55	4,994.62	205.04	25.46	7.43	350.66	6,026.81	5,513.11	5,426.52	86.60	63.664	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbore #2												Offset Well Error:	0.50 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,000.00	9,060.00	5,990.06	4,994.58	207.06	25.50	7.48	347.20	6,027.38	5,581.95	5,495.09	86.86	64.264	
19,100.00	9,060.00	5,993.49	4,994.54	209.07	25.55	7.53	343.81	6,027.94	5,651.71	5,564.60	87.11	64.882	
19,200.00	9,060.00	5,996.85	4,994.49	211.09	25.59	7.58	340.50	6,028.48	5,722.36	5,635.01	87.34	65.516	
19,300.00	9,060.00	6,034.00	4,993.74	213.11	26.05	8.09	303.79	6,034.11	5,794.29	5,706.06	88.23	65.675	
19,400.00	9,060.00	6,034.00	4,993.74	215.13	26.05	8.09	303.79	6,034.11	5,866.54	5,778.16	88.38	66.381	
19,500.32	9,060.00	6,034.00	4,993.74	217.16	26.05	8.09	303.79	6,034.11	5,939.83	5,851.31	88.52	67.103	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,911.18				
100.00	100.00	13.81	13.81	0.52	5.02	77.36	1,731.24	7,718.92	7,910.69	7,905.14	5.54	1,427.216	
200.00	200.00	134.92	134.92	0.70	5.03	77.36	1,731.43	7,718.68	7,910.52	7,904.79	5.73	1,380.208	
300.00	300.00	260.04	260.03	0.99	5.05	77.35	1,731.94	7,718.00	7,910.09	7,904.05	6.03	1,311.157	
400.00	400.00	368.41	368.40	1.31	5.09	77.35	1,731.87	7,717.17	7,909.32	7,902.92	6.40	1,235.287	
500.00	500.00	452.05	452.04	1.65	5.15	77.35	1,731.53	7,716.73	7,908.72	7,901.92	6.80	1,163.752	
600.00	600.00	548.61	548.60	1.99	5.23	77.36	1,731.06	7,716.38	7,908.26	7,901.03	7.22	1,094.606	
700.00	700.00	658.53	658.52	2.34	5.35	77.36	1,730.43	7,715.92	7,907.72	7,900.03	7.69	1,027.790	
800.00	800.00	758.98	758.96	2.69	5.49	77.36	1,729.61	7,715.47	7,907.11	7,898.93	8.18	967.035	
900.00	900.00	839.49	839.47	3.04	5.61	77.37	1,729.01	7,715.19	7,906.60	7,897.96	8.65	914.199	
1,000.00	1,000.00	938.38	938.36	3.40	5.77	77.37	1,728.57	7,715.01	7,906.33	7,897.16	9.16	862.728	
1,100.00	1,100.00	1,036.78	1,036.75	3.75	5.94	77.37	1,728.05	7,714.76	7,905.96	7,896.27	9.70	815.405	
1,200.00	1,200.00	1,169.31	1,169.28	4.11	6.20	77.37	1,728.01	7,713.99	7,905.38	7,895.07	10.31	766.672	
1,300.00	1,300.00	1,240.90	1,240.87	4.46	6.35	77.37	1,728.24	7,713.57	7,904.86	7,894.04	10.82	730.743	
1,400.00	1,400.00	1,325.66	1,325.63	4.82	6.54	77.37	1,728.52	7,713.29	7,904.61	7,893.25	11.36	695.864	
1,500.00	1,500.00	1,422.34	1,422.31	5.18	6.76	77.37	1,728.77	7,713.08	7,904.46	7,892.52	11.94	662.173	
1,600.00	1,600.00	1,568.81	1,568.78	5.53	7.11	77.36	1,729.37	7,712.26	7,903.99	7,891.34	12.65	624.981	
1,700.00	1,700.00	1,654.80	1,654.76	5.89	7.33	77.36	1,729.56	7,711.57	7,903.27	7,890.05	13.22	597.822	
1,800.00	1,800.00	1,727.76	1,727.72	6.25	7.52	77.36	1,729.44	7,711.34	7,902.91	7,889.15	13.77	574.118	
1,900.00	1,900.00	1,813.49	1,813.45	6.61	7.74	77.36	1,729.05	7,711.34	7,902.80	7,888.46	14.35	550.799	
1,921.72	1,921.72	1,833.16	1,833.12	6.68	7.79	77.36	1,728.94	7,711.36	7,902.80	7,888.32	14.48	545.856	
2,000.00	2,000.00	1,902.53	1,902.49	6.96	7.98	77.37	1,728.60	7,711.47	7,902.84	7,887.90	14.94	528.831	
2,100.00	2,100.00	1,993.92	1,993.87	7.32	8.23	77.37	1,727.78	7,711.85	7,903.05	7,887.49	15.55	508.186	
2,200.00	2,200.00	2,116.41	2,116.36	7.68	8.57	77.38	1,726.59	7,712.18	7,903.09	7,886.84	16.25	486.287	
2,300.00	2,300.00	2,215.69	2,215.63	8.04	8.86	77.39	1,725.79	7,712.27	7,903.01	7,886.11	16.89	467.830	
2,350.00	2,350.00	2,263.18	2,263.12	8.22	9.00	77.39	1,725.70	7,712.28	7,902.99	7,885.78	17.21	459.242	
2,376.67	2,376.67	2,290.33	2,290.27	8.31	9.07	93.43	1,725.66	7,712.28	7,902.99	7,885.61	17.38	454.644	
2,400.00	2,400.00	2,314.07	2,314.02	8.39	9.14	93.43	1,725.61	7,712.28	7,902.99	7,885.46	17.54	450.692	
2,500.00	2,499.98	2,413.70	2,413.65	8.75	9.44	93.44	1,725.37	7,712.30	7,903.06	7,884.88	18.18	434.612	
2,600.00	2,599.92	2,507.61	2,507.55	9.11	9.72	93.47	1,724.98	7,712.39	7,903.28	7,884.46	18.82	419.956	
2,700.00	2,699.78	2,604.38	2,604.32	9.47	10.01	93.51	1,724.32	7,712.61	7,903.67	7,884.20	19.47	406.033	
2,800.00	2,799.54	2,706.40	2,706.34	9.82	10.32	93.56	1,723.75	7,712.82	7,904.17	7,884.04	20.13	392.649	
2,900.00	2,899.16	2,824.56	2,824.49	10.18	10.68	93.63	1,723.02	7,712.89	7,904.65	7,883.80	20.85	379.155	
3,000.00	2,998.61	2,922.64	2,922.58	10.54	10.98	93.70	1,722.80	7,712.73	7,905.11	7,883.61	21.51	367.555	
3,100.00	3,097.86	3,011.81	3,011.75	10.89	11.26	93.77	1,722.78	7,712.68	7,905.84	7,883.70	22.14	357.066	
3,200.00	3,196.89	3,122.46	3,122.40	11.25	11.61	93.87	1,722.92	7,712.56	7,906.70	7,883.86	22.84	346.107	
3,295.74	3,291.45	3,197.88	3,197.81	11.59	11.85	93.95	1,723.46	7,712.30	7,907.59	7,884.16	23.42	337.582	
3,300.00	3,295.65	3,200.16	3,200.09	11.61	11.85	93.95	1,723.48	7,712.30	7,907.64	7,884.19	23.45	337.262	
3,400.00	3,394.29	3,257.20	3,257.13	11.97	12.03	94.01	1,723.98	7,712.43	7,909.18	7,885.19	23.98	329.763	
3,500.00	3,492.94	3,333.61	3,333.54	12.33	12.27	94.10	1,724.48	7,712.94	7,911.15	7,886.57	24.58	321.789	
3,600.00	3,591.58	3,470.50	3,470.43	12.69	12.71	94.26	1,724.55	7,713.82	7,913.01	7,887.63	25.38	311.760	
3,700.00	3,690.22	3,568.72	3,568.65	13.05	13.03	94.38	1,724.17	7,714.32	7,914.69	7,888.63	26.06	303.733	
3,800.00	3,788.86	3,669.32	3,669.24	13.41	13.35	94.51	1,723.54	7,714.87	7,916.40	7,889.65	26.74	295.998	
3,900.00	3,887.50	3,785.00	3,785.08	13.77	21.55	103.08	740.77	7,748.92	7,907.14	7,872.15	34.99	226.011	
4,000.00	3,986.14	5,754.59	4,977.91	14.14	21.25	102.86	771.09	7,746.56	7,896.22	7,861.12	35.10	224.936	
4,100.00	4,084.78	5,749.01	4,977.90	14.50	21.20	102.82	776.65	7,746.15	7,886.66	7,851.20	35.46	222.408	
4,200.00	4,183.42	5,743.34	4,977.90	14.87	21.14	102.78	782.31	7,745.74	7,878.35	7,842.54	35.81	219.989	
4,300.00	4,282.06	5,737.56	4,977.92	15.24	21.09	102.74	788.07	7,745.32	7,871.29	7,835.13	36.16	217.678	
4,400.00	4,380.70	5,731.67	4,977.94	15.60	21.03	102.70	793.95	7,744.91	7,865.48	7,828.97	36.50	215.472	
4,500.00	4,479.34	5,725.67	4,977.97	15.97	20.97	102.66	799.93	7,744.49	7,860.92	7,824.08	36.84	213.370	
4,600.00	4,577.98	5,719.56	4,978.01	16.34	20.91	102.61	806.03	7,744.08	7,857.62	7,820.45	37.17	211.369	
4,700.00	4,676.62	5,694.00	4,978.30	16.71	20.66	102.43	831.53	7,742.42	7,855.65	7,818.33	37.32	210.522	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	5,694.00	4,978.30	17.08	20.66	102.43	831.53	7,742.42	7,854.83	7,817.13	37.70	208.355		
4,814.06	4,789.13	5,694.00	4,978.30	17.13	20.66	102.43	831.53	7,742.42	7,854.82	7,817.07	37.75	208.058		
4,900.00	4,873.91	5,694.00	4,978.30	17.45	20.66	102.43	831.53	7,742.42	7,855.29	7,817.21	38.08	206.289		
5,000.00	4,972.55	5,694.00	4,978.30	17.82	20.66	102.43	831.53	7,742.42	7,857.02	7,818.57	38.45	204.322		
5,100.00	5,071.19	5,679.87	4,978.49	18.19	20.54	102.33	845.63	7,741.54	7,860.01	7,821.31	38.70	203.123		
5,200.00	5,169.83	5,666.33	4,978.64	18.56	20.41	102.23	859.15	7,740.71	7,864.23	7,825.30	38.94	201.968		
5,300.00	5,268.47	5,653.14	4,978.76	18.93	20.29	102.13	872.32	7,739.90	7,869.70	7,830.52	39.18	200.868		
5,400.00	5,367.11	5,640.28	4,978.84	19.31	20.18	102.04	885.15	7,739.12	7,876.41	7,836.99	39.42	199.822		
5,500.00	5,465.75	5,627.75	4,978.90	19.68	20.06	101.95	897.66	7,738.36	7,884.35	7,844.69	39.65	198.831		
5,600.00	5,564.39	5,615.53	4,978.93	20.05	19.95	101.86	909.85	7,737.63	7,893.52	7,853.63	39.89	197.894		
5,700.00	5,663.03	5,603.00	4,978.93	20.42	19.84	101.77	922.36	7,736.89	7,903.92	7,863.81	40.11	197.039		
5,800.00	5,761.67	5,603.00	4,978.93	20.80	19.84	101.77	922.36	7,736.89	7,915.56	7,875.12	40.45	195.700		
5,900.00	5,860.31	5,603.00	4,978.93	21.17	19.84	101.77	922.36	7,736.89	7,928.45	7,887.67	40.78	194.442		
6,000.00	5,958.96	5,603.00	4,978.93	21.54	19.84	101.77	922.36	7,736.89	7,942.57	7,901.47	41.10	193.260		
6,100.00	6,057.60	5,603.00	4,978.93	21.92	19.84	101.77	922.36	7,736.89	7,957.93	7,916.51	41.41	192.152		
6,200.00	6,156.24	5,603.00	4,978.93	22.29	19.84	101.77	922.36	7,736.89	7,974.51	7,932.78	41.73	191.117		
6,300.00	6,254.88	5,603.00	4,978.93	22.67	19.84	101.77	922.36	7,736.89	7,992.30	7,950.27	42.03	190.152		
6,400.00	6,353.52	5,572.57	4,979.03	23.04	19.59	101.55	952.74	7,735.26	8,011.10	7,969.02	42.08	190.379		
6,500.00	6,452.16	5,567.96	4,979.07	23.42	19.55	101.52	957.35	7,735.04	8,031.23	7,988.90	42.34	189.702		
6,600.00	6,550.80	5,563.29	4,979.11	23.79	19.51	101.49	962.01	7,734.83	8,052.55	8,009.97	42.59	189.088		
6,700.00	6,649.44	5,558.56	4,979.16	24.17	19.47	101.45	966.74	7,734.62	8,075.05	8,032.22	42.83	188.534		
6,800.00	6,748.08	5,553.77	4,979.21	24.54	19.43	101.42	971.53	7,734.42	8,098.70	8,055.63	43.07	188.040		
6,900.00	6,846.72	5,548.91	4,979.27	24.92	19.39	101.38	976.39	7,734.23	8,123.51	8,080.21	43.30	187.604		
7,000.00	6,945.36	5,543.98	4,979.34	25.29	19.35	101.35	981.31	7,734.04	8,149.46	8,105.93	43.53	187.223		
7,100.00	7,044.00	5,513.00	4,979.91	25.67	19.09	101.13	1,012.27	7,733.07	8,176.68	8,133.14	43.54	187.802		
7,200.00	7,142.65	5,513.00	4,979.91	26.04	19.09	101.13	1,012.27	7,733.07	8,204.83	8,161.03	43.80	187.345		
7,300.00	7,241.29	5,513.00	4,979.91	26.42	19.09	101.13	1,012.27	7,733.07	8,234.09	8,190.05	44.05	186.941		
7,400.00	7,339.93	5,513.00	4,979.91	26.79	19.09	101.13	1,012.27	7,733.07	8,264.46	8,220.17	44.29	186.588		
7,500.00	7,438.57	5,513.00	4,979.91	27.17	19.09	101.13	1,012.27	7,733.07	8,295.93	8,251.40	44.53	186.285		
7,571.77	7,509.37	5,513.00	4,979.91	27.44	19.09	101.13	1,012.27	7,733.07	8,319.18	8,274.48	44.70	186.097		
7,600.00	7,537.23	5,513.00	4,979.91	27.55	19.09	101.27	1,012.27	7,733.07	8,328.46	8,283.69	44.77	186.030		
7,700.00	7,636.18	5,513.00	4,979.91	27.92	19.09	101.79	1,012.27	7,733.07	8,361.69	8,316.70	45.00	185.826		
7,800.00	7,735.48	5,513.00	4,979.91	28.29	19.09	102.32	1,012.27	7,733.07	8,395.49	8,350.27	45.22	185.673		
7,900.00	7,835.05	5,513.00	4,979.91	28.65	19.09	102.85	1,012.27	7,733.07	8,429.81	8,384.39	45.43	185.570		
8,000.00	7,934.83	5,513.00	4,979.91	29.01	19.09	103.39	1,012.27	7,733.07	8,464.63	8,419.00	45.63	185.513		
8,100.00	8,034.74	5,513.00	4,979.91	29.36	19.09	103.94	1,012.27	7,733.07	8,499.92	8,454.10	45.82	185.502		
8,202.27	8,137.00	5,513.00	4,979.91	29.72	19.09	88.47	1,012.27	7,733.07	8,536.46	8,490.45	46.01	185.535		
8,300.00	8,234.73	5,513.00	4,979.91	30.06	19.09	88.47	1,012.27	7,733.07	8,572.08	8,525.89	46.18	185.604		
8,400.00	8,334.73	5,513.00	4,979.91	30.41	19.09	88.47	1,012.27	7,733.07	8,609.52	8,563.16	46.36	185.709		
8,500.00	8,434.73	5,513.00	4,979.91	30.75	19.09	88.47	1,012.27	7,733.07	8,647.95	8,601.42	46.53	185.847		
8,552.31	8,487.04	5,513.00	4,979.91	30.94	19.09	88.47	1,012.27	7,733.07	8,668.44	8,621.82	46.62	185.932		
8,600.00	8,534.68	5,513.00	4,979.91	31.10	19.09	-1.15	1,012.27	7,733.07	8,685.52	8,638.83	46.69	186.006		
8,650.00	8,584.26	5,487.43	4,980.59	31.26	18.90	-1.29	1,037.83	7,732.54	8,699.54	8,652.96	46.59	186.742		
8,700.00	8,633.10	5,486.89	4,980.61	31.43	18.89	-1.27	1,038.36	7,732.53	8,709.70	8,663.05	46.65	186.716		
8,750.00	8,680.83	5,486.38	4,980.63	31.58	18.89	-1.26	1,038.87	7,732.52	8,715.84	8,669.14	46.70	186.626		
8,800.00	8,727.09	5,485.90	4,980.64	31.74	18.89	-1.26	1,039.36	7,732.52	8,717.91	8,671.16	46.75	186.475		
8,850.00	8,771.52	5,485.44	4,980.66	31.89	18.88	-1.27	1,039.82	7,732.51	8,715.92	8,669.12	46.79	186.267		
8,900.00	8,813.78	5,485.01	4,980.67	32.04	18.88	-1.29	1,040.24	7,732.50	8,709.86	8,663.03	46.83	186.006		
8,950.00	8,853.56	5,484.62	4,980.68	32.18	18.88	-1.31	1,040.64	7,732.50	8,699.78	8,652.93	46.85	185.692		
9,000.00	8,890.55	5,484.26	4,980.70	32.32	18.87	-1.35	1,040.99	7,732.49	8,685.73	8,638.87	46.87	185.330		
9,050.00	8,924.46	5,483.95	4,980.71	32.47	18.87	-1.40	1,041.30	7,732.49	8,667.82	8,620.95	46.87	184.921		
9,100.00	8,955.05	5,483.69	4,980.71	32.63	18.87	-1.46	1,041.56	7,732.48	8,646.15	8,599.27	46.87	184.465		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,483.48	4,980.72	32.79	18.87	-1.54	1,041.77	7,732.48	8,620.85	8,573.99	46.86	183.965		
9,200.00	9,005.34	5,483.33	4,980.73	32.97	18.87	-1.64	1,041.92	7,732.48	8,592.09	8,545.25	46.84	183.420		
9,250.00	9,024.65	5,483.23	4,980.73	33.17	18.87	-1.76	1,042.02	7,732.48	8,560.06	8,513.24	46.82	182.833		
9,300.00	9,039.87	5,483.19	4,980.73	33.38	18.87	-1.92	1,042.06	7,732.48	8,524.96	8,478.17	46.79	182.204		
9,350.00	9,050.89	5,483.21	4,980.73	33.62	18.87	-2.13	1,042.04	7,732.48	8,487.02	8,440.27	46.75	181.534		
9,400.00	9,057.61	5,483.30	4,980.73	33.87	18.87	-2.40	1,041.95	7,732.48	8,446.50	8,399.79	46.71	180.822		
9,452.31	9,060.00	5,483.46	4,980.72	34.15	18.87	-2.79	1,041.80	7,732.48	8,401.64	8,354.97	46.67	180.033		
9,500.00	9,060.00	5,483.63	4,980.72	34.42	18.87	-2.79	1,041.62	7,732.48	8,359.72	8,313.09	46.62	179.303		
9,600.00	9,060.00	5,484.02	4,980.70	35.09	18.87	-2.78	1,041.24	7,732.49	8,272.01	8,225.49	46.53	177.792		
9,700.00	9,060.00	5,484.41	4,980.69	35.86	18.87	-2.78	1,040.84	7,732.49	8,184.59	8,138.16	46.43	176.268		
9,800.00	9,060.00	5,484.82	4,980.68	36.72	18.88	-2.77	1,040.43	7,732.50	8,097.47	8,051.12	46.34	174.728		
9,900.00	9,060.00	5,485.24	4,980.66	37.69	18.88	-2.77	1,040.01	7,732.51	8,010.64	7,964.38	46.26	173.174		
10,000.00	9,060.00	5,485.68	4,980.65	38.73	18.88	-2.76	1,039.57	7,732.51	7,924.12	7,877.94	46.18	171.603		
10,100.00	9,060.00	5,486.13	4,980.63	39.86	18.89	-2.75	1,039.12	7,732.52	7,837.93	7,791.82	46.10	170.016		
10,140.22	9,060.00	5,486.32	4,980.63	40.33	18.89	-2.75	1,038.93	7,732.52	7,803.35	7,757.27	46.07	169.372		
10,200.00	9,060.00	5,486.91	4,980.61	41.05	18.89	-4.73	1,038.35	7,732.53	7,752.08	7,706.05	46.03	168.404		
10,300.00	9,060.00	5,489.30	4,980.54	42.31	18.91	-7.95	1,035.95	7,732.57	7,666.72	7,620.74	45.98	166.735		
10,400.00	9,060.00	5,493.55	4,980.41	43.64	18.94	-11.04	1,031.71	7,732.65	7,581.97	7,536.02	45.95	165.002		
10,507.23	9,060.00	5,513.00	4,979.91	45.11	19.09	-14.02	1,012.27	7,733.07	7,491.94	7,445.92	46.02	162.787		
10,600.00	9,060.00	5,513.00	4,979.91	46.43	19.09	-11.26	1,012.27	7,733.07	7,414.39	7,368.40	45.99	161.218		
10,700.00	9,060.00	5,513.00	4,979.91	47.91	19.09	-8.26	1,012.27	7,733.07	7,330.84	7,284.87	45.96	159.503		
10,800.00	9,060.00	5,513.00	4,979.91	49.42	19.09	-5.26	1,012.27	7,733.07	7,247.42	7,201.48	45.94	157.773		
10,900.00	9,060.00	5,513.00	4,979.91	50.97	19.09	-2.27	1,012.27	7,733.07	7,164.25	7,118.33	45.91	156.035		
11,000.00	9,060.00	5,513.00	4,979.91	52.55	19.09	0.68	1,012.27	7,733.07	7,081.43	7,035.53	45.90	154.292		
11,100.00	9,060.00	5,513.00	4,979.91	54.14	19.09	3.58	1,012.27	7,733.07	6,999.09	6,953.21	45.88	152.545		
11,207.23	9,060.00	5,513.00	4,979.91	55.87	19.09	6.61	1,012.27	7,733.07	6,911.46	6,865.58	45.87	150.668		
11,300.00	9,060.00	5,513.00	4,979.91	57.39	19.09	4.04	1,012.27	7,733.07	6,836.10	6,790.22	45.87	149.023		
11,400.00	9,060.00	5,501.19	4,980.20	59.06	19.00	1.12	1,024.07	7,732.80	6,755.20	6,709.38	45.82	147.423		
11,506.63	9,060.00	5,500.16	4,980.22	60.88	18.99	-1.78	1,025.10	7,732.77	6,669.47	6,623.62	45.85	145.461		
11,600.00	9,060.00	5,500.35	4,980.22	62.49	18.99	-1.77	1,024.92	7,732.78	6,594.92	6,549.03	45.90	143.693		
11,700.00	9,060.00	5,500.56	4,980.21	64.24	19.00	-1.77	1,024.71	7,732.78	6,515.62	6,469.66	45.96	141.778		
11,800.00	9,060.00	5,500.78	4,980.21	66.01	19.00	-1.77	1,024.49	7,732.79	6,436.89	6,390.86	46.03	139.839		
11,900.00	9,060.00	5,501.01	4,980.20	67.79	19.00	-1.76	1,024.25	7,732.79	6,358.76	6,312.64	46.12	137.877		
12,000.00	9,060.00	5,501.25	4,980.19	69.58	19.00	-1.76	1,024.01	7,732.80	6,281.25	6,235.03	46.22	135.893		
12,100.00	9,060.00	5,501.51	4,980.19	71.39	19.00	-1.76	1,023.75	7,732.80	6,204.38	6,158.04	46.34	133.887		
12,200.00	9,060.00	5,501.78	4,980.18	73.21	19.01	-1.75	1,023.48	7,732.81	6,128.19	6,081.71	46.48	131.860		
12,300.00	9,060.00	5,502.07	4,980.17	75.05	19.01	-1.75	1,023.19	7,732.81	6,052.68	6,006.05	46.63	129.813		
12,400.00	9,060.00	5,502.38	4,980.16	76.89	19.01	-1.74	1,022.88	7,732.82	5,977.89	5,931.10	46.79	127.747		
12,500.00	9,060.00	5,502.70	4,980.16	78.74	19.01	-1.74	1,022.56	7,732.83	5,903.85	5,856.87	46.98	125.664		
12,600.00	9,060.00	5,503.05	4,980.15	80.61	19.01	-1.73	1,022.21	7,732.84	5,830.59	5,783.40	47.19	123.565		
12,700.00	9,060.00	5,503.42	4,980.14	82.48	19.02	-1.73	1,021.85	7,732.84	5,758.13	5,710.71	47.41	121.452		
12,800.00	9,060.00	5,503.81	4,980.13	84.36	19.02	-1.72	1,021.45	7,732.85	5,686.50	5,638.84	47.65	119.328		
12,900.00	9,060.00	5,504.23	4,980.12	86.24	19.02	-1.72	1,021.03	7,732.86	5,615.74	5,567.82	47.92	117.193		
13,000.00	9,060.00	5,504.68	4,980.11	88.14	19.03	-1.71	1,020.58	7,732.87	5,545.88	5,497.68	48.20	115.051		
13,100.00	9,060.00	5,505.17	4,980.09	90.04	19.03	-1.70	1,020.10	7,732.88	5,476.96	5,428.45	48.51	112.905		
13,200.00	9,060.00	5,505.69	4,980.08	91.94	19.03	-1.70	1,019.57	7,732.89	5,409.01	5,360.17	48.84	110.756		
13,300.00	9,060.00	5,506.26	4,980.07	93.86	19.04	-1.69	1,019.01	7,732.91	5,342.06	5,292.87	49.19	108.608		
13,400.00	9,060.00	5,506.87	4,980.05	95.77	19.04	-1.68	1,018.39	7,732.92	5,276.16	5,226.60	49.56	106.464		
13,500.00	9,060.00	5,507.54	4,980.03	97.70	19.05	-1.67	1,017.72	7,732.94	5,211.35	5,161.40	49.95	104.326		
13,600.00	9,060.00	5,508.28	4,980.02	99.62	19.05	-1.66	1,016.99	7,732.96	5,147.66	5,097.29	50.37	102.198		
13,700.00	9,060.00	5,509.08	4,980.00	101.56	19.06	-1.65	1,016.19	7,732.97	5,085.14	5,034.33	50.81	100.084		
13,800.00	9,060.00	5,509.97	4,979.98	103.49	19.07	-1.63	1,015.30	7,733.00	5,023.84	4,972.57	51.27	97.986		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,510.95	4,979.95	105.43	19.07	-1.62	1,014.31	7,733.02	4,963.79	4,912.03	51.76	95.907	
14,000.00	9,060.00	5,512.05	4,979.93	107.38	19.08	-1.60	1,013.22	7,733.05	4,905.04	4,852.78	52.26	93.851	
14,100.00	9,060.00	5,513.28	4,979.90	109.33	19.09	-1.59	1,011.99	7,733.08	4,847.65	4,794.86	52.79	91.822	
14,200.00	9,060.00	5,514.67	4,979.87	111.28	19.10	-1.57	1,010.60	7,733.11	4,791.66	4,738.31	53.35	89.821	
14,300.00	9,060.00	5,516.25	4,979.84	113.23	19.11	-1.54	1,009.02	7,733.16	4,737.11	4,683.19	53.92	87.853	
14,400.00	9,060.00	5,518.07	4,979.80	115.19	19.13	-1.52	1,007.20	7,733.21	4,684.07	4,629.55	54.52	85.920	
14,500.00	9,060.00	5,520.19	4,979.76	117.15	19.14	-1.49	1,005.09	7,733.26	4,632.57	4,577.44	55.13	84.025	
14,600.00	9,060.00	5,522.67	4,979.71	119.11	19.16	-1.45	1,002.60	7,733.33	4,582.68	4,526.91	55.77	82.170	
14,700.00	9,060.00	5,525.63	4,979.65	121.08	19.19	-1.41	999.64	7,733.42	4,534.45	4,478.02	56.43	80.358	
14,800.00	9,060.00	5,529.22	4,979.59	123.05	19.21	-1.36	996.06	7,733.53	4,487.92	4,430.82	57.10	78.592	
14,900.00	9,060.00	14,900.00	4,980.86	125.02	91.84	-1.95	1,037.18	7,732.86	4,443.10	4,336.85	106.25	41.818	
15,000.00	9,060.00	15,000.00	4,980.90	126.99	92.62	-1.96	1,038.08	7,732.85	4,400.16	4,293.32	106.84	41.185	
15,100.00	9,060.00	15,100.00	4,980.93	128.97	93.40	-1.97	1,038.98	7,732.84	4,359.08	4,251.65	107.43	40.576	
15,200.00	9,060.00	15,200.00	4,980.97	130.95	94.18	-1.99	1,039.88	7,732.83	4,319.93	4,211.90	108.03	39.989	
15,300.00	9,060.00	15,300.00	4,981.00	132.93	94.96	-2.00	1,040.78	7,732.82	4,282.75	4,174.12	108.63	39.425	
15,400.00	9,060.00	15,400.00	4,981.04	134.91	95.74	-2.01	1,041.68	7,732.82	4,247.61	4,138.37	109.24	38.882	
15,500.00	9,060.00	5,535.87	4,979.46	136.89	19.28	-1.26	989.42	7,733.75	4,214.63	4,152.37	62.26	67.697	
15,600.00	9,060.00	5,539.53	4,979.40	138.88	19.31	-1.21	985.76	7,733.88	4,183.69	4,120.64	63.05	66.357	
15,700.00	9,060.00	5,543.86	4,979.34	140.86	19.35	-1.15	981.43	7,734.04	4,154.93	4,091.08	63.85	65.074	
15,800.00	9,060.00	5,549.07	4,979.27	142.85	19.39	-1.07	976.23	7,734.23	4,128.39	4,063.73	64.66	63.847	
15,900.00	9,060.00	5,555.44	4,979.19	144.84	19.44	-0.98	969.86	7,734.49	4,104.11	4,038.63	65.48	62.676	
16,000.00	9,060.00	5,563.42	4,979.11	146.83	19.51	-0.87	961.89	7,734.83	4,082.14	4,015.83	66.31	61.560	
16,100.00	9,060.00	5,573.71	4,979.02	148.83	19.60	-0.72	951.61	7,735.31	4,062.50	3,995.35	67.15	60.498	
16,200.00	9,060.00	5,587.47	4,978.95	150.82	19.71	-0.52	937.87	7,736.01	4,045.23	3,977.23	68.00	59.485	
16,300.00	9,060.00	5,606.81	4,978.94	152.82	19.87	-0.25	918.56	7,737.12	4,030.35	3,961.48	68.88	58.515	
16,400.00	9,060.00	16,400.00	4,979.30	154.81	112.76	-0.78	955.81	7,735.47	4,017.77	3,896.31	121.45	33.081	
16,500.00	9,060.00	16,500.00	4,979.27	156.81	113.63	-0.74	953.34	7,735.57	4,007.79	3,885.35	122.45	32.731 ES	
16,600.00	9,060.00	5,603.00	4,978.93	158.81	19.84	-0.30	922.36	7,736.89	4,000.40	3,929.03	71.37	56.052	
16,700.00	9,060.00	5,603.00	4,978.93	160.81	19.84	-0.30	922.36	7,736.89	3,995.37	3,923.17	72.20	55.335	
16,800.00	9,060.00	5,603.00	4,978.93	162.81	19.84	-0.30	922.36	7,736.89	3,992.85	3,919.81	73.03	54.670	
16,851.53	9,060.00	5,617.15	4,978.93	163.85	19.97	-0.10	908.24	7,737.73	3,992.48	3,918.98	73.50	54.318 CC	
16,900.00	9,060.00	5,618.37	4,978.92	164.82	19.98	-0.08	907.02	7,737.80	3,992.77	3,918.87	73.91	54.025	
17,000.00	9,060.00	5,620.90	4,978.92	166.82	20.00	-0.04	904.49	7,737.95	3,995.24	3,920.50	74.74	53.459	
17,100.00	9,060.00	5,623.44	4,978.91	168.82	20.03	-0.01	901.96	7,738.11	4,000.19	3,924.64	75.56	52.943	
17,200.00	9,060.00	5,625.98	4,978.90	170.83	20.05	0.03	899.42	7,738.26	4,007.64	3,931.27	76.37	52.477	
17,300.00	9,060.00	5,628.54	4,978.90	172.84	20.07	0.07	896.87	7,738.41	4,017.56	3,940.39	77.17	52.061	
17,400.00	9,060.00	5,631.10	4,978.89	174.84	20.09	0.10	894.31	7,738.57	4,029.94	3,951.98	77.96	51.694	
17,500.00	9,060.00	5,633.68	4,978.88	176.85	20.12	0.14	891.74	7,738.72	4,044.74	3,966.02	78.73	51.377	
17,600.00	9,060.00	5,636.27	4,978.86	178.86	20.14	0.18	889.15	7,738.88	4,061.96	3,982.48	79.48	51.107	
17,700.00	9,060.00	5,638.86	4,978.85	180.87	20.16	0.21	886.56	7,739.03	4,081.54	4,001.33	80.21	50.885	
17,800.00	9,060.00	5,641.47	4,978.84	182.88	20.19	0.25	883.96	7,739.19	4,103.47	4,022.55	80.92	50.709	
17,900.00	9,060.00	5,644.09	4,978.82	184.89	20.21	0.29	881.35	7,739.35	4,127.71	4,046.10	81.61	50.579	
18,000.00	9,060.00	5,646.72	4,978.80	186.90	20.24	0.33	878.72	7,739.51	4,154.21	4,071.94	82.27	50.495	
18,100.00	9,060.00	5,649.35	4,978.78	188.92	20.26	0.36	876.09	7,739.67	4,182.93	4,100.02	82.90	50.455	
18,200.00	9,060.00	5,652.00	4,978.77	190.93	20.28	0.40	873.45	7,739.83	4,213.82	4,130.31	83.51	50.457	
18,300.00	9,060.00	5,654.66	4,978.74	192.94	20.31	0.44	870.79	7,739.99	4,246.84	4,162.75	84.09	50.502	
18,400.00	9,060.00	5,657.33	4,978.72	194.96	20.33	0.48	868.13	7,740.16	4,281.94	4,197.30	84.65	50.587	
18,500.00	9,060.00	5,660.01	4,978.70	196.97	20.36	0.52	865.45	7,740.32	4,319.07	4,233.90	85.17	50.712	
18,600.00	9,060.00	5,662.71	4,978.67	198.99	20.38	0.56	862.76	7,740.49	4,358.17	4,272.51	85.66	50.875	
18,700.00	9,060.00	5,665.41	4,978.65	201.00	20.41	0.59	860.07	7,740.65	4,399.20	4,313.07	86.13	51.075	
18,800.00	9,060.00	5,668.12	4,978.62	203.02	20.43	0.63	857.36	7,740.82	4,442.10	4,355.53	86.57	51.312	
18,900.00	9,060.00	18,900.00	4,978.23	205.04	153.62	1.45	800.76	7,744.62	4,486.80	4,311.94	174.86	25.659	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		233-GYRO-NS-CT, 4541-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	19,000.00	4,978.21	207.06	154.64	1.52	795.39	7,745.01	4,533.22	4,356.18	177.04	25.606	
19,100.00	9,060.00	19,100.00	4,978.20	209.07	155.65	1.60	790.02	7,745.39	4,581.34	4,402.14	179.20	25.566	
19,200.00	9,060.00	19,200.00	4,978.19	211.09	156.66	1.68	784.65	7,745.78	4,631.11	4,449.77	181.34	25.539	
19,300.00	9,060.00	19,300.00	4,978.17	213.11	157.68	1.75	779.27	7,746.16	4,682.49	4,499.03	183.46	25.524 SF	
19,400.00	9,060.00	5,815.44	4,978.33	215.13	21.86	2.74	710.43	7,751.41	4,735.40	4,645.61	89.79	52.740	
19,500.32	9,060.00	5,820.51	4,978.36	217.16	21.91	2.81	705.38	7,751.83	4,789.92	4,699.82	90.10	53.162	

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.34	1,585.65	8,424.46	8,572.80					
100.00	100.00	17.01	17.01	0.52	5.00	79.34	1,585.64	8,424.46	8,572.38	8,566.87	5.52	1,553.588		
200.00	200.00	120.85	120.85	0.70	5.01	79.34	1,585.11	8,424.51	8,572.34	8,566.63	5.71	1,501.871		
285.14	285.14	201.15	201.14	0.94	5.03	79.35	1,584.72	8,424.55	8,572.30	8,566.33	5.97	1,436.223		
300.00	300.00	213.65	213.65	0.99	5.03	79.35	1,584.70	8,424.55	8,572.30	8,566.28	6.02	1,424.241		
400.00	400.00	301.05	301.05	1.31	5.07	79.35	1,584.95	8,424.61	8,572.42	8,566.03	6.38	1,342.856		
500.00	500.00	397.87	397.86	1.65	5.14	79.34	1,585.59	8,424.69	8,572.62	8,565.83	6.79	1,262.661		
600.00	600.00	498.10	498.09	1.99	5.24	79.34	1,586.36	8,424.75	8,572.82	8,565.60	7.23	1,186.214		
700.00	700.00	592.45	592.44	2.34	5.34	79.33	1,587.15	8,424.83	8,573.06	8,565.38	7.68	1,115.844		
800.00	800.00	685.74	685.72	2.69	5.47	79.33	1,588.06	8,424.96	8,573.38	8,565.22	8.16	1,050.929		
900.00	900.00	786.57	786.54	3.04	5.62	79.32	1,589.19	8,425.12	8,573.74	8,565.08	8.66	989.720		
1,000.00	1,000.00	897.63	897.60	3.40	5.81	79.31	1,590.68	8,425.16	8,574.03	8,564.82	9.20	931.491		
1,100.00	1,100.00	986.10	986.06	3.75	5.97	79.30	1,591.99	8,425.14	8,574.28	8,564.56	9.72	881.852		
1,200.00	1,200.00	1,070.18	1,070.13	4.11	6.14	79.29	1,593.45	8,425.25	8,574.73	8,564.48	10.24	837.020		
1,300.00	1,300.00	1,145.88	1,145.81	4.46	6.29	79.28	1,594.66	8,425.53	8,575.39	8,564.63	10.76	797.157		
1,400.00	1,400.00	1,235.78	1,235.71	4.82	6.49	79.28	1,595.86	8,426.16	8,576.33	8,565.02	11.31	758.328		
1,500.00	1,500.00	1,402.55	1,402.46	5.18	6.88	79.26	1,598.32	8,426.62	8,576.87	8,564.82	12.05	711.602		
1,600.00	1,600.00	1,481.96	1,481.85	5.53	7.07	79.25	1,599.60	8,426.59	8,577.14	8,564.54	12.60	680.551		
1,700.00	1,700.00	1,553.16	1,553.04	5.89	7.25	79.24	1,600.77	8,426.78	8,577.71	8,564.57	13.14	652.877		
1,800.00	1,800.00	1,626.36	1,626.23	6.25	7.44	79.24	1,601.92	8,427.23	8,578.60	8,564.92	13.68	626.967		
1,900.00	1,900.00	1,766.63	1,766.48	6.61	7.81	79.22	1,604.21	8,428.14	8,579.59	8,565.18	14.41	595.371		
2,000.00	2,000.00	1,863.88	1,863.72	6.96	8.08	79.21	1,605.87	8,428.43	8,580.20	8,565.17	15.03	570.793		
2,100.00	2,100.00	1,953.18	1,953.00	7.32	8.32	79.20	1,607.49	8,428.74	8,580.89	8,565.25	15.64	548.757		
2,200.00	2,200.00	2,052.69	2,052.49	7.68	8.60	79.19	1,609.49	8,429.04	8,581.57	8,565.29	16.28	527.273		
2,300.00	2,300.00	2,113.11	2,112.90	8.04	8.78	79.18	1,610.64	8,429.42	8,582.54	8,565.73	16.81	510.702		
2,350.00	2,350.00	2,226.00	2,225.77	8.22	9.11	79.17	1,612.80	8,430.01	8,583.00	8,565.69	17.31	495.779		
2,400.00	2,400.00	2,264.41	2,264.16	8.39	9.22	95.20	1,613.64	8,430.02	8,583.25	8,565.64	17.60	487.592		
2,500.00	2,499.98	2,320.50	2,320.24	8.75	9.39	95.19	1,614.89	8,430.27	8,584.26	8,566.14	18.12	473.617		
2,600.00	2,599.92	2,395.94	2,395.66	9.11	9.61	95.18	1,616.56	8,430.92	8,585.84	8,567.13	18.71	459.011		
2,700.00	2,699.78	2,569.56	2,569.23	9.47	10.14	95.20	1,620.57	8,431.39	8,586.81	8,567.22	19.59	438.425		
2,800.00	2,799.54	2,639.51	2,639.16	9.82	10.35	95.21	1,622.37	8,431.58	8,588.19	8,568.04	20.15	426.119		
2,900.00	2,899.16	2,730.48	2,730.09	10.18	10.63	95.23	1,624.75	8,432.04	8,589.97	8,569.18	20.79	413.187		
3,000.00	2,998.61	2,834.53	2,834.11	10.54	10.95	95.27	1,627.60	8,432.49	8,591.87	8,570.40	21.47	400.221		
3,100.00	3,097.86	2,909.46	2,909.01	10.89	11.19	95.29	1,629.65	8,432.87	8,594.03	8,571.97	22.06	389.631		
3,200.00	3,196.89	2,963.46	2,962.99	11.25	11.36	95.30	1,631.00	8,433.43	8,596.82	8,574.24	22.58	380.715		
3,295.74	3,291.45	3,131.46	3,130.92	11.59	11.89	95.43	1,635.28	8,434.61	8,599.24	8,575.79	23.45	366.634		
3,300.00	3,295.65	3,134.68	3,134.14	11.61	11.90	95.43	1,635.36	8,434.63	8,599.35	8,575.87	23.48	366.241		
3,400.00	3,394.29	3,215.71	3,215.14	11.97	12.16	95.50	1,637.45	8,435.08	8,601.96	8,577.87	24.10	356.999		
3,500.00	3,492.94	3,304.92	3,304.32	12.33	12.44	95.59	1,639.80	8,435.72	8,604.76	8,580.02	24.74	347.819		
3,600.00	3,591.58	3,400.20	3,399.57	12.69	12.75	95.68	1,642.32	8,436.47	8,607.65	8,582.25	25.41	338.814		
3,700.00	3,690.22	3,700.00	3,628.58	13.05	13.72	95.89	1,647.61	8,436.98	8,610.14	8,583.40	26.74	322.030		
3,800.00	3,788.86	3,686.33	3,685.63	13.41	13.68	95.95	1,648.20	8,436.54	8,611.51	8,584.46	27.05	318.297		
3,900.00	3,887.50	3,731.50	3,730.79	13.77	13.83	96.00	1,647.98	8,437.04	8,614.00	8,586.44	27.56	312.508		
4,000.00	3,986.14	3,849.56	3,848.82	14.14	14.21	96.12	1,649.08	8,437.99	8,616.76	8,588.45	28.31	304.336		
4,100.00	4,084.78	3,915.00	3,914.25	14.50	14.43	96.18	1,650.47	8,438.43	8,619.50	8,590.61	28.89	298.339		
4,200.00	4,183.42	3,964.09	3,963.33	14.87	14.59	96.23	1,651.40	8,439.02	8,622.72	8,593.30	29.42	293.127		
4,300.00	4,282.06	4,061.84	4,061.06	15.24	14.91	96.33	1,653.00	8,440.39	8,626.21	8,596.11	30.10	286.548		
4,400.00	4,380.70	4,178.92	4,178.12	15.60	15.30	96.45	1,654.12	8,441.94	8,629.55	8,598.69	30.86	279.659		
4,500.00	4,479.34	4,270.71	4,269.90	15.97	15.60	96.55	1,653.80	8,443.29	8,632.85	8,601.32	31.53	273.818		
4,600.00	4,577.98	4,353.32	4,352.49	16.34	15.87	96.64	1,654.53	8,444.46	8,636.32	8,604.15	32.17	268.472		
4,700.00	4,676.62	4,700.00	4,647.67	16.71	17.03	96.84	1,656.04	8,446.62	8,639.63	8,605.94	33.69	256.419		
4,800.00	4,775.27	4,631.54	4,630.68	17.08	16.80	96.93	1,657.10	8,446.71	8,642.00	8,608.16	33.83	255.425		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
4,900.00	4,873.91	4,671.00	4,670.14	17.45	16.93	96.97	1,657.48	8,447.07	8,645.08	8,610.74	34.33	251.805				
5,000.00	4,972.55	4,791.28	4,790.41	17.82	17.33	97.09	1,658.78	8,448.38	8,648.37	8,613.26	35.11	246.356				
5,100.00	5,071.19	4,890.63	4,889.74	18.19	17.67	97.19	1,659.97	8,449.36	8,651.60	8,615.80	35.81	241.610				
5,200.00	5,169.83	4,987.31	4,986.42	18.56	17.99	97.29	1,661.13	8,450.24	8,654.80	8,618.30	36.50	237.100				
5,300.00	5,268.47	5,100.96	5,100.05	18.93	18.38	97.41	1,662.32	8,451.46	8,658.18	8,620.93	37.26	232.396				
5,400.00	5,367.11	5,208.20	5,207.28	19.31	18.74	97.51	1,663.52	8,452.15	8,661.14	8,623.16	37.99	227.994				
5,500.00	5,465.75	5,368.75	5,367.82	19.68	19.28	97.68	1,664.68	8,452.86	8,663.92	8,625.02	38.90	222.710				
5,600.00	5,564.39	5,487.01	5,486.08	20.05	19.68	97.80	1,665.46	8,452.82	8,666.22	8,626.55	39.67	218.445				
5,700.00	5,663.03	5,585.23	5,584.30	20.42	20.01	97.90	1,666.00	8,452.65	8,668.40	8,628.03	40.38	214.694				
5,800.00	5,761.67	5,674.76	5,673.83	20.80	20.32	98.00	1,666.53	8,452.57	8,670.70	8,629.65	41.05	211.223				
5,900.00	5,860.31	6,099.81	6,098.77	21.17	21.76	98.43	1,669.08	8,444.66	8,671.54	8,628.71	42.83	202.444				
6,000.00	5,958.96	6,156.78	6,155.70	21.54	21.95	98.49	1,669.03	8,442.67	8,670.46	8,627.06	43.41	199.754				
6,100.00	6,057.60	6,225.28	6,224.16	21.92	22.18	98.56	1,668.95	8,440.59	8,669.85	8,625.84	44.01	196.978				
6,184.11	6,140.57	6,271.00	6,269.87	22.23	22.34	98.61	1,668.80	8,439.31	8,669.60	8,625.12	44.49	194.879				
6,200.00	6,156.24	6,271.00	6,269.87	22.29	22.34	98.61	1,668.80	8,439.31	8,669.62	8,625.07	44.55	194.614				
6,300.00	6,254.88	6,271.00	6,269.87	22.67	22.34	98.61	1,668.80	8,439.31	8,670.38	8,625.45	44.93	192.986				
6,400.00	6,353.52	6,311.02	6,309.88	23.04	22.47	98.65	1,668.75	8,438.67	8,671.75	8,626.31	45.44	190.848				
6,500.00	6,452.16	6,531.35	6,530.18	23.42	23.22	98.90	1,667.56	8,437.68	8,674.54	8,627.98	46.56	186.324				
6,600.00	6,550.80	6,625.89	6,624.67	23.79	23.54	99.01	1,665.26	8,436.27	8,675.32	8,628.07	47.25	183.596				
6,700.00	6,649.44	6,703.39	6,702.15	24.17	23.80	99.11	1,663.29	8,435.15	8,676.19	8,628.29	47.89	181.163				
6,800.00	6,748.08	8,141.00	7,763.66	24.54	28.21	104.58	996.13	8,418.45	8,676.89	8,624.51	52.38	165.655				
6,900.00	6,846.72	8,141.00	7,763.66	24.92	28.21	104.58	996.13	8,418.45	8,668.79	8,615.98	52.81	164.143				
7,000.00	6,945.36	8,129.31	7,763.04	25.29	28.12	104.50	1,007.79	8,418.03	8,661.82	8,608.68	53.14	162.995				
7,100.00	7,044.00	8,125.56	7,762.80	25.67	28.08	104.48	1,011.53	8,417.91	8,656.00	8,602.47	53.53	161.697				
7,200.00	7,142.65	8,122.10	7,762.58	26.04	28.05	104.45	1,014.98	8,417.80	8,651.33	8,597.41	53.92	160.450				
7,300.00	7,241.29	8,110.00	7,761.68	26.42	27.95	104.37	1,027.04	8,417.43	8,647.82	8,593.60	54.23	159.472				
7,400.00	7,339.93	8,110.00	7,761.68	26.79	27.95	104.37	1,027.04	8,417.43	8,645.45	8,590.82	54.63	158.247				
7,500.00	7,438.57	8,110.00	7,761.68	27.17	27.95	104.37	1,027.04	8,417.43	8,644.23	8,589.20	55.03	157.079				
7,555.30	7,493.11	8,110.00	7,761.68	27.38	27.95	104.37	1,027.04	8,417.43	8,644.06	8,588.81	55.25	156.457				
7,571.77	7,509.37	8,110.00	7,761.68	27.44	27.95	104.37	1,027.04	8,417.43	8,644.07	8,588.76	55.31	156.275				
7,600.00	7,537.23	8,110.00	7,761.68	27.55	27.95	104.37	1,027.04	8,417.43	8,644.15	8,588.72	55.42	155.966				
7,700.00	7,636.18	8,110.00	7,761.68	27.92	27.95	104.38	1,027.04	8,417.43	8,644.73	8,588.93	55.81	154.907				
7,800.00	7,735.48	8,110.00	7,761.68	28.29	27.95	104.40	1,027.04	8,417.43	8,645.83	8,589.65	56.18	153.900				
7,900.00	7,835.05	8,110.00	7,761.68	28.65	27.95	104.42	1,027.04	8,417.43	8,647.42	8,590.89	56.54	152.945				
8,000.00	7,934.83	8,110.00	7,761.68	29.01	27.95	104.45	1,027.04	8,417.43	8,649.53	8,592.64	56.89	152.041				
8,100.00	8,034.74	8,110.00	7,761.68	29.36	27.95	104.49	1,027.04	8,417.43	8,652.13	8,594.91	57.23	151.188				
8,202.27	8,137.00	8,110.00	7,761.68	29.72	27.95	88.50	1,027.04	8,417.43	8,655.31	8,597.75	57.56	150.365				
8,300.00	8,234.73	8,110.00	7,761.68	30.06	27.95	88.50	1,027.04	8,417.43	8,659.16	8,601.28	57.87	149.625				
8,400.00	8,334.73	8,110.00	7,761.68	30.41	27.95	88.50	1,027.04	8,417.43	8,664.22	8,606.04	58.18	148.911				
8,500.00	8,434.73	8,110.00	7,761.68	30.75	27.95	88.50	1,027.04	8,417.43	8,670.44	8,611.95	58.49	148.241				
8,552.31	8,487.04	8,110.00	7,761.68	30.94	27.95	88.50	1,027.04	8,417.43	8,674.15	8,615.51	58.65	147.907				
8,600.00	8,534.68	8,110.00	7,761.68	31.10	27.95	-1.16	1,027.04	8,417.43	8,675.83	8,617.05	58.78	147.593				
8,650.00	8,584.26	8,110.00	7,761.68	31.26	27.95	-1.17	1,027.04	8,417.43	8,673.61	8,614.69	58.92	147.218				
8,700.00	8,633.10	8,110.00	7,761.68	31.43	27.95	-1.18	1,027.04	8,417.43	8,667.33	8,608.28	59.05	146.790				
8,750.00	8,680.83	8,110.00	7,761.68	31.58	27.95	-1.20	1,027.04	8,417.43	8,657.03	8,597.86	59.17	146.315				
8,800.00	8,727.09	8,121.96	7,762.57	31.74	28.05	-1.15	1,015.13	8,417.79	8,642.74	8,583.36	59.38	145.548				
8,850.00	8,771.52	8,122.76	7,762.62	31.89	28.06	-1.18	1,014.33	8,417.82	8,624.61	8,565.12	59.49	144.975				
8,900.00	8,813.78	8,123.54	7,762.67	32.04	28.07	-1.23	1,013.55	8,417.84	8,602.73	8,543.14	59.59	144.368				
8,950.00	8,853.56	8,124.29	7,762.72	32.18	28.07	-1.29	1,012.80	8,417.87	8,577.24	8,517.56	59.68	143.730				
9,000.00	8,890.55	8,125.01	7,762.77	32.32	28.08	-1.36	1,012.08	8,417.89	8,548.30	8,488.54	59.75	143.063				
9,050.00	8,924.46	8,125.70	7,762.81	32.47	28.08	-1.46	1,011.39	8,417.91	8,516.09	8,456.27	59.82	142.372				
9,100.00	8,955.05	8,126.35	7,762.85	32.63	28.09	-1.59	1,010.74	8,417.93	8,480.83	8,420.96	59.87	141.659				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,150.00	8,982.08	8,126.97	7,762.89	32.79	28.10	-1.75	1,010.13	8,417.95	8,442.74	8,382.83	59.91	140.926				
9,200.00	9,005.34	8,127.54	7,762.93	32.97	28.10	-1.97	1,009.56	8,417.97	8,402.08	8,342.14	59.94	140.176				
9,250.00	9,024.65	8,128.07	7,762.96	33.17	28.10	-2.28	1,009.03	8,417.99	8,359.13	8,299.17	59.96	139.411				
9,300.00	9,039.87	8,128.55	7,762.99	33.38	28.11	-2.72	1,008.55	8,418.01	8,314.18	8,254.20	59.97	138.631				
9,350.00	9,050.89	8,128.98	7,763.02	33.62	28.11	-3.40	1,008.12	8,418.02	8,267.54	8,207.56	59.98	137.840				
9,400.00	9,057.61	8,129.37	7,763.04	33.87	28.12	-4.59	1,007.73	8,418.03	8,219.53	8,159.55	59.98	137.038				
9,452.31	9,060.00	8,141.00	7,763.66	34.15	28.21	-6.81	996.13	8,418.45	8,168.27	8,108.20	60.07	135.977				
9,500.00	9,060.00	8,141.00	7,763.66	34.42	28.21	-6.81	996.13	8,418.45	8,121.12	8,061.05	60.06	135.207				
9,600.00	9,060.00	8,141.00	7,763.66	35.09	28.21	-6.81	996.13	8,418.45	8,022.27	7,962.22	60.05	133.599				
9,700.00	9,060.00	8,141.00	7,763.66	35.86	28.21	-6.81	996.13	8,418.45	7,923.45	7,863.42	60.03	131.989				
9,800.00	9,060.00	8,141.00	7,763.66	36.72	28.21	-6.81	996.13	8,418.45	7,824.66	7,764.64	60.02	130.376				
9,900.00	9,060.00	8,141.00	7,763.66	37.69	28.21	-6.81	996.13	8,418.45	7,725.90	7,665.90	60.00	128.762				
10,000.00	9,060.00	8,141.00	7,763.66	38.73	28.21	-6.81	996.13	8,418.45	7,627.17	7,567.18	59.99	127.145				
10,100.00	9,060.00	8,141.00	7,763.66	39.86	28.21	-6.81	996.13	8,418.45	7,528.48	7,468.50	59.98	125.527				
10,140.22	9,060.00	8,141.00	7,763.66	40.33	28.21	-6.81	996.13	8,418.45	7,488.79	7,428.82	59.97	124.875				
10,200.00	9,060.00	8,141.00	7,763.66	41.05	28.21	-13.82	996.13	8,418.45	7,429.84	7,369.87	59.96	123.907				
10,300.00	9,060.00	8,141.00	7,763.66	42.31	28.21	-24.48	996.13	8,418.45	7,331.37	7,271.42	59.95	122.288				
10,400.00	9,060.00	8,141.00	7,763.66	43.64	28.21	-33.47	996.13	8,418.45	7,233.21	7,173.27	59.94	120.669				
10,507.23	9,060.00	8,141.00	7,763.66	45.11	28.21	-41.27	996.13	8,418.45	7,128.45	7,068.52	59.94	118.931				
10,600.00	9,060.00	8,141.00	7,763.66	46.43	28.21	-34.72	996.13	8,418.45	7,037.91	6,977.97	59.94	117.420				
10,700.00	9,060.00	8,152.43	7,764.15	47.91	28.31	-25.96	984.71	8,418.88	6,939.94	6,879.91	60.04	115.596				
10,800.00	9,060.00	8,155.48	7,764.26	49.42	28.34	-16.14	981.67	8,419.00	6,841.74	6,781.68	60.06	113.910				
10,900.00	9,060.00	8,157.13	7,764.32	50.97	28.36	-5.46	980.02	8,419.06	6,743.41	6,683.34	60.07	112.250				
11,000.00	9,060.00	8,157.37	7,764.32	52.55	28.36	5.38	979.78	8,419.07	6,645.07	6,585.00	60.07	110.617				
11,100.00	9,060.00	8,156.20	7,764.28	54.14	28.35	15.64	980.95	8,419.03	6,546.84	6,486.78	60.06	109.012				
11,207.23	9,060.00	8,153.36	7,764.18	55.87	28.32	25.37	983.78	8,418.92	6,441.77	6,381.75	60.02	107.323				
11,300.00	9,060.00	8,150.80	7,764.09	57.39	28.30	16.94	986.34	8,418.82	6,350.94	6,290.94	59.99	105.859				
11,400.00	9,060.00	8,149.40	7,764.03	59.06	28.29	7.15	987.74	8,418.77	6,252.90	6,192.92	59.98	104.250				
11,506.63	9,060.00	8,149.48	7,764.04	60.88	28.29	-3.50	987.66	8,418.77	6,148.33	6,088.35	59.98	102.505				
11,600.00	9,060.00	8,150.26	7,764.07	62.49	28.29	-3.46	986.88	8,418.80	6,056.83	5,996.84	59.99	100.964				
11,700.00	9,060.00	8,151.10	7,764.10	64.24	28.30	-3.42	986.05	8,418.83	5,958.89	5,898.89	60.00	99.313				
11,800.00	9,060.00	8,151.94	7,764.13	66.01	28.31	-3.39	985.20	8,418.86	5,861.02	5,801.01	60.01	97.662				
11,900.00	9,060.00	8,152.79	7,764.16	67.79	28.32	-3.35	984.36	8,418.90	5,763.23	5,703.20	60.03	96.011				
12,000.00	9,060.00	8,153.64	7,764.19	69.58	28.32	-3.31	983.51	8,418.93	5,665.51	5,605.47	60.04	94.359				
12,100.00	9,060.00	8,154.49	7,764.23	71.39	28.33	-3.27	982.66	8,418.96	5,567.88	5,507.82	60.06	92.707				
12,200.00	9,060.00	8,155.35	7,764.26	73.21	28.34	-3.22	981.80	8,418.99	5,470.32	5,410.25	60.08	91.054				
12,300.00	9,060.00	8,156.21	7,764.28	75.05	28.35	-3.18	980.94	8,419.03	5,372.86	5,312.76	60.10	89.402				
12,400.00	9,060.00	8,157.08	7,764.31	76.89	28.35	-3.14	980.07	8,419.06	5,275.49	5,215.37	60.12	87.749				
12,500.00	9,060.00	8,157.95	7,764.34	78.74	28.36	-3.10	979.20	8,419.09	5,178.23	5,118.08	60.14	86.097				
12,600.00	9,060.00	8,158.83	7,764.37	80.61	28.37	-3.06	978.33	8,419.13	5,081.06	5,020.89	60.17	84.444				
12,700.00	9,060.00	8,159.71	7,764.40	82.48	28.38	-3.02	977.45	8,419.16	4,984.01	4,923.82	60.20	82.791				
12,800.00	9,060.00	8,160.59	7,764.42	84.36	28.39	-2.98	976.56	8,419.20	4,887.08	4,826.85	60.23	81.139				
12,900.00	9,060.00	8,161.48	7,764.45	86.24	28.39	-2.94	975.68	8,419.23	4,790.28	4,730.01	60.27	79.487				
13,000.00	9,060.00	8,162.37	7,764.48	88.14	28.40	-2.89	974.79	8,419.27	4,693.61	4,633.30	60.30	77.835				
13,100.00	9,060.00	8,163.27	7,764.50	90.04	28.41	-2.85	973.89	8,419.30	4,597.08	4,536.73	60.34	76.183				
13,200.00	9,060.00	8,164.17	7,764.53	91.94	28.42	-2.81	972.99	8,419.33	4,500.70	4,440.31	60.39	74.531				
13,300.00	9,060.00	8,172.00	7,764.71	93.86	28.49	-2.44	965.17	8,419.64	4,404.49	4,344.01	60.48	72.820				
13,400.00	9,060.00	8,172.00	7,764.71	95.77	28.49	-2.44	965.17	8,419.64	4,308.44	4,247.91	60.53	71.179				
13,500.00	9,060.00	8,172.00	7,764.71	97.70	28.49	-2.44	965.17	8,419.64	4,212.58	4,152.00	60.58	69.538				
13,600.00	9,060.00	8,172.00	7,764.71	99.62	28.49	-2.44	965.17	8,419.64	4,116.91	4,056.28	60.63	67.897				
13,700.00	9,060.00	8,172.00	7,764.71	101.56	28.49	-2.44	965.17	8,419.64	4,021.45	3,960.76	60.70	66.256				
13,800.00	9,060.00	8,172.00	7,764.71	103.49	28.49	-2.44	965.17	8,419.64	3,926.22	3,865.46	60.76	64.615				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,900.00	9,060.00	8,172.00	7,764.71	105.43	28.49	-2.44	965.17	8,419.64	3,831.23	3,770.39	60.84	62.975		
14,000.00	9,060.00	8,172.00	7,764.71	107.38	28.49	-2.44	965.17	8,419.64	3,736.51	3,675.59	60.92	61.334		
14,100.00	9,060.00	8,173.21	7,764.73	109.33	28.50	-2.38	963.96	8,419.69	3,642.06	3,581.04	61.02	59.687		
14,200.00	9,060.00	8,175.52	7,764.77	111.28	28.52	-2.27	961.65	8,419.78	3,547.92	3,486.78	61.13	58.034		
14,300.00	9,060.00	8,177.74	7,764.81	113.23	28.54	-2.17	959.43	8,419.86	3,454.10	3,392.84	61.26	56.384		
14,400.00	9,060.00	8,179.88	7,764.85	115.19	28.56	-2.07	957.29	8,419.94	3,360.65	3,299.25	61.40	54.738		
14,500.00	9,060.00	8,181.95	7,764.88	117.15	28.58	-1.97	955.23	8,420.02	3,267.57	3,206.03	61.54	53.094		
14,600.00	9,060.00	8,183.94	7,764.91	119.11	28.59	-1.88	953.24	8,420.10	3,174.92	3,113.22	61.70	51.454		
14,700.00	9,060.00	8,185.87	7,764.94	121.08	28.61	-1.79	951.31	8,420.17	3,082.73	3,020.84	61.88	49.817		
14,800.00	9,060.00	8,187.73	7,764.96	123.05	28.63	-1.70	949.45	8,420.24	2,991.03	2,928.96	62.07	48.184		
14,900.00	9,060.00	8,189.53	7,764.98	125.02	28.65	-1.61	947.66	8,420.30	2,899.89	2,837.60	62.29	46.557		
15,000.00	9,060.00	8,191.27	7,765.00	126.99	28.66	-1.53	945.92	8,420.36	2,809.34	2,746.82	62.52	44.934		
15,100.00	9,060.00	8,192.95	7,765.02	128.97	28.68	-1.45	944.24	8,420.42	2,719.46	2,656.68	62.78	43.318		
15,200.00	9,060.00	8,194.58	7,765.04	130.95	28.69	-1.37	942.61	8,420.48	2,630.30	2,567.24	63.06	41.709		
15,300.00	9,060.00	8,196.16	7,765.06	132.93	28.71	-1.30	941.03	8,420.54	2,541.95	2,478.58	63.38	40.108		
15,400.00	9,060.00	8,197.69	7,765.07	134.91	28.72	-1.23	939.50	8,420.59	2,454.50	2,390.77	63.72	38.518		
15,500.00	9,060.00	8,199.17	7,765.08	136.89	28.73	-1.16	938.01	8,420.64	2,368.04	2,303.93	64.11	36.939		
15,600.00	9,060.00	8,200.61	7,765.09	138.88	28.75	-1.09	936.58	8,420.69	2,282.68	2,218.15	64.53	35.375		
15,700.00	9,060.00	8,202.01	7,765.10	140.86	28.76	-1.02	935.18	8,420.74	2,198.55	2,133.56	64.99	33.829		
15,800.00	9,060.00	8,203.37	7,765.11	142.85	28.77	-0.96	933.82	8,420.79	2,115.81	2,050.31	65.50	32.302		
15,900.00	9,060.00	8,204.72	7,765.12	144.84	28.78	-0.90	932.47	8,420.83	2,034.62	1,968.56	66.06	30.800		
16,000.00	9,060.00	8,206.10	7,765.13	146.83	28.80	-0.83	931.09	8,420.88	1,955.17	1,888.50	66.67	29.327		
16,100.00	9,060.00	8,207.48	7,765.14	148.83	28.81	-0.76	929.71	8,420.92	1,877.68	1,810.35	67.33	27.889		
16,200.00	9,060.00	8,208.86	7,765.14	150.82	28.82	-0.70	928.34	8,420.97	1,802.41	1,734.37	68.04	26.491		
16,300.00	9,060.00	8,210.23	7,765.15	152.82	28.84	-0.63	926.96	8,421.02	1,729.64	1,660.84	68.80	25.140		
16,400.00	9,060.00	8,211.61	7,765.16	154.81	28.85	-0.57	925.59	8,421.06	1,659.71	1,590.11	69.60	23.846		
16,500.00	9,060.00	8,212.98	7,765.17	156.81	28.86	-0.50	924.22	8,421.11	1,593.00	1,522.56	70.44	22.616		
16,600.00	9,060.00	8,214.35	7,765.17	158.81	28.88	-0.44	922.84	8,421.16	1,529.91	1,458.61	71.29	21.459		
16,700.00	9,060.00	8,215.73	7,765.18	160.81	28.89	-0.37	921.47	8,421.20	1,470.92	1,398.77	72.15	20.387		
16,800.00	9,060.00	8,217.10	7,765.18	162.81	28.90	-0.31	920.10	8,421.25	1,416.53	1,343.55	72.98	19.409		
16,900.00	9,060.00	8,218.47	7,765.19	164.82	28.92	-0.24	918.73	8,421.29	1,367.31	1,293.54	73.77	18.535		
17,000.00	9,060.00	8,219.84	7,765.20	166.82	28.93	-0.18	917.36	8,421.34	1,323.82	1,249.34	74.47	17.775		
17,100.00	9,060.00	8,221.21	7,765.20	168.82	28.94	-0.12	915.99	8,421.39	1,286.64	1,211.56	75.09	17.136		
17,200.00	9,060.00	8,222.58	7,765.21	170.83	28.95	-0.05	914.62	8,421.43	1,256.35	1,180.74	75.60	16.618		
17,300.00	9,060.00	8,223.95	7,765.21	172.84	28.97	0.01	913.25	8,421.48	1,233.43	1,157.36	76.07	16.214		
17,400.00	9,060.00	8,225.32	7,765.22	174.84	28.98	0.08	911.88	8,421.52	1,218.32	1,141.73	76.59	15.908		
17,500.00	9,060.00	8,226.69	7,765.22	176.85	28.99	0.14	910.51	8,421.57	1,211.30	1,133.99	77.31	15.668		
17,535.31	9,060.00	8,227.17	7,765.22	177.56	29.00	0.17	910.03	8,421.59	1,210.78	1,133.15	77.64	15.595 CC, ES		
17,600.00	9,060.00	8,228.06	7,765.22	178.86	29.01	0.21	909.15	8,421.62	1,212.51	1,134.16	78.35	15.476		
17,700.00	9,060.00	8,229.42	7,765.23	180.87	29.02	0.27	907.78	8,421.66	1,221.93	1,142.28	79.65	15.342		
17,800.00	9,060.00	8,230.79	7,765.23	182.88	29.03	0.34	906.42	8,421.71	1,239.37	1,158.34	81.04	15.294 SF		
17,900.00	9,060.00	8,232.15	7,765.23	184.89	29.05	0.40	905.05	8,421.75	1,264.50	1,182.17	82.33	15.359		
18,000.00	9,060.00	8,233.52	7,765.24	186.90	29.06	0.47	903.69	8,421.80	1,296.87	1,213.46	83.42	15.547		
18,100.00	9,060.00	8,234.88	7,765.24	188.92	29.07	0.53	902.33	8,421.85	1,335.96	1,251.71	84.25	15.857		
18,200.00	9,060.00	8,236.25	7,765.24	190.93	29.09	0.60	900.96	8,421.89	1,381.20	1,296.36	84.83	16.281		
18,300.00	9,060.00	8,237.61	7,765.24	192.94	29.10	0.66	899.60	8,421.94	1,432.00	1,346.81	85.18	16.811		
18,400.00	9,060.00	8,238.97	7,765.25	194.96	29.11	0.73	898.24	8,421.98	1,487.79	1,402.46	85.33	17.435		
18,500.00	9,060.00	8,240.33	7,765.25	196.97	29.12	0.79	896.88	8,422.03	1,548.03	1,462.71	85.32	18.144		
18,600.00	9,060.00	8,241.69	7,765.25	198.99	29.14	0.85	895.52	8,422.07	1,612.24	1,527.05	85.18	18.926		
18,700.00	9,060.00	8,243.05	7,765.25	201.00	29.15	0.92	894.16	8,422.12	1,679.94	1,594.99	84.95	19.775		
18,800.00	9,060.00	8,244.41	7,765.25	203.02	29.16	0.98	892.80	8,422.17	1,750.74	1,666.09	84.65	20.682		
18,900.00	9,060.00	8,245.77	7,765.25	205.04	29.18	1.05	891.44	8,422.21	1,824.27	1,739.97	84.30	21.639		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals										Offset Site Error:	5.00 ft
Survey Program:		81-GYRO-NS, 7138-MWD+IGRF										Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	8,247.13	7,765.25	207.06	29.19	1.11	890.09	8,422.26	1,900.22	1,816.29	83.93	22.642	
19,100.00	9,060.00	8,248.49	7,765.25	209.07	29.20	1.18	888.73	8,422.30	1,978.31	1,894.78	83.53	23.683	
19,200.00	9,060.00	8,249.84	7,765.25	211.09	29.22	1.24	887.37	8,422.35	2,058.29	1,975.16	83.13	24.759	
19,300.00	9,060.00	8,251.20	7,765.25	213.11	29.23	1.30	886.02	8,422.39	2,139.96	2,057.23	82.73	25.865	
19,400.00	9,060.00	8,252.55	7,765.25	215.13	29.24	1.37	884.66	8,422.44	2,223.13	2,140.78	82.34	26.998	
19,500.32	9,060.00	8,253.91	7,765.25	217.16	29.25	1.43	883.31	8,422.48	2,307.90	2,225.93	81.97	28.157	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.07	1,576.15	6,866.20	7,045.13					
100.00	100.00	21.35	21.35	0.52	5.03	77.07	1,576.17	6,866.21	7,044.81	7,039.26	5.54	1,270.988		
200.00	200.00	91.59	91.59	0.70	5.03	77.07	1,576.54	6,866.37	7,045.15	7,039.42	5.73	1,229.833		
300.00	300.00	209.93	209.93	0.99	5.05	77.06	1,577.41	6,866.73	7,045.61	7,039.57	6.04	1,166.700		
400.00	400.00	288.02	288.01	1.31	5.09	77.06	1,578.29	6,866.91	7,046.08	7,039.68	6.40	1,101.605		
500.00	500.00	411.74	411.71	1.65	5.17	77.04	1,580.34	6,867.03	7,046.56	7,039.74	6.82	1,033.290		
600.00	600.00	509.89	509.86	1.99	5.27	77.03	1,581.66	6,867.00	7,046.83	7,039.57	7.26	971.090		
700.00	700.00	585.16	585.11	2.34	5.35	77.02	1,582.68	6,867.13	7,047.30	7,039.61	7.69	916.403		
800.00	800.00	700.14	700.08	2.69	5.50	77.01	1,584.76	6,867.34	7,047.89	7,039.70	8.19	860.123		
900.00	900.00	801.34	801.26	3.04	5.66	76.99	1,586.57	6,867.36	7,048.31	7,039.61	8.70	809.979		
1,000.00	1,000.00	871.04	870.95	3.40	5.78	76.98	1,587.76	6,867.54	7,048.94	7,039.77	9.17	768.470		
1,100.00	1,100.00	1,052.16	1,052.03	3.75	6.12	76.95	1,591.23	6,867.46	7,049.43	7,039.56	9.87	714.413		
1,200.00	1,200.00	1,210.09	1,209.93	4.11	6.45	76.93	1,593.64	6,865.70	7,048.68	7,038.13	10.55	667.862		
1,300.00	1,300.00	1,317.87	1,317.70	4.46	6.69	76.92	1,594.82	6,864.09	7,047.47	7,036.32	11.15	631.954		
1,400.00	1,400.00	1,400.00	1,399.82	4.82	6.88	76.91	1,595.42	6,863.02	7,046.36	7,034.66	11.70	602.226		
1,500.00	1,500.00	1,532.83	1,532.62	5.18	7.21	76.90	1,596.59	6,861.04	7,045.10	7,032.72	12.38	569.018		
1,600.00	1,600.00	1,635.46	1,635.23	5.53	7.47	76.89	1,597.85	6,859.17	7,043.60	7,030.60	13.00	541.825		
1,700.00	1,700.00	1,700.00	1,768.10	5.89	7.64	76.87	1,599.34	6,856.49	7,041.90	7,028.37	13.52	520.661		
1,800.00	1,800.00	1,870.37	1,870.08	6.25	8.10	76.86	1,600.02	6,854.07	7,039.74	7,025.40	14.34	490.921		
1,900.00	1,900.00	1,900.00	1,982.53	6.61	8.18	76.85	1,600.55	6,851.54	7,037.65	7,022.87	14.78	476.223		
2,000.00	2,000.00	2,058.11	2,057.77	6.96	8.62	76.85	1,600.77	6,849.80	7,035.52	7,019.94	15.58	451.629		
2,100.00	2,100.00	2,149.88	2,149.52	7.32	8.88	76.84	1,601.01	6,848.33	7,033.99	7,017.79	16.20	434.257		
2,200.00	2,200.00	2,248.41	2,248.04	7.68	9.17	76.84	1,600.90	6,846.43	7,032.09	7,015.25	16.84	417.563		
2,300.00	2,300.00	2,310.89	2,310.51	8.04	9.35	76.84	1,601.12	6,845.49	7,030.70	7,013.31	17.38	404.470		
2,350.00	2,350.00	2,347.32	2,346.93	8.22	9.46	76.83	1,601.26	6,845.07	7,030.18	7,012.51	17.67	397.880		
2,400.00	2,400.00	2,383.75	2,383.37	8.39	9.57	92.88	1,601.33	6,844.73	7,029.76	7,011.81	17.96	391.502		
2,500.00	2,499.98	2,493.43	2,493.04	8.75	9.90	92.90	1,601.36	6,843.86	7,029.09	7,010.45	18.64	377.097		
2,600.00	2,599.92	2,651.85	2,651.44	9.11	10.38	92.95	1,601.11	6,841.63	7,027.80	7,008.33	19.47	360.871		
2,700.00	2,699.78	2,759.98	2,759.55	9.47	10.71	93.01	1,600.64	6,839.76	7,026.29	7,006.13	20.16	348.493		
2,800.00	2,799.54	2,854.69	2,854.25	9.82	11.00	93.08	1,600.29	6,838.05	7,024.82	7,004.01	20.81	337.558		
2,900.00	2,899.16	2,929.56	2,929.11	10.18	11.24	93.15	1,600.03	6,836.84	7,023.65	7,002.25	21.40	328.207		
3,000.00	2,998.61	3,000.00	2,999.54	10.54	11.46	93.21	1,599.86	6,836.08	7,023.09	7,001.11	21.98	319.570		
3,100.00	3,097.86	3,115.07	3,114.61	10.89	11.82	93.33	1,599.77	6,834.91	7,022.78	7,000.09	22.69	309.447		
3,200.00	3,196.89	3,240.37	3,239.89	11.25	12.22	93.47	1,599.88	6,832.98	7,022.11	6,998.66	23.45	299.477		
3,295.74	3,291.45	3,327.20	3,326.71	11.59	12.50	93.59	1,599.75	6,831.60	7,021.51	6,997.44	24.07	291.748		
3,300.00	3,295.65	3,330.48	3,330.00	11.61	12.51	93.59	1,599.74	6,831.55	7,021.49	6,997.40	24.09	291.435		
3,400.00	3,394.29	3,410.73	3,410.24	11.97	12.77	93.70	1,599.55	6,830.51	7,021.20	6,996.49	24.71	284.160		
3,500.00	3,492.94	6,337.07	4,971.01	12.33	28.52	108.82	-9.63	6,814.68	7,019.21	6,979.15	40.06	175.218		
3,600.00	3,591.58	6,333.51	4,970.90	12.69	28.47	108.79	-6.07	6,814.76	7,002.84	6,962.38	40.47	173.048		
3,700.00	3,690.22	6,329.93	4,970.79	13.05	28.43	108.76	-2.50	6,814.86	6,987.86	6,946.99	40.87	170.971		
3,800.00	3,788.86	6,326.34	4,970.68	13.41	28.39	108.73	1.08	6,814.95	6,974.27	6,933.00	41.27	168.985		
3,900.00	3,887.50	6,322.74	4,970.57	13.77	28.35	108.70	4.68	6,815.06	6,962.09	6,920.42	41.67	167.089		
4,000.00	3,986.14	6,319.12	4,970.47	14.14	28.30	108.67	8.30	6,815.16	6,951.32	6,909.26	42.06	165.280		
4,100.00	4,084.78	6,315.49	4,970.36	14.50	28.26	108.64	11.93	6,815.28	6,941.96	6,899.52	42.44	163.558		
4,200.00	4,183.42	6,311.84	4,970.26	14.87	28.22	108.61	15.57	6,815.39	6,934.03	6,891.20	42.82	161.921		
4,300.00	4,282.06	6,280.00	4,969.39	15.24	27.84	108.35	47.38	6,816.62	6,927.72	6,884.86	42.87	161.610		
4,400.00	4,380.70	6,280.00	4,969.39	15.60	27.84	108.35	47.38	6,816.62	6,922.60	6,879.32	43.28	159.955		
4,500.00	4,479.34	6,280.00	4,969.39	15.97	27.84	108.35	47.38	6,816.62	6,918.92	6,875.24	43.68	158.388		
4,600.00	4,577.98	6,280.00	4,969.39	16.34	27.84	108.35	47.38	6,816.62	6,916.68	6,872.60	44.08	156.904		
4,700.00	4,676.62	6,280.00	4,969.39	16.71	27.84	108.35	47.38	6,816.62	6,915.89	6,871.42	44.47	155.503		
4,704.73	4,681.29	6,280.00	4,969.39	16.73	27.84	108.35	47.38	6,816.62	6,915.89	6,871.40	44.49	155.439		
4,800.00	4,775.27	6,280.00	4,969.39	17.08	27.84	108.35	47.38	6,816.62	6,916.55	6,871.69	44.86	154.182		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,280.00	4,969.39	17.45	27.84	108.35	47.38	6,816.62	6,918.65	6,873.41	45.24	152.940		
5,000.00	4,972.55	6,280.00	4,969.39	17.82	27.84	108.35	47.38	6,816.62	6,922.19	6,876.58	45.61	151.774		
5,100.00	5,071.19	6,274.46	4,969.26	18.19	27.77	108.30	52.91	6,816.86	6,927.17	6,881.27	45.91	150.891		
5,200.00	5,169.83	6,261.70	4,968.95	18.56	27.63	108.20	65.65	6,817.43	6,933.58	6,887.46	46.12	150.345		
5,300.00	5,268.47	5,955.68	4,963.82	18.93	24.17	105.69	371.50	6,824.31	6,940.83	6,897.79	43.04	161.273		
5,400.00	5,367.11	5,948.42	4,963.66	19.31	24.09	105.63	378.76	6,824.32	6,949.46	6,906.16	43.30	160.486		
5,500.00	5,465.75	5,941.18	4,963.49	19.68	24.02	105.57	386.00	6,824.35	6,959.50	6,915.94	43.56	159.768		
5,600.00	5,564.39	5,933.95	4,963.33	20.05	23.94	105.51	393.23	6,824.38	6,970.95	6,927.14	43.81	159.116		
5,700.00	5,663.03	5,926.73	4,963.16	20.42	23.86	105.45	400.45	6,824.42	6,983.80	6,939.75	44.05	158.530		
5,800.00	5,761.67	5,919.53	4,963.00	20.80	23.78	105.39	407.65	6,824.46	6,998.04	6,953.75	44.29	158.007		
5,900.00	5,860.31	5,901.00	4,962.57	21.17	23.58	105.24	426.17	6,824.61	7,013.68	6,969.29	44.40	157.979		
6,000.00	5,958.96	5,901.00	4,962.57	21.54	23.58	105.24	426.17	6,824.61	7,030.66	6,985.97	44.69	157.306		
6,100.00	6,057.60	5,895.76	4,962.45	21.92	23.53	105.20	431.40	6,824.65	7,049.02	7,004.09	44.93	156.886		
6,200.00	6,156.24	5,883.19	4,962.16	22.29	23.40	105.09	443.97	6,824.77	7,068.73	7,023.64	45.08	156.789		
6,300.00	6,254.88	5,870.53	4,961.88	22.67	23.26	104.99	456.63	6,824.89	7,089.77	7,044.54	45.23	156.748		
6,400.00	6,353.52	5,857.78	4,961.60	23.04	23.13	104.88	469.37	6,825.01	7,112.12	7,066.75	45.37	156.765		
6,500.00	6,452.16	5,845.00	4,959.09	23.42	22.98	104.77	482.11	6,825.13	7,135.74	7,083.74	45.50	156.782		
6,600.00	6,550.80	5,832.24	4,956.12	23.79	22.83	104.66	494.85	6,824.44	7,160.49	7,116.41	44.08	162.428		
6,700.00	6,649.44	5,819.48	4,953.78	24.17	22.68	104.55	507.59	6,824.30	7,186.46	7,142.20	44.26	162.372		
6,800.00	6,748.08	5,806.72	4,951.44	24.54	22.53	104.44	520.33	6,824.17	7,213.71	7,169.28	44.43	162.368		
6,900.00	6,846.72	5,793.96	4,949.10	24.92	22.38	104.33	533.07	6,824.04	7,242.22	7,197.63	44.59	162.415		
7,000.00	6,945.36	5,781.20	4,946.76	25.29	22.23	104.22	545.81	6,823.92	7,271.98	7,227.23	44.75	162.513		
7,100.00	7,044.00	5,768.44	4,944.42	25.67	22.08	104.11	558.55	6,823.80	7,302.98	7,258.08	44.90	162.659		
7,200.00	7,142.64	5,755.68	4,942.08	26.04	21.93	104.00	571.29	6,823.69	7,335.19	7,290.15	45.04	162.852		
7,300.00	7,241.28	5,742.92	4,939.74	26.42	21.78	103.89	584.03	6,823.58	7,368.62	7,323.43	45.18	163.080		
7,400.00	7,339.92	5,730.16	4,937.40	26.79	21.63	103.78	596.77	6,823.44	7,403.22	7,357.92	45.30	163.422		
7,500.00	7,438.56	5,717.40	4,935.06	27.17	21.48	103.67	609.51	6,823.30	7,439.00	7,393.58	45.41	163.811		
7,571.77	7,509.37	5,699.84	4,932.56	27.44	21.33	103.56	622.25	6,823.21	7,465.38	7,419.89	45.49	164.118		
7,600.00	7,537.23	5,587.34	4,952.44	27.55	20.48	102.83	739.62	6,823.17	7,475.90	7,430.38	45.52	164.243		
7,700.00	7,636.18	5,578.33	4,952.08	27.92	20.40	103.35	748.64	6,823.06	7,513.54	7,467.91	45.63	164.670		
7,800.00	7,735.48	5,571.49	4,951.81	28.29	20.34	103.90	755.46	6,822.98	7,551.74	7,505.99	45.75	165.073		
7,900.00	7,835.05	5,566.90	4,951.63	28.65	20.30	104.47	760.05	6,822.93	7,590.49	7,544.61	45.88	165.449		
8,000.00	7,934.83	5,564.59	4,951.54	29.01	20.28	105.07	762.36	6,822.90	7,629.75	7,583.74	46.02	165.796		
8,100.00	8,034.74	5,564.61	4,951.54	29.36	20.28	105.70	762.34	6,822.90	7,669.50	7,623.33	46.17	166.113		
8,202.27	8,137.00	5,567.11	4,951.64	29.72	20.30	90.33	759.84	6,822.93	7,710.60	7,664.26	46.34	166.401		
8,300.00	8,234.73	5,570.73	4,951.78	30.06	20.34	90.36	756.22	6,822.97	7,750.61	7,704.11	46.50	166.674		
8,400.00	8,334.73	5,574.49	4,951.93	30.41	20.37	90.39	752.47	6,823.02	7,792.60	7,745.93	46.67	166.985		
8,500.00	8,434.73	5,578.31	4,952.08	30.75	20.40	90.42	748.65	6,823.06	7,835.64	7,788.81	46.83	167.327		
8,552.31	8,487.04	5,580.33	4,952.16	30.94	20.42	90.43	746.63	6,823.08	7,858.56	7,811.65	46.91	167.517		
8,600.00	8,534.68	5,582.19	4,952.24	31.10	20.44	0.76	744.77	6,823.11	7,877.91	7,830.93	46.98	167.687		
8,650.00	8,584.26	5,584.17	4,952.31	31.26	20.46	0.75	742.79	6,823.13	7,894.50	7,847.46	47.04	167.819		
8,700.00	8,633.10	5,586.17	4,952.40	31.43	20.47	0.75	740.80	6,823.16	7,907.21	7,860.11	47.10	167.887		
8,750.00	8,680.83	5,588.16	4,952.48	31.58	20.49	0.75	738.81	6,823.18	7,915.96	7,868.81	47.15	167.892		
8,800.00	8,727.09	5,590.14	4,952.56	31.74	20.51	0.76	736.83	6,823.21	7,920.70	7,873.51	47.19	167.840		
8,850.00	8,771.52	5,592.09	4,952.64	31.89	20.53	0.77	734.89	6,823.23	7,921.40	7,874.17	47.23	167.732		
8,900.00	8,813.78	5,593.99	4,952.71	32.04	20.54	0.79	732.99	6,823.25	7,918.06	7,870.80	47.25	167.571		
8,950.00	8,853.56	5,595.83	4,952.79	32.18	20.56	0.82	731.15	6,823.28	7,910.69	7,863.42	47.27	167.359		
9,000.00	8,890.55	5,597.59	4,952.86	32.32	20.58	0.85	729.39	6,823.30	7,899.34	7,852.07	47.27	167.098		
9,050.00	8,924.46	5,599.26	4,952.93	32.47	20.59	0.88	727.72	6,823.32	7,884.08	7,836.81	47.27	166.789		
9,100.00	8,955.05	5,600.83	4,953.00	32.63	20.60	0.93	726.15	6,823.34	7,865.01	7,817.75	47.26	166.434		
9,150.00	8,982.08	5,602.27	4,953.06	32.79	20.62	0.98	724.71	6,823.36	7,842.24	7,795.01	47.23	166.032		
9,200.00	9,005.34	5,603.58	4,953.11	32.97	20.63	1.05	723.40	6,823.38	7,815.91	7,768.71	47.20	165.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,604.75	4,953.16	33.17	20.64	1.13	722.24	6,823.39	7,786.20	7,739.03	47.16	165.093		
9,300.00	9,039.87	5,605.75	4,953.20	33.38	20.65	1.23	721.23	6,823.41	7,753.28	7,706.16	47.12	164.556		
9,350.00	9,050.89	5,606.59	4,953.24	33.62	20.66	1.36	720.39	6,823.42	7,717.37	7,670.30	47.06	163.976		
9,400.00	9,057.61	5,607.26	4,953.26	33.87	20.66	1.52	719.73	6,823.42	7,678.70	7,631.70	47.01	163.351		
9,452.31	9,060.00	5,607.76	4,953.28	34.15	20.67	1.74	719.23	6,823.43	7,635.58	7,588.63	46.94	162.651		
9,500.00	9,060.00	5,608.12	4,953.30	34.42	20.67	1.74	718.87	6,823.44	7,595.15	7,548.26	46.88	162.001		
9,600.00	9,060.00	5,608.88	4,953.33	35.09	20.68	1.76	718.11	6,823.45	7,510.65	7,463.90	46.75	160.658		
9,700.00	9,060.00	5,609.65	4,953.36	35.86	20.68	1.77	717.34	6,823.46	7,426.53	7,379.91	46.62	159.303		
9,800.00	9,060.00	5,610.43	4,953.40	36.72	20.69	1.78	716.56	6,823.47	7,342.81	7,296.32	46.49	157.935		
9,900.00	9,060.00	5,611.21	4,953.43	37.69	20.70	1.79	715.78	6,823.48	7,259.51	7,213.14	46.37	156.554		
10,000.00	9,060.00	5,612.01	4,953.46	38.73	20.70	1.80	714.99	6,823.49	7,176.63	7,130.38	46.25	155.157		
10,100.00	9,060.00	5,612.80	4,953.50	39.86	20.71	1.81	714.19	6,823.50	7,094.20	7,048.05	46.14	153.746		
10,140.22	9,060.00	5,613.13	4,953.51	40.33	20.71	1.82	713.87	6,823.50	7,061.16	7,015.06	46.10	153.173		
10,200.00	9,060.00	5,614.28	4,953.56	41.05	20.72	0.13	712.71	6,823.52	7,012.21	6,966.17	46.04	152.301		
10,300.00	9,060.00	5,619.23	4,953.77	42.31	20.77	-2.62	707.77	6,823.59	6,930.69	6,884.72	45.97	150.756		
10,400.00	9,060.00	5,628.00	4,954.15	43.64	20.85	-5.24	699.01	6,823.71	6,849.75	6,803.82	45.94	149.105		
10,507.23	9,060.00	5,633.36	4,954.37	45.11	20.90	-8.03	693.66	6,823.79	6,763.75	6,717.86	45.89	147.393		
10,600.00	9,060.00	5,641.44	4,954.72	46.43	20.98	-5.49	685.58	6,823.91	6,689.82	6,643.94	45.88	145.819		
10,700.00	9,060.00	5,647.80	4,954.99	47.91	21.04	-2.80	679.23	6,824.00	6,610.46	6,564.61	45.85	144.163		
10,800.00	9,060.00	5,651.67	4,955.15	49.42	21.08	-0.18	675.36	6,824.06	6,531.56	6,485.74	45.82	142.551		
10,900.00	9,060.00	5,653.01	4,955.21	50.97	21.09	2.36	674.03	6,824.08	6,453.24	6,407.47	45.77	140.981		
11,000.00	9,060.00	5,651.79	4,955.16	52.55	21.08	4.80	675.25	6,824.07	6,375.61	6,329.89	45.72	139.453		
11,100.00	9,060.00	5,647.97	4,954.99	54.14	21.04	7.13	679.06	6,824.01	6,298.80	6,253.15	45.66	137.963		
11,207.23	9,060.00	5,640.96	4,954.70	55.87	20.98	9.50	686.06	6,823.90	6,217.48	6,171.90	45.58	136.402		
11,300.00	9,060.00	5,634.66	4,954.43	57.39	20.92	7.33	692.35	6,823.81	6,147.78	6,102.25	45.53	135.025		
11,400.00	9,060.00	5,630.33	4,954.25	59.06	20.88	5.03	696.68	6,823.74	6,073.04	6,027.54	45.51	133.450		
11,506.63	9,060.00	5,634.50	4,954.44	60.88	20.90	2.73	692.51	6,823.80	5,993.93	5,948.37	45.56	131.568		
11,600.00	9,060.00	5,634.15	4,954.42	62.49	20.90	2.73	692.87	6,823.79	5,925.30	5,879.71	45.59	129.965		
11,700.00	9,060.00	5,633.77	4,954.40	64.24	20.90	2.72	693.25	6,823.79	5,852.55	5,806.91	45.64	128.223		
11,800.00	9,060.00	5,633.38	4,954.39	66.01	20.89	2.72	693.63	6,823.78	5,780.62	5,734.91	45.71	126.456		
11,900.00	9,060.00	5,632.99	4,954.37	67.79	20.89	2.71	694.02	6,823.78	5,709.54	5,663.74	45.80	124.663		
12,000.00	9,060.00	5,632.59	4,954.35	69.58	20.89	2.71	694.42	6,823.77	5,639.33	5,593.42	45.91	122.846		
12,100.00	9,060.00	5,632.20	4,954.34	71.39	20.88	2.70	694.82	6,823.77	5,570.03	5,524.00	46.03	121.005		
12,200.00	9,060.00	5,631.79	4,954.32	73.21	20.88	2.70	695.22	6,823.76	5,501.68	5,455.50	46.18	119.143		
12,300.00	9,060.00	5,631.39	4,954.30	75.05	20.88	2.69	695.62	6,823.76	5,434.30	5,387.96	46.34	117.262		
12,400.00	9,060.00	5,630.98	4,954.28	76.89	20.87	2.68	696.03	6,823.75	5,367.95	5,321.42	46.53	115.362		
12,500.00	9,060.00	5,630.56	4,954.26	78.74	20.87	2.68	696.45	6,823.74	5,302.65	5,255.91	46.74	113.446		
12,600.00	9,060.00	5,630.14	4,954.25	80.61	20.87	2.67	696.87	6,823.74	5,238.44	5,191.47	46.97	111.517		
12,700.00	9,060.00	5,629.72	4,954.23	82.48	20.86	2.67	697.29	6,823.73	5,175.37	5,128.14	47.23	109.578		
12,800.00	9,060.00	5,629.29	4,954.21	84.36	20.86	2.66	697.72	6,823.73	5,113.48	5,065.97	47.51	107.632		
12,900.00	9,060.00	5,628.86	4,954.19	86.24	20.85	2.65	698.15	6,823.72	5,052.81	5,005.00	47.81	105.681		
13,000.00	9,060.00	5,628.43	4,954.17	88.14	20.85	2.65	698.58	6,823.71	4,993.41	4,945.27	48.14	103.730		
13,100.00	9,060.00	5,627.99	4,954.15	90.04	20.85	2.64	699.02	6,823.71	4,935.31	4,886.82	48.49	101.781		
13,200.00	9,060.00	5,627.54	4,954.13	91.94	20.84	2.64	699.47	6,823.70	4,878.58	4,829.71	48.86	99.839		
13,300.00	9,060.00	5,627.09	4,954.11	93.86	20.84	2.63	699.92	6,823.69	4,823.25	4,773.99	49.26	97.907		
13,400.00	9,060.00	5,626.63	4,954.09	95.77	20.83	2.62	700.37	6,823.69	4,769.38	4,719.69	49.69	95.989		
13,500.00	9,060.00	5,626.17	4,954.07	97.70	20.83	2.62	700.83	6,823.68	4,717.01	4,666.87	50.13	94.088		
13,600.00	9,060.00	5,625.71	4,954.05	99.62	20.83	2.61	701.30	6,823.68	4,666.19	4,615.59	50.60	92.209		
13,700.00	9,060.00	5,625.24	4,954.03	101.56	20.82	2.60	701.76	6,823.67	4,616.99	4,565.89	51.10	90.354		
13,800.00	9,060.00	5,624.77	4,954.01	103.49	20.82	2.60	702.24	6,823.66	4,569.44	4,517.82	51.62	88.528		
13,900.00	9,060.00	5,624.29	4,953.99	105.43	20.81	2.59	702.72	6,823.66	4,523.60	4,471.45	52.16	86.734		
14,000.00	9,060.00	5,623.80	4,953.97	107.38	20.81	2.58	703.20	6,823.65	4,479.53	4,426.81	52.72	84.974		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	5,623.31	4,953.95	109.33	20.81	2.58	703.69	6,823.64	4,437.27	4,383.97	53.30	83.253	
14,200.00	9,060.00	5,622.81	4,953.93	111.28	20.80	2.57	704.19	6,823.64	4,396.88	4,342.98	53.90	81.573	
14,300.00	9,060.00	5,622.31	4,953.90	113.23	20.80	2.56	704.69	6,823.63	4,358.42	4,303.89	54.52	79.936	
14,400.00	9,060.00	5,621.80	4,953.88	115.19	20.79	2.55	705.20	6,823.62	4,321.92	4,266.75	55.17	78.344	
14,500.00	9,060.00	5,621.29	4,953.86	117.15	20.79	2.55	705.71	6,823.61	4,287.45	4,231.62	55.83	76.800	
14,600.00	9,060.00	5,620.77	4,953.84	119.11	20.78	2.54	706.23	6,823.61	4,255.04	4,198.54	56.50	75.305	
14,700.00	9,060.00	5,620.25	4,953.82	121.08	20.78	2.53	706.75	6,823.60	4,224.76	4,167.56	57.20	73.862	
14,800.00	9,060.00	5,619.72	4,953.79	123.05	20.77	2.53	707.28	6,823.59	4,196.64	4,138.73	57.91	72.470	
14,900.00	9,060.00	5,619.18	4,953.77	125.02	20.77	2.52	707.82	6,823.59	4,170.73	4,112.10	58.63	71.131	
15,000.00	9,060.00	5,618.64	4,953.75	126.99	20.76	2.51	708.36	6,823.58	4,147.07	4,087.70	59.37	69.846	
15,100.00	9,060.00	5,618.09	4,953.72	128.97	20.76	2.50	708.91	6,823.57	4,125.70	4,065.57	60.13	68.616	
15,200.00	9,060.00	5,617.53	4,953.70	130.95	20.75	2.49	709.47	6,823.56	4,106.66	4,045.76	60.89	67.439	
15,300.00	9,060.00	5,616.97	4,953.68	132.93	20.75	2.49	710.03	6,823.55	4,089.97	4,028.29	61.67	66.318	
15,400.00	9,060.00	5,616.40	4,953.65	134.91	20.74	2.48	710.60	6,823.55	4,075.66	4,013.20	62.46	65.251	
15,500.00	9,060.00	5,615.82	4,953.63	136.89	20.74	2.47	711.17	6,823.54	4,063.77	4,000.51	63.26	64.240	
15,600.00	9,060.00	5,615.24	4,953.60	138.88	20.73	2.46	711.75	6,823.53	4,054.31	3,990.24	64.07	63.282	
15,700.00	9,060.00	5,614.65	4,953.58	140.86	20.73	2.45	712.34	6,823.52	4,047.30	3,982.42	64.88	62.380	
15,800.00	9,060.00	5,614.05	4,953.55	142.85	20.72	2.44	712.94	6,823.52	4,042.75	3,977.05	65.70	61.532	
15,900.00	9,060.00	5,613.45	4,953.53	144.84	20.72	2.44	713.54	6,823.51	4,040.67	3,974.14	66.53	60.738	
15,934.02	9,060.00	5,613.24	4,953.52	145.52	20.72	2.43	713.75	6,823.50	4,040.53	3,973.72	66.81	60.480 CC	
16,000.00	9,060.00	5,612.84	4,953.50	146.83	20.71	2.43	714.16	6,823.50	4,041.06	3,973.71	67.35	59.998 ES	
16,100.00	9,060.00	5,612.22	4,953.47	148.83	20.71	2.42	714.77	6,823.49	4,043.93	3,975.75	68.18	59.312	
16,200.00	9,060.00	5,611.59	4,953.45	150.82	20.70	2.41	715.40	6,823.48	4,049.27	3,980.27	69.01	58.681	
16,300.00	9,060.00	5,610.96	4,953.42	152.82	20.69	2.40	716.04	6,823.47	4,057.07	3,987.24	69.83	58.103	
16,400.00	9,060.00	5,610.31	4,953.39	154.81	20.69	2.39	716.68	6,823.47	4,067.31	3,996.67	70.64	57.578	
16,500.00	9,060.00	5,609.66	4,953.36	156.81	20.68	2.38	717.33	6,823.46	4,079.97	4,008.53	71.44	57.107	
16,600.00	9,060.00	5,609.00	4,953.34	158.81	20.68	2.37	717.99	6,823.45	4,095.04	4,022.81	72.24	56.689	
16,700.00	9,060.00	5,608.33	4,953.31	160.81	20.67	2.36	718.65	6,823.44	4,112.49	4,039.47	73.01	56.324	
16,800.00	9,060.00	5,607.66	4,953.28	162.81	20.67	2.35	719.33	6,823.43	4,132.28	4,058.51	73.78	56.011	
16,900.00	9,060.00	5,606.97	4,953.25	164.82	20.66	2.34	720.02	6,823.42	4,154.39	4,079.87	74.52	55.749	
17,000.00	9,060.00	5,606.28	4,953.22	166.82	20.65	2.33	720.71	6,823.41	4,178.77	4,103.53	75.24	55.537	
17,100.00	9,060.00	5,605.57	4,953.19	168.82	20.65	2.32	721.41	6,823.40	4,205.39	4,129.45	75.94	55.376	
17,200.00	9,060.00	5,604.86	4,953.16	170.83	20.64	2.31	722.13	6,823.39	4,234.21	4,157.59	76.62	55.262	
17,300.00	9,060.00	5,604.14	4,953.13	172.84	20.63	2.30	722.85	6,823.38	4,265.17	4,187.90	77.27	55.197	
17,400.00	9,060.00	5,603.40	4,953.10	174.84	20.63	2.29	723.58	6,823.37	4,298.24	4,220.35	77.90	55.178 SF	
17,500.00	9,060.00	5,602.66	4,953.07	176.85	20.62	2.28	724.32	6,823.36	4,333.37	4,254.87	78.50	55.204	
17,600.00	9,060.00	5,601.91	4,953.04	178.86	20.61	2.27	725.07	6,823.35	4,370.50	4,291.43	79.07	55.273	
17,700.00	9,060.00	5,601.15	4,953.01	180.87	20.61	2.26	725.84	6,823.34	4,409.59	4,329.97	79.62	55.386	
17,800.00	9,060.00	5,600.37	4,952.98	182.88	20.60	2.25	726.61	6,823.33	4,450.58	4,370.44	80.13	55.539	
17,900.00	9,060.00	5,599.59	4,952.94	184.89	20.59	2.24	727.39	6,823.32	4,493.42	4,412.80	80.62	55.732	
18,000.00	9,060.00	5,598.79	4,952.91	186.90	20.59	2.23	728.19	6,823.31	4,538.06	4,456.97	81.09	55.964	
18,100.00	9,060.00	5,597.99	4,952.88	188.92	20.58	2.22	728.99	6,823.30	4,584.45	4,502.93	81.53	56.233	
18,200.00	9,060.00	5,597.17	4,952.84	190.93	20.57	2.21	729.81	6,823.29	4,632.54	4,550.60	81.94	56.537	
18,300.00	9,060.00	5,596.34	4,952.81	192.94	20.56	2.19	730.64	6,823.28	4,682.26	4,599.94	82.32	56.876	
18,400.00	9,060.00	5,595.50	4,952.78	194.96	20.56	2.18	731.48	6,823.27	4,733.58	4,650.89	82.69	57.248	
18,500.00	9,060.00	5,594.64	4,952.74	196.97	20.55	2.17	732.33	6,823.26	4,786.43	4,703.41	83.02	57.652	
18,600.00	9,060.00	5,593.78	4,952.70	198.99	20.54	2.16	733.20	6,823.25	4,840.78	4,757.44	83.34	58.086	
18,700.00	9,060.00	5,592.90	4,952.67	201.00	20.53	2.14	734.08	6,823.24	4,896.56	4,812.93	83.63	58.550	
18,800.00	9,060.00	5,592.00	4,952.63	203.02	20.53	2.13	734.97	6,823.23	4,953.73	4,869.83	83.90	59.042	
18,900.00	9,060.00	5,591.10	4,952.60	205.04	20.52	2.12	735.87	6,823.22	5,012.25	4,928.10	84.15	59.561	
19,000.00	9,060.00	5,590.18	4,952.56	207.06	20.51	2.11	736.79	6,823.21	5,072.06	4,987.68	84.39	60.106	
19,100.00	9,060.00	5,589.24	4,952.52	209.07	20.50	2.09	737.73	6,823.19	5,133.13	5,048.53	84.60	60.676	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,588.30	4,952.48	211.09	20.49	2.08	738.67	6,823.18	5,195.40	5,110.60	84.80	61.270	
19,300.00	9,060.00	5,587.33	4,952.44	213.11	20.48	2.07	739.64	6,823.17	5,258.83	5,173.86	84.98	61.886	
19,400.00	9,060.00	5,586.36	4,952.40	215.13	20.48	2.05	740.61	6,823.16	5,323.39	5,238.25	85.14	62.525	
19,500.32	9,060.00	5,585.36	4,952.36	217.16	20.47	2.04	741.61	6,823.15	5,389.24	5,303.95	85.29	63.187	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,910.99					
100.00	100.00	28.73	28.73	0.52	5.03	77.36	1,731.24	7,718.93	7,910.69	7,905.15	5.54	1,427.192		
200.00	200.00	128.36	128.36	0.70	5.03	77.36	1,731.29	7,718.99	7,910.77	7,905.04	5.73	1,380.028		
300.00	300.00	254.70	254.70	0.99	5.07	77.36	1,731.70	7,718.73	7,910.63	7,904.58	6.06	1,306.040		
400.00	400.00	419.80	419.80	1.31	5.18	77.35	1,731.62	7,717.69	7,910.06	7,903.57	6.49	1,219.440		
500.00	500.00	601.22	601.17	1.65	5.37	77.37	1,729.12	7,714.96	7,908.18	7,901.16	7.01	1,127.749		
600.00	600.00	667.79	667.73	1.99	5.46	77.37	1,728.08	7,713.88	7,906.24	7,898.80	7.44	1,062.161		
700.00	700.00	745.22	745.15	2.34	5.57	77.38	1,727.35	7,712.82	7,904.69	7,896.79	7.90	1,000.152		
800.00	800.00	851.52	851.44	2.69	5.74	77.38	1,726.73	7,711.42	7,903.29	7,894.87	8.42	938.147		
900.00	900.00	985.58	985.47	3.04	5.98	77.38	1,726.31	7,709.12	7,901.55	7,892.53	9.02	876.288		
1,000.00	1,000.00	1,063.07	1,062.95	3.40	6.13	77.38	1,726.22	7,707.67	7,899.70	7,890.18	9.52	829.591		
1,100.00	1,100.00	1,100.00	1,256.38	3.75	6.21	77.38	1,725.12	7,703.93	7,897.93	7,887.98	9.95	793.766		
1,200.00	1,200.00	1,400.00	1,399.74	4.11	6.89	77.39	1,721.94	7,699.73	7,894.48	7,883.51	10.98	719.311		
1,300.00	1,300.00	1,472.97	1,472.65	4.46	7.07	77.41	1,719.75	7,697.82	7,891.27	7,879.76	11.51	685.581		
1,400.00	1,400.00	1,548.20	1,547.83	4.82	7.27	77.42	1,717.54	7,696.08	7,888.37	7,876.31	12.06	654.286		
1,500.00	1,500.00	1,649.59	1,649.15	5.18	7.53	77.44	1,714.61	7,693.99	7,885.74	7,873.06	12.68	622.134		
1,600.00	1,600.00	1,750.48	1,749.97	5.53	7.81	77.45	1,711.75	7,691.65	7,882.85	7,869.55	13.30	592.666		
1,700.00	1,700.00	1,844.03	1,843.46	5.89	8.07	77.47	1,709.18	7,689.69	7,880.20	7,866.29	13.91	566.389		
1,800.00	1,800.00	1,978.72	1,978.06	6.25	8.45	77.49	1,705.17	7,686.56	7,877.29	7,862.64	14.65	537.835		
1,900.00	1,900.00	2,132.92	2,132.12	6.61	8.91	77.52	1,700.43	7,681.98	7,873.67	7,858.23	15.44	509.790		
2,000.00	2,000.00	2,200.00	2,199.14	6.96	9.11	77.53	1,698.51	7,679.84	7,869.98	7,853.98	16.00	491.872		
2,100.00	2,100.00	2,273.94	2,273.02	7.32	9.33	77.54	1,696.41	7,677.77	7,866.66	7,850.08	16.58	474.545		
2,200.00	2,200.00	2,368.43	2,367.45	7.68	9.62	77.56	1,693.60	7,675.54	7,863.71	7,846.49	17.22	456.715		
2,300.00	2,300.00	2,455.12	2,454.07	8.04	9.89	77.57	1,691.00	7,673.47	7,860.74	7,842.90	17.84	440.658		
2,350.00	2,350.00	2,492.82	2,491.74	8.22	10.01	77.58	1,689.92	7,672.65	7,859.36	7,841.23	18.13	433.432		
2,400.00	2,400.00	2,541.86	2,540.75	8.39	10.16	93.64	1,688.55	7,671.61	7,858.05	7,839.59	18.46	425.643		
2,500.00	2,499.98	2,642.86	2,641.69	8.75	10.47	93.70	1,685.76	7,669.46	7,855.48	7,836.35	19.13	410.649		
2,600.00	2,599.92	2,732.75	2,731.53	9.11	10.76	93.76	1,683.39	7,667.54	7,853.06	7,833.30	19.77	397.317		
2,700.00	2,699.78	2,810.48	2,809.22	9.47	10.95	93.82	1,681.54	7,666.03	7,850.99	7,830.68	20.31	386.561		
2,800.00	2,799.54	2,887.17	2,885.89	9.82	11.07	93.88	1,680.39	7,664.61	7,849.34	7,828.55	20.79	377.592		
2,900.00	2,899.16	3,304.35	3,302.53	10.18	11.25	94.11	1,686.85	7,648.16	7,847.88	7,826.59	21.29	368.562		
3,000.00	2,998.61	3,403.47	3,401.29	10.54	11.30	94.19	1,691.55	7,641.07	7,842.61	7,820.91	21.71	361.284		
3,100.00	3,097.86	3,504.25	3,501.69	10.89	11.37	94.29	1,696.29	7,633.85	7,837.45	7,815.32	22.13	354.087		
3,200.00	3,196.89	3,602.27	3,599.35	11.25	11.45	94.39	1,700.92	7,626.83	7,832.44	7,809.86	22.57	347.015		
3,295.74	3,291.45	3,696.78	3,693.52	11.59	11.54	94.51	1,705.40	7,620.08	7,827.78	7,804.78	23.00	340.335		
3,300.00	3,295.65	3,701.14	3,697.85	11.61	11.54	94.51	1,705.61	7,619.76	7,827.58	7,804.56	23.02	340.037		
3,400.00	3,394.29	3,802.48	3,798.81	11.97	11.65	94.59	1,710.55	7,612.47	7,822.78	7,799.30	23.48	333.122		
3,500.00	3,492.94	3,899.43	3,895.39	12.33	11.75	94.66	1,715.32	7,605.49	7,817.99	7,794.04	23.95	326.374		
3,600.00	3,591.58	3,961.00	3,956.73	12.69	11.83	94.70	1,718.30	7,601.09	7,813.35	7,788.96	24.39	320.299		
3,700.00	3,690.22	4,023.97	4,019.49	13.05	11.91	94.75	1,721.46	7,596.88	7,809.19	7,784.35	24.84	314.355		
3,800.00	3,788.86	4,183.09	4,178.14	13.41	12.12	94.88	1,728.09	7,586.94	7,805.35	7,779.93	25.42	307.061		
3,900.00	3,887.50	4,246.00	4,240.89	13.77	12.22	94.94	1,729.88	7,582.78	7,800.88	7,775.00	25.88	301.420		
4,000.00	3,986.14	4,293.32	4,288.10	14.14	12.29	94.98	1,731.32	7,579.90	7,797.04	7,770.72	26.32	296.194		
4,100.00	4,084.78	4,340.00	4,334.69	14.50	12.36	95.02	1,732.98	7,577.59	7,794.13	7,767.37	26.77	291.186		
4,200.00	4,183.42	4,390.30	4,384.91	14.87	12.44	95.06	1,734.93	7,575.40	7,791.90	7,764.68	27.22	286.269		
4,300.00	4,282.06	4,481.44	4,475.89	15.24	12.59	95.14	1,738.54	7,571.53	7,789.94	7,762.20	27.74	280.830		
4,400.00	4,380.70	4,577.13	4,571.43	15.60	12.76	95.23	1,742.24	7,567.54	7,788.04	7,759.77	28.27	275.446		
4,500.00	4,479.34	4,673.19	4,667.34	15.97	12.93	95.31	1,745.96	7,563.58	7,786.22	7,757.40	28.82	270.186		
4,600.00	4,577.98	4,766.30	4,760.31	16.34	13.11	95.39	1,749.45	7,559.80	7,784.45	7,755.09	29.36	265.106		
4,700.00	4,676.62	4,859.83	4,853.70	16.71	13.29	95.47	1,752.90	7,556.13	7,782.81	7,752.89	29.92	260.152		
4,800.00	4,775.27	4,962.05	4,955.78	17.08	13.49	95.57	1,756.66	7,552.12	7,781.20	7,750.71	30.49	255.177		
4,900.00	4,873.91	5,052.45	5,046.05	17.45	13.68	95.65	1,759.92	7,548.58	7,779.60	7,748.55	31.05	250.527		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,266.22	5,259.39	17.82	14.15	95.83	1,768.85	7,538.66	7,777.46	7,745.57	31.88	243.925		
5,100.00	5,071.19	5,359.85	5,352.77	18.19	14.36	95.90	1,773.26	7,533.49	7,774.52	7,742.05	32.47	239.427		
5,200.00	5,169.83	5,462.85	5,455.52	18.56	14.61	95.99	1,777.86	7,527.93	7,771.68	7,738.59	33.08	234.905		
5,300.00	5,268.47	5,541.85	5,534.34	18.93	14.80	96.05	1,781.10	7,523.76	7,768.90	7,735.26	33.65	230.895		
5,400.00	5,367.11	5,627.21	5,619.54	19.31	15.01	96.13	1,784.28	7,519.55	7,766.42	7,732.19	34.23	226.907		
5,500.00	5,465.75	5,723.64	5,715.78	19.68	15.25	96.21	1,787.88	7,514.88	7,764.04	7,729.21	34.84	222.861		
5,600.00	5,564.39	5,809.39	5,801.39	20.05	15.47	96.29	1,790.89	7,510.82	7,761.75	7,726.32	35.43	219.093		
5,700.00	5,663.03	6,096.79	6,088.07	20.42	16.23	96.54	1,800.82	7,493.44	7,757.79	7,721.27	36.52	212.407		
5,800.00	5,761.67	6,147.98	6,139.09	20.80	16.37	96.58	1,803.03	7,489.94	7,753.59	7,716.55	37.04	209.328		
5,900.00	5,860.31	6,256.43	6,247.19	21.17	16.67	96.67	1,807.82	7,482.77	7,749.66	7,711.95	37.71	205.527		
6,000.00	5,958.96	6,374.08	6,364.49	21.54	17.01	96.77	1,812.24	7,474.74	7,745.42	7,707.02	38.40	201.704		
6,100.00	6,057.60	6,420.00	6,410.26	21.92	17.14	96.81	1,814.20	7,471.57	7,741.39	7,702.48	38.91	198.965		
6,200.00	6,156.24	6,479.11	6,469.18	22.29	17.31	96.85	1,817.09	7,467.80	7,737.93	7,698.47	39.45	196.131		
6,300.00	6,254.88	6,514.00	6,503.96	22.67	17.41	96.88	1,818.98	7,465.86	7,735.31	7,695.38	39.93	193.717		
6,400.00	6,353.52	6,580.56	6,570.35	23.04	17.60	96.93	1,822.47	7,462.60	7,733.30	7,692.81	40.50	190.967		
6,500.00	6,452.16	8,661.63	7,754.67	23.42	25.59	106.49	711.53	7,437.40	7,728.12	7,679.58	48.53	159.239		
6,600.00	6,550.80	8,643.00	7,754.88	23.79	25.43	106.35	730.15	7,437.05	7,715.45	7,666.65	48.80	158.098		
6,700.00	6,649.44	8,643.00	7,754.88	24.17	25.43	106.35	730.15	7,437.05	7,704.02	7,654.79	49.23	156.484		
6,800.00	6,748.08	8,630.50	7,755.02	24.54	25.33	106.26	742.66	7,436.84	7,693.86	7,644.31	49.55	155.265		
6,900.00	6,846.72	8,620.13	7,755.08	24.92	25.25	106.18	753.02	7,436.68	7,684.97	7,635.08	49.89	154.048		
7,000.00	6,945.36	8,610.25	7,755.10	25.29	25.16	106.11	762.90	7,436.54	7,677.34	7,627.12	50.22	152.877		
7,100.00	7,044.00	8,600.84	7,755.09	25.67	25.09	106.04	772.31	7,436.42	7,670.99	7,620.44	50.55	151.751		
7,200.00	7,142.65	8,591.85	7,755.04	26.04	25.01	105.97	781.30	7,436.31	7,665.93	7,615.05	50.88	150.671		
7,300.00	7,241.29	8,583.26	7,754.97	26.42	24.95	105.91	789.89	7,436.22	7,662.14	7,610.94	51.20	149.637		
7,400.00	7,339.93	8,575.05	7,754.87	26.79	24.88	105.85	798.10	7,436.14	7,659.65	7,608.12	51.53	148.649		
7,500.00	7,438.57	8,567.18	7,754.75	27.17	24.81	105.79	805.96	7,436.08	7,658.44	7,606.59	51.85	147.708		
7,545.42	7,483.37	8,549.00	7,754.38	27.34	24.67	105.66	824.14	7,435.95	7,658.35	7,606.48	51.87	147.644		
7,571.77	7,509.37	8,549.00	7,754.38	27.44	24.67	105.66	824.14	7,435.95	7,658.39	7,606.42	51.97	147.361		
7,600.00	7,537.23	8,549.00	7,754.38	27.55	24.67	105.66	824.14	7,435.95	7,658.51	7,606.44	52.08	147.063		
7,700.00	7,636.18	8,549.00	7,754.38	27.92	24.67	105.67	824.14	7,435.95	7,659.32	7,606.88	52.45	146.043		
7,800.00	7,735.48	8,530.57	7,753.96	28.29	24.53	105.55	842.57	7,435.83	7,660.73	7,608.07	52.66	145.471		
7,900.00	7,835.05	8,446.52	7,752.29	28.65	23.90	104.95	926.59	7,434.71	7,662.66	7,610.30	52.37	146.330		
8,000.00	7,934.83	8,440.22	7,752.18	29.01	23.85	104.94	932.88	7,434.59	7,665.21	7,612.55	52.66	145.569		
8,100.00	8,034.74	8,437.29	7,752.13	29.36	23.83	104.97	935.82	7,434.54	7,668.38	7,615.42	52.96	144.794		
8,202.27	8,137.00	8,437.83	7,752.14	29.72	23.84	88.99	935.27	7,434.55	7,672.27	7,618.98	53.28	143.989		
8,300.00	8,234.73	8,440.11	7,752.18	30.06	23.85	89.01	933.00	7,434.59	7,676.92	7,623.32	53.60	143.237		
8,400.00	8,334.73	8,442.47	7,752.22	30.41	23.87	89.02	930.64	7,434.64	7,682.96	7,629.05	53.91	142.517		
8,500.00	8,434.73	8,444.86	7,752.26	30.75	23.88	89.04	928.25	7,434.68	7,690.29	7,636.08	54.22	141.845		
8,552.31	8,487.04	8,446.12	7,752.28	30.94	23.89	89.05	926.99	7,434.70	7,694.64	7,640.27	54.37	141.512		
8,600.00	8,534.68	8,447.31	7,752.30	31.10	23.90	-0.60	925.80	7,434.72	7,696.94	7,642.43	54.51	141.197		
8,650.00	8,584.26	8,448.63	7,752.32	31.26	23.91	-0.59	924.48	7,434.75	7,695.40	7,640.75	54.65	140.817		
8,700.00	8,633.10	8,700.00	7,753.38	31.43	25.81	-0.21	872.76	7,435.39	7,689.70	7,633.04	56.66	135.708		
8,750.00	8,680.83	8,750.00	7,753.40	31.58	26.20	-0.20	871.68	7,435.40	7,680.14	7,622.98	57.15	134.379		
8,800.00	8,727.09	8,800.00	7,753.42	31.74	26.58	-0.20	870.62	7,435.41	7,666.64	7,609.00	57.63	133.024		
8,850.00	8,771.52	8,850.00	7,753.44	31.89	26.96	-0.20	869.57	7,435.42	7,649.28	7,591.18	58.10	131.648		
8,900.00	8,813.78	8,900.00	7,753.46	32.04	27.34	-0.19	868.54	7,435.43	7,628.18	7,569.62	58.56	130.255		
8,950.00	8,853.56	8,950.00	7,753.48	32.18	27.73	-0.20	867.54	7,435.45	7,603.47	7,544.45	59.01	128.846		
9,000.00	8,890.55	9,000.00	7,753.50	32.32	28.11	-0.20	866.58	7,435.46	7,575.29	7,515.84	59.45	127.426		
9,050.00	8,924.46	8,549.00	7,754.38	32.47	24.67	0.22	824.14	7,435.95	7,543.94	7,487.82	56.12	134.433		
9,100.00	8,955.05	8,549.00	7,754.38	32.63	24.67	0.23	824.14	7,435.95	7,509.38	7,453.22	56.16	133.720		
9,150.00	8,982.08	8,549.00	7,754.38	32.79	24.67	0.26	824.14	7,435.95	7,471.96	7,415.77	56.19	132.983		
9,200.00	9,005.34	8,549.00	7,754.38	32.97	24.67	0.29	824.14	7,435.95	7,431.92	7,375.71	56.21	132.222		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,250.00	9,024.65	8,549.00	7,754.38	33.17	24.67	0.34	824.14	7,435.95	7,389.53	7,333.31	56.22	131.440	
9,300.00	9,039.87	8,549.00	7,754.38	33.38	24.67	0.40	824.14	7,435.95	7,345.06	7,288.84	56.22	130.639	
9,350.00	9,050.89	8,549.00	7,754.38	33.62	24.67	0.49	824.14	7,435.95	7,298.83	7,242.61	56.22	129.821	
9,400.00	9,057.61	8,549.00	7,754.38	33.87	24.67	0.65	824.14	7,435.95	7,251.15	7,194.94	56.22	128.986	
9,452.31	9,060.00	8,549.00	7,754.38	34.15	24.67	0.99	824.14	7,435.95	7,200.09	7,143.89	56.21	128.098	
9,500.00	9,060.00	8,549.00	7,754.38	34.42	24.67	0.99	824.14	7,435.95	7,153.12	7,096.92	56.20	127.283	
9,600.00	9,060.00	8,549.00	7,754.38	35.09	24.67	0.99	824.14	7,435.95	7,054.65	6,998.47	56.18	125.582	
9,700.00	9,060.00	8,549.00	7,754.38	35.86	24.67	0.99	824.14	7,435.95	6,956.22	6,900.06	56.15	123.880	
9,800.00	9,060.00	9,800.00	7,753.67	36.72	34.27	-0.61	858.74	7,435.55	6,857.75	6,792.25	65.50	104.704	
9,900.00	9,060.00	9,900.00	7,753.68	37.69	35.04	-0.59	858.16	7,435.56	6,759.41	6,693.19	66.22	102.070	
10,000.00	9,060.00	10,000.00	7,753.69	38.73	35.82	-0.56	857.59	7,435.56	6,661.13	6,594.18	66.95	99.495	
10,100.00	9,060.00	10,100.00	7,753.70	39.86	36.59	-0.53	857.01	7,435.57	6,562.90	6,495.22	67.68	96.975	
10,140.22	9,060.00	10,140.22	7,753.71	40.33	36.90	-0.52	856.78	7,435.57	6,523.40	6,455.43	67.97	95.977	
10,200.00	9,060.00	10,200.00	7,753.73	41.05	37.36	-6.61	855.81	7,435.58	6,464.73	6,396.32	68.40	94.510	
10,300.00	9,060.00	10,300.00	7,753.82	42.31	38.14	-16.15	851.41	7,435.63	6,366.69	6,297.56	69.13	92.101	
10,400.00	9,060.00	10,400.00	7,753.98	43.64	38.91	-24.59	843.52	7,435.73	6,268.90	6,199.05	69.85	89.747	
10,507.23	9,060.00	10,507.23	7,754.24	45.11	39.75	-32.25	831.21	7,435.87	6,164.48	6,093.85	70.63	87.282	
10,600.00	9,060.00	10,600.00	7,754.46	46.43	40.47	-25.01	820.32	7,436.00	6,074.21	6,002.91	71.30	85.192	
10,700.00	9,060.00	8,572.03	7,754.83	47.91	24.85	-15.92	801.11	7,436.12	5,976.56	5,920.42	56.14	106.459	
10,800.00	9,060.00	8,574.10	7,754.85	49.42	24.87	-6.85	799.05	7,436.13	5,878.86	5,822.72	56.14	104.713	
10,900.00	9,060.00	8,574.61	7,754.86	50.97	24.87	2.36	798.54	7,436.14	5,781.14	5,725.01	56.13	102.990	
11,000.00	9,060.00	8,573.54	7,754.85	52.55	24.87	11.21	799.60	7,436.13	5,683.54	5,627.43	56.11	101.290	
11,100.00	9,060.00	8,570.88	7,754.81	54.14	24.84	19.34	802.27	7,436.11	5,586.17	5,530.09	56.08	99.613	
11,207.23	9,060.00	11,207.23	7,754.41	55.87	45.18	26.41	823.05	7,435.97	5,482.23	5,406.53	75.70	72.420	
11,300.00	9,060.00	11,300.00	7,754.22	57.39	45.91	19.37	831.78	7,435.86	5,392.34	5,315.96	76.37	70.606	
11,400.00	9,060.00	11,400.00	7,754.10	59.06	46.68	11.33	837.83	7,435.79	5,295.27	5,218.17	77.10	68.684	
11,506.63	9,060.00	11,506.63	7,754.05	60.88	47.51	2.58	840.45	7,435.76	5,191.70	5,113.84	77.86	66.676	
11,600.00	9,060.00	11,600.00	7,754.03	62.49	48.24	2.55	841.01	7,435.76	5,101.08	5,022.54	78.54	64.952	
11,700.00	9,060.00	11,700.00	7,754.02	64.24	49.02	2.52	841.61	7,435.75	5,004.13	4,924.87	79.25	63.140	
11,800.00	9,060.00	11,800.00	7,754.01	66.01	49.80	2.50	842.20	7,435.74	4,907.30	4,827.33	79.97	61.363	
11,900.00	9,060.00	11,900.00	7,754.00	67.79	50.58	2.47	842.80	7,435.74	4,810.60	4,729.92	80.69	59.621	
12,000.00	9,060.00	12,000.00	7,753.98	69.58	51.35	2.44	843.40	7,435.73	4,714.05	4,632.65	81.40	57.912	
12,100.00	9,060.00	12,100.00	7,753.97	71.39	52.13	2.41	843.99	7,435.72	4,617.63	4,535.52	82.11	56.235	
12,200.00	9,060.00	12,200.00	7,753.96	73.21	52.91	2.39	844.59	7,435.71	4,521.38	4,438.55	82.82	54.591	
12,300.00	9,060.00	12,300.00	7,753.95	75.05	53.69	2.36	845.19	7,435.71	4,425.29	4,341.75	83.53	52.977	
12,400.00	9,060.00	8,568.31	7,754.85	76.89	24.81	4.22	804.84	7,436.04	4,329.41	4,273.36	56.05	77.240	
12,500.00	9,060.00	8,564.67	7,754.76	78.74	24.79	4.05	808.48	7,436.03	4,233.70	4,177.66	56.04	75.548	
12,600.00	9,060.00	8,561.25	7,754.68	80.61	24.76	3.90	811.89	7,436.01	4,138.18	4,082.15	56.03	73.851	
12,700.00	9,060.00	8,558.05	7,754.60	82.48	24.73	3.75	815.10	7,436.00	4,042.88	3,986.85	56.03	72.151	
12,800.00	9,060.00	8,555.03	7,754.53	84.36	24.71	3.61	818.12	7,435.99	3,947.82	3,891.78	56.04	70.447	
12,900.00	9,060.00	8,552.18	7,754.46	86.24	24.69	3.48	820.96	7,435.97	3,853.00	3,796.95	56.05	68.739	
13,000.00	9,060.00	8,549.49	7,754.39	88.14	24.67	3.35	823.65	7,435.96	3,758.45	3,702.38	56.07	67.029	
13,100.00	9,060.00	8,546.95	7,754.33	90.04	24.65	3.24	826.19	7,435.94	3,664.19	3,608.09	56.10	65.316	
13,200.00	9,060.00	8,544.53	7,754.28	91.94	24.63	3.12	828.60	7,435.93	3,570.24	3,514.11	56.13	63.601	
13,300.00	9,060.00	8,542.25	7,754.22	93.86	24.62	3.02	830.89	7,435.91	3,476.63	3,420.45	56.18	61.884	
13,400.00	9,060.00	8,540.07	7,754.17	95.77	24.60	2.92	833.06	7,435.90	3,383.38	3,327.14	56.24	60.165	
13,500.00	9,060.00	8,538.01	7,754.13	97.70	24.58	2.82	835.13	7,435.88	3,290.53	3,234.23	56.30	58.444	
13,600.00	9,060.00	8,536.04	7,754.08	99.62	24.57	2.73	837.10	7,435.87	3,198.11	3,141.72	56.38	56.722	
13,700.00	9,060.00	8,534.16	7,754.04	101.56	24.55	2.64	838.98	7,435.86	3,106.15	3,049.68	56.48	54.999	
13,800.00	9,060.00	8,532.37	7,754.00	103.49	24.54	2.56	840.77	7,435.84	3,014.71	2,958.13	56.59	53.276	
13,900.00	9,060.00	8,530.65	7,753.96	105.43	24.53	2.48	842.48	7,435.83	2,923.83	2,867.12	56.71	51.553	
14,000.00	9,060.00	8,529.01	7,753.92	107.38	24.51	2.41	844.12	7,435.82	2,833.56	2,776.70	56.86	49.831	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,527.44	7,753.89	109.33	24.50	2.33	845.69	7,435.80	2,743.97	2,686.94	57.04	48.110		
14,200.00	9,060.00	8,525.94	7,753.85	111.28	24.49	2.26	847.19	7,435.79	2,655.12	2,597.89	57.23	46.392		
14,300.00	9,060.00	8,524.50	7,753.82	113.23	24.48	2.20	848.64	7,435.78	2,567.09	2,509.63	57.46	44.676		
14,400.00	9,060.00	8,523.11	7,753.79	115.19	24.47	2.13	850.02	7,435.77	2,479.97	2,422.25	57.72	42.966		
14,500.00	9,060.00	8,521.78	7,753.76	117.15	24.46	2.07	851.35	7,435.75	2,393.85	2,335.83	58.02	41.262		
14,600.00	9,060.00	8,520.50	7,753.73	119.11	24.45	2.01	852.63	7,435.74	2,308.85	2,250.50	58.35	39.567		
14,700.00	9,060.00	8,519.27	7,753.71	121.08	24.44	1.96	853.86	7,435.73	2,225.10	2,166.36	58.74	37.883		
14,800.00	9,060.00	8,518.08	7,753.68	123.05	24.43	1.90	855.05	7,435.72	2,142.74	2,083.57	59.17	36.213		
14,900.00	9,060.00	8,516.94	7,753.65	125.02	24.42	1.85	856.19	7,435.71	2,061.95	2,002.28	59.66	34.561		
15,000.00	9,060.00	8,515.84	7,753.63	126.99	24.42	1.80	857.29	7,435.70	1,982.90	1,922.69	60.21	32.931		
15,100.00	9,060.00	8,514.77	7,753.61	128.97	24.41	1.75	858.36	7,435.69	1,905.82	1,844.99	60.83	31.328		
15,200.00	9,060.00	8,513.75	7,753.59	130.95	24.40	1.70	859.39	7,435.68	1,830.96	1,769.44	61.53	29.759		
15,300.00	9,060.00	8,512.75	7,753.56	132.93	24.39	1.65	860.38	7,435.67	1,758.61	1,696.31	62.30	28.230		
15,400.00	9,060.00	8,511.79	7,753.54	134.91	24.38	1.61	861.34	7,435.66	1,689.07	1,625.93	63.14	26.749		
15,500.00	9,060.00	8,510.87	7,753.52	136.89	24.38	1.57	862.26	7,435.65	1,622.72	1,558.65	64.07	25.326		
15,600.00	9,060.00	8,509.97	7,753.51	138.88	24.37	1.53	863.16	7,435.64	1,559.96	1,494.88	65.08	23.969		
15,700.00	9,060.00	8,509.10	7,753.49	140.86	24.36	1.49	864.03	7,435.63	1,501.25	1,435.08	66.17	22.688		
15,800.00	9,060.00	8,508.26	7,753.47	142.85	24.36	1.45	864.87	7,435.62	1,447.07	1,379.75	67.32	21.495		
15,900.00	9,060.00	8,507.44	7,753.45	144.84	24.35	1.41	865.69	7,435.61	1,397.95	1,329.42	68.53	20.398		
16,000.00	9,060.00	8,506.65	7,753.44	146.83	24.35	1.37	866.48	7,435.60	1,354.45	1,284.65	69.79	19.407		
16,100.00	9,060.00	8,505.88	7,753.42	148.83	24.34	1.34	867.25	7,435.59	1,317.11	1,246.04	71.07	18.531		
16,200.00	9,060.00	8,505.13	7,753.40	150.82	24.33	1.30	868.00	7,435.59	1,286.48	1,214.11	72.37	17.777		
16,300.00	9,060.00	8,504.41	7,753.39	152.82	24.33	1.27	868.72	7,435.58	1,263.05	1,189.40	73.65	17.149		
16,400.00	9,060.00	8,503.70	7,753.37	154.81	24.32	1.24	869.42	7,435.57	1,247.21	1,172.31	74.90	16.652		
16,500.00	9,060.00	8,503.02	7,753.36	156.81	24.32	1.20	870.11	7,435.56	1,239.27	1,163.18	76.09	16.287		
16,548.74	9,060.00	8,502.69	7,753.35	157.79	24.32	1.19	870.43	7,435.56	1,238.31	1,161.67	76.64	16.157 CC, ES		
16,600.00	9,060.00	8,502.36	7,753.35	158.81	24.31	1.17	870.77	7,435.55	1,239.37	1,162.18	77.19	16.056		
16,700.00	9,060.00	8,501.71	7,753.33	160.81	24.31	1.14	871.42	7,435.55	1,247.52	1,169.35	78.17	15.959 SF		
16,800.00	9,060.00	8,501.08	7,753.32	162.81	24.30	1.11	872.05	7,435.54	1,263.55	1,184.55	79.00	15.994		
16,900.00	9,060.00	8,500.47	7,753.31	164.82	24.30	1.09	872.66	7,435.53	1,287.17	1,207.52	79.65	16.160		
17,000.00	9,060.00	8,499.87	7,753.29	166.82	24.29	1.06	873.26	7,435.52	1,317.97	1,237.86	80.12	16.451		
17,100.00	9,060.00	8,499.29	7,753.28	168.82	24.29	1.03	873.84	7,435.52	1,355.47	1,275.07	80.40	16.860		
17,200.00	9,060.00	8,498.73	7,753.27	170.83	24.29	1.01	874.40	7,435.51	1,399.12	1,318.62	80.51	17.379		
17,300.00	9,060.00	8,498.17	7,753.26	172.84	24.28	0.98	874.95	7,435.50	1,448.38	1,367.91	80.46	18.000		
17,400.00	9,060.00	8,497.64	7,753.25	174.84	24.28	0.96	875.49	7,435.50	1,502.68	1,422.38	80.30	18.714		
17,500.00	9,060.00	8,497.11	7,753.24	176.85	24.27	0.93	876.02	7,435.49	1,561.50	1,481.47	80.03	19.512		
17,600.00	9,060.00	8,496.60	7,753.23	178.86	24.27	0.91	876.53	7,435.48	1,624.35	1,544.67	79.69	20.385		
17,700.00	9,060.00	8,496.10	7,753.22	180.87	24.27	0.88	877.03	7,435.48	1,690.79	1,611.50	79.29	21.325		
17,800.00	9,060.00	8,495.61	7,753.21	182.88	24.26	0.86	877.51	7,435.47	1,760.40	1,681.55	78.85	22.325		
17,900.00	9,060.00	8,495.14	7,753.20	184.89	24.26	0.84	877.99	7,435.47	1,832.83	1,754.43	78.40	23.378		
18,000.00	9,060.00	8,494.67	7,753.19	186.90	24.25	0.82	878.45	7,435.46	1,907.75	1,829.81	77.94	24.478		
18,100.00	9,060.00	8,494.22	7,753.18	188.92	24.25	0.80	878.91	7,435.45	1,984.88	1,907.41	77.47	25.620		
18,200.00	9,060.00	8,493.77	7,753.17	190.93	24.25	0.78	879.35	7,435.45	2,063.97	1,986.96	77.02	26.799		
18,300.00	9,060.00	8,493.34	7,753.16	192.94	24.24	0.76	879.79	7,435.44	2,144.82	2,068.24	76.57	28.010		
18,400.00	9,060.00	8,492.91	7,753.15	194.96	24.24	0.74	880.21	7,435.44	2,227.21	2,151.07	76.14	29.250		
18,500.00	9,060.00	8,492.50	7,753.14	196.97	24.24	0.72	880.63	7,435.43	2,311.00	2,235.27	75.73	30.516		
18,600.00	9,060.00	8,492.09	7,753.14	198.99	24.24	0.70	881.03	7,435.43	2,396.03	2,320.69	75.34	31.803		
18,700.00	9,060.00	8,491.70	7,753.13	201.00	24.23	0.68	881.43	7,435.42	2,482.18	2,407.21	74.97	33.111		
18,800.00	9,060.00	8,491.31	7,753.12	203.02	24.23	0.66	881.82	7,435.42	2,569.33	2,494.71	74.61	34.435		
18,900.00	9,060.00	8,490.93	7,753.11	205.04	24.23	0.64	882.20	7,435.41	2,657.38	2,583.10	74.28	35.775		
19,000.00	9,060.00	8,490.55	7,753.11	207.06	24.22	0.63	882.57	7,435.41	2,746.25	2,672.29	73.97	37.127		
19,100.00	9,060.00	8,490.19	7,753.10	209.07	24.22	0.61	882.94	7,435.40	2,835.87	2,762.19	73.68	38.491		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	8,489.83	7,753.09	211.09	24.22	0.59	883.29	7,435.40	2,926.16	2,852.76	73.40	39.866	
19,300.00	9,060.00	8,489.48	7,753.08	213.11	24.22	0.58	883.65	7,435.39	3,017.06	2,943.91	73.14	41.248	
19,400.00	9,060.00	8,489.14	7,753.08	215.13	24.21	0.56	883.99	7,435.39	3,108.52	3,035.61	72.90	42.639	
19,500.32	9,060.00	8,488.80	7,753.07	217.16	24.21	0.55	884.33	7,435.38	3,200.78	3,128.10	72.68	44.040	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	6,436.00	4,944.58	10.89	29.67	110.65	-193.54	5,686.70	6,016.33	5,977.45	38.88	154.738		
3,200.00	3,196.89	6,436.00	4,944.58	11.25	29.67	110.91	-193.54	5,686.70	5,989.85	5,950.47	39.38	152.095		
3,295.74	3,291.45	6,436.00	4,944.58	11.59	29.67	111.14	-193.54	5,686.70	5,966.53	5,926.67	39.86	149.686		
3,300.00	3,295.65	6,436.00	4,944.58	11.61	29.67	111.14	-193.54	5,686.70	5,965.54	5,925.66	39.88	149.582		
3,400.00	3,394.29	6,436.00	4,944.58	11.97	29.67	111.14	-193.54	5,686.70	5,943.09	5,902.71	40.38	147.185		
3,500.00	3,492.94	6,436.00	4,944.58	12.33	29.67	111.14	-193.54	5,686.70	5,922.25	5,881.38	40.87	144.897		
3,600.00	3,591.58	6,436.00	4,944.58	12.69	29.67	111.14	-193.54	5,686.70	5,903.03	5,861.66	41.36	142.718		
3,700.00	3,690.22	6,436.00	4,944.58	13.05	29.67	111.14	-193.54	5,686.70	5,885.44	5,843.59	41.85	140.645		
3,800.00	3,788.86	6,436.00	4,944.58	13.41	29.67	111.14	-193.54	5,686.70	5,869.50	5,827.18	42.33	138.676		
3,900.00	3,887.50	6,436.00	4,944.58	13.77	29.67	111.14	-193.54	5,686.70	5,855.23	5,812.43	42.80	136.810		
4,000.00	3,986.14	6,436.00	4,944.58	14.14	29.67	111.14	-193.54	5,686.70	5,842.64	5,799.37	43.26	135.043		
4,100.00	4,084.78	6,436.00	4,944.58	14.50	29.67	111.14	-193.54	5,686.70	5,831.73	5,788.01	43.72	133.376		
4,200.00	4,183.42	6,436.00	4,944.58	14.87	29.67	111.14	-193.54	5,686.70	5,822.52	5,778.35	44.18	131.804		
4,300.00	4,282.06	6,399.64	4,944.27	15.24	29.24	110.78	-157.25	5,688.85	5,814.56	5,770.38	44.18	131.596		
4,400.00	4,380.70	6,395.82	4,944.26	15.60	29.19	110.74	-153.44	5,689.12	5,808.67	5,764.10	44.57	130.317		
4,500.00	4,479.34	6,391.93	4,944.26	15.97	29.14	110.71	-149.56	5,689.39	5,804.49	5,759.54	44.95	129.126		
4,600.00	4,577.98	6,387.97	4,944.27	16.34	29.10	110.67	-145.61	5,689.68	5,802.02	5,756.70	45.32	128.023		
4,694.33	4,671.04	6,384.17	4,944.29	16.69	29.05	110.63	-141.82	5,689.96	5,801.26	5,755.60	45.66	127.059		
4,700.00	4,676.62	6,383.94	4,944.29	16.71	29.05	110.63	-141.59	5,689.98	5,801.26	5,755.58	45.68	127.004		
4,800.00	4,775.27	6,379.84	4,944.31	17.08	29.00	110.59	-137.50	5,690.29	5,802.21	5,756.19	46.02	126.069		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,375.66	4,944.34	17.45	28.95	110.55	-133.33	5,690.62	5,804.88	5,758.52	46.36	125.215		
5,000.00	4,972.55	6,341.00	4,944.83	17.82	28.54	110.21	-98.81	5,693.66	5,809.55	5,763.23	46.32	125.424		
5,100.00	5,071.19	6,341.00	4,944.83	18.19	28.54	110.21	-98.81	5,693.66	5,815.55	5,768.87	46.68	124.576		
5,200.00	5,169.83	6,341.00	4,944.83	18.56	28.54	110.21	-98.81	5,693.66	5,823.26	5,776.22	47.04	123.806		
5,300.00	5,268.47	6,341.00	4,944.83	18.93	28.54	110.21	-98.81	5,693.66	5,832.67	5,785.29	47.38	123.113		
5,400.00	5,367.11	6,341.00	4,944.83	19.31	28.54	110.21	-98.81	5,693.66	5,843.77	5,796.07	47.71	122.495		
5,500.00	5,465.75	6,341.00	4,944.83	19.68	28.54	110.21	-98.81	5,693.66	5,856.57	5,808.54	48.02	121.949		
5,600.00	5,564.39	6,341.00	4,944.83	20.05	28.54	110.21	-98.81	5,693.66	5,871.04	5,822.71	48.33	121.475		
5,700.00	5,663.03	6,341.00	4,944.83	20.42	28.54	110.21	-98.81	5,693.66	5,887.17	5,838.55	48.63	121.069		
5,800.00	5,761.67	6,341.00	4,944.83	20.80	28.54	110.21	-98.81	5,693.66	5,904.96	5,856.05	48.91	120.731		
5,900.00	5,860.31	6,317.10	4,945.35	21.17	28.26	109.98	-75.03	5,695.98	5,924.29	5,875.38	48.91	121.135		
6,000.00	5,958.96	6,306.89	4,945.58	21.54	28.14	109.88	-64.87	5,697.00	5,945.24	5,896.19	49.05	121.206		
6,100.00	6,057.60	6,296.62	4,945.81	21.92	28.02	109.78	-54.66	5,698.04	5,967.77	5,918.58	49.18	121.336		
6,200.00	6,156.24	6,026.18	4,943.70	22.29	24.94	107.14	214.87	5,718.29	5,991.69	5,945.29	46.39	129.146		
6,300.00	6,254.88	6,018.26	4,943.44	22.67	24.86	107.06	222.78	5,718.67	6,016.68	5,970.14	46.55	129.259		
6,400.00	6,353.52	6,010.17	4,943.19	23.04	24.77	106.99	230.85	5,719.07	6,043.21	5,996.52	46.69	129.435		
6,500.00	6,452.16	6,001.92	4,942.94	23.42	24.68	106.91	239.09	5,719.49	6,071.26	6,024.44	46.82	129.674		
6,600.00	6,550.80	5,993.49	4,942.70	23.79	24.59	106.82	247.50	5,719.92	6,100.80	6,053.86	46.94	129.973		
6,700.00	6,649.44	5,984.89	4,942.47	24.17	24.49	106.74	256.08	5,720.37	6,131.80	6,084.76	47.05	130.332		
6,800.00	6,748.08	6,000.00	4,941.49	24.54	33.17	106.29	302.34	5,722.78	6,164.23	6,108.56	55.67	110.733		
6,900.00	6,846.72	6,900.00	4,941.23	24.92	34.24	106.15	316.05	5,723.46	6,198.03	6,141.16	56.86	109.000		
7,000.00	6,945.36	5,865.21	4,940.16	25.29	23.22	105.57	375.59	5,726.40	6,233.35	6,186.98	46.37	134.432		
7,100.00	7,044.00	5,843.98	4,939.88	25.67	23.01	105.37	396.80	5,727.31	6,269.79	6,223.46	46.33	135.326		
7,200.00	7,142.65	5,822.38	4,939.62	26.04	22.79	105.16	418.38	5,728.23	6,307.56	6,261.28	46.28	136.277		
7,300.00	7,241.29	5,800.41	4,939.38	26.42	22.56	104.94	440.33	5,729.14	6,346.63	6,300.40	46.23	137.285		
7,400.00	7,339.93	5,778.06	4,939.17	26.79	22.34	104.73	462.65	5,730.05	6,386.98	6,340.81	46.17	138.349		
7,500.00	7,438.57	5,774.00	4,939.13	27.17	22.30	104.69	466.71	5,730.21	6,428.59	6,382.32	46.27	138.930		
7,571.77	7,509.37	5,774.00	4,939.13	27.44	22.30	104.69	466.71	5,730.21	6,459.25	6,412.87	46.37	139.289		
7,600.00	7,537.23	5,774.00	4,939.13	27.55	22.30	104.88	466.71	5,730.21	6,471.46	6,425.05	46.41	139.436		
7,700.00	7,636.18	5,774.00	4,939.13	27.92	22.30	105.59	466.71	5,730.21	6,515.13	6,468.58	46.54	139.986		
7,800.00	7,735.48	5,774.00	4,939.13	28.29	22.30	106.30	466.71	5,730.21	6,559.40	6,512.74	46.66	140.575		
7,900.00	7,835.05	5,774.00	4,939.13	28.65	22.30	107.02	466.71	5,730.21	6,604.24	6,557.47	46.77	141.204		
8,000.00	7,934.83	5,774.00	4,939.13	29.01	22.30	107.75	466.71	5,730.21	6,649.60	6,602.73	46.87	141.869		
8,100.00	8,034.74	5,774.00	4,939.13	29.36	22.30	108.48	466.71	5,730.21	6,695.44	6,648.48	46.96	142.569		
8,202.27	8,137.00	5,774.00	4,939.13	29.72	22.30	93.20	466.71	5,730.21	6,742.78	6,695.73	47.05	143.318		
8,300.00	8,234.73	5,774.00	4,939.13	30.06	22.30	93.20	466.71	5,730.21	6,788.78	6,741.65	47.12	144.065		
8,400.00	8,334.73	5,774.00	4,939.13	30.41	22.30	93.20	466.71	5,730.21	6,836.97	6,789.77	47.20	144.858		
8,500.00	8,434.73	5,774.00	4,939.13	30.75	22.30	93.20	466.71	5,730.21	6,886.27	6,839.00	47.27	145.681		
8,552.31	8,487.04	5,774.00	4,939.13	30.94	22.30	93.20	466.71	5,730.21	6,912.49	6,865.19	47.31	146.123		
8,600.00	8,534.68	5,774.00	4,939.13	31.10	22.30	3.39	466.71	5,730.21	6,934.93	6,887.60	47.33	146.523		
8,650.00	8,584.26	5,774.00	4,939.13	31.26	22.30	3.26	466.71	5,730.21	6,954.91	6,907.57	47.34	146.902		
8,700.00	8,633.10	5,774.00	4,939.13	31.43	22.30	3.16	466.71	5,730.21	6,971.14	6,923.79	47.35	147.221		
8,750.00	8,680.83	5,774.00	4,939.13	31.58	22.30	3.09	466.71	5,730.21	6,983.53	6,936.18	47.35	147.482		
8,800.00	8,727.09	5,774.00	4,939.13	31.74	22.30	3.05	466.71	5,730.21	6,992.01	6,944.66	47.34	147.687		
8,850.00	8,771.52	5,774.00	4,939.13	31.89	22.30	3.02	466.71	5,730.21	6,996.51	6,949.19	47.33	147.836		
8,900.00	8,813.78	5,774.00	4,939.13	32.04	22.30	3.02	466.71	5,730.21	6,997.03	6,949.73	47.30	147.930		
8,950.00	8,853.56	5,774.00	4,939.13	32.18	22.30	3.04	466.71	5,730.21	6,993.54	6,946.28	47.26	147.969		
9,000.00	8,890.55	5,774.00	4,939.13	32.32	22.30	3.08	466.71	5,730.21	6,986.08	6,938.87	47.22	147.954		
9,050.00	8,924.46	5,774.00	4,939.13	32.47	22.30	3.14	466.71	5,730.21	6,974.69	6,927.53	47.16	147.883		
9,100.00	8,955.05	5,747.83	4,938.92	32.63	22.04	3.00	492.85	5,731.38	6,959.31	6,912.43	46.88	148.449		
9,150.00	8,982.08	5,747.05	4,938.92	32.79	22.03	3.11	493.64	5,731.41	6,940.27	6,893.47	46.80	148.286		
9,200.00	9,005.34	5,746.20	4,938.91	32.97	22.03	3.24	494.49	5,731.46	6,917.58	6,870.86	46.72	148.066		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,745.28	4,938.91	33.17	22.02	3.41	495.40	5,731.50	6,891.36	6,844.73	46.63	147.791		
9,300.00	9,039.87	5,744.32	4,938.90	33.38	22.01	3.62	496.37	5,731.55	6,861.78	6,815.25	46.53	147.458		
9,350.00	9,050.89	5,743.30	4,938.89	33.62	22.00	3.90	497.38	5,731.60	6,829.02	6,782.59	46.43	147.067		
9,400.00	9,057.61	5,742.25	4,938.88	33.87	21.99	4.25	498.43	5,731.65	6,793.29	6,746.96	46.33	146.617		
9,452.31	9,060.00	5,741.10	4,938.88	34.15	21.98	4.73	499.57	5,731.71	6,752.98	6,706.75	46.23	146.083		
9,500.00	9,060.00	5,740.04	4,938.87	34.42	21.97	4.71	500.63	5,731.77	6,714.99	6,668.87	46.13	145.577		
9,600.00	9,060.00	5,737.77	4,938.85	35.09	21.94	4.68	502.90	5,731.88	6,635.76	6,589.85	45.91	144.537		
9,700.00	9,060.00	5,735.44	4,938.84	35.86	21.92	4.65	505.23	5,732.01	6,557.09	6,511.39	45.70	143.487		
9,800.00	9,060.00	5,733.05	4,938.82	36.72	21.90	4.62	507.62	5,732.14	6,479.00	6,433.51	45.49	142.423		
9,900.00	9,060.00	5,730.59	4,938.81	37.69	21.87	4.58	510.07	5,732.27	6,401.53	6,356.24	45.29	141.346		
10,000.00	9,060.00	5,728.06	4,938.79	38.73	21.85	4.55	512.60	5,732.41	6,324.68	6,279.59	45.09	140.253		
10,100.00	9,060.00	5,725.46	4,938.78	39.86	21.82	4.51	515.19	5,732.55	6,248.49	6,203.58	44.91	139.143		
10,140.22	9,060.00	5,724.40	4,938.77	40.33	21.81	4.50	516.26	5,732.61	6,218.03	6,173.19	44.83	138.692		
10,200.00	9,060.00	5,723.06	4,938.76	41.05	21.80	3.11	517.60	5,732.69	6,172.94	6,128.21	44.73	138.009		
10,300.00	9,060.00	5,721.98	4,938.75	42.31	21.79	0.83	518.68	5,732.75	6,097.98	6,053.42	44.57	136.829		
10,400.00	9,060.00	5,722.41	4,938.76	43.64	21.79	-1.38	518.24	5,732.73	6,023.72	5,979.30	44.42	135.598		
10,507.23	9,060.00	5,724.63	4,938.77	45.11	21.82	-3.67	516.03	5,732.60	5,945.00	5,900.71	44.29	134.220		
10,600.00	9,060.00	5,726.71	4,938.78	46.43	21.84	-1.68	513.95	5,732.48	5,877.62	5,833.43	44.19	133.000		
10,700.00	9,060.00	5,727.47	4,938.79	47.91	21.84	0.40	513.19	5,732.44	5,805.71	5,761.62	44.09	131.687		
10,800.00	9,060.00	5,726.61	4,938.78	49.42	21.84	2.41	514.05	5,732.49	5,734.65	5,690.67	43.99	130.376		
10,900.00	9,060.00	5,724.06	4,938.77	50.97	21.81	4.33	516.59	5,732.63	5,664.57	5,620.69	43.89	129.067		
11,000.00	9,060.00	5,719.74	4,938.74	52.55	21.77	6.17	520.91	5,732.88	5,595.60	5,551.80	43.80	127.759		
11,100.00	9,060.00	5,713.56	4,938.71	54.14	21.71	7.91	527.07	5,733.25	5,527.83	5,484.11	43.72	126.450		
11,207.23	9,060.00	5,704.79	4,938.66	55.87	21.62	9.67	535.83	5,733.79	5,456.65	5,413.01	43.64	125.041		
11,300.00	9,060.00	5,680.00	4,938.56	57.39	21.38	7.75	560.56	5,735.46	5,396.08	5,352.61	43.46	124.148		
11,400.00	9,060.00	5,680.00	4,938.56	59.06	21.38	6.07	560.56	5,735.46	5,331.36	5,287.86	43.49	122.577		
11,506.63	9,060.00	5,680.00	4,938.56	60.88	21.38	4.30	560.56	5,735.46	5,263.25	5,219.70	43.54	120.873		
11,600.00	9,060.00	5,680.00	4,938.56	62.49	21.38	4.30	560.56	5,735.46	5,204.55	5,160.95	43.61	119.356		
11,700.00	9,060.00	5,680.00	4,938.56	64.24	21.38	4.30	560.56	5,735.46	5,142.83	5,099.13	43.69	117.701		
11,800.00	9,060.00	5,680.00	4,938.56	66.01	21.38	4.30	560.56	5,735.46	5,082.32	5,038.52	43.81	116.015		
11,900.00	9,060.00	5,680.00	4,938.56	67.79	21.38	4.30	560.56	5,735.46	5,023.08	4,979.13	43.95	114.301		
12,000.00	9,060.00	5,680.00	4,938.56	69.58	21.38	4.30	560.56	5,735.46	4,965.14	4,921.03	44.11	112.561		
12,100.00	9,060.00	5,680.00	4,938.56	71.39	21.38	4.30	560.56	5,735.46	4,908.56	4,864.26	44.30	110.799		
12,200.00	9,060.00	5,680.00	4,938.56	73.21	21.38	4.30	560.56	5,735.46	4,853.38	4,808.86	44.52	109.016		
12,300.00	9,060.00	5,680.00	4,938.56	75.05	21.38	4.30	560.56	5,735.46	4,799.64	4,754.88	44.77	107.218		
12,400.00	9,060.00	5,652.78	4,938.48	76.89	21.13	3.92	587.69	5,737.68	4,747.20	4,702.36	44.84	105.865		
12,500.00	9,060.00	5,648.57	4,938.47	78.74	21.09	3.87	591.89	5,738.07	4,696.45	4,651.34	45.11	104.106		
12,600.00	9,060.00	5,644.11	4,938.46	80.61	21.05	3.80	596.32	5,738.50	4,647.29	4,601.88	45.41	102.344		
12,700.00	9,060.00	5,639.38	4,938.45	82.48	21.01	3.74	601.03	5,738.97	4,599.76	4,554.03	45.73	100.584		
12,800.00	9,060.00	5,634.37	4,938.44	84.36	20.96	3.67	606.01	5,739.48	4,553.92	4,507.84	46.08	98.831		
12,900.00	9,060.00	5,629.03	4,938.43	86.24	20.92	3.59	611.32	5,740.05	4,509.82	4,463.37	46.45	97.090		
13,000.00	9,060.00	5,623.35	4,938.42	88.14	20.86	3.51	616.97	5,740.68	4,467.51	4,420.66	46.85	95.364		
13,100.00	9,060.00	5,617.28	4,938.41	90.04	20.81	3.43	623.00	5,741.38	4,427.03	4,379.77	47.27	93.659		
13,200.00	9,060.00	5,610.78	4,938.41	91.94	20.75	3.34	629.45	5,742.16	4,388.44	4,340.73	47.71	91.980		
13,300.00	9,060.00	5,585.00	4,938.39	93.86	20.51	2.98	655.00	5,745.55	4,351.87	4,303.82	48.05	90.569		
13,400.00	9,060.00	5,585.00	4,938.39	95.77	20.51	2.98	655.00	5,745.55	4,317.15	4,268.56	48.59	88.852		
13,500.00	9,060.00	5,585.00	4,938.39	97.70	20.51	2.98	655.00	5,745.55	4,284.47	4,235.32	49.15	87.172		
13,600.00	9,060.00	5,585.00	4,938.39	99.62	20.51	2.98	655.00	5,745.55	4,253.90	4,204.17	49.73	85.532		
13,700.00	9,060.00	5,585.00	4,938.39	101.56	20.51	2.98	655.00	5,745.55	4,225.47	4,175.13	50.34	83.935		
13,800.00	9,060.00	5,585.00	4,938.39	103.49	20.51	2.98	655.00	5,745.55	4,199.24	4,148.27	50.97	82.384		
13,900.00	9,060.00	5,559.86	4,938.31	105.43	20.29	2.63	679.88	5,749.15	4,175.06	4,123.59	51.46	81.127		
14,000.00	9,060.00	5,552.69	4,938.25	107.38	20.23	2.53	686.98	5,750.19	4,153.21	4,101.12	52.09	79.734		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	5,545.40	4,938.18	109.33	20.17	2.43	694.19	5,751.26	4,133.64	4,080.90	52.73	78.388		
14,200.00	9,060.00	5,538.02	4,938.09	111.28	20.11	2.33	701.49	5,752.35	4,116.37	4,062.98	53.40	77.092		
14,300.00	9,060.00	5,530.52	4,937.98	113.23	20.04	2.22	708.90	5,753.47	4,101.44	4,047.37	54.07	75.848		
14,400.00	9,060.00	5,522.92	4,937.86	115.19	19.98	2.12	716.42	5,754.61	4,088.87	4,034.10	54.77	74.655		
14,500.00	9,060.00	5,515.20	4,937.72	117.15	19.91	2.01	724.05	5,755.78	4,078.69	4,023.21	55.48	73.516		
14,600.00	9,060.00	5,490.00	4,937.15	119.11	19.69	1.66	748.94	5,759.67	4,070.98	4,014.87	56.11	72.554		
14,700.00	9,060.00	14,700.00	4,937.18	121.08	99.99	1.68	747.58	5,759.47	4,065.55	3,965.43	100.12	40.607 ES, SF		
14,800.00	9,060.00	5,494.69	4,937.27	123.05	19.73	1.72	744.31	5,758.94	4,062.57	4,004.87	57.70	70.403		
14,900.00	9,060.00	5,289.38	4,936.26	125.02	18.18	-1.13	947.48	5,788.07	4,061.93	4,004.05	57.88	70.174		
14,902.86	9,060.00	5,289.29	4,936.27	125.08	18.18	-1.14	947.58	5,788.08	4,061.93	4,004.03	57.91	70.147 CC		
15,000.00	9,060.00	5,275.00	4,936.47	126.99	18.08	-1.34	961.76	5,789.78	4,063.15	4,004.47	58.68	69.242		
15,100.00	9,060.00	5,275.00	4,936.47	128.97	18.08	-1.34	961.76	5,789.78	4,066.72	4,007.23	59.49	68.361		
15,200.00	9,060.00	5,275.00	4,936.47	130.95	18.08	-1.34	961.76	5,789.78	4,072.74	4,012.44	60.30	67.542		
15,300.00	9,060.00	5,275.00	4,936.47	132.93	18.08	-1.34	961.76	5,789.78	4,081.21	4,020.10	61.11	66.784		
15,400.00	9,060.00	5,275.00	4,936.47	134.91	18.08	-1.34	961.76	5,789.78	4,092.10	4,030.18	61.92	66.089		
15,500.00	9,060.00	5,275.00	4,936.47	136.89	18.08	-1.34	961.76	5,789.78	4,105.40	4,042.68	62.72	65.455		
15,600.00	9,060.00	5,275.00	4,936.47	138.88	18.08	-1.34	961.76	5,789.78	4,121.09	4,057.57	63.52	64.882		
15,700.00	9,060.00	5,275.00	4,936.47	140.86	18.08	-1.34	961.76	5,789.78	4,139.13	4,074.83	64.30	64.371		
15,800.00	9,060.00	5,275.00	4,936.47	142.85	18.08	-1.34	961.76	5,789.78	4,159.50	4,094.43	65.07	63.920		
15,900.00	9,060.00	5,275.00	4,936.47	144.84	18.08	-1.34	961.76	5,789.78	4,182.16	4,116.33	65.83	63.529		
16,000.00	9,060.00	5,275.00	4,936.47	146.83	18.08	-1.34	961.76	5,789.78	4,207.08	4,140.51	66.57	63.196		
16,100.00	9,060.00	5,275.00	4,936.47	148.83	18.08	-1.34	961.76	5,789.78	4,234.21	4,166.92	67.29	62.921		
16,200.00	9,060.00	5,275.00	4,936.47	150.82	18.08	-1.34	961.76	5,789.78	4,263.52	4,195.52	68.00	62.703		
16,300.00	9,060.00	5,275.00	4,936.47	152.82	18.08	-1.34	961.76	5,789.78	4,294.95	4,226.28	68.68	62.540		
16,400.00	9,060.00	5,275.00	4,936.47	154.81	18.08	-1.34	961.76	5,789.78	4,328.47	4,259.14	69.33	62.430		
16,500.00	9,060.00	5,275.00	4,936.47	156.81	18.08	-1.34	961.76	5,789.78	4,364.02	4,294.05	69.97	62.372		
16,600.00	9,060.00	5,260.42	4,936.34	158.81	17.99	-1.54	976.25	5,791.44	4,401.28	4,330.71	70.57	62.367		
16,700.00	9,060.00	5,259.32	4,936.31	160.81	17.98	-1.55	977.34	5,791.56	4,440.71	4,369.55	71.15	62.409		
16,800.00	9,060.00	5,258.23	4,936.27	162.81	17.97	-1.57	978.42	5,791.68	4,482.02	4,410.30	71.71	62.498		
16,900.00	9,060.00	5,244.00	4,935.58	164.82	17.88	-1.77	992.55	5,793.18	4,525.38	4,453.14	72.25	62.639		
17,000.00	9,060.00	5,244.00	4,935.58	166.82	17.88	-1.77	992.55	5,793.18	4,570.27	4,497.51	72.75	62.817		
17,100.00	9,060.00	5,244.00	4,935.58	168.82	17.88	-1.77	992.55	5,793.18	4,616.88	4,543.64	73.24	63.038		
17,200.00	9,060.00	5,244.00	4,935.58	170.83	17.88	-1.77	992.55	5,793.18	4,665.17	4,591.47	73.70	63.299		
17,300.00	9,060.00	5,244.00	4,935.58	172.84	17.88	-1.77	992.55	5,793.18	4,715.09	4,640.95	74.14	63.599		
17,400.00	9,060.00	5,244.00	4,935.58	174.84	17.88	-1.77	992.55	5,793.18	4,766.58	4,692.03	74.55	63.937		
17,500.00	9,060.00	5,244.00	4,935.58	176.85	17.88	-1.77	992.55	5,793.18	4,819.60	4,744.66	74.94	64.310		
17,600.00	9,060.00	5,244.00	4,935.58	178.86	17.88	-1.77	992.55	5,793.18	4,874.10	4,798.78	75.31	64.718		
17,700.00	9,060.00	5,244.00	4,935.58	180.87	17.88	-1.77	992.55	5,793.18	4,930.02	4,854.35	75.66	65.159		
17,800.00	9,060.00	5,244.00	4,935.58	182.88	17.88	-1.77	992.55	5,793.18	4,987.31	4,911.32	75.99	65.631		
17,900.00	9,060.00	5,244.00	4,935.58	184.89	17.88	-1.77	992.55	5,793.18	5,045.94	4,969.64	76.30	66.133		
18,000.00	9,060.00	5,244.00	4,935.58	186.90	17.88	-1.77	992.55	5,793.18	5,105.86	5,029.27	76.59	66.664		
18,100.00	9,060.00	5,244.00	4,935.58	188.92	17.88	-1.77	992.55	5,793.18	5,167.01	5,090.15	76.86	67.223		
18,200.00	9,060.00	5,244.00	4,935.58	190.93	17.88	-1.77	992.55	5,793.18	5,229.37	5,152.25	77.12	67.809		
18,300.00	9,060.00	5,244.00	4,935.58	192.94	17.88	-1.77	992.55	5,793.18	5,292.87	5,215.51	77.36	68.419		
18,400.00	9,060.00	5,244.00	4,935.58	194.96	17.88	-1.77	992.55	5,793.18	5,357.50	5,279.91	77.58	69.054		
18,500.00	9,060.00	5,244.00	4,935.58	196.97	17.88	-1.77	992.55	5,793.18	5,423.19	5,345.40	77.79	69.712		
18,600.00	9,060.00	5,244.00	4,935.58	198.99	17.88	-1.77	992.55	5,793.18	5,489.92	5,411.93	77.99	70.392		
18,700.00	9,060.00	5,230.48	4,934.60	201.00	17.80	-1.96	1,005.97	5,794.57	5,557.58	5,479.41	78.17	71.099		
18,800.00	9,060.00	5,227.84	4,934.38	203.02	17.78	-1.99	1,008.59	5,794.85	5,626.24	5,547.90	78.34	71.822		
18,900.00	9,060.00	5,225.19	4,934.17	205.04	17.76	-2.03	1,011.21	5,795.12	5,695.82	5,617.33	78.49	72.563		
19,000.00	9,060.00	5,212.00	4,932.98	207.06	17.68	-2.21	1,024.28	5,796.49	5,766.34	5,687.70	78.64	73.327		
19,100.00	9,060.00	5,212.00	4,932.98	209.07	17.68	-2.21	1,024.28	5,796.49	5,837.65	5,758.87	78.78	74.104		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - ST01 - ST01												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,212.00	4,932.98	211.09	17.68	-2.21	1,024.28	5,796.49	5,909.79	5,830.88	78.90	74.898	
19,300.00	9,060.00	5,212.00	4,932.98	213.11	17.68	-2.21	1,024.28	5,796.49	5,982.73	5,903.71	79.02	75.708	
19,400.00	9,060.00	5,212.00	4,932.98	215.13	17.68	-2.21	1,024.28	5,796.49	6,056.44	5,977.31	79.13	76.533	
19,500.32	9,060.00	5,212.00	4,932.98	217.16	17.68	-2.21	1,024.28	5,796.49	6,131.14	6,051.90	79.24	77.376	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	2,963.31	2,962.72	10.89	11.41	91.61	1,538.28	5,826.32	6,027.67	6,005.39	22.29	270.450		
3,200.00	3,196.89	3,064.85	3,064.26	11.25	11.73	91.74	1,537.56	5,827.72	6,029.26	6,006.30	22.96	262.552		
3,295.74	3,291.45	3,150.88	3,150.27	11.59	12.01	91.86	1,537.08	5,828.91	6,030.91	6,007.33	23.58	255.783		
3,300.00	3,295.65	3,154.46	3,153.86	11.61	12.02	91.86	1,537.06	5,828.97	6,030.99	6,007.38	23.60	255.499		
3,400.00	3,394.29	3,236.81	3,236.19	11.97	12.28	92.00	1,536.72	5,830.27	6,033.01	6,008.78	24.22	249.047		
3,500.00	3,492.94	3,323.56	3,322.93	12.33	12.56	92.14	1,536.53	5,831.86	6,035.35	6,010.49	24.86	242.770		
3,600.00	3,591.58	3,438.24	3,437.59	12.69	12.93	92.32	1,536.61	5,833.85	6,037.74	6,012.15	25.59	235.946		
3,700.00	3,690.22	3,550.89	3,550.24	13.05	13.29	92.50	1,536.94	5,835.32	6,039.79	6,013.47	26.31	229.524		
3,800.00	3,788.86	3,657.02	3,656.35	13.41	13.63	92.66	1,537.43	5,836.55	6,041.78	6,014.76	27.02	223.600		
3,900.00	3,887.50	3,755.76	3,755.08	13.77	13.95	92.81	1,538.19	5,837.53	6,043.74	6,016.04	27.70	218.151		
4,000.00	3,986.14	3,859.66	3,858.98	14.14	14.29	92.96	1,539.25	5,838.48	6,045.71	6,017.30	28.41	212.822		
4,100.00	4,084.78	3,958.42	3,957.73	14.50	14.61	93.11	1,540.26	5,839.34	6,047.68	6,018.59	29.10	207.857		
4,200.00	4,183.42	4,074.77	4,074.07	14.87	14.99	93.28	1,541.33	5,840.15	6,049.50	6,019.66	29.84	202.709		
4,300.00	4,282.06	4,177.09	4,176.39	15.24	15.33	93.43	1,542.20	5,840.76	6,051.25	6,020.70	30.55	198.099		
4,400.00	4,380.70	4,282.82	4,282.11	15.60	15.68	93.59	1,543.08	5,841.25	6,052.92	6,021.65	31.26	193.615		
4,500.00	4,479.34	4,383.67	4,382.95	15.97	16.01	93.74	1,543.91	5,841.67	6,054.56	6,022.60	31.96	189.418		
4,600.00	4,577.98	4,482.04	4,481.32	16.34	16.34	93.89	1,544.66	5,842.06	6,056.23	6,023.57	32.66	185.441		
4,700.00	4,676.62	4,582.53	4,581.81	16.71	16.67	94.04	1,545.45	5,842.47	6,057.95	6,024.59	33.36	181.587		
4,800.00	4,775.27	4,688.25	4,687.52	17.08	17.02	94.19	1,546.26	5,842.82	6,059.63	6,025.55	34.08	177.793		
4,900.00	4,873.91	4,797.17	4,796.44	17.45	17.39	94.36	1,547.07	5,843.02	6,061.21	6,026.40	34.82	174.095		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,897.54	4,896.81	17.82	17.72	94.50	1,547.90	5,843.08	6,062.73	6,027.21	35.52	170.681		
5,100.00	5,071.19	4,986.09	4,985.36	18.19	18.02	94.63	1,548.84	5,843.16	6,064.36	6,028.17	36.19	167.580		
5,200.00	5,169.83	5,060.40	5,059.65	18.56	18.27	94.74	1,549.88	5,843.39	6,066.30	6,029.49	36.81	164.811		
5,300.00	5,268.47	5,140.93	5,140.17	18.93	18.54	94.85	1,551.23	5,843.91	6,068.66	6,031.21	37.45	162.052		
5,400.00	5,367.11	5,228.17	5,227.39	19.31	18.83	94.97	1,552.88	5,844.65	6,071.29	6,033.17	38.11	159.294		
5,500.00	5,465.75	5,335.87	5,335.07	19.68	19.20	95.12	1,555.05	5,845.63	6,074.05	6,035.20	38.85	156.348		
5,600.00	5,564.39	5,445.88	5,445.06	20.05	19.57	95.27	1,557.18	5,846.33	6,076.55	6,036.96	39.59	153.471		
5,700.00	5,663.03	5,543.00	5,542.15	20.42	19.90	95.41	1,559.13	5,846.89	6,079.05	6,038.76	40.30	150.863		
5,800.00	5,761.67	5,659.99	5,659.12	20.80	20.29	95.57	1,561.06	5,847.53	6,081.49	6,040.43	41.07	148.094		
5,900.00	5,860.31	5,743.61	5,742.74	21.17	20.58	95.69	1,561.86	5,848.06	6,083.93	6,042.21	41.72	145.826		
6,000.00	5,958.96	5,863.00	5,862.13	21.54	20.98	95.88	1,561.91	5,848.96	6,086.37	6,043.87	42.50	143.212		
6,100.00	6,057.60	5,990.84	5,989.96	21.92	21.42	96.08	1,560.72	5,849.65	6,088.50	6,045.19	43.31	140.590		
6,200.00	6,156.24	6,136.22	6,135.32	22.29	21.91	96.33	1,558.68	5,849.56	6,089.99	6,045.82	44.17	137.869		
6,300.00	6,254.88	6,389.58	6,388.62	22.67	22.76	96.73	1,556.21	5,845.06	6,090.01	6,044.63	45.38	134.193		
6,400.00	6,353.52	6,473.36	6,472.35	23.04	23.05	96.87	1,554.88	5,842.56	6,088.75	6,042.70	46.04	132.244		
6,500.00	6,452.16	6,562.52	6,561.46	23.42	23.35	97.02	1,553.00	5,840.31	6,087.89	6,041.17	46.72	130.308		
6,600.00	6,550.80	6,642.29	6,641.19	23.79	23.62	97.16	1,551.06	5,838.39	6,087.16	6,039.80	47.37	128.511		
6,682.55	6,632.22	6,696.95	6,695.82	24.10	23.80	97.25	1,549.91	5,837.31	6,086.97	6,039.11	47.87	127.169		
6,700.00	6,649.44	6,711.90	6,710.77	24.17	23.85	97.27	1,549.62	5,837.04	6,086.98	6,038.99	47.98	126.861		
6,800.00	6,748.08	6,816.45	6,815.28	24.54	24.21	97.45	1,547.84	5,835.25	6,087.14	6,038.42	48.71	124.966		
6,900.00	6,846.72	6,957.73	6,956.51	24.92	24.69	97.68	1,545.46	5,831.79	6,086.54	6,036.98	49.56	122.815		
6,959.59	6,905.50	6,978.42	6,977.18	25.14	24.76	97.72	1,545.14	5,831.25	6,086.28	6,036.43	49.86	122.073		
7,000.00	6,945.36	6,978.42	6,977.18	25.29	24.76	97.72	1,545.14	5,831.25	6,086.42	6,036.40	50.01	121.696		
7,100.00	7,044.00	6,978.42	6,977.18	25.67	24.76	97.72	1,545.14	5,831.25	6,087.90	6,037.51	50.39	120.814		
7,200.00	7,142.65	6,978.42	6,977.18	26.04	24.76	97.72	1,545.14	5,831.25	6,091.03	6,040.27	50.76	120.003		
7,300.00	7,241.29	6,978.42	6,977.18	26.42	24.76	97.72	1,545.14	5,831.25	6,095.80	6,044.68	51.11	119.261		
7,400.00	7,339.93	6,978.42	6,977.18	26.79	24.76	97.72	1,545.14	5,831.25	6,102.20	6,050.74	51.46	118.587		
7,500.00	7,438.57	6,978.42	6,977.18	27.17	24.76	97.72	1,545.14	5,831.25	6,110.23	6,058.44	51.79	117.979		
7,571.77	7,509.37	6,978.42	6,977.18	27.44	24.76	97.72	1,545.14	5,831.25	6,116.99	6,064.97	52.02	117.582		
7,600.00	7,537.23	6,978.42	6,977.18	27.55	24.76	97.76	1,545.14	5,831.25	6,119.87	6,067.76	52.11	117.435		
7,700.00	7,636.18	6,978.42	6,977.18	27.92	24.76	97.92	1,545.14	5,831.25	6,130.86	6,078.44	52.42	116.956		
7,800.00	7,735.48	6,978.42	6,977.18	28.29	24.76	98.11	1,545.14	5,831.25	6,143.11	6,090.40	52.71	116.541		
7,900.00	7,835.05	6,978.42	6,977.18	28.65	24.76	98.31	1,545.14	5,831.25	6,156.59	6,103.60	52.99	116.189		
8,000.00	7,934.83	6,978.42	6,977.18	29.01	24.76	98.53	1,545.14	5,831.25	6,171.29	6,118.04	53.25	115.898		
8,100.00	8,034.74	6,978.42	6,977.18	29.36	24.76	98.77	1,545.14	5,831.25	6,187.19	6,133.69	53.49	115.666		
8,202.27	8,137.00	6,978.42	6,977.18	29.72	24.76	82.99	1,545.14	5,831.25	6,204.66	6,150.94	53.73	115.489		
8,300.00	8,234.73	6,978.42	6,977.18	30.06	24.76	82.99	1,545.14	5,831.25	6,222.69	6,168.75	53.94	115.372		
8,400.00	8,334.73	6,978.42	6,977.18	30.41	24.76	82.99	1,545.14	5,831.25	6,242.66	6,188.52	54.14	115.303		
8,500.00	8,434.73	6,978.42	6,977.18	30.75	24.76	82.99	1,545.14	5,831.25	6,264.17	6,209.83	54.34	115.285		
8,552.31	8,487.04	6,978.42	6,977.18	30.94	24.76	82.99	1,545.14	5,831.25	6,276.03	6,221.59	54.43	115.295		
8,600.00	8,534.68	6,978.42	6,977.18	31.10	24.76	-6.56	1,545.14	5,831.25	6,285.27	6,230.75	54.52	115.292		
8,650.00	8,584.26	6,978.42	6,977.18	31.26	24.76	-6.49	1,545.14	5,831.25	6,291.16	6,236.56	54.59	115.239		
8,700.00	8,633.10	6,978.42	6,977.18	31.43	24.76	-6.47	1,545.14	5,831.25	6,293.12	6,238.45	54.66	115.126		
8,750.00	8,680.83	6,978.42	6,977.18	31.58	24.76	-6.49	1,545.14	5,831.25	6,291.14	6,236.42	54.73	114.956		
8,800.00	8,727.09	6,978.42	6,977.18	31.74	24.76	-6.56	1,545.14	5,831.25	6,285.24	6,230.46	54.78	114.730		
8,850.00	8,771.52	6,978.42	6,977.18	31.89	24.76	-6.68	1,545.14	5,831.25	6,275.45	6,220.62	54.83	114.453		
8,900.00	8,813.78	6,978.42	6,977.18	32.04	24.76	-6.84	1,545.14	5,831.25	6,261.83	6,206.96	54.87	114.125		
8,950.00	8,853.56	6,978.42	6,977.18	32.18	24.76	-7.07	1,545.14	5,831.25	6,244.45	6,189.55	54.90	113.749		
9,000.00	8,890.55	6,978.42	6,977.18	32.32	24.76	-7.36	1,545.14	5,831.25	6,223.41	6,168.50	54.92	113.326		
9,050.00	8,924.46	6,978.42	6,977.18	32.47	24.76	-7.73	1,545.14	5,831.25	6,198.85	6,143.92	54.93	112.859		
9,100.00	8,955.05	6,978.42	6,977.18	32.63	24.76	-8.20	1,545.14	5,831.25	6,170.90	6,115.97	54.93	112.349		
9,150.00	8,982.08	6,978.42	6,977.18	32.79	24.76	-8.78	1,545.14	5,831.25	6,139.73	6,084.81	54.92	111.797		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	6,978.42	6,977.18	32.97	24.76	-9.53	1,545.14	5,831.25	6,105.54	6,050.63	54.90	111.205		
9,250.00	9,024.65	6,978.42	6,977.18	33.17	24.76	-10.49	1,545.14	5,831.25	6,068.53	6,013.65	54.88	110.575		
9,300.00	9,039.87	6,978.42	6,977.18	33.38	24.76	-11.74	1,545.14	5,831.25	6,028.94	5,974.09	54.85	109.907		
9,350.00	9,050.89	6,978.42	6,977.18	33.62	24.76	-13.42	1,545.14	5,831.25	5,987.02	5,932.20	54.82	109.204		
9,400.00	9,057.61	6,978.42	6,977.18	33.87	24.76	-15.75	1,545.14	5,831.25	5,943.05	5,888.25	54.79	108.467		
9,452.31	9,060.00	6,978.42	6,977.18	34.15	24.76	-19.34	1,545.14	5,831.25	5,895.16	5,840.40	54.76	107.662		
9,500.00	9,060.00	6,978.42	6,977.18	34.42	24.76	-19.34	1,545.14	5,831.25	5,850.75	5,796.02	54.72	106.916		
9,600.00	9,060.00	6,978.42	6,977.18	35.09	24.76	-19.34	1,545.14	5,831.25	5,757.80	5,703.15	54.65	105.360		
9,700.00	9,060.00	6,978.42	6,977.18	35.86	24.76	-19.34	1,545.14	5,831.25	5,665.09	5,610.52	54.58	103.798		
9,800.00	9,060.00	6,978.42	6,977.18	36.72	24.76	-19.34	1,545.14	5,831.25	5,572.64	5,518.13	54.51	102.231		
9,900.00	9,060.00	6,978.42	6,977.18	37.69	24.76	-19.34	1,545.14	5,831.25	5,480.45	5,426.00	54.45	100.658		
10,000.00	9,060.00	6,978.42	6,977.18	38.73	24.76	-19.34	1,545.14	5,831.25	5,388.54	5,334.15	54.39	99.078		
10,100.00	9,060.00	6,978.42	6,977.18	39.86	24.76	-19.34	1,545.14	5,831.25	5,296.92	5,242.59	54.33	97.493		
10,140.22	9,060.00	6,978.42	6,977.18	40.33	24.76	-19.34	1,545.14	5,831.25	5,260.15	5,205.84	54.31	96.853		
10,200.00	9,060.00	6,978.42	6,977.18	41.05	24.76	-21.81	1,545.14	5,831.25	5,205.70	5,151.42	54.28	95.899		
10,300.00	9,060.00	6,978.42	6,977.18	42.31	24.76	-25.68	1,545.14	5,831.25	5,115.32	5,061.07	54.25	94.292		
10,400.00	9,060.00	6,978.42	6,977.18	43.64	24.76	-29.21	1,545.14	5,831.25	5,025.98	4,971.74	54.24	92.663		
10,507.23	9,060.00	6,978.42	6,977.18	45.11	24.76	-32.63	1,545.14	5,831.25	4,931.53	4,877.27	54.26	90.888		
10,600.00	9,060.00	6,978.42	6,977.18	46.43	24.76	-29.76	1,545.14	5,831.25	4,850.30	4,796.00	54.30	89.328		
10,700.00	9,060.00	6,978.42	6,977.18	47.91	24.76	-26.51	1,545.14	5,831.25	4,762.39	4,708.05	54.34	87.638		
10,800.00	9,060.00	6,978.42	6,977.18	49.42	24.76	-23.12	1,545.14	5,831.25	4,674.23	4,619.84	54.38	85.949		
10,900.00	9,060.00	6,978.42	6,977.18	50.97	24.76	-19.60	1,545.14	5,831.25	4,585.89	4,531.47	54.42	84.269		
11,000.00	9,060.00	6,978.42	6,977.18	52.55	24.76	-16.00	1,545.14	5,831.25	4,497.48	4,443.03	54.44	82.607		
11,100.00	9,060.00	6,978.42	6,977.18	54.14	24.76	-12.34	1,545.14	5,831.25	4,409.10	4,354.65	54.45	80.969		
11,207.23	9,060.00	6,978.42	6,977.18	55.87	24.76	-8.39	1,545.14	5,831.25	4,314.51	4,260.07	54.44	79.246		
11,300.00	9,060.00	6,978.42	6,977.18	57.39	24.76	-11.73	1,545.14	5,831.25	4,233.14	4,178.70	54.44	77.757		
11,400.00	9,060.00	6,978.42	6,977.18	59.06	24.76	-15.13	1,545.14	5,831.25	4,146.30	4,091.83	54.47	76.119		
11,506.63	9,060.00	6,978.42	6,977.18	60.88	24.76	-18.53	1,545.14	5,831.25	4,054.90	4,000.34	54.55	74.331		
11,600.00	9,060.00	6,978.42	6,977.18	62.49	24.76	-18.53	1,545.14	5,831.25	3,975.76	3,921.10	54.66	72.742		
11,700.00	9,060.00	6,978.42	6,977.18	64.24	24.76	-18.53	1,545.14	5,831.25	3,891.70	3,836.91	54.79	71.034		
11,800.00	9,060.00	6,978.42	6,977.18	66.01	24.76	-18.53	1,545.14	5,831.25	3,808.41	3,753.47	54.94	69.319		
11,900.00	9,060.00	6,978.42	6,977.18	67.79	24.76	-18.53	1,545.14	5,831.25	3,725.95	3,670.83	55.12	67.600		
12,000.00	9,060.00	6,978.42	6,977.18	69.58	24.76	-18.53	1,545.14	5,831.25	3,644.36	3,589.04	55.32	65.876		
12,100.00	9,060.00	6,978.42	6,977.18	71.39	24.76	-18.53	1,545.14	5,831.25	3,563.71	3,508.16	55.55	64.149		
12,200.00	9,060.00	6,978.42	6,977.18	73.21	24.76	-18.53	1,545.14	5,831.25	3,484.07	3,428.25	55.82	62.420		
12,300.00	9,060.00	6,978.42	6,977.18	75.05	24.76	-18.53	1,545.14	5,831.25	3,405.50	3,349.39	56.11	60.692		
12,400.00	9,060.00	6,978.42	6,977.18	76.89	24.76	-18.53	1,545.14	5,831.25	3,328.08	3,271.64	56.44	58.967		
12,500.00	9,060.00	6,978.42	6,977.18	78.74	24.76	-18.53	1,545.14	5,831.25	3,251.89	3,195.08	56.80	57.247		
12,600.00	9,060.00	6,978.42	6,977.18	80.61	24.76	-18.53	1,545.14	5,831.25	3,177.02	3,119.81	57.21	55.534		
12,700.00	9,060.00	6,978.42	6,977.18	82.48	24.76	-18.53	1,545.14	5,831.25	3,103.57	3,045.92	57.65	53.833		
12,800.00	9,060.00	6,978.42	6,977.18	84.36	24.76	-18.53	1,545.14	5,831.25	3,031.64	2,973.50	58.14	52.146		
12,900.00	9,060.00	6,978.42	6,977.18	86.24	24.76	-18.53	1,545.14	5,831.25	2,961.33	2,902.67	58.67	50.478		
13,000.00	9,060.00	6,978.42	6,977.18	88.14	24.76	-18.53	1,545.14	5,831.25	2,892.78	2,833.54	59.24	48.833		
13,100.00	9,060.00	6,978.42	6,977.18	90.04	24.76	-18.53	1,545.14	5,831.25	2,826.10	2,766.25	59.86	47.214		
13,200.00	9,060.00	6,978.42	6,977.18	91.94	24.76	-18.53	1,545.14	5,831.25	2,761.44	2,700.92	60.52	45.628		
13,300.00	9,060.00	6,978.42	6,977.18	93.86	24.76	-18.53	1,545.14	5,831.25	2,698.93	2,637.70	61.23	44.078		
13,400.00	9,060.00	6,978.42	6,977.18	95.77	24.76	-18.53	1,545.14	5,831.25	2,638.73	2,576.74	61.99	42.570		
13,500.00	9,060.00	6,978.42	6,977.18	97.70	24.76	-18.53	1,545.14	5,831.25	2,581.00	2,518.22	62.78	41.109		
13,600.00	9,060.00	6,978.42	6,977.18	99.62	24.76	-18.53	1,545.14	5,831.25	2,525.92	2,462.29	63.63	39.699		
13,700.00	9,060.00	6,978.42	6,977.18	101.56	24.76	-18.53	1,545.14	5,831.25	2,473.65	2,409.14	64.51	38.346		
13,800.00	9,060.00	6,978.42	6,977.18	103.49	24.76	-18.53	1,545.14	5,831.25	2,424.38	2,358.95	65.43	37.055		
13,900.00	9,060.00	6,978.42	6,977.18	105.43	24.76	-18.53	1,545.14	5,831.25	2,378.30	2,311.92	66.38	35.829		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	6,978.42	6,977.18	107.38	24.76	-18.53	1,545.14	5,831.25	2,335.59	2,268.23	67.36	34.672		
14,100.00	9,060.00	6,978.42	6,977.18	109.33	24.76	-18.53	1,545.14	5,831.25	2,296.45	2,228.08	68.37	33.588		
14,200.00	9,060.00	6,978.42	6,977.18	111.28	24.76	-18.53	1,545.14	5,831.25	2,261.05	2,191.65	69.40	32.580		
14,300.00	9,060.00	6,978.42	6,977.18	113.23	24.76	-18.53	1,545.14	5,831.25	2,229.58	2,159.14	70.44	31.650		
14,400.00	9,060.00	6,978.42	6,977.18	115.19	24.76	-18.53	1,545.14	5,831.25	2,202.21	2,130.70	71.50	30.800		
14,500.00	9,060.00	6,978.42	6,977.18	117.15	24.76	-18.53	1,545.14	5,831.25	2,179.08	2,106.51	72.56	30.029		
14,600.00	9,060.00	6,978.42	6,977.18	119.11	24.76	-18.53	1,545.14	5,831.25	2,160.34	2,086.71	73.63	29.340		
14,700.00	9,060.00	6,978.42	6,977.18	121.08	24.76	-18.53	1,545.14	5,831.25	2,146.10	2,071.41	74.69	28.732		
14,800.00	9,060.00	6,978.42	6,977.18	123.05	24.76	-18.53	1,545.14	5,831.25	2,136.45	2,060.70	75.75	28.204		
14,900.00	9,060.00	6,978.42	6,977.18	125.02	24.76	-18.53	1,545.14	5,831.25	2,131.46	2,054.66	76.79	27.756		
14,956.60	9,060.00	6,978.42	6,977.18	126.14	24.76	-18.53	1,545.14	5,831.25	2,130.71	2,053.33	77.37	27.538	CC, ES	
15,000.00	9,060.00	6,978.42	6,977.18	126.99	24.76	-18.53	1,545.14	5,831.25	2,131.15	2,053.33	77.81	27.387		
15,100.00	9,060.00	6,978.42	6,977.18	128.97	24.76	-18.53	1,545.14	5,831.25	2,135.53	2,056.72	78.81	27.098		
15,200.00	9,060.00	6,978.42	6,977.18	130.95	24.76	-18.53	1,545.14	5,831.25	2,144.56	2,064.80	79.76	26.887		
15,300.00	9,060.00	6,978.42	6,977.18	132.93	24.76	-18.53	1,545.14	5,831.25	2,158.20	2,077.53	80.67	26.753		
15,400.00	9,060.00	6,978.42	6,977.18	134.91	24.76	-18.53	1,545.14	5,831.25	2,176.35	2,094.83	81.53	26.695	SF	
15,500.00	9,060.00	6,978.42	6,977.18	136.89	24.76	-18.53	1,545.14	5,831.25	2,198.91	2,116.59	82.32	26.713		
15,600.00	9,060.00	6,978.42	6,977.18	138.88	24.76	-18.53	1,545.14	5,831.25	2,225.73	2,142.70	83.03	26.805		
15,700.00	9,060.00	6,978.42	6,977.18	140.86	24.76	-18.53	1,545.14	5,831.25	2,256.67	2,172.99	83.68	26.968		
15,800.00	9,060.00	6,978.42	6,977.18	142.85	24.76	-18.53	1,545.14	5,831.25	2,291.56	2,207.31	84.25	27.200		
15,900.00	9,060.00	6,978.42	6,977.18	144.84	24.76	-18.53	1,545.14	5,831.25	2,330.22	2,245.48	84.74	27.499		
16,000.00	9,060.00	6,978.42	6,977.18	146.83	24.76	-18.53	1,545.14	5,831.25	2,372.47	2,287.32	85.15	27.862		
16,100.00	9,060.00	6,978.42	6,977.18	148.83	24.76	-18.53	1,545.14	5,831.25	2,418.12	2,332.62	85.49	28.285		
16,200.00	9,060.00	6,978.42	6,977.18	150.82	24.76	-18.53	1,545.14	5,831.25	2,466.97	2,381.21	85.76	28.766		
16,300.00	9,060.00	6,978.42	6,977.18	152.82	24.76	-18.53	1,545.14	5,831.25	2,518.86	2,432.89	85.97	29.301		
16,400.00	9,060.00	6,978.42	6,977.18	154.81	24.76	-18.53	1,545.14	5,831.25	2,573.58	2,487.47	86.11	29.887		
16,500.00	9,060.00	6,978.42	6,977.18	156.81	24.76	-18.53	1,545.14	5,831.25	2,630.97	2,544.77	86.20	30.521		
16,600.00	9,060.00	6,978.42	6,977.18	158.81	24.76	-18.53	1,545.14	5,831.25	2,690.85	2,604.61	86.24	31.201		
16,700.00	9,060.00	6,978.42	6,977.18	160.81	24.76	-18.53	1,545.14	5,831.25	2,753.07	2,666.82	86.24	31.923		
16,800.00	9,060.00	6,978.42	6,977.18	162.81	24.76	-18.53	1,545.14	5,831.25	2,817.45	2,731.25	86.20	32.684		
16,900.00	9,060.00	6,978.42	6,977.18	164.82	24.76	-18.53	1,545.14	5,831.25	2,883.87	2,797.74	86.13	33.483		
17,000.00	9,060.00	6,978.42	6,977.18	166.82	24.76	-18.53	1,545.14	5,831.25	2,952.19	2,866.16	86.03	34.315		
17,100.00	9,060.00	6,978.42	6,977.18	168.82	24.76	-18.53	1,545.14	5,831.25	3,022.27	2,936.36	85.91	35.180		
17,200.00	9,060.00	6,978.42	6,977.18	170.83	24.76	-18.53	1,545.14	5,831.25	3,093.99	3,008.22	85.77	36.075		
17,300.00	9,060.00	6,978.42	6,977.18	172.84	24.76	-18.53	1,545.14	5,831.25	3,167.25	3,081.64	85.61	36.998		
17,400.00	9,060.00	6,978.42	6,977.18	174.84	24.76	-18.53	1,545.14	5,831.25	3,241.93	3,156.50	85.43	37.946		
17,500.00	9,060.00	6,978.42	6,977.18	176.85	24.76	-18.53	1,545.14	5,831.25	3,317.95	3,232.70	85.25	38.919		
17,600.00	9,060.00	6,978.42	6,977.18	178.86	24.76	-18.53	1,545.14	5,831.25	3,395.22	3,310.15	85.06	39.914		
17,700.00	9,060.00	6,978.42	6,977.18	180.87	24.76	-18.53	1,545.14	5,831.25	3,473.64	3,388.77	84.87	40.931		
17,800.00	9,060.00	6,978.42	6,977.18	182.88	24.76	-18.53	1,545.14	5,831.25	3,553.15	3,468.48	84.67	41.966		
17,900.00	9,060.00	6,978.42	6,977.18	184.89	24.76	-18.53	1,545.14	5,831.25	3,633.67	3,549.20	84.46	43.020		
18,000.00	9,060.00	6,978.42	6,977.18	186.90	24.76	-18.53	1,545.14	5,831.25	3,715.13	3,630.87	84.26	44.091		
18,100.00	9,060.00	6,978.42	6,977.18	188.92	24.76	-18.53	1,545.14	5,831.25	3,797.49	3,713.43	84.06	45.177		
18,200.00	9,060.00	6,978.42	6,977.18	190.93	24.76	-18.53	1,545.14	5,831.25	3,880.67	3,796.81	83.86	46.277		
18,300.00	9,060.00	6,978.42	6,977.18	192.94	24.76	-18.53	1,545.14	5,831.25	3,964.63	3,880.97	83.66	47.392		
18,400.00	9,060.00	6,978.42	6,977.18	194.96	24.76	-18.53	1,545.14	5,831.25	4,049.31	3,965.85	83.46	48.518		
18,500.00	9,060.00	6,978.42	6,977.18	196.97	24.76	-18.53	1,545.14	5,831.25	4,134.69	4,051.42	83.27	49.656		
18,600.00	9,060.00	6,978.42	6,977.18	198.99	24.76	-18.53	1,545.14	5,831.25	4,220.70	4,137.62	83.08	50.805		
18,700.00	9,060.00	6,978.42	6,977.18	201.00	24.76	-18.53	1,545.14	5,831.25	4,307.32	4,224.43	82.89	51.964		
18,800.00	9,060.00	6,978.42	6,977.18	203.02	24.76	-18.53	1,545.14	5,831.25	4,394.50	4,311.79	82.71	53.132		
18,900.00	9,060.00	6,978.42	6,977.18	205.04	24.76	-18.53	1,545.14	5,831.25	4,482.23	4,399.69	82.53	54.309		
19,000.00	9,060.00	6,978.42	6,977.18	207.06	24.76	-18.53	1,545.14	5,831.25	4,570.45	4,488.09	82.36	55.493		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,100.00	9,060.00	6,978.42	6,977.18	209.07	24.76	-18.53	1,545.14	5,831.25	4,659.15	4,576.96	82.19	56.684	
19,200.00	9,060.00	6,978.42	6,977.18	211.09	24.76	-18.53	1,545.14	5,831.25	4,748.30	4,666.27	82.03	57.883	
19,300.00	9,060.00	6,978.42	6,977.18	213.11	24.76	-18.53	1,545.14	5,831.25	4,837.88	4,756.00	81.88	59.087	
19,400.00	9,060.00	6,978.42	6,977.18	215.13	24.76	-18.53	1,545.14	5,831.25	4,927.85	4,846.13	81.73	60.297	
19,500.32	9,060.00	6,978.42	6,977.18	217.16	24.76	-18.53	1,545.14	5,831.25	5,018.50	4,936.92	81.58	61.516	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	102.62	-1,573.01	7,026.75	7,201.26				
100.00	100.00	12.60	7.40	0.52	5.03	102.62	-1,573.01	7,026.75	7,200.67	7,195.12	5.54	1,299.092	
200.00	200.00	107.40	107.40	0.70	5.23	102.62	-1,573.01	7,026.75	7,200.67	7,194.73	5.93	1,213.433	
300.00	300.00	207.40	207.40	0.99	5.83	102.62	-1,573.01	7,026.75	7,200.67	7,193.85	6.82	1,056.417	
400.00	400.00	307.40	307.40	1.31	6.71	102.62	-1,573.01	7,026.75	7,200.67	7,192.65	8.02	897.697	
500.00	500.00	407.40	407.40	1.65	7.79	102.62	-1,573.01	7,026.75	7,200.67	7,191.24	9.43	763.483	
600.00	600.00	507.40	507.40	1.99	8.98	102.62	-1,573.01	7,026.75	7,200.67	7,189.70	10.97	656.346	
700.00	700.00	607.40	607.40	2.34	10.25	102.62	-1,573.01	7,026.75	7,200.67	7,188.07	12.59	571.756	
800.00	800.00	707.40	707.40	2.69	11.58	102.62	-1,573.01	7,026.75	7,200.67	7,186.39	14.27	504.502	
900.00	900.00	807.40	807.40	3.04	12.95	102.62	-1,573.01	7,026.75	7,200.67	7,184.68	15.99	450.316	
1,000.00	1,000.00	907.40	907.40	3.40	14.34	102.62	-1,573.01	7,026.75	7,200.67	7,182.93	17.74	406.011	
1,100.00	1,100.00	1,007.40	1,007.40	3.75	15.75	102.62	-1,573.01	7,026.75	7,200.67	7,181.17	19.50	369.260	
1,200.00	1,200.00	1,107.40	1,107.40	4.11	17.17	102.62	-1,573.01	7,026.75	7,200.67	7,179.39	21.28	338.368	
1,300.00	1,300.00	1,207.40	1,207.40	4.46	18.61	102.62	-1,573.01	7,026.75	7,200.67	7,177.59	23.07	312.088	
1,400.00	1,400.00	1,307.40	1,307.40	4.82	20.05	102.62	-1,573.01	7,026.75	7,200.67	7,175.79	24.87	289.488	
1,500.00	1,500.00	1,407.40	1,407.40	5.18	21.51	102.62	-1,573.01	7,026.75	7,200.67	7,173.98	26.68	269.867	
1,600.00	1,600.00	1,507.40	1,507.40	5.53	22.96	102.62	-1,573.01	7,026.75	7,200.67	7,172.17	28.50	252.683	
1,700.00	1,700.00	1,607.40	1,607.40	5.89	24.43	102.62	-1,573.01	7,026.75	7,200.67	7,170.35	30.32	237.519	
1,800.00	1,800.00	1,707.40	1,707.40	6.25	25.89	102.62	-1,573.01	7,026.75	7,200.67	7,168.53	32.14	224.044	
1,900.00	1,900.00	1,807.40	1,807.40	6.61	27.36	102.62	-1,573.01	7,026.75	7,200.67	7,166.70	33.97	211.994	
2,000.00	2,000.00	1,907.40	1,907.40	6.96	28.83	102.62	-1,573.01	7,026.75	7,200.67	7,164.87	35.80	201.158	
2,100.00	2,100.00	2,007.40	2,007.40	7.32	30.31	102.62	-1,573.01	7,026.75	7,200.67	7,163.04	37.63	191.364	
2,200.00	2,200.00	2,107.40	2,107.40	7.68	31.78	102.62	-1,573.01	7,026.75	7,200.67	7,161.20	39.46	182.469	
2,300.00	2,300.00	2,207.40	2,207.40	8.04	33.26	102.62	-1,573.01	7,026.75	7,200.67	7,159.37	41.30	174.356	
2,350.00	2,350.00	2,257.40	2,257.40	8.22	34.00	102.62	-1,573.01	7,026.75	7,200.67	7,158.45	42.22	170.562	
2,400.00	2,400.00	2,307.40	2,307.40	8.39	34.74	118.66	-1,573.01	7,026.75	7,200.77	7,157.64	43.14	166.932	
2,500.00	2,499.98	2,407.38	2,407.38	8.75	36.22	118.66	-1,573.01	7,026.75	7,201.61	7,156.63	44.97	160.129	
2,600.00	2,599.92	2,507.32	2,507.32	9.11	37.71	118.67	-1,573.01	7,026.75	7,203.28	7,156.47	46.81	153.879	
2,700.00	2,699.78	2,607.18	2,607.18	9.47	39.19	118.69	-1,573.01	7,026.75	7,205.80	7,157.15	48.65	148.119	
2,800.00	2,799.54	2,706.94	2,706.94	9.82	40.67	118.71	-1,573.01	7,026.75	7,209.15	7,158.67	50.48	142.798	
2,900.00	2,899.16	2,806.56	2,806.56	10.18	42.15	118.73	-1,573.01	7,026.75	7,213.35	7,161.03	52.32	137.871	
3,000.00	2,998.61	2,906.01	2,906.01	10.54	43.63	118.76	-1,573.01	7,026.75	7,218.40	7,164.25	54.15	133.298	
3,100.00	3,097.86	3,005.26	3,005.26	10.89	45.10	118.79	-1,573.01	7,026.75	7,224.30	7,168.32	55.98	129.045	
3,200.00	3,196.89	3,104.29	3,104.29	11.25	46.57	118.83	-1,573.01	7,026.75	7,231.06	7,173.25	57.81	125.081	
3,295.74	3,291.45	3,198.85	3,198.85	11.59	47.98	118.87	-1,573.01	7,026.75	7,238.34	7,178.78	59.56	121.534	
3,300.00	3,295.65	3,203.05	3,203.05	11.61	48.04	118.87	-1,573.01	7,026.75	7,238.68	7,179.04	59.64	121.381	
3,400.00	3,394.29	3,301.69	3,301.69	11.97	49.51	118.98	-1,573.01	7,026.75	7,246.71	7,185.25	61.46	117.908	
3,500.00	3,492.94	3,400.34	3,400.34	12.33	50.98	119.10	-1,573.01	7,026.75	7,254.77	7,191.48	63.29	114.634	
3,600.00	3,591.58	3,498.98	3,498.98	12.69	52.45	119.21	-1,573.01	7,026.75	7,262.86	7,197.74	65.11	111.540	
3,700.00	3,690.22	3,597.62	3,597.62	13.05	53.92	119.32	-1,573.01	7,026.75	7,270.97	7,204.03	66.94	108.614	
3,800.00	3,788.86	3,696.26	3,696.26	13.41	55.39	119.43	-1,573.01	7,026.75	7,279.12	7,210.34	68.77	105.842	
3,900.00	3,887.50	3,794.90	3,794.90	13.77	56.86	119.54	-1,573.01	7,026.75	7,287.29	7,216.68	70.61	103.212	
4,000.00	3,986.14	3,893.54	3,893.54	14.14	58.33	119.65	-1,573.01	7,026.75	7,295.49	7,223.05	72.44	100.714	
4,100.00	4,084.78	3,992.18	3,992.18	14.50	59.80	119.76	-1,573.01	7,026.75	7,303.72	7,229.45	74.27	98.338	
4,200.00	4,183.42	4,090.82	4,090.82	14.87	61.27	119.88	-1,573.01	7,026.75	7,311.97	7,235.87	76.11	96.076	
4,300.00	4,282.06	4,189.46	4,189.46	15.24	62.74	119.99	-1,573.01	7,026.75	7,320.26	7,242.31	77.94	93.920	
4,400.00	4,380.70	4,288.10	4,288.10	15.60	64.21	120.10	-1,573.01	7,026.75	7,328.57	7,248.79	79.78	91.862	
4,500.00	4,479.34	4,386.74	4,386.74	15.97	65.69	120.21	-1,573.01	7,026.75	7,336.90	7,255.29	81.61	89.897	
4,600.00	4,577.98	4,485.38	4,485.38	16.34	67.16	120.32	-1,573.01	7,026.75	7,345.27	7,261.82	83.45	88.017	
4,700.00	4,676.62	4,584.02	4,584.02	16.71	68.63	120.43	-1,573.01	7,026.75	7,353.66	7,268.37	85.29	86.218	
4,800.00	4,775.27	4,682.67	4,682.67	17.08	70.10	120.53	-1,573.01	7,026.75	7,362.08	7,274.95	87.13	84.495	
4,900.00	4,873.91	4,781.31	4,781.31	17.45	71.57	120.64	-1,573.01	7,026.75	7,370.53	7,281.56	88.97	82.843	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,879.95	4,879.95	17.82	73.05	120.75	-1,573.01	7,026.75	7,379.00	7,288.19	90.81	81.258		
5,100.00	5,071.19	4,978.59	4,978.59	18.19	74.52	120.86	-1,573.01	7,026.75	7,387.50	7,294.85	92.65	79.735		
5,200.00	5,169.83	5,077.23	5,077.23	18.56	75.99	120.97	-1,573.01	7,026.75	7,396.03	7,301.54	94.49	78.272		
5,300.00	5,268.47	5,175.87	5,175.87	18.93	77.46	121.08	-1,573.01	7,026.75	7,404.58	7,308.25	96.33	76.864		
5,400.00	5,367.11	5,274.51	5,274.51	19.31	78.94	121.18	-1,573.01	7,026.75	7,413.16	7,314.99	98.18	75.510		
5,500.00	5,465.75	5,373.15	5,373.15	19.68	80.41	121.29	-1,573.01	7,026.75	7,421.77	7,321.75	100.02	74.205		
5,600.00	5,564.39	5,471.79	5,471.79	20.05	81.88	121.40	-1,573.01	7,026.75	7,430.40	7,328.54	101.86	72.947		
5,700.00	5,663.03	5,570.43	5,570.43	20.42	83.36	121.51	-1,573.01	7,026.75	7,439.06	7,335.36	103.70	71.734		
5,800.00	5,761.67	5,669.07	5,669.07	20.80	84.83	121.61	-1,573.01	7,026.75	7,447.75	7,342.20	105.55	70.563		
5,900.00	5,860.31	5,767.71	5,767.71	21.17	86.30	121.72	-1,573.01	7,026.75	7,456.46	7,349.07	107.39	69.433		
6,000.00	5,958.96	5,866.36	5,866.36	21.54	87.78	121.83	-1,573.01	7,026.75	7,465.19	7,355.96	109.23	68.341		
6,100.00	6,057.60	5,965.00	5,965.00	21.92	89.25	121.93	-1,573.01	7,026.75	7,473.96	7,362.88	111.08	67.285		
6,200.00	6,156.24	6,063.64	6,063.64	22.29	90.72	122.04	-1,573.01	7,026.75	7,482.75	7,369.82	112.92	66.264		
6,300.00	6,254.88	6,162.28	6,162.28	22.67	92.20	122.14	-1,573.01	7,026.75	7,491.56	7,376.79	114.77	65.275		
6,400.00	6,353.52	6,260.92	6,260.92	23.04	93.67	122.25	-1,573.01	7,026.75	7,500.40	7,383.79	116.61	64.318		
6,500.00	6,452.16	6,359.56	6,359.56	23.42	95.15	122.35	-1,573.01	7,026.75	7,509.27	7,390.81	118.46	63.391		
6,600.00	6,550.80	6,458.20	6,458.20	23.79	96.62	122.46	-1,573.01	7,026.75	7,518.16	7,397.86	120.30	62.493		
6,700.00	6,649.44	6,556.84	6,556.84	24.17	98.09	122.56	-1,573.01	7,026.75	7,527.08	7,404.93	122.15	61.621		
6,800.00	6,748.08	6,655.48	6,655.48	24.54	99.57	122.67	-1,573.01	7,026.75	7,536.02	7,412.02	124.00	60.776		
6,900.00	6,846.72	6,754.12	6,754.12	24.92	101.04	122.77	-1,573.01	7,026.75	7,544.99	7,419.14	125.84	59.956		
7,000.00	6,945.36	6,852.76	6,852.76	25.29	102.52	122.87	-1,573.01	7,026.75	7,553.98	7,426.29	127.69	59.159		
7,100.00	7,044.00	6,951.40	6,951.40	25.67	103.99	122.98	-1,573.01	7,026.75	7,563.00	7,433.46	129.54	58.386		
7,200.00	7,142.65	7,050.05	7,050.05	26.04	105.47	123.08	-1,573.01	7,026.75	7,572.04	7,440.66	131.38	57.634		
7,300.00	7,241.29	7,148.69	7,148.69	26.42	106.94	123.18	-1,573.01	7,026.75	7,581.11	7,447.88	133.23	56.903		
7,400.00	7,339.93	7,247.33	7,247.33	26.79	108.41	123.29	-1,573.01	7,026.75	7,590.20	7,455.12	135.08	56.192		
7,500.00	7,438.57	7,345.97	7,345.97	27.17	109.89	123.39	-1,573.01	7,026.75	7,599.31	7,462.39	136.92	55.501		
7,571.77	7,509.37	7,416.77	7,416.77	27.44	110.95	123.46	-1,573.01	7,026.75	7,605.87	7,467.62	138.25	55.016		
7,600.00	7,537.23	7,444.63	7,444.63	27.55	111.36	123.52	-1,573.01	7,026.75	7,608.40	7,469.63	138.77	54.827		
7,700.00	7,636.18	7,543.58	7,543.58	27.92	112.84	123.71	-1,573.01	7,026.75	7,616.43	7,475.81	140.62	54.163		
7,800.00	7,735.48	7,642.88	7,642.88	28.29	114.33	123.87	-1,573.01	7,026.75	7,623.04	7,480.57	142.47	53.506		
7,900.00	7,835.05	7,742.45	7,742.45	28.65	115.82	123.99	-1,573.01	7,026.75	7,628.19	7,483.87	144.32	52.856		
8,000.00	7,934.83	7,842.23	7,842.23	29.01	117.31	124.08	-1,573.01	7,026.75	7,631.89	7,485.72	146.17	52.212		
8,100.00	8,034.74	7,942.14	7,942.14	29.36	118.80	124.13	-1,573.01	7,026.75	7,634.13	7,486.11	148.02	51.575		
8,202.27	8,137.00	8,044.40	8,044.40	29.72	120.33	108.11	-1,573.01	7,026.75	7,634.89	7,484.99	149.91	50.931		
8,300.00	8,234.73	8,142.13	8,142.13	30.06	121.79	108.11	-1,573.01	7,026.75	7,634.89	7,483.19	151.71	50.327		
8,400.00	8,334.73	8,242.13	8,242.13	30.41	123.29	108.11	-1,573.01	7,026.75	7,634.89	7,481.35	153.55	49.723		
8,500.00	8,434.73	8,342.13	8,342.13	30.75	124.78	108.11	-1,573.01	7,026.75	7,634.89	7,479.50	155.39	49.134		
8,552.31	8,487.04	8,394.44	8,394.44	30.94	125.56	108.11	-1,573.01	7,026.75	7,634.89	7,478.54	156.35	48.831		
8,600.00	8,534.68	8,442.08	8,442.08	31.10	126.28	18.51	-1,573.01	7,026.75	7,633.01	7,475.79	157.23	48.548		
8,650.00	8,584.26	8,491.66	8,491.66	31.26	127.02	18.72	-1,573.01	7,026.75	7,627.01	7,468.89	158.13	48.233		
8,700.00	8,633.10	8,540.50	8,540.50	31.43	127.75	19.08	-1,573.01	7,026.75	7,616.94	7,457.93	159.01	47.902		
8,750.00	8,680.83	8,588.23	8,588.23	31.58	128.46	19.60	-1,573.01	7,026.75	7,602.87	7,443.00	159.87	47.557		
8,800.00	8,727.09	8,634.49	8,634.49	31.74	129.15	20.31	-1,573.01	7,026.75	7,584.91	7,424.21	160.70	47.200		
8,850.00	8,771.52	8,678.92	8,678.92	31.89	129.82	21.22	-1,573.01	7,026.75	7,563.21	7,401.72	161.49	46.834		
8,900.00	8,813.78	8,721.18	8,721.18	32.04	130.45	22.39	-1,573.01	7,026.75	7,537.92	7,375.69	162.24	46.463		
8,950.00	8,853.56	8,760.96	8,760.96	32.18	131.04	23.85	-1,573.01	7,026.75	7,509.26	7,346.32	162.93	46.088		
9,000.00	8,890.55	8,797.95	8,797.95	32.32	131.60	25.68	-1,573.01	7,026.75	7,477.43	7,313.85	163.58	45.711		
9,050.00	8,924.46	8,831.86	8,831.86	32.47	132.10	27.99	-1,573.01	7,026.75	7,442.70	7,278.53	164.17	45.335		
9,100.00	8,955.05	8,862.45	8,862.45	32.63	132.56	30.89	-1,573.01	7,026.75	7,405.32	7,240.62	164.70	44.963		
9,150.00	8,982.08	8,889.48	8,889.48	32.79	132.97	34.59	-1,573.01	7,026.75	7,365.58	7,200.41	165.17	44.595		
9,200.00	9,005.34	8,912.74	8,912.74	32.97	133.31	39.34	-1,573.01	7,026.75	7,323.80	7,158.23	165.57	44.234		
9,250.00	9,024.65	8,932.05	8,932.05	33.17	133.60	45.49	-1,573.01	7,026.75	7,280.30	7,114.39	165.91	43.881		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,947.27	8,947.27	33.38	133.83	53.44	-1,573.01	7,026.75	7,235.40	7,069.22	166.18	43.538		
9,350.00	9,050.89	8,958.29	8,958.29	33.62	133.99	63.54	-1,573.01	7,026.75	7,189.46	7,023.07	166.39	43.208		
9,400.00	9,057.61	8,965.01	8,965.01	33.87	134.10	75.77	-1,573.01	7,026.75	7,142.83	6,976.30	166.54	42.890		
9,452.31	9,060.00	8,967.40	8,967.40	34.15	134.13	90.00	-1,573.01	7,026.75	7,093.70	6,927.08	166.62	42.574		
9,500.00	9,060.00	8,967.40	8,967.40	34.42	134.13	90.00	-1,573.01	7,026.75	7,048.88	6,882.21	166.67	42.293		
9,600.00	9,060.00	8,967.40	8,967.40	35.09	134.13	90.00	-1,573.01	7,026.75	6,955.02	6,788.24	166.78	41.702		
9,700.00	9,060.00	8,967.40	8,967.40	35.86	134.13	90.00	-1,573.01	7,026.75	6,861.33	6,694.42	166.91	41.107		
9,800.00	9,060.00	8,967.40	8,967.40	36.72	134.13	90.00	-1,573.01	7,026.75	6,767.83	6,600.76	167.07	40.509		
9,900.00	9,060.00	8,967.40	8,967.40	37.69	134.13	90.00	-1,573.01	7,026.75	6,674.51	6,507.26	167.25	39.907		
10,000.00	9,060.00	8,967.40	8,967.40	38.73	134.13	90.00	-1,573.01	7,026.75	6,581.40	6,413.94	167.46	39.302		
10,100.00	9,060.00	8,967.40	8,967.40	39.86	134.13	90.00	-1,573.01	7,026.75	6,488.48	6,320.79	167.69	38.693		
10,140.22	9,060.00	8,967.40	8,967.40	40.33	134.13	90.00	-1,573.01	7,026.75	6,451.17	6,283.37	167.79	38.447		
10,200.00	9,060.00	8,967.40	8,967.40	41.05	134.13	90.00	-1,573.01	7,026.75	6,395.55	6,227.60	167.95	38.080		
10,300.00	9,060.00	8,967.40	8,967.40	42.31	134.13	90.00	-1,573.01	7,026.75	6,301.67	6,133.46	168.22	37.462		
10,400.00	9,060.00	8,967.40	8,967.40	43.64	134.13	90.00	-1,573.01	7,026.75	6,206.82	6,038.33	168.48	36.839		
10,507.23	9,060.00	8,967.40	8,967.40	45.11	134.13	90.00	-1,573.01	7,026.75	6,104.10	5,935.34	168.76	36.170		
10,600.00	9,060.00	8,967.40	8,967.40	46.43	134.13	90.00	-1,573.01	7,026.75	6,015.29	5,846.27	169.02	35.589		
10,700.00	9,060.00	8,967.40	8,967.40	47.91	134.13	90.00	-1,573.01	7,026.75	5,920.74	5,751.39	169.35	34.961		
10,800.00	9,060.00	8,967.40	8,967.40	49.42	134.13	90.00	-1,573.01	7,026.75	5,827.60	5,657.85	169.75	34.331		
10,900.00	9,060.00	8,967.40	8,967.40	50.97	134.13	90.00	-1,573.01	7,026.75	5,736.04	5,565.83	170.22	33.698		
11,000.00	9,060.00	8,967.40	8,967.40	52.55	134.13	90.00	-1,573.01	7,026.75	5,646.27	5,475.50	170.77	33.064		
11,100.00	9,060.00	8,967.40	8,967.40	54.14	134.13	90.00	-1,573.01	7,026.75	5,558.48	5,387.07	171.40	32.429		
11,207.23	9,060.00	8,967.40	8,967.40	55.87	134.13	90.00	-1,573.01	7,026.75	5,466.77	5,294.58	172.19	31.748		
11,300.00	9,060.00	8,967.40	8,967.40	57.39	134.13	90.00	-1,573.01	7,026.75	5,388.00	5,215.07	172.94	31.156		
11,400.00	9,060.00	8,967.40	8,967.40	59.06	134.13	90.00	-1,573.01	7,026.75	5,301.85	5,128.09	173.76	30.513		
11,506.63	9,060.00	8,967.40	8,967.40	60.88	134.13	90.00	-1,573.01	7,026.75	5,208.58	5,033.93	174.65	29.823		
11,600.00	9,060.00	8,967.40	8,967.40	62.49	134.13	90.00	-1,573.01	7,026.75	5,126.48	4,951.03	175.46	29.218		
11,700.00	9,060.00	8,967.40	8,967.40	64.24	134.13	90.00	-1,573.01	7,026.75	5,038.99	4,862.62	176.38	28.570		
11,800.00	9,060.00	8,967.40	8,967.40	66.01	134.13	90.00	-1,573.01	7,026.75	4,951.98	4,774.62	177.36	27.921		
11,900.00	9,060.00	8,967.40	8,967.40	67.79	134.13	90.00	-1,573.01	7,026.75	4,865.46	4,687.06	178.40	27.273		
12,000.00	9,060.00	8,967.40	8,967.40	69.58	134.13	90.00	-1,573.01	7,026.75	4,779.47	4,599.96	179.51	26.625		
12,100.00	9,060.00	8,967.40	8,967.40	71.39	134.13	90.00	-1,573.01	7,026.75	4,694.04	4,513.35	180.68	25.979		
12,200.00	9,060.00	8,967.40	8,967.40	73.21	134.13	90.00	-1,573.01	7,026.75	4,609.19	4,427.26	181.93	25.335		
12,300.00	9,060.00	8,967.40	8,967.40	75.05	134.13	90.00	-1,573.01	7,026.75	4,524.96	4,341.71	183.24	24.694		
12,400.00	9,060.00	8,967.40	8,967.40	76.89	134.13	90.00	-1,573.01	7,026.75	4,441.38	4,256.75	184.63	24.055		
12,500.00	9,060.00	8,967.40	8,967.40	78.74	134.13	90.00	-1,573.01	7,026.75	4,358.50	4,172.40	186.10	23.420		
12,600.00	9,060.00	8,967.40	8,967.40	80.61	134.13	90.00	-1,573.01	7,026.75	4,276.35	4,088.70	187.64	22.790		
12,700.00	9,060.00	8,967.40	8,967.40	82.48	134.13	90.00	-1,573.01	7,026.75	4,194.97	4,005.70	189.27	22.164		
12,800.00	9,060.00	8,967.40	8,967.40	84.36	134.13	90.00	-1,573.01	7,026.75	4,114.41	3,923.43	190.98	21.544		
12,900.00	9,060.00	8,967.40	8,967.40	86.24	134.13	90.00	-1,573.01	7,026.75	4,034.73	3,841.96	192.77	20.930		
13,000.00	9,060.00	8,967.40	8,967.40	88.14	134.13	90.00	-1,573.01	7,026.75	3,955.96	3,761.31	194.65	20.323		
13,100.00	9,060.00	8,967.40	8,967.40	90.04	134.13	90.00	-1,573.01	7,026.75	3,878.18	3,681.56	196.62	19.724		
13,200.00	9,060.00	8,967.40	8,967.40	91.94	134.13	90.00	-1,573.01	7,026.75	3,801.44	3,602.75	198.69	19.133		
13,300.00	9,060.00	8,967.40	8,967.40	93.86	134.13	90.00	-1,573.01	7,026.75	3,725.79	3,524.95	200.84	18.551		
13,400.00	9,060.00	8,967.40	8,967.40	95.77	134.13	90.00	-1,573.01	7,026.75	3,651.33	3,448.24	203.09	17.979		
13,500.00	9,060.00	8,967.40	8,967.40	97.70	134.13	90.00	-1,573.01	7,026.75	3,578.10	3,372.67	205.44	17.417		
13,600.00	9,060.00	8,967.40	8,967.40	99.62	134.13	90.00	-1,573.01	7,026.75	3,506.20	3,298.32	207.88	16.867		
13,700.00	9,060.00	8,967.40	8,967.40	101.56	134.13	90.00	-1,573.01	7,026.75	3,435.71	3,225.29	210.42	16.328		
13,800.00	9,060.00	8,967.40	8,967.40	103.49	134.13	90.00	-1,573.01	7,026.75	3,366.71	3,153.65	213.05	15.802		
13,900.00	9,060.00	8,967.40	8,967.40	105.43	134.13	90.00	-1,573.01	7,026.75	3,299.29	3,083.51	215.79	15.290		
14,000.00	9,060.00	8,967.40	8,967.40	107.38	134.13	90.00	-1,573.01	7,026.75	3,233.57	3,014.96	218.61	14.791		
14,100.00	9,060.00	8,967.40	8,967.40	109.33	134.13	90.00	-1,573.01	7,026.75	3,169.64	2,948.11	221.53	14.308		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,200.00	9,060.00	8,967.40	8,967.40	111.28	134.13	90.00	-1,573.01	7,026.75	3,107.61	2,883.07	224.54	13.840		
14,300.00	9,060.00	8,967.40	8,967.40	113.23	134.13	90.00	-1,573.01	7,026.75	3,047.60	2,819.97	227.63	13.388		
14,400.00	9,060.00	8,967.40	8,967.40	115.19	134.13	90.00	-1,573.01	7,026.75	2,989.73	2,758.93	230.80	12.954		
14,500.00	9,060.00	8,967.40	8,967.40	117.15	134.13	90.00	-1,573.01	7,026.75	2,934.13	2,700.10	234.03	12.537		
14,600.00	9,060.00	8,967.40	8,967.40	119.11	134.13	90.00	-1,573.01	7,026.75	2,880.93	2,643.59	237.33	12.139		
14,700.00	9,060.00	8,967.40	8,967.40	121.08	134.13	90.00	-1,573.01	7,026.75	2,830.26	2,589.58	240.68	11.759		
14,800.00	9,060.00	8,967.40	8,967.40	123.05	134.13	90.00	-1,573.01	7,026.75	2,782.27	2,538.20	244.07	11.399		
14,900.00	9,060.00	8,967.40	8,967.40	125.02	134.13	90.00	-1,573.01	7,026.75	2,737.09	2,489.61	247.48	11.060		
15,000.00	9,060.00	8,967.40	8,967.40	126.99	134.13	90.00	-1,573.01	7,026.75	2,694.86	2,443.97	250.90	10.741		
15,100.00	9,060.00	8,967.40	8,967.40	128.97	134.13	90.00	-1,573.01	7,026.75	2,655.73	2,401.43	254.30	10.443		
15,200.00	9,060.00	8,967.40	8,967.40	130.95	134.13	90.00	-1,573.01	7,026.75	2,619.84	2,362.16	257.67	10.167		
15,300.00	9,060.00	8,967.40	8,967.40	132.93	134.13	90.00	-1,573.01	7,026.75	2,587.31	2,326.32	260.99	9.913		
15,400.00	9,060.00	8,967.40	8,967.40	134.91	134.13	90.00	-1,573.01	7,026.75	2,558.28	2,294.04	264.24	9.682		
15,500.00	9,060.00	8,967.40	8,967.40	136.89	134.13	90.00	-1,573.01	7,026.75	2,532.87	2,265.49	267.38	9.473		
15,600.00	9,060.00	8,967.40	8,967.40	138.88	134.13	90.00	-1,573.01	7,026.75	2,511.19	2,240.78	270.41	9.287		
15,700.00	9,060.00	8,967.40	8,967.40	140.86	134.13	90.00	-1,573.01	7,026.75	2,493.33	2,220.04	273.29	9.124		
15,800.00	9,060.00	8,967.40	8,967.40	142.85	134.13	90.00	-1,573.01	7,026.75	2,479.38	2,203.38	276.00	8.983		
15,900.00	9,060.00	8,967.40	8,967.40	144.84	134.13	90.00	-1,573.01	7,026.75	2,469.40	2,190.88	278.53	8.866		
16,000.00	9,060.00	8,967.40	8,967.40	146.83	134.13	90.00	-1,573.01	7,026.75	2,463.45	2,182.60	280.85	8.771		
16,096.85	9,060.00	8,967.40	8,967.40	148.76	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.65	282.90	8.701 CC		
16,100.00	9,060.00	8,967.40	8,967.40	148.83	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.59	282.96	8.699 ES		
16,200.00	9,060.00	8,967.40	8,967.40	150.82	134.13	90.00	-1,573.01	7,026.75	2,463.71	2,178.87	284.83	8.650		
16,300.00	9,060.00	8,967.40	8,967.40	152.82	134.13	90.00	-1,573.01	7,026.75	2,469.91	2,183.45	286.47	8.622		
16,400.00	9,060.00	8,967.40	8,967.40	154.81	134.13	90.00	-1,573.01	7,026.75	2,480.14	2,192.28	287.86	8.616 SF		
16,500.00	9,060.00	8,967.40	8,967.40	156.81	134.13	90.00	-1,573.01	7,026.75	2,494.34	2,205.34	289.00	8.631		
16,600.00	9,060.00	8,967.40	8,967.40	158.81	134.13	90.00	-1,573.01	7,026.75	2,512.44	2,222.54	289.91	8.666		
16,700.00	9,060.00	8,967.40	8,967.40	160.81	134.13	90.00	-1,573.01	7,026.75	2,534.36	2,243.79	290.58	8.722		
16,800.00	9,060.00	8,967.40	8,967.40	162.81	134.13	90.00	-1,573.01	7,026.75	2,560.01	2,268.99	291.01	8.797		
16,900.00	9,060.00	8,967.40	8,967.40	164.82	134.13	90.00	-1,573.01	7,026.75	2,589.26	2,298.02	291.24	8.891		
17,000.00	9,060.00	8,967.40	8,967.40	166.82	134.13	90.00	-1,573.01	7,026.75	2,622.00	2,330.75	291.26	9.002		
17,100.00	9,060.00	8,967.40	8,967.40	168.82	134.13	90.00	-1,573.01	7,026.75	2,658.11	2,367.02	291.09	9.132		
17,200.00	9,060.00	8,967.40	8,967.40	170.83	134.13	90.00	-1,573.01	7,026.75	2,697.44	2,406.69	290.74	9.278		
17,300.00	9,060.00	8,967.40	8,967.40	172.84	134.13	90.00	-1,573.01	7,026.75	2,739.85	2,449.61	290.24	9.440		
17,400.00	9,060.00	8,967.40	8,967.40	174.84	134.13	90.00	-1,573.01	7,026.75	2,785.21	2,495.61	289.61	9.617		
17,500.00	9,060.00	8,967.40	8,967.40	176.85	134.13	90.00	-1,573.01	7,026.75	2,833.38	2,544.54	288.84	9.809		
17,600.00	9,060.00	8,967.40	8,967.40	178.86	134.13	90.00	-1,573.01	7,026.75	2,884.21	2,596.24	287.97	10.016		
17,700.00	9,060.00	8,967.40	8,967.40	180.87	134.13	90.00	-1,573.01	7,026.75	2,937.57	2,650.56	287.01	10.235		
17,800.00	9,060.00	8,967.40	8,967.40	182.88	134.13	90.00	-1,573.01	7,026.75	2,993.32	2,707.35	285.97	10.467		
17,900.00	9,060.00	8,967.40	8,967.40	184.89	134.13	90.00	-1,573.01	7,026.75	3,051.32	2,766.46	284.86	10.712		
18,000.00	9,060.00	8,967.40	8,967.40	186.90	134.13	90.00	-1,573.01	7,026.75	3,111.46	2,827.76	283.70	10.967		
18,100.00	9,060.00	8,967.40	8,967.40	188.92	134.13	90.00	-1,573.01	7,026.75	3,173.62	2,891.12	282.50	11.234		
18,200.00	9,060.00	8,967.40	8,967.40	190.93	134.13	90.00	-1,573.01	7,026.75	3,237.66	2,956.41	281.26	11.511		
18,300.00	9,060.00	8,967.40	8,967.40	192.94	134.13	90.00	-1,573.01	7,026.75	3,303.50	3,023.50	280.00	11.798		
18,400.00	9,060.00	8,967.40	8,967.40	194.96	134.13	90.00	-1,573.01	7,026.75	3,371.01	3,092.29	278.72	12.095		
18,500.00	9,060.00	8,967.40	8,967.40	196.97	134.13	90.00	-1,573.01	7,026.75	3,440.11	3,162.68	277.43	12.400		
18,600.00	9,060.00	8,967.40	8,967.40	198.99	134.13	90.00	-1,573.01	7,026.75	3,510.70	3,234.55	276.14	12.713		
18,700.00	9,060.00	8,967.40	8,967.40	201.00	134.13	90.00	-1,573.01	7,026.75	3,582.68	3,307.83	274.86	13.035		
18,800.00	9,060.00	8,967.40	8,967.40	203.02	134.13	90.00	-1,573.01	7,026.75	3,655.99	3,382.42	273.57	13.364		
18,900.00	9,060.00	8,967.40	8,967.40	205.04	134.13	90.00	-1,573.01	7,026.75	3,730.53	3,458.23	272.30	13.700		
19,000.00	9,060.00	8,967.40	8,967.40	207.06	134.13	90.00	-1,573.01	7,026.75	3,806.25	3,535.20	271.04	14.043		
19,100.00	9,060.00	8,967.40	8,967.40	209.07	134.13	90.00	-1,573.01	7,026.75	3,883.06	3,613.26	269.80	14.392		
19,200.00	9,060.00	8,967.40	8,967.40	211.09	134.13	90.00	-1,573.01	7,026.75	3,960.91	3,692.33	268.58	14.748		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,967.40	8,967.40	213.11	134.13	90.00	-1,573.01	7,026.75	4,039.73	3,772.36	267.37	15.109	
19,400.00	9,060.00	8,967.40	8,967.40	215.13	134.13	90.00	-1,573.01	7,026.75	4,119.47	3,853.28	266.19	15.476	
19,500.32	9,060.00	8,967.40	8,967.40	217.16	134.13	90.00	-1,573.01	7,026.75	4,200.34	3,935.31	265.02	15.849	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	58.50	1,038.14	1,693.77	1,986.84					
100.00	100.00	64.70	64.70	0.52	10.00	58.50	1,038.04	1,693.92	1,986.68	1,976.16	10.52	188.880		
200.00	200.00	167.21	167.20	0.70	10.01	58.52	1,037.53	1,694.54	1,986.94	1,976.24	10.71	185.530		
300.00	300.00	276.71	276.70	0.99	10.03	58.55	1,036.61	1,694.95	1,986.83	1,975.81	11.02	180.343		
400.00	400.00	386.96	386.94	1.31	10.07	58.59	1,034.99	1,695.13	1,986.20	1,974.83	11.38	174.601		
500.00	500.00	499.41	499.36	1.65	10.12	58.66	1,032.44	1,695.12	1,985.01	1,973.25	11.77	168.711		
600.00	600.00	595.76	595.67	1.99	10.18	58.72	1,029.75	1,695.16	1,983.59	1,971.42	12.17	163.004		
700.00	700.00	700.66	700.53	2.34	10.26	58.79	1,026.83	1,695.17	1,982.16	1,969.56	12.59	157.393		
800.00	800.00	798.62	798.45	2.69	10.34	58.87	1,023.86	1,695.23	1,980.64	1,967.61	13.03	152.027		
900.00	900.00	900.59	900.36	3.04	10.44	58.96	1,020.48	1,695.46	1,979.12	1,965.64	13.48	146.821		
1,000.00	1,000.00	999.08	998.79	3.40	10.55	59.04	1,017.18	1,695.69	1,977.60	1,963.66	13.94	141.859		
1,100.00	1,100.00	1,100.28	1,099.94	3.75	10.67	59.13	1,013.79	1,695.94	1,976.08	1,961.67	14.42	137.077		
1,200.00	1,200.00	1,196.68	1,196.28	4.11	10.80	59.21	1,010.65	1,696.18	1,974.63	1,959.73	14.90	132.559		
1,300.00	1,300.00	1,293.57	1,293.12	4.46	10.93	59.30	1,007.45	1,696.64	1,973.35	1,957.96	15.39	128.244		
1,400.00	1,400.00	1,387.76	1,387.25	4.82	11.07	59.39	1,004.24	1,697.38	1,972.29	1,956.41	15.88	124.162		
1,500.00	1,500.00	1,484.92	1,484.35	5.18	11.23	59.48	1,001.06	1,698.33	1,971.47	1,955.07	16.40	120.246		
1,600.00	1,600.00	1,579.44	1,578.82	5.53	11.38	59.58	997.99	1,699.45	1,970.84	1,953.93	16.91	116.547		
1,700.00	1,700.00	1,678.15	1,677.47	5.89	11.56	59.68	994.84	1,700.82	1,970.42	1,952.98	17.44	112.979		
1,800.00	1,800.00	1,780.52	1,779.78	6.25	11.75	59.78	991.51	1,702.22	1,969.97	1,951.98	17.99	109.526		
1,900.00	1,900.00	1,882.06	1,881.25	6.61	11.94	59.89	988.05	1,703.56	1,969.39	1,950.86	18.54	106.229		
2,000.00	2,000.00	1,981.36	1,980.48	6.96	12.14	59.99	984.65	1,704.86	1,968.80	1,949.71	19.10	103.103		
2,100.00	2,100.00	2,073.05	2,072.11	7.32	12.33	60.09	981.53	1,706.24	1,968.42	1,948.78	19.64	100.208		
2,200.00	2,200.00	2,177.73	2,176.72	7.68	12.55	60.20	978.16	1,708.00	1,968.28	1,948.05	20.22	97.322		
2,300.00	2,300.00	2,275.85	2,274.80	8.04	12.77	60.28	975.53	1,709.06	1,967.89	1,947.09	20.80	94.629		
2,350.00	2,350.00	2,323.50	2,322.44	8.22	12.87	60.31	974.56	1,709.50	1,967.78	1,946.70	21.08	93.350		
2,400.00	2,400.00	2,371.35	2,370.28	8.39	12.98	76.39	973.74	1,709.91	1,967.68	1,946.32	21.36	92.101		
2,500.00	2,499.98	2,470.57	2,469.49	8.75	13.20	76.48	972.47	1,710.64	1,967.27	1,945.33	21.94	89.650		
2,600.00	2,599.92	2,568.64	2,567.55	9.11	13.42	76.62	971.56	1,711.17	1,966.48	1,943.96	22.52	87.305		
2,700.00	2,699.78	2,673.59	2,672.50	9.47	13.67	76.81	970.88	1,711.59	1,965.31	1,942.18	23.13	84.986		
2,800.00	2,799.54	2,772.79	2,771.69	9.82	13.90	77.04	970.21	1,711.72	1,963.51	1,939.79	23.72	82.790		
2,900.00	2,899.16	2,873.53	2,872.44	10.18	14.15	77.33	969.70	1,711.84	1,961.43	1,937.12	24.32	80.662		
3,000.00	2,998.61	2,972.58	2,971.48	10.54	14.39	77.66	969.31	1,711.82	1,958.95	1,934.03	24.92	78.621		
3,100.00	3,097.86	3,069.50	3,068.40	10.89	14.63	78.02	969.27	1,711.70	1,956.24	1,930.72	25.51	76.672		
3,200.00	3,196.89	3,167.91	3,166.81	11.25	14.88	78.44	969.33	1,711.64	1,953.35	1,927.22	26.12	74.782		
3,295.74	3,291.45	3,262.21	3,261.12	11.59	15.12	78.89	969.36	1,711.60	1,950.35	1,923.64	26.71	73.033		
3,300.00	3,295.65	3,266.39	3,265.29	11.61	15.13	78.91	969.36	1,711.60	1,950.21	1,923.48	26.73	72.956		
3,400.00	3,394.29	3,362.87	3,361.77	11.97	15.39	79.36	969.57	1,711.53	1,947.10	1,919.76	27.34	71.215		
3,500.00	3,492.94	3,462.26	3,461.16	12.33	15.65	79.83	969.94	1,711.47	1,944.21	1,916.25	27.96	69.526		
3,600.00	3,591.58	3,561.40	3,560.30	12.69	15.91	80.28	970.48	1,711.23	1,941.36	1,912.77	28.59	67.902		
3,700.00	3,690.22	3,659.02	3,657.92	13.05	16.18	80.73	971.01	1,711.04	1,938.68	1,909.46	29.22	66.353		
3,800.00	3,788.86	3,759.89	3,758.78	13.41	16.45	81.20	971.55	1,710.86	1,936.13	1,906.27	29.86	64.846		
3,900.00	3,887.50	3,863.77	3,862.67	13.77	16.74	81.67	972.26	1,710.35	1,933.49	1,902.98	30.51	63.374		
4,000.00	3,986.14	3,964.80	3,963.69	14.14	17.03	82.14	972.91	1,709.63	1,930.75	1,899.59	31.16	61.968		
4,100.00	4,084.78	4,063.92	4,062.80	14.50	17.31	82.59	973.64	1,708.83	1,928.10	1,896.29	31.80	60.626		
4,200.00	4,183.42	4,162.49	4,161.37	14.87	17.59	83.04	974.36	1,708.04	1,925.56	1,893.11	32.45	59.338		
4,300.00	4,282.06	4,264.09	4,262.97	15.24	17.88	83.50	975.10	1,707.19	1,923.11	1,890.00	33.11	58.083		
4,400.00	4,380.70	4,361.35	4,360.22	15.60	18.16	83.94	975.84	1,706.23	1,920.66	1,886.90	33.76	56.893		
4,500.00	4,479.34	4,458.52	4,457.37	15.97	18.45	84.38	976.71	1,705.40	1,918.51	1,884.09	34.41	55.752		
4,600.00	4,577.98	4,559.08	4,557.93	16.34	18.74	84.84	977.60	1,704.52	1,916.45	1,881.37	35.08	54.638		
4,700.00	4,676.62	4,658.63	4,657.47	16.71	19.04	85.29	978.62	1,703.50	1,914.41	1,878.67	35.74	53.566		
4,800.00	4,775.27	4,757.08	4,755.91	17.08	19.33	85.74	979.62	1,702.50	1,912.51	1,876.11	36.40	52.538		
4,900.00	4,873.91	4,859.18	4,857.99	17.45	19.64	86.20	980.55	1,701.46	1,910.69	1,873.61	37.08	51.532		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

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Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.00	4,972.55	4,959.95	4,958.76	17.82	19.94	86.66	981.30	1,700.26	1,908.78	1,871.03	37.75	50.562	
5,100.00	5,071.19	5,058.85	5,057.65	18.19	20.24	87.12	981.97	1,699.11	1,906.98	1,868.56	38.42	49.634	
5,200.00	5,169.83	5,157.17	5,155.96	18.56	20.54	87.58	982.60	1,697.96	1,905.30	1,866.21	39.09	48.741	
5,300.00	5,268.47	5,255.88	5,254.67	18.93	20.84	88.04	983.15	1,696.88	1,903.79	1,864.02	39.76	47.879	
5,400.00	5,367.11	5,351.89	5,350.67	19.31	21.13	88.49	983.59	1,695.87	1,902.42	1,861.99	40.43	47.057	
5,500.00	5,465.75	5,447.29	5,446.07	19.68	21.43	88.95	983.98	1,695.12	1,901.41	1,860.31	41.09	46.270	
5,600.00	5,564.39	5,544.40	5,543.18	20.05	21.73	89.43	983.64	1,694.67	1,900.62	1,858.86	41.76	45.508	
5,700.00	5,663.03	5,640.63	5,639.39	20.42	22.02	89.94	982.56	1,694.56	1,900.09	1,857.66	42.44	44.776	
5,800.00	5,761.67	5,737.55	5,736.31	20.80	22.33	90.46	981.19	1,694.64	1,899.84	1,856.73	43.11	44.069	
5,900.00	5,860.31	5,840.03	5,838.77	21.17	22.65	91.01	979.62	1,694.74	1,899.74	1,855.94	43.80	43.369	
6,000.00	5,958.96	5,961.41	5,960.13	21.54	23.03	91.66	977.84	1,694.03	1,899.20	1,854.65	44.55	42.627	
6,100.00	6,057.60	6,079.16	6,077.84	21.92	23.40	92.29	975.77	1,691.78	1,897.44	1,852.15	45.29	41.895	
6,200.00	6,156.24	6,180.69	6,179.32	22.29	23.72	92.85	973.29	1,689.45	1,895.35	1,849.36	45.98	41.218	
6,300.00	6,254.88	6,271.97	6,270.53	22.67	24.01	93.38	970.23	1,687.66	1,893.54	1,846.89	46.65	40.589	
6,400.00	6,353.52	6,366.34	6,364.83	23.04	24.32	93.93	967.00	1,686.17	1,892.28	1,844.95	47.33	39.980	
6,500.00	6,452.16	6,469.34	6,467.77	23.42	24.65	94.53	963.69	1,684.48	1,891.20	1,843.17	48.03	39.373	
6,600.00	6,550.80	6,566.94	6,565.31	23.79	24.96	95.07	961.27	1,682.49	1,890.08	1,841.36	48.72	38.794	
6,700.00	6,649.44	6,656.95	6,655.29	24.17	25.25	95.57	959.32	1,680.85	1,889.40	1,840.02	49.39	38.258	
6,747.24	6,696.04	6,698.45	6,696.78	24.34	25.38	95.79	958.46	1,680.25	1,889.32	1,839.62	49.70	38.016	
6,800.00	6,748.08	6,746.99	6,745.30	24.54	25.54	96.06	957.48	1,679.66	1,889.39	1,839.34	50.05	37.748	
6,900.00	6,846.72	6,835.99	6,834.28	24.92	25.83	96.55	955.67	1,678.83	1,889.94	1,839.23	50.71	37.266	
7,000.00	6,945.36	6,918.54	6,916.81	25.29	26.10	97.01	953.88	1,678.63	1,891.32	1,839.97	51.36	36.828	
7,100.00	7,044.00	6,994.39	6,992.64	25.67	26.34	97.44	952.25	1,679.25	1,893.92	1,841.95	51.97	36.443	
7,200.00	7,142.65	7,092.54	7,090.76	26.04	26.66	97.98	950.33	1,680.67	1,897.32	1,844.66	52.66	36.028	
7,300.00	7,241.29	7,188.27	7,186.47	26.42	26.97	98.51	948.55	1,682.06	1,900.91	1,847.57	53.35	35.634	
7,400.00	7,339.93	7,282.04	7,280.20	26.79	27.28	99.03	946.62	1,683.61	1,904.87	1,850.84	54.02	35.261	
7,500.00	7,438.57	7,377.32	7,375.44	27.17	27.59	99.56	944.59	1,685.40	1,909.20	1,854.50	54.71	34.900	
7,571.77	7,509.37	7,450.67	7,448.77	27.44	27.83	99.96	943.31	1,686.77	1,912.45	1,857.23	55.21	34.637	
7,600.00	7,537.23	7,480.47	7,478.56	27.55	27.93	100.13	942.89	1,687.27	1,913.68	1,858.26	55.42	34.532	
7,700.00	7,636.18	7,577.71	7,575.78	27.92	28.25	100.64	941.77	1,688.81	1,917.79	1,861.69	56.10	34.183	
7,800.00	7,735.48	7,673.36	7,671.41	28.29	28.56	101.07	940.65	1,690.49	1,921.69	1,864.91	56.78	33.845	
7,900.00	7,835.05	7,769.65	7,767.68	28.65	28.88	101.42	939.54	1,692.34	1,925.33	1,867.87	57.45	33.511	
8,000.00	7,934.83	7,869.01	7,867.02	29.01	29.20	101.68	939.11	1,694.31	1,928.59	1,870.46	58.13	33.174	
8,100.00	8,034.74	7,985.45	7,983.43	29.36	29.58	101.81	940.33	1,696.10	1,931.03	1,872.15	58.88	32.796	
8,202.27	8,137.00	8,095.01	8,092.98	29.72	29.94	85.79	941.94	1,696.90	1,932.17	1,872.57	59.60	32.419	
8,300.00	8,234.73	8,201.50	8,199.46	30.06	30.29	85.76	942.85	1,697.34	1,932.63	1,872.34	60.29	32.055	
8,400.00	8,334.73	8,327.25	8,325.21	30.41	30.70	85.76	943.01	1,696.87	1,932.28	1,871.23	61.06	31.648	
8,500.00	8,434.73	8,448.86	8,446.78	30.75	31.11	85.82	940.52	1,694.79	1,930.38	1,868.58	61.80	31.235	
8,552.31	8,487.04	8,501.92	8,499.80	30.94	31.28	85.87	939.06	1,693.71	1,929.21	1,867.06	62.16	31.037	
8,600.00	8,534.68	8,537.37	8,535.23	31.10	31.40	-3.79	938.08	1,693.10	1,926.32	1,863.88	62.44	30.850	
8,650.00	8,584.26	8,574.78	8,572.63	31.26	31.53	-3.82	937.08	1,692.68	1,919.36	1,856.64	62.73	30.598	
8,700.00	8,633.10	8,612.28	8,610.11	31.43	31.65	-3.88	936.09	1,692.50	1,908.43	1,845.42	63.01	30.288	
8,750.00	8,680.83	8,650.28	8,648.10	31.58	31.78	-3.98	935.10	1,692.51	1,893.56	1,830.27	63.29	29.921	
8,800.00	8,727.09	8,687.24	8,685.05	31.74	31.90	-4.12	934.15	1,692.71	1,874.82	1,811.27	63.55	29.503	
8,850.00	8,771.52	8,727.40	8,725.19	31.89	32.04	-4.32	933.12	1,693.10	1,852.31	1,788.50	63.81	29.027	
8,900.00	8,813.78	8,768.08	8,765.86	32.04	32.17	-4.58	932.14	1,693.54	1,826.07	1,762.00	64.07	28.502	
8,950.00	8,853.56	8,808.70	8,806.47	32.18	32.31	-4.93	931.21	1,694.01	1,796.26	1,731.94	64.31	27.929	
9,000.00	8,890.55	8,856.47	8,854.23	32.32	32.47	-5.42	930.30	1,694.37	1,762.94	1,698.37	64.57	27.301	
9,050.00	8,924.46	8,899.80	8,897.55	32.47	32.61	-6.08	929.68	1,694.44	1,726.33	1,661.53	64.80	26.640	
9,100.00	8,955.05	8,930.97	8,928.72	32.63	32.72	-6.95	929.30	1,694.40	1,686.82	1,621.85	64.98	25.960	
9,150.00	8,982.08	8,958.44	8,956.18	32.79	32.81	-8.14	928.94	1,694.35	1,644.81	1,579.68	65.13	25.255	
9,200.00	9,005.34	8,982.04	8,979.79	32.97	32.89	-9.84	928.63	1,694.30	1,600.61	1,535.36	65.25	24.530	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,001.60	8,999.34	33.17	32.95	-12.42	928.37	1,694.26	1,554.57	1,489.22	65.35	23.787		
9,300.00	9,039.87	9,016.33	9,014.07	33.38	33.00	-16.66	928.16	1,694.23	1,507.05	1,441.63	65.43	23.034		
9,350.00	9,050.89	9,027.01	9,024.76	33.62	33.04	-24.67	928.02	1,694.21	1,458.41	1,392.93	65.48	22.272		
9,400.00	9,057.61	9,033.51	9,031.25	33.87	33.06	-43.26	927.93	1,694.19	1,409.03	1,343.51	65.51	21.507		
9,452.31	9,060.00	9,035.75	9,033.49	34.15	33.07	-92.01	927.90	1,694.19	1,356.97	1,291.44	65.53	20.708		
9,500.00	9,060.00	9,035.67	9,033.41	34.42	33.07	-91.97	927.90	1,694.19	1,309.46	1,243.93	65.53	19.981		
9,600.00	9,060.00	9,035.48	9,033.22	35.09	33.07	-91.88	927.90	1,694.19	1,209.89	1,144.35	65.55	18.458		
9,700.00	9,060.00	9,035.30	9,033.04	35.86	33.07	-91.79	927.90	1,694.19	1,110.40	1,044.83	65.56	16.936		
9,800.00	9,060.00	9,035.12	9,032.86	36.72	33.07	-91.70	927.91	1,694.19	1,011.01	945.42	65.59	15.414		
9,900.00	9,060.00	9,034.94	9,032.68	37.69	33.06	-91.61	927.91	1,694.19	911.75	846.12	65.63	13.893		
10,000.00	9,060.00	9,034.75	9,032.49	38.73	33.06	-91.52	927.91	1,694.19	812.67	746.98	65.68	12.373		
10,100.00	9,060.00	9,034.57	9,032.31	39.86	33.06	-91.43	927.91	1,694.19	713.84	648.08	65.76	10.855		
10,140.22	9,060.00	9,034.49	9,032.23	40.33	33.06	-91.39	927.91	1,694.19	674.19	608.38	65.81	10.245		
10,200.00	9,060.00	9,034.39	9,032.13	41.05	33.06	-91.21	927.92	1,694.19	615.52	549.62	65.90	9.340		
10,300.00	9,060.00	9,034.26	9,032.00	42.31	33.06	-91.00	927.92	1,694.19	518.66	452.48	66.17	7.838		
10,400.00	9,060.00	9,034.17	9,031.91	43.64	33.06	-90.88	927.92	1,694.19	424.48	357.71	66.77	6.357		
10,507.23	9,060.00	9,034.13	9,031.87	45.11	33.06	-90.80	927.92	1,694.19	329.29	260.99	68.29	4.822 Alert		
10,600.00	9,060.00	9,034.10	9,031.84	46.43	33.06	-90.83	927.92	1,694.19	254.92	183.73	71.19	3.581 Alert		
10,700.00	9,060.00	9,034.02	9,031.76	47.91	33.06	-90.82	927.92	1,694.19	190.50	113.58	76.92	2.477 Minor Risk		
10,800.00	9,060.00	9,033.90	9,031.64	49.42	33.06	-90.79	927.92	1,694.19	162.63	80.33	82.30	1.976 Minor Risk		
10,802.18	9,060.00	9,033.89	9,031.63	49.46	33.06	-90.79	927.92	1,694.19	162.61	80.28	82.34	1.975 Minor Risk, CC, ES, SF		
10,900.00	9,060.00	9,033.72	9,031.46	50.97	33.06	-90.72	927.92	1,694.19	188.33	108.61	79.72	2.362 Minor Risk		
11,000.00	9,060.00	9,033.50	9,031.24	52.55	33.06	-90.62	927.93	1,694.19	251.68	177.15	74.52	3.377 Alert		
11,100.00	9,060.00	9,033.22	9,030.96	54.14	33.06	-90.51	927.93	1,694.19	331.71	260.62	71.08	4.666 Alert		
11,207.23	9,060.00	9,032.88	9,030.62	55.87	33.06	-90.37	927.94	1,694.20	425.37	356.39	68.98	6.167		
11,300.00	9,060.00	9,032.57	9,030.32	57.39	33.06	-90.30	927.94	1,694.20	510.64	442.68	67.96	7.514		
11,400.00	9,060.00	9,032.29	9,030.03	59.06	33.06	-90.23	927.94	1,694.20	606.00	538.64	67.37	8.996		
11,506.63	9,060.00	9,032.04	9,029.78	60.88	33.05	-90.17	927.95	1,694.20	709.95	642.92	67.03	10.592		
11,600.00	9,060.00	9,031.85	9,029.59	62.49	33.05	-90.08	927.95	1,694.20	801.85	735.00	66.85	11.995		
11,700.00	9,060.00	9,031.64	9,029.38	64.24	33.05	-89.99	927.95	1,694.20	900.61	833.90	66.72	13.499		
11,800.00	9,060.00	9,031.43	9,029.17	66.01	33.05	-89.90	927.96	1,694.20	999.62	933.00	66.63	15.003		
11,900.00	9,060.00	9,031.22	9,028.96	67.79	33.05	-89.81	927.96	1,694.20	1,098.81	1,032.25	66.57	16.507		
12,000.00	9,060.00	9,031.01	9,028.75	69.58	33.05	-89.72	927.96	1,694.20	1,198.14	1,131.61	66.52	18.011		
12,100.00	9,060.00	9,030.80	9,028.54	71.39	33.05	-89.63	927.96	1,694.20	1,297.56	1,231.07	66.50	19.514		
12,200.00	9,060.00	9,030.59	9,028.33	73.21	33.05	-89.54	927.97	1,694.20	1,397.07	1,330.59	66.48	21.015		
12,300.00	9,060.00	9,030.37	9,028.11	75.05	33.05	-89.45	927.97	1,694.20	1,496.65	1,430.18	66.47	22.516		
12,400.00	9,060.00	9,030.16	9,027.90	76.89	33.05	-89.36	927.97	1,694.20	1,596.28	1,529.80	66.47	24.015		
12,500.00	9,060.00	9,029.95	9,027.69	78.74	33.05	-89.26	927.98	1,694.20	1,695.95	1,629.47	66.48	25.512		
12,600.00	9,060.00	9,029.73	9,027.47	80.61	33.05	-89.17	927.98	1,694.20	1,795.65	1,729.17	66.49	27.008		
12,700.00	9,060.00	9,029.52	9,027.26	82.48	33.05	-89.08	927.98	1,694.20	1,895.39	1,828.89	66.50	28.502		
12,800.00	9,060.00	9,029.30	9,027.04	84.36	33.05	-88.99	927.98	1,694.20	1,995.16	1,928.64	66.52	29.994		
12,900.00	9,060.00	9,029.08	9,026.83	86.24	33.04	-88.89	927.99	1,694.20	2,094.95	2,028.41	66.54	31.485		
13,000.00	9,060.00	9,028.87	9,026.61	88.14	33.04	-88.80	927.99	1,694.20	2,194.75	2,128.19	66.56	32.973		
13,100.00	9,060.00	9,028.65	9,026.39	90.04	33.04	-88.71	927.99	1,694.20	2,294.58	2,227.99	66.59	34.460		
13,200.00	9,060.00	9,028.43	9,026.17	91.94	33.04	-88.61	928.00	1,694.20	2,394.41	2,327.80	66.61	35.944		
13,300.00	9,060.00	9,028.21	9,025.95	93.86	33.04	-88.52	928.00	1,694.20	2,494.27	2,427.62	66.64	37.426		
13,400.00	9,060.00	9,027.99	9,025.73	95.77	33.04	-88.42	928.00	1,694.20	2,594.13	2,527.45	66.68	38.906		
13,500.00	9,060.00	9,027.77	9,025.51	97.70	33.04	-88.33	928.01	1,694.20	2,694.00	2,627.29	66.71	40.384		
13,600.00	9,060.00	9,027.55	9,025.29	99.62	33.04	-88.24	928.01	1,694.21	2,793.88	2,727.14	66.74	41.859		
13,700.00	9,060.00	9,027.33	9,025.07	101.56	33.04	-88.14	928.01	1,694.21	2,893.77	2,826.99	66.78	43.332		
13,800.00	9,060.00	9,027.11	9,024.85	103.49	33.04	-88.04	928.02	1,694.21	2,993.67	2,926.85	66.82	44.802		
13,900.00	9,060.00	9,026.88	9,024.63	105.43	33.04	-87.95	928.02	1,694.21	3,093.57	3,026.72	66.86	46.270		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	9,026.66	9,024.40	107.38	33.04	-87.85	928.02	1,694.21	3,193.48	3,126.58	66.90	47.736		
14,100.00	9,060.00	9,026.44	9,024.18	109.33	33.04	-87.76	928.02	1,694.21	3,293.40	3,226.46	66.94	49.198		
14,200.00	9,060.00	9,026.21	9,023.95	111.28	33.04	-87.66	928.03	1,694.21	3,393.32	3,326.34	66.98	50.658		
14,300.00	9,060.00	9,025.99	9,023.73	113.23	33.03	-87.56	928.03	1,694.21	3,493.24	3,426.22	67.03	52.115		
14,400.00	9,060.00	9,025.76	9,023.50	115.19	33.03	-87.47	928.03	1,694.21	3,593.17	3,526.10	67.07	53.570		
14,500.00	9,060.00	9,025.53	9,023.27	117.15	33.03	-87.37	928.04	1,694.21	3,693.11	3,625.99	67.12	55.021		
14,600.00	9,060.00	9,025.31	9,023.05	119.11	33.03	-87.27	928.04	1,694.21	3,793.04	3,725.87	67.17	56.470		
14,700.00	9,060.00	9,025.08	9,022.82	121.08	33.03	-87.17	928.04	1,694.21	3,892.98	3,825.76	67.22	57.916		
14,800.00	9,060.00	9,024.85	9,022.59	123.05	33.03	-87.08	928.05	1,694.21	3,992.93	3,925.66	67.27	59.359		
14,900.00	9,060.00	9,024.62	9,022.36	125.02	33.03	-86.98	928.05	1,694.21	4,092.87	4,025.55	67.32	60.798		
15,000.00	9,060.00	9,024.39	9,022.13	126.99	33.03	-86.88	928.05	1,694.21	4,192.82	4,125.45	67.37	62.235		
15,100.00	9,060.00	9,024.16	9,021.90	128.97	33.03	-86.78	928.06	1,694.21	4,292.77	4,225.35	67.42	63.669		
15,200.00	9,060.00	9,023.93	9,021.67	130.95	33.03	-86.68	928.06	1,694.21	4,392.72	4,325.24	67.48	65.099		
15,300.00	9,060.00	9,023.69	9,021.43	132.93	33.03	-86.58	928.06	1,694.21	4,492.68	4,425.14	67.53	66.527		
15,400.00	9,060.00	9,023.46	9,021.20	134.91	33.03	-86.48	928.07	1,694.21	4,592.63	4,525.05	67.59	67.951		
15,500.00	9,060.00	9,023.23	9,020.97	136.89	33.03	-86.38	928.07	1,694.21	4,692.59	4,624.95	67.64	69.371		
15,600.00	9,060.00	9,022.99	9,020.73	138.88	33.02	-86.28	928.07	1,694.21	4,792.55	4,724.85	67.70	70.789		
15,700.00	9,060.00	9,022.76	9,020.50	140.86	33.02	-86.18	928.07	1,694.21	4,892.51	4,824.75	67.76	72.203		
15,800.00	9,060.00	9,022.52	9,020.26	142.85	33.02	-86.08	928.08	1,694.22	4,992.48	4,924.66	67.82	73.614		
15,900.00	9,060.00	9,022.28	9,020.02	144.84	33.02	-85.98	928.08	1,694.22	5,092.44	5,024.56	67.88	75.021		
16,000.00	9,060.00	9,022.04	9,019.79	146.83	33.02	-85.88	928.08	1,694.22	5,192.41	5,124.47	67.94	76.425		
16,100.00	9,060.00	9,021.81	9,019.55	148.83	33.02	-85.77	928.09	1,694.22	5,292.38	5,224.37	68.00	77.825		
16,200.00	9,060.00	9,021.57	9,019.31	150.82	33.02	-85.67	928.09	1,694.22	5,392.35	5,324.28	68.07	79.222		
16,300.00	9,060.00	9,021.33	9,019.07	152.82	33.02	-85.57	928.09	1,694.22	5,492.32	5,424.19	68.13	80.615		
16,400.00	9,060.00	9,021.09	9,018.83	154.81	33.02	-85.47	928.10	1,694.22	5,592.29	5,524.09	68.19	82.005		
16,500.00	9,060.00	9,020.85	9,018.59	156.81	33.02	-85.36	928.10	1,694.22	5,692.26	5,624.00	68.26	83.391		
16,600.00	9,060.00	9,020.60	9,018.35	158.81	33.02	-85.26	928.10	1,694.22	5,792.23	5,723.90	68.33	84.774		
16,700.00	9,060.00	9,020.36	9,018.10	160.81	33.02	-85.16	928.11	1,694.22	5,892.20	5,823.81	68.39	86.152		
16,800.00	9,060.00	9,020.12	9,017.86	162.81	33.02	-85.05	928.11	1,694.22	5,992.18	5,923.72	68.46	87.527		
16,900.00	9,060.00	9,019.87	9,017.61	164.82	33.01	-84.95	928.11	1,694.22	6,092.15	6,023.63	68.53	88.899		
17,000.00	9,060.00	9,019.63	9,017.37	166.82	33.01	-84.85	928.12	1,694.22	6,192.13	6,123.53	68.60	90.266		
17,100.00	9,060.00	9,019.38	9,017.12	168.82	33.01	-84.74	928.12	1,694.22	6,292.11	6,223.44	68.67	91.630		
17,200.00	9,060.00	9,019.14	9,016.88	170.83	33.01	-84.64	928.12	1,694.22	6,392.09	6,323.35	68.74	92.990		
17,300.00	9,060.00	9,018.89	9,016.63	172.84	33.01	-84.53	928.13	1,694.22	6,492.06	6,423.25	68.81	94.346		
17,400.00	9,060.00	9,018.64	9,016.38	174.84	33.01	-84.43	928.13	1,694.22	6,592.04	6,523.16	68.88	95.698		
17,500.00	9,060.00	9,018.39	9,016.13	176.85	33.01	-84.32	928.13	1,694.22	6,692.02	6,623.07	68.96	97.046		
17,600.00	9,060.00	9,018.14	9,015.88	178.86	33.01	-84.21	928.14	1,694.22	6,792.00	6,722.97	69.03	98.390		
17,700.00	9,060.00	9,017.89	9,015.63	180.87	33.01	-84.11	928.14	1,694.22	6,891.98	6,822.88	69.11	99.731		
17,800.00	9,060.00	9,017.64	9,015.38	182.88	33.01	-84.00	928.15	1,694.22	6,991.96	6,922.78	69.18	101.067		
17,900.00	9,060.00	9,017.39	9,015.13	184.89	33.01	-83.89	928.15	1,694.23	7,091.95	7,022.69	69.26	102.400		
18,000.00	9,060.00	9,017.13	9,014.88	186.90	33.01	-83.79	928.15	1,694.23	7,191.93	7,122.59	69.33	103.728		
18,100.00	9,060.00	9,016.88	9,014.62	188.92	33.00	-83.68	928.16	1,694.23	7,291.91	7,222.50	69.41	105.052		
18,200.00	9,060.00	9,016.63	9,014.37	190.93	33.00	-83.57	928.16	1,694.23	7,391.90	7,322.40	69.49	106.373		
18,300.00	9,060.00	9,016.37	9,014.11	192.94	33.00	-83.46	928.16	1,694.23	7,491.88	7,422.31	69.57	107.689		
18,400.00	9,060.00	9,016.11	9,013.86	194.96	33.00	-83.36	928.17	1,694.23	7,591.86	7,522.21	69.65	109.001		
18,500.00	9,060.00	9,015.86	9,013.60	196.97	33.00	-83.25	928.17	1,694.23	7,691.85	7,622.12	69.73	110.309		
18,600.00	9,060.00	9,015.60	9,013.34	198.99	33.00	-83.14	928.17	1,694.23	7,791.83	7,722.02	69.81	111.613		
18,700.00	9,060.00	9,015.34	9,013.08	201.00	33.00	-83.03	928.18	1,694.23	7,891.82	7,821.92	69.89	112.913		
18,800.00	9,060.00	9,015.08	9,012.82	203.02	33.00	-82.92	928.18	1,694.23	7,991.80	7,921.83	69.98	114.209		
18,900.00	9,060.00	9,014.82	9,012.56	205.04	33.00	-82.81	928.18	1,694.23	8,091.79	8,021.73	70.06	115.500		
19,000.00	9,060.00	9,014.56	9,012.30	207.06	33.00	-82.70	928.19	1,694.23	8,191.78	8,121.63	70.14	116.787		
19,100.00	9,060.00	9,014.30	9,012.04	209.07	33.00	-82.59	928.19	1,694.23	8,291.76	8,221.54	70.23	118.071		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	9,014.03	9,011.78	211.09	32.99	-82.48	928.19	1,694.23	8,391.75	8,321.44	70.31	119.349	
19,300.00	9,060.00	9,013.77	9,011.51	213.11	32.99	-82.37	928.20	1,694.23	8,491.74	8,421.34	70.40	120.624	
19,400.00	9,060.00	9,013.51	9,011.25	215.13	32.99	-82.26	928.20	1,694.23	8,591.72	8,521.24	70.48	121.895	
19,500.32	9,060.00	9,013.24	9,010.98	217.16	32.99	-82.14	928.21	1,694.23	8,692.03	8,621.46	70.57	123.165	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	172.62	-2,937.12	380.22	2,961.70					
100.00	100.00	78.40	78.40	0.52	1.14	172.62	-2,937.12	380.22	2,961.62	2,959.97	1.66	1,786.635		
200.00	200.00	178.40	178.40	0.70	2.57	172.62	-2,937.12	380.22	2,961.62	2,958.35	3.27	904.804		
300.00	300.00	278.40	278.40	0.99	4.05	172.62	-2,937.12	380.22	2,961.62	2,956.59	5.04	587.858		
400.00	400.00	378.40	378.40	1.31	5.54	172.62	-2,937.12	380.22	2,961.62	2,954.78	6.85	432.416		
500.00	500.00	478.40	478.40	1.65	7.03	172.62	-2,937.12	380.22	2,961.62	2,952.95	8.68	341.246		
600.00	600.00	578.40	578.40	1.99	8.53	172.62	-2,937.12	380.22	2,961.62	2,951.11	10.52	281.580		
700.00	700.00	678.40	678.40	2.34	10.02	172.62	-2,937.12	380.22	2,961.62	2,949.26	12.36	239.574		
800.00	800.00	778.40	778.40	2.69	11.52	172.62	-2,937.12	380.22	2,961.62	2,947.42	14.21	208.428		
900.00	900.00	878.40	878.40	3.04	13.02	172.62	-2,937.12	380.22	2,961.62	2,945.57	16.06	184.425		
1,000.00	1,000.00	978.40	978.40	3.40	14.51	172.62	-2,937.12	380.22	2,961.62	2,943.72	17.91	165.366		
1,100.00	1,100.00	1,078.40	1,078.40	3.75	16.01	172.62	-2,937.12	380.22	2,961.62	2,941.86	19.76	149.870		
1,200.00	1,200.00	1,178.40	1,178.40	4.11	17.51	172.62	-2,937.12	380.22	2,961.62	2,940.01	21.61	137.025		
1,300.00	1,300.00	1,278.40	1,278.40	4.46	19.00	172.62	-2,937.12	380.22	2,961.62	2,938.16	23.47	126.205		
1,400.00	1,400.00	1,378.40	1,378.40	4.82	20.50	172.62	-2,937.12	380.22	2,961.62	2,936.30	25.32	116.966		
1,500.00	1,500.00	1,478.40	1,478.40	5.18	22.00	172.62	-2,937.12	380.22	2,961.62	2,934.45	27.17	108.986		
1,600.00	1,600.00	1,578.40	1,578.40	5.53	23.49	172.62	-2,937.12	380.22	2,961.62	2,932.60	29.03	102.025		
1,700.00	1,700.00	1,678.40	1,678.40	5.89	24.99	172.62	-2,937.12	380.22	2,961.62	2,930.74	30.88	95.898		
1,800.00	1,800.00	1,778.40	1,778.40	6.25	26.49	172.62	-2,937.12	380.22	2,961.62	2,928.89	32.74	90.466		
1,900.00	1,900.00	1,878.40	1,878.40	6.61	27.99	172.62	-2,937.12	380.22	2,961.62	2,927.03	34.59	85.615		
2,000.00	2,000.00	1,978.40	1,978.40	6.96	29.48	172.62	-2,937.12	380.22	2,961.62	2,925.18	36.45	81.258		
2,100.00	2,100.00	2,078.40	2,078.40	7.32	30.98	172.62	-2,937.12	380.22	2,961.62	2,923.32	38.30	77.322		
2,200.00	2,200.00	2,178.40	2,178.40	7.68	32.48	172.62	-2,937.12	380.22	2,961.62	2,921.47	40.16	73.750		
2,300.00	2,300.00	2,278.40	2,278.40	8.04	33.98	172.62	-2,937.12	380.22	2,961.62	2,919.61	42.01	70.494		
2,350.00	2,350.00	2,328.40	2,328.40	8.22	34.72	172.62	-2,937.12	380.22	2,961.62	2,918.68	42.94	68.971 CC		
2,400.00	2,400.00	2,378.40	2,378.40	8.39	35.47	-171.34	-2,937.12	380.22	2,961.84	2,917.97	43.87	67.518		
2,500.00	2,499.98	2,478.38	2,478.38	8.75	36.97	-171.34	-2,937.12	380.22	2,963.57	2,917.84	45.72	64.817 ES		
2,600.00	2,599.92	2,578.32	2,578.32	9.11	38.47	-171.34	-2,937.12	380.22	2,967.02	2,919.44	47.58	62.364		
2,700.00	2,699.78	2,678.18	2,678.18	9.47	39.96	-171.35	-2,937.12	380.22	2,972.19	2,922.76	49.43	60.131		
2,800.00	2,799.54	2,777.94	2,777.94	9.82	41.46	-171.36	-2,937.12	380.22	2,979.09	2,927.81	51.28	58.095		
2,900.00	2,899.16	2,877.56	2,877.56	10.18	42.95	-171.37	-2,937.12	380.22	2,987.70	2,934.58	53.13	56.235		
3,000.00	2,998.61	2,977.01	2,977.01	10.54	44.44	-171.39	-2,937.12	380.22	2,998.04	2,943.07	54.97	54.535		
3,100.00	3,097.86	3,076.26	3,076.26	10.89	45.92	-171.40	-2,937.12	380.22	3,010.09	2,953.27	56.82	52.978		
3,200.00	3,196.89	3,175.29	3,175.29	11.25	47.41	-171.42	-2,937.12	380.22	3,023.86	2,965.20	58.66	51.552		
3,295.74	3,291.45	3,269.85	3,269.85	11.59	48.82	-171.44	-2,937.12	380.22	3,038.63	2,978.22	60.41	50.297		
3,300.00	3,295.65	3,274.05	3,274.05	11.61	48.89	-171.44	-2,937.12	380.22	3,039.33	2,978.83	60.49	50.243		
3,400.00	3,394.29	3,372.69	3,372.69	11.97	50.36	-171.49	-2,937.12	380.22	3,055.58	2,993.26	62.33	49.026		
3,500.00	3,492.94	3,471.34	3,471.34	12.33	51.84	-171.54	-2,937.12	380.22	3,071.84	3,007.68	64.16	47.878		
3,600.00	3,591.58	3,569.98	3,569.98	12.69	53.32	-171.58	-2,937.12	380.22	3,088.10	3,022.10	65.99	46.794		
3,700.00	3,690.22	3,668.62	3,668.62	13.05	54.80	-171.63	-2,937.12	380.22	3,104.36	3,036.53	67.83	45.767		
3,800.00	3,788.86	3,767.26	3,767.26	13.41	56.27	-171.67	-2,937.12	380.22	3,120.62	3,050.95	69.67	44.794		
3,900.00	3,887.50	3,865.90	3,865.90	13.77	57.75	-171.71	-2,937.12	380.22	3,136.88	3,065.38	71.50	43.870		
4,000.00	3,986.14	3,964.54	3,964.54	14.14	59.23	-171.76	-2,937.12	380.22	3,153.15	3,079.81	73.34	42.993		
4,100.00	4,084.78	4,063.18	4,063.18	14.50	60.70	-171.80	-2,937.12	380.22	3,169.41	3,094.23	75.18	42.158		
4,200.00	4,183.42	4,161.82	4,161.82	14.87	62.18	-171.84	-2,937.12	380.22	3,185.68	3,108.66	77.02	41.362		
4,300.00	4,282.06	4,260.46	4,260.46	15.24	63.66	-171.88	-2,937.12	380.22	3,201.95	3,123.09	78.86	40.604		
4,400.00	4,380.70	4,359.10	4,359.10	15.60	65.14	-171.92	-2,937.12	380.22	3,218.22	3,137.53	80.70	39.879		
4,500.00	4,479.34	4,457.74	4,457.74	15.97	66.61	-171.96	-2,937.12	380.22	3,234.50	3,151.96	82.54	39.187		
4,600.00	4,577.98	4,556.38	4,556.38	16.34	68.09	-172.00	-2,937.12	380.22	3,250.77	3,166.39	84.38	38.525		
4,700.00	4,676.62	4,655.02	4,655.02	16.71	69.57	-172.04	-2,937.12	380.22	3,267.05	3,180.83	86.22	37.891		
4,800.00	4,775.27	4,753.67	4,753.67	17.08	71.05	-172.08	-2,937.12	380.22	3,283.33	3,195.26	88.06	37.283		
4,900.00	4,873.91	4,852.31	4,852.31	17.45	72.52	-172.12	-2,937.12	380.22	3,299.61	3,209.70	89.91	36.700		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,950.95	4,950.95	17.82	74.00	-172.16	-2,937.12	380.22	3,315.89	3,224.14	91.75	36.141		
5,100.00	5,071.19	5,049.59	5,049.59	18.19	75.48	-172.20	-2,937.12	380.22	3,332.17	3,238.58	93.59	35.603		
5,200.00	5,169.83	5,148.23	5,148.23	18.56	76.95	-172.24	-2,937.12	380.22	3,348.46	3,253.02	95.44	35.086		
5,300.00	5,268.47	5,246.87	5,246.87	18.93	78.43	-172.28	-2,937.12	380.22	3,364.74	3,267.46	97.28	34.588		
5,400.00	5,367.11	5,345.51	5,345.51	19.31	79.91	-172.31	-2,937.12	380.22	3,381.03	3,281.91	99.12	34.109		
5,500.00	5,465.75	5,444.15	5,444.15	19.68	81.39	-172.35	-2,937.12	380.22	3,397.32	3,296.35	100.97	33.648		
5,600.00	5,564.39	5,542.79	5,542.79	20.05	82.86	-172.39	-2,937.12	380.22	3,413.61	3,310.79	102.81	33.202		
5,700.00	5,663.03	5,641.43	5,641.43	20.42	84.34	-172.42	-2,937.12	380.22	3,429.90	3,325.24	104.66	32.773		
5,800.00	5,761.67	5,740.07	5,740.07	20.80	85.82	-172.46	-2,937.12	380.22	3,446.19	3,339.69	106.50	32.358		
5,900.00	5,860.31	5,838.71	5,838.71	21.17	87.29	-172.50	-2,937.12	380.22	3,462.48	3,354.14	108.35	31.957		
6,000.00	5,958.96	5,937.36	5,937.36	21.54	88.77	-172.53	-2,937.12	380.22	3,478.78	3,368.59	110.19	31.570		
6,100.00	6,057.60	6,036.00	6,036.00	21.92	90.25	-172.57	-2,937.12	380.22	3,495.08	3,383.04	112.04	31.196		
6,200.00	6,156.24	6,134.64	6,134.64	22.29	91.73	-172.60	-2,937.12	380.22	3,511.37	3,397.49	113.88	30.833		
6,300.00	6,254.88	6,233.28	6,233.28	22.67	93.20	-172.64	-2,937.12	380.22	3,527.67	3,411.94	115.73	30.482		
6,400.00	6,353.52	6,331.92	6,331.92	23.04	94.68	-172.67	-2,937.12	380.22	3,543.97	3,426.40	117.58	30.142		
6,500.00	6,452.16	6,430.56	6,430.56	23.42	96.16	-172.70	-2,937.12	380.22	3,560.27	3,440.85	119.42	29.813		
6,600.00	6,550.80	6,529.20	6,529.20	23.79	97.64	-172.74	-2,937.12	380.22	3,576.58	3,455.31	121.27	29.493		
6,700.00	6,649.44	6,627.84	6,627.84	24.17	99.11	-172.77	-2,937.12	380.22	3,592.88	3,469.76	123.12	29.183		
6,800.00	6,748.08	6,726.48	6,726.48	24.54	100.59	-172.80	-2,937.12	380.22	3,609.18	3,484.22	124.96	28.882		
6,900.00	6,846.72	6,825.12	6,825.12	24.92	102.07	-172.84	-2,937.12	380.22	3,625.49	3,498.68	126.81	28.590		
7,000.00	6,945.36	6,923.76	6,923.76	25.29	103.54	-172.87	-2,937.12	380.22	3,641.80	3,513.14	128.66	28.306		
7,100.00	7,044.00	7,022.40	7,022.40	25.67	105.02	-172.90	-2,937.12	380.22	3,658.11	3,527.60	130.50	28.031		
7,200.00	7,142.65	7,121.05	7,121.05	26.04	106.50	-172.93	-2,937.12	380.22	3,674.41	3,542.06	132.35	27.763		
7,300.00	7,241.29	7,219.69	7,219.69	26.42	107.98	-172.96	-2,937.12	380.22	3,690.73	3,556.53	134.20	27.502		
7,400.00	7,339.93	7,318.33	7,318.33	26.79	109.45	-172.99	-2,937.12	380.22	3,707.04	3,570.99	136.05	27.248		
7,500.00	7,438.57	7,416.97	7,416.97	27.17	110.93	-173.02	-2,937.12	380.22	3,723.35	3,585.46	137.89	27.002		
7,571.77	7,509.37	7,487.77	7,487.77	27.44	111.99	-173.05	-2,937.12	380.22	3,735.06	3,595.84	139.22	26.828		
7,600.00	7,537.23	7,515.63	7,515.63	27.55	112.41	-173.06	-2,937.12	380.22	3,739.56	3,599.82	139.74	26.760		
7,700.00	7,636.18	7,614.58	7,614.58	27.92	113.89	-173.12	-2,937.12	380.22	3,753.87	3,612.27	141.59	26.512		
7,800.00	7,735.48	7,713.88	7,713.88	28.29	115.38	-173.16	-2,937.12	380.22	3,765.59	3,622.15	143.45	26.251		
7,900.00	7,835.05	7,813.45	7,813.45	28.65	116.87	-173.19	-2,937.12	380.22	3,774.74	3,629.44	145.30	25.979		
8,000.00	7,934.83	7,913.23	7,913.23	29.01	118.36	-173.21	-2,937.12	380.22	3,781.29	3,634.14	147.15	25.696		
8,100.00	8,034.74	8,013.14	8,013.14	29.36	119.86	-173.23	-2,937.12	380.22	3,785.25	3,636.24	149.01	25.403		
8,202.27	8,137.00	8,115.40	8,115.40	29.72	121.39	170.73	-2,937.12	380.22	3,786.61	3,635.71	150.90	25.094		
8,300.00	8,234.73	8,213.13	8,213.13	30.06	122.85	170.73	-2,937.12	380.22	3,786.61	3,633.91	152.70	24.798		
8,400.00	8,334.73	8,313.13	8,313.13	30.41	124.35	170.73	-2,937.12	380.22	3,786.61	3,632.06	154.55	24.501		
8,500.00	8,434.73	8,413.13	8,413.13	30.75	125.85	170.73	-2,937.12	380.22	3,786.61	3,630.22	156.39	24.212		
8,552.31	8,487.04	8,465.44	8,465.44	30.94	126.63	170.73	-2,937.12	380.22	3,786.61	3,629.25	157.36	24.063		
8,600.00	8,534.68	8,513.08	8,513.08	31.10	127.35	81.13	-2,937.12	380.22	3,786.30	3,628.07	158.23	23.928		
8,650.00	8,584.26	8,562.66	8,562.66	31.26	128.09	81.32	-2,937.12	380.22	3,785.33	3,626.19	159.14	23.786		
8,700.00	8,633.10	8,611.50	8,611.50	31.43	128.82	81.63	-2,937.12	380.22	3,783.72	3,623.68	160.03	23.643		
8,750.00	8,680.83	8,659.23	8,659.23	31.58	129.54	82.06	-2,937.12	380.22	3,781.51	3,620.61	160.91	23.501		
8,800.00	8,727.09	8,705.49	8,705.49	31.74	130.23	82.60	-2,937.12	380.22	3,778.78	3,617.03	161.76	23.361		
8,850.00	8,771.52	8,749.92	8,749.92	31.89	130.89	83.22	-2,937.12	380.22	3,775.61	3,613.03	162.58	23.224		
8,900.00	8,813.78	8,792.18	8,792.18	32.04	131.53	83.91	-2,937.12	380.22	3,772.08	3,608.71	163.36	23.090		
8,950.00	8,853.56	8,831.96	8,831.96	32.18	132.12	84.65	-2,937.12	380.22	3,768.30	3,604.18	164.11	22.962		
9,000.00	8,890.55	8,868.95	8,868.95	32.32	132.68	85.42	-2,937.12	380.22	3,764.38	3,599.56	164.83	22.839		
9,050.00	8,924.46	8,902.86	8,902.86	32.47	133.18	86.20	-2,937.12	380.22	3,760.45	3,594.95	165.50	22.722		
9,100.00	8,955.05	8,933.45	8,933.45	32.63	133.64	86.95	-2,937.12	380.22	3,756.60	3,590.48	166.13	22.613		
9,150.00	8,982.08	8,960.48	8,960.48	32.79	134.05	87.66	-2,937.12	380.22	3,752.97	3,586.25	166.72	22.511		
9,200.00	9,005.34	8,983.74	8,983.74	32.97	134.40	88.31	-2,937.12	380.22	3,749.65	3,582.38	167.26	22.418		
9,250.00	9,024.65	9,003.05	9,003.05	33.17	134.68	88.87	-2,937.12	380.22	3,746.74	3,578.97	167.77	22.333		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,018.27	9,018.27	33.38	134.91	89.33	-2,937.12	380.22	3,744.34	3,576.11	168.23	22.257		
9,350.00	9,050.89	9,029.29	9,029.29	33.62	135.08	89.68	-2,937.12	380.22	3,742.50	3,573.85	168.65	22.192		
9,400.00	9,057.61	9,036.01	9,036.01	33.87	135.18	89.91	-2,937.12	380.22	3,741.28	3,572.26	169.01	22.136		
9,452.31	9,060.00	9,038.40	9,038.40	34.15	135.21	90.00	-2,937.12	380.22	3,740.70	3,571.36	169.34	22.090		
9,467.38	9,060.00	9,038.40	9,038.40	34.24	135.21	90.00	-2,937.12	380.22	3,740.67	3,571.24	169.43	22.078		
9,500.00	9,060.00	9,038.40	9,038.40	34.42	135.21	90.00	-2,937.12	380.22	3,740.81	3,571.19	169.62	22.054		
9,600.00	9,060.00	9,038.40	9,038.40	35.09	135.21	90.00	-2,937.12	380.22	3,743.02	3,572.72	170.30	21.979		
9,700.00	9,060.00	9,038.40	9,038.40	35.86	135.21	90.00	-2,937.12	380.22	3,747.90	3,576.83	171.07	21.909		
9,800.00	9,060.00	9,038.40	9,038.40	36.72	135.21	90.00	-2,937.12	380.22	3,755.43	3,583.51	171.92	21.844		
9,900.00	9,060.00	9,038.40	9,038.40	37.69	135.21	90.00	-2,937.12	380.22	3,765.61	3,592.75	172.85	21.785		
10,000.00	9,060.00	9,038.40	9,038.40	38.73	135.21	90.00	-2,937.12	380.22	3,778.40	3,604.55	173.85	21.734		
10,100.00	9,060.00	9,038.40	9,038.40	39.86	135.21	90.00	-2,937.12	380.22	3,793.79	3,618.89	174.89	21.692		
10,140.22	9,060.00	9,038.40	9,038.40	40.33	135.21	90.00	-2,937.12	380.22	3,800.70	3,625.38	175.33	21.678		
10,200.00	9,060.00	9,038.40	9,038.40	41.05	135.21	90.00	-2,937.12	380.22	3,811.13	3,635.14	175.99	21.656		
10,300.00	9,060.00	9,038.40	9,038.40	42.31	135.21	90.00	-2,937.12	380.22	3,827.85	3,650.73	177.12	21.611		
10,400.00	9,060.00	9,038.40	9,038.40	43.64	135.21	90.00	-2,937.12	380.22	3,843.67	3,665.37	178.30	21.557		
10,507.23	9,060.00	9,038.40	9,038.40	45.11	135.21	90.00	-2,937.12	380.22	3,859.63	3,680.03	179.60	21.491		
10,600.00	9,060.00	9,038.40	9,038.40	46.43	135.21	90.00	-2,937.12	380.22	3,875.55	3,694.81	180.73	21.443		
10,700.00	9,060.00	9,038.40	9,038.40	47.91	135.21	90.00	-2,937.12	380.22	3,898.38	3,716.42	181.96	21.424 SF		
10,800.00	9,060.00	9,038.40	9,038.40	49.42	135.21	90.00	-2,937.12	380.22	3,926.99	3,743.81	183.18	21.438		
10,900.00	9,060.00	9,038.40	9,038.40	50.97	135.21	90.00	-2,937.12	380.22	3,961.20	3,776.83	184.37	21.486		
11,000.00	9,060.00	9,038.40	9,038.40	52.55	135.21	90.00	-2,937.12	380.22	4,000.83	3,815.31	185.52	21.566		
11,100.00	9,060.00	9,038.40	9,038.40	54.14	135.21	90.00	-2,937.12	380.22	4,045.67	3,859.05	186.63	21.678		
11,207.23	9,060.00	9,038.40	9,038.40	55.87	135.21	90.00	-2,937.12	380.22	4,099.30	3,911.54	187.76	21.833		
11,300.00	9,060.00	9,038.40	9,038.40	57.39	135.21	90.00	-2,937.12	380.22	4,147.57	3,958.86	188.71	21.978		
11,400.00	9,060.00	9,038.40	9,038.40	59.06	135.21	90.00	-2,937.12	380.22	4,198.43	4,008.69	189.74	22.128		
11,506.63	9,060.00	9,038.40	9,038.40	60.88	135.21	90.00	-2,937.12	380.22	4,251.29	4,060.46	190.83	22.278		
11,600.00	9,060.00	9,038.40	9,038.40	62.49	135.21	90.00	-2,937.12	380.22	4,297.73	4,105.96	191.77	22.410		
11,700.00	9,060.00	9,038.40	9,038.40	64.24	135.21	90.00	-2,937.12	380.22	4,349.14	4,156.38	192.76	22.563		
11,800.00	9,060.00	9,038.40	9,038.40	66.01	135.21	90.00	-2,937.12	380.22	4,402.23	4,208.51	193.71	22.725		
11,900.00	9,060.00	9,038.40	9,038.40	67.79	135.21	90.00	-2,937.12	380.22	4,456.92	4,262.28	194.64	22.898		
12,000.00	9,060.00	9,038.40	9,038.40	69.58	135.21	90.00	-2,937.12	380.22	4,513.17	4,317.64	195.53	23.081		
12,100.00	9,060.00	9,038.40	9,038.40	71.39	135.21	90.00	-2,937.12	380.22	4,570.91	4,374.52	196.40	23.274		
12,200.00	9,060.00	9,038.40	9,038.40	73.21	135.21	90.00	-2,937.12	380.22	4,630.10	4,432.87	197.23	23.476		
12,300.00	9,060.00	9,038.40	9,038.40	75.05	135.21	90.00	-2,937.12	380.22	4,690.67	4,492.63	198.03	23.686		
12,400.00	9,060.00	9,038.40	9,038.40	76.89	135.21	90.00	-2,937.12	380.22	4,752.57	4,553.76	198.81	23.905		
12,500.00	9,060.00	9,038.40	9,038.40	78.74	135.21	90.00	-2,937.12	380.22	4,815.75	4,616.19	199.55	24.132		
12,600.00	9,060.00	9,038.40	9,038.40	80.61	135.21	90.00	-2,937.12	380.22	4,880.16	4,679.89	200.27	24.368		
12,700.00	9,060.00	9,038.40	9,038.40	82.48	135.21	90.00	-2,937.12	380.22	4,945.76	4,744.80	200.96	24.610		
12,800.00	9,060.00	9,038.40	9,038.40	84.36	135.21	90.00	-2,937.12	380.22	5,012.49	4,810.86	201.63	24.860		
12,900.00	9,060.00	9,038.40	9,038.40	86.24	135.21	90.00	-2,937.12	380.22	5,080.32	4,878.05	202.27	25.117		
13,000.00	9,060.00	9,038.40	9,038.40	88.14	135.21	90.00	-2,937.12	380.22	5,149.19	4,946.31	202.88	25.380		
13,100.00	9,060.00	9,038.40	9,038.40	90.04	135.21	90.00	-2,937.12	380.22	5,219.07	5,015.60	203.47	25.650		
13,200.00	9,060.00	9,038.40	9,038.40	91.94	135.21	90.00	-2,937.12	380.22	5,289.92	5,085.88	204.04	25.926		
13,300.00	9,060.00	9,038.40	9,038.40	93.86	135.21	90.00	-2,937.12	380.22	5,361.70	5,157.12	204.58	26.208		
13,400.00	9,060.00	9,038.40	9,038.40	95.77	135.21	90.00	-2,937.12	380.22	5,434.37	5,229.26	205.11	26.495		
13,500.00	9,060.00	9,038.40	9,038.40	97.70	135.21	90.00	-2,937.12	380.22	5,507.90	5,302.29	205.61	26.788		
13,600.00	9,060.00	9,038.40	9,038.40	99.62	135.21	90.00	-2,937.12	380.22	5,582.25	5,376.15	206.09	27.086		
13,700.00	9,060.00	9,038.40	9,038.40	101.56	135.21	90.00	-2,937.12	380.22	5,657.39	5,450.83	206.56	27.389		
13,800.00	9,060.00	9,038.40	9,038.40	103.49	135.21	90.00	-2,937.12	380.22	5,733.29	5,526.28	207.00	27.697		
13,900.00	9,060.00	9,038.40	9,038.40	105.43	135.21	90.00	-2,937.12	380.22	5,809.92	5,602.48	207.43	28.009		
14,000.00	9,060.00	9,038.40	9,038.40	107.38	135.21	90.00	-2,937.12	380.22	5,887.25	5,679.40	207.85	28.325		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	9,038.40	9,038.40	109.33	135.21	90.00	-2,937.12	380.22	5,965.25	5,757.01	208.24	28.646	
14,200.00	9,060.00	9,038.40	9,038.40	111.28	135.21	90.00	-2,937.12	380.22	6,043.90	5,835.28	208.62	28.970	
14,300.00	9,060.00	9,038.40	9,038.40	113.23	135.21	90.00	-2,937.12	380.22	6,123.18	5,914.19	208.99	29.299	
14,400.00	9,060.00	9,038.40	9,038.40	115.19	135.21	90.00	-2,937.12	380.22	6,203.05	5,993.71	209.34	29.631	
14,500.00	9,060.00	9,038.40	9,038.40	117.15	135.21	90.00	-2,937.12	380.22	6,283.50	6,073.82	209.68	29.967	
14,600.00	9,060.00	9,038.40	9,038.40	119.11	135.21	90.00	-2,937.12	380.22	6,364.51	6,154.50	210.01	30.306	
14,700.00	9,060.00	9,038.40	9,038.40	121.08	135.21	90.00	-2,937.12	380.22	6,446.05	6,235.72	210.33	30.648	
14,800.00	9,060.00	9,038.40	9,038.40	123.05	135.21	90.00	-2,937.12	380.22	6,528.10	6,317.47	210.63	30.993	
14,900.00	9,060.00	9,038.40	9,038.40	125.02	135.21	90.00	-2,937.12	380.22	6,610.64	6,399.72	210.92	31.341	
15,000.00	9,060.00	9,038.40	9,038.40	126.99	135.21	90.00	-2,937.12	380.22	6,693.67	6,482.46	211.21	31.693	
15,100.00	9,060.00	9,038.40	9,038.40	128.97	135.21	90.00	-2,937.12	380.22	6,777.15	6,565.67	211.48	32.046	
15,200.00	9,060.00	9,038.40	9,038.40	130.95	135.21	90.00	-2,937.12	380.22	6,861.07	6,649.33	211.74	32.403	
15,300.00	9,060.00	9,038.40	9,038.40	132.93	135.21	90.00	-2,937.12	380.22	6,945.42	6,733.42	212.00	32.762	
15,400.00	9,060.00	9,038.40	9,038.40	134.91	135.21	90.00	-2,937.12	380.22	7,030.17	6,817.93	212.24	33.124	
15,500.00	9,060.00	9,038.40	9,038.40	136.89	135.21	90.00	-2,937.12	380.22	7,115.33	6,902.85	212.48	33.487	
15,600.00	9,060.00	9,038.40	9,038.40	138.88	135.21	90.00	-2,937.12	380.22	7,200.86	6,988.16	212.71	33.853	
15,700.00	9,060.00	9,038.40	9,038.40	140.86	135.21	90.00	-2,937.12	380.22	7,286.77	7,073.84	212.93	34.221	
15,800.00	9,060.00	9,038.40	9,038.40	142.85	135.21	90.00	-2,937.12	380.22	7,373.03	7,159.88	213.14	34.592	
15,900.00	9,060.00	9,038.40	9,038.40	144.84	135.21	90.00	-2,937.12	380.22	7,459.63	7,246.28	213.35	34.964	
16,000.00	9,060.00	9,038.40	9,038.40	146.83	135.21	90.00	-2,937.12	380.22	7,546.57	7,333.01	213.55	35.338	
16,100.00	9,060.00	9,038.40	9,038.40	148.83	135.21	90.00	-2,937.12	380.22	7,633.82	7,420.07	213.75	35.714	
16,200.00	9,060.00	9,038.40	9,038.40	150.82	135.21	90.00	-2,937.12	380.22	7,721.38	7,507.44	213.94	36.092	
16,300.00	9,060.00	9,038.40	9,038.40	152.82	135.21	90.00	-2,937.12	380.22	7,809.24	7,595.12	214.12	36.471	
16,400.00	9,060.00	9,038.40	9,038.40	154.81	135.21	90.00	-2,937.12	380.22	7,897.39	7,683.10	214.30	36.852	
16,500.00	9,060.00	9,038.40	9,038.40	156.81	135.21	90.00	-2,937.12	380.22	7,985.82	7,771.35	214.47	37.235	
16,600.00	9,060.00	9,038.40	9,038.40	158.81	135.21	90.00	-2,937.12	380.22	8,074.52	7,859.88	214.64	37.619	
16,700.00	9,060.00	9,038.40	9,038.40	160.81	135.21	90.00	-2,937.12	380.22	8,163.48	7,948.68	214.80	38.004	
16,800.00	9,060.00	9,038.40	9,038.40	162.81	135.21	90.00	-2,937.12	380.22	8,252.70	8,037.74	214.96	38.391	
16,900.00	9,060.00	9,038.40	9,038.40	164.82	135.21	90.00	-2,937.12	380.22	8,342.16	8,127.04	215.12	38.780	
17,000.00	9,060.00	9,038.40	9,038.40	166.82	135.21	90.00	-2,937.12	380.22	8,431.85	8,216.58	215.27	39.169	
17,100.00	9,060.00	9,038.40	9,038.40	168.82	135.21	90.00	-2,937.12	380.22	8,521.78	8,306.36	215.41	39.560	
17,200.00	9,060.00	9,038.40	9,038.40	170.83	135.21	90.00	-2,937.12	380.22	8,611.92	8,396.37	215.56	39.952	
17,300.00	9,060.00	9,038.40	9,038.40	172.84	135.21	90.00	-2,937.12	380.22	8,702.29	8,486.59	215.70	40.345	
17,400.00	9,060.00	9,038.40	9,038.40	174.84	135.21	90.00	-2,937.12	380.22	8,792.86	8,577.02	215.83	40.739	
17,500.00	9,060.00	9,038.40	9,038.40	176.85	135.21	90.00	-2,937.12	380.22	8,883.63	8,667.66	215.97	41.135	
17,600.00	9,060.00	9,038.40	9,038.40	178.86	135.21	90.00	-2,937.12	380.22	8,974.60	8,758.50	216.09	41.531	
17,700.00	9,060.00	9,038.40	9,038.40	180.87	135.21	90.00	-2,937.12	380.22	9,065.76	8,849.54	216.22	41.928	
17,800.00	9,060.00	9,038.40	9,038.40	182.88	135.21	90.00	-2,937.12	380.22	9,157.10	8,940.76	216.35	42.326	
17,900.00	9,060.00	9,038.40	9,038.40	184.89	135.21	90.00	-2,937.12	380.22	9,248.63	9,032.16	216.47	42.725	
18,000.00	9,060.00	9,038.40	9,038.40	186.90	135.21	90.00	-2,937.12	380.22	9,340.32	9,123.74	216.58	43.125	
18,100.00	9,060.00	9,038.40	9,038.40	188.92	135.21	90.00	-2,937.12	380.22	9,432.19	9,215.49	216.70	43.526	
18,200.00	9,060.00	9,038.40	9,038.40	190.93	135.21	90.00	-2,937.12	380.22	9,524.22	9,307.40	216.81	43.928	
18,300.00	9,060.00	9,038.40	9,038.40	192.94	135.21	90.00	-2,937.12	380.22	9,616.41	9,399.48	216.93	44.330	
18,400.00	9,060.00	9,038.40	9,038.40	194.96	135.21	90.00	-2,937.12	380.22	9,708.75	9,491.71	217.04	44.734	
18,500.00	9,060.00	9,038.40	9,038.40	196.97	135.21	90.00	-2,937.12	380.22	9,801.24	9,584.10	217.14	45.137	
18,600.00	9,060.00	9,038.40	9,038.40	198.99	135.21	90.00	-2,937.12	380.22	9,893.88	9,676.63	217.25	45.542	
18,700.00	9,060.00	9,038.40	9,038.40	201.00	135.21	90.00	-2,937.12	380.22	9,986.66	9,769.31	217.35	45.947	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	110.53	-140.75	375.86	402.10					
100.00	100.00	75.40	75.40	0.52	10.09	110.53	-140.75	375.86	401.35	390.74	10.60	37.846		
200.00	200.00	175.40	175.40	0.70	10.55	110.53	-140.75	375.86	401.35	390.10	11.25	35.684		
300.00	300.00	275.40	275.40	0.99	11.35	110.53	-140.75	375.86	401.35	389.01	12.34	32.530		
400.00	400.00	375.40	375.40	1.31	12.44	110.53	-140.75	375.86	401.35	387.60	13.75	29.199		
500.00	500.00	475.40	475.40	1.65	13.74	110.53	-140.75	375.86	401.35	385.97	15.38	26.093		
600.00	600.00	575.40	575.40	1.99	15.19	110.53	-140.75	375.86	401.35	384.16	17.18	23.355		
700.00	700.00	675.40	675.40	2.34	16.77	110.53	-140.75	375.86	401.35	382.24	19.11	21.003		
800.00	800.00	775.40	775.40	2.69	18.43	110.53	-140.75	375.86	401.35	380.22	21.12	18.999		
900.00	900.00	875.40	875.40	3.04	20.16	110.53	-140.75	375.86	401.35	378.14	23.21	17.294		
1,000.00	1,000.00	975.40	975.40	3.40	21.94	110.53	-140.75	375.86	401.35	376.01	25.34	15.838		
1,100.00	1,100.00	1,075.40	1,075.40	3.75	23.76	110.53	-140.75	375.86	401.35	373.83	27.51	14.587		
1,200.00	1,200.00	1,175.40	1,175.40	4.11	25.61	110.53	-140.75	375.86	401.35	371.63	29.72	13.504		
1,300.00	1,300.00	1,275.40	1,275.40	4.46	27.49	110.53	-140.75	375.86	401.35	369.40	31.95	12.562		
1,400.00	1,400.00	1,375.40	1,375.40	4.82	29.38	110.53	-140.75	375.86	401.35	367.15	34.20	11.735		
1,500.00	1,500.00	1,475.40	1,475.40	5.18	31.29	110.53	-140.75	375.86	401.35	364.88	36.47	11.006		
1,600.00	1,600.00	1,575.40	1,575.40	5.53	33.21	110.53	-140.75	375.86	401.35	362.60	38.75	10.358		
1,700.00	1,700.00	1,675.40	1,675.40	5.89	35.15	110.53	-140.75	375.86	401.35	360.31	41.04	9.780		
1,800.00	1,800.00	1,775.40	1,775.40	6.25	37.09	110.53	-140.75	375.86	401.35	358.01	43.34	9.260		
1,900.00	1,900.00	1,875.40	1,875.40	6.61	39.05	110.53	-140.75	375.86	401.35	355.70	45.65	8.792		
2,000.00	2,000.00	1,975.40	1,975.40	6.96	41.00	110.53	-140.75	375.86	401.35	353.38	47.97	8.367		
2,100.00	2,100.00	2,075.40	2,075.40	7.32	42.97	110.53	-140.75	375.86	401.35	351.06	50.29	7.981		
2,200.00	2,200.00	2,175.40	2,175.40	7.68	44.94	110.53	-140.75	375.86	401.35	348.73	52.62	7.628		
2,300.00	2,300.00	2,275.40	2,275.40	8.04	46.91	110.53	-140.75	375.86	401.35	346.40	54.95	7.304		
2,350.00	2,350.00	2,325.40	2,325.40	8.22	47.90	110.53	-140.75	375.86	401.35	345.23	56.12	7.152 CC		
2,400.00	2,400.00	2,375.40	2,375.40	8.39	48.89	126.59	-140.75	375.86	401.48	344.19	57.29	7.008		
2,500.00	2,499.98	2,475.38	2,475.38	8.75	50.87	126.79	-140.75	375.86	402.52	342.90	59.62	6.751		
2,600.00	2,599.92	2,575.32	2,575.32	9.11	52.86	127.16	-140.75	375.86	404.62	342.66	61.96	6.530 ES		
2,700.00	2,699.78	2,675.18	2,675.18	9.47	54.84	127.72	-140.75	375.86	407.81	343.50	64.31	6.342		
2,800.00	2,799.54	2,774.94	2,774.94	9.82	56.83	128.46	-140.75	375.86	412.12	345.47	66.65	6.184		
2,900.00	2,899.16	2,874.56	2,874.56	10.18	58.82	129.35	-140.75	375.86	417.60	348.62	68.99	6.053		
3,000.00	2,998.61	2,974.01	2,974.01	10.54	60.80	130.39	-140.75	375.86	424.33	353.00	71.33	5.949		
3,100.00	3,097.86	3,073.26	3,073.26	10.89	62.78	131.55	-140.75	375.86	432.35	358.69	73.66	5.869		
3,200.00	3,196.89	3,172.29	3,172.29	11.25	64.76	132.82	-140.75	375.86	441.75	365.75	76.00	5.813		
3,295.74	3,291.45	3,266.85	3,266.85	11.59	66.65	134.13	-140.75	375.86	452.10	373.87	78.23	5.779		
3,300.00	3,295.65	3,271.05	3,271.05	11.61	66.73	134.19	-140.75	375.86	452.59	374.26	78.33	5.778		
3,400.00	3,394.29	3,369.69	3,369.69	11.97	68.71	135.64	-140.75	375.86	464.27	383.61	80.66	5.756		
3,500.00	3,492.94	3,468.34	3,468.34	12.33	70.68	137.01	-140.75	375.86	476.23	393.24	82.99	5.739		
3,600.00	3,591.58	3,566.98	3,566.98	12.69	72.66	138.32	-140.75	375.86	488.45	403.13	85.32	5.725		
3,700.00	3,690.22	3,665.62	3,665.62	13.05	74.64	139.56	-140.75	375.86	500.92	413.26	87.66	5.715		
3,800.00	3,788.86	3,764.26	3,764.26	13.41	76.62	140.74	-140.75	375.86	513.60	423.61	89.99	5.707		
3,900.00	3,887.50	3,862.90	3,862.90	13.77	78.59	141.87	-140.75	375.86	526.50	434.16	92.33	5.702		
4,000.00	3,986.14	3,961.54	3,961.54	14.14	80.57	142.94	-140.75	375.86	539.58	444.91	94.67	5.699		
4,100.00	4,084.78	4,060.18	4,060.18	14.50	82.56	143.96	-140.75	375.86	552.85	455.83	97.02	5.699		
4,200.00	4,183.42	4,158.82	4,158.82	14.87	84.54	144.94	-140.75	375.86	566.28	466.92	99.36	5.699		
4,300.00	4,282.06	4,257.46	4,257.46	15.24	86.52	145.87	-140.75	375.86	579.86	478.16	101.70	5.702		
4,400.00	4,380.70	4,356.10	4,356.10	15.60	88.50	146.75	-140.75	375.86	593.59	489.54	104.05	5.705		
4,500.00	4,479.34	4,454.74	4,454.74	15.97	90.49	147.60	-140.75	375.86	607.45	501.06	106.39	5.709		
4,600.00	4,577.98	4,553.38	4,553.38	16.34	92.47	148.41	-140.75	375.86	621.44	512.70	108.74	5.715		
4,700.00	4,676.62	4,652.02	4,652.02	16.71	94.45	149.18	-140.75	375.86	635.55	524.46	111.09	5.721		
4,800.00	4,775.27	4,750.67	4,750.67	17.08	96.44	149.92	-140.75	375.86	649.76	536.32	113.44	5.728		
4,900.00	4,873.91	4,849.31	4,849.31	17.45	98.42	150.63	-140.75	375.86	664.08	548.29	115.79	5.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,947.95	4,947.95	17.82	100.41	151.31	-140.75	375.86	678.49	560.35	118.14	5.743		
5,100.00	5,071.19	5,046.59	5,046.59	18.19	102.40	151.96	-140.75	375.86	693.00	572.50	120.49	5.751		
5,200.00	5,169.83	5,145.23	5,145.23	18.56	104.38	152.58	-140.75	375.86	707.58	584.74	122.84	5.760		
5,300.00	5,268.47	5,243.87	5,243.87	18.93	106.37	153.18	-140.75	375.86	722.25	597.05	125.20	5.769		
5,400.00	5,367.11	5,342.51	5,342.51	19.31	108.36	153.75	-140.75	375.86	736.99	609.44	127.55	5.778		
5,500.00	5,465.75	5,441.15	5,441.15	19.68	110.34	154.31	-140.75	375.86	751.80	621.90	129.90	5.787		
5,600.00	5,564.39	5,539.79	5,539.79	20.05	112.33	154.84	-140.75	375.86	766.68	634.42	132.26	5.797		
5,700.00	5,663.03	5,638.43	5,638.43	20.42	114.32	155.35	-140.75	375.86	781.62	647.00	134.61	5.806		
5,800.00	5,761.67	5,737.07	5,737.07	20.80	116.31	155.84	-140.75	375.86	796.61	659.65	136.97	5.816		
5,900.00	5,860.31	5,835.71	5,835.71	21.17	118.30	156.31	-140.75	375.86	811.67	672.34	139.32	5.826		
6,000.00	5,958.96	5,934.36	5,934.36	21.54	120.28	156.77	-140.75	375.86	826.77	685.09	141.68	5.836		
6,100.00	6,057.60	6,033.00	6,033.00	21.92	122.27	157.21	-140.75	375.86	841.93	697.89	144.04	5.845		
6,200.00	6,156.24	6,131.64	6,131.64	22.29	124.26	157.64	-140.75	375.86	857.13	710.74	146.39	5.855		
6,300.00	6,254.88	6,230.28	6,230.28	22.67	126.25	158.05	-140.75	375.86	872.38	723.63	148.75	5.865		
6,400.00	6,353.52	6,328.92	6,328.92	23.04	128.24	158.44	-140.75	375.86	887.67	736.56	151.11	5.874		
6,500.00	6,452.16	6,427.56	6,427.56	23.42	130.23	158.82	-140.75	375.86	903.00	749.53	153.47	5.884		
6,600.00	6,550.80	6,526.20	6,526.20	23.79	132.22	159.19	-140.75	375.86	918.37	762.54	155.83	5.894		
6,700.00	6,649.44	6,624.84	6,624.84	24.17	134.21	159.55	-140.75	375.86	933.77	775.58	158.19	5.903		
6,800.00	6,748.08	6,723.48	6,723.48	24.54	136.20	159.90	-140.75	375.86	949.21	788.66	160.54	5.912		
6,900.00	6,846.72	6,822.12	6,822.12	24.92	138.19	160.23	-140.75	375.86	964.68	801.77	162.90	5.922		
7,000.00	6,945.36	6,920.76	6,920.76	25.29	140.18	160.56	-140.75	375.86	980.18	814.92	165.26	5.931		
7,100.00	7,044.00	7,019.40	7,019.40	25.67	142.17	160.87	-140.75	375.86	995.71	828.09	167.62	5.940		
7,200.00	7,142.65	7,118.05	7,118.05	26.04	144.17	161.18	-140.75	375.86	1,011.27	841.29	169.99	5.949		
7,300.00	7,241.29	7,216.69	7,216.69	26.42	146.16	161.47	-140.75	375.86	1,026.86	854.52	172.35	5.958		
7,400.00	7,339.93	7,315.33	7,315.33	26.79	148.15	161.76	-140.75	375.86	1,042.48	867.77	174.71	5.967		
7,500.00	7,438.57	7,413.97	7,413.97	27.17	150.14	162.04	-140.75	375.86	1,058.11	881.05	177.07	5.976		
7,571.77	7,509.37	7,484.77	7,484.77	27.44	151.57	162.23	-140.75	375.86	1,069.35	890.59	178.76	5.982		
7,600.00	7,537.23	7,512.63	7,512.63	27.55	152.13	162.32	-140.75	375.86	1,073.68	894.25	179.43	5.984		
7,700.00	7,636.18	7,611.58	7,611.58	27.92	154.13	162.62	-140.75	375.86	1,087.43	905.63	181.80	5.982		
7,800.00	7,735.48	7,710.88	7,710.88	28.29	156.13	162.85	-140.75	375.86	1,098.72	914.55	184.17	5.966		
7,900.00	7,835.05	7,810.45	7,810.45	28.65	158.14	163.03	-140.75	375.86	1,107.52	920.98	186.54	5.937		
8,000.00	7,934.83	7,910.23	7,910.23	29.01	160.16	163.16	-140.75	375.86	1,113.84	924.93	188.91	5.896		
8,100.00	8,034.74	8,010.14	8,010.14	29.36	162.18	163.23	-140.75	375.86	1,117.65	926.37	191.29	5.843		
8,202.27	8,137.00	8,112.40	8,112.40	29.72	164.24	147.22	-140.75	375.86	1,118.97	925.25	193.71	5.776		
8,300.00	8,234.73	8,210.13	8,210.13	30.06	166.22	147.22	-140.75	375.86	1,118.97	922.94	196.02	5.708		
8,400.00	8,334.73	8,310.13	8,310.13	30.41	168.23	147.22	-140.75	375.86	1,118.97	920.57	198.39	5.640		
8,500.00	8,434.73	8,410.13	8,410.13	30.75	170.25	147.22	-140.75	375.86	1,118.97	918.20	200.76	5.574		
8,552.31	8,487.04	8,462.44	8,462.44	30.94	171.31	147.22	-140.75	375.86	1,118.97	916.96	202.00	5.539		
8,600.00	8,534.68	8,510.08	8,510.08	31.10	172.27	57.73	-140.75	375.86	1,117.90	914.78	203.12	5.504		
8,650.00	8,584.26	8,559.66	8,559.66	31.26	173.28	58.29	-140.75	375.86	1,114.53	910.25	204.28	5.456		
8,700.00	8,633.10	8,608.50	8,608.50	31.43	174.26	59.24	-140.75	375.86	1,108.93	903.50	205.43	5.398		
8,750.00	8,680.83	8,656.23	8,656.23	31.58	175.23	60.55	-140.75	375.86	1,101.22	894.68	206.54	5.332		
8,800.00	8,727.09	8,702.49	8,702.49	31.74	176.16	62.23	-140.75	375.86	1,091.60	883.97	207.62	5.258		
8,850.00	8,771.52	8,746.92	8,746.92	31.89	177.06	64.25	-140.75	375.86	1,080.29	871.63	208.66	5.177		
8,900.00	8,813.78	8,789.18	8,789.18	32.04	177.91	66.58	-140.75	375.86	1,067.58	857.92	209.66	5.092		
8,950.00	8,853.56	8,828.96	8,828.96	32.18	178.71	69.16	-140.75	375.86	1,053.81	843.20	210.60	5.004		
9,000.00	8,890.55	8,865.95	8,865.95	32.32	179.46	71.93	-140.75	375.86	1,039.32	827.82	211.50	4.914 Alert		
9,050.00	8,924.46	8,899.86	8,899.86	32.47	180.15	74.80	-140.75	375.86	1,024.53	812.19	212.34	4.825 Alert		
9,100.00	8,955.05	8,930.45	8,930.45	32.63	180.77	77.67	-140.75	375.86	1,009.85	796.74	213.12	4.738 Alert		
9,150.00	8,982.08	8,957.48	8,957.48	32.79	181.31	80.44	-140.75	375.86	995.73	781.88	213.85	4.656 Alert		
9,200.00	9,005.34	8,980.74	8,980.74	32.97	181.78	83.01	-140.75	375.86	982.60	768.07	214.52	4.580 Alert		
9,250.00	9,024.65	9,000.05	9,000.05	33.17	182.17	85.28	-140.75	375.86	970.87	755.72	215.14	4.513 Alert		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,015.27	9,015.27	33.38	182.48	87.17	-140.75	375.86	960.93	745.22	215.71	4.455	Alert	
9,350.00	9,050.89	9,026.29	9,026.29	33.62	182.70	88.61	-140.75	375.86	953.11	736.91	216.21	4.408	Alert	
9,400.00	9,057.61	9,033.01	9,033.01	33.87	182.84	89.56	-140.75	375.86	947.68	731.04	216.64	4.375	Alert	
9,452.31	9,060.00	9,035.40	9,035.40	34.15	182.89	90.00	-140.75	375.86	944.73	727.73	217.00	4.354	Alert	
9,479.62	9,060.00	9,035.40	9,035.40	34.31	182.89	90.00	-140.75	375.86	944.33	727.16	217.17	4.348	Alert	
9,500.00	9,060.00	9,035.40	9,035.40	34.42	182.89	90.00	-140.75	375.86	944.55	727.25	217.30	4.347	Alert, SF	
9,600.00	9,060.00	9,035.40	9,035.40	35.09	182.89	90.00	-140.75	375.86	951.98	734.02	217.96	4.368	Alert	
9,700.00	9,060.00	9,035.40	9,035.40	35.86	182.89	90.00	-140.75	375.86	969.71	751.09	218.62	4.436	Alert	
9,800.00	9,060.00	9,035.40	9,035.40	36.72	182.89	90.00	-140.75	375.86	997.20	777.95	219.25	4.548	Alert	
9,900.00	9,060.00	9,035.40	9,035.40	37.69	182.89	90.00	-140.75	375.86	1,033.68	813.86	219.81	4.703	Alert	
10,000.00	9,060.00	9,035.40	9,035.40	38.73	182.89	90.00	-140.75	375.86	1,078.22	857.93	220.30	4.894	Alert	
10,100.00	9,060.00	9,035.40	9,035.40	39.86	182.89	90.00	-140.75	375.86	1,129.89	909.19	220.70	5.120		
10,140.22	9,060.00	9,035.40	9,035.40	40.33	182.89	90.00	-140.75	375.86	1,152.46	931.63	220.84	5.219		
10,200.00	9,060.00	9,035.40	9,035.40	41.05	182.89	90.00	-140.75	375.86	1,187.24	966.22	221.02	5.372		
10,300.00	9,060.00	9,035.40	9,035.40	42.31	182.89	90.00	-140.75	375.86	1,247.50	1,026.22	221.28	5.638		
10,400.00	9,060.00	9,035.40	9,035.40	43.64	182.89	90.00	-140.75	375.86	1,310.01	1,088.52	221.49	5.915		
10,507.23	9,060.00	9,035.40	9,035.40	45.11	182.89	90.00	-140.75	375.86	1,379.09	1,157.43	221.66	6.222		
10,600.00	9,060.00	9,035.40	9,035.40	46.43	182.89	90.00	-140.75	375.86	1,442.47	1,220.70	221.77	6.504		
10,700.00	9,060.00	9,035.40	9,035.40	47.91	182.89	90.00	-140.75	375.86	1,516.42	1,294.57	221.85	6.835		
10,800.00	9,060.00	9,035.40	9,035.40	49.42	182.89	90.00	-140.75	375.86	1,595.36	1,373.45	221.91	7.189		
10,900.00	9,060.00	9,035.40	9,035.40	50.97	182.89	90.00	-140.75	375.86	1,678.48	1,456.54	221.94	7.563		
11,000.00	9,060.00	9,035.40	9,035.40	52.55	182.89	90.00	-140.75	375.86	1,765.11	1,543.15	221.96	7.952		
11,100.00	9,060.00	9,035.40	9,035.40	54.14	182.89	90.00	-140.75	375.86	1,854.65	1,632.68	221.97	8.356		
11,207.23	9,060.00	9,035.40	9,035.40	55.87	182.89	90.00	-140.75	375.86	1,953.33	1,731.36	221.97	8.800		
11,300.00	9,060.00	9,035.40	9,035.40	57.39	182.89	90.00	-140.75	375.86	2,039.49	1,817.52	221.97	9.188		
11,400.00	9,060.00	9,035.40	9,035.40	59.06	182.89	90.00	-140.75	375.86	2,131.76	1,909.80	221.96	9.604		
11,506.63	9,060.00	9,035.40	9,035.40	60.88	182.89	90.00	-140.75	375.86	2,229.44	2,007.48	221.96	10.044		
11,600.00	9,060.00	9,035.40	9,035.40	62.49	182.89	90.00	-140.75	375.86	2,314.96	2,093.00	221.96	10.430		
11,700.00	9,060.00	9,035.40	9,035.40	64.24	182.89	90.00	-140.75	375.86	2,407.19	2,185.24	221.95	10.846		
11,800.00	9,060.00	9,035.40	9,035.40	66.01	182.89	90.00	-140.75	375.86	2,500.02	2,278.07	221.95	11.264		
11,900.00	9,060.00	9,035.40	9,035.40	67.79	182.89	90.00	-140.75	375.86	2,593.39	2,371.44	221.95	11.685		
12,000.00	9,060.00	9,035.40	9,035.40	69.58	182.89	90.00	-140.75	375.86	2,687.23	2,465.28	221.94	12.108		
12,100.00	9,060.00	9,035.40	9,035.40	71.39	182.89	90.00	-140.75	375.86	2,781.50	2,559.56	221.94	12.533		
12,200.00	9,060.00	9,035.40	9,035.40	73.21	182.89	90.00	-140.75	375.86	2,876.16	2,654.22	221.94	12.959		
12,300.00	9,060.00	9,035.40	9,035.40	75.05	182.89	90.00	-140.75	375.86	2,971.17	2,749.22	221.94	13.387		
12,400.00	9,060.00	9,035.40	9,035.40	76.89	182.89	90.00	-140.75	375.86	3,066.49	2,844.55	221.94	13.817		
12,500.00	9,060.00	9,035.40	9,035.40	78.74	182.89	90.00	-140.75	375.86	3,162.11	2,940.16	221.95	14.247		
12,600.00	9,060.00	9,035.40	9,035.40	80.61	182.89	90.00	-140.75	375.86	3,257.98	3,036.03	221.95	14.679		
12,700.00	9,060.00	9,035.40	9,035.40	82.48	182.89	90.00	-140.75	375.86	3,354.10	3,132.14	221.96	15.111		
12,800.00	9,060.00	9,035.40	9,035.40	84.36	182.89	90.00	-140.75	375.86	3,450.44	3,228.47	221.97	15.545		
12,900.00	9,060.00	9,035.40	9,035.40	86.24	182.89	90.00	-140.75	375.86	3,546.98	3,325.01	221.98	15.979		
13,000.00	9,060.00	9,035.40	9,035.40	88.14	182.89	90.00	-140.75	375.86	3,643.71	3,421.72	221.99	16.414		
13,100.00	9,060.00	9,035.40	9,035.40	90.04	182.89	90.00	-140.75	375.86	3,740.61	3,518.61	222.00	16.850		
13,200.00	9,060.00	9,035.40	9,035.40	91.94	182.89	90.00	-140.75	375.86	3,837.67	3,615.66	222.01	17.286		
13,300.00	9,060.00	9,035.40	9,035.40	93.86	182.89	90.00	-140.75	375.86	3,934.88	3,712.85	222.03	17.723		
13,400.00	9,060.00	9,035.40	9,035.40	95.77	182.89	90.00	-140.75	375.86	4,032.22	3,810.18	222.04	18.160		
13,500.00	9,060.00	9,035.40	9,035.40	97.70	182.89	90.00	-140.75	375.86	4,129.69	3,907.63	222.06	18.597		
13,600.00	9,060.00	9,035.40	9,035.40	99.62	182.89	90.00	-140.75	375.86	4,227.28	4,005.20	222.08	19.035		
13,700.00	9,060.00	9,035.40	9,035.40	101.56	182.89	90.00	-140.75	375.86	4,324.98	4,102.88	222.10	19.473		
13,800.00	9,060.00	9,035.40	9,035.40	103.49	182.89	90.00	-140.75	375.86	4,422.78	4,200.66	222.12	19.911		
13,900.00	9,060.00	9,035.40	9,035.40	105.43	182.89	90.00	-140.75	375.86	4,520.68	4,298.53	222.15	20.350		
14,000.00	9,060.00	9,035.40	9,035.40	107.38	182.89	90.00	-140.75	375.86	4,618.66	4,396.49	222.17	20.789		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	9,035.40	9,035.40	109.33	182.89	90.00	-140.75	375.86	4,716.74	4,494.54	222.20	21.228		
14,200.00	9,060.00	9,035.40	9,035.40	111.28	182.89	90.00	-140.75	375.86	4,814.89	4,592.66	222.22	21.667		
14,300.00	9,060.00	9,035.40	9,035.40	113.23	182.89	90.00	-140.75	375.86	4,913.11	4,690.86	222.25	22.106		
14,400.00	9,060.00	9,035.40	9,035.40	115.19	182.89	90.00	-140.75	375.86	5,011.41	4,789.13	222.28	22.545		
14,500.00	9,060.00	9,035.40	9,035.40	117.15	182.89	90.00	-140.75	375.86	5,109.77	4,887.46	222.31	22.985		
14,600.00	9,060.00	9,035.40	9,035.40	119.11	182.89	90.00	-140.75	375.86	5,208.20	4,985.85	222.34	23.424		
14,700.00	9,060.00	9,035.40	9,035.40	121.08	182.89	90.00	-140.75	375.86	5,306.68	5,084.30	222.38	23.863		
14,800.00	9,060.00	9,035.40	9,035.40	123.05	182.89	90.00	-140.75	375.86	5,405.22	5,182.81	222.41	24.303		
14,900.00	9,060.00	9,035.40	9,035.40	125.02	182.89	90.00	-140.75	375.86	5,503.81	5,281.37	222.45	24.742		
15,000.00	9,060.00	9,035.40	9,035.40	126.99	182.89	90.00	-140.75	375.86	5,602.45	5,379.97	222.48	25.182		
15,100.00	9,060.00	9,035.40	9,035.40	128.97	182.89	90.00	-140.75	375.86	5,701.14	5,478.62	222.52	25.621		
15,200.00	9,060.00	9,035.40	9,035.40	130.95	182.89	90.00	-140.75	375.86	5,799.88	5,577.32	222.56	26.060		
15,300.00	9,060.00	9,035.40	9,035.40	132.93	182.89	90.00	-140.75	375.86	5,898.65	5,676.06	222.60	26.499		
15,400.00	9,060.00	9,035.40	9,035.40	134.91	182.89	90.00	-140.75	375.86	5,997.47	5,774.83	222.64	26.938		
15,500.00	9,060.00	9,035.40	9,035.40	136.89	182.89	90.00	-140.75	375.86	6,096.33	5,873.65	222.68	27.377		
15,600.00	9,060.00	9,035.40	9,035.40	138.88	182.89	90.00	-140.75	375.86	6,195.22	5,972.50	222.72	27.816		
15,700.00	9,060.00	9,035.40	9,035.40	140.86	182.89	90.00	-140.75	375.86	6,294.15	6,071.38	222.77	28.254		
15,800.00	9,060.00	9,035.40	9,035.40	142.85	182.89	90.00	-140.75	375.86	6,393.11	6,170.30	222.81	28.693		
15,900.00	9,060.00	9,035.40	9,035.40	144.84	182.89	90.00	-140.75	375.86	6,492.10	6,269.24	222.86	29.131		
16,000.00	9,060.00	9,035.40	9,035.40	146.83	182.89	90.00	-140.75	375.86	6,591.12	6,368.22	222.90	29.569		
16,100.00	9,060.00	9,035.40	9,035.40	148.83	182.89	90.00	-140.75	375.86	6,690.18	6,467.23	222.95	30.007		
16,200.00	9,060.00	9,035.40	9,035.40	150.82	182.89	90.00	-140.75	375.86	6,789.26	6,566.26	223.00	30.445		
16,300.00	9,060.00	9,035.40	9,035.40	152.82	182.89	90.00	-140.75	375.86	6,888.36	6,665.31	223.05	30.883		
16,400.00	9,060.00	9,035.40	9,035.40	154.81	182.89	90.00	-140.75	375.86	6,987.50	6,764.40	223.10	31.320		
16,500.00	9,060.00	9,035.40	9,035.40	156.81	182.89	90.00	-140.75	375.86	7,086.65	6,863.50	223.15	31.757		
16,600.00	9,060.00	9,035.40	9,035.40	158.81	182.89	90.00	-140.75	375.86	7,185.83	6,962.63	223.20	32.194		
16,700.00	9,060.00	9,035.40	9,035.40	160.81	182.89	90.00	-140.75	375.86	7,285.03	7,061.78	223.26	32.631		
16,800.00	9,060.00	9,035.40	9,035.40	162.81	182.89	90.00	-140.75	375.86	7,384.26	7,160.95	223.31	33.067		
16,900.00	9,060.00	9,035.40	9,035.40	164.82	182.89	90.00	-140.75	375.86	7,483.50	7,260.14	223.37	33.503		
17,000.00	9,060.00	9,035.40	9,035.40	166.82	182.89	90.00	-140.75	375.86	7,582.77	7,359.35	223.42	33.939		
17,100.00	9,060.00	9,035.40	9,035.40	168.82	182.89	90.00	-140.75	375.86	7,682.05	7,458.57	223.48	34.375		
17,200.00	9,060.00	9,035.40	9,035.40	170.83	182.89	90.00	-140.75	375.86	7,781.35	7,557.82	223.54	34.810		
17,300.00	9,060.00	9,035.40	9,035.40	172.84	182.89	90.00	-140.75	375.86	7,880.67	7,657.08	223.59	35.245		
17,400.00	9,060.00	9,035.40	9,035.40	174.84	182.89	90.00	-140.75	375.86	7,980.01	7,756.36	223.65	35.680		
17,500.00	9,060.00	9,035.40	9,035.40	176.85	182.89	90.00	-140.75	375.86	8,079.36	7,855.65	223.71	36.115		
17,600.00	9,060.00	9,035.40	9,035.40	178.86	182.89	90.00	-140.75	375.86	8,178.73	7,954.96	223.77	36.549		
17,700.00	9,060.00	9,035.40	9,035.40	180.87	182.89	90.00	-140.75	375.86	8,278.11	8,054.28	223.84	36.983		
17,800.00	9,060.00	9,035.40	9,035.40	182.88	182.89	90.00	-140.75	375.86	8,377.51	8,153.61	223.90	37.417		
17,900.00	9,060.00	9,035.40	9,035.40	184.89	182.89	90.00	-140.75	375.86	8,476.92	8,252.96	223.96	37.850		
18,000.00	9,060.00	9,035.40	9,035.40	186.90	182.89	90.00	-140.75	375.86	8,576.35	8,352.33	224.02	38.283		
18,100.00	9,060.00	9,035.40	9,035.40	188.92	182.89	90.00	-140.75	375.86	8,675.79	8,451.70	224.09	38.716		
18,200.00	9,060.00	9,035.40	9,035.40	190.93	182.89	90.00	-140.75	375.86	8,775.24	8,551.09	224.15	39.148		
18,300.00	9,060.00	9,035.40	9,035.40	192.94	182.89	90.00	-140.75	375.86	8,874.71	8,650.49	224.22	39.580		
18,400.00	9,060.00	9,035.40	9,035.40	194.96	182.89	90.00	-140.75	375.86	8,974.18	8,749.90	224.29	40.012		
18,500.00	9,060.00	9,035.40	9,035.40	196.97	182.89	90.00	-140.75	375.86	9,073.67	8,849.32	224.36	40.443		
18,600.00	9,060.00	9,035.40	9,035.40	198.99	182.89	90.00	-140.75	375.86	9,173.17	8,948.75	224.42	40.874		
18,700.00	9,060.00	9,035.40	9,035.40	201.00	182.89	90.00	-140.75	375.86	9,272.68	9,048.19	224.49	41.305		
18,800.00	9,060.00	9,035.40	9,035.40	203.02	182.89	90.00	-140.75	375.86	9,372.20	9,147.64	224.56	41.735		
18,900.00	9,060.00	9,035.40	9,035.40	205.04	182.89	90.00	-140.75	375.86	9,471.73	9,247.10	224.63	42.165		
19,000.00	9,060.00	9,035.40	9,035.40	207.06	182.89	90.00	-140.75	375.86	9,571.27	9,346.57	224.71	42.595		
19,100.00	9,060.00	9,035.40	9,035.40	209.07	182.89	90.00	-140.75	375.86	9,670.82	9,446.04	224.78	43.024		
19,200.00	9,060.00	9,035.40	9,035.40	211.09	182.89	90.00	-140.75	375.86	9,770.38	9,545.53	224.85	43.453		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbore #1										Offset Site Error:	0.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	9,035.40	9,035.40	213.11	182.89	90.00	-140.75	375.86	9,869.95	9,645.02	224.92	43.881	
19,400.00	9,060.00	9,035.40	9,035.40	215.13	182.89	90.00	-140.75	375.86	9,969.52	9,744.53	225.00	44.309	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.70	0.70	0.50	0.50	-0.19	30.02	-0.10	30.02				
100.00	100.00	100.70	100.70	0.52	0.52	-0.19	30.02	-0.10	30.02	28.98	1.04	28.972	
200.00	200.00	200.70	200.70	0.70	0.70	-0.19	30.02	-0.10	30.02	28.61	1.41	21.352	
300.00	300.00	300.70	300.70	0.99	0.99	-0.19	30.02	-0.10	30.02	28.04	1.98	15.186	
400.00	400.00	400.70	400.70	1.31	1.31	-0.19	30.02	-0.10	30.02	27.40	2.62	11.456	
500.00	500.00	500.70	500.70	1.65	1.65	-0.19	30.02	-0.10	30.02	26.73	3.29	9.112	
600.00	600.00	600.70	600.70	1.99	1.99	-0.19	30.02	-0.10	30.02	26.04	3.98	7.536	
700.00	700.00	700.70	700.70	2.34	2.34	-0.19	30.02	-0.10	30.02	25.34	4.68	6.413	
800.00	800.00	800.70	800.70	2.69	2.69	-0.19	30.02	-0.10	30.02	24.64	5.38	5.576	
900.00	900.00	900.70	900.70	3.04	3.05	-0.19	30.02	-0.10	30.02	23.93	6.09	4.930 Alert	
1,000.00	1,000.00	1,000.70	1,000.70	3.40	3.40	-0.19	30.02	-0.10	30.02	23.22	6.80	4.416 Alert	
1,100.00	1,100.00	1,100.70	1,100.70	3.75	3.76	-0.19	30.02	-0.10	30.02	22.51	7.51	3.999 Alert	
1,200.00	1,200.00	1,200.70	1,200.70	4.11	4.11	-0.19	30.02	-0.10	30.02	21.80	8.22	3.653 Alert	
1,300.00	1,300.00	1,300.70	1,300.70	4.46	4.47	-0.19	30.02	-0.10	30.02	21.09	8.93	3.361 Alert	
1,400.00	1,400.00	1,400.70	1,400.70	4.82	4.82	-0.19	30.02	-0.10	30.02	20.38	9.64	3.113 Alert	
1,500.00	1,500.00	1,500.70	1,500.70	5.18	5.18	-0.19	30.02	-0.10	30.02	19.66	10.36	2.899 Alert	
1,600.00	1,600.00	1,600.70	1,600.70	5.53	5.54	-0.19	30.02	-0.10	30.02	18.95	11.07	2.712 Alert	
1,700.00	1,700.00	1,700.70	1,700.70	5.89	5.89	-0.19	30.02	-0.10	30.02	18.24	11.78	2.547 Alert	
1,800.00	1,800.00	1,800.70	1,800.70	6.25	6.25	-0.19	30.02	-0.10	30.02	17.52	12.50	2.402 Minor Risk	
1,900.00	1,900.00	1,900.70	1,900.70	6.61	6.61	-0.19	30.02	-0.10	30.02	16.81	13.21	2.272 Minor Risk	
2,000.00	2,000.00	2,000.70	2,000.70	6.96	6.97	-0.19	30.02	-0.10	30.02	16.09	13.93	2.155 Minor Risk, CC, ES	
2,100.00	2,100.00	2,100.18	2,100.17	7.32	7.32	-0.52	30.88	-0.28	30.88	16.24	14.64	2.109 Minor Risk	
2,200.00	2,200.00	2,199.59	2,199.55	7.68	7.68	-1.38	33.42	-0.81	33.45	18.10	15.35	2.180 Minor Risk	
2,300.00	2,300.00	2,298.89	2,298.76	8.04	8.03	-2.56	37.65	-1.69	37.74	21.69	16.05	2.351 Minor Risk	
2,350.00	2,350.00	2,348.48	2,348.26	8.22	8.21	-3.20	40.39	-2.25	40.53	24.13	16.40	2.471 Minor Risk	
2,400.00	2,400.00	2,398.03	2,397.71	8.39	8.39	12.27	43.55	-2.91	43.54	26.79	16.75	2.600 Alert	
2,500.00	2,499.98	2,497.04	2,496.42	8.75	8.74	11.44	51.12	-4.48	49.57	32.13	17.44	2.842 Alert	
2,600.00	2,599.92	2,595.96	2,594.89	9.11	9.09	10.93	60.34	-6.40	55.61	37.49	18.13	3.068 Alert	
2,700.00	2,699.78	2,694.77	2,693.07	9.47	9.45	10.63	71.21	-8.66	61.66	42.85	18.81	3.278 Alert	
2,800.00	2,799.54	2,793.48	2,790.95	9.82	9.80	10.50	83.73	-11.26	67.70	48.22	19.48	3.475 Alert	
2,900.00	2,899.16	2,892.09	2,888.49	10.18	10.15	10.49	97.88	-14.20	73.74	53.58	20.16	3.658 Alert	
3,000.00	2,998.61	2,990.59	2,985.67	10.54	10.50	10.57	113.65	-17.47	79.77	58.95	20.82	3.831 Alert	
3,100.00	3,097.86	3,089.00	3,082.45	10.89	10.86	10.73	131.04	-21.09	85.80	64.31	21.49	3.993 Alert	
3,200.00	3,196.89	3,188.41	3,179.99	11.25	11.21	10.98	149.84	-24.99	91.39	69.20	22.19	4.119 Alert	
3,295.74	3,291.45	3,284.07	3,273.84	11.59	11.56	11.38	168.00	-28.76	95.21	72.33	22.88	4.162 Alert	
3,300.00	3,295.65	3,288.33	3,278.01	11.61	11.58	11.40	168.81	-28.93	95.35	72.44	22.91	4.162 Alert	
3,400.00	3,394.29	3,388.27	3,376.06	11.97	11.94	11.89	187.78	-32.87	98.53	74.89	23.64	4.169 Alert	
3,500.00	3,492.94	3,488.22	3,474.11	12.33	12.31	12.35	206.75	-36.81	101.72	77.35	24.36	4.175 Alert	
3,600.00	3,591.58	3,588.16	3,572.16	12.69	12.67	12.78	225.72	-40.75	104.91	79.82	25.09	4.181 Alert	
3,700.00	3,690.22	3,688.11	3,670.21	13.05	13.04	13.19	244.69	-44.70	108.11	82.29	25.83	4.186 Alert	
3,800.00	3,788.86	3,788.06	3,768.26	13.41	13.41	13.57	263.66	-48.64	111.32	84.76	26.56	4.191 Alert	
3,900.00	3,887.50	3,888.00	3,866.31	13.77	13.78	13.93	282.63	-52.58	114.53	87.23	27.30	4.196 Alert	
4,000.00	3,986.14	3,987.95	3,964.36	14.14	14.15	14.27	301.60	-56.52	117.74	89.71	28.03	4.200 Alert	
4,100.00	4,084.78	4,087.89	4,062.41	14.50	14.52	14.60	320.57	-60.46	120.96	92.19	28.77	4.204 Alert	
4,200.00	4,183.42	4,187.84	4,160.46	14.87	14.90	14.90	339.54	-64.40	124.18	94.67	29.51	4.208 Alert	
4,300.00	4,282.06	4,287.79	4,258.51	15.24	15.27	15.20	358.51	-68.34	127.41	97.16	30.25	4.212 Alert	
4,400.00	4,380.70	4,387.73	4,356.56	15.60	15.65	15.47	377.48	-72.28	130.63	99.64	30.99	4.215 Alert	
4,500.00	4,479.34	4,487.68	4,454.61	15.97	16.02	15.74	396.45	-76.22	133.87	102.13	31.74	4.218 Alert	
4,600.00	4,577.98	4,587.62	4,552.66	16.34	16.40	15.99	415.42	-80.16	137.10	104.62	32.48	4.221 Alert	
4,700.00	4,676.62	4,687.57	4,650.71	16.71	16.77	16.23	434.39	-84.10	140.34	107.11	33.22	4.224 Alert	
4,800.00	4,775.27	4,787.52	4,748.76	17.08	17.15	16.46	453.36	-88.04	143.57	109.61	33.97	4.227 Alert	
4,900.00	4,873.91	4,887.46	4,846.81	17.45	17.53	16.67	472.33	-91.99	146.82	112.10	34.72	4.229 Alert	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,987.41	4,944.86	17.82	17.91	16.88	491.30	-95.93	150.06	114.60	35.46	4.231	Alert	
5,100.00	5,071.19	5,087.35	5,042.91	18.19	18.28	17.08	510.27	-99.87	153.30	117.09	36.21	4.234	Alert	
5,200.00	5,169.83	5,187.30	5,140.96	18.56	18.66	17.28	529.24	-103.81	156.55	119.59	36.96	4.236	Alert	
5,300.00	5,268.47	5,287.25	5,239.01	18.93	19.04	17.46	548.21	-107.75	159.80	122.09	37.71	4.238	Alert	
5,400.00	5,367.11	5,387.19	5,337.06	19.31	19.42	17.64	567.18	-111.69	163.05	124.59	38.46	4.240	Alert	
5,500.00	5,465.75	5,487.14	5,435.11	19.68	19.80	17.81	586.15	-115.63	166.30	127.09	39.21	4.242	Alert	
5,600.00	5,564.39	5,587.08	5,533.16	20.05	20.18	17.97	605.12	-119.57	169.55	129.59	39.96	4.243	Alert	
5,700.00	5,663.03	5,687.03	5,631.21	20.42	20.56	18.13	624.09	-123.51	172.81	132.10	40.71	4.245	Alert	
5,800.00	5,761.67	5,786.98	5,729.26	20.80	20.94	18.28	643.06	-127.45	176.06	134.60	41.46	4.247	Alert	
5,900.00	5,860.31	5,886.92	5,827.31	21.17	21.33	18.42	662.03	-131.39	179.32	137.11	42.21	4.248	Alert	
6,000.00	5,958.96	5,986.87	5,925.36	21.54	21.71	18.57	681.00	-135.34	182.57	139.61	42.96	4.250	Alert	
6,100.00	6,057.60	6,086.81	6,023.41	21.92	22.09	18.70	699.97	-139.28	185.83	142.12	43.72	4.251	Alert	
6,200.00	6,156.24	6,186.76	6,121.46	22.29	22.47	18.83	718.94	-143.22	189.09	144.62	44.47	4.252	Alert	
6,300.00	6,254.88	6,286.70	6,219.51	22.67	22.85	18.96	737.91	-147.16	192.35	147.13	45.22	4.254	Alert	
6,400.00	6,353.52	6,386.65	6,317.56	23.04	23.24	19.08	756.88	-151.10	195.62	149.64	45.98	4.255	Alert	
6,500.00	6,452.16	6,486.60	6,415.61	23.42	23.62	19.20	775.85	-155.04	198.88	152.15	46.73	4.256	Alert	
6,600.00	6,550.80	6,586.54	6,513.66	23.79	24.00	19.31	794.82	-158.98	202.14	154.66	47.48	4.257	Alert	
6,700.00	6,649.44	6,686.49	6,611.71	24.17	24.38	19.43	813.79	-162.92	205.41	157.17	48.24	4.258	Alert	
6,800.00	6,748.08	6,786.43	6,709.76	24.54	24.77	19.53	832.76	-166.86	208.67	159.68	48.99	4.259	Alert	
6,900.00	6,846.72	6,886.38	6,807.81	24.92	25.15	19.64	851.73	-170.80	211.94	162.19	49.75	4.260	Alert	
7,000.00	6,945.36	6,986.33	6,905.86	25.29	25.53	19.74	870.70	-174.74	215.20	164.70	50.50	4.261	Alert	
7,100.00	7,044.00	7,086.27	7,003.91	25.67	25.92	19.84	889.67	-178.68	218.47	167.21	51.26	4.262	Alert	
7,200.00	7,142.65	7,186.22	7,101.96	26.04	26.30	19.93	908.64	-182.63	221.74	169.72	52.02	4.263	Alert	
7,300.00	7,241.29	7,286.16	7,200.01	26.42	26.68	20.02	927.61	-186.57	225.00	172.23	52.77	4.264	Alert	
7,400.00	7,339.93	7,386.11	7,298.06	26.79	27.07	20.11	946.58	-190.51	228.27	174.75	53.53	4.265	Alert	
7,500.00	7,438.57	7,486.06	7,396.11	27.17	27.45	20.20	965.55	-194.45	231.54	177.26	54.28	4.265	Alert	
7,571.77	7,509.37	7,557.79	7,466.49	27.44	27.73	20.26	979.16	-197.28	233.89	179.06	54.83	4.266	Alert	
7,600.00	7,537.23	7,586.00	7,494.16	27.55	27.84	20.28	984.51	-198.39	234.91	179.87	55.04	4.268	Alert	
7,700.00	7,636.18	7,685.86	7,592.13	27.92	28.22	20.22	1,003.47	-202.33	240.10	184.31	55.79	4.303	Alert	
7,800.00	7,735.48	7,785.56	7,689.93	28.29	28.60	19.97	1,022.39	-206.26	247.74	191.20	56.54	4.382	Alert	
7,900.00	7,835.05	7,885.02	7,787.51	28.65	28.99	19.55	1,041.27	-210.18	257.85	200.57	57.28	4.502	Alert	
8,000.00	7,934.83	7,984.18	7,884.79	29.01	29.37	18.99	1,060.09	-214.09	270.43	212.42	58.01	4.662	Alert	
8,100.00	8,034.74	8,082.98	7,981.71	29.36	29.75	18.33	1,078.84	-217.98	285.50	226.76	58.74	4.861	Alert	
8,202.27	8,137.00	8,183.56	8,080.38	29.72	30.14	1.55	1,097.93	-221.95	303.50	244.03	59.47	5.103		
8,300.00	8,234.73	8,279.43	8,174.44	30.06	30.51	0.77	1,116.13	-225.73	321.99	261.82	60.17	5.352		
8,400.00	8,334.73	8,377.47	8,270.63	30.41	30.88	0.10	1,134.74	-229.40	340.96	280.08	60.88	5.600		
8,500.00	8,434.73	8,474.47	8,365.49	30.75	31.24	1.22	1,153.16	-222.50	360.09	298.52	61.58	5.848		
8,552.31	8,487.04	8,523.54	8,412.69	30.94	31.41	2.72	1,162.36	-212.81	370.45	308.54	61.91	5.984		
8,600.00	8,534.68	8,567.10	8,453.78	31.10	31.56	-84.43	1,170.39	-200.79	380.23	318.07	62.17	6.116		
8,650.00	8,584.26	8,612.06	8,495.10	31.26	31.70	-81.94	1,178.49	-185.09	390.68	328.27	62.41	6.260		
8,700.00	8,633.10	8,656.35	8,534.51	31.43	31.83	-79.62	1,186.23	-166.44	401.17	338.55	62.62	6.407		
8,750.00	8,680.83	8,700.07	8,571.91	31.58	31.95	-77.46	1,193.60	-145.05	411.59	348.79	62.79	6.555		
8,800.00	8,727.09	8,743.28	8,607.18	31.74	32.06	-75.46	1,200.58	-121.11	421.80	358.86	62.94	6.702		
8,850.00	8,771.52	8,786.03	8,640.24	31.89	32.17	-73.63	1,207.14	-94.82	431.70	368.64	63.06	6.846		
8,900.00	8,813.78	8,828.40	8,671.01	32.04	32.26	-71.97	1,213.27	-66.36	441.17	378.01	63.17	6.984		
8,950.00	8,853.56	8,870.43	8,699.41	32.18	32.35	-70.46	1,218.95	-35.92	450.14	386.87	63.26	7.115		
9,000.00	8,890.55	8,912.16	8,725.36	32.32	32.45	-69.12	1,224.17	-3.67	458.49	395.14	63.36	7.237		
9,050.00	8,924.46	8,953.64	8,748.81	32.47	32.55	-67.93	1,228.91	30.21	466.17	402.71	63.46	7.345		
9,100.00	8,955.05	8,994.92	8,769.68	32.63	32.66	-66.89	1,233.16	65.55	473.11	409.51	63.59	7.440		
9,150.00	8,982.08	9,036.01	8,787.94	32.79	32.80	-66.00	1,236.92	102.17	479.23	415.48	63.75	7.517		
9,200.00	9,005.34	9,076.97	8,803.51	32.97	32.96	-65.25	1,240.16	139.90	484.50	420.54	63.96	7.576		
9,250.00	9,024.65	9,117.81	8,816.37	33.17	33.13	-64.65	1,242.88	178.55	488.86	424.66	64.20	7.614		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,300.00	9,039.87	9,158.56	8,826.47	33.38	33.32	-64.19	1,245.07	217.96	492.29	427.79	64.51	7.632				
9,350.00	9,050.89	9,199.25	8,833.79	33.62	33.52	-63.86	1,246.72	257.95	494.76	429.89	64.87	7.627				
9,400.00	9,057.61	9,239.90	8,838.30	33.87	33.73	-63.67	1,247.84	298.32	496.25	430.96	65.29	7.601				
9,452.31	9,060.00	9,282.41	8,840.00	34.15	33.96	-63.62	1,248.42	340.78	496.74	430.95	65.79	7.550				
9,454.79	9,060.00	9,284.53	8,840.00	34.16	33.97	-63.62	1,248.43	342.79	496.74	430.93	65.82	7.547				
9,500.00	9,060.00	9,329.62	8,840.00	34.42	34.25	-63.62	1,248.70	388.00	496.74	430.39	66.35	7.486				
9,600.00	9,060.00	9,429.62	8,840.00	35.09	34.92	-63.62	1,249.29	488.00	496.74	429.08	67.66	7.342				
9,700.00	9,060.00	9,529.62	8,840.00	35.86	35.69	-63.62	1,249.88	587.99	496.74	427.60	69.14	7.184				
9,800.00	9,060.00	9,629.62	8,840.00	36.72	36.57	-63.62	1,250.48	687.99	496.74	425.95	70.80	7.017				
9,900.00	9,060.00	9,729.62	8,840.00	37.69	37.53	-63.62	1,251.07	787.99	496.74	424.14	72.60	6.842				
10,000.00	9,060.00	9,829.62	8,840.00	38.73	38.58	-63.62	1,251.67	887.99	496.74	422.19	74.55	6.663				
10,100.00	9,060.00	9,929.62	8,840.00	39.86	39.70	-63.62	1,252.26	987.99	496.74	420.11	76.63	6.482				
10,140.22	9,060.00	9,969.85	8,840.00	40.33	40.17	-63.62	1,252.50	1,028.21	496.74	419.24	77.50	6.409				
10,200.00	9,060.00	10,029.62	8,840.00	41.05	40.90	-63.65	1,252.85	1,087.98	497.30	418.45	78.85	6.307				
10,300.00	9,060.00	10,129.54	8,840.00	42.31	42.16	-63.81	1,253.44	1,187.90	500.74	419.50	81.24	6.164				
10,400.00	9,060.00	10,229.27	8,840.00	43.64	43.47	-64.12	1,254.04	1,287.63	507.31	423.51	83.81	6.053				
10,507.23	9,060.00	10,335.84	8,840.00	45.11	44.94	-64.59	1,254.67	1,394.20	517.88	431.14	86.74	5.970				
10,600.00	9,060.00	10,428.03	8,840.00	46.43	46.25	-65.16	1,255.22	1,486.39	527.27	437.91	89.36	5.900				
10,700.00	9,060.00	10,527.72	8,840.00	47.91	47.72	-65.57	1,255.81	1,586.08	534.38	442.16	92.22	5.795				
10,800.00	9,060.00	10,627.62	8,840.00	49.42	49.23	-65.79	1,256.40	1,685.98	538.33	443.24	95.09	5.661				
10,900.00	9,060.00	10,727.62	8,840.00	50.97	50.77	-65.83	1,256.99	1,785.97	539.10	441.14	97.97	5.503				
11,000.00	9,060.00	10,827.58	8,840.00	52.55	52.35	-65.70	1,257.59	1,885.93	536.69	435.86	100.83	5.323				
11,100.00	9,060.00	10,927.38	8,840.00	54.14	53.96	-65.38	1,258.18	1,985.73	531.11	427.45	103.65	5.124				
11,207.23	9,060.00	11,034.09	8,840.00	55.87	55.72	-64.82	1,258.81	2,092.44	521.63	415.02	106.61	4.893	Alert			
11,300.00	9,060.00	11,126.40	8,840.00	57.39	57.26	-64.45	1,259.36	2,184.74	513.25	404.08	109.17	4.701	Alert			
11,400.00	9,060.00	11,226.17	8,840.00	59.06	58.94	-64.18	1,259.95	2,284.52	507.27	395.22	112.05	4.527	Alert			
11,506.63	9,060.00	11,332.75	8,840.00	60.88	60.77	-64.05	1,260.58	2,391.09	504.36	389.08	115.28	4.375	Alert			
11,600.00	9,060.00	11,426.11	8,840.00	62.49	62.39	-63.99	1,261.14	2,484.45	503.37	385.18	118.19	4.259	Alert			
11,700.00	9,060.00	11,526.10	8,840.00	64.24	64.14	-63.94	1,261.73	2,584.44	502.32	380.98	121.34	4.140	Alert			
11,800.00	9,060.00	11,626.10	8,840.00	66.01	65.91	-63.88	1,262.33	2,684.43	501.27	376.75	124.51	4.026	Alert			
11,900.00	9,060.00	11,726.09	8,840.00	67.79	67.69	-63.82	1,262.92	2,784.42	500.21	372.50	127.71	3.917	Alert			
12,000.00	9,060.00	11,826.08	8,840.00	69.58	69.49	-63.76	1,263.51	2,884.42	499.16	368.22	130.94	3.812	Alert			
12,100.00	9,060.00	11,926.08	8,840.00	71.39	71.30	-63.70	1,264.11	2,984.41	498.11	363.92	134.19	3.712	Alert			
12,200.00	9,060.00	12,026.07	8,840.00	73.21	73.12	-63.64	1,264.70	3,084.40	497.06	359.61	137.45	3.616	Alert			
12,300.00	9,060.00	12,126.06	8,840.00	75.05	74.96	-63.58	1,265.29	3,184.39	496.01	355.27	140.74	3.524	Alert			
12,400.00	9,060.00	12,226.06	8,840.00	76.89	76.80	-63.52	1,265.89	3,284.38	494.96	350.92	144.04	3.436	Alert			
12,500.00	9,060.00	12,326.05	8,840.00	78.74	78.66	-63.46	1,266.48	3,384.37	493.91	346.56	147.35	3.352	Alert			
12,600.00	9,060.00	12,426.04	8,840.00	80.61	80.53	-63.40	1,267.07	3,484.36	492.86	342.18	150.68	3.271	Alert			
12,700.00	9,060.00	12,526.04	8,840.00	82.48	82.40	-63.34	1,267.67	3,584.36	491.81	337.79	154.02	3.193	Alert			
12,800.00	9,060.00	12,626.03	8,840.00	84.36	84.28	-63.27	1,268.26	3,684.35	490.76	333.39	157.38	3.118	Alert			
12,900.00	9,060.00	12,726.02	8,840.00	86.24	86.17	-63.21	1,268.85	3,784.34	489.72	328.98	160.74	3.047	Alert			
13,000.00	9,060.00	12,826.02	8,840.00	88.14	88.07	-63.15	1,269.45	3,884.33	488.67	324.56	164.11	2.978	Alert			
13,100.00	9,060.00	12,926.01	8,840.00	90.04	89.97	-63.09	1,270.04	3,984.32	487.62	320.13	167.50	2.911	Alert			
13,200.00	9,060.00	13,026.00	8,840.00	91.94	91.88	-63.03	1,270.63	4,084.31	486.58	315.69	170.89	2.847	Alert			
13,300.00	9,060.00	13,125.99	8,840.00	93.86	93.79	-62.96	1,271.23	4,184.30	485.53	311.25	174.28	2.786	Alert			
13,400.00	9,060.00	13,225.99	8,840.00	95.77	95.71	-62.90	1,271.82	4,284.30	484.49	306.80	177.69	2.727	Alert			
13,500.00	9,060.00	13,325.98	8,840.00	97.70	97.64	-62.84	1,272.41	4,384.29	483.45	302.35	181.10	2.670	Alert			
13,600.00	9,060.00	13,425.97	8,840.00	99.62	99.57	-62.77	1,273.01	4,484.28	482.40	297.89	184.51	2.614	Alert			
13,700.00	9,060.00	13,525.97	8,840.00	101.56	101.50	-62.71	1,273.60	4,584.27	481.36	293.43	187.93	2.561	Alert			
13,800.00	9,060.00	13,625.96	8,840.00	103.49	103.44	-62.64	1,274.19	4,684.26	480.32	288.96	191.35	2.510	Alert			
13,900.00	9,060.00	13,725.95	8,840.00	105.43	105.38	-62.58	1,274.79	4,784.25	479.28	284.49	194.78	2.461	Minor Risk			
14,000.00	9,060.00	13,825.95	8,840.00	107.38	107.33	-62.52	1,275.38	4,884.24	478.24	280.02	198.21	2.413	Minor Risk			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,100.00	9,060.00	13,925.94	8,840.00	109.33	109.28	-62.45	1,275.97	4,984.23	477.20	275.55	201.65	2.366 Minor Risk	
14,200.00	9,060.00	14,025.93	8,840.00	111.28	111.24	-62.39	1,276.57	5,084.23	476.16	271.07	205.08	2.322 Minor Risk	
14,300.00	9,060.00	14,125.93	8,840.00	113.23	113.19	-62.32	1,277.16	5,184.22	475.12	266.60	208.52	2.279 Minor Risk	
14,400.00	9,060.00	14,225.92	8,840.00	115.19	115.15	-62.25	1,277.75	5,284.21	474.08	262.12	211.96	2.237 Minor Risk	
14,500.00	9,060.00	14,325.91	8,840.00	117.15	117.12	-62.19	1,278.35	5,384.20	473.04	257.64	215.40	2.196 Minor Risk	
14,600.00	9,060.00	14,425.91	8,840.00	119.11	119.08	-62.12	1,278.94	5,484.19	472.00	253.16	218.84	2.157 Minor Risk	
14,700.00	9,060.00	14,525.90	8,840.00	121.08	121.05	-62.05	1,279.53	5,584.18	470.97	248.68	222.29	2.119 Minor Risk	
14,800.00	9,060.00	14,625.89	8,840.00	123.05	123.02	-61.99	1,280.13	5,684.17	469.93	244.20	225.73	2.082 Minor Risk	
14,900.00	9,060.00	14,725.88	8,840.00	125.02	125.00	-61.92	1,280.72	5,784.17	468.90	239.72	229.18	2.046 Minor Risk	
15,000.00	9,060.00	14,825.88	8,840.00	126.99	126.97	-61.85	1,281.31	5,884.16	467.86	235.24	232.62	2.011 Minor Risk	
15,100.00	9,060.00	14,925.87	8,840.00	128.97	128.95	-61.78	1,281.91	5,984.15	466.83	230.77	236.06	1.978 Minor Risk	
15,200.00	9,060.00	15,025.86	8,840.00	130.95	130.93	-61.72	1,282.50	6,084.14	465.80	226.29	239.51	1.945 Minor Risk	
15,300.00	9,060.00	15,125.86	8,840.00	132.93	132.91	-61.65	1,283.09	6,184.13	464.76	221.82	242.95	1.913 Minor Risk	
15,400.00	9,060.00	15,225.85	8,840.00	134.91	134.90	-61.58	1,283.69	6,284.12	463.73	217.34	246.39	1.882 Minor Risk	
15,500.00	9,060.00	15,325.84	8,840.00	136.89	136.88	-61.51	1,284.28	6,384.11	462.70	212.87	249.83	1.852 Minor Risk	
15,600.00	9,060.00	15,425.84	8,840.00	138.88	138.87	-61.44	1,284.87	6,484.11	461.67	208.40	253.27	1.823 Minor Risk	
15,700.00	9,060.00	15,525.83	8,840.00	140.86	140.86	-61.37	1,285.47	6,584.10	460.64	203.93	256.71	1.794 Minor Risk	
15,800.00	9,060.00	15,625.82	8,840.00	142.85	142.85	-61.30	1,286.06	6,684.09	459.61	199.47	260.14	1.767 Minor Risk	
15,900.00	9,060.00	15,725.82	8,840.00	144.84	144.84	-61.23	1,286.65	6,784.08	458.58	195.01	263.58	1.740 Minor Risk	
16,000.00	9,060.00	15,825.81	8,840.00	146.83	146.84	-61.16	1,287.25	6,884.07	457.56	190.55	267.01	1.714 Minor Risk	
16,100.00	9,060.00	15,925.80	8,840.00	148.83	148.83	-61.09	1,287.84	6,984.06	456.53	186.09	270.44	1.688 Minor Risk	
16,200.00	9,060.00	16,025.80	8,840.00	150.82	150.83	-61.02	1,288.43	7,084.05	455.50	181.64	273.87	1.663 Minor Risk	
16,300.00	9,060.00	16,125.79	8,840.00	152.82	152.83	-60.95	1,289.03	7,184.04	454.48	177.19	277.29	1.639 Minor Risk	
16,400.00	9,060.00	16,225.78	8,840.00	154.81	154.83	-60.87	1,289.62	7,284.04	453.45	172.74	280.71	1.615 Minor Risk	
16,500.00	9,060.00	16,325.77	8,840.00	156.81	156.83	-60.80	1,290.21	7,384.03	452.43	168.30	284.13	1.592 Minor Risk	
16,600.00	9,060.00	16,425.77	8,840.00	158.81	158.83	-60.73	1,290.81	7,484.02	451.40	163.86	287.55	1.570 Minor Risk	
16,700.00	9,060.00	16,525.76	8,840.00	160.81	160.83	-60.66	1,291.40	7,584.01	450.38	159.42	290.96	1.548 Minor Risk	
16,800.00	9,060.00	16,625.75	8,840.00	162.81	162.83	-60.58	1,291.99	7,684.00	449.36	154.99	294.37	1.527 Minor Risk	
16,900.00	9,060.00	16,725.75	8,840.00	164.82	164.84	-60.51	1,292.59	7,783.99	448.34	150.56	297.78	1.506 Minor Risk	
17,000.00	9,060.00	16,825.74	8,840.00	166.82	166.85	-60.44	1,293.18	7,883.98	447.32	146.14	301.18	1.485 Major Risk	
17,100.00	9,060.00	16,925.73	8,840.00	168.82	168.85	-60.36	1,293.77	7,983.98	446.30	141.72	304.58	1.465 Major Risk	
17,200.00	9,060.00	17,025.73	8,840.00	170.83	170.86	-60.29	1,294.37	8,083.97	445.28	137.30	307.98	1.446 Major Risk	
17,300.00	9,060.00	17,125.72	8,840.00	172.84	172.87	-60.21	1,294.96	8,183.96	444.26	132.89	311.37	1.427 Major Risk	
17,400.00	9,060.00	17,225.71	8,840.00	174.84	174.88	-60.14	1,295.55	8,283.95	443.24	128.48	314.76	1.408 Major Risk	
17,500.00	9,060.00	17,325.71	8,840.00	176.85	176.89	-60.06	1,296.15	8,383.94	442.23	124.08	318.14	1.390 Major Risk	
17,600.00	9,060.00	17,425.70	8,840.00	178.86	178.90	-59.98	1,296.74	8,483.93	441.21	119.69	321.52	1.372 Major Risk	
17,700.00	9,060.00	17,525.69	8,840.00	180.87	180.91	-59.91	1,297.33	8,583.92	440.20	115.30	324.90	1.355 Major Risk	
17,800.00	9,060.00	17,625.69	8,840.00	182.88	182.92	-59.83	1,297.93	8,683.92	439.18	110.91	328.27	1.338 Major Risk	
17,900.00	9,060.00	17,725.68	8,840.00	184.89	184.94	-59.75	1,298.52	8,783.91	438.17	106.53	331.64	1.321 Major Risk	
18,000.00	9,060.00	17,825.67	8,840.00	186.90	186.95	-59.68	1,299.11	8,883.90	437.16	102.15	335.00	1.305 Major Risk	
18,100.00	9,060.00	17,925.66	8,840.00	188.92	188.97	-59.60	1,299.71	8,983.89	436.14	97.78	338.36	1.289 Major Risk	
18,200.00	9,060.00	18,025.66	8,840.00	190.93	190.98	-59.52	1,300.30	9,083.88	435.13	93.42	341.71	1.273 Major Risk	
18,300.00	9,060.00	18,125.65	8,840.00	192.94	193.00	-59.44	1,300.89	9,183.87	434.12	89.06	345.06	1.258 Major Risk	
18,400.00	9,060.00	18,225.64	8,840.00	194.96	195.02	-59.36	1,301.49	9,283.86	433.11	84.71	348.40	1.243 Major Risk	
18,500.00	9,060.00	18,325.64	8,840.00	196.97	197.03	-59.28	1,302.08	9,383.85	432.10	80.36	351.74	1.228 Major Risk	
18,600.00	9,060.00	18,425.63	8,840.00	198.99	199.05	-59.20	1,302.67	9,483.85	431.10	76.02	355.08	1.214 Major Risk	
18,700.00	9,060.00	18,525.62	8,840.00	201.00	201.07	-59.12	1,303.27	9,583.84	430.09	71.69	358.40	1.200 Major Risk	
18,800.00	9,060.00	18,625.62	8,840.00	203.02	203.09	-59.04	1,303.86	9,683.83	429.08	67.36	361.73	1.186 Major Risk	
18,900.00	9,060.00	18,725.61	8,840.00	205.04	205.11	-58.96	1,304.45	9,783.82	428.08	63.04	365.04	1.173 Major Risk	
19,000.00	9,060.00	18,825.60	8,840.00	207.06	207.13	-58.88	1,305.05	9,883.81	427.07	58.72	368.35	1.159 Major Risk	
19,100.00	9,060.00	18,925.60	8,840.00	209.07	209.15	-58.80	1,305.64	9,983.80	426.07	54.41	371.66	1.146 Major Risk	
19,200.00	9,060.00	19,025.59	8,840.00	211.09	211.17	-58.72	1,306.23	10,083.79	425.07	50.11	374.96	1.134 Major Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,125.58	8,840.00	213.11	213.19	-58.64	1,306.83	10,183.79	424.07	45.81	378.25	1.121	Major Risk
19,400.00	9,060.00	19,225.58	8,840.00	215.13	215.21	-58.55	1,307.42	10,283.78	423.06	41.52	381.54	1.109	Major Risk
19,500.32	9,060.00	19,325.89	8,840.00	217.16	217.24	-58.47	1,308.02	10,384.09	422.06	37.23	384.84	1.097	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.60	-0.60	0.50	0.50	179.85	-29.99	0.08	29.99				
100.00	100.00	100.60	99.40	0.52	0.52	179.85	-29.99	0.08	29.99	28.95	1.04	28.946	
200.00	200.00	200.60	199.40	0.70	0.70	179.85	-29.99	0.08	29.99	28.58	1.41	21.334	
300.00	300.00	300.60	299.40	0.99	0.99	179.85	-29.99	0.08	29.99	28.01	1.98	15.173	
400.00	400.00	400.60	399.40	1.31	1.31	179.85	-29.99	0.08	29.99	27.37	2.62	11.446	
500.00	500.00	500.60	499.40	1.65	1.65	179.85	-29.99	0.08	29.99	26.70	3.29	9.104	
600.00	600.00	600.60	599.40	1.99	1.99	179.85	-29.99	0.08	29.99	26.01	3.98	7.529	
700.00	700.00	700.60	699.40	2.34	2.34	179.85	-29.99	0.08	29.99	25.31	4.68	6.407	
800.00	800.00	800.60	799.40	2.69	2.69	179.85	-29.99	0.08	29.99	24.61	5.38	5.571	
900.00	900.00	900.60	899.40	3.04	3.05	179.85	-29.99	0.08	29.99	23.90	6.09	4.925 Alert	
1,000.00	1,000.00	1,000.60	999.40	3.40	3.40	179.85	-29.99	0.08	29.99	23.19	6.80	4.412 Alert	
1,100.00	1,100.00	1,100.60	1,099.40	3.75	3.75	179.85	-29.99	0.08	29.99	22.48	7.51	3.995 Alert	
1,200.00	1,200.00	1,200.60	1,199.40	4.11	4.11	179.85	-29.99	0.08	29.99	21.77	8.22	3.649 Alert	
1,300.00	1,300.00	1,300.60	1,299.40	4.46	4.47	179.85	-29.99	0.08	29.99	21.06	8.93	3.358 Alert	
1,400.00	1,400.00	1,400.60	1,399.40	4.82	4.82	179.85	-29.99	0.08	29.99	20.35	9.64	3.110 Alert	
1,500.00	1,500.00	1,500.60	1,499.40	5.18	5.18	179.85	-29.99	0.08	29.99	19.63	10.36	2.896 Alert	
1,600.00	1,600.00	1,600.60	1,599.40	5.53	5.54	179.85	-29.99	0.08	29.99	18.92	11.07	2.709 Alert	
1,700.00	1,700.00	1,700.60	1,699.40	5.89	5.89	179.85	-29.99	0.08	29.99	18.21	11.78	2.545 Alert	
1,800.00	1,800.00	1,800.60	1,799.40	6.25	6.25	179.85	-29.99	0.08	29.99	17.49	12.50	2.399 Minor Risk	
1,900.00	1,900.00	1,900.60	1,899.40	6.61	6.61	179.85	-29.99	0.08	29.99	16.78	13.21	2.270 Minor Risk	
2,000.00	2,000.00	2,000.60	1,999.40	6.96	6.97	179.85	-29.99	0.08	29.99	16.06	13.93	2.153 Minor Risk	
2,100.00	2,100.00	2,100.60	2,099.40	7.32	7.32	179.85	-29.99	0.08	29.99	15.35	14.64	2.048 Minor Risk	
2,200.00	2,200.00	2,200.60	2,199.40	7.68	7.68	179.85	-29.99	0.08	29.99	14.63	15.36	1.953 Minor Risk	
2,300.00	2,300.00	2,300.60	2,299.40	8.04	8.04	179.85	-29.99	0.08	29.99	13.92	16.07	1.866 Minor Risk	
2,350.00	2,350.00	2,349.40	2,349.40	8.22	8.21	179.85	-29.99	0.08	29.99	13.56	16.43	1.826 Minor Risk, CC	
2,400.00	2,400.00	2,400.60	2,399.40	8.39	8.40	-164.23	-29.99	0.08	30.20	13.41	16.79	1.799 Minor Risk, ES	
2,500.00	2,499.98	2,500.62	2,499.38	8.75	8.75	-165.07	-29.99	0.08	31.88	14.38	17.51	1.821 Minor Risk	
2,600.00	2,599.92	2,600.68	2,599.32	9.11	9.11	-166.53	-29.99	0.08	35.27	17.05	18.22	1.936 Minor Risk	
2,700.00	2,699.78	2,699.18	2,699.18	9.47	9.46	-168.25	-29.99	0.08	40.37	21.44	18.93	2.133 Minor Risk	
2,800.00	2,799.54	2,799.68	2,799.68	9.82	9.82	-169.54	-29.24	-0.35	46.44	26.79	19.64	2.364 Minor Risk	
2,900.00	2,899.16	2,900.28	2,900.24	10.18	10.18	-170.10	-26.95	-1.65	52.63	32.27	20.35	2.586 Alert	
3,000.00	2,998.61	3,000.99	3,000.85	10.54	10.54	-170.15	-23.12	-3.82	58.93	37.87	21.06	2.798 Alert	
3,100.00	3,097.86	3,101.78	3,101.45	10.89	10.90	-169.83	-17.75	-6.87	65.33	43.57	21.76	3.002 Alert	
3,200.00	3,196.89	3,202.67	3,202.03	11.25	11.26	-169.25	-10.83	-10.80	71.85	49.39	22.46	3.199 Alert	
3,295.74	3,291.45	3,301.22	3,297.71	11.59	11.61	-168.56	-2.96	-15.27	78.36	55.21	23.15	3.385 Alert	
3,300.00	3,295.65	3,303.03	3,301.94	11.61	11.62	-168.54	-2.61	-15.47	78.67	55.51	23.17	3.396 Alert	
3,400.00	3,394.29	3,402.75	3,401.19	11.97	11.97	-168.00	5.76	-20.22	86.09	62.20	23.88	3.604 Alert	
3,500.00	3,492.94	3,502.47	3,500.45	12.33	12.33	-167.55	14.13	-24.97	93.51	68.91	24.60	3.801 Alert	
3,600.00	3,591.58	3,602.19	3,599.71	12.69	12.68	-167.17	22.49	-29.72	100.94	75.62	25.32	3.986 Alert	
3,700.00	3,690.22	3,701.91	3,698.96	13.05	13.04	-166.84	30.86	-34.47	108.37	82.33	26.04	4.161 Alert	
3,800.00	3,788.86	3,801.64	3,798.22	13.41	13.40	-166.55	39.22	-39.23	115.80	89.04	26.76	4.327 Alert	
3,900.00	3,887.50	3,901.36	3,897.48	13.77	13.76	-166.30	47.59	-43.98	123.24	95.75	27.48	4.484 Alert	
4,000.00	3,986.14	4,001.08	3,996.73	14.14	14.12	-166.07	55.95	-48.73	130.67	102.47	28.21	4.633 Alert	
4,100.00	4,084.78	4,100.80	4,095.99	14.50	14.47	-165.87	64.32	-53.48	138.11	109.18	28.93	4.774 Alert	
4,200.00	4,183.42	4,200.52	4,195.25	14.87	14.83	-165.69	72.68	-58.23	145.55	115.90	29.66	4.908 Alert	
4,300.00	4,282.06	4,300.25	4,294.50	15.24	15.19	-165.53	81.05	-62.98	153.00	122.61	30.38	5.036	
4,400.00	4,380.70	4,400.03	4,393.76	15.60	15.55	-165.38	89.42	-67.73	160.44	129.33	31.11	5.157	
4,500.00	4,479.34	4,499.69	4,493.02	15.97	15.91	-165.24	97.78	-72.48	167.89	136.05	31.84	5.273	
4,600.00	4,577.98	4,599.41	4,592.27	16.34	16.27	-165.12	106.15	-77.23	175.33	142.77	32.57	5.384	
4,700.00	4,676.62	4,700.87	4,691.53	16.71	16.64	-165.01	114.51	-81.98	182.78	149.48	33.30	5.489	
4,800.00	4,775.27	4,801.15	4,790.79	17.08	17.00	-164.90	122.88	-86.73	190.22	156.19	34.03	5.589	
4,900.00	4,873.91	4,901.42	4,890.04	17.45	17.36	-164.81	131.24	-91.48	197.67	162.91	34.76	5.686	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,001.70	4,989.30	17.82	17.72	-164.72	139.61	-96.24	205.12	169.62	35.50	5.779		
5,100.00	5,071.19	5,101.98	5,088.56	18.19	18.09	-164.63	147.97	-100.99	212.57	176.34	36.23	5.867		
5,200.00	5,169.83	5,202.26	5,187.81	18.56	18.45	-164.56	156.34	-105.74	220.02	183.05	36.96	5.952		
5,300.00	5,268.47	5,302.54	5,287.07	18.93	18.81	-164.48	164.71	-110.49	227.47	189.77	37.70	6.034		
5,400.00	5,367.11	5,402.82	5,386.33	19.31	19.18	-164.42	173.07	-115.24	234.92	196.49	38.43	6.113		
5,500.00	5,465.75	5,503.09	5,485.58	19.68	19.54	-164.35	181.44	-119.99	242.37	203.20	39.17	6.188		
5,600.00	5,564.39	5,603.37	5,584.84	20.05	19.90	-164.29	189.80	-124.74	249.82	209.92	39.90	6.261		
5,700.00	5,663.03	5,703.65	5,684.10	20.42	20.27	-164.24	198.17	-129.49	257.27	216.63	40.64	6.331		
5,800.00	5,761.67	5,803.93	5,783.35	20.80	20.63	-164.18	206.53	-134.24	264.72	223.35	41.37	6.399		
5,900.00	5,860.31	5,904.21	5,882.61	21.17	20.99	-164.13	214.90	-138.99	272.17	230.06	42.11	6.464		
6,000.00	5,958.96	5,995.52	5,981.87	21.54	21.33	-164.09	223.26	-143.74	279.62	236.81	42.81	6.532		
6,100.00	6,057.60	6,104.76	6,081.12	21.92	21.72	-164.04	231.63	-148.49	287.07	243.49	43.58	6.587		
6,200.00	6,156.24	6,205.04	6,180.38	22.29	22.09	-164.00	240.00	-153.24	294.52	250.21	44.32	6.646		
6,300.00	6,254.88	6,305.32	6,279.63	22.67	22.45	-163.96	248.36	-158.00	301.97	256.92	45.05	6.703		
6,400.00	6,353.52	6,405.60	6,378.89	23.04	22.81	-163.92	256.73	-162.75	309.43	263.64	45.79	6.758		
6,500.00	6,452.16	6,505.88	6,478.15	23.42	23.18	-163.88	265.09	-167.50	316.88	270.35	46.53	6.811		
6,600.00	6,550.80	6,606.15	6,577.40	23.79	23.54	-163.85	273.46	-172.25	324.33	277.07	47.26	6.862		
6,700.00	6,649.44	6,706.43	6,676.66	24.17	23.91	-163.81	281.82	-177.00	331.78	283.78	48.00	6.912		
6,800.00	6,748.08	6,806.71	6,775.92	24.54	24.27	-163.78	290.19	-181.75	339.23	290.50	48.74	6.960		
6,900.00	6,846.72	6,906.99	6,875.17	24.92	24.64	-163.75	298.55	-186.50	346.69	297.21	49.48	7.007		
7,000.00	6,945.36	7,007.27	6,974.43	25.29	25.00	-163.72	306.92	-191.25	354.14	303.92	50.22	7.052		
7,100.00	7,044.00	7,107.55	7,073.69	25.67	25.37	-163.69	315.29	-196.00	361.59	310.64	50.95	7.096		
7,200.00	7,142.65	7,207.82	7,172.94	26.04	25.73	-163.66	323.65	-200.75	369.04	317.35	51.69	7.139		
7,300.00	7,241.29	7,291.90	7,272.20	26.42	26.04	-163.64	332.02	-205.50	376.50	324.12	52.37	7.189		
7,400.00	7,339.93	7,408.38	7,371.46	26.79	26.46	-163.61	340.38	-210.25	383.95	330.78	53.17	7.221		
7,500.00	7,438.57	7,508.66	7,470.71	27.17	26.83	-163.59	348.75	-215.01	391.40	337.49	53.91	7.260		
7,571.77	7,509.37	7,562.92	7,541.95	27.44	27.02	-163.57	354.75	-218.42	396.75	342.38	54.38	7.296		
7,600.00	7,537.23	7,591.07	7,569.98	27.55	27.13	-163.57	357.11	-219.76	398.76	344.17	54.58	7.305		
7,700.00	7,636.18	7,684.93	7,663.45	27.92	27.47	-163.54	364.51	-223.95	404.78	349.48	55.30	7.320		
7,800.00	7,735.48	7,776.33	7,754.64	28.29	27.80	-163.56	369.87	-227.00	410.27	354.29	55.98	7.329		
7,900.00	7,835.05	7,867.65	7,845.87	28.65	28.12	-163.63	373.34	-228.97	415.34	358.70	56.64	7.333		
8,000.00	7,934.83	7,958.88	7,937.08	29.01	28.45	-163.76	374.91	-229.86	419.96	362.69	57.27	7.333		
8,100.00	8,034.74	8,055.95	8,034.14	29.36	28.79	-163.91	375.01	-229.92	423.67	365.73	57.95	7.311		
8,202.27	8,137.00	8,158.20	8,136.40	29.72	29.16	179.99	375.01	-229.92	424.99	366.32	58.67	7.244		
8,300.00	8,234.73	8,255.93	8,234.13	30.06	29.50	179.99	375.01	-229.92	424.99	365.63	59.36	7.160		
8,400.00	8,334.73	8,356.00	8,334.20	30.41	29.85	179.95	375.01	-229.66	424.99	364.93	60.06	7.076		
8,435.88	8,370.61	8,391.89	8,370.01	30.53	29.97	179.66	375.02	-227.47	424.98	364.68	60.30	7.048		
8,500.00	8,434.73	8,454.83	8,432.24	30.75	30.18	178.41	375.08	-218.22	425.09	364.38	60.71	7.002		
8,552.31	8,487.04	8,504.22	8,480.13	30.94	30.35	176.80	375.15	-206.22	425.56	364.56	61.00	6.976		
8,600.00	8,534.68	8,547.79	8,521.39	31.10	30.49	85.40	375.23	-192.24	426.47	365.24	61.23	6.965		
8,650.00	8,584.26	8,592.57	8,562.55	31.26	30.63	83.63	375.34	-174.65	427.83	366.41	61.42	6.965		
8,700.00	8,633.10	8,636.51	8,601.50	31.43	30.77	81.92	375.46	-154.32	429.55	367.98	61.57	6.977		
8,750.00	8,680.83	8,679.69	8,638.14	31.58	30.91	80.28	375.60	-131.49	431.57	369.91	61.66	6.999		
8,800.00	8,727.09	8,722.20	8,672.43	31.74	31.04	78.72	375.75	-106.39	433.83	372.13	61.70	7.032		
8,850.00	8,771.52	8,764.09	8,704.31	31.89	31.17	77.25	375.91	-79.23	436.26	374.57	61.68	7.073		
8,900.00	8,813.78	8,805.44	8,733.75	32.04	31.30	75.88	376.08	-50.20	438.79	377.17	61.62	7.120		
8,950.00	8,853.56	8,846.30	8,760.71	32.18	31.44	74.61	376.27	-19.51	441.36	379.83	61.53	7.173		
9,000.00	8,890.55	8,886.73	8,785.16	32.32	31.58	73.45	376.46	12.67	443.91	382.49	61.42	7.228		
9,050.00	8,924.46	8,926.78	8,807.10	32.47	31.72	72.40	376.66	46.17	446.37	385.07	61.29	7.282		
9,100.00	8,955.05	8,966.50	8,826.48	32.63	31.87	71.46	376.86	80.83	448.68	387.50	61.18	7.333		
9,150.00	8,982.08	9,005.94	8,843.31	32.79	32.03	70.64	377.08	116.49	450.81	389.71	61.10	7.378		
9,200.00	9,005.34	9,045.14	8,857.57	32.97	32.20	69.94	377.30	153.00	452.70	391.63	61.07	7.412		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,084.14	8,869.24	33.17	32.38	69.36	377.52	190.20	454.31	393.21	61.11	7.435		
9,300.00	9,039.87	9,122.99	8,878.33	33.38	32.57	68.90	377.74	227.96	455.62	394.40	61.22	7.442		
9,350.00	9,050.89	9,161.71	8,884.82	33.62	32.77	68.57	377.97	266.13	456.60	395.17	61.42	7.434		
9,400.00	9,057.61	9,200.00	8,888.68	33.87	32.98	68.36	378.20	304.22	457.22	395.50	61.72	7.408		
9,452.31	9,060.00	9,241.30	8,890.00	34.15	33.21	68.27	378.44	345.49	457.48	395.34	62.15	7.361		
9,500.00	9,060.00	9,288.99	8,890.00	34.42	33.50	68.27	378.73	393.18	457.48	394.83	62.65	7.302		
9,600.00	9,060.00	9,388.99	8,890.00	35.09	34.19	68.27	379.33	493.17	457.48	393.60	63.88	7.162		
9,700.00	9,060.00	9,488.99	8,890.00	35.86	34.98	68.27	379.92	593.17	457.47	392.17	65.30	7.006		
9,800.00	9,060.00	9,588.99	8,890.00	36.72	35.87	68.27	380.52	693.17	457.47	390.56	66.91	6.837		
9,900.00	9,060.00	9,688.99	8,890.00	37.69	36.86	68.27	381.12	793.17	457.47	388.76	68.71	6.658		
10,000.00	9,060.00	9,788.99	8,890.00	38.73	37.93	68.27	381.71	893.17	457.47	386.81	70.66	6.474		
10,100.00	9,060.00	9,888.99	8,890.00	39.86	39.08	68.27	382.31	993.16	457.46	384.70	72.77	6.287		
10,140.22	9,060.00	9,929.21	8,890.00	40.33	39.56	68.27	382.55	1,033.39	457.46	383.81	73.65	6.211		
10,200.00	9,060.00	9,988.99	8,890.00	41.05	40.30	68.23	382.91	1,093.16	456.88	381.89	74.99	6.092		
10,300.00	9,060.00	10,088.91	8,890.00	42.31	41.58	68.03	383.50	1,193.08	453.32	376.05	77.27	5.867		
10,400.00	9,060.00	10,188.63	8,890.00	43.64	42.92	67.62	384.10	1,292.80	446.54	366.98	79.57	5.612		
10,507.23	9,060.00	10,304.79	8,890.00	45.11	44.55	66.95	384.73	1,399.38	435.73	353.60	82.13	5.306		
10,600.00	9,060.00	10,387.40	8,890.00	46.43	45.75	66.48	385.28	1,491.57	426.20	342.05	84.15	5.065		
10,700.00	9,060.00	10,487.09	8,890.00	47.91	47.23	66.12	385.88	1,591.25	419.03	332.41	86.63	4.837 Alert		
10,800.00	9,060.00	10,586.99	8,890.00	49.42	48.76	65.91	386.48	1,691.15	415.07	325.79	89.28	4.649 Alert		
10,874.32	9,060.00	10,661.30	8,890.00	50.57	49.92	65.86	386.92	1,765.47	414.19	322.81	91.38	4.532 Alert		
10,900.00	9,060.00	10,686.98	8,890.00	50.97	50.33	65.86	387.07	1,791.14	414.29	322.17	92.13	4.497 Alert		
11,000.00	9,060.00	10,786.94	8,890.00	52.55	51.93	65.99	387.67	1,891.10	416.71	321.55	95.16	4.379 Alert		
11,100.00	9,060.00	10,886.75	8,890.00	54.14	53.55	66.29	388.26	1,990.91	422.31	323.94	98.37	4.293 Alert		
11,207.23	9,060.00	11,006.54	8,890.00	55.87	55.54	66.77	388.90	2,097.62	431.89	329.69	102.20	4.226 Alert		
11,300.00	9,060.00	11,085.77	8,890.00	57.39	56.88	67.31	389.45	2,189.92	440.43	335.23	105.19	4.187 Alert		
11,400.00	9,060.00	11,185.54	8,890.00	59.06	58.58	67.68	390.05	2,289.69	446.56	337.98	108.58	4.113 Alert		
11,506.63	9,060.00	11,307.89	8,890.00	60.88	60.70	67.86	390.68	2,396.26	449.55	337.18	112.37	4.001 Alert		
11,600.00	9,060.00	11,385.48	8,890.00	62.49	62.06	67.91	391.24	2,489.63	450.56	335.37	115.19	3.911 Alert		
11,700.00	9,060.00	11,485.47	8,890.00	64.24	63.82	67.97	391.84	2,589.62	451.64	333.12	118.53	3.810 Alert		
11,800.00	9,060.00	11,585.47	8,890.00	66.01	65.60	68.03	392.43	2,689.61	452.73	330.83	121.89	3.714 Alert		
11,900.00	9,060.00	11,685.46	8,890.00	67.79	67.40	68.08	393.03	2,789.60	453.81	328.52	125.29	3.622 Alert		
12,000.00	9,060.00	11,785.45	8,890.00	69.58	69.21	68.14	393.63	2,889.59	454.90	326.18	128.72	3.534 Alert		
12,100.00	9,060.00	11,885.44	8,890.00	71.39	71.03	68.19	394.23	2,989.58	455.98	323.81	132.17	3.450 Alert		
12,200.00	9,060.00	11,985.44	8,890.00	73.21	72.86	68.24	394.82	3,089.58	457.07	321.42	135.65	3.369 Alert		
12,300.00	9,060.00	12,085.43	8,890.00	75.05	74.71	68.30	395.42	3,189.57	458.15	319.00	139.15	3.292 Alert		
12,400.00	9,060.00	12,185.42	8,890.00	76.89	76.57	68.35	396.02	3,289.56	459.24	316.57	142.67	3.219 Alert		
12,500.00	9,060.00	12,285.42	8,890.00	78.74	78.43	68.41	396.61	3,389.55	460.33	314.11	146.22	3.148 Alert		
12,600.00	9,060.00	12,385.41	8,890.00	80.61	80.31	68.46	397.21	3,489.54	461.42	311.64	149.78	3.081 Alert		
12,700.00	9,060.00	12,485.40	8,890.00	82.48	82.19	68.51	397.81	3,589.53	462.50	309.14	153.36	3.016 Alert		
12,800.00	9,060.00	12,585.40	8,890.00	84.36	84.08	68.57	398.40	3,689.52	463.59	306.64	156.96	2.954 Alert		
12,900.00	9,060.00	12,685.39	8,890.00	86.24	85.97	68.62	399.00	3,789.52	464.68	304.11	160.57	2.894 Alert		
13,000.00	9,060.00	12,785.38	8,890.00	88.14	87.88	68.67	399.60	3,889.51	465.77	301.57	164.19	2.837 Alert		
13,100.00	9,060.00	12,885.38	8,890.00	90.04	89.79	68.72	400.19	3,989.50	466.86	299.02	167.83	2.782 Alert		
13,200.00	9,060.00	12,985.37	8,890.00	91.94	91.70	68.78	400.79	4,089.49	467.95	296.46	171.49	2.729 Alert		
13,300.00	9,060.00	13,085.36	8,890.00	93.86	93.63	68.83	401.39	4,189.48	469.04	293.88	175.15	2.678 Alert		
13,400.00	9,060.00	13,185.36	8,890.00	95.77	95.55	68.88	401.98	4,289.47	470.13	291.30	178.83	2.629 Alert		
13,500.00	9,060.00	13,285.35	8,890.00	97.70	97.48	68.93	402.58	4,389.46	471.22	288.70	182.52	2.582 Alert		
13,600.00	9,060.00	13,385.34	8,890.00	99.62	99.42	68.98	403.18	4,489.45	472.31	286.09	186.22	2.536 Alert		
13,700.00	9,060.00	13,485.34	8,890.00	101.56	101.36	69.03	403.77	4,589.45	473.40	283.47	189.93	2.493 Minor Risk		
13,800.00	9,060.00	13,585.33	8,890.00	103.49	103.31	69.08	404.37	4,689.44	474.50	280.85	193.65	2.450 Minor Risk		
13,900.00	9,060.00	13,685.32	8,890.00	105.43	105.25	69.13	404.97	4,789.43	475.59	278.21	197.38	2.410 Minor Risk		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,000.00	9,060.00	13,785.31	8,890.00	107.38	107.21	69.18	405.56	4,889.42	476.68	275.57	201.12	2.370 Minor Risk	
14,100.00	9,060.00	13,885.31	8,890.00	109.33	109.16	69.23	406.16	4,989.41	477.77	272.91	204.86	2.332 Minor Risk	
14,200.00	9,060.00	13,985.30	8,890.00	111.28	111.12	69.28	406.76	5,089.40	478.87	270.25	208.61	2.295 Minor Risk	
14,300.00	9,060.00	14,085.29	8,890.00	113.23	113.08	69.33	407.35	5,189.39	479.96	267.59	212.37	2.260 Minor Risk	
14,400.00	9,060.00	14,185.29	8,890.00	115.19	115.05	69.38	407.95	5,289.39	481.06	264.91	216.14	2.226 Minor Risk	
14,500.00	9,060.00	14,285.28	8,890.00	117.15	117.01	69.43	408.55	5,389.38	482.15	262.23	219.92	2.192 Minor Risk	
14,600.00	9,060.00	14,385.27	8,890.00	119.11	118.98	69.48	409.14	5,489.37	483.25	259.55	223.70	2.160 Minor Risk	
14,700.00	9,060.00	14,485.27	8,890.00	121.08	120.96	69.53	409.74	5,589.36	484.34	256.85	227.49	2.129 Minor Risk	
14,800.00	9,060.00	14,585.26	8,890.00	123.05	122.93	69.57	410.34	5,689.35	485.44	254.15	231.28	2.099 Minor Risk	
14,900.00	9,060.00	14,685.25	8,890.00	125.02	124.91	69.62	410.94	5,789.34	486.53	251.45	235.08	2.070 Minor Risk	
15,000.00	9,060.00	14,785.25	8,890.00	126.99	126.89	69.67	411.53	5,889.33	487.63	248.74	238.89	2.041 Minor Risk	
15,100.00	9,060.00	14,885.24	8,890.00	128.97	128.87	69.72	412.13	5,989.33	488.73	246.02	242.70	2.014 Minor Risk	
15,200.00	9,060.00	14,985.23	8,890.00	130.95	130.85	69.77	412.73	6,089.32	489.82	243.30	246.52	1.987 Minor Risk	
15,300.00	9,060.00	15,085.23	8,890.00	132.93	132.84	69.81	413.32	6,189.31	490.92	240.58	250.34	1.961 Minor Risk	
15,400.00	9,060.00	15,185.22	8,890.00	134.91	134.83	69.86	413.92	6,289.30	492.02	237.85	254.17	1.936 Minor Risk	
15,500.00	9,060.00	15,285.21	8,890.00	136.89	136.82	69.91	414.52	6,389.29	493.12	235.11	258.00	1.911 Minor Risk	
15,600.00	9,060.00	15,385.21	8,890.00	138.88	138.81	69.95	415.11	6,489.28	494.21	232.38	261.84	1.887 Minor Risk	
15,700.00	9,060.00	15,485.20	8,890.00	140.86	140.80	70.00	415.71	6,589.27	495.31	229.63	265.68	1.864 Minor Risk	
15,800.00	9,060.00	15,585.19	8,890.00	142.85	142.79	70.05	416.31	6,689.27	496.41	226.89	269.52	1.842 Minor Risk	
15,900.00	9,060.00	15,685.18	8,890.00	144.84	144.79	70.09	416.90	6,789.26	497.51	224.14	273.37	1.820 Minor Risk	
16,000.00	9,060.00	15,785.18	8,890.00	146.83	146.79	70.14	417.50	6,889.25	498.61	221.38	277.23	1.799 Minor Risk	
16,100.00	9,060.00	15,885.17	8,890.00	148.83	148.78	70.18	418.10	6,989.24	499.71	218.62	281.09	1.778 Minor Risk	
16,200.00	9,060.00	15,985.16	8,890.00	150.82	150.78	70.23	418.69	7,089.23	500.81	215.86	284.95	1.758 Minor Risk	
16,300.00	9,060.00	16,085.16	8,890.00	152.82	152.78	70.27	419.29	7,189.22	501.91	213.10	288.81	1.738 Minor Risk	
16,400.00	9,060.00	16,185.15	8,890.00	154.81	154.79	70.32	419.89	7,289.21	503.01	210.33	292.68	1.719 Minor Risk	
16,500.00	9,060.00	16,285.14	8,890.00	156.81	156.79	70.36	420.48	7,389.20	504.11	207.56	296.56	1.700 Minor Risk	
16,600.00	9,060.00	16,385.14	8,890.00	158.81	158.79	70.41	421.08	7,489.20	505.21	204.78	300.43	1.682 Minor Risk	
16,700.00	9,060.00	16,485.13	8,890.00	160.81	160.80	70.45	421.68	7,589.19	506.32	202.00	304.31	1.664 Minor Risk	
16,800.00	9,060.00	16,585.12	8,890.00	162.81	162.80	70.50	422.27	7,689.18	507.42	199.22	308.19	1.646 Minor Risk	
16,900.00	9,060.00	16,685.12	8,890.00	164.82	164.81	70.54	422.87	7,789.17	508.52	196.44	312.08	1.629 Minor Risk	
17,000.00	9,060.00	16,785.11	8,890.00	166.82	166.82	70.58	423.47	7,889.16	509.62	193.65	315.97	1.613 Minor Risk	
17,100.00	9,060.00	16,885.10	8,890.00	168.83	168.83	70.63	424.06	7,989.15	510.73	190.86	319.86	1.597 Minor Risk	
17,200.00	9,060.00	16,985.10	8,890.00	170.83	170.84	70.67	424.66	8,089.14	511.83	188.07	323.76	1.581 Minor Risk	
17,300.00	9,060.00	17,085.09	8,890.00	172.84	172.85	70.71	425.26	8,189.14	512.93	185.28	327.66	1.565 Minor Risk	
17,400.00	9,060.00	17,185.08	8,890.00	174.84	174.86	70.76	425.85	8,289.13	514.04	182.48	331.56	1.550 Minor Risk	
17,500.00	9,060.00	17,285.08	8,890.00	176.85	176.87	70.80	426.45	8,389.12	515.14	179.68	335.46	1.536 Minor Risk	
17,600.00	9,060.00	17,385.07	8,890.00	178.86	178.89	70.84	427.05	8,489.11	516.25	176.88	339.37	1.521 Minor Risk	
17,700.00	9,060.00	17,485.06	8,890.00	180.87	180.90	70.89	427.65	8,589.10	517.35	174.08	343.28	1.507 Minor Risk	
17,800.00	9,060.00	17,585.06	8,890.00	182.88	182.91	70.93	428.24	8,689.09	518.46	171.27	347.19	1.493 Major Risk	
17,900.00	9,060.00	17,685.05	8,890.00	184.89	184.93	70.97	428.84	8,789.08	519.56	168.46	351.10	1.480 Major Risk	
18,000.00	9,060.00	17,785.04	8,890.00	186.90	186.94	71.01	429.44	8,889.08	520.67	165.65	355.02	1.467 Major Risk	
18,100.00	9,060.00	17,885.03	8,890.00	188.92	188.96	71.05	430.03	8,989.07	521.77	162.84	358.94	1.454 Major Risk	
18,200.00	9,060.00	17,985.03	8,890.00	190.93	190.98	71.10	430.63	9,089.06	522.88	160.02	362.86	1.441 Major Risk	
18,300.00	9,060.00	18,085.02	8,890.00	192.94	193.00	71.14	431.23	9,189.05	523.98	157.20	366.78	1.429 Major Risk	
18,400.00	9,060.00	18,185.01	8,890.00	194.96	195.01	71.18	431.82	9,289.04	525.09	154.38	370.71	1.416 Major Risk	
18,500.00	9,060.00	18,285.01	8,890.00	196.97	197.03	71.22	432.42	9,389.03	526.20	151.56	374.63	1.405 Major Risk	
18,600.00	9,060.00	18,385.00	8,890.00	198.99	199.05	71.26	433.02	9,489.02	527.31	148.74	378.57	1.393 Major Risk	
18,700.00	9,060.00	18,484.99	8,890.00	201.00	201.07	71.30	433.61	9,589.02	528.41	145.92	382.50	1.381 Major Risk	
18,800.00	9,060.00	18,584.99	8,890.00	203.02	203.09	71.34	434.21	9,689.01	529.52	143.09	386.43	1.370 Major Risk	
18,900.00	9,060.00	18,684.98	8,890.00	205.04	205.11	71.38	434.81	9,789.00	530.63	140.26	390.37	1.359 Major Risk	
19,000.00	9,060.00	18,784.97	8,890.00	207.06	207.14	71.42	435.40	9,888.99	531.74	137.43	394.31	1.349 Major Risk	
19,100.00	9,060.00	18,884.97	8,890.00	209.07	209.16	71.46	436.00	9,988.98	532.85	134.60	398.25	1.338 Major Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
19,200.00	9,060.00	18,984.96	8,890.00	211.09	211.18	71.50	436.60	10,088.97	533.95	131.76	402.19	1.328 Major Risk	
19,300.00	9,060.00	19,084.95	8,890.00	213.11	213.20	71.54	437.19	10,188.96	535.06	128.93	406.13	1.317 Major Risk	
19,400.00	9,060.00	19,184.95	8,890.00	215.13	215.23	71.58	437.79	10,288.96	536.17	126.09	410.08	1.307 Major Risk	
19,500.32	9,060.00	19,285.26	8,890.00	217.16	217.26	71.62	438.39	10,389.26	537.29	123.25	414.04	1.298 Major Risk, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,528.68	3.38	1,528.72					
100.00	100.00	89.20	89.20	0.52	0.51	179.87	-1,528.68	3.38	1,528.69	1,527.65	1.03	1,481.382		
200.00	200.00	189.20	189.20	0.70	0.68	179.87	-1,528.68	3.38	1,528.69	1,527.31	1.38	1,109.682		
300.00	300.00	289.20	289.20	0.99	0.95	179.87	-1,528.68	3.38	1,528.69	1,526.75	1.94	787.379		
400.00	400.00	389.20	389.20	1.31	1.27	179.87	-1,528.68	3.38	1,528.69	1,526.10	2.58	591.944		
500.00	500.00	489.20	489.20	1.65	1.61	179.87	-1,528.68	3.38	1,528.69	1,525.43	3.26	469.595		
600.00	600.00	589.20	589.20	1.99	1.95	179.87	-1,528.68	3.38	1,528.69	1,524.74	3.94	387.622		
700.00	700.00	689.20	689.20	2.34	2.30	179.87	-1,528.68	3.38	1,528.69	1,524.05	4.64	329.400		
800.00	800.00	789.20	789.20	2.69	2.65	179.87	-1,528.68	3.38	1,528.69	1,523.34	5.34	286.102		
900.00	900.00	889.20	889.20	3.04	3.01	179.87	-1,528.68	3.38	1,528.69	1,522.64	6.05	252.721		
1,000.00	1,000.00	989.20	989.20	3.40	3.36	179.87	-1,528.68	3.38	1,528.69	1,521.93	6.76	226.236		
1,100.00	1,100.00	1,089.20	1,089.20	3.75	3.71	179.87	-1,528.68	3.38	1,528.69	1,521.22	7.47	204.730		
1,200.00	1,200.00	1,189.20	1,189.20	4.11	4.07	179.87	-1,528.68	3.38	1,528.69	1,520.51	8.18	186.929		
1,300.00	1,300.00	1,289.20	1,289.20	4.46	4.43	179.87	-1,528.68	3.38	1,528.69	1,519.80	8.89	171.958		
1,400.00	1,400.00	1,389.20	1,389.20	4.82	4.78	179.87	-1,528.68	3.38	1,528.69	1,519.08	9.60	159.195		
1,500.00	1,500.00	1,489.20	1,489.20	5.18	5.14	179.87	-1,528.68	3.38	1,528.69	1,518.37	10.32	148.187		
1,600.00	1,600.00	1,589.20	1,589.20	5.53	5.50	179.87	-1,528.68	3.38	1,528.69	1,517.66	11.03	138.597		
1,700.00	1,700.00	1,689.20	1,689.20	5.89	5.85	179.87	-1,528.68	3.38	1,528.69	1,516.94	11.74	130.169		
1,800.00	1,800.00	1,789.20	1,789.20	6.25	6.21	179.87	-1,528.68	3.38	1,528.69	1,516.23	12.46	122.704		
1,900.00	1,900.00	1,889.20	1,889.20	6.61	6.57	179.87	-1,528.68	3.38	1,528.69	1,515.51	13.17	116.046		
2,000.00	2,000.00	1,989.20	1,989.20	6.96	6.92	179.87	-1,528.68	3.38	1,528.69	1,514.80	13.89	110.072		
2,100.00	2,100.00	2,120.58	2,120.57	7.32	7.39	179.88	-1,527.45	3.10	1,527.77	1,513.06	14.71	103.840		
2,200.00	2,200.00	2,255.62	2,255.53	7.68	7.88	179.92	-1,523.12	2.12	1,524.57	1,509.02	15.54	98.084		
2,300.00	2,300.00	2,390.38	2,390.08	8.04	8.36	179.98	-1,515.72	0.44	1,519.07	1,502.71	16.37	92.819		
2,350.00	2,350.00	2,457.60	2,457.12	8.22	8.60	-179.97	-1,510.87	-0.66	1,515.47	1,498.69	16.77	90.348		
2,400.00	2,400.00	2,524.73	2,524.00	8.39	8.84	-163.90	-1,505.27	-1.93	1,511.50	1,494.32	17.18	87.987		
2,500.00	2,499.98	2,658.74	2,657.29	8.75	9.32	-163.83	-1,491.79	-4.99	1,503.12	1,485.14	17.98	83.593		
2,600.00	2,599.92	2,792.39	2,789.87	9.11	9.79	-163.76	-1,475.33	-8.72	1,494.14	1,475.36	18.77	79.582		
2,700.00	2,699.78	2,925.68	2,921.66	9.47	10.27	-163.69	-1,455.92	-13.13	1,484.57	1,465.01	19.56	75.902		
2,800.00	2,799.54	3,058.58	3,052.56	9.82	10.75	-163.62	-1,433.59	-18.19	1,474.42	1,454.09	20.33	72.509		
2,900.00	2,899.16	3,191.06	3,182.50	10.18	11.22	-163.54	-1,408.39	-23.91	1,463.69	1,442.59	21.10	69.367		
3,000.00	2,998.61	3,308.49	3,280.78	10.54	11.65	-163.50	-1,388.10	-28.51	1,453.45	1,431.57	21.88	66.423		
3,100.00	3,097.86	3,408.87	3,378.24	10.89	12.02	-163.47	-1,367.98	-33.07	1,444.87	1,422.27	22.61	63.917		
3,200.00	3,196.89	3,509.11	3,475.83	11.25	12.38	-163.46	-1,347.84	-37.64	1,437.96	1,414.63	23.33	61.633		
3,295.74	3,291.45	3,586.50	3,569.37	11.59	12.67	-163.46	-1,328.53	-42.02	1,432.91	1,408.96	23.96	59.806		
3,300.00	3,295.65	3,609.25	3,573.53	11.61	12.75	-163.46	-1,327.67	-42.21	1,432.72	1,408.67	24.06	59.552		
3,400.00	3,394.29	3,709.35	3,671.26	11.97	13.12	-163.46	-1,307.50	-46.79	1,428.25	1,403.46	24.79	57.617		
3,500.00	3,492.94	3,809.45	3,769.00	12.33	13.49	-163.45	-1,287.33	-51.37	1,423.78	1,398.26	25.52	55.789		
3,600.00	3,591.58	3,909.55	3,866.73	12.69	13.87	-163.45	-1,267.15	-55.94	1,419.30	1,393.05	26.26	54.058		
3,700.00	3,690.22	4,009.65	3,964.47	13.05	14.24	-163.45	-1,246.98	-60.52	1,414.83	1,387.84	26.99	52.418		
3,800.00	3,788.86	4,109.75	4,062.20	13.41	14.62	-163.44	-1,226.81	-65.09	1,410.36	1,382.63	27.73	50.863		
3,900.00	3,887.50	4,190.15	4,159.94	13.77	14.92	-163.44	-1,206.63	-69.67	1,405.88	1,377.49	28.39	49.513		
4,000.00	3,986.14	4,309.95	4,257.67	14.14	15.37	-163.43	-1,186.46	-74.24	1,401.41	1,372.20	29.21	47.980		
4,100.00	4,084.78	4,389.95	4,355.41	14.50	15.67	-163.43	-1,166.28	-78.82	1,396.93	1,367.06	29.87	46.760		
4,200.00	4,183.42	4,489.85	4,453.14	14.87	16.05	-163.43	-1,146.11	-83.40	1,392.46	1,361.84	30.62	45.480		
4,300.00	4,282.06	4,589.75	4,550.88	15.24	16.43	-163.42	-1,125.94	-87.97	1,387.99	1,356.63	31.36	44.260		
4,400.00	4,380.70	4,689.65	4,648.61	15.60	16.81	-163.42	-1,105.76	-92.55	1,383.51	1,351.41	32.10	43.094		
4,500.00	4,479.34	4,789.55	4,746.35	15.97	17.19	-163.41	-1,085.59	-97.12	1,379.04	1,346.19	32.85	41.980		
4,600.00	4,577.98	4,889.45	4,844.08	16.34	17.57	-163.41	-1,065.42	-101.70	1,374.57	1,340.97	33.60	40.915		
4,700.00	4,676.62	4,989.35	4,941.82	16.71	17.95	-163.40	-1,045.24	-106.28	1,370.09	1,335.75	34.34	39.894		
4,800.00	4,775.27	5,089.25	5,039.55	17.08	18.33	-163.40	-1,025.07	-110.85	1,365.62	1,330.53	35.09	38.917		
4,900.00	4,873.91	5,189.15	5,137.28	17.45	18.71	-163.39	-1,004.89	-115.43	1,361.15	1,325.31	35.84	37.979		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,289.05	5,235.02	17.82	19.09	-163.39	-984.72	-120.00	1,356.67	1,320.08	36.59	37.079		
5,100.00	5,071.19	5,388.95	5,332.75	18.19	19.48	-163.39	-964.55	-124.58	1,352.20	1,314.86	37.34	36.214		
5,200.00	5,169.83	5,488.85	5,430.49	18.56	19.86	-163.38	-944.37	-129.16	1,347.73	1,309.64	38.09	35.383		
5,300.00	5,268.47	5,588.75	5,528.22	18.93	20.24	-163.38	-924.20	-133.73	1,343.25	1,304.41	38.84	34.584		
5,400.00	5,367.11	5,688.65	5,628.96	19.31	20.63	-163.37	-904.03	-138.31	1,338.78	1,299.19	39.59	33.814		
5,500.00	5,465.75	5,788.55	5,723.69	19.68	21.01	-163.37	-883.85	-142.88	1,334.30	1,293.96	40.34	33.073		
5,600.00	5,564.39	5,888.45	5,821.43	20.05	21.40	-163.36	-863.68	-147.46	1,329.83	1,288.73	41.10	32.358		
5,700.00	5,663.03	5,988.35	5,919.16	20.42	21.78	-163.36	-843.51	-152.04	1,325.36	1,283.51	41.85	31.669		
5,800.00	5,761.67	6,088.25	6,016.90	20.80	22.17	-163.35	-823.33	-156.61	1,320.88	1,278.28	42.60	31.004		
5,900.00	5,860.31	6,188.15	6,114.63	21.17	22.55	-163.35	-803.16	-161.19	1,316.41	1,273.05	43.36	30.361		
6,000.00	5,958.96	6,288.05	6,212.37	21.54	22.94	-163.34	-782.98	-165.76	1,311.94	1,267.82	44.11	29.741		
6,100.00	6,057.60	6,387.95	6,310.10	21.92	23.32	-163.34	-762.81	-170.34	1,307.46	1,262.60	44.87	29.141		
6,200.00	6,156.24	6,487.85	6,407.83	22.29	23.71	-163.33	-742.64	-174.91	1,302.99	1,257.37	45.62	28.560		
6,300.00	6,254.88	6,587.75	6,505.57	22.67	24.10	-163.33	-722.46	-179.49	1,298.52	1,252.14	46.38	27.999		
6,400.00	6,353.52	6,687.65	6,603.30	23.04	24.48	-163.32	-702.29	-184.07	1,294.04	1,246.91	47.13	27.455		
6,500.00	6,452.16	6,787.55	6,701.04	23.42	24.87	-163.32	-682.12	-188.64	1,289.57	1,241.68	47.89	26.928		
6,600.00	6,550.80	6,887.45	6,798.77	23.79	25.26	-163.31	-661.94	-193.22	1,285.10	1,236.45	48.65	26.417		
6,700.00	6,649.44	6,987.35	6,896.51	24.17	25.64	-163.31	-641.77	-197.79	1,280.62	1,231.22	49.40	25.922		
6,800.00	6,748.08	7,087.25	6,994.24	24.54	26.03	-163.30	-621.59	-202.37	1,276.15	1,225.99	50.16	25.441		
6,900.00	6,846.72	7,187.15	7,091.98	24.92	26.42	-163.30	-601.42	-206.95	1,271.68	1,220.76	50.92	24.975		
7,000.00	6,945.36	7,286.93	7,173.04	25.29	26.74	-163.30	-585.06	-210.66	1,267.68	1,216.02	51.66	24.541		
7,100.00	7,044.00	7,345.53	7,247.35	25.67	27.03	-163.31	-571.51	-213.73	1,265.52	1,213.15	52.37	24.165		
7,162.27	7,105.43	7,392.62	7,293.78	25.90	27.21	-163.33	-563.80	-215.48	1,265.14	1,212.34	52.81	23.958 CC		
7,200.00	7,142.65	7,421.16	7,321.95	26.04	27.31	-163.35	-559.40	-216.48	1,265.28	1,212.21	53.07	23.843		
7,300.00	7,241.29	7,500.00	7,399.97	26.42	27.61	-163.39	-548.30	-218.99	1,266.97	1,213.22	53.76	23.569		
7,400.00	7,339.93	7,572.27	7,471.67	26.79	27.88	-163.45	-539.52	-220.99	1,270.58	1,216.18	54.40	23.355		
7,500.00	7,438.57	7,647.64	7,546.62	27.17	28.15	-163.53	-531.76	-222.75	1,276.12	1,221.08	55.04	23.185		
7,571.77	7,509.37	7,700.00	7,598.77	27.44	28.34	-163.59	-527.23	-223.77	1,281.28	1,225.80	55.48	23.095		
7,600.00	7,537.23	7,722.80	7,621.51	27.55	28.42	-163.63	-525.47	-224.17	1,283.48	1,227.82	55.66	23.060		
7,700.00	7,636.18	7,800.00	7,698.53	27.92	28.70	-163.75	-520.50	-225.30	1,290.90	1,234.63	56.27	22.943		
7,800.00	7,735.48	7,872.83	7,771.28	28.29	28.95	-163.85	-517.21	-226.05	1,297.71	1,240.89	56.82	22.837		
7,900.00	7,835.05	7,947.74	7,846.17	28.65	29.21	-163.94	-515.24	-226.49	1,303.93	1,246.56	57.37	22.728		
8,000.00	7,934.83	8,025.60	7,924.03	29.01	29.48	-164.02	-514.68	-226.62	1,309.54	1,251.62	57.92	22.610		
8,100.00	8,034.74	8,125.52	8,023.94	29.36	29.81	-164.09	-514.68	-226.62	1,313.37	1,254.75	58.62	22.406		
8,202.27	8,137.00	8,227.78	8,126.20	29.72	30.16	179.85	-514.68	-226.62	1,314.69	1,255.36	59.33	22.160		
8,300.00	8,234.73	8,325.51	8,223.93	30.06	30.50	179.85	-514.68	-226.62	1,314.69	1,254.68	60.00	21.910		
8,400.00	8,334.73	8,425.75	8,324.05	30.41	30.83	179.71	-514.66	-223.25	1,314.68	1,253.99	60.69	21.663		
8,409.41	8,344.15	8,435.11	8,333.35	30.44	30.86	179.66	-514.66	-222.17	1,314.68	1,253.93	60.75	21.641		
8,500.00	8,434.73	8,522.57	8,418.96	30.75	31.14	178.90	-514.55	-204.71	1,314.81	1,253.49	61.32	21.442		
8,552.31	8,487.04	8,570.07	8,464.06	30.94	31.29	178.25	-514.46	-189.83	1,315.13	1,253.52	61.62	21.344		
8,600.00	8,534.68	8,611.68	8,502.42	31.10	31.41	87.91	-514.37	-173.76	1,315.67	1,253.82	61.86	21.269		
8,650.00	8,584.26	8,654.32	8,540.43	31.26	31.53	87.20	-514.25	-154.44	1,316.44	1,254.34	62.09	21.201		
8,700.00	8,633.10	8,696.08	8,576.16	31.43	31.65	86.52	-514.12	-132.84	1,317.37	1,255.06	62.31	21.142		
8,750.00	8,680.83	8,737.05	8,609.59	31.58	31.76	85.87	-513.98	-109.18	1,318.45	1,255.94	62.51	21.092		
8,800.00	8,727.09	8,777.32	8,640.72	31.74	31.87	85.23	-513.83	-83.65	1,319.64	1,256.95	62.70	21.048		
8,850.00	8,771.52	8,816.96	8,669.54	31.89	31.97	84.63	-513.67	-56.44	1,320.91	1,258.04	62.87	21.010		
8,900.00	8,813.78	8,856.06	8,696.05	32.04	32.07	84.06	-513.50	-27.72	1,322.23	1,259.20	63.03	20.976		
8,950.00	8,853.56	8,894.67	8,720.26	32.18	32.18	83.53	-513.32	2.36	1,323.57	1,260.37	63.20	20.944		
9,000.00	8,890.55	8,932.85	8,742.15	32.32	32.29	83.04	-513.13	33.64	1,324.89	1,261.53	63.36	20.910		
9,050.00	8,924.46	8,970.67	8,761.72	32.47	32.40	82.59	-512.94	65.98	1,326.17	1,262.63	63.54	20.872		
9,100.00	8,955.05	9,008.16	8,778.99	32.63	32.52	82.18	-512.74	99.25	1,327.37	1,263.64	63.73	20.828		
9,150.00	8,982.08	9,045.38	8,793.93	32.79	32.66	81.82	-512.54	133.33	1,328.48	1,264.53	63.95	20.775		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	9,082.36	8,806.57	32.97	32.80	81.51	-512.33	168.08	1,329.47	1,265.27	64.19	20.710		
9,250.00	9,024.65	9,119.16	8,816.88	33.17	32.96	81.25	-512.12	203.40	1,330.31	1,265.83	64.48	20.632		
9,300.00	9,039.87	9,155.80	8,824.88	33.38	33.12	81.04	-511.91	239.15	1,331.00	1,266.20	64.80	20.539		
9,350.00	9,050.89	9,192.33	8,830.57	33.62	33.30	80.89	-511.69	275.22	1,331.52	1,266.35	65.17	20.431		
9,400.00	9,057.61	9,228.78	8,833.94	33.87	33.49	80.79	-511.48	311.51	1,331.85	1,266.27	65.58	20.308		
9,452.31	9,060.00	9,268.07	8,835.00	34.15	33.70	80.75	-511.24	350.78	1,332.00	1,265.94	66.06	20.163		
9,500.00	9,060.00	9,315.76	8,835.00	34.42	33.98	80.75	-510.96	398.47	1,332.00	1,265.39	66.61	19.997		
9,600.00	9,060.00	9,415.76	8,835.00	35.09	34.65	80.75	-510.36	498.47	1,332.00	1,264.08	67.92	19.612		
9,700.00	9,060.00	9,515.76	8,835.00	35.86	35.43	80.75	-509.77	598.47	1,332.00	1,262.56	69.44	19.183		
9,800.00	9,060.00	9,615.76	8,835.00	36.72	36.32	80.75	-509.17	698.47	1,331.99	1,260.84	71.15	18.720		
9,900.00	9,060.00	9,715.76	8,835.00	37.69	37.29	80.75	-508.57	798.47	1,331.99	1,258.94	73.05	18.233		
10,000.00	9,060.00	9,815.76	8,835.00	38.73	38.36	80.75	-507.98	898.46	1,331.99	1,256.86	75.12	17.731		
10,100.00	9,060.00	9,915.76	8,835.00	39.86	39.50	80.75	-507.38	998.46	1,331.99	1,254.64	77.35	17.220		
10,140.22	9,060.00	9,955.99	8,835.00	40.33	39.98	80.75	-507.14	1,038.69	1,331.98	1,253.69	78.29	17.014		
10,200.00	9,060.00	10,015.76	8,835.00	41.05	40.71	80.74	-506.79	1,098.46	1,331.37	1,251.65	79.72	16.701		
10,300.00	9,060.00	10,115.68	8,835.00	42.31	41.98	80.70	-506.19	1,198.38	1,327.58	1,245.37	82.21	16.149		
10,400.00	9,060.00	10,215.41	8,835.00	43.64	43.32	80.63	-505.60	1,298.10	1,320.36	1,235.55	84.81	15.568		
10,507.23	9,060.00	10,321.99	8,835.00	45.11	44.80	80.50	-504.96	1,404.68	1,308.81	1,221.11	87.70	14.924		
10,600.00	9,060.00	10,414.18	8,835.00	46.43	46.13	80.46	-504.41	1,496.87	1,298.59	1,208.30	90.29	14.383		
10,700.00	9,060.00	10,513.87	8,835.00	47.91	47.60	80.43	-503.82	1,596.55	1,290.87	1,197.70	93.18	13.854		
10,800.00	9,060.00	10,613.77	8,835.00	49.42	49.13	80.41	-503.22	1,696.45	1,286.60	1,190.44	96.16	13.379		
10,874.30	9,060.00	10,688.06	8,835.00	50.57	50.28	80.41	-502.78	1,770.74	1,285.65	1,187.21	98.44	13.060		
10,900.00	9,060.00	10,713.76	8,835.00	50.97	50.68	80.41	-502.63	1,796.44	1,285.76	1,186.53	99.23	12.957		
11,000.00	9,060.00	10,813.72	8,835.00	52.55	52.28	80.42	-502.03	1,896.40	1,288.37	1,186.00	102.37	12.585		
11,100.00	9,060.00	10,913.52	8,835.00	54.14	53.90	80.45	-501.44	1,996.20	1,294.41	1,188.84	105.57	12.261		
11,207.23	9,060.00	11,020.24	8,835.00	55.87	55.66	80.49	-500.80	2,102.91	1,304.71	1,195.65	109.05	11.964		
11,300.00	9,060.00	11,112.54	8,835.00	57.39	57.21	80.58	-500.25	2,195.22	1,313.84	1,201.74	112.11	11.719		
11,400.00	9,060.00	11,212.32	8,835.00	59.06	58.91	80.65	-499.66	2,294.99	1,320.39	1,204.93	115.46	11.436		
11,506.63	9,060.00	11,318.89	8,835.00	60.88	60.74	80.69	-499.02	2,401.56	1,323.58	1,204.49	119.08	11.115		
11,600.00	9,060.00	11,412.25	8,835.00	62.49	62.37	80.69	-498.46	2,494.93	1,324.66	1,202.36	122.29	10.832		
11,700.00	9,060.00	11,512.25	8,835.00	64.24	64.13	80.70	-497.87	2,594.92	1,325.81	1,200.04	125.77	10.542		
11,800.00	9,060.00	11,612.24	8,835.00	66.01	65.90	80.71	-497.27	2,694.91	1,326.97	1,197.69	129.28	10.265		
11,900.00	9,060.00	11,712.23	8,835.00	67.79	67.70	80.72	-496.68	2,794.90	1,328.12	1,195.31	132.81	10.000		
12,000.00	9,060.00	11,812.23	8,835.00	69.58	69.50	80.73	-496.08	2,894.89	1,329.28	1,192.90	136.38	9.747		
12,100.00	9,060.00	11,912.22	8,835.00	71.39	71.32	80.73	-495.49	2,994.88	1,330.43	1,190.46	139.97	9.505		
12,200.00	9,060.00	12,012.21	8,835.00	73.21	73.15	80.74	-494.89	3,094.87	1,331.59	1,188.00	143.59	9.274		
12,300.00	9,060.00	12,112.21	8,835.00	75.05	74.99	80.75	-494.29	3,194.86	1,332.74	1,185.51	147.23	9.052		
12,400.00	9,060.00	12,212.20	8,835.00	76.89	76.84	80.76	-493.70	3,294.86	1,333.90	1,183.01	150.89	8.840		
12,500.00	9,060.00	12,312.19	8,835.00	78.74	78.70	80.77	-493.10	3,394.85	1,335.05	1,180.48	154.57	8.637		
12,600.00	9,060.00	12,412.19	8,835.00	80.61	80.57	80.77	-492.51	3,494.84	1,336.21	1,177.94	158.26	8.443		
12,700.00	9,060.00	12,512.18	8,835.00	82.48	82.45	80.78	-491.91	3,594.83	1,337.36	1,175.38	161.98	8.256		
12,800.00	9,060.00	12,612.17	8,835.00	84.36	84.34	80.79	-491.31	3,694.82	1,338.52	1,172.81	165.71	8.078		
12,900.00	9,060.00	12,712.17	8,835.00	86.24	86.23	80.80	-490.72	3,794.81	1,339.67	1,170.22	169.45	7.906		
13,000.00	9,060.00	12,812.16	8,835.00	88.14	88.13	80.81	-490.12	3,894.80	1,340.83	1,167.62	173.21	7.741		
13,100.00	9,060.00	12,912.15	8,835.00	90.04	90.04	80.81	-489.53	3,994.80	1,341.98	1,165.00	176.98	7.583		
13,200.00	9,060.00	13,012.14	8,835.00	91.94	91.95	80.82	-488.93	4,094.79	1,343.14	1,162.37	180.76	7.430		
13,300.00	9,060.00	13,112.14	8,835.00	93.86	93.87	80.83	-488.33	4,194.78	1,344.29	1,159.73	184.56	7.284		
13,400.00	9,060.00	13,212.13	8,835.00	95.77	95.79	80.84	-487.74	4,294.77	1,345.45	1,157.08	188.36	7.143		
13,500.00	9,060.00	13,312.12	8,835.00	97.70	97.72	80.85	-487.14	4,394.76	1,346.60	1,154.42	192.18	7.007		
13,600.00	9,060.00	13,412.12	8,835.00	99.62	99.66	80.85	-486.55	4,494.75	1,347.76	1,151.75	196.00	6.876		
13,700.00	9,060.00	13,512.11	8,835.00	101.56	101.59	80.86	-485.95	4,594.74	1,348.91	1,149.07	199.84	6.750		
13,800.00	9,060.00	13,612.10	8,835.00	103.49	103.54	80.87	-485.36	4,694.74	1,350.07	1,146.39	203.68	6.628		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,900.00	9,060.00	13,712.10	8,835.00	105.43	105.48	80.88	-484.76	4,794.73	1,351.22	1,143.69	207.53	6.511				
14,000.00	9,060.00	13,812.09	8,835.00	107.38	107.43	80.89	-484.16	4,894.72	1,352.38	1,140.99	211.39	6.398				
14,100.00	9,060.00	13,912.08	8,835.00	109.33	109.38	80.89	-483.57	4,994.71	1,353.53	1,138.28	215.25	6.288				
14,200.00	9,060.00	14,012.08	8,835.00	111.28	111.34	80.90	-482.97	5,094.70	1,354.69	1,135.57	219.13	6.182				
14,300.00	9,060.00	14,112.07	8,835.00	113.23	113.30	80.91	-482.38	5,194.69	1,355.85	1,132.84	223.00	6.080				
14,400.00	9,060.00	14,212.06	8,835.00	115.19	115.26	80.92	-481.78	5,294.68	1,357.00	1,130.11	226.89	5.981				
14,500.00	9,060.00	14,312.06	8,835.00	117.15	117.23	80.93	-481.18	5,394.68	1,358.16	1,127.38	230.78	5.885				
14,600.00	9,060.00	14,412.05	8,835.00	119.11	119.20	80.93	-480.59	5,494.67	1,359.31	1,124.64	234.67	5.792				
14,700.00	9,060.00	14,512.04	8,835.00	121.08	121.17	80.94	-479.99	5,594.66	1,360.47	1,121.89	238.57	5.703				
14,800.00	9,060.00	14,612.04	8,835.00	123.05	123.14	80.95	-479.40	5,694.65	1,361.62	1,119.14	242.48	5.615				
14,900.00	9,060.00	14,712.03	8,835.00	125.02	125.12	80.96	-478.80	5,794.64	1,362.78	1,116.39	246.39	5.531				
15,000.00	9,060.00	14,812.02	8,835.00	126.99	127.09	80.96	-478.20	5,894.63	1,363.94	1,113.63	250.30	5.449				
15,100.00	9,060.00	14,912.01	8,835.00	128.97	129.07	80.97	-477.61	5,994.62	1,365.09	1,110.87	254.22	5.370				
15,200.00	9,060.00	15,012.01	8,835.00	130.95	131.06	80.98	-477.01	6,094.61	1,366.25	1,108.10	258.15	5.292				
15,300.00	9,060.00	15,112.00	8,835.00	132.93	133.04	80.99	-476.42	6,194.61	1,367.40	1,105.33	262.08	5.218				
15,400.00	9,060.00	15,211.99	8,835.00	134.91	135.03	80.99	-475.82	6,294.60	1,368.56	1,102.55	266.01	5.145				
15,500.00	9,060.00	15,311.99	8,835.00	136.89	137.01	81.00	-475.23	6,394.59	1,369.71	1,099.77	269.94	5.074				
15,600.00	9,060.00	15,411.98	8,835.00	138.88	139.00	81.01	-474.63	6,494.58	1,370.87	1,096.99	273.88	5.005				
15,700.00	9,060.00	15,511.97	8,835.00	140.86	140.99	81.02	-474.03	6,594.57	1,372.03	1,094.20	277.82	4.938	Alert			
15,800.00	9,060.00	15,611.97	8,835.00	142.85	142.99	81.03	-473.44	6,694.56	1,373.18	1,091.41	281.77	4.873	Alert			
15,900.00	9,060.00	15,711.96	8,835.00	144.84	144.98	81.03	-472.84	6,794.55	1,374.34	1,088.62	285.72	4.810	Alert			
16,000.00	9,060.00	15,811.95	8,835.00	146.83	146.98	81.04	-472.25	6,894.55	1,375.49	1,085.83	289.67	4.749	Alert			
16,100.00	9,060.00	15,911.95	8,835.00	148.83	148.97	81.05	-471.65	6,994.54	1,376.65	1,083.03	293.62	4.689	Alert			
16,200.00	9,060.00	16,011.94	8,835.00	150.82	150.97	81.06	-471.05	7,094.53	1,377.81	1,080.23	297.58	4.630	Alert			
16,300.00	9,060.00	16,111.93	8,835.00	152.82	152.97	81.06	-470.46	7,194.52	1,378.96	1,077.42	301.54	4.573	Alert			
16,400.00	9,060.00	16,211.93	8,835.00	154.81	154.97	81.07	-469.86	7,294.51	1,380.12	1,074.62	305.50	4.518	Alert			
16,500.00	9,060.00	16,311.92	8,835.00	156.81	156.97	81.08	-469.27	7,394.50	1,381.27	1,071.81	309.46	4.463	Alert			
16,600.00	9,060.00	16,411.91	8,835.00	158.81	158.97	81.09	-468.67	7,494.49	1,382.43	1,069.00	313.43	4.411	Alert			
16,700.00	9,060.00	16,511.91	8,835.00	160.81	160.98	81.09	-468.07	7,594.49	1,383.59	1,066.19	317.40	4.359	Alert			
16,800.00	9,060.00	16,611.90	8,835.00	162.81	162.98	81.10	-467.48	7,694.48	1,384.74	1,063.37	321.37	4.309	Alert			
16,900.00	9,060.00	16,711.89	8,835.00	164.82	164.99	81.11	-466.88	7,794.47	1,385.90	1,060.55	325.34	4.260	Alert			
17,000.00	9,060.00	16,811.88	8,835.00	166.82	167.00	81.12	-466.29	7,894.46	1,387.05	1,057.73	329.32	4.212	Alert			
17,100.00	9,060.00	16,911.88	8,835.00	168.82	169.00	81.12	-465.69	7,994.45	1,388.21	1,054.91	333.30	4.165	Alert			
17,200.00	9,060.00	17,011.87	8,835.00	170.83	171.01	81.13	-465.10	8,094.44	1,389.37	1,052.09	337.28	4.119	Alert			
17,300.00	9,060.00	17,111.86	8,835.00	172.84	173.02	81.14	-464.50	8,194.43	1,390.52	1,049.27	341.26	4.075	Alert			
17,400.00	9,060.00	17,211.86	8,835.00	174.84	175.03	81.15	-463.90	8,294.43	1,391.68	1,046.44	345.24	4.031	Alert			
17,500.00	9,060.00	17,311.85	8,835.00	176.85	177.04	81.15	-463.31	8,394.42	1,392.84	1,043.61	349.23	3.988	Alert			
17,600.00	9,060.00	17,411.84	8,835.00	178.86	179.06	81.16	-462.71	8,494.41	1,393.99	1,040.78	353.21	3.947	Alert			
17,700.00	9,060.00	17,511.84	8,835.00	180.87	181.07	81.17	-462.12	8,594.40	1,395.15	1,037.95	357.20	3.906	Alert			
17,800.00	9,060.00	17,611.83	8,835.00	182.88	183.08	81.18	-461.52	8,694.39	1,396.30	1,035.11	361.19	3.866	Alert			
17,900.00	9,060.00	17,711.82	8,835.00	184.89	185.10	81.18	-460.92	8,794.38	1,397.46	1,032.28	365.18	3.827	Alert			
18,000.00	9,060.00	17,811.82	8,835.00	186.90	187.11	81.19	-460.33	8,894.37	1,398.62	1,029.44	369.17	3.789	Alert			
18,100.00	9,060.00	17,911.81	8,835.00	188.92	189.13	81.20	-459.73	8,994.36	1,399.77	1,026.61	373.17	3.751	Alert			
18,200.00	9,060.00	18,011.80	8,835.00	190.93	191.14	81.20	-459.14	9,094.36	1,400.93	1,023.77	377.16	3.714	Alert			
18,300.00	9,060.00	18,111.80	8,835.00	192.94	193.16	81.21	-458.54	9,194.35	1,402.09	1,020.93	381.16	3.678	Alert			
18,400.00	9,060.00	18,211.79	8,835.00	194.96	195.18	81.22	-457.95	9,294.34	1,403.24	1,018.08	385.16	3.643	Alert			
18,500.00	9,060.00	18,311.78	8,835.00	196.97	197.20	81.23	-457.35	9,394.33	1,404.40	1,015.24	389.16	3.609	Alert			
18,600.00	9,060.00	18,411.78	8,835.00	198.99	199.22	81.23	-456.75	9,494.32	1,405.56	1,012.40	393.16	3.575	Alert			
18,700.00	9,060.00	18,511.77	8,835.00	201.00	201.23	81.24	-456.16	9,594.31	1,406.71	1,009.55	397.16	3.542	Alert			
18,800.00	9,060.00	18,611.76	8,835.00	203.02	203.25	81.25	-455.56	9,694.30	1,407.87	1,006.71	401.16	3.509	Alert			
18,900.00	9,060.00	18,711.75	8,835.00	205.04	205.28	81.26	-454.97	9,794.30	1,409.03	1,003.86	405.17	3.478	Alert			
19,000.00	9,060.00	18,811.75	8,835.00	207.06	207.30	81.26	-454.37	9,894.29	1,410.18	1,001.01	409.17	3.446	Alert			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	18,911.74	8,835.00	209.07	209.32	81.27	-453.77	9,994.28	1,411.34	998.16	413.18	3.416	Alert
19,200.00	9,060.00	19,011.73	8,835.00	211.09	211.34	81.28	-453.18	10,094.27	1,412.50	995.31	417.19	3.386	Alert
19,300.00	9,060.00	19,111.73	8,835.00	213.11	213.36	81.28	-452.58	10,194.26	1,413.65	992.46	421.20	3.356	Alert
19,400.00	9,060.00	19,211.72	8,835.00	215.13	215.38	81.29	-451.99	10,294.25	1,414.81	989.60	425.21	3.327	Alert
19,500.32	9,060.00	19,312.03	8,835.00	217.16	217.41	81.30	-451.39	10,394.56	1,415.97	986.74	429.23	3.299	Alert, ES, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,558.65	3.44	1,558.70					
100.00	100.00	88.90	88.90	0.52	0.51	179.87	-1,558.65	3.44	1,558.66	1,557.63	1.03	1,510.563		
200.00	200.00	188.90	188.90	0.70	0.67	179.87	-1,558.65	3.44	1,558.66	1,557.28	1.38	1,132.031		
300.00	300.00	288.90	288.90	0.99	0.95	179.87	-1,558.65	3.44	1,558.66	1,556.72	1.94	803.194		
400.00	400.00	388.90	388.90	1.31	1.27	179.87	-1,558.65	3.44	1,558.66	1,556.08	2.58	603.780		
500.00	500.00	488.90	488.90	1.65	1.61	179.87	-1,558.65	3.44	1,558.66	1,555.40	3.25	478.951		
600.00	600.00	588.90	588.90	1.99	1.95	179.87	-1,558.65	3.44	1,558.66	1,554.71	3.94	395.326		
700.00	700.00	688.90	688.90	2.34	2.30	179.87	-1,558.65	3.44	1,558.66	1,554.02	4.64	335.934		
800.00	800.00	788.90	788.90	2.69	2.65	179.87	-1,558.65	3.44	1,558.66	1,553.31	5.34	291.769		
900.00	900.00	888.90	888.90	3.04	3.00	179.87	-1,558.65	3.44	1,558.66	1,552.61	6.05	257.720		
1,000.00	1,000.00	988.90	988.90	3.40	3.36	179.87	-1,558.65	3.44	1,558.66	1,551.90	6.76	230.708		
1,100.00	1,100.00	1,088.90	1,088.90	3.75	3.71	179.87	-1,558.65	3.44	1,558.66	1,551.19	7.47	208.774		
1,200.00	1,200.00	1,188.90	1,188.90	4.11	4.07	179.87	-1,558.65	3.44	1,558.66	1,550.48	8.18	190.619		
1,300.00	1,300.00	1,288.90	1,288.90	4.46	4.42	179.87	-1,558.65	3.44	1,558.66	1,549.77	8.89	175.350		
1,400.00	1,400.00	1,388.90	1,388.90	4.82	4.78	179.87	-1,558.65	3.44	1,558.66	1,549.06	9.60	162.334		
1,500.00	1,500.00	1,488.90	1,488.90	5.18	5.14	179.87	-1,558.65	3.44	1,558.66	1,548.34	10.31	151.108		
1,600.00	1,600.00	1,588.90	1,588.90	5.53	5.49	179.87	-1,558.65	3.44	1,558.66	1,547.63	11.03	141.328		
1,700.00	1,700.00	1,688.90	1,688.90	5.89	5.85	179.87	-1,558.65	3.44	1,558.66	1,546.91	11.74	132.733		
1,800.00	1,800.00	1,788.90	1,788.90	6.25	6.21	179.87	-1,558.65	3.44	1,558.66	1,546.20	12.46	125.120		
1,900.00	1,900.00	1,888.90	1,888.90	6.61	6.57	179.87	-1,558.65	3.44	1,558.66	1,545.48	13.17	118.331		
2,000.00	2,000.00	1,988.90	1,988.90	6.96	6.92	179.87	-1,558.65	3.44	1,558.66	1,544.77	13.89	112.238		
2,100.00	2,100.00	2,088.90	2,088.90	7.32	7.28	179.87	-1,558.65	3.44	1,558.66	1,544.05	14.60	106.741		
2,200.00	2,200.00	2,188.90	2,188.90	7.68	7.64	179.87	-1,558.65	3.44	1,558.66	1,543.34	15.32	101.756		
2,300.00	2,300.00	2,288.90	2,288.90	8.04	8.00	179.87	-1,558.65	3.44	1,558.66	1,542.62	16.03	97.215		
2,350.00	2,350.00	2,338.90	2,338.90	8.22	8.18	179.87	-1,558.65	3.44	1,558.66	1,542.27	16.39	95.093 CC		
2,400.00	2,400.00	2,388.90	2,388.90	8.39	8.35	-164.09	-1,558.65	3.44	1,558.87	1,542.12	16.75	93.075 ES		
2,500.00	2,499.98	2,488.88	2,488.88	8.75	8.71	-164.10	-1,558.65	3.44	1,560.55	1,543.08	17.46	89.360		
2,600.00	2,599.92	2,588.82	2,588.82	9.11	9.07	-164.13	-1,558.65	3.44	1,563.90	1,545.72	18.18	86.030		
2,700.00	2,699.78	2,688.68	2,688.68	9.47	9.43	-164.17	-1,558.65	3.44	1,568.94	1,550.04	18.89	83.042		
2,800.00	2,799.54	2,788.44	2,788.44	9.82	9.78	-164.22	-1,558.65	3.44	1,575.65	1,556.04	19.61	80.359		
2,900.00	2,899.16	2,888.06	2,888.06	10.18	10.14	-164.28	-1,558.65	3.44	1,584.04	1,563.72	20.32	77.950		
3,000.00	2,998.61	2,987.51	2,987.51	10.54	10.50	-164.35	-1,558.65	3.44	1,594.11	1,573.07	21.03	75.786		
3,100.00	3,097.86	3,086.76	3,086.76	10.89	10.85	-164.44	-1,558.65	3.44	1,605.85	1,584.11	21.75	73.845		
3,200.00	3,196.89	3,185.79	3,185.79	11.25	11.21	-164.54	-1,558.65	3.44	1,619.27	1,596.81	22.46	72.103		
3,295.74	3,291.45	3,280.35	3,280.35	11.59	11.55	-164.64	-1,558.65	3.44	1,633.69	1,610.55	23.14	70.607		
3,300.00	3,295.65	3,284.55	3,284.55	11.61	11.56	-164.64	-1,558.65	3.44	1,634.36	1,611.20	23.17	70.543		
3,400.00	3,394.29	3,383.19	3,383.19	11.97	11.91	-164.79	-1,558.65	3.44	1,650.23	1,626.35	23.88	69.112		
3,500.00	3,492.94	3,481.84	3,481.84	12.33	12.27	-164.94	-1,558.65	3.44	1,666.11	1,641.52	24.59	67.761		
3,600.00	3,591.58	3,580.48	3,580.48	12.69	12.62	-165.09	-1,558.65	3.44	1,681.99	1,656.69	25.30	66.484		
3,700.00	3,690.22	3,679.12	3,679.12	13.05	12.97	-165.23	-1,558.65	3.44	1,697.89	1,671.88	26.01	65.275		
3,800.00	3,788.86	3,777.76	3,777.76	13.41	13.33	-165.37	-1,558.65	3.44	1,713.80	1,687.07	26.72	64.129		
3,900.00	3,887.50	3,876.40	3,876.40	13.77	13.68	-165.51	-1,558.65	3.44	1,729.71	1,702.28	27.44	63.041		
4,000.00	3,986.14	3,975.04	3,975.04	14.14	14.03	-165.64	-1,558.65	3.44	1,745.64	1,717.49	28.15	62.007		
4,100.00	4,084.78	4,087.76	4,087.76	14.50	14.43	-165.77	-1,558.32	2.85	1,761.28	1,732.36	28.92	60.906		
4,200.00	4,183.42	4,205.69	4,205.64	14.87	14.85	-165.85	-1,556.84	0.23	1,775.90	1,746.21	29.70	59.801		
4,300.00	4,282.06	4,324.01	4,323.84	15.24	15.26	-165.85	-1,554.15	-4.53	1,789.46	1,758.98	30.48	58.716		
4,400.00	4,380.70	4,438.11	4,437.68	15.60	15.66	-165.79	-1,550.44	-11.09	1,801.97	1,770.73	31.24	57.680		
4,500.00	4,479.34	4,537.34	4,536.65	15.97	16.01	-165.72	-1,546.90	-17.35	1,814.17	1,782.21	31.96	56.771		
4,600.00	4,577.98	4,636.57	4,635.62	16.34	16.36	-165.65	-1,543.37	-23.60	1,826.37	1,793.70	32.67	55.900		
4,700.00	4,676.62	4,735.80	4,734.59	16.71	16.71	-165.59	-1,539.84	-29.85	1,838.57	1,805.18	33.39	55.065		
4,800.00	4,775.27	4,835.03	4,833.57	17.08	17.06	-165.52	-1,536.30	-36.10	1,850.78	1,816.67	34.11	54.264		
4,900.00	4,873.91	4,934.26	4,932.54	17.45	17.41	-165.46	-1,532.77	-42.35	1,862.99	1,828.16	34.83	53.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,033.49	5,031.51	17.82	17.77	-165.40	-1,529.24	-48.61	1,875.20	1,839.65	35.54	52.756		
5,100.00	5,071.19	5,132.72	5,130.48	18.19	18.12	-165.33	-1,525.70	-54.86	1,887.41	1,851.14	36.26	52.046		
5,200.00	5,169.83	5,231.95	5,229.45	18.56	18.47	-165.27	-1,522.17	-61.11	1,899.62	1,862.64	36.98	51.362		
5,300.00	5,268.47	5,331.18	5,328.42	18.93	18.82	-165.21	-1,518.63	-67.36	1,911.84	1,874.13	37.71	50.704		
5,400.00	5,367.11	5,430.41	5,427.39	19.31	19.17	-165.15	-1,515.10	-73.61	1,924.06	1,885.63	38.43	50.069		
5,500.00	5,465.75	5,529.64	5,526.36	19.68	19.53	-165.09	-1,511.57	-79.87	1,936.28	1,897.13	39.15	49.457		
5,600.00	5,564.39	5,628.87	5,625.33	20.05	19.88	-165.03	-1,508.03	-86.12	1,948.50	1,908.63	39.87	48.867		
5,700.00	5,663.03	5,728.10	5,724.30	20.42	20.23	-164.98	-1,504.50	-92.37	1,960.73	1,920.13	40.60	48.298		
5,800.00	5,761.67	5,827.33	5,823.27	20.80	20.59	-164.92	-1,500.97	-98.62	1,972.96	1,931.64	41.32	47.747		
5,900.00	5,860.31	5,926.57	5,922.24	21.17	20.94	-164.86	-1,497.43	-104.87	1,985.18	1,943.14	42.04	47.216		
6,000.00	5,958.96	6,025.80	6,021.21	21.54	21.30	-164.81	-1,493.90	-111.12	1,997.42	1,954.65	42.77	46.702		
6,100.00	6,057.60	6,125.03	6,120.18	21.92	21.65	-164.75	-1,490.37	-117.38	2,009.65	1,966.15	43.49	46.204		
6,200.00	6,156.24	6,224.26	6,219.15	22.29	22.01	-164.70	-1,486.83	-123.63	2,021.88	1,977.66	44.22	45.723		
6,300.00	6,254.88	6,323.49	6,318.12	22.67	22.36	-164.64	-1,483.30	-129.88	2,034.12	1,989.17	44.95	45.256		
6,400.00	6,353.52	6,422.72	6,417.09	23.04	22.72	-164.59	-1,479.76	-136.13	2,046.36	2,000.68	45.67	44.805		
6,500.00	6,452.16	6,521.95	6,516.06	23.42	23.07	-164.54	-1,476.23	-142.38	2,058.60	2,012.20	46.40	44.367		
6,600.00	6,550.80	6,621.18	6,615.03	23.79	23.43	-164.48	-1,472.70	-148.64	2,070.84	2,023.71	47.13	43.942		
6,700.00	6,649.44	6,720.41	6,714.00	24.17	23.78	-164.43	-1,469.16	-154.89	2,083.08	2,035.23	47.85	43.530		
6,800.00	6,748.08	6,819.64	6,812.97	24.54	24.14	-164.38	-1,465.63	-161.14	2,095.33	2,046.74	48.58	43.130		
6,900.00	6,846.72	6,918.87	6,911.94	24.92	24.49	-164.33	-1,462.10	-167.39	2,107.57	2,058.26	49.31	42.742		
7,000.00	6,945.36	7,018.10	7,010.91	25.29	24.85	-164.28	-1,458.56	-173.64	2,119.82	2,069.78	50.04	42.365		
7,100.00	7,044.00	7,117.33	7,109.88	25.67	25.20	-164.23	-1,455.03	-179.90	2,132.07	2,081.30	50.77	41.998		
7,200.00	7,142.65	7,216.56	7,208.85	26.04	25.56	-164.19	-1,451.49	-186.15	2,144.32	2,092.83	51.49	41.642		
7,300.00	7,241.29	7,315.79	7,307.82	26.42	25.92	-164.14	-1,447.96	-192.40	2,156.57	2,104.35	52.22	41.295		
7,400.00	7,339.93	7,415.02	7,406.79	26.79	26.27	-164.09	-1,444.43	-198.65	2,168.83	2,115.87	52.95	40.958		
7,500.00	7,438.57	7,514.25	7,505.76	27.17	26.63	-164.04	-1,440.89	-204.90	2,181.08	2,127.40	53.68	40.630		
7,571.77	7,509.37	7,585.48	7,576.80	27.44	26.89	-164.01	-1,438.36	-209.39	2,189.88	2,135.67	54.21	40.399		
7,600.00	7,537.23	7,613.50	7,604.75	27.55	26.99	-164.01	-1,437.36	-211.16	2,193.24	2,138.83	54.41	40.308		
7,700.00	7,636.18	7,712.93	7,703.92	27.92	27.34	-163.99	-1,433.82	-217.42	2,203.54	2,148.40	55.14	39.963		
7,800.00	7,735.48	7,791.92	7,782.75	28.29	27.63	-163.98	-1,431.34	-221.80	2,211.78	2,156.00	55.78	39.652		
7,900.00	7,835.05	7,869.49	7,860.25	28.65	27.91	-163.98	-1,429.69	-224.73	2,218.50	2,162.09	56.40	39.332		
8,000.00	7,934.83	7,947.11	7,937.84	29.01	28.18	-164.00	-1,428.81	-226.28	2,223.71	2,166.69	57.02	38.999		
8,100.00	8,034.74	8,032.92	8,023.64	29.36	28.49	-164.03	-1,428.65	-226.56	2,227.34	2,169.68	57.66	38.626		
8,202.27	8,137.00	8,135.17	8,125.90	29.72	28.85	179.91	-1,428.65	-226.56	2,228.66	2,170.27	58.39	38.171		
8,300.00	8,234.73	8,232.90	8,223.63	30.06	29.20	179.91	-1,428.65	-226.56	2,228.66	2,169.58	59.07	37.726		
8,400.00	8,334.73	8,332.90	8,323.63	30.41	29.55	179.91	-1,428.65	-226.56	2,228.66	2,168.88	59.78	37.282		
8,500.00	8,434.73	8,435.48	8,425.85	30.75	29.90	179.73	-1,428.58	-219.64	2,228.60	2,168.13	60.48	36.852		
8,552.31	8,487.04	8,487.58	8,476.88	30.94	30.07	179.47	-1,428.46	-209.23	2,228.56	2,167.73	60.83	36.637		
8,576.06	8,510.78	8,510.65	8,499.14	31.02	30.15	89.66	-1,428.40	-203.15	2,228.55	2,167.57	60.98	36.545		
8,600.00	8,534.68	8,533.69	8,521.10	31.10	30.22	89.52	-1,428.32	-196.19	2,228.56	2,167.42	61.14	36.453		
8,650.00	8,584.26	8,581.10	8,565.32	31.26	30.38	89.22	-1,428.13	-179.13	2,228.60	2,167.16	61.45	36.270		
8,700.00	8,633.10	8,627.64	8,607.20	31.43	30.53	88.93	-1,427.91	-158.87	2,228.68	2,166.93	61.75	36.094		
8,750.00	8,680.83	8,673.36	8,646.62	31.58	30.67	88.66	-1,427.65	-135.73	2,228.80	2,166.76	62.04	35.925		
8,800.00	8,727.09	8,718.35	8,683.48	31.74	30.81	88.39	-1,427.37	-109.96	2,228.94	2,166.61	62.33	35.762		
8,850.00	8,771.52	8,762.66	8,717.70	31.89	30.96	88.13	-1,427.06	-81.84	2,229.10	2,166.49	62.61	35.605		
8,900.00	8,813.78	8,806.36	8,749.22	32.04	31.10	87.89	-1,426.73	-51.59	2,229.28	2,166.39	62.88	35.450		
8,950.00	8,853.56	8,849.50	8,778.00	32.18	31.24	87.66	-1,426.38	-19.45	2,229.46	2,166.30	63.16	35.297		
9,000.00	8,890.55	8,892.15	8,803.98	32.32	31.39	87.45	-1,426.00	14.35	2,229.64	2,166.19	63.45	35.141		
9,050.00	8,924.46	8,934.34	8,827.15	32.47	31.55	87.25	-1,425.62	49.60	2,229.81	2,166.07	63.74	34.981		
9,100.00	8,955.05	8,976.15	8,847.48	32.63	31.71	87.08	-1,425.21	86.12	2,229.96	2,165.91	64.05	34.814		
9,150.00	8,982.08	9,017.60	8,864.95	32.79	31.89	86.92	-1,424.80	123.69	2,230.09	2,165.70	64.38	34.638		
9,200.00	9,005.34	9,058.75	8,879.57	32.97	32.07	86.78	-1,424.38	162.14	2,230.18	2,165.44	64.74	34.450		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD+IFR1															Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
9,250.00	9,024.65	9,100.00	8,891.42	33.17	32.26	86.67	-1,423.94	201.65	2,230.24	2,165.12	65.12	34.248					
9,300.00	9,039.87	9,140.31	8,900.22	33.38	32.47	86.57	-1,423.51	240.97	2,230.26	2,164.72	65.53	34.033					
9,350.00	9,050.89	9,180.80	8,906.26	33.62	32.68	86.50	-1,423.07	281.00	2,230.22	2,164.25	65.98	33.803					
9,400.00	9,057.61	9,221.15	8,909.45	33.87	32.91	86.45	-1,422.63	321.21	2,230.14	2,163.70	66.45	33.563					
9,452.31	9,060.00	9,267.37	8,910.00	34.15	33.18	86.43	-1,422.12	367.43	2,229.99	2,162.99	67.00	33.286					
9,500.00	9,060.00	9,315.06	8,910.00	34.42	33.48	86.43	-1,421.60	415.11	2,229.74	2,162.17	67.57	32.997					
9,600.00	9,060.00	9,415.06	8,910.00	35.09	34.19	86.43	-1,420.50	515.11	2,229.24	2,160.29	68.95	32.333					
9,700.00	9,060.00	9,515.06	8,910.00	35.86	35.01	86.43	-1,419.40	615.10	2,228.73	2,158.20	70.53	31.600					
9,800.00	9,060.00	9,615.06	8,910.00	36.72	35.93	86.43	-1,418.30	715.09	2,228.23	2,155.92	72.31	30.815					
9,900.00	9,060.00	9,715.06	8,910.00	37.69	36.93	86.43	-1,417.20	815.08	2,227.72	2,153.45	74.27	29.995					
10,000.00	9,060.00	9,815.06	8,910.00	38.73	38.02	86.42	-1,416.10	915.08	2,227.22	2,150.82	76.40	29.152					
10,100.00	9,060.00	9,915.06	8,910.00	39.86	39.19	86.42	-1,415.00	1,015.07	2,226.71	2,148.03	78.68	28.299					
10,140.22	9,060.00	9,955.28	8,910.00	40.33	39.68	86.42	-1,414.56	1,055.29	2,226.51	2,146.86	79.65	27.955					
10,200.00	9,060.00	10,015.05	8,910.00	41.05	40.43	86.42	-1,413.90	1,115.05	2,225.58	2,144.48	81.11	27.440					
10,300.00	9,060.00	10,114.95	8,910.00	42.31	41.72	86.41	-1,412.80	1,214.95	2,221.26	2,137.59	83.66	26.550					
10,400.00	9,060.00	10,214.64	8,910.00	43.64	43.08	86.39	-1,411.70	1,314.63	2,213.45	2,127.12	86.33	25.640					
10,507.23	9,060.00	10,321.16	8,910.00	45.11	44.58	86.35	-1,410.53	1,421.14	2,201.23	2,111.93	89.30	24.650					
10,600.00	9,060.00	10,413.29	8,910.00	46.43	45.93	86.35	-1,409.52	1,513.27	2,190.42	2,098.47	91.95	23.821					
10,700.00	9,060.00	10,512.94	8,910.00	47.91	47.42	86.34	-1,408.42	1,612.92	2,182.12	2,087.21	94.91	22.991					
10,800.00	9,060.00	10,612.82	8,910.00	49.42	48.96	86.34	-1,407.32	1,712.79	2,177.29	2,079.33	97.95	22.228					
10,888.73	9,060.00	10,701.54	8,910.00	50.80	50.36	86.34	-1,406.35	1,801.50	2,175.92	2,075.20	100.72	21.604					
10,900.00	9,060.00	10,712.80	8,910.00	50.97	50.54	86.34	-1,406.22	1,812.77	2,175.94	2,074.87	101.07	21.528					
11,000.00	9,060.00	10,812.78	8,910.00	52.55	52.14	86.34	-1,405.13	1,912.73	2,178.07	2,073.82	104.25	20.892					
11,100.00	9,060.00	10,912.61	8,910.00	54.14	53.78	86.34	-1,404.03	2,012.56	2,183.69	2,076.20	107.48	20.317					
11,207.23	9,060.00	11,019.37	8,910.00	55.87	55.56	86.35	-1,402.85	2,119.32	2,193.57	2,082.58	110.99	19.764					
11,300.00	9,060.00	11,111.73	8,910.00	57.39	57.12	86.37	-1,401.84	2,211.66	2,202.35	2,088.28	114.06	19.308					
11,400.00	9,060.00	11,211.53	8,910.00	59.06	58.83	86.39	-1,400.74	2,311.47	2,208.46	2,091.02	117.44	18.805					
11,506.63	9,060.00	11,318.12	8,910.00	60.88	60.68	86.40	-1,399.57	2,418.05	2,211.15	2,090.05	121.10	18.258					
11,600.00	9,060.00	11,411.49	8,910.00	62.49	62.31	86.40	-1,398.54	2,511.41	2,211.77	2,087.42	124.35	17.787					
11,700.00	9,060.00	11,511.49	8,910.00	64.24	64.08	86.40	-1,397.44	2,611.40	2,212.44	2,084.58	127.86	17.303					
11,800.00	9,060.00	11,611.49	8,910.00	66.01	65.87	86.40	-1,396.34	2,711.39	2,213.10	2,081.70	131.41	16.842					
11,900.00	9,060.00	11,711.48	8,910.00	67.79	67.67	86.40	-1,395.24	2,811.39	2,213.77	2,078.79	134.98	16.400					
12,000.00	9,060.00	11,811.48	8,910.00	69.58	69.48	86.40	-1,394.14	2,911.38	2,214.44	2,075.85	138.59	15.979					
12,100.00	9,060.00	11,911.48	8,910.00	71.39	71.31	86.40	-1,393.04	3,011.37	2,215.10	2,072.88	142.22	15.576					
12,200.00	9,060.00	12,011.48	8,910.00	73.21	73.14	86.41	-1,391.94	3,111.36	2,215.77	2,069.90	145.87	15.190					
12,300.00	9,060.00	12,111.47	8,910.00	75.05	74.99	86.41	-1,390.84	3,211.35	2,216.43	2,066.89	149.54	14.821					
12,400.00	9,060.00	12,211.47	8,910.00	76.89	76.85	86.41	-1,389.74	3,311.35	2,217.10	2,063.86	153.24	14.468					
12,500.00	9,060.00	12,311.47	8,910.00	78.74	78.72	86.41	-1,388.64	3,411.34	2,217.76	2,060.81	156.95	14.130					
12,600.00	9,060.00	12,411.47	8,910.00	80.61	80.60	86.41	-1,387.54	3,511.33	2,218.43	2,057.74	160.69	13.806					
12,700.00	9,060.00	12,511.47	8,910.00	82.48	82.48	86.41	-1,386.44	3,611.32	2,219.09	2,054.65	164.44	13.495					
12,800.00	9,060.00	12,611.46	8,910.00	84.36	84.37	86.41	-1,385.34	3,711.31	2,219.76	2,051.55	168.20	13.197					
12,900.00	9,060.00	12,711.46	8,910.00	86.24	86.27	86.41	-1,384.24	3,811.30	2,220.42	2,048.44	171.98	12.911					
13,000.00	9,060.00	12,811.46	8,910.00	88.14	88.18	86.41	-1,383.14	3,911.30	2,221.09	2,045.31	175.77	12.636					
13,100.00	9,060.00	12,911.46	8,910.00	90.04	90.09	86.42	-1,382.04	4,011.29	2,221.75	2,042.17	179.58	12.372					
13,200.00	9,060.00	13,011.45	8,910.00	91.94	92.00	86.42	-1,380.95	4,111.28	2,222.42	2,039.02	183.40	12.118					
13,300.00	9,060.00	13,111.45	8,910.00	93.86	93.93	86.42	-1,379.85	4,211.27	2,223.08	2,035.86	187.23	11.874					
13,400.00	9,060.00	13,211.45	8,910.00	95.77	95.85	86.42	-1,378.75	4,311.26	2,223.75	2,032.68	191.06	11.639					
13,500.00	9,060.00	13,311.45	8,910.00	97.70	97.79	86.42	-1,377.65	4,411.25	2,224.41	2,029.50	194.91	11.412					
13,600.00	9,060.00	13,411.45	8,910.00	99.62	99.72	86.42	-1,376.55	4,511.25	2,225.08	2,026.31	198.77	11.194					
13,700.00	9,060.00	13,511.44	8,910.00	101.56	101.67	86.42	-1,375.45	4,611.24	2,225.74	2,023.10	202.64	10.984					
13,800.00	9,060.00	13,611.44	8,910.00	103.49	103.61	86.42	-1,374.35	4,711.23	2,226.41	2,019.89	206.51	10.781					
13,900.00	9,060.00	13,711.44	8,910.00	105.43	105.56	86.42	-1,373.25	4,811.22	2,227.07	2,016.68	210.40	10.585					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD+IFR1															Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
14,000.00	9,060.00	13,811.44	8,910.00	107.38	107.51	86.43	-1,372.15	4,911.21	2,227.74	2,013.45	214.29	10.396					
14,100.00	9,060.00	13,911.43	8,910.00	109.33	109.47	86.43	-1,371.05	5,011.20	2,228.40	2,010.22	218.18	10.213					
14,200.00	9,060.00	14,011.43	8,910.00	111.28	111.43	86.43	-1,369.95	5,111.20	2,229.07	2,006.98	222.09	10.037					
14,300.00	9,060.00	14,111.43	8,910.00	113.23	113.39	86.43	-1,368.85	5,211.19	2,229.73	2,003.73	226.00	9.866					
14,400.00	9,060.00	14,211.43	8,910.00	115.19	115.35	86.43	-1,367.75	5,311.18	2,230.40	2,000.48	229.92	9.701					
14,500.00	9,060.00	14,311.43	8,910.00	117.15	117.32	86.43	-1,366.65	5,411.17	2,231.06	1,997.23	233.84	9.541					
14,600.00	9,060.00	14,411.42	8,910.00	119.11	119.29	86.43	-1,365.55	5,511.16	2,231.73	1,993.96	237.77	9.386					
14,700.00	9,060.00	14,511.42	8,910.00	121.08	121.27	86.43	-1,364.45	5,611.15	2,232.39	1,990.70	241.70	9.236					
14,800.00	9,060.00	14,611.42	8,910.00	123.05	123.24	86.43	-1,363.35	5,711.15	2,233.06	1,987.42	245.64	9.091					
14,900.00	9,060.00	14,711.42	8,910.00	125.02	125.22	86.43	-1,362.25	5,811.14	2,233.72	1,984.15	249.58	8.950					
15,000.00	9,060.00	14,811.41	8,910.00	126.99	127.20	86.44	-1,361.15	5,911.13	2,234.39	1,980.86	253.52	8.813					
15,100.00	9,060.00	14,911.41	8,910.00	128.97	129.18	86.44	-1,360.05	6,011.12	2,235.05	1,977.58	257.47	8.681					
15,200.00	9,060.00	15,011.41	8,910.00	130.95	131.16	86.44	-1,358.95	6,111.11	2,235.72	1,974.29	261.43	8.552					
15,300.00	9,060.00	15,111.41	8,910.00	132.93	133.15	86.44	-1,357.85	6,211.11	2,236.38	1,971.00	265.39	8.427					
15,400.00	9,060.00	15,211.41	8,910.00	134.91	135.14	86.44	-1,356.75	6,311.10	2,237.05	1,967.70	269.35	8.305					
15,500.00	9,060.00	15,311.40	8,910.00	136.89	137.12	86.44	-1,355.65	6,411.09	2,237.71	1,964.40	273.32	8.187					
15,600.00	9,060.00	15,411.40	8,910.00	138.88	139.11	86.44	-1,354.55	6,511.08	2,238.38	1,961.09	277.29	8.072					
15,700.00	9,060.00	15,511.40	8,910.00	140.86	141.11	86.44	-1,353.45	6,611.07	2,239.04	1,957.79	281.26	7.961					
15,800.00	9,060.00	15,611.40	8,910.00	142.85	143.10	86.44	-1,352.35	6,711.06	2,239.71	1,954.48	285.23	7.852					
15,900.00	9,060.00	15,711.39	8,910.00	144.84	145.10	86.45	-1,351.25	6,811.06	2,240.37	1,951.16	289.21	7.746					
16,000.00	9,060.00	15,811.39	8,910.00	146.83	147.09	86.45	-1,350.15	6,911.05	2,241.04	1,947.85	293.19	7.644					
16,100.00	9,060.00	15,911.39	8,910.00	148.83	149.09	86.45	-1,349.05	7,011.04	2,241.71	1,944.53	297.18	7.543					
16,200.00	9,060.00	16,011.39	8,910.00	150.82	151.09	86.45	-1,347.95	7,111.03	2,242.37	1,941.21	301.16	7.446					
16,300.00	9,060.00	16,111.39	8,910.00	152.82	153.09	86.45	-1,346.85	7,211.02	2,243.04	1,937.88	305.15	7.351					
16,400.00	9,060.00	16,211.38	8,910.00	154.81	155.09	86.45	-1,345.75	7,311.01	2,243.70	1,934.56	309.15	7.258					
16,500.00	9,060.00	16,311.38	8,910.00	156.81	157.09	86.45	-1,344.65	7,411.01	2,244.37	1,931.23	313.14	7.167					
16,600.00	9,060.00	16,411.38	8,910.00	158.81	159.10	86.45	-1,343.55	7,511.00	2,245.03	1,927.89	317.14	7.079					
16,700.00	9,060.00	16,511.38	8,910.00	160.81	161.10	86.45	-1,342.46	7,610.99	2,245.70	1,924.56	321.13	6.993					
16,800.00	9,060.00	16,611.37	8,910.00	162.81	163.11	86.45	-1,341.36	7,710.98	2,246.36	1,921.23	325.13	6.909					
16,900.00	9,060.00	16,711.37	8,910.00	164.82	165.11	86.46	-1,340.26	7,810.97	2,247.03	1,917.89	329.14	6.827					
17,000.00	9,060.00	16,811.37	8,910.00	166.82	167.12	86.46	-1,339.16	7,910.96	2,247.69	1,914.55	333.14	6.747					
17,100.00	9,060.00	16,911.37	8,910.00	168.82	169.13	86.46	-1,338.06	8,010.96	2,248.36	1,911.21	337.15	6.669					
17,200.00	9,060.00	17,011.37	8,910.00	170.83	171.14	86.46	-1,336.96	8,110.95	2,249.02	1,907.87	341.16	6.592					
17,300.00	9,060.00	17,111.36	8,910.00	172.84	173.15	86.46	-1,335.86	8,210.94	2,249.69	1,904.52	345.17	6.518					
17,400.00	9,060.00	17,211.36	8,910.00	174.84	175.16	86.46	-1,334.76	8,310.93	2,250.35	1,901.17	349.18	6.445					
17,500.00	9,060.00	17,311.36	8,910.00	176.85	177.17	86.46	-1,333.66	8,410.92	2,251.02	1,897.83	353.19	6.373					
17,600.00	9,060.00	17,411.36	8,910.00	178.86	179.18	86.46	-1,332.56	8,510.92	2,251.68	1,894.48	357.21	6.304					
17,700.00	9,060.00	17,511.35	8,910.00	180.87	181.20	86.46	-1,331.46	8,610.91	2,252.35	1,891.13	361.22	6.235					
17,800.00	9,060.00	17,611.35	8,910.00	182.88	183.21	86.47	-1,330.36	8,710.90	2,253.01	1,887.77	365.24	6.169					
17,900.00	9,060.00	17,711.35	8,910.00	184.89	185.23	86.47	-1,329.26	8,810.89	2,253.68	1,884.42	369.26	6.103					
18,000.00	9,060.00	17,811.35	8,910.00	186.90	187.24	86.47	-1,328.16	8,910.88	2,254.34	1,881.06	373.28	6.039					
18,100.00	9,060.00	17,911.35	8,910.00	188.92	189.26	86.47	-1,327.06	9,010.87	2,255.01	1,877.71	377.30	5.977					
18,200.00	9,060.00	18,011.34	8,910.00	190.93	191.27	86.47	-1,325.96	9,110.87	2,255.67	1,874.35	381.32	5.915					
18,300.00	9,060.00	18,111.34	8,910.00	192.94	193.29	86.47	-1,324.86	9,210.86	2,256.34	1,870.99	385.35	5.855					
18,400.00	9,060.00	18,211.34	8,910.00	194.96	195.31	86.47	-1,323.76	9,310.85	2,257.00	1,867.63	389.38	5.796					
18,500.00	9,060.00	18,311.34	8,910.00	196.97	197.33	86.47	-1,322.66	9,410.84	2,257.67	1,864.27	393.40	5.739					
18,600.00	9,060.00	18,411.33	8,910.00	198.99	199.35	86.47	-1,321.56	9,510.83	2,258.33	1,860.90	397.43	5.682					
18,700.00	9,060.00	18,511.33	8,910.00	201.00	201.37	86.47	-1,320.46	9,610.82	2,259.00	1,857.54	401.46	5.627					
18,800.00	9,060.00	18,611.33	8,910.00	203.02	203.39	86.48	-1,319.36	9,710.82	2,259.66	1,854.18	405.49	5.573					
18,900.00	9,060.00	18,711.33	8,910.00	205.04	205.41	86.48	-1,318.26	9,810.81	2,260.33	1,850.81	409.52	5.519					
19,000.00	9,060.00	18,811.33	8,910.00	207.06	207.43	86.48	-1,317.16	9,910.80	2,260.99	1,847.44	413.55	5.467					
19,100.00	9,060.00	18,911.32	8,910.00	209.07	209.45	86.48	-1,316.06	10,010.79	2,261.66	1,844.07	417.59	5.416					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	19,011.32	8,910.00	211.09	211.47	86.48	-1,314.96	10,110.78	2,262.32	1,840.71	421.62	5.366	
19,300.00	9,060.00	19,111.32	8,910.00	213.11	213.49	86.48	-1,313.86	10,210.77	2,262.99	1,837.34	425.65	5.316	
19,400.00	9,060.00	19,211.32	8,910.00	215.13	215.52	86.48	-1,312.76	10,310.77	2,263.66	1,833.96	429.69	5.268	
19,500.32	9,060.00	19,294.07	8,910.00	217.16	217.19	86.48	-1,311.85	10,393.51	2,264.39	1,831.03	433.36	5.225 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.53	4.53	0.50	0.50	-178.58	-3,232.90	-80.25	3,233.89					
100.00	100.00	101.00	101.00	0.52	0.53	-178.58	-3,232.96	-80.14	3,233.95	3,232.91	1.05	3,091.497		
200.00	200.00	197.47	197.47	0.70	0.60	-178.59	-3,233.13	-79.83	3,234.12	3,232.82	1.30	2,481.671		
300.00	300.00	293.93	293.93	0.99	0.70	-178.59	-3,233.41	-79.31	3,234.40	3,232.71	1.69	1,911.525		
400.00	400.00	390.39	390.39	1.31	0.83	-178.61	-3,233.80	-78.60	3,234.79	3,232.65	2.14	1,513.876		
500.00	500.00	481.18	481.17	1.65	1.04	-178.62	-3,234.31	-77.79	3,235.34	3,232.65	2.68	1,206.047		
600.00	600.00	581.75	581.74	1.99	1.36	-178.64	-3,235.16	-76.99	3,236.15	3,232.80	3.35	964.944		
700.00	700.00	685.09	685.06	2.34	1.71	-178.65	-3,235.81	-76.25	3,236.77	3,232.72	4.05	798.735		
800.00	800.00	789.60	789.57	2.69	2.08	-178.66	-3,236.41	-75.56	3,237.32	3,232.56	4.76	679.444		
900.00	900.00	875.60	875.57	3.04	2.38	-178.67	-3,236.99	-75.25	3,237.99	3,232.57	5.42	597.771		
1,000.00	1,000.00	1,004.14	1,004.10	3.40	2.82	-178.68	-3,237.62	-74.40	3,238.47	3,232.25	6.22	520.713		
1,100.00	1,100.00	1,112.40	1,112.36	3.75	3.20	-178.70	-3,237.43	-73.70	3,238.28	3,231.33	6.95	465.922		
1,200.00	1,200.00	1,214.90	1,214.86	4.11	3.56	-178.71	-3,237.21	-72.83	3,238.04	3,230.38	7.66	422.515		
1,300.00	1,300.00	1,330.80	1,330.74	4.46	3.96	-178.74	-3,236.64	-71.28	3,237.53	3,229.10	8.42	384.288		
1,400.00	1,400.00	1,433.14	1,433.08	4.82	4.32	-178.76	-3,235.78	-70.06	3,236.67	3,227.53	9.14	354.192		
1,500.00	1,500.00	1,522.35	1,522.28	5.18	4.63	-178.78	-3,235.18	-68.82	3,235.96	3,226.15	9.81	329.887		
1,600.00	1,600.00	1,632.75	1,632.66	5.53	5.02	-178.80	-3,234.44	-67.52	3,235.27	3,224.71	10.55	306.517		
1,700.00	1,700.00	1,723.81	1,723.71	5.89	5.34	-178.82	-3,233.86	-66.53	3,234.60	3,223.37	11.23	287.942		
1,800.00	1,800.00	1,830.98	1,830.87	6.25	5.72	-178.85	-3,233.11	-65.08	3,233.87	3,221.90	11.97	270.155		
1,900.00	1,900.00	1,928.44	1,928.33	6.61	6.07	-178.87	-3,232.39	-63.72	3,233.11	3,220.43	12.67	255.103		
2,000.00	2,000.00	2,038.89	2,038.76	6.96	6.46	-178.90	-3,231.55	-62.29	3,232.33	3,218.91	13.42	240.832		
2,100.00	2,100.00	2,163.65	2,163.51	7.32	6.89	-178.90	-3,229.68	-61.73	3,230.81	3,216.60	14.21	227.340		
2,200.00	2,200.00	2,260.89	2,260.73	7.68	7.23	-178.90	-3,227.89	-61.82	3,228.96	3,214.06	14.90	216.664		
2,300.00	2,300.00	2,359.73	2,359.55	8.04	7.57	-178.90	-3,226.21	-62.13	3,227.28	3,211.68	15.60	206.879		
2,350.00	2,350.00	2,409.91	2,409.72	8.22	7.74	-178.89	-3,225.35	-62.32	3,226.42	3,210.47	15.95	202.268		
2,400.00	2,400.00	2,459.53	2,459.33	8.39	7.91	-162.85	-3,224.51	-62.47	3,225.78	3,209.48	16.30	197.890		
2,448.27	2,448.26	2,506.02	2,505.82	8.57	8.07	-162.85	-3,223.73	-62.58	3,225.57	3,208.94	16.63	193.913		
2,500.00	2,499.98	2,554.99	2,554.78	8.75	8.24	-162.86	-3,222.94	-62.68	3,225.82	3,208.83	16.99	189.881		
2,600.00	2,599.92	2,643.71	2,643.49	9.11	8.55	-162.87	-3,221.70	-62.58	3,227.76	3,210.10	17.66	182.801		
2,700.00	2,699.78	2,743.86	2,743.64	9.47	8.90	-162.89	-3,220.55	-62.20	3,231.61	3,213.24	18.37	175.958		
2,800.00	2,799.54	2,843.54	2,843.31	9.82	9.25	-162.91	-3,219.33	-62.48	3,237.05	3,217.98	19.07	169.742		
2,900.00	2,899.16	2,900.00	2,982.17	10.18	9.44	-162.94	-3,216.94	-62.87	3,243.71	3,224.09	19.62	165.316		
3,000.00	2,998.61	3,146.85	3,146.47	10.54	10.31	-163.00	-3,210.72	-63.54	3,249.71	3,228.87	20.83	155.985		
3,100.00	3,097.86	3,247.94	3,247.47	10.89	10.66	-163.03	-3,206.26	-63.87	3,256.99	3,235.44	21.55	151.161		
3,200.00	3,196.89	3,342.96	3,342.38	11.25	11.00	-163.07	-3,202.02	-64.18	3,265.88	3,243.64	22.24	146.848		
3,295.74	3,291.45	4,008.93	4,001.24	11.59	13.40	-163.30	-3,114.86	-79.50	3,267.22	3,242.69	24.54	133.155		
3,300.00	3,295.65	4,014.31	4,006.48	11.61	13.43	-163.30	-3,113.70	-79.78	3,266.97	3,242.40	24.57	132.967		
3,400.00	3,394.29	4,095.04	4,085.17	11.97	13.73	-163.29	-3,096.19	-84.24	3,261.03	3,235.79	25.24	129.195		
3,500.00	3,492.94	4,153.00	4,141.80	12.33	13.95	-163.27	-3,084.34	-87.59	3,256.30	3,230.44	25.86	125.926		
3,600.00	3,591.58	4,303.98	4,289.29	12.69	14.54	-163.26	-3,052.92	-94.96	3,251.10	3,224.39	26.71	121.741		
3,700.00	3,690.22	4,386.33	4,369.68	13.05	14.86	-163.26	-3,035.39	-98.49	3,245.53	3,218.15	27.39	118.502		
3,800.00	3,788.86	4,475.18	4,456.57	13.41	15.21	-163.26	-3,017.28	-102.40	3,240.83	3,212.74	28.09	115.380		
3,900.00	3,887.50	4,605.67	4,584.03	13.77	15.73	-163.29	-2,989.68	-106.87	3,235.31	3,206.42	28.89	111.980		
4,000.00	3,886.14	4,686.70	4,663.18	14.14	16.06	-163.31	-2,972.46	-109.06	3,229.76	3,200.18	29.58	109.197		
4,100.00	4,084.78	4,762.46	4,737.30	14.50	16.36	-163.34	-2,956.95	-111.11	3,224.98	3,194.73	30.25	106.610		
4,200.00	4,183.42	4,875.47	4,847.99	14.87	16.82	-163.37	-2,934.37	-114.32	3,220.75	3,189.74	31.02	103.839		
4,300.00	4,282.06	4,978.16	4,948.41	15.24	17.23	-163.43	-2,912.95	-115.75	3,215.57	3,183.81	31.76	101.249		
4,400.00	4,380.70	5,046.48	5,015.32	15.60	17.51	-163.47	-2,899.15	-116.34	3,211.09	3,178.67	32.42	99.059		
4,500.00	4,479.34	5,105.00	5,072.76	15.97	17.75	-163.51	-2,887.99	-117.05	3,207.76	3,174.71	33.04	97.072		
4,600.00	4,577.98	5,182.81	5,149.27	16.34	18.06	-163.55	-2,873.90	-118.17	3,205.40	3,171.68	33.72	95.051		
4,700.00	4,676.62	5,268.41	5,233.55	16.71	18.41	-163.59	-2,858.98	-119.63	3,203.72	3,169.30	34.42	93.073		
4,800.00	4,775.27	5,385.93	5,349.25	17.08	18.88	-163.64	-2,838.52	-121.95	3,202.09	3,166.88	35.21	90.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	5,448.92	5,411.29	17.45	19.13	-163.68	-2,827.64	-123.00	3,200.59	3,164.74	35.85	89.289		
5,000.00	4,972.55	5,527.30	5,488.63	17.82	19.45	-163.72	-2,815.00	-124.23	3,200.20	3,163.68	36.52	87.622		
5,100.00	5,071.19	5,719.60	5,677.92	18.19	20.23	-163.88	-2,781.24	-123.73	3,198.25	3,160.73	37.52	85.251		
5,200.00	5,169.83	5,805.93	5,762.78	18.56	20.58	-163.96	-2,765.35	-123.26	3,195.56	3,157.34	38.22	83.607		
5,300.00	5,268.47	5,900.00	5,904.49	18.93	18.47	-164.06	-2,737.48	-124.31	3,191.91	3,155.26	36.65	87.088		
5,400.00	5,367.11	6,026.22	5,978.79	19.31	21.49	-164.08	-2,722.42	-126.44	3,187.90	3,148.14	39.76	80.173		
5,500.00	5,465.75	6,104.27	6,055.44	19.68	21.82	-164.09	-2,708.04	-129.62	3,185.17	3,144.72	40.45	78.744		
5,600.00	5,564.39	6,273.44	6,221.29	20.05	22.53	-164.10	-2,675.54	-136.89	3,181.85	3,140.47	41.38	76.903		
5,700.00	5,663.03	6,398.71	6,343.58	20.42	23.06	-164.09	-2,649.01	-142.92	3,176.29	3,134.10	42.19	75.292		
5,800.00	5,761.67	6,502.34	6,444.72	20.80	23.51	-164.09	-2,627.02	-147.81	3,170.77	3,127.82	42.95	73.833		
5,900.00	5,860.31	6,564.35	6,505.29	21.17	23.77	-164.10	-2,613.90	-150.01	3,165.44	3,121.84	43.60	72.599		
6,000.00	5,958.96	6,628.00	6,567.76	21.54	24.04	-164.12	-2,601.87	-151.81	3,162.01	3,117.76	44.26	71.446		
6,100.00	6,057.60	6,666.56	6,605.73	21.92	24.20	-164.14	-2,595.16	-152.61	3,159.93	3,115.09	44.84	70.475		
6,200.00	6,156.24	6,779.73	6,717.24	22.29	24.67	-164.21	-2,575.89	-153.42	3,158.74	3,113.12	45.62	69.240		
6,300.00	6,254.88	6,957.86	6,891.95	22.67	25.42	-164.34	-2,541.21	-154.51	3,154.51	3,107.94	46.57	67.731		
6,400.00	6,353.52	7,021.50	6,954.38	23.04	25.69	-164.39	-2,528.87	-154.76	3,150.85	3,103.62	47.23	66.713		
6,500.00	6,452.16	7,125.05	7,056.07	23.42	26.12	-164.46	-2,509.35	-155.80	3,147.78	3,099.79	47.99	65.595		
6,600.00	6,550.80	7,250.50	7,179.03	23.79	26.66	-164.52	-2,484.62	-157.89	3,143.75	3,094.95	48.80	64.416		
6,700.00	6,649.44	7,297.00	7,224.62	24.17	26.86	-164.55	-2,475.46	-158.65	3,140.20	3,090.79	49.41	63.548		
6,800.00	6,748.08	7,360.05	7,286.60	24.54	27.12	-164.58	-2,463.93	-159.53	3,137.96	3,087.90	50.06	62.684		
6,900.00	6,846.72	7,438.88	7,364.38	24.92	27.45	-164.63	-2,451.18	-160.36	3,137.52	3,086.77	50.75	61.827		
7,000.00	6,945.36	7,526.80	7,451.09	25.29	27.81	-164.69	-2,436.62	-161.33	3,136.83	3,085.38	51.46	60.960		
7,008.93	6,954.18	7,531.79	7,456.01	25.32	27.83	-164.69	-2,435.83	-161.39	3,136.83	3,085.32	51.51	60.894		
7,100.00	7,044.00	7,583.00	7,506.62	25.67	28.04	-164.72	-2,428.05	-162.06	3,137.41	3,085.34	52.07	60.254		
7,200.00	7,142.65	7,622.18	7,545.43	26.04	28.19	-164.74	-2,422.71	-162.69	3,139.66	3,087.04	52.61	59.672		
7,300.00	7,241.29	7,678.00	7,600.88	26.42	28.41	-164.77	-2,416.41	-163.86	3,143.94	3,090.73	53.20	59.093		
7,400.00	7,339.93	7,766.65	7,689.03	26.79	28.75	-164.81	-2,407.16	-165.34	3,149.31	3,095.41	53.90	58.427		
7,500.00	7,438.57	7,831.94	7,753.96	27.17	28.99	-164.86	-2,400.32	-165.50	3,154.77	3,100.26	54.51	57.872		
7,571.77	7,509.37	7,868.00	7,789.86	27.44	29.13	-164.90	-2,396.89	-165.17	3,159.46	3,104.55	54.91	57.542		
7,600.00	7,537.23	7,888.57	7,810.34	27.55	29.20	-164.93	-2,395.07	-164.84	3,161.38	3,106.30	55.08	57.392		
7,700.00	7,636.18	7,938.39	7,860.00	27.92	29.39	-165.01	-2,391.21	-163.63	3,167.63	3,112.01	55.61	56.958		
7,800.00	7,735.48	8,000.42	7,921.88	28.29	29.61	-165.10	-2,387.35	-161.72	3,172.84	3,116.66	56.18	56.476		
7,900.00	7,835.05	8,082.87	8,004.21	28.65	29.90	-165.16	-2,382.95	-161.32	3,176.40	3,119.57	56.82	55.898		
8,000.00	7,934.83	8,177.59	8,098.78	29.01	30.23	-165.17	-2,377.96	-162.51	3,177.50	3,119.98	57.52	55.244		
8,100.00	8,034.74	8,249.00	8,170.12	29.36	30.49	-165.17	-2,374.87	-163.35	3,176.93	3,118.83	58.10	54.677		
8,202.27	8,137.00	8,337.96	8,259.01	29.72	30.79	178.82	-2,371.60	-164.59	3,174.44	3,115.68	58.76	54.021		
8,300.00	8,234.73	8,437.36	8,358.21	30.06	31.13	178.74	-2,367.81	-160.40	3,170.80	3,111.35	59.45	53.334		
8,400.00	8,334.73	8,538.27	8,456.52	30.41	31.46	178.36	-2,363.20	-139.27	3,166.66	3,106.53	60.14	52.657		
8,500.00	8,434.73	8,600.08	8,513.31	30.75	31.64	177.92	-2,360.58	-115.14	3,163.53	3,102.89	60.64	52.168		
8,552.31	8,487.04	8,630.00	8,539.42	30.94	31.72	177.65	-2,359.59	-100.58	3,162.60	3,101.71	60.89	51.940		
8,600.00	8,534.68	8,630.00	8,539.42	31.10	31.72	88.04	-2,359.59	-100.58	3,162.17	3,101.19	60.98	51.852		
8,629.74	8,564.23	8,645.36	8,552.41	31.20	31.75	87.92	-2,359.22	-92.39	3,162.07	3,100.96	61.11	51.747		
8,650.00	8,584.26	8,650.67	8,556.83	31.26	31.76	87.87	-2,359.13	-89.44	3,162.11	3,100.95	61.17	51.698		
8,700.00	8,633.10	8,677.00	8,578.17	31.43	31.83	87.65	-2,358.98	-74.04	3,162.62	3,101.26	61.37	51.536		
8,750.00	8,680.83	8,677.00	8,578.17	31.58	31.83	87.58	-2,358.98	-74.04	3,163.36	3,101.92	61.44	51.489		
8,800.00	8,727.09	8,694.63	8,591.98	31.74	31.86	87.37	-2,359.10	-63.08	3,164.57	3,102.98	61.59	51.382		
8,850.00	8,771.52	8,725.00	8,614.96	31.89	31.92	87.10	-2,359.66	-43.23	3,166.18	3,104.38	61.80	51.233		
8,900.00	8,813.78	8,749.29	8,632.51	32.04	31.96	86.85	-2,360.20	-26.46	3,167.89	3,105.91	61.99	51.107		
8,950.00	8,853.56	8,890.48	8,720.96	32.18	32.17	86.16	-2,359.47	83.34	3,168.40	3,105.52	62.87	50.393		
9,000.00	8,890.55	8,920.74	8,737.44	32.32	32.22	86.01	-2,358.84	108.70	3,168.46	3,105.31	63.15	50.175		
9,050.00	8,924.46	8,980.96	8,766.86	32.47	32.32	85.77	-2,357.32	161.20	3,168.29	3,104.61	63.68	49.754		
9,100.00	8,955.05	9,066.42	8,802.74	32.63	32.62	85.51	-2,354.08	238.69	3,167.51	3,103.01	64.51	49.105		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1		Offset Site Error:		0.00 ft
Survey Program: 431-MWD+HDGM														Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,150.00	8,982.08	9,097.41	8,814.31	32.79	32.83	85.53	-2,352.69	267.40	3,166.25	3,101.34	64.91	48.778				
9,200.00	9,005.34	9,127.42	8,824.47	32.97	33.06	85.58	-2,351.43	295.60	3,164.96	3,099.62	65.34	48.435				
9,250.00	9,024.65	9,154.00	8,832.51	33.17	33.30	85.66	-2,350.40	320.92	3,163.66	3,097.89	65.77	48.100				
9,300.00	9,039.87	9,190.68	8,842.19	33.38	33.66	85.77	-2,349.07	356.27	3,162.32	3,095.96	66.36	47.653				
9,350.00	9,050.89	9,251.74	8,855.50	33.62	34.33	85.92	-2,346.81	415.81	3,160.78	3,093.49	67.29	46.971				
9,400.00	9,057.61	9,400.00	8,873.30	33.87	36.27	86.20	-2,339.99	538.10	3,158.46	3,088.93	69.54	45.422				
9,452.31	9,060.00	9,446.80	8,879.75	34.15	36.98	86.63	-2,334.45	608.81	3,154.52	3,083.98	70.54	44.717				
9,500.00	9,060.00	9,492.28	8,883.19	34.42	37.66	86.69	-2,330.84	654.01	3,150.80	3,079.29	71.51	44.061				
9,600.00	9,060.00	9,548.94	8,886.95	35.09	38.59	86.75	-2,326.74	710.40	3,143.75	3,070.65	73.11	43.003				
9,700.00	9,060.00	9,613.06	8,890.58	35.86	39.68	86.81	-2,322.88	774.29	3,137.97	3,063.01	74.96	41.863				
9,800.00	9,060.00	9,677.00	8,893.34	36.72	40.80	86.86	-2,319.55	838.09	3,133.18	3,056.24	76.94	40.722				
9,900.00	9,060.00	9,727.42	8,894.81	37.69	41.74	86.89	-2,317.57	888.45	3,129.77	3,050.96	78.82	39.710				
10,000.00	9,060.00	9,773.64	8,895.54	38.73	42.60	86.90	-2,316.57	934.65	3,128.10	3,047.42	80.68	38.770				
10,100.00	9,060.00	9,860.65	8,896.36	39.86	44.31	86.91	-2,315.57	1,021.65	3,127.50	3,043.99	83.50	37.454				
10,140.22	9,060.00	9,901.45	8,896.80	40.33	45.14	86.92	-2,315.19	1,062.44	3,127.34	3,042.53	84.81	36.876				
10,200.00	9,060.00	9,964.34	8,897.76	41.05	46.43	86.94	-2,314.57	1,125.33	3,126.44	3,039.61	86.82	36.009				
10,300.00	9,060.00	10,038.02	8,898.67	42.31	47.99	86.95	-2,314.12	1,199.00	3,122.52	3,032.89	89.63	34.837				
10,400.00	9,060.00	10,200.27	8,899.04	43.64	51.56	86.93	-2,312.18	1,361.23	3,114.65	3,020.06	94.59	32.927				
10,507.23	9,060.00	10,352.72	8,899.80	45.11	55.06	86.91	-2,307.72	1,513.62	3,100.48	3,000.89	99.59	31.132				
10,600.00	9,060.00	10,438.50	8,901.35	46.43	57.08	86.94	-2,304.70	1,599.32	3,087.35	2,984.42	102.93	29.995				
10,700.00	9,060.00	10,519.86	8,903.20	47.91	59.04	86.98	-2,302.13	1,680.62	3,076.87	2,970.53	106.34	28.934				
10,800.00	9,060.00	10,626.65	8,906.06	49.42	61.63	87.03	-2,299.05	1,787.32	3,070.12	2,959.66	110.46	27.793				
10,900.00	9,060.00	10,752.23	8,911.63	50.97	64.74	87.14	-2,294.70	1,912.71	3,066.17	2,951.02	115.15	26.626				
10,978.08	9,060.00	10,835.72	8,915.26	52.20	66.83	87.21	-2,291.45	1,996.05	3,065.19	2,946.70	118.49	25.868	CC			
11,000.00	9,060.00	10,860.81	8,916.25	52.55	67.47	87.22	-2,290.42	2,021.11	3,065.26	2,945.79	119.48	25.656				
11,100.00	9,060.00	10,957.04	8,919.40	54.14	69.91	87.28	-2,286.34	2,117.20	3,067.58	2,944.06	123.52	24.834				
11,207.23	9,060.00	11,045.03	8,921.76	55.87	72.16	87.33	-2,283.06	2,205.09	3,074.53	2,947.02	127.51	24.112				
11,300.00	9,060.00	11,106.00	8,923.84	57.39	73.72	87.37	-2,281.07	2,265.99	3,081.28	2,950.70	130.58	23.597				
11,400.00	9,060.00	11,161.15	8,925.77	59.06	75.15	87.42	-2,279.95	2,321.10	3,086.48	2,952.85	133.64	23.096				
11,506.63	9,060.00	11,219.22	8,927.39	60.88	76.66	87.45	-2,279.98	2,379.15	3,090.16	2,953.27	136.89	22.575				
11,600.00	9,060.00	11,334.31	8,931.25	62.49	79.67	87.53	-2,280.56	2,494.17	3,092.18	2,950.61	141.57	21.842				
11,700.00	9,060.00	11,423.87	8,935.33	64.24	82.03	87.60	-2,280.13	2,583.63	3,093.34	2,947.66	145.68	21.234				
11,800.00	9,060.00	11,486.00	8,937.44	66.01	83.67	87.64	-2,281.08	2,645.72	3,096.24	2,947.23	149.01	20.779				
11,900.00	9,060.00	11,562.25	8,939.02	67.79	85.69	87.67	-2,282.96	2,721.93	3,100.23	2,947.47	152.76	20.295				
12,000.00	9,060.00	11,651.64	8,939.81	69.58	88.07	87.69	-2,284.93	2,811.30	3,104.17	2,947.25	156.91	19.783				
12,100.00	9,060.00	11,819.23	8,940.02	71.39	92.55	87.70	-2,287.67	2,978.85	3,107.75	2,944.36	163.39	19.021				
12,200.00	9,060.00	11,989.90	8,937.15	73.21	97.15	87.65	-2,285.53	3,149.47	3,108.10	2,938.20	169.91	18.293				
12,234.52	9,060.00	12,016.84	8,936.61	73.85	97.88	87.64	-2,285.00	3,176.40	3,108.06	2,936.81	171.26	18.149				
12,300.00	9,060.00	12,068.80	8,935.90	75.05	99.28	87.63	-2,284.17	3,228.36	3,108.21	2,934.37	173.84	17.880				
12,400.00	9,060.00	12,152.99	8,934.91	76.89	101.56	87.61	-2,283.22	3,312.53	3,108.90	2,930.96	177.94	17.472				
12,500.00	9,060.00	12,272.82	8,932.96	78.74	104.83	87.57	-2,281.93	3,432.34	3,109.68	2,926.61	183.08	16.986				
12,600.00	9,060.00	12,400.25	8,932.75	80.61	108.30	87.57	-2,279.10	3,559.74	3,109.15	2,920.71	188.44	16.499				
12,696.03	9,060.00	12,478.41	8,933.95	82.40	110.44	87.59	-2,277.50	3,637.87	3,108.82	2,916.46	192.36	16.161				
12,700.00	9,060.00	12,481.40	8,934.01	82.48	110.52	87.59	-2,277.45	3,640.85	3,108.82	2,916.30	192.52	16.148				
12,800.00	9,060.00	12,558.78	8,936.09	84.36	112.64	87.63	-2,276.50	3,718.20	3,109.24	2,912.75	196.50	15.823				
12,900.00	9,060.00	12,642.32	8,938.07	86.24	114.94	87.67	-2,275.98	3,801.72	3,110.29	2,909.63	200.66	15.500				
13,000.00	9,060.00	12,763.33	8,940.90	88.14	118.27	87.72	-2,275.53	3,922.69	3,111.66	2,905.72	205.93	15.110				
13,100.00	9,060.00	12,905.56	8,946.34	90.04	122.20	87.82	-2,272.66	4,064.79	3,111.11	2,899.28	211.83	14.687				
13,200.00	9,060.00	13,028.38	8,952.14	91.94	125.59	87.93	-2,269.18	4,187.42	3,109.84	2,892.68	217.16	14.321				
13,300.00	9,060.00	13,103.00	8,954.95	93.86	127.65	87.98	-2,267.11	4,261.96	3,108.72	2,887.58	221.13	14.058				
13,380.06	9,060.00	13,162.85	8,956.28	95.39	129.31	88.00	-2,265.86	4,321.78	3,108.40	2,884.10	224.31	13.858				
13,400.00	9,060.00	13,176.84	8,956.43	95.77	129.70	88.00	-2,265.63	4,335.76	3,108.42	2,883.35	225.07	13.811				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,500.00	9,060.00	13,293.88	8,956.51	97.70	132.94	88.01	-2,263.69	4,452.79	3,108.57	2,878.31	230.26	13.500		
13,600.00	9,060.00	13,399.35	8,955.94	99.62	135.87	87.99	-2,261.35	4,558.23	3,108.13	2,873.01	235.12	13.219		
13,700.00	9,060.00	13,494.22	8,957.13	101.56	138.51	88.02	-2,259.31	4,653.07	3,107.70	2,868.02	239.69	12.966		
13,800.00	9,060.00	13,593.23	8,959.66	103.49	141.27	88.06	-2,257.26	4,752.03	3,107.31	2,862.93	244.39	12.715		
13,867.68	9,060.00	13,650.54	8,960.94	104.81	142.87	88.09	-2,256.20	4,809.31	3,107.20	2,859.91	247.29	12.565		
13,900.00	9,060.00	13,680.07	8,961.49	105.43	143.69	88.10	-2,255.72	4,838.83	3,107.23	2,858.48	248.74	12.492		
14,000.00	9,060.00	13,801.34	8,965.12	107.38	147.07	88.16	-2,253.28	4,960.02	3,106.86	2,852.75	254.11	12.227		
14,100.00	9,060.00	13,885.77	8,968.35	109.33	149.43	88.22	-2,251.45	5,044.37	3,106.37	2,847.96	258.41	12.021		
14,106.65	9,060.00	13,889.63	8,968.49	109.46	149.54	88.23	-2,251.39	5,048.22	3,106.37	2,847.72	258.64	12.010		
14,200.00	9,060.00	13,943.86	8,970.27	111.28	151.06	88.26	-2,250.83	5,102.42	3,106.95	2,845.03	261.92	11.862		
14,300.00	9,060.00	14,043.42	8,973.05	113.23	153.84	88.31	-2,250.59	5,201.94	3,108.40	2,841.72	266.67	11.656		
14,400.00	9,060.00	14,147.81	8,975.61	115.19	156.77	88.36	-2,250.06	5,306.30	3,109.58	2,838.01	271.58	11.450		
14,500.00	9,060.00	14,279.48	8,978.85	117.15	160.46	88.42	-2,248.50	5,437.92	3,110.06	2,832.77	277.30	11.216		
14,600.00	9,060.00	14,397.56	8,981.47	119.11	163.77	88.47	-2,246.45	5,555.95	3,110.05	2,827.45	282.60	11.005		
14,700.00	9,060.00	14,492.60	8,983.62	121.08	166.44	88.51	-2,244.26	5,650.94	3,109.46	2,822.23	287.24	10.825		
14,800.00	9,060.00	14,603.95	8,986.10	123.05	169.56	88.55	-2,242.07	5,762.24	3,109.24	2,816.89	292.35	10.635		
14,900.00	9,060.00	14,692.27	8,988.36	125.02	172.04	88.59	-2,240.02	5,850.51	3,108.63	2,811.83	296.80	10.474		
14,936.73	9,060.00	14,720.00	8,989.01	125.75	172.82	88.60	-2,239.50	5,878.23	3,108.57	2,810.27	298.30	10.421		
15,000.00	9,060.00	14,749.56	8,989.71	126.99	173.65	88.62	-2,239.15	5,907.78	3,108.91	2,808.59	300.32	10.352		
15,100.00	9,060.00	14,815.00	8,991.43	128.97	175.50	88.65	-2,239.57	5,973.19	3,111.01	2,806.96	304.05	10.232		
15,200.00	9,060.00	14,892.07	8,993.32	130.95	177.67	88.69	-2,240.77	6,050.23	3,114.11	2,805.99	308.12	10.107		
15,300.00	9,060.00	15,005.94	8,995.48	132.93	180.88	88.73	-2,241.85	6,164.07	3,116.78	2,803.40	313.38	9.946		
15,400.00	9,060.00	15,091.37	8,997.05	134.91	183.29	88.76	-2,242.70	6,249.49	3,119.50	2,801.79	317.72	9.818		
15,500.00	9,060.00	15,226.61	9,000.30	136.89	187.10	88.82	-2,243.71	6,384.68	3,121.99	2,798.33	323.66	9.646		
15,600.00	9,060.00	15,357.51	9,003.88	138.88	190.79	88.88	-2,243.11	6,515.53	3,123.21	2,793.79	329.43	9.481		
15,700.00	9,060.00	15,483.58	9,007.96	140.86	194.35	88.96	-2,241.51	6,641.52	3,123.66	2,788.63	335.03	9.324		
15,800.00	9,060.00	15,578.89	9,010.31	142.85	197.04	89.00	-2,239.96	6,736.79	3,123.75	2,784.05	339.71	9.195		
15,900.00	9,060.00	15,664.45	9,012.19	144.84	199.46	89.04	-2,238.82	6,822.32	3,124.15	2,780.05	344.10	9.079		
16,000.00	9,060.00	15,841.69	9,019.93	146.83	204.45	89.18	-2,233.89	6,999.31	3,122.70	2,771.55	351.15	8.893		
16,100.00	9,060.00	15,902.40	9,022.20	148.83	206.17	89.22	-2,232.00	7,059.94	3,121.36	2,766.49	354.87	8.796		
16,138.15	9,060.00	15,922.18	9,022.67	149.59	206.73	89.23	-2,231.60	7,079.71	3,121.25	2,765.08	356.17	8.763		
16,200.00	9,060.00	15,954.96	9,023.14	150.82	207.65	89.24	-2,231.18	7,112.48	3,121.54	2,763.26	358.28	8.713		
16,300.00	9,060.00	16,035.35	9,023.67	152.82	209.93	89.25	-2,230.77	7,192.88	3,122.79	2,760.28	362.51	8.614		
16,400.00	9,060.00	16,112.84	9,023.85	154.81	212.12	89.25	-2,230.88	7,270.36	3,124.70	2,758.08	366.62	8.523		
16,500.00	9,060.00	16,237.27	9,023.63	156.81	215.64	89.25	-2,231.33	7,394.79	3,126.89	2,754.66	372.22	8.401		
16,600.00	9,060.00	16,315.57	9,023.11	158.81	217.86	89.24	-2,231.37	7,473.09	3,128.71	2,752.34	376.37	8.313		
16,700.00	9,060.00	16,465.59	9,021.54	160.81	222.11	89.21	-2,230.87	7,623.10	3,130.19	2,747.44	382.75	8.178		
16,800.00	9,060.00	16,563.61	9,020.62	162.81	224.88	89.19	-2,229.54	7,721.10	3,130.62	2,743.10	387.52	8.079		
16,900.00	9,060.00	16,644.59	9,020.70	164.82	227.18	89.19	-2,228.95	7,802.08	3,131.64	2,739.86	391.78	7.993		
17,000.00	9,060.00	16,741.53	9,022.35	166.82	229.93	89.23	-2,228.57	7,899.00	3,132.98	2,736.46	396.53	7.901		
17,100.00	9,060.00	16,843.86	9,024.80	168.82	232.83	89.27	-2,228.12	8,001.30	3,134.28	2,732.84	401.45	7.807		
17,200.00	9,060.00	16,947.05	9,026.78	170.83	235.75	89.31	-2,227.65	8,104.47	3,135.57	2,729.17	406.39	7.716		
17,300.00	9,060.00	17,049.81	9,028.77	172.84	238.67	89.34	-2,226.97	8,207.21	3,136.65	2,725.32	411.33	7.626		
17,400.00	9,060.00	17,146.43	9,031.77	174.84	241.41	89.40	-2,226.42	8,303.79	3,137.81	2,721.73	416.08	7.541		
17,500.00	9,060.00	17,245.79	9,034.72	176.85	244.23	89.45	-2,225.92	8,403.10	3,139.04	2,718.13	420.91	7.458		
17,600.00	9,060.00	17,350.74	9,037.72	178.86	247.21	89.51	-2,225.32	8,508.01	3,140.21	2,714.29	425.92	7.373		
17,700.00	9,060.00	17,462.14	9,040.50	180.87	250.37	89.56	-2,224.39	8,619.37	3,141.12	2,709.99	431.13	7.286		
17,800.00	9,060.00	17,567.19	9,042.71	182.88	253.35	89.60	-2,223.20	8,724.38	3,141.74	2,705.60	436.14	7.204		
17,900.00	9,060.00	17,682.55	9,044.43	184.89	256.63	89.63	-2,221.33	8,839.71	3,141.85	2,700.40	441.45	7.117		
18,000.00	9,060.00	17,758.00	9,044.31	186.90	258.77	89.63	-2,220.42	8,915.16	3,142.38	2,696.82	445.56	7.053		
18,100.00	9,060.00	17,828.92	9,043.50	188.92	260.78	89.61	-2,220.16	8,986.08	3,143.76	2,694.26	449.51	6.994		
18,200.00	9,060.00	17,950.14	9,043.88	190.93	264.23	89.62	-2,219.99	9,107.29	3,145.43	2,690.40	455.03	6.913		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,300.00	9,060.00	18,039.85	9,046.55	192.94	266.78	89.67	-2,219.56	9,196.95	3,146.69	2,687.12	459.57	6.847	
18,400.00	9,060.00	18,161.68	9,050.52	194.96	270.24	89.74	-2,218.55	9,318.72	3,147.58	2,682.47	465.11	6.767	
18,500.00	9,060.00	18,242.04	9,052.61	196.97	272.52	89.78	-2,218.00	9,399.04	3,148.64	2,679.27	469.37	6.708	
18,600.00	9,060.00	18,334.64	9,054.56	198.99	275.16	89.82	-2,217.76	9,491.62	3,150.15	2,676.15	474.00	6.646	
18,700.00	9,060.00	18,447.31	9,056.11	201.00	278.36	89.84	-2,217.16	9,604.28	3,151.35	2,672.08	479.26	6.575	
18,800.00	9,060.00	18,528.62	9,056.22	203.02	280.67	89.85	-2,217.01	9,685.59	3,152.91	2,669.38	483.54	6.521	
18,900.00	9,060.00	18,653.75	9,055.33	205.04	284.23	89.83	-2,216.16	9,810.71	3,153.93	2,664.74	489.19	6.447	
19,000.00	9,060.00	18,758.70	9,055.72	207.06	287.22	89.84	-2,215.53	9,915.66	3,155.11	2,660.91	494.20	6.384	
19,100.00	9,060.00	18,907.88	9,058.29	209.07	291.46	89.88	-2,212.92	10,064.80	3,155.11	2,654.59	500.51	6.304	
19,200.00	9,060.00	18,987.23	9,059.50	211.09	293.71	89.91	-2,211.27	10,144.11	3,154.76	2,649.98	504.78	6.250	
19,300.00	9,060.00	19,108.37	9,061.25	213.11	297.16	89.94	-2,208.68	10,265.22	3,154.40	2,644.14	510.26	6.182	
19,373.20	9,060.00	19,158.00	9,061.95	214.59	298.57	89.95	-2,207.50	10,314.83	3,154.01	2,640.87	513.14	6.147	
19,400.00	9,060.00	19,158.00	9,061.95	215.13	298.57	89.95	-2,207.50	10,314.83	3,154.13	2,640.49	513.64	6.141 ES	
19,500.32	9,060.00	19,158.00	9,061.95	217.16	298.57	89.95	-2,207.50	10,314.83	3,156.57	2,641.39	515.18	6.127 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70				
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807	
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.964	
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247	
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.230	
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716	
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.897	
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.893	
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049	
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925	
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540	
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796	
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742	
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341	
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216	
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984	
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970	
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862	
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835	
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868	
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877	
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730	
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464	
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984	
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091	
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308	
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC	
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES	
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247	
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486	
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744	
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397	
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943	
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786	
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539	
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883	
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741	
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.596	
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.575	
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992	
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024	
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070	
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266	
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488	
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.905	
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292	
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127	
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869	
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593	
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539	
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562	
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.386		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.017		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.673		
9,350.00	9,050.89	9,350.00	9,294.90	33.62	32.86	93.00	-3,346.21	375.96	4,158.16	4,095.06	63.10	65.896		
9,400.00	9,057.61	9,966.67	9,298.04	33.87	37.27	93.02	-3,340.28	507.75	4,155.81	4,084.67	71.14	58.418		
9,452.31	9,060.00	10,020.82	9,299.73	34.15	38.12	93.26	-3,337.37	561.79	4,153.27	4,080.99	72.28	57.460		
9,500.00	9,060.00	10,051.00	9,300.79	34.42	38.59	93.28	-3,335.70	591.91	4,151.07	4,078.03	73.03	56.837		
9,600.00	9,060.00	10,106.91	9,302.58	35.09	39.54	93.31	-3,333.05	647.73	4,147.20	4,072.54	74.66	55.549		
9,700.00	9,060.00	10,157.71	9,303.73	35.86	40.41	93.32	-3,331.40	698.49	4,144.64	4,068.33	76.31	54.311		
9,800.00	9,060.00	10,236.40	9,305.24	36.72	41.83	93.35	-3,329.46	777.14	4,142.89	4,064.28	78.61	52.699		
9,900.00	9,060.00	10,297.12	9,307.09	37.69	42.99	93.37	-3,328.36	837.82	4,141.85	4,061.11	80.74	51.299		
9,963.47	9,060.00	10,338.00	9,309.29	38.35	43.78	93.40	-3,327.90	878.64	4,141.71	4,059.52	82.19	50.394		
10,000.00	9,060.00	10,368.00	9,311.25	38.73	44.38	93.43	-3,327.65	908.57	4,141.76	4,058.58	83.17	49.798		
10,100.00	9,060.00	10,477.61	9,319.12	39.86	46.62	93.54	-3,326.68	1,017.89	4,141.91	4,055.37	86.53	47.866		
10,140.22	9,060.00	10,532.36	9,322.76	40.33	47.77	93.59	-3,326.00	1,072.52	4,141.81	4,053.66	88.15	46.988		
10,200.00	9,060.00	10,590.90	9,325.90	41.05	49.04	93.63	-3,325.23	1,130.97	4,140.96	4,050.82	90.14	45.940		
10,300.00	9,060.00	10,659.14	9,328.39	42.31	50.54	93.68	-3,324.54	1,199.16	4,137.01	4,044.11	92.90	44.532		
10,400.00	9,060.00	10,719.00	9,329.83	43.64	51.88	93.71	-3,324.71	1,259.00	4,130.68	4,035.12	95.55	43.230		
10,507.23	9,060.00	10,791.83	9,331.29	45.11	53.56	93.75	-3,325.59	1,331.81	4,121.00	4,022.31	98.69	41.758		
10,600.00	9,060.00	10,928.83	9,334.28	46.43	56.76	93.79	-3,327.05	1,468.77	4,112.39	4,009.17	103.22	39.842		
10,700.00	9,060.00	10,997.51	9,335.79	47.91	58.41	93.81	-3,327.69	1,537.43	4,106.19	3,999.86	106.33	38.618		
10,800.00	9,060.00	11,160.69	9,339.49	49.42	62.39	93.86	-3,327.90	1,700.56	4,102.61	3,990.79	111.82	36.690		
10,871.08	9,060.00	11,239.90	9,341.54	50.52	64.36	93.89	-3,327.47	1,779.75	4,101.81	3,986.93	114.88	35.706		
10,900.00	9,060.00	11,273.38	9,342.44	50.97	65.19	93.90	-3,327.23	1,813.21	4,101.94	3,985.78	116.16	35.314		
11,000.00	9,060.00	11,369.64	9,345.25	52.55	67.62	93.94	-3,326.47	1,909.43	4,104.59	3,984.44	120.14	34.164		
11,100.00	9,060.00	11,451.97	9,347.30	54.14	69.71	93.97	-3,326.07	1,991.74	4,110.99	3,987.16	123.83	33.200		
11,207.23	9,060.00	11,540.18	9,348.11	55.87	71.97	93.99	-3,326.16	2,079.94	4,122.20	3,994.40	127.80	32.254		
11,300.00	9,060.00	11,617.29	9,348.82	57.39	73.96	93.98	-3,326.54	2,157.05	4,132.50	4,001.20	131.30	31.474		
11,400.00	9,060.00	11,712.20	9,349.73	59.06	76.43	93.97	-3,327.32	2,251.95	4,140.59	4,005.17	135.43	30.574		
11,506.63	9,060.00	11,839.47	9,351.03	60.88	79.77	93.98	-3,328.02	2,379.20	4,145.12	4,004.54	140.58	29.486		
11,600.00	9,060.00	11,972.35	9,352.63	62.49	83.28	94.00	-3,327.78	2,512.08	4,146.68	4,000.99	145.70	28.461		
11,700.00	9,060.00	12,075.32	9,354.56	64.24	86.01	94.02	-3,327.03	2,615.02	4,147.85	3,997.68	150.17	27.621		
11,800.00	9,060.00	12,190.76	9,357.75	66.01	89.10	94.07	-3,325.92	2,730.42	4,148.86	3,993.86	155.00	26.767		
11,900.00	9,060.00	11,900.00	9,363.70	67.79	81.27	94.15	-3,320.15	2,944.83	4,148.07	3,999.16	148.91	27.856		
12,000.00	9,060.00	12,527.00	9,366.82	69.58	98.13	94.20	-3,314.28	3,066.30	4,145.08	3,977.59	167.49	24.748		
12,100.00	9,060.00	12,587.50	9,367.80	71.39	99.76	94.21	-3,311.65	3,126.73	4,142.77	3,971.81	170.96	24.232		
12,200.00	9,060.00	12,655.98	9,368.22	73.21	101.62	94.22	-3,309.77	3,195.19	4,141.74	3,967.08	174.65	23.714		
12,300.00	9,060.00	12,742.10	9,368.28	75.05	103.97	94.22	-3,307.40	3,281.28	4,140.80	3,961.97	178.83	23.155		
12,340.15	9,060.00	12,760.93	9,368.26	75.79	104.48	94.22	-3,307.02	3,300.10	4,140.70	3,960.61	180.08	22.993		
12,400.00	9,060.00	12,789.00	9,368.21	76.89	105.25	94.22	-3,306.63	3,328.16	4,140.93	3,958.98	181.95	22.759		
12,500.00	9,060.00	12,850.97	9,368.11	78.74	106.94	94.22	-3,306.40	3,390.14	4,142.24	3,956.76	185.48	22.333		
12,600.00	9,060.00	12,926.48	9,368.19	80.61	109.01	94.22	-3,306.55	3,465.64	4,144.22	3,954.83	189.39	21.882		
12,700.00	9,060.00	13,002.00	9,369.37	82.48	111.09	94.23	-3,307.11	3,541.15	4,146.82	3,953.52	193.30	21.453		
12,800.00	9,060.00	13,114.17	9,372.12	84.36	114.17	94.27	-3,308.13	3,653.28	4,149.69	3,951.43	198.26	20.930		
12,900.00	9,060.00	13,267.52	9,375.59	86.24	118.40	94.31	-3,307.85	3,806.60	4,151.34	3,946.95	204.39	20.311		
13,000.00	9,060.00	13,339.75	9,377.10	88.14	120.40	94.33	-3,307.55	3,878.80	4,152.88	3,944.63	208.25	19.942		
13,100.00	9,060.00	13,449.05	9,379.72	90.04	123.43	94.37	-3,307.81	3,988.08	4,155.09	3,941.92	213.16	19.493		
13,200.00	9,060.00	13,534.21	9,382.35	91.94	125.79	94.40	-3,307.54	4,073.19	4,156.80	3,939.40	217.40	19.120		
13,300.00	9,060.00	13,680.54	9,386.57	93.86	129.85	94.46	-3,307.43	4,219.46	4,158.88	3,935.51	223.37	18.619		
13,400.00	9,060.00	13,791.90	9,389.24	95.77	132.95	94.49	-3,305.85	4,330.78	4,159.38	3,931.02	228.36	18.214		
13,500.00	9,060.00	13,858.00	9,389.88	97.70	134.79	94.50	-3,305.54	4,396.87	4,160.66	3,928.56	232.11	17.926		
13,600.00	9,060.00	13,931.09	9,389.24	99.62	136.83	94.49	-3,305.84	4,469.96	4,162.69	3,926.65	236.05	17.635		
13,700.00	9,060.00	14,002.70	9,387.80	101.56	138.83	94.47	-3,306.43	4,541.55	4,165.14	3,925.19	239.94	17.359		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	14,093.66	9,388.16	103.49	141.37	94.47	-3,307.70	4,632.50	4,168.31	3,923.91	244.40	17.055		
13,900.00	9,060.00	14,215.56	9,390.74	105.43	144.78	94.50	-3,308.66	4,754.36	4,171.00	3,921.24	249.75	16.700		
14,000.00	9,060.00	14,450.24	9,401.86	107.38	151.33	94.65	-3,304.78	4,988.72	4,170.90	3,912.69	258.21	16.153		
14,100.00	9,060.00	14,572.50	9,408.25	109.33	154.75	94.74	-3,300.90	5,110.76	4,169.91	3,906.41	263.51	15.825		
14,200.00	9,060.00	14,680.06	9,412.71	111.28	157.75	94.81	-3,297.19	5,218.16	4,168.57	3,900.15	268.43	15.530		
14,300.00	9,060.00	14,761.21	9,416.07	113.23	160.02	94.85	-3,294.44	5,299.19	4,167.32	3,894.68	272.64	15.285		
14,400.00	9,060.00	14,828.37	9,417.86	115.19	161.90	94.88	-3,292.71	5,366.31	4,166.75	3,890.26	276.49	15.070		
14,415.97	9,060.00	14,838.06	9,418.00	115.50	162.18	94.88	-3,292.52	5,375.99	4,166.74	3,889.67	277.07	15.038		
14,500.00	9,060.00	14,889.03	9,418.09	117.15	163.61	94.88	-3,291.81	5,426.95	4,167.07	3,886.93	280.14	14.875		
14,600.00	9,060.00	14,979.38	9,417.60	119.11	166.15	94.87	-3,291.17	5,517.30	4,168.07	3,883.44	284.63	14.644		
14,700.00	9,060.00	15,111.10	9,419.07	121.08	169.85	94.89	-3,289.65	5,649.00	4,168.80	3,878.51	290.28	14.361		
14,800.00	9,060.00	15,301.02	9,423.99	123.05	175.19	94.96	-3,284.47	5,838.77	4,168.13	3,870.66	297.47	14.012		
14,900.00	9,060.00	15,412.35	9,428.25	125.02	178.32	95.02	-3,279.93	5,949.93	4,166.16	3,863.66	302.50	13.772		
15,000.00	9,060.00	15,498.93	9,431.40	126.99	180.75	95.07	-3,276.14	6,036.37	4,163.91	3,857.01	306.90	13.568		
15,100.00	9,060.00	15,546.25	9,432.65	128.97	182.08	95.09	-3,274.62	6,083.65	4,162.71	3,852.46	310.25	13.417		
15,147.58	9,060.00	15,570.00	9,433.10	129.91	182.75	95.09	-3,274.10	6,107.39	4,162.58	3,850.72	311.86	13.347		
15,200.00	9,060.00	15,618.08	9,433.86	130.95	184.10	95.10	-3,273.23	6,155.46	4,162.62	3,848.38	314.24	13.246		
15,300.00	9,060.00	15,300.00	9,435.68	132.93	175.13	95.13	-3,270.53	6,280.25	4,162.34	3,855.09	307.26	13.547		
15,400.00	9,060.00	15,829.70	9,436.42	134.91	190.07	95.14	-3,268.39	6,367.00	4,161.76	3,837.64	324.12	12.840		
15,500.00	9,060.00	15,933.86	9,435.77	136.89	193.01	95.13	-3,266.56	6,471.14	4,161.72	3,832.69	329.03	12.648		
15,545.36	9,060.00	15,967.81	9,435.54	137.79	193.97	95.13	-3,265.90	6,505.08	4,161.62	3,830.73	330.89	12.577		
15,600.00	9,060.00	15,997.45	9,435.47	138.88	194.81	95.13	-3,265.47	6,534.72	4,161.78	3,828.98	332.81	12.505		
15,700.00	9,060.00	16,058.40	9,435.74	140.86	196.53	95.13	-3,265.10	6,595.67	4,162.93	3,826.44	336.48	12.372		
15,800.00	9,060.00	16,188.45	9,436.61	142.85	200.21	95.14	-3,264.36	6,725.71	4,164.20	3,822.06	342.15	12.171		
15,900.00	9,060.00	16,269.67	9,437.40	144.84	202.51	95.15	-3,263.43	6,806.92	4,164.98	3,818.57	346.41	12.023		
16,000.00	9,060.00	16,328.00	9,438.62	146.83	204.17	95.17	-3,263.46	6,865.24	4,166.87	3,816.89	349.98	11.906		
16,100.00	9,060.00	16,387.08	9,440.45	148.83	205.84	95.19	-3,264.01	6,924.29	4,169.76	3,816.21	353.55	11.794		
16,200.00	9,060.00	16,513.19	9,445.99	150.82	209.41	95.26	-3,265.32	7,050.27	4,173.02	3,813.90	359.12	11.620		
16,300.00	9,060.00	16,604.11	9,450.90	152.82	211.99	95.33	-3,265.73	7,141.06	4,175.72	3,812.10	363.62	11.484		
16,400.00	9,060.00	16,718.40	9,457.60	154.81	215.22	95.41	-3,266.18	7,255.15	4,178.43	3,809.61	368.82	11.329		
16,500.00	9,060.00	16,831.36	9,464.65	156.81	218.42	95.51	-3,266.15	7,367.89	4,180.75	3,806.79	373.97	11.179		
16,600.00	9,060.00	16,963.23	9,470.46	158.81	222.15	95.58	-3,265.87	7,499.63	4,182.78	3,803.10	379.68	11.017		
16,700.00	9,060.00	17,057.56	9,473.07	160.81	224.83	95.62	-3,265.22	7,593.91	4,184.13	3,799.81	384.31	10.887		
16,800.00	9,060.00	17,167.43	9,472.08	162.81	227.95	95.60	-3,265.13	7,703.77	4,185.72	3,796.30	389.43	10.748		
16,900.00	9,060.00	17,230.03	9,470.61	164.82	229.73	95.58	-3,265.20	7,766.36	4,187.42	3,794.26	393.16	10.651		
17,000.00	9,060.00	17,292.17	9,470.23	166.82	231.49	95.57	-3,265.90	7,828.49	4,190.19	3,793.35	396.84	10.559		
17,100.00	9,060.00	17,426.71	9,474.04	168.82	235.32	95.62	-3,267.00	7,962.96	4,193.09	3,790.40	402.69	10.413		
17,200.00	9,060.00	17,523.42	9,477.50	170.83	238.06	95.67	-3,267.01	8,059.61	4,195.21	3,787.82	407.39	10.298		
17,300.00	9,060.00	17,610.81	9,480.14	172.84	240.55	95.70	-3,267.54	8,146.96	4,197.85	3,786.04	411.82	10.193		
17,400.00	9,060.00	17,768.58	9,483.08	174.84	245.03	95.73	-3,267.79	8,304.70	4,200.01	3,781.66	418.34	10.040		
17,500.00	9,060.00	17,849.00	9,484.32	176.85	247.32	95.75	-3,267.41	8,385.11	4,201.47	3,778.88	422.59	9.942		
17,600.00	9,060.00	17,889.40	9,487.89	178.86	248.41	95.80	-3,267.30	8,425.32	4,203.92	3,778.39	425.53	9.879		
17,700.00	9,060.00	17,700.00	9,506.21	180.87	243.31	96.04	-3,267.27	8,502.58	4,207.92	3,785.69	422.23	9.966		
17,800.00	9,060.00	18,269.68	9,519.81	182.88	259.00	96.22	-3,265.25	8,801.68	4,209.88	3,769.99	439.89	9.570		
17,900.00	9,060.00	18,406.04	9,521.45	184.89	262.87	96.25	-3,260.67	8,937.96	4,208.42	3,762.76	445.65	9.443		
18,000.00	9,060.00	18,507.48	9,522.39	186.90	265.74	96.26	-3,256.84	9,039.32	4,206.52	3,756.01	450.50	9.337		
18,100.00	9,060.00	18,584.67	9,523.84	188.92	267.93	96.29	-3,254.05	9,116.45	4,204.89	3,750.17	454.72	9.247		
18,200.00	9,060.00	18,683.43	9,527.84	190.93	270.73	96.34	-3,250.62	9,215.07	4,203.64	3,744.17	459.47	9.149		
18,300.00	9,060.00	18,767.62	9,532.05	192.94	273.12	96.40	-3,247.67	9,299.10	4,202.46	3,738.63	463.83	9.060		
18,400.00	9,060.00	18,926.85	9,541.01	194.96	277.62	96.53	-3,241.30	9,457.94	4,200.90	3,730.81	470.08	8.936		
18,500.00	9,060.00	19,039.02	9,548.23	196.97	280.79	96.63	-3,235.84	9,569.75	4,198.56	3,723.44	475.12	8.837		
18,600.00	9,060.00	19,159.47	9,556.91	198.99	284.19	96.76	-3,229.10	9,689.70	4,195.56	3,715.23	480.33	8.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,700.00	9,060.00	19,172.00	9,557.83	201.00	284.54	96.77	-3,228.38	9,702.17	4,193.37	3,710.46	482.91	8.684	
18,742.61	9,060.00	19,172.00	9,557.83	201.86	284.54	96.77	-3,228.38	9,702.17	4,193.15	3,709.35	483.80	8.667	
18,800.00	9,060.00	19,172.00	9,557.83	203.02	284.54	96.77	-3,228.38	9,702.17	4,193.55	3,708.61	484.93	8.648	
18,900.00	9,060.00	19,172.00	9,557.83	205.04	284.54	96.77	-3,228.38	9,702.17	4,196.11	3,709.42	486.69	8.622	
19,000.00	9,060.00	19,172.00	9,557.83	207.06	284.54	96.77	-3,228.38	9,702.17	4,201.05	3,712.87	488.17	8.606	
19,100.00	9,060.00	19,172.00	9,557.83	209.07	284.54	96.77	-3,228.38	9,702.17	4,208.36	3,718.97	489.38	8.599 SF	
19,200.00	9,060.00	19,172.00	9,557.83	211.09	284.54	96.77	-3,228.38	9,702.17	4,218.03	3,727.70	490.32	8.603	
19,300.00	9,060.00	19,172.00	9,557.83	213.11	284.54	96.77	-3,228.38	9,702.17	4,230.04	3,739.05	490.99	8.615	
19,400.00	9,060.00	19,172.00	9,557.83	215.13	284.54	96.77	-3,228.38	9,702.17	4,244.37	3,752.98	491.40	8.637	
19,500.32	9,060.00	19,172.00	9,557.83	217.16	284.54	96.77	-3,228.38	9,702.17	4,261.06	3,769.52	491.54	8.669	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.965		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.231		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.898		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.894		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.597		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.576		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.906		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.387		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.018		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.674		
9,350.00	9,050.89	8,829.90	8,826.40	33.62	30.24	88.02	-3,333.66	-190.87	4,165.21	4,101.60	63.61	65.483		
9,400.00	9,057.61	8,835.35	8,831.85	33.87	30.26	87.48	-3,333.96	-190.94	4,171.29	4,107.42	63.88	65.300		
9,452.31	9,060.00	8,836.90	8,833.39	34.15	30.26	86.81	-3,334.04	-190.96	4,178.09	4,113.93	64.16	65.121		
9,500.00	9,060.00	8,836.36	8,832.85	34.42	30.26	86.81	-3,334.01	-190.95	4,184.73	4,120.30	64.42	64.957		
9,600.00	9,060.00	8,835.24	8,831.73	35.09	30.26	86.79	-3,333.95	-190.94	4,200.38	4,135.33	65.05	64.571		
9,700.00	9,060.00	8,834.12	8,830.62	35.86	30.25	86.78	-3,333.89	-190.92	4,218.34	4,152.57	65.77	64.141		
9,800.00	9,060.00	8,833.01	8,829.50	36.72	30.25	86.76	-3,333.83	-190.91	4,238.59	4,172.03	66.56	63.681		
9,900.00	9,060.00	8,831.89	8,828.39	37.69	30.24	86.74	-3,333.77	-190.90	4,261.08	4,193.66	67.42	63.202		
10,000.00	9,060.00	8,830.78	8,827.28	38.73	30.24	86.73	-3,333.71	-190.88	4,285.80	4,217.46	68.34	62.713		
10,100.00	9,060.00	8,829.67	8,826.17	39.86	30.24	86.71	-3,333.65	-190.87	4,312.69	4,243.38	69.31	62.226		
10,140.22	9,060.00	8,829.22	8,825.73	40.33	30.23	86.71	-3,333.63	-190.87	4,324.11	4,254.40	69.71	62.033		
10,200.00	9,060.00	8,828.59	8,825.09	41.05	30.23	86.72	-3,333.59	-190.86	4,341.12	4,270.80	70.31	61.739		
10,300.00	9,060.00	8,827.67	8,824.17	42.31	30.23	86.74	-3,333.54	-190.85	4,368.60	4,297.23	71.37	61.212		
10,400.00	9,060.00	8,826.92	8,823.42	43.64	30.23	86.76	-3,333.50	-190.84	4,394.84	4,322.38	72.46	60.649		
10,507.23	9,060.00	8,826.30	8,822.80	45.11	30.22	86.78	-3,333.47	-190.83	4,421.60	4,347.93	73.67	60.015		
10,600.00	9,060.00	8,825.77	8,822.28	46.43	30.22	86.75	-3,333.44	-190.82	4,446.49	4,371.75	74.74	59.492		
10,700.00	9,060.00	8,825.05	8,821.56	47.91	30.22	86.70	-3,333.40	-190.81	4,478.50	4,402.62	75.89	59.015		
10,800.00	9,060.00	8,824.16	8,820.67	49.42	30.22	86.64	-3,333.35	-190.80	4,515.75	4,438.73	77.02	58.631		
10,900.00	9,060.00	8,823.10	8,819.61	50.97	30.21	86.57	-3,333.30	-190.79	4,558.05	4,479.92	78.13	58.341		
11,000.00	9,060.00	8,821.89	8,818.40	52.55	30.21	86.49	-3,333.23	-190.78	4,605.22	4,526.02	79.20	58.146		
11,100.00	9,060.00	8,820.51	8,817.02	54.14	30.20	86.39	-3,333.16	-190.76	4,657.06	4,576.82	80.23	58.044		
11,207.23	9,060.00	8,818.86	8,815.37	55.87	30.20	86.27	-3,333.07	-190.74	4,717.57	4,636.29	81.29	58.037		
11,300.00	9,060.00	8,817.42	8,813.94	57.39	30.19	86.34	-3,332.99	-190.72	4,771.45	4,689.27	82.17	58.065		
11,400.00	9,060.00	8,816.03	8,812.55	59.06	30.19	86.40	-3,332.92	-190.71	4,828.12	4,744.98	83.14	58.070		
11,506.63	9,060.00	8,814.73	8,811.25	60.88	30.18	86.47	-3,332.85	-190.69	4,886.94	4,802.75	84.19	58.049		
11,600.00	9,060.00	8,813.68	8,810.20	62.49	30.18	86.46	-3,332.79	-190.68	4,938.33	4,853.24	85.09	58.034 SF		
11,700.00	9,060.00	8,812.55	8,809.07	64.24	30.17	86.44	-3,332.73	-190.66	4,994.72	4,908.67	86.05	58.047		
11,800.00	9,060.00	8,812.00	8,808.53	66.01	30.17	86.44	-3,332.70	-190.66	5,052.46	4,965.48	86.98	58.088		
11,900.00	9,060.00	8,812.00	8,808.53	67.79	30.17	86.44	-3,332.70	-190.66	5,111.50	5,023.61	87.89	58.158		
12,000.00	9,060.00	8,812.00	8,808.53	69.58	30.17	86.44	-3,332.70	-190.66	5,171.80	5,083.02	88.78	58.255		
12,100.00	9,060.00	8,812.00	8,808.53	71.39	30.17	86.44	-3,332.70	-190.66	5,233.32	5,143.68	89.64	58.380		
12,200.00	9,060.00	8,812.00	8,808.53	73.21	30.17	86.44	-3,332.70	-190.66	5,296.01	5,205.53	90.48	58.530		
12,300.00	9,060.00	8,812.00	8,808.53	75.05	30.17	86.44	-3,332.70	-190.66	5,359.83	5,268.53	91.30	58.705		
12,400.00	9,060.00	8,812.00	8,808.53	76.89	30.17	86.44	-3,332.70	-190.66	5,424.75	5,332.66	92.09	58.904		
12,500.00	9,060.00	8,812.00	8,808.53	78.74	30.17	86.44	-3,332.70	-190.66	5,490.72	5,397.86	92.86	59.126		
12,600.00	9,060.00	8,812.00	8,808.53	80.61	30.17	86.44	-3,332.70	-190.66	5,557.71	5,464.10	93.61	59.369		
12,700.00	9,060.00	8,812.00	8,808.53	82.48	30.17	86.44	-3,332.70	-190.66	5,625.68	5,531.34	94.34	59.633		
12,800.00	9,060.00	8,812.00	8,808.53	84.36	30.17	86.44	-3,332.70	-190.66	5,694.59	5,599.55	95.04	59.917		
12,900.00	9,060.00	8,812.00	8,808.53	86.24	30.17	86.44	-3,332.70	-190.66	5,764.41	5,668.69	95.72	60.220		
13,000.00	9,060.00	8,812.00	8,808.53	88.14	30.17	86.44	-3,332.70	-190.66	5,835.11	5,738.73	96.38	60.540		
13,100.00	9,060.00	8,812.00	8,808.53	90.04	30.17	86.44	-3,332.70	-190.66	5,906.66	5,809.64	97.02	60.878		
13,200.00	9,060.00	8,812.00	8,808.53	91.94	30.17	86.44	-3,332.70	-190.66	5,979.03	5,881.38	97.65	61.232		
13,300.00	9,060.00	8,812.00	8,808.53	93.86	30.17	86.44	-3,332.70	-190.66	6,052.18	5,953.93	98.25	61.602		
13,400.00	9,060.00	8,812.00	8,808.53	95.77	30.17	86.44	-3,332.70	-190.66	6,126.09	6,027.26	98.83	61.986		
13,500.00	9,060.00	8,812.00	8,808.53	97.70	30.17	86.44	-3,332.70	-190.66	6,200.73	6,101.34	99.39	62.385		
13,600.00	9,060.00	8,812.00	8,808.53	99.62	30.17	86.44	-3,332.70	-190.66	6,276.08	6,176.14	99.94	62.798		
13,700.00	9,060.00	8,812.00	8,808.53	101.56	30.17	86.44	-3,332.70	-190.66	6,352.11	6,251.64	100.47	63.223		
13,800.00	9,060.00	8,812.00	8,808.53	103.49	30.17	86.44	-3,332.70	-190.66	6,428.79	6,327.81	100.98	63.661		
13,900.00	9,060.00	8,812.00	8,808.53	105.43	30.17	86.44	-3,332.70	-190.66	6,506.11	6,404.63	101.48	64.111		
14,000.00	9,060.00	8,795.90	8,792.45	107.38	30.11	86.21	-3,331.86	-190.47	6,584.00	6,482.11	101.89	64.618		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,795.22	8,791.78	109.33	30.11	86.20	-3,331.83	-190.46	6,662.52	6,560.16	102.36	65.091		
14,200.00	9,060.00	8,794.56	8,791.11	111.28	30.11	86.19	-3,331.80	-190.46	6,741.60	6,638.80	102.81	65.575		
14,300.00	9,060.00	8,793.89	8,790.44	113.23	30.11	86.18	-3,331.76	-190.45	6,821.24	6,718.00	103.24	66.069		
14,400.00	9,060.00	8,793.23	8,789.78	115.19	30.11	86.17	-3,331.73	-190.44	6,901.40	6,797.74	103.67	66.573		
14,500.00	9,060.00	8,792.57	8,789.12	117.15	30.10	86.16	-3,331.70	-190.43	6,982.08	6,878.00	104.08	67.085		
14,600.00	9,060.00	8,791.91	8,788.47	119.11	30.10	86.16	-3,331.66	-190.43	7,063.25	6,958.77	104.48	67.606		
14,700.00	9,060.00	8,791.26	8,787.82	121.08	30.10	86.15	-3,331.63	-190.42	7,144.89	7,040.03	104.86	68.136		
14,800.00	9,060.00	8,790.61	8,787.17	123.05	30.10	86.14	-3,331.60	-190.41	7,227.00	7,121.76	105.24	68.673		
14,900.00	9,060.00	8,789.97	8,786.52	125.02	30.09	86.13	-3,331.56	-190.40	7,309.56	7,203.95	105.60	69.218		
15,000.00	9,060.00	8,789.32	8,785.88	126.99	30.09	86.12	-3,331.53	-190.40	7,392.54	7,286.59	105.96	69.770		
15,100.00	9,060.00	8,788.68	8,785.24	128.97	30.09	86.11	-3,331.50	-190.39	7,475.94	7,369.64	106.30	70.329		
15,200.00	9,060.00	8,788.05	8,784.61	130.95	30.09	86.10	-3,331.47	-190.38	7,559.75	7,453.11	106.63	70.895		
15,300.00	9,060.00	8,787.41	8,783.98	132.93	30.08	86.09	-3,331.44	-190.38	7,643.94	7,536.98	106.96	71.467		
15,400.00	9,060.00	8,786.78	8,783.35	134.91	30.08	86.08	-3,331.41	-190.37	7,728.51	7,621.24	107.27	72.046		
15,500.00	9,060.00	8,786.16	8,782.72	136.89	30.08	86.07	-3,331.37	-190.36	7,813.44	7,705.86	107.58	72.630		
15,600.00	9,060.00	8,785.53	8,782.10	138.88	30.08	86.07	-3,331.34	-190.36	7,898.73	7,790.85	107.88	73.220		
15,700.00	9,060.00	8,784.91	8,781.48	140.86	30.08	86.06	-3,331.31	-190.35	7,984.36	7,876.19	108.17	73.815		
15,800.00	9,060.00	8,784.30	8,780.86	142.85	30.07	86.05	-3,331.28	-190.34	8,070.32	7,961.87	108.45	74.416		
15,900.00	9,060.00	8,783.68	8,780.25	144.84	30.07	86.04	-3,331.25	-190.34	8,156.59	8,047.87	108.72	75.021		
16,000.00	9,060.00	8,783.07	8,779.64	146.83	30.07	86.03	-3,331.22	-190.33	8,243.18	8,134.19	108.99	75.631		
16,100.00	9,060.00	8,782.46	8,779.03	148.83	30.07	86.02	-3,331.19	-190.32	8,330.07	8,220.82	109.25	76.246		
16,200.00	9,060.00	8,781.85	8,778.42	150.82	30.06	86.01	-3,331.16	-190.32	8,417.25	8,307.75	109.51	76.866		
16,300.00	9,060.00	8,781.25	8,777.82	152.82	30.06	86.01	-3,331.13	-190.31	8,504.71	8,394.96	109.75	77.489		
16,400.00	9,060.00	8,780.65	8,777.22	154.81	30.06	86.00	-3,331.10	-190.30	8,592.45	8,482.45	110.00	78.117		
16,500.00	9,060.00	8,780.05	8,776.63	156.81	30.06	85.99	-3,331.07	-190.30	8,680.45	8,570.22	110.23	78.748		
16,600.00	9,060.00	8,779.46	8,776.03	158.81	30.06	85.98	-3,331.04	-190.29	8,768.71	8,658.25	110.46	79.383		
16,700.00	9,060.00	8,778.87	8,775.44	160.81	30.05	85.97	-3,331.02	-190.28	8,857.22	8,746.53	110.68	80.022		
16,800.00	9,060.00	8,778.28	8,774.85	162.81	30.05	85.96	-3,330.99	-190.28	8,945.96	8,835.06	110.90	80.664		
16,900.00	9,060.00	8,777.69	8,774.27	164.82	30.05	85.96	-3,330.96	-190.27	9,034.95	8,923.83	111.12	81.310		
17,000.00	9,060.00	8,777.11	8,773.69	166.82	30.05	85.95	-3,330.93	-190.27	9,124.16	9,012.83	111.33	81.959		
17,100.00	9,060.00	8,776.53	8,773.11	168.82	30.05	85.94	-3,330.90	-190.26	9,213.60	9,102.06	111.53	82.610		
17,200.00	9,060.00	8,775.95	8,772.53	170.83	30.04	85.93	-3,330.87	-190.25	9,303.24	9,191.51	111.73	83.265		
17,300.00	9,060.00	8,775.38	8,771.95	172.84	30.04	85.92	-3,330.85	-190.25	9,393.10	9,281.18	111.93	83.923		
17,400.00	9,060.00	8,774.81	8,771.38	174.84	30.04	85.92	-3,330.82	-190.24	9,483.16	9,371.05	112.12	84.583		
17,500.00	9,060.00	8,774.24	8,770.81	176.85	30.04	85.91	-3,330.79	-190.24	9,573.42	9,461.12	112.30	85.246		
17,600.00	9,060.00	8,773.67	8,770.25	178.86	30.04	85.90	-3,330.76	-190.23	9,663.87	9,551.38	112.49	85.911		
17,700.00	9,060.00	8,773.11	8,769.68	180.87	30.03	85.89	-3,330.74	-190.22	9,754.51	9,641.84	112.67	86.579		
17,800.00	9,060.00	8,772.54	8,769.12	182.88	30.03	85.88	-3,330.71	-190.22	9,845.33	9,732.48	112.84	87.249		
17,900.00	9,060.00	8,771.99	8,768.57	184.89	30.03	85.88	-3,330.68	-190.21	9,936.32	9,823.31	113.01	87.921		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,588.66	3.49	1,588.71					
100.00	100.00	88.30	88.30	0.52	0.51	179.87	-1,588.66	3.49	1,588.67	1,587.64	1.03	1,539.926		
200.00	200.00	188.30	188.30	0.70	0.67	179.87	-1,588.66	3.49	1,588.67	1,587.29	1.38	1,155.037		
300.00	300.00	288.30	288.30	0.99	0.95	179.87	-1,588.66	3.49	1,588.67	1,586.73	1.94	819.432		
400.00	400.00	388.30	388.30	1.31	1.27	179.87	-1,588.66	3.49	1,588.67	1,586.09	2.58	615.877		
500.00	500.00	488.30	488.30	1.65	1.61	179.87	-1,588.66	3.49	1,588.67	1,585.41	3.25	488.480		
600.00	600.00	588.30	588.30	1.99	1.95	179.87	-1,588.66	3.49	1,588.67	1,584.73	3.94	403.150		
700.00	700.00	688.30	688.30	2.34	2.30	179.87	-1,588.66	3.49	1,588.67	1,584.03	4.64	342.557		
800.00	800.00	788.30	788.30	2.69	2.65	179.87	-1,588.66	3.49	1,588.67	1,583.33	5.34	297.504		
900.00	900.00	888.30	888.30	3.04	3.00	179.87	-1,588.66	3.49	1,588.67	1,582.62	6.05	262.775		
1,000.00	1,000.00	988.30	988.30	3.40	3.36	179.87	-1,588.66	3.49	1,588.67	1,581.91	6.75	235.224		
1,100.00	1,100.00	1,088.30	1,088.30	3.75	3.71	179.87	-1,588.66	3.49	1,588.67	1,581.20	7.46	212.854		
1,200.00	1,200.00	1,188.30	1,188.30	4.11	4.07	179.87	-1,588.66	3.49	1,588.67	1,580.49	8.17	194.340		
1,300.00	1,300.00	1,288.30	1,288.30	4.46	4.42	179.87	-1,588.66	3.49	1,588.67	1,579.78	8.89	178.770		
1,400.00	1,400.00	1,388.30	1,388.30	4.82	4.78	179.87	-1,588.66	3.49	1,588.67	1,579.07	9.60	165.496		
1,500.00	1,500.00	1,488.30	1,488.30	5.18	5.14	179.87	-1,588.66	3.49	1,588.67	1,578.35	10.31	154.049		
1,600.00	1,600.00	1,588.30	1,588.30	5.53	5.49	179.87	-1,588.66	3.49	1,588.67	1,577.64	11.03	144.077		
1,700.00	1,700.00	1,688.30	1,688.30	5.89	5.85	179.87	-1,588.66	3.49	1,588.67	1,576.93	11.74	135.313		
1,800.00	1,800.00	1,788.30	1,788.30	6.25	6.21	179.87	-1,588.66	3.49	1,588.67	1,576.21	12.46	127.551		
1,900.00	1,900.00	1,888.30	1,888.30	6.61	6.56	179.87	-1,588.66	3.49	1,588.67	1,575.50	13.17	120.629		
2,000.00	2,000.00	1,988.30	1,988.30	6.96	6.92	179.87	-1,588.66	3.49	1,588.67	1,574.78	13.88	114.417		
2,100.00	2,100.00	2,088.30	2,088.30	7.32	7.28	179.87	-1,588.66	3.49	1,588.67	1,574.07	14.60	108.812		
2,200.00	2,200.00	2,188.30	2,188.30	7.68	7.64	179.87	-1,588.66	3.49	1,588.67	1,573.35	15.32	103.730		
2,300.00	2,300.00	2,288.30	2,288.30	8.04	7.99	179.87	-1,588.66	3.49	1,588.67	1,572.64	16.03	99.100		
2,350.00	2,350.00	2,338.30	2,338.30	8.22	8.17	179.87	-1,588.66	3.49	1,588.67	1,572.28	16.39	96.937 CC		
2,400.00	2,400.00	2,388.30	2,388.30	8.39	8.35	-164.09	-1,588.66	3.49	1,588.88	1,572.13	16.75	94.879 ES		
2,500.00	2,499.98	2,488.28	2,488.28	8.75	8.71	-164.10	-1,588.66	3.49	1,590.56	1,573.09	17.46	91.090		
2,600.00	2,599.92	2,571.72	2,571.72	9.11	9.00	-164.11	-1,589.04	3.24	1,594.37	1,576.26	18.10	88.064		
2,700.00	2,699.78	2,652.81	2,652.79	9.47	9.27	-164.10	-1,590.35	2.35	1,601.02	1,582.29	18.73	85.488		
2,800.00	2,799.54	2,733.64	2,733.57	9.82	9.53	-164.07	-1,592.61	0.82	1,610.51	1,591.16	19.34	83.256		
2,900.00	2,899.16	2,814.11	2,813.95	10.18	9.80	-164.03	-1,595.79	-1.33	1,622.82	1,602.86	19.96	81.315		
3,000.00	2,998.61	2,894.13	2,893.82	10.54	10.06	-163.97	-1,599.89	-4.10	1,637.94	1,617.38	20.57	79.640		
3,100.00	3,097.86	2,980.38	2,979.82	10.89	10.35	-163.90	-1,605.24	-7.73	1,655.78	1,634.58	21.20	78.103		
3,200.00	3,196.89	3,078.41	3,077.56	11.25	10.68	-163.82	-1,611.55	-11.99	1,675.50	1,653.62	21.88	76.571		
3,295.74	3,291.45	3,171.95	3,170.82	11.59	10.99	-163.77	-1,617.57	-16.06	1,695.92	1,673.39	22.53	75.259		
3,300.00	3,295.65	3,176.10	3,174.96	11.61	11.00	-163.77	-1,617.83	-16.24	1,696.86	1,674.30	22.56	75.201		
3,400.00	3,394.29	3,273.63	3,272.19	11.97	11.33	-163.77	-1,624.10	-20.48	1,718.97	1,695.73	23.25	73.947		
3,500.00	3,492.94	3,371.15	3,369.42	12.33	11.66	-163.78	-1,630.38	-24.73	1,741.08	1,717.15	23.93	72.756		
3,600.00	3,591.58	3,468.68	3,466.65	12.69	12.00	-163.79	-1,636.65	-28.97	1,763.19	1,738.57	24.62	71.625		
3,700.00	3,690.22	3,566.20	3,563.88	13.05	12.33	-163.80	-1,642.92	-33.21	1,785.30	1,760.00	25.31	70.549		
3,800.00	3,788.86	3,663.73	3,661.11	13.41	12.67	-163.80	-1,649.19	-37.46	1,807.41	1,781.41	26.00	69.526		
3,900.00	3,887.50	3,761.25	3,758.34	13.77	13.00	-163.81	-1,655.46	-41.70	1,829.52	1,802.83	26.69	68.550		
4,000.00	3,986.14	3,858.78	3,855.57	14.14	13.34	-163.82	-1,661.74	-45.94	1,851.63	1,824.25	27.38	67.620		
4,100.00	4,084.78	3,956.30	3,952.80	14.50	13.68	-163.82	-1,668.01	-50.19	1,873.74	1,845.66	28.08	66.732		
4,200.00	4,183.42	4,053.83	4,050.03	14.87	14.02	-163.83	-1,674.28	-54.43	1,895.85	1,867.07	28.78	65.883		
4,300.00	4,282.06	4,151.35	4,147.26	15.24	14.36	-163.84	-1,680.55	-58.67	1,917.96	1,888.49	29.47	65.072		
4,400.00	4,380.70	4,248.88	4,244.49	15.60	14.70	-163.84	-1,686.83	-62.91	1,940.07	1,909.90	30.17	64.296		
4,500.00	4,479.34	4,346.40	4,341.72	15.97	15.04	-163.85	-1,693.10	-67.16	1,962.18	1,931.31	30.88	63.552		
4,600.00	4,577.98	4,443.93	4,438.95	16.34	15.38	-163.85	-1,699.37	-71.40	1,984.29	1,952.71	31.58	62.840		
4,700.00	4,676.62	4,541.45	4,536.19	16.71	15.73	-163.86	-1,705.64	-75.64	2,006.40	1,974.12	32.28	62.156		
4,800.00	4,775.27	4,638.98	4,633.42	17.08	16.07	-163.86	-1,711.91	-79.89	2,028.51	1,995.53	32.98	61.499		
4,900.00	4,873.91	4,736.50	4,730.65	17.45	16.42	-163.87	-1,718.19	-84.13	2,050.62	2,016.93	33.69	60.869		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,834.03	4,827.88	17.82	16.76	-163.88	-1,724.46	-88.37	2,072.73	2,038.34	34.40	60.263		
5,100.00	5,071.19	4,931.55	4,925.11	18.19	17.11	-163.88	-1,730.73	-92.61	2,094.84	2,059.74	35.10	59.679		
5,200.00	5,169.83	5,029.08	5,022.34	18.56	17.45	-163.89	-1,737.00	-96.86	2,116.95	2,081.14	35.81	59.118		
5,300.00	5,268.47	5,126.60	5,119.57	18.93	17.80	-163.89	-1,743.27	-101.10	2,139.06	2,102.54	36.52	58.577		
5,400.00	5,367.11	5,224.13	5,216.80	19.31	18.15	-163.90	-1,749.55	-105.34	2,161.17	2,123.95	37.23	58.055		
5,500.00	5,465.75	5,321.65	5,314.03	19.68	18.49	-163.90	-1,755.82	-109.59	2,183.28	2,145.35	37.94	57.552		
5,600.00	5,564.39	5,419.18	5,411.26	20.05	18.84	-163.90	-1,762.09	-113.83	2,205.39	2,166.75	38.65	57.067		
5,700.00	5,663.03	5,516.70	5,508.49	20.42	19.19	-163.91	-1,768.36	-118.07	2,227.50	2,188.15	39.36	56.598		
5,800.00	5,761.67	5,614.23	5,605.72	20.80	19.54	-163.91	-1,774.63	-122.31	2,249.61	2,209.54	40.07	56.145		
5,900.00	5,860.31	5,711.75	5,702.95	21.17	19.89	-163.92	-1,780.91	-126.56	2,271.72	2,230.94	40.78	55.708		
6,000.00	5,958.96	5,809.28	5,800.18	21.54	20.24	-163.92	-1,787.18	-130.80	2,293.83	2,252.34	41.49	55.284		
6,100.00	6,057.60	5,906.80	5,897.41	21.92	20.59	-163.93	-1,793.45	-135.04	2,315.94	2,273.74	42.20	54.874		
6,200.00	6,156.24	6,004.33	5,994.64	22.29	20.94	-163.93	-1,799.72	-139.29	2,338.05	2,295.13	42.92	54.477		
6,300.00	6,254.88	6,101.85	6,091.87	22.67	21.29	-163.94	-1,806.00	-143.53	2,360.16	2,316.53	43.63	54.093		
6,400.00	6,353.52	6,200.62	6,189.10	23.04	21.64	-163.94	-1,812.27	-147.77	2,382.27	2,337.92	44.35	53.715		
6,500.00	6,452.16	6,303.10	6,286.33	23.42	22.01	-163.94	-1,818.54	-152.01	2,404.38	2,359.30	45.08	53.333		
6,600.00	6,550.80	6,394.43	6,383.56	23.79	22.34	-163.95	-1,824.81	-156.26	2,426.49	2,380.72	45.78	53.009		
6,700.00	6,649.44	6,508.05	6,480.80	24.17	22.75	-163.95	-1,831.08	-160.50	2,448.60	2,402.06	46.55	52.604		
6,800.00	6,748.08	6,589.48	6,578.03	24.54	23.04	-163.95	-1,837.36	-164.74	2,470.71	2,423.51	47.21	52.338		
6,900.00	6,846.72	6,687.00	6,675.26	24.92	23.39	-163.96	-1,843.63	-168.99	2,492.82	2,444.90	47.92	52.018		
7,000.00	6,945.36	6,784.53	6,772.49	25.29	23.74	-163.96	-1,849.90	-173.23	2,514.93	2,466.30	48.64	51.706		
7,100.00	7,044.00	6,882.05	6,869.72	25.67	24.09	-163.97	-1,856.17	-177.47	2,537.05	2,487.69	49.36	51.403		
7,200.00	7,142.65	6,979.58	6,966.95	26.04	24.45	-163.97	-1,862.44	-181.71	2,559.16	2,509.08	50.07	51.109		
7,300.00	7,241.29	7,077.10	7,064.18	26.42	24.80	-163.97	-1,868.72	-185.96	2,581.27	2,530.48	50.79	50.822		
7,400.00	7,339.93	7,174.63	7,161.41	26.79	25.15	-163.98	-1,874.99	-190.20	2,603.38	2,551.87	51.51	50.543		
7,500.00	7,438.57	7,272.15	7,258.64	27.17	25.50	-163.98	-1,881.26	-194.44	2,625.49	2,573.26	52.23	50.272		
7,571.77	7,509.37	7,342.15	7,328.42	27.44	25.75	-163.98	-1,885.76	-197.49	2,641.36	2,588.61	52.74	50.081		
7,600.00	7,537.23	7,369.70	7,355.89	27.55	25.85	-164.01	-1,887.53	-198.69	2,647.50	2,594.55	52.94	50.005		
7,700.00	7,636.18	7,467.63	7,453.53	27.92	26.21	-164.08	-1,893.83	-202.95	2,667.68	2,614.02	53.66	49.713		
7,800.00	7,735.48	7,566.04	7,551.65	28.29	26.56	-164.13	-1,900.16	-207.23	2,685.40	2,631.02	54.38	49.383		
7,900.00	7,835.05	7,664.86	7,650.16	28.65	26.92	-164.16	-1,906.52	-211.53	2,700.63	2,645.53	55.10	49.017		
8,000.00	7,934.83	7,764.01	7,749.01	29.01	27.28	-164.15	-1,912.89	-215.84	2,713.37	2,657.56	55.81	48.618		
8,100.00	8,034.74	7,867.34	7,852.03	29.36	27.66	-164.12	-1,919.53	-220.33	2,723.61	2,667.07	56.54	48.170		
8,202.27	8,137.00	8,116.74	8,101.15	29.72	28.55	179.92	-1,928.48	-226.39	2,728.59	2,670.64	57.95	47.086		
8,300.00	8,234.73	8,238.62	8,223.03	30.06	28.96	179.93	-1,928.66	-226.51	2,728.67	2,669.94	58.72	46.469		
8,400.00	8,334.73	8,338.62	8,323.03	30.41	29.30	179.93	-1,928.66	-226.51	2,728.67	2,669.26	59.41	45.929		
8,500.00	8,434.73	8,438.62	8,423.03	30.75	29.64	179.93	-1,928.66	-226.51	2,728.67	2,668.57	60.10	45.402		
8,552.31	8,487.04	8,490.93	8,475.34	30.94	29.82	179.93	-1,928.66	-226.51	2,728.67	2,668.20	60.46	45.131		
8,600.00	8,534.68	8,540.15	8,524.55	31.10	29.98	90.29	-1,928.65	-225.59	2,728.67	2,667.88	60.79	44.887		
8,650.00	8,584.26	8,592.73	8,576.83	31.26	30.16	90.32	-1,928.59	-220.20	2,728.65	2,667.52	61.13	44.636		
8,700.00	8,633.10	8,645.42	8,628.51	31.43	30.33	90.35	-1,928.48	-210.02	2,728.60	2,667.14	61.47	44.391		
8,750.00	8,680.83	8,698.20	8,679.12	31.58	30.50	90.37	-1,928.32	-195.11	2,728.54	2,666.74	61.80	44.152		
8,800.00	8,727.09	8,751.04	8,728.20	31.74	30.66	90.39	-1,928.10	-175.58	2,728.45	2,666.32	62.12	43.920		
8,850.00	8,771.52	8,803.92	8,775.31	31.89	30.82	90.41	-1,927.84	-151.59	2,728.33	2,665.89	62.44	43.693		
8,900.00	8,813.78	8,856.82	8,820.01	32.04	30.97	90.42	-1,927.53	-123.36	2,728.20	2,665.44	62.76	43.471		
8,950.00	8,853.56	8,909.70	8,861.91	32.18	31.12	90.43	-1,927.17	-91.14	2,728.04	2,664.97	63.07	43.251		
9,000.00	8,890.55	8,962.54	8,900.64	32.32	31.26	90.44	-1,926.78	-55.22	2,727.86	2,664.47	63.39	43.030		
9,050.00	8,924.46	9,015.31	8,935.85	32.47	31.42	90.44	-1,926.35	-15.93	2,727.67	2,663.95	63.72	42.804		
9,100.00	8,955.05	9,068.00	8,967.25	32.63	31.59	90.44	-1,925.88	26.35	2,727.46	2,663.39	64.07	42.568		
9,150.00	8,982.08	9,120.57	8,994.58	32.79	31.77	90.43	-1,925.39	71.24	2,727.23	2,662.79	64.44	42.319		
9,200.00	9,005.34	9,173.02	9,017.63	32.97	31.96	90.43	-1,924.87	118.32	2,726.99	2,662.15	64.84	42.054		
9,250.00	9,024.65	9,225.30	9,036.23	33.17	32.18	90.41	-1,924.33	167.16	2,726.75	2,661.47	65.28	41.770		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,277.41	9,050.27	33.38	32.42	90.40	-1,923.78	217.33	2,726.49	2,660.74	65.75	41.468		
9,350.00	9,050.89	9,329.34	9,059.66	33.62	32.68	90.38	-1,923.22	268.37	2,726.23	2,659.97	66.26	41.147		
9,400.00	9,057.61	9,381.06	9,064.38	33.87	32.96	90.36	-1,922.65	319.86	2,725.96	2,659.16	66.79	40.811		
9,452.31	9,060.00	9,434.16	9,065.00	34.15	33.27	90.35	-1,922.07	372.95	2,725.68	2,658.29	67.39	40.444		
9,500.00	9,060.00	9,481.85	9,065.00	34.42	33.56	90.35	-1,921.54	420.63	2,725.44	2,657.47	67.97	40.096		
9,600.00	9,060.00	9,581.85	9,065.00	35.09	34.27	90.35	-1,920.44	520.62	2,724.93	2,655.58	69.36	39.289		
9,700.00	9,060.00	9,681.85	9,065.00	35.86	35.09	90.35	-1,919.34	620.62	2,724.43	2,653.48	70.95	38.401		
9,800.00	9,060.00	9,781.85	9,065.00	36.72	36.00	90.35	-1,918.24	720.61	2,723.92	2,651.18	72.73	37.450		
9,900.00	9,060.00	9,881.85	9,065.00	37.69	37.01	90.35	-1,917.14	820.60	2,723.41	2,648.71	74.70	36.457		
10,000.00	9,060.00	9,981.84	9,065.00	38.73	38.10	90.35	-1,916.04	920.60	2,722.90	2,646.07	76.84	35.437		
10,100.00	9,060.00	10,081.84	9,065.00	39.86	39.26	90.35	-1,914.94	1,020.59	2,722.40	2,643.27	79.13	34.405		
10,140.22	9,060.00	10,122.07	9,065.00	40.33	39.75	90.35	-1,914.50	1,060.81	2,722.19	2,642.10	80.09	33.989		
10,200.00	9,060.00	10,181.83	9,065.00	41.05	40.50	90.35	-1,913.84	1,120.57	2,721.27	2,639.71	81.56	33.366		
10,300.00	9,060.00	10,281.74	9,065.00	42.31	41.80	90.35	-1,912.74	1,220.47	2,716.93	2,632.81	84.12	32.298		
10,400.00	9,060.00	10,381.42	9,065.00	43.64	43.15	90.35	-1,911.64	1,320.15	2,709.11	2,622.31	86.79	31.213		
10,507.23	9,060.00	10,487.94	9,065.00	45.11	44.65	90.36	-1,910.47	1,426.66	2,696.86	2,607.09	89.77	30.042		
10,600.00	9,060.00	10,580.08	9,065.00	46.43	45.99	90.36	-1,909.45	1,518.79	2,686.03	2,593.60	92.43	29.059		
10,700.00	9,060.00	10,679.73	9,065.00	47.91	47.49	90.36	-1,908.36	1,618.43	2,677.71	2,582.31	95.40	28.068		
10,800.00	9,060.00	10,779.60	9,065.00	49.42	49.02	90.36	-1,907.26	1,718.31	2,672.87	2,574.42	98.45	27.149		
10,888.75	9,060.00	10,868.34	9,065.00	50.80	50.42	90.36	-1,906.28	1,807.04	2,671.49	2,570.27	101.22	26.393		
10,900.00	9,060.00	10,879.59	9,065.00	50.97	50.60	90.36	-1,906.16	1,818.29	2,671.52	2,569.94	101.57	26.301		
11,000.00	9,060.00	10,979.56	9,065.00	52.55	52.21	90.36	-1,905.06	1,918.25	2,673.65	2,568.90	104.76	25.522		
11,100.00	9,060.00	11,079.40	9,065.00	54.14	53.84	90.36	-1,903.96	2,018.08	2,679.28	2,571.29	107.99	24.810		
11,207.23	9,060.00	11,186.16	9,065.00	55.87	55.62	90.36	-1,902.78	2,124.84	2,689.18	2,577.68	111.50	24.119		
11,300.00	9,060.00	11,278.51	9,065.00	57.39	57.18	90.36	-1,901.77	2,217.18	2,697.98	2,583.40	114.58	23.547		
11,400.00	9,060.00	11,378.32	9,065.00	59.06	58.89	90.35	-1,900.67	2,316.98	2,704.10	2,586.15	117.96	22.924		
11,506.63	9,060.00	11,484.91	9,065.00	60.88	60.73	90.35	-1,899.50	2,423.57	2,706.80	2,585.18	121.62	22.256		
11,600.00	9,060.00	11,578.28	9,065.00	62.49	62.37	90.35	-1,898.47	2,516.93	2,707.42	2,582.55	124.87	21.681		
11,700.00	9,060.00	11,678.27	9,065.00	64.24	64.14	90.35	-1,897.37	2,616.92	2,708.09	2,579.69	128.39	21.092		
11,800.00	9,060.00	11,778.27	9,065.00	66.01	65.92	90.35	-1,896.27	2,716.91	2,708.75	2,576.81	131.94	20.530		
11,900.00	9,060.00	11,878.27	9,065.00	67.79	67.72	90.35	-1,895.17	2,816.91	2,709.42	2,573.90	135.52	19.993		
12,000.00	9,060.00	11,978.27	9,065.00	69.58	69.53	90.35	-1,894.07	2,916.90	2,710.08	2,570.95	139.13	19.479		
12,100.00	9,060.00	12,078.27	9,065.00	71.39	71.36	90.35	-1,892.97	3,016.89	2,710.75	2,567.98	142.76	18.988		
12,200.00	9,060.00	12,178.26	9,065.00	73.21	73.20	90.35	-1,891.87	3,116.88	2,711.41	2,564.99	146.42	18.518		
12,300.00	9,060.00	12,278.26	9,065.00	75.05	75.04	90.35	-1,890.77	3,216.87	2,712.08	2,561.98	150.10	18.068		
12,400.00	9,060.00	12,378.26	9,065.00	76.89	76.90	90.35	-1,889.67	3,316.86	2,712.74	2,558.94	153.80	17.638		
12,500.00	9,060.00	12,478.26	9,065.00	78.74	78.77	90.35	-1,888.56	3,416.86	2,713.41	2,555.89	157.52	17.225		
12,600.00	9,060.00	12,578.25	9,065.00	80.61	80.64	90.35	-1,887.46	3,516.85	2,714.08	2,552.81	161.26	16.830		
12,700.00	9,060.00	12,678.25	9,065.00	82.48	82.53	90.35	-1,886.36	3,616.84	2,714.74	2,549.72	165.02	16.451		
12,800.00	9,060.00	12,778.25	9,065.00	84.36	84.42	90.35	-1,885.26	3,716.83	2,715.41	2,546.62	168.79	16.088		
12,900.00	9,060.00	12,878.25	9,065.00	86.24	86.32	90.35	-1,884.16	3,816.82	2,716.07	2,543.50	172.57	15.739		
13,000.00	9,060.00	12,978.25	9,065.00	88.14	88.22	90.35	-1,883.06	3,916.81	2,716.74	2,540.37	176.37	15.404		
13,100.00	9,060.00	13,078.24	9,065.00	90.04	90.13	90.35	-1,881.96	4,016.81	2,717.40	2,537.22	180.18	15.082		
13,200.00	9,060.00	13,178.24	9,065.00	91.94	92.05	90.35	-1,880.86	4,116.80	2,718.07	2,534.07	184.00	14.772		
13,300.00	9,060.00	13,278.24	9,065.00	93.86	93.97	90.35	-1,879.76	4,216.79	2,718.74	2,530.90	187.84	14.474		
13,400.00	9,060.00	13,378.24	9,065.00	95.77	95.90	90.35	-1,878.66	4,316.78	2,719.40	2,527.72	191.68	14.187		
13,500.00	9,060.00	13,478.23	9,065.00	97.70	97.83	90.35	-1,877.56	4,416.77	2,720.07	2,524.53	195.54	13.911		
13,600.00	9,060.00	13,578.23	9,065.00	99.62	99.77	90.35	-1,876.46	4,516.77	2,720.73	2,521.33	199.40	13.644		
13,700.00	9,060.00	13,678.23	9,065.00	101.56	101.71	90.35	-1,875.36	4,616.76	2,721.40	2,518.12	203.27	13.388		
13,800.00	9,060.00	13,778.23	9,065.00	103.49	103.65	90.35	-1,874.26	4,716.75	2,722.06	2,514.91	207.16	13.140		
13,900.00	9,060.00	13,878.23	9,065.00	105.43	105.60	90.35	-1,873.16	4,816.74	2,722.73	2,511.68	211.05	12.901		
14,000.00	9,060.00	13,978.22	9,065.00	107.38	107.55	90.35	-1,872.06	4,916.73	2,723.39	2,508.45	214.94	12.670		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	14,078.22	9,065.00	109.33	109.51	90.35	-1,870.96	5,016.72	2,724.06	2,505.22	218.84	12.447		
14,200.00	9,060.00	14,178.22	9,065.00	111.28	111.47	90.35	-1,869.86	5,116.72	2,724.73	2,501.97	222.76	12.232		
14,300.00	9,060.00	14,278.22	9,065.00	113.23	113.43	90.35	-1,868.76	5,216.71	2,725.39	2,498.72	226.67	12.024		
14,400.00	9,060.00	14,378.21	9,065.00	115.19	115.40	90.35	-1,867.66	5,316.70	2,726.06	2,495.46	230.59	11.822		
14,500.00	9,060.00	14,478.21	9,065.00	117.15	117.36	90.35	-1,866.55	5,416.69	2,726.72	2,492.20	234.52	11.627		
14,600.00	9,060.00	14,578.21	9,065.00	119.11	119.33	90.35	-1,865.45	5,516.68	2,727.39	2,488.93	238.46	11.438		
14,700.00	9,060.00	14,678.21	9,065.00	121.08	121.31	90.35	-1,864.35	5,616.67	2,728.05	2,485.66	242.39	11.255		
14,800.00	9,060.00	14,778.21	9,065.00	123.05	123.28	90.35	-1,863.25	5,716.67	2,728.72	2,482.38	246.34	11.077		
14,900.00	9,060.00	14,878.20	9,065.00	125.02	125.26	90.35	-1,862.15	5,816.66	2,729.39	2,479.10	250.29	10.905		
15,000.00	9,060.00	14,978.20	9,065.00	126.99	127.24	90.35	-1,861.05	5,916.65	2,730.05	2,475.81	254.24	10.738		
15,100.00	9,060.00	15,078.20	9,065.00	128.97	129.22	90.35	-1,859.95	6,016.64	2,730.72	2,472.52	258.20	10.576		
15,200.00	9,060.00	15,178.20	9,065.00	130.95	131.20	90.35	-1,858.85	6,116.63	2,731.38	2,469.23	262.16	10.419		
15,300.00	9,060.00	15,278.19	9,065.00	132.93	133.19	90.35	-1,857.75	6,216.62	2,732.05	2,465.93	266.12	10.266		
15,400.00	9,060.00	15,378.19	9,065.00	134.91	135.17	90.35	-1,856.65	6,316.62	2,732.71	2,462.62	270.09	10.118		
15,500.00	9,060.00	15,478.19	9,065.00	136.89	137.16	90.35	-1,855.55	6,416.61	2,733.38	2,459.32	274.06	9.974		
15,600.00	9,060.00	15,578.19	9,065.00	138.88	139.15	90.35	-1,854.45	6,516.60	2,734.04	2,456.01	278.04	9.833		
15,700.00	9,060.00	15,678.19	9,065.00	140.86	141.14	90.35	-1,853.35	6,616.59	2,734.71	2,452.69	282.02	9.697		
15,800.00	9,060.00	15,778.18	9,065.00	142.85	143.14	90.35	-1,852.25	6,716.58	2,735.38	2,449.38	286.00	9.564		
15,900.00	9,060.00	15,878.18	9,065.00	144.84	145.13	90.35	-1,851.15	6,816.57	2,736.04	2,446.06	289.98	9.435		
16,000.00	9,060.00	15,978.18	9,065.00	146.83	147.13	90.35	-1,850.05	6,916.57	2,736.71	2,442.74	293.97	9.309		
16,100.00	9,060.00	16,078.18	9,065.00	148.83	149.13	90.35	-1,848.95	7,016.56	2,737.37	2,439.41	297.96	9.187		
16,200.00	9,060.00	16,178.17	9,065.00	150.82	151.13	90.35	-1,847.85	7,116.55	2,738.04	2,436.08	301.95	9.068		
16,300.00	9,060.00	16,278.17	9,065.00	152.82	153.13	90.35	-1,846.75	7,216.54	2,738.70	2,432.75	305.95	8.951		
16,400.00	9,060.00	16,378.17	9,065.00	154.81	155.13	90.35	-1,845.65	7,316.53	2,739.37	2,429.42	309.95	8.838		
16,500.00	9,060.00	16,478.17	9,065.00	156.81	157.13	90.35	-1,844.54	7,416.53	2,740.03	2,426.09	313.95	8.728		
16,600.00	9,060.00	16,578.17	9,065.00	158.81	159.13	90.35	-1,843.44	7,516.52	2,740.70	2,422.75	317.95	8.620		
16,700.00	9,060.00	16,678.16	9,065.00	160.81	161.14	90.35	-1,842.34	7,616.51	2,741.37	2,419.41	321.96	8.515		
16,800.00	9,060.00	16,778.16	9,065.00	162.81	163.14	90.35	-1,841.24	7,716.50	2,742.03	2,416.07	325.96	8.412		
16,900.00	9,060.00	16,878.16	9,065.00	164.82	165.15	90.35	-1,840.14	7,816.49	2,742.70	2,412.73	329.97	8.312		
17,000.00	9,060.00	16,978.16	9,065.00	166.82	167.16	90.35	-1,839.04	7,916.48	2,743.36	2,409.38	333.98	8.214		
17,100.00	9,060.00	17,078.15	9,065.00	168.82	169.16	90.35	-1,837.94	8,016.48	2,744.03	2,406.03	338.00	8.119		
17,200.00	9,060.00	17,178.15	9,065.00	170.83	171.17	90.35	-1,836.84	8,116.47	2,744.69	2,402.68	342.01	8.025		
17,300.00	9,060.00	17,278.15	9,065.00	172.84	173.18	90.35	-1,835.74	8,216.46	2,745.36	2,399.33	346.03	7.934		
17,400.00	9,060.00	17,378.15	9,065.00	174.84	175.19	90.35	-1,834.64	8,316.45	2,746.03	2,395.98	350.04	7.845		
17,500.00	9,060.00	17,478.15	9,065.00	176.85	177.21	90.35	-1,833.54	8,416.44	2,746.69	2,392.63	354.06	7.758		
17,600.00	9,060.00	17,578.14	9,065.00	178.86	179.22	90.35	-1,832.44	8,516.43	2,747.36	2,389.27	358.09	7.672		
17,700.00	9,060.00	17,678.14	9,065.00	180.87	181.23	90.35	-1,831.34	8,616.43	2,748.02	2,385.91	362.11	7.589		
17,800.00	9,060.00	17,778.14	9,065.00	182.88	183.25	90.35	-1,830.24	8,716.42	2,748.69	2,382.56	366.13	7.507		
17,900.00	9,060.00	17,878.14	9,065.00	184.89	185.26	90.35	-1,829.14	8,816.41	2,749.35	2,379.20	370.16	7.428		
18,000.00	9,060.00	17,978.13	9,065.00	186.90	187.28	90.35	-1,828.04	8,916.40	2,750.02	2,375.83	374.19	7.349		
18,100.00	9,060.00	18,078.13	9,065.00	188.92	189.29	90.35	-1,826.94	9,016.39	2,750.68	2,372.47	378.21	7.273		
18,200.00	9,060.00	18,178.13	9,065.00	190.93	191.31	90.35	-1,825.84	9,116.38	2,751.35	2,369.11	382.24	7.198		
18,300.00	9,060.00	18,278.13	9,065.00	192.94	193.32	90.35	-1,824.74	9,216.38	2,752.02	2,365.74	386.27	7.125		
18,400.00	9,060.00	18,378.13	9,065.00	194.96	195.34	90.35	-1,823.64	9,316.37	2,752.68	2,362.38	390.31	7.053		
18,500.00	9,060.00	18,478.12	9,065.00	196.97	197.36	90.35	-1,822.53	9,416.36	2,753.35	2,359.01	394.34	6.982		
18,600.00	9,060.00	18,578.12	9,065.00	198.99	199.38	90.35	-1,821.43	9,516.35	2,754.01	2,355.64	398.37	6.913		
18,700.00	9,060.00	18,678.12	9,065.00	201.00	201.40	90.35	-1,820.33	9,616.34	2,754.68	2,352.27	402.41	6.845		
18,800.00	9,060.00	18,778.12	9,065.00	203.02	203.42	90.35	-1,819.23	9,716.34	2,755.34	2,348.90	406.45	6.779		
18,900.00	9,060.00	18,878.11	9,065.00	205.04	205.44	90.35	-1,818.13	9,816.33	2,756.01	2,345.53	410.48	6.714		
19,000.00	9,060.00	18,978.11	9,065.00	207.06	207.46	90.35	-1,817.03	9,916.32	2,756.68	2,342.15	414.52	6.650		
19,100.00	9,060.00	19,078.11	9,065.00	209.07	209.48	90.35	-1,815.93	10,016.31	2,757.34	2,338.78	418.56	6.588		
19,200.00	9,060.00	19,178.11	9,065.00	211.09	211.50	90.35	-1,814.83	10,116.30	2,758.01	2,335.40	422.60	6.526		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,278.11	9,065.00	213.11	213.52	90.35	-1,813.73	10,216.29	2,758.67	2,332.03	426.64	6.466	
19,400.00	9,060.00	19,378.10	9,065.00	215.13	215.55	90.35	-1,812.63	10,316.29	2,759.34	2,328.65	430.69	6.407	
19,500.32	9,060.00	19,456.84	9,065.00	217.16	217.14	90.35	-1,811.76	10,395.02	2,760.09	2,325.81	434.28	6.355 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	133.74	-2,939.76	3,071.78	4,252.26					
100.00	100.00	39.40	39.40	0.52	0.67	133.74	-2,939.76	3,071.78	4,251.83	4,250.64	1.18	3,591.107		
200.00	200.00	139.40	139.40	0.70	2.00	133.74	-2,939.76	3,071.78	4,251.83	4,249.12	2.70	1,572.717		
300.00	300.00	239.40	239.40	0.99	3.47	133.74	-2,939.76	3,071.78	4,251.83	4,247.37	4.46	953.521		
400.00	400.00	339.40	339.40	1.31	4.96	133.74	-2,939.76	3,071.78	4,251.83	4,245.56	6.27	678.389		
500.00	500.00	439.40	439.40	1.65	6.45	133.74	-2,939.76	3,071.78	4,251.83	4,243.73	8.10	525.157		
600.00	600.00	539.40	539.40	1.99	7.94	133.74	-2,939.76	3,071.78	4,251.83	4,241.89	9.93	427.974		
700.00	700.00	639.40	639.40	2.34	9.44	133.74	-2,939.76	3,071.78	4,251.83	4,240.05	11.78	360.979		
800.00	800.00	739.40	739.40	2.69	10.94	133.74	-2,939.76	3,071.78	4,251.83	4,238.20	13.63	312.045		
900.00	900.00	839.40	839.40	3.04	12.43	133.74	-2,939.76	3,071.78	4,251.83	4,236.35	15.47	274.756		
1,000.00	1,000.00	939.40	939.40	3.40	13.93	133.74	-2,939.76	3,071.78	4,251.83	4,234.50	17.33	245.408		
1,100.00	1,100.00	1,039.40	1,039.40	3.75	15.42	133.74	-2,939.76	3,071.78	4,251.83	4,232.65	19.18	221.712		
1,200.00	1,200.00	1,139.40	1,139.40	4.11	16.92	133.74	-2,939.76	3,071.78	4,251.83	4,230.80	21.03	202.182		
1,300.00	1,300.00	1,239.40	1,239.40	4.46	18.42	133.74	-2,939.76	3,071.78	4,251.83	4,228.94	22.88	185.809		
1,400.00	1,400.00	1,339.40	1,339.40	4.82	19.92	133.74	-2,939.76	3,071.78	4,251.83	4,227.09	24.74	171.886		
1,500.00	1,500.00	1,439.40	1,439.40	5.18	21.41	133.74	-2,939.76	3,071.78	4,251.83	4,225.24	26.59	159.903		
1,600.00	1,600.00	1,539.40	1,539.40	5.53	22.91	133.74	-2,939.76	3,071.78	4,251.83	4,223.38	28.44	149.479		
1,700.00	1,700.00	1,639.40	1,639.40	5.89	24.41	133.74	-2,939.76	3,071.78	4,251.83	4,221.53	30.30	140.331		
1,800.00	1,800.00	1,739.40	1,739.40	6.25	25.91	133.74	-2,939.76	3,071.78	4,251.83	4,219.67	32.15	132.236		
1,900.00	1,900.00	1,839.40	1,839.40	6.61	27.40	133.74	-2,939.76	3,071.78	4,251.83	4,217.82	34.01	125.024		
2,000.00	2,000.00	1,939.40	1,939.40	6.96	28.90	133.74	-2,939.76	3,071.78	4,251.83	4,215.96	35.86	118.558		
2,100.00	2,100.00	2,039.40	2,039.40	7.32	30.40	133.74	-2,939.76	3,071.78	4,251.83	4,214.11	37.72	112.727		
2,200.00	2,200.00	2,139.40	2,139.40	7.68	31.89	133.74	-2,939.76	3,071.78	4,251.83	4,212.25	39.57	107.443		
2,300.00	2,300.00	2,239.40	2,239.40	8.04	33.39	133.74	-2,939.76	3,071.78	4,251.83	4,210.40	41.43	102.631		
2,350.00	2,350.00	2,289.40	2,289.40	8.22	34.14	133.74	-2,939.76	3,071.78	4,251.83	4,209.47	42.36	100.384		
2,400.00	2,400.00	2,339.40	2,339.40	8.39	34.89	149.78	-2,939.76	3,071.78	4,252.01	4,208.73	43.28	98.237		
2,500.00	2,499.98	2,439.38	2,439.38	8.75	36.39	149.79	-2,939.76	3,071.78	4,253.52	4,208.39	45.14	94.235		
2,600.00	2,599.92	2,539.32	2,539.32	9.11	37.88	149.80	-2,939.76	3,071.78	4,256.54	4,209.55	46.99	90.583		
2,700.00	2,699.78	2,639.18	2,639.18	9.47	39.38	149.81	-2,939.76	3,071.78	4,261.06	4,212.22	48.84	87.241		
2,800.00	2,799.54	2,738.94	2,738.94	9.82	40.87	149.82	-2,939.76	3,071.78	4,267.10	4,216.41	50.69	84.176		
2,900.00	2,899.16	2,838.56	2,838.56	10.18	42.36	149.85	-2,939.76	3,071.78	4,274.64	4,222.10	52.54	81.360		
3,000.00	2,998.61	2,938.01	2,938.01	10.54	43.85	149.87	-2,939.76	3,071.78	4,283.69	4,229.31	54.38	78.767		
3,100.00	3,097.86	3,037.26	3,037.26	10.89	45.34	149.90	-2,939.76	3,071.78	4,294.25	4,238.03	56.23	76.375		
3,200.00	3,196.89	3,136.29	3,136.29	11.25	46.82	149.93	-2,939.76	3,071.78	4,306.32	4,248.26	58.06	74.165		
3,295.74	3,291.45	3,230.85	3,230.85	11.59	48.24	149.96	-2,939.76	3,071.78	4,319.30	4,259.48	59.82	72.205		
3,300.00	3,295.65	3,235.05	3,235.05	11.61	48.30	149.97	-2,939.76	3,071.78	4,319.91	4,260.01	59.90	72.120		
3,400.00	3,394.29	3,333.69	3,333.69	11.97	49.78	150.08	-2,939.76	3,071.78	4,334.19	4,272.46	61.73	70.212		
3,500.00	3,492.94	3,432.34	3,432.34	12.33	51.26	150.18	-2,939.76	3,071.78	4,348.48	4,284.92	63.56	68.412		
3,600.00	3,591.58	3,530.98	3,530.98	12.69	52.73	150.29	-2,939.76	3,071.78	4,362.80	4,297.40	65.40	66.712		
3,700.00	3,690.22	3,629.62	3,629.62	13.05	54.21	150.40	-2,939.76	3,071.78	4,377.12	4,309.89	67.23	65.104		
3,800.00	3,788.86	3,728.26	3,728.26	13.41	55.69	150.50	-2,939.76	3,071.78	4,391.46	4,322.39	69.07	63.582		
3,900.00	3,887.50	3,826.90	3,826.90	13.77	57.17	150.61	-2,939.76	3,071.78	4,405.82	4,334.91	70.90	62.137		
4,000.00	3,986.14	3,925.54	3,925.54	14.14	58.64	150.71	-2,939.76	3,071.78	4,420.19	4,347.45	72.74	60.765		
4,100.00	4,084.78	4,024.18	4,024.18	14.50	60.12	150.82	-2,939.76	3,071.78	4,434.57	4,359.99	74.58	59.461		
4,200.00	4,183.42	4,122.82	4,122.82	14.87	61.60	150.92	-2,939.76	3,071.78	4,448.97	4,372.55	76.42	58.218		
4,300.00	4,282.06	4,221.46	4,221.46	15.24	63.07	151.02	-2,939.76	3,071.78	4,463.39	4,385.13	78.26	57.034		
4,400.00	4,380.70	4,320.10	4,320.10	15.60	64.55	151.12	-2,939.76	3,071.78	4,477.81	4,397.71	80.10	55.904		
4,500.00	4,479.34	4,418.74	4,418.74	15.97	66.03	151.22	-2,939.76	3,071.78	4,492.25	4,410.31	81.94	54.825		
4,600.00	4,577.98	4,517.38	4,517.38	16.34	67.51	151.32	-2,939.76	3,071.78	4,506.71	4,422.93	83.78	53.793		
4,700.00	4,676.62	4,616.02	4,616.02	16.71	68.98	151.42	-2,939.76	3,071.78	4,521.17	4,435.55	85.62	52.805		
4,800.00	4,775.27	4,714.67	4,714.67	17.08	70.46	151.52	-2,939.76	3,071.78	4,535.66	4,448.19	87.46	51.859		
4,900.00	4,873.91	4,813.31	4,813.31	17.45	71.94	151.62	-2,939.76	3,071.78	4,550.15	4,460.85	89.30	50.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,911.95	4,911.95	17.82	73.42	151.72	-2,939.76	3,071.78	4,564.66	4,473.51	91.15	50.080		
5,100.00	5,071.19	5,010.59	5,010.59	18.19	74.89	151.81	-2,939.76	3,071.78	4,579.18	4,486.19	92.99	49.244		
5,200.00	5,169.83	5,109.23	5,109.23	18.56	76.37	151.91	-2,939.76	3,071.78	4,593.71	4,498.88	94.83	48.440		
5,300.00	5,268.47	5,207.87	5,207.87	18.93	77.85	152.01	-2,939.76	3,071.78	4,608.26	4,511.58	96.68	47.667		
5,400.00	5,367.11	5,306.51	5,306.51	19.31	79.32	152.10	-2,939.76	3,071.78	4,622.82	4,524.30	98.52	46.923		
5,500.00	5,465.75	5,405.15	5,405.15	19.68	80.80	152.20	-2,939.76	3,071.78	4,637.39	4,537.02	100.36	46.206		
5,600.00	5,564.39	5,503.79	5,503.79	20.05	82.28	152.29	-2,939.76	3,071.78	4,651.97	4,549.76	102.21	45.515		
5,700.00	5,663.03	5,602.43	5,602.43	20.42	83.76	152.38	-2,939.76	3,071.78	4,666.57	4,562.51	104.05	44.848		
5,800.00	5,761.67	5,701.07	5,701.07	20.80	85.23	152.48	-2,939.76	3,071.78	4,681.17	4,575.28	105.90	44.205		
5,900.00	5,860.31	5,799.71	5,799.71	21.17	86.71	152.57	-2,939.76	3,071.78	4,695.79	4,588.05	107.74	43.584		
6,000.00	5,958.96	5,898.36	5,898.36	21.54	88.19	152.66	-2,939.76	3,071.78	4,710.43	4,600.84	109.59	42.983		
6,100.00	6,057.60	5,997.00	5,997.00	21.92	89.67	152.75	-2,939.76	3,071.78	4,725.07	4,613.64	111.43	42.403		
6,200.00	6,156.24	6,095.64	6,095.64	22.29	91.14	152.84	-2,939.76	3,071.78	4,739.73	4,626.45	113.28	41.841		
6,300.00	6,254.88	6,194.28	6,194.28	22.67	92.62	152.93	-2,939.76	3,071.78	4,754.39	4,639.27	115.12	41.298		
6,400.00	6,353.52	6,292.92	6,292.92	23.04	94.10	153.02	-2,939.76	3,071.78	4,769.07	4,652.10	116.97	40.772		
6,500.00	6,452.16	6,391.56	6,391.56	23.42	95.57	153.11	-2,939.76	3,071.78	4,783.76	4,664.95	118.82	40.262		
6,600.00	6,550.80	6,490.20	6,490.20	23.79	97.05	153.20	-2,939.76	3,071.78	4,798.46	4,677.80	120.66	39.768		
6,700.00	6,649.44	6,588.84	6,588.84	24.17	98.53	153.29	-2,939.76	3,071.78	4,813.18	4,690.67	122.51	39.288		
6,800.00	6,748.08	6,687.48	6,687.48	24.54	100.01	153.38	-2,939.76	3,071.78	4,827.90	4,703.54	124.36	38.823		
6,900.00	6,846.72	6,786.12	6,786.12	24.92	101.48	153.46	-2,939.76	3,071.78	4,842.63	4,716.43	126.20	38.372		
7,000.00	6,945.36	6,884.76	6,884.76	25.29	102.96	153.55	-2,939.76	3,071.78	4,857.38	4,729.33	128.05	37.934		
7,100.00	7,044.00	6,983.40	6,983.40	25.67	104.44	153.64	-2,939.76	3,071.78	4,872.14	4,742.24	129.90	37.508		
7,200.00	7,142.65	7,082.05	7,082.05	26.04	105.92	153.72	-2,939.76	3,071.78	4,886.90	4,755.16	131.74	37.094		
7,300.00	7,241.29	7,180.69	7,180.69	26.42	107.39	153.81	-2,939.76	3,071.78	4,901.68	4,768.09	133.59	36.692		
7,400.00	7,339.93	7,279.33	7,279.33	26.79	108.87	153.89	-2,939.76	3,071.78	4,916.47	4,781.03	135.44	36.300		
7,500.00	7,438.57	7,377.97	7,377.97	27.17	110.35	153.97	-2,939.76	3,071.78	4,931.27	4,793.98	137.29	35.920		
7,571.77	7,509.37	7,448.77	7,448.77	27.44	111.41	154.03	-2,939.76	3,071.78	4,941.89	4,803.28	138.61	35.653		
7,600.00	7,537.23	7,476.63	7,476.63	27.55	111.83	154.08	-2,939.76	3,071.78	4,945.98	4,806.85	139.13	35.548		
7,700.00	7,636.18	7,575.58	7,575.58	27.92	113.31	154.24	-2,939.76	3,071.78	4,958.98	4,817.99	140.98	35.174		
7,800.00	7,735.48	7,674.88	7,674.88	28.29	114.79	154.37	-2,939.76	3,071.78	4,969.63	4,826.80	142.84	34.792		
7,900.00	7,835.05	7,774.45	7,774.45	28.65	116.29	154.47	-2,939.76	3,071.78	4,977.95	4,833.26	144.69	34.404		
8,000.00	7,934.83	7,874.23	7,874.23	29.01	117.78	154.54	-2,939.76	3,071.78	4,983.91	4,837.36	146.54	34.010		
8,100.00	8,034.74	7,974.14	7,974.14	29.36	119.28	154.58	-2,939.76	3,071.78	4,987.51	4,839.11	148.40	33.610		
8,202.27	8,137.00	8,076.40	8,076.40	29.72	120.81	138.56	-2,939.76	3,071.78	4,988.74	4,838.46	150.28	33.195		
8,300.00	8,234.73	8,174.13	8,174.13	30.06	122.27	138.56	-2,939.76	3,071.78	4,988.74	4,836.65	152.09	32.802		
8,400.00	8,334.73	8,274.13	8,274.13	30.41	123.77	138.56	-2,939.76	3,071.78	4,988.74	4,834.81	153.93	32.408		
8,500.00	8,434.73	8,374.13	8,374.13	30.75	125.27	138.56	-2,939.76	3,071.78	4,988.74	4,832.96	155.78	32.024		
8,552.31	8,487.04	8,426.44	8,426.44	30.94	126.05	138.56	-2,939.76	3,071.78	4,988.74	4,832.00	156.75	31.827		
8,600.00	8,534.68	8,474.08	8,474.08	31.10	126.76	49.01	-2,939.76	3,071.78	4,987.44	4,829.82	157.62	31.642		
8,650.00	8,584.26	8,523.66	8,523.66	31.26	127.51	49.39	-2,939.76	3,071.78	4,983.29	4,824.76	158.52	31.436		
8,700.00	8,633.10	8,572.50	8,572.50	31.43	128.24	50.01	-2,939.76	3,071.78	4,976.32	4,816.91	159.41	31.218		
8,750.00	8,680.83	8,620.23	8,620.23	31.58	128.95	50.91	-2,939.76	3,071.78	4,966.61	4,806.34	160.27	30.989		
8,800.00	8,727.09	8,666.49	8,666.49	31.74	129.64	52.07	-2,939.76	3,071.78	4,954.25	4,793.15	161.11	30.752		
8,850.00	8,771.52	8,710.92	8,710.92	31.89	130.31	53.51	-2,939.76	3,071.78	4,939.37	4,777.46	161.91	30.508		
8,900.00	8,813.78	8,753.18	8,753.18	32.04	130.94	55.23	-2,939.76	3,071.78	4,922.10	4,759.43	162.67	30.259		
8,950.00	8,853.56	8,792.96	8,792.96	32.18	131.54	57.24	-2,939.76	3,071.78	4,902.61	4,739.23	163.39	30.006		
9,000.00	8,890.55	8,829.95	8,829.95	32.32	132.09	59.55	-2,939.76	3,071.78	4,881.10	4,717.04	164.06	29.752		
9,050.00	8,924.46	8,863.86	8,863.86	32.47	132.60	62.14	-2,939.76	3,071.78	4,857.76	4,693.07	164.69	29.496		
9,100.00	8,955.05	8,894.45	8,894.45	32.63	133.06	65.01	-2,939.76	3,071.78	4,832.82	4,667.55	165.27	29.242		
9,150.00	8,982.08	8,921.48	8,921.48	32.79	133.46	68.14	-2,939.76	3,071.78	4,806.51	4,640.71	165.80	28.989		
9,200.00	9,005.34	8,944.74	8,944.74	32.97	133.81	71.50	-2,939.76	3,071.78	4,779.07	4,612.78	166.29	28.740		
9,250.00	9,024.65	8,964.05	8,964.05	33.17	134.10	75.04	-2,939.76	3,071.78	4,750.74	4,584.02	166.72	28.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,979.27	8,979.27	33.38	134.33	78.71	-2,939.76	3,071.78	4,721.78	4,554.67	167.11	28.255		
9,350.00	9,050.89	8,990.29	8,990.29	33.62	134.49	82.44	-2,939.76	3,071.78	4,692.44	4,524.99	167.45	28.023		
9,400.00	9,057.61	8,997.01	8,997.01	33.87	134.59	86.17	-2,939.76	3,071.78	4,662.97	4,495.22	167.74	27.798		
9,452.31	9,060.00	8,999.40	8,999.40	34.15	134.63	90.00	-2,939.76	3,071.78	4,632.25	4,464.25	168.00	27.573		
9,500.00	9,060.00	8,999.40	8,999.40	34.42	134.63	90.00	-2,939.76	3,071.78	4,604.55	4,436.34	168.22	27.373		
9,600.00	9,060.00	8,999.40	8,999.40	35.09	134.63	90.00	-2,939.76	3,071.78	4,547.54	4,378.79	168.74	26.949		
9,700.00	9,060.00	8,999.40	8,999.40	35.86	134.63	90.00	-2,939.76	3,071.78	4,492.03	4,322.66	169.37	26.522		
9,800.00	9,060.00	8,999.40	8,999.40	36.72	134.63	90.00	-2,939.76	3,071.78	4,438.08	4,267.98	170.10	26.091		
9,900.00	9,060.00	8,999.40	8,999.40	37.69	134.63	90.00	-2,939.76	3,071.78	4,385.75	4,214.82	170.93	25.659		
10,000.00	9,060.00	8,999.40	8,999.40	38.73	134.63	90.00	-2,939.76	3,071.78	4,335.09	4,163.23	171.85	25.225		
10,100.00	9,060.00	8,999.40	8,999.40	39.86	134.63	90.00	-2,939.76	3,071.78	4,286.17	4,113.29	172.88	24.793		
10,140.22	9,060.00	8,999.40	8,999.40	40.33	134.63	90.00	-2,939.76	3,071.78	4,266.99	4,093.67	173.32	24.620		
10,200.00	9,060.00	8,999.40	8,999.40	41.05	134.63	90.00	-2,939.76	3,071.78	4,238.49	4,064.49	173.99	24.360		
10,300.00	9,060.00	8,999.40	8,999.40	42.31	134.63	90.00	-2,939.76	3,071.78	4,189.81	4,014.63	175.18	23.917		
10,400.00	9,060.00	8,999.40	8,999.40	43.64	134.63	90.00	-2,939.76	3,071.78	4,139.90	3,963.47	176.43	23.464		
10,507.23	9,060.00	8,999.40	8,999.40	45.11	134.63	90.00	-2,939.76	3,071.78	4,085.04	3,907.20	177.84	22.970		
10,600.00	9,060.00	8,999.40	8,999.40	46.43	134.63	90.00	-2,939.76	3,071.78	4,039.06	3,859.94	179.12	22.549		
10,700.00	9,060.00	8,999.40	8,999.40	47.91	134.63	90.00	-2,939.76	3,071.78	3,994.33	3,813.72	180.61	22.116		
10,800.00	9,060.00	8,999.40	8,999.40	49.42	134.63	90.00	-2,939.76	3,071.78	3,954.82	3,772.63	182.18	21.708		
10,900.00	9,060.00	8,999.40	8,999.40	50.97	134.63	90.00	-2,939.76	3,071.78	3,920.73	3,736.89	183.84	21.327		
11,000.00	9,060.00	8,999.40	8,999.40	52.55	134.63	90.00	-2,939.76	3,071.78	3,892.26	3,706.69	185.57	20.975		
11,100.00	9,060.00	8,999.40	8,999.40	54.14	134.63	90.00	-2,939.76	3,071.78	3,869.56	3,682.21	187.35	20.654		
11,207.23	9,060.00	8,999.40	8,999.40	55.87	134.63	90.00	-2,939.76	3,071.78	3,851.78	3,662.48	189.31	20.347		
11,300.00	9,060.00	8,999.40	8,999.40	57.39	134.63	90.00	-2,939.76	3,071.78	3,838.98	3,647.96	191.02	20.097		
11,400.00	9,060.00	8,999.40	8,999.40	59.06	134.63	90.00	-2,939.76	3,071.78	3,824.32	3,631.43	192.89	19.827		
11,506.63	9,060.00	8,999.40	8,999.40	60.88	134.63	90.00	-2,939.76	3,071.78	3,807.69	3,612.80	194.89	19.538		
11,600.00	9,060.00	8,999.40	8,999.40	62.49	134.63	90.00	-2,939.76	3,071.78	3,793.81	3,597.16	196.65	19.292		
11,700.00	9,060.00	8,999.40	8,999.40	64.24	134.63	90.00	-2,939.76	3,071.78	3,781.45	3,582.90	198.54	19.046		
11,800.00	9,060.00	8,999.40	8,999.40	66.01	134.63	90.00	-2,939.76	3,071.78	3,771.69	3,571.26	200.43	18.818		
11,900.00	9,060.00	8,999.40	8,999.40	67.79	134.63	90.00	-2,939.76	3,071.78	3,764.57	3,562.26	202.31	18.608		
12,000.00	9,060.00	8,999.40	8,999.40	69.58	134.63	90.00	-2,939.76	3,071.78	3,760.10	3,555.92	204.18	18.416		
12,100.00	9,060.00	8,999.40	8,999.40	71.39	134.63	90.00	-2,939.76	3,071.78	3,758.28	3,552.26	206.02	18.242		
12,118.35	9,060.00	8,999.40	8,999.40	71.73	134.63	90.00	-2,939.76	3,071.78	3,758.23	3,551.88	206.36	18.212 CC		
12,200.00	9,060.00	8,999.40	8,999.40	73.21	134.63	90.00	-2,939.76	3,071.78	3,759.12	3,551.28	207.84	18.087 ES		
12,300.00	9,060.00	8,999.40	8,999.40	75.05	134.63	90.00	-2,939.76	3,071.78	3,762.62	3,553.00	209.62	17.950		
12,400.00	9,060.00	8,999.40	8,999.40	76.89	134.63	90.00	-2,939.76	3,071.78	3,768.77	3,557.41	211.37	17.831		
12,500.00	9,060.00	8,999.40	8,999.40	78.74	134.63	90.00	-2,939.76	3,071.78	3,777.56	3,564.49	213.07	17.729		
12,600.00	9,060.00	8,999.40	8,999.40	80.61	134.63	90.00	-2,939.76	3,071.78	3,788.97	3,574.25	214.73	17.646		
12,700.00	9,060.00	8,999.40	8,999.40	82.48	134.63	90.00	-2,939.76	3,071.78	3,802.98	3,586.65	216.33	17.579		
12,800.00	9,060.00	8,999.40	8,999.40	84.36	134.63	90.00	-2,939.76	3,071.78	3,819.55	3,601.66	217.89	17.530		
12,900.00	9,060.00	8,999.40	8,999.40	86.24	134.63	90.00	-2,939.76	3,071.78	3,838.66	3,619.27	219.38	17.497		
13,000.00	9,060.00	8,999.40	8,999.40	88.14	134.63	90.00	-2,939.76	3,071.78	3,860.26	3,639.44	220.82	17.481		
13,100.00	9,060.00	8,999.40	8,999.40	90.04	134.63	90.00	-2,939.76	3,071.78	3,884.32	3,662.12	222.21	17.481 SF		
13,200.00	9,060.00	8,999.40	8,999.40	91.94	134.63	90.00	-2,939.76	3,071.78	3,910.79	3,687.27	223.53	17.496		
13,300.00	9,060.00	8,999.40	8,999.40	93.86	134.63	90.00	-2,939.76	3,071.78	3,939.62	3,714.84	224.78	17.526		
13,400.00	9,060.00	8,999.40	8,999.40	95.77	134.63	90.00	-2,939.76	3,071.78	3,970.76	3,744.78	225.98	17.571		
13,500.00	9,060.00	8,999.40	8,999.40	97.70	134.63	90.00	-2,939.76	3,071.78	4,004.16	3,777.04	227.12	17.630		
13,600.00	9,060.00	8,999.40	8,999.40	99.62	134.63	90.00	-2,939.76	3,071.78	4,039.75	3,811.56	228.19	17.703		
13,700.00	9,060.00	8,999.40	8,999.40	101.56	134.63	90.00	-2,939.76	3,071.78	4,077.49	3,848.28	229.21	17.790		
13,800.00	9,060.00	8,999.40	8,999.40	103.49	134.63	90.00	-2,939.76	3,071.78	4,117.31	3,887.15	230.16	17.889		
13,900.00	9,060.00	8,999.40	8,999.40	105.43	134.63	90.00	-2,939.76	3,071.78	4,159.16	3,928.10	231.06	18.000		
14,000.00	9,060.00	8,999.40	8,999.40	107.38	134.63	90.00	-2,939.76	3,071.78	4,202.97	3,971.07	231.90	18.124		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,999.40	8,999.40	109.33	134.63	90.00	-2,939.76	3,071.78	4,248.68	4,015.99	232.69	18.259		
14,200.00	9,060.00	8,999.40	8,999.40	111.28	134.63	90.00	-2,939.76	3,071.78	4,296.23	4,062.81	233.42	18.406		
14,300.00	9,060.00	8,999.40	8,999.40	113.23	134.63	90.00	-2,939.76	3,071.78	4,345.56	4,111.46	234.10	18.563		
14,400.00	9,060.00	8,999.40	8,999.40	115.19	134.63	90.00	-2,939.76	3,071.78	4,396.62	4,161.88	234.73	18.730		
14,500.00	9,060.00	8,999.40	8,999.40	117.15	134.63	90.00	-2,939.76	3,071.78	4,449.33	4,214.01	235.32	18.908		
14,600.00	9,060.00	8,999.40	8,999.40	119.11	134.63	90.00	-2,939.76	3,071.78	4,503.65	4,267.79	235.86	19.095		
14,700.00	9,060.00	8,999.40	8,999.40	121.08	134.63	90.00	-2,939.76	3,071.78	4,559.52	4,323.16	236.36	19.291		
14,800.00	9,060.00	8,999.40	8,999.40	123.05	134.63	90.00	-2,939.76	3,071.78	4,616.88	4,380.06	236.82	19.496		
14,900.00	9,060.00	8,999.40	8,999.40	125.02	134.63	90.00	-2,939.76	3,071.78	4,675.67	4,438.43	237.24	19.709		
15,000.00	9,060.00	8,999.40	8,999.40	126.99	134.63	90.00	-2,939.76	3,071.78	4,735.84	4,498.22	237.62	19.930		
15,100.00	9,060.00	8,999.40	8,999.40	128.97	134.63	90.00	-2,939.76	3,071.78	4,797.35	4,559.38	237.97	20.160		
15,200.00	9,060.00	8,999.40	8,999.40	130.95	134.63	90.00	-2,939.76	3,071.78	4,860.13	4,621.85	238.28	20.396		
15,300.00	9,060.00	8,999.40	8,999.40	132.93	134.63	90.00	-2,939.76	3,071.78	4,924.14	4,685.58	238.57	20.640		
15,400.00	9,060.00	8,999.40	8,999.40	134.91	134.63	90.00	-2,939.76	3,071.78	4,989.34	4,750.52	238.83	20.891		
15,500.00	9,060.00	8,999.40	8,999.40	136.89	134.63	90.00	-2,939.76	3,071.78	5,055.68	4,816.62	239.06	21.148		
15,600.00	9,060.00	8,999.40	8,999.40	138.88	134.63	90.00	-2,939.76	3,071.78	5,123.10	4,883.84	239.26	21.412		
15,700.00	9,060.00	8,999.40	8,999.40	140.86	134.63	90.00	-2,939.76	3,071.78	5,191.58	4,952.14	239.44	21.682		
15,800.00	9,060.00	8,999.40	8,999.40	142.85	134.63	90.00	-2,939.76	3,071.78	5,261.07	5,021.47	239.60	21.957		
15,900.00	9,060.00	8,999.40	8,999.40	144.84	134.63	90.00	-2,939.76	3,071.78	5,331.53	5,091.78	239.74	22.239		
16,000.00	9,060.00	8,999.40	8,999.40	146.83	134.63	90.00	-2,939.76	3,071.78	5,402.92	5,163.05	239.86	22.525		
16,100.00	9,060.00	8,999.40	8,999.40	148.83	134.63	90.00	-2,939.76	3,071.78	5,475.20	5,235.24	239.97	22.817		
16,200.00	9,060.00	8,999.40	8,999.40	150.82	134.63	90.00	-2,939.76	3,071.78	5,548.35	5,308.30	240.05	23.113		
16,300.00	9,060.00	8,999.40	8,999.40	152.82	134.63	90.00	-2,939.76	3,071.78	5,622.32	5,382.20	240.12	23.414		
16,400.00	9,060.00	8,999.40	8,999.40	154.81	134.63	90.00	-2,939.76	3,071.78	5,697.09	5,456.91	240.18	23.720		
16,500.00	9,060.00	8,999.40	8,999.40	156.81	134.63	90.00	-2,939.76	3,071.78	5,772.62	5,532.40	240.22	24.030		
16,600.00	9,060.00	8,999.40	8,999.40	158.81	134.63	90.00	-2,939.76	3,071.78	5,848.89	5,608.63	240.26	24.344		
16,700.00	9,060.00	8,999.40	8,999.40	160.81	134.63	90.00	-2,939.76	3,071.78	5,925.86	5,685.58	240.28	24.663		
16,800.00	9,060.00	8,999.40	8,999.40	162.81	134.63	90.00	-2,939.76	3,071.78	6,003.51	5,763.22	240.29	24.985		
16,900.00	9,060.00	8,999.40	8,999.40	164.82	134.63	90.00	-2,939.76	3,071.78	6,081.82	5,841.53	240.29	25.311		
17,000.00	9,060.00	8,999.40	8,999.40	166.82	134.63	90.00	-2,939.76	3,071.78	6,160.75	5,920.47	240.28	25.640		
17,100.00	9,060.00	8,999.40	8,999.40	168.82	134.63	90.00	-2,939.76	3,071.78	6,240.28	6,000.02	240.26	25.973		
17,200.00	9,060.00	8,999.40	8,999.40	170.83	134.63	90.00	-2,939.76	3,071.78	6,320.40	6,080.16	240.24	26.309		
17,300.00	9,060.00	8,999.40	8,999.40	172.84	134.63	90.00	-2,939.76	3,071.78	6,401.08	6,160.87	240.21	26.648		
17,400.00	9,060.00	8,999.40	8,999.40	174.84	134.63	90.00	-2,939.76	3,071.78	6,482.29	6,242.12	240.18	26.990		
17,500.00	9,060.00	8,999.40	8,999.40	176.85	134.63	90.00	-2,939.76	3,071.78	6,564.03	6,323.89	240.13	27.335		
17,600.00	9,060.00	8,999.40	8,999.40	178.86	134.63	90.00	-2,939.76	3,071.78	6,646.26	6,406.17	240.09	27.683		
17,700.00	9,060.00	8,999.40	8,999.40	180.87	134.63	90.00	-2,939.76	3,071.78	6,728.98	6,488.94	240.04	28.033		
17,800.00	9,060.00	8,999.40	8,999.40	182.88	134.63	90.00	-2,939.76	3,071.78	6,812.15	6,572.17	239.98	28.386		
17,900.00	9,060.00	8,999.40	8,999.40	184.89	134.63	90.00	-2,939.76	3,071.78	6,895.78	6,655.86	239.92	28.742		
18,000.00	9,060.00	8,999.40	8,999.40	186.90	134.63	90.00	-2,939.76	3,071.78	6,979.84	6,739.97	239.86	29.100		
18,100.00	9,060.00	8,999.40	8,999.40	188.92	134.63	90.00	-2,939.76	3,071.78	7,064.31	6,824.51	239.80	29.460		
18,200.00	9,060.00	8,999.40	8,999.40	190.93	134.63	90.00	-2,939.76	3,071.78	7,149.18	6,909.45	239.73	29.822		
18,300.00	9,060.00	8,999.40	8,999.40	192.94	134.63	90.00	-2,939.76	3,071.78	7,234.44	6,994.78	239.66	30.187		
18,400.00	9,060.00	8,999.40	8,999.40	194.96	134.63	90.00	-2,939.76	3,071.78	7,320.07	7,080.48	239.59	30.553		
18,500.00	9,060.00	8,999.40	8,999.40	196.97	134.63	90.00	-2,939.76	3,071.78	7,406.06	7,166.55	239.51	30.921		
18,600.00	9,060.00	8,999.40	8,999.40	198.99	134.63	90.00	-2,939.76	3,071.78	7,492.40	7,252.97	239.44	31.292		
18,700.00	9,060.00	8,999.40	8,999.40	201.00	134.63	90.00	-2,939.76	3,071.78	7,579.08	7,339.72	239.36	31.664		
18,800.00	9,060.00	8,999.40	8,999.40	203.02	134.63	90.00	-2,939.76	3,071.78	7,666.08	7,426.80	239.28	32.038		
18,900.00	9,060.00	8,999.40	8,999.40	205.04	134.63	90.00	-2,939.76	3,071.78	7,753.39	7,514.19	239.20	32.414		
19,000.00	9,060.00	8,999.40	8,999.40	207.06	134.63	90.00	-2,939.76	3,071.78	7,841.01	7,601.88	239.12	32.791		
19,100.00	9,060.00	8,999.40	8,999.40	209.07	134.63	90.00	-2,939.76	3,071.78	7,928.92	7,689.87	239.04	33.169		
19,200.00	9,060.00	8,999.40	8,999.40	211.09	134.63	90.00	-2,939.76	3,071.78	8,017.11	7,778.15	238.96	33.550		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	0.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,999.40	8,999.40	213.11	134.63	90.00	-2,939.76	3,071.78	8,105.58	7,866.70	238.88	33.931	
19,400.00	9,060.00	8,999.40	8,999.40	215.13	134.63	90.00	-2,939.76	3,071.78	8,194.31	7,955.51	238.80	34.315	
19,500.32	9,060.00	8,999.40	8,999.40	217.16	134.63	90.00	-2,939.76	3,071.78	8,283.58	8,044.86	238.72	34.700	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	150.00	62.65	705.94	1,364.95	1,537.07					
100.00	100.00	66.40	66.40	0.52	150.00	62.65	705.94	1,364.95	1,536.70	1,386.18	150.52	10.209		
200.00	200.00	166.40	166.40	0.70	150.02	62.65	705.94	1,364.95	1,536.70	1,385.98	150.72	10.196		
300.00	300.00	266.40	266.40	0.99	150.05	62.65	705.94	1,364.95	1,536.70	1,385.66	151.04	10.174		
400.00	400.00	366.40	366.40	1.31	150.10	62.65	705.94	1,364.95	1,536.70	1,385.30	151.40	10.150		
500.00	500.00	466.40	466.40	1.65	150.16	62.65	705.94	1,364.95	1,536.70	1,384.90	151.80	10.123		
600.00	600.00	566.40	566.40	1.99	150.23	62.65	705.94	1,364.95	1,536.70	1,384.48	152.22	10.095	CC, ES, SF	
700.00	700.00	563.00	562.89	2.34	150.23	62.65	705.94	1,364.95	1,540.18	1,387.96	152.23	10.118		
800.00	800.00	563.00	562.89	2.69	150.23	62.65	705.94	1,364.95	1,550.12	1,398.50	151.61	10.224		
900.00	900.00	563.00	562.89	3.04	150.23	62.65	705.94	1,364.95	1,566.39	1,415.98	150.41	10.414		
1,000.00	1,000.00	563.00	562.89	3.40	150.23	62.65	705.94	1,364.95	1,588.80	1,440.14	148.65	10.688		
1,100.00	1,100.00	563.00	562.89	3.75	150.23	62.65	705.94	1,364.95	1,617.09	1,470.67	146.42	11.044		
1,200.00	1,200.00	563.00	562.89	4.11	150.23	62.65	705.94	1,364.95	1,650.96	1,507.18	143.78	11.483		
1,300.00	1,300.00	563.00	562.89	4.46	150.23	62.65	705.94	1,364.95	1,690.08	1,549.27	140.81	12.002		
1,400.00	1,400.00	563.00	562.89	4.82	150.23	62.65	705.94	1,364.95	1,734.09	1,596.50	137.60	12.603		
1,500.00	1,500.00	563.00	562.89	5.18	150.23	62.65	705.94	1,364.95	1,782.63	1,648.43	134.20	13.283		
1,600.00	1,600.00	563.00	562.89	5.53	150.23	62.65	705.94	1,364.95	1,835.34	1,704.65	130.70	14.043		
1,700.00	1,700.00	563.00	562.89	5.89	150.23	62.65	705.94	1,364.95	1,891.87	1,764.74	127.13	14.881		
1,800.00	1,800.00	563.00	562.89	6.25	150.23	62.65	705.94	1,364.95	1,951.89	1,828.33	123.56	15.797		
1,900.00	1,900.00	563.00	562.89	6.61	150.23	62.65	705.94	1,364.95	2,015.09	1,895.07	120.02	16.790		
2,000.00	2,000.00	563.00	562.89	6.96	150.23	62.65	705.94	1,364.95	2,081.18	1,964.64	116.53	17.859		
2,100.00	2,100.00	563.00	562.89	7.32	150.23	62.65	705.94	1,364.95	2,149.88	2,036.75	113.13	19.003		
2,200.00	2,200.00	563.00	562.89	7.68	150.23	62.65	705.94	1,364.95	2,220.97	2,111.14	109.83	20.222		
2,300.00	2,300.00	563.00	562.89	8.04	150.23	62.65	705.94	1,364.95	2,294.21	2,187.57	106.64	21.514		
2,350.00	2,350.00	563.00	562.89	8.22	150.23	62.65	705.94	1,364.95	2,331.58	2,226.49	105.09	22.187		
2,400.00	2,400.00	563.00	562.89	8.39	150.23	78.13	705.94	1,364.95	2,369.38	2,265.82	103.56	22.879		
2,500.00	2,499.98	563.00	562.89	8.75	150.23	76.96	705.94	1,364.95	2,446.13	2,345.54	100.60	24.316		
2,600.00	2,599.92	563.00	562.89	9.11	150.23	75.74	705.94	1,364.95	2,524.27	2,426.53	97.74	25.825		
2,700.00	2,699.78	563.00	562.89	9.47	150.23	74.48	705.94	1,364.95	2,603.65	2,508.64	95.00	27.405		
2,800.00	2,799.54	563.00	562.89	9.82	150.23	73.18	705.94	1,364.95	2,684.13	2,591.75	92.38	29.056		
2,900.00	2,899.16	563.00	562.89	10.18	150.23	71.84	705.94	1,364.95	2,765.60	2,675.73	89.86	30.775		
3,000.00	2,998.61	563.00	562.89	10.54	150.23	70.46	705.94	1,364.95	2,847.94	2,760.48	87.46	32.563		
3,100.00	3,097.86	563.00	562.89	10.89	150.23	69.06	705.94	1,364.95	2,931.07	2,845.91	85.16	34.417		
3,200.00	3,196.89	563.00	562.89	11.25	150.23	67.63	705.94	1,364.95	3,014.89	2,931.92	82.97	36.336		
3,295.74	3,291.45	563.00	562.89	11.59	150.23	66.24	705.94	1,364.95	3,095.71	3,014.74	80.97	38.232		
3,300.00	3,295.65	563.00	562.89	11.61	150.23	66.24	705.94	1,364.95	3,099.32	3,018.43	80.88	38.318		
3,400.00	3,394.29	563.00	562.89	11.97	150.23	66.24	705.94	1,364.95	3,184.49	3,105.58	78.90	40.360		
3,500.00	3,492.94	563.00	562.89	12.33	150.23	66.24	705.94	1,364.95	3,270.49	3,193.47	77.02	42.463		
3,600.00	3,591.58	563.00	562.89	12.69	150.23	66.24	705.94	1,364.95	3,357.28	3,282.04	75.23	44.626		
3,700.00	3,690.22	563.00	562.89	13.05	150.23	66.24	705.94	1,364.95	3,444.78	3,371.24	73.53	46.846		
3,800.00	3,788.86	563.00	562.89	13.41	150.23	66.24	705.94	1,364.95	3,532.94	3,461.02	71.92	49.122		
3,900.00	3,887.50	563.00	562.89	13.77	150.23	66.24	705.94	1,364.95	3,621.72	3,551.32	70.39	51.450		
4,000.00	3,986.14	563.00	562.89	14.14	150.23	66.24	705.94	1,364.95	3,711.07	3,642.12	68.94	53.829		
4,100.00	4,084.78	563.00	562.89	14.50	150.23	66.24	705.94	1,364.95	3,800.94	3,733.38	67.56	56.256		
4,200.00	4,183.42	563.00	562.89	14.87	150.23	66.24	705.94	1,364.95	3,891.32	3,825.06	66.26	58.730		
4,300.00	4,282.06	563.00	562.89	15.24	150.23	66.24	705.94	1,364.95	3,982.15	3,917.13	65.02	61.247		
4,400.00	4,380.70	563.00	562.89	15.60	150.23	66.24	705.94	1,364.95	4,073.41	4,009.57	63.84	63.805		
4,500.00	4,479.34	563.00	562.89	15.97	150.23	66.24	705.94	1,364.95	4,165.08	4,102.35	62.73	66.401		
4,600.00	4,577.98	563.00	562.89	16.34	150.23	66.24	705.94	1,364.95	4,257.12	4,195.45	61.67	69.034		
4,700.00	4,676.62	563.00	562.89	16.71	150.23	66.24	705.94	1,364.95	4,349.51	4,288.85	60.66	71.699		
4,800.00	4,775.27	563.00	562.89	17.08	150.23	66.24	705.94	1,364.95	4,442.23	4,382.52	59.71	74.395		
4,900.00	4,873.91	563.00	562.89	17.45	150.23	66.24	705.94	1,364.95	4,535.26	4,476.45	58.81	77.119		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	563.00	562.89	17.82	150.23	66.24	705.94	1,364.95	4,628.58	4,570.63	57.95	79.867		
5,100.00	5,071.19	563.00	562.89	18.19	150.23	66.24	705.94	1,364.95	4,722.18	4,665.03	57.14	82.638		
5,200.00	5,169.83	563.00	562.89	18.56	150.23	66.24	705.94	1,364.95	4,816.03	4,759.65	56.38	85.428		
5,300.00	5,268.47	563.00	562.89	18.93	150.23	66.24	705.94	1,364.95	4,910.12	4,854.47	55.65	88.235		
5,400.00	5,367.11	563.00	562.89	19.31	150.23	66.24	705.94	1,364.95	5,004.45	4,949.49	54.96	91.056		
5,500.00	5,465.75	563.00	562.89	19.68	150.23	66.24	705.94	1,364.95	5,098.98	5,044.68	54.31	93.888		
5,600.00	5,564.39	563.00	562.89	20.05	150.23	66.24	705.94	1,364.95	5,193.73	5,140.04	53.69	96.729		
5,700.00	5,663.03	563.00	562.89	20.42	150.23	66.24	705.94	1,364.95	5,288.67	5,235.55	53.11	99.575		
5,800.00	5,761.67	563.00	562.89	20.80	150.23	66.24	705.94	1,364.95	5,383.79	5,331.22	52.56	102.424		
5,900.00	5,860.31	563.00	562.89	21.17	150.23	66.24	705.94	1,364.95	5,479.08	5,427.04	52.05	105.274		
6,000.00	5,958.96	563.00	562.89	21.54	150.23	66.24	705.94	1,364.95	5,574.54	5,522.99	51.56	108.122		
6,100.00	6,057.60	563.00	562.89	21.92	150.23	66.24	705.94	1,364.95	5,670.16	5,619.06	51.10	110.965		
6,200.00	6,156.24	563.00	562.89	22.29	150.23	66.24	705.94	1,364.95	5,765.92	5,715.26	50.67	113.802		
6,300.00	6,254.88	563.00	562.89	22.67	150.23	66.24	705.94	1,364.95	5,861.83	5,811.57	50.26	116.628		
6,400.00	6,353.52	563.00	562.89	23.04	150.23	66.24	705.94	1,364.95	5,957.87	5,907.99	49.88	119.443		
6,500.00	6,452.16	563.00	562.89	23.42	150.23	66.24	705.94	1,364.95	6,054.04	6,004.52	49.52	122.244		
6,600.00	6,550.80	563.00	562.89	23.79	150.23	66.24	705.94	1,364.95	6,150.33	6,101.14	49.19	125.028		
6,700.00	6,649.44	563.00	562.89	24.17	150.23	66.24	705.94	1,364.95	6,246.74	6,197.86	48.88	127.794		
6,800.00	6,748.08	563.00	562.89	24.54	150.23	66.24	705.94	1,364.95	6,343.26	6,294.67	48.59	130.540		
6,900.00	6,846.72	563.00	562.89	24.92	150.23	66.24	705.94	1,364.95	6,439.88	6,391.56	48.32	133.263		
7,000.00	6,945.36	563.00	562.89	25.29	150.23	66.24	705.94	1,364.95	6,536.61	6,488.53	48.08	135.962		
7,100.00	7,044.00	563.00	562.89	25.67	150.23	66.24	705.94	1,364.95	6,633.44	6,585.59	47.85	138.635		
7,200.00	7,142.65	563.00	562.89	26.04	150.23	66.24	705.94	1,364.95	6,730.35	6,682.71	47.64	141.280		
7,300.00	7,241.29	563.00	562.89	26.42	150.23	66.24	705.94	1,364.95	6,827.36	6,779.91	47.45	143.895		
7,400.00	7,339.93	563.00	562.89	26.79	150.23	66.24	705.94	1,364.95	6,924.45	6,877.18	47.27	146.480		
7,500.00	7,438.57	563.00	562.89	27.17	150.23	66.24	705.94	1,364.95	7,021.62	6,974.51	47.11	149.033		
7,571.77	7,509.37	563.00	562.89	27.44	150.23	66.24	705.94	1,364.95	7,091.41	7,044.40	47.01	150.844		
7,600.00	7,537.23	563.00	562.89	27.55	150.23	67.89	705.94	1,364.95	7,118.88	7,071.91	46.97	151.554		
7,700.00	7,636.18	563.00	562.89	27.92	150.23	74.10	705.94	1,364.95	7,216.37	7,169.54	46.83	154.086		
7,800.00	7,735.48	563.00	562.89	28.29	150.23	80.83	705.94	1,364.95	7,314.09	7,267.39	46.69	156.647		
7,900.00	7,835.05	563.00	562.89	28.65	150.23	87.92	705.94	1,364.95	7,411.95	7,365.40	46.55	159.240		
8,000.00	7,934.83	563.00	562.89	29.01	150.23	95.18	705.94	1,364.95	7,509.88	7,463.48	46.40	161.865		
8,100.00	8,034.74	563.00	562.89	29.36	150.23	102.37	705.94	1,364.95	7,607.82	7,561.58	46.24	164.523		
8,202.27	8,137.00	563.00	562.89	29.72	150.23	93.37	705.94	1,364.95	7,707.92	7,661.84	46.08	167.273		
8,300.00	8,234.73	563.00	562.89	30.06	150.23	93.37	705.94	1,364.95	7,803.56	7,757.63	45.93	169.902		
8,400.00	8,334.73	563.00	562.89	30.41	150.23	93.37	705.94	1,364.95	7,901.47	7,855.68	45.79	172.562		
8,500.00	8,434.73	563.00	562.89	30.75	150.23	93.37	705.94	1,364.95	7,999.43	7,953.77	45.66	175.192		
8,552.31	8,487.04	563.00	562.89	30.94	150.23	93.37	705.94	1,364.95	8,050.69	8,005.09	45.60	176.555		
8,600.00	8,534.68	563.00	562.89	31.10	150.23	2.64	705.94	1,364.95	8,096.99	8,051.49	45.51	177.932		
8,650.00	8,584.26	563.00	562.89	31.26	150.23	2.03	705.94	1,364.95	8,144.37	8,099.04	45.33	179.660		
8,700.00	8,633.10	563.00	562.89	31.43	150.23	1.66	705.94	1,364.95	8,190.23	8,145.15	45.08	181.665		
8,750.00	8,680.83	563.00	562.89	31.58	150.23	1.41	705.94	1,364.95	8,234.25	8,189.48	44.77	183.942		
8,800.00	8,727.09	563.00	562.89	31.74	150.23	1.23	705.94	1,364.95	8,276.12	8,231.74	44.38	186.488		
8,850.00	8,771.52	563.00	562.89	31.89	150.23	1.10	705.94	1,364.95	8,315.56	8,271.63	43.93	189.300		
8,900.00	8,813.78	563.00	562.89	32.04	150.23	1.00	705.94	1,364.95	8,352.30	8,308.88	43.42	192.372		
8,950.00	8,853.56	563.00	562.89	32.18	150.23	0.93	705.94	1,364.95	8,386.11	8,343.26	42.85	195.701		
9,000.00	8,890.55	563.00	562.89	32.32	150.23	0.87	705.94	1,364.95	8,416.76	8,374.52	42.24	199.281		
9,050.00	8,924.46	563.00	562.89	32.47	150.23	0.82	705.94	1,364.95	8,444.06	8,402.48	41.58	203.102		
9,100.00	8,955.05	563.00	562.89	32.63	150.23	0.78	705.94	1,364.95	8,467.82	8,426.95	40.88	207.155		
9,150.00	8,982.08	563.00	562.89	32.79	150.23	0.75	705.94	1,364.95	8,487.91	8,447.77	40.15	211.427		
9,200.00	9,005.34	563.00	562.89	32.97	150.23	0.73	705.94	1,364.95	8,504.19	8,464.81	39.39	215.903		
9,250.00	9,024.65	563.00	562.89	33.17	150.23	0.71	705.94	1,364.95	8,516.57	8,477.96	38.61	220.564		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	563.00	562.89	33.38	150.23	0.70	705.94	1,364.95	8,524.96	8,487.14	37.82	225.388		
9,350.00	9,050.89	563.00	562.89	33.62	150.23	0.70	705.94	1,364.95	8,529.31	8,492.28	37.03	230.350		
9,400.00	9,057.61	563.00	562.89	33.87	150.23	0.70	705.94	1,364.95	8,529.60	8,493.37	36.23	235.423		
9,452.31	9,060.00	563.00	562.89	34.15	150.23	0.70	705.94	1,364.95	8,525.55	8,490.15	35.40	240.814		
9,500.00	9,060.00	563.00	562.89	34.42	150.23	0.70	705.94	1,364.95	8,519.97	8,485.31	34.66	245.841		
9,600.00	9,060.00	563.00	562.89	35.09	150.23	0.70	705.94	1,364.95	8,509.12	8,476.00	33.12	256.919		
9,700.00	9,060.00	563.00	562.89	35.86	150.23	0.70	705.94	1,364.95	8,499.43	8,467.81	31.63	268.719		
9,800.00	9,060.00	563.00	562.89	36.72	150.23	0.70	705.94	1,364.95	8,490.92	8,460.73	30.19	281.268		
9,900.00	9,060.00	563.00	562.89	37.69	150.23	0.70	705.94	1,364.95	8,483.57	8,454.77	28.80	294.558		
10,000.00	9,060.00	563.00	562.89	38.73	150.23	0.70	705.94	1,364.95	8,477.39	8,449.91	27.48	308.518		
10,100.00	9,060.00	563.00	562.89	39.86	150.23	0.70	705.94	1,364.95	8,472.39	8,446.15	26.24	322.913		
10,140.22	9,060.00	563.00	562.89	40.33	150.23	0.70	705.94	1,364.95	8,470.71	8,444.94	25.77	328.711		
10,200.00	9,060.00	563.00	562.89	41.05	150.23	0.66	705.94	1,364.95	8,468.56	8,443.45	25.12	337.171		
10,300.00	9,060.00	563.00	562.89	42.31	150.23	0.60	705.94	1,364.95	8,465.88	8,441.69	24.19	350.009		
10,400.00	9,060.00	563.00	562.89	43.64	150.23	0.57	705.94	1,364.95	8,464.33	8,440.69	23.64	358.047		
10,484.55	9,060.00	563.00	562.89	44.80	150.23	0.56	705.94	1,364.95	8,463.92	8,440.19	23.74	356.558		
10,507.23	9,060.00	563.00	562.89	45.11	150.23	0.57	705.94	1,364.95	8,463.95	8,440.08	23.88	354.491		
10,600.00	9,060.00	563.00	562.89	46.43	150.23	0.55	705.94	1,364.95	8,464.72	8,439.78	24.94	339.393		
10,700.00	9,060.00	563.00	562.89	47.91	150.23	0.51	705.94	1,364.95	8,466.71	8,440.02	26.69	317.254		
10,800.00	9,060.00	563.00	562.89	49.42	150.23	0.45	705.94	1,364.95	8,469.92	8,441.19	28.73	294.807		
10,900.00	9,060.00	563.00	562.89	50.97	150.23	0.36	705.94	1,364.95	8,474.33	8,443.42	30.91	274.134		
11,000.00	9,060.00	563.00	562.89	52.55	150.23	0.25	705.94	1,364.95	8,479.94	8,446.77	33.17	255.659		
11,100.00	9,060.00	563.00	562.89	54.14	150.23	0.11	705.94	1,364.95	8,486.74	8,451.27	35.47	239.288		
11,207.23	9,060.00	563.00	562.89	55.87	150.23	-0.06	705.94	1,364.95	8,495.34	8,457.38	37.96	223.813		
11,300.00	9,060.00	563.00	562.89	57.39	150.23	0.11	705.94	1,364.95	8,503.87	8,463.74	40.13	211.918		
11,400.00	9,060.00	563.00	562.89	59.06	150.23	0.32	705.94	1,364.95	8,514.17	8,471.69	42.48	200.423		
11,506.63	9,060.00	563.00	562.89	60.88	150.23	0.56	705.94	1,364.95	8,526.42	8,481.42	45.00	189.483		
11,600.00	9,060.00	563.00	562.89	62.49	150.23	0.56	705.94	1,364.95	8,538.20	8,491.00	47.21	180.870		
11,700.00	9,060.00	563.00	562.89	64.24	150.23	0.56	705.94	1,364.95	8,551.94	8,502.37	49.57	172.511		
11,800.00	9,060.00	563.00	562.89	66.01	150.23	0.56	705.94	1,364.95	8,566.82	8,514.88	51.94	164.938		
11,900.00	9,060.00	563.00	562.89	67.79	150.23	0.56	705.94	1,364.95	8,582.84	8,528.54	54.30	158.055		
12,000.00	9,060.00	563.00	562.89	69.58	150.23	0.56	705.94	1,364.95	8,600.00	8,543.34	56.66	151.778		
12,100.00	9,060.00	563.00	562.89	71.39	150.23	0.56	705.94	1,364.95	8,618.28	8,559.27	59.01	146.040		
12,200.00	9,060.00	563.00	562.89	73.21	150.23	0.56	705.94	1,364.95	8,637.68	8,576.32	61.36	140.778		
12,300.00	9,060.00	563.00	562.89	75.05	150.23	0.56	705.94	1,364.95	8,658.19	8,594.50	63.69	135.943		
12,400.00	9,060.00	563.00	562.89	76.89	150.23	0.56	705.94	1,364.95	8,679.81	8,613.79	66.01	131.488		
12,500.00	9,060.00	563.00	562.89	78.74	150.23	0.56	705.94	1,364.95	8,702.52	8,634.20	68.32	127.376		
12,600.00	9,060.00	563.00	562.89	80.61	150.23	0.56	705.94	1,364.95	8,726.31	8,655.70	70.62	123.573		
12,700.00	9,060.00	563.00	562.89	82.48	150.23	0.56	705.94	1,364.95	8,751.19	8,678.29	72.90	120.049		
12,800.00	9,060.00	563.00	562.89	84.36	150.23	0.56	705.94	1,364.95	8,777.13	8,701.97	75.16	116.778		
12,900.00	9,060.00	563.00	562.89	86.24	150.23	0.56	705.94	1,364.95	8,804.14	8,726.73	77.41	113.737		
13,000.00	9,060.00	563.00	562.89	88.14	150.23	0.56	705.94	1,364.95	8,832.19	8,752.55	79.64	110.905		
13,100.00	9,060.00	563.00	562.89	90.04	150.23	0.56	705.94	1,364.95	8,861.29	8,779.44	81.85	108.266		
13,200.00	9,060.00	563.00	562.89	91.94	150.23	0.56	705.94	1,364.95	8,891.41	8,807.37	84.04	105.802		
13,300.00	9,060.00	563.00	562.89	93.86	150.23	0.56	705.94	1,364.95	8,922.55	8,836.34	86.21	103.499		
13,400.00	9,060.00	563.00	562.89	95.77	150.23	0.56	705.94	1,364.95	8,954.70	8,866.34	88.36	101.345		
13,500.00	9,060.00	563.00	562.89	97.70	150.23	0.56	705.94	1,364.95	8,987.85	8,897.36	90.49	99.328		
13,600.00	9,060.00	563.00	562.89	99.62	150.23	0.56	705.94	1,364.95	9,021.98	8,929.39	92.59	97.438		
13,700.00	9,060.00	563.00	562.89	101.56	150.23	0.56	705.94	1,364.95	9,057.09	8,962.42	94.68	95.664		
13,800.00	9,060.00	563.00	562.89	103.49	150.23	0.56	705.94	1,364.95	9,093.17	8,996.43	96.74	94.000		
13,900.00	9,060.00	563.00	562.89	105.43	150.23	0.56	705.94	1,364.95	9,130.20	9,031.42	98.77	92.436		
14,000.00	9,060.00	563.00	562.89	107.38	150.23	0.56	705.94	1,364.95	9,168.17	9,067.38	100.79	90.967		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY												Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	563.00	562.89	109.33	150.23	0.56	705.94	1,364.95	9,207.06	9,104.29	102.78	89.585	
14,200.00	9,060.00	563.00	562.89	111.28	150.23	0.56	705.94	1,364.95	9,246.88	9,142.14	104.74	88.284	
14,300.00	9,060.00	563.00	562.89	113.23	150.23	0.56	705.94	1,364.95	9,287.60	9,180.92	106.68	87.061	
14,400.00	9,060.00	563.00	562.89	115.19	150.23	0.56	705.94	1,364.95	9,329.22	9,220.62	108.59	85.908	
14,500.00	9,060.00	563.00	562.89	117.15	150.23	0.56	705.94	1,364.95	9,371.72	9,261.23	110.49	84.823	
14,600.00	9,060.00	563.00	562.89	119.11	150.23	0.56	705.94	1,364.95	9,415.09	9,302.74	112.35	83.801	
14,700.00	9,060.00	563.00	562.89	121.08	150.23	0.56	705.94	1,364.95	9,459.31	9,345.12	114.19	82.838	
14,800.00	9,060.00	563.00	562.89	123.05	150.23	0.56	705.94	1,364.95	9,504.39	9,388.38	116.00	81.931	
14,900.00	9,060.00	563.00	562.89	125.02	150.23	0.56	705.94	1,364.95	9,550.30	9,432.50	117.79	81.076	
15,000.00	9,060.00	563.00	562.89	126.99	150.23	0.56	705.94	1,364.95	9,597.03	9,477.47	119.56	80.271	
15,100.00	9,060.00	563.00	562.89	128.97	150.23	0.56	705.94	1,364.95	9,644.57	9,523.27	121.30	79.512	
15,200.00	9,060.00	563.00	562.89	130.95	150.23	0.56	705.94	1,364.95	9,692.91	9,569.90	123.01	78.797	
15,300.00	9,060.00	563.00	562.89	132.93	150.23	0.56	705.94	1,364.95	9,742.03	9,617.33	124.70	78.125	
15,400.00	9,060.00	563.00	562.89	134.91	150.23	0.56	705.94	1,364.95	9,791.93	9,665.57	126.36	77.491	
15,500.00	9,060.00	563.00	562.89	136.89	150.23	0.56	705.94	1,364.95	9,842.60	9,714.60	128.00	76.895	
15,600.00	9,060.00	563.00	562.89	138.88	150.23	0.56	705.94	1,364.95	9,894.01	9,764.40	129.61	76.335	
15,700.00	9,060.00	563.00	562.89	140.86	150.23	0.56	705.94	1,364.95	9,946.17	9,814.97	131.20	75.808	
15,800.00	9,060.00	563.00	562.89	142.85	150.23	0.56	705.94	1,364.95	9,999.05	9,866.29	132.77	75.314	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

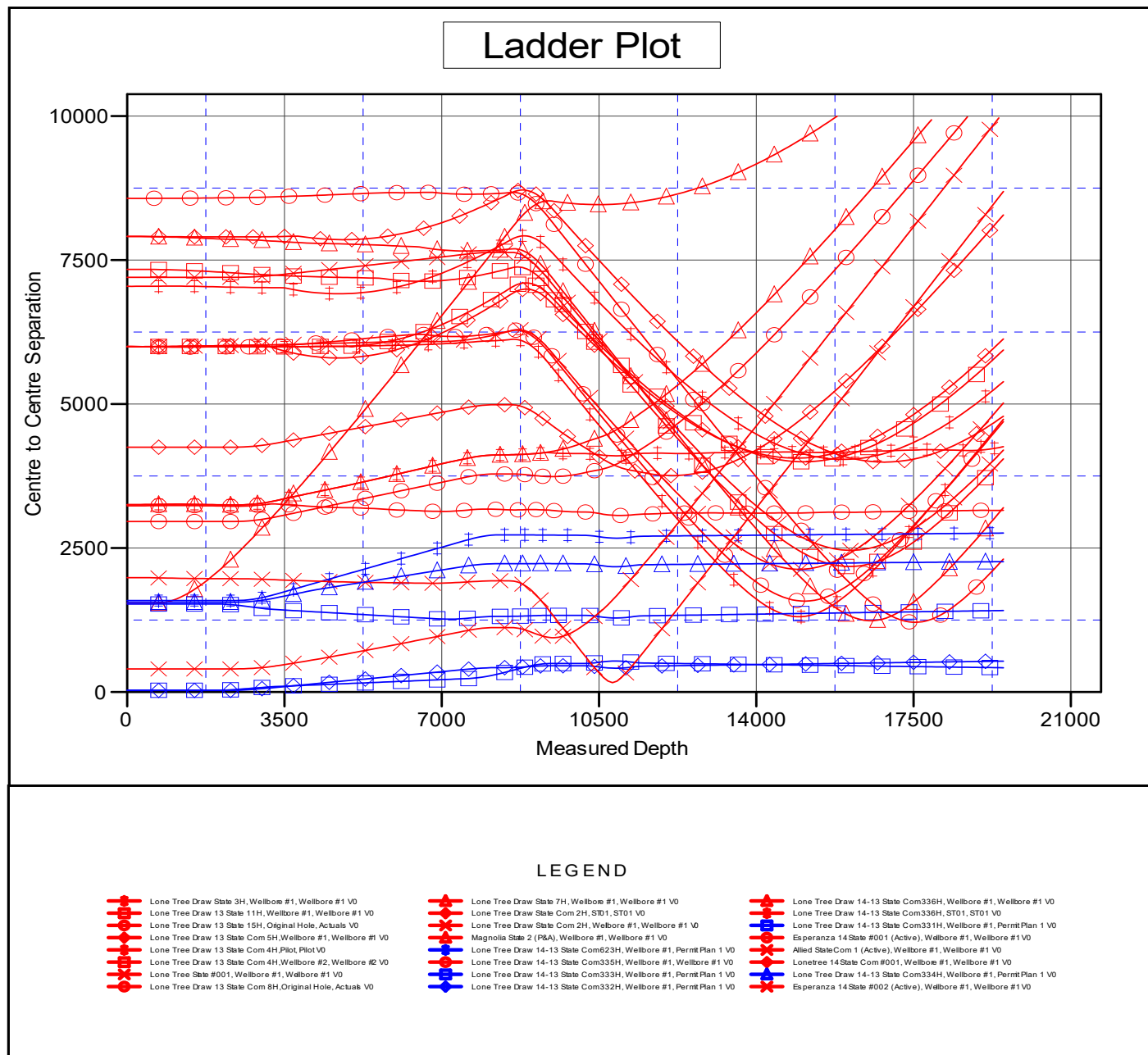
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

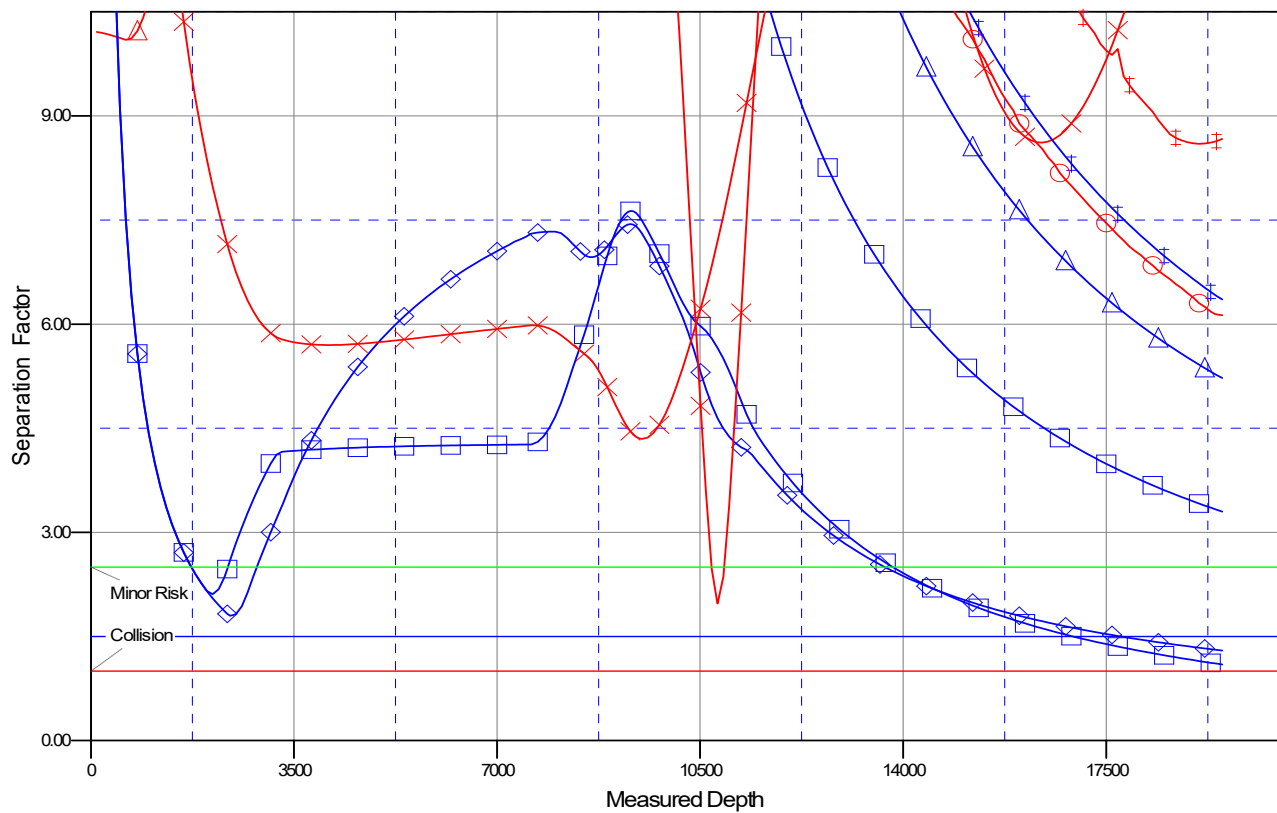
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

Lone Tree Draw State 3H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw State 7H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 336H, Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State 11H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw State Com 2H, ST01, ST01 V0	Lone Tree Draw 14-13 State Com 336H, ST01, ST01 V0
Lone Tree Draw 13 State 15H, Original Hole, Actual V0	Lone Tree Draw State Com 2H, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 331H, Wellbore #1, Permit Plan 1 V0
Lone Tree Draw 13 State Com 5H, Wellbore #1, Wellbore #1 V0	Magnolia State 2 (P&A), Wellbore #1, Wellbore #1 V0	Esperanza 14 State #001 (Active), Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State Com 4H, Wellbore #2, Wellbore #2 V0	Lone Tree Draw 14-13 State Com 623H, Wellbore #1, Permit Plan 1 V0	Allied State Com 1 (Active), Wellbore #1, Wellbore #1 V0
Lone Tree State #001, Wellbore #1, Wellbore #1 V0	Lone Tree Draw 14-13 State Com 335H, Wellbore #1, Wellbore #1 V0	Lone Tree 14 State Com #001, Wellbore #1, Wellbore #1 V0
Lone Tree Draw 13 State Com 8H, Original Hole, Actual V0	Lone Tree Draw 14-13 State Com 333H, Wellbore #1, Permit Plan 1 V0	Lone Tree Draw 14-13 State Com 334H, Wellbore #1, Permit Plan 1 V0
	Lone Tree Draw 14-13 State Com 332H, Wellbore #1, Permit Plan 1 V0	Esperanza 14 State #002 (Active), Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 14-T21S-R27E

Lone Tree Draw 14-13 State Com 621H

Wellbore #1

Permit Plan 1

Anticollision Report

09 October, 2019

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/9/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	10,202.00	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1	

Summary							
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning	
Offset Well - Wellbore - Design	Depth (ft)	Depth (ft)	Between Centres (ft)	Between Ellipses (ft)			
Sec 13-T21S-R27E							
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,078.39	7,144.21	2,180.93	2,111.00	31.187	CC	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,100.00	7,144.60	2,181.03	2,110.90	31.100	ES	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	18,800.00	18,800.00	3,484.32	3,277.00	16.807	SF	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,076.58	7,846.67	1,578.35	1,514.57	24.745	CC	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,100.00	7,846.77	1,578.53	1,514.54	24.668	ES	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,400.00	7,848.11	1,611.15	1,544.67	24.237	SF	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	14,947.33	7,876.00	1,308.17	1,208.20	13.086	CC, ES	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	15,100.00	7,876.00	1,317.04	1,215.39	12.956	SF	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	14,700.00	14,700.00	4,014.52	3,917.67	41.451	ES	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	15,049.69	5,518.72	3,999.58	3,939.99	67.123	CC	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	16,200.00	16,200.00	4,156.76	4,017.05	29.754	SF	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,500.00	16,500.00	4,007.79	3,885.35	32.731	ES	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,851.53	5,617.15	3,992.48	3,918.98	54.318	CC	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	19,300.00	19,300.00	4,682.49	4,499.03	25.524	SF	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,535.31	8,227.17	1,210.78	1,133.15	15.595	CC, ES	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,800.00	8,230.79	1,239.37	1,158.34	15.294	SF	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	15,934.02	5,613.24	4,040.53	3,973.72	60.480	CC	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	16,000.00	5,612.84	4,041.06	3,973.71	59.998	ES	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	17,400.00	5,603.40	4,298.24	4,220.35	55.178	SF	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,548.74	8,502.69	1,238.31	1,161.67	16.157	CC, ES	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,700.00	8,501.71	1,247.52	1,169.35	15.959	SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,700.00	14,700.00	4,065.55	3,965.43	40.607	ES, SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,902.86	5,289.29	4,061.93	4,004.03	70.147	CC	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	14,956.60	6,978.42	2,130.71	2,053.33	27.538	CC, ES	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	15,400.00	6,978.42	2,176.35	2,094.83	26.695	SF	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,096.85	8,967.40	2,461.55	2,178.65	8.701	CC	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,100.00	8,967.40	2,461.55	2,178.59	8.699	ES	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,400.00	8,967.40	2,480.14	2,192.28	8.616	SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 14-T21S-R27E						
Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1	10,802.18	9,033.89	162.61	80.28	1.975	Minor Risk, CC, ES, SF
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,350.00	2,328.40	2,961.62	2,918.68	68.971	CC
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,500.00	2,478.38	2,963.57	2,917.84	64.817	ES
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	10,700.00	9,038.40	3,898.38	3,716.42	21.424	SF
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,350.00	2,325.40	401.35	345.23	7.152	CC
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,600.00	2,575.32	404.62	342.66	6.530	ES
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	9,500.00	9,035.40	944.55	727.25	4.347	Alert, SF
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	2,000.00	2,000.70	30.02	16.09	2.155	Minor Risk, CC, ES
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	19,500.32	19,325.89	422.06	37.23	1.097	Major Risk, SF
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,350.00	2,349.40	29.99	13.56	1.826	Minor Risk, CC
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,400.00	2,400.60	30.20	13.41	1.799	Minor Risk, ES
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	19,500.32	19,285.26	537.29	123.25	1.298	Major Risk, SF
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	7,162.27	7,392.62	1,265.14	1,212.34	23.958	CC
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	19,500.32	19,312.03	1,415.97	986.74	3.299	Alert, ES, SF
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,350.00	2,338.90	1,558.66	1,542.27	95.093	CC
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,400.00	2,388.90	1,558.87	1,542.12	93.075	ES
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	19,500.32	19,294.07	2,264.39	1,831.03	5.225	SF
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	10,978.08	10,835.72	3,065.19	2,946.70	25.868	CC
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,400.00	19,158.00	3,154.13	2,640.49	6.141	ES
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,500.32	19,158.00	3,156.57	2,641.39	6.127	SF
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	19,100.00	19,172.00	4,208.36	3,718.97	8.599	SF
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	11,600.00	8,813.68	4,938.33	4,853.24	58.034	SF
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,350.00	2,338.30	1,588.67	1,572.28	96.937	CC
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,400.00	2,388.30	1,588.88	1,572.13	94.879	ES
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	19,500.32	19,456.84	2,760.09	2,325.81	6.355	SF
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,118.35	8,999.40	3,758.23	3,551.88	18.212	CC
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,200.00	8,999.40	3,759.12	3,551.28	18.087	ES
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	13,100.00	8,999.40	3,884.32	3,662.12	17.481	SF
Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1	600.00	566.40	1,536.70	1,384.48	10.095	CC, ES, SF

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1		Offset Site Error:		5.00 ft	
Survey Program:													111-GYRO-NS-CT, 6243-MWD+HDGM		Offset Well Error:		0.50 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor						
	0.00	0.00	0.00	0.00	0.50	5.02	77.58	1,577.86	7,166.10	7,338.08								
	100.00	100.00	20.86	20.86	0.52	5.03	77.58	1,577.86	7,166.12	7,337.78	7,332.24	5.54	1,323.845					
	200.00	200.00	87.28	87.28	0.70	5.03	77.58	1,577.86	7,166.37	7,338.15	7,332.43	5.73	1,280.996					
	300.00	300.00	300.00	198.29	0.99	5.09	77.58	1,577.85	7,166.94	7,338.65	7,332.57	6.08	1,207.491					
	400.00	400.00	267.96	267.96	1.31	5.07	77.59	1,577.60	7,167.35	7,339.20	7,332.81	6.38	1,149.847					
	500.00	500.00	544.17	544.09	1.65	5.30	77.63	1,571.87	7,168.17	7,339.35	7,332.41	6.94	1,056.814					
	600.00	600.00	635.07	634.96	1.99	5.41	77.65	1,569.72	7,167.19	7,337.81	7,330.41	7.40	991.654					
	700.00	700.00	737.48	737.33	2.34	5.56	77.66	1,567.30	7,166.34	7,336.49	7,328.59	7.89	929.614					
	800.00	800.00	843.87	843.69	2.69	5.73	77.68	1,564.85	7,165.19	7,334.94	7,326.53	8.41	871.888					
	900.00	900.00	950.34	950.13	3.04	5.92	77.70	1,562.57	7,164.00	7,333.39	7,324.43	8.95	819.030					
	1,000.00	1,000.00	1,056.44	1,056.20	3.40	6.12	77.71	1,560.48	7,162.65	7,331.72	7,322.21	9.51	770.788					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,100.00	1,100.00	1,229.98	1,229.68	3.75	6.49	77.73	1,556.68	7,159.52	7,329.48	7,319.25	10.23	716.304		
1,200.00	1,200.00	1,396.95	1,396.54	4.11	6.89	77.75	1,553.19	7,154.83	7,326.27	7,315.30	10.97	667.835		
1,300.00	1,300.00	1,509.37	1,508.87	4.46	7.17	77.76	1,550.74	7,151.04	7,322.51	7,310.91	11.60	631.262		
1,400.00	1,400.00	1,615.58	1,614.98	4.82	7.45	77.78	1,548.17	7,147.44	7,318.68	7,306.46	12.23	598.642		
1,500.00	1,500.00	1,696.88	1,696.22	5.18	7.67	77.79	1,546.36	7,144.70	7,314.92	7,302.13	12.79	571.703		
1,600.00	1,600.00	1,787.61	1,786.88	5.53	7.92	77.80	1,544.44	7,141.84	7,311.39	7,297.99	13.39	545.852		
1,700.00	1,700.00	1,873.17	1,872.38	5.89	8.16	77.81	1,542.51	7,139.26	7,307.97	7,293.99	13.99	522.532		
1,800.00	1,800.00	2,046.34	2,045.39	6.25	8.66	77.84	1,537.69	7,133.65	7,304.25	7,289.42	14.83	492.610		
1,900.00	1,900.00	2,179.39	2,178.25	6.61	9.07	77.87	1,532.31	7,128.71	7,299.78	7,284.21	15.57	468.768		
2,000.00	2,000.00	2,280.94	2,279.63	6.96	9.39	77.89	1,528.35	7,124.59	7,294.99	7,278.76	16.23	449.425		
2,100.00	2,100.00	2,383.19	2,381.72	7.32	9.71	77.92	1,524.40	7,120.44	7,290.21	7,273.31	16.90	431.433		
2,200.00	2,200.00	2,503.48	2,501.81	7.68	10.10	77.94	1,520.11	7,115.17	7,285.16	7,267.54	17.62	413.455		
2,300.00	2,300.00	2,581.66	2,579.87	8.04	10.35	77.96	1,517.21	7,111.84	7,280.22	7,262.00	18.22	399.561		
2,350.00	2,350.00	2,617.61	2,615.76	8.22	10.47	77.97	1,515.77	7,110.42	7,277.88	7,259.36	18.51	393.132		
2,400.00	2,400.00	2,653.55	2,651.65	8.39	10.59	94.04	1,514.28	7,109.09	7,275.64	7,256.84	18.80	386.906		
2,500.00	2,499.98	2,802.17	2,800.03	8.75	11.08	94.14	1,508.24	7,103.21	7,271.05	7,251.43	19.63	370.482		
2,600.00	2,599.92	2,906.94	2,904.62	9.11	11.43	94.24	1,504.36	7,098.49	7,266.13	7,245.81	20.31	357.693		
2,700.00	2,699.78	2,987.86	2,985.41	9.47	11.70	94.34	1,501.43	7,094.94	7,261.49	7,240.56	20.93	346.944		
2,800.00	2,799.54	3,074.77	3,072.18	9.82	12.00	94.45	1,498.04	7,091.46	7,257.28	7,235.71	21.57	336.513		
2,900.00	2,899.16	3,191.60	3,188.84	10.18	12.39	94.59	1,493.95	7,086.56	7,253.12	7,230.83	22.30	325.294		
3,000.00	2,998.61	3,287.64	3,284.74	10.54	12.72	94.73	1,490.83	7,082.33	7,248.99	7,226.02	22.96	315.667		
3,100.00	3,097.86	3,392.84	3,389.78	10.89	13.08	94.89	1,487.31	7,077.82	7,245.11	7,221.44	23.66	306.193		
3,200.00	3,196.89	3,495.46	3,492.24	11.25	13.43	95.06	1,484.12	7,073.20	7,241.24	7,216.89	24.35	297.346		
3,295.74	3,291.45	3,589.26	3,585.91	11.59	13.76	95.23	1,481.38	7,068.94	7,237.73	7,212.73	25.00	289.486		
3,300.00	3,295.65	3,593.45	3,590.09	11.61	13.77	95.23	1,481.25	7,068.75	7,237.58	7,212.55	25.03	289.145		
3,400.00	3,394.29	3,691.98	3,688.48	11.97	14.11	95.37	1,478.53	7,064.26	7,234.04	7,208.32	25.71	281.342		
3,500.00	3,492.94	3,779.79	3,776.18	12.33	14.42	95.50	1,476.32	7,060.26	7,230.60	7,204.23	26.36	274.281		
3,600.00	3,591.58	3,879.23	3,875.48	12.69	14.76	95.64	1,473.99	7,055.79	7,227.29	7,200.24	27.05	267.184		
3,700.00	3,690.22	3,971.12	3,967.26	13.05	15.08	95.77	1,472.17	7,051.61	7,224.04	7,196.32	27.72	260.654		
3,800.00	3,788.86	4,059.29	4,055.33	13.41	15.38	95.89	1,470.26	7,047.73	7,220.95	7,192.58	28.37	254.521		
3,900.00	3,887.50	4,152.15	4,148.08	13.77	15.70	96.02	1,468.41	7,043.74	7,218.02	7,188.98	29.04	248.535		
4,000.00	3,986.14	4,239.09	4,234.93	14.14	15.99	96.13	1,467.75	7,039.89	7,215.23	7,185.54	29.69	242.988		
4,100.00	4,084.78	4,312.26	4,308.03	14.50	16.24	96.22	1,468.13	7,036.65	7,212.71	7,182.41	30.30	238.033		
4,200.00	4,183.42	4,387.80	4,383.50	14.87	16.48	96.30	1,469.34	7,033.51	7,210.64	7,179.72	30.92	233.228		
4,300.00	4,282.06	4,300.00	4,537.73	15.24	16.20	96.47	1,472.32	7,026.45	7,208.23	7,177.24	30.99	232.591		
4,400.00	4,380.70	4,617.85	4,613.24	15.60	17.24	96.55	1,473.89	7,022.64	7,205.52	7,173.11	32.40	222.358		
4,500.00	4,479.34	4,670.64	4,665.98	15.97	17.41	96.61	1,474.47	7,020.50	7,203.53	7,170.58	32.95	218.612		
4,600.00	4,577.98	4,733.98	4,729.28	16.34	17.63	96.69	1,474.61	7,018.35	7,202.12	7,168.59	33.53	214.783		
4,700.00	4,676.62	4,857.25	4,852.49	16.71	18.04	96.86	1,473.55	7,014.49	7,200.80	7,166.49	34.31	209.866		
4,800.00	4,775.27	4,934.46	4,929.66	17.08	18.31	96.96	1,472.82	7,012.10	7,199.55	7,164.61	34.94	206.049		
4,900.00	4,873.91	5,047.59	5,042.73	17.45	18.69	97.11	1,471.23	7,008.74	7,198.39	7,162.70	35.69	201.687		
5,000.00	4,972.55	5,151.53	5,146.61	17.82	19.05	97.25	1,469.97	7,005.42	7,197.08	7,160.67	36.41	197.661		
5,100.00	5,071.19	5,276.24	5,271.23	18.19	19.47	97.41	1,470.31	7,001.04	7,195.76	7,158.57	37.20	193.445		
5,200.00	5,169.83	5,428.22	5,423.05	18.56	19.99	97.58	1,472.22	6,994.19	7,193.53	7,155.46	38.07	188.941		
5,300.00	5,268.47	5,484.17	5,478.94	18.93	20.18	97.65	1,472.58	6,991.77	7,191.50	7,152.87	38.64	186.133		
5,400.00	5,367.11	5,576.08	5,570.79	19.31	20.49	97.76	1,472.88	6,988.24	7,189.93	7,150.61	39.32	182.867		
5,500.00	5,465.75	5,668.21	5,662.84	19.68	20.81	97.87	1,473.68	6,984.61	7,188.38	7,148.38	40.00	179.707		
5,600.00	5,564.39	5,759.50	5,754.05	20.05	21.11	97.97	1,475.26	6,981.02	7,186.99	7,146.31	40.68	176.666		
5,700.00	5,663.03	5,850.00	5,845.53	20.42	22.73	99.76	1,374.82	6,922.56	7,178.73	7,136.31	42.42	169.212		
5,800.00	5,761.67	6,626.00	6,588.32	20.80	22.75	99.93	1,356.23	6,921.70	7,168.43	7,125.57	42.86	167.249		
5,900.00	5,860.31	6,626.00	6,588.32	21.17	22.75	99.93	1,356.23	6,921.70	7,159.32	7,116.04	43.28	165.416		
6,000.00	5,958.96	6,640.99	6,599.90	21.54	22.76	100.02	1,346.71	6,921.59	7,151.49	7,107.79	43.70	163.632		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,100.00	6,057.60	6,658.00	6,612.69	21.92	22.77	100.13	1,335.50	6,921.75	7,145.00	7,100.87	44.13	161.922		
6,200.00	6,156.24	6,658.00	6,612.69	22.29	22.77	100.13	1,335.50	6,921.75	7,139.77	7,095.24	44.53	160.337		
6,300.00	6,254.88	6,677.81	6,627.07	22.67	22.79	100.26	1,321.88	6,922.26	7,135.83	7,090.89	44.95	158.760		
6,400.00	6,353.52	6,689.00	6,634.91	23.04	22.80	100.33	1,313.91	6,922.67	7,133.18	7,087.83	45.35	157.288		
6,500.00	6,452.16	6,710.03	6,649.20	23.42	22.81	100.47	1,298.52	6,923.62	7,131.79	7,086.03	45.76	155.837		
6,559.26	6,510.61	6,721.00	6,656.44	23.64	22.82	100.54	1,290.30	6,924.20	7,131.57	7,085.57	46.01	155.017		
6,600.00	6,550.80	6,721.00	6,656.44	23.79	22.82	100.54	1,290.30	6,924.20	7,131.69	7,085.53	46.16	154.502		
6,700.00	6,649.44	6,740.07	6,668.69	24.17	22.84	100.68	1,275.73	6,925.34	7,132.87	7,086.31	46.56	153.186		
6,800.00	6,748.08	6,766.15	6,684.75	24.54	22.86	100.86	1,255.26	6,927.13	7,135.36	7,088.38	46.98	151.889		
6,900.00	6,846.72	6,799.33	6,703.97	24.92	22.90	101.10	1,228.32	6,929.48	7,138.97	7,091.57	47.41	150.588		
7,000.00	6,945.36	6,816.00	6,713.08	25.29	22.92	101.22	1,214.42	6,930.74	7,143.88	7,096.08	47.80	149.456		
7,100.00	7,044.00	6,827.76	6,719.29	25.67	22.93	101.31	1,204.47	6,931.68	7,150.11	7,101.93	48.18	148.415		
7,200.00	7,142.65	6,847.00	6,729.03	26.04	22.96	101.45	1,187.96	6,933.32	7,157.68	7,109.11	48.57	147.379		
7,300.00	7,241.29	6,847.00	6,729.03	26.42	22.96	101.45	1,187.96	6,933.32	7,166.56	7,117.66	48.90	146.557		
7,400.00	7,339.93	6,859.95	6,735.31	26.79	22.97	101.55	1,176.69	6,934.48	7,176.78	7,127.51	49.26	145.685		
7,500.00	7,438.57	6,878.00	6,743.75	27.17	23.00	101.69	1,160.83	6,936.17	7,188.34	7,138.71	49.63	144.829		
7,571.77	7,509.37	6,878.00	6,743.75	27.44	23.00	101.69	1,160.83	6,936.17	7,197.44	7,147.58	49.86	144.362		
7,600.00	7,537.23	6,880.81	6,745.02	27.55	23.01	101.76	1,158.35	6,936.44	7,201.19	7,151.23	49.95	144.160		
7,700.00	7,636.18	6,904.17	6,755.34	27.92	23.05	102.15	1,137.50	6,938.67	7,214.94	7,164.61	50.33	143.356		
7,800.00	7,735.48	6,910.00	6,757.82	28.29	23.06	102.41	1,132.26	6,939.22	7,229.43	7,178.79	50.64	142.775		
7,900.00	7,835.05	6,926.62	6,764.65	28.65	23.09	102.76	1,117.19	6,940.82	7,244.65	7,193.68	50.97	142.134		
8,000.00	7,934.83	6,942.00	6,770.61	29.01	23.13	103.11	1,103.09	6,942.34	7,260.62	7,209.33	51.29	141.563		
8,100.00	8,034.74	6,948.49	6,773.01	29.36	23.14	103.40	1,097.10	6,942.99	7,277.29	7,225.72	51.57	141.128		
8,202.27	8,137.00	6,965.52	6,778.96	29.72	23.19	87.76	1,081.23	6,944.66	7,295.03	7,243.15	51.88	140.624		
8,300.00	8,234.73	6,973.00	6,781.41	30.06	23.21	87.81	1,074.20	6,945.38	7,312.91	7,260.78	52.13	140.285		
8,400.00	8,334.73	6,973.00	6,781.41	30.41	23.21	87.81	1,074.20	6,945.38	7,332.50	7,280.15	52.35	140.064		
8,500.00	8,434.73	6,987.70	6,786.01	30.75	23.25	87.92	1,060.31	6,946.83	7,353.32	7,300.70	52.63	139.721		
8,552.31	8,487.04	6,990.62	6,786.90	30.94	23.26	87.94	1,057.54	6,947.12	7,364.74	7,311.99	52.75	139.613		
8,600.00	8,534.68	7,005.00	6,791.14	31.10	23.31	-1.58	1,043.89	6,948.64	7,373.56	7,320.65	52.90	139.375		
8,650.00	8,584.26	7,005.00	6,791.14	31.26	23.31	-1.57	1,043.89	6,948.64	7,378.83	7,325.84	52.99	139.242		
8,700.00	8,633.10	7,005.00	6,791.14	31.43	23.31	-1.56	1,043.89	6,948.64	7,380.09	7,327.01	53.08	139.048		
8,750.00	8,680.83	7,005.00	6,791.14	31.58	23.31	-1.57	1,043.89	6,948.64	7,377.33	7,324.18	53.15	138.795		
8,800.00	8,727.09	7,005.00	6,791.14	31.74	23.31	-1.59	1,043.89	6,948.64	7,370.57	7,317.34	53.22	138.489		
8,850.00	8,771.52	7,005.00	6,791.14	31.89	23.31	-1.62	1,043.89	6,948.64	7,359.84	7,306.56	53.28	138.131		
8,900.00	8,813.78	7,005.00	6,791.14	32.04	23.31	-1.66	1,043.89	6,948.64	7,345.21	7,291.88	53.33	137.725		
8,950.00	8,853.56	7,005.00	6,791.14	32.18	23.31	-1.72	1,043.89	6,948.64	7,326.78	7,273.40	53.37	137.274		
9,000.00	8,890.55	7,005.00	6,791.14	32.32	23.31	-1.80	1,043.89	6,948.64	7,304.64	7,251.24	53.40	136.779		
9,050.00	8,924.46	7,005.00	6,791.14	32.47	23.31	-1.90	1,043.89	6,948.64	7,278.94	7,225.52	53.43	136.244		
9,100.00	8,955.05	7,018.98	6,794.98	32.63	23.35	-1.88	1,030.54	6,950.17	7,249.76	7,196.26	53.50	135.508		
9,150.00	8,982.08	7,020.95	6,795.50	32.79	23.36	-2.01	1,028.65	6,950.39	7,217.41	7,163.90	53.51	134.875		
9,200.00	9,005.34	7,022.78	6,795.97	32.97	23.37	-2.17	1,026.90	6,950.60	7,182.04	7,128.53	53.51	134.208		
9,250.00	9,024.65	7,036.00	6,799.19	33.17	23.42	-2.24	1,014.16	6,952.08	7,143.93	7,090.37	53.56	133.382		
9,300.00	9,039.87	7,036.00	6,799.19	33.38	23.42	-2.54	1,014.16	6,952.08	7,103.22	7,049.67	53.54	132.670		
9,350.00	9,050.89	7,036.00	6,799.19	33.62	23.42	-2.94	1,014.16	6,952.08	7,060.22	7,006.71	53.52	131.926		
9,400.00	9,057.61	7,036.00	6,799.19	33.87	23.42	-3.52	1,014.16	6,952.08	7,015.25	6,961.76	53.49	131.154		
9,452.31	9,060.00	7,036.00	6,799.19	34.15	23.42	-4.47	1,014.16	6,952.08	6,966.41	6,912.95	53.46	130.314		
9,500.00	9,060.00	7,036.00	6,799.19	34.42	23.42	-4.47	1,014.16	6,952.08	6,921.17	6,867.74	53.43	129.540		
9,600.00	9,060.00	7,036.00	6,799.19	35.09	23.42	-4.47	1,014.16	6,952.08	6,826.43	6,773.07	53.36	127.929		
9,700.00	9,060.00	7,036.00	6,799.19	35.86	23.42	-4.47	1,014.16	6,952.08	6,731.84	6,678.54	53.29	126.314		
9,800.00	9,060.00	7,036.00	6,799.19	36.72	23.42	-4.47	1,014.16	6,952.08	6,637.40	6,584.17	53.23	124.696		
9,900.00	9,060.00	7,036.00	6,799.19	37.69	23.42	-4.47	1,014.16	6,952.08	6,543.13	6,489.97	53.16	123.076		
10,000.00	9,060.00	7,036.00	6,799.19	38.73	23.42	-4.47	1,014.16	6,952.08	6,449.04	6,395.94	53.10	121.452		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,100.00	9,060.00	7,036.00	6,799.19	39.86	23.42	-4.47	1,014.16	6,952.08	6,355.12	6,302.08	53.04	119.826	
10,140.22	9,060.00	7,036.00	6,799.19	40.33	23.42	-4.47	1,014.16	6,952.08	6,317.40	6,264.38	53.01	119.170	
10,200.00	9,060.00	7,036.00	6,799.19	41.05	23.42	-7.65	1,014.16	6,952.08	6,261.41	6,208.44	52.97	118.196	
10,300.00	9,060.00	7,036.00	6,799.19	42.31	23.42	-12.77	1,014.16	6,952.08	6,168.06	6,115.15	52.92	116.564	
10,400.00	9,060.00	7,036.00	6,799.19	43.64	23.42	-17.60	1,014.16	6,952.08	6,075.21	6,022.35	52.86	114.929	
10,507.23	9,060.00	7,036.00	6,799.19	45.11	23.42	-22.39	1,014.16	6,952.08	5,976.36	5,923.55	52.81	113.167	
10,600.00	9,060.00	7,051.56	6,802.52	46.43	23.48	-18.01	999.07	6,953.89	5,890.95	5,838.10	52.84	111.483	
10,700.00	9,060.00	7,054.06	6,803.01	47.91	23.49	-13.40	996.63	6,954.19	5,798.83	5,746.01	52.81	109.799	
10,800.00	9,060.00	7,068.00	6,805.46	49.42	23.54	-8.40	983.02	6,955.88	5,706.74	5,653.91	52.83	108.019	
10,900.00	9,060.00	7,068.00	6,805.46	50.97	23.54	-3.68	983.02	6,955.88	5,614.59	5,561.80	52.79	106.362	
11,000.00	9,060.00	7,068.00	6,805.46	52.55	23.54	1.00	983.02	6,955.88	5,522.63	5,469.89	52.74	104.711	
11,100.00	9,060.00	7,068.00	6,805.46	54.14	23.54	5.57	983.02	6,955.88	5,430.97	5,378.28	52.69	103.070	
11,207.23	9,060.00	7,068.00	6,805.46	55.87	23.54	10.29	983.02	6,955.88	5,333.19	5,280.55	52.64	101.320	
11,300.00	9,060.00	7,068.00	6,805.46	57.39	23.54	6.30	983.02	6,955.88	5,248.89	5,196.30	52.59	99.803	
11,400.00	9,060.00	7,068.00	6,805.46	59.06	23.54	2.01	983.02	6,955.88	5,158.20	5,105.65	52.55	98.153	
11,506.63	9,060.00	7,068.00	6,805.46	60.88	23.54	-2.50	983.02	6,955.88	5,061.82	5,009.30	52.52	96.379	
11,600.00	9,060.00	7,068.00	6,805.46	62.49	23.54	-2.50	983.02	6,955.88	4,977.79	4,925.29	52.50	94.819	
11,700.00	9,060.00	7,068.00	6,805.46	64.24	23.54	-2.50	983.02	6,955.88	4,888.17	4,835.69	52.48	93.145	
11,800.00	9,060.00	7,068.00	6,805.46	66.01	23.54	-2.50	983.02	6,955.88	4,798.95	4,746.49	52.47	91.466	
11,900.00	9,060.00	7,068.00	6,805.46	67.79	23.54	-2.50	983.02	6,955.88	4,710.17	4,657.71	52.46	89.784	
12,000.00	9,060.00	7,068.00	6,805.46	69.58	23.54	-2.50	983.02	6,955.88	4,621.85	4,569.39	52.46	88.098	
12,100.00	9,060.00	7,068.00	6,805.46	71.39	23.54	-2.50	983.02	6,955.88	4,534.01	4,481.54	52.47	86.409	
12,200.00	9,060.00	7,068.00	6,805.46	73.21	23.54	-2.50	983.02	6,955.88	4,446.69	4,394.20	52.49	84.716	
12,300.00	9,060.00	7,068.00	6,805.46	75.05	23.54	-2.50	983.02	6,955.88	4,359.91	4,307.39	52.52	83.019	
12,400.00	9,060.00	7,068.00	6,805.46	76.89	23.54	-2.50	983.02	6,955.88	4,273.71	4,221.15	52.56	81.318	
12,500.00	9,060.00	7,068.00	6,805.46	78.74	23.54	-2.50	983.02	6,955.88	4,188.12	4,135.52	52.60	79.615	
12,600.00	9,060.00	7,068.00	6,805.46	80.61	23.54	-2.50	983.02	6,955.88	4,103.19	4,050.52	52.67	77.908	
12,700.00	9,060.00	7,081.21	6,807.34	82.48	23.60	-2.16	970.04	6,957.51	4,018.81	3,966.03	52.78	76.146	
12,800.00	9,060.00	7,082.85	6,807.54	84.36	23.61	-2.12	968.43	6,957.70	3,935.26	3,882.39	52.87	74.432	
12,900.00	9,060.00	7,084.48	6,807.73	86.24	23.62	-2.07	966.82	6,957.90	3,852.50	3,799.52	52.98	72.719	
13,000.00	9,060.00	7,086.10	6,807.91	88.14	23.62	-2.03	965.22	6,958.10	3,770.56	3,717.46	53.10	71.005	
13,100.00	9,060.00	7,099.00	6,809.13	90.04	23.68	-1.70	952.48	6,959.66	3,689.63	3,636.36	53.27	69.266	
13,200.00	9,060.00	7,099.00	6,809.13	91.94	23.68	-1.70	952.48	6,959.66	3,609.50	3,556.07	53.42	67.562	
13,300.00	9,060.00	7,099.00	6,809.13	93.86	23.68	-1.70	952.48	6,959.66	3,530.38	3,476.78	53.60	65.861	
13,400.00	9,060.00	7,099.00	6,809.13	95.77	23.68	-1.70	952.48	6,959.66	3,452.35	3,398.54	53.81	64.164	
13,500.00	9,060.00	7,099.00	6,809.13	97.70	23.68	-1.70	952.48	6,959.66	3,375.48	3,321.45	54.03	62.472	
13,600.00	9,060.00	7,099.00	6,809.13	99.62	23.68	-1.70	952.48	6,959.66	3,299.84	3,245.56	54.28	60.789	
13,700.00	9,060.00	7,099.00	6,809.13	101.56	23.68	-1.70	952.48	6,959.66	3,225.54	3,170.97	54.56	59.115	
13,800.00	9,060.00	7,099.00	6,809.13	103.49	23.68	-1.70	952.48	6,959.66	3,152.65	3,097.78	54.87	57.453	
13,900.00	9,060.00	7,099.00	6,809.13	105.43	23.68	-1.70	952.48	6,959.66	3,081.29	3,026.08	55.21	55.807	
14,000.00	9,060.00	7,099.00	6,809.13	107.38	23.68	-1.70	952.48	6,959.66	3,011.56	2,955.97	55.58	54.180	
14,100.00	9,060.00	7,099.00	6,809.13	109.33	23.68	-1.70	952.48	6,959.66	2,943.57	2,887.58	55.99	52.575	
14,200.00	9,060.00	7,099.00	6,809.13	111.28	23.68	-1.70	952.48	6,959.66	2,877.45	2,821.03	56.43	50.996	
14,300.00	9,060.00	7,110.67	6,809.88	113.23	23.74	-1.40	940.91	6,961.01	2,813.23	2,756.35	56.89	49.453	
14,400.00	9,060.00	7,112.84	6,809.99	115.19	23.75	-1.34	938.76	6,961.25	2,751.21	2,693.82	57.39	47.941	
14,500.00	9,060.00	7,114.95	6,810.09	117.15	23.76	-1.28	936.67	6,961.49	2,691.47	2,633.55	57.92	46.469	
14,600.00	9,060.00	7,116.99	6,810.18	119.11	23.77	-1.23	934.63	6,961.71	2,634.16	2,575.67	58.49	45.040	
14,700.00	9,060.00	7,128.00	6,810.49	121.08	23.82	-0.94	923.69	6,962.86	2,579.52	2,520.45	59.07	43.668	
14,800.00	9,060.00	7,128.00	6,810.49	123.05	23.82	-0.94	923.69	6,962.86	2,527.55	2,467.85	59.70	42.338	
14,900.00	9,060.00	7,128.00	6,810.49	125.02	23.82	-0.94	923.69	6,962.86	2,478.53	2,418.17	60.36	41.063	
15,000.00	9,060.00	7,128.00	6,810.49	126.99	23.82	-0.94	923.69	6,962.86	2,432.63	2,371.58	61.05	39.849	
15,100.00	9,060.00	7,128.00	6,810.49	128.97	23.82	-0.94	923.69	6,962.86	2,390.04	2,328.28	61.76	38.698	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,200.00	9,060.00	7,128.00	6,810.49	130.95	23.82	-0.94	923.69	6,962.86	2,350.93	2,288.43	62.50	37.613	
15,300.00	9,060.00	7,128.00	6,810.49	132.93	23.82	-0.94	923.69	6,962.86	2,315.48	2,252.21	63.27	36.598	
15,400.00	9,060.00	7,128.00	6,810.49	134.91	23.82	-0.94	923.69	6,962.86	2,283.87	2,219.81	64.06	35.654	
15,500.00	9,060.00	7,128.00	6,810.49	136.89	23.82	-0.94	923.69	6,962.86	2,256.24	2,191.37	64.87	34.782	
15,600.00	9,060.00	7,128.00	6,810.49	138.88	23.82	-0.94	923.69	6,962.86	2,232.76	2,167.06	65.70	33.983	
15,700.00	9,060.00	7,128.00	6,810.49	140.86	23.82	-0.94	923.69	6,962.86	2,213.55	2,146.99	66.56	33.256	
15,800.00	9,060.00	7,128.00	6,810.49	142.85	23.82	-0.94	923.69	6,962.86	2,198.73	2,131.29	67.44	32.603	
15,900.00	9,060.00	7,141.03	6,810.58	144.84	23.88	-0.60	910.72	6,964.16	2,188.20	2,119.90	68.30	32.039	
16,000.00	9,060.00	7,142.82	6,810.57	146.83	23.89	-0.55	908.94	6,964.34	2,182.33	2,113.13	69.21	31.533	
16,078.39	9,060.00	7,144.21	6,810.56	148.40	23.90	-0.52	907.56	6,964.48	2,180.93	2,111.00	69.93	31.187 CC	
16,100.00	9,060.00	7,144.60	6,810.56	148.83	23.90	-0.51	907.18	6,964.51	2,181.03	2,110.90	70.13	31.100 ES	
16,200.00	9,060.00	7,146.36	6,810.54	150.82	23.91	-0.46	905.43	6,964.69	2,184.31	2,113.26	71.06	30.741	
16,300.00	9,060.00	7,159.00	6,810.25	152.82	23.98	-0.13	892.84	6,965.91	2,192.27	2,120.31	71.96	30.467	
16,400.00	9,060.00	7,159.00	6,810.25	154.81	23.98	-0.13	892.84	6,965.91	2,204.57	2,131.71	72.86	30.257	
16,500.00	9,060.00	7,159.00	6,810.25	156.81	23.98	-0.13	892.84	6,965.91	2,221.31	2,147.57	73.74	30.124	
16,600.00	9,060.00	7,159.00	6,810.25	158.81	23.98	-0.13	892.84	6,965.91	2,242.39	2,167.81	74.57	30.069	
16,700.00	9,060.00	7,159.00	6,810.25	160.81	23.98	-0.13	892.84	6,965.91	2,267.68	2,192.32	75.36	30.092	
16,800.00	9,060.00	7,159.00	6,810.25	162.81	23.98	-0.13	892.84	6,965.91	2,297.06	2,220.97	76.08	30.191	
16,900.00	9,060.00	7,159.00	6,810.25	164.82	23.98	-0.13	892.84	6,965.91	2,330.36	2,253.61	76.75	30.364	
17,000.00	9,060.00	7,159.00	6,810.25	166.82	23.98	-0.13	892.84	6,965.91	2,367.41	2,290.07	77.34	30.610	
17,100.00	9,060.00	7,159.00	6,810.25	168.82	23.98	-0.13	892.84	6,965.91	2,408.06	2,330.19	77.87	30.925	
17,200.00	9,060.00	7,159.00	6,810.25	170.83	23.98	-0.13	892.84	6,965.91	2,452.10	2,373.78	78.33	31.306	
17,300.00	9,060.00	7,173.69	6,809.72	172.84	24.06	0.25	878.24	6,967.31	2,499.30	2,420.56	78.73	31.743	
17,400.00	9,060.00	7,177.72	6,809.56	174.84	24.08	0.36	874.23	6,967.69	2,549.57	2,470.50	79.08	32.242	
17,500.00	9,060.00	7,181.72	6,809.40	176.85	24.10	0.46	870.24	6,968.07	2,602.71	2,523.35	79.36	32.795	
17,600.00	9,060.00	7,185.71	6,809.23	178.86	24.12	0.57	866.28	6,968.45	2,658.53	2,578.93	79.60	33.400	
17,700.00	9,060.00	7,189.67	6,809.05	180.87	24.14	0.67	862.34	6,968.82	2,716.88	2,637.09	79.78	34.053	
17,800.00	9,060.00	7,193.61	6,808.87	182.88	24.17	0.77	858.42	6,969.19	2,777.59	2,697.66	79.93	34.750	
17,900.00	9,060.00	7,197.52	6,808.68	184.89	24.19	0.88	854.53	6,969.56	2,840.52	2,760.48	80.04	35.489	
18,000.00	9,060.00	7,201.41	6,808.49	186.90	24.21	0.98	850.66	6,969.92	2,905.51	2,825.40	80.11	36.267	
18,100.00	9,060.00	7,205.28	6,808.30	188.92	24.23	1.08	846.81	6,970.28	2,972.44	2,892.28	80.16	37.081	
18,200.00	9,060.00	7,209.13	6,808.10	190.93	24.25	1.18	842.99	6,970.64	3,041.18	2,960.99	80.18	37.928	
18,300.00	9,060.00	7,222.00	6,807.39	192.94	24.33	1.51	830.19	6,971.83	3,111.62	3,031.39	80.24	38.781	
18,400.00	9,060.00	7,222.00	6,807.39	194.96	24.33	1.51	830.19	6,971.83	3,183.60	3,103.41	80.20	39.698	
18,500.00	9,060.00	7,222.00	6,807.39	196.97	24.33	1.51	830.19	6,971.83	3,257.06	3,176.92	80.14	40.642	
18,600.00	9,060.00	7,231.57	6,806.85	198.99	24.38	1.76	820.68	6,972.72	3,331.90	3,251.76	80.14	41.577	
18,700.00	9,060.00	7,520.93	6,806.31	201.00	26.44	9.24	532.99	7,002.09	3,407.68	3,323.16	84.52	40.317	
18,800.00	9,060.00	18,800.00	6,805.17	203.02	281.84	8.44	563.85	6,998.56	3,484.32	3,277.00	207.31	16.807 SF	
18,900.00	9,060.00	18,900.00	6,805.47	205.04	284.28	8.68	554.62	6,999.58	3,562.17	3,352.43	209.75	16.983	
19,000.00	9,060.00	7,525.49	6,806.44	207.06	26.48	9.36	528.46	7,002.59	3,641.00	3,556.74	84.27	43.207	
19,100.00	9,060.00	7,530.63	6,806.62	209.07	26.53	9.49	523.36	7,003.17	3,720.87	3,636.62	84.25	44.163	
19,200.00	9,060.00	7,535.71	6,806.79	211.09	26.57	9.62	518.32	7,003.75	3,801.68	3,717.45	84.23	45.134	
19,300.00	9,060.00	7,540.72	6,806.96	213.11	26.61	9.74	513.34	7,004.31	3,883.37	3,799.17	84.20	46.119	
19,400.00	9,060.00	7,545.66	6,807.12	215.13	26.65	9.87	508.44	7,004.86	3,965.89	3,881.72	84.17	47.115	
19,500.32	9,060.00	7,550.55	6,807.27	217.16	26.69	9.99	503.58	7,005.41	4,049.45	3,965.31	84.14	48.127	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.24	1,120.51	5,898.45	6,004.31					
100.00	100.00	31.15	31.15	0.52	5.00	79.24	1,120.45	5,898.47	6,003.95	5,998.43	5.52	1,088.077		
200.00	200.00	319.08	319.01	0.70	5.08	79.25	1,119.36	5,894.01	6,002.23	5,996.45	5.78	1,037.993		
300.00	300.00	395.00	394.88	0.99	5.14	79.23	1,120.22	5,891.52	5,999.24	5,993.12	6.12	980.126		
400.00	400.00	453.31	453.17	1.31	5.19	79.23	1,120.63	5,890.09	5,996.94	5,990.45	6.49	923.552		
500.00	500.00	535.97	535.82	1.65	5.27	79.22	1,120.98	5,888.49	5,995.11	5,988.20	6.92	866.858		
600.00	600.00	609.42	609.25	1.99	5.36	79.21	1,121.49	5,887.25	5,993.59	5,986.24	7.35	815.566		
700.00	700.00	691.98	691.80	2.34	5.48	79.21	1,122.28	5,886.21	5,992.52	5,984.71	7.81	767.266		
800.00	800.00	793.49	793.30	2.69	5.63	79.19	1,123.29	5,885.02	5,991.57	5,983.25	8.32	720.322		
900.00	900.00	938.15	937.94	3.04	5.89	79.18	1,124.07	5,882.95	5,990.29	5,981.37	8.93	671.134		
1,000.00	1,000.00	1,013.40	1,013.18	3.40	6.04	79.18	1,124.42	5,881.78	5,988.83	5,979.40	9.43	635.326		
1,100.00	1,100.00	1,070.12	1,069.90	3.75	6.15	79.17	1,124.76	5,881.15	5,987.85	5,977.95	9.90	605.055		
1,177.38	1,177.38	1,111.00	1,110.78	4.03	6.24	79.17	1,125.03	5,880.95	5,987.60	5,977.34	10.26	583.772		
1,200.00	1,200.00	1,128.31	1,128.09	4.11	6.27	79.17	1,125.16	5,880.93	5,987.60	5,977.23	10.37	577.215		
1,300.00	1,300.00	1,193.92	1,193.70	4.46	6.41	79.16	1,125.81	5,881.06	5,987.98	5,977.11	10.87	550.929		
1,400.00	1,400.00	1,262.68	1,262.45	4.82	6.56	79.16	1,126.61	5,881.56	5,988.91	5,977.53	11.37	526.529		
1,500.00	1,500.00	1,389.07	1,388.83	5.18	6.85	79.15	1,127.62	5,882.87	5,990.13	5,978.11	12.02	498.415		
1,600.00	1,600.00	1,468.88	1,468.63	5.53	7.04	79.15	1,127.93	5,883.52	5,991.02	5,978.45	12.56	476.866		
1,700.00	1,700.00	1,581.56	1,581.30	5.89	7.31	79.15	1,127.93	5,884.73	5,992.07	5,978.88	13.19	454.124		
1,800.00	1,800.00	1,692.39	1,692.13	6.25	7.59	79.15	1,127.64	5,885.71	5,992.90	5,979.07	13.83	433.247		
1,900.00	1,900.00	1,825.80	1,825.54	6.61	7.94	79.15	1,127.69	5,886.10	5,993.16	5,978.61	14.54	412.074		
2,000.00	2,000.00	1,919.63	1,919.37	6.96	8.20	79.16	1,127.46	5,886.30	5,993.32	5,978.16	15.16	395.428		
2,100.00	2,100.00	2,016.12	2,015.86	7.32	8.47	79.15	1,127.80	5,886.52	5,993.61	5,977.82	15.78	379.737		
2,200.00	2,200.00	2,168.73	2,168.46	7.68	8.91	79.15	1,128.28	5,886.31	5,993.57	5,976.99	16.58	361.495		
2,300.00	2,300.00	2,271.83	2,271.56	8.04	9.21	79.15	1,128.40	5,885.53	5,992.84	5,975.60	17.24	347.632		
2,350.00	2,350.00	2,306.62	2,306.35	8.22	9.31	79.15	1,128.35	5,885.36	5,992.59	5,975.07	17.52	342.048		
2,400.00	2,400.00	2,343.01	2,342.74	8.39	9.42	95.19	1,128.25	5,885.28	5,992.48	5,974.67	17.81	336.560		
2,424.04	2,424.04	2,364.72	2,364.45	8.48	9.48	95.19	1,128.19	5,885.26	5,992.47	5,974.52	17.95	333.764		
2,500.00	2,499.98	2,437.89	2,437.62	8.75	9.69	95.21	1,128.12	5,885.23	5,992.56	5,974.12	18.44	324.972		
2,600.00	2,599.92	2,559.17	2,558.90	9.11	10.06	95.24	1,128.26	5,884.59	5,992.33	5,973.16	19.16	312.718		
2,603.56	2,603.48	2,561.38	2,561.12	9.12	10.07	95.24	1,128.26	5,884.58	5,992.33	5,973.14	19.18	312.401		
2,700.00	2,699.78	2,621.38	2,621.11	9.47	10.25	95.27	1,128.43	5,884.49	5,992.69	5,972.99	19.71	304.070		
2,800.00	2,799.54	2,731.69	2,731.42	9.82	10.43	95.33	1,128.56	5,884.63	5,993.49	5,973.25	20.24	296.054		
2,900.00	2,899.16	2,810.79	2,810.52	10.18	10.46	95.39	1,128.66	5,884.64	5,994.38	5,973.75	20.63	290.563		
3,000.00	2,998.61	2,872.00	2,871.72	10.54	10.47	95.42	1,129.81	5,884.93	5,996.14	5,975.14	20.99	285.604		
3,100.00	3,097.86	2,916.86	2,916.54	10.89	10.48	95.43	1,131.35	5,885.37	5,998.83	5,977.47	21.36	280.845		
3,200.00	3,196.89	2,966.00	2,965.63	11.25	10.50	95.44	1,133.68	5,886.07	6,002.48	5,980.75	21.73	276.284		
3,295.74	3,291.45	3,027.56	3,027.06	11.59	10.52	95.46	1,137.45	5,887.24	6,006.80	5,984.71	22.09	271.936		
3,300.00	3,295.65	3,030.10	3,029.59	11.61	10.52	95.46	1,137.62	5,887.29	6,007.01	5,984.91	22.11	271.748		
3,400.00	3,394.29	3,106.93	3,106.18	11.97	10.56	95.53	1,143.35	5,889.07	6,012.23	5,989.73	22.50	267.235		
3,500.00	3,492.94	3,207.22	3,206.14	12.33	10.62	95.62	1,151.29	5,891.42	6,017.59	5,994.67	22.92	262.564		
3,600.00	3,591.58	3,313.72	3,312.26	12.69	10.70	95.71	1,159.82	5,893.80	6,022.88	5,999.52	23.36	257.834		
3,700.00	3,690.22	3,424.81	3,423.01	13.05	10.80	95.80	1,168.31	5,896.19	6,028.03	6,004.21	23.82	253.060		
3,800.00	3,788.86	3,487.97	3,485.94	13.41	10.86	95.86	1,173.39	5,897.58	6,033.35	6,009.11	24.24	248.873		
3,900.00	3,887.50	3,531.00	3,528.76	13.77	10.91	95.89	1,177.53	5,898.69	6,039.40	6,014.76	24.64	245.086		
4,000.00	3,986.14	3,589.26	3,586.65	14.14	10.98	95.92	1,183.84	5,900.55	6,046.23	6,021.17	25.07	241.188		
4,100.00	4,084.78	3,654.20	3,651.08	14.50	11.07	95.96	1,191.52	5,903.17	6,053.93	6,028.42	25.51	237.331		
4,200.00	4,183.42	3,788.50	3,784.28	14.87	11.26	96.02	1,207.84	5,908.31	6,061.56	6,035.49	26.07	232.486		
4,300.00	4,282.06	3,936.84	3,931.47	15.24	11.51	96.09	1,225.77	5,912.61	6,068.15	6,041.46	26.69	227.369		
4,400.00	4,380.70	4,002.00	3,996.05	15.60	11.62	96.11	1,234.23	5,914.54	6,075.02	6,047.86	27.16	223.655		
4,500.00	4,479.34	4,190.00	4,182.44	15.97	11.99	96.19	1,258.40	5,918.55	6,080.85	6,052.94	27.91	217.886		
4,600.00	4,577.98	4,255.97	4,247.86	16.34	12.13	96.21	1,266.80	5,919.59	6,086.50	6,058.10	28.41	214.244		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
4,700.00	4,676.62	4,369.31	4,360.14	16.71	12.38	96.25	1,282.06	5,922.25	6,092.93	6,063.91	29.03	209.899				
4,800.00	4,775.27	4,418.95	4,409.35	17.08	12.50	96.27	1,288.53	5,923.38	6,099.26	6,069.76	29.50	206.747				
4,900.00	4,873.91	4,472.00	4,461.89	17.45	12.63	96.29	1,295.58	5,925.17	6,106.54	6,076.55	29.98	203.670				
5,000.00	4,972.55	4,534.79	4,524.06	17.82	12.78	96.31	1,304.02	5,927.70	6,114.52	6,084.02	30.49	200.517				
5,100.00	5,071.19	4,678.15	4,666.07	18.19	13.14	96.36	1,322.84	5,933.36	6,122.50	6,091.27	31.23	196.058				
5,200.00	5,169.83	4,724.11	4,711.54	18.56	13.27	96.38	1,329.25	5,935.21	6,130.50	6,098.79	31.71	193.351				
5,300.00	5,268.47	4,815.79	4,802.10	18.93	13.53	96.40	1,343.05	5,939.10	6,139.03	6,106.70	32.32	189.932				
5,400.00	5,367.11	4,970.26	4,954.81	19.31	13.97	96.43	1,365.55	5,944.98	6,147.06	6,113.92	33.14	185.489				
5,500.00	5,465.75	5,104.40	5,087.58	19.68	14.37	96.47	1,384.09	5,949.21	6,154.31	6,120.41	33.90	181.519				
5,600.00	5,564.39	5,235.91	5,217.91	20.05	14.76	96.52	1,401.32	5,952.84	6,161.07	6,126.40	34.67	177.719				
5,700.00	5,663.03	5,331.84	5,313.04	20.42	15.05	96.56	1,413.44	5,955.44	6,167.71	6,132.38	35.32	174.603				
5,800.00	5,761.67	5,465.25	5,445.49	20.80	15.46	96.62	1,429.11	5,958.32	6,173.55	6,137.45	36.10	171.000				
5,900.00	5,860.31	5,567.07	5,546.54	21.17	15.77	96.67	1,441.38	5,960.70	6,179.74	6,142.96	36.79	167.992				
6,000.00	5,958.96	5,651.10	5,630.02	21.54	16.04	96.71	1,450.76	5,962.59	6,185.72	6,148.31	37.41	165.328				
6,100.00	6,057.60	5,754.84	5,732.99	21.92	16.37	96.76	1,463.15	5,965.29	6,192.17	6,154.06	38.11	162.467				
6,200.00	6,156.24	5,847.75	5,825.30	22.29	16.66	96.81	1,473.50	5,967.48	6,198.25	6,159.48	38.78	159.845				
6,300.00	6,254.88	5,955.03	5,932.01	22.67	17.00	96.88	1,484.02	5,970.56	6,204.65	6,165.17	39.48	157.148				
6,400.00	6,353.52	6,034.47	6,010.47	23.04	18.13	97.22	1,510.08	5,973.54	6,208.38	6,167.38	41.01	151.398				
6,500.00	6,452.16	6,151.30	6,127.19	23.42	18.46	97.35	1,514.89	5,972.17	6,209.95	6,168.24	41.71	148.867				
6,600.00	6,550.80	6,275.80	6,246.21	23.79	21.51	105.32	801.32	5,964.63	6,209.92	6,165.02	44.90	138.320				
6,700.00	6,649.44	6,370.70	6,341.10	24.17	21.47	105.28	806.41	5,964.48	6,199.87	6,154.56	45.31	136.843				
6,800.00	6,748.08	6,469.00	6,441.84	24.54	21.39	105.17	818.11	5,964.17	6,191.42	6,145.76	45.66	135.585				
6,900.00	6,846.72	6,568.00	6,541.84	24.92	21.39	105.17	818.11	5,964.17	6,184.55	6,138.45	46.10	134.168				
7,000.00	6,945.36	6,667.00	6,641.84	25.29	21.39	105.17	818.11	5,964.17	6,179.28	6,132.76	46.52	132.835				
7,100.00	7,044.00	6,767.00	6,741.57	25.67	21.32	105.07	829.31	5,963.90	6,175.61	6,128.75	46.86	131.786				
7,200.00	7,142.65	6,866.00	6,841.57	26.04	21.28	105.01	835.94	5,963.75	6,173.55	6,126.33	47.22	130.729				
7,278.47	7,220.05	6,936.02	6,915.27	26.34	21.24	104.96	841.07	5,963.63	6,173.06	6,125.55	47.50	129.950				
7,300.00	7,241.29	6,934.62	6,915.23	26.42	21.23	104.95	842.47	5,963.61	6,173.09	6,125.51	47.58	129.744				
7,400.00	7,339.93	7,034.00	7,015.05	26.79	21.19	104.89	849.09	5,963.47	6,174.24	6,126.32	47.92	128.832				
7,500.00	7,438.57	7,134.00	7,115.05	27.17	21.19	104.89	849.09	5,963.47	6,177.00	6,128.70	48.30	127.879				
7,571.77	7,509.37	7,234.00	7,215.05	27.44	21.19	104.89	849.09	5,963.47	6,179.98	6,131.41	48.57	127.240				
7,600.00	7,537.23	7,234.00	7,215.05	27.55	21.19	104.90	849.09	5,963.47	6,181.35	6,132.68	48.67	126.998				
7,700.00	7,636.18	7,334.00	7,315.05	27.92	21.12	104.87	861.00	5,963.26	6,186.78	6,137.82	48.96	126.368				
7,800.00	7,735.48	7,434.00	7,415.05	28.29	21.11	104.95	863.27	5,963.22	6,193.16	6,143.88	49.29	125.653				
7,900.00	7,835.05	7,534.00	7,515.05	28.65	21.10	105.04	864.63	5,963.20	6,200.48	6,150.87	49.61	124.988				
8,000.00	7,934.83	7,634.00	7,615.05	29.01	21.09	105.15	865.17	5,963.19	6,208.72	6,158.80	49.92	124.373				
8,100.00	8,034.74	7,734.00	7,715.05	29.36	21.10	105.29	864.96	5,963.20	6,217.87	6,167.65	50.22	123.808				
8,202.27	8,137.00	7,834.00	7,815.05	29.72	21.10	89.41	864.04	5,963.21	6,228.18	6,177.66	50.52	123.282				
8,300.00	8,234.73	7,934.00	7,915.05	30.06	21.11	89.42	862.88	5,963.23	6,239.22	6,188.43	50.79	122.833				
8,400.00	8,334.73	8,034.00	8,015.05	30.41	21.11	89.43	861.76	5,963.25	6,252.09	6,201.02	51.07	122.431				
8,500.00	8,434.73	8,134.00	8,115.05	30.75	21.12	89.44	860.71	5,963.26	6,266.52	6,215.20	51.33	122.086				
8,552.31	8,487.04	8,234.00	8,215.05	30.94	21.19	89.55	849.09	5,963.47	6,274.74	6,223.21	51.53	121.775				
8,600.00	8,534.68	8,334.00	8,315.05	31.10	21.19	-0.11	849.09	5,963.47	6,280.59	6,228.95	51.64	121.627				
8,650.00	8,584.26	8,434.00	8,415.05	31.26	21.19	-0.11	849.09	5,963.47	6,282.87	6,231.12	51.74	121.420				
8,700.00	8,633.10	8,534.00	8,515.05	31.43	21.19	-0.11	849.09	5,963.47	6,281.18	6,229.33	51.85	121.151				
8,750.00	8,680.83	8,584.00	8,565.05	31.58	21.19	-0.11	849.09	5,963.47	6,275.54	6,223.60	51.94	120.824				
8,800.00	8,727.09	8,684.00	8,665.05	31.74	21.19	-0.12	849.09	5,963.47	6,265.98	6,213.95	52.02	120.442				
8,850.00	8,771.52	8,734.00	8,715.05	31.89	21.19	-0.12	849.09	5,963.47	6,252.55	6,200.45	52.10	120.010				
8,900.00	8,813.78	8,834.00	8,815.05	32.04	21.19	-0.12	849.09	5,963.47	6,235.33	6,183.17	52.17	119.531				
8,950.00	8,853.56	8,934.00	8,915.05	32.18	21.19	-0.13	849.09	5,963.47	6,214.42	6,162.20	52.22	119.006				
9,000.00	8,890.55	9,034.00	9,015.05	32.32	21.19	-0.13	849.09	5,963.47	6,189.95	6,137.69	52.26	118.439				
9,050.00	8,924.46	9,134.00	9,115.05	32.47	21.19	-0.14	849.09	5,963.47	6,162.06	6,109.76	52.30	117.831				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,100.00	8,955.05	7,828.00	7,415.05	32.63	21.19	-0.15	849.09	5,963.47	6,130.91	6,078.59	52.32	117.185		
9,150.00	8,982.08	7,828.00	7,415.05	32.79	21.19	-0.17	849.09	5,963.47	6,096.70	6,044.37	52.33	116.503		
9,200.00	9,005.34	7,828.00	7,415.05	32.97	21.19	-0.18	849.09	5,963.47	6,059.63	6,007.30	52.33	115.787		
9,250.00	9,024.65	7,828.00	7,415.05	33.17	21.19	-0.20	849.09	5,963.47	6,019.95	5,967.62	52.33	115.038		
9,300.00	9,039.87	7,828.00	7,415.05	33.38	21.19	-0.23	849.09	5,963.47	5,977.89	5,925.57	52.32	114.259		
9,350.00	9,050.89	7,828.00	7,415.05	33.62	21.19	-0.28	849.09	5,963.47	5,933.74	5,881.43	52.30	113.451		
9,400.00	9,057.61	7,828.00	7,415.05	33.87	21.19	-0.34	849.09	5,963.47	5,887.78	5,835.50	52.28	112.616		
9,452.31	9,060.00	7,828.00	7,415.05	34.15	21.19	-0.45	849.09	5,963.47	5,838.11	5,785.85	52.26	111.715		
9,500.00	9,060.00	7,828.00	7,415.05	34.42	21.19	-0.45	849.09	5,963.47	5,792.21	5,739.98	52.24	110.886		
9,600.00	9,060.00	7,828.00	7,415.05	35.09	21.19	-0.45	849.09	5,963.47	5,696.06	5,643.88	52.18	109.156		
9,700.00	9,060.00	7,828.00	7,415.05	35.86	21.19	-0.45	849.09	5,963.47	5,600.05	5,547.92	52.13	107.425		
9,800.00	9,060.00	7,828.00	7,415.05	36.72	21.19	-0.45	849.09	5,963.47	5,504.17	5,452.10	52.08	105.693		
9,900.00	9,060.00	7,828.00	7,415.05	37.69	21.19	-0.45	849.09	5,963.47	5,408.45	5,356.42	52.02	103.960		
10,000.00	9,060.00	7,828.00	7,415.05	38.73	21.19	-0.45	849.09	5,963.47	5,312.88	5,260.91	51.97	102.227		
10,100.00	9,060.00	7,828.00	7,415.05	39.86	21.19	-0.45	849.09	5,963.47	5,217.48	5,165.56	51.92	100.493		
10,140.22	9,060.00	7,828.00	7,415.05	40.33	21.19	-0.45	849.09	5,963.47	5,179.16	5,127.26	51.90	99.795		
10,200.00	9,060.00	7,828.00	7,415.05	41.05	21.19	-4.15	849.09	5,963.47	5,122.26	5,070.40	51.87	98.759		
10,300.00	9,060.00	7,828.00	7,415.05	42.31	21.19	-10.16	849.09	5,963.47	5,027.31	4,975.49	51.81	97.026		
10,400.00	9,060.00	7,828.00	7,415.05	43.64	21.19	-15.82	849.09	5,963.47	4,932.75	4,880.99	51.76	95.295		
10,507.23	9,060.00	7,836.41	7,415.28	45.11	21.25	-21.15	840.69	5,963.64	4,831.96	4,780.20	51.76	93.351		
10,600.00	9,060.00	7,842.20	7,415.43	46.43	21.28	-16.24	834.90	5,963.77	4,744.98	4,693.23	51.75	91.683		
10,700.00	9,060.00	7,846.89	7,415.55	47.91	21.31	-10.80	830.21	5,963.87	4,651.15	4,599.41	51.74	89.897		
10,800.00	9,060.00	7,849.92	7,415.63	49.42	21.33	-5.33	827.18	5,963.95	4,557.33	4,505.62	51.71	88.129		
10,900.00	9,060.00	7,851.24	7,415.66	50.97	21.34	0.06	825.87	5,963.98	4,463.67	4,412.00	51.67	86.382		
11,000.00	9,060.00	7,850.80	7,415.65	52.55	21.34	5.26	826.31	5,963.97	4,370.29	4,318.66	51.62	84.658		
11,100.00	9,060.00	7,848.56	7,415.59	54.14	21.32	10.18	828.55	5,963.91	4,277.32	4,225.76	51.56	82.958		
11,207.23	9,060.00	7,844.10	7,415.48	55.87	21.30	15.07	833.01	5,963.81	4,178.26	4,126.78	51.48	81.160		
11,300.00	9,060.00	7,840.05	7,415.37	57.39	21.27	10.68	837.05	5,963.72	4,092.89	4,041.47	51.42	79.604		
11,400.00	9,060.00	7,837.38	7,415.30	59.06	21.25	5.98	839.72	5,963.66	4,000.99	3,949.63	51.36	77.902		
11,506.63	9,060.00	7,836.53	7,415.28	60.88	21.25	1.07	840.57	5,963.65	3,903.27	3,851.96	51.32	76.064		
11,600.00	9,060.00	7,836.70	7,415.29	62.49	21.25	1.08	840.39	5,963.65	3,818.06	3,766.78	51.29	74.447		
11,700.00	9,060.00	7,836.90	7,415.29	64.24	21.25	1.09	840.20	5,963.65	3,727.24	3,675.98	51.26	72.716		
11,800.00	9,060.00	7,837.10	7,415.30	66.01	21.25	1.09	840.00	5,963.66	3,636.89	3,585.66	51.23	70.986		
11,900.00	9,060.00	7,837.30	7,415.30	67.79	21.25	1.10	839.80	5,963.66	3,547.07	3,495.85	51.22	69.258		
12,000.00	9,060.00	7,837.51	7,415.31	69.58	21.25	1.11	839.59	5,963.67	3,457.80	3,406.59	51.20	67.530		
12,100.00	9,060.00	7,837.72	7,415.31	71.39	21.25	1.12	839.38	5,963.67	3,369.13	3,317.93	51.20	65.805		
12,200.00	9,060.00	7,837.93	7,415.32	73.21	21.26	1.12	839.17	5,963.68	3,281.12	3,229.92	51.20	64.081		
12,300.00	9,060.00	7,838.15	7,415.32	75.05	21.26	1.13	838.95	5,963.68	3,193.81	3,142.60	51.22	62.359		
12,400.00	9,060.00	7,838.37	7,415.33	76.89	21.26	1.14	838.73	5,963.68	3,107.27	3,056.03	51.24	60.639		
12,500.00	9,060.00	7,838.60	7,415.34	78.74	21.26	1.15	838.50	5,963.69	3,021.56	2,970.28	51.28	58.923		
12,600.00	9,060.00	7,838.83	7,415.34	80.61	21.26	1.16	838.27	5,963.69	2,936.75	2,885.42	51.33	57.210		
12,700.00	9,060.00	7,839.07	7,415.35	82.48	21.26	1.17	838.03	5,963.70	2,852.93	2,801.53	51.40	55.501		
12,800.00	9,060.00	7,839.31	7,415.36	84.36	21.26	1.17	837.79	5,963.71	2,770.18	2,718.69	51.49	53.798		
12,900.00	9,060.00	7,839.56	7,415.36	86.24	21.27	1.18	837.54	5,963.71	2,688.61	2,637.00	51.60	52.101		
13,000.00	9,060.00	7,839.81	7,415.37	88.14	21.27	1.19	837.29	5,963.72	2,608.31	2,556.57	51.74	50.411		
13,100.00	9,060.00	7,840.07	7,415.38	90.04	21.27	1.20	837.03	5,963.72	2,529.42	2,477.52	51.90	48.732		
13,200.00	9,060.00	7,840.34	7,415.38	91.94	21.27	1.21	836.76	5,963.73	2,452.08	2,399.97	52.10	47.064		
13,300.00	9,060.00	7,840.61	7,415.39	93.86	21.27	1.22	836.49	5,963.73	2,376.42	2,324.09	52.33	45.411		
13,400.00	9,060.00	7,840.88	7,415.40	95.77	21.27	1.23	836.22	5,963.74	2,302.62	2,250.02	52.60	43.777		
13,500.00	9,060.00	7,841.17	7,415.40	97.70	21.28	1.24	835.93	5,963.75	2,230.86	2,177.95	52.91	42.164		
13,600.00	9,060.00	7,841.46	7,415.41	99.62	21.28	1.25	835.65	5,963.75	2,161.35	2,108.09	53.26	40.578		
13,700.00	9,060.00	7,841.75	7,415.42	101.56	21.28	1.26	835.35	5,963.76	2,094.31	2,040.64	53.67	39.024		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
13,800.00	9,060.00	7,842.05	7,415.43	103.49	21.28	1.27	835.05	5,963.77	2,029.98	1,975.86	54.12	37.509				
13,900.00	9,060.00	7,842.36	7,415.43	105.43	21.28	1.29	834.74	5,963.77	1,968.63	1,914.00	54.63	36.039				
14,000.00	9,060.00	7,842.68	7,415.44	107.38	21.29	1.30	834.42	5,963.78	1,910.55	1,855.36	55.18	34.621				
14,100.00	9,060.00	7,843.01	7,415.45	109.33	21.29	1.31	834.09	5,963.79	1,856.04	1,800.24	55.80	33.265				
14,200.00	9,060.00	7,843.34	7,415.46	111.28	21.29	1.32	833.76	5,963.79	1,805.43	1,748.97	56.46	31.977				
14,300.00	9,060.00	7,843.68	7,415.47	113.23	21.29	1.33	833.42	5,963.80	1,759.05	1,701.88	57.17	30.767				
14,400.00	9,060.00	7,844.03	7,415.48	115.19	21.30	1.35	833.07	5,963.81	1,717.25	1,659.32	57.93	29.643				
14,500.00	9,060.00	7,844.39	7,415.49	117.15	21.30	1.36	832.71	5,963.82	1,680.37	1,621.64	58.73	28.612				
14,600.00	9,060.00	7,844.76	7,415.50	119.11	21.30	1.37	832.34	5,963.83	1,648.73	1,589.17	59.56	27.680				
14,700.00	9,060.00	7,845.14	7,415.51	121.08	21.30	1.39	831.96	5,963.83	1,622.65	1,562.23	60.42	26.854				
14,800.00	9,060.00	7,845.53	7,415.52	123.05	21.30	1.40	831.57	5,963.84	1,602.40	1,541.10	61.31	26.137				
14,900.00	9,060.00	7,845.93	7,415.53	125.02	21.31	1.41	831.17	5,963.85	1,588.20	1,526.00	62.20	25.533				
15,000.00	9,060.00	7,846.34	7,415.54	126.99	21.31	1.43	830.76	5,963.86	1,580.21	1,517.11	63.10	25.043				
15,076.58	9,060.00	7,846.67	7,415.54	128.51	21.31	1.44	830.44	5,963.87	1,578.35	1,514.57	63.78	24.745 CC				
15,100.00	9,060.00	7,846.77	7,415.55	128.97	21.31	1.45	830.34	5,963.87	1,578.53	1,514.54	63.99	24.668 ES				
15,200.00	9,060.00	7,847.20	7,415.56	130.95	21.32	1.46	829.90	5,963.88	1,583.17	1,518.31	64.86	24.409				
15,300.00	9,060.00	7,847.65	7,415.57	132.93	21.32	1.48	829.46	5,963.89	1,594.09	1,528.40	65.69	24.266				
15,400.00	9,060.00	7,848.11	7,415.58	134.91	21.32	1.49	829.00	5,963.90	1,611.15	1,544.67	66.48	24.237 SF				
15,500.00	9,060.00	7,848.58	7,415.59	136.89	21.32	1.51	828.52	5,963.91	1,634.16	1,566.97	67.19	24.320				
15,600.00	9,060.00	7,849.07	7,415.60	138.88	21.33	1.53	828.03	5,963.93	1,662.88	1,595.04	67.84	24.512				
15,700.00	9,060.00	7,849.57	7,415.62	140.86	21.33	1.55	827.53	5,963.94	1,697.01	1,628.61	68.40	24.810				
15,800.00	9,060.00	7,850.09	7,415.63	142.85	21.33	1.57	827.01	5,963.95	1,736.24	1,667.36	68.88	25.207				
15,900.00	9,060.00	7,850.63	7,415.64	144.84	21.34	1.59	826.48	5,963.96	1,780.23	1,710.96	69.27	25.699				
16,000.00	9,060.00	7,851.18	7,415.66	146.83	21.34	1.61	825.93	5,963.97	1,828.63	1,759.05	69.58	26.279				
16,100.00	9,060.00	7,851.75	7,415.67	148.83	21.35	1.63	825.36	5,963.99	1,881.11	1,811.29	69.82	26.941				
16,200.00	9,060.00	7,852.34	7,415.68	150.82	21.35	1.65	824.77	5,964.00	1,937.33	1,867.34	69.99	27.679				
16,300.00	9,060.00	7,852.95	7,415.70	152.82	21.35	1.67	824.16	5,964.02	1,996.98	1,926.88	70.10	28.486				
16,400.00	9,060.00	7,853.58	7,415.71	154.81	21.36	1.69	823.53	5,964.03	2,059.76	1,989.59	70.17	29.356				
16,500.00	9,060.00	7,854.23	7,415.73	156.81	21.36	1.72	822.88	5,964.05	2,125.39	2,055.21	70.18	30.283				
16,600.00	9,060.00	7,854.91	7,415.75	158.81	21.37	1.74	822.20	5,964.06	2,193.62	2,123.45	70.17	31.263				
16,700.00	9,060.00	7,855.61	7,415.76	160.81	21.37	1.77	821.50	5,964.08	2,264.21	2,194.09	70.12	32.291				
16,800.00	9,060.00	7,856.33	7,415.78	162.81	21.38	1.79	820.78	5,964.10	2,336.94	2,266.89	70.05	33.361				
16,900.00	9,060.00	7,857.08	7,415.80	164.82	21.38	1.82	820.03	5,964.12	2,411.63	2,341.67	69.96	34.470				
17,000.00	9,060.00	7,857.87	7,415.82	166.82	21.38	1.85	819.24	5,964.14	2,488.10	2,418.24	69.86	35.614				
17,100.00	9,060.00	7,858.68	7,415.84	168.82	21.39	1.88	818.43	5,964.16	2,566.19	2,496.43	69.75	36.790				
17,200.00	9,060.00	7,859.73	7,415.86	170.83	21.40	1.92	817.38	5,964.18	2,645.75	2,576.11	69.64	37.993				
17,300.00	9,060.00	7,861.02	7,415.89	172.84	21.41	1.96	816.09	5,964.22	2,726.66	2,657.14	69.52	39.220				
17,400.00	9,060.00	7,862.45	7,415.92	174.84	21.42	2.01	814.66	5,964.25	2,808.79	2,739.39	69.40	40.470				
17,500.00	9,060.00	7,864.04	7,415.96	176.85	21.43	2.07	813.07	5,964.30	2,892.06	2,822.77	69.29	41.740				
17,600.00	9,060.00	7,865.83	7,416.00	178.86	21.44	2.14	811.29	5,964.34	2,976.35	2,907.17	69.17	43.027				
17,700.00	9,060.00	7,867.84	7,416.04	180.87	21.45	2.21	809.28	5,964.40	3,061.58	2,992.52	69.06	44.329				
17,800.00	9,060.00	7,870.13	7,416.09	182.88	21.47	2.29	806.98	5,964.46	3,147.69	3,078.73	68.96	45.645				
17,900.00	9,060.00	7,872.76	7,416.15	184.89	21.49	2.39	804.35	5,964.54	3,234.59	3,165.73	68.86	46.971				
18,000.00	9,060.00	7,875.82	7,416.21	186.90	21.51	2.50	801.31	5,964.63	3,322.23	3,253.46	68.77	48.306				
18,100.00	9,060.00	7,879.40	7,416.28	188.92	21.53	2.63	797.73	5,964.74	3,410.55	3,341.86	68.70	49.647				
18,200.00	9,060.00	7,883.66	7,416.36	190.93	21.56	2.78	793.47	5,964.88	3,499.50	3,430.87	68.63	50.992				
18,300.00	9,060.00	7,888.81	7,416.46	192.94	21.60	2.97	788.32	5,965.05	3,589.02	3,520.45	68.58	52.337				
18,400.00	9,060.00	18,400.00	7,416.25	194.96	102.28	2.61	798.35	5,964.75	3,679.08	3,541.61	137.47	26.763				
18,500.00	9,060.00	18,500.00	7,416.28	196.97	103.08	2.65	797.17	5,964.78	3,769.65	3,631.30	138.35	27.248				
18,600.00	9,060.00	18,600.00	7,416.30	198.99	103.87	2.69	796.00	5,964.82	3,860.68	3,721.46	139.22	27.731				
18,700.00	9,060.00	18,700.00	7,416.33	201.00	104.67	2.73	794.83	5,964.85	3,952.15	3,812.07	140.08	28.213				
18,800.00	9,060.00	18,800.00	7,416.35	203.02	105.46	2.78	793.65	5,964.89	4,044.02	3,903.09	140.93	28.694				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals												Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,900.00	9,060.00	18,900.00	7,416.38	205.04	106.25	2.82	792.48	5,964.92	4,136.27	3,994.49	141.78	29.173	
19,000.00	9,060.00	7,895.25	7,416.56	207.06	21.65	3.20	781.89	5,965.27	4,228.86	4,160.77	68.09	62.108	
19,100.00	9,060.00	7,896.39	7,416.58	209.07	21.66	3.25	780.74	5,965.31	4,321.78	4,253.74	68.04	63.517	
19,200.00	9,060.00	7,897.54	7,416.60	211.09	21.67	3.29	779.60	5,965.35	4,415.02	4,347.02	68.00	64.927	
19,300.00	9,060.00	7,898.69	7,416.62	213.11	21.68	3.33	778.44	5,965.38	4,508.54	4,440.58	67.96	66.339	
19,400.00	9,060.00	7,899.85	7,416.63	215.13	21.69	3.37	777.29	5,965.42	4,602.34	4,534.41	67.93	67.752	
19,500.32	9,060.00	7,901.02	7,416.65	217.16	21.70	3.41	776.12	5,965.46	4,696.69	4,628.79	67.90	69.170	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10				
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719	
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830	
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136	
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138	
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071	
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393	
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588	
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365	
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235	
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783	
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522	
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356	
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598	
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396	
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816	
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495	
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810	
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492	
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077	
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919	
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751	
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600	
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466	
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553	
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265	
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166	
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786	
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382	
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961	
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918	
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227	
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202	
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622	
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583	
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027	
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738	
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740	
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823	
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354	
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169	
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681	
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928	
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391	
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958	
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848	
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993	
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353	
4,400.00	4,380.70	4,326.65	4,326.54	15.60	15.69	93.30	1,571.52	5,782.75	6,001.91	5,970.63	31.28	191.866	
4,500.00	4,479.34	4,448.29	4,448.18	15.97	16.10	93.49	1,571.66	5,782.02	6,002.33	5,970.27	32.05	187.267	
4,600.00	4,577.98	4,559.15	4,559.03	16.34	16.47	93.66	1,571.40	5,781.11	6,002.50	5,969.71	32.79	183.068	
4,700.00	4,676.62	4,661.36	4,661.24	16.71	16.81	93.82	1,571.37	5,780.08	6,002.58	5,969.08	33.50	179.196	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	4,754.35	4,754.23	17.08	17.12	93.96	1,571.65	5,779.09	6,002.73	5,968.55	34.18	175.635		
4,900.00	4,873.91	4,843.75	4,843.62	17.45	17.42	94.10	1,572.03	5,778.25	6,003.05	5,968.21	34.85	172.274		
5,000.00	4,972.55	4,917.04	4,916.90	17.82	17.66	94.21	1,572.40	5,777.70	6,003.65	5,968.19	35.46	169.299		
5,100.00	5,071.19	4,979.31	4,979.17	18.19	17.87	94.30	1,572.78	5,777.62	6,004.86	5,968.82	36.04	166.616		
5,200.00	5,169.83	5,070.23	5,070.09	18.56	18.18	94.44	1,573.09	5,777.86	6,006.48	5,969.76	36.72	163.597		
5,300.00	5,268.47	5,152.21	5,152.08	18.93	18.45	94.57	1,573.09	5,778.32	6,008.33	5,970.97	37.36	160.822		
5,400.00	5,367.11	5,238.14	5,238.00	19.31	18.74	94.71	1,572.93	5,779.04	6,010.48	5,972.46	38.02	158.091		
5,500.00	5,465.75	5,339.17	5,339.03	19.68	19.08	94.87	1,572.80	5,779.99	6,012.78	5,974.05	38.73	155.247		
5,600.00	5,564.39	5,475.90	5,475.75	20.05	19.54	95.08	1,573.39	5,780.61	6,014.76	5,975.19	39.56	152.023		
5,700.00	5,663.03	5,599.25	5,599.10	20.42	19.96	95.26	1,574.02	5,780.50	6,016.26	5,975.91	40.35	149.088		
5,800.00	5,761.67	5,695.79	5,695.64	20.80	20.29	95.41	1,574.39	5,780.20	6,017.58	5,976.53	41.05	146.582		
5,900.00	5,860.31	5,785.09	5,784.94	21.17	20.59	95.54	1,574.73	5,780.07	6,019.09	5,977.36	41.73	144.248		
6,000.00	5,958.96	5,874.18	5,874.03	21.54	20.89	95.68	1,574.99	5,780.09	6,020.79	5,978.39	42.40	141.994		
6,100.00	6,057.60	5,976.20	5,976.05	21.92	21.24	95.84	1,575.02	5,780.26	6,022.64	5,979.52	43.12	139.670		
6,200.00	6,156.24	6,075.37	6,075.21	22.29	21.57	96.00	1,574.75	5,780.38	6,024.43	5,980.60	43.83	137.449		
6,300.00	6,254.88	6,180.28	6,180.12	22.67	21.93	96.17	1,573.80	5,780.61	6,026.25	5,981.69	44.56	135.238		
6,400.00	6,353.52	6,268.06	6,267.89	23.04	22.22	96.32	1,572.65	5,780.85	6,028.12	5,982.89	45.23	133.270		
6,500.00	6,452.16	6,355.38	6,355.20	23.42	22.52	96.46	1,571.61	5,781.26	6,030.24	5,984.34	45.90	131.369		
6,600.00	6,550.80	6,429.06	6,428.88	23.79	22.77	96.58	1,570.80	5,781.78	6,032.67	5,986.14	46.53	129.661		
6,700.00	6,649.44	6,496.77	6,496.58	24.17	23.00	96.70	1,570.09	5,782.59	6,035.63	5,988.50	47.13	128.069		
6,800.00	6,748.08	6,566.30	6,566.10	24.54	23.24	96.81	1,569.53	5,783.78	6,039.16	5,991.42	47.74	126.513		
6,900.00	6,846.72	6,672.57	6,672.35	24.92	23.61	96.99	1,568.70	5,785.78	6,042.92	5,994.45	48.47	124.665		
7,000.00	6,945.36	6,780.34	6,780.09	25.29	23.97	97.17	1,567.66	5,787.60	6,046.51	5,997.29	49.22	122.855		
7,100.00	7,044.00	6,876.98	6,876.72	25.67	24.31	97.32	1,567.26	5,789.16	6,050.16	6,000.24	49.92	121.195		
7,200.00	7,142.65	6,969.27	6,969.01	26.04	24.62	97.46	1,567.49	5,790.49	6,053.79	6,003.18	50.61	119.617		
7,300.00	7,241.29	7,034.05	7,033.77	26.42	24.84	97.56	1,567.78	5,791.69	6,057.90	6,006.70	51.20	118.319		
7,400.00	7,339.93	7,097.67	7,097.37	26.79	25.06	97.66	1,568.08	5,793.24	6,062.61	6,010.82	51.78	117.074		
7,500.00	7,438.57	7,162.22	7,161.89	27.17	25.29	97.76	1,568.29	5,795.19	6,067.91	6,015.54	52.37	115.864		
7,571.77	7,509.37	7,208.74	7,208.38	27.44	25.45	97.83	1,568.25	5,796.84	6,072.09	6,019.30	52.79	115.019		
7,600.00	7,537.23	7,227.96	7,227.59	27.55	25.51	97.89	1,568.18	5,797.59	6,073.80	6,020.84	52.96	114.685		
7,700.00	7,636.18	7,303.05	7,302.60	27.92	25.77	98.09	1,567.46	5,800.75	6,079.91	6,026.33	53.58	113.470		
7,800.00	7,735.48	7,389.70	7,389.16	28.29	26.08	98.30	1,566.16	5,804.73	6,085.99	6,031.75	54.24	112.202		
7,900.00	7,835.05	7,476.64	7,475.99	28.65	26.38	98.47	1,565.04	5,808.86	6,091.91	6,037.01	54.90	110.968		
8,000.00	7,934.83	7,571.46	7,571.63	29.01	27.20	98.72	1,562.60	5,817.66	6,096.49	6,040.38	56.11	108.652		
8,100.00	8,034.74	7,671.42	7,671.55	29.36	27.56	98.81	1,561.63	5,820.26	6,099.47	6,042.65	56.82	107.343		
8,202.27	8,137.00	7,776.00	7,775.11	29.72	27.77	82.83	1,561.12	5,821.70	6,102.22	6,044.85	57.37	106.366		
8,300.00	8,234.73	7,876.00	7,875.11	30.06	27.77	82.83	1,561.12	5,821.70	6,105.99	6,048.31	57.68	105.866		
8,400.00	8,334.73	7,976.00	7,975.11	30.41	27.77	82.83	1,561.12	5,821.70	6,111.45	6,053.47	57.98	105.408		
8,500.00	8,434.73	8,076.00	8,075.11	30.75	27.77	82.83	1,561.12	5,821.70	6,118.55	6,060.28	58.27	105.005		
8,552.31	8,487.04	8,176.00	8,175.11	30.94	27.77	82.83	1,561.12	5,821.70	6,122.91	6,064.49	58.42	104.815		
8,600.00	8,534.68	8,276.00	8,275.11	31.10	27.77	-6.80	1,561.12	5,821.70	6,125.31	6,066.76	58.54	104.630		
8,650.00	8,584.26	8,376.00	8,375.11	31.26	27.77	-6.82	1,561.12	5,821.70	6,123.99	6,065.32	58.67	104.388		
8,700.00	8,633.10	8,476.00	8,475.11	31.43	27.77	-6.88	1,561.12	5,821.70	6,118.75	6,059.97	58.78	104.092		
8,750.00	8,680.83	8,576.00	8,575.11	31.58	27.77	-6.99	1,561.12	5,821.70	6,109.63	6,050.74	58.89	103.744		
8,800.00	8,727.09	8,676.00	8,675.11	31.74	27.77	-7.16	1,561.12	5,821.70	6,096.68	6,037.69	58.99	103.349		
8,850.00	8,771.52	8,776.00	8,775.11	31.89	27.77	-7.38	1,561.12	5,821.70	6,079.97	6,020.89	59.08	102.909		
8,900.00	8,813.78	8,876.00	8,875.11	32.04	27.77	-7.67	1,561.12	5,821.70	6,059.59	6,000.43	59.16	102.427		
8,950.00	8,853.56	8,976.00	8,975.11	32.18	27.77	-8.05	1,561.12	5,821.70	6,035.68	5,976.45	59.23	101.905		
9,000.00	8,890.55	9,076.00	9,075.11	32.32	27.77	-8.52	1,561.12	5,821.70	6,008.36	5,949.08	59.29	101.346		
9,050.00	8,924.46	9,176.00	9,175.11	32.47	27.77	-9.11	1,561.12	5,821.70	5,977.80	5,918.47	59.33	100.753		
9,100.00	8,955.05	9,276.00	9,275.11	32.63	27.77	-9.86	1,561.12	5,821.70	5,944.19	5,884.83	59.37	100.126		
9,150.00	8,982.08	9,376.00	9,375.11	32.79	27.77	-10.81	1,561.12	5,821.70	5,907.73	5,848.34	59.39	99.469		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	7,876.00	7,875.11	32.97	27.77	-12.06	1,561.12	5,821.70	5,868.65	5,809.24	59.41	98.784		
9,250.00	9,024.65	7,876.00	7,875.11	33.17	27.77	-13.71	1,561.12	5,821.70	5,827.20	5,767.78	59.42	98.072		
9,300.00	9,039.87	7,876.00	7,875.11	33.38	27.77	-15.99	1,561.12	5,821.70	5,783.64	5,724.22	59.42	97.336		
9,350.00	9,050.89	7,876.00	7,875.11	33.62	27.77	-19.27	1,561.12	5,821.70	5,738.26	5,678.84	59.42	96.578		
9,400.00	9,057.61	7,876.00	7,875.11	33.87	27.77	-24.29	1,561.12	5,821.70	5,691.37	5,631.96	59.41	95.801		
9,452.31	9,060.00	7,876.00	7,875.11	34.15	27.77	-33.17	1,561.12	5,821.70	5,641.04	5,581.65	59.40	94.968		
9,500.00	9,060.00	7,876.00	7,875.11	34.42	27.77	-33.17	1,561.12	5,821.70	5,594.70	5,535.31	59.39	94.203		
9,600.00	9,060.00	7,876.00	7,875.11	35.09	27.77	-33.17	1,561.12	5,821.70	5,497.60	5,438.23	59.37	92.601		
9,700.00	9,060.00	7,876.00	7,875.11	35.86	27.77	-33.17	1,561.12	5,821.70	5,400.60	5,341.25	59.35	90.994		
9,800.00	9,060.00	7,876.00	7,875.11	36.72	27.77	-33.17	1,561.12	5,821.70	5,303.71	5,244.38	59.34	89.383		
9,900.00	9,060.00	7,876.00	7,875.11	37.69	27.77	-33.17	1,561.12	5,821.70	5,206.95	5,147.62	59.33	87.766		
10,000.00	9,060.00	7,876.00	7,875.11	38.73	27.77	-33.17	1,561.12	5,821.70	5,110.30	5,050.98	59.32	86.144		
10,100.00	9,060.00	7,876.00	7,875.11	39.86	27.77	-33.17	1,561.12	5,821.70	5,013.79	4,954.47	59.32	84.517		
10,140.22	9,060.00	7,876.00	7,875.11	40.33	27.77	-33.17	1,561.12	5,821.70	4,975.01	4,915.69	59.32	83.861		
10,200.00	9,060.00	7,876.00	7,875.11	41.05	27.77	-36.62	1,561.12	5,821.70	4,917.52	4,858.19	59.33	82.885		
10,300.00	9,060.00	7,876.00	7,875.11	42.31	27.77	-41.66	1,561.12	5,821.70	4,821.95	4,762.59	59.35	81.242		
10,400.00	9,060.00	7,876.00	7,875.11	43.64	27.77	-45.90	1,561.12	5,821.70	4,727.29	4,667.89	59.40	79.586		
10,507.23	9,060.00	7,876.00	7,875.11	45.11	27.77	-49.71	1,561.12	5,821.70	4,627.01	4,567.53	59.48	77.790		
10,600.00	9,060.00	7,876.00	7,875.11	46.43	27.77	-46.53	1,561.12	5,821.70	4,540.56	4,480.98	59.57	76.218		
10,700.00	9,060.00	7,876.00	7,875.11	47.91	27.77	-42.68	1,561.12	5,821.70	4,446.77	4,387.10	59.68	74.512		
10,800.00	9,060.00	7,876.00	7,875.11	49.42	27.77	-38.37	1,561.12	5,821.70	4,352.45	4,292.67	59.78	72.805		
10,900.00	9,060.00	7,876.00	7,875.11	50.97	27.77	-33.55	1,561.12	5,821.70	4,257.66	4,197.78	59.88	71.103		
11,000.00	9,060.00	7,876.00	7,875.11	52.55	27.77	-28.24	1,561.12	5,821.70	4,162.50	4,102.54	59.97	69.414		
11,100.00	9,060.00	7,876.00	7,875.11	54.14	27.77	-22.47	1,561.12	5,821.70	4,067.07	4,007.03	60.04	67.744		
11,207.23	9,060.00	7,876.00	7,875.11	55.87	27.77	-15.85	1,561.12	5,821.70	3,964.53	3,904.45	60.09	65.978		
11,300.00	9,060.00	7,876.00	7,875.11	57.39	27.77	-21.46	1,561.12	5,821.70	3,876.00	3,815.87	60.14	64.452		
11,400.00	9,060.00	7,876.00	7,875.11	59.06	27.77	-26.90	1,561.12	5,821.70	3,781.20	3,720.97	60.23	62.781		
11,506.63	9,060.00	7,876.00	7,875.11	60.88	27.77	-32.01	1,561.12	5,821.70	3,681.00	3,620.62	60.38	60.967		
11,600.00	9,060.00	7,876.00	7,875.11	62.49	27.77	-32.01	1,561.12	5,821.70	3,593.87	3,533.33	60.54	59.360		
11,700.00	9,060.00	7,876.00	7,875.11	64.24	27.77	-32.01	1,561.12	5,821.70	3,500.92	3,440.18	60.75	57.633		
11,800.00	9,060.00	7,876.00	7,875.11	66.01	27.77	-32.01	1,561.12	5,821.70	3,408.37	3,347.40	60.97	55.899		
11,900.00	9,060.00	7,876.00	7,875.11	67.79	27.77	-32.01	1,561.12	5,821.70	3,316.25	3,255.02	61.23	54.160		
12,000.00	9,060.00	7,876.00	7,875.11	69.58	27.77	-32.01	1,561.12	5,821.70	3,224.60	3,163.08	61.52	52.416		
12,100.00	9,060.00	7,876.00	7,875.11	71.39	27.77	-32.01	1,561.12	5,821.70	3,133.46	3,071.62	61.84	50.667		
12,200.00	9,060.00	7,876.00	7,875.11	73.21	27.77	-32.01	1,561.12	5,821.70	3,042.88	2,980.67	62.21	48.915		
12,300.00	9,060.00	7,876.00	7,875.11	75.05	27.77	-32.01	1,561.12	5,821.70	2,952.91	2,890.29	62.62	47.160		
12,400.00	9,060.00	7,876.00	7,875.11	76.89	27.77	-32.01	1,561.12	5,821.70	2,863.60	2,800.53	63.07	45.403		
12,500.00	9,060.00	7,876.00	7,875.11	78.74	27.77	-32.01	1,561.12	5,821.70	2,775.02	2,711.44	63.58	43.647		
12,600.00	9,060.00	7,876.00	7,875.11	80.61	27.77	-32.01	1,561.12	5,821.70	2,687.24	2,623.10	64.14	41.894		
12,700.00	9,060.00	7,876.00	7,875.11	82.48	27.77	-32.01	1,561.12	5,821.70	2,600.35	2,535.57	64.77	40.145		
12,800.00	9,060.00	7,876.00	7,875.11	84.36	27.77	-32.01	1,561.12	5,821.70	2,514.43	2,448.95	65.47	38.403		
12,900.00	9,060.00	7,876.00	7,875.11	86.24	27.77	-32.01	1,561.12	5,821.70	2,429.58	2,363.33	66.25	36.672		
13,000.00	9,060.00	7,876.00	7,875.11	88.14	27.77	-32.01	1,561.12	5,821.70	2,345.93	2,278.82	67.11	34.956		
13,100.00	9,060.00	7,876.00	7,875.11	90.04	27.77	-32.01	1,561.12	5,821.70	2,263.61	2,195.55	68.06	33.259		
13,200.00	9,060.00	7,876.00	7,875.11	91.94	27.77	-32.01	1,561.12	5,821.70	2,182.77	2,113.66	69.11	31.586		
13,300.00	9,060.00	7,876.00	7,875.11	93.86	27.77	-32.01	1,561.12	5,821.70	2,103.57	2,033.31	70.26	29.942		
13,400.00	9,060.00	7,876.00	7,875.11	95.77	27.77	-32.01	1,561.12	5,821.70	2,026.21	1,954.70	71.51	28.333		
13,500.00	9,060.00	7,876.00	7,875.11	97.70	27.77	-32.01	1,561.12	5,821.70	1,950.91	1,878.03	72.89	26.766		
13,600.00	9,060.00	7,876.00	7,875.11	99.62	27.77	-32.01	1,561.12	5,821.70	1,877.92	1,803.54	74.38	25.248		
13,700.00	9,060.00	7,876.00	7,875.11	101.56	27.77	-32.01	1,561.12	5,821.70	1,807.52	1,731.53	75.99	23.786		
13,800.00	9,060.00	7,876.00	7,875.11	103.49	27.77	-32.01	1,561.12	5,821.70	1,740.02	1,662.30	77.72	22.388		
13,900.00	9,060.00	7,876.00	7,875.11	105.43	27.77	-32.01	1,561.12	5,821.70	1,675.77	1,596.20	79.57	21.061		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot		Offset Site Error:		5.00 ft
Survey Program: 18-GYRO-NS-CT															Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
14,000.00	9,060.00	7,876.00	7,875.11	107.38	27.77	-32.01	1,561.12	5,821.70	1,615.16	1,533.64	81.51	19.814					
14,100.00	9,060.00	7,876.00	7,875.11	109.33	27.77	-32.01	1,561.12	5,821.70	1,558.61	1,475.06	83.55	18.654					
14,200.00	9,060.00	7,876.00	7,875.11	111.28	27.77	-32.01	1,561.12	5,821.70	1,506.59	1,420.93	85.66	17.588					
14,300.00	9,060.00	7,876.00	7,875.11	113.23	27.77	-32.01	1,561.12	5,821.70	1,459.57	1,371.76	87.80	16.623					
14,400.00	9,060.00	7,876.00	7,875.11	115.19	27.77	-32.01	1,561.12	5,821.70	1,418.05	1,328.10	89.96	15.764					
14,500.00	9,060.00	7,876.00	7,875.11	117.15	27.77	-32.01	1,561.12	5,821.70	1,382.53	1,290.46	92.07	15.016					
14,600.00	9,060.00	7,876.00	7,875.11	119.11	27.77	-32.01	1,561.12	5,821.70	1,353.49	1,259.38	94.11	14.382					
14,700.00	9,060.00	7,876.00	7,875.11	121.08	27.77	-32.01	1,561.12	5,821.70	1,331.34	1,235.31	96.03	13.864					
14,800.00	9,060.00	7,876.00	7,875.11	123.05	27.77	-32.01	1,561.12	5,821.70	1,316.44	1,218.66	97.78	13.464					
14,900.00	9,060.00	7,876.00	7,875.11	125.02	27.77	-32.01	1,561.12	5,821.70	1,309.02	1,209.70	99.32	13.180					
14,947.33	9,060.00	7,876.00	7,875.11	125.95	27.77	-32.01	1,561.12	5,821.70	1,308.17	1,208.20	99.96	13.086	CC, ES				
15,000.00	9,060.00	7,876.00	7,875.11	126.99	27.77	-32.01	1,561.12	5,821.70	1,309.23	1,208.61	100.62	13.012					
15,100.00	9,060.00	7,876.00	7,875.11	128.97	27.77	-32.01	1,561.12	5,821.70	1,317.04	1,215.39	101.65	12.956	SF				
15,200.00	9,060.00	7,876.00	7,875.11	130.95	27.77	-32.01	1,561.12	5,821.70	1,332.34	1,229.94	102.41	13.010					
15,300.00	9,060.00	7,876.00	7,875.11	132.93	27.77	-32.01	1,561.12	5,821.70	1,354.87	1,251.99	102.88	13.170					
15,400.00	9,060.00	7,876.00	7,875.11	134.91	27.77	-32.01	1,561.12	5,821.70	1,384.27	1,281.20	103.07	13.430					
15,500.00	9,060.00	7,876.00	7,875.11	136.89	27.77	-32.01	1,561.12	5,821.70	1,420.12	1,317.11	103.01	13.786					
15,600.00	9,060.00	7,876.00	7,875.11	138.88	27.77	-32.01	1,561.12	5,821.70	1,461.94	1,359.21	102.73	14.231					
15,700.00	9,060.00	7,876.00	7,875.11	140.86	27.77	-32.01	1,561.12	5,821.70	1,509.24	1,406.99	102.25	14.760					
15,800.00	9,060.00	7,876.00	7,875.11	142.85	27.77	-32.01	1,561.12	5,821.70	1,561.52	1,459.90	101.62	15.366					
15,900.00	9,060.00	7,876.00	7,875.11	144.84	27.77	-32.01	1,561.12	5,821.70	1,618.29	1,517.42	100.87	16.043					
16,000.00	9,060.00	7,876.00	7,875.11	146.83	27.77	-32.01	1,561.12	5,821.70	1,679.11	1,579.07	100.03	16.785					
16,100.00	9,060.00	7,876.00	7,875.11	148.83	27.77	-32.01	1,561.12	5,821.70	1,743.54	1,644.41	99.14	17.587					
16,200.00	9,060.00	7,876.00	7,875.11	150.82	27.77	-32.01	1,561.12	5,821.70	1,811.21	1,713.00	98.20	18.443					
16,300.00	9,060.00	7,876.00	7,875.11	152.82	27.77	-32.01	1,561.12	5,821.70	1,881.76	1,784.50	97.26	19.348					
16,400.00	9,060.00	7,876.00	7,875.11	154.81	27.77	-32.01	1,561.12	5,821.70	1,954.88	1,858.57	96.31	20.298					
16,500.00	9,060.00	7,876.00	7,875.11	156.81	27.77	-32.01	1,561.12	5,821.70	2,030.29	1,934.92	95.37	21.288					
16,600.00	9,060.00	7,876.00	7,875.11	158.81	27.77	-32.01	1,561.12	5,821.70	2,107.75	2,013.29	94.45	22.315					
16,700.00	9,060.00	7,876.00	7,875.11	160.81	27.77	-32.01	1,561.12	5,821.70	2,187.04	2,093.47	93.56	23.375					
16,800.00	9,060.00	7,876.00	7,875.11	162.81	27.77	-32.01	1,561.12	5,821.70	2,267.97	2,175.26	92.70	24.464					
16,900.00	9,060.00	7,876.00	7,875.11	164.82	27.77	-32.01	1,561.12	5,821.70	2,350.36	2,258.48	91.88	25.581					
17,000.00	9,060.00	7,876.00	7,875.11	166.82	27.77	-32.01	1,561.12	5,821.70	2,434.08	2,342.99	91.09	26.722					
17,100.00	9,060.00	7,876.00	7,875.11	168.82	27.77	-32.01	1,561.12	5,821.70	2,518.98	2,428.65	90.33	27.885					
17,200.00	9,060.00	7,876.00	7,875.11	170.83	27.77	-32.01	1,561.12	5,821.70	2,604.96	2,515.34	89.62	29.068					
17,300.00	9,060.00	7,876.00	7,875.11	172.84	27.77	-32.01	1,561.12	5,821.70	2,691.90	2,602.97	88.93	30.268					
17,400.00	9,060.00	7,876.00	7,875.11	174.84	27.77	-32.01	1,561.12	5,821.70	2,779.73	2,691.44	88.29	31.485					
17,500.00	9,060.00	7,876.00	7,875.11	176.85	27.77	-32.01	1,561.12	5,821.70	2,868.35	2,780.67	87.67	32.716					
17,600.00	9,060.00	7,876.00	7,875.11	178.86	27.77	-32.01	1,561.12	5,821.70	2,957.69	2,870.60	87.09	33.960					
17,700.00	9,060.00	7,876.00	7,875.11	180.87	27.77	-32.01	1,561.12	5,821.70	3,047.70	2,961.16	86.54	35.216					
17,800.00	9,060.00	7,876.00	7,875.11	182.88	27.77	-32.01	1,561.12	5,821.70	3,138.31	3,052.29	86.02	36.482					
17,900.00	9,060.00	7,876.00	7,875.11	184.89	27.77	-32.01	1,561.12	5,821.70	3,229.48	3,143.95	85.53	37.758					
18,000.00	9,060.00	7,876.00	7,875.11	186.90	27.77	-32.01	1,561.12	5,821.70	3,321.16	3,236.09	85.07	39.042					
18,100.00	9,060.00	7,876.00	7,875.11	188.92	27.77	-32.01	1,561.12	5,821.70	3,413.30	3,328.67	84.63	40.333					
18,200.00	9,060.00	7,876.00	7,875.11	190.93	27.77	-32.01	1,561.12	5,821.70	3,505.87	3,421.66	84.21	41.631					
18,300.00	9,060.00	7,876.00	7,875.11	192.94	27.77	-32.01	1,561.12	5,821.70	3,598.84	3,515.02	83.82	42.935					
18,400.00	9,060.00	7,876.00	7,875.11	194.96	27.77	-32.01	1,561.12	5,821.70	3,692.18	3,608.73	83.45	44.244					
18,500.00	9,060.00	7,876.00	7,875.11	196.97	27.77	-32.01	1,561.12	5,821.70	3,785.86	3,702.76	83.10	45.557					
18,600.00	9,060.00	7,876.00	7,875.11	198.99	27.77	-32.01	1,561.12	5,821.70	3,879.86	3,797.08	82.77	46.874					
18,700.00	9,060.00	7,876.00	7,875.11	201.00	27.77	-32.01	1,561.12	5,821.70	3,974.14	3,891.68	82.46	48.195					
18,800.00	9,060.00	7,876.00	7,875.11	203.02	27.77	-32.01	1,561.12	5,821.70	4,068.70	3,986.54	82.17	49.518					
18,900.00	9,060.00	7,876.00	7,875.11	205.04	27.77	-32.01	1,561.12	5,821.70	4,163.52	4,081.63	81.89	50.844					
19,000.00	9,060.00	7,876.00	7,875.11	207.06	27.77	-32.01	1,561.12	5,821.70	4,258.57	4,176.94	81.63	52.172					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	7,876.00	7,875.11	209.07	27.77	-32.01	1,561.12	5,821.70	4,353.84	4,272.46	81.38	53.501	
19,200.00	9,060.00	7,876.00	7,875.11	211.09	27.77	-32.01	1,561.12	5,821.70	4,449.32	4,368.18	81.14	54.832	
19,300.00	9,060.00	7,876.00	7,875.11	213.11	27.77	-32.01	1,561.12	5,821.70	4,545.00	4,464.07	80.92	56.163	
19,400.00	9,060.00	7,876.00	7,875.11	215.13	27.77	-32.01	1,561.12	5,821.70	4,640.86	4,560.14	80.72	57.495	
19,500.32	9,060.00	7,876.00	7,875.11	217.16	27.77	-32.01	1,561.12	5,821.70	4,737.19	4,656.67	80.52	58.832	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10					
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719		
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830		
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136		
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138		
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071		
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393		
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588		
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365		
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235		
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783		
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522		
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356		
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598		
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396		
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816		
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495		
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810		
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492		
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077		
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919		
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751		
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600		
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466		
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553		
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265		
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166		
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786		
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382		
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961		
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918		
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227		
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202		
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622		
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583		
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027		
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738		
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740		
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823		
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354		
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169		
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681		
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928		
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391		
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958		
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848		
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993		
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353		
4,400.00	4,380.70	4,325.80	4,325.69	15.60	15.69	93.30	1,571.51	5,782.76	6,001.91	5,970.64	31.28	191.883		
4,500.00	4,479.34	4,369.00	4,368.89	15.97	15.76	93.37	1,571.55	5,782.60	6,002.81	5,971.10	31.71	189.304		
4,600.00	4,577.98	4,687.00	4,677.89	16.34	15.84	94.43	1,510.79	5,792.56	6,003.27	5,971.13	32.14	186.796		
4,700.00	4,676.62	4,718.00	4,705.14	16.71	15.86	94.61	1,496.18	5,794.84	6,002.13	5,969.60	32.53	184.483		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,736.82	4,712.94	4,733.28	4,718.25	16.85	15.87	94.71	1,488.45	5,796.17	6,002.02	5,969.33	32.69	183.631		
4,800.00	4,775.27	4,751.00	4,733.22	17.08	15.88	94.82	1,479.14	5,797.91	6,002.31	5,969.37	32.94	182.246		
4,900.00	4,873.91	4,751.00	4,733.22	17.45	15.88	94.82	1,479.14	5,797.91	6,003.97	5,970.67	33.30	180.287		
5,000.00	4,972.55	4,782.00	4,758.73	17.82	15.90	95.02	1,461.92	5,801.64	6,007.10	5,973.40	33.70	178.262		
5,100.00	5,071.19	4,782.00	4,758.73	18.19	15.90	95.02	1,461.92	5,801.64	6,011.72	5,977.67	34.05	176.545		
5,200.00	5,169.83	4,814.00	4,783.86	18.56	15.95	95.25	1,442.69	5,806.33	6,017.82	5,983.37	34.45	174.700		
5,300.00	5,268.47	4,826.82	4,793.55	18.93	15.97	95.34	1,434.54	5,808.39	6,025.35	5,990.53	34.81	173.091		
5,400.00	5,367.11	4,846.00	4,807.60	19.31	16.00	95.49	1,421.90	5,811.64	6,034.34	5,999.16	35.18	171.532		
5,500.00	5,465.75	4,864.00	4,820.31	19.68	16.03	95.63	1,409.57	5,814.85	6,044.80	6,009.25	35.55	170.059		
5,600.00	5,564.39	4,878.00	4,829.88	20.05	16.06	95.74	1,399.69	5,817.45	6,056.71	6,020.82	35.90	168.732		
5,700.00	5,663.03	4,892.43	4,839.45	20.42	16.09	95.85	1,389.26	5,820.23	6,070.13	6,033.88	36.24	167.477		
5,800.00	5,761.67	4,910.00	4,850.69	20.80	16.14	96.00	1,376.23	5,823.78	6,085.08	6,048.48	36.60	166.281		
5,900.00	5,860.31	4,910.00	4,850.69	21.17	16.14	96.00	1,376.23	5,823.78	6,101.51	6,064.62	36.89	165.400		
6,000.00	5,958.96	4,942.00	4,870.04	21.54	16.22	96.27	1,351.65	5,830.53	6,119.43	6,082.15	37.28	164.158		
6,100.00	6,057.60	4,942.00	4,870.04	21.92	16.22	96.27	1,351.65	5,830.53	6,138.79	6,101.24	37.56	163.456		
6,200.00	6,156.24	4,942.00	4,870.04	22.29	16.22	96.27	1,351.65	5,830.53	6,159.71	6,121.89	37.83	162.844		
6,300.00	6,254.88	4,959.16	4,879.80	22.67	16.28	96.41	1,338.05	5,834.31	6,182.03	6,143.88	38.15	162.042		
6,400.00	6,353.52	4,973.00	4,887.34	23.04	16.32	96.53	1,326.90	5,837.50	6,205.93	6,167.47	38.46	161.378		
6,500.00	6,452.16	4,973.00	4,887.34	23.42	16.32	96.53	1,326.90	5,837.50	6,231.23	6,192.53	38.70	161.008		
6,600.00	6,550.80	4,985.65	4,893.98	23.79	16.37	96.64	1,316.56	5,840.46	6,258.01	6,219.01	38.99	160.495		
6,700.00	6,649.44	5,005.00	4,903.67	24.17	16.44	96.82	1,300.43	5,844.98	6,286.17	6,246.87	39.30	159.942		
6,800.00	6,748.08	5,005.00	4,903.67	24.54	16.44	96.82	1,300.43	5,844.98	6,315.73	6,276.20	39.53	159.791		
6,900.00	6,846.72	5,017.61	4,909.69	24.92	16.49	96.93	1,289.74	5,847.94	6,346.66	6,306.86	39.80	159.471		
7,000.00	6,945.36	5,024.50	4,912.87	25.29	16.52	96.99	1,283.86	5,849.56	6,378.99	6,338.95	40.04	159.325		
7,100.00	7,044.00	5,037.00	4,918.48	25.67	16.58	97.10	1,273.09	5,852.54	6,412.70	6,372.40	40.30	159.140		
7,200.00	7,142.65	5,037.00	4,918.48	26.04	16.58	97.10	1,273.09	5,852.54	6,447.72	6,407.23	40.49	159.246		
7,300.00	7,241.29	5,037.00	4,918.48	26.42	16.58	97.10	1,273.09	5,852.54	6,484.10	6,443.43	40.68	159.411		
7,400.00	7,339.93	5,049.95	4,924.06	26.79	16.64	97.22	1,261.82	5,855.65	6,521.75	6,480.83	40.92	159.373		
7,500.00	7,438.57	5,055.82	4,926.51	27.17	16.66	97.27	1,256.67	5,857.06	6,560.71	6,519.58	41.12	159.531		
7,571.77	7,509.37	5,068.00	4,931.44	27.44	16.72	97.39	1,245.93	5,860.00	6,589.47	6,548.16	41.31	159.522		
7,600.00	7,537.23	5,068.00	4,931.44	27.55	16.72	97.57	1,245.93	5,860.00	6,600.92	6,559.57	41.35	159.619		
7,700.00	7,636.18	5,068.00	4,931.44	27.92	16.72	98.24	1,245.93	5,860.00	6,642.12	6,600.60	41.51	160.001		
7,800.00	7,735.48	5,068.00	4,931.44	28.29	16.72	98.93	1,245.93	5,860.00	6,684.21	6,642.55	41.66	160.439		
7,900.00	7,835.05	5,084.84	4,937.90	28.65	16.81	99.79	1,230.92	5,864.03	6,727.10	6,685.20	41.89	160.575		
8,000.00	7,934.83	5,099.00	4,943.00	29.01	16.88	100.63	1,218.13	5,867.36	6,770.77	6,728.67	42.10	160.822		
8,100.00	8,034.74	5,107.74	4,946.00	29.36	16.93	101.43	1,210.17	5,869.38	6,815.14	6,772.87	42.27	161.213		
8,202.27	8,137.00	5,195.00	4,970.67	29.72	17.45	86.93	1,128.37	5,886.72	6,861.10	6,818.19	42.91	159.887		
8,300.00	8,234.73	5,195.00	4,970.67	30.06	17.45	86.93	1,128.37	5,886.72	6,905.68	6,862.66	43.02	160.533		
8,400.00	8,334.73	5,195.00	4,970.67	30.41	17.45	86.93	1,128.37	5,886.72	6,952.42	6,909.30	43.12	161.228		
8,500.00	8,434.73	5,210.12	4,973.84	30.75	17.55	87.06	1,113.78	5,889.15	7,000.19	6,956.87	43.32	161.596		
8,552.31	8,487.04	5,212.09	4,974.22	30.94	17.57	87.08	1,111.88	5,889.46	7,025.63	6,982.25	43.38	161.943		
8,600.00	8,534.68	5,213.87	4,974.56	31.10	17.58	-2.45	1,110.15	5,889.74	7,047.34	7,003.90	43.43	162.257		
8,650.00	8,584.26	5,227.00	4,976.84	31.26	17.67	-2.26	1,097.38	5,891.75	7,066.56	7,023.01	43.55	162.280		
8,700.00	8,633.10	5,227.00	4,976.84	31.43	17.67	-2.19	1,097.38	5,891.75	7,081.94	7,038.37	43.57	162.540		
8,750.00	8,680.83	5,227.00	4,976.84	31.58	17.67	-2.15	1,097.38	5,891.75	7,093.45	7,049.86	43.59	162.734		
8,800.00	8,727.09	5,227.00	4,976.84	31.74	17.67	-2.12	1,097.38	5,891.75	7,101.02	7,057.42	43.60	162.865		
8,850.00	8,771.52	5,227.00	4,976.84	31.89	17.67	-2.11	1,097.38	5,891.75	7,104.61	7,061.00	43.60	162.935		
8,900.00	8,813.78	5,227.00	4,976.84	32.04	17.67	-2.11	1,097.38	5,891.75	7,104.19	7,060.59	43.60	162.944		
8,950.00	8,853.56	5,227.00	4,976.84	32.18	17.67	-2.12	1,097.38	5,891.75	7,099.77	7,056.19	43.58	162.896		
9,000.00	8,890.55	5,227.00	4,976.84	32.32	17.67	-2.16	1,097.38	5,891.75	7,091.38	7,047.81	43.56	162.789		
9,050.00	8,924.46	5,227.00	4,976.84	32.47	17.67	-2.20	1,097.38	5,891.75	7,079.06	7,035.53	43.53	162.624		
9,100.00	8,955.05	5,227.00	4,976.84	32.63	17.67	-2.27	1,097.38	5,891.75	7,062.88	7,019.39	43.49	162.402		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,227.00	4,976.84	32.79	17.67	-2.36	1,097.38	5,891.75	7,042.95	6,999.51	43.44	162.122		
9,200.00	9,005.34	5,227.00	4,976.84	32.97	17.67	-2.47	1,097.38	5,891.75	7,019.39	6,976.00	43.39	161.785		
9,250.00	9,024.65	5,227.00	4,976.84	33.17	17.67	-2.62	1,097.38	5,891.75	6,992.33	6,949.01	43.33	161.390		
9,300.00	9,039.87	5,239.90	4,978.76	33.38	17.75	-2.66	1,084.77	5,893.64	6,961.88	6,918.54	43.34	160.639		
9,350.00	9,050.89	5,241.34	4,978.96	33.62	17.76	-2.86	1,083.35	5,893.85	6,928.35	6,885.07	43.28	160.097		
9,400.00	9,057.61	5,242.68	4,979.13	33.87	17.77	-3.13	1,082.04	5,894.04	6,891.89	6,848.68	43.21	159.499		
9,452.31	9,060.00	5,243.96	4,979.30	34.15	17.78	-3.49	1,080.78	5,894.22	6,850.87	6,807.73	43.14	158.814		
9,500.00	9,060.00	5,245.08	4,979.44	34.42	17.79	-3.48	1,079.68	5,894.38	6,812.27	6,769.20	43.07	158.173		
9,600.00	9,060.00	5,259.00	4,981.01	35.09	17.89	-3.28	1,065.98	5,896.29	6,731.77	6,688.79	42.99	156.604		
9,700.00	9,060.00	5,259.00	4,981.01	35.86	17.89	-3.28	1,065.98	5,896.29	6,651.72	6,608.89	42.83	155.322		
9,800.00	9,060.00	5,259.00	4,981.01	36.72	17.89	-3.28	1,065.98	5,896.29	6,572.21	6,529.54	42.67	154.024		
9,900.00	9,060.00	5,259.00	4,981.01	37.69	17.89	-3.28	1,065.98	5,896.29	6,493.26	6,450.74	42.52	152.706		
10,000.00	9,060.00	5,259.00	4,981.01	38.73	17.89	-3.28	1,065.98	5,896.29	6,414.91	6,372.53	42.38	151.369		
10,100.00	9,060.00	5,259.00	4,981.01	39.86	17.89	-3.28	1,065.98	5,896.29	6,337.16	6,294.92	42.25	150.009		
10,140.22	9,060.00	5,259.00	4,981.01	40.33	17.89	-3.28	1,065.98	5,896.29	6,306.07	6,263.87	42.19	149.456		
10,200.00	9,060.00	5,259.00	4,981.01	41.05	17.89	-4.72	1,065.98	5,896.29	6,260.08	6,217.96	42.12	148.625		
10,300.00	9,060.00	5,259.00	4,981.01	42.31	17.89	-7.06	1,065.98	5,896.29	6,183.82	6,141.81	42.01	147.207		
10,400.00	9,060.00	5,259.00	4,981.01	43.64	17.89	-9.33	1,065.98	5,896.29	6,108.53	6,066.62	41.91	145.746		
10,507.23	9,060.00	5,259.00	4,981.01	45.11	17.89	-11.66	1,065.98	5,896.29	6,029.03	5,987.20	41.83	144.124		
10,600.00	9,060.00	5,259.00	4,981.01	46.43	17.89	-9.69	1,065.98	5,896.29	5,960.97	5,919.19	41.78	142.676		
10,700.00	9,060.00	5,259.00	4,981.01	47.91	17.89	-7.58	1,065.98	5,896.29	5,887.98	5,846.25	41.73	141.089		
10,800.00	9,060.00	5,274.38	4,982.28	49.42	18.00	-5.27	1,050.79	5,898.33	5,815.30	5,773.53	41.77	139.229		
10,900.00	9,060.00	5,275.96	4,982.39	50.97	18.01	-3.19	1,049.23	5,898.53	5,743.34	5,701.60	41.74	137.597		
11,000.00	9,060.00	5,277.12	4,982.46	52.55	18.02	-1.14	1,048.09	5,898.68	5,672.10	5,630.38	41.72	135.966		
11,100.00	9,060.00	5,291.00	4,983.12	54.14	18.12	1.04	1,034.34	5,900.48	5,601.81	5,560.05	41.76	134.152		
11,207.23	9,060.00	5,291.00	4,983.12	55.87	18.12	3.11	1,034.34	5,900.48	5,527.36	5,485.61	41.74	132.418		
11,300.00	9,060.00	5,291.00	4,983.12	57.39	18.12	1.37	1,034.34	5,900.48	5,463.82	5,422.08	41.74	130.887		
11,400.00	9,060.00	5,291.00	4,983.12	59.06	18.12	-0.47	1,034.34	5,900.48	5,396.23	5,354.45	41.77	129.180		
11,506.63	9,060.00	5,291.00	4,983.12	60.88	18.12	-2.37	1,034.34	5,900.48	5,325.30	5,283.47	41.83	127.296		
11,600.00	9,060.00	5,291.00	4,983.12	62.49	18.12	-2.37	1,034.34	5,900.48	5,264.23	5,222.31	41.91	125.602		
11,700.00	9,060.00	5,291.00	4,983.12	64.24	18.12	-2.37	1,034.34	5,900.48	5,199.88	5,157.86	42.02	123.757		
11,800.00	9,060.00	5,291.00	4,983.12	66.01	18.12	-2.37	1,034.34	5,900.48	5,136.67	5,094.52	42.14	121.882		
11,900.00	9,060.00	5,291.00	4,983.12	67.79	18.12	-2.37	1,034.34	5,900.48	5,074.64	5,032.35	42.30	119.979		
12,000.00	9,060.00	5,291.00	4,983.12	69.58	18.12	-2.37	1,034.34	5,900.48	5,013.84	4,971.37	42.47	118.049		
12,100.00	9,060.00	5,291.00	4,983.12	71.39	18.12	-2.37	1,034.34	5,900.48	4,954.32	4,911.65	42.67	116.098		
12,200.00	9,060.00	5,291.00	4,983.12	73.21	18.12	-2.37	1,034.34	5,900.48	4,896.11	4,853.21	42.90	114.127		
12,300.00	9,060.00	5,291.00	4,983.12	75.05	18.12	-2.37	1,034.34	5,900.48	4,839.27	4,796.12	43.15	112.140		
12,400.00	9,060.00	5,291.00	4,983.12	76.89	18.12	-2.37	1,034.34	5,900.48	4,783.85	4,740.41	43.43	110.143		
12,500.00	9,060.00	5,291.00	4,983.12	78.74	18.12	-2.37	1,034.34	5,900.48	4,729.89	4,686.15	43.74	108.138		
12,600.00	9,060.00	5,291.00	4,983.12	80.61	18.12	-2.37	1,034.34	5,900.48	4,677.44	4,633.37	44.07	106.131		
12,700.00	9,060.00	5,291.00	4,983.12	82.48	18.12	-2.37	1,034.34	5,900.48	4,626.57	4,582.14	44.43	104.127		
12,800.00	9,060.00	5,298.44	4,983.33	84.36	18.18	-2.26	1,026.96	5,901.44	4,577.27	4,532.44	44.83	102.097		
12,900.00	9,060.00	5,300.09	4,983.36	86.24	18.19	-2.24	1,025.32	5,901.66	4,529.66	4,484.42	45.25	100.110		
13,000.00	9,060.00	5,309.00	4,983.50	88.14	18.26	-2.11	1,016.50	5,902.84	4,483.82	4,438.12	45.70	98.118		
13,100.00	9,060.00	5,309.00	4,983.50	90.04	18.26	-2.11	1,016.50	5,902.84	4,439.69	4,393.53	46.16	96.182		
13,200.00	9,060.00	5,309.00	4,983.50	91.94	18.26	-2.11	1,016.50	5,902.84	4,397.39	4,350.75	46.65	94.272		
13,300.00	9,060.00	5,309.00	4,983.50	93.86	18.26	-2.11	1,016.50	5,902.84	4,356.98	4,309.83	47.16	92.393		
13,400.00	9,060.00	5,309.00	4,983.50	95.77	18.26	-2.11	1,016.50	5,902.84	4,318.51	4,270.82	47.69	90.549		
13,500.00	9,060.00	5,309.00	4,983.50	97.70	18.26	-2.11	1,016.50	5,902.84	4,282.03	4,233.78	48.25	88.744		
13,600.00	9,060.00	5,309.00	4,983.50	99.62	18.26	-2.11	1,016.50	5,902.84	4,247.59	4,198.76	48.83	86.982		
13,700.00	9,060.00	5,309.00	4,983.50	101.56	18.26	-2.11	1,016.50	5,902.84	4,215.24	4,165.80	49.44	85.267		
13,800.00	9,060.00	5,309.00	4,983.50	103.49	18.26	-2.11	1,016.50	5,902.84	4,185.03	4,134.97	50.06	83.600		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,330.89	4,983.66	105.43	18.43	-1.80	994.82	5,905.88	4,156.86	4,106.14	50.72	81.964	
14,000.00	9,060.00	5,335.93	4,983.67	107.38	18.47	-1.73	989.83	5,906.61	4,131.00	4,079.62	51.38	80.403	
14,100.00	9,060.00	5,341.14	4,983.69	109.33	18.51	-1.65	984.68	5,907.37	4,107.39	4,055.33	52.06	78.897	
14,200.00	9,060.00	5,346.53	4,983.69	111.28	18.56	-1.58	979.34	5,908.17	4,086.07	4,033.32	52.76	77.449	
14,300.00	9,060.00	5,352.12	4,983.69	113.23	18.60	-1.50	973.82	5,909.02	4,067.09	4,013.62	53.47	76.059	
14,400.00	9,060.00	5,373.00	4,983.60	115.19	18.77	-1.20	953.20	5,912.30	4,050.53	3,996.32	54.21	74.717	
14,500.00	9,060.00	5,373.00	4,983.60	117.15	18.77	-1.20	953.20	5,912.30	4,036.26	3,981.30	54.95	73.449	
14,600.00	9,060.00	14,600.00	4,983.97	119.11	108.64	-0.51	904.95	5,920.57	4,024.12	3,928.05	96.07	41.888	
14,700.00	9,060.00	14,700.00	4,984.09	121.08	109.64	-0.29	890.01	5,923.13	4,014.52	3,917.67	96.85	41.451 ES	
14,800.00	9,060.00	5,493.65	4,984.85	123.05	19.86	0.51	834.33	5,932.89	4,007.24	3,949.74	57.50	69.686	
14,900.00	9,060.00	5,503.66	4,985.03	125.02	19.96	0.65	824.48	5,934.67	4,002.34	3,944.01	58.33	68.617	
15,000.00	9,060.00	5,513.71	4,985.19	126.99	20.06	0.79	814.60	5,936.46	3,999.88	3,940.72	59.17	67.604	
15,049.69	9,060.00	5,518.72	4,985.27	127.98	20.11	0.86	809.67	5,937.35	3,999.58	3,939.99	59.59	67.123 CC	
15,100.00	9,060.00	5,523.80	4,985.34	128.97	20.16	0.93	804.67	5,938.25	3,999.89	3,939.88	60.01	66.649	
15,200.00	9,060.00	5,533.93	4,985.48	130.95	20.26	1.07	794.70	5,940.06	4,002.36	3,941.49	60.87	65.751	
15,300.00	9,060.00	5,544.11	4,985.60	132.93	20.36	1.22	784.69	5,941.88	4,007.28	3,945.54	61.74	64.910	
15,400.00	9,060.00	5,562.00	4,985.77	134.91	20.53	1.47	767.09	5,945.09	4,014.65	3,952.01	62.64	64.088	
15,500.00	9,060.00	5,566.02	4,985.80	136.89	20.58	1.53	763.13	5,945.82	4,024.44	3,960.95	63.49	63.388	
15,600.00	9,060.00	5,581.94	4,985.94	138.88	20.74	1.75	747.48	5,948.67	4,036.63	3,972.23	64.40	62.681	
15,700.00	9,060.00	5,597.75	4,986.07	140.86	20.91	1.98	731.92	5,951.49	4,051.19	3,985.88	65.31	62.028	
15,800.00	9,060.00	5,613.46	4,986.20	142.85	21.07	2.20	716.47	5,954.29	4,068.09	4,001.87	66.22	61.430	
15,900.00	9,060.00	15,900.00	4,987.25	144.84	143.06	3.28	641.24	5,968.47	4,087.25	3,959.30	127.95	31.944	
16,000.00	9,060.00	5,799.86	4,990.19	146.83	23.17	4.82	533.72	5,990.65	4,108.60	4,039.11	69.49	59.125	
16,100.00	9,060.00	5,845.48	4,992.15	148.83	23.72	5.46	489.13	6,000.14	4,131.60	4,060.78	70.82	58.338	
16,200.00	9,060.00	16,200.00	4,991.84	150.82	153.44	5.35	496.92	5,998.47	4,156.76	4,017.05	139.70	29.754 SF	
16,300.00	9,060.00	5,846.00	4,992.17	152.82	23.72	5.47	488.63	6,000.25	4,184.18	4,111.79	72.39	57.799	
16,400.00	9,060.00	5,846.00	4,992.17	154.81	23.72	5.47	488.63	6,000.25	4,213.78	4,140.64	73.14	57.610	
16,500.00	9,060.00	5,846.00	4,992.17	156.81	23.72	5.47	488.63	6,000.25	4,245.54	4,171.66	73.87	57.471	
16,600.00	9,060.00	5,876.89	4,993.41	158.81	24.10	5.90	458.41	6,006.52	4,279.05	4,204.06	74.99	57.059	
16,700.00	9,060.00	5,882.81	4,993.61	160.81	24.18	5.98	452.61	6,007.70	4,314.82	4,239.05	75.76	56.952	
16,800.00	9,060.00	5,888.64	4,993.78	162.81	24.25	6.06	446.89	6,008.85	4,352.56	4,276.05	76.51	56.891	
16,900.00	9,060.00	5,894.40	4,993.94	164.82	24.32	6.15	441.25	6,009.98	4,392.24	4,315.01	77.23	56.874	
17,000.00	9,060.00	5,900.06	4,994.08	166.82	24.39	6.22	435.70	6,011.08	4,433.79	4,355.86	77.92	56.900	
17,100.00	9,060.00	5,905.65	4,994.21	168.82	24.46	6.30	430.21	6,012.17	4,477.17	4,398.57	78.59	56.967	
17,200.00	9,060.00	5,939.00	4,994.68	170.83	24.87	6.77	397.47	6,018.48	4,522.59	4,442.92	79.67	56.764	
17,300.00	9,060.00	5,939.00	4,994.68	172.84	24.87	6.77	397.47	6,018.48	4,569.37	4,489.16	80.21	56.967	
17,400.00	9,060.00	5,939.00	4,994.68	174.84	24.87	6.77	397.47	6,018.48	4,617.84	4,537.11	80.72	57.206	
17,500.00	9,060.00	5,939.00	4,994.68	176.85	24.87	6.77	397.47	6,018.48	4,667.94	4,586.73	81.21	57.480	
17,600.00	9,060.00	5,939.00	4,994.68	178.86	24.87	6.77	397.47	6,018.48	4,719.64	4,637.97	81.67	57.789	
17,700.00	9,060.00	5,939.00	4,994.68	180.87	24.87	6.77	397.47	6,018.48	4,772.87	4,690.76	82.11	58.130	
17,800.00	9,060.00	5,939.00	4,994.68	182.88	24.87	6.77	397.47	6,018.48	4,827.59	4,745.07	82.52	58.502	
17,900.00	9,060.00	5,939.00	4,994.68	184.89	24.87	6.77	397.47	6,018.48	4,883.74	4,800.83	82.91	58.905	
18,000.00	9,060.00	5,939.00	4,994.68	186.90	24.87	6.77	397.47	6,018.48	4,941.27	4,858.00	83.28	59.336	
18,100.00	9,060.00	5,939.00	4,994.68	188.92	24.87	6.77	397.47	6,018.48	5,000.15	4,916.52	83.62	59.795	
18,200.00	9,060.00	5,939.00	4,994.68	190.93	24.87	6.77	397.47	6,018.48	5,060.31	4,976.37	83.95	60.280	
18,300.00	9,060.00	5,939.00	4,994.68	192.94	24.87	6.77	397.47	6,018.48	5,121.72	5,037.47	84.25	60.790	
18,400.00	9,060.00	5,939.00	4,994.68	194.96	24.87	6.77	397.47	6,018.48	5,184.34	5,099.80	84.54	61.325	
18,500.00	9,060.00	5,939.00	4,994.68	196.97	24.87	6.77	397.47	6,018.48	5,248.11	5,163.30	84.81	61.882	
18,600.00	9,060.00	5,975.56	4,994.70	198.99	25.32	7.28	361.49	6,024.97	5,312.49	5,226.77	85.72	61.974	
18,700.00	9,060.00	5,979.31	4,994.68	201.00	25.37	7.33	357.80	6,025.61	5,378.35	5,292.32	86.03	62.518	
18,800.00	9,060.00	5,982.97	4,994.65	203.02	25.41	7.38	354.19	6,026.22	5,445.23	5,358.91	86.32	63.081	
18,900.00	9,060.00	5,986.55	4,994.62	205.04	25.46	7.43	350.66	6,026.81	5,513.11	5,426.52	86.60	63.664	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbore #2										Offset Site Error:	5.00 ft
Survey Program:		18-GYRO-NS-CT, 4369-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	5,990.06	4,994.58	207.06	25.50	7.48	347.20	6,027.38	5,581.95	5,495.09	86.86	64.264	
19,100.00	9,060.00	5,993.49	4,994.54	209.07	25.55	7.53	343.81	6,027.94	5,651.71	5,564.60	87.11	64.882	
19,200.00	9,060.00	5,996.85	4,994.49	211.09	25.59	7.58	340.50	6,028.48	5,722.36	5,635.01	87.34	65.516	
19,300.00	9,060.00	6,034.00	4,993.74	213.11	26.05	8.09	303.79	6,034.11	5,794.29	5,706.06	88.23	65.675	
19,400.00	9,060.00	6,034.00	4,993.74	215.13	26.05	8.09	303.79	6,034.11	5,866.54	5,778.16	88.38	66.381	
19,500.32	9,060.00	6,034.00	4,993.74	217.16	26.05	8.09	303.79	6,034.11	5,939.83	5,851.31	88.52	67.103	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,911.18				
100.00	100.00	13.81	13.81	0.52	5.02	77.36	1,731.24	7,718.92	7,910.69	7,905.14	5.54	1,427.216	
200.00	200.00	134.92	134.92	0.70	5.03	77.36	1,731.43	7,718.68	7,910.52	7,904.79	5.73	1,380.208	
300.00	300.00	260.04	260.03	0.99	5.05	77.35	1,731.94	7,718.00	7,910.09	7,904.05	6.03	1,311.157	
400.00	400.00	368.41	368.40	1.31	5.09	77.35	1,731.87	7,717.17	7,909.32	7,902.92	6.40	1,235.287	
500.00	500.00	452.05	452.04	1.65	5.15	77.35	1,731.53	7,716.73	7,908.72	7,901.92	6.80	1,163.752	
600.00	600.00	548.61	548.60	1.99	5.23	77.36	1,731.06	7,716.38	7,908.26	7,901.03	7.22	1,094.606	
700.00	700.00	658.53	658.52	2.34	5.35	77.36	1,730.43	7,715.92	7,907.72	7,900.03	7.69	1,027.790	
800.00	800.00	758.98	758.96	2.69	5.49	77.36	1,729.61	7,715.47	7,907.11	7,898.93	8.18	967.035	
900.00	900.00	839.49	839.47	3.04	5.61	77.37	1,729.01	7,715.19	7,906.60	7,897.96	8.65	914.199	
1,000.00	1,000.00	938.38	938.36	3.40	5.77	77.37	1,728.57	7,715.01	7,906.33	7,897.16	9.16	862.728	
1,100.00	1,100.00	1,036.78	1,036.75	3.75	5.94	77.37	1,728.05	7,714.76	7,905.96	7,896.27	9.70	815.405	
1,200.00	1,200.00	1,169.31	1,169.28	4.11	6.20	77.37	1,728.01	7,713.99	7,905.38	7,895.07	10.31	766.672	
1,300.00	1,300.00	1,240.90	1,240.87	4.46	6.35	77.37	1,728.24	7,713.57	7,904.86	7,894.04	10.82	730.743	
1,400.00	1,400.00	1,325.66	1,325.63	4.82	6.54	77.37	1,728.52	7,713.29	7,904.61	7,893.25	11.36	695.864	
1,500.00	1,500.00	1,422.34	1,422.31	5.18	6.76	77.37	1,728.77	7,713.08	7,904.46	7,892.52	11.94	662.173	
1,600.00	1,600.00	1,568.81	1,568.78	5.53	7.11	77.36	1,729.37	7,712.26	7,903.99	7,891.34	12.65	624.981	
1,700.00	1,700.00	1,654.80	1,654.76	5.89	7.33	77.36	1,729.56	7,711.57	7,903.27	7,890.05	13.22	597.822	
1,800.00	1,800.00	1,727.76	1,727.72	6.25	7.52	77.36	1,729.44	7,711.34	7,902.91	7,889.15	13.77	574.118	
1,900.00	1,900.00	1,813.49	1,813.45	6.61	7.74	77.36	1,729.05	7,711.34	7,902.80	7,888.46	14.35	550.799	
1,921.72	1,921.72	1,833.16	1,833.12	6.68	7.79	77.36	1,728.94	7,711.36	7,902.80	7,888.32	14.48	545.856	
2,000.00	2,000.00	1,902.53	1,902.49	6.96	7.98	77.37	1,728.60	7,711.47	7,902.84	7,887.90	14.94	528.831	
2,100.00	2,100.00	1,993.92	1,993.87	7.32	8.23	77.37	1,727.78	7,711.85	7,903.05	7,887.49	15.55	508.186	
2,200.00	2,200.00	2,116.41	2,116.36	7.68	8.57	77.38	1,726.59	7,712.18	7,903.09	7,886.84	16.25	486.287	
2,300.00	2,300.00	2,215.69	2,215.63	8.04	8.86	77.39	1,725.79	7,712.27	7,903.01	7,886.11	16.89	467.830	
2,350.00	2,350.00	2,263.18	2,263.12	8.22	9.00	77.39	1,725.70	7,712.28	7,902.99	7,885.78	17.21	459.242	
2,376.67	2,376.67	2,290.33	2,290.27	8.31	9.07	93.43	1,725.66	7,712.28	7,902.99	7,885.61	17.38	454.644	
2,400.00	2,400.00	2,314.07	2,314.02	8.39	9.14	93.43	1,725.61	7,712.28	7,902.99	7,885.46	17.54	450.692	
2,500.00	2,499.98	2,413.70	2,413.65	8.75	9.44	93.44	1,725.37	7,712.30	7,903.06	7,884.88	18.18	434.612	
2,600.00	2,599.92	2,507.61	2,507.55	9.11	9.72	93.47	1,724.98	7,712.39	7,903.28	7,884.46	18.82	419.956	
2,700.00	2,699.78	2,604.38	2,604.32	9.47	10.01	93.51	1,724.32	7,712.61	7,903.67	7,884.20	19.47	406.033	
2,800.00	2,799.54	2,706.40	2,706.34	9.82	10.32	93.56	1,723.75	7,712.82	7,904.17	7,884.04	20.13	392.649	
2,900.00	2,899.16	2,824.56	2,824.49	10.18	10.68	93.63	1,723.02	7,712.89	7,904.65	7,883.80	20.85	379.155	
3,000.00	2,998.61	2,922.64	2,922.58	10.54	10.98	93.70	1,722.80	7,712.73	7,905.11	7,883.61	21.51	367.555	
3,100.00	3,097.86	3,011.81	3,011.75	10.89	11.26	93.77	1,722.78	7,712.68	7,905.84	7,883.70	22.14	357.066	
3,200.00	3,196.89	3,122.46	3,122.40	11.25	11.61	93.87	1,722.92	7,712.56	7,906.70	7,883.86	22.84	346.107	
3,295.74	3,291.45	3,197.88	3,197.81	11.59	11.85	93.95	1,723.46	7,712.30	7,907.59	7,884.16	23.42	337.582	
3,300.00	3,295.65	3,200.16	3,200.09	11.61	11.85	93.95	1,723.48	7,712.30	7,907.64	7,884.19	23.45	337.262	
3,400.00	3,394.29	3,257.20	3,257.13	11.97	12.03	94.01	1,723.98	7,712.43	7,909.18	7,885.19	23.98	329.763	
3,500.00	3,492.94	3,333.61	3,333.54	12.33	12.27	94.10	1,724.48	7,712.94	7,911.15	7,886.57	24.58	321.789	
3,600.00	3,591.58	3,470.50	3,470.43	12.69	12.71	94.26	1,724.55	7,713.82	7,913.01	7,887.63	25.38	311.760	
3,700.00	3,690.22	3,568.72	3,568.65	13.05	13.03	94.38	1,724.17	7,714.32	7,914.69	7,888.63	26.06	303.733	
3,800.00	3,788.86	3,669.32	3,669.24	13.41	13.35	94.51	1,723.54	7,714.87	7,916.40	7,889.65	26.74	295.998	
3,900.00	3,887.50	3,785.00	3,785.08	13.77	21.55	103.08	740.77	7,748.92	7,907.14	7,872.15	34.99	226.011	
4,000.00	3,986.14	5,754.59	4,977.91	14.14	21.25	102.86	771.09	7,746.56	7,896.22	7,861.12	35.10	224.936	
4,100.00	4,084.78	5,749.01	4,977.90	14.50	21.20	102.82	776.65	7,746.15	7,886.66	7,851.20	35.46	222.408	
4,200.00	4,183.42	5,743.34	4,977.90	14.87	21.14	102.78	782.31	7,745.74	7,878.35	7,842.54	35.81	219.989	
4,300.00	4,282.06	5,737.56	4,977.92	15.24	21.09	102.74	788.07	7,745.32	7,871.29	7,835.13	36.16	217.678	
4,400.00	4,380.70	5,731.67	4,977.94	15.60	21.03	102.70	793.95	7,744.91	7,865.48	7,828.97	36.50	215.472	
4,500.00	4,479.34	5,725.67	4,977.97	15.97	20.97	102.66	799.93	7,744.49	7,860.92	7,824.08	36.84	213.370	
4,600.00	4,577.98	5,719.56	4,978.01	16.34	20.91	102.61	806.03	7,744.08	7,857.62	7,820.45	37.17	211.369	
4,700.00	4,676.62	5,694.00	4,978.30	16.71	20.66	102.43	831.53	7,742.42	7,855.65	7,818.33	37.32	210.522	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	5,694.00	4,978.30	17.08	20.66	102.43	831.53	7,742.42	7,854.83	7,817.13	37.70	208.355		
4,814.06	4,789.13	5,694.00	4,978.30	17.13	20.66	102.43	831.53	7,742.42	7,854.82	7,817.07	37.75	208.058		
4,900.00	4,873.91	5,694.00	4,978.30	17.45	20.66	102.43	831.53	7,742.42	7,855.29	7,817.21	38.08	206.289		
5,000.00	4,972.55	5,694.00	4,978.30	17.82	20.66	102.43	831.53	7,742.42	7,857.02	7,818.57	38.45	204.322		
5,100.00	5,071.19	5,679.87	4,978.49	18.19	20.54	102.33	845.63	7,741.54	7,860.01	7,821.31	38.70	203.123		
5,200.00	5,169.83	5,666.33	4,978.64	18.56	20.41	102.23	859.15	7,740.71	7,864.23	7,825.30	38.94	201.968		
5,300.00	5,268.47	5,653.14	4,978.76	18.93	20.29	102.13	872.32	7,739.90	7,869.70	7,830.52	39.18	200.868		
5,400.00	5,367.11	5,640.28	4,978.84	19.31	20.18	102.04	885.15	7,739.12	7,876.41	7,836.99	39.42	199.822		
5,500.00	5,465.75	5,627.75	4,978.90	19.68	20.06	101.95	897.66	7,738.36	7,884.35	7,844.69	39.65	198.831		
5,600.00	5,564.39	5,615.53	4,978.93	20.05	19.95	101.86	909.85	7,737.63	7,893.52	7,853.63	39.89	197.894		
5,700.00	5,663.03	5,603.00	4,978.93	20.42	19.84	101.77	922.36	7,736.89	7,903.92	7,863.81	40.11	197.039		
5,800.00	5,761.67	5,603.00	4,978.93	20.80	19.84	101.77	922.36	7,736.89	7,915.56	7,875.12	40.45	195.700		
5,900.00	5,860.31	5,603.00	4,978.93	21.17	19.84	101.77	922.36	7,736.89	7,928.45	7,887.67	40.78	194.442		
6,000.00	5,958.96	5,603.00	4,978.93	21.54	19.84	101.77	922.36	7,736.89	7,942.57	7,901.47	41.10	193.260		
6,100.00	6,057.60	5,603.00	4,978.93	21.92	19.84	101.77	922.36	7,736.89	7,957.93	7,916.51	41.41	192.152		
6,200.00	6,156.24	5,603.00	4,978.93	22.29	19.84	101.77	922.36	7,736.89	7,974.51	7,932.78	41.73	191.117		
6,300.00	6,254.88	5,603.00	4,978.93	22.67	19.84	101.77	922.36	7,736.89	7,992.30	7,950.27	42.03	190.152		
6,400.00	6,353.52	5,572.57	4,979.03	23.04	19.59	101.55	952.74	7,735.26	8,011.10	7,969.02	42.08	190.379		
6,500.00	6,452.16	5,567.96	4,979.07	23.42	19.55	101.52	957.35	7,735.04	8,031.23	7,988.90	42.34	189.702		
6,600.00	6,550.80	5,563.29	4,979.11	23.79	19.51	101.49	962.01	7,734.83	8,052.55	8,009.97	42.59	189.088		
6,700.00	6,649.44	5,558.56	4,979.16	24.17	19.47	101.45	966.74	7,734.62	8,075.05	8,032.22	42.83	188.534		
6,800.00	6,748.08	5,553.77	4,979.21	24.54	19.43	101.42	971.53	7,734.42	8,098.70	8,055.63	43.07	188.040		
6,900.00	6,846.72	5,548.91	4,979.27	24.92	19.39	101.38	976.39	7,734.23	8,123.51	8,080.21	43.30	187.604		
7,000.00	6,945.36	5,543.98	4,979.34	25.29	19.35	101.35	981.31	7,734.04	8,149.46	8,105.93	43.53	187.223		
7,100.00	7,044.00	5,513.00	4,979.91	25.67	19.09	101.13	1,012.27	7,733.07	8,176.68	8,133.14	43.54	187.802		
7,200.00	7,142.65	5,513.00	4,979.91	26.04	19.09	101.13	1,012.27	7,733.07	8,204.83	8,161.03	43.80	187.345		
7,300.00	7,241.29	5,513.00	4,979.91	26.42	19.09	101.13	1,012.27	7,733.07	8,234.09	8,190.05	44.05	186.941		
7,400.00	7,339.93	5,513.00	4,979.91	26.79	19.09	101.13	1,012.27	7,733.07	8,264.46	8,220.17	44.29	186.588		
7,500.00	7,438.57	5,513.00	4,979.91	27.17	19.09	101.13	1,012.27	7,733.07	8,295.93	8,251.40	44.53	186.285		
7,571.77	7,509.37	5,513.00	4,979.91	27.44	19.09	101.13	1,012.27	7,733.07	8,319.18	8,274.48	44.70	186.097		
7,600.00	7,537.23	5,513.00	4,979.91	27.55	19.09	101.27	1,012.27	7,733.07	8,328.46	8,283.69	44.77	186.030		
7,700.00	7,636.18	5,513.00	4,979.91	27.92	19.09	101.79	1,012.27	7,733.07	8,361.69	8,316.70	45.00	185.826		
7,800.00	7,735.48	5,513.00	4,979.91	28.29	19.09	102.32	1,012.27	7,733.07	8,395.49	8,350.27	45.22	185.673		
7,900.00	7,835.05	5,513.00	4,979.91	28.65	19.09	102.85	1,012.27	7,733.07	8,429.81	8,384.39	45.43	185.570		
8,000.00	7,934.83	5,513.00	4,979.91	29.01	19.09	103.39	1,012.27	7,733.07	8,464.63	8,419.00	45.63	185.513		
8,100.00	8,034.74	5,513.00	4,979.91	29.36	19.09	103.94	1,012.27	7,733.07	8,499.92	8,454.10	45.82	185.502		
8,202.27	8,137.00	5,513.00	4,979.91	29.72	19.09	88.47	1,012.27	7,733.07	8,536.46	8,490.45	46.01	185.535		
8,300.00	8,234.73	5,513.00	4,979.91	30.06	19.09	88.47	1,012.27	7,733.07	8,572.08	8,525.89	46.18	185.604		
8,400.00	8,334.73	5,513.00	4,979.91	30.41	19.09	88.47	1,012.27	7,733.07	8,609.52	8,563.16	46.36	185.709		
8,500.00	8,434.73	5,513.00	4,979.91	30.75	19.09	88.47	1,012.27	7,733.07	8,647.95	8,601.42	46.53	185.847		
8,552.31	8,487.04	5,513.00	4,979.91	30.94	19.09	88.47	1,012.27	7,733.07	8,668.44	8,621.82	46.62	185.932		
8,600.00	8,534.68	5,513.00	4,979.91	31.10	19.09	-1.15	1,012.27	7,733.07	8,685.52	8,638.83	46.69	186.006		
8,650.00	8,584.26	5,487.43	4,980.59	31.26	18.90	-1.29	1,037.83	7,732.54	8,699.54	8,652.96	46.59	186.742		
8,700.00	8,633.10	5,486.89	4,980.61	31.43	18.89	-1.27	1,038.36	7,732.53	8,709.70	8,663.05	46.65	186.716		
8,750.00	8,680.83	5,486.38	4,980.63	31.58	18.89	-1.26	1,038.87	7,732.52	8,715.84	8,669.14	46.70	186.626		
8,800.00	8,727.09	5,485.90	4,980.64	31.74	18.89	-1.26	1,039.36	7,732.52	8,717.91	8,671.16	46.75	186.475		
8,850.00	8,771.52	5,485.44	4,980.66	31.89	18.88	-1.27	1,039.82	7,732.51	8,715.92	8,669.12	46.79	186.267		
8,900.00	8,813.78	5,485.01	4,980.67	32.04	18.88	-1.29	1,040.24	7,732.50	8,709.86	8,663.03	46.83	186.006		
8,950.00	8,853.56	5,484.62	4,980.68	32.18	18.88	-1.31	1,040.64	7,732.50	8,699.78	8,652.93	46.85	185.692		
9,000.00	8,890.55	5,484.26	4,980.70	32.32	18.87	-1.35	1,040.99	7,732.49	8,685.73	8,638.87	46.87	185.330		
9,050.00	8,924.46	5,483.95	4,980.71	32.47	18.87	-1.40	1,041.30	7,732.49	8,667.82	8,620.95	46.87	184.921		
9,100.00	8,955.05	5,483.69	4,980.71	32.63	18.87	-1.46	1,041.56	7,732.48	8,646.15	8,599.27	46.87	184.465		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,483.48	4,980.72	32.79	18.87	-1.54	1,041.77	7,732.48	8,620.85	8,573.99	46.86	183.965		
9,200.00	9,005.34	5,483.33	4,980.73	32.97	18.87	-1.64	1,041.92	7,732.48	8,592.09	8,545.25	46.84	183.420		
9,250.00	9,024.65	5,483.23	4,980.73	33.17	18.87	-1.76	1,042.02	7,732.48	8,560.06	8,513.24	46.82	182.833		
9,300.00	9,039.87	5,483.19	4,980.73	33.38	18.87	-1.92	1,042.06	7,732.48	8,524.96	8,478.17	46.79	182.204		
9,350.00	9,050.89	5,483.21	4,980.73	33.62	18.87	-2.13	1,042.04	7,732.48	8,487.02	8,440.27	46.75	181.534		
9,400.00	9,057.61	5,483.30	4,980.73	33.87	18.87	-2.40	1,041.95	7,732.48	8,446.50	8,399.79	46.71	180.822		
9,452.31	9,060.00	5,483.46	4,980.72	34.15	18.87	-2.79	1,041.80	7,732.48	8,401.64	8,354.97	46.67	180.033		
9,500.00	9,060.00	5,483.63	4,980.72	34.42	18.87	-2.79	1,041.62	7,732.48	8,359.72	8,313.09	46.62	179.303		
9,600.00	9,060.00	5,484.02	4,980.70	35.09	18.87	-2.78	1,041.24	7,732.49	8,272.01	8,225.49	46.53	177.792		
9,700.00	9,060.00	5,484.41	4,980.69	35.86	18.87	-2.78	1,040.84	7,732.49	8,184.59	8,138.16	46.43	176.268		
9,800.00	9,060.00	5,484.82	4,980.68	36.72	18.88	-2.77	1,040.43	7,732.50	8,097.47	8,051.12	46.34	174.728		
9,900.00	9,060.00	5,485.24	4,980.66	37.69	18.88	-2.77	1,040.01	7,732.51	8,010.64	7,964.38	46.26	173.174		
10,000.00	9,060.00	5,485.68	4,980.65	38.73	18.88	-2.76	1,039.57	7,732.51	7,924.12	7,877.94	46.18	171.603		
10,100.00	9,060.00	5,486.13	4,980.63	39.86	18.89	-2.75	1,039.12	7,732.52	7,837.93	7,791.82	46.10	170.016		
10,140.22	9,060.00	5,486.32	4,980.63	40.33	18.89	-2.75	1,038.93	7,732.52	7,803.35	7,757.27	46.07	169.372		
10,200.00	9,060.00	5,486.91	4,980.61	41.05	18.89	-4.73	1,038.35	7,732.53	7,752.08	7,706.05	46.03	168.404		
10,300.00	9,060.00	5,489.30	4,980.54	42.31	18.91	-7.95	1,035.95	7,732.57	7,666.72	7,620.74	45.98	166.735		
10,400.00	9,060.00	5,493.55	4,980.41	43.64	18.94	-11.04	1,031.71	7,732.65	7,581.97	7,536.02	45.95	165.002		
10,507.23	9,060.00	5,513.00	4,979.91	45.11	19.09	-14.02	1,012.27	7,733.07	7,491.94	7,445.92	46.02	162.787		
10,600.00	9,060.00	5,513.00	4,979.91	46.43	19.09	-11.26	1,012.27	7,733.07	7,414.39	7,368.40	45.99	161.218		
10,700.00	9,060.00	5,513.00	4,979.91	47.91	19.09	-8.26	1,012.27	7,733.07	7,330.84	7,284.87	45.96	159.503		
10,800.00	9,060.00	5,513.00	4,979.91	49.42	19.09	-5.26	1,012.27	7,733.07	7,247.42	7,201.48	45.94	157.773		
10,900.00	9,060.00	5,513.00	4,979.91	50.97	19.09	-2.27	1,012.27	7,733.07	7,164.25	7,118.33	45.91	156.035		
11,000.00	9,060.00	5,513.00	4,979.91	52.55	19.09	0.68	1,012.27	7,733.07	7,081.43	7,035.53	45.90	154.292		
11,100.00	9,060.00	5,513.00	4,979.91	54.14	19.09	3.58	1,012.27	7,733.07	6,999.09	6,953.21	45.88	152.545		
11,207.23	9,060.00	5,513.00	4,979.91	55.87	19.09	6.61	1,012.27	7,733.07	6,911.46	6,865.58	45.87	150.668		
11,300.00	9,060.00	5,513.00	4,979.91	57.39	19.09	4.04	1,012.27	7,733.07	6,836.10	6,790.22	45.87	149.023		
11,400.00	9,060.00	5,501.19	4,980.20	59.06	19.00	1.12	1,024.07	7,732.80	6,755.20	6,709.38	45.82	147.423		
11,506.63	9,060.00	5,500.16	4,980.22	60.88	18.99	-1.78	1,025.10	7,732.77	6,669.47	6,623.62	45.85	145.461		
11,600.00	9,060.00	5,500.35	4,980.22	62.49	18.99	-1.77	1,024.92	7,732.78	6,594.92	6,549.03	45.90	143.693		
11,700.00	9,060.00	5,500.56	4,980.21	64.24	19.00	-1.77	1,024.71	7,732.78	6,515.62	6,469.66	45.96	141.778		
11,800.00	9,060.00	5,500.78	4,980.21	66.01	19.00	-1.77	1,024.49	7,732.79	6,436.89	6,390.86	46.03	139.839		
11,900.00	9,060.00	5,501.01	4,980.20	67.79	19.00	-1.76	1,024.25	7,732.79	6,358.76	6,312.64	46.12	137.877		
12,000.00	9,060.00	5,501.25	4,980.19	69.58	19.00	-1.76	1,024.01	7,732.80	6,281.25	6,235.03	46.22	135.893		
12,100.00	9,060.00	5,501.51	4,980.19	71.39	19.00	-1.76	1,023.75	7,732.80	6,204.38	6,158.04	46.34	133.887		
12,200.00	9,060.00	5,501.78	4,980.18	73.21	19.01	-1.75	1,023.48	7,732.81	6,128.19	6,081.71	46.48	131.860		
12,300.00	9,060.00	5,502.07	4,980.17	75.05	19.01	-1.75	1,023.19	7,732.81	6,052.68	6,006.05	46.63	129.813		
12,400.00	9,060.00	5,502.38	4,980.16	76.89	19.01	-1.74	1,022.88	7,732.82	5,977.89	5,931.10	46.79	127.747		
12,500.00	9,060.00	5,502.70	4,980.16	78.74	19.01	-1.74	1,022.56	7,732.83	5,903.85	5,856.87	46.98	125.664		
12,600.00	9,060.00	5,503.05	4,980.15	80.61	19.01	-1.73	1,022.21	7,732.84	5,830.59	5,783.40	47.19	123.565		
12,700.00	9,060.00	5,503.42	4,980.14	82.48	19.02	-1.73	1,021.85	7,732.84	5,758.13	5,710.71	47.41	121.452		
12,800.00	9,060.00	5,503.81	4,980.13	84.36	19.02	-1.72	1,021.45	7,732.85	5,686.50	5,638.84	47.65	119.328		
12,900.00	9,060.00	5,504.23	4,980.12	86.24	19.02	-1.72	1,021.03	7,732.86	5,615.74	5,567.82	47.92	117.193		
13,000.00	9,060.00	5,504.68	4,980.11	88.14	19.03	-1.71	1,020.58	7,732.87	5,545.88	5,497.68	48.20	115.051		
13,100.00	9,060.00	5,505.17	4,980.09	90.04	19.03	-1.70	1,020.10	7,732.88	5,476.96	5,428.45	48.51	112.905		
13,200.00	9,060.00	5,505.69	4,980.08	91.94	19.03	-1.70	1,019.57	7,732.89	5,409.01	5,360.17	48.84	110.756		
13,300.00	9,060.00	5,506.26	4,980.07	93.86	19.04	-1.69	1,019.01	7,732.91	5,342.06	5,292.87	49.19	108.608		
13,400.00	9,060.00	5,506.87	4,980.05	95.77	19.04	-1.68	1,018.39	7,732.92	5,276.16	5,226.60	49.56	106.464		
13,500.00	9,060.00	5,507.54	4,980.03	97.70	19.05	-1.67	1,017.72	7,732.94	5,211.35	5,161.40	49.95	104.326		
13,600.00	9,060.00	5,508.28	4,980.02	99.62	19.05	-1.66	1,016.99	7,732.96	5,147.66	5,097.29	50.37	102.198		
13,700.00	9,060.00	5,509.08	4,980.00	101.56	19.06	-1.65	1,016.19	7,732.97	5,085.14	5,034.33	50.81	100.084		
13,800.00	9,060.00	5,509.97	4,979.98	103.49	19.07	-1.63	1,015.30	7,733.00	5,023.84	4,972.57	51.27	97.986		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,510.95	4,979.95	105.43	19.07	-1.62	1,014.31	7,733.02	4,963.79	4,912.03	51.76	95.907	
14,000.00	9,060.00	5,512.05	4,979.93	107.38	19.08	-1.60	1,013.22	7,733.05	4,905.04	4,852.78	52.26	93.851	
14,100.00	9,060.00	5,513.28	4,979.90	109.33	19.09	-1.59	1,011.99	7,733.08	4,847.65	4,794.86	52.79	91.822	
14,200.00	9,060.00	5,514.67	4,979.87	111.28	19.10	-1.57	1,010.60	7,733.11	4,791.66	4,738.31	53.35	89.821	
14,300.00	9,060.00	5,516.25	4,979.84	113.23	19.11	-1.54	1,009.02	7,733.16	4,737.11	4,683.19	53.92	87.853	
14,400.00	9,060.00	5,518.07	4,979.80	115.19	19.13	-1.52	1,007.20	7,733.21	4,684.07	4,629.55	54.52	85.920	
14,500.00	9,060.00	5,520.19	4,979.76	117.15	19.14	-1.49	1,005.09	7,733.26	4,632.57	4,577.44	55.13	84.025	
14,600.00	9,060.00	5,522.67	4,979.71	119.11	19.16	-1.45	1,002.60	7,733.33	4,582.68	4,526.91	55.77	82.170	
14,700.00	9,060.00	5,525.63	4,979.65	121.08	19.19	-1.41	999.64	7,733.42	4,534.45	4,478.02	56.43	80.358	
14,800.00	9,060.00	5,529.22	4,979.59	123.05	19.21	-1.36	996.06	7,733.53	4,487.92	4,430.82	57.10	78.592	
14,900.00	9,060.00	14,900.00	4,980.86	125.02	91.84	-1.95	1,037.18	7,732.86	4,443.10	4,336.85	106.25	41.818	
15,000.00	9,060.00	15,000.00	4,980.90	126.99	92.62	-1.96	1,038.08	7,732.85	4,400.16	4,293.32	106.84	41.185	
15,100.00	9,060.00	15,100.00	4,980.93	128.97	93.40	-1.97	1,038.98	7,732.84	4,359.08	4,251.65	107.43	40.576	
15,200.00	9,060.00	15,200.00	4,980.97	130.95	94.18	-1.99	1,039.88	7,732.83	4,319.93	4,211.90	108.03	39.989	
15,300.00	9,060.00	15,300.00	4,981.00	132.93	94.96	-2.00	1,040.78	7,732.82	4,282.75	4,174.12	108.63	39.425	
15,400.00	9,060.00	15,400.00	4,981.04	134.91	95.74	-2.01	1,041.68	7,732.82	4,247.61	4,138.37	109.24	38.882	
15,500.00	9,060.00	5,535.87	4,979.46	136.89	19.28	-1.26	989.42	7,733.75	4,214.63	4,152.37	62.26	67.697	
15,600.00	9,060.00	5,539.53	4,979.40	138.88	19.31	-1.21	985.76	7,733.88	4,183.69	4,120.64	63.05	66.357	
15,700.00	9,060.00	5,543.86	4,979.34	140.86	19.35	-1.15	981.43	7,734.04	4,154.93	4,091.08	63.85	65.074	
15,800.00	9,060.00	5,549.07	4,979.27	142.85	19.39	-1.07	976.23	7,734.23	4,128.39	4,063.73	64.66	63.847	
15,900.00	9,060.00	5,555.44	4,979.19	144.84	19.44	-0.98	969.86	7,734.49	4,104.11	4,038.63	65.48	62.676	
16,000.00	9,060.00	5,563.42	4,979.11	146.83	19.51	-0.87	961.89	7,734.83	4,082.14	4,015.83	66.31	61.560	
16,100.00	9,060.00	5,573.71	4,979.02	148.83	19.60	-0.72	951.61	7,735.31	4,062.50	3,995.35	67.15	60.498	
16,200.00	9,060.00	5,587.47	4,978.95	150.82	19.71	-0.52	937.87	7,736.01	4,045.23	3,977.23	68.00	59.485	
16,300.00	9,060.00	5,606.81	4,978.94	152.82	19.87	-0.25	918.56	7,737.12	4,030.35	3,961.48	68.88	58.515	
16,400.00	9,060.00	16,400.00	4,979.30	154.81	112.76	-0.78	955.81	7,735.47	4,017.77	3,896.31	121.45	33.081	
16,500.00	9,060.00	16,500.00	4,979.27	156.81	113.63	-0.74	953.34	7,735.57	4,007.79	3,885.35	122.45	32.731 ES	
16,600.00	9,060.00	5,603.00	4,978.93	158.81	19.84	-0.30	922.36	7,736.89	4,000.40	3,929.03	71.37	56.052	
16,700.00	9,060.00	5,603.00	4,978.93	160.81	19.84	-0.30	922.36	7,736.89	3,995.37	3,923.17	72.20	55.335	
16,800.00	9,060.00	5,603.00	4,978.93	162.81	19.84	-0.30	922.36	7,736.89	3,992.85	3,919.81	73.03	54.670	
16,851.53	9,060.00	5,617.15	4,978.93	163.85	19.97	-0.10	908.24	7,737.73	3,992.48	3,918.98	73.50	54.318 CC	
16,900.00	9,060.00	5,618.37	4,978.92	164.82	19.98	-0.08	907.02	7,737.80	3,992.77	3,918.87	73.91	54.025	
17,000.00	9,060.00	5,620.90	4,978.92	166.82	20.00	-0.04	904.49	7,737.95	3,995.24	3,920.50	74.74	53.459	
17,100.00	9,060.00	5,623.44	4,978.91	168.82	20.03	-0.01	901.96	7,738.11	4,000.19	3,924.64	75.56	52.943	
17,200.00	9,060.00	5,625.98	4,978.90	170.83	20.05	0.03	899.42	7,738.26	4,007.64	3,931.27	76.37	52.477	
17,300.00	9,060.00	5,628.54	4,978.90	172.84	20.07	0.07	896.87	7,738.41	4,017.56	3,940.39	77.17	52.061	
17,400.00	9,060.00	5,631.10	4,978.89	174.84	20.09	0.10	894.31	7,738.57	4,029.94	3,951.98	77.96	51.694	
17,500.00	9,060.00	5,633.68	4,978.88	176.85	20.12	0.14	891.74	7,738.72	4,044.74	3,966.02	78.73	51.377	
17,600.00	9,060.00	5,636.27	4,978.86	178.86	20.14	0.18	889.15	7,738.88	4,061.96	3,982.48	79.48	51.107	
17,700.00	9,060.00	5,638.86	4,978.85	180.87	20.16	0.21	886.56	7,739.03	4,081.54	4,001.33	80.21	50.885	
17,800.00	9,060.00	5,641.47	4,978.84	182.88	20.19	0.25	883.96	7,739.19	4,103.47	4,022.55	80.92	50.709	
17,900.00	9,060.00	5,644.09	4,978.82	184.89	20.21	0.29	881.35	7,739.35	4,127.71	4,046.10	81.61	50.579	
18,000.00	9,060.00	5,646.72	4,978.80	186.90	20.24	0.33	878.72	7,739.51	4,154.21	4,071.94	82.27	50.495	
18,100.00	9,060.00	5,649.35	4,978.78	188.92	20.26	0.36	876.09	7,739.67	4,182.93	4,100.02	82.90	50.455	
18,200.00	9,060.00	5,652.00	4,978.77	190.93	20.28	0.40	873.45	7,739.83	4,213.82	4,130.31	83.51	50.457	
18,300.00	9,060.00	5,654.66	4,978.74	192.94	20.31	0.44	870.79	7,739.99	4,246.84	4,162.75	84.09	50.502	
18,400.00	9,060.00	5,657.33	4,978.72	194.96	20.33	0.48	868.13	7,740.16	4,281.94	4,197.30	84.65	50.587	
18,500.00	9,060.00	5,660.01	4,978.70	196.97	20.36	0.52	865.45	7,740.32	4,319.07	4,233.90	85.17	50.712	
18,600.00	9,060.00	5,662.71	4,978.67	198.99	20.38	0.56	862.76	7,740.49	4,358.17	4,272.51	85.66	50.875	
18,700.00	9,060.00	5,665.41	4,978.65	201.00	20.41	0.59	860.07	7,740.65	4,399.20	4,313.07	86.13	51.075	
18,800.00	9,060.00	5,668.12	4,978.62	203.02	20.43	0.63	857.36	7,740.82	4,442.10	4,355.53	86.57	51.312	
18,900.00	9,060.00	18,900.00	4,978.23	205.04	153.62	1.45	800.76	7,744.62	4,486.80	4,311.94	174.86	25.659	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		233-GYRO-NS-CT, 4541-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	19,000.00	4,978.21	207.06	154.64	1.52	795.39	7,745.01	4,533.22	4,356.18	177.04	25.606	
19,100.00	9,060.00	19,100.00	4,978.20	209.07	155.65	1.60	790.02	7,745.39	4,581.34	4,402.14	179.20	25.566	
19,200.00	9,060.00	19,200.00	4,978.19	211.09	156.66	1.68	784.65	7,745.78	4,631.11	4,449.77	181.34	25.539	
19,300.00	9,060.00	19,300.00	4,978.17	213.11	157.68	1.75	779.27	7,746.16	4,682.49	4,499.03	183.46	25.524 SF	
19,400.00	9,060.00	5,815.44	4,978.33	215.13	21.86	2.74	710.43	7,751.41	4,735.40	4,645.61	89.79	52.740	
19,500.32	9,060.00	5,820.51	4,978.36	217.16	21.91	2.81	705.38	7,751.83	4,789.92	4,699.82	90.10	53.162	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.34	1,585.65	8,424.46	8,572.80					
100.00	100.00	17.01	17.01	0.52	5.00	79.34	1,585.64	8,424.46	8,572.38	8,566.87	5.52	1,553.588		
200.00	200.00	120.85	120.85	0.70	5.01	79.34	1,585.11	8,424.51	8,572.34	8,566.63	5.71	1,501.871		
285.14	285.14	201.15	201.14	0.94	5.03	79.35	1,584.72	8,424.55	8,572.30	8,566.33	5.97	1,436.223		
300.00	300.00	213.65	213.65	0.99	5.03	79.35	1,584.70	8,424.55	8,572.30	8,566.28	6.02	1,424.241		
400.00	400.00	301.05	301.05	1.31	5.07	79.35	1,584.95	8,424.61	8,572.42	8,566.03	6.38	1,342.856		
500.00	500.00	397.87	397.86	1.65	5.14	79.34	1,585.59	8,424.69	8,572.62	8,565.83	6.79	1,262.661		
600.00	600.00	498.10	498.09	1.99	5.24	79.34	1,586.36	8,424.75	8,572.82	8,565.60	7.23	1,186.214		
700.00	700.00	592.45	592.44	2.34	5.34	79.33	1,587.15	8,424.83	8,573.06	8,565.38	7.68	1,115.844		
800.00	800.00	685.74	685.72	2.69	5.47	79.33	1,588.06	8,424.96	8,573.38	8,565.22	8.16	1,050.929		
900.00	900.00	786.57	786.54	3.04	5.62	79.32	1,589.19	8,425.12	8,573.74	8,565.08	8.66	989.720		
1,000.00	1,000.00	897.63	897.60	3.40	5.81	79.31	1,590.68	8,425.16	8,574.03	8,564.82	9.20	931.491		
1,100.00	1,100.00	986.10	986.06	3.75	5.97	79.30	1,591.99	8,425.14	8,574.28	8,564.56	9.72	881.852		
1,200.00	1,200.00	1,070.18	1,070.13	4.11	6.14	79.29	1,593.45	8,425.25	8,574.73	8,564.48	10.24	837.020		
1,300.00	1,300.00	1,145.88	1,145.81	4.46	6.29	79.28	1,594.66	8,425.53	8,575.39	8,564.63	10.76	797.157		
1,400.00	1,400.00	1,235.78	1,235.71	4.82	6.49	79.28	1,595.86	8,426.16	8,576.33	8,565.02	11.31	758.328		
1,500.00	1,500.00	1,402.55	1,402.46	5.18	6.88	79.26	1,598.32	8,426.62	8,576.87	8,564.82	12.05	711.602		
1,600.00	1,600.00	1,481.96	1,481.85	5.53	7.07	79.25	1,599.60	8,426.59	8,577.14	8,564.54	12.60	680.551		
1,700.00	1,700.00	1,553.16	1,553.04	5.89	7.25	79.24	1,600.77	8,426.78	8,577.71	8,564.57	13.14	652.877		
1,800.00	1,800.00	1,626.36	1,626.23	6.25	7.44	79.24	1,601.92	8,427.23	8,578.60	8,564.92	13.68	626.967		
1,900.00	1,900.00	1,766.63	1,766.48	6.61	7.81	79.22	1,604.21	8,428.14	8,579.59	8,565.18	14.41	595.371		
2,000.00	2,000.00	1,863.88	1,863.72	6.96	8.08	79.21	1,605.87	8,428.43	8,580.20	8,565.17	15.03	570.793		
2,100.00	2,100.00	1,953.18	1,953.00	7.32	8.32	79.20	1,607.49	8,428.74	8,580.89	8,565.25	15.64	548.757		
2,200.00	2,200.00	2,052.69	2,052.49	7.68	8.60	79.19	1,609.49	8,429.04	8,581.57	8,565.29	16.28	527.273		
2,300.00	2,300.00	2,113.11	2,112.90	8.04	8.78	79.18	1,610.64	8,429.42	8,582.54	8,565.73	16.81	510.702		
2,350.00	2,350.00	2,226.00	2,225.77	8.22	9.11	79.17	1,612.80	8,430.01	8,583.00	8,565.69	17.31	495.779		
2,400.00	2,400.00	2,264.41	2,264.16	8.39	9.22	95.20	1,613.64	8,430.02	8,583.25	8,565.64	17.60	487.592		
2,500.00	2,499.98	2,320.50	2,320.24	8.75	9.39	95.19	1,614.89	8,430.27	8,584.26	8,566.14	18.12	473.617		
2,600.00	2,599.92	2,395.94	2,395.66	9.11	9.61	95.18	1,616.56	8,430.92	8,585.84	8,567.13	18.71	459.011		
2,700.00	2,699.78	2,569.56	2,569.23	9.47	10.14	95.20	1,620.57	8,431.39	8,586.81	8,567.22	19.59	438.425		
2,800.00	2,799.54	2,639.51	2,639.16	9.82	10.35	95.21	1,622.37	8,431.58	8,588.19	8,568.04	20.15	426.119		
2,900.00	2,899.16	2,730.48	2,730.09	10.18	10.63	95.23	1,624.75	8,432.04	8,589.97	8,569.18	20.79	413.187		
3,000.00	2,998.61	2,834.53	2,834.11	10.54	10.95	95.27	1,627.60	8,432.49	8,591.87	8,570.40	21.47	400.221		
3,100.00	3,097.86	2,909.46	2,909.01	10.89	11.19	95.29	1,629.65	8,432.87	8,594.03	8,571.97	22.06	389.631		
3,200.00	3,196.89	2,963.46	2,962.99	11.25	11.36	95.30	1,631.00	8,433.43	8,596.82	8,574.24	22.58	380.715		
3,295.74	3,291.45	3,131.46	3,130.92	11.59	11.89	95.43	1,635.28	8,434.61	8,599.24	8,575.79	23.45	366.634		
3,300.00	3,295.65	3,134.68	3,134.14	11.61	11.90	95.43	1,635.36	8,434.63	8,599.35	8,575.87	23.48	366.241		
3,400.00	3,394.29	3,215.71	3,215.14	11.97	12.16	95.50	1,637.45	8,435.08	8,601.96	8,577.87	24.10	356.999		
3,500.00	3,492.94	3,304.92	3,304.32	12.33	12.44	95.59	1,639.80	8,435.72	8,604.76	8,580.02	24.74	347.819		
3,600.00	3,591.58	3,400.20	3,399.57	12.69	12.75	95.68	1,642.32	8,436.47	8,607.65	8,582.25	25.41	338.814		
3,700.00	3,690.22	3,700.00	3,628.58	13.05	13.72	95.89	1,647.61	8,436.98	8,610.14	8,583.40	26.74	322.030		
3,800.00	3,788.86	3,686.33	3,685.63	13.41	13.68	95.95	1,648.20	8,436.54	8,611.51	8,584.46	27.05	318.297		
3,900.00	3,887.50	3,731.50	3,730.79	13.77	13.83	96.00	1,647.98	8,437.04	8,614.00	8,586.44	27.56	312.508		
4,000.00	3,986.14	3,849.56	3,848.82	14.14	14.21	96.12	1,649.08	8,437.99	8,616.76	8,588.45	28.31	304.336		
4,100.00	4,084.78	3,915.00	3,914.25	14.50	14.43	96.18	1,650.47	8,438.43	8,619.50	8,590.61	28.89	298.339		
4,200.00	4,183.42	3,964.09	3,963.33	14.87	14.59	96.23	1,651.40	8,439.02	8,622.72	8,593.30	29.42	293.127		
4,300.00	4,282.06	4,061.84	4,061.06	15.24	14.91	96.33	1,653.00	8,440.39	8,626.21	8,596.11	30.10	286.548		
4,400.00	4,380.70	4,178.92	4,178.12	15.60	15.30	96.45	1,654.12	8,441.94	8,629.55	8,598.69	30.86	279.659		
4,500.00	4,479.34	4,270.71	4,269.90	15.97	15.60	96.55	1,653.80	8,443.29	8,632.85	8,601.32	31.53	273.818		
4,600.00	4,577.98	4,353.32	4,352.49	16.34	15.87	96.64	1,654.53	8,444.46	8,636.32	8,604.15	32.17	268.472		
4,700.00	4,676.62	4,700.00	4,647.67	16.71	17.03	96.84	1,656.04	8,446.62	8,639.63	8,605.94	33.69	256.419		
4,800.00	4,775.27	4,631.54	4,630.68	17.08	16.80	96.93	1,657.10	8,446.71	8,642.00	8,608.16	33.83	255.425		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,671.00	4,670.14	17.45	16.93	96.97	1,657.48	8,447.07	8,645.08	8,610.74	34.33	251.805		
5,000.00	4,972.55	4,791.28	4,790.41	17.82	17.33	97.09	1,658.78	8,448.38	8,648.37	8,613.26	35.11	246.356		
5,100.00	5,071.19	4,890.63	4,889.74	18.19	17.67	97.19	1,659.97	8,449.36	8,651.60	8,615.80	35.81	241.610		
5,200.00	5,169.83	4,987.31	4,986.42	18.56	17.99	97.29	1,661.13	8,450.24	8,654.80	8,618.30	36.50	237.100		
5,300.00	5,268.47	5,100.96	5,100.05	18.93	18.38	97.41	1,662.32	8,451.46	8,658.18	8,620.93	37.26	232.396		
5,400.00	5,367.11	5,208.20	5,207.28	19.31	18.74	97.51	1,663.52	8,452.15	8,661.14	8,623.16	37.99	227.994		
5,500.00	5,465.75	5,368.75	5,367.82	19.68	19.28	97.68	1,664.68	8,452.86	8,663.92	8,625.02	38.90	222.710		
5,600.00	5,564.39	5,487.01	5,486.08	20.05	19.68	97.80	1,665.46	8,452.82	8,666.22	8,626.55	39.67	218.445		
5,700.00	5,663.03	5,585.23	5,584.30	20.42	20.01	97.90	1,666.00	8,452.65	8,668.40	8,628.03	40.38	214.694		
5,800.00	5,761.67	5,674.76	5,673.83	20.80	20.32	98.00	1,666.53	8,452.57	8,670.70	8,629.65	41.05	211.223		
5,900.00	5,860.31	6,099.81	6,098.77	21.17	21.76	98.43	1,669.08	8,444.66	8,671.54	8,628.71	42.83	202.444		
6,000.00	5,958.96	6,156.78	6,155.70	21.54	21.95	98.49	1,669.03	8,442.67	8,670.46	8,627.06	43.41	199.754		
6,100.00	6,057.60	6,225.28	6,224.16	21.92	22.18	98.56	1,668.95	8,440.59	8,669.85	8,625.84	44.01	196.978		
6,184.11	6,140.57	6,271.00	6,269.87	22.23	22.34	98.61	1,668.80	8,439.31	8,669.60	8,625.12	44.49	194.879		
6,200.00	6,156.24	6,271.00	6,269.87	22.29	22.34	98.61	1,668.80	8,439.31	8,669.62	8,625.07	44.55	194.614		
6,300.00	6,254.88	6,271.00	6,269.87	22.67	22.34	98.61	1,668.80	8,439.31	8,670.38	8,625.45	44.93	192.986		
6,400.00	6,353.52	6,311.02	6,309.88	23.04	22.47	98.65	1,668.75	8,438.67	8,671.75	8,626.31	45.44	190.848		
6,500.00	6,452.16	6,531.35	6,530.18	23.42	23.22	98.90	1,667.56	8,437.68	8,674.54	8,627.98	46.56	186.324		
6,600.00	6,550.80	6,625.89	6,624.67	23.79	23.54	99.01	1,665.26	8,436.27	8,675.32	8,628.07	47.25	183.596		
6,700.00	6,649.44	6,703.39	6,702.15	24.17	23.80	99.11	1,663.29	8,435.15	8,676.19	8,628.29	47.89	181.163		
6,800.00	6,748.08	6,811.00	7,763.66	24.54	28.21	104.58	996.13	8,418.45	8,676.89	8,624.51	52.38	165.655		
6,900.00	6,846.72	8,141.00	7,763.66	24.92	28.21	104.58	996.13	8,418.45	8,668.79	8,615.98	52.81	164.143		
7,000.00	6,945.36	8,129.31	7,763.04	25.29	28.12	104.50	1,007.79	8,418.03	8,661.82	8,608.68	53.14	162.995		
7,100.00	7,044.00	8,125.56	7,762.80	25.67	28.08	104.48	1,011.53	8,417.91	8,656.00	8,602.47	53.53	161.697		
7,200.00	7,142.65	8,122.10	7,762.58	26.04	28.05	104.45	1,014.98	8,417.80	8,651.33	8,597.41	53.92	160.450		
7,300.00	7,241.29	8,110.00	7,761.68	26.42	27.95	104.37	1,027.04	8,417.43	8,647.82	8,593.60	54.23	159.472		
7,400.00	7,339.93	8,110.00	7,761.68	26.79	27.95	104.37	1,027.04	8,417.43	8,645.45	8,590.82	54.63	158.247		
7,500.00	7,438.57	8,110.00	7,761.68	27.17	27.95	104.37	1,027.04	8,417.43	8,644.23	8,589.20	55.03	157.079		
7,555.30	7,493.11	8,110.00	7,761.68	27.38	27.95	104.37	1,027.04	8,417.43	8,644.06	8,588.81	55.25	156.457		
7,571.77	7,509.37	8,110.00	7,761.68	27.44	27.95	104.37	1,027.04	8,417.43	8,644.07	8,588.76	55.31	156.275		
7,600.00	7,537.23	8,110.00	7,761.68	27.55	27.95	104.37	1,027.04	8,417.43	8,644.15	8,588.72	55.42	155.966		
7,700.00	7,636.18	8,110.00	7,761.68	27.92	27.95	104.38	1,027.04	8,417.43	8,644.73	8,588.93	55.81	154.907		
7,800.00	7,735.48	8,110.00	7,761.68	28.29	27.95	104.40	1,027.04	8,417.43	8,645.83	8,589.65	56.18	153.900		
7,900.00	7,835.05	8,110.00	7,761.68	28.65	27.95	104.42	1,027.04	8,417.43	8,647.42	8,590.89	56.54	152.945		
8,000.00	7,934.83	8,110.00	7,761.68	29.01	27.95	104.45	1,027.04	8,417.43	8,649.53	8,592.64	56.89	152.041		
8,100.00	8,034.74	8,110.00	7,761.68	29.36	27.95	104.49	1,027.04	8,417.43	8,652.13	8,594.91	57.23	151.188		
8,202.27	8,137.00	8,110.00	7,761.68	29.72	27.95	88.50	1,027.04	8,417.43	8,655.31	8,597.75	57.56	150.365		
8,300.00	8,234.73	8,110.00	7,761.68	30.06	27.95	88.50	1,027.04	8,417.43	8,659.16	8,601.28	57.87	149.625		
8,400.00	8,334.73	8,110.00	7,761.68	30.41	27.95	88.50	1,027.04	8,417.43	8,664.22	8,606.04	58.18	148.911		
8,500.00	8,434.73	8,110.00	7,761.68	30.75	27.95	88.50	1,027.04	8,417.43	8,670.44	8,611.95	58.49	148.241		
8,552.31	8,487.04	8,110.00	7,761.68	30.94	27.95	88.50	1,027.04	8,417.43	8,674.15	8,615.51	58.65	147.907		
8,600.00	8,534.68	8,110.00	7,761.68	31.10	27.95	-1.16	1,027.04	8,417.43	8,675.83	8,617.05	58.78	147.593		
8,650.00	8,584.26	8,110.00	7,761.68	31.26	27.95	-1.17	1,027.04	8,417.43	8,673.61	8,614.69	58.92	147.218		
8,700.00	8,633.10	8,110.00	7,761.68	31.43	27.95	-1.18	1,027.04	8,417.43	8,667.33	8,608.28	59.05	146.790		
8,750.00	8,680.83	8,110.00	7,761.68	31.58	27.95	-1.20	1,027.04	8,417.43	8,657.03	8,597.86	59.17	146.315		
8,800.00	8,727.09	8,121.96	7,762.57	31.74	28.05	-1.15	1,015.13	8,417.79	8,642.74	8,583.36	59.38	145.548		
8,850.00	8,771.52	8,122.76	7,762.62	31.89	28.06	-1.18	1,014.33	8,417.82	8,624.61	8,565.12	59.49	144.975		
8,900.00	8,813.78	8,123.54	7,762.67	32.04	28.07	-1.23	1,013.55	8,417.84	8,602.73	8,543.14	59.59	144.368		
8,950.00	8,853.56	8,124.29	7,762.72	32.18	28.07	-1.29	1,012.80	8,417.87	8,577.24	8,517.56	59.68	143.730		
9,000.00	8,890.55	8,125.01	7,762.77	32.32	28.08	-1.36	1,012.08	8,417.89	8,548.30	8,488.54	59.75	143.063		
9,050.00	8,924.46	8,125.70	7,762.81	32.47	28.08	-1.46	1,011.39	8,417.91	8,516.09	8,456.27	59.82	142.372		
9,100.00	8,955.05	8,126.35	7,762.85	32.63	28.09	-1.59	1,010.74	8,417.93	8,480.83	8,420.96	59.87	141.659		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,150.00	8,982.08	8,126.97	7,762.89	32.79	28.10	-1.75	1,010.13	8,417.95	8,442.74	8,382.83	59.91	140.926				
9,200.00	9,005.34	8,127.54	7,762.93	32.97	28.10	-1.97	1,009.56	8,417.97	8,402.08	8,342.14	59.94	140.176				
9,250.00	9,024.65	8,128.07	7,762.96	33.17	28.10	-2.28	1,009.03	8,417.99	8,359.13	8,299.17	59.96	139.411				
9,300.00	9,039.87	8,128.55	7,762.99	33.38	28.11	-2.72	1,008.55	8,418.01	8,314.18	8,254.20	59.97	138.631				
9,350.00	9,050.89	8,128.98	7,763.02	33.62	28.11	-3.40	1,008.12	8,418.02	8,267.54	8,207.56	59.98	137.840				
9,400.00	9,057.61	8,129.37	7,763.04	33.87	28.12	-4.59	1,007.73	8,418.03	8,219.53	8,159.55	59.98	137.038				
9,452.31	9,060.00	8,141.00	7,763.66	34.15	28.21	-6.81	996.13	8,418.45	8,168.27	8,108.20	60.07	135.977				
9,500.00	9,060.00	8,141.00	7,763.66	34.42	28.21	-6.81	996.13	8,418.45	8,121.12	8,061.05	60.06	135.207				
9,600.00	9,060.00	8,141.00	7,763.66	35.09	28.21	-6.81	996.13	8,418.45	8,022.27	7,962.22	60.05	133.599				
9,700.00	9,060.00	8,141.00	7,763.66	35.86	28.21	-6.81	996.13	8,418.45	7,923.45	7,863.42	60.03	131.989				
9,800.00	9,060.00	8,141.00	7,763.66	36.72	28.21	-6.81	996.13	8,418.45	7,824.66	7,764.64	60.02	130.376				
9,900.00	9,060.00	8,141.00	7,763.66	37.69	28.21	-6.81	996.13	8,418.45	7,725.90	7,665.90	60.00	128.762				
10,000.00	9,060.00	8,141.00	7,763.66	38.73	28.21	-6.81	996.13	8,418.45	7,627.17	7,567.18	59.99	127.145				
10,100.00	9,060.00	8,141.00	7,763.66	39.86	28.21	-6.81	996.13	8,418.45	7,528.48	7,468.50	59.98	125.527				
10,140.22	9,060.00	8,141.00	7,763.66	40.33	28.21	-6.81	996.13	8,418.45	7,488.79	7,428.82	59.97	124.875				
10,200.00	9,060.00	8,141.00	7,763.66	41.05	28.21	-13.82	996.13	8,418.45	7,429.84	7,369.87	59.96	123.907				
10,300.00	9,060.00	8,141.00	7,763.66	42.31	28.21	-24.48	996.13	8,418.45	7,331.37	7,271.42	59.95	122.288				
10,400.00	9,060.00	8,141.00	7,763.66	43.64	28.21	-33.47	996.13	8,418.45	7,233.21	7,173.27	59.94	120.669				
10,507.23	9,060.00	8,141.00	7,763.66	45.11	28.21	-41.27	996.13	8,418.45	7,128.45	7,068.52	59.94	118.931				
10,600.00	9,060.00	8,141.00	7,763.66	46.43	28.21	-34.72	996.13	8,418.45	7,037.91	6,977.97	59.94	117.420				
10,700.00	9,060.00	8,152.43	7,764.15	47.91	28.31	-25.96	984.71	8,418.88	6,939.94	6,879.91	60.04	115.596				
10,800.00	9,060.00	8,155.48	7,764.26	49.42	28.34	-16.14	981.67	8,419.00	6,841.74	6,781.68	60.06	113.910				
10,900.00	9,060.00	8,157.13	7,764.32	50.97	28.36	-5.46	980.02	8,419.06	6,743.41	6,683.34	60.07	112.250				
11,000.00	9,060.00	8,157.37	7,764.32	52.55	28.36	5.38	979.78	8,419.07	6,645.07	6,585.00	60.07	110.617				
11,100.00	9,060.00	8,156.20	7,764.28	54.14	28.35	15.64	980.95	8,419.03	6,546.84	6,486.78	60.06	109.012				
11,207.23	9,060.00	8,153.36	7,764.18	55.87	28.32	25.37	983.78	8,418.92	6,441.77	6,381.75	60.02	107.323				
11,300.00	9,060.00	8,150.80	7,764.09	57.39	28.30	16.94	986.34	8,418.82	6,350.94	6,290.94	59.99	105.859				
11,400.00	9,060.00	8,149.40	7,764.03	59.06	28.29	7.15	987.74	8,418.77	6,252.90	6,192.92	59.98	104.250				
11,506.63	9,060.00	8,149.48	7,764.04	60.88	28.29	-3.50	987.66	8,418.77	6,148.33	6,088.35	59.98	102.505				
11,600.00	9,060.00	8,150.26	7,764.07	62.49	28.29	-3.46	986.88	8,418.80	6,056.83	5,996.84	59.99	100.964				
11,700.00	9,060.00	8,151.10	7,764.10	64.24	28.30	-3.42	986.05	8,418.83	5,958.89	5,898.89	60.00	99.313				
11,800.00	9,060.00	8,151.94	7,764.13	66.01	28.31	-3.39	985.20	8,418.86	5,861.02	5,801.01	60.01	97.662				
11,900.00	9,060.00	8,152.79	7,764.16	67.79	28.32	-3.35	984.36	8,418.90	5,763.23	5,703.20	60.03	96.011				
12,000.00	9,060.00	8,153.64	7,764.19	69.58	28.32	-3.31	983.51	8,418.93	5,665.51	5,605.47	60.04	94.359				
12,100.00	9,060.00	8,154.49	7,764.23	71.39	28.33	-3.27	982.66	8,418.96	5,567.88	5,507.82	60.06	92.707				
12,200.00	9,060.00	8,155.35	7,764.26	73.21	28.34	-3.22	981.80	8,418.99	5,470.32	5,410.25	60.08	91.054				
12,300.00	9,060.00	8,156.21	7,764.28	75.05	28.35	-3.18	980.94	8,419.03	5,372.86	5,312.76	60.10	89.402				
12,400.00	9,060.00	8,157.08	7,764.31	76.89	28.35	-3.14	980.07	8,419.06	5,275.49	5,215.37	60.12	87.749				
12,500.00	9,060.00	8,157.95	7,764.34	78.74	28.36	-3.10	979.20	8,419.09	5,178.23	5,118.08	60.14	86.097				
12,600.00	9,060.00	8,158.83	7,764.37	80.61	28.37	-3.06	978.33	8,419.13	5,081.06	5,020.89	60.17	84.444				
12,700.00	9,060.00	8,159.71	7,764.40	82.48	28.38	-3.02	977.45	8,419.16	4,984.01	4,923.82	60.20	82.791				
12,800.00	9,060.00	8,160.59	7,764.42	84.36	28.39	-2.98	976.56	8,419.20	4,887.08	4,826.85	60.23	81.139				
12,900.00	9,060.00	8,161.48	7,764.45	86.24	28.39	-2.94	975.68	8,419.23	4,790.28	4,730.01	60.27	79.487				
13,000.00	9,060.00	8,162.37	7,764.48	88.14	28.40	-2.89	974.79	8,419.27	4,693.61	4,633.30	60.30	77.835				
13,100.00	9,060.00	8,163.27	7,764.50	90.04	28.41	-2.85	973.89	8,419.30	4,597.08	4,536.73	60.34	76.183				
13,200.00	9,060.00	8,164.17	7,764.53	91.94	28.42	-2.81	972.99	8,419.33	4,500.70	4,440.31	60.39	74.531				
13,300.00	9,060.00	8,172.00	7,764.71	93.86	28.49	-2.44	965.17	8,419.64	4,404.49	4,344.01	60.48	72.820				
13,400.00	9,060.00	8,172.00	7,764.71	95.77	28.49	-2.44	965.17	8,419.64	4,308.44	4,247.91	60.53	71.179				
13,500.00	9,060.00	8,172.00	7,764.71	97.70	28.49	-2.44	965.17	8,419.64	4,212.58	4,152.00	60.58	69.538				
13,600.00	9,060.00	8,172.00	7,764.71	99.62	28.49	-2.44	965.17	8,419.64	4,116.91	4,056.28	60.63	67.897				
13,700.00	9,060.00	8,172.00	7,764.71	101.56	28.49	-2.44	965.17	8,419.64	4,021.45	3,960.76	60.70	66.256				
13,800.00	9,060.00	8,172.00	7,764.71	103.49	28.49	-2.44	965.17	8,419.64	3,926.22	3,865.46	60.76	64.615				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,900.00	9,060.00	8,172.00	7,764.71	105.43	28.49	-2.44	965.17	8,419.64	3,831.23	3,770.39	60.84	62.975		
14,000.00	9,060.00	8,172.00	7,764.71	107.38	28.49	-2.44	965.17	8,419.64	3,736.51	3,675.59	60.92	61.334		
14,100.00	9,060.00	8,173.21	7,764.73	109.33	28.50	-2.38	963.96	8,419.69	3,642.06	3,581.04	61.02	59.687		
14,200.00	9,060.00	8,175.52	7,764.77	111.28	28.52	-2.27	961.65	8,419.78	3,547.92	3,486.78	61.13	58.034		
14,300.00	9,060.00	8,177.74	7,764.81	113.23	28.54	-2.17	959.43	8,419.86	3,454.10	3,392.84	61.26	56.384		
14,400.00	9,060.00	8,179.88	7,764.85	115.19	28.56	-2.07	957.29	8,419.94	3,360.65	3,299.25	61.40	54.738		
14,500.00	9,060.00	8,181.95	7,764.88	117.15	28.58	-1.97	955.23	8,420.02	3,267.57	3,206.03	61.54	53.094		
14,600.00	9,060.00	8,183.94	7,764.91	119.11	28.59	-1.88	953.24	8,420.10	3,174.92	3,113.22	61.70	51.454		
14,700.00	9,060.00	8,185.87	7,764.94	121.08	28.61	-1.79	951.31	8,420.17	3,082.73	3,020.84	61.88	49.817		
14,800.00	9,060.00	8,187.73	7,764.96	123.05	28.63	-1.70	949.45	8,420.24	2,991.03	2,928.96	62.07	48.184		
14,900.00	9,060.00	8,189.53	7,764.98	125.02	28.65	-1.61	947.66	8,420.30	2,899.89	2,837.60	62.29	46.557		
15,000.00	9,060.00	8,191.27	7,765.00	126.99	28.66	-1.53	945.92	8,420.36	2,809.34	2,746.82	62.52	44.934		
15,100.00	9,060.00	8,192.95	7,765.02	128.97	28.68	-1.45	944.24	8,420.42	2,719.46	2,656.68	62.78	43.318		
15,200.00	9,060.00	8,194.58	7,765.04	130.95	28.69	-1.37	942.61	8,420.48	2,630.30	2,567.24	63.06	41.709		
15,300.00	9,060.00	8,196.16	7,765.06	132.93	28.71	-1.30	941.03	8,420.54	2,541.95	2,478.58	63.38	40.108		
15,400.00	9,060.00	8,197.69	7,765.07	134.91	28.72	-1.23	939.50	8,420.59	2,454.50	2,390.77	63.72	38.518		
15,500.00	9,060.00	8,199.17	7,765.08	136.89	28.73	-1.16	938.01	8,420.64	2,368.04	2,303.93	64.11	36.939		
15,600.00	9,060.00	8,200.61	7,765.09	138.88	28.75	-1.09	936.58	8,420.69	2,282.68	2,218.15	64.53	35.375		
15,700.00	9,060.00	8,202.01	7,765.10	140.86	28.76	-1.02	935.18	8,420.74	2,198.55	2,133.56	64.99	33.829		
15,800.00	9,060.00	8,203.37	7,765.11	142.85	28.77	-0.96	933.82	8,420.79	2,115.81	2,050.31	65.50	32.302		
15,900.00	9,060.00	8,204.72	7,765.12	144.84	28.78	-0.90	932.47	8,420.83	2,034.62	1,968.56	66.06	30.800		
16,000.00	9,060.00	8,206.10	7,765.13	146.83	28.80	-0.83	931.09	8,420.88	1,955.17	1,888.50	66.67	29.327		
16,100.00	9,060.00	8,207.48	7,765.14	148.83	28.81	-0.76	929.71	8,420.92	1,877.68	1,810.35	67.33	27.889		
16,200.00	9,060.00	8,208.86	7,765.14	150.82	28.82	-0.70	928.34	8,420.97	1,802.41	1,734.37	68.04	26.491		
16,300.00	9,060.00	8,210.23	7,765.15	152.82	28.84	-0.63	926.96	8,421.02	1,729.64	1,660.84	68.80	25.140		
16,400.00	9,060.00	8,211.61	7,765.16	154.81	28.85	-0.57	925.59	8,421.06	1,659.71	1,590.11	69.60	23.846		
16,500.00	9,060.00	8,212.98	7,765.17	156.81	28.86	-0.50	924.22	8,421.11	1,593.00	1,522.56	70.44	22.616		
16,600.00	9,060.00	8,214.35	7,765.17	158.81	28.88	-0.44	922.84	8,421.16	1,529.91	1,458.61	71.29	21.459		
16,700.00	9,060.00	8,215.73	7,765.18	160.81	28.89	-0.37	921.47	8,421.20	1,470.92	1,398.77	72.15	20.387		
16,800.00	9,060.00	8,217.10	7,765.18	162.81	28.90	-0.31	920.10	8,421.25	1,416.53	1,343.55	72.98	19.409		
16,900.00	9,060.00	8,218.47	7,765.19	164.82	28.92	-0.24	918.73	8,421.29	1,367.31	1,293.54	73.77	18.535		
17,000.00	9,060.00	8,219.84	7,765.20	166.82	28.93	-0.18	917.36	8,421.34	1,323.82	1,249.34	74.47	17.775		
17,100.00	9,060.00	8,221.21	7,765.20	168.82	28.94	-0.12	915.99	8,421.39	1,286.64	1,211.56	75.09	17.136		
17,200.00	9,060.00	8,222.58	7,765.21	170.83	28.95	-0.05	914.62	8,421.43	1,256.35	1,180.74	75.60	16.618		
17,300.00	9,060.00	8,223.95	7,765.21	172.84	28.97	0.01	913.25	8,421.48	1,233.43	1,157.36	76.07	16.214		
17,400.00	9,060.00	8,225.32	7,765.22	174.84	28.98	0.08	911.88	8,421.52	1,218.32	1,141.73	76.59	15.908		
17,500.00	9,060.00	8,226.69	7,765.22	176.85	28.99	0.14	910.51	8,421.57	1,211.30	1,133.99	77.31	15.668		
17,535.31	9,060.00	8,227.17	7,765.22	177.56	29.00	0.17	910.03	8,421.59	1,210.78	1,133.15	77.64	15.595 CC, ES		
17,600.00	9,060.00	8,228.06	7,765.22	178.86	29.01	0.21	909.15	8,421.62	1,212.51	1,134.16	78.35	15.476		
17,700.00	9,060.00	8,229.42	7,765.23	180.87	29.02	0.27	907.78	8,421.66	1,221.93	1,142.28	79.65	15.342		
17,800.00	9,060.00	8,230.79	7,765.23	182.88	29.03	0.34	906.42	8,421.71	1,239.37	1,158.34	81.04	15.294 SF		
17,900.00	9,060.00	8,232.15	7,765.23	184.89	29.05	0.40	905.05	8,421.75	1,264.50	1,182.17	82.33	15.359		
18,000.00	9,060.00	8,233.52	7,765.24	186.90	29.06	0.47	903.69	8,421.80	1,296.87	1,213.46	83.42	15.547		
18,100.00	9,060.00	8,234.88	7,765.24	188.92	29.07	0.53	902.33	8,421.85	1,335.96	1,251.71	84.25	15.857		
18,200.00	9,060.00	8,236.25	7,765.24	190.93	29.09	0.60	900.96	8,421.89	1,381.20	1,296.36	84.83	16.281		
18,300.00	9,060.00	8,237.61	7,765.24	192.94	29.10	0.66	899.60	8,421.94	1,432.00	1,346.81	85.18	16.811		
18,400.00	9,060.00	8,238.97	7,765.25	194.96	29.11	0.73	898.24	8,421.98	1,487.79	1,402.46	85.33	17.435		
18,500.00	9,060.00	8,240.33	7,765.25	196.97	29.12	0.79	896.88	8,422.03	1,548.03	1,462.71	85.32	18.144		
18,600.00	9,060.00	8,241.69	7,765.25	198.99	29.14	0.85	895.52	8,422.07	1,612.24	1,527.05	85.18	18.926		
18,700.00	9,060.00	8,243.05	7,765.25	201.00	29.15	0.92	894.16	8,422.12	1,679.94	1,594.99	84.95	19.775		
18,800.00	9,060.00	8,244.41	7,765.25	203.02	29.16	0.98	892.80	8,422.17	1,750.74	1,666.09	84.65	20.682		
18,900.00	9,060.00	8,245.77	7,765.25	205.04	29.18	1.05	891.44	8,422.21	1,824.27	1,739.97	84.30	21.639		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	8,247.13	7,765.25	207.06	29.19	1.11	890.09	8,422.26	1,900.22	1,816.29	83.93	22.642	
19,100.00	9,060.00	8,248.49	7,765.25	209.07	29.20	1.18	888.73	8,422.30	1,978.31	1,894.78	83.53	23.683	
19,200.00	9,060.00	8,249.84	7,765.25	211.09	29.22	1.24	887.37	8,422.35	2,058.29	1,975.16	83.13	24.759	
19,300.00	9,060.00	8,251.20	7,765.25	213.11	29.23	1.30	886.02	8,422.39	2,139.96	2,057.23	82.73	25.865	
19,400.00	9,060.00	8,252.55	7,765.25	215.13	29.24	1.37	884.66	8,422.44	2,223.13	2,140.78	82.34	26.998	
19,500.32	9,060.00	8,253.91	7,765.25	217.16	29.25	1.43	883.31	8,422.48	2,307.90	2,225.93	81.97	28.157	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.07	1,576.15	6,866.20	7,045.13					
100.00	100.00	21.35	21.35	0.52	5.03	77.07	1,576.17	6,866.21	7,044.81	7,039.26	5.54	1,270.988		
200.00	200.00	91.59	91.59	0.70	5.03	77.07	1,576.54	6,866.37	7,045.15	7,039.42	5.73	1,229.833		
300.00	300.00	209.93	209.93	0.99	5.05	77.06	1,577.41	6,866.73	7,045.61	7,039.57	6.04	1,166.700		
400.00	400.00	288.02	288.01	1.31	5.09	77.06	1,578.29	6,866.91	7,046.08	7,039.68	6.40	1,101.605		
500.00	500.00	411.74	411.71	1.65	5.17	77.04	1,580.34	6,867.03	7,046.56	7,039.74	6.82	1,033.290		
600.00	600.00	509.89	509.86	1.99	5.27	77.03	1,581.66	6,867.00	7,046.83	7,039.57	7.26	971.090		
700.00	700.00	585.16	585.11	2.34	5.35	77.02	1,582.68	6,867.13	7,047.30	7,039.61	7.69	916.403		
800.00	800.00	700.14	700.08	2.69	5.50	77.01	1,584.76	6,867.34	7,047.89	7,039.70	8.19	860.123		
900.00	900.00	801.34	801.26	3.04	5.66	76.99	1,586.57	6,867.36	7,048.31	7,039.61	8.70	809.979		
1,000.00	1,000.00	871.04	870.95	3.40	5.78	76.98	1,587.76	6,867.54	7,048.94	7,039.77	9.17	768.470		
1,100.00	1,100.00	1,052.16	1,052.03	3.75	6.12	76.95	1,591.23	6,867.46	7,049.43	7,039.56	9.87	714.413		
1,200.00	1,200.00	1,210.09	1,209.93	4.11	6.45	76.93	1,593.64	6,865.70	7,048.68	7,038.13	10.55	667.862		
1,300.00	1,300.00	1,317.87	1,317.70	4.46	6.69	76.92	1,594.82	6,864.09	7,047.47	7,036.32	11.15	631.954		
1,400.00	1,400.00	1,400.00	1,399.82	4.82	6.88	76.91	1,595.42	6,863.02	7,046.36	7,034.66	11.70	602.226		
1,500.00	1,500.00	1,532.83	1,532.62	5.18	7.21	76.90	1,596.59	6,861.04	7,045.10	7,032.72	12.38	569.018		
1,600.00	1,600.00	1,635.46	1,635.23	5.53	7.47	76.89	1,597.85	6,859.17	7,043.60	7,030.60	13.00	541.825		
1,700.00	1,700.00	1,700.00	1,768.10	5.89	7.64	76.87	1,599.34	6,856.49	7,041.90	7,028.37	13.52	520.661		
1,800.00	1,800.00	1,870.37	1,870.08	6.25	8.10	76.86	1,600.02	6,854.07	7,039.74	7,025.40	14.34	490.921		
1,900.00	1,900.00	1,900.00	1,982.53	6.61	8.18	76.85	1,600.55	6,851.54	7,037.65	7,022.87	14.78	476.223		
2,000.00	2,000.00	2,058.11	2,057.77	6.96	8.62	76.85	1,600.77	6,849.80	7,035.52	7,019.94	15.58	451.629		
2,100.00	2,100.00	2,149.88	2,149.52	7.32	8.88	76.84	1,601.01	6,848.33	7,033.99	7,017.79	16.20	434.257		
2,200.00	2,200.00	2,248.41	2,248.04	7.68	9.17	76.84	1,600.90	6,846.43	7,032.09	7,015.25	16.84	417.563		
2,300.00	2,300.00	2,310.89	2,310.51	8.04	9.35	76.84	1,601.12	6,845.49	7,030.70	7,013.31	17.38	404.470		
2,350.00	2,350.00	2,347.32	2,346.93	8.22	9.46	76.83	1,601.26	6,845.07	7,030.18	7,012.51	17.67	397.880		
2,400.00	2,400.00	2,383.75	2,383.37	8.39	9.57	92.88	1,601.33	6,844.73	7,029.76	7,011.81	17.96	391.502		
2,500.00	2,499.98	2,493.43	2,493.04	8.75	9.90	92.90	1,601.36	6,843.86	7,029.09	7,010.45	18.64	377.097		
2,600.00	2,599.92	2,651.85	2,651.44	9.11	10.38	92.95	1,601.11	6,841.63	7,027.80	7,008.33	19.47	360.871		
2,700.00	2,699.78	2,759.98	2,759.55	9.47	10.71	93.01	1,600.64	6,839.76	7,026.29	7,006.13	20.16	348.493		
2,800.00	2,799.54	2,854.69	2,854.25	9.82	11.00	93.08	1,600.29	6,838.05	7,024.82	7,004.01	20.81	337.558		
2,900.00	2,899.16	2,929.56	2,929.11	10.18	11.24	93.15	1,600.03	6,836.84	7,023.65	7,002.25	21.40	328.207		
3,000.00	2,998.61	3,000.00	2,999.54	10.54	11.46	93.21	1,599.86	6,836.08	7,023.09	7,001.11	21.98	319.570		
3,100.00	3,097.86	3,115.07	3,114.61	10.89	11.82	93.33	1,599.77	6,834.91	7,022.78	7,000.09	22.69	309.447		
3,200.00	3,196.89	3,240.37	3,239.89	11.25	12.22	93.47	1,599.88	6,832.98	7,022.11	6,998.66	23.45	299.477		
3,295.74	3,291.45	3,327.20	3,326.71	11.59	12.50	93.59	1,599.75	6,831.60	7,021.51	6,997.44	24.07	291.748		
3,300.00	3,295.65	3,330.48	3,330.00	11.61	12.51	93.59	1,599.74	6,831.55	7,021.49	6,997.40	24.09	291.435		
3,400.00	3,394.29	3,410.73	3,410.24	11.97	12.77	93.70	1,599.55	6,830.51	7,021.20	6,996.49	24.71	284.160		
3,500.00	3,492.94	6,337.07	4,971.01	12.33	28.52	108.82	-9.63	6,814.68	7,019.21	6,979.15	40.06	175.218		
3,600.00	3,591.58	6,333.51	4,970.90	12.69	28.47	108.79	-6.07	6,814.76	7,002.84	6,962.38	40.47	173.048		
3,700.00	3,690.22	6,329.93	4,970.79	13.05	28.43	108.76	-2.50	6,814.86	6,987.86	6,946.99	40.87	170.971		
3,800.00	3,788.86	6,326.34	4,970.68	13.41	28.39	108.73	1.08	6,814.95	6,974.27	6,933.00	41.27	168.985		
3,900.00	3,887.50	6,322.74	4,970.57	13.77	28.35	108.70	4.68	6,815.06	6,962.09	6,920.42	41.67	167.089		
4,000.00	3,986.14	6,319.12	4,970.47	14.14	28.30	108.67	8.30	6,815.16	6,951.32	6,909.26	42.06	165.280		
4,100.00	4,084.78	6,315.49	4,970.36	14.50	28.26	108.64	11.93	6,815.28	6,941.96	6,899.52	42.44	163.558		
4,200.00	4,183.42	6,311.84	4,970.26	14.87	28.22	108.61	15.57	6,815.39	6,934.03	6,891.20	42.82	161.921		
4,300.00	4,282.06	6,280.00	4,969.39	15.24	27.84	108.35	47.38	6,816.62	6,927.72	6,884.86	42.87	161.610		
4,400.00	4,380.70	6,280.00	4,969.39	15.60	27.84	108.35	47.38	6,816.62	6,922.60	6,879.32	43.28	159.955		
4,500.00	4,479.34	6,280.00	4,969.39	15.97	27.84	108.35	47.38	6,816.62	6,918.92	6,875.24	43.68	158.388		
4,600.00	4,577.98	6,280.00	4,969.39	16.34	27.84	108.35	47.38	6,816.62	6,916.68	6,872.60	44.08	156.904		
4,700.00	4,676.62	6,280.00	4,969.39	16.71	27.84	108.35	47.38	6,816.62	6,915.89	6,871.42	44.47	155.503		
4,704.73	4,681.29	6,280.00	4,969.39	16.73	27.84	108.35	47.38	6,816.62	6,915.89	6,871.40	44.49	155.439		
4,800.00	4,775.27	6,280.00	4,969.39	17.08	27.84	108.35	47.38	6,816.62	6,916.55	6,871.69	44.86	154.182		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,280.00	4,969.39	17.45	27.84	108.35	47.38	6,816.62	6,918.65	6,873.41	45.24	152.940		
5,000.00	4,972.55	6,280.00	4,969.39	17.82	27.84	108.35	47.38	6,816.62	6,922.19	6,876.58	45.61	151.774		
5,100.00	5,071.19	6,274.46	4,969.26	18.19	27.77	108.30	52.91	6,816.86	6,927.17	6,881.27	45.91	150.891		
5,200.00	5,169.83	6,261.70	4,968.95	18.56	27.63	108.20	65.65	6,817.43	6,933.58	6,887.46	46.12	150.345		
5,300.00	5,268.47	5,955.68	4,963.82	18.93	24.17	105.69	371.50	6,824.31	6,940.83	6,897.79	43.04	161.273		
5,400.00	5,367.11	5,948.42	4,963.66	19.31	24.09	105.63	378.76	6,824.32	6,949.46	6,906.16	43.30	160.486		
5,500.00	5,465.75	5,941.18	4,963.49	19.68	24.02	105.57	386.00	6,824.35	6,959.50	6,915.94	43.56	159.768		
5,600.00	5,564.39	5,933.95	4,963.33	20.05	23.94	105.51	393.23	6,824.38	6,970.95	6,927.14	43.81	159.116		
5,700.00	5,663.03	5,926.73	4,963.16	20.42	23.86	105.45	400.45	6,824.42	6,983.80	6,939.75	44.05	158.530		
5,800.00	5,761.67	5,919.53	4,963.00	20.80	23.78	105.39	407.65	6,824.46	6,998.04	6,953.75	44.29	158.007		
5,900.00	5,860.31	5,901.00	4,962.57	21.17	23.58	105.24	426.17	6,824.61	7,013.68	6,969.29	44.40	157.979		
6,000.00	5,958.96	5,901.00	4,962.57	21.54	23.58	105.24	426.17	6,824.61	7,030.66	6,985.97	44.69	157.306		
6,100.00	6,057.60	5,895.76	4,962.45	21.92	23.53	105.20	431.40	6,824.65	7,049.02	7,004.09	44.93	156.886		
6,200.00	6,156.24	5,883.19	4,962.16	22.29	23.40	105.09	443.97	6,824.77	7,068.73	7,023.64	45.08	156.789		
6,300.00	6,254.88	5,870.53	4,961.88	22.67	23.26	104.99	456.63	6,824.89	7,089.77	7,044.54	45.23	156.748		
6,400.00	6,353.52	5,857.78	4,961.60	23.04	23.13	104.88	469.37	6,825.01	7,112.12	7,066.75	45.37	156.765		
6,500.00	6,452.16	5,845.00	4,959.09	23.42	22.98	104.77	482.11	6,825.13	7,135.74	7,083.74	45.50	156.782		
6,600.00	6,550.80	5,832.24	4,956.12	23.79	22.83	104.66	494.85	6,824.44	7,160.49	7,116.41	44.08	162.428		
6,700.00	6,649.44	5,819.48	4,953.78	24.17	22.68	104.55	507.59	6,824.30	7,186.46	7,142.20	44.26	162.372		
6,800.00	6,748.08	5,806.72	4,951.44	24.54	22.53	104.44	520.33	6,824.17	7,213.71	7,169.28	44.43	162.368		
6,900.00	6,846.72	5,793.96	4,949.10	24.92	22.38	104.33	533.07	6,824.04	7,242.22	7,197.63	44.59	162.415		
7,000.00	6,945.36	5,781.20	4,946.76	25.29	22.23	104.22	545.81	6,823.92	7,271.98	7,227.23	44.75	162.513		
7,100.00	7,044.00	5,768.44	4,944.42	25.67	22.08	104.11	558.55	6,823.80	7,302.98	7,258.08	44.90	162.659		
7,200.00	7,142.64	5,755.68	4,942.08	26.04	21.93	104.00	571.29	6,823.69	7,335.19	7,290.15	45.04	162.852		
7,300.00	7,241.28	5,742.92	4,939.74	26.42	21.78	103.89	584.03	6,823.58	7,368.62	7,323.43	45.18	163.080		
7,400.00	7,339.92	5,730.16	4,937.40	26.79	21.63	103.78	596.77	6,823.44	7,403.22	7,357.92	45.30	163.422		
7,500.00	7,438.56	5,717.40	4,935.06	27.17	21.48	103.67	609.51	6,823.30	7,439.00	7,393.58	45.41	163.811		
7,571.77	7,509.37	5,699.84	4,932.56	27.44	21.33	103.56	622.25	6,823.21	7,465.38	7,419.89	45.49	164.118		
7,600.00	7,537.23	5,587.34	4,952.44	27.55	20.48	102.83	739.62	6,823.17	7,475.90	7,430.38	45.52	164.243		
7,700.00	7,636.18	5,578.33	4,952.08	27.92	20.40	103.35	748.64	6,823.06	7,513.54	7,467.91	45.63	164.670		
7,800.00	7,735.48	5,571.49	4,951.81	28.29	20.34	103.90	755.46	6,822.98	7,551.74	7,505.99	45.75	165.073		
7,900.00	7,835.05	5,566.90	4,951.63	28.65	20.30	104.47	760.05	6,822.93	7,590.49	7,544.61	45.88	165.449		
8,000.00	7,934.83	5,564.59	4,951.54	29.01	20.28	105.07	762.36	6,822.90	7,629.75	7,583.74	46.02	165.796		
8,100.00	8,034.74	5,564.61	4,951.54	29.36	20.28	105.70	762.34	6,822.90	7,669.50	7,623.33	46.17	166.113		
8,202.27	8,137.00	5,567.11	4,951.64	29.72	20.30	90.33	759.84	6,822.93	7,710.60	7,664.26	46.34	166.401		
8,300.00	8,234.73	5,570.73	4,951.78	30.06	20.34	90.36	756.22	6,822.97	7,750.61	7,704.11	46.50	166.674		
8,400.00	8,334.73	5,574.49	4,951.93	30.41	20.37	90.39	752.47	6,823.02	7,792.60	7,745.93	46.67	166.985		
8,500.00	8,434.73	5,578.31	4,952.08	30.75	20.40	90.42	748.65	6,823.06	7,835.64	7,788.81	46.83	167.327		
8,552.31	8,487.04	5,580.33	4,952.16	30.94	20.42	90.43	746.63	6,823.08	7,858.56	7,811.65	46.91	167.517		
8,600.00	8,534.68	5,582.19	4,952.24	31.10	20.44	0.76	744.77	6,823.11	7,877.91	7,830.93	46.98	167.687		
8,650.00	8,584.26	5,584.17	4,952.31	31.26	20.46	0.75	742.79	6,823.13	7,894.50	7,847.46	47.04	167.819		
8,700.00	8,633.10	5,586.17	4,952.40	31.43	20.47	0.75	740.80	6,823.16	7,907.21	7,860.11	47.10	167.887		
8,750.00	8,680.83	5,588.16	4,952.48	31.58	20.49	0.75	738.81	6,823.18	7,915.96	7,868.81	47.15	167.892		
8,800.00	8,727.09	5,590.14	4,952.56	31.74	20.51	0.76	736.83	6,823.21	7,920.70	7,873.51	47.19	167.840		
8,850.00	8,771.52	5,592.09	4,952.64	31.89	20.53	0.77	734.89	6,823.23	7,921.40	7,874.17	47.23	167.732		
8,900.00	8,813.78	5,593.99	4,952.71	32.04	20.54	0.79	732.99	6,823.25	7,918.06	7,870.80	47.25	167.571		
8,950.00	8,853.56	5,595.83	4,952.79	32.18	20.56	0.82	731.15	6,823.28	7,910.69	7,863.42	47.27	167.359		
9,000.00	8,890.55	5,597.59	4,952.86	32.32	20.58	0.85	729.39	6,823.30	7,899.34	7,852.07	47.27	167.098		
9,050.00	8,924.46	5,599.26	4,952.93	32.47	20.59	0.88	727.72	6,823.32	7,884.08	7,836.81	47.27	166.789		
9,100.00	8,955.05	5,600.83	4,953.00	32.63	20.60	0.93	726.15	6,823.34	7,865.01	7,817.75	47.26	166.434		
9,150.00	8,982.08	5,602.27	4,953.06	32.79	20.62	0.98	724.71	6,823.36	7,842.24	7,795.01	47.23	166.032		
9,200.00	9,005.34	5,603.58	4,953.11	32.97	20.63	1.05	723.40	6,823.38	7,815.91	7,768.71	47.20	165.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,604.75	4,953.16	33.17	20.64	1.13	722.24	6,823.39	7,786.20	7,739.03	47.16	165.093		
9,300.00	9,039.87	5,605.75	4,953.20	33.38	20.65	1.23	721.23	6,823.41	7,753.28	7,706.16	47.12	164.556		
9,350.00	9,050.89	5,606.59	4,953.24	33.62	20.66	1.36	720.39	6,823.42	7,717.37	7,670.30	47.06	163.976		
9,400.00	9,057.61	5,607.26	4,953.26	33.87	20.66	1.52	719.73	6,823.42	7,678.70	7,631.70	47.01	163.351		
9,452.31	9,060.00	5,607.76	4,953.28	34.15	20.67	1.74	719.23	6,823.43	7,635.58	7,588.63	46.94	162.651		
9,500.00	9,060.00	5,608.12	4,953.30	34.42	20.67	1.74	718.87	6,823.44	7,595.15	7,548.26	46.88	162.001		
9,600.00	9,060.00	5,608.88	4,953.33	35.09	20.68	1.76	718.11	6,823.45	7,510.65	7,463.90	46.75	160.658		
9,700.00	9,060.00	5,609.65	4,953.36	35.86	20.68	1.77	717.34	6,823.46	7,426.53	7,379.91	46.62	159.303		
9,800.00	9,060.00	5,610.43	4,953.40	36.72	20.69	1.78	716.56	6,823.47	7,342.81	7,296.32	46.49	157.935		
9,900.00	9,060.00	5,611.21	4,953.43	37.69	20.70	1.79	715.78	6,823.48	7,259.51	7,213.14	46.37	156.554		
10,000.00	9,060.00	5,612.01	4,953.46	38.73	20.70	1.80	714.99	6,823.49	7,176.63	7,130.38	46.25	155.157		
10,100.00	9,060.00	5,612.80	4,953.50	39.86	20.71	1.81	714.19	6,823.50	7,094.20	7,048.05	46.14	153.746		
10,140.22	9,060.00	5,613.13	4,953.51	40.33	20.71	1.82	713.87	6,823.50	7,061.16	7,015.06	46.10	153.173		
10,200.00	9,060.00	5,614.28	4,953.56	41.05	20.72	0.13	712.71	6,823.52	7,012.21	6,966.17	46.04	152.301		
10,300.00	9,060.00	5,619.23	4,953.77	42.31	20.77	-2.62	707.77	6,823.59	6,930.69	6,884.72	45.97	150.756		
10,400.00	9,060.00	5,628.00	4,954.15	43.64	20.85	-5.24	699.01	6,823.71	6,849.75	6,803.82	45.94	149.105		
10,507.23	9,060.00	5,633.36	4,954.37	45.11	20.90	-8.03	693.66	6,823.79	6,763.75	6,717.86	45.89	147.393		
10,600.00	9,060.00	5,641.44	4,954.72	46.43	20.98	-5.49	685.58	6,823.91	6,689.82	6,643.94	45.88	145.819		
10,700.00	9,060.00	5,647.80	4,954.99	47.91	21.04	-2.80	679.23	6,824.00	6,610.46	6,564.61	45.85	144.163		
10,800.00	9,060.00	5,651.67	4,955.15	49.42	21.08	-0.18	675.36	6,824.06	6,531.56	6,485.74	45.82	142.551		
10,900.00	9,060.00	5,653.01	4,955.21	50.97	21.09	2.36	674.03	6,824.08	6,453.24	6,407.47	45.77	140.981		
11,000.00	9,060.00	5,651.79	4,955.16	52.55	21.08	4.80	675.25	6,824.07	6,375.61	6,329.89	45.72	139.453		
11,100.00	9,060.00	5,647.97	4,954.99	54.14	21.04	7.13	679.06	6,824.01	6,298.80	6,253.15	45.66	137.963		
11,207.23	9,060.00	5,640.96	4,954.70	55.87	20.98	9.50	686.06	6,823.90	6,217.48	6,171.90	45.58	136.402		
11,300.00	9,060.00	5,634.66	4,954.43	57.39	20.92	7.33	692.35	6,823.81	6,147.78	6,102.25	45.53	135.025		
11,400.00	9,060.00	5,630.33	4,954.25	59.06	20.88	5.03	696.68	6,823.74	6,073.04	6,027.54	45.51	133.450		
11,506.63	9,060.00	5,634.50	4,954.44	60.88	20.90	2.73	692.51	6,823.80	5,993.93	5,948.37	45.56	131.568		
11,600.00	9,060.00	5,634.15	4,954.42	62.49	20.90	2.73	692.87	6,823.79	5,925.30	5,879.71	45.59	129.965		
11,700.00	9,060.00	5,633.77	4,954.40	64.24	20.90	2.72	693.25	6,823.79	5,852.55	5,806.91	45.64	128.223		
11,800.00	9,060.00	5,633.38	4,954.39	66.01	20.89	2.72	693.63	6,823.78	5,780.62	5,734.91	45.71	126.456		
11,900.00	9,060.00	5,632.99	4,954.37	67.79	20.89	2.71	694.02	6,823.78	5,709.54	5,663.74	45.80	124.663		
12,000.00	9,060.00	5,632.59	4,954.35	69.58	20.89	2.71	694.42	6,823.77	5,639.33	5,593.42	45.91	122.846		
12,100.00	9,060.00	5,632.20	4,954.34	71.39	20.88	2.70	694.82	6,823.77	5,570.03	5,524.00	46.03	121.005		
12,200.00	9,060.00	5,631.79	4,954.32	73.21	20.88	2.70	695.22	6,823.76	5,501.68	5,455.50	46.18	119.143		
12,300.00	9,060.00	5,631.39	4,954.30	75.05	20.88	2.69	695.62	6,823.76	5,434.30	5,387.96	46.34	117.262		
12,400.00	9,060.00	5,630.98	4,954.28	76.89	20.87	2.68	696.03	6,823.75	5,367.95	5,321.42	46.53	115.362		
12,500.00	9,060.00	5,630.56	4,954.26	78.74	20.87	2.68	696.45	6,823.74	5,302.65	5,255.91	46.74	113.446		
12,600.00	9,060.00	5,630.14	4,954.25	80.61	20.87	2.67	696.87	6,823.74	5,238.44	5,191.47	46.97	111.517		
12,700.00	9,060.00	5,629.72	4,954.23	82.48	20.86	2.67	697.29	6,823.73	5,175.37	5,128.14	47.23	109.578		
12,800.00	9,060.00	5,629.29	4,954.21	84.36	20.86	2.66	697.72	6,823.73	5,113.48	5,065.97	47.51	107.632		
12,900.00	9,060.00	5,628.86	4,954.19	86.24	20.85	2.65	698.15	6,823.72	5,052.81	5,005.00	47.81	105.681		
13,000.00	9,060.00	5,628.43	4,954.17	88.14	20.85	2.65	698.58	6,823.71	4,993.41	4,945.27	48.14	103.730		
13,100.00	9,060.00	5,627.99	4,954.15	90.04	20.85	2.64	699.02	6,823.71	4,935.31	4,886.82	48.49	101.781		
13,200.00	9,060.00	5,627.54	4,954.13	91.94	20.84	2.64	699.47	6,823.70	4,878.58	4,829.71	48.86	99.839		
13,300.00	9,060.00	5,627.09	4,954.11	93.86	20.84	2.63	699.92	6,823.69	4,823.25	4,773.99	49.26	97.907		
13,400.00	9,060.00	5,626.63	4,954.09	95.77	20.83	2.62	700.37	6,823.69	4,769.38	4,719.69	49.69	95.989		
13,500.00	9,060.00	5,626.17	4,954.07	97.70	20.83	2.62	700.83	6,823.68	4,717.01	4,666.87	50.13	94.088		
13,600.00	9,060.00	5,625.71	4,954.05	99.62	20.83	2.61	701.30	6,823.68	4,666.19	4,615.59	50.60	92.209		
13,700.00	9,060.00	5,625.24	4,954.03	101.56	20.82	2.60	701.76	6,823.67	4,616.99	4,565.89	51.10	90.354		
13,800.00	9,060.00	5,624.77	4,954.01	103.49	20.82	2.60	702.24	6,823.66	4,569.44	4,517.82	51.62	88.528		
13,900.00	9,060.00	5,624.29	4,953.99	105.43	20.81	2.59	702.72	6,823.66	4,523.60	4,471.45	52.16	86.734		
14,000.00	9,060.00	5,623.80	4,953.97	107.38	20.81	2.58	703.20	6,823.65	4,479.53	4,426.81	52.72	84.974		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	5,623.31	4,953.95	109.33	20.81	2.58	703.69	6,823.64	4,437.27	4,383.97	53.30	83.253	
14,200.00	9,060.00	5,622.81	4,953.93	111.28	20.80	2.57	704.19	6,823.64	4,396.88	4,342.98	53.90	81.573	
14,300.00	9,060.00	5,622.31	4,953.90	113.23	20.80	2.56	704.69	6,823.63	4,358.42	4,303.89	54.52	79.936	
14,400.00	9,060.00	5,621.80	4,953.88	115.19	20.79	2.55	705.20	6,823.62	4,321.92	4,266.75	55.17	78.344	
14,500.00	9,060.00	5,621.29	4,953.86	117.15	20.79	2.55	705.71	6,823.61	4,287.45	4,231.62	55.83	76.800	
14,600.00	9,060.00	5,620.77	4,953.84	119.11	20.78	2.54	706.23	6,823.61	4,255.04	4,198.54	56.50	75.305	
14,700.00	9,060.00	5,620.25	4,953.82	121.08	20.78	2.53	706.75	6,823.60	4,224.76	4,167.56	57.20	73.862	
14,800.00	9,060.00	5,619.72	4,953.79	123.05	20.77	2.53	707.28	6,823.59	4,196.64	4,138.73	57.91	72.470	
14,900.00	9,060.00	5,619.18	4,953.77	125.02	20.77	2.52	707.82	6,823.59	4,170.73	4,112.10	58.63	71.131	
15,000.00	9,060.00	5,618.64	4,953.75	126.99	20.76	2.51	708.36	6,823.58	4,147.07	4,087.70	59.37	69.846	
15,100.00	9,060.00	5,618.09	4,953.72	128.97	20.76	2.50	708.91	6,823.57	4,125.70	4,065.57	60.13	68.616	
15,200.00	9,060.00	5,617.53	4,953.70	130.95	20.75	2.49	709.47	6,823.56	4,106.66	4,045.76	60.89	67.439	
15,300.00	9,060.00	5,616.97	4,953.68	132.93	20.75	2.49	710.03	6,823.55	4,089.97	4,028.29	61.67	66.318	
15,400.00	9,060.00	5,616.40	4,953.65	134.91	20.74	2.48	710.60	6,823.55	4,075.66	4,013.20	62.46	65.251	
15,500.00	9,060.00	5,615.82	4,953.63	136.89	20.74	2.47	711.17	6,823.54	4,063.77	4,000.51	63.26	64.240	
15,600.00	9,060.00	5,615.24	4,953.60	138.88	20.73	2.46	711.75	6,823.53	4,054.31	3,990.24	64.07	63.282	
15,700.00	9,060.00	5,614.65	4,953.58	140.86	20.73	2.45	712.34	6,823.52	4,047.30	3,982.42	64.88	62.380	
15,800.00	9,060.00	5,614.05	4,953.55	142.85	20.72	2.44	712.94	6,823.52	4,042.75	3,977.05	65.70	61.532	
15,900.00	9,060.00	5,613.45	4,953.53	144.84	20.72	2.44	713.54	6,823.51	4,040.67	3,974.14	66.53	60.738	
15,934.02	9,060.00	5,613.24	4,953.52	145.52	20.72	2.43	713.75	6,823.50	4,040.53	3,973.72	66.81	60.480 CC	
16,000.00	9,060.00	5,612.84	4,953.50	146.83	20.71	2.43	714.16	6,823.50	4,041.06	3,973.71	67.35	59.998 ES	
16,100.00	9,060.00	5,612.22	4,953.47	148.83	20.71	2.42	714.77	6,823.49	4,043.93	3,975.75	68.18	59.312	
16,200.00	9,060.00	5,611.59	4,953.45	150.82	20.70	2.41	715.40	6,823.48	4,049.27	3,980.27	69.01	58.681	
16,300.00	9,060.00	5,610.96	4,953.42	152.82	20.69	2.40	716.04	6,823.47	4,057.07	3,987.24	69.83	58.103	
16,400.00	9,060.00	5,610.31	4,953.39	154.81	20.69	2.39	716.68	6,823.47	4,067.31	3,996.67	70.64	57.578	
16,500.00	9,060.00	5,609.66	4,953.36	156.81	20.68	2.38	717.33	6,823.46	4,079.97	4,008.53	71.44	57.107	
16,600.00	9,060.00	5,609.00	4,953.34	158.81	20.68	2.37	717.99	6,823.45	4,095.04	4,022.81	72.24	56.689	
16,700.00	9,060.00	5,608.33	4,953.31	160.81	20.67	2.36	718.65	6,823.44	4,112.49	4,039.47	73.01	56.324	
16,800.00	9,060.00	5,607.66	4,953.28	162.81	20.67	2.35	719.33	6,823.43	4,132.28	4,058.51	73.78	56.011	
16,900.00	9,060.00	5,606.97	4,953.25	164.82	20.66	2.34	720.02	6,823.42	4,154.39	4,079.87	74.52	55.749	
17,000.00	9,060.00	5,606.28	4,953.22	166.82	20.65	2.33	720.71	6,823.41	4,178.77	4,103.53	75.24	55.537	
17,100.00	9,060.00	5,605.57	4,953.19	168.82	20.65	2.32	721.41	6,823.40	4,205.39	4,129.45	75.94	55.376	
17,200.00	9,060.00	5,604.86	4,953.16	170.83	20.64	2.31	722.13	6,823.39	4,234.21	4,157.59	76.62	55.262	
17,300.00	9,060.00	5,604.14	4,953.13	172.84	20.63	2.30	722.85	6,823.38	4,265.17	4,187.90	77.27	55.197	
17,400.00	9,060.00	5,603.40	4,953.10	174.84	20.63	2.29	723.58	6,823.37	4,298.24	4,220.35	77.90	55.178 SF	
17,500.00	9,060.00	5,602.66	4,953.07	176.85	20.62	2.28	724.32	6,823.36	4,333.37	4,254.87	78.50	55.204	
17,600.00	9,060.00	5,601.91	4,953.04	178.86	20.61	2.27	725.07	6,823.35	4,370.50	4,291.43	79.07	55.273	
17,700.00	9,060.00	5,601.15	4,953.01	180.87	20.61	2.26	725.84	6,823.34	4,409.59	4,329.97	79.62	55.386	
17,800.00	9,060.00	5,600.37	4,952.98	182.88	20.60	2.25	726.61	6,823.33	4,450.58	4,370.44	80.13	55.539	
17,900.00	9,060.00	5,599.59	4,952.94	184.89	20.59	2.24	727.39	6,823.32	4,493.42	4,412.80	80.62	55.732	
18,000.00	9,060.00	5,598.79	4,952.91	186.90	20.59	2.23	728.19	6,823.31	4,538.06	4,456.97	81.09	55.964	
18,100.00	9,060.00	5,597.99	4,952.88	188.92	20.58	2.22	728.99	6,823.30	4,584.45	4,502.93	81.53	56.233	
18,200.00	9,060.00	5,597.17	4,952.84	190.93	20.57	2.21	729.81	6,823.29	4,632.54	4,550.60	81.94	56.537	
18,300.00	9,060.00	5,596.34	4,952.81	192.94	20.56	2.19	730.64	6,823.28	4,682.26	4,599.94	82.32	56.876	
18,400.00	9,060.00	5,595.50	4,952.78	194.96	20.56	2.18	731.48	6,823.27	4,733.58	4,650.89	82.69	57.248	
18,500.00	9,060.00	5,594.64	4,952.74	196.97	20.55	2.17	732.33	6,823.26	4,786.43	4,703.41	83.02	57.652	
18,600.00	9,060.00	5,593.78	4,952.70	198.99	20.54	2.16	733.20	6,823.25	4,840.78	4,757.44	83.34	58.086	
18,700.00	9,060.00	5,592.90	4,952.67	201.00	20.53	2.14	734.08	6,823.24	4,896.56	4,812.93	83.63	58.550	
18,800.00	9,060.00	5,592.00	4,952.63	203.02	20.53	2.13	734.97	6,823.23	4,953.73	4,869.83	83.90	59.042	
18,900.00	9,060.00	5,591.10	4,952.60	205.04	20.52	2.12	735.87	6,823.22	5,012.25	4,928.10	84.15	59.561	
19,000.00	9,060.00	5,590.18	4,952.56	207.06	20.51	2.11	736.79	6,823.21	5,072.06	4,987.68	84.39	60.106	
19,100.00	9,060.00	5,589.24	4,952.52	209.07	20.50	2.09	737.73	6,823.19	5,133.13	5,048.53	84.60	60.676	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,588.30	4,952.48	211.09	20.49	2.08	738.67	6,823.18	5,195.40	5,110.60	84.80	61.270	
19,300.00	9,060.00	5,587.33	4,952.44	213.11	20.48	2.07	739.64	6,823.17	5,258.83	5,173.86	84.98	61.886	
19,400.00	9,060.00	5,586.36	4,952.40	215.13	20.48	2.05	740.61	6,823.16	5,323.39	5,238.25	85.14	62.525	
19,500.32	9,060.00	5,585.36	4,952.36	217.16	20.47	2.04	741.61	6,823.15	5,389.24	5,303.95	85.29	63.187	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,910.99					
100.00	100.00	28.73	28.73	0.52	5.03	77.36	1,731.24	7,718.93	7,910.69	7,905.15	5.54	1,427.192		
200.00	200.00	128.36	128.36	0.70	5.03	77.36	1,731.29	7,718.99	7,910.77	7,905.04	5.73	1,380.028		
300.00	300.00	254.70	254.70	0.99	5.07	77.36	1,731.70	7,718.73	7,910.63	7,904.58	6.06	1,306.040		
400.00	400.00	419.80	419.80	1.31	5.18	77.35	1,731.62	7,717.69	7,910.06	7,903.57	6.49	1,219.440		
500.00	500.00	601.22	601.17	1.65	5.37	77.37	1,729.12	7,714.96	7,908.18	7,901.16	7.01	1,127.749		
600.00	600.00	667.79	667.73	1.99	5.46	77.37	1,728.08	7,713.88	7,906.24	7,898.80	7.44	1,062.161		
700.00	700.00	745.22	745.15	2.34	5.57	77.38	1,727.35	7,712.82	7,904.69	7,896.79	7.90	1,000.152		
800.00	800.00	851.52	851.44	2.69	5.74	77.38	1,726.73	7,711.42	7,903.29	7,894.87	8.42	938.147		
900.00	900.00	985.58	985.47	3.04	5.98	77.38	1,726.31	7,709.12	7,901.55	7,892.53	9.02	876.288		
1,000.00	1,000.00	1,063.07	1,062.95	3.40	6.13	77.38	1,726.22	7,707.67	7,899.70	7,890.18	9.52	829.591		
1,100.00	1,100.00	1,100.00	1,256.38	3.75	6.21	77.38	1,725.12	7,703.93	7,897.93	7,887.98	9.95	793.766		
1,200.00	1,200.00	1,400.00	1,399.74	4.11	6.89	77.39	1,721.94	7,699.73	7,894.48	7,883.51	10.98	719.311		
1,300.00	1,300.00	1,472.97	1,472.65	4.46	7.07	77.41	1,719.75	7,697.82	7,891.27	7,879.76	11.51	685.581		
1,400.00	1,400.00	1,548.20	1,547.83	4.82	7.27	77.42	1,717.54	7,696.08	7,888.37	7,876.31	12.06	654.286		
1,500.00	1,500.00	1,649.59	1,649.15	5.18	7.53	77.44	1,714.61	7,693.99	7,885.74	7,873.06	12.68	622.134		
1,600.00	1,600.00	1,750.48	1,749.97	5.53	7.81	77.45	1,711.75	7,691.65	7,882.85	7,869.55	13.30	592.666		
1,700.00	1,700.00	1,844.03	1,843.46	5.89	8.07	77.47	1,709.18	7,689.69	7,880.20	7,866.29	13.91	566.389		
1,800.00	1,800.00	1,978.72	1,978.06	6.25	8.45	77.49	1,705.17	7,686.56	7,877.29	7,862.64	14.65	537.835		
1,900.00	1,900.00	2,132.92	2,132.12	6.61	8.91	77.52	1,700.43	7,681.98	7,873.67	7,858.23	15.44	509.790		
2,000.00	2,000.00	2,200.00	2,199.14	6.96	9.11	77.53	1,698.51	7,679.84	7,869.98	7,853.98	16.00	491.872		
2,100.00	2,100.00	2,273.94	2,273.02	7.32	9.33	77.54	1,696.41	7,677.77	7,866.66	7,850.08	16.58	474.545		
2,200.00	2,200.00	2,368.43	2,367.45	7.68	9.62	77.56	1,693.60	7,675.54	7,863.71	7,846.49	17.22	456.715		
2,300.00	2,300.00	2,455.12	2,454.07	8.04	9.89	77.57	1,691.00	7,673.47	7,860.74	7,842.90	17.84	440.658		
2,350.00	2,350.00	2,492.82	2,491.74	8.22	10.01	77.58	1,689.92	7,672.65	7,859.36	7,841.23	18.13	433.432		
2,400.00	2,400.00	2,541.86	2,540.75	8.39	10.16	93.64	1,688.55	7,671.61	7,858.05	7,839.59	18.46	425.643		
2,500.00	2,499.98	2,642.86	2,641.69	8.75	10.47	93.70	1,685.76	7,669.46	7,855.48	7,836.35	19.13	410.649		
2,600.00	2,599.92	2,732.75	2,731.53	9.11	10.76	93.76	1,683.39	7,667.54	7,853.06	7,833.30	19.77	397.317		
2,700.00	2,699.78	2,810.48	2,809.22	9.47	10.95	93.82	1,681.54	7,666.03	7,850.99	7,830.68	20.31	386.561		
2,800.00	2,799.54	2,887.17	2,885.89	9.82	11.07	93.88	1,680.39	7,664.61	7,849.34	7,828.55	20.79	377.592		
2,900.00	2,899.16	3,304.35	3,302.53	10.18	11.25	94.11	1,686.85	7,648.16	7,847.88	7,826.59	21.29	368.562		
3,000.00	2,998.61	3,403.47	3,401.29	10.54	11.30	94.19	1,691.55	7,641.07	7,842.61	7,820.91	21.71	361.284		
3,100.00	3,097.86	3,504.25	3,501.69	10.89	11.37	94.29	1,696.29	7,633.85	7,837.45	7,815.32	22.13	354.087		
3,200.00	3,196.89	3,602.27	3,599.35	11.25	11.45	94.39	1,700.92	7,626.83	7,832.44	7,809.86	22.57	347.015		
3,295.74	3,291.45	3,696.78	3,693.52	11.59	11.54	94.51	1,705.40	7,620.08	7,827.78	7,804.78	23.00	340.335		
3,300.00	3,295.65	3,701.14	3,697.85	11.61	11.54	94.51	1,705.61	7,619.76	7,827.58	7,804.56	23.02	340.037		
3,400.00	3,394.29	3,802.48	3,798.81	11.97	11.65	94.59	1,710.55	7,612.47	7,822.78	7,799.30	23.48	333.122		
3,500.00	3,492.94	3,899.43	3,895.39	12.33	11.75	94.66	1,715.32	7,605.49	7,817.99	7,794.04	23.95	326.374		
3,600.00	3,591.58	3,961.00	3,956.73	12.69	11.83	94.70	1,718.30	7,601.09	7,813.35	7,788.96	24.39	320.299		
3,700.00	3,690.22	4,023.97	4,019.49	13.05	11.91	94.75	1,721.46	7,596.88	7,809.19	7,784.35	24.84	314.355		
3,800.00	3,788.86	4,183.09	4,178.14	13.41	12.12	94.88	1,728.09	7,586.94	7,805.35	7,779.93	25.42	307.061		
3,900.00	3,887.50	4,246.00	4,240.89	13.77	12.22	94.94	1,729.88	7,582.78	7,800.88	7,775.00	25.88	301.420		
4,000.00	3,986.14	4,293.32	4,288.10	14.14	12.29	94.98	1,731.32	7,579.90	7,797.04	7,770.72	26.32	296.194		
4,100.00	4,084.78	4,340.00	4,334.69	14.50	12.36	95.02	1,732.98	7,577.59	7,794.13	7,767.37	26.77	291.186		
4,200.00	4,183.42	4,390.30	4,384.91	14.87	12.44	95.06	1,734.93	7,575.40	7,791.90	7,764.68	27.22	286.269		
4,300.00	4,282.06	4,481.44	4,475.89	15.24	12.59	95.14	1,738.54	7,571.53	7,789.94	7,762.20	27.74	280.830		
4,400.00	4,380.70	4,577.13	4,571.43	15.60	12.76	95.23	1,742.24	7,567.54	7,788.04	7,759.77	28.27	275.446		
4,500.00	4,479.34	4,673.19	4,667.34	15.97	12.93	95.31	1,745.96	7,563.58	7,786.22	7,757.40	28.82	270.186		
4,600.00	4,577.98	4,766.30	4,760.31	16.34	13.11	95.39	1,749.45	7,559.80	7,784.45	7,755.09	29.36	265.106		
4,700.00	4,676.62	4,859.83	4,853.70	16.71	13.29	95.47	1,752.90	7,556.13	7,782.81	7,752.89	29.92	260.152		
4,800.00	4,775.27	4,962.05	4,955.78	17.08	13.49	95.57	1,756.66	7,552.12	7,781.20	7,750.71	30.49	255.177		
4,900.00	4,873.91	5,052.45	5,046.05	17.45	13.68	95.65	1,759.92	7,548.58	7,779.60	7,748.55	31.05	250.527		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,266.22	5,259.39	17.82	14.15	95.83	1,768.85	7,538.66	7,777.46	7,745.57	31.88	243.925		
5,100.00	5,071.19	5,359.85	5,352.77	18.19	14.36	95.90	1,773.26	7,533.49	7,774.52	7,742.05	32.47	239.427		
5,200.00	5,169.83	5,462.85	5,455.52	18.56	14.61	95.99	1,777.86	7,527.93	7,771.68	7,738.59	33.08	234.905		
5,300.00	5,268.47	5,541.85	5,534.34	18.93	14.80	96.05	1,781.10	7,523.76	7,768.90	7,735.26	33.65	230.895		
5,400.00	5,367.11	5,627.21	5,619.54	19.31	15.01	96.13	1,784.28	7,519.55	7,766.42	7,732.19	34.23	226.907		
5,500.00	5,465.75	5,723.64	5,715.78	19.68	15.25	96.21	1,787.88	7,514.88	7,764.04	7,729.21	34.84	222.861		
5,600.00	5,564.39	5,809.39	5,801.39	20.05	15.47	96.29	1,790.89	7,510.82	7,761.75	7,726.32	35.43	219.093		
5,700.00	5,663.03	6,096.79	6,088.07	20.42	16.23	96.54	1,800.82	7,493.44	7,757.79	7,721.27	36.52	212.407		
5,800.00	5,761.67	6,147.98	6,139.09	20.80	16.37	96.58	1,803.03	7,489.94	7,753.59	7,716.55	37.04	209.328		
5,900.00	5,860.31	6,256.43	6,247.19	21.17	16.67	96.67	1,807.82	7,482.77	7,749.66	7,711.95	37.71	205.527		
6,000.00	5,958.96	6,374.08	6,364.49	21.54	17.01	96.77	1,812.24	7,474.74	7,745.42	7,707.02	38.40	201.704		
6,100.00	6,057.60	6,420.00	6,410.26	21.92	17.14	96.81	1,814.20	7,471.57	7,741.39	7,702.48	38.91	198.965		
6,200.00	6,156.24	6,479.11	6,469.18	22.29	17.31	96.85	1,817.09	7,467.80	7,737.93	7,698.47	39.45	196.131		
6,300.00	6,254.88	6,514.00	6,503.96	22.67	17.41	96.88	1,818.98	7,465.86	7,735.31	7,695.38	39.93	193.717		
6,400.00	6,353.52	6,580.56	6,570.35	23.04	17.60	96.93	1,822.47	7,462.60	7,733.30	7,692.81	40.50	190.967		
6,500.00	6,452.16	8,661.63	7,754.67	23.42	25.59	106.49	711.53	7,437.40	7,728.12	7,679.58	48.53	159.239		
6,600.00	6,550.80	8,643.00	7,754.88	23.79	25.43	106.35	730.15	7,437.05	7,715.45	7,666.65	48.80	158.098		
6,700.00	6,649.44	8,643.00	7,754.88	24.17	25.43	106.35	730.15	7,437.05	7,704.02	7,654.79	49.23	156.484		
6,800.00	6,748.08	8,630.50	7,755.02	24.54	25.33	106.26	742.66	7,436.84	7,693.86	7,644.31	49.55	155.265		
6,900.00	6,846.72	8,620.13	7,755.08	24.92	25.25	106.18	753.02	7,436.68	7,684.97	7,635.08	49.89	154.048		
7,000.00	6,945.36	8,610.25	7,755.10	25.29	25.16	106.11	762.90	7,436.54	7,677.34	7,627.12	50.22	152.877		
7,100.00	7,044.00	8,600.84	7,755.09	25.67	25.09	106.04	772.31	7,436.42	7,670.99	7,620.44	50.55	151.751		
7,200.00	7,142.65	8,591.85	7,755.04	26.04	25.01	105.97	781.30	7,436.31	7,665.93	7,615.05	50.88	150.671		
7,300.00	7,241.29	8,583.26	7,754.97	26.42	24.95	105.91	789.89	7,436.22	7,662.14	7,610.94	51.20	149.637		
7,400.00	7,339.93	8,575.05	7,754.87	26.79	24.88	105.85	798.10	7,436.14	7,659.65	7,608.12	51.53	148.649		
7,500.00	7,438.57	8,567.18	7,754.75	27.17	24.81	105.79	805.96	7,436.08	7,658.44	7,606.59	51.85	147.708		
7,545.42	7,483.37	8,549.00	7,754.38	27.34	24.67	105.66	824.14	7,435.95	7,658.35	7,606.48	51.87	147.644		
7,571.77	7,509.37	8,549.00	7,754.38	27.44	24.67	105.66	824.14	7,435.95	7,658.39	7,606.42	51.97	147.361		
7,600.00	7,537.23	8,549.00	7,754.38	27.55	24.67	105.66	824.14	7,435.95	7,658.51	7,606.44	52.08	147.063		
7,700.00	7,636.18	8,549.00	7,754.38	27.92	24.67	105.67	824.14	7,435.95	7,659.32	7,606.88	52.45	146.043		
7,800.00	7,735.48	8,530.57	7,753.96	28.29	24.53	105.55	842.57	7,435.83	7,660.73	7,608.07	52.66	145.471		
7,900.00	7,835.05	8,446.52	7,752.29	28.65	23.90	104.95	926.59	7,434.71	7,662.66	7,610.30	52.37	146.330		
8,000.00	7,934.83	8,440.22	7,752.18	29.01	23.85	104.94	932.88	7,434.59	7,665.21	7,612.55	52.66	145.569		
8,100.00	8,034.74	8,437.29	7,752.13	29.36	23.83	104.97	935.82	7,434.54	7,668.38	7,615.42	52.96	144.794		
8,202.27	8,137.00	8,437.83	7,752.14	29.72	23.84	88.99	935.27	7,434.55	7,672.27	7,618.98	53.28	143.989		
8,300.00	8,234.73	8,440.11	7,752.18	30.06	23.85	89.01	933.00	7,434.59	7,676.92	7,623.32	53.60	143.237		
8,400.00	8,334.73	8,442.47	7,752.22	30.41	23.87	89.02	930.64	7,434.64	7,682.96	7,629.05	53.91	142.517		
8,500.00	8,434.73	8,444.86	7,752.26	30.75	23.88	89.04	928.25	7,434.68	7,690.29	7,636.08	54.22	141.845		
8,552.31	8,487.04	8,446.12	7,752.28	30.94	23.89	89.05	926.99	7,434.70	7,694.64	7,640.27	54.37	141.512		
8,600.00	8,534.68	8,447.31	7,752.30	31.10	23.90	-0.60	925.80	7,434.72	7,696.94	7,642.43	54.51	141.197		
8,650.00	8,584.26	8,448.63	7,752.32	31.26	23.91	-0.59	924.48	7,434.75	7,695.40	7,640.75	54.65	140.817		
8,700.00	8,633.10	8,700.00	7,753.38	31.43	25.81	-0.21	872.76	7,435.39	7,689.70	7,633.04	56.66	135.708		
8,750.00	8,680.83	8,750.00	7,753.40	31.58	26.20	-0.20	871.68	7,435.40	7,680.14	7,622.98	57.15	134.379		
8,800.00	8,727.09	8,800.00	7,753.42	31.74	26.58	-0.20	870.62	7,435.41	7,666.64	7,609.00	57.63	133.024		
8,850.00	8,771.52	8,850.00	7,753.44	31.89	26.96	-0.20	869.57	7,435.42	7,649.28	7,591.18	58.10	131.648		
8,900.00	8,813.78	8,900.00	7,753.46	32.04	27.34	-0.19	868.54	7,435.43	7,628.18	7,569.62	58.56	130.255		
8,950.00	8,853.56	8,950.00	7,753.48	32.18	27.73	-0.20	867.54	7,435.45	7,603.47	7,544.45	59.01	128.846		
9,000.00	8,890.55	9,000.00	7,753.50	32.32	28.11	-0.20	866.58	7,435.46	7,575.29	7,515.84	59.45	127.426		
9,050.00	8,924.46	8,549.00	7,754.38	32.47	24.67	0.22	824.14	7,435.95	7,543.94	7,487.82	56.12	134.433		
9,100.00	8,955.05	8,549.00	7,754.38	32.63	24.67	0.23	824.14	7,435.95	7,509.38	7,453.22	56.16	133.720		
9,150.00	8,982.08	8,549.00	7,754.38	32.79	24.67	0.26	824.14	7,435.95	7,471.96	7,415.77	56.19	132.983		
9,200.00	9,005.34	8,549.00	7,754.38	32.97	24.67	0.29	824.14	7,435.95	7,431.92	7,375.71	56.21	132.222		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,250.00	9,024.65	8,549.00	7,754.38	33.17	24.67	0.34	824.14	7,435.95	7,389.53	7,333.31	56.22	131.440	
9,300.00	9,039.87	8,549.00	7,754.38	33.38	24.67	0.40	824.14	7,435.95	7,345.06	7,288.84	56.22	130.639	
9,350.00	9,050.89	8,549.00	7,754.38	33.62	24.67	0.49	824.14	7,435.95	7,298.83	7,242.61	56.22	129.821	
9,400.00	9,057.61	8,549.00	7,754.38	33.87	24.67	0.65	824.14	7,435.95	7,251.15	7,194.94	56.22	128.986	
9,452.31	9,060.00	8,549.00	7,754.38	34.15	24.67	0.99	824.14	7,435.95	7,200.09	7,143.89	56.21	128.098	
9,500.00	9,060.00	8,549.00	7,754.38	34.42	24.67	0.99	824.14	7,435.95	7,153.12	7,096.92	56.20	127.283	
9,600.00	9,060.00	8,549.00	7,754.38	35.09	24.67	0.99	824.14	7,435.95	7,054.65	6,998.47	56.18	125.582	
9,700.00	9,060.00	8,549.00	7,754.38	35.86	24.67	0.99	824.14	7,435.95	6,956.22	6,900.06	56.15	123.880	
9,800.00	9,060.00	9,800.00	7,753.67	36.72	34.27	-0.61	858.74	7,435.55	6,857.75	6,792.25	65.50	104.704	
9,900.00	9,060.00	9,900.00	7,753.68	37.69	35.04	-0.59	858.16	7,435.56	6,759.41	6,693.19	66.22	102.070	
10,000.00	9,060.00	10,000.00	7,753.69	38.73	35.82	-0.56	857.59	7,435.56	6,661.13	6,594.18	66.95	99.495	
10,100.00	9,060.00	10,100.00	7,753.70	39.86	36.59	-0.53	857.01	7,435.57	6,562.90	6,495.22	67.68	96.975	
10,140.22	9,060.00	10,140.22	7,753.71	40.33	36.90	-0.52	856.78	7,435.57	6,523.40	6,455.43	67.97	95.977	
10,200.00	9,060.00	10,200.00	7,753.73	41.05	37.36	-6.61	855.81	7,435.58	6,464.73	6,396.32	68.40	94.510	
10,300.00	9,060.00	10,300.00	7,753.82	42.31	38.14	-16.15	851.41	7,435.63	6,366.69	6,297.56	69.13	92.101	
10,400.00	9,060.00	10,400.00	7,753.98	43.64	38.91	-24.59	843.52	7,435.73	6,268.90	6,199.05	69.85	89.747	
10,507.23	9,060.00	10,507.23	7,754.24	45.11	39.75	-32.25	831.21	7,435.87	6,164.48	6,093.85	70.63	87.282	
10,600.00	9,060.00	10,600.00	7,754.46	46.43	40.47	-25.01	820.32	7,436.00	6,074.21	6,002.91	71.30	85.192	
10,700.00	9,060.00	8,572.03	7,754.83	47.91	24.85	-15.92	801.11	7,436.12	5,976.56	5,920.42	56.14	106.459	
10,800.00	9,060.00	8,574.10	7,754.85	49.42	24.87	-6.85	799.05	7,436.13	5,878.86	5,822.72	56.14	104.713	
10,900.00	9,060.00	8,574.61	7,754.86	50.97	24.87	2.36	798.54	7,436.14	5,781.14	5,725.01	56.13	102.990	
11,000.00	9,060.00	8,573.54	7,754.85	52.55	24.87	11.21	799.60	7,436.13	5,683.54	5,627.43	56.11	101.290	
11,100.00	9,060.00	8,570.88	7,754.81	54.14	24.84	19.34	802.27	7,436.11	5,586.17	5,530.09	56.08	99.613	
11,207.23	9,060.00	11,207.23	7,754.41	55.87	45.18	26.41	823.05	7,435.97	5,482.23	5,406.53	75.70	72.420	
11,300.00	9,060.00	11,300.00	7,754.22	57.39	45.91	19.37	831.78	7,435.86	5,392.34	5,315.96	76.37	70.606	
11,400.00	9,060.00	11,400.00	7,754.10	59.06	46.68	11.33	837.83	7,435.79	5,295.27	5,218.17	77.10	68.684	
11,506.63	9,060.00	11,506.63	7,754.05	60.88	47.51	2.58	840.45	7,435.76	5,191.70	5,113.84	77.86	66.676	
11,600.00	9,060.00	11,600.00	7,754.03	62.49	48.24	2.55	841.01	7,435.76	5,101.08	5,022.54	78.54	64.952	
11,700.00	9,060.00	11,700.00	7,754.02	64.24	49.02	2.52	841.61	7,435.75	5,004.13	4,924.87	79.25	63.140	
11,800.00	9,060.00	11,800.00	7,754.01	66.01	49.80	2.50	842.20	7,435.74	4,907.30	4,827.33	79.97	61.363	
11,900.00	9,060.00	11,900.00	7,754.00	67.79	50.58	2.47	842.80	7,435.74	4,810.60	4,729.92	80.69	59.621	
12,000.00	9,060.00	12,000.00	7,753.98	69.58	51.35	2.44	843.40	7,435.73	4,714.05	4,632.65	81.40	57.912	
12,100.00	9,060.00	12,100.00	7,753.97	71.39	52.13	2.41	843.99	7,435.72	4,617.63	4,535.52	82.11	56.235	
12,200.00	9,060.00	12,200.00	7,753.96	73.21	52.91	2.39	844.59	7,435.71	4,521.38	4,438.55	82.82	54.591	
12,300.00	9,060.00	12,300.00	7,753.95	75.05	53.69	2.36	845.19	7,435.71	4,425.29	4,341.75	83.53	52.977	
12,400.00	9,060.00	8,568.31	7,754.85	76.89	24.81	4.22	804.84	7,436.04	4,329.41	4,273.36	56.05	77.240	
12,500.00	9,060.00	8,564.67	7,754.76	78.74	24.79	4.05	808.48	7,436.03	4,233.70	4,177.66	56.04	75.548	
12,600.00	9,060.00	8,561.25	7,754.68	80.61	24.76	3.90	811.89	7,436.01	4,138.18	4,082.15	56.03	73.851	
12,700.00	9,060.00	8,558.05	7,754.60	82.48	24.73	3.75	815.10	7,436.00	4,042.88	3,986.85	56.03	72.151	
12,800.00	9,060.00	8,555.03	7,754.53	84.36	24.71	3.61	818.12	7,435.99	3,947.82	3,891.78	56.04	70.447	
12,900.00	9,060.00	8,552.18	7,754.46	86.24	24.69	3.48	820.96	7,435.97	3,853.00	3,796.95	56.05	68.739	
13,000.00	9,060.00	8,549.49	7,754.39	88.14	24.67	3.35	823.65	7,435.96	3,758.45	3,702.38	56.07	67.029	
13,100.00	9,060.00	8,546.95	7,754.33	90.04	24.65	3.24	826.19	7,435.94	3,664.19	3,608.09	56.10	65.316	
13,200.00	9,060.00	8,544.53	7,754.28	91.94	24.63	3.12	828.60	7,435.93	3,570.24	3,514.11	56.13	63.601	
13,300.00	9,060.00	8,542.25	7,754.22	93.86	24.62	3.02	830.89	7,435.91	3,476.63	3,420.45	56.18	61.884	
13,400.00	9,060.00	8,540.07	7,754.17	95.77	24.60	2.92	833.06	7,435.90	3,383.38	3,327.14	56.24	60.165	
13,500.00	9,060.00	8,538.01	7,754.13	97.70	24.58	2.82	835.13	7,435.88	3,290.53	3,234.23	56.30	58.444	
13,600.00	9,060.00	8,536.04	7,754.08	99.62	24.57	2.73	837.10	7,435.87	3,198.11	3,141.72	56.38	56.722	
13,700.00	9,060.00	8,534.16	7,754.04	101.56	24.55	2.64	838.98	7,435.86	3,106.15	3,049.68	56.48	54.999	
13,800.00	9,060.00	8,532.37	7,754.00	103.49	24.54	2.56	840.77	7,435.84	3,014.71	2,958.13	56.59	53.276	
13,900.00	9,060.00	8,530.65	7,753.96	105.43	24.53	2.48	842.48	7,435.83	2,923.83	2,867.12	56.71	51.553	
14,000.00	9,060.00	8,529.01	7,753.92	107.38	24.51	2.41	844.12	7,435.82	2,833.56	2,776.70	56.86	49.831	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,527.44	7,753.89	109.33	24.50	2.33	845.69	7,435.80	2,743.97	2,686.94	57.04	48.110		
14,200.00	9,060.00	8,525.94	7,753.85	111.28	24.49	2.26	847.19	7,435.79	2,655.12	2,597.89	57.23	46.392		
14,300.00	9,060.00	8,524.50	7,753.82	113.23	24.48	2.20	848.64	7,435.78	2,567.09	2,509.63	57.46	44.676		
14,400.00	9,060.00	8,523.11	7,753.79	115.19	24.47	2.13	850.02	7,435.77	2,479.97	2,422.25	57.72	42.966		
14,500.00	9,060.00	8,521.78	7,753.76	117.15	24.46	2.07	851.35	7,435.75	2,393.85	2,335.83	58.02	41.262		
14,600.00	9,060.00	8,520.50	7,753.73	119.11	24.45	2.01	852.63	7,435.74	2,308.85	2,250.50	58.35	39.567		
14,700.00	9,060.00	8,519.27	7,753.71	121.08	24.44	1.96	853.86	7,435.73	2,225.10	2,166.36	58.74	37.883		
14,800.00	9,060.00	8,518.08	7,753.68	123.05	24.43	1.90	855.05	7,435.72	2,142.74	2,083.57	59.17	36.213		
14,900.00	9,060.00	8,516.94	7,753.65	125.02	24.42	1.85	856.19	7,435.71	2,061.95	2,002.28	59.66	34.561		
15,000.00	9,060.00	8,515.84	7,753.63	126.99	24.42	1.80	857.29	7,435.70	1,982.90	1,922.69	60.21	32.931		
15,100.00	9,060.00	8,514.77	7,753.61	128.97	24.41	1.75	858.36	7,435.69	1,905.82	1,844.99	60.83	31.328		
15,200.00	9,060.00	8,513.75	7,753.59	130.95	24.40	1.70	859.39	7,435.68	1,830.96	1,769.44	61.53	29.759		
15,300.00	9,060.00	8,512.75	7,753.56	132.93	24.39	1.65	860.38	7,435.67	1,758.61	1,696.31	62.30	28.230		
15,400.00	9,060.00	8,511.79	7,753.54	134.91	24.38	1.61	861.34	7,435.66	1,689.07	1,625.93	63.14	26.749		
15,500.00	9,060.00	8,510.87	7,753.52	136.89	24.38	1.57	862.26	7,435.65	1,622.72	1,558.65	64.07	25.326		
15,600.00	9,060.00	8,509.97	7,753.51	138.88	24.37	1.53	863.16	7,435.64	1,559.96	1,494.88	65.08	23.969		
15,700.00	9,060.00	8,509.10	7,753.49	140.86	24.36	1.49	864.03	7,435.63	1,501.25	1,435.08	66.17	22.688		
15,800.00	9,060.00	8,508.26	7,753.47	142.85	24.36	1.45	864.87	7,435.62	1,447.07	1,379.75	67.32	21.495		
15,900.00	9,060.00	8,507.44	7,753.45	144.84	24.35	1.41	865.69	7,435.61	1,397.95	1,329.42	68.53	20.398		
16,000.00	9,060.00	8,506.65	7,753.44	146.83	24.35	1.37	866.48	7,435.60	1,354.45	1,284.65	69.79	19.407		
16,100.00	9,060.00	8,505.88	7,753.42	148.83	24.34	1.34	867.25	7,435.59	1,317.11	1,246.04	71.07	18.531		
16,200.00	9,060.00	8,505.13	7,753.40	150.82	24.33	1.30	868.00	7,435.59	1,286.48	1,214.11	72.37	17.777		
16,300.00	9,060.00	8,504.41	7,753.39	152.82	24.33	1.27	868.72	7,435.58	1,263.05	1,189.40	73.65	17.149		
16,400.00	9,060.00	8,503.70	7,753.37	154.81	24.32	1.24	869.42	7,435.57	1,247.21	1,172.31	74.90	16.652		
16,500.00	9,060.00	8,503.02	7,753.36	156.81	24.32	1.20	870.11	7,435.56	1,239.27	1,163.18	76.09	16.287		
16,548.74	9,060.00	8,502.69	7,753.35	157.79	24.32	1.19	870.43	7,435.56	1,238.31	1,161.67	76.64	16.157 CC, ES		
16,600.00	9,060.00	8,502.36	7,753.35	158.81	24.31	1.17	870.77	7,435.55	1,239.37	1,162.18	77.19	16.056		
16,700.00	9,060.00	8,501.71	7,753.33	160.81	24.31	1.14	871.42	7,435.55	1,247.52	1,169.35	78.17	15.959 SF		
16,800.00	9,060.00	8,501.08	7,753.32	162.81	24.30	1.11	872.05	7,435.54	1,263.55	1,184.55	79.00	15.994		
16,900.00	9,060.00	8,500.47	7,753.31	164.82	24.30	1.09	872.66	7,435.53	1,287.17	1,207.52	79.65	16.160		
17,000.00	9,060.00	8,499.87	7,753.29	166.82	24.29	1.06	873.26	7,435.52	1,317.97	1,237.86	80.12	16.451		
17,100.00	9,060.00	8,499.29	7,753.28	168.82	24.29	1.03	873.84	7,435.52	1,355.47	1,275.07	80.40	16.860		
17,200.00	9,060.00	8,498.73	7,753.27	170.83	24.29	1.01	874.40	7,435.51	1,399.12	1,318.62	80.51	17.379		
17,300.00	9,060.00	8,498.17	7,753.26	172.84	24.28	0.98	874.95	7,435.50	1,448.38	1,367.91	80.46	18.000		
17,400.00	9,060.00	8,497.64	7,753.25	174.84	24.28	0.96	875.49	7,435.50	1,502.68	1,422.38	80.30	18.714		
17,500.00	9,060.00	8,497.11	7,753.24	176.85	24.27	0.93	876.02	7,435.49	1,561.50	1,481.47	80.03	19.512		
17,600.00	9,060.00	8,496.60	7,753.23	178.86	24.27	0.91	876.53	7,435.48	1,624.35	1,544.67	79.69	20.385		
17,700.00	9,060.00	8,496.10	7,753.22	180.87	24.27	0.88	877.03	7,435.48	1,690.79	1,611.50	79.29	21.325		
17,800.00	9,060.00	8,495.61	7,753.21	182.88	24.26	0.86	877.51	7,435.47	1,760.40	1,681.55	78.85	22.325		
17,900.00	9,060.00	8,495.14	7,753.20	184.89	24.26	0.84	877.99	7,435.47	1,832.83	1,754.43	78.40	23.378		
18,000.00	9,060.00	8,494.67	7,753.19	186.90	24.25	0.82	878.45	7,435.46	1,907.75	1,829.81	77.94	24.478		
18,100.00	9,060.00	8,494.22	7,753.18	188.92	24.25	0.80	878.91	7,435.45	1,984.88	1,907.41	77.47	25.620		
18,200.00	9,060.00	8,493.77	7,753.17	190.93	24.25	0.78	879.35	7,435.45	2,063.97	1,986.96	77.02	26.799		
18,300.00	9,060.00	8,493.34	7,753.16	192.94	24.24	0.76	879.79	7,435.44	2,144.82	2,068.24	76.57	28.010		
18,400.00	9,060.00	8,492.91	7,753.15	194.96	24.24	0.74	880.21	7,435.44	2,227.21	2,151.07	76.14	29.250		
18,500.00	9,060.00	8,492.50	7,753.14	196.97	24.24	0.72	880.63	7,435.43	2,311.00	2,235.27	75.73	30.516		
18,600.00	9,060.00	8,492.09	7,753.14	198.99	24.24	0.70	881.03	7,435.43	2,396.03	2,320.69	75.34	31.803		
18,700.00	9,060.00	8,491.70	7,753.13	201.00	24.23	0.68	881.43	7,435.42	2,482.18	2,407.21	74.97	33.111		
18,800.00	9,060.00	8,491.31	7,753.12	203.02	24.23	0.66	881.82	7,435.42	2,569.33	2,494.71	74.61	34.435		
18,900.00	9,060.00	8,490.93	7,753.11	205.04	24.23	0.64	882.20	7,435.41	2,657.38	2,583.10	74.28	35.775		
19,000.00	9,060.00	8,490.55	7,753.11	207.06	24.22	0.63	882.57	7,435.41	2,746.25	2,672.29	73.97	37.127		
19,100.00	9,060.00	8,490.19	7,753.10	209.07	24.22	0.61	882.94	7,435.40	2,835.87	2,762.19	73.68	38.491		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	8,489.83	7,753.09	211.09	24.22	0.59	883.29	7,435.40	2,926.16	2,852.76	73.40	39.866	
19,300.00	9,060.00	8,489.48	7,753.08	213.11	24.22	0.58	883.65	7,435.39	3,017.06	2,943.91	73.14	41.248	
19,400.00	9,060.00	8,489.14	7,753.08	215.13	24.21	0.56	883.99	7,435.39	3,108.52	3,035.61	72.90	42.639	
19,500.32	9,060.00	8,488.80	7,753.07	217.16	24.21	0.55	884.33	7,435.38	3,200.78	3,128.10	72.68	44.040	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	2,964.00	2,963.48	10.89	29.67	110.65	-193.54	5,886.70	6,016.33	5,977.45	38.88	154.738		
3,200.00	3,196.89	2,964.00	2,963.48	11.25	29.67	110.91	-193.54	5,886.70	5,989.85	5,950.47	39.38	152.095		
3,295.74	3,291.45	2,964.00	2,963.48	11.59	29.67	111.14	-193.54	5,886.70	5,966.53	5,926.67	39.86	149.686		
3,300.00	3,295.65	2,964.00	2,963.48	11.61	29.67	111.14	-193.54	5,886.70	5,965.54	5,925.66	39.88	149.582		
3,400.00	3,394.29	2,964.00	2,963.48	11.97	29.67	111.14	-193.54	5,886.70	5,943.09	5,902.71	40.38	147.185		
3,500.00	3,492.94	2,964.00	2,963.48	12.33	29.67	111.14	-193.54	5,886.70	5,922.25	5,881.38	40.87	144.897		
3,600.00	3,591.58	2,964.00	2,963.48	12.69	29.67	111.14	-193.54	5,886.70	5,903.03	5,861.66	41.36	142.718		
3,700.00	3,690.22	2,964.00	2,963.48	13.05	29.67	111.14	-193.54	5,886.70	5,885.44	5,843.59	41.85	140.645		
3,800.00	3,788.86	2,964.00	2,963.48	13.41	29.67	111.14	-193.54	5,886.70	5,869.50	5,827.18	42.33	138.676		
3,900.00	3,887.50	2,964.00	2,963.48	13.77	29.67	111.14	-193.54	5,886.70	5,855.23	5,812.43	42.80	136.810		
4,000.00	3,986.14	2,964.00	2,963.48	14.14	29.67	111.14	-193.54	5,886.70	5,842.64	5,799.37	43.26	135.043		
4,100.00	4,084.78	2,964.00	2,963.48	14.50	29.67	111.14	-193.54	5,886.70	5,831.73	5,788.01	43.72	133.376		
4,200.00	4,183.42	2,964.00	2,963.48	14.87	29.67	111.14	-193.54	5,886.70	5,822.52	5,778.35	44.18	131.804		
4,300.00	4,282.06	2,964.00	2,963.48	15.24	29.24	110.78	-157.25	5,888.85	5,814.56	5,770.38	44.18	131.596		
4,400.00	4,380.70	2,964.00	2,963.48	15.60	29.19	110.74	-153.44	5,889.12	5,808.67	5,764.10	44.57	130.317		
4,500.00	4,479.34	2,964.00	2,963.48	15.97	29.14	110.71	-149.56	5,889.39	5,804.49	5,759.54	44.95	129.126		
4,600.00	4,577.98	2,964.00	2,963.48	16.34	29.10	110.67	-145.61	5,889.68	5,802.02	5,756.70	45.32	128.023		
4,694.33	4,671.04	2,964.00	2,963.48	16.69	29.05	110.63	-141.82	5,889.96	5,801.26	5,755.60	45.66	127.059		
4,700.00	4,676.62	2,964.00	2,963.48	16.71	29.05	110.63	-141.59	5,889.98	5,801.26	5,755.58	45.68	127.004		
4,800.00	4,775.27	2,964.00	2,963.48	17.08	29.00	110.59	-137.50	5,890.29	5,802.21	5,756.19	46.02	126.069		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,375.66	4,944.34	17.45	28.95	110.55	-133.33	5,690.62	5,804.88	5,758.52	46.36	125.215		
5,000.00	4,972.55	6,341.00	4,944.83	17.82	28.54	110.21	-98.81	5,693.66	5,809.55	5,763.23	46.32	125.424		
5,100.00	5,071.19	6,341.00	4,944.83	18.19	28.54	110.21	-98.81	5,693.66	5,815.55	5,768.87	46.68	124.576		
5,200.00	5,169.83	6,341.00	4,944.83	18.56	28.54	110.21	-98.81	5,693.66	5,823.26	5,776.22	47.04	123.806		
5,300.00	5,268.47	6,341.00	4,944.83	18.93	28.54	110.21	-98.81	5,693.66	5,832.67	5,785.29	47.38	123.113		
5,400.00	5,367.11	6,341.00	4,944.83	19.31	28.54	110.21	-98.81	5,693.66	5,843.77	5,796.07	47.71	122.495		
5,500.00	5,465.75	6,341.00	4,944.83	19.68	28.54	110.21	-98.81	5,693.66	5,856.57	5,808.54	48.02	121.949		
5,600.00	5,564.39	6,341.00	4,944.83	20.05	28.54	110.21	-98.81	5,693.66	5,871.04	5,822.71	48.33	121.475		
5,700.00	5,663.03	6,341.00	4,944.83	20.42	28.54	110.21	-98.81	5,693.66	5,887.17	5,838.55	48.63	121.069		
5,800.00	5,761.67	6,341.00	4,944.83	20.80	28.54	110.21	-98.81	5,693.66	5,904.96	5,856.05	48.91	120.731		
5,900.00	5,860.31	6,317.10	4,945.35	21.17	28.26	109.98	-75.03	5,695.98	5,924.29	5,875.38	48.91	121.135		
6,000.00	5,958.96	6,306.89	4,945.58	21.54	28.14	109.88	-64.87	5,697.00	5,945.24	5,896.19	49.05	121.206		
6,100.00	6,057.60	6,296.62	4,945.81	21.92	28.02	109.78	-54.66	5,698.04	5,967.77	5,918.58	49.18	121.336		
6,200.00	6,156.24	6,026.18	4,943.70	22.29	24.94	107.14	214.87	5,718.29	5,991.69	5,945.29	46.39	129.146		
6,300.00	6,254.88	6,018.26	4,943.44	22.67	24.86	107.06	222.78	5,718.67	6,016.68	5,970.14	46.55	129.259		
6,400.00	6,353.52	6,010.17	4,943.19	23.04	24.77	106.99	230.85	5,719.07	6,043.21	5,996.52	46.69	129.435		
6,500.00	6,452.16	6,001.92	4,942.94	23.42	24.68	106.91	239.09	5,719.49	6,071.26	6,024.44	46.82	129.674		
6,600.00	6,550.80	5,993.49	4,942.70	23.79	24.59	106.82	247.50	5,719.92	6,100.80	6,053.86	46.94	129.973		
6,700.00	6,649.44	5,984.89	4,942.47	24.17	24.49	106.74	256.08	5,720.37	6,131.80	6,084.76	47.05	130.332		
6,800.00	6,748.08	6,000.00	4,941.49	24.54	33.17	106.29	302.34	5,722.78	6,164.23	6,108.56	55.67	110.733		
6,900.00	6,846.72	6,900.00	4,941.23	24.92	34.24	106.15	316.05	5,723.46	6,198.03	6,141.16	56.86	109.000		
7,000.00	6,945.36	5,865.21	4,940.16	25.29	23.22	105.57	375.59	5,726.40	6,233.35	6,186.98	46.37	134.432		
7,100.00	7,044.00	5,843.98	4,939.88	25.67	23.01	105.37	396.80	5,727.31	6,269.79	6,223.46	46.33	135.326		
7,200.00	7,142.65	5,822.38	4,939.62	26.04	22.79	105.16	418.38	5,728.23	6,307.56	6,261.28	46.28	136.277		
7,300.00	7,241.29	5,800.41	4,939.38	26.42	22.56	104.94	440.33	5,729.14	6,346.63	6,300.40	46.23	137.285		
7,400.00	7,339.93	5,778.06	4,939.17	26.79	22.34	104.73	462.65	5,730.05	6,386.98	6,340.81	46.17	138.349		
7,500.00	7,438.57	5,774.00	4,939.13	27.17	22.30	104.69	466.71	5,730.21	6,428.59	6,382.32	46.27	138.930		
7,571.77	7,509.37	5,774.00	4,939.13	27.44	22.30	104.69	466.71	5,730.21	6,459.25	6,412.87	46.37	139.289		
7,600.00	7,537.23	5,774.00	4,939.13	27.55	22.30	104.88	466.71	5,730.21	6,471.46	6,425.05	46.41	139.436		
7,700.00	7,636.18	5,774.00	4,939.13	27.92	22.30	105.59	466.71	5,730.21	6,515.13	6,468.58	46.54	139.986		
7,800.00	7,735.48	5,774.00	4,939.13	28.29	22.30	106.30	466.71	5,730.21	6,559.40	6,512.74	46.66	140.575		
7,900.00	7,835.05	5,774.00	4,939.13	28.65	22.30	107.02	466.71	5,730.21	6,604.24	6,557.47	46.77	141.204		
8,000.00	7,934.83	5,774.00	4,939.13	29.01	22.30	107.75	466.71	5,730.21	6,649.60	6,602.73	46.87	141.869		
8,100.00	8,034.74	5,774.00	4,939.13	29.36	22.30	108.48	466.71	5,730.21	6,695.44	6,648.48	46.96	142.569		
8,202.27	8,137.00	5,774.00	4,939.13	29.72	22.30	93.20	466.71	5,730.21	6,742.78	6,695.73	47.05	143.318		
8,300.00	8,234.73	5,774.00	4,939.13	30.06	22.30	93.20	466.71	5,730.21	6,788.78	6,741.65	47.12	144.065		
8,400.00	8,334.73	5,774.00	4,939.13	30.41	22.30	93.20	466.71	5,730.21	6,836.97	6,789.77	47.20	144.858		
8,500.00	8,434.73	5,774.00	4,939.13	30.75	22.30	93.20	466.71	5,730.21	6,886.27	6,839.00	47.27	145.681		
8,552.31	8,487.04	5,774.00	4,939.13	30.94	22.30	93.20	466.71	5,730.21	6,912.49	6,865.19	47.31	146.123		
8,600.00	8,534.68	5,774.00	4,939.13	31.10	22.30	3.39	466.71	5,730.21	6,934.93	6,887.60	47.33	146.523		
8,650.00	8,584.26	5,774.00	4,939.13	31.26	22.30	3.26	466.71	5,730.21	6,954.91	6,907.57	47.34	146.902		
8,700.00	8,633.10	5,774.00	4,939.13	31.43	22.30	3.16	466.71	5,730.21	6,971.14	6,923.79	47.35	147.221		
8,750.00	8,680.83	5,774.00	4,939.13	31.58	22.30	3.09	466.71	5,730.21	6,983.53	6,936.18	47.35	147.482		
8,800.00	8,727.09	5,774.00	4,939.13	31.74	22.30	3.05	466.71	5,730.21	6,992.01	6,944.66	47.34	147.687		
8,850.00	8,771.52	5,774.00	4,939.13	31.89	22.30	3.02	466.71	5,730.21	6,996.51	6,949.19	47.33	147.836		
8,900.00	8,813.78	5,774.00	4,939.13	32.04	22.30	3.02	466.71	5,730.21	6,997.03	6,949.73	47.30	147.930		
8,950.00	8,853.56	5,774.00	4,939.13	32.18	22.30	3.04	466.71	5,730.21	6,993.54	6,946.28	47.26	147.969		
9,000.00	8,890.55	5,774.00	4,939.13	32.32	22.30	3.08	466.71	5,730.21	6,986.08	6,938.87	47.22	147.954		
9,050.00	8,924.46	5,774.00	4,939.13	32.47	22.30	3.14	466.71	5,730.21	6,974.69	6,927.53	47.16	147.883		
9,100.00	8,955.05	5,747.83	4,938.92	32.63	22.04	3.00	492.85	5,731.38	6,959.31	6,912.43	46.88	148.449		
9,150.00	8,982.08	5,747.05	4,938.92	32.79	22.03	3.11	493.64	5,731.41	6,940.27	6,893.47	46.80	148.286		
9,200.00	9,005.34	5,746.20	4,938.91	32.97	22.03	3.24	494.49	5,731.46	6,917.58	6,870.86	46.72	148.066		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - ST01 - ST01		Offset Site Error: 5.00 ft	
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
9,250.00	9,024.65	5,745.28	4,938.91	33.17	22.02	3.41	495.40	5,731.50	6,891.36	6,844.73	46.63	147.791				
9,300.00	9,039.87	5,744.32	4,938.90	33.38	22.01	3.62	496.37	5,731.55	6,861.78	6,815.25	46.53	147.458				
9,350.00	9,050.89	5,743.30	4,938.89	33.62	22.00	3.90	497.38	5,731.60	6,829.02	6,782.59	46.43	147.067				
9,400.00	9,057.61	5,742.25	4,938.88	33.87	21.99	4.25	498.43	5,731.65	6,793.29	6,746.96	46.33	146.617				
9,452.31	9,060.00	5,741.10	4,938.88	34.15	21.98	4.73	499.57	5,731.71	6,752.98	6,706.75	46.23	146.083				
9,500.00	9,060.00	5,740.04	4,938.87	34.42	21.97	4.71	500.63	5,731.77	6,714.99	6,668.87	46.13	145.577				
9,600.00	9,060.00	5,737.77	4,938.85	35.09	21.94	4.68	502.90	5,731.88	6,635.76	6,589.85	45.91	144.537				
9,700.00	9,060.00	5,735.44	4,938.84	35.86	21.92	4.65	505.23	5,732.01	6,557.09	6,511.39	45.70	143.487				
9,800.00	9,060.00	5,733.05	4,938.82	36.72	21.90	4.62	507.62	5,732.14	6,479.00	6,433.51	45.49	142.423				
9,900.00	9,060.00	5,730.59	4,938.81	37.69	21.87	4.58	510.07	5,732.27	6,401.53	6,356.24	45.29	141.346				
10,000.00	9,060.00	5,728.06	4,938.79	38.73	21.85	4.55	512.60	5,732.41	6,324.68	6,279.59	45.09	140.253				
10,100.00	9,060.00	5,725.46	4,938.78	39.86	21.82	4.51	515.19	5,732.55	6,248.49	6,203.58	44.91	139.143				
10,140.22	9,060.00	5,724.40	4,938.77	40.33	21.81	4.50	516.26	5,732.61	6,218.03	6,173.19	44.83	138.692				
10,200.00	9,060.00	5,723.06	4,938.76	41.05	21.80	3.11	517.60	5,732.69	6,172.94	6,128.21	44.73	138.009				
10,300.00	9,060.00	5,721.98	4,938.75	42.31	21.79	0.83	518.68	5,732.75	6,097.98	6,053.42	44.57	136.829				
10,400.00	9,060.00	5,722.41	4,938.76	43.64	21.79	-1.38	518.24	5,732.73	6,023.72	5,979.30	44.42	135.598				
10,507.23	9,060.00	5,724.63	4,938.77	45.11	21.82	-3.67	516.03	5,732.60	5,945.00	5,900.71	44.29	134.220				
10,600.00	9,060.00	5,726.71	4,938.78	46.43	21.84	-1.68	513.95	5,732.48	5,877.62	5,833.43	44.19	133.000				
10,700.00	9,060.00	5,727.47	4,938.79	47.91	21.84	0.40	513.19	5,732.44	5,805.71	5,761.62	44.09	131.687				
10,800.00	9,060.00	5,726.61	4,938.78	49.42	21.84	2.41	514.05	5,732.49	5,734.65	5,690.67	43.99	130.376				
10,900.00	9,060.00	5,724.06	4,938.77	50.97	21.81	4.33	516.59	5,732.63	5,664.57	5,620.69	43.89	129.067				
11,000.00	9,060.00	5,719.74	4,938.74	52.55	21.77	6.17	520.91	5,732.88	5,595.60	5,551.80	43.80	127.759				
11,100.00	9,060.00	5,713.56	4,938.71	54.14	21.71	7.91	527.07	5,733.25	5,527.83	5,484.11	43.72	126.450				
11,207.23	9,060.00	5,704.79	4,938.66	55.87	21.62	9.67	535.83	5,733.79	5,456.65	5,413.01	43.64	125.041				
11,300.00	9,060.00	5,680.00	4,938.56	57.39	21.38	7.75	560.56	5,735.46	5,396.08	5,352.61	43.46	124.148				
11,400.00	9,060.00	5,680.00	4,938.56	59.06	21.38	6.07	560.56	5,735.46	5,331.36	5,287.86	43.49	122.577				
11,506.63	9,060.00	5,680.00	4,938.56	60.88	21.38	4.30	560.56	5,735.46	5,263.25	5,219.70	43.54	120.873				
11,600.00	9,060.00	5,680.00	4,938.56	62.49	21.38	4.30	560.56	5,735.46	5,204.55	5,160.95	43.61	119.356				
11,700.00	9,060.00	5,680.00	4,938.56	64.24	21.38	4.30	560.56	5,735.46	5,142.83	5,099.13	43.69	117.701				
11,800.00	9,060.00	5,680.00	4,938.56	66.01	21.38	4.30	560.56	5,735.46	5,082.32	5,038.52	43.81	116.015				
11,900.00	9,060.00	5,680.00	4,938.56	67.79	21.38	4.30	560.56	5,735.46	5,023.08	4,979.13	43.95	114.301				
12,000.00	9,060.00	5,680.00	4,938.56	69.58	21.38	4.30	560.56	5,735.46	4,965.14	4,921.03	44.11	112.561				
12,100.00	9,060.00	5,680.00	4,938.56	71.39	21.38	4.30	560.56	5,735.46	4,908.56	4,864.26	44.30	110.799				
12,200.00	9,060.00	5,680.00	4,938.56	73.21	21.38	4.30	560.56	5,735.46	4,853.38	4,808.86	44.52	109.016				
12,300.00	9,060.00	5,680.00	4,938.56	75.05	21.38	4.30	560.56	5,735.46	4,799.64	4,754.88	44.77	107.218				
12,400.00	9,060.00	5,652.78	4,938.48	76.89	21.13	3.92	587.69	5,737.68	4,747.20	4,702.36	44.84	105.865				
12,500.00	9,060.00	5,648.57	4,938.47	78.74	21.09	3.87	591.89	5,738.07	4,696.45	4,651.34	45.11	104.106				
12,600.00	9,060.00	5,644.11	4,938.46	80.61	21.05	3.80	596.32	5,738.50	4,647.29	4,601.88	45.41	102.344				
12,700.00	9,060.00	5,639.38	4,938.45	82.48	21.01	3.74	601.03	5,738.97	4,599.76	4,554.03	45.73	100.584				
12,800.00	9,060.00	5,634.37	4,938.44	84.36	20.96	3.67	606.01	5,739.48	4,553.92	4,507.84	46.08	98.831				
12,900.00	9,060.00	5,629.03	4,938.43	86.24	20.92	3.59	611.32	5,740.05	4,509.82	4,463.37	46.45	97.090				
13,000.00	9,060.00	5,623.35	4,938.42	88.14	20.86	3.51	616.97	5,740.68	4,467.51	4,420.66	46.85	95.364				
13,100.00	9,060.00	5,617.28	4,938.41	90.04	20.81	3.43	623.00	5,741.38	4,427.03	4,379.77	47.27	93.659				
13,200.00	9,060.00	5,610.78	4,938.41	91.94	20.75	3.34	629.45	5,742.16	4,388.44	4,340.73	47.71	91.980				
13,300.00	9,060.00	5,585.00	4,938.39	93.86	20.51	2.98	655.00	5,745.55	4,351.87	4,303.82	48.05	90.569				
13,400.00	9,060.00	5,585.00	4,938.39	95.77	20.51	2.98	655.00	5,745.55	4,317.15	4,268.56	48.59	88.852				
13,500.00	9,060.00	5,585.00	4,938.39	97.70	20.51	2.98	655.00	5,745.55	4,284.47	4,235.32	49.15	87.172				
13,600.00	9,060.00	5,585.00	4,938.39	99.62	20.51	2.98	655.00	5,745.55	4,253.90	4,204.17	49.73	85.532				
13,700.00	9,060.00	5,585.00	4,938.39	101.56	20.51	2.98	655.00	5,745.55	4,225.47	4,175.13	50.34	83.935				
13,800.00	9,060.00	5,585.00	4,938.39	103.49	20.51	2.98	655.00	5,745.55	4,199.24	4,148.27	50.97	82.384				
13,900.00	9,060.00	5,559.86	4,938.31	105.43	20.29	2.63	679.88	5,749.15	4,175.06	4,123.59	51.46	81.127				
14,000.00	9,060.00	5,552.69	4,938.25	107.38	20.23	2.53	686.98	5,750.19	4,153.21	4,101.12	52.09	79.734				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	5,545.40	4,938.18	109.33	20.17	2.43	694.19	5,751.26	4,133.64	4,080.90	52.73	78.388		
14,200.00	9,060.00	5,538.02	4,938.09	111.28	20.11	2.33	701.49	5,752.35	4,116.37	4,062.98	53.40	77.092		
14,300.00	9,060.00	5,530.52	4,937.98	113.23	20.04	2.22	708.90	5,753.47	4,101.44	4,047.37	54.07	75.848		
14,400.00	9,060.00	5,522.92	4,937.86	115.19	19.98	2.12	716.42	5,754.61	4,088.87	4,034.10	54.77	74.655		
14,500.00	9,060.00	5,515.20	4,937.72	117.15	19.91	2.01	724.05	5,755.78	4,078.69	4,023.21	55.48	73.516		
14,600.00	9,060.00	5,490.00	4,937.15	119.11	19.69	1.66	748.94	5,759.67	4,070.98	4,014.87	56.11	72.554		
14,700.00	9,060.00	14,700.00	4,937.18	121.08	99.99	1.68	747.58	5,759.47	4,065.55	3,965.43	100.12	40.607 ES, SF		
14,800.00	9,060.00	5,494.69	4,937.27	123.05	19.73	1.72	744.31	5,758.94	4,062.57	4,004.87	57.70	70.403		
14,900.00	9,060.00	5,289.38	4,936.26	125.02	18.18	-1.13	947.48	5,788.07	4,061.93	4,004.05	57.88	70.174		
14,902.86	9,060.00	5,289.29	4,936.27	125.08	18.18	-1.14	947.58	5,788.08	4,061.93	4,004.03	57.91	70.147 CC		
15,000.00	9,060.00	5,275.00	4,936.47	126.99	18.08	-1.34	961.76	5,789.78	4,063.15	4,004.47	58.68	69.242		
15,100.00	9,060.00	5,275.00	4,936.47	128.97	18.08	-1.34	961.76	5,789.78	4,066.72	4,007.23	59.49	68.361		
15,200.00	9,060.00	5,275.00	4,936.47	130.95	18.08	-1.34	961.76	5,789.78	4,072.74	4,012.44	60.30	67.542		
15,300.00	9,060.00	5,275.00	4,936.47	132.93	18.08	-1.34	961.76	5,789.78	4,081.21	4,020.10	61.11	66.784		
15,400.00	9,060.00	5,275.00	4,936.47	134.91	18.08	-1.34	961.76	5,789.78	4,092.10	4,030.18	61.92	66.089		
15,500.00	9,060.00	5,275.00	4,936.47	136.89	18.08	-1.34	961.76	5,789.78	4,105.40	4,042.68	62.72	65.455		
15,600.00	9,060.00	5,275.00	4,936.47	138.88	18.08	-1.34	961.76	5,789.78	4,121.09	4,057.57	63.52	64.882		
15,700.00	9,060.00	5,275.00	4,936.47	140.86	18.08	-1.34	961.76	5,789.78	4,139.13	4,074.83	64.30	64.371		
15,800.00	9,060.00	5,275.00	4,936.47	142.85	18.08	-1.34	961.76	5,789.78	4,159.50	4,094.43	65.07	63.920		
15,900.00	9,060.00	5,275.00	4,936.47	144.84	18.08	-1.34	961.76	5,789.78	4,182.16	4,116.33	65.83	63.529		
16,000.00	9,060.00	5,275.00	4,936.47	146.83	18.08	-1.34	961.76	5,789.78	4,207.08	4,140.51	66.57	63.196		
16,100.00	9,060.00	5,275.00	4,936.47	148.83	18.08	-1.34	961.76	5,789.78	4,234.21	4,166.92	67.29	62.921		
16,200.00	9,060.00	5,275.00	4,936.47	150.82	18.08	-1.34	961.76	5,789.78	4,263.52	4,195.52	68.00	62.703		
16,300.00	9,060.00	5,275.00	4,936.47	152.82	18.08	-1.34	961.76	5,789.78	4,294.95	4,226.28	68.68	62.540		
16,400.00	9,060.00	5,275.00	4,936.47	154.81	18.08	-1.34	961.76	5,789.78	4,328.47	4,259.14	69.33	62.430		
16,500.00	9,060.00	5,275.00	4,936.47	156.81	18.08	-1.34	961.76	5,789.78	4,364.02	4,294.05	69.97	62.372		
16,600.00	9,060.00	5,260.42	4,936.34	158.81	17.99	-1.54	976.25	5,791.44	4,401.28	4,330.71	70.57	62.367		
16,700.00	9,060.00	5,259.32	4,936.31	160.81	17.98	-1.55	977.34	5,791.56	4,440.71	4,369.55	71.15	62.409		
16,800.00	9,060.00	5,258.23	4,936.27	162.81	17.97	-1.57	978.42	5,791.68	4,482.02	4,410.30	71.71	62.498		
16,900.00	9,060.00	5,244.00	4,935.58	164.82	17.88	-1.77	992.55	5,793.18	4,525.38	4,453.14	72.25	62.639		
17,000.00	9,060.00	5,244.00	4,935.58	166.82	17.88	-1.77	992.55	5,793.18	4,570.27	4,497.51	72.75	62.817		
17,100.00	9,060.00	5,244.00	4,935.58	168.82	17.88	-1.77	992.55	5,793.18	4,616.88	4,543.64	73.24	63.038		
17,200.00	9,060.00	5,244.00	4,935.58	170.83	17.88	-1.77	992.55	5,793.18	4,665.17	4,591.47	73.70	63.299		
17,300.00	9,060.00	5,244.00	4,935.58	172.84	17.88	-1.77	992.55	5,793.18	4,715.09	4,640.95	74.14	63.599		
17,400.00	9,060.00	5,244.00	4,935.58	174.84	17.88	-1.77	992.55	5,793.18	4,766.58	4,692.03	74.55	63.937		
17,500.00	9,060.00	5,244.00	4,935.58	176.85	17.88	-1.77	992.55	5,793.18	4,819.60	4,744.66	74.94	64.310		
17,600.00	9,060.00	5,244.00	4,935.58	178.86	17.88	-1.77	992.55	5,793.18	4,874.10	4,798.78	75.31	64.718		
17,700.00	9,060.00	5,244.00	4,935.58	180.87	17.88	-1.77	992.55	5,793.18	4,930.02	4,854.35	75.66	65.159		
17,800.00	9,060.00	5,244.00	4,935.58	182.88	17.88	-1.77	992.55	5,793.18	4,987.31	4,911.32	75.99	65.631		
17,900.00	9,060.00	5,244.00	4,935.58	184.89	17.88	-1.77	992.55	5,793.18	5,045.94	4,969.64	76.30	66.133		
18,000.00	9,060.00	5,244.00	4,935.58	186.90	17.88	-1.77	992.55	5,793.18	5,105.86	5,029.27	76.59	66.664		
18,100.00	9,060.00	5,244.00	4,935.58	188.92	17.88	-1.77	992.55	5,793.18	5,167.01	5,090.15	76.86	67.223		
18,200.00	9,060.00	5,244.00	4,935.58	190.93	17.88	-1.77	992.55	5,793.18	5,229.37	5,152.25	77.12	67.809		
18,300.00	9,060.00	5,244.00	4,935.58	192.94	17.88	-1.77	992.55	5,793.18	5,292.87	5,215.51	77.36	68.419		
18,400.00	9,060.00	5,244.00	4,935.58	194.96	17.88	-1.77	992.55	5,793.18	5,357.50	5,279.91	77.58	69.054		
18,500.00	9,060.00	5,244.00	4,935.58	196.97	17.88	-1.77	992.55	5,793.18	5,423.19	5,345.40	77.79	69.712		
18,600.00	9,060.00	5,244.00	4,935.58	198.99	17.88	-1.77	992.55	5,793.18	5,489.92	5,411.93	77.99	70.392		
18,700.00	9,060.00	5,230.48	4,934.60	201.00	17.80	-1.96	1,005.97	5,794.57	5,557.58	5,479.41	78.17	71.099		
18,800.00	9,060.00	5,227.84	4,934.38	203.02	17.78	-1.99	1,008.59	5,794.85	5,626.24	5,547.90	78.34	71.822		
18,900.00	9,060.00	5,225.19	4,934.17	205.04	17.76	-2.03	1,011.21	5,795.12	5,695.82	5,617.33	78.49	72.563		
19,000.00	9,060.00	5,212.00	4,932.98	207.06	17.68	-2.21	1,024.28	5,796.49	5,766.34	5,687.70	78.64	73.327		
19,100.00	9,060.00	5,212.00	4,932.98	209.07	17.68	-2.21	1,024.28	5,796.49	5,837.65	5,758.87	78.78	74.104		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - ST01 - ST01												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,212.00	4,932.98	211.09	17.68	-2.21	1,024.28	5,796.49	5,909.79	5,830.88	78.90	74.898	
19,300.00	9,060.00	5,212.00	4,932.98	213.11	17.68	-2.21	1,024.28	5,796.49	5,982.73	5,903.71	79.02	75.708	
19,400.00	9,060.00	5,212.00	4,932.98	215.13	17.68	-2.21	1,024.28	5,796.49	6,056.44	5,977.31	79.13	76.533	
19,500.32	9,060.00	5,212.00	4,932.98	217.16	17.68	-2.21	1,024.28	5,796.49	6,131.14	6,051.90	79.24	77.376	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	2,963.31	2,962.72	10.89	11.41	91.61	1,538.28	5,826.32	6,027.67	6,005.39	22.29	270.450		
3,200.00	3,196.89	3,064.85	3,064.26	11.25	11.73	91.74	1,537.56	5,827.72	6,029.26	6,006.30	22.96	262.552		
3,295.74	3,291.45	3,150.88	3,150.27	11.59	12.01	91.86	1,537.08	5,828.91	6,030.91	6,007.33	23.58	255.783		
3,300.00	3,295.65	3,154.46	3,153.86	11.61	12.02	91.86	1,537.06	5,828.97	6,030.99	6,007.38	23.60	255.499		
3,400.00	3,394.29	3,236.81	3,236.19	11.97	12.28	92.00	1,536.72	5,830.27	6,033.01	6,008.78	24.22	249.047		
3,500.00	3,492.94	3,323.56	3,322.93	12.33	12.56	92.14	1,536.53	5,831.86	6,035.35	6,010.49	24.86	242.770		
3,600.00	3,591.58	3,438.24	3,437.59	12.69	12.93	92.32	1,536.61	5,833.85	6,037.74	6,012.15	25.59	235.946		
3,700.00	3,690.22	3,550.89	3,550.24	13.05	13.29	92.50	1,536.94	5,835.32	6,039.79	6,013.47	26.31	229.524		
3,800.00	3,788.86	3,657.02	3,656.35	13.41	13.63	92.66	1,537.43	5,836.55	6,041.78	6,014.76	27.02	223.600		
3,900.00	3,887.50	3,755.76	3,755.08	13.77	13.95	92.81	1,538.19	5,837.53	6,043.74	6,016.04	27.70	218.151		
4,000.00	3,986.14	3,859.66	3,858.98	14.14	14.29	92.96	1,539.25	5,838.48	6,045.71	6,017.30	28.41	212.822		
4,100.00	4,084.78	3,958.42	3,957.73	14.50	14.61	93.11	1,540.26	5,839.34	6,047.68	6,018.59	29.10	207.857		
4,200.00	4,183.42	4,074.77	4,074.07	14.87	14.99	93.28	1,541.33	5,840.15	6,049.50	6,019.66	29.84	202.709		
4,300.00	4,282.06	4,177.09	4,176.39	15.24	15.33	93.43	1,542.20	5,840.76	6,051.25	6,020.70	30.55	198.099		
4,400.00	4,380.70	4,282.82	4,282.11	15.60	15.68	93.59	1,543.08	5,841.25	6,052.92	6,021.65	31.26	193.615		
4,500.00	4,479.34	4,383.67	4,382.95	15.97	16.01	93.74	1,543.91	5,841.67	6,054.56	6,022.60	31.96	189.418		
4,600.00	4,577.98	4,482.04	4,481.32	16.34	16.34	93.89	1,544.66	5,842.06	6,056.23	6,023.57	32.66	185.441		
4,700.00	4,676.62	4,582.53	4,581.81	16.71	16.67	94.04	1,545.45	5,842.47	6,057.95	6,024.59	33.36	181.587		
4,800.00	4,775.27	4,688.25	4,687.52	17.08	17.02	94.19	1,546.26	5,842.82	6,059.63	6,025.55	34.08	177.793		
4,900.00	4,873.91	4,797.17	4,796.44	17.45	17.39	94.36	1,547.07	5,843.02	6,061.21	6,026.40	34.82	174.095		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,897.54	4,896.81	17.82	17.72	94.50	1,547.90	5,843.08	6,062.73	6,027.21	35.52	170.681		
5,100.00	5,071.19	4,986.09	4,985.36	18.19	18.02	94.63	1,548.84	5,843.16	6,064.36	6,028.17	36.19	167.580		
5,200.00	5,169.83	5,060.40	5,059.65	18.56	18.27	94.74	1,549.88	5,843.39	6,066.30	6,029.49	36.81	164.811		
5,300.00	5,268.47	5,140.93	5,140.17	18.93	18.54	94.85	1,551.23	5,843.91	6,068.66	6,031.21	37.45	162.052		
5,400.00	5,367.11	5,228.17	5,227.39	19.31	18.83	94.97	1,552.88	5,844.65	6,071.29	6,033.17	38.11	159.294		
5,500.00	5,465.75	5,335.87	5,335.07	19.68	19.20	95.12	1,555.05	5,845.63	6,074.05	6,035.20	38.85	156.348		
5,600.00	5,564.39	5,445.88	5,445.06	20.05	19.57	95.27	1,557.18	5,846.33	6,076.55	6,036.96	39.59	153.471		
5,700.00	5,663.03	5,543.00	5,542.15	20.42	19.90	95.41	1,559.13	5,846.89	6,079.05	6,038.76	40.30	150.863		
5,800.00	5,761.67	5,659.99	5,659.12	20.80	20.29	95.57	1,561.06	5,847.53	6,081.49	6,040.43	41.07	148.094		
5,900.00	5,860.31	5,743.61	5,742.74	21.17	20.58	95.69	1,561.86	5,848.06	6,083.93	6,042.21	41.72	145.826		
6,000.00	5,958.96	5,863.00	5,862.13	21.54	20.98	95.88	1,561.91	5,848.96	6,086.37	6,043.87	42.50	143.212		
6,100.00	6,057.60	5,990.84	5,989.96	21.92	21.42	96.08	1,560.72	5,849.65	6,088.50	6,045.19	43.31	140.590		
6,200.00	6,156.24	6,136.22	6,135.32	22.29	21.91	96.33	1,558.68	5,849.56	6,089.99	6,045.82	44.17	137.869		
6,300.00	6,254.88	6,389.58	6,388.62	22.67	22.76	96.73	1,556.21	5,845.06	6,090.01	6,044.63	45.38	134.193		
6,400.00	6,353.52	6,473.36	6,472.35	23.04	23.05	96.87	1,554.88	5,842.56	6,088.75	6,042.70	46.04	132.244		
6,500.00	6,452.16	6,562.52	6,561.46	23.42	23.35	97.02	1,553.00	5,840.31	6,087.89	6,041.17	46.72	130.308		
6,600.00	6,550.80	6,642.29	6,641.19	23.79	23.62	97.16	1,551.06	5,838.39	6,087.16	6,039.80	47.37	128.511		
6,682.55	6,632.22	6,696.95	6,695.82	24.10	23.80	97.25	1,549.91	5,837.31	6,086.97	6,039.11	47.87	127.169		
6,700.00	6,649.44	6,711.90	6,710.77	24.17	23.85	97.27	1,549.62	5,837.04	6,086.98	6,038.99	47.98	126.861		
6,800.00	6,748.08	6,816.45	6,815.28	24.54	24.21	97.45	1,547.84	5,835.25	6,087.14	6,038.42	48.71	124.966		
6,900.00	6,846.72	6,957.73	6,956.51	24.92	24.69	97.68	1,545.46	5,831.79	6,086.54	6,036.98	49.56	122.815		
6,959.59	6,905.50	6,978.42	6,977.18	25.14	24.76	97.72	1,545.14	5,831.25	6,086.28	6,036.43	49.86	122.073		
7,000.00	6,945.36	6,978.42	6,977.18	25.29	24.76	97.72	1,545.14	5,831.25	6,086.42	6,036.40	50.01	121.696		
7,100.00	7,044.00	6,978.42	6,977.18	25.67	24.76	97.72	1,545.14	5,831.25	6,087.90	6,037.51	50.39	120.814		
7,200.00	7,142.65	6,978.42	6,977.18	26.04	24.76	97.72	1,545.14	5,831.25	6,091.03	6,040.27	50.76	120.003		
7,300.00	7,241.29	6,978.42	6,977.18	26.42	24.76	97.72	1,545.14	5,831.25	6,095.80	6,044.68	51.11	119.261		
7,400.00	7,339.93	6,978.42	6,977.18	26.79	24.76	97.72	1,545.14	5,831.25	6,102.20	6,050.74	51.46	118.587		
7,500.00	7,438.57	6,978.42	6,977.18	27.17	24.76	97.72	1,545.14	5,831.25	6,110.23	6,058.44	51.79	117.979		
7,571.77	7,509.37	6,978.42	6,977.18	27.44	24.76	97.72	1,545.14	5,831.25	6,116.99	6,064.97	52.02	117.582		
7,600.00	7,537.23	6,978.42	6,977.18	27.55	24.76	97.76	1,545.14	5,831.25	6,119.87	6,067.76	52.11	117.435		
7,700.00	7,636.18	6,978.42	6,977.18	27.92	24.76	97.92	1,545.14	5,831.25	6,130.86	6,078.44	52.42	116.956		
7,800.00	7,735.48	6,978.42	6,977.18	28.29	24.76	98.11	1,545.14	5,831.25	6,143.11	6,090.40	52.71	116.541		
7,900.00	7,835.05	6,978.42	6,977.18	28.65	24.76	98.31	1,545.14	5,831.25	6,156.59	6,103.60	52.99	116.189		
8,000.00	7,934.83	6,978.42	6,977.18	29.01	24.76	98.53	1,545.14	5,831.25	6,171.29	6,118.04	53.25	115.898		
8,100.00	8,034.74	6,978.42	6,977.18	29.36	24.76	98.77	1,545.14	5,831.25	6,187.19	6,133.69	53.49	115.666		
8,202.27	8,137.00	6,978.42	6,977.18	29.72	24.76	82.99	1,545.14	5,831.25	6,204.66	6,150.94	53.73	115.489		
8,300.00	8,234.73	6,978.42	6,977.18	30.06	24.76	82.99	1,545.14	5,831.25	6,222.69	6,168.75	53.94	115.372		
8,400.00	8,334.73	6,978.42	6,977.18	30.41	24.76	82.99	1,545.14	5,831.25	6,242.66	6,188.52	54.14	115.303		
8,500.00	8,434.73	6,978.42	6,977.18	30.75	24.76	82.99	1,545.14	5,831.25	6,264.17	6,209.83	54.34	115.285		
8,552.31	8,487.04	6,978.42	6,977.18	30.94	24.76	82.99	1,545.14	5,831.25	6,276.03	6,221.59	54.43	115.295		
8,600.00	8,534.68	6,978.42	6,977.18	31.10	24.76	-6.56	1,545.14	5,831.25	6,285.27	6,230.75	54.52	115.292		
8,650.00	8,584.26	6,978.42	6,977.18	31.26	24.76	-6.49	1,545.14	5,831.25	6,291.16	6,236.56	54.59	115.239		
8,700.00	8,633.10	6,978.42	6,977.18	31.43	24.76	-6.47	1,545.14	5,831.25	6,293.12	6,238.45	54.66	115.126		
8,750.00	8,680.83	6,978.42	6,977.18	31.58	24.76	-6.49	1,545.14	5,831.25	6,291.14	6,236.42	54.73	114.956		
8,800.00	8,727.09	6,978.42	6,977.18	31.74	24.76	-6.56	1,545.14	5,831.25	6,285.24	6,230.46	54.78	114.730		
8,850.00	8,771.52	6,978.42	6,977.18	31.89	24.76	-6.68	1,545.14	5,831.25	6,275.45	6,220.62	54.83	114.453		
8,900.00	8,813.78	6,978.42	6,977.18	32.04	24.76	-6.84	1,545.14	5,831.25	6,261.83	6,206.96	54.87	114.125		
8,950.00	8,853.56	6,978.42	6,977.18	32.18	24.76	-7.07	1,545.14	5,831.25	6,244.45	6,189.55	54.90	113.749		
9,000.00	8,890.55	6,978.42	6,977.18	32.32	24.76	-7.36	1,545.14	5,831.25	6,223.41	6,168.50	54.92	113.326		
9,050.00	8,924.46	6,978.42	6,977.18	32.47	24.76	-7.73	1,545.14	5,831.25	6,198.85	6,143.92	54.93	112.859		
9,100.00	8,955.05	6,978.42	6,977.18	32.63	24.76	-8.20	1,545.14	5,831.25	6,170.90	6,115.97	54.93	112.349		
9,150.00	8,982.08	6,978.42	6,977.18	32.79	24.76	-8.78	1,545.14	5,831.25	6,139.73	6,084.81	54.92	111.797		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	6,978.42	6,977.18	32.97	24.76	-9.53	1,545.14	5,831.25	6,105.54	6,050.63	54.90	111.205		
9,250.00	9,024.65	6,978.42	6,977.18	33.17	24.76	-10.49	1,545.14	5,831.25	6,068.53	6,013.65	54.88	110.575		
9,300.00	9,039.87	6,978.42	6,977.18	33.38	24.76	-11.74	1,545.14	5,831.25	6,028.94	5,974.09	54.85	109.907		
9,350.00	9,050.89	6,978.42	6,977.18	33.62	24.76	-13.42	1,545.14	5,831.25	5,987.02	5,932.20	54.82	109.204		
9,400.00	9,057.61	6,978.42	6,977.18	33.87	24.76	-15.75	1,545.14	5,831.25	5,943.05	5,888.25	54.79	108.467		
9,452.31	9,060.00	6,978.42	6,977.18	34.15	24.76	-19.34	1,545.14	5,831.25	5,895.16	5,840.40	54.76	107.662		
9,500.00	9,060.00	6,978.42	6,977.18	34.42	24.76	-19.34	1,545.14	5,831.25	5,850.75	5,796.02	54.72	106.916		
9,600.00	9,060.00	6,978.42	6,977.18	35.09	24.76	-19.34	1,545.14	5,831.25	5,757.80	5,703.15	54.65	105.360		
9,700.00	9,060.00	6,978.42	6,977.18	35.86	24.76	-19.34	1,545.14	5,831.25	5,665.09	5,610.52	54.58	103.798		
9,800.00	9,060.00	6,978.42	6,977.18	36.72	24.76	-19.34	1,545.14	5,831.25	5,572.64	5,518.13	54.51	102.231		
9,900.00	9,060.00	6,978.42	6,977.18	37.69	24.76	-19.34	1,545.14	5,831.25	5,480.45	5,426.00	54.45	100.658		
10,000.00	9,060.00	6,978.42	6,977.18	38.73	24.76	-19.34	1,545.14	5,831.25	5,388.54	5,334.15	54.39	99.078		
10,100.00	9,060.00	6,978.42	6,977.18	39.86	24.76	-19.34	1,545.14	5,831.25	5,296.92	5,242.59	54.33	97.493		
10,140.22	9,060.00	6,978.42	6,977.18	40.33	24.76	-19.34	1,545.14	5,831.25	5,260.15	5,205.84	54.31	96.853		
10,200.00	9,060.00	6,978.42	6,977.18	41.05	24.76	-21.81	1,545.14	5,831.25	5,205.70	5,151.42	54.28	95.899		
10,300.00	9,060.00	6,978.42	6,977.18	42.31	24.76	-25.68	1,545.14	5,831.25	5,115.32	5,061.07	54.25	94.292		
10,400.00	9,060.00	6,978.42	6,977.18	43.64	24.76	-29.21	1,545.14	5,831.25	5,025.98	4,971.74	54.24	92.663		
10,507.23	9,060.00	6,978.42	6,977.18	45.11	24.76	-32.63	1,545.14	5,831.25	4,931.53	4,877.27	54.26	90.888		
10,600.00	9,060.00	6,978.42	6,977.18	46.43	24.76	-29.76	1,545.14	5,831.25	4,850.30	4,796.00	54.30	89.328		
10,700.00	9,060.00	6,978.42	6,977.18	47.91	24.76	-26.51	1,545.14	5,831.25	4,762.39	4,708.05	54.34	87.638		
10,800.00	9,060.00	6,978.42	6,977.18	49.42	24.76	-23.12	1,545.14	5,831.25	4,674.23	4,619.84	54.38	85.949		
10,900.00	9,060.00	6,978.42	6,977.18	50.97	24.76	-19.60	1,545.14	5,831.25	4,585.89	4,531.47	54.42	84.269		
11,000.00	9,060.00	6,978.42	6,977.18	52.55	24.76	-16.00	1,545.14	5,831.25	4,497.48	4,443.03	54.44	82.607		
11,100.00	9,060.00	6,978.42	6,977.18	54.14	24.76	-12.34	1,545.14	5,831.25	4,409.10	4,354.65	54.45	80.969		
11,207.23	9,060.00	6,978.42	6,977.18	55.87	24.76	-8.39	1,545.14	5,831.25	4,314.51	4,260.07	54.44	79.246		
11,300.00	9,060.00	6,978.42	6,977.18	57.39	24.76	-11.73	1,545.14	5,831.25	4,233.14	4,178.70	54.44	77.757		
11,400.00	9,060.00	6,978.42	6,977.18	59.06	24.76	-15.13	1,545.14	5,831.25	4,146.30	4,091.83	54.47	76.119		
11,506.63	9,060.00	6,978.42	6,977.18	60.88	24.76	-18.53	1,545.14	5,831.25	4,054.90	4,000.34	54.55	74.331		
11,600.00	9,060.00	6,978.42	6,977.18	62.49	24.76	-18.53	1,545.14	5,831.25	3,975.76	3,921.10	54.66	72.742		
11,700.00	9,060.00	6,978.42	6,977.18	64.24	24.76	-18.53	1,545.14	5,831.25	3,891.70	3,836.91	54.79	71.034		
11,800.00	9,060.00	6,978.42	6,977.18	66.01	24.76	-18.53	1,545.14	5,831.25	3,808.41	3,753.47	54.94	69.319		
11,900.00	9,060.00	6,978.42	6,977.18	67.79	24.76	-18.53	1,545.14	5,831.25	3,725.95	3,670.83	55.12	67.600		
12,000.00	9,060.00	6,978.42	6,977.18	69.58	24.76	-18.53	1,545.14	5,831.25	3,644.36	3,589.04	55.32	65.876		
12,100.00	9,060.00	6,978.42	6,977.18	71.39	24.76	-18.53	1,545.14	5,831.25	3,563.71	3,508.16	55.55	64.149		
12,200.00	9,060.00	6,978.42	6,977.18	73.21	24.76	-18.53	1,545.14	5,831.25	3,484.07	3,428.25	55.82	62.420		
12,300.00	9,060.00	6,978.42	6,977.18	75.05	24.76	-18.53	1,545.14	5,831.25	3,405.50	3,349.39	56.11	60.692		
12,400.00	9,060.00	6,978.42	6,977.18	76.89	24.76	-18.53	1,545.14	5,831.25	3,328.08	3,271.64	56.44	58.967		
12,500.00	9,060.00	6,978.42	6,977.18	78.74	24.76	-18.53	1,545.14	5,831.25	3,251.89	3,195.08	56.80	57.247		
12,600.00	9,060.00	6,978.42	6,977.18	80.61	24.76	-18.53	1,545.14	5,831.25	3,177.02	3,119.81	57.21	55.534		
12,700.00	9,060.00	6,978.42	6,977.18	82.48	24.76	-18.53	1,545.14	5,831.25	3,103.57	3,045.92	57.65	53.833		
12,800.00	9,060.00	6,978.42	6,977.18	84.36	24.76	-18.53	1,545.14	5,831.25	3,031.64	2,973.50	58.14	52.146		
12,900.00	9,060.00	6,978.42	6,977.18	86.24	24.76	-18.53	1,545.14	5,831.25	2,961.33	2,902.67	58.67	50.478		
13,000.00	9,060.00	6,978.42	6,977.18	88.14	24.76	-18.53	1,545.14	5,831.25	2,892.78	2,833.54	59.24	48.833		
13,100.00	9,060.00	6,978.42	6,977.18	90.04	24.76	-18.53	1,545.14	5,831.25	2,826.10	2,766.25	59.86	47.214		
13,200.00	9,060.00	6,978.42	6,977.18	91.94	24.76	-18.53	1,545.14	5,831.25	2,761.44	2,700.92	60.52	45.628		
13,300.00	9,060.00	6,978.42	6,977.18	93.86	24.76	-18.53	1,545.14	5,831.25	2,698.93	2,637.70	61.23	44.078		
13,400.00	9,060.00	6,978.42	6,977.18	95.77	24.76	-18.53	1,545.14	5,831.25	2,638.73	2,576.74	61.99	42.570		
13,500.00	9,060.00	6,978.42	6,977.18	97.70	24.76	-18.53	1,545.14	5,831.25	2,581.00	2,518.22	62.78	41.109		
13,600.00	9,060.00	6,978.42	6,977.18	99.62	24.76	-18.53	1,545.14	5,831.25	2,525.92	2,462.29	63.63	39.699		
13,700.00	9,060.00	6,978.42	6,977.18	101.56	24.76	-18.53	1,545.14	5,831.25	2,473.65	2,409.14	64.51	38.346		
13,800.00	9,060.00	6,978.42	6,977.18	103.49	24.76	-18.53	1,545.14	5,831.25	2,424.38	2,358.95	65.43	37.055		
13,900.00	9,060.00	6,978.42	6,977.18	105.43	24.76	-18.53	1,545.14	5,831.25	2,378.30	2,311.92	66.38	35.829		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	6,978.42	6,977.18	107.38	24.76	-18.53	1,545.14	5,831.25	2,335.59	2,268.23	67.36	34.672		
14,100.00	9,060.00	6,978.42	6,977.18	109.33	24.76	-18.53	1,545.14	5,831.25	2,296.45	2,228.08	68.37	33.588		
14,200.00	9,060.00	6,978.42	6,977.18	111.28	24.76	-18.53	1,545.14	5,831.25	2,261.05	2,191.65	69.40	32.580		
14,300.00	9,060.00	6,978.42	6,977.18	113.23	24.76	-18.53	1,545.14	5,831.25	2,229.58	2,159.14	70.44	31.650		
14,400.00	9,060.00	6,978.42	6,977.18	115.19	24.76	-18.53	1,545.14	5,831.25	2,202.21	2,130.70	71.50	30.800		
14,500.00	9,060.00	6,978.42	6,977.18	117.15	24.76	-18.53	1,545.14	5,831.25	2,179.08	2,106.51	72.56	30.029		
14,600.00	9,060.00	6,978.42	6,977.18	119.11	24.76	-18.53	1,545.14	5,831.25	2,160.34	2,086.71	73.63	29.340		
14,700.00	9,060.00	6,978.42	6,977.18	121.08	24.76	-18.53	1,545.14	5,831.25	2,146.10	2,071.41	74.69	28.732		
14,800.00	9,060.00	6,978.42	6,977.18	123.05	24.76	-18.53	1,545.14	5,831.25	2,136.45	2,060.70	75.75	28.204		
14,900.00	9,060.00	6,978.42	6,977.18	125.02	24.76	-18.53	1,545.14	5,831.25	2,131.46	2,054.66	76.79	27.756		
14,956.60	9,060.00	6,978.42	6,977.18	126.14	24.76	-18.53	1,545.14	5,831.25	2,130.71	2,053.33	77.37	27.538	CC, ES	
15,000.00	9,060.00	6,978.42	6,977.18	126.99	24.76	-18.53	1,545.14	5,831.25	2,131.15	2,053.33	77.81	27.387		
15,100.00	9,060.00	6,978.42	6,977.18	128.97	24.76	-18.53	1,545.14	5,831.25	2,135.53	2,056.72	78.81	27.098		
15,200.00	9,060.00	6,978.42	6,977.18	130.95	24.76	-18.53	1,545.14	5,831.25	2,144.56	2,064.80	79.76	26.887		
15,300.00	9,060.00	6,978.42	6,977.18	132.93	24.76	-18.53	1,545.14	5,831.25	2,158.20	2,077.53	80.67	26.753		
15,400.00	9,060.00	6,978.42	6,977.18	134.91	24.76	-18.53	1,545.14	5,831.25	2,176.35	2,094.83	81.53	26.695	SF	
15,500.00	9,060.00	6,978.42	6,977.18	136.89	24.76	-18.53	1,545.14	5,831.25	2,198.91	2,116.59	82.32	26.713		
15,600.00	9,060.00	6,978.42	6,977.18	138.88	24.76	-18.53	1,545.14	5,831.25	2,225.73	2,142.70	83.03	26.805		
15,700.00	9,060.00	6,978.42	6,977.18	140.86	24.76	-18.53	1,545.14	5,831.25	2,256.67	2,172.99	83.68	26.968		
15,800.00	9,060.00	6,978.42	6,977.18	142.85	24.76	-18.53	1,545.14	5,831.25	2,291.56	2,207.31	84.25	27.200		
15,900.00	9,060.00	6,978.42	6,977.18	144.84	24.76	-18.53	1,545.14	5,831.25	2,330.22	2,245.48	84.74	27.499		
16,000.00	9,060.00	6,978.42	6,977.18	146.83	24.76	-18.53	1,545.14	5,831.25	2,372.47	2,287.32	85.15	27.862		
16,100.00	9,060.00	6,978.42	6,977.18	148.83	24.76	-18.53	1,545.14	5,831.25	2,418.12	2,332.62	85.49	28.285		
16,200.00	9,060.00	6,978.42	6,977.18	150.82	24.76	-18.53	1,545.14	5,831.25	2,466.97	2,381.21	85.76	28.766		
16,300.00	9,060.00	6,978.42	6,977.18	152.82	24.76	-18.53	1,545.14	5,831.25	2,518.86	2,432.89	85.97	29.301		
16,400.00	9,060.00	6,978.42	6,977.18	154.81	24.76	-18.53	1,545.14	5,831.25	2,573.58	2,487.47	86.11	29.887		
16,500.00	9,060.00	6,978.42	6,977.18	156.81	24.76	-18.53	1,545.14	5,831.25	2,630.97	2,544.77	86.20	30.521		
16,600.00	9,060.00	6,978.42	6,977.18	158.81	24.76	-18.53	1,545.14	5,831.25	2,690.85	2,604.61	86.24	31.201		
16,700.00	9,060.00	6,978.42	6,977.18	160.81	24.76	-18.53	1,545.14	5,831.25	2,753.07	2,666.82	86.24	31.923		
16,800.00	9,060.00	6,978.42	6,977.18	162.81	24.76	-18.53	1,545.14	5,831.25	2,817.45	2,731.25	86.20	32.684		
16,900.00	9,060.00	6,978.42	6,977.18	164.82	24.76	-18.53	1,545.14	5,831.25	2,883.87	2,797.74	86.13	33.483		
17,000.00	9,060.00	6,978.42	6,977.18	166.82	24.76	-18.53	1,545.14	5,831.25	2,952.19	2,866.16	86.03	34.315		
17,100.00	9,060.00	6,978.42	6,977.18	168.82	24.76	-18.53	1,545.14	5,831.25	3,022.27	2,936.36	85.91	35.180		
17,200.00	9,060.00	6,978.42	6,977.18	170.83	24.76	-18.53	1,545.14	5,831.25	3,093.99	3,008.22	85.77	36.075		
17,300.00	9,060.00	6,978.42	6,977.18	172.84	24.76	-18.53	1,545.14	5,831.25	3,167.25	3,081.64	85.61	36.998		
17,400.00	9,060.00	6,978.42	6,977.18	174.84	24.76	-18.53	1,545.14	5,831.25	3,241.93	3,156.50	85.43	37.946		
17,500.00	9,060.00	6,978.42	6,977.18	176.85	24.76	-18.53	1,545.14	5,831.25	3,317.95	3,232.70	85.25	38.919		
17,600.00	9,060.00	6,978.42	6,977.18	178.86	24.76	-18.53	1,545.14	5,831.25	3,395.22	3,310.15	85.06	39.914		
17,700.00	9,060.00	6,978.42	6,977.18	180.87	24.76	-18.53	1,545.14	5,831.25	3,473.64	3,388.77	84.87	40.931		
17,800.00	9,060.00	6,978.42	6,977.18	182.88	24.76	-18.53	1,545.14	5,831.25	3,553.15	3,468.48	84.67	41.966		
17,900.00	9,060.00	6,978.42	6,977.18	184.89	24.76	-18.53	1,545.14	5,831.25	3,633.67	3,549.20	84.46	43.020		
18,000.00	9,060.00	6,978.42	6,977.18	186.90	24.76	-18.53	1,545.14	5,831.25	3,715.13	3,630.87	84.26	44.091		
18,100.00	9,060.00	6,978.42	6,977.18	188.92	24.76	-18.53	1,545.14	5,831.25	3,797.49	3,713.43	84.06	45.177		
18,200.00	9,060.00	6,978.42	6,977.18	190.93	24.76	-18.53	1,545.14	5,831.25	3,880.67	3,796.81	83.86	46.277		
18,300.00	9,060.00	6,978.42	6,977.18	192.94	24.76	-18.53	1,545.14	5,831.25	3,964.63	3,880.97	83.66	47.392		
18,400.00	9,060.00	6,978.42	6,977.18	194.96	24.76	-18.53	1,545.14	5,831.25	4,049.31	3,965.85	83.46	48.518		
18,500.00	9,060.00	6,978.42	6,977.18	196.97	24.76	-18.53	1,545.14	5,831.25	4,134.69	4,051.42	83.27	49.656		
18,600.00	9,060.00	6,978.42	6,977.18	198.99	24.76	-18.53	1,545.14	5,831.25	4,220.70	4,137.62	83.08	50.805		
18,700.00	9,060.00	6,978.42	6,977.18	201.00	24.76	-18.53	1,545.14	5,831.25	4,307.32	4,224.43	82.89	51.964		
18,800.00	9,060.00	6,978.42	6,977.18	203.02	24.76	-18.53	1,545.14	5,831.25	4,394.50	4,311.79	82.71	53.132		
18,900.00	9,060.00	6,978.42	6,977.18	205.04	24.76	-18.53	1,545.14	5,831.25	4,482.23	4,399.69	82.53	54.309		
19,000.00	9,060.00	6,978.42	6,977.18	207.06	24.76	-18.53	1,545.14	5,831.25	4,570.45	4,488.09	82.36	55.493		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,100.00	9,060.00	6,978.42	6,977.18	209.07	24.76	-18.53	1,545.14	5,831.25	4,659.15	4,576.96	82.19	56.684	
19,200.00	9,060.00	6,978.42	6,977.18	211.09	24.76	-18.53	1,545.14	5,831.25	4,748.30	4,666.27	82.03	57.883	
19,300.00	9,060.00	6,978.42	6,977.18	213.11	24.76	-18.53	1,545.14	5,831.25	4,837.88	4,756.00	81.88	59.087	
19,400.00	9,060.00	6,978.42	6,977.18	215.13	24.76	-18.53	1,545.14	5,831.25	4,927.85	4,846.13	81.73	60.297	
19,500.32	9,060.00	6,978.42	6,977.18	217.16	24.76	-18.53	1,545.14	5,831.25	5,018.50	4,936.92	81.58	61.516	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	102.62	-1,573.01	7,026.75	7,201.26					
100.00	100.00	12.60	7.40	0.52	5.03	102.62	-1,573.01	7,026.75	7,200.67	7,195.12	5.54	1,299.092		
200.00	200.00	107.40	107.40	0.70	5.23	102.62	-1,573.01	7,026.75	7,200.67	7,194.73	5.93	1,213.433		
300.00	300.00	207.40	207.40	0.99	5.83	102.62	-1,573.01	7,026.75	7,200.67	7,193.85	6.82	1,056.417		
400.00	400.00	307.40	307.40	1.31	6.71	102.62	-1,573.01	7,026.75	7,200.67	7,192.65	8.02	897.697		
500.00	500.00	407.40	407.40	1.65	7.79	102.62	-1,573.01	7,026.75	7,200.67	7,191.24	9.43	763.483		
600.00	600.00	507.40	507.40	1.99	8.98	102.62	-1,573.01	7,026.75	7,200.67	7,189.70	10.97	656.346		
700.00	700.00	607.40	607.40	2.34	10.25	102.62	-1,573.01	7,026.75	7,200.67	7,188.07	12.59	571.756		
800.00	800.00	707.40	707.40	2.69	11.58	102.62	-1,573.01	7,026.75	7,200.67	7,186.39	14.27	504.502		
900.00	900.00	807.40	807.40	3.04	12.95	102.62	-1,573.01	7,026.75	7,200.67	7,184.68	15.99	450.316		
1,000.00	1,000.00	907.40	907.40	3.40	14.34	102.62	-1,573.01	7,026.75	7,200.67	7,182.93	17.74	406.011		
1,100.00	1,100.00	1,007.40	1,007.40	3.75	15.75	102.62	-1,573.01	7,026.75	7,200.67	7,181.17	19.50	369.260		
1,200.00	1,200.00	1,107.40	1,107.40	4.11	17.17	102.62	-1,573.01	7,026.75	7,200.67	7,179.39	21.28	338.368		
1,300.00	1,300.00	1,207.40	1,207.40	4.46	18.61	102.62	-1,573.01	7,026.75	7,200.67	7,177.59	23.07	312.088		
1,400.00	1,400.00	1,307.40	1,307.40	4.82	20.05	102.62	-1,573.01	7,026.75	7,200.67	7,175.79	24.87	289.488		
1,500.00	1,500.00	1,407.40	1,407.40	5.18	21.51	102.62	-1,573.01	7,026.75	7,200.67	7,173.98	26.68	269.867		
1,600.00	1,600.00	1,507.40	1,507.40	5.53	22.96	102.62	-1,573.01	7,026.75	7,200.67	7,172.17	28.50	252.683		
1,700.00	1,700.00	1,607.40	1,607.40	5.89	24.43	102.62	-1,573.01	7,026.75	7,200.67	7,170.35	30.32	237.519		
1,800.00	1,800.00	1,707.40	1,707.40	6.25	25.89	102.62	-1,573.01	7,026.75	7,200.67	7,168.53	32.14	224.044		
1,900.00	1,900.00	1,807.40	1,807.40	6.61	27.36	102.62	-1,573.01	7,026.75	7,200.67	7,166.70	33.97	211.994		
2,000.00	2,000.00	1,907.40	1,907.40	6.96	28.83	102.62	-1,573.01	7,026.75	7,200.67	7,164.87	35.80	201.158		
2,100.00	2,100.00	2,007.40	2,007.40	7.32	30.31	102.62	-1,573.01	7,026.75	7,200.67	7,163.04	37.63	191.364		
2,200.00	2,200.00	2,107.40	2,107.40	7.68	31.78	102.62	-1,573.01	7,026.75	7,200.67	7,161.20	39.46	182.469		
2,300.00	2,300.00	2,207.40	2,207.40	8.04	33.26	102.62	-1,573.01	7,026.75	7,200.67	7,159.37	41.30	174.356		
2,350.00	2,350.00	2,257.40	2,257.40	8.22	34.00	102.62	-1,573.01	7,026.75	7,200.67	7,158.45	42.22	170.562		
2,400.00	2,400.00	2,307.40	2,307.40	8.39	34.74	118.66	-1,573.01	7,026.75	7,200.77	7,157.64	43.14	166.932		
2,500.00	2,499.98	2,407.38	2,407.38	8.75	36.22	118.66	-1,573.01	7,026.75	7,201.61	7,156.63	44.97	160.129		
2,600.00	2,599.92	2,507.32	2,507.32	9.11	37.71	118.67	-1,573.01	7,026.75	7,203.28	7,156.47	46.81	153.879		
2,700.00	2,699.78	2,607.18	2,607.18	9.47	39.19	118.69	-1,573.01	7,026.75	7,205.80	7,157.15	48.65	148.119		
2,800.00	2,799.54	2,706.94	2,706.94	9.82	40.67	118.71	-1,573.01	7,026.75	7,209.15	7,158.67	50.48	142.798		
2,900.00	2,899.16	2,806.56	2,806.56	10.18	42.15	118.73	-1,573.01	7,026.75	7,213.35	7,161.03	52.32	137.871		
3,000.00	2,998.61	2,906.01	2,906.01	10.54	43.63	118.76	-1,573.01	7,026.75	7,218.40	7,164.25	54.15	133.298		
3,100.00	3,097.86	3,005.26	3,005.26	10.89	45.10	118.79	-1,573.01	7,026.75	7,224.30	7,168.32	55.98	129.045		
3,200.00	3,196.89	3,104.29	3,104.29	11.25	46.57	118.83	-1,573.01	7,026.75	7,231.06	7,173.25	57.81	125.081		
3,295.74	3,291.45	3,198.85	3,198.85	11.59	47.98	118.87	-1,573.01	7,026.75	7,238.34	7,178.78	59.56	121.534		
3,300.00	3,295.65	3,203.05	3,203.05	11.61	48.04	118.87	-1,573.01	7,026.75	7,238.68	7,179.04	59.64	121.381		
3,400.00	3,394.29	3,301.69	3,301.69	11.97	49.51	118.98	-1,573.01	7,026.75	7,246.71	7,185.25	61.46	117.908		
3,500.00	3,492.94	3,400.34	3,400.34	12.33	50.98	119.10	-1,573.01	7,026.75	7,254.77	7,191.48	63.29	114.634		
3,600.00	3,591.58	3,498.98	3,498.98	12.69	52.45	119.21	-1,573.01	7,026.75	7,262.86	7,197.74	65.11	111.540		
3,700.00	3,690.22	3,597.62	3,597.62	13.05	53.92	119.32	-1,573.01	7,026.75	7,270.97	7,204.03	66.94	108.614		
3,800.00	3,788.86	3,696.26	3,696.26	13.41	55.39	119.43	-1,573.01	7,026.75	7,279.12	7,210.34	68.77	105.842		
3,900.00	3,887.50	3,794.90	3,794.90	13.77	56.86	119.54	-1,573.01	7,026.75	7,287.29	7,216.68	70.61	103.212		
4,000.00	3,986.14	3,893.54	3,893.54	14.14	58.33	119.65	-1,573.01	7,026.75	7,295.49	7,223.05	72.44	100.714		
4,100.00	4,084.78	3,992.18	3,992.18	14.50	59.80	119.76	-1,573.01	7,026.75	7,303.72	7,229.45	74.27	98.338		
4,200.00	4,183.42	4,090.82	4,090.82	14.87	61.27	119.88	-1,573.01	7,026.75	7,311.97	7,235.87	76.11	96.076		
4,300.00	4,282.06	4,189.46	4,189.46	15.24	62.74	119.99	-1,573.01	7,026.75	7,320.26	7,242.31	77.94	93.920		
4,400.00	4,380.70	4,288.10	4,288.10	15.60	64.21	120.10	-1,573.01	7,026.75	7,328.57	7,248.79	79.78	91.862		
4,500.00	4,479.34	4,386.74	4,386.74	15.97	65.69	120.21	-1,573.01	7,026.75	7,336.90	7,255.29	81.61	89.897		
4,600.00	4,577.98	4,485.38	4,485.38	16.34	67.16	120.32	-1,573.01	7,026.75	7,345.27	7,261.82	83.45	88.017		
4,700.00	4,676.62	4,584.02	4,584.02	16.71	68.63	120.43	-1,573.01	7,026.75	7,353.66	7,268.37	85.29	86.218		
4,800.00	4,775.27	4,682.67	4,682.67	17.08	70.10	120.53	-1,573.01	7,026.75	7,362.08	7,274.95	87.13	84.495		
4,900.00	4,873.91	4,781.31	4,781.31	17.45	71.57	120.64	-1,573.01	7,026.75	7,370.53	7,281.56	88.97	82.843		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,879.95	4,879.95	17.82	73.05	120.75	-1,573.01	7,026.75	7,379.00	7,288.19	90.81	81.258		
5,100.00	5,071.19	4,978.59	4,978.59	18.19	74.52	120.86	-1,573.01	7,026.75	7,387.50	7,294.85	92.65	79.735		
5,200.00	5,169.83	5,077.23	5,077.23	18.56	75.99	120.97	-1,573.01	7,026.75	7,396.03	7,301.54	94.49	78.272		
5,300.00	5,268.47	5,175.87	5,175.87	18.93	77.46	121.08	-1,573.01	7,026.75	7,404.58	7,308.25	96.33	76.864		
5,400.00	5,367.11	5,274.51	5,274.51	19.31	78.94	121.18	-1,573.01	7,026.75	7,413.16	7,314.99	98.18	75.510		
5,500.00	5,465.75	5,373.15	5,373.15	19.68	80.41	121.29	-1,573.01	7,026.75	7,421.77	7,321.75	100.02	74.205		
5,600.00	5,564.39	5,471.79	5,471.79	20.05	81.88	121.40	-1,573.01	7,026.75	7,430.40	7,328.54	101.86	72.947		
5,700.00	5,663.03	5,570.43	5,570.43	20.42	83.36	121.51	-1,573.01	7,026.75	7,439.06	7,335.36	103.70	71.734		
5,800.00	5,761.67	5,669.07	5,669.07	20.80	84.83	121.61	-1,573.01	7,026.75	7,447.75	7,342.20	105.55	70.563		
5,900.00	5,860.31	5,767.71	5,767.71	21.17	86.30	121.72	-1,573.01	7,026.75	7,456.46	7,349.07	107.39	69.433		
6,000.00	5,958.96	5,866.36	5,866.36	21.54	87.78	121.83	-1,573.01	7,026.75	7,465.19	7,355.96	109.23	68.341		
6,100.00	6,057.60	5,965.00	5,965.00	21.92	89.25	121.93	-1,573.01	7,026.75	7,473.96	7,362.88	111.08	67.285		
6,200.00	6,156.24	6,063.64	6,063.64	22.29	90.72	122.04	-1,573.01	7,026.75	7,482.75	7,369.82	112.92	66.264		
6,300.00	6,254.88	6,162.28	6,162.28	22.67	92.20	122.14	-1,573.01	7,026.75	7,491.56	7,376.79	114.77	65.275		
6,400.00	6,353.52	6,260.92	6,260.92	23.04	93.67	122.25	-1,573.01	7,026.75	7,500.40	7,383.79	116.61	64.318		
6,500.00	6,452.16	6,359.56	6,359.56	23.42	95.15	122.35	-1,573.01	7,026.75	7,509.27	7,390.81	118.46	63.391		
6,600.00	6,550.80	6,458.20	6,458.20	23.79	96.62	122.46	-1,573.01	7,026.75	7,518.16	7,397.86	120.30	62.493		
6,700.00	6,649.44	6,556.84	6,556.84	24.17	98.09	122.56	-1,573.01	7,026.75	7,527.08	7,404.93	122.15	61.621		
6,800.00	6,748.08	6,655.48	6,655.48	24.54	99.57	122.67	-1,573.01	7,026.75	7,536.02	7,412.02	124.00	60.776		
6,900.00	6,846.72	6,754.12	6,754.12	24.92	101.04	122.77	-1,573.01	7,026.75	7,544.99	7,419.14	125.84	59.956		
7,000.00	6,945.36	6,852.76	6,852.76	25.29	102.52	122.87	-1,573.01	7,026.75	7,553.98	7,426.29	127.69	59.159		
7,100.00	7,044.00	6,951.40	6,951.40	25.67	103.99	122.98	-1,573.01	7,026.75	7,563.00	7,433.46	129.54	58.386		
7,200.00	7,142.65	7,050.05	7,050.05	26.04	105.47	123.08	-1,573.01	7,026.75	7,572.04	7,440.66	131.38	57.634		
7,300.00	7,241.29	7,148.69	7,148.69	26.42	106.94	123.18	-1,573.01	7,026.75	7,581.11	7,447.88	133.23	56.903		
7,400.00	7,339.93	7,247.33	7,247.33	26.79	108.41	123.29	-1,573.01	7,026.75	7,590.20	7,455.12	135.08	56.192		
7,500.00	7,438.57	7,345.97	7,345.97	27.17	109.89	123.39	-1,573.01	7,026.75	7,599.31	7,462.39	136.92	55.501		
7,571.77	7,509.37	7,416.77	7,416.77	27.44	110.95	123.46	-1,573.01	7,026.75	7,605.87	7,467.62	138.25	55.016		
7,600.00	7,537.23	7,444.63	7,444.63	27.55	111.36	123.52	-1,573.01	7,026.75	7,608.40	7,469.63	138.77	54.827		
7,700.00	7,636.18	7,543.58	7,543.58	27.92	112.84	123.71	-1,573.01	7,026.75	7,616.43	7,475.81	140.62	54.163		
7,800.00	7,735.48	7,642.88	7,642.88	28.29	114.33	123.87	-1,573.01	7,026.75	7,623.04	7,480.57	142.47	53.506		
7,900.00	7,835.05	7,742.45	7,742.45	28.65	115.82	123.99	-1,573.01	7,026.75	7,628.19	7,483.87	144.32	52.856		
8,000.00	7,934.83	7,842.23	7,842.23	29.01	117.31	124.08	-1,573.01	7,026.75	7,631.89	7,485.72	146.17	52.212		
8,100.00	8,034.74	7,942.14	7,942.14	29.36	118.80	124.13	-1,573.01	7,026.75	7,634.13	7,486.11	148.02	51.575		
8,202.27	8,137.00	8,044.40	8,044.40	29.72	120.33	108.11	-1,573.01	7,026.75	7,634.89	7,484.99	149.91	50.931		
8,300.00	8,234.73	8,142.13	8,142.13	30.06	121.79	108.11	-1,573.01	7,026.75	7,634.89	7,483.19	151.71	50.327		
8,400.00	8,334.73	8,242.13	8,242.13	30.41	123.29	108.11	-1,573.01	7,026.75	7,634.89	7,481.35	153.55	49.723		
8,500.00	8,434.73	8,342.13	8,342.13	30.75	124.78	108.11	-1,573.01	7,026.75	7,634.89	7,479.50	155.39	49.134		
8,552.31	8,487.04	8,394.44	8,394.44	30.94	125.56	108.11	-1,573.01	7,026.75	7,634.89	7,478.54	156.35	48.831		
8,600.00	8,534.68	8,442.08	8,442.08	31.10	126.28	18.51	-1,573.01	7,026.75	7,633.01	7,475.79	157.23	48.548		
8,650.00	8,584.26	8,491.66	8,491.66	31.26	127.02	18.72	-1,573.01	7,026.75	7,627.01	7,468.89	158.13	48.233		
8,700.00	8,633.10	8,540.50	8,540.50	31.43	127.75	19.08	-1,573.01	7,026.75	7,616.94	7,457.93	159.01	47.902		
8,750.00	8,680.83	8,588.23	8,588.23	31.58	128.46	19.60	-1,573.01	7,026.75	7,602.87	7,443.00	159.87	47.557		
8,800.00	8,727.09	8,634.49	8,634.49	31.74	129.15	20.31	-1,573.01	7,026.75	7,584.91	7,424.21	160.70	47.200		
8,850.00	8,771.52	8,678.92	8,678.92	31.89	129.82	21.22	-1,573.01	7,026.75	7,563.21	7,401.72	161.49	46.834		
8,900.00	8,813.78	8,721.18	8,721.18	32.04	130.45	22.39	-1,573.01	7,026.75	7,537.92	7,375.69	162.24	46.463		
8,950.00	8,853.56	8,760.96	8,760.96	32.18	131.04	23.85	-1,573.01	7,026.75	7,509.26	7,346.32	162.93	46.088		
9,000.00	8,890.55	8,797.95	8,797.95	32.32	131.60	25.68	-1,573.01	7,026.75	7,477.43	7,313.85	163.58	45.711		
9,050.00	8,924.46	8,831.86	8,831.86	32.47	132.10	27.99	-1,573.01	7,026.75	7,442.70	7,278.53	164.17	45.335		
9,100.00	8,955.05	8,862.45	8,862.45	32.63	132.56	30.89	-1,573.01	7,026.75	7,405.32	7,240.62	164.70	44.963		
9,150.00	8,982.08	8,889.48	8,889.48	32.79	132.97	34.59	-1,573.01	7,026.75	7,365.58	7,200.41	165.17	44.595		
9,200.00	9,005.34	8,912.74	8,912.74	32.97	133.31	39.34	-1,573.01	7,026.75	7,323.80	7,158.23	165.57	44.234		
9,250.00	9,024.65	8,932.05	8,932.05	33.17	133.60	45.49	-1,573.01	7,026.75	7,280.30	7,114.39	165.91	43.881		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,947.27	8,947.27	33.38	133.83	53.44	-1,573.01	7,026.75	7,235.40	7,069.22	166.18	43.538		
9,350.00	9,050.89	8,958.29	8,958.29	33.62	133.99	63.54	-1,573.01	7,026.75	7,189.46	7,023.07	166.39	43.208		
9,400.00	9,057.61	8,965.01	8,965.01	33.87	134.10	75.77	-1,573.01	7,026.75	7,142.83	6,976.30	166.54	42.890		
9,452.31	9,060.00	8,967.40	8,967.40	34.15	134.13	90.00	-1,573.01	7,026.75	7,093.70	6,927.08	166.62	42.574		
9,500.00	9,060.00	8,967.40	8,967.40	34.42	134.13	90.00	-1,573.01	7,026.75	7,048.88	6,882.21	166.67	42.293		
9,600.00	9,060.00	8,967.40	8,967.40	35.09	134.13	90.00	-1,573.01	7,026.75	6,955.02	6,788.24	166.78	41.702		
9,700.00	9,060.00	8,967.40	8,967.40	35.86	134.13	90.00	-1,573.01	7,026.75	6,861.33	6,694.42	166.91	41.107		
9,800.00	9,060.00	8,967.40	8,967.40	36.72	134.13	90.00	-1,573.01	7,026.75	6,767.83	6,600.76	167.07	40.509		
9,900.00	9,060.00	8,967.40	8,967.40	37.69	134.13	90.00	-1,573.01	7,026.75	6,674.51	6,507.26	167.25	39.907		
10,000.00	9,060.00	8,967.40	8,967.40	38.73	134.13	90.00	-1,573.01	7,026.75	6,581.40	6,413.94	167.46	39.302		
10,100.00	9,060.00	8,967.40	8,967.40	39.86	134.13	90.00	-1,573.01	7,026.75	6,488.48	6,320.79	167.69	38.693		
10,140.22	9,060.00	8,967.40	8,967.40	40.33	134.13	90.00	-1,573.01	7,026.75	6,451.17	6,283.37	167.79	38.447		
10,200.00	9,060.00	8,967.40	8,967.40	41.05	134.13	90.00	-1,573.01	7,026.75	6,395.55	6,227.60	167.95	38.080		
10,300.00	9,060.00	8,967.40	8,967.40	42.31	134.13	90.00	-1,573.01	7,026.75	6,301.67	6,133.46	168.22	37.462		
10,400.00	9,060.00	8,967.40	8,967.40	43.64	134.13	90.00	-1,573.01	7,026.75	6,206.82	6,038.33	168.48	36.839		
10,507.23	9,060.00	8,967.40	8,967.40	45.11	134.13	90.00	-1,573.01	7,026.75	6,104.10	5,935.34	168.76	36.170		
10,600.00	9,060.00	8,967.40	8,967.40	46.43	134.13	90.00	-1,573.01	7,026.75	6,015.29	5,846.27	169.02	35.589		
10,700.00	9,060.00	8,967.40	8,967.40	47.91	134.13	90.00	-1,573.01	7,026.75	5,920.74	5,751.39	169.35	34.961		
10,800.00	9,060.00	8,967.40	8,967.40	49.42	134.13	90.00	-1,573.01	7,026.75	5,827.60	5,657.85	169.75	34.331		
10,900.00	9,060.00	8,967.40	8,967.40	50.97	134.13	90.00	-1,573.01	7,026.75	5,736.04	5,565.83	170.22	33.698		
11,000.00	9,060.00	8,967.40	8,967.40	52.55	134.13	90.00	-1,573.01	7,026.75	5,646.27	5,475.50	170.77	33.064		
11,100.00	9,060.00	8,967.40	8,967.40	54.14	134.13	90.00	-1,573.01	7,026.75	5,558.48	5,387.07	171.40	32.429		
11,207.23	9,060.00	8,967.40	8,967.40	55.87	134.13	90.00	-1,573.01	7,026.75	5,466.77	5,294.58	172.19	31.748		
11,300.00	9,060.00	8,967.40	8,967.40	57.39	134.13	90.00	-1,573.01	7,026.75	5,388.00	5,215.07	172.94	31.156		
11,400.00	9,060.00	8,967.40	8,967.40	59.06	134.13	90.00	-1,573.01	7,026.75	5,301.85	5,128.09	173.76	30.513		
11,506.63	9,060.00	8,967.40	8,967.40	60.88	134.13	90.00	-1,573.01	7,026.75	5,208.58	5,033.93	174.65	29.823		
11,600.00	9,060.00	8,967.40	8,967.40	62.49	134.13	90.00	-1,573.01	7,026.75	5,126.48	4,951.03	175.46	29.218		
11,700.00	9,060.00	8,967.40	8,967.40	64.24	134.13	90.00	-1,573.01	7,026.75	5,038.99	4,862.62	176.38	28.570		
11,800.00	9,060.00	8,967.40	8,967.40	66.01	134.13	90.00	-1,573.01	7,026.75	4,951.98	4,774.62	177.36	27.921		
11,900.00	9,060.00	8,967.40	8,967.40	67.79	134.13	90.00	-1,573.01	7,026.75	4,865.46	4,687.06	178.40	27.273		
12,000.00	9,060.00	8,967.40	8,967.40	69.58	134.13	90.00	-1,573.01	7,026.75	4,779.47	4,599.96	179.51	26.625		
12,100.00	9,060.00	8,967.40	8,967.40	71.39	134.13	90.00	-1,573.01	7,026.75	4,694.04	4,513.35	180.68	25.979		
12,200.00	9,060.00	8,967.40	8,967.40	73.21	134.13	90.00	-1,573.01	7,026.75	4,609.19	4,427.26	181.93	25.335		
12,300.00	9,060.00	8,967.40	8,967.40	75.05	134.13	90.00	-1,573.01	7,026.75	4,524.96	4,341.71	183.24	24.694		
12,400.00	9,060.00	8,967.40	8,967.40	76.89	134.13	90.00	-1,573.01	7,026.75	4,441.38	4,256.75	184.63	24.055		
12,500.00	9,060.00	8,967.40	8,967.40	78.74	134.13	90.00	-1,573.01	7,026.75	4,358.50	4,172.40	186.10	23.420		
12,600.00	9,060.00	8,967.40	8,967.40	80.61	134.13	90.00	-1,573.01	7,026.75	4,276.35	4,088.70	187.64	22.790		
12,700.00	9,060.00	8,967.40	8,967.40	82.48	134.13	90.00	-1,573.01	7,026.75	4,194.97	4,005.70	189.27	22.164		
12,800.00	9,060.00	8,967.40	8,967.40	84.36	134.13	90.00	-1,573.01	7,026.75	4,114.41	3,923.43	190.98	21.544		
12,900.00	9,060.00	8,967.40	8,967.40	86.24	134.13	90.00	-1,573.01	7,026.75	4,034.73	3,841.96	192.77	20.930		
13,000.00	9,060.00	8,967.40	8,967.40	88.14	134.13	90.00	-1,573.01	7,026.75	3,955.96	3,761.31	194.65	20.323		
13,100.00	9,060.00	8,967.40	8,967.40	90.04	134.13	90.00	-1,573.01	7,026.75	3,878.18	3,681.56	196.62	19.724		
13,200.00	9,060.00	8,967.40	8,967.40	91.94	134.13	90.00	-1,573.01	7,026.75	3,801.44	3,602.75	198.69	19.133		
13,300.00	9,060.00	8,967.40	8,967.40	93.86	134.13	90.00	-1,573.01	7,026.75	3,725.79	3,524.95	200.84	18.551		
13,400.00	9,060.00	8,967.40	8,967.40	95.77	134.13	90.00	-1,573.01	7,026.75	3,651.33	3,448.24	203.09	17.979		
13,500.00	9,060.00	8,967.40	8,967.40	97.70	134.13	90.00	-1,573.01	7,026.75	3,578.10	3,372.67	205.44	17.417		
13,600.00	9,060.00	8,967.40	8,967.40	99.62	134.13	90.00	-1,573.01	7,026.75	3,506.20	3,298.32	207.88	16.867		
13,700.00	9,060.00	8,967.40	8,967.40	101.56	134.13	90.00	-1,573.01	7,026.75	3,435.71	3,225.29	210.42	16.328		
13,800.00	9,060.00	8,967.40	8,967.40	103.49	134.13	90.00	-1,573.01	7,026.75	3,366.71	3,153.65	213.05	15.802		
13,900.00	9,060.00	8,967.40	8,967.40	105.43	134.13	90.00	-1,573.01	7,026.75	3,299.29	3,083.51	215.79	15.290		
14,000.00	9,060.00	8,967.40	8,967.40	107.38	134.13	90.00	-1,573.01	7,026.75	3,233.57	3,014.96	218.61	14.791		
14,100.00	9,060.00	8,967.40	8,967.40	109.33	134.13	90.00	-1,573.01	7,026.75	3,169.64	2,948.11	221.53	14.308		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,200.00	9,060.00	8,967.40	8,967.40	111.28	134.13	90.00	-1,573.01	7,026.75	3,107.61	2,883.07	224.54	13.840		
14,300.00	9,060.00	8,967.40	8,967.40	113.23	134.13	90.00	-1,573.01	7,026.75	3,047.60	2,819.97	227.63	13.388		
14,400.00	9,060.00	8,967.40	8,967.40	115.19	134.13	90.00	-1,573.01	7,026.75	2,989.73	2,758.93	230.80	12.954		
14,500.00	9,060.00	8,967.40	8,967.40	117.15	134.13	90.00	-1,573.01	7,026.75	2,934.13	2,700.10	234.03	12.537		
14,600.00	9,060.00	8,967.40	8,967.40	119.11	134.13	90.00	-1,573.01	7,026.75	2,880.93	2,643.59	237.33	12.139		
14,700.00	9,060.00	8,967.40	8,967.40	121.08	134.13	90.00	-1,573.01	7,026.75	2,830.26	2,589.58	240.68	11.759		
14,800.00	9,060.00	8,967.40	8,967.40	123.05	134.13	90.00	-1,573.01	7,026.75	2,782.27	2,538.20	244.07	11.399		
14,900.00	9,060.00	8,967.40	8,967.40	125.02	134.13	90.00	-1,573.01	7,026.75	2,737.09	2,489.61	247.48	11.060		
15,000.00	9,060.00	8,967.40	8,967.40	126.99	134.13	90.00	-1,573.01	7,026.75	2,694.86	2,443.97	250.90	10.741		
15,100.00	9,060.00	8,967.40	8,967.40	128.97	134.13	90.00	-1,573.01	7,026.75	2,655.73	2,401.43	254.30	10.443		
15,200.00	9,060.00	8,967.40	8,967.40	130.95	134.13	90.00	-1,573.01	7,026.75	2,619.84	2,362.16	257.67	10.167		
15,300.00	9,060.00	8,967.40	8,967.40	132.93	134.13	90.00	-1,573.01	7,026.75	2,587.31	2,326.32	260.99	9.913		
15,400.00	9,060.00	8,967.40	8,967.40	134.91	134.13	90.00	-1,573.01	7,026.75	2,558.28	2,294.04	264.24	9.682		
15,500.00	9,060.00	8,967.40	8,967.40	136.89	134.13	90.00	-1,573.01	7,026.75	2,532.87	2,265.49	267.38	9.473		
15,600.00	9,060.00	8,967.40	8,967.40	138.88	134.13	90.00	-1,573.01	7,026.75	2,511.19	2,240.78	270.41	9.287		
15,700.00	9,060.00	8,967.40	8,967.40	140.86	134.13	90.00	-1,573.01	7,026.75	2,493.33	2,220.04	273.29	9.124		
15,800.00	9,060.00	8,967.40	8,967.40	142.85	134.13	90.00	-1,573.01	7,026.75	2,479.38	2,203.38	276.00	8.983		
15,900.00	9,060.00	8,967.40	8,967.40	144.84	134.13	90.00	-1,573.01	7,026.75	2,469.40	2,190.88	278.53	8.866		
16,000.00	9,060.00	8,967.40	8,967.40	146.83	134.13	90.00	-1,573.01	7,026.75	2,463.45	2,182.60	280.85	8.771		
16,096.85	9,060.00	8,967.40	8,967.40	148.76	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.65	282.90	8.701 CC		
16,100.00	9,060.00	8,967.40	8,967.40	148.83	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.59	282.96	8.699 ES		
16,200.00	9,060.00	8,967.40	8,967.40	150.82	134.13	90.00	-1,573.01	7,026.75	2,463.71	2,178.87	284.83	8.650		
16,300.00	9,060.00	8,967.40	8,967.40	152.82	134.13	90.00	-1,573.01	7,026.75	2,469.91	2,183.45	286.47	8.622		
16,400.00	9,060.00	8,967.40	8,967.40	154.81	134.13	90.00	-1,573.01	7,026.75	2,480.14	2,192.28	287.86	8.616 SF		
16,500.00	9,060.00	8,967.40	8,967.40	156.81	134.13	90.00	-1,573.01	7,026.75	2,494.34	2,205.34	289.00	8.631		
16,600.00	9,060.00	8,967.40	8,967.40	158.81	134.13	90.00	-1,573.01	7,026.75	2,512.44	2,222.54	289.91	8.666		
16,700.00	9,060.00	8,967.40	8,967.40	160.81	134.13	90.00	-1,573.01	7,026.75	2,534.36	2,243.79	290.58	8.722		
16,800.00	9,060.00	8,967.40	8,967.40	162.81	134.13	90.00	-1,573.01	7,026.75	2,560.01	2,268.99	291.01	8.797		
16,900.00	9,060.00	8,967.40	8,967.40	164.82	134.13	90.00	-1,573.01	7,026.75	2,589.26	2,298.02	291.24	8.891		
17,000.00	9,060.00	8,967.40	8,967.40	166.82	134.13	90.00	-1,573.01	7,026.75	2,622.00	2,330.75	291.26	9.002		
17,100.00	9,060.00	8,967.40	8,967.40	168.82	134.13	90.00	-1,573.01	7,026.75	2,658.11	2,367.02	291.09	9.132		
17,200.00	9,060.00	8,967.40	8,967.40	170.83	134.13	90.00	-1,573.01	7,026.75	2,697.44	2,406.69	290.74	9.278		
17,300.00	9,060.00	8,967.40	8,967.40	172.84	134.13	90.00	-1,573.01	7,026.75	2,739.85	2,449.61	290.24	9.440		
17,400.00	9,060.00	8,967.40	8,967.40	174.84	134.13	90.00	-1,573.01	7,026.75	2,785.21	2,495.61	289.61	9.617		
17,500.00	9,060.00	8,967.40	8,967.40	176.85	134.13	90.00	-1,573.01	7,026.75	2,833.38	2,544.54	288.84	9.809		
17,600.00	9,060.00	8,967.40	8,967.40	178.86	134.13	90.00	-1,573.01	7,026.75	2,884.21	2,596.24	287.97	10.016		
17,700.00	9,060.00	8,967.40	8,967.40	180.87	134.13	90.00	-1,573.01	7,026.75	2,937.57	2,650.56	287.01	10.235		
17,800.00	9,060.00	8,967.40	8,967.40	182.88	134.13	90.00	-1,573.01	7,026.75	2,993.32	2,707.35	285.97	10.467		
17,900.00	9,060.00	8,967.40	8,967.40	184.89	134.13	90.00	-1,573.01	7,026.75	3,051.32	2,766.46	284.86	10.712		
18,000.00	9,060.00	8,967.40	8,967.40	186.90	134.13	90.00	-1,573.01	7,026.75	3,111.46	2,827.76	283.70	10.967		
18,100.00	9,060.00	8,967.40	8,967.40	188.92	134.13	90.00	-1,573.01	7,026.75	3,173.62	2,891.12	282.50	11.234		
18,200.00	9,060.00	8,967.40	8,967.40	190.93	134.13	90.00	-1,573.01	7,026.75	3,237.66	2,956.41	281.26	11.511		
18,300.00	9,060.00	8,967.40	8,967.40	192.94	134.13	90.00	-1,573.01	7,026.75	3,303.50	3,023.50	280.00	11.798		
18,400.00	9,060.00	8,967.40	8,967.40	194.96	134.13	90.00	-1,573.01	7,026.75	3,371.01	3,092.29	278.72	12.095		
18,500.00	9,060.00	8,967.40	8,967.40	196.97	134.13	90.00	-1,573.01	7,026.75	3,440.11	3,162.68	277.43	12.400		
18,600.00	9,060.00	8,967.40	8,967.40	198.99	134.13	90.00	-1,573.01	7,026.75	3,510.70	3,234.55	276.14	12.713		
18,700.00	9,060.00	8,967.40	8,967.40	201.00	134.13	90.00	-1,573.01	7,026.75	3,582.68	3,307.83	274.86	13.035		
18,800.00	9,060.00	8,967.40	8,967.40	203.02	134.13	90.00	-1,573.01	7,026.75	3,655.99	3,382.42	273.57	13.364		
18,900.00	9,060.00	8,967.40	8,967.40	205.04	134.13	90.00	-1,573.01	7,026.75	3,730.53	3,458.23	272.30	13.700		
19,000.00	9,060.00	8,967.40	8,967.40	207.06	134.13	90.00	-1,573.01	7,026.75	3,806.25	3,535.20	271.04	14.043		
19,100.00	9,060.00	8,967.40	8,967.40	209.07	134.13	90.00	-1,573.01	7,026.75	3,883.06	3,613.26	269.80	14.392		
19,200.00	9,060.00	8,967.40	8,967.40	211.09	134.13	90.00	-1,573.01	7,026.75	3,960.91	3,692.33	268.58	14.748		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,967.40	8,967.40	213.11	134.13	90.00	-1,573.01	7,026.75	4,039.73	3,772.36	267.37	15.109	
19,400.00	9,060.00	8,967.40	8,967.40	215.13	134.13	90.00	-1,573.01	7,026.75	4,119.47	3,853.28	266.19	15.476	
19,500.32	9,060.00	8,967.40	8,967.40	217.16	134.13	90.00	-1,573.01	7,026.75	4,200.34	3,935.31	265.02	15.849	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	10.00	58.50	1,038.14	1,693.77	1,986.84				
100.00	100.00	64.70	64.70	0.52	10.00	58.50	1,038.04	1,693.92	1,986.68	1,976.16	10.52	188.880	
200.00	200.00	167.21	167.20	0.70	10.01	58.52	1,037.53	1,694.54	1,986.94	1,976.24	10.71	185.530	
300.00	300.00	276.71	276.70	0.99	10.03	58.55	1,036.61	1,694.95	1,986.83	1,975.81	11.02	180.343	
400.00	400.00	386.96	386.94	1.31	10.07	58.59	1,034.99	1,695.13	1,986.20	1,974.83	11.38	174.601	
500.00	500.00	499.41	499.36	1.65	10.12	58.66	1,032.44	1,695.12	1,985.01	1,973.25	11.77	168.711	
600.00	600.00	595.76	595.67	1.99	10.18	58.72	1,029.75	1,695.16	1,983.59	1,971.42	12.17	163.004	
700.00	700.00	700.66	700.53	2.34	10.26	58.79	1,026.83	1,695.17	1,982.16	1,969.56	12.59	157.393	
800.00	800.00	798.62	798.45	2.69	10.34	58.87	1,023.86	1,695.23	1,980.64	1,967.61	13.03	152.027	
900.00	900.00	900.59	900.36	3.04	10.44	58.96	1,020.48	1,695.46	1,979.12	1,965.64	13.48	146.821	
1,000.00	1,000.00	999.08	998.79	3.40	10.55	59.04	1,017.18	1,695.69	1,977.60	1,963.66	13.94	141.859	
1,100.00	1,100.00	1,100.28	1,099.94	3.75	10.67	59.13	1,013.79	1,695.94	1,976.08	1,961.67	14.42	137.077	
1,200.00	1,200.00	1,196.68	1,196.28	4.11	10.80	59.21	1,010.65	1,696.18	1,974.63	1,959.73	14.90	132.559	
1,300.00	1,300.00	1,293.57	1,293.12	4.46	10.93	59.30	1,007.45	1,696.64	1,973.35	1,957.96	15.39	128.244	
1,400.00	1,400.00	1,387.76	1,387.25	4.82	11.07	59.39	1,004.24	1,697.38	1,972.29	1,956.41	15.88	124.162	
1,500.00	1,500.00	1,484.92	1,484.35	5.18	11.23	59.48	1,001.06	1,698.33	1,971.47	1,955.07	16.40	120.246	
1,600.00	1,600.00	1,579.44	1,578.82	5.53	11.38	59.58	997.99	1,699.45	1,970.84	1,953.93	16.91	116.547	
1,700.00	1,700.00	1,678.15	1,677.47	5.89	11.56	59.68	994.84	1,700.82	1,970.42	1,952.98	17.44	112.979	
1,800.00	1,800.00	1,780.52	1,779.78	6.25	11.75	59.78	991.51	1,702.22	1,969.97	1,951.98	17.99	109.526	
1,900.00	1,900.00	1,882.06	1,881.25	6.61	11.94	59.89	988.05	1,703.56	1,969.39	1,950.86	18.54	106.229	
2,000.00	2,000.00	1,981.36	1,980.48	6.96	12.14	59.99	984.65	1,704.86	1,968.80	1,949.71	19.10	103.103	
2,100.00	2,100.00	2,073.05	2,072.11	7.32	12.33	60.09	981.53	1,706.24	1,968.42	1,948.78	19.64	100.208	
2,200.00	2,200.00	2,177.73	2,176.72	7.68	12.55	60.20	978.16	1,708.00	1,968.28	1,948.05	20.22	97.322	
2,300.00	2,300.00	2,275.85	2,274.80	8.04	12.77	60.28	975.53	1,709.06	1,967.89	1,947.09	20.80	94.629	
2,350.00	2,350.00	2,323.50	2,322.44	8.22	12.87	60.31	974.56	1,709.50	1,967.78	1,946.70	21.08	93.350	
2,400.00	2,400.00	2,371.35	2,370.28	8.39	12.98	76.39	973.74	1,709.91	1,967.68	1,946.32	21.36	92.101	
2,500.00	2,499.98	2,470.57	2,469.49	8.75	13.20	76.48	972.47	1,710.64	1,967.27	1,945.33	21.94	89.650	
2,600.00	2,599.92	2,568.64	2,567.55	9.11	13.42	76.62	971.56	1,711.17	1,966.48	1,943.96	22.52	87.305	
2,700.00	2,699.78	2,673.59	2,672.50	9.47	13.67	76.81	970.88	1,711.59	1,965.31	1,942.18	23.13	84.986	
2,800.00	2,799.54	2,772.79	2,771.69	9.82	13.90	77.04	970.21	1,711.72	1,963.51	1,939.79	23.72	82.790	
2,900.00	2,899.16	2,873.53	2,872.44	10.18	14.15	77.33	969.70	1,711.84	1,961.43	1,937.12	24.32	80.662	
3,000.00	2,998.61	2,972.58	2,971.48	10.54	14.39	77.66	969.31	1,711.82	1,958.95	1,934.03	24.92	78.621	
3,100.00	3,097.86	3,069.50	3,068.40	10.89	14.63	78.02	969.27	1,711.70	1,956.24	1,930.72	25.51	76.672	
3,200.00	3,196.89	3,167.91	3,166.81	11.25	14.88	78.44	969.33	1,711.64	1,953.35	1,927.22	26.12	74.782	
3,295.74	3,291.45	3,262.21	3,261.12	11.59	15.12	78.89	969.36	1,711.60	1,950.35	1,923.64	26.71	73.033	
3,300.00	3,295.65	3,266.39	3,265.29	11.61	15.13	78.91	969.36	1,711.60	1,950.21	1,923.48	26.73	72.956	
3,400.00	3,394.29	3,362.87	3,361.77	11.97	15.39	79.36	969.57	1,711.53	1,947.10	1,919.76	27.34	71.215	
3,500.00	3,492.94	3,462.26	3,461.16	12.33	15.65	79.83	969.94	1,711.47	1,944.21	1,916.25	27.96	69.526	
3,600.00	3,591.58	3,561.40	3,560.30	12.69	15.91	80.28	970.48	1,711.23	1,941.36	1,912.77	28.59	67.902	
3,700.00	3,690.22	3,659.02	3,657.92	13.05	16.18	80.73	971.01	1,711.04	1,938.68	1,909.46	29.22	66.353	
3,800.00	3,788.86	3,759.89	3,758.78	13.41	16.45	81.20	971.55	1,710.86	1,936.13	1,906.27	29.86	64.846	
3,900.00	3,887.50	3,863.77	3,862.67	13.77	16.74	81.67	972.26	1,710.35	1,933.49	1,902.98	30.51	63.374	
4,000.00	3,986.14	3,964.80	3,963.69	14.14	17.03	82.14	972.91	1,709.63	1,930.75	1,899.59	31.16	61.968	
4,100.00	4,084.78	4,063.92	4,062.80	14.50	17.31	82.59	973.64	1,708.83	1,928.10	1,896.29	31.80	60.626	
4,200.00	4,183.42	4,162.49	4,161.37	14.87	17.59	83.04	974.36	1,708.04	1,925.56	1,893.11	32.45	59.338	
4,300.00	4,282.06	4,264.09	4,262.97	15.24	17.88	83.50	975.10	1,707.19	1,923.11	1,890.00	33.11	58.083	
4,400.00	4,380.70	4,361.35	4,360.22	15.60	18.16	83.94	975.84	1,706.23	1,920.66	1,886.90	33.76	56.893	
4,500.00	4,479.34	4,458.52	4,457.37	15.97	18.45	84.38	976.71	1,705.40	1,918.51	1,884.09	34.41	55.752	
4,600.00	4,577.98	4,559.08	4,557.93	16.34	18.74	84.84	977.60	1,704.52	1,916.45	1,881.37	35.08	54.638	
4,700.00	4,676.62	4,658.63	4,657.47	16.71	19.04	85.29	978.62	1,703.50	1,914.41	1,878.67	35.74	53.566	
4,800.00	4,775.27	4,757.08	4,755.91	17.08	19.33	85.74	979.62	1,702.50	1,912.51	1,876.11	36.40	52.538	
4,900.00	4,873.91	4,859.18	4,857.99	17.45	19.64	86.20	980.55	1,701.46	1,910.69	1,873.61	37.08	51.532	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,959.95	4,958.76	17.82	19.94	86.66	981.30	1,700.26	1,908.78	1,871.03	37.75	50.562		
5,100.00	5,071.19	5,058.85	5,057.65	18.19	20.24	87.12	981.97	1,699.11	1,906.98	1,868.56	38.42	49.634		
5,200.00	5,169.83	5,157.17	5,155.96	18.56	20.54	87.58	982.60	1,697.96	1,905.30	1,866.21	39.09	48.741		
5,300.00	5,268.47	5,255.88	5,254.67	18.93	20.84	88.04	983.15	1,696.88	1,903.79	1,864.02	39.76	47.879		
5,400.00	5,367.11	5,351.89	5,350.67	19.31	21.13	88.49	983.59	1,695.87	1,902.42	1,861.99	40.43	47.057		
5,500.00	5,465.75	5,447.29	5,446.07	19.68	21.43	88.95	983.98	1,695.12	1,901.41	1,860.31	41.09	46.270		
5,600.00	5,564.39	5,544.40	5,543.18	20.05	21.73	89.43	983.64	1,694.67	1,900.62	1,858.86	41.76	45.508		
5,700.00	5,663.03	5,640.63	5,639.39	20.42	22.02	89.94	982.56	1,694.56	1,900.09	1,857.66	42.44	44.776		
5,800.00	5,761.67	5,737.55	5,736.31	20.80	22.33	90.46	981.19	1,694.64	1,899.84	1,856.73	43.11	44.069		
5,900.00	5,860.31	5,840.03	5,838.77	21.17	22.65	91.01	979.62	1,694.74	1,899.74	1,855.94	43.80	43.369		
6,000.00	5,958.96	5,961.41	5,960.13	21.54	23.03	91.66	977.84	1,694.03	1,899.20	1,854.65	44.55	42.627		
6,100.00	6,057.60	6,079.16	6,077.84	21.92	23.40	92.29	975.77	1,691.78	1,897.44	1,852.15	45.29	41.895		
6,200.00	6,156.24	6,180.69	6,179.32	22.29	23.72	92.85	973.29	1,689.45	1,895.35	1,849.36	45.98	41.218		
6,300.00	6,254.88	6,271.97	6,270.53	22.67	24.01	93.38	970.23	1,687.66	1,893.54	1,846.89	46.65	40.589		
6,400.00	6,353.52	6,366.34	6,364.83	23.04	24.32	93.93	967.00	1,686.17	1,892.28	1,844.95	47.33	39.980		
6,500.00	6,452.16	6,469.34	6,467.77	23.42	24.65	94.53	963.69	1,684.48	1,891.20	1,843.17	48.03	39.373		
6,600.00	6,550.80	6,566.94	6,565.31	23.79	24.96	95.07	961.27	1,682.49	1,890.08	1,841.36	48.72	38.794		
6,700.00	6,649.44	6,656.95	6,655.29	24.17	25.25	95.57	959.32	1,680.85	1,889.40	1,840.02	49.39	38.258		
6,747.24	6,696.04	6,698.45	6,696.78	24.34	25.38	95.79	958.46	1,680.25	1,889.32	1,839.62	49.70	38.016		
6,800.00	6,748.08	6,746.99	6,745.30	24.54	25.54	96.06	957.48	1,679.66	1,889.39	1,839.34	50.05	37.748		
6,900.00	6,846.72	6,835.99	6,834.28	24.92	25.83	96.55	955.67	1,678.83	1,889.94	1,839.23	50.71	37.266		
7,000.00	6,945.36	6,918.54	6,916.81	25.29	26.10	97.01	953.88	1,678.63	1,891.32	1,839.97	51.36	36.828		
7,100.00	7,044.00	6,994.39	6,992.64	25.67	26.34	97.44	952.25	1,679.25	1,893.92	1,841.95	51.97	36.443		
7,200.00	7,142.65	7,092.54	7,090.76	26.04	26.66	97.98	950.33	1,680.67	1,897.32	1,844.66	52.66	36.028		
7,300.00	7,241.29	7,188.27	7,186.47	26.42	26.97	98.51	948.55	1,682.06	1,900.91	1,847.57	53.35	35.634		
7,400.00	7,339.93	7,282.04	7,280.20	26.79	27.28	99.03	946.62	1,683.61	1,904.87	1,850.84	54.02	35.261		
7,500.00	7,438.57	7,377.32	7,375.44	27.17	27.59	99.56	944.59	1,685.40	1,909.20	1,854.50	54.71	34.900		
7,571.77	7,509.37	7,450.67	7,448.77	27.44	27.83	99.96	943.31	1,686.77	1,912.45	1,857.23	55.21	34.637		
7,600.00	7,537.23	7,480.47	7,478.56	27.55	27.93	100.13	942.89	1,687.27	1,913.68	1,858.26	55.42	34.532		
7,700.00	7,636.18	7,577.71	7,575.78	27.92	28.25	100.64	941.77	1,688.81	1,917.79	1,861.69	56.10	34.183		
7,800.00	7,735.48	7,673.36	7,671.41	28.29	28.56	101.07	940.65	1,690.49	1,921.69	1,864.91	56.78	33.845		
7,900.00	7,835.05	7,769.65	7,767.68	28.65	28.88	101.42	939.54	1,692.34	1,925.33	1,867.87	57.45	33.511		
8,000.00	7,934.83	7,869.01	7,867.02	29.01	29.20	101.68	939.11	1,694.31	1,928.59	1,870.46	58.13	33.174		
8,100.00	8,034.74	7,985.45	7,983.43	29.36	29.58	101.81	940.33	1,696.10	1,931.03	1,872.15	58.88	32.796		
8,202.27	8,137.00	8,095.01	8,092.98	29.72	29.94	85.79	941.94	1,696.90	1,932.17	1,872.57	59.60	32.419		
8,300.00	8,234.73	8,201.50	8,199.46	30.06	30.29	85.76	942.85	1,697.34	1,932.63	1,872.34	60.29	32.055		
8,400.00	8,334.73	8,327.25	8,325.21	30.41	30.70	85.76	943.01	1,696.87	1,932.28	1,871.23	61.06	31.648		
8,500.00	8,434.73	8,448.86	8,446.78	30.75	31.11	85.82	940.52	1,694.79	1,930.38	1,868.58	61.80	31.235		
8,552.31	8,487.04	8,501.92	8,499.80	30.94	31.28	85.87	939.06	1,693.71	1,929.21	1,867.06	62.16	31.037		
8,600.00	8,534.68	8,537.37	8,535.23	31.10	31.40	-3.79	938.08	1,693.10	1,926.32	1,863.88	62.44	30.850		
8,650.00	8,584.26	8,574.78	8,572.63	31.26	31.53	-3.82	937.08	1,692.68	1,919.36	1,856.64	62.73	30.598		
8,700.00	8,633.10	8,612.28	8,610.11	31.43	31.65	-3.88	936.09	1,692.50	1,908.43	1,845.42	63.01	30.288		
8,750.00	8,680.83	8,650.28	8,648.10	31.58	31.78	-3.98	935.10	1,692.51	1,893.56	1,830.27	63.29	29.921		
8,800.00	8,727.09	8,687.24	8,685.05	31.74	31.90	-4.12	934.15	1,692.71	1,874.82	1,811.27	63.55	29.503		
8,850.00	8,771.52	8,727.40	8,725.19	31.89	32.04	-4.32	933.12	1,693.10	1,852.31	1,788.50	63.81	29.027		
8,900.00	8,813.78	8,768.08	8,765.86	32.04	32.17	-4.58	932.14	1,693.54	1,826.07	1,762.00	64.07	28.502		
8,950.00	8,853.56	8,808.70	8,806.47	32.18	32.31	-4.93	931.21	1,694.01	1,796.26	1,731.94	64.31	27.929		
9,000.00	8,890.55	8,856.47	8,854.23	32.32	32.47	-5.42	930.30	1,694.37	1,762.94	1,698.37	64.57	27.301		
9,050.00	8,924.46	8,899.80	8,897.55	32.47	32.61	-6.08	929.68	1,694.44	1,726.33	1,661.53	64.80	26.640		
9,100.00	8,955.05	8,930.97	8,928.72	32.63	32.72	-6.95	929.30	1,694.40	1,686.82	1,621.85	64.98	25.960		
9,150.00	8,982.08	8,958.44	8,956.18	32.79	32.81	-8.14	928.94	1,694.35	1,644.81	1,579.68	65.13	25.255		
9,200.00	9,005.34	8,982.04	8,979.79	32.97	32.89	-9.84	928.63	1,694.30	1,600.61	1,535.36	65.25	24.530		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,001.60	8,999.34	33.17	32.95	-12.42	928.37	1,694.26	1,554.57	1,489.22	65.35	23.787		
9,300.00	9,039.87	9,016.33	9,014.07	33.38	33.00	-16.66	928.16	1,694.23	1,507.05	1,441.63	65.43	23.034		
9,350.00	9,050.89	9,027.01	9,024.76	33.62	33.04	-24.67	928.02	1,694.21	1,458.41	1,392.93	65.48	22.272		
9,400.00	9,057.61	9,033.51	9,031.25	33.87	33.06	-43.26	927.93	1,694.19	1,409.03	1,343.51	65.51	21.507		
9,452.31	9,060.00	9,035.75	9,033.49	34.15	33.07	-92.01	927.90	1,694.19	1,356.97	1,291.44	65.53	20.708		
9,500.00	9,060.00	9,035.67	9,033.41	34.42	33.07	-91.97	927.90	1,694.19	1,309.46	1,243.93	65.53	19.981		
9,600.00	9,060.00	9,035.48	9,033.22	35.09	33.07	-91.88	927.90	1,694.19	1,209.89	1,144.35	65.55	18.458		
9,700.00	9,060.00	9,035.30	9,033.04	35.86	33.07	-91.79	927.90	1,694.19	1,110.40	1,044.83	65.56	16.936		
9,800.00	9,060.00	9,035.12	9,032.86	36.72	33.07	-91.70	927.91	1,694.19	1,011.01	945.42	65.59	15.414		
9,900.00	9,060.00	9,034.94	9,032.68	37.69	33.06	-91.61	927.91	1,694.19	911.75	846.12	65.63	13.893		
10,000.00	9,060.00	9,034.75	9,032.49	38.73	33.06	-91.52	927.91	1,694.19	812.67	746.98	65.68	12.373		
10,100.00	9,060.00	9,034.57	9,032.31	39.86	33.06	-91.43	927.91	1,694.19	713.84	648.08	65.76	10.855		
10,140.22	9,060.00	9,034.49	9,032.23	40.33	33.06	-91.39	927.91	1,694.19	674.19	608.38	65.81	10.245		
10,200.00	9,060.00	9,034.39	9,032.13	41.05	33.06	-91.21	927.92	1,694.19	615.52	549.62	65.90	9.340		
10,300.00	9,060.00	9,034.26	9,032.00	42.31	33.06	-91.00	927.92	1,694.19	518.66	452.48	66.17	7.838		
10,400.00	9,060.00	9,034.17	9,031.91	43.64	33.06	-90.88	927.92	1,694.19	424.48	357.71	66.77	6.357		
10,507.23	9,060.00	9,034.13	9,031.87	45.11	33.06	-90.80	927.92	1,694.19	329.29	260.99	68.29	4.822 Alert		
10,600.00	9,060.00	9,034.10	9,031.84	46.43	33.06	-90.83	927.92	1,694.19	254.92	183.73	71.19	3.581 Alert		
10,700.00	9,060.00	9,034.02	9,031.76	47.91	33.06	-90.82	927.92	1,694.19	190.50	113.58	76.92	2.477 Minor Risk		
10,800.00	9,060.00	9,033.90	9,031.64	49.42	33.06	-90.79	927.92	1,694.19	162.63	80.33	82.30	1.976 Minor Risk		
10,802.18	9,060.00	9,033.89	9,031.63	49.46	33.06	-90.79	927.92	1,694.19	162.61	80.28	82.34	1.975 Minor Risk, CC, ES, SF		
10,900.00	9,060.00	9,033.72	9,031.46	50.97	33.06	-90.72	927.92	1,694.19	188.33	108.61	79.72	2.362 Minor Risk		
11,000.00	9,060.00	9,033.50	9,031.24	52.55	33.06	-90.62	927.93	1,694.19	251.68	177.15	74.52	3.377 Alert		
11,100.00	9,060.00	9,033.22	9,030.96	54.14	33.06	-90.51	927.93	1,694.19	331.71	260.62	71.08	4.666 Alert		
11,207.23	9,060.00	9,032.88	9,030.62	55.87	33.06	-90.37	927.94	1,694.20	425.37	356.39	68.98	6.167		
11,300.00	9,060.00	9,032.57	9,030.32	57.39	33.06	-90.30	927.94	1,694.20	510.64	442.68	67.96	7.514		
11,400.00	9,060.00	9,032.29	9,030.03	59.06	33.06	-90.23	927.94	1,694.20	606.00	538.64	67.37	8.996		
11,506.63	9,060.00	9,032.04	9,029.78	60.88	33.05	-90.17	927.95	1,694.20	709.95	642.92	67.03	10.592		
11,600.00	9,060.00	9,031.85	9,029.59	62.49	33.05	-90.08	927.95	1,694.20	801.85	735.00	66.85	11.995		
11,700.00	9,060.00	9,031.64	9,029.38	64.24	33.05	-89.99	927.95	1,694.20	900.61	833.90	66.72	13.499		
11,800.00	9,060.00	9,031.43	9,029.17	66.01	33.05	-89.90	927.96	1,694.20	999.62	933.00	66.63	15.003		
11,900.00	9,060.00	9,031.22	9,028.96	67.79	33.05	-89.81	927.96	1,694.20	1,098.81	1,032.25	66.57	16.507		
12,000.00	9,060.00	9,031.01	9,028.75	69.58	33.05	-89.72	927.96	1,694.20	1,198.14	1,131.61	66.52	18.011		
12,100.00	9,060.00	9,030.80	9,028.54	71.39	33.05	-89.63	927.96	1,694.20	1,297.56	1,231.07	66.50	19.514		
12,200.00	9,060.00	9,030.59	9,028.33	73.21	33.05	-89.54	927.97	1,694.20	1,397.07	1,330.59	66.48	21.015		
12,300.00	9,060.00	9,030.37	9,028.11	75.05	33.05	-89.45	927.97	1,694.20	1,496.65	1,430.18	66.47	22.516		
12,400.00	9,060.00	9,030.16	9,027.90	76.89	33.05	-89.36	927.97	1,694.20	1,596.28	1,529.80	66.47	24.015		
12,500.00	9,060.00	9,029.95	9,027.69	78.74	33.05	-89.26	927.98	1,694.20	1,695.95	1,629.47	66.48	25.512		
12,600.00	9,060.00	9,029.73	9,027.47	80.61	33.05	-89.17	927.98	1,694.20	1,795.65	1,729.17	66.49	27.008		
12,700.00	9,060.00	9,029.52	9,027.26	82.48	33.05	-89.08	927.98	1,694.20	1,895.39	1,828.89	66.50	28.502		
12,800.00	9,060.00	9,029.30	9,027.04	84.36	33.05	-88.99	927.98	1,694.20	1,995.16	1,928.64	66.52	29.994		
12,900.00	9,060.00	9,029.08	9,026.83	86.24	33.04	-88.89	927.99	1,694.20	2,094.95	2,028.41	66.54	31.485		
13,000.00	9,060.00	9,028.87	9,026.61	88.14	33.04	-88.80	927.99	1,694.20	2,194.75	2,128.19	66.56	32.973		
13,100.00	9,060.00	9,028.65	9,026.39	90.04	33.04	-88.71	927.99	1,694.20	2,294.58	2,227.99	66.59	34.460		
13,200.00	9,060.00	9,028.43	9,026.17	91.94	33.04	-88.61	928.00	1,694.20	2,394.41	2,327.80	66.61	35.944		
13,300.00	9,060.00	9,028.21	9,025.95	93.86	33.04	-88.52	928.00	1,694.20	2,494.27	2,427.62	66.64	37.426		
13,400.00	9,060.00	9,027.99	9,025.73	95.77	33.04	-88.42	928.00	1,694.20	2,594.13	2,527.45	66.68	38.906		
13,500.00	9,060.00	9,027.77	9,025.51	97.70	33.04	-88.33	928.01	1,694.20	2,694.00	2,627.29	66.71	40.384		
13,600.00	9,060.00	9,027.55	9,025.29	99.62	33.04	-88.24	928.01	1,694.21	2,793.88	2,727.14	66.74	41.859		
13,700.00	9,060.00	9,027.33	9,025.07	101.56	33.04	-88.14	928.01	1,694.21	2,893.77	2,826.99	66.78	43.332		
13,800.00	9,060.00	9,027.11	9,024.85	103.49	33.04	-88.04	928.02	1,694.21	2,993.67	2,926.85	66.82	44.802		
13,900.00	9,060.00	9,026.88	9,024.63	105.43	33.04	-87.95	928.02	1,694.21	3,093.57	3,026.72	66.86	46.270		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	9,026.66	9,024.40	107.38	33.04	-87.85	928.02	1,694.21	3,193.48	3,126.58	66.90	47.736		
14,100.00	9,060.00	9,026.44	9,024.18	109.33	33.04	-87.76	928.02	1,694.21	3,293.40	3,226.46	66.94	49.198		
14,200.00	9,060.00	9,026.21	9,023.95	111.28	33.04	-87.66	928.03	1,694.21	3,393.32	3,326.34	66.98	50.658		
14,300.00	9,060.00	9,025.99	9,023.73	113.23	33.03	-87.56	928.03	1,694.21	3,493.24	3,426.22	67.03	52.115		
14,400.00	9,060.00	9,025.76	9,023.50	115.19	33.03	-87.47	928.03	1,694.21	3,593.17	3,526.10	67.07	53.570		
14,500.00	9,060.00	9,025.53	9,023.27	117.15	33.03	-87.37	928.04	1,694.21	3,693.11	3,625.99	67.12	55.021		
14,600.00	9,060.00	9,025.31	9,023.05	119.11	33.03	-87.27	928.04	1,694.21	3,793.04	3,725.87	67.17	56.470		
14,700.00	9,060.00	9,025.08	9,022.82	121.08	33.03	-87.17	928.04	1,694.21	3,892.98	3,825.76	67.22	57.916		
14,800.00	9,060.00	9,024.85	9,022.59	123.05	33.03	-87.08	928.05	1,694.21	3,992.93	3,925.66	67.27	59.359		
14,900.00	9,060.00	9,024.62	9,022.36	125.02	33.03	-86.98	928.05	1,694.21	4,092.87	4,025.55	67.32	60.798		
15,000.00	9,060.00	9,024.39	9,022.13	126.99	33.03	-86.88	928.05	1,694.21	4,192.82	4,125.45	67.37	62.235		
15,100.00	9,060.00	9,024.16	9,021.90	128.97	33.03	-86.78	928.06	1,694.21	4,292.77	4,225.35	67.42	63.669		
15,200.00	9,060.00	9,023.93	9,021.67	130.95	33.03	-86.68	928.06	1,694.21	4,392.72	4,325.24	67.48	65.099		
15,300.00	9,060.00	9,023.69	9,021.43	132.93	33.03	-86.58	928.06	1,694.21	4,492.68	4,425.14	67.53	66.527		
15,400.00	9,060.00	9,023.46	9,021.20	134.91	33.03	-86.48	928.07	1,694.21	4,592.63	4,525.05	67.59	67.951		
15,500.00	9,060.00	9,023.23	9,020.97	136.89	33.03	-86.38	928.07	1,694.21	4,692.59	4,624.95	67.64	69.371		
15,600.00	9,060.00	9,022.99	9,020.73	138.88	33.02	-86.28	928.07	1,694.21	4,792.55	4,724.85	67.70	70.789		
15,700.00	9,060.00	9,022.76	9,020.50	140.86	33.02	-86.18	928.07	1,694.21	4,892.51	4,824.75	67.76	72.203		
15,800.00	9,060.00	9,022.52	9,020.26	142.85	33.02	-86.08	928.08	1,694.22	4,992.48	4,924.66	67.82	73.614		
15,900.00	9,060.00	9,022.28	9,020.02	144.84	33.02	-85.98	928.08	1,694.22	5,092.44	5,024.56	67.88	75.021		
16,000.00	9,060.00	9,022.04	9,019.79	146.83	33.02	-85.88	928.08	1,694.22	5,192.41	5,124.47	67.94	76.425		
16,100.00	9,060.00	9,021.81	9,019.55	148.83	33.02	-85.77	928.09	1,694.22	5,292.38	5,224.37	68.00	77.825		
16,200.00	9,060.00	9,021.57	9,019.31	150.82	33.02	-85.67	928.09	1,694.22	5,392.35	5,324.28	68.07	79.222		
16,300.00	9,060.00	9,021.33	9,019.07	152.82	33.02	-85.57	928.09	1,694.22	5,492.32	5,424.19	68.13	80.615		
16,400.00	9,060.00	9,021.09	9,018.83	154.81	33.02	-85.47	928.10	1,694.22	5,592.29	5,524.09	68.19	82.005		
16,500.00	9,060.00	9,020.85	9,018.59	156.81	33.02	-85.36	928.10	1,694.22	5,692.26	5,624.00	68.26	83.391		
16,600.00	9,060.00	9,020.60	9,018.35	158.81	33.02	-85.26	928.10	1,694.22	5,792.23	5,723.90	68.33	84.774		
16,700.00	9,060.00	9,020.36	9,018.10	160.81	33.02	-85.16	928.11	1,694.22	5,892.20	5,823.81	68.39	86.152		
16,800.00	9,060.00	9,020.12	9,017.86	162.81	33.02	-85.05	928.11	1,694.22	5,992.18	5,923.72	68.46	87.527		
16,900.00	9,060.00	9,019.87	9,017.61	164.82	33.01	-84.95	928.11	1,694.22	6,092.15	6,023.63	68.53	88.899		
17,000.00	9,060.00	9,019.63	9,017.37	166.82	33.01	-84.85	928.12	1,694.22	6,192.13	6,123.53	68.60	90.266		
17,100.00	9,060.00	9,019.38	9,017.12	168.82	33.01	-84.74	928.12	1,694.22	6,292.11	6,223.44	68.67	91.630		
17,200.00	9,060.00	9,019.14	9,016.88	170.83	33.01	-84.64	928.12	1,694.22	6,392.09	6,323.35	68.74	92.990		
17,300.00	9,060.00	9,018.89	9,016.63	172.84	33.01	-84.53	928.13	1,694.22	6,492.06	6,423.25	68.81	94.346		
17,400.00	9,060.00	9,018.64	9,016.38	174.84	33.01	-84.43	928.13	1,694.22	6,592.04	6,523.16	68.88	95.698		
17,500.00	9,060.00	9,018.39	9,016.13	176.85	33.01	-84.32	928.13	1,694.22	6,692.02	6,623.07	68.96	97.046		
17,600.00	9,060.00	9,018.14	9,015.88	178.86	33.01	-84.21	928.14	1,694.22	6,792.00	6,722.97	69.03	98.390		
17,700.00	9,060.00	9,017.89	9,015.63	180.87	33.01	-84.11	928.14	1,694.22	6,891.98	6,822.88	69.11	99.731		
17,800.00	9,060.00	9,017.64	9,015.38	182.88	33.01	-84.00	928.15	1,694.22	6,991.96	6,922.78	69.18	101.067		
17,900.00	9,060.00	9,017.39	9,015.13	184.89	33.01	-83.89	928.15	1,694.23	7,091.95	7,022.69	69.26	102.400		
18,000.00	9,060.00	9,017.13	9,014.88	186.90	33.01	-83.79	928.15	1,694.23	7,191.93	7,122.59	69.33	103.728		
18,100.00	9,060.00	9,016.88	9,014.62	188.92	33.00	-83.68	928.16	1,694.23	7,291.91	7,222.50	69.41	105.052		
18,200.00	9,060.00	9,016.63	9,014.37	190.93	33.00	-83.57	928.16	1,694.23	7,391.90	7,322.40	69.49	106.373		
18,300.00	9,060.00	9,016.37	9,014.11	192.94	33.00	-83.46	928.16	1,694.23	7,491.88	7,422.31	69.57	107.689		
18,400.00	9,060.00	9,016.11	9,013.86	194.96	33.00	-83.36	928.17	1,694.23	7,591.86	7,522.21	69.65	109.001		
18,500.00	9,060.00	9,015.86	9,013.60	196.97	33.00	-83.25	928.17	1,694.23	7,691.85	7,622.12	69.73	110.309		
18,600.00	9,060.00	9,015.60	9,013.34	198.99	33.00	-83.14	928.17	1,694.23	7,791.83	7,722.02	69.81	111.613		
18,700.00	9,060.00	9,015.34	9,013.08	201.00	33.00	-83.03	928.18	1,694.23	7,891.82	7,821.92	69.89	112.913		
18,800.00	9,060.00	9,015.08	9,012.82	203.02	33.00	-82.92	928.18	1,694.23	7,991.80	7,921.83	69.98	114.209		
18,900.00	9,060.00	9,014.82	9,012.56	205.04	33.00	-82.81	928.18	1,694.23	8,091.79	8,021.73	70.06	115.500		
19,000.00	9,060.00	9,014.56	9,012.30	207.06	33.00	-82.70	928.19	1,694.23	8,191.78	8,121.63	70.14	116.787		
19,100.00	9,060.00	9,014.30	9,012.04	209.07	33.00	-82.59	928.19	1,694.23	8,291.76	8,221.54	70.23	118.071		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	9,014.03	9,011.78	211.09	32.99	-82.48	928.19	1,694.23	8,391.75	8,321.44	70.31	119.349	
19,300.00	9,060.00	9,013.77	9,011.51	213.11	32.99	-82.37	928.20	1,694.23	8,491.74	8,421.34	70.40	120.624	
19,400.00	9,060.00	9,013.51	9,011.25	215.13	32.99	-82.26	928.20	1,694.23	8,591.72	8,521.24	70.48	121.895	
19,500.32	9,060.00	9,013.24	9,010.98	217.16	32.99	-82.14	928.21	1,694.23	8,692.03	8,621.46	70.57	123.165	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	172.62	-2,937.12	380.22	2,961.70					
100.00	100.00	78.40	78.40	0.52	1.14	172.62	-2,937.12	380.22	2,961.62	2,959.97	1.66	1,786.635		
200.00	200.00	178.40	178.40	0.70	2.57	172.62	-2,937.12	380.22	2,961.62	2,958.35	3.27	904.804		
300.00	300.00	278.40	278.40	0.99	4.05	172.62	-2,937.12	380.22	2,961.62	2,956.59	5.04	587.858		
400.00	400.00	378.40	378.40	1.31	5.54	172.62	-2,937.12	380.22	2,961.62	2,954.78	6.85	432.416		
500.00	500.00	478.40	478.40	1.65	7.03	172.62	-2,937.12	380.22	2,961.62	2,952.95	8.68	341.246		
600.00	600.00	578.40	578.40	1.99	8.53	172.62	-2,937.12	380.22	2,961.62	2,951.11	10.52	281.580		
700.00	700.00	678.40	678.40	2.34	10.02	172.62	-2,937.12	380.22	2,961.62	2,949.26	12.36	239.574		
800.00	800.00	778.40	778.40	2.69	11.52	172.62	-2,937.12	380.22	2,961.62	2,947.42	14.21	208.428		
900.00	900.00	878.40	878.40	3.04	13.02	172.62	-2,937.12	380.22	2,961.62	2,945.57	16.06	184.425		
1,000.00	1,000.00	978.40	978.40	3.40	14.51	172.62	-2,937.12	380.22	2,961.62	2,943.72	17.91	165.366		
1,100.00	1,100.00	1,078.40	1,078.40	3.75	16.01	172.62	-2,937.12	380.22	2,961.62	2,941.86	19.76	149.870		
1,200.00	1,200.00	1,178.40	1,178.40	4.11	17.51	172.62	-2,937.12	380.22	2,961.62	2,940.01	21.61	137.025		
1,300.00	1,300.00	1,278.40	1,278.40	4.46	19.00	172.62	-2,937.12	380.22	2,961.62	2,938.16	23.47	126.205		
1,400.00	1,400.00	1,378.40	1,378.40	4.82	20.50	172.62	-2,937.12	380.22	2,961.62	2,936.30	25.32	116.966		
1,500.00	1,500.00	1,478.40	1,478.40	5.18	22.00	172.62	-2,937.12	380.22	2,961.62	2,934.45	27.17	108.986		
1,600.00	1,600.00	1,578.40	1,578.40	5.53	23.49	172.62	-2,937.12	380.22	2,961.62	2,932.60	29.03	102.025		
1,700.00	1,700.00	1,678.40	1,678.40	5.89	24.99	172.62	-2,937.12	380.22	2,961.62	2,930.74	30.88	95.898		
1,800.00	1,800.00	1,778.40	1,778.40	6.25	26.49	172.62	-2,937.12	380.22	2,961.62	2,928.89	32.74	90.466		
1,900.00	1,900.00	1,878.40	1,878.40	6.61	27.99	172.62	-2,937.12	380.22	2,961.62	2,927.03	34.59	85.615		
2,000.00	2,000.00	1,978.40	1,978.40	6.96	29.48	172.62	-2,937.12	380.22	2,961.62	2,925.18	36.45	81.258		
2,100.00	2,100.00	2,078.40	2,078.40	7.32	30.98	172.62	-2,937.12	380.22	2,961.62	2,923.32	38.30	77.322		
2,200.00	2,200.00	2,178.40	2,178.40	7.68	32.48	172.62	-2,937.12	380.22	2,961.62	2,921.47	40.16	73.750		
2,300.00	2,300.00	2,278.40	2,278.40	8.04	33.98	172.62	-2,937.12	380.22	2,961.62	2,919.61	42.01	70.494		
2,350.00	2,350.00	2,328.40	2,328.40	8.22	34.72	172.62	-2,937.12	380.22	2,961.62	2,918.68	42.94	68.971 CC		
2,400.00	2,400.00	2,378.40	2,378.40	8.39	35.47	-171.34	-2,937.12	380.22	2,961.84	2,917.97	43.87	67.518		
2,500.00	2,499.98	2,478.38	2,478.38	8.75	36.97	-171.34	-2,937.12	380.22	2,963.57	2,917.84	45.72	64.817 ES		
2,600.00	2,599.92	2,578.32	2,578.32	9.11	38.47	-171.34	-2,937.12	380.22	2,967.02	2,919.44	47.58	62.364		
2,700.00	2,699.78	2,678.18	2,678.18	9.47	39.96	-171.35	-2,937.12	380.22	2,972.19	2,922.76	49.43	60.131		
2,800.00	2,799.54	2,777.94	2,777.94	9.82	41.46	-171.36	-2,937.12	380.22	2,979.09	2,927.81	51.28	58.095		
2,900.00	2,899.16	2,877.56	2,877.56	10.18	42.95	-171.37	-2,937.12	380.22	2,987.70	2,934.58	53.13	56.235		
3,000.00	2,998.61	2,977.01	2,977.01	10.54	44.44	-171.39	-2,937.12	380.22	2,998.04	2,943.07	54.97	54.535		
3,100.00	3,097.86	3,076.26	3,076.26	10.89	45.92	-171.40	-2,937.12	380.22	3,010.09	2,953.27	56.82	52.978		
3,200.00	3,196.89	3,175.29	3,175.29	11.25	47.41	-171.42	-2,937.12	380.22	3,023.86	2,965.20	58.66	51.552		
3,295.74	3,291.45	3,269.85	3,269.85	11.59	48.82	-171.44	-2,937.12	380.22	3,038.63	2,978.22	60.41	50.297		
3,300.00	3,295.65	3,274.05	3,274.05	11.61	48.89	-171.44	-2,937.12	380.22	3,039.33	2,978.83	60.49	50.243		
3,400.00	3,394.29	3,372.69	3,372.69	11.97	50.36	-171.49	-2,937.12	380.22	3,055.58	2,993.26	62.33	49.026		
3,500.00	3,492.94	3,471.34	3,471.34	12.33	51.84	-171.54	-2,937.12	380.22	3,071.84	3,007.68	64.16	47.878		
3,600.00	3,591.58	3,569.98	3,569.98	12.69	53.32	-171.58	-2,937.12	380.22	3,088.10	3,022.10	65.99	46.794		
3,700.00	3,690.22	3,668.62	3,668.62	13.05	54.80	-171.63	-2,937.12	380.22	3,104.36	3,036.53	67.83	45.767		
3,800.00	3,788.86	3,767.26	3,767.26	13.41	56.27	-171.67	-2,937.12	380.22	3,120.62	3,050.95	69.67	44.794		
3,900.00	3,887.50	3,865.90	3,865.90	13.77	57.75	-171.71	-2,937.12	380.22	3,136.88	3,065.38	71.50	43.870		
4,000.00	3,986.14	3,964.54	3,964.54	14.14	59.23	-171.76	-2,937.12	380.22	3,153.15	3,079.81	73.34	42.993		
4,100.00	4,084.78	4,063.18	4,063.18	14.50	60.70	-171.80	-2,937.12	380.22	3,169.41	3,094.23	75.18	42.158		
4,200.00	4,183.42	4,161.82	4,161.82	14.87	62.18	-171.84	-2,937.12	380.22	3,185.68	3,108.66	77.02	41.362		
4,300.00	4,282.06	4,260.46	4,260.46	15.24	63.66	-171.88	-2,937.12	380.22	3,201.95	3,123.09	78.86	40.604		
4,400.00	4,380.70	4,359.10	4,359.10	15.60	65.14	-171.92	-2,937.12	380.22	3,218.22	3,137.53	80.70	39.879		
4,500.00	4,479.34	4,457.74	4,457.74	15.97	66.61	-171.96	-2,937.12	380.22	3,234.50	3,151.96	82.54	39.187		
4,600.00	4,577.98	4,556.38	4,556.38	16.34	68.09	-172.00	-2,937.12	380.22	3,250.77	3,166.39	84.38	38.525		
4,700.00	4,676.62	4,655.02	4,655.02	16.71	69.57	-172.04	-2,937.12	380.22	3,267.05	3,180.83	86.22	37.891		
4,800.00	4,775.27	4,753.67	4,753.67	17.08	71.05	-172.08	-2,937.12	380.22	3,283.33	3,195.26	88.06	37.283		
4,900.00	4,873.91	4,852.31	4,852.31	17.45	72.52	-172.12	-2,937.12	380.22	3,299.61	3,209.70	89.91	36.700		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,950.95	4,950.95	17.82	74.00	-172.16	-2,937.12	380.22	3,315.89	3,224.14	91.75	36.141		
5,100.00	5,071.19	5,049.59	5,049.59	18.19	75.48	-172.20	-2,937.12	380.22	3,332.17	3,238.58	93.59	35.603		
5,200.00	5,169.83	5,148.23	5,148.23	18.56	76.95	-172.24	-2,937.12	380.22	3,348.46	3,253.02	95.44	35.086		
5,300.00	5,268.47	5,246.87	5,246.87	18.93	78.43	-172.28	-2,937.12	380.22	3,364.74	3,267.46	97.28	34.588		
5,400.00	5,367.11	5,345.51	5,345.51	19.31	79.91	-172.31	-2,937.12	380.22	3,381.03	3,281.91	99.12	34.109		
5,500.00	5,465.75	5,444.15	5,444.15	19.68	81.39	-172.35	-2,937.12	380.22	3,397.32	3,296.35	100.97	33.648		
5,600.00	5,564.39	5,542.79	5,542.79	20.05	82.86	-172.39	-2,937.12	380.22	3,413.61	3,310.79	102.81	33.202		
5,700.00	5,663.03	5,641.43	5,641.43	20.42	84.34	-172.42	-2,937.12	380.22	3,429.90	3,325.24	104.66	32.773		
5,800.00	5,761.67	5,740.07	5,740.07	20.80	85.82	-172.46	-2,937.12	380.22	3,446.19	3,339.69	106.50	32.358		
5,900.00	5,860.31	5,838.71	5,838.71	21.17	87.29	-172.50	-2,937.12	380.22	3,462.48	3,354.14	108.35	31.957		
6,000.00	5,958.96	5,937.36	5,937.36	21.54	88.77	-172.53	-2,937.12	380.22	3,478.78	3,368.59	110.19	31.570		
6,100.00	6,057.60	6,036.00	6,036.00	21.92	90.25	-172.57	-2,937.12	380.22	3,495.08	3,383.04	112.04	31.196		
6,200.00	6,156.24	6,134.64	6,134.64	22.29	91.73	-172.60	-2,937.12	380.22	3,511.37	3,397.49	113.88	30.833		
6,300.00	6,254.88	6,233.28	6,233.28	22.67	93.20	-172.64	-2,937.12	380.22	3,527.67	3,411.94	115.73	30.482		
6,400.00	6,353.52	6,331.92	6,331.92	23.04	94.68	-172.67	-2,937.12	380.22	3,543.97	3,426.40	117.58	30.142		
6,500.00	6,452.16	6,430.56	6,430.56	23.42	96.16	-172.70	-2,937.12	380.22	3,560.27	3,440.85	119.42	29.813		
6,600.00	6,550.80	6,529.20	6,529.20	23.79	97.64	-172.74	-2,937.12	380.22	3,576.58	3,455.31	121.27	29.493		
6,700.00	6,649.44	6,627.84	6,627.84	24.17	99.11	-172.77	-2,937.12	380.22	3,592.88	3,469.76	123.12	29.183		
6,800.00	6,748.08	6,726.48	6,726.48	24.54	100.59	-172.80	-2,937.12	380.22	3,609.18	3,484.22	124.96	28.882		
6,900.00	6,846.72	6,825.12	6,825.12	24.92	102.07	-172.84	-2,937.12	380.22	3,625.49	3,498.68	126.81	28.590		
7,000.00	6,945.36	6,923.76	6,923.76	25.29	103.54	-172.87	-2,937.12	380.22	3,641.80	3,513.14	128.66	28.306		
7,100.00	7,044.00	7,022.40	7,022.40	25.67	105.02	-172.90	-2,937.12	380.22	3,658.11	3,527.60	130.50	28.031		
7,200.00	7,142.65	7,121.05	7,121.05	26.04	106.50	-172.93	-2,937.12	380.22	3,674.41	3,542.06	132.35	27.763		
7,300.00	7,241.29	7,219.69	7,219.69	26.42	107.98	-172.96	-2,937.12	380.22	3,690.73	3,556.53	134.20	27.502		
7,400.00	7,339.93	7,318.33	7,318.33	26.79	109.45	-172.99	-2,937.12	380.22	3,707.04	3,570.99	136.05	27.248		
7,500.00	7,438.57	7,416.97	7,416.97	27.17	110.93	-173.02	-2,937.12	380.22	3,723.35	3,585.46	137.89	27.002		
7,571.77	7,509.37	7,487.77	7,487.77	27.44	111.99	-173.05	-2,937.12	380.22	3,735.06	3,595.84	139.22	26.828		
7,600.00	7,537.23	7,515.63	7,515.63	27.55	112.41	-173.06	-2,937.12	380.22	3,739.56	3,599.82	139.74	26.760		
7,700.00	7,636.18	7,614.58	7,614.58	27.92	113.89	-173.12	-2,937.12	380.22	3,753.87	3,612.27	141.59	26.512		
7,800.00	7,735.48	7,713.88	7,713.88	28.29	115.38	-173.16	-2,937.12	380.22	3,765.59	3,622.15	143.45	26.251		
7,900.00	7,835.05	7,813.45	7,813.45	28.65	116.87	-173.19	-2,937.12	380.22	3,774.74	3,629.44	145.30	25.979		
8,000.00	7,934.83	7,913.23	7,913.23	29.01	118.36	-173.21	-2,937.12	380.22	3,781.29	3,634.14	147.15	25.696		
8,100.00	8,034.74	8,013.14	8,013.14	29.36	119.86	-173.23	-2,937.12	380.22	3,785.25	3,636.24	149.01	25.403		
8,202.27	8,137.00	8,115.40	8,115.40	29.72	121.39	170.73	-2,937.12	380.22	3,786.61	3,635.71	150.90	25.094		
8,300.00	8,234.73	8,213.13	8,213.13	30.06	122.85	170.73	-2,937.12	380.22	3,786.61	3,633.91	152.70	24.798		
8,400.00	8,334.73	8,313.13	8,313.13	30.41	124.35	170.73	-2,937.12	380.22	3,786.61	3,632.06	154.55	24.501		
8,500.00	8,434.73	8,413.13	8,413.13	30.75	125.85	170.73	-2,937.12	380.22	3,786.61	3,630.22	156.39	24.212		
8,552.31	8,487.04	8,465.44	8,465.44	30.94	126.63	170.73	-2,937.12	380.22	3,786.61	3,629.25	157.36	24.063		
8,600.00	8,534.68	8,513.08	8,513.08	31.10	127.35	81.13	-2,937.12	380.22	3,786.30	3,628.07	158.23	23.928		
8,650.00	8,584.26	8,562.66	8,562.66	31.26	128.09	81.32	-2,937.12	380.22	3,785.33	3,626.19	159.14	23.786		
8,700.00	8,633.10	8,611.50	8,611.50	31.43	128.82	81.63	-2,937.12	380.22	3,783.72	3,623.68	160.03	23.643		
8,750.00	8,680.83	8,659.23	8,659.23	31.58	129.54	82.06	-2,937.12	380.22	3,781.51	3,620.61	160.91	23.501		
8,800.00	8,727.09	8,705.49	8,705.49	31.74	130.23	82.60	-2,937.12	380.22	3,778.78	3,617.03	161.76	23.361		
8,850.00	8,771.52	8,749.92	8,749.92	31.89	130.89	83.22	-2,937.12	380.22	3,775.61	3,613.03	162.58	23.224		
8,900.00	8,813.78	8,792.18	8,792.18	32.04	131.53	83.91	-2,937.12	380.22	3,772.08	3,608.71	163.36	23.090		
8,950.00	8,853.56	8,831.96	8,831.96	32.18	132.12	84.65	-2,937.12	380.22	3,768.30	3,604.18	164.11	22.962		
9,000.00	8,890.55	8,868.95	8,868.95	32.32	132.68	85.42	-2,937.12	380.22	3,764.38	3,599.56	164.83	22.839		
9,050.00	8,924.46	8,902.86	8,902.86	32.47	133.18	86.20	-2,937.12	380.22	3,760.45	3,594.95	165.50	22.722		
9,100.00	8,955.05	8,933.45	8,933.45	32.63	133.64	86.95	-2,937.12	380.22	3,756.60	3,590.48	166.13	22.613		
9,150.00	8,982.08	8,960.48	8,960.48	32.79	134.05	87.66	-2,937.12	380.22	3,752.97	3,586.25	166.72	22.511		
9,200.00	9,005.34	8,983.74	8,983.74	32.97	134.40	88.31	-2,937.12	380.22	3,749.65	3,582.38	167.26	22.418		
9,250.00	9,024.65	9,003.05	9,003.05	33.17	134.68	88.87	-2,937.12	380.22	3,746.74	3,578.97	167.77	22.333		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,300.00	9,039.87	9,018.27	9,018.27	33.38	134.91	89.33	-2,937.12	380.22	3,744.34	3,576.11	168.23	22.257	
9,350.00	9,050.89	9,029.29	9,029.29	33.62	135.08	89.68	-2,937.12	380.22	3,742.50	3,573.85	168.65	22.192	
9,400.00	9,057.61	9,036.01	9,036.01	33.87	135.18	89.91	-2,937.12	380.22	3,741.28	3,572.26	169.01	22.136	
9,452.31	9,060.00	9,038.40	9,038.40	34.15	135.21	90.00	-2,937.12	380.22	3,740.70	3,571.36	169.34	22.090	
9,467.38	9,060.00	9,038.40	9,038.40	34.24	135.21	90.00	-2,937.12	380.22	3,740.67	3,571.24	169.43	22.078	
9,500.00	9,060.00	9,038.40	9,038.40	34.42	135.21	90.00	-2,937.12	380.22	3,740.81	3,571.19	169.62	22.054	
9,600.00	9,060.00	9,038.40	9,038.40	35.09	135.21	90.00	-2,937.12	380.22	3,743.02	3,572.72	170.30	21.979	
9,700.00	9,060.00	9,038.40	9,038.40	35.86	135.21	90.00	-2,937.12	380.22	3,747.90	3,576.83	171.07	21.909	
9,800.00	9,060.00	9,038.40	9,038.40	36.72	135.21	90.00	-2,937.12	380.22	3,755.43	3,583.51	171.92	21.844	
9,900.00	9,060.00	9,038.40	9,038.40	37.69	135.21	90.00	-2,937.12	380.22	3,765.61	3,592.75	172.85	21.785	
10,000.00	9,060.00	9,038.40	9,038.40	38.73	135.21	90.00	-2,937.12	380.22	3,778.40	3,604.55	173.85	21.734	
10,100.00	9,060.00	9,038.40	9,038.40	39.86	135.21	90.00	-2,937.12	380.22	3,793.79	3,618.89	174.89	21.692	
10,140.22	9,060.00	9,038.40	9,038.40	40.33	135.21	90.00	-2,937.12	380.22	3,800.70	3,625.38	175.33	21.678	
10,200.00	9,060.00	9,038.40	9,038.40	41.05	135.21	90.00	-2,937.12	380.22	3,811.13	3,635.14	175.99	21.656	
10,300.00	9,060.00	9,038.40	9,038.40	42.31	135.21	90.00	-2,937.12	380.22	3,827.85	3,650.73	177.12	21.611	
10,400.00	9,060.00	9,038.40	9,038.40	43.64	135.21	90.00	-2,937.12	380.22	3,843.67	3,665.37	178.30	21.557	
10,507.23	9,060.00	9,038.40	9,038.40	45.11	135.21	90.00	-2,937.12	380.22	3,859.63	3,680.03	179.60	21.491	
10,600.00	9,060.00	9,038.40	9,038.40	46.43	135.21	90.00	-2,937.12	380.22	3,875.55	3,694.81	180.73	21.443	
10,700.00	9,060.00	9,038.40	9,038.40	47.91	135.21	90.00	-2,937.12	380.22	3,898.38	3,716.42	181.96	21.424 SF	
10,800.00	9,060.00	9,038.40	9,038.40	49.42	135.21	90.00	-2,937.12	380.22	3,926.99	3,743.81	183.18	21.438	
10,900.00	9,060.00	9,038.40	9,038.40	50.97	135.21	90.00	-2,937.12	380.22	3,961.20	3,776.83	184.37	21.486	
11,000.00	9,060.00	9,038.40	9,038.40	52.55	135.21	90.00	-2,937.12	380.22	4,000.83	3,815.31	185.52	21.566	
11,100.00	9,060.00	9,038.40	9,038.40	54.14	135.21	90.00	-2,937.12	380.22	4,045.67	3,859.05	186.63	21.678	
11,207.23	9,060.00	9,038.40	9,038.40	55.87	135.21	90.00	-2,937.12	380.22	4,099.30	3,911.54	187.76	21.833	
11,300.00	9,060.00	9,038.40	9,038.40	57.39	135.21	90.00	-2,937.12	380.22	4,147.57	3,958.86	188.71	21.978	
11,400.00	9,060.00	9,038.40	9,038.40	59.06	135.21	90.00	-2,937.12	380.22	4,198.43	4,008.69	189.74	22.128	
11,506.63	9,060.00	9,038.40	9,038.40	60.88	135.21	90.00	-2,937.12	380.22	4,251.29	4,060.46	190.83	22.278	
11,600.00	9,060.00	9,038.40	9,038.40	62.49	135.21	90.00	-2,937.12	380.22	4,297.73	4,105.96	191.77	22.410	
11,700.00	9,060.00	9,038.40	9,038.40	64.24	135.21	90.00	-2,937.12	380.22	4,349.14	4,156.38	192.76	22.563	
11,800.00	9,060.00	9,038.40	9,038.40	66.01	135.21	90.00	-2,937.12	380.22	4,402.23	4,208.51	193.71	22.725	
11,900.00	9,060.00	9,038.40	9,038.40	67.79	135.21	90.00	-2,937.12	380.22	4,456.92	4,262.28	194.64	22.898	
12,000.00	9,060.00	9,038.40	9,038.40	69.58	135.21	90.00	-2,937.12	380.22	4,513.17	4,317.64	195.53	23.081	
12,100.00	9,060.00	9,038.40	9,038.40	71.39	135.21	90.00	-2,937.12	380.22	4,570.91	4,374.52	196.40	23.274	
12,200.00	9,060.00	9,038.40	9,038.40	73.21	135.21	90.00	-2,937.12	380.22	4,630.10	4,432.87	197.23	23.476	
12,300.00	9,060.00	9,038.40	9,038.40	75.05	135.21	90.00	-2,937.12	380.22	4,690.67	4,492.63	198.03	23.686	
12,400.00	9,060.00	9,038.40	9,038.40	76.89	135.21	90.00	-2,937.12	380.22	4,752.57	4,553.76	198.81	23.905	
12,500.00	9,060.00	9,038.40	9,038.40	78.74	135.21	90.00	-2,937.12	380.22	4,815.75	4,616.19	199.55	24.132	
12,600.00	9,060.00	9,038.40	9,038.40	80.61	135.21	90.00	-2,937.12	380.22	4,880.16	4,679.89	200.27	24.368	
12,700.00	9,060.00	9,038.40	9,038.40	82.48	135.21	90.00	-2,937.12	380.22	4,945.76	4,744.80	200.96	24.610	
12,800.00	9,060.00	9,038.40	9,038.40	84.36	135.21	90.00	-2,937.12	380.22	5,012.49	4,810.86	201.63	24.860	
12,900.00	9,060.00	9,038.40	9,038.40	86.24	135.21	90.00	-2,937.12	380.22	5,080.32	4,878.05	202.27	25.117	
13,000.00	9,060.00	9,038.40	9,038.40	88.14	135.21	90.00	-2,937.12	380.22	5,149.19	4,946.31	202.88	25.380	
13,100.00	9,060.00	9,038.40	9,038.40	90.04	135.21	90.00	-2,937.12	380.22	5,219.07	5,015.60	203.47	25.650	
13,200.00	9,060.00	9,038.40	9,038.40	91.94	135.21	90.00	-2,937.12	380.22	5,289.92	5,085.88	204.04	25.926	
13,300.00	9,060.00	9,038.40	9,038.40	93.86	135.21	90.00	-2,937.12	380.22	5,361.70	5,157.12	204.58	26.208	
13,400.00	9,060.00	9,038.40	9,038.40	95.77	135.21	90.00	-2,937.12	380.22	5,434.37	5,229.26	205.11	26.495	
13,500.00	9,060.00	9,038.40	9,038.40	97.70	135.21	90.00	-2,937.12	380.22	5,507.90	5,302.29	205.61	26.788	
13,600.00	9,060.00	9,038.40	9,038.40	99.62	135.21	90.00	-2,937.12	380.22	5,582.25	5,376.15	206.09	27.086	
13,700.00	9,060.00	9,038.40	9,038.40	101.56	135.21	90.00	-2,937.12	380.22	5,657.39	5,450.83	206.56	27.389	
13,800.00	9,060.00	9,038.40	9,038.40	103.49	135.21	90.00	-2,937.12	380.22	5,733.29	5,526.28	207.00	27.697	
13,900.00	9,060.00	9,038.40	9,038.40	105.43	135.21	90.00	-2,937.12	380.22	5,809.92	5,602.48	207.43	28.009	
14,000.00	9,060.00	9,038.40	9,038.40	107.38	135.21	90.00	-2,937.12	380.22	5,887.25	5,679.40	207.85	28.325	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1													Offset Site Error:		0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
14,100.00	9,060.00	9,038.40	9,038.40	109.33	135.21	90.00	-2,937.12	380.22	5,965.25	5,757.01	208.24	28.646			
14,200.00	9,060.00	9,038.40	9,038.40	111.28	135.21	90.00	-2,937.12	380.22	6,043.90	5,835.28	208.62	28.970			
14,300.00	9,060.00	9,038.40	9,038.40	113.23	135.21	90.00	-2,937.12	380.22	6,123.18	5,914.19	208.99	29.299			
14,400.00	9,060.00	9,038.40	9,038.40	115.19	135.21	90.00	-2,937.12	380.22	6,203.05	5,993.71	209.34	29.631			
14,500.00	9,060.00	9,038.40	9,038.40	117.15	135.21	90.00	-2,937.12	380.22	6,283.50	6,073.82	209.68	29.967			
14,600.00	9,060.00	9,038.40	9,038.40	119.11	135.21	90.00	-2,937.12	380.22	6,364.51	6,154.50	210.01	30.306			
14,700.00	9,060.00	9,038.40	9,038.40	121.08	135.21	90.00	-2,937.12	380.22	6,446.05	6,235.72	210.33	30.648			
14,800.00	9,060.00	9,038.40	9,038.40	123.05	135.21	90.00	-2,937.12	380.22	6,528.10	6,317.47	210.63	30.993			
14,900.00	9,060.00	9,038.40	9,038.40	125.02	135.21	90.00	-2,937.12	380.22	6,610.64	6,399.72	210.92	31.341			
15,000.00	9,060.00	9,038.40	9,038.40	126.99	135.21	90.00	-2,937.12	380.22	6,693.67	6,482.46	211.21	31.693			
15,100.00	9,060.00	9,038.40	9,038.40	128.97	135.21	90.00	-2,937.12	380.22	6,777.15	6,565.67	211.48	32.046			
15,200.00	9,060.00	9,038.40	9,038.40	130.95	135.21	90.00	-2,937.12	380.22	6,861.07	6,649.33	211.74	32.403			
15,300.00	9,060.00	9,038.40	9,038.40	132.93	135.21	90.00	-2,937.12	380.22	6,945.42	6,733.42	212.00	32.762			
15,400.00	9,060.00	9,038.40	9,038.40	134.91	135.21	90.00	-2,937.12	380.22	7,030.17	6,817.93	212.24	33.124			
15,500.00	9,060.00	9,038.40	9,038.40	136.89	135.21	90.00	-2,937.12	380.22	7,115.33	6,902.85	212.48	33.487			
15,600.00	9,060.00	9,038.40	9,038.40	138.88	135.21	90.00	-2,937.12	380.22	7,200.86	6,988.16	212.71	33.853			
15,700.00	9,060.00	9,038.40	9,038.40	140.86	135.21	90.00	-2,937.12	380.22	7,286.77	7,073.84	212.93	34.221			
15,800.00	9,060.00	9,038.40	9,038.40	142.85	135.21	90.00	-2,937.12	380.22	7,373.03	7,159.88	213.14	34.592			
15,900.00	9,060.00	9,038.40	9,038.40	144.84	135.21	90.00	-2,937.12	380.22	7,459.63	7,246.28	213.35	34.964			
16,000.00	9,060.00	9,038.40	9,038.40	146.83	135.21	90.00	-2,937.12	380.22	7,546.57	7,333.01	213.55	35.338			
16,100.00	9,060.00	9,038.40	9,038.40	148.83	135.21	90.00	-2,937.12	380.22	7,633.82	7,420.07	213.75	35.714			
16,200.00	9,060.00	9,038.40	9,038.40	150.82	135.21	90.00	-2,937.12	380.22	7,721.38	7,507.44	213.94	36.092			
16,300.00	9,060.00	9,038.40	9,038.40	152.82	135.21	90.00	-2,937.12	380.22	7,809.24	7,595.12	214.12	36.471			
16,400.00	9,060.00	9,038.40	9,038.40	154.81	135.21	90.00	-2,937.12	380.22	7,897.39	7,683.10	214.30	36.852			
16,500.00	9,060.00	9,038.40	9,038.40	156.81	135.21	90.00	-2,937.12	380.22	7,985.82	7,771.35	214.47	37.235			
16,600.00	9,060.00	9,038.40	9,038.40	158.81	135.21	90.00	-2,937.12	380.22	8,074.52	7,859.88	214.64	37.619			
16,700.00	9,060.00	9,038.40	9,038.40	160.81	135.21	90.00	-2,937.12	380.22	8,163.48	7,948.68	214.80	38.004			
16,800.00	9,060.00	9,038.40	9,038.40	162.81	135.21	90.00	-2,937.12	380.22	8,252.70	8,037.74	214.96	38.391			
16,900.00	9,060.00	9,038.40	9,038.40	164.82	135.21	90.00	-2,937.12	380.22	8,342.16	8,127.04	215.12	38.780			
17,000.00	9,060.00	9,038.40	9,038.40	166.82	135.21	90.00	-2,937.12	380.22	8,431.85	8,216.58	215.27	39.169			
17,100.00	9,060.00	9,038.40	9,038.40	168.82	135.21	90.00	-2,937.12	380.22	8,521.78	8,306.36	215.41	39.560			
17,200.00	9,060.00	9,038.40	9,038.40	170.83	135.21	90.00	-2,937.12	380.22	8,611.92	8,396.37	215.56	39.952			
17,300.00	9,060.00	9,038.40	9,038.40	172.84	135.21	90.00	-2,937.12	380.22	8,702.29	8,486.59	215.70	40.345			
17,400.00	9,060.00	9,038.40	9,038.40	174.84	135.21	90.00	-2,937.12	380.22	8,792.86	8,577.02	215.83	40.739			
17,500.00	9,060.00	9,038.40	9,038.40	176.85	135.21	90.00	-2,937.12	380.22	8,883.63	8,667.66	215.97	41.135			
17,600.00	9,060.00	9,038.40	9,038.40	178.86	135.21	90.00	-2,937.12	380.22	8,974.60	8,758.50	216.09	41.531			
17,700.00	9,060.00	9,038.40	9,038.40	180.87	135.21	90.00	-2,937.12	380.22	9,065.76	8,849.54	216.22	41.928			
17,800.00	9,060.00	9,038.40	9,038.40	182.88	135.21	90.00	-2,937.12	380.22	9,157.10	8,940.76	216.35	42.326			
17,900.00	9,060.00	9,038.40	9,038.40	184.89	135.21	90.00	-2,937.12	380.22	9,248.63	9,032.16	216.47	42.725			
18,000.00	9,060.00	9,038.40	9,038.40	186.90	135.21	90.00	-2,937.12	380.22	9,340.32	9,123.74	216.58	43.125			
18,100.00	9,060.00	9,038.40	9,038.40	188.92	135.21	90.00	-2,937.12	380.22	9,432.19	9,215.49	216.70	43.526			
18,200.00	9,060.00	9,038.40	9,038.40	190.93	135.21	90.00	-2,937.12	380.22	9,524.22	9,307.40	216.81	43.928			
18,300.00	9,060.00	9,038.40	9,038.40	192.94	135.21	90.00	-2,937.12	380.22	9,616.41	9,399.48	216.93	44.330			
18,400.00	9,060.00	9,038.40	9,038.40	194.96	135.21	90.00	-2,937.12	380.22	9,708.75	9,491.71	217.04	44.734			
18,500.00	9,060.00	9,038.40	9,038.40	196.97	135.21	90.00	-2,937.12	380.22	9,801.24	9,584.10	217.14	45.137			
18,600.00	9,060.00	9,038.40	9,038.40	198.99	135.21	90.00	-2,937.12	380.22	9,893.88	9,676.63	217.25	45.542			
18,700.00	9,060.00	9,038.40	9,038.40	201.00	135.21	90.00	-2,937.12	380.22	9,986.66	9,769.31	217.35	45.947			

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	10.00	110.53	-140.75	375.86	402.10				
100.00	100.00	75.40	75.40	0.52	10.09	110.53	-140.75	375.86	401.35	390.74	10.60	37.846	
200.00	200.00	175.40	175.40	0.70	10.55	110.53	-140.75	375.86	401.35	390.10	11.25	35.684	
300.00	300.00	275.40	275.40	0.99	11.35	110.53	-140.75	375.86	401.35	389.01	12.34	32.530	
400.00	400.00	375.40	375.40	1.31	12.44	110.53	-140.75	375.86	401.35	387.60	13.75	29.199	
500.00	500.00	475.40	475.40	1.65	13.74	110.53	-140.75	375.86	401.35	385.97	15.38	26.093	
600.00	600.00	575.40	575.40	1.99	15.19	110.53	-140.75	375.86	401.35	384.16	17.18	23.355	
700.00	700.00	675.40	675.40	2.34	16.77	110.53	-140.75	375.86	401.35	382.24	19.11	21.003	
800.00	800.00	775.40	775.40	2.69	18.43	110.53	-140.75	375.86	401.35	380.22	21.12	18.999	
900.00	900.00	875.40	875.40	3.04	20.16	110.53	-140.75	375.86	401.35	378.14	23.21	17.294	
1,000.00	1,000.00	975.40	975.40	3.40	21.94	110.53	-140.75	375.86	401.35	376.01	25.34	15.838	
1,100.00	1,100.00	1,075.40	1,075.40	3.75	23.76	110.53	-140.75	375.86	401.35	373.83	27.51	14.587	
1,200.00	1,200.00	1,175.40	1,175.40	4.11	25.61	110.53	-140.75	375.86	401.35	371.63	29.72	13.504	
1,300.00	1,300.00	1,275.40	1,275.40	4.46	27.49	110.53	-140.75	375.86	401.35	369.40	31.95	12.562	
1,400.00	1,400.00	1,375.40	1,375.40	4.82	29.38	110.53	-140.75	375.86	401.35	367.15	34.20	11.735	
1,500.00	1,500.00	1,475.40	1,475.40	5.18	31.29	110.53	-140.75	375.86	401.35	364.88	36.47	11.006	
1,600.00	1,600.00	1,575.40	1,575.40	5.53	33.21	110.53	-140.75	375.86	401.35	362.60	38.75	10.358	
1,700.00	1,700.00	1,675.40	1,675.40	5.89	35.15	110.53	-140.75	375.86	401.35	360.31	41.04	9.780	
1,800.00	1,800.00	1,775.40	1,775.40	6.25	37.09	110.53	-140.75	375.86	401.35	358.01	43.34	9.260	
1,900.00	1,900.00	1,875.40	1,875.40	6.61	39.05	110.53	-140.75	375.86	401.35	355.70	45.65	8.792	
2,000.00	2,000.00	1,975.40	1,975.40	6.96	41.00	110.53	-140.75	375.86	401.35	353.38	47.97	8.367	
2,100.00	2,100.00	2,075.40	2,075.40	7.32	42.97	110.53	-140.75	375.86	401.35	351.06	50.29	7.981	
2,200.00	2,200.00	2,175.40	2,175.40	7.68	44.94	110.53	-140.75	375.86	401.35	348.73	52.62	7.628	
2,300.00	2,300.00	2,275.40	2,275.40	8.04	46.91	110.53	-140.75	375.86	401.35	346.40	54.95	7.304	
2,350.00	2,350.00	2,325.40	2,325.40	8.22	47.90	110.53	-140.75	375.86	401.35	345.23	56.12	7.152 CC	
2,400.00	2,400.00	2,375.40	2,375.40	8.39	48.89	126.59	-140.75	375.86	401.48	344.19	57.29	7.008	
2,500.00	2,499.98	2,475.38	2,475.38	8.75	50.87	126.79	-140.75	375.86	402.52	342.90	59.62	6.751	
2,600.00	2,599.92	2,575.32	2,575.32	9.11	52.86	127.16	-140.75	375.86	404.62	342.66	61.96	6.530 ES	
2,700.00	2,699.78	2,675.18	2,675.18	9.47	54.84	127.72	-140.75	375.86	407.81	343.50	64.31	6.342	
2,800.00	2,799.54	2,774.94	2,774.94	9.82	56.83	128.46	-140.75	375.86	412.12	345.47	66.65	6.184	
2,900.00	2,899.16	2,874.56	2,874.56	10.18	58.82	129.35	-140.75	375.86	417.60	348.62	68.99	6.053	
3,000.00	2,998.61	2,974.01	2,974.01	10.54	60.80	130.39	-140.75	375.86	424.33	353.00	71.33	5.949	
3,100.00	3,097.86	3,073.26	3,073.26	10.89	62.78	131.55	-140.75	375.86	432.35	358.69	73.66	5.869	
3,200.00	3,196.89	3,172.29	3,172.29	11.25	64.76	132.82	-140.75	375.86	441.75	365.75	76.00	5.813	
3,295.74	3,291.45	3,266.85	3,266.85	11.59	66.65	134.13	-140.75	375.86	452.10	373.87	78.23	5.779	
3,300.00	3,295.65	3,271.05	3,271.05	11.61	66.73	134.19	-140.75	375.86	452.59	374.26	78.33	5.778	
3,400.00	3,394.29	3,369.69	3,369.69	11.97	68.71	135.64	-140.75	375.86	464.27	383.61	80.66	5.756	
3,500.00	3,492.94	3,468.34	3,468.34	12.33	70.68	137.01	-140.75	375.86	476.23	393.24	82.99	5.739	
3,600.00	3,591.58	3,566.98	3,566.98	12.69	72.66	138.32	-140.75	375.86	488.45	403.13	85.32	5.725	
3,700.00	3,690.22	3,665.62	3,665.62	13.05	74.64	139.56	-140.75	375.86	500.92	413.26	87.66	5.715	
3,800.00	3,788.86	3,764.26	3,764.26	13.41	76.62	140.74	-140.75	375.86	513.60	423.61	89.99	5.707	
3,900.00	3,887.50	3,862.90	3,862.90	13.77	78.59	141.87	-140.75	375.86	526.50	434.16	92.33	5.702	
4,000.00	3,986.14	3,961.54	3,961.54	14.14	80.57	142.94	-140.75	375.86	539.58	444.91	94.67	5.699	
4,100.00	4,084.78	4,060.18	4,060.18	14.50	82.56	143.96	-140.75	375.86	552.85	455.83	97.02	5.699	
4,200.00	4,183.42	4,158.82	4,158.82	14.87	84.54	144.94	-140.75	375.86	566.28	466.92	99.36	5.699	
4,300.00	4,282.06	4,257.46	4,257.46	15.24	86.52	145.87	-140.75	375.86	579.86	478.16	101.70	5.702	
4,400.00	4,380.70	4,356.10	4,356.10	15.60	88.50	146.75	-140.75	375.86	593.59	489.54	104.05	5.705	
4,500.00	4,479.34	4,454.74	4,454.74	15.97	90.49	147.60	-140.75	375.86	607.45	501.06	106.39	5.709	
4,600.00	4,577.98	4,553.38	4,553.38	16.34	92.47	148.41	-140.75	375.86	621.44	512.70	108.74	5.715	
4,700.00	4,676.62	4,652.02	4,652.02	16.71	94.45	149.18	-140.75	375.86	635.55	524.46	111.09	5.721	
4,800.00	4,775.27	4,750.67	4,750.67	17.08	96.44	149.92	-140.75	375.86	649.76	536.32	113.44	5.728	
4,900.00	4,873.91	4,849.31	4,849.31	17.45	98.42	150.63	-140.75	375.86	664.08	548.29	115.79	5.735	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,947.95	4,947.95	17.82	100.41	151.31	-140.75	375.86	678.49	560.35	118.14	5.743		
5,100.00	5,071.19	5,046.59	5,046.59	18.19	102.40	151.96	-140.75	375.86	693.00	572.50	120.49	5.751		
5,200.00	5,169.83	5,145.23	5,145.23	18.56	104.38	152.58	-140.75	375.86	707.58	584.74	122.84	5.760		
5,300.00	5,268.47	5,243.87	5,243.87	18.93	106.37	153.18	-140.75	375.86	722.25	597.05	125.20	5.769		
5,400.00	5,367.11	5,342.51	5,342.51	19.31	108.36	153.75	-140.75	375.86	736.99	609.44	127.55	5.778		
5,500.00	5,465.75	5,441.15	5,441.15	19.68	110.34	154.31	-140.75	375.86	751.80	621.90	129.90	5.787		
5,600.00	5,564.39	5,539.79	5,539.79	20.05	112.33	154.84	-140.75	375.86	766.68	634.42	132.26	5.797		
5,700.00	5,663.03	5,638.43	5,638.43	20.42	114.32	155.35	-140.75	375.86	781.62	647.00	134.61	5.806		
5,800.00	5,761.67	5,737.07	5,737.07	20.80	116.31	155.84	-140.75	375.86	796.61	659.65	136.97	5.816		
5,900.00	5,860.31	5,835.71	5,835.71	21.17	118.30	156.31	-140.75	375.86	811.67	672.34	139.32	5.826		
6,000.00	5,958.96	5,934.36	5,934.36	21.54	120.28	156.77	-140.75	375.86	826.77	685.09	141.68	5.836		
6,100.00	6,057.60	6,033.00	6,033.00	21.92	122.27	157.21	-140.75	375.86	841.93	697.89	144.04	5.845		
6,200.00	6,156.24	6,131.64	6,131.64	22.29	124.26	157.64	-140.75	375.86	857.13	710.74	146.39	5.855		
6,300.00	6,254.88	6,230.28	6,230.28	22.67	126.25	158.05	-140.75	375.86	872.38	723.63	148.75	5.865		
6,400.00	6,353.52	6,328.92	6,328.92	23.04	128.24	158.44	-140.75	375.86	887.67	736.56	151.11	5.874		
6,500.00	6,452.16	6,427.56	6,427.56	23.42	130.23	158.82	-140.75	375.86	903.00	749.53	153.47	5.884		
6,600.00	6,550.80	6,526.20	6,526.20	23.79	132.22	159.19	-140.75	375.86	918.37	762.54	155.83	5.894		
6,700.00	6,649.44	6,624.84	6,624.84	24.17	134.21	159.55	-140.75	375.86	933.77	775.58	158.19	5.903		
6,800.00	6,748.08	6,723.48	6,723.48	24.54	136.20	159.90	-140.75	375.86	949.21	788.66	160.54	5.912		
6,900.00	6,846.72	6,822.12	6,822.12	24.92	138.19	160.23	-140.75	375.86	964.68	801.77	162.90	5.922		
7,000.00	6,945.36	6,920.76	6,920.76	25.29	140.18	160.56	-140.75	375.86	980.18	814.92	165.26	5.931		
7,100.00	7,044.00	7,019.40	7,019.40	25.67	142.17	160.87	-140.75	375.86	995.71	828.09	167.62	5.940		
7,200.00	7,142.65	7,118.05	7,118.05	26.04	144.17	161.18	-140.75	375.86	1,011.27	841.29	169.99	5.949		
7,300.00	7,241.29	7,216.69	7,216.69	26.42	146.16	161.47	-140.75	375.86	1,026.86	854.52	172.35	5.958		
7,400.00	7,339.93	7,315.33	7,315.33	26.79	148.15	161.76	-140.75	375.86	1,042.48	867.77	174.71	5.967		
7,500.00	7,438.57	7,413.97	7,413.97	27.17	150.14	162.04	-140.75	375.86	1,058.11	881.05	177.07	5.976		
7,571.77	7,509.37	7,484.77	7,484.77	27.44	151.57	162.23	-140.75	375.86	1,069.35	890.59	178.76	5.982		
7,600.00	7,537.23	7,512.63	7,512.63	27.55	152.13	162.32	-140.75	375.86	1,073.68	894.25	179.43	5.984		
7,700.00	7,636.18	7,611.58	7,611.58	27.92	154.13	162.62	-140.75	375.86	1,087.43	905.63	181.80	5.982		
7,800.00	7,735.48	7,710.88	7,710.88	28.29	156.13	162.85	-140.75	375.86	1,098.72	914.55	184.17	5.966		
7,900.00	7,835.05	7,810.45	7,810.45	28.65	158.14	163.03	-140.75	375.86	1,107.52	920.98	186.54	5.937		
8,000.00	7,934.83	7,910.23	7,910.23	29.01	160.16	163.16	-140.75	375.86	1,113.84	924.93	188.91	5.896		
8,100.00	8,034.74	8,010.14	8,010.14	29.36	162.18	163.23	-140.75	375.86	1,117.65	926.37	191.29	5.843		
8,202.27	8,137.00	8,112.40	8,112.40	29.72	164.24	147.22	-140.75	375.86	1,118.97	925.25	193.71	5.776		
8,300.00	8,234.73	8,210.13	8,210.13	30.06	166.22	147.22	-140.75	375.86	1,118.97	922.94	196.02	5.708		
8,400.00	8,334.73	8,310.13	8,310.13	30.41	168.23	147.22	-140.75	375.86	1,118.97	920.57	198.39	5.640		
8,500.00	8,434.73	8,410.13	8,410.13	30.75	170.25	147.22	-140.75	375.86	1,118.97	918.20	200.76	5.574		
8,552.31	8,487.04	8,462.44	8,462.44	30.94	171.31	147.22	-140.75	375.86	1,118.97	916.96	202.00	5.539		
8,600.00	8,534.68	8,510.08	8,510.08	31.10	172.27	57.73	-140.75	375.86	1,117.90	914.78	203.12	5.504		
8,650.00	8,584.26	8,559.66	8,559.66	31.26	173.28	58.29	-140.75	375.86	1,114.53	910.25	204.28	5.456		
8,700.00	8,633.10	8,608.50	8,608.50	31.43	174.26	59.24	-140.75	375.86	1,108.93	903.50	205.43	5.398		
8,750.00	8,680.83	8,656.23	8,656.23	31.58	175.23	60.55	-140.75	375.86	1,101.22	894.68	206.54	5.332		
8,800.00	8,727.09	8,702.49	8,702.49	31.74	176.16	62.23	-140.75	375.86	1,091.60	883.97	207.62	5.258		
8,850.00	8,771.52	8,746.92	8,746.92	31.89	177.06	64.25	-140.75	375.86	1,080.29	871.63	208.66	5.177		
8,900.00	8,813.78	8,789.18	8,789.18	32.04	177.91	66.58	-140.75	375.86	1,067.58	857.92	209.66	5.092		
8,950.00	8,853.56	8,828.96	8,828.96	32.18	178.71	69.16	-140.75	375.86	1,053.81	843.20	210.60	5.004		
9,000.00	8,890.55	8,865.95	8,865.95	32.32	179.46	71.93	-140.75	375.86	1,039.32	827.82	211.50	4.914 Alert		
9,050.00	8,924.46	8,899.86	8,899.86	32.47	180.15	74.80	-140.75	375.86	1,024.53	812.19	212.34	4.825 Alert		
9,100.00	8,955.05	8,930.45	8,930.45	32.63	180.77	77.67	-140.75	375.86	1,009.85	796.74	213.12	4.738 Alert		
9,150.00	8,982.08	8,957.48	8,957.48	32.79	181.31	80.44	-140.75	375.86	995.73	781.88	213.85	4.656 Alert		
9,200.00	9,005.34	8,980.74	8,980.74	32.97	181.78	83.01	-140.75	375.86	982.60	768.07	214.52	4.580 Alert		
9,250.00	9,024.65	9,000.05	9,000.05	33.17	182.17	85.28	-140.75	375.86	970.87	755.72	215.14	4.513 Alert		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,015.27	9,015.27	33.38	182.48	87.17	-140.75	375.86	960.93	745.22	215.71	4.455	Alert	
9,350.00	9,050.89	9,026.29	9,026.29	33.62	182.70	88.61	-140.75	375.86	953.11	736.91	216.21	4.408	Alert	
9,400.00	9,057.61	9,033.01	9,033.01	33.87	182.84	89.56	-140.75	375.86	947.68	731.04	216.64	4.375	Alert	
9,452.31	9,060.00	9,035.40	9,035.40	34.15	182.89	90.00	-140.75	375.86	944.73	727.73	217.00	4.354	Alert	
9,479.62	9,060.00	9,035.40	9,035.40	34.31	182.89	90.00	-140.75	375.86	944.33	727.16	217.17	4.348	Alert	
9,500.00	9,060.00	9,035.40	9,035.40	34.42	182.89	90.00	-140.75	375.86	944.55	727.25	217.30	4.347	Alert, SF	
9,600.00	9,060.00	9,035.40	9,035.40	35.09	182.89	90.00	-140.75	375.86	951.98	734.02	217.96	4.368	Alert	
9,700.00	9,060.00	9,035.40	9,035.40	35.86	182.89	90.00	-140.75	375.86	969.71	751.09	218.62	4.436	Alert	
9,800.00	9,060.00	9,035.40	9,035.40	36.72	182.89	90.00	-140.75	375.86	997.20	777.95	219.25	4.548	Alert	
9,900.00	9,060.00	9,035.40	9,035.40	37.69	182.89	90.00	-140.75	375.86	1,033.68	813.86	219.81	4.703	Alert	
10,000.00	9,060.00	9,035.40	9,035.40	38.73	182.89	90.00	-140.75	375.86	1,078.22	857.93	220.30	4.894	Alert	
10,100.00	9,060.00	9,035.40	9,035.40	39.86	182.89	90.00	-140.75	375.86	1,129.89	909.19	220.70	5.120		
10,140.22	9,060.00	9,035.40	9,035.40	40.33	182.89	90.00	-140.75	375.86	1,152.46	931.63	220.84	5.219		
10,200.00	9,060.00	9,035.40	9,035.40	41.05	182.89	90.00	-140.75	375.86	1,187.24	966.22	221.02	5.372		
10,300.00	9,060.00	9,035.40	9,035.40	42.31	182.89	90.00	-140.75	375.86	1,247.50	1,026.22	221.28	5.638		
10,400.00	9,060.00	9,035.40	9,035.40	43.64	182.89	90.00	-140.75	375.86	1,310.01	1,088.52	221.49	5.915		
10,507.23	9,060.00	9,035.40	9,035.40	45.11	182.89	90.00	-140.75	375.86	1,379.09	1,157.43	221.66	6.222		
10,600.00	9,060.00	9,035.40	9,035.40	46.43	182.89	90.00	-140.75	375.86	1,442.47	1,220.70	221.77	6.504		
10,700.00	9,060.00	9,035.40	9,035.40	47.91	182.89	90.00	-140.75	375.86	1,516.42	1,294.57	221.85	6.835		
10,800.00	9,060.00	9,035.40	9,035.40	49.42	182.89	90.00	-140.75	375.86	1,595.36	1,373.45	221.91	7.189		
10,900.00	9,060.00	9,035.40	9,035.40	50.97	182.89	90.00	-140.75	375.86	1,678.48	1,456.54	221.94	7.563		
11,000.00	9,060.00	9,035.40	9,035.40	52.55	182.89	90.00	-140.75	375.86	1,765.11	1,543.15	221.96	7.952		
11,100.00	9,060.00	9,035.40	9,035.40	54.14	182.89	90.00	-140.75	375.86	1,854.65	1,632.68	221.97	8.356		
11,207.23	9,060.00	9,035.40	9,035.40	55.87	182.89	90.00	-140.75	375.86	1,953.33	1,731.36	221.97	8.800		
11,300.00	9,060.00	9,035.40	9,035.40	57.39	182.89	90.00	-140.75	375.86	2,039.49	1,817.52	221.97	9.188		
11,400.00	9,060.00	9,035.40	9,035.40	59.06	182.89	90.00	-140.75	375.86	2,131.76	1,909.80	221.96	9.604		
11,506.63	9,060.00	9,035.40	9,035.40	60.88	182.89	90.00	-140.75	375.86	2,229.44	2,007.48	221.96	10.044		
11,600.00	9,060.00	9,035.40	9,035.40	62.49	182.89	90.00	-140.75	375.86	2,314.96	2,093.00	221.96	10.430		
11,700.00	9,060.00	9,035.40	9,035.40	64.24	182.89	90.00	-140.75	375.86	2,407.19	2,185.24	221.95	10.846		
11,800.00	9,060.00	9,035.40	9,035.40	66.01	182.89	90.00	-140.75	375.86	2,500.02	2,278.07	221.95	11.264		
11,900.00	9,060.00	9,035.40	9,035.40	67.79	182.89	90.00	-140.75	375.86	2,593.39	2,371.44	221.95	11.685		
12,000.00	9,060.00	9,035.40	9,035.40	69.58	182.89	90.00	-140.75	375.86	2,687.23	2,465.28	221.94	12.108		
12,100.00	9,060.00	9,035.40	9,035.40	71.39	182.89	90.00	-140.75	375.86	2,781.50	2,559.56	221.94	12.533		
12,200.00	9,060.00	9,035.40	9,035.40	73.21	182.89	90.00	-140.75	375.86	2,876.16	2,654.22	221.94	12.959		
12,300.00	9,060.00	9,035.40	9,035.40	75.05	182.89	90.00	-140.75	375.86	2,971.17	2,749.22	221.94	13.387		
12,400.00	9,060.00	9,035.40	9,035.40	76.89	182.89	90.00	-140.75	375.86	3,066.49	2,844.55	221.94	13.817		
12,500.00	9,060.00	9,035.40	9,035.40	78.74	182.89	90.00	-140.75	375.86	3,162.11	2,940.16	221.95	14.247		
12,600.00	9,060.00	9,035.40	9,035.40	80.61	182.89	90.00	-140.75	375.86	3,257.98	3,036.03	221.95	14.679		
12,700.00	9,060.00	9,035.40	9,035.40	82.48	182.89	90.00	-140.75	375.86	3,354.10	3,132.14	221.96	15.111		
12,800.00	9,060.00	9,035.40	9,035.40	84.36	182.89	90.00	-140.75	375.86	3,450.44	3,228.47	221.97	15.545		
12,900.00	9,060.00	9,035.40	9,035.40	86.24	182.89	90.00	-140.75	375.86	3,546.98	3,325.01	221.98	15.979		
13,000.00	9,060.00	9,035.40	9,035.40	88.14	182.89	90.00	-140.75	375.86	3,643.71	3,421.72	221.99	16.414		
13,100.00	9,060.00	9,035.40	9,035.40	90.04	182.89	90.00	-140.75	375.86	3,740.61	3,518.61	222.00	16.850		
13,200.00	9,060.00	9,035.40	9,035.40	91.94	182.89	90.00	-140.75	375.86	3,837.67	3,615.66	222.01	17.286		
13,300.00	9,060.00	9,035.40	9,035.40	93.86	182.89	90.00	-140.75	375.86	3,934.88	3,712.85	222.03	17.723		
13,400.00	9,060.00	9,035.40	9,035.40	95.77	182.89	90.00	-140.75	375.86	4,032.22	3,810.18	222.04	18.160		
13,500.00	9,060.00	9,035.40	9,035.40	97.70	182.89	90.00	-140.75	375.86	4,129.69	3,907.63	222.06	18.597		
13,600.00	9,060.00	9,035.40	9,035.40	99.62	182.89	90.00	-140.75	375.86	4,227.28	4,005.20	222.08	19.035		
13,700.00	9,060.00	9,035.40	9,035.40	101.56	182.89	90.00	-140.75	375.86	4,324.98	4,102.88	222.10	19.473		
13,800.00	9,060.00	9,035.40	9,035.40	103.49	182.89	90.00	-140.75	375.86	4,422.78	4,200.66	222.12	19.911		
13,900.00	9,060.00	9,035.40	9,035.40	105.43	182.89	90.00	-140.75	375.86	4,520.68	4,298.53	222.15	20.350		
14,000.00	9,060.00	9,035.40	9,035.40	107.38	182.89	90.00	-140.75	375.86	4,618.66	4,396.49	222.17	20.789		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.00 ft
Survey Program: 10-INC-ONLY															Offset Well Error:		10.00 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
14,100.00	9,060.00	9,035.40	9,035.40	109.33	182.89	90.00	-140.75	375.86	4,716.74	4,494.54	222.20	21.228					
14,200.00	9,060.00	9,035.40	9,035.40	111.28	182.89	90.00	-140.75	375.86	4,814.89	4,592.66	222.22	21.667					
14,300.00	9,060.00	9,035.40	9,035.40	113.23	182.89	90.00	-140.75	375.86	4,913.11	4,690.86	222.25	22.106					
14,400.00	9,060.00	9,035.40	9,035.40	115.19	182.89	90.00	-140.75	375.86	5,011.41	4,789.13	222.28	22.545					
14,500.00	9,060.00	9,035.40	9,035.40	117.15	182.89	90.00	-140.75	375.86	5,109.77	4,887.46	222.31	22.985					
14,600.00	9,060.00	9,035.40	9,035.40	119.11	182.89	90.00	-140.75	375.86	5,208.20	4,985.85	222.34	23.424					
14,700.00	9,060.00	9,035.40	9,035.40	121.08	182.89	90.00	-140.75	375.86	5,306.68	5,084.30	222.38	23.863					
14,800.00	9,060.00	9,035.40	9,035.40	123.05	182.89	90.00	-140.75	375.86	5,405.22	5,182.81	222.41	24.303					
14,900.00	9,060.00	9,035.40	9,035.40	125.02	182.89	90.00	-140.75	375.86	5,503.81	5,281.37	222.45	24.742					
15,000.00	9,060.00	9,035.40	9,035.40	126.99	182.89	90.00	-140.75	375.86	5,602.45	5,379.97	222.48	25.182					
15,100.00	9,060.00	9,035.40	9,035.40	128.97	182.89	90.00	-140.75	375.86	5,701.14	5,478.62	222.52	25.621					
15,200.00	9,060.00	9,035.40	9,035.40	130.95	182.89	90.00	-140.75	375.86	5,799.88	5,577.32	222.56	26.060					
15,300.00	9,060.00	9,035.40	9,035.40	132.93	182.89	90.00	-140.75	375.86	5,898.65	5,676.06	222.60	26.499					
15,400.00	9,060.00	9,035.40	9,035.40	134.91	182.89	90.00	-140.75	375.86	5,997.47	5,774.83	222.64	26.938					
15,500.00	9,060.00	9,035.40	9,035.40	136.89	182.89	90.00	-140.75	375.86	6,096.33	5,873.65	222.68	27.377					
15,600.00	9,060.00	9,035.40	9,035.40	138.88	182.89	90.00	-140.75	375.86	6,195.22	5,972.50	222.72	27.816					
15,700.00	9,060.00	9,035.40	9,035.40	140.86	182.89	90.00	-140.75	375.86	6,294.15	6,071.38	222.77	28.254					
15,800.00	9,060.00	9,035.40	9,035.40	142.85	182.89	90.00	-140.75	375.86	6,393.11	6,170.30	222.81	28.693					
15,900.00	9,060.00	9,035.40	9,035.40	144.84	182.89	90.00	-140.75	375.86	6,492.10	6,269.24	222.86	29.131					
16,000.00	9,060.00	9,035.40	9,035.40	146.83	182.89	90.00	-140.75	375.86	6,591.12	6,368.22	222.90	29.569					
16,100.00	9,060.00	9,035.40	9,035.40	148.83	182.89	90.00	-140.75	375.86	6,690.18	6,467.23	222.95	30.007					
16,200.00	9,060.00	9,035.40	9,035.40	150.82	182.89	90.00	-140.75	375.86	6,789.26	6,566.26	223.00	30.445					
16,300.00	9,060.00	9,035.40	9,035.40	152.82	182.89	90.00	-140.75	375.86	6,888.36	6,665.31	223.05	30.883					
16,400.00	9,060.00	9,035.40	9,035.40	154.81	182.89	90.00	-140.75	375.86	6,987.50	6,764.40	223.10	31.320					
16,500.00	9,060.00	9,035.40	9,035.40	156.81	182.89	90.00	-140.75	375.86	7,086.65	6,863.50	223.15	31.757					
16,600.00	9,060.00	9,035.40	9,035.40	158.81	182.89	90.00	-140.75	375.86	7,185.83	6,962.63	223.20	32.194					
16,700.00	9,060.00	9,035.40	9,035.40	160.81	182.89	90.00	-140.75	375.86	7,285.03	7,061.78	223.26	32.631					
16,800.00	9,060.00	9,035.40	9,035.40	162.81	182.89	90.00	-140.75	375.86	7,384.26	7,160.95	223.31	33.067					
16,900.00	9,060.00	9,035.40	9,035.40	164.82	182.89	90.00	-140.75	375.86	7,483.50	7,260.14	223.37	33.503					
17,000.00	9,060.00	9,035.40	9,035.40	166.82	182.89	90.00	-140.75	375.86	7,582.77	7,359.35	223.42	33.939					
17,100.00	9,060.00	9,035.40	9,035.40	168.82	182.89	90.00	-140.75	375.86	7,682.05	7,458.57	223.48	34.375					
17,200.00	9,060.00	9,035.40	9,035.40	170.83	182.89	90.00	-140.75	375.86	7,781.35	7,557.82	223.54	34.810					
17,300.00	9,060.00	9,035.40	9,035.40	172.84	182.89	90.00	-140.75	375.86	7,880.67	7,657.08	223.59	35.245					
17,400.00	9,060.00	9,035.40	9,035.40	174.84	182.89	90.00	-140.75	375.86	7,980.01	7,756.36	223.65	35.680					
17,500.00	9,060.00	9,035.40	9,035.40	176.85	182.89	90.00	-140.75	375.86	8,079.36	7,855.65	223.71	36.115					
17,600.00	9,060.00	9,035.40	9,035.40	178.86	182.89	90.00	-140.75	375.86	8,178.73	7,954.96	223.77	36.549					
17,700.00	9,060.00	9,035.40	9,035.40	180.87	182.89	90.00	-140.75	375.86	8,278.11	8,054.28	223.84	36.983					
17,800.00	9,060.00	9,035.40	9,035.40	182.88	182.89	90.00	-140.75	375.86	8,377.51	8,153.61	223.90	37.417					
17,900.00	9,060.00	9,035.40	9,035.40	184.89	182.89	90.00	-140.75	375.86	8,476.92	8,252.96	223.96	37.850					
18,000.00	9,060.00	9,035.40	9,035.40	186.90	182.89	90.00	-140.75	375.86	8,576.35	8,352.33	224.02	38.283					
18,100.00	9,060.00	9,035.40	9,035.40	188.92	182.89	90.00	-140.75	375.86	8,675.79	8,451.70	224.09	38.716					
18,200.00	9,060.00	9,035.40	9,035.40	190.93	182.89	90.00	-140.75	375.86	8,775.24	8,551.09	224.15	39.148					
18,300.00	9,060.00	9,035.40	9,035.40	192.94	182.89	90.00	-140.75	375.86	8,874.71	8,650.49	224.22	39.580					
18,400.00	9,060.00	9,035.40	9,035.40	194.96	182.89	90.00	-140.75	375.86	8,974.18	8,749.90	224.29	40.012					
18,500.00	9,060.00	9,035.40	9,035.40	196.97	182.89	90.00	-140.75	375.86	9,073.67	8,849.32	224.36	40.443					
18,600.00	9,060.00	9,035.40	9,035.40	198.99	182.89	90.00	-140.75	375.86	9,173.17	8,948.75	224.42	40.874					
18,700.00	9,060.00	9,035.40	9,035.40	201.00	182.89	90.00	-140.75	375.86	9,272.68	9,048.19	224.49	41.305					
18,800.00	9,060.00	9,035.40	9,035.40	203.02	182.89	90.00	-140.75	375.86	9,372.20	9,147.64	224.56	41.735					
18,900.00	9,060.00	9,035.40	9,035.40	205.04	182.89	90.00	-140.75	375.86	9,471.73	9,247.10	224.63	42.165					
19,000.00	9,060.00	9,035.40	9,035.40	207.06	182.89	90.00	-140.75	375.86	9,571.27	9,346.57	224.71	42.595					
19,100.00	9,060.00	9,035.40	9,035.40	209.07	182.89	90.00	-140.75	375.86	9,670.82	9,446.04	224.78	43.024					
19,200.00	9,060.00	9,035.40	9,035.40	211.09	182.89	90.00	-140.75	375.86	9,770.38	9,545.53	224.85	43.453					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	9,035.40	9,035.40	213.11	182.89	90.00	-140.75	375.86	9,869.95	9,645.02	224.92	43.881	
19,400.00	9,060.00	9,035.40	9,035.40	215.13	182.89	90.00	-140.75	375.86	9,969.52	9,744.53	225.00	44.309	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.70	0.70	0.50	0.50	-0.19	30.02	-0.10	30.02				
100.00	100.00	100.70	100.70	0.52	0.52	-0.19	30.02	-0.10	30.02	28.98	1.04	28.972	
200.00	200.00	200.70	200.70	0.70	0.70	-0.19	30.02	-0.10	30.02	28.61	1.41	21.352	
300.00	300.00	300.70	300.70	0.99	0.99	-0.19	30.02	-0.10	30.02	28.04	1.98	15.186	
400.00	400.00	400.70	400.70	1.31	1.31	-0.19	30.02	-0.10	30.02	27.40	2.62	11.456	
500.00	500.00	500.70	500.70	1.65	1.65	-0.19	30.02	-0.10	30.02	26.73	3.29	9.112	
600.00	600.00	600.70	600.70	1.99	1.99	-0.19	30.02	-0.10	30.02	26.04	3.98	7.536	
700.00	700.00	700.70	700.70	2.34	2.34	-0.19	30.02	-0.10	30.02	25.34	4.68	6.413	
800.00	800.00	800.70	800.70	2.69	2.69	-0.19	30.02	-0.10	30.02	24.64	5.38	5.576	
900.00	900.00	900.70	900.70	3.04	3.05	-0.19	30.02	-0.10	30.02	23.93	6.09	4.930 Alert	
1,000.00	1,000.00	1,000.70	1,000.70	3.40	3.40	-0.19	30.02	-0.10	30.02	23.22	6.80	4.416 Alert	
1,100.00	1,100.00	1,100.70	1,100.70	3.75	3.76	-0.19	30.02	-0.10	30.02	22.51	7.51	3.999 Alert	
1,200.00	1,200.00	1,200.70	1,200.70	4.11	4.11	-0.19	30.02	-0.10	30.02	21.80	8.22	3.653 Alert	
1,300.00	1,300.00	1,300.70	1,300.70	4.46	4.47	-0.19	30.02	-0.10	30.02	21.09	8.93	3.361 Alert	
1,400.00	1,400.00	1,400.70	1,400.70	4.82	4.82	-0.19	30.02	-0.10	30.02	20.38	9.64	3.113 Alert	
1,500.00	1,500.00	1,500.70	1,500.70	5.18	5.18	-0.19	30.02	-0.10	30.02	19.66	10.36	2.899 Alert	
1,600.00	1,600.00	1,600.70	1,600.70	5.53	5.54	-0.19	30.02	-0.10	30.02	18.95	11.07	2.712 Alert	
1,700.00	1,700.00	1,700.70	1,700.70	5.89	5.89	-0.19	30.02	-0.10	30.02	18.24	11.78	2.547 Alert	
1,800.00	1,800.00	1,800.70	1,800.70	6.25	6.25	-0.19	30.02	-0.10	30.02	17.52	12.50	2.402 Minor Risk	
1,900.00	1,900.00	1,900.70	1,900.70	6.61	6.61	-0.19	30.02	-0.10	30.02	16.81	13.21	2.272 Minor Risk	
2,000.00	2,000.00	2,000.70	2,000.70	6.96	6.97	-0.19	30.02	-0.10	30.02	16.09	13.93	2.155 Minor Risk, CC, ES	
2,100.00	2,100.00	2,100.18	2,100.17	7.32	7.32	-0.52	30.88	-0.28	30.88	16.24	14.64	2.109 Minor Risk	
2,200.00	2,200.00	2,199.59	2,199.55	7.68	7.68	-1.38	33.42	-0.81	33.45	18.10	15.35	2.180 Minor Risk	
2,300.00	2,300.00	2,298.89	2,298.76	8.04	8.03	-2.56	37.65	-1.69	37.74	21.69	16.05	2.351 Minor Risk	
2,350.00	2,350.00	2,348.48	2,348.26	8.22	8.21	-3.20	40.39	-2.25	40.53	24.13	16.40	2.471 Minor Risk	
2,400.00	2,400.00	2,398.03	2,397.71	8.39	8.39	12.27	43.55	-2.91	43.54	26.79	16.75	2.600 Alert	
2,500.00	2,499.98	2,497.04	2,496.42	8.75	8.74	11.44	51.12	-4.48	49.57	32.13	17.44	2.842 Alert	
2,600.00	2,599.92	2,595.96	2,594.89	9.11	9.09	10.93	60.34	-6.40	55.61	37.49	18.13	3.068 Alert	
2,700.00	2,699.78	2,694.77	2,693.07	9.47	9.45	10.63	71.21	-8.66	61.66	42.85	18.81	3.278 Alert	
2,800.00	2,799.54	2,793.48	2,790.95	9.82	9.80	10.50	83.73	-11.26	67.70	48.22	19.48	3.475 Alert	
2,900.00	2,899.16	2,892.09	2,888.49	10.18	10.15	10.49	97.88	-14.20	73.74	53.58	20.16	3.658 Alert	
3,000.00	2,998.61	2,990.59	2,985.67	10.54	10.50	10.57	113.65	-17.47	79.77	58.95	20.82	3.831 Alert	
3,100.00	3,097.86	3,089.00	3,082.45	10.89	10.86	10.73	131.04	-21.09	85.80	64.31	21.49	3.993 Alert	
3,200.00	3,196.89	3,188.41	3,179.99	11.25	11.21	10.98	149.84	-24.99	91.39	69.20	22.19	4.119 Alert	
3,295.74	3,291.45	3,284.07	3,273.84	11.59	11.56	11.38	168.00	-28.76	95.21	72.33	22.88	4.162 Alert	
3,300.00	3,295.65	3,288.33	3,278.01	11.61	11.58	11.40	168.81	-28.93	95.35	72.44	22.91	4.162 Alert	
3,400.00	3,394.29	3,388.27	3,376.06	11.97	11.94	11.89	187.78	-32.87	98.53	74.89	23.64	4.169 Alert	
3,500.00	3,492.94	3,488.22	3,474.11	12.33	12.31	12.35	206.75	-36.81	101.72	77.35	24.36	4.175 Alert	
3,600.00	3,591.58	3,588.16	3,572.16	12.69	12.67	12.78	225.72	-40.75	104.91	79.82	25.09	4.181 Alert	
3,700.00	3,690.22	3,688.11	3,670.21	13.05	13.04	13.19	244.69	-44.70	108.11	82.29	25.83	4.186 Alert	
3,800.00	3,788.86	3,788.06	3,768.26	13.41	13.41	13.57	263.66	-48.64	111.32	84.76	26.56	4.191 Alert	
3,900.00	3,887.50	3,888.00	3,866.31	13.77	13.78	13.93	282.63	-52.58	114.53	87.23	27.30	4.196 Alert	
4,000.00	3,986.14	3,987.95	3,964.36	14.14	14.15	14.27	301.60	-56.52	117.74	89.71	28.03	4.200 Alert	
4,100.00	4,084.78	4,087.89	4,062.41	14.50	14.52	14.60	320.57	-60.46	120.96	92.19	28.77	4.204 Alert	
4,200.00	4,183.42	4,187.84	4,160.46	14.87	14.90	14.90	339.54	-64.40	124.18	94.67	29.51	4.208 Alert	
4,300.00	4,282.06	4,287.79	4,258.51	15.24	15.27	15.20	358.51	-68.34	127.41	97.16	30.25	4.212 Alert	
4,400.00	4,380.70	4,387.73	4,356.56	15.60	15.65	15.47	377.48	-72.28	130.63	99.64	30.99	4.215 Alert	
4,500.00	4,479.34	4,487.68	4,454.61	15.97	16.02	15.74	396.45	-76.22	133.87	102.13	31.74	4.218 Alert	
4,600.00	4,577.98	4,587.62	4,552.66	16.34	16.40	15.99	415.42	-80.16	137.10	104.62	32.48	4.221 Alert	
4,700.00	4,676.62	4,687.57	4,650.71	16.71	16.77	16.23	434.39	-84.10	140.34	107.11	33.22	4.224 Alert	
4,800.00	4,775.27	4,787.52	4,748.76	17.08	17.15	16.46	453.36	-88.04	143.57	109.61	33.97	4.227 Alert	
4,900.00	4,873.91	4,887.46	4,846.81	17.45	17.53	16.67	472.33	-91.99	146.82	112.10	34.72	4.229 Alert	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,987.41	4,944.86	17.82	17.91	16.88	491.30	-95.93	150.06	114.60	35.46	4.231 Alert		
5,100.00	5,071.19	5,087.35	5,042.91	18.19	18.28	17.08	510.27	-99.87	153.30	117.09	36.21	4.234 Alert		
5,200.00	5,169.83	5,187.30	5,140.96	18.56	18.66	17.28	529.24	-103.81	156.55	119.59	36.96	4.236 Alert		
5,300.00	5,268.47	5,287.25	5,239.01	18.93	19.04	17.46	548.21	-107.75	159.80	122.09	37.71	4.238 Alert		
5,400.00	5,367.11	5,387.19	5,337.06	19.31	19.42	17.64	567.18	-111.69	163.05	124.59	38.46	4.240 Alert		
5,500.00	5,465.75	5,487.14	5,435.11	19.68	19.80	17.81	586.15	-115.63	166.30	127.09	39.21	4.242 Alert		
5,600.00	5,564.39	5,587.08	5,533.16	20.05	20.18	17.97	605.12	-119.57	169.55	129.59	39.96	4.243 Alert		
5,700.00	5,663.03	5,687.03	5,631.21	20.42	20.56	18.13	624.09	-123.51	172.81	132.10	40.71	4.245 Alert		
5,800.00	5,761.67	5,786.98	5,729.26	20.80	20.94	18.28	643.06	-127.45	176.06	134.60	41.46	4.247 Alert		
5,900.00	5,860.31	5,886.92	5,827.31	21.17	21.33	18.42	662.03	-131.39	179.32	137.11	42.21	4.248 Alert		
6,000.00	5,958.96	5,986.87	5,925.36	21.54	21.71	18.57	681.00	-135.34	182.57	139.61	42.96	4.250 Alert		
6,100.00	6,057.60	6,086.81	6,023.41	21.92	22.09	18.70	699.97	-139.28	185.83	142.12	43.72	4.251 Alert		
6,200.00	6,156.24	6,186.76	6,121.46	22.29	22.47	18.83	718.94	-143.22	189.09	144.62	44.47	4.252 Alert		
6,300.00	6,254.88	6,286.70	6,219.51	22.67	22.85	18.96	737.91	-147.16	192.35	147.13	45.22	4.254 Alert		
6,400.00	6,353.52	6,386.65	6,317.56	23.04	23.24	19.08	756.88	-151.10	195.62	149.64	45.98	4.255 Alert		
6,500.00	6,452.16	6,486.60	6,415.61	23.42	23.62	19.20	775.85	-155.04	198.88	152.15	46.73	4.256 Alert		
6,600.00	6,550.80	6,586.54	6,513.66	23.79	24.00	19.31	794.82	-158.98	202.14	154.66	47.48	4.257 Alert		
6,700.00	6,649.44	6,686.49	6,611.71	24.17	24.38	19.43	813.79	-162.92	205.41	157.17	48.24	4.258 Alert		
6,800.00	6,748.08	6,786.43	6,709.76	24.54	24.77	19.53	832.76	-166.86	208.67	159.68	48.99	4.259 Alert		
6,900.00	6,846.72	6,886.38	6,807.81	24.92	25.15	19.64	851.73	-170.80	211.94	162.19	49.75	4.260 Alert		
7,000.00	6,945.36	6,986.33	6,905.86	25.29	25.53	19.74	870.70	-174.74	215.20	164.70	50.50	4.261 Alert		
7,100.00	7,044.00	7,086.27	7,003.91	25.67	25.92	19.84	889.67	-178.68	218.47	167.21	51.26	4.262 Alert		
7,200.00	7,142.65	7,186.22	7,101.96	26.04	26.30	19.93	908.64	-182.63	221.74	169.72	52.02	4.263 Alert		
7,300.00	7,241.29	7,286.16	7,200.01	26.42	26.68	20.02	927.61	-186.57	225.00	172.23	52.77	4.264 Alert		
7,400.00	7,339.93	7,386.11	7,298.06	26.79	27.07	20.11	946.58	-190.51	228.27	174.75	53.53	4.265 Alert		
7,500.00	7,438.57	7,486.06	7,396.11	27.17	27.45	20.20	965.55	-194.45	231.54	177.26	54.28	4.265 Alert		
7,571.77	7,509.37	7,557.79	7,466.49	27.44	27.73	20.26	979.16	-197.28	233.89	179.06	54.83	4.266 Alert		
7,600.00	7,537.23	7,586.00	7,494.16	27.55	27.84	20.28	984.51	-198.39	234.91	179.87	55.04	4.268 Alert		
7,700.00	7,636.18	7,685.86	7,592.13	27.92	28.22	20.22	1,003.47	-202.33	240.10	184.31	55.79	4.303 Alert		
7,800.00	7,735.48	7,785.56	7,689.93	28.29	28.60	19.97	1,022.39	-206.26	247.74	191.20	56.54	4.382 Alert		
7,900.00	7,835.05	7,885.02	7,787.51	28.65	28.99	19.55	1,041.27	-210.18	257.85	200.57	57.28	4.502 Alert		
8,000.00	7,934.83	7,984.18	7,884.79	29.01	29.37	18.99	1,060.09	-214.09	270.43	212.42	58.01	4.662 Alert		
8,100.00	8,034.74	8,082.98	7,981.71	29.36	29.75	18.33	1,078.84	-217.98	285.50	226.76	58.74	4.861 Alert		
8,202.27	8,137.00	8,183.56	8,080.38	29.72	30.14	1.55	1,097.93	-221.95	303.50	244.03	59.47	5.103		
8,300.00	8,234.73	8,279.43	8,174.44	30.06	30.51	0.77	1,116.13	-225.73	321.99	261.82	60.17	5.352		
8,400.00	8,334.73	8,377.47	8,270.63	30.41	30.88	0.10	1,134.74	-229.40	340.96	280.08	60.88	5.600		
8,500.00	8,434.73	8,474.47	8,365.49	30.75	31.24	1.22	1,153.16	-222.50	360.09	298.52	61.58	5.848		
8,552.31	8,487.04	8,523.54	8,412.69	30.94	31.41	2.72	1,162.36	-212.81	370.45	308.54	61.91	5.984		
8,600.00	8,534.68	8,567.10	8,453.78	31.10	31.56	-84.43	1,170.39	-200.79	380.23	318.07	62.17	6.116		
8,650.00	8,584.26	8,612.06	8,495.10	31.26	31.70	-81.94	1,178.49	-185.09	390.68	328.27	62.41	6.260		
8,700.00	8,633.10	8,656.35	8,534.51	31.43	31.83	-79.62	1,186.23	-166.44	401.17	338.55	62.62	6.407		
8,750.00	8,680.83	8,700.07	8,571.91	31.58	31.95	-77.46	1,193.60	-145.05	411.59	348.79	62.79	6.555		
8,800.00	8,727.09	8,743.28	8,607.18	31.74	32.06	-75.46	1,200.58	-121.11	421.80	358.86	62.94	6.702		
8,850.00	8,771.52	8,786.03	8,640.24	31.89	32.17	-73.63	1,207.14	-94.82	431.70	368.64	63.06	6.846		
8,900.00	8,813.78	8,828.40	8,671.01	32.04	32.26	-71.97	1,213.27	-66.36	441.17	378.01	63.17	6.984		
8,950.00	8,853.56	8,870.43	8,699.41	32.18	32.35	-70.46	1,218.95	-35.92	450.14	386.87	63.26	7.115		
9,000.00	8,890.55	8,912.16	8,725.36	32.32	32.45	-69.12	1,224.17	-3.67	458.49	395.14	63.36	7.237		
9,050.00	8,924.46	8,953.64	8,748.81	32.47	32.55	-67.93	1,228.91	30.21	466.17	402.71	63.46	7.345		
9,100.00	8,955.05	8,994.92	8,769.68	32.63	32.66	-66.89	1,233.16	65.55	473.11	409.51	63.59	7.440		
9,150.00	8,982.08	9,036.01	8,787.94	32.79	32.80	-66.00	1,236.92	102.17	479.23	415.48	63.75	7.517		
9,200.00	9,005.34	9,076.97	8,803.51	32.97	32.96	-65.25	1,240.16	139.90	484.50	420.54	63.96	7.576		
9,250.00	9,024.65	9,117.81	8,816.37	33.17	33.13	-64.65	1,242.88	178.55	488.86	424.66	64.20	7.614		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,300.00	9,039.87	9,158.56	8,826.47	33.38	33.32	-64.19	1,245.07	217.96	492.29	427.79	64.51	7.632				
9,350.00	9,050.89	9,199.25	8,833.79	33.62	33.52	-63.86	1,246.72	257.95	494.76	429.89	64.87	7.627				
9,400.00	9,057.61	9,239.90	8,838.30	33.87	33.73	-63.67	1,247.84	298.32	496.25	430.96	65.29	7.601				
9,452.31	9,060.00	9,282.41	8,840.00	34.15	33.96	-63.62	1,248.42	340.78	496.74	430.95	65.79	7.550				
9,454.79	9,060.00	9,284.53	8,840.00	34.16	33.97	-63.62	1,248.43	342.79	496.74	430.93	65.82	7.547				
9,500.00	9,060.00	9,329.62	8,840.00	34.42	34.25	-63.62	1,248.70	388.00	496.74	430.39	66.35	7.486				
9,600.00	9,060.00	9,429.62	8,840.00	35.09	34.92	-63.62	1,249.29	488.00	496.74	429.08	67.66	7.342				
9,700.00	9,060.00	9,529.62	8,840.00	35.86	35.69	-63.62	1,249.88	587.99	496.74	427.60	69.14	7.184				
9,800.00	9,060.00	9,629.62	8,840.00	36.72	36.57	-63.62	1,250.48	687.99	496.74	425.95	70.80	7.017				
9,900.00	9,060.00	9,729.62	8,840.00	37.69	37.53	-63.62	1,251.07	787.99	496.74	424.14	72.60	6.842				
10,000.00	9,060.00	9,829.62	8,840.00	38.73	38.58	-63.62	1,251.67	887.99	496.74	422.19	74.55	6.663				
10,100.00	9,060.00	9,929.62	8,840.00	39.86	39.70	-63.62	1,252.26	987.99	496.74	420.11	76.63	6.482				
10,140.22	9,060.00	9,969.85	8,840.00	40.33	40.17	-63.62	1,252.50	1,028.21	496.74	419.24	77.50	6.409				
10,200.00	9,060.00	10,029.62	8,840.00	41.05	40.90	-63.65	1,252.85	1,087.98	497.30	418.45	78.85	6.307				
10,300.00	9,060.00	10,129.54	8,840.00	42.31	42.16	-63.81	1,253.44	1,187.90	500.74	419.50	81.24	6.164				
10,400.00	9,060.00	10,229.27	8,840.00	43.64	43.47	-64.12	1,254.04	1,287.63	507.31	423.51	83.81	6.053				
10,507.23	9,060.00	10,335.84	8,840.00	45.11	44.94	-64.59	1,254.67	1,394.20	517.88	431.14	86.74	5.970				
10,600.00	9,060.00	10,428.03	8,840.00	46.43	46.25	-65.16	1,255.22	1,486.39	527.27	437.91	89.36	5.900				
10,700.00	9,060.00	10,527.72	8,840.00	47.91	47.72	-65.57	1,255.81	1,586.08	534.38	442.16	92.22	5.795				
10,800.00	9,060.00	10,627.62	8,840.00	49.42	49.23	-65.79	1,256.40	1,685.98	538.33	443.24	95.09	5.661				
10,900.00	9,060.00	10,727.62	8,840.00	50.97	50.77	-65.83	1,256.99	1,785.97	539.10	441.14	97.97	5.503				
11,000.00	9,060.00	10,827.58	8,840.00	52.55	52.35	-65.70	1,257.59	1,885.93	536.69	435.86	100.83	5.323				
11,100.00	9,060.00	10,927.38	8,840.00	54.14	53.96	-65.38	1,258.18	1,985.73	531.11	427.45	103.65	5.124				
11,207.23	9,060.00	11,034.09	8,840.00	55.87	55.72	-64.82	1,258.81	2,092.44	521.63	415.02	106.61	4.893	Alert			
11,300.00	9,060.00	11,126.40	8,840.00	57.39	57.26	-64.45	1,259.36	2,184.74	513.25	404.08	109.17	4.701	Alert			
11,400.00	9,060.00	11,226.17	8,840.00	59.06	58.94	-64.18	1,259.95	2,284.52	507.27	395.22	112.05	4.527	Alert			
11,506.63	9,060.00	11,332.75	8,840.00	60.88	60.77	-64.05	1,260.58	2,391.09	504.36	389.08	115.28	4.375	Alert			
11,600.00	9,060.00	11,426.11	8,840.00	62.49	62.39	-63.99	1,261.14	2,484.45	503.37	385.18	118.19	4.259	Alert			
11,700.00	9,060.00	11,526.10	8,840.00	64.24	64.14	-63.94	1,261.73	2,584.44	502.32	380.98	121.34	4.140	Alert			
11,800.00	9,060.00	11,626.10	8,840.00	66.01	65.91	-63.88	1,262.33	2,684.43	501.27	376.75	124.51	4.026	Alert			
11,900.00	9,060.00	11,726.09	8,840.00	67.79	67.69	-63.82	1,262.92	2,784.42	500.21	372.50	127.71	3.917	Alert			
12,000.00	9,060.00	11,826.08	8,840.00	69.58	69.49	-63.76	1,263.51	2,884.42	499.16	368.22	130.94	3.812	Alert			
12,100.00	9,060.00	11,926.08	8,840.00	71.39	71.30	-63.70	1,264.11	2,984.41	498.11	363.92	134.19	3.712	Alert			
12,200.00	9,060.00	12,026.07	8,840.00	73.21	73.12	-63.64	1,264.70	3,084.40	497.06	359.61	137.45	3.616	Alert			
12,300.00	9,060.00	12,126.06	8,840.00	75.05	74.96	-63.58	1,265.29	3,184.39	496.01	355.27	140.74	3.524	Alert			
12,400.00	9,060.00	12,226.06	8,840.00	76.89	76.80	-63.52	1,265.89	3,284.38	494.96	350.92	144.04	3.436	Alert			
12,500.00	9,060.00	12,326.05	8,840.00	78.74	78.66	-63.46	1,266.48	3,384.37	493.91	346.56	147.35	3.352	Alert			
12,600.00	9,060.00	12,426.04	8,840.00	80.61	80.53	-63.40	1,267.07	3,484.36	492.86	342.18	150.68	3.271	Alert			
12,700.00	9,060.00	12,526.04	8,840.00	82.48	82.40	-63.34	1,267.67	3,584.36	491.81	337.79	154.02	3.193	Alert			
12,800.00	9,060.00	12,626.03	8,840.00	84.36	84.28	-63.27	1,268.26	3,684.35	490.76	333.39	157.38	3.118	Alert			
12,900.00	9,060.00	12,726.02	8,840.00	86.24	86.17	-63.21	1,268.85	3,784.34	489.72	328.98	160.74	3.047	Alert			
13,000.00	9,060.00	12,826.02	8,840.00	88.14	88.07	-63.15	1,269.45	3,884.33	488.67	324.56	164.11	2.978	Alert			
13,100.00	9,060.00	12,926.01	8,840.00	90.04	89.97	-63.09	1,270.04	3,984.32	487.62	320.13	167.50	2.911	Alert			
13,200.00	9,060.00	13,026.00	8,840.00	91.94	91.88	-63.03	1,270.63	4,084.31	486.58	315.69	170.89	2.847	Alert			
13,300.00	9,060.00	13,125.99	8,840.00	93.86	93.79	-62.96	1,271.23	4,184.30	485.53	311.25	174.28	2.786	Alert			
13,400.00	9,060.00	13,225.99	8,840.00	95.77	95.71	-62.90	1,271.82	4,284.30	484.49	306.80	177.69	2.727	Alert			
13,500.00	9,060.00	13,325.98	8,840.00	97.70	97.64	-62.84	1,272.41	4,384.29	483.45	302.35	181.10	2.670	Alert			
13,600.00	9,060.00	13,425.97	8,840.00	99.62	99.57	-62.77	1,273.01	4,484.28	482.40	297.89	184.51	2.614	Alert			
13,700.00	9,060.00	13,525.97	8,840.00	101.56	101.50	-62.71	1,273.60	4,584.27	481.36	293.43	187.93	2.561	Alert			
13,800.00	9,060.00	13,625.96	8,840.00	103.49	103.44	-62.64	1,274.19	4,684.26	480.32	288.96	191.35	2.510	Alert			
13,900.00	9,060.00	13,725.95	8,840.00	105.43	105.38	-62.58	1,274.79	4,784.25	479.28	284.49	194.78	2.461	Minor Risk			
14,000.00	9,060.00	13,825.95	8,840.00	107.38	107.33	-62.52	1,275.38	4,884.24	478.24	280.02	198.21	2.413	Minor Risk			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	13,925.94	8,840.00	109.33	109.28	-62.45	1,275.97	4,984.23	477.20	275.55	201.65	2.366 Minor Risk		
14,200.00	9,060.00	14,025.93	8,840.00	111.28	111.24	-62.39	1,276.57	5,084.23	476.16	271.07	205.08	2.322 Minor Risk		
14,300.00	9,060.00	14,125.93	8,840.00	113.23	113.19	-62.32	1,277.16	5,184.22	475.12	266.60	208.52	2.279 Minor Risk		
14,400.00	9,060.00	14,225.92	8,840.00	115.19	115.15	-62.25	1,277.75	5,284.21	474.08	262.12	211.96	2.237 Minor Risk		
14,500.00	9,060.00	14,325.91	8,840.00	117.15	117.12	-62.19	1,278.35	5,384.20	473.04	257.64	215.40	2.196 Minor Risk		
14,600.00	9,060.00	14,425.91	8,840.00	119.11	119.08	-62.12	1,278.94	5,484.19	472.00	253.16	218.84	2.157 Minor Risk		
14,700.00	9,060.00	14,525.90	8,840.00	121.08	121.05	-62.05	1,279.53	5,584.18	470.97	248.68	222.29	2.119 Minor Risk		
14,800.00	9,060.00	14,625.89	8,840.00	123.05	123.02	-61.99	1,280.13	5,684.17	469.93	244.20	225.73	2.082 Minor Risk		
14,900.00	9,060.00	14,725.88	8,840.00	125.02	125.00	-61.92	1,280.72	5,784.17	468.90	239.72	229.18	2.046 Minor Risk		
15,000.00	9,060.00	14,825.88	8,840.00	126.99	126.97	-61.85	1,281.31	5,884.16	467.86	235.24	232.62	2.011 Minor Risk		
15,100.00	9,060.00	14,925.87	8,840.00	128.97	128.95	-61.78	1,281.91	5,984.15	466.83	230.77	236.06	1.978 Minor Risk		
15,200.00	9,060.00	15,025.86	8,840.00	130.95	130.93	-61.72	1,282.50	6,084.14	465.80	226.29	239.51	1.945 Minor Risk		
15,300.00	9,060.00	15,125.86	8,840.00	132.93	132.91	-61.65	1,283.09	6,184.13	464.76	221.82	242.95	1.913 Minor Risk		
15,400.00	9,060.00	15,225.85	8,840.00	134.91	134.90	-61.58	1,283.69	6,284.12	463.73	217.34	246.39	1.882 Minor Risk		
15,500.00	9,060.00	15,325.84	8,840.00	136.89	136.88	-61.51	1,284.28	6,384.11	462.70	212.87	249.83	1.852 Minor Risk		
15,600.00	9,060.00	15,425.84	8,840.00	138.88	138.87	-61.44	1,284.87	6,484.11	461.67	208.40	253.27	1.823 Minor Risk		
15,700.00	9,060.00	15,525.83	8,840.00	140.86	140.86	-61.37	1,285.47	6,584.10	460.64	203.93	256.71	1.794 Minor Risk		
15,800.00	9,060.00	15,625.82	8,840.00	142.85	142.85	-61.30	1,286.06	6,684.09	459.61	199.47	260.14	1.767 Minor Risk		
15,900.00	9,060.00	15,725.82	8,840.00	144.84	144.84	-61.23	1,286.65	6,784.08	458.58	195.01	263.58	1.740 Minor Risk		
16,000.00	9,060.00	15,825.81	8,840.00	146.83	146.84	-61.16	1,287.25	6,884.07	457.56	190.55	267.01	1.714 Minor Risk		
16,100.00	9,060.00	15,925.80	8,840.00	148.83	148.83	-61.09	1,287.84	6,984.06	456.53	186.09	270.44	1.688 Minor Risk		
16,200.00	9,060.00	16,025.80	8,840.00	150.82	150.83	-61.02	1,288.43	7,084.05	455.50	181.64	273.87	1.663 Minor Risk		
16,300.00	9,060.00	16,125.79	8,840.00	152.82	152.83	-60.95	1,289.03	7,184.04	454.48	177.19	277.29	1.639 Minor Risk		
16,400.00	9,060.00	16,225.78	8,840.00	154.81	154.83	-60.87	1,289.62	7,284.04	453.45	172.74	280.71	1.615 Minor Risk		
16,500.00	9,060.00	16,325.77	8,840.00	156.81	156.83	-60.80	1,290.21	7,384.03	452.43	168.30	284.13	1.592 Minor Risk		
16,600.00	9,060.00	16,425.77	8,840.00	158.81	158.83	-60.73	1,290.81	7,484.02	451.40	163.86	287.55	1.570 Minor Risk		
16,700.00	9,060.00	16,525.76	8,840.00	160.81	160.83	-60.66	1,291.40	7,584.01	450.38	159.42	290.96	1.548 Minor Risk		
16,800.00	9,060.00	16,625.75	8,840.00	162.81	162.83	-60.58	1,291.99	7,684.00	449.36	154.99	294.37	1.527 Minor Risk		
16,900.00	9,060.00	16,725.75	8,840.00	164.82	164.84	-60.51	1,292.59	7,783.99	448.34	150.56	297.78	1.506 Minor Risk		
17,000.00	9,060.00	16,825.74	8,840.00	166.82	166.85	-60.44	1,293.18	7,883.98	447.32	146.14	301.18	1.485 Major Risk		
17,100.00	9,060.00	16,925.73	8,840.00	168.82	168.85	-60.36	1,293.77	7,983.98	446.30	141.72	304.58	1.465 Major Risk		
17,200.00	9,060.00	17,025.73	8,840.00	170.83	170.86	-60.29	1,294.37	8,083.97	445.28	137.30	307.98	1.446 Major Risk		
17,300.00	9,060.00	17,125.72	8,840.00	172.84	172.87	-60.21	1,294.96	8,183.96	444.26	132.89	311.37	1.427 Major Risk		
17,400.00	9,060.00	17,225.71	8,840.00	174.84	174.88	-60.14	1,295.55	8,283.95	443.24	128.48	314.76	1.408 Major Risk		
17,500.00	9,060.00	17,325.71	8,840.00	176.85	176.89	-60.06	1,296.15	8,383.94	442.23	124.08	318.14	1.390 Major Risk		
17,600.00	9,060.00	17,425.70	8,840.00	178.86	178.90	-59.98	1,296.74	8,483.93	441.21	119.69	321.52	1.372 Major Risk		
17,700.00	9,060.00	17,525.69	8,840.00	180.87	180.91	-59.91	1,297.33	8,583.92	440.20	115.30	324.90	1.355 Major Risk		
17,800.00	9,060.00	17,625.69	8,840.00	182.88	182.92	-59.83	1,297.93	8,683.92	439.18	110.91	328.27	1.338 Major Risk		
17,900.00	9,060.00	17,725.68	8,840.00	184.89	184.94	-59.75	1,298.52	8,783.91	438.17	106.53	331.64	1.321 Major Risk		
18,000.00	9,060.00	17,825.67	8,840.00	186.90	186.95	-59.68	1,299.11	8,883.90	437.16	102.15	335.00	1.305 Major Risk		
18,100.00	9,060.00	17,925.66	8,840.00	188.92	188.97	-59.60	1,299.71	8,983.89	436.14	97.78	338.36	1.289 Major Risk		
18,200.00	9,060.00	18,025.66	8,840.00	190.93	190.98	-59.52	1,300.30	9,083.88	435.13	93.42	341.71	1.273 Major Risk		
18,300.00	9,060.00	18,125.65	8,840.00	192.94	193.00	-59.44	1,300.89	9,183.87	434.12	89.06	345.06	1.258 Major Risk		
18,400.00	9,060.00	18,225.64	8,840.00	194.96	195.02	-59.36	1,301.49	9,283.86	433.11	84.71	348.40	1.243 Major Risk		
18,500.00	9,060.00	18,325.64	8,840.00	196.97	197.03	-59.28	1,302.08	9,383.85	432.10	80.36	351.74	1.228 Major Risk		
18,600.00	9,060.00	18,425.63	8,840.00	198.99	199.05	-59.20	1,302.67	9,483.85	431.10	76.02	355.08	1.214 Major Risk		
18,700.00	9,060.00	18,525.62	8,840.00	201.00	201.07	-59.12	1,303.27	9,583.84	430.09	71.69	358.40	1.200 Major Risk		
18,800.00	9,060.00	18,625.62	8,840.00	203.02	203.09	-59.04	1,303.86	9,683.83	429.08	67.36	361.73	1.186 Major Risk		
18,900.00	9,060.00	18,725.61	8,840.00	205.04	205.11	-58.96	1,304.45	9,783.82	428.08	63.04	365.04	1.173 Major Risk		
19,000.00	9,060.00	18,825.60	8,840.00	207.06	207.13	-58.88	1,305.05	9,883.81	427.07	58.72	368.35	1.159 Major Risk		
19,100.00	9,060.00	18,925.60	8,840.00	209.07	209.15	-58.80	1,305.64	9,983.80	426.07	54.41	371.66	1.146 Major Risk		
19,200.00	9,060.00	19,025.59	8,840.00	211.09	211.17	-58.72	1,306.23	10,083.79	425.07	50.11	374.96	1.134 Major Risk		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,125.58	8,840.00	213.11	213.19	-58.64	1,306.83	10,183.79	424.07	45.81	378.25	1.121	Major Risk
19,400.00	9,060.00	19,225.58	8,840.00	215.13	215.21	-58.55	1,307.42	10,283.78	423.06	41.52	381.54	1.109	Major Risk
19,500.32	9,060.00	19,325.89	8,840.00	217.16	217.24	-58.47	1,308.02	10,384.09	422.06	37.23	384.84	1.097	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.60	-0.60	0.50	0.50	179.85	-29.99	0.08	29.99				
100.00	100.00	100.60	99.40	0.52	0.52	179.85	-29.99	0.08	29.99	28.95	1.04	28.946	
200.00	200.00	200.60	199.40	0.70	0.70	179.85	-29.99	0.08	29.99	28.58	1.41	21.334	
300.00	300.00	300.60	299.40	0.99	0.99	179.85	-29.99	0.08	29.99	28.01	1.98	15.173	
400.00	400.00	400.60	399.40	1.31	1.31	179.85	-29.99	0.08	29.99	27.37	2.62	11.446	
500.00	500.00	500.60	499.40	1.65	1.65	179.85	-29.99	0.08	29.99	26.70	3.29	9.104	
600.00	600.00	600.60	599.40	1.99	1.99	179.85	-29.99	0.08	29.99	26.01	3.98	7.529	
700.00	700.00	700.60	699.40	2.34	2.34	179.85	-29.99	0.08	29.99	25.31	4.68	6.407	
800.00	800.00	800.60	799.40	2.69	2.69	179.85	-29.99	0.08	29.99	24.61	5.38	5.571	
900.00	900.00	900.60	899.40	3.04	3.05	179.85	-29.99	0.08	29.99	23.90	6.09	4.925 Alert	
1,000.00	1,000.00	1,000.60	999.40	3.40	3.40	179.85	-29.99	0.08	29.99	23.19	6.80	4.412 Alert	
1,100.00	1,100.00	1,100.60	1,099.40	3.75	3.75	179.85	-29.99	0.08	29.99	22.48	7.51	3.995 Alert	
1,200.00	1,200.00	1,200.60	1,199.40	4.11	4.11	179.85	-29.99	0.08	29.99	21.77	8.22	3.649 Alert	
1,300.00	1,300.00	1,300.60	1,299.40	4.46	4.47	179.85	-29.99	0.08	29.99	21.06	8.93	3.358 Alert	
1,400.00	1,400.00	1,400.60	1,399.40	4.82	4.82	179.85	-29.99	0.08	29.99	20.35	9.64	3.110 Alert	
1,500.00	1,500.00	1,500.60	1,499.40	5.18	5.18	179.85	-29.99	0.08	29.99	19.63	10.36	2.896 Alert	
1,600.00	1,600.00	1,600.60	1,599.40	5.53	5.54	179.85	-29.99	0.08	29.99	18.92	11.07	2.709 Alert	
1,700.00	1,700.00	1,700.60	1,699.40	5.89	5.89	179.85	-29.99	0.08	29.99	18.21	11.78	2.545 Alert	
1,800.00	1,800.00	1,800.60	1,799.40	6.25	6.25	179.85	-29.99	0.08	29.99	17.49	12.50	2.399 Minor Risk	
1,900.00	1,900.00	1,900.60	1,899.40	6.61	6.61	179.85	-29.99	0.08	29.99	16.78	13.21	2.270 Minor Risk	
2,000.00	2,000.00	2,000.60	1,999.40	6.96	6.97	179.85	-29.99	0.08	29.99	16.06	13.93	2.153 Minor Risk	
2,100.00	2,100.00	2,100.60	2,099.40	7.32	7.32	179.85	-29.99	0.08	29.99	15.35	14.64	2.048 Minor Risk	
2,200.00	2,200.00	2,200.60	2,199.40	7.68	7.68	179.85	-29.99	0.08	29.99	14.63	15.36	1.953 Minor Risk	
2,300.00	2,300.00	2,300.60	2,299.40	8.04	8.04	179.85	-29.99	0.08	29.99	13.92	16.07	1.866 Minor Risk	
2,350.00	2,350.00	2,349.40	2,349.40	8.22	8.21	179.85	-29.99	0.08	29.99	13.56	16.43	1.826 Minor Risk, CC	
2,400.00	2,400.00	2,400.60	2,399.40	8.39	8.40	-164.23	-29.99	0.08	30.20	13.41	16.79	1.799 Minor Risk, ES	
2,500.00	2,499.98	2,500.62	2,499.38	8.75	8.75	-165.07	-29.99	0.08	31.88	14.38	17.51	1.821 Minor Risk	
2,600.00	2,599.92	2,600.68	2,599.32	9.11	9.11	-166.53	-29.99	0.08	35.27	17.05	18.22	1.936 Minor Risk	
2,700.00	2,699.78	2,699.18	2,699.18	9.47	9.46	-168.25	-29.99	0.08	40.37	21.44	18.93	2.133 Minor Risk	
2,800.00	2,799.54	2,799.68	2,799.68	9.82	9.82	-169.54	-29.24	-0.35	46.44	26.79	19.64	2.364 Minor Risk	
2,900.00	2,899.16	2,900.28	2,900.24	10.18	10.18	-170.10	-26.95	-1.65	52.63	32.27	20.35	2.586 Alert	
3,000.00	2,998.61	3,000.99	3,000.85	10.54	10.54	-170.15	-23.12	-3.82	58.93	37.87	21.06	2.798 Alert	
3,100.00	3,097.86	3,101.78	3,101.45	10.89	10.90	-169.83	-17.75	-6.87	65.33	43.57	21.76	3.002 Alert	
3,200.00	3,196.89	3,202.67	3,202.03	11.25	11.26	-169.25	-10.83	-10.80	71.85	49.39	22.46	3.199 Alert	
3,295.74	3,291.45	3,301.22	3,297.71	11.59	11.61	-168.56	-2.96	-15.27	78.36	55.21	23.15	3.385 Alert	
3,300.00	3,295.65	3,303.03	3,301.94	11.61	11.62	-168.54	-2.61	-15.47	78.67	55.51	23.17	3.396 Alert	
3,400.00	3,394.29	3,402.75	3,401.19	11.97	11.97	-168.00	5.76	-20.22	86.09	62.20	23.88	3.604 Alert	
3,500.00	3,492.94	3,502.47	3,500.45	12.33	12.33	-167.55	14.13	-24.97	93.51	68.91	24.60	3.801 Alert	
3,600.00	3,591.58	3,602.19	3,599.71	12.69	12.68	-167.17	22.49	-29.72	100.94	75.62	25.32	3.986 Alert	
3,700.00	3,690.22	3,701.91	3,698.96	13.05	13.04	-166.84	30.86	-34.47	108.37	82.33	26.04	4.161 Alert	
3,800.00	3,788.86	3,801.64	3,798.22	13.41	13.40	-166.55	39.22	-39.23	115.80	89.04	26.76	4.327 Alert	
3,900.00	3,887.50	3,901.36	3,897.48	13.77	13.76	-166.30	47.59	-43.98	123.24	95.75	27.48	4.484 Alert	
4,000.00	3,986.14	4,001.08	3,996.73	14.14	14.12	-166.07	55.95	-48.73	130.67	102.47	28.21	4.633 Alert	
4,100.00	4,084.78	4,100.80	4,095.99	14.50	14.47	-165.87	64.32	-53.48	138.11	109.18	28.93	4.774 Alert	
4,200.00	4,183.42	4,200.52	4,195.25	14.87	14.83	-165.69	72.68	-58.23	145.55	115.90	29.66	4.908 Alert	
4,300.00	4,282.06	4,300.25	4,294.50	15.24	15.19	-165.53	81.05	-62.98	153.00	122.61	30.38	5.036	
4,400.00	4,380.70	4,400.03	4,393.76	15.60	15.55	-165.38	89.42	-67.73	160.44	129.33	31.11	5.157	
4,500.00	4,479.34	4,499.69	4,493.02	15.97	15.91	-165.24	97.78	-72.48	167.89	136.05	31.84	5.273	
4,600.00	4,577.98	4,599.41	4,592.27	16.34	16.27	-165.12	106.15	-77.23	175.33	142.77	32.57	5.384	
4,700.00	4,676.62	4,700.87	4,691.53	16.71	16.64	-165.01	114.51	-81.98	182.78	149.48	33.30	5.489	
4,800.00	4,775.27	4,801.15	4,790.79	17.08	17.00	-164.90	122.88	-86.73	190.22	156.19	34.03	5.589	
4,900.00	4,873.91	4,901.42	4,890.04	17.45	17.36	-164.81	131.24	-91.48	197.67	162.91	34.76	5.686	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,001.70	4,989.30	17.82	17.72	-164.72	139.61	-96.24	205.12	169.62	35.50	5.779		
5,100.00	5,071.19	5,101.98	5,088.56	18.19	18.09	-164.63	147.97	-100.99	212.57	176.34	36.23	5.867		
5,200.00	5,169.83	5,202.26	5,187.81	18.56	18.45	-164.56	156.34	-105.74	220.02	183.05	36.96	5.952		
5,300.00	5,268.47	5,302.54	5,287.07	18.93	18.81	-164.48	164.71	-110.49	227.47	189.77	37.70	6.034		
5,400.00	5,367.11	5,402.82	5,386.33	19.31	19.18	-164.42	173.07	-115.24	234.92	196.49	38.43	6.113		
5,500.00	5,465.75	5,503.09	5,485.58	19.68	19.54	-164.35	181.44	-119.99	242.37	203.20	39.17	6.188		
5,600.00	5,564.39	5,603.37	5,584.84	20.05	19.90	-164.29	189.80	-124.74	249.82	209.92	39.90	6.261		
5,700.00	5,663.03	5,703.65	5,684.10	20.42	20.27	-164.24	198.17	-129.49	257.27	216.63	40.64	6.331		
5,800.00	5,761.67	5,803.93	5,783.35	20.80	20.63	-164.18	206.53	-134.24	264.72	223.35	41.37	6.399		
5,900.00	5,860.31	5,904.21	5,882.61	21.17	20.99	-164.13	214.90	-138.99	272.17	230.06	42.11	6.464		
6,000.00	5,958.96	5,995.52	5,981.87	21.54	21.33	-164.09	223.26	-143.74	279.62	236.81	42.81	6.532		
6,100.00	6,057.60	6,104.76	6,081.12	21.92	21.72	-164.04	231.63	-148.49	287.07	243.49	43.58	6.587		
6,200.00	6,156.24	6,205.04	6,180.38	22.29	22.09	-164.00	240.00	-153.24	294.52	250.21	44.32	6.646		
6,300.00	6,254.88	6,305.32	6,279.63	22.67	22.45	-163.96	248.36	-158.00	301.97	256.92	45.05	6.703		
6,400.00	6,353.52	6,405.60	6,378.89	23.04	22.81	-163.92	256.73	-162.75	309.43	263.64	45.79	6.758		
6,500.00	6,452.16	6,505.88	6,478.15	23.42	23.18	-163.88	265.09	-167.50	316.88	270.35	46.53	6.811		
6,600.00	6,550.80	6,606.15	6,577.40	23.79	23.54	-163.85	273.46	-172.25	324.33	277.07	47.26	6.862		
6,700.00	6,649.44	6,706.43	6,676.66	24.17	23.91	-163.81	281.82	-177.00	331.78	283.78	48.00	6.912		
6,800.00	6,748.08	6,806.71	6,775.92	24.54	24.27	-163.78	290.19	-181.75	339.23	290.50	48.74	6.960		
6,900.00	6,846.72	6,906.99	6,875.17	24.92	24.64	-163.75	298.55	-186.50	346.69	297.21	49.48	7.007		
7,000.00	6,945.36	7,007.27	6,974.43	25.29	25.00	-163.72	306.92	-191.25	354.14	303.92	50.22	7.052		
7,100.00	7,044.00	7,107.55	7,073.69	25.67	25.37	-163.69	315.29	-196.00	361.59	310.64	50.95	7.096		
7,200.00	7,142.65	7,207.82	7,172.94	26.04	25.73	-163.66	323.65	-200.75	369.04	317.35	51.69	7.139		
7,300.00	7,241.29	7,291.90	7,272.20	26.42	26.04	-163.64	332.02	-205.50	376.50	324.12	52.37	7.189		
7,400.00	7,339.93	7,408.38	7,371.46	26.79	26.46	-163.61	340.38	-210.25	383.95	330.78	53.17	7.221		
7,500.00	7,438.57	7,508.66	7,470.71	27.17	26.83	-163.59	348.75	-215.01	391.40	337.49	53.91	7.260		
7,571.77	7,509.37	7,562.92	7,541.95	27.44	27.02	-163.57	354.75	-218.42	396.75	342.38	54.38	7.296		
7,600.00	7,537.23	7,591.07	7,569.98	27.55	27.13	-163.57	357.11	-219.76	398.76	344.17	54.58	7.305		
7,700.00	7,636.18	7,684.93	7,663.45	27.92	27.47	-163.54	364.51	-223.95	404.78	349.48	55.30	7.320		
7,800.00	7,735.48	7,776.33	7,754.64	28.29	27.80	-163.56	369.87	-227.00	410.27	354.29	55.98	7.329		
7,900.00	7,835.05	7,867.65	7,845.87	28.65	28.12	-163.63	373.34	-228.97	415.34	358.70	56.64	7.333		
8,000.00	7,934.83	7,958.88	7,937.08	29.01	28.45	-163.76	374.91	-229.86	419.96	362.69	57.27	7.333		
8,100.00	8,034.74	8,055.95	8,034.14	29.36	28.79	-163.91	375.01	-229.92	423.67	365.73	57.95	7.311		
8,202.27	8,137.00	8,158.20	8,136.40	29.72	29.16	179.99	375.01	-229.92	424.99	366.32	58.67	7.244		
8,300.00	8,234.73	8,255.93	8,234.13	30.06	29.50	179.99	375.01	-229.92	424.99	365.63	59.36	7.160		
8,400.00	8,334.73	8,356.00	8,334.20	30.41	29.85	179.95	375.01	-229.66	424.99	364.93	60.06	7.076		
8,435.88	8,370.61	8,391.89	8,370.01	30.53	29.97	179.66	375.02	-227.47	424.98	364.68	60.30	7.048		
8,500.00	8,434.73	8,454.83	8,432.24	30.75	30.18	178.41	375.08	-218.22	425.09	364.38	60.71	7.002		
8,552.31	8,487.04	8,504.22	8,480.13	30.94	30.35	176.80	375.15	-206.22	425.56	364.56	61.00	6.976		
8,600.00	8,534.68	8,547.79	8,521.39	31.10	30.49	85.40	375.23	-192.24	426.47	365.24	61.23	6.965		
8,650.00	8,584.26	8,592.57	8,562.55	31.26	30.63	83.63	375.34	-174.65	427.83	366.41	61.42	6.965		
8,700.00	8,633.10	8,636.51	8,601.50	31.43	30.77	81.92	375.46	-154.32	429.55	367.98	61.57	6.977		
8,750.00	8,680.83	8,679.69	8,638.14	31.58	30.91	80.28	375.60	-131.49	431.57	369.91	61.66	6.999		
8,800.00	8,727.09	8,722.20	8,672.43	31.74	31.04	78.72	375.75	-106.39	433.83	372.13	61.70	7.032		
8,850.00	8,771.52	8,764.09	8,704.31	31.89	31.17	77.25	375.91	-79.23	436.26	374.57	61.68	7.073		
8,900.00	8,813.78	8,805.44	8,733.75	32.04	31.30	75.88	376.08	-50.20	438.79	377.17	61.62	7.120		
8,950.00	8,853.56	8,846.30	8,760.71	32.18	31.44	74.61	376.27	-19.51	441.36	379.83	61.53	7.173		
9,000.00	8,890.55	8,886.73	8,785.16	32.32	31.58	73.45	376.46	12.67	443.91	382.49	61.42	7.228		
9,050.00	8,924.46	8,926.78	8,807.10	32.47	31.72	72.40	376.66	46.17	446.37	385.07	61.29	7.282		
9,100.00	8,955.05	8,966.50	8,826.48	32.63	31.87	71.46	376.86	80.83	448.68	387.50	61.18	7.333		
9,150.00	8,982.08	9,005.94	8,843.31	32.79	32.03	70.64	377.08	116.49	450.81	389.71	61.10	7.378		
9,200.00	9,005.34	9,045.14	8,857.57	32.97	32.20	69.94	377.30	153.00	452.70	391.63	61.07	7.412		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,250.00	9,024.65	9,084.14	8,869.24	33.17	32.38	69.36	377.52	190.20	454.31	393.21	61.11	7.435				
9,300.00	9,039.87	9,122.99	8,878.33	33.38	32.57	68.90	377.74	227.96	455.62	394.40	61.22	7.442				
9,350.00	9,050.89	9,161.71	8,884.82	33.62	32.77	68.57	377.97	266.13	456.60	395.17	61.42	7.434				
9,400.00	9,057.61	9,200.00	8,888.68	33.87	32.98	68.36	378.20	304.22	457.22	395.50	61.72	7.408				
9,452.31	9,060.00	9,241.30	8,890.00	34.15	33.21	68.27	378.44	345.49	457.48	395.34	62.15	7.361				
9,500.00	9,060.00	9,288.99	8,890.00	34.42	33.50	68.27	378.73	393.18	457.48	394.83	62.65	7.302				
9,600.00	9,060.00	9,388.99	8,890.00	35.09	34.19	68.27	379.33	493.17	457.48	393.60	63.88	7.162				
9,700.00	9,060.00	9,488.99	8,890.00	35.86	34.98	68.27	379.92	593.17	457.47	392.17	65.30	7.006				
9,800.00	9,060.00	9,588.99	8,890.00	36.72	35.87	68.27	380.52	693.17	457.47	390.56	66.91	6.837				
9,900.00	9,060.00	9,688.99	8,890.00	37.69	36.86	68.27	381.12	793.17	457.47	388.76	68.71	6.658				
10,000.00	9,060.00	9,788.99	8,890.00	38.73	37.93	68.27	381.71	893.17	457.47	386.81	70.66	6.474				
10,100.00	9,060.00	9,888.99	8,890.00	39.86	39.08	68.27	382.31	993.16	457.46	384.70	72.77	6.287				
10,140.22	9,060.00	9,929.21	8,890.00	40.33	39.56	68.27	382.55	1,033.39	457.46	383.81	73.65	6.211				
10,200.00	9,060.00	9,988.99	8,890.00	41.05	40.30	68.23	382.91	1,093.16	456.88	381.89	74.99	6.092				
10,300.00	9,060.00	10,088.91	8,890.00	42.31	41.58	68.03	383.50	1,193.08	453.32	376.05	77.27	5.867				
10,400.00	9,060.00	10,188.63	8,890.00	43.64	42.92	67.62	384.10	1,292.80	446.54	366.98	79.57	5.612				
10,507.23	9,060.00	10,304.79	8,890.00	45.11	44.55	66.95	384.73	1,399.38	435.73	353.60	82.13	5.306				
10,600.00	9,060.00	10,387.40	8,890.00	46.43	45.75	66.48	385.28	1,491.57	426.20	342.05	84.15	5.065				
10,700.00	9,060.00	10,487.09	8,890.00	47.91	47.23	66.12	385.88	1,591.25	419.03	332.41	86.63	4.837	Alert			
10,800.00	9,060.00	10,586.99	8,890.00	49.42	48.76	65.91	386.48	1,691.15	415.07	325.79	89.28	4.649	Alert			
10,874.32	9,060.00	10,661.30	8,890.00	50.57	49.92	65.86	386.92	1,765.47	414.19	322.81	91.38	4.532	Alert			
10,900.00	9,060.00	10,686.98	8,890.00	50.97	50.33	65.86	387.07	1,791.14	414.29	322.17	92.13	4.497	Alert			
11,000.00	9,060.00	10,786.94	8,890.00	52.55	51.93	65.99	387.67	1,891.10	416.71	321.55	95.16	4.379	Alert			
11,100.00	9,060.00	10,886.75	8,890.00	54.14	53.55	66.29	388.26	1,990.91	422.31	323.94	98.37	4.293	Alert			
11,207.23	9,060.00	11,006.54	8,890.00	55.87	55.54	66.77	388.90	2,097.62	431.89	329.69	102.20	4.226	Alert			
11,300.00	9,060.00	11,085.77	8,890.00	57.39	56.88	67.31	389.45	2,189.92	440.43	335.23	105.19	4.187	Alert			
11,400.00	9,060.00	11,185.54	8,890.00	59.06	58.58	67.68	390.05	2,289.69	446.56	337.98	108.58	4.113	Alert			
11,506.63	9,060.00	11,307.89	8,890.00	60.88	60.70	67.86	390.68	2,396.26	449.55	337.18	112.37	4.001	Alert			
11,600.00	9,060.00	11,385.48	8,890.00	62.49	62.06	67.91	391.24	2,489.63	450.56	335.37	115.19	3.911	Alert			
11,700.00	9,060.00	11,485.47	8,890.00	64.24	63.82	67.97	391.84	2,589.62	451.64	333.12	118.53	3.810	Alert			
11,800.00	9,060.00	11,585.47	8,890.00	66.01	65.60	68.03	392.43	2,689.61	452.73	330.83	121.89	3.714	Alert			
11,900.00	9,060.00	11,685.46	8,890.00	67.79	67.40	68.08	393.03	2,789.60	453.81	328.52	125.29	3.622	Alert			
12,000.00	9,060.00	11,785.45	8,890.00	69.58	69.21	68.14	393.63	2,889.59	454.90	326.18	128.72	3.534	Alert			
12,100.00	9,060.00	11,885.44	8,890.00	71.39	71.03	68.19	394.23	2,989.58	455.98	323.81	132.17	3.450	Alert			
12,200.00	9,060.00	11,985.44	8,890.00	73.21	72.86	68.24	394.82	3,089.58	457.07	321.42	135.65	3.369	Alert			
12,300.00	9,060.00	12,085.43	8,890.00	75.05	74.71	68.30	395.42	3,189.57	458.15	319.00	139.15	3.292	Alert			
12,400.00	9,060.00	12,185.42	8,890.00	76.89	76.57	68.35	396.02	3,289.56	459.24	316.57	142.67	3.219	Alert			
12,500.00	9,060.00	12,285.42	8,890.00	78.74	78.43	68.41	396.61	3,389.55	460.33	314.11	146.22	3.148	Alert			
12,600.00	9,060.00	12,385.41	8,890.00	80.61	80.31	68.46	397.21	3,489.54	461.42	311.64	149.78	3.081	Alert			
12,700.00	9,060.00	12,485.40	8,890.00	82.48	82.19	68.51	397.81	3,589.53	462.50	309.14	153.36	3.016	Alert			
12,800.00	9,060.00	12,585.40	8,890.00	84.36	84.08	68.57	398.40	3,689.52	463.59	306.64	156.96	2.954	Alert			
12,900.00	9,060.00	12,685.39	8,890.00	86.24	85.97	68.62	399.00	3,789.52	464.68	304.11	160.57	2.894	Alert			
13,000.00	9,060.00	12,785.38	8,890.00	88.14	87.88	68.67	399.60	3,889.51	465.77	301.57	164.19	2.837	Alert			
13,100.00	9,060.00	12,885.38	8,890.00	90.04	89.79	68.72	400.19	3,989.50	466.86	299.02	167.83	2.782	Alert			
13,200.00	9,060.00	12,985.37	8,890.00	91.94	91.70	68.78	400.79	4,089.49	467.95	296.46	171.49	2.729	Alert			
13,300.00	9,060.00	13,085.36	8,890.00	93.86	93.63	68.83	401.39	4,189.48	469.04	293.88	175.15	2.678	Alert			
13,400.00	9,060.00	13,185.36	8,890.00	95.77	95.55	68.88	401.98	4,289.47	470.13	291.30	178.83	2.629	Alert			
13,500.00	9,060.00	13,285.35	8,890.00	97.70	97.48	68.93	402.58	4,389.46	471.22	288.70	182.52	2.582	Alert			
13,600.00	9,060.00	13,385.34	8,890.00	99.62	99.42	68.98	403.18	4,489.45	472.31	286.09	186.22	2.536	Alert			
13,700.00	9,060.00	13,485.34	8,890.00	101.56	101.36	69.03	403.77	4,589.45	473.40	283.47	189.93	2.493	Minor Risk			
13,800.00	9,060.00	13,585.33	8,890.00	103.49	103.31	69.08	404.37	4,689.44	474.50	280.85	193.65	2.450	Minor Risk			
13,900.00	9,060.00	13,685.32	8,890.00	105.43	105.25	69.13	404.97	4,789.43	475.59	278.21	197.38	2.410	Minor Risk			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,000.00	9,060.00	13,785.31	8,890.00	107.38	107.21	69.18	405.56	4,889.42	476.68	275.57	201.12	2.370 Minor Risk	
14,100.00	9,060.00	13,885.31	8,890.00	109.33	109.16	69.23	406.16	4,989.41	477.77	272.91	204.86	2.332 Minor Risk	
14,200.00	9,060.00	13,985.30	8,890.00	111.28	111.12	69.28	406.76	5,089.40	478.87	270.25	208.61	2.295 Minor Risk	
14,300.00	9,060.00	14,085.29	8,890.00	113.23	113.08	69.33	407.35	5,189.39	479.96	267.59	212.37	2.260 Minor Risk	
14,400.00	9,060.00	14,185.29	8,890.00	115.19	115.05	69.38	407.95	5,289.39	481.06	264.91	216.14	2.226 Minor Risk	
14,500.00	9,060.00	14,285.28	8,890.00	117.15	117.01	69.43	408.55	5,389.38	482.15	262.23	219.92	2.192 Minor Risk	
14,600.00	9,060.00	14,385.27	8,890.00	119.11	118.98	69.48	409.14	5,489.37	483.25	259.55	223.70	2.160 Minor Risk	
14,700.00	9,060.00	14,485.27	8,890.00	121.08	120.96	69.53	409.74	5,589.36	484.34	256.85	227.49	2.129 Minor Risk	
14,800.00	9,060.00	14,585.26	8,890.00	123.05	122.93	69.57	410.34	5,689.35	485.44	254.15	231.28	2.099 Minor Risk	
14,900.00	9,060.00	14,685.25	8,890.00	125.02	124.91	69.62	410.94	5,789.34	486.53	251.45	235.08	2.070 Minor Risk	
15,000.00	9,060.00	14,785.25	8,890.00	126.99	126.89	69.67	411.53	5,889.33	487.63	248.74	238.89	2.041 Minor Risk	
15,100.00	9,060.00	14,885.24	8,890.00	128.97	128.87	69.72	412.13	5,989.33	488.73	246.02	242.70	2.014 Minor Risk	
15,200.00	9,060.00	14,985.23	8,890.00	130.95	130.85	69.77	412.73	6,089.32	489.82	243.30	246.52	1.987 Minor Risk	
15,300.00	9,060.00	15,085.23	8,890.00	132.93	132.84	69.81	413.32	6,189.31	490.92	240.58	250.34	1.961 Minor Risk	
15,400.00	9,060.00	15,185.22	8,890.00	134.91	134.83	69.86	413.92	6,289.30	492.02	237.85	254.17	1.936 Minor Risk	
15,500.00	9,060.00	15,285.21	8,890.00	136.89	136.82	69.91	414.52	6,389.29	493.12	235.11	258.00	1.911 Minor Risk	
15,600.00	9,060.00	15,385.21	8,890.00	138.88	138.81	69.95	415.11	6,489.28	494.21	232.38	261.84	1.887 Minor Risk	
15,700.00	9,060.00	15,485.20	8,890.00	140.86	140.80	70.00	415.71	6,589.27	495.31	229.63	265.68	1.864 Minor Risk	
15,800.00	9,060.00	15,585.19	8,890.00	142.85	142.79	70.05	416.31	6,689.27	496.41	226.89	269.52	1.842 Minor Risk	
15,900.00	9,060.00	15,685.18	8,890.00	144.84	144.79	70.09	416.90	6,789.26	497.51	224.14	273.37	1.820 Minor Risk	
16,000.00	9,060.00	15,785.18	8,890.00	146.83	146.79	70.14	417.50	6,889.25	498.61	221.38	277.23	1.799 Minor Risk	
16,100.00	9,060.00	15,885.17	8,890.00	148.83	148.78	70.18	418.10	6,989.24	499.71	218.62	281.09	1.778 Minor Risk	
16,200.00	9,060.00	15,985.16	8,890.00	150.82	150.78	70.23	418.69	7,089.23	500.81	215.86	284.95	1.758 Minor Risk	
16,300.00	9,060.00	16,085.16	8,890.00	152.82	152.78	70.27	419.29	7,189.22	501.91	213.10	288.81	1.738 Minor Risk	
16,400.00	9,060.00	16,185.15	8,890.00	154.81	154.79	70.32	419.89	7,289.21	503.01	210.33	292.68	1.719 Minor Risk	
16,500.00	9,060.00	16,285.14	8,890.00	156.81	156.79	70.36	420.48	7,389.20	504.11	207.56	296.56	1.700 Minor Risk	
16,600.00	9,060.00	16,385.14	8,890.00	158.81	158.79	70.41	421.08	7,489.20	505.21	204.78	300.43	1.682 Minor Risk	
16,700.00	9,060.00	16,485.13	8,890.00	160.81	160.80	70.45	421.68	7,589.19	506.32	202.00	304.31	1.664 Minor Risk	
16,800.00	9,060.00	16,585.12	8,890.00	162.81	162.80	70.50	422.27	7,689.18	507.42	199.22	308.19	1.646 Minor Risk	
16,900.00	9,060.00	16,685.12	8,890.00	164.82	164.81	70.54	422.87	7,789.17	508.52	196.44	312.08	1.629 Minor Risk	
17,000.00	9,060.00	16,785.11	8,890.00	166.82	166.82	70.58	423.47	7,889.16	509.62	193.65	315.97	1.613 Minor Risk	
17,100.00	9,060.00	16,885.10	8,890.00	168.83	168.83	70.63	424.06	7,989.15	510.73	190.86	319.86	1.597 Minor Risk	
17,200.00	9,060.00	16,985.10	8,890.00	170.83	170.84	70.67	424.66	8,089.14	511.83	188.07	323.76	1.581 Minor Risk	
17,300.00	9,060.00	17,085.09	8,890.00	172.84	172.85	70.71	425.26	8,189.14	512.93	185.28	327.66	1.565 Minor Risk	
17,400.00	9,060.00	17,185.08	8,890.00	174.84	174.86	70.76	425.85	8,289.13	514.04	182.48	331.56	1.550 Minor Risk	
17,500.00	9,060.00	17,285.08	8,890.00	176.85	176.87	70.80	426.45	8,389.12	515.14	179.68	335.46	1.536 Minor Risk	
17,600.00	9,060.00	17,385.07	8,890.00	178.86	178.89	70.84	427.05	8,489.11	516.25	176.88	339.37	1.521 Minor Risk	
17,700.00	9,060.00	17,485.06	8,890.00	180.87	180.90	70.89	427.65	8,589.10	517.35	174.08	343.28	1.507 Minor Risk	
17,800.00	9,060.00	17,585.06	8,890.00	182.88	182.91	70.93	428.24	8,689.09	518.46	171.27	347.19	1.493 Major Risk	
17,900.00	9,060.00	17,685.05	8,890.00	184.89	184.93	70.97	428.84	8,789.08	519.56	168.46	351.10	1.480 Major Risk	
18,000.00	9,060.00	17,785.04	8,890.00	186.90	186.94	71.01	429.44	8,889.08	520.67	165.65	355.02	1.467 Major Risk	
18,100.00	9,060.00	17,885.03	8,890.00	188.92	188.96	71.05	430.03	8,989.07	521.77	162.84	358.94	1.454 Major Risk	
18,200.00	9,060.00	17,985.03	8,890.00	190.93	190.98	71.10	430.63	9,089.06	522.88	160.02	362.86	1.441 Major Risk	
18,300.00	9,060.00	18,085.02	8,890.00	192.94	193.00	71.14	431.23	9,189.05	523.98	157.20	366.78	1.429 Major Risk	
18,400.00	9,060.00	18,185.01	8,890.00	194.96	195.01	71.18	431.82	9,289.04	525.09	154.38	370.71	1.416 Major Risk	
18,500.00	9,060.00	18,285.01	8,890.00	196.97	197.03	71.22	432.42	9,389.03	526.20	151.56	374.63	1.405 Major Risk	
18,600.00	9,060.00	18,385.00	8,890.00	198.99	199.05	71.26	433.02	9,489.02	527.31	148.74	378.57	1.393 Major Risk	
18,700.00	9,060.00	18,484.99	8,890.00	201.00	201.07	71.30	433.61	9,589.02	528.41	145.92	382.50	1.381 Major Risk	
18,800.00	9,060.00	18,584.99	8,890.00	203.02	203.09	71.34	434.21	9,689.01	529.52	143.09	386.43	1.370 Major Risk	
18,900.00	9,060.00	18,684.98	8,890.00	205.04	205.11	71.38	434.81	9,789.00	530.63	140.26	390.37	1.359 Major Risk	
19,000.00	9,060.00	18,784.97	8,890.00	207.06	207.14	71.42	435.40	9,888.99	531.74	137.43	394.31	1.349 Major Risk	
19,100.00	9,060.00	18,884.97	8,890.00	209.07	209.16	71.46	436.00	9,988.98	532.85	134.60	398.25	1.338 Major Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	18,984.96	8,890.00	211.09	211.18	71.50	436.60	10,088.97	533.95	131.76	402.19	1.328	Major Risk
19,300.00	9,060.00	19,084.95	8,890.00	213.11	213.20	71.54	437.19	10,188.96	535.06	128.93	406.13	1.317	Major Risk
19,400.00	9,060.00	19,184.95	8,890.00	215.13	215.23	71.58	437.79	10,288.96	536.17	126.09	410.08	1.307	Major Risk
19,500.32	9,060.00	19,285.26	8,890.00	217.16	217.26	71.62	438.39	10,389.26	537.29	123.25	414.04	1.298	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,528.68	3.38	1,528.72					
100.00	100.00	89.20	89.20	0.52	0.51	179.87	-1,528.68	3.38	1,528.69	1,527.65	1.03	1,481.382		
200.00	200.00	189.20	189.20	0.70	0.68	179.87	-1,528.68	3.38	1,528.69	1,527.31	1.38	1,109.682		
300.00	300.00	289.20	289.20	0.99	0.95	179.87	-1,528.68	3.38	1,528.69	1,526.75	1.94	787.379		
400.00	400.00	389.20	389.20	1.31	1.27	179.87	-1,528.68	3.38	1,528.69	1,526.10	2.58	591.944		
500.00	500.00	489.20	489.20	1.65	1.61	179.87	-1,528.68	3.38	1,528.69	1,525.43	3.26	469.595		
600.00	600.00	589.20	589.20	1.99	1.95	179.87	-1,528.68	3.38	1,528.69	1,524.74	3.94	387.622		
700.00	700.00	689.20	689.20	2.34	2.30	179.87	-1,528.68	3.38	1,528.69	1,524.05	4.64	329.400		
800.00	800.00	789.20	789.20	2.69	2.65	179.87	-1,528.68	3.38	1,528.69	1,523.34	5.34	286.102		
900.00	900.00	889.20	889.20	3.04	3.01	179.87	-1,528.68	3.38	1,528.69	1,522.64	6.05	252.721		
1,000.00	1,000.00	989.20	989.20	3.40	3.36	179.87	-1,528.68	3.38	1,528.69	1,521.93	6.76	226.236		
1,100.00	1,100.00	1,089.20	1,089.20	3.75	3.71	179.87	-1,528.68	3.38	1,528.69	1,521.22	7.47	204.730		
1,200.00	1,200.00	1,189.20	1,189.20	4.11	4.07	179.87	-1,528.68	3.38	1,528.69	1,520.51	8.18	186.929		
1,300.00	1,300.00	1,289.20	1,289.20	4.46	4.43	179.87	-1,528.68	3.38	1,528.69	1,519.80	8.89	171.958		
1,400.00	1,400.00	1,389.20	1,389.20	4.82	4.78	179.87	-1,528.68	3.38	1,528.69	1,519.08	9.60	159.195		
1,500.00	1,500.00	1,489.20	1,489.20	5.18	5.14	179.87	-1,528.68	3.38	1,528.69	1,518.37	10.32	148.187		
1,600.00	1,600.00	1,589.20	1,589.20	5.53	5.50	179.87	-1,528.68	3.38	1,528.69	1,517.66	11.03	138.597		
1,700.00	1,700.00	1,689.20	1,689.20	5.89	5.85	179.87	-1,528.68	3.38	1,528.69	1,516.94	11.74	130.169		
1,800.00	1,800.00	1,789.20	1,789.20	6.25	6.21	179.87	-1,528.68	3.38	1,528.69	1,516.23	12.46	122.704		
1,900.00	1,900.00	1,889.20	1,889.20	6.61	6.57	179.87	-1,528.68	3.38	1,528.69	1,515.51	13.17	116.046		
2,000.00	2,000.00	1,989.20	1,989.20	6.96	6.92	179.87	-1,528.68	3.38	1,528.69	1,514.80	13.89	110.072		
2,100.00	2,100.00	2,120.58	2,120.57	7.32	7.39	179.88	-1,527.45	3.10	1,527.77	1,513.06	14.71	103.840		
2,200.00	2,200.00	2,255.62	2,255.53	7.68	7.88	179.92	-1,523.12	2.12	1,524.57	1,509.02	15.54	98.084		
2,300.00	2,300.00	2,390.38	2,390.08	8.04	8.36	179.98	-1,515.72	0.44	1,519.07	1,502.71	16.37	92.819		
2,350.00	2,350.00	2,457.60	2,457.12	8.22	8.60	-179.97	-1,510.87	-0.66	1,515.47	1,498.69	16.77	90.348		
2,400.00	2,400.00	2,524.73	2,524.00	8.39	8.84	-163.90	-1,505.27	-1.93	1,511.50	1,494.32	17.18	87.987		
2,500.00	2,499.98	2,658.74	2,657.29	8.75	9.32	-163.83	-1,491.79	-4.99	1,503.12	1,485.14	17.98	83.593		
2,600.00	2,599.92	2,792.39	2,789.87	9.11	9.79	-163.76	-1,475.33	-8.72	1,494.14	1,475.36	18.77	79.582		
2,700.00	2,699.78	2,925.68	2,921.66	9.47	10.27	-163.69	-1,455.92	-13.13	1,484.57	1,465.01	19.56	75.902		
2,800.00	2,799.54	3,058.58	3,052.56	9.82	10.75	-163.62	-1,433.59	-18.19	1,474.42	1,454.09	20.33	72.509		
2,900.00	2,899.16	3,191.06	3,182.50	10.18	11.22	-163.54	-1,408.39	-23.91	1,463.69	1,442.59	21.10	69.367		
3,000.00	2,998.61	3,308.49	3,280.78	10.54	11.65	-163.50	-1,388.10	-28.51	1,453.45	1,431.57	21.88	66.423		
3,100.00	3,097.86	3,408.87	3,378.24	10.89	12.02	-163.47	-1,367.98	-33.07	1,444.87	1,422.27	22.61	63.917		
3,200.00	3,196.89	3,509.11	3,475.83	11.25	12.38	-163.46	-1,347.84	-37.64	1,437.96	1,414.63	23.33	61.633		
3,295.74	3,291.45	3,586.50	3,569.37	11.59	12.67	-163.46	-1,328.53	-42.02	1,432.91	1,408.96	23.96	59.806		
3,300.00	3,295.65	3,609.25	3,573.53	11.61	12.75	-163.46	-1,327.67	-42.21	1,432.72	1,408.67	24.06	59.552		
3,400.00	3,394.29	3,709.35	3,671.26	11.97	13.12	-163.46	-1,307.50	-46.79	1,428.25	1,403.46	24.79	57.617		
3,500.00	3,492.94	3,809.45	3,769.00	12.33	13.49	-163.45	-1,287.33	-51.37	1,423.78	1,398.26	25.52	55.789		
3,600.00	3,591.58	3,909.55	3,866.73	12.69	13.87	-163.45	-1,267.15	-55.94	1,419.30	1,393.05	26.26	54.058		
3,700.00	3,690.22	4,009.65	3,964.47	13.05	14.24	-163.45	-1,246.98	-60.52	1,414.83	1,387.84	26.99	52.418		
3,800.00	3,788.86	4,109.75	4,062.20	13.41	14.62	-163.44	-1,226.81	-65.09	1,410.36	1,382.63	27.73	50.863		
3,900.00	3,887.50	4,190.15	4,159.94	13.77	14.92	-163.44	-1,206.63	-69.67	1,405.88	1,377.49	28.39	49.513		
4,000.00	3,986.14	4,309.95	4,257.67	14.14	15.37	-163.43	-1,186.46	-74.24	1,401.41	1,372.20	29.21	47.980		
4,100.00	4,084.78	4,389.95	4,355.41	14.50	15.67	-163.43	-1,166.28	-78.82	1,396.93	1,367.06	29.87	46.760		
4,200.00	4,183.42	4,489.85	4,453.14	14.87	16.05	-163.43	-1,146.11	-83.40	1,392.46	1,361.84	30.62	45.480		
4,300.00	4,282.06	4,589.75	4,550.88	15.24	16.43	-163.42	-1,125.94	-87.97	1,387.99	1,356.63	31.36	44.260		
4,400.00	4,380.70	4,689.65	4,648.61	15.60	16.81	-163.42	-1,105.76	-92.55	1,383.51	1,351.41	32.10	43.094		
4,500.00	4,479.34	4,789.55	4,746.35	15.97	17.19	-163.41	-1,085.59	-97.12	1,379.04	1,346.19	32.85	41.980		
4,600.00	4,577.98	4,889.45	4,844.08	16.34	17.57	-163.41	-1,065.42	-101.70	1,374.57	1,340.97	33.60	40.915		
4,700.00	4,676.62	4,989.35	4,941.82	16.71	17.95	-163.40	-1,045.24	-106.28	1,370.09	1,335.75	34.34	39.894		
4,800.00	4,775.27	5,089.25	5,039.55	17.08	18.33	-163.40	-1,025.07	-110.85	1,365.62	1,330.53	35.09	38.917		
4,900.00	4,873.91	5,189.15	5,137.28	17.45	18.71	-163.39	-1,004.89	-115.43	1,361.15	1,325.31	35.84	37.979		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,289.05	5,235.02	17.82	19.09	-163.39	-984.72	-120.00	1,356.67	1,320.08	36.59	37.079		
5,100.00	5,071.19	5,388.95	5,332.75	18.19	19.48	-163.39	-964.55	-124.58	1,352.20	1,314.86	37.34	36.214		
5,200.00	5,169.83	5,488.85	5,430.49	18.56	19.86	-163.38	-944.37	-129.16	1,347.73	1,309.64	38.09	35.383		
5,300.00	5,268.47	5,588.75	5,528.22	18.93	20.24	-163.38	-924.20	-133.73	1,343.25	1,304.41	38.84	34.584		
5,400.00	5,367.11	5,688.65	5,628.96	19.31	20.63	-163.37	-904.03	-138.31	1,338.78	1,299.19	39.59	33.814		
5,500.00	5,465.75	5,788.55	5,723.69	19.68	21.01	-163.37	-883.85	-142.88	1,334.30	1,293.96	40.34	33.073		
5,600.00	5,564.39	5,888.45	5,821.43	20.05	21.40	-163.36	-863.68	-147.46	1,329.83	1,288.73	41.10	32.358		
5,700.00	5,663.03	5,988.35	5,919.16	20.42	21.78	-163.36	-843.51	-152.04	1,325.36	1,283.51	41.85	31.669		
5,800.00	5,761.67	6,088.25	6,016.90	20.80	22.17	-163.35	-823.33	-156.61	1,320.88	1,278.28	42.60	31.004		
5,900.00	5,860.31	6,188.15	6,114.63	21.17	22.55	-163.35	-803.16	-161.19	1,316.41	1,273.05	43.36	30.361		
6,000.00	5,958.96	6,288.05	6,212.37	21.54	22.94	-163.34	-782.98	-165.76	1,311.94	1,267.82	44.11	29.741		
6,100.00	6,057.60	6,387.95	6,310.10	21.92	23.32	-163.34	-762.81	-170.34	1,307.46	1,262.60	44.87	29.141		
6,200.00	6,156.24	6,487.85	6,407.83	22.29	23.71	-163.33	-742.64	-174.91	1,302.99	1,257.37	45.62	28.560		
6,300.00	6,254.88	6,587.75	6,505.57	22.67	24.10	-163.33	-722.46	-179.49	1,298.52	1,252.14	46.38	27.999		
6,400.00	6,353.52	6,687.65	6,603.30	23.04	24.48	-163.32	-702.29	-184.07	1,294.04	1,246.91	47.13	27.455		
6,500.00	6,452.16	6,787.55	6,701.04	23.42	24.87	-163.32	-682.12	-188.64	1,289.57	1,241.68	47.89	26.928		
6,600.00	6,550.80	6,887.45	6,798.77	23.79	25.26	-163.31	-661.94	-193.22	1,285.10	1,236.45	48.65	26.417		
6,700.00	6,649.44	6,987.35	6,896.51	24.17	25.64	-163.31	-641.77	-197.79	1,280.62	1,231.22	49.40	25.922		
6,800.00	6,748.08	7,087.25	6,994.24	24.54	26.03	-163.30	-621.59	-202.37	1,276.15	1,225.99	50.16	25.441		
6,900.00	6,846.72	7,187.15	7,091.98	24.92	26.42	-163.30	-601.42	-206.95	1,271.68	1,220.76	50.92	24.975		
7,000.00	6,945.36	7,286.93	7,173.04	25.29	26.74	-163.30	-585.06	-210.66	1,267.68	1,216.02	51.66	24.541		
7,100.00	7,044.00	7,345.53	7,247.35	25.67	27.03	-163.31	-571.51	-213.73	1,265.52	1,213.15	52.37	24.165		
7,162.27	7,105.43	7,392.62	7,293.78	25.90	27.21	-163.33	-563.80	-215.48	1,265.14	1,212.34	52.81	23.958 CC		
7,200.00	7,142.65	7,421.16	7,321.95	26.04	27.31	-163.35	-559.40	-216.48	1,265.28	1,212.21	53.07	23.843		
7,300.00	7,241.29	7,500.00	7,399.97	26.42	27.61	-163.39	-548.30	-218.99	1,266.97	1,213.22	53.76	23.569		
7,400.00	7,339.93	7,572.27	7,471.67	26.79	27.88	-163.45	-539.52	-220.99	1,270.58	1,216.18	54.40	23.355		
7,500.00	7,438.57	7,647.64	7,546.62	27.17	28.15	-163.53	-531.76	-222.75	1,276.12	1,221.08	55.04	23.185		
7,571.77	7,509.37	7,700.00	7,598.77	27.44	28.34	-163.59	-527.23	-223.77	1,281.28	1,225.80	55.48	23.095		
7,600.00	7,537.23	7,722.80	7,621.51	27.55	28.42	-163.63	-525.47	-224.17	1,283.48	1,227.82	55.66	23.060		
7,700.00	7,636.18	7,800.00	7,698.53	27.92	28.70	-163.75	-520.50	-225.30	1,290.90	1,234.63	56.27	22.943		
7,800.00	7,735.48	7,872.83	7,771.28	28.29	28.95	-163.85	-517.21	-226.05	1,297.71	1,240.89	56.82	22.837		
7,900.00	7,835.05	7,947.74	7,846.17	28.65	29.21	-163.94	-515.24	-226.49	1,303.93	1,246.56	57.37	22.728		
8,000.00	7,934.83	8,025.60	7,924.03	29.01	29.48	-164.02	-514.68	-226.62	1,309.54	1,251.62	57.92	22.610		
8,100.00	8,034.74	8,125.52	8,023.94	29.36	29.81	-164.09	-514.68	-226.62	1,313.37	1,254.75	58.62	22.406		
8,202.27	8,137.00	8,227.78	8,126.20	29.72	30.16	179.85	-514.68	-226.62	1,314.69	1,255.36	59.33	22.160		
8,300.00	8,234.73	8,325.51	8,223.93	30.06	30.50	179.85	-514.68	-226.62	1,314.69	1,254.68	60.00	21.910		
8,400.00	8,334.73	8,425.75	8,324.05	30.41	30.83	179.71	-514.66	-223.25	1,314.68	1,253.99	60.69	21.663		
8,409.41	8,344.15	8,435.11	8,333.35	30.44	30.86	179.66	-514.66	-222.17	1,314.68	1,253.93	60.75	21.641		
8,500.00	8,434.73	8,522.57	8,418.96	30.75	31.14	178.90	-514.55	-204.71	1,314.81	1,253.49	61.32	21.442		
8,552.31	8,487.04	8,570.07	8,464.06	30.94	31.29	178.25	-514.46	-189.83	1,315.13	1,253.52	61.62	21.344		
8,600.00	8,534.68	8,611.68	8,502.42	31.10	31.41	87.91	-514.37	-173.76	1,315.67	1,253.82	61.86	21.269		
8,650.00	8,584.26	8,654.32	8,540.43	31.26	31.53	87.20	-514.25	-154.44	1,316.44	1,254.34	62.09	21.201		
8,700.00	8,633.10	8,696.08	8,576.16	31.43	31.65	86.52	-514.12	-132.84	1,317.37	1,255.06	62.31	21.142		
8,750.00	8,680.83	8,737.05	8,609.59	31.58	31.76	85.87	-513.98	-109.18	1,318.45	1,255.94	62.51	21.092		
8,800.00	8,727.09	8,777.32	8,640.72	31.74	31.87	85.23	-513.83	-83.65	1,319.64	1,256.95	62.70	21.048		
8,850.00	8,771.52	8,816.96	8,669.54	31.89	31.97	84.63	-513.67	-56.44	1,320.91	1,258.04	62.87	21.010		
8,900.00	8,813.78	8,856.06	8,696.05	32.04	32.07	84.06	-513.50	-27.72	1,322.23	1,259.20	63.03	20.976		
8,950.00	8,853.56	8,894.67	8,720.26	32.18	32.18	83.53	-513.32	2.36	1,323.57	1,260.37	63.20	20.944		
9,000.00	8,890.55	8,932.85	8,742.15	32.32	32.29	83.04	-513.13	33.64	1,324.89	1,261.53	63.36	20.910		
9,050.00	8,924.46	8,970.67	8,761.72	32.47	32.40	82.59	-512.94	65.98	1,326.17	1,262.63	63.54	20.872		
9,100.00	8,955.05	9,008.16	8,778.99	32.63	32.52	82.18	-512.74	99.25	1,327.37	1,263.64	63.73	20.828		
9,150.00	8,982.08	9,045.38	8,793.93	32.79	32.66	81.82	-512.54	133.33	1,328.48	1,264.53	63.95	20.775		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	9,082.36	8,806.57	32.97	32.80	81.51	-512.33	168.08	1,329.47	1,265.27	64.19	20.710		
9,250.00	9,024.65	9,119.16	8,816.88	33.17	32.96	81.25	-512.12	203.40	1,330.31	1,265.83	64.48	20.632		
9,300.00	9,039.87	9,155.80	8,824.88	33.38	33.12	81.04	-511.91	239.15	1,331.00	1,266.20	64.80	20.539		
9,350.00	9,050.89	9,192.33	8,830.57	33.62	33.30	80.89	-511.69	275.22	1,331.52	1,266.35	65.17	20.431		
9,400.00	9,057.61	9,228.78	8,833.94	33.87	33.49	80.79	-511.48	311.51	1,331.85	1,266.27	65.58	20.308		
9,452.31	9,060.00	9,268.07	8,835.00	34.15	33.70	80.75	-511.24	350.78	1,332.00	1,265.94	66.06	20.163		
9,500.00	9,060.00	9,315.76	8,835.00	34.42	33.98	80.75	-510.96	398.47	1,332.00	1,265.39	66.61	19.997		
9,600.00	9,060.00	9,415.76	8,835.00	35.09	34.65	80.75	-510.36	498.47	1,332.00	1,264.08	67.92	19.612		
9,700.00	9,060.00	9,515.76	8,835.00	35.86	35.43	80.75	-509.77	598.47	1,332.00	1,262.56	69.44	19.183		
9,800.00	9,060.00	9,615.76	8,835.00	36.72	36.32	80.75	-509.17	698.47	1,331.99	1,260.84	71.15	18.720		
9,900.00	9,060.00	9,715.76	8,835.00	37.69	37.29	80.75	-508.57	798.47	1,331.99	1,258.94	73.05	18.233		
10,000.00	9,060.00	9,815.76	8,835.00	38.73	38.36	80.75	-507.98	898.46	1,331.99	1,256.86	75.12	17.731		
10,100.00	9,060.00	9,915.76	8,835.00	39.86	39.50	80.75	-507.38	998.46	1,331.99	1,254.64	77.35	17.220		
10,140.22	9,060.00	9,955.99	8,835.00	40.33	39.98	80.75	-507.14	1,038.69	1,331.98	1,253.69	78.29	17.014		
10,200.00	9,060.00	10,015.76	8,835.00	41.05	40.71	80.74	-506.79	1,098.46	1,331.37	1,251.65	79.72	16.701		
10,300.00	9,060.00	10,115.68	8,835.00	42.31	41.98	80.70	-506.19	1,198.38	1,327.58	1,245.37	82.21	16.149		
10,400.00	9,060.00	10,215.41	8,835.00	43.64	43.32	80.63	-505.60	1,298.10	1,320.36	1,235.55	84.81	15.568		
10,507.23	9,060.00	10,321.99	8,835.00	45.11	44.80	80.50	-504.96	1,404.68	1,308.81	1,221.11	87.70	14.924		
10,600.00	9,060.00	10,414.18	8,835.00	46.43	46.13	80.46	-504.41	1,496.87	1,298.59	1,208.30	90.29	14.383		
10,700.00	9,060.00	10,513.87	8,835.00	47.91	47.60	80.43	-503.82	1,596.55	1,290.87	1,197.70	93.18	13.854		
10,800.00	9,060.00	10,613.77	8,835.00	49.42	49.13	80.41	-503.22	1,696.45	1,286.60	1,190.44	96.16	13.379		
10,874.30	9,060.00	10,688.06	8,835.00	50.57	50.28	80.41	-502.78	1,770.74	1,285.65	1,187.21	98.44	13.060		
10,900.00	9,060.00	10,713.76	8,835.00	50.97	50.68	80.41	-502.63	1,796.44	1,285.76	1,186.53	99.23	12.957		
11,000.00	9,060.00	10,813.72	8,835.00	52.55	52.28	80.42	-502.03	1,896.40	1,288.37	1,186.00	102.37	12.585		
11,100.00	9,060.00	10,913.52	8,835.00	54.14	53.90	80.45	-501.44	1,996.20	1,294.41	1,188.84	105.57	12.261		
11,207.23	9,060.00	11,020.24	8,835.00	55.87	55.66	80.49	-500.80	2,102.91	1,304.71	1,195.65	109.05	11.964		
11,300.00	9,060.00	11,112.54	8,835.00	57.39	57.21	80.58	-500.25	2,195.22	1,313.84	1,201.74	112.11	11.719		
11,400.00	9,060.00	11,212.32	8,835.00	59.06	58.91	80.65	-499.66	2,294.99	1,320.39	1,204.93	115.46	11.436		
11,506.63	9,060.00	11,318.89	8,835.00	60.88	60.74	80.69	-499.02	2,401.56	1,323.58	1,204.49	119.08	11.115		
11,600.00	9,060.00	11,412.25	8,835.00	62.49	62.37	80.69	-498.46	2,494.93	1,324.66	1,202.36	122.29	10.832		
11,700.00	9,060.00	11,512.25	8,835.00	64.24	64.13	80.70	-497.87	2,594.92	1,325.81	1,200.04	125.77	10.542		
11,800.00	9,060.00	11,612.24	8,835.00	66.01	65.90	80.71	-497.27	2,694.91	1,326.97	1,197.69	129.28	10.265		
11,900.00	9,060.00	11,712.23	8,835.00	67.79	67.70	80.72	-496.68	2,794.90	1,328.12	1,195.31	132.81	10.000		
12,000.00	9,060.00	11,812.23	8,835.00	69.58	69.50	80.73	-496.08	2,894.89	1,329.28	1,192.90	136.38	9.747		
12,100.00	9,060.00	11,912.22	8,835.00	71.39	71.32	80.73	-495.49	2,994.88	1,330.43	1,190.46	139.97	9.505		
12,200.00	9,060.00	12,012.21	8,835.00	73.21	73.15	80.74	-494.89	3,094.87	1,331.59	1,188.00	143.59	9.274		
12,300.00	9,060.00	12,112.21	8,835.00	75.05	74.99	80.75	-494.29	3,194.86	1,332.74	1,185.51	147.23	9.052		
12,400.00	9,060.00	12,212.20	8,835.00	76.89	76.84	80.76	-493.70	3,294.86	1,333.90	1,183.01	150.89	8.840		
12,500.00	9,060.00	12,312.19	8,835.00	78.74	78.70	80.77	-493.10	3,394.85	1,335.05	1,180.48	154.57	8.637		
12,600.00	9,060.00	12,412.19	8,835.00	80.61	80.57	80.77	-492.51	3,494.84	1,336.21	1,177.94	158.26	8.443		
12,700.00	9,060.00	12,512.18	8,835.00	82.48	82.45	80.78	-491.91	3,594.83	1,337.36	1,175.38	161.98	8.256		
12,800.00	9,060.00	12,612.17	8,835.00	84.36	84.34	80.79	-491.31	3,694.82	1,338.52	1,172.81	165.71	8.078		
12,900.00	9,060.00	12,712.17	8,835.00	86.24	86.23	80.80	-490.72	3,794.81	1,339.67	1,170.22	169.45	7.906		
13,000.00	9,060.00	12,812.16	8,835.00	88.14	88.13	80.81	-490.12	3,894.80	1,340.83	1,167.62	173.21	7.741		
13,100.00	9,060.00	12,912.15	8,835.00	90.04	90.04	80.81	-489.53	3,994.80	1,341.98	1,165.00	176.98	7.583		
13,200.00	9,060.00	13,012.14	8,835.00	91.94	91.95	80.82	-488.93	4,094.79	1,343.14	1,162.37	180.76	7.430		
13,300.00	9,060.00	13,112.14	8,835.00	93.86	93.87	80.83	-488.33	4,194.78	1,344.29	1,159.73	184.56	7.284		
13,400.00	9,060.00	13,212.13	8,835.00	95.77	95.79	80.84	-487.74	4,294.77	1,345.45	1,157.08	188.36	7.143		
13,500.00	9,060.00	13,312.12	8,835.00	97.70	97.72	80.85	-487.14	4,394.76	1,346.60	1,154.42	192.18	7.007		
13,600.00	9,060.00	13,412.12	8,835.00	99.62	99.66	80.85	-486.55	4,494.75	1,347.76	1,151.75	196.00	6.876		
13,700.00	9,060.00	13,512.11	8,835.00	101.56	101.59	80.86	-485.95	4,594.74	1,348.91	1,149.07	199.84	6.750		
13,800.00	9,060.00	13,612.10	8,835.00	103.49	103.54	80.87	-485.36	4,694.74	1,350.07	1,146.39	203.68	6.628		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,900.00	9,060.00	13,712.10	8,835.00	105.43	105.48	80.88	-484.76	4,794.73	1,351.22	1,143.69	207.53	6.511				
14,000.00	9,060.00	13,812.09	8,835.00	107.38	107.43	80.89	-484.16	4,894.72	1,352.38	1,140.99	211.39	6.398				
14,100.00	9,060.00	13,912.08	8,835.00	109.33	109.38	80.89	-483.57	4,994.71	1,353.53	1,138.28	215.25	6.288				
14,200.00	9,060.00	14,012.08	8,835.00	111.28	111.34	80.90	-482.97	5,094.70	1,354.69	1,135.57	219.13	6.182				
14,300.00	9,060.00	14,112.07	8,835.00	113.23	113.30	80.91	-482.38	5,194.69	1,355.85	1,132.84	223.00	6.080				
14,400.00	9,060.00	14,212.06	8,835.00	115.19	115.26	80.92	-481.78	5,294.68	1,357.00	1,130.11	226.89	5.981				
14,500.00	9,060.00	14,312.06	8,835.00	117.15	117.23	80.93	-481.18	5,394.68	1,358.16	1,127.38	230.78	5.885				
14,600.00	9,060.00	14,412.05	8,835.00	119.11	119.20	80.93	-480.59	5,494.67	1,359.31	1,124.64	234.67	5.792				
14,700.00	9,060.00	14,512.04	8,835.00	121.08	121.17	80.94	-479.99	5,594.66	1,360.47	1,121.89	238.57	5.703				
14,800.00	9,060.00	14,612.04	8,835.00	123.05	123.14	80.95	-479.40	5,694.65	1,361.62	1,119.14	242.48	5.615				
14,900.00	9,060.00	14,712.03	8,835.00	125.02	125.12	80.96	-478.80	5,794.64	1,362.78	1,116.39	246.39	5.531				
15,000.00	9,060.00	14,812.02	8,835.00	126.99	127.09	80.96	-478.20	5,894.63	1,363.94	1,113.63	250.30	5.449				
15,100.00	9,060.00	14,912.01	8,835.00	128.97	129.07	80.97	-477.61	5,994.62	1,365.09	1,110.87	254.22	5.370				
15,200.00	9,060.00	15,012.01	8,835.00	130.95	131.06	80.98	-477.01	6,094.61	1,366.25	1,108.10	258.15	5.292				
15,300.00	9,060.00	15,112.00	8,835.00	132.93	133.04	80.99	-476.42	6,194.61	1,367.40	1,105.33	262.08	5.218				
15,400.00	9,060.00	15,211.99	8,835.00	134.91	135.03	80.99	-475.82	6,294.60	1,368.56	1,102.55	266.01	5.145				
15,500.00	9,060.00	15,311.99	8,835.00	136.89	137.01	81.00	-475.23	6,394.59	1,369.71	1,099.77	269.94	5.074				
15,600.00	9,060.00	15,411.98	8,835.00	138.88	139.00	81.01	-474.63	6,494.58	1,370.87	1,096.99	273.88	5.005				
15,700.00	9,060.00	15,511.97	8,835.00	140.86	140.99	81.02	-474.03	6,594.57	1,372.03	1,094.20	277.82	4.938	Alert			
15,800.00	9,060.00	15,611.97	8,835.00	142.85	142.99	81.03	-473.44	6,694.56	1,373.18	1,091.41	281.77	4.873	Alert			
15,900.00	9,060.00	15,711.96	8,835.00	144.84	144.98	81.03	-472.84	6,794.55	1,374.34	1,088.62	285.72	4.810	Alert			
16,000.00	9,060.00	15,811.95	8,835.00	146.83	146.98	81.04	-472.25	6,894.55	1,375.49	1,085.83	289.67	4.749	Alert			
16,100.00	9,060.00	15,911.95	8,835.00	148.83	148.97	81.05	-471.65	6,994.54	1,376.65	1,083.03	293.62	4.689	Alert			
16,200.00	9,060.00	16,011.94	8,835.00	150.82	150.97	81.06	-471.05	7,094.53	1,377.81	1,080.23	297.58	4.630	Alert			
16,300.00	9,060.00	16,111.93	8,835.00	152.82	152.97	81.06	-470.46	7,194.52	1,378.96	1,077.42	301.54	4.573	Alert			
16,400.00	9,060.00	16,211.93	8,835.00	154.81	154.97	81.07	-469.86	7,294.51	1,380.12	1,074.62	305.50	4.518	Alert			
16,500.00	9,060.00	16,311.92	8,835.00	156.81	156.97	81.08	-469.27	7,394.50	1,381.27	1,071.81	309.46	4.463	Alert			
16,600.00	9,060.00	16,411.91	8,835.00	158.81	158.97	81.09	-468.67	7,494.49	1,382.43	1,069.00	313.43	4.411	Alert			
16,700.00	9,060.00	16,511.91	8,835.00	160.81	160.98	81.09	-468.07	7,594.49	1,383.59	1,066.19	317.40	4.359	Alert			
16,800.00	9,060.00	16,611.90	8,835.00	162.81	162.98	81.10	-467.48	7,694.48	1,384.74	1,063.37	321.37	4.309	Alert			
16,900.00	9,060.00	16,711.89	8,835.00	164.82	164.99	81.11	-466.88	7,794.47	1,385.90	1,060.55	325.34	4.260	Alert			
17,000.00	9,060.00	16,811.88	8,835.00	166.82	167.00	81.12	-466.29	7,894.46	1,387.05	1,057.73	329.32	4.212	Alert			
17,100.00	9,060.00	16,911.88	8,835.00	168.82	169.00	81.12	-465.69	7,994.45	1,388.21	1,054.91	333.30	4.165	Alert			
17,200.00	9,060.00	17,011.87	8,835.00	170.83	171.01	81.13	-465.10	8,094.44	1,389.37	1,052.09	337.28	4.119	Alert			
17,300.00	9,060.00	17,111.86	8,835.00	172.84	173.02	81.14	-464.50	8,194.43	1,390.52	1,049.27	341.26	4.075	Alert			
17,400.00	9,060.00	17,211.86	8,835.00	174.84	175.03	81.15	-463.90	8,294.43	1,391.68	1,046.44	345.24	4.031	Alert			
17,500.00	9,060.00	17,311.85	8,835.00	176.85	177.04	81.15	-463.31	8,394.42	1,392.84	1,043.61	349.23	3.988	Alert			
17,600.00	9,060.00	17,411.84	8,835.00	178.86	179.06	81.16	-462.71	8,494.41	1,393.99	1,040.78	353.21	3.947	Alert			
17,700.00	9,060.00	17,511.84	8,835.00	180.87	181.07	81.17	-462.12	8,594.40	1,395.15	1,037.95	357.20	3.906	Alert			
17,800.00	9,060.00	17,611.83	8,835.00	182.88	183.08	81.18	-461.52	8,694.39	1,396.30	1,035.11	361.19	3.866	Alert			
17,900.00	9,060.00	17,711.82	8,835.00	184.89	185.10	81.18	-460.92	8,794.38	1,397.46	1,032.28	365.18	3.827	Alert			
18,000.00	9,060.00	17,811.82	8,835.00	186.90	187.11	81.19	-460.33	8,894.37	1,398.62	1,029.44	369.17	3.789	Alert			
18,100.00	9,060.00	17,911.81	8,835.00	188.92	189.13	81.20	-459.73	8,994.36	1,399.77	1,026.61	373.17	3.751	Alert			
18,200.00	9,060.00	18,011.80	8,835.00	190.93	191.14	81.20	-459.14	9,094.36	1,400.93	1,023.77	377.16	3.714	Alert			
18,300.00	9,060.00	18,111.80	8,835.00	192.94	193.16	81.21	-458.54	9,194.35	1,402.09	1,020.93	381.16	3.678	Alert			
18,400.00	9,060.00	18,211.79	8,835.00	194.96	195.18	81.22	-457.95	9,294.34	1,403.24	1,018.08	385.16	3.643	Alert			
18,500.00	9,060.00	18,311.78	8,835.00	196.97	197.20	81.23	-457.35	9,394.33	1,404.40	1,015.24	389.16	3.609	Alert			
18,600.00	9,060.00	18,411.78	8,835.00	198.99	199.22	81.23	-456.75	9,494.32	1,405.56	1,012.40	393.16	3.575	Alert			
18,700.00	9,060.00	18,511.77	8,835.00	201.00	201.23	81.24	-456.16	9,594.31	1,406.71	1,009.55	397.16	3.542	Alert			
18,800.00	9,060.00	18,611.76	8,835.00	203.02	203.25	81.25	-455.56	9,694.30	1,407.87	1,006.71	401.16	3.509	Alert			
18,900.00	9,060.00	18,711.75	8,835.00	205.04	205.28	81.26	-454.97	9,794.30	1,409.03	1,003.86	405.17	3.478	Alert			
19,000.00	9,060.00	18,811.75	8,835.00	207.06	207.30	81.26	-454.37	9,894.29	1,410.18	1,001.01	409.17	3.446	Alert			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	18,911.74	8,835.00	209.07	209.32	81.27	-453.77	9,994.28	1,411.34	998.16	413.18	3.416	Alert
19,200.00	9,060.00	19,011.73	8,835.00	211.09	211.34	81.28	-453.18	10,094.27	1,412.50	995.31	417.19	3.386	Alert
19,300.00	9,060.00	19,111.73	8,835.00	213.11	213.36	81.28	-452.58	10,194.26	1,413.65	992.46	421.20	3.356	Alert
19,400.00	9,060.00	19,211.72	8,835.00	215.13	215.38	81.29	-451.99	10,294.25	1,414.81	989.60	425.21	3.327	Alert
19,500.32	9,060.00	19,312.03	8,835.00	217.16	217.41	81.30	-451.39	10,394.56	1,415.97	986.74	429.23	3.299	Alert, ES, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,558.65	3.44	1,558.70					
100.00	100.00	88.90	88.90	0.52	0.51	179.87	-1,558.65	3.44	1,558.66	1,557.63	1.03	1,510.563		
200.00	200.00	188.90	188.90	0.70	0.67	179.87	-1,558.65	3.44	1,558.66	1,557.28	1.38	1,132.031		
300.00	300.00	288.90	288.90	0.99	0.95	179.87	-1,558.65	3.44	1,558.66	1,556.72	1.94	803.194		
400.00	400.00	388.90	388.90	1.31	1.27	179.87	-1,558.65	3.44	1,558.66	1,556.08	2.58	603.780		
500.00	500.00	488.90	488.90	1.65	1.61	179.87	-1,558.65	3.44	1,558.66	1,555.40	3.25	478.951		
600.00	600.00	588.90	588.90	1.99	1.95	179.87	-1,558.65	3.44	1,558.66	1,554.71	3.94	395.326		
700.00	700.00	688.90	688.90	2.34	2.30	179.87	-1,558.65	3.44	1,558.66	1,554.02	4.64	335.934		
800.00	800.00	788.90	788.90	2.69	2.65	179.87	-1,558.65	3.44	1,558.66	1,553.31	5.34	291.769		
900.00	900.00	888.90	888.90	3.04	3.00	179.87	-1,558.65	3.44	1,558.66	1,552.61	6.05	257.720		
1,000.00	1,000.00	988.90	988.90	3.40	3.36	179.87	-1,558.65	3.44	1,558.66	1,551.90	6.76	230.708		
1,100.00	1,100.00	1,088.90	1,088.90	3.75	3.71	179.87	-1,558.65	3.44	1,558.66	1,551.19	7.47	208.774		
1,200.00	1,200.00	1,188.90	1,188.90	4.11	4.07	179.87	-1,558.65	3.44	1,558.66	1,550.48	8.18	190.619		
1,300.00	1,300.00	1,288.90	1,288.90	4.46	4.42	179.87	-1,558.65	3.44	1,558.66	1,549.77	8.89	175.350		
1,400.00	1,400.00	1,388.90	1,388.90	4.82	4.78	179.87	-1,558.65	3.44	1,558.66	1,549.06	9.60	162.334		
1,500.00	1,500.00	1,488.90	1,488.90	5.18	5.14	179.87	-1,558.65	3.44	1,558.66	1,548.34	10.31	151.108		
1,600.00	1,600.00	1,588.90	1,588.90	5.53	5.49	179.87	-1,558.65	3.44	1,558.66	1,547.63	11.03	141.328		
1,700.00	1,700.00	1,688.90	1,688.90	5.89	5.85	179.87	-1,558.65	3.44	1,558.66	1,546.91	11.74	132.733		
1,800.00	1,800.00	1,788.90	1,788.90	6.25	6.21	179.87	-1,558.65	3.44	1,558.66	1,546.20	12.46	125.120		
1,900.00	1,900.00	1,888.90	1,888.90	6.61	6.57	179.87	-1,558.65	3.44	1,558.66	1,545.48	13.17	118.331		
2,000.00	2,000.00	1,988.90	1,988.90	6.96	6.92	179.87	-1,558.65	3.44	1,558.66	1,544.77	13.89	112.238		
2,100.00	2,100.00	2,088.90	2,088.90	7.32	7.28	179.87	-1,558.65	3.44	1,558.66	1,544.05	14.60	106.741		
2,200.00	2,200.00	2,188.90	2,188.90	7.68	7.64	179.87	-1,558.65	3.44	1,558.66	1,543.34	15.32	101.756		
2,300.00	2,300.00	2,288.90	2,288.90	8.04	8.00	179.87	-1,558.65	3.44	1,558.66	1,542.62	16.03	97.215		
2,350.00	2,350.00	2,338.90	2,338.90	8.22	8.18	179.87	-1,558.65	3.44	1,558.66	1,542.27	16.39	95.093 CC		
2,400.00	2,400.00	2,388.90	2,388.90	8.39	8.35	-164.09	-1,558.65	3.44	1,558.87	1,542.12	16.75	93.075 ES		
2,500.00	2,499.98	2,488.88	2,488.88	8.75	8.71	-164.10	-1,558.65	3.44	1,560.55	1,543.08	17.46	89.360		
2,600.00	2,599.92	2,588.82	2,588.82	9.11	9.07	-164.13	-1,558.65	3.44	1,563.90	1,545.72	18.18	86.030		
2,700.00	2,699.78	2,688.68	2,688.68	9.47	9.43	-164.17	-1,558.65	3.44	1,568.94	1,550.04	18.89	83.042		
2,800.00	2,799.54	2,788.44	2,788.44	9.82	9.78	-164.22	-1,558.65	3.44	1,575.65	1,556.04	19.61	80.359		
2,900.00	2,899.16	2,888.06	2,888.06	10.18	10.14	-164.28	-1,558.65	3.44	1,584.04	1,563.72	20.32	77.950		
3,000.00	2,998.61	2,987.51	2,987.51	10.54	10.50	-164.35	-1,558.65	3.44	1,594.11	1,573.07	21.03	75.786		
3,100.00	3,097.86	3,086.76	3,086.76	10.89	10.85	-164.44	-1,558.65	3.44	1,605.85	1,584.11	21.75	73.845		
3,200.00	3,196.89	3,185.79	3,185.79	11.25	11.21	-164.54	-1,558.65	3.44	1,619.27	1,596.81	22.46	72.103		
3,295.74	3,291.45	3,280.35	3,280.35	11.59	11.55	-164.64	-1,558.65	3.44	1,633.69	1,610.55	23.14	70.607		
3,300.00	3,295.65	3,284.55	3,284.55	11.61	11.56	-164.64	-1,558.65	3.44	1,634.36	1,611.20	23.17	70.543		
3,400.00	3,394.29	3,383.19	3,383.19	11.97	11.91	-164.79	-1,558.65	3.44	1,650.23	1,626.35	23.88	69.112		
3,500.00	3,492.94	3,481.84	3,481.84	12.33	12.27	-164.94	-1,558.65	3.44	1,666.11	1,641.52	24.59	67.761		
3,600.00	3,591.58	3,580.48	3,580.48	12.69	12.62	-165.09	-1,558.65	3.44	1,681.99	1,656.69	25.30	66.484		
3,700.00	3,690.22	3,679.12	3,679.12	13.05	12.97	-165.23	-1,558.65	3.44	1,697.89	1,671.88	26.01	65.275		
3,800.00	3,788.86	3,777.76	3,777.76	13.41	13.33	-165.37	-1,558.65	3.44	1,713.80	1,687.07	26.72	64.129		
3,900.00	3,887.50	3,876.40	3,876.40	13.77	13.68	-165.51	-1,558.65	3.44	1,729.71	1,702.28	27.44	63.041		
4,000.00	3,986.14	3,975.04	3,975.04	14.14	14.03	-165.64	-1,558.65	3.44	1,745.64	1,717.49	28.15	62.007		
4,100.00	4,084.78	4,087.76	4,087.76	14.50	14.43	-165.77	-1,558.32	2.85	1,761.28	1,732.36	28.92	60.906		
4,200.00	4,183.42	4,205.69	4,205.64	14.87	14.85	-165.85	-1,556.84	0.23	1,775.90	1,746.21	29.70	59.801		
4,300.00	4,282.06	4,324.01	4,323.84	15.24	15.26	-165.85	-1,554.15	-4.53	1,789.46	1,758.98	30.48	58.716		
4,400.00	4,380.70	4,438.11	4,437.68	15.60	15.66	-165.79	-1,550.44	-11.09	1,801.97	1,770.73	31.24	57.680		
4,500.00	4,479.34	4,537.34	4,536.65	15.97	16.01	-165.72	-1,546.90	-17.35	1,814.17	1,782.21	31.96	56.771		
4,600.00	4,577.98	4,636.57	4,635.62	16.34	16.36	-165.65	-1,543.37	-23.60	1,826.37	1,793.70	32.67	55.900		
4,700.00	4,676.62	4,735.80	4,734.59	16.71	16.71	-165.59	-1,539.84	-29.85	1,838.57	1,805.18	33.39	55.065		
4,800.00	4,775.27	4,835.03	4,833.57	17.08	17.06	-165.52	-1,536.30	-36.10	1,850.78	1,816.67	34.11	54.264		
4,900.00	4,873.91	4,934.26	4,932.54	17.45	17.41	-165.46	-1,532.77	-42.35	1,862.99	1,828.16	34.83	53.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,033.49	5,031.51	17.82	17.77	-165.40	-1,529.24	-48.61	1,875.20	1,839.65	35.54	52.756		
5,100.00	5,071.19	5,132.72	5,130.48	18.19	18.12	-165.33	-1,525.70	-54.86	1,887.41	1,851.14	36.26	52.046		
5,200.00	5,169.83	5,231.95	5,229.45	18.56	18.47	-165.27	-1,522.17	-61.11	1,899.62	1,862.64	36.98	51.362		
5,300.00	5,268.47	5,331.18	5,328.42	18.93	18.82	-165.21	-1,518.63	-67.36	1,911.84	1,874.13	37.71	50.704		
5,400.00	5,367.11	5,430.41	5,427.39	19.31	19.17	-165.15	-1,515.10	-73.61	1,924.06	1,885.63	38.43	50.069		
5,500.00	5,465.75	5,529.64	5,526.36	19.68	19.53	-165.09	-1,511.57	-79.87	1,936.28	1,897.13	39.15	49.457		
5,600.00	5,564.39	5,628.87	5,625.33	20.05	19.88	-165.03	-1,508.03	-86.12	1,948.50	1,908.63	39.87	48.867		
5,700.00	5,663.03	5,728.10	5,724.30	20.42	20.23	-164.98	-1,504.50	-92.37	1,960.73	1,920.13	40.60	48.298		
5,800.00	5,761.67	5,827.33	5,823.27	20.80	20.59	-164.92	-1,500.97	-98.62	1,972.96	1,931.64	41.32	47.747		
5,900.00	5,860.31	5,926.57	5,922.24	21.17	20.94	-164.86	-1,497.43	-104.87	1,985.18	1,943.14	42.04	47.216		
6,000.00	5,958.96	6,025.80	6,021.21	21.54	21.30	-164.81	-1,493.90	-111.12	1,997.42	1,954.65	42.77	46.702		
6,100.00	6,057.60	6,125.03	6,120.18	21.92	21.65	-164.75	-1,490.37	-117.38	2,009.65	1,966.15	43.49	46.204		
6,200.00	6,156.24	6,224.26	6,219.15	22.29	22.01	-164.70	-1,486.83	-123.63	2,021.88	1,977.66	44.22	45.723		
6,300.00	6,254.88	6,323.49	6,318.12	22.67	22.36	-164.64	-1,483.30	-129.88	2,034.12	1,989.17	44.95	45.256		
6,400.00	6,353.52	6,422.72	6,417.09	23.04	22.72	-164.59	-1,479.76	-136.13	2,046.36	2,000.68	45.67	44.805		
6,500.00	6,452.16	6,521.95	6,516.06	23.42	23.07	-164.54	-1,476.23	-142.38	2,058.60	2,012.20	46.40	44.367		
6,600.00	6,550.80	6,621.18	6,615.03	23.79	23.43	-164.48	-1,472.70	-148.64	2,070.84	2,023.71	47.13	43.942		
6,700.00	6,649.44	6,720.41	6,714.00	24.17	23.78	-164.43	-1,469.16	-154.89	2,083.08	2,035.23	47.85	43.530		
6,800.00	6,748.08	6,819.64	6,812.97	24.54	24.14	-164.38	-1,465.63	-161.14	2,095.33	2,046.74	48.58	43.130		
6,900.00	6,846.72	6,918.87	6,911.94	24.92	24.49	-164.33	-1,462.10	-167.39	2,107.57	2,058.26	49.31	42.742		
7,000.00	6,945.36	7,018.10	7,010.91	25.29	24.85	-164.28	-1,458.56	-173.64	2,119.82	2,069.78	50.04	42.365		
7,100.00	7,044.00	7,117.33	7,109.88	25.67	25.20	-164.23	-1,455.03	-179.90	2,132.07	2,081.30	50.77	41.998		
7,200.00	7,142.65	7,216.56	7,208.85	26.04	25.56	-164.19	-1,451.49	-186.15	2,144.32	2,092.83	51.49	41.642		
7,300.00	7,241.29	7,315.79	7,307.82	26.42	25.92	-164.14	-1,447.96	-192.40	2,156.57	2,104.35	52.22	41.295		
7,400.00	7,339.93	7,415.02	7,406.79	26.79	26.27	-164.09	-1,444.43	-198.65	2,168.83	2,115.87	52.95	40.958		
7,500.00	7,438.57	7,514.25	7,505.76	27.17	26.63	-164.04	-1,440.89	-204.90	2,181.08	2,127.40	53.68	40.630		
7,571.77	7,509.37	7,585.48	7,576.80	27.44	26.89	-164.01	-1,438.36	-209.39	2,189.88	2,135.67	54.21	40.399		
7,600.00	7,537.23	7,613.50	7,604.75	27.55	26.99	-164.01	-1,437.36	-211.16	2,193.24	2,138.83	54.41	40.308		
7,700.00	7,636.18	7,712.93	7,703.92	27.92	27.34	-163.99	-1,433.82	-217.42	2,203.54	2,148.40	55.14	39.963		
7,800.00	7,735.48	7,791.92	7,782.75	28.29	27.63	-163.98	-1,431.34	-221.80	2,211.78	2,156.00	55.78	39.652		
7,900.00	7,835.05	7,869.49	7,860.25	28.65	27.91	-163.98	-1,429.69	-224.73	2,218.50	2,162.09	56.40	39.332		
8,000.00	7,934.83	7,947.11	7,937.84	29.01	28.18	-164.00	-1,428.81	-226.28	2,223.71	2,166.69	57.02	38.999		
8,100.00	8,034.74	8,032.92	8,023.64	29.36	28.49	-164.03	-1,428.65	-226.56	2,227.34	2,169.68	57.66	38.626		
8,202.27	8,137.00	8,135.17	8,125.90	29.72	28.85	179.91	-1,428.65	-226.56	2,228.66	2,170.27	58.39	38.171		
8,300.00	8,234.73	8,232.90	8,223.63	30.06	29.20	179.91	-1,428.65	-226.56	2,228.66	2,169.58	59.07	37.726		
8,400.00	8,334.73	8,332.90	8,323.63	30.41	29.55	179.91	-1,428.65	-226.56	2,228.66	2,168.88	59.78	37.282		
8,500.00	8,434.73	8,435.48	8,425.85	30.75	29.90	179.73	-1,428.58	-219.64	2,228.60	2,168.13	60.48	36.852		
8,552.31	8,487.04	8,487.58	8,476.88	30.94	30.07	179.47	-1,428.46	-209.23	2,228.56	2,167.73	60.83	36.637		
8,576.06	8,510.78	8,510.65	8,499.14	31.02	30.15	89.66	-1,428.40	-203.15	2,228.55	2,167.57	60.98	36.545		
8,600.00	8,534.68	8,533.69	8,521.10	31.10	30.22	89.52	-1,428.32	-196.19	2,228.56	2,167.42	61.14	36.453		
8,650.00	8,584.26	8,581.10	8,565.32	31.26	30.38	89.22	-1,428.13	-179.13	2,228.60	2,167.16	61.45	36.270		
8,700.00	8,633.10	8,627.64	8,607.20	31.43	30.53	88.93	-1,427.91	-158.87	2,228.68	2,166.93	61.75	36.094		
8,750.00	8,680.83	8,673.36	8,646.62	31.58	30.67	88.66	-1,427.65	-135.73	2,228.80	2,166.76	62.04	35.925		
8,800.00	8,727.09	8,718.35	8,683.48	31.74	30.81	88.39	-1,427.37	-109.96	2,228.94	2,166.61	62.33	35.762		
8,850.00	8,771.52	8,762.66	8,717.70	31.89	30.96	88.13	-1,427.06	-81.84	2,229.10	2,166.49	62.61	35.605		
8,900.00	8,813.78	8,806.36	8,749.22	32.04	31.10	87.89	-1,426.73	-51.59	2,229.28	2,166.39	62.88	35.450		
8,950.00	8,853.56	8,849.50	8,778.00	32.18	31.24	87.66	-1,426.38	-19.45	2,229.46	2,166.30	63.16	35.297		
9,000.00	8,890.55	8,892.15	8,803.98	32.32	31.39	87.45	-1,426.00	14.35	2,229.64	2,166.19	63.45	35.141		
9,050.00	8,924.46	8,934.34	8,827.15	32.47	31.55	87.25	-1,425.62	49.60	2,229.81	2,166.07	63.74	34.981		
9,100.00	8,955.05	8,976.15	8,847.48	32.63	31.71	87.08	-1,425.21	86.12	2,229.96	2,165.91	64.05	34.814		
9,150.00	8,982.08	9,017.60	8,864.95	32.79	31.89	86.92	-1,424.80	123.69	2,230.09	2,165.70	64.38	34.638		
9,200.00	9,005.34	9,058.75	8,879.57	32.97	32.07	86.78	-1,424.38	162.14	2,230.18	2,165.44	64.74	34.450		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,100.00	8,891.42	33.17	32.26	86.67	-1,423.94	201.65	2,230.24	2,165.12	65.12	34.248		
9,300.00	9,039.87	9,140.31	8,900.22	33.38	32.47	86.57	-1,423.51	240.97	2,230.26	2,164.72	65.53	34.033		
9,350.00	9,050.89	9,180.80	8,906.26	33.62	32.68	86.50	-1,423.07	281.00	2,230.22	2,164.25	65.98	33.803		
9,400.00	9,057.61	9,221.15	8,909.45	33.87	32.91	86.45	-1,422.63	321.21	2,230.14	2,163.70	66.45	33.563		
9,452.31	9,060.00	9,267.37	8,910.00	34.15	33.18	86.43	-1,422.12	367.43	2,229.99	2,162.99	67.00	33.286		
9,500.00	9,060.00	9,315.06	8,910.00	34.42	33.48	86.43	-1,421.60	415.11	2,229.74	2,162.17	67.57	32.997		
9,600.00	9,060.00	9,415.06	8,910.00	35.09	34.19	86.43	-1,420.50	515.11	2,229.24	2,160.29	68.95	32.333		
9,700.00	9,060.00	9,515.06	8,910.00	35.86	35.01	86.43	-1,419.40	615.10	2,228.73	2,158.20	70.53	31.600		
9,800.00	9,060.00	9,615.06	8,910.00	36.72	35.93	86.43	-1,418.30	715.09	2,228.23	2,155.92	72.31	30.815		
9,900.00	9,060.00	9,715.06	8,910.00	37.69	36.93	86.43	-1,417.20	815.08	2,227.72	2,153.45	74.27	29.995		
10,000.00	9,060.00	9,815.06	8,910.00	38.73	38.02	86.42	-1,416.10	915.08	2,227.22	2,150.82	76.40	29.152		
10,100.00	9,060.00	9,915.06	8,910.00	39.86	39.19	86.42	-1,415.00	1,015.07	2,226.71	2,148.03	78.68	28.299		
10,140.22	9,060.00	9,955.28	8,910.00	40.33	39.68	86.42	-1,414.56	1,055.29	2,226.51	2,146.86	79.65	27.955		
10,200.00	9,060.00	10,015.05	8,910.00	41.05	40.43	86.42	-1,413.90	1,115.05	2,225.58	2,144.48	81.11	27.440		
10,300.00	9,060.00	10,114.95	8,910.00	42.31	41.72	86.41	-1,412.80	1,214.95	2,221.26	2,137.59	83.66	26.550		
10,400.00	9,060.00	10,214.64	8,910.00	43.64	43.08	86.39	-1,411.70	1,314.63	2,213.45	2,127.12	86.33	25.640		
10,507.23	9,060.00	10,321.16	8,910.00	45.11	44.58	86.35	-1,410.53	1,421.14	2,201.23	2,111.93	89.30	24.650		
10,600.00	9,060.00	10,413.29	8,910.00	46.43	45.93	86.35	-1,409.52	1,513.27	2,190.42	2,098.47	91.95	23.821		
10,700.00	9,060.00	10,512.94	8,910.00	47.91	47.42	86.34	-1,408.42	1,612.92	2,182.12	2,087.21	94.91	22.991		
10,800.00	9,060.00	10,612.82	8,910.00	49.42	48.96	86.34	-1,407.32	1,712.79	2,177.29	2,079.33	97.95	22.228		
10,888.73	9,060.00	10,701.54	8,910.00	50.80	50.36	86.34	-1,406.35	1,801.50	2,175.92	2,075.20	100.72	21.604		
10,900.00	9,060.00	10,712.80	8,910.00	50.97	50.54	86.34	-1,406.22	1,812.77	2,175.94	2,074.87	101.07	21.528		
11,000.00	9,060.00	10,812.78	8,910.00	52.55	52.14	86.34	-1,405.13	1,912.73	2,178.07	2,073.82	104.25	20.892		
11,100.00	9,060.00	10,912.61	8,910.00	54.14	53.78	86.34	-1,404.03	2,012.56	2,183.69	2,076.20	107.48	20.317		
11,207.23	9,060.00	11,019.37	8,910.00	55.87	55.56	86.35	-1,402.85	2,119.32	2,193.57	2,082.58	110.99	19.764		
11,300.00	9,060.00	11,111.73	8,910.00	57.39	57.12	86.37	-1,401.84	2,211.66	2,202.35	2,088.28	114.06	19.308		
11,400.00	9,060.00	11,211.53	8,910.00	59.06	58.83	86.39	-1,400.74	2,311.47	2,208.46	2,091.02	117.44	18.805		
11,506.63	9,060.00	11,318.12	8,910.00	60.88	60.68	86.40	-1,399.57	2,418.05	2,211.15	2,090.05	121.10	18.258		
11,600.00	9,060.00	11,411.49	8,910.00	62.49	62.31	86.40	-1,398.54	2,511.41	2,211.77	2,087.42	124.35	17.787		
11,700.00	9,060.00	11,511.49	8,910.00	64.24	64.08	86.40	-1,397.44	2,611.40	2,212.44	2,084.58	127.86	17.303		
11,800.00	9,060.00	11,611.49	8,910.00	66.01	65.87	86.40	-1,396.34	2,711.39	2,213.10	2,081.70	131.41	16.842		
11,900.00	9,060.00	11,711.48	8,910.00	67.79	67.67	86.40	-1,395.24	2,811.39	2,213.77	2,078.79	134.98	16.400		
12,000.00	9,060.00	11,811.48	8,910.00	69.58	69.48	86.40	-1,394.14	2,911.38	2,214.44	2,075.85	138.59	15.979		
12,100.00	9,060.00	11,911.48	8,910.00	71.39	71.31	86.40	-1,393.04	3,011.37	2,215.10	2,072.88	142.22	15.576		
12,200.00	9,060.00	12,011.48	8,910.00	73.21	73.14	86.41	-1,391.94	3,111.36	2,215.77	2,069.90	145.87	15.190		
12,300.00	9,060.00	12,111.47	8,910.00	75.05	74.99	86.41	-1,390.84	3,211.35	2,216.43	2,066.89	149.54	14.821		
12,400.00	9,060.00	12,211.47	8,910.00	76.89	76.85	86.41	-1,389.74	3,311.35	2,217.10	2,063.86	153.24	14.468		
12,500.00	9,060.00	12,311.47	8,910.00	78.74	78.72	86.41	-1,388.64	3,411.34	2,217.76	2,060.81	156.95	14.130		
12,600.00	9,060.00	12,411.47	8,910.00	80.61	80.60	86.41	-1,387.54	3,511.33	2,218.43	2,057.74	160.69	13.806		
12,700.00	9,060.00	12,511.47	8,910.00	82.48	82.48	86.41	-1,386.44	3,611.32	2,219.09	2,054.65	164.44	13.495		
12,800.00	9,060.00	12,611.46	8,910.00	84.36	84.37	86.41	-1,385.34	3,711.31	2,219.76	2,051.55	168.20	13.197		
12,900.00	9,060.00	12,711.46	8,910.00	86.24	86.27	86.41	-1,384.24	3,811.30	2,220.42	2,048.44	171.98	12.911		
13,000.00	9,060.00	12,811.46	8,910.00	88.14	88.18	86.41	-1,383.14	3,911.30	2,221.09	2,045.31	175.77	12.636		
13,100.00	9,060.00	12,911.46	8,910.00	90.04	90.09	86.42	-1,382.04	4,011.29	2,221.75	2,042.17	179.58	12.372		
13,200.00	9,060.00	13,011.45	8,910.00	91.94	92.00	86.42	-1,380.95	4,111.28	2,222.42	2,039.02	183.40	12.118		
13,300.00	9,060.00	13,111.45	8,910.00	93.86	93.93	86.42	-1,379.85	4,211.27	2,223.08	2,035.86	187.23	11.874		
13,400.00	9,060.00	13,211.45	8,910.00	95.77	95.85	86.42	-1,378.75	4,311.26	2,223.75	2,032.68	191.06	11.639		
13,500.00	9,060.00	13,311.45	8,910.00	97.70	97.79	86.42	-1,377.65	4,411.25	2,224.41	2,029.50	194.91	11.412		
13,600.00	9,060.00	13,411.45	8,910.00	99.62	99.72	86.42	-1,376.55	4,511.25	2,225.08	2,026.31	198.77	11.194		
13,700.00	9,060.00	13,511.44	8,910.00	101.56	101.67	86.42	-1,375.45	4,611.24	2,225.74	2,023.10	202.64	10.984		
13,800.00	9,060.00	13,611.44	8,910.00	103.49	103.61	86.42	-1,374.35	4,711.23	2,226.41	2,019.89	206.51	10.781		
13,900.00	9,060.00	13,711.44	8,910.00	105.43	105.56	86.42	-1,373.25	4,811.22	2,227.07	2,016.68	210.40	10.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	13,811.44	8,910.00	107.38	107.51	86.43	-1,372.15	4,911.21	2,227.74	2,013.45	214.29	10.396		
14,100.00	9,060.00	13,911.43	8,910.00	109.33	109.47	86.43	-1,371.05	5,011.20	2,228.40	2,010.22	218.18	10.213		
14,200.00	9,060.00	14,011.43	8,910.00	111.28	111.43	86.43	-1,369.95	5,111.20	2,229.07	2,006.98	222.09	10.037		
14,300.00	9,060.00	14,111.43	8,910.00	113.23	113.39	86.43	-1,368.85	5,211.19	2,229.73	2,003.73	226.00	9.866		
14,400.00	9,060.00	14,211.43	8,910.00	115.19	115.35	86.43	-1,367.75	5,311.18	2,230.40	2,000.48	229.92	9.701		
14,500.00	9,060.00	14,311.43	8,910.00	117.15	117.32	86.43	-1,366.65	5,411.17	2,231.06	1,997.23	233.84	9.541		
14,600.00	9,060.00	14,411.42	8,910.00	119.11	119.29	86.43	-1,365.55	5,511.16	2,231.73	1,993.96	237.77	9.386		
14,700.00	9,060.00	14,511.42	8,910.00	121.08	121.27	86.43	-1,364.45	5,611.15	2,232.39	1,990.70	241.70	9.236		
14,800.00	9,060.00	14,611.42	8,910.00	123.05	123.24	86.43	-1,363.35	5,711.15	2,233.06	1,987.42	245.64	9.091		
14,900.00	9,060.00	14,711.42	8,910.00	125.02	125.22	86.43	-1,362.25	5,811.14	2,233.72	1,984.15	249.58	8.950		
15,000.00	9,060.00	14,811.41	8,910.00	126.99	127.20	86.44	-1,361.15	5,911.13	2,234.39	1,980.86	253.52	8.813		
15,100.00	9,060.00	14,911.41	8,910.00	128.97	129.18	86.44	-1,360.05	6,011.12	2,235.05	1,977.58	257.47	8.681		
15,200.00	9,060.00	15,011.41	8,910.00	130.95	131.16	86.44	-1,358.95	6,111.11	2,235.72	1,974.29	261.43	8.552		
15,300.00	9,060.00	15,111.41	8,910.00	132.93	133.15	86.44	-1,357.85	6,211.11	2,236.38	1,971.00	265.39	8.427		
15,400.00	9,060.00	15,211.41	8,910.00	134.91	135.14	86.44	-1,356.75	6,311.10	2,237.05	1,967.70	269.35	8.305		
15,500.00	9,060.00	15,311.40	8,910.00	136.89	137.12	86.44	-1,355.65	6,411.09	2,237.71	1,964.40	273.32	8.187		
15,600.00	9,060.00	15,411.40	8,910.00	138.88	139.11	86.44	-1,354.55	6,511.08	2,238.38	1,961.09	277.29	8.072		
15,700.00	9,060.00	15,511.40	8,910.00	140.86	141.11	86.44	-1,353.45	6,611.07	2,239.04	1,957.79	281.26	7.961		
15,800.00	9,060.00	15,611.40	8,910.00	142.85	143.10	86.44	-1,352.35	6,711.06	2,239.71	1,954.48	285.23	7.852		
15,900.00	9,060.00	15,711.39	8,910.00	144.84	145.10	86.45	-1,351.25	6,811.06	2,240.37	1,951.16	289.21	7.746		
16,000.00	9,060.00	15,811.39	8,910.00	146.83	147.09	86.45	-1,350.15	6,911.05	2,241.04	1,947.85	293.19	7.644		
16,100.00	9,060.00	15,911.39	8,910.00	148.83	149.09	86.45	-1,349.05	7,011.04	2,241.71	1,944.53	297.18	7.543		
16,200.00	9,060.00	16,011.39	8,910.00	150.82	151.09	86.45	-1,347.95	7,111.03	2,242.37	1,941.21	301.16	7.446		
16,300.00	9,060.00	16,111.39	8,910.00	152.82	153.09	86.45	-1,346.85	7,211.02	2,243.04	1,937.88	305.15	7.351		
16,400.00	9,060.00	16,211.38	8,910.00	154.81	155.09	86.45	-1,345.75	7,311.01	2,243.70	1,934.56	309.15	7.258		
16,500.00	9,060.00	16,311.38	8,910.00	156.81	157.09	86.45	-1,344.65	7,411.01	2,244.37	1,931.23	313.14	7.167		
16,600.00	9,060.00	16,411.38	8,910.00	158.81	159.10	86.45	-1,343.55	7,511.00	2,245.03	1,927.89	317.14	7.079		
16,700.00	9,060.00	16,511.38	8,910.00	160.81	161.10	86.45	-1,342.46	7,610.99	2,245.70	1,924.56	321.13	6.993		
16,800.00	9,060.00	16,611.37	8,910.00	162.81	163.11	86.45	-1,341.36	7,710.98	2,246.36	1,921.23	325.13	6.909		
16,900.00	9,060.00	16,711.37	8,910.00	164.82	165.11	86.46	-1,340.26	7,810.97	2,247.03	1,917.89	329.14	6.827		
17,000.00	9,060.00	16,811.37	8,910.00	166.82	167.12	86.46	-1,339.16	7,910.96	2,247.69	1,914.55	333.14	6.747		
17,100.00	9,060.00	16,911.37	8,910.00	168.82	169.13	86.46	-1,338.06	8,010.96	2,248.36	1,911.21	337.15	6.669		
17,200.00	9,060.00	17,011.37	8,910.00	170.83	171.14	86.46	-1,336.96	8,110.95	2,249.02	1,907.87	341.16	6.592		
17,300.00	9,060.00	17,111.36	8,910.00	172.84	173.15	86.46	-1,335.86	8,210.94	2,249.69	1,904.52	345.17	6.518		
17,400.00	9,060.00	17,211.36	8,910.00	174.84	175.16	86.46	-1,334.76	8,310.93	2,250.35	1,901.17	349.18	6.445		
17,500.00	9,060.00	17,311.36	8,910.00	176.85	177.17	86.46	-1,333.66	8,410.92	2,251.02	1,897.83	353.19	6.373		
17,600.00	9,060.00	17,411.36	8,910.00	178.86	179.18	86.46	-1,332.56	8,510.92	2,251.68	1,894.48	357.21	6.304		
17,700.00	9,060.00	17,511.35	8,910.00	180.87	181.20	86.46	-1,331.46	8,610.91	2,252.35	1,891.13	361.22	6.235		
17,800.00	9,060.00	17,611.35	8,910.00	182.88	183.21	86.47	-1,330.36	8,710.90	2,253.01	1,887.77	365.24	6.169		
17,900.00	9,060.00	17,711.35	8,910.00	184.89	185.23	86.47	-1,329.26	8,810.89	2,253.68	1,884.42	369.26	6.103		
18,000.00	9,060.00	17,811.35	8,910.00	186.90	187.24	86.47	-1,328.16	8,910.88	2,254.34	1,881.06	373.28	6.039		
18,100.00	9,060.00	17,911.35	8,910.00	188.92	189.26	86.47	-1,327.06	9,010.87	2,255.01	1,877.71	377.30	5.977		
18,200.00	9,060.00	18,011.34	8,910.00	190.93	191.27	86.47	-1,325.96	9,110.87	2,255.67	1,874.35	381.32	5.915		
18,300.00	9,060.00	18,111.34	8,910.00	192.94	193.29	86.47	-1,324.86	9,210.86	2,256.34	1,870.99	385.35	5.855		
18,400.00	9,060.00	18,211.34	8,910.00	194.96	195.31	86.47	-1,323.76	9,310.85	2,257.00	1,867.63	389.38	5.796		
18,500.00	9,060.00	18,311.34	8,910.00	196.97	197.33	86.47	-1,322.66	9,410.84	2,257.67	1,864.27	393.40	5.739		
18,600.00	9,060.00	18,411.33	8,910.00	198.99	199.35	86.47	-1,321.56	9,510.83	2,258.33	1,860.90	397.43	5.682		
18,700.00	9,060.00	18,511.33	8,910.00	201.00	201.37	86.47	-1,320.46	9,610.82	2,259.00	1,857.54	401.46	5.627		
18,800.00	9,060.00	18,611.33	8,910.00	203.02	203.39	86.48	-1,319.36	9,710.82	2,259.66	1,854.18	405.49	5.573		
18,900.00	9,060.00	18,711.33	8,910.00	205.04	205.41	86.48	-1,318.26	9,810.81	2,260.33	1,850.81	409.52	5.519		
19,000.00	9,060.00	18,811.33	8,910.00	207.06	207.43	86.48	-1,317.16	9,910.80	2,260.99	1,847.44	413.55	5.467		
19,100.00	9,060.00	18,911.32	8,910.00	209.07	209.45	86.48	-1,316.06	10,010.79	2,261.66	1,844.07	417.59	5.416		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	19,011.32	8,910.00	211.09	211.47	86.48	-1,314.96	10,110.78	2,262.32	1,840.71	421.62	5.366	
19,300.00	9,060.00	19,111.32	8,910.00	213.11	213.49	86.48	-1,313.86	10,210.77	2,262.99	1,837.34	425.65	5.316	
19,400.00	9,060.00	19,211.32	8,910.00	215.13	215.52	86.48	-1,312.76	10,310.77	2,263.66	1,833.96	429.69	5.268	
19,500.32	9,060.00	19,294.07	8,910.00	217.16	217.19	86.48	-1,311.85	10,393.51	2,264.39	1,831.03	433.36	5.225 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.53	4.53	0.50	0.50	-178.58	-3,232.90	-80.25	3,233.89					
100.00	100.00	101.00	101.00	0.52	0.53	-178.58	-3,232.96	-80.14	3,233.95	3,232.91	1.05	3,091.497		
200.00	200.00	197.47	197.47	0.70	0.60	-178.59	-3,233.13	-79.83	3,234.12	3,232.82	1.30	2,481.671		
300.00	300.00	293.93	293.93	0.99	0.70	-178.59	-3,233.41	-79.31	3,234.40	3,232.71	1.69	1,911.525		
400.00	400.00	390.39	390.39	1.31	0.83	-178.61	-3,233.80	-78.60	3,234.79	3,232.65	2.14	1,513.876		
500.00	500.00	481.18	481.17	1.65	1.04	-178.62	-3,234.31	-77.79	3,235.34	3,232.65	2.68	1,206.047		
600.00	600.00	581.75	581.74	1.99	1.36	-178.64	-3,235.16	-76.99	3,236.15	3,232.80	3.35	964.944		
700.00	700.00	685.09	685.06	2.34	1.71	-178.65	-3,235.81	-76.25	3,236.77	3,232.72	4.05	798.735		
800.00	800.00	789.60	789.57	2.69	2.08	-178.66	-3,236.41	-75.56	3,237.32	3,232.56	4.76	679.444		
900.00	900.00	875.60	875.57	3.04	2.38	-178.67	-3,236.99	-75.25	3,237.99	3,232.57	5.42	597.771		
1,000.00	1,000.00	1,004.14	1,004.10	3.40	2.82	-178.68	-3,237.62	-74.40	3,238.47	3,232.25	6.22	520.713		
1,100.00	1,100.00	1,112.40	1,112.36	3.75	3.20	-178.70	-3,237.43	-73.70	3,238.28	3,231.33	6.95	465.922		
1,200.00	1,200.00	1,214.90	1,214.86	4.11	3.56	-178.71	-3,237.21	-72.83	3,238.04	3,230.38	7.66	422.515		
1,300.00	1,300.00	1,330.80	1,330.74	4.46	3.96	-178.74	-3,236.64	-71.28	3,237.53	3,229.10	8.42	384.288		
1,400.00	1,400.00	1,433.14	1,433.08	4.82	4.32	-178.76	-3,235.78	-70.06	3,236.67	3,227.53	9.14	354.192		
1,500.00	1,500.00	1,522.35	1,522.28	5.18	4.63	-178.78	-3,235.18	-68.82	3,235.96	3,226.15	9.81	329.887		
1,600.00	1,600.00	1,632.75	1,632.66	5.53	5.02	-178.80	-3,234.44	-67.52	3,235.27	3,224.71	10.55	306.517		
1,700.00	1,700.00	1,723.81	1,723.71	5.89	5.34	-178.82	-3,233.86	-66.53	3,234.60	3,223.37	11.23	287.942		
1,800.00	1,800.00	1,830.98	1,830.87	6.25	5.72	-178.85	-3,233.11	-65.08	3,233.87	3,221.90	11.97	270.155		
1,900.00	1,900.00	1,928.44	1,928.33	6.61	6.07	-178.87	-3,232.39	-63.72	3,233.11	3,220.43	12.67	255.103		
2,000.00	2,000.00	2,038.89	2,038.76	6.96	6.46	-178.90	-3,231.55	-62.29	3,232.33	3,218.91	13.42	240.832		
2,100.00	2,100.00	2,163.65	2,163.51	7.32	6.89	-178.90	-3,229.68	-61.73	3,230.81	3,216.60	14.21	227.340		
2,200.00	2,200.00	2,260.89	2,260.73	7.68	7.23	-178.90	-3,227.89	-61.82	3,228.96	3,214.06	14.90	216.664		
2,300.00	2,300.00	2,359.73	2,359.55	8.04	7.57	-178.90	-3,226.21	-62.13	3,227.28	3,211.68	15.60	206.879		
2,350.00	2,350.00	2,409.91	2,409.72	8.22	7.74	-178.89	-3,225.35	-62.32	3,226.42	3,210.47	15.95	202.268		
2,400.00	2,400.00	2,459.53	2,459.33	8.39	7.91	-162.85	-3,224.51	-62.47	3,225.78	3,209.48	16.30	197.890		
2,448.27	2,448.26	2,506.02	2,505.82	8.57	8.07	-162.85	-3,223.73	-62.58	3,225.57	3,208.94	16.63	193.913		
2,500.00	2,499.98	2,554.99	2,554.78	8.75	8.24	-162.86	-3,222.94	-62.68	3,225.82	3,208.83	16.99	189.881		
2,600.00	2,599.92	2,643.71	2,643.49	9.11	8.55	-162.87	-3,221.70	-62.58	3,227.76	3,210.10	17.66	182.801		
2,700.00	2,699.78	2,743.86	2,743.64	9.47	8.90	-162.89	-3,220.55	-62.20	3,231.61	3,213.24	18.37	175.958		
2,800.00	2,799.54	2,843.54	2,843.31	9.82	9.25	-162.91	-3,219.33	-62.48	3,237.05	3,217.98	19.07	169.742		
2,900.00	2,899.16	2,900.00	2,982.17	10.18	9.44	-162.94	-3,216.94	-62.87	3,243.71	3,224.09	19.62	165.316		
3,000.00	2,998.61	3,146.85	3,146.47	10.54	10.31	-163.00	-3,210.72	-63.54	3,249.71	3,228.87	20.83	155.985		
3,100.00	3,097.86	3,247.94	3,247.47	10.89	10.66	-163.03	-3,206.26	-63.87	3,256.99	3,235.44	21.55	151.161		
3,200.00	3,196.89	3,342.96	3,342.38	11.25	11.00	-163.07	-3,202.02	-64.18	3,265.88	3,243.64	22.24	146.848		
3,295.74	3,291.45	4,008.93	4,001.24	11.59	13.40	-163.30	-3,114.86	-79.50	3,267.22	3,242.69	24.54	133.155		
3,300.00	3,295.65	4,014.31	4,006.48	11.61	13.43	-163.30	-3,113.70	-79.78	3,266.97	3,242.40	24.57	132.967		
3,400.00	3,394.29	4,095.04	4,085.17	11.97	13.73	-163.29	-3,096.19	-84.24	3,261.03	3,235.79	25.24	129.195		
3,500.00	3,492.94	4,153.00	4,141.80	12.33	13.95	-163.27	-3,084.34	-87.59	3,256.30	3,230.44	25.86	125.926		
3,600.00	3,591.58	4,303.98	4,289.29	12.69	14.54	-163.26	-3,052.92	-94.96	3,251.10	3,224.39	26.71	121.741		
3,700.00	3,690.22	4,386.33	4,369.68	13.05	14.86	-163.26	-3,035.39	-98.49	3,245.53	3,218.15	27.39	118.502		
3,800.00	3,788.86	4,475.18	4,456.57	13.41	15.21	-163.26	-3,017.28	-102.40	3,240.83	3,212.74	28.09	115.380		
3,900.00	3,887.50	4,605.67	4,584.03	13.77	15.73	-163.29	-2,989.68	-106.87	3,235.31	3,206.42	28.89	111.980		
4,000.00	3,886.14	4,686.70	4,663.18	14.14	16.06	-163.31	-2,972.46	-109.06	3,229.76	3,200.18	29.58	109.197		
4,100.00	4,084.78	4,762.46	4,737.30	14.50	16.36	-163.34	-2,956.95	-111.11	3,224.98	3,194.73	30.25	106.610		
4,200.00	4,183.42	4,875.47	4,847.99	14.87	16.82	-163.37	-2,934.37	-114.32	3,220.75	3,189.74	31.02	103.839		
4,300.00	4,282.06	4,978.16	4,948.41	15.24	17.23	-163.43	-2,912.95	-115.75	3,215.57	3,183.81	31.76	101.249		
4,400.00	4,380.70	5,046.48	5,015.32	15.60	17.51	-163.47	-2,899.15	-116.34	3,211.09	3,178.67	32.42	99.059		
4,500.00	4,479.34	5,105.00	5,072.76	15.97	17.75	-163.51	-2,887.99	-117.05	3,207.76	3,174.71	33.04	97.072		
4,600.00	4,577.98	5,182.81	5,149.27	16.34	18.06	-163.55	-2,873.90	-118.17	3,205.40	3,171.68	33.72	95.051		
4,700.00	4,676.62	5,268.41	5,233.55	16.71	18.41	-163.59	-2,858.98	-119.63	3,203.72	3,169.30	34.42	93.073		
4,800.00	4,775.27	5,385.93	5,349.25	17.08	18.88	-163.64	-2,838.52	-121.95	3,202.09	3,166.88	35.21	90.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	5,448.92	5,411.29	17.45	19.13	-163.68	-2,827.64	-123.00	3,200.59	3,164.74	35.85	89.289		
5,000.00	4,972.55	5,527.30	5,488.63	17.82	19.45	-163.72	-2,815.00	-124.23	3,200.20	3,163.68	36.52	87.622		
5,100.00	5,071.19	5,719.60	5,677.92	18.19	20.23	-163.88	-2,781.24	-123.73	3,198.25	3,160.73	37.52	85.251		
5,200.00	5,169.83	5,805.93	5,762.78	18.56	20.58	-163.96	-2,765.35	-123.26	3,195.56	3,157.34	38.22	83.607		
5,300.00	5,268.47	5,900.00	5,904.49	18.93	18.47	-164.06	-2,737.48	-124.31	3,191.91	3,155.26	36.65	87.088		
5,400.00	5,367.11	6,026.22	5,978.79	19.31	21.49	-164.08	-2,722.42	-126.44	3,187.90	3,148.14	39.76	80.173		
5,500.00	5,465.75	6,104.27	6,055.44	19.68	21.82	-164.09	-2,708.04	-129.62	3,185.17	3,144.72	40.45	78.744		
5,600.00	5,564.39	6,273.44	6,221.29	20.05	22.53	-164.10	-2,675.54	-136.89	3,181.85	3,140.47	41.38	76.903		
5,700.00	5,663.03	6,398.71	6,343.58	20.42	23.06	-164.09	-2,649.01	-142.92	3,176.29	3,134.10	42.19	75.292		
5,800.00	5,761.67	6,502.34	6,444.72	20.80	23.51	-164.09	-2,627.02	-147.81	3,170.77	3,127.82	42.95	73.833		
5,900.00	5,860.31	6,564.35	6,505.29	21.17	23.77	-164.10	-2,613.90	-150.01	3,165.44	3,121.84	43.60	72.599		
6,000.00	5,958.96	6,628.00	6,567.76	21.54	24.04	-164.12	-2,601.87	-151.81	3,162.01	3,117.76	44.26	71.446		
6,100.00	6,057.60	6,666.56	6,605.73	21.92	24.20	-164.14	-2,595.16	-152.61	3,159.93	3,115.09	44.84	70.475		
6,200.00	6,156.24	6,779.73	6,717.24	22.29	24.67	-164.21	-2,575.89	-153.42	3,158.74	3,113.12	45.62	69.240		
6,300.00	6,254.88	6,957.86	6,891.95	22.67	25.42	-164.34	-2,541.21	-154.51	3,154.51	3,107.94	46.57	67.731		
6,400.00	6,353.52	7,021.50	6,954.38	23.04	25.69	-164.39	-2,528.87	-154.76	3,150.85	3,103.62	47.23	66.713		
6,500.00	6,452.16	7,125.05	7,056.07	23.42	26.12	-164.46	-2,509.35	-155.80	3,147.78	3,099.79	47.99	65.595		
6,600.00	6,550.80	7,250.50	7,179.03	23.79	26.66	-164.52	-2,484.62	-157.89	3,143.75	3,094.95	48.80	64.416		
6,700.00	6,649.44	7,297.00	7,224.62	24.17	26.86	-164.55	-2,475.46	-158.65	3,140.20	3,090.79	49.41	63.548		
6,800.00	6,748.08	7,360.05	7,286.60	24.54	27.12	-164.58	-2,463.93	-159.53	3,137.96	3,087.90	50.06	62.684		
6,900.00	6,846.72	7,438.88	7,364.38	24.92	27.45	-164.63	-2,451.18	-160.36	3,137.52	3,086.77	50.75	61.827		
7,000.00	6,945.36	7,526.80	7,451.09	25.29	27.81	-164.69	-2,436.62	-161.33	3,136.83	3,085.38	51.46	60.960		
7,008.93	6,954.18	7,531.79	7,456.01	25.32	27.83	-164.69	-2,435.83	-161.39	3,136.83	3,085.32	51.51	60.894		
7,100.00	7,044.00	7,583.00	7,506.62	25.67	28.04	-164.72	-2,428.05	-162.06	3,137.41	3,085.34	52.07	60.254		
7,200.00	7,142.65	7,622.18	7,545.43	26.04	28.19	-164.74	-2,422.71	-162.69	3,139.66	3,087.04	52.61	59.672		
7,300.00	7,241.29	7,678.00	7,600.88	26.42	28.41	-164.77	-2,416.41	-163.86	3,143.94	3,090.73	53.20	59.093		
7,400.00	7,339.93	7,766.65	7,689.03	26.79	28.75	-164.81	-2,407.16	-165.34	3,149.31	3,095.41	53.90	58.427		
7,500.00	7,438.57	7,831.94	7,753.96	27.17	28.99	-164.86	-2,400.32	-165.50	3,154.77	3,100.26	54.51	57.872		
7,571.77	7,509.37	7,868.00	7,789.86	27.44	29.13	-164.90	-2,396.89	-165.17	3,159.46	3,104.55	54.91	57.542		
7,600.00	7,537.23	7,888.57	7,810.34	27.55	29.20	-164.93	-2,395.07	-164.84	3,161.38	3,106.30	55.08	57.392		
7,700.00	7,636.18	7,938.39	7,860.00	27.92	29.39	-165.01	-2,391.21	-163.63	3,167.63	3,112.01	55.61	56.958		
7,800.00	7,735.48	8,000.42	7,921.88	28.29	29.61	-165.10	-2,387.35	-161.72	3,172.84	3,116.66	56.18	56.476		
7,900.00	7,835.05	8,082.87	8,004.21	28.65	29.90	-165.16	-2,382.95	-161.32	3,176.40	3,119.57	56.82	55.898		
8,000.00	7,934.83	8,177.59	8,098.78	29.01	30.23	-165.17	-2,377.96	-162.51	3,177.50	3,119.98	57.52	55.244		
8,100.00	8,034.74	8,249.00	8,170.12	29.36	30.49	-165.17	-2,374.87	-163.35	3,176.93	3,118.83	58.10	54.677		
8,202.27	8,137.00	8,337.96	8,259.01	29.72	30.79	178.82	-2,371.60	-164.59	3,174.44	3,115.68	58.76	54.021		
8,300.00	8,234.73	8,437.36	8,358.21	30.06	31.13	178.74	-2,367.81	-160.40	3,170.80	3,111.35	59.45	53.334		
8,400.00	8,334.73	8,538.27	8,456.52	30.41	31.46	178.36	-2,363.20	-139.27	3,166.66	3,106.53	60.14	52.657		
8,500.00	8,434.73	8,600.08	8,513.31	30.75	31.64	177.92	-2,360.58	-115.14	3,163.53	3,102.89	60.64	52.168		
8,552.31	8,487.04	8,630.00	8,539.42	30.94	31.72	177.65	-2,359.59	-100.58	3,162.60	3,101.71	60.89	51.940		
8,600.00	8,534.68	8,630.00	8,539.42	31.10	31.72	88.04	-2,359.59	-100.58	3,162.17	3,101.19	60.98	51.852		
8,629.74	8,564.23	8,645.36	8,552.41	31.20	31.75	87.92	-2,359.22	-92.39	3,162.07	3,100.96	61.11	51.747		
8,650.00	8,584.26	8,650.67	8,556.83	31.26	31.76	87.87	-2,359.13	-89.44	3,162.11	3,100.95	61.17	51.698		
8,700.00	8,633.10	8,677.00	8,578.17	31.43	31.83	87.65	-2,358.98	-74.04	3,162.62	3,101.26	61.37	51.536		
8,750.00	8,680.83	8,677.00	8,578.17	31.58	31.83	87.58	-2,358.98	-74.04	3,163.36	3,101.92	61.44	51.489		
8,800.00	8,727.09	8,694.63	8,591.98	31.74	31.86	87.37	-2,359.10	-63.08	3,164.57	3,102.98	61.59	51.382		
8,850.00	8,771.52	8,725.00	8,614.96	31.89	31.92	87.10	-2,359.66	-43.23	3,166.18	3,104.38	61.80	51.233		
8,900.00	8,813.78	8,749.29	8,632.51	32.04	31.96	86.85	-2,360.20	-26.46	3,167.89	3,105.91	61.99	51.107		
8,950.00	8,853.56	8,890.48	8,720.96	32.18	32.17	86.16	-2,359.47	83.34	3,168.40	3,105.52	62.87	50.393		
9,000.00	8,890.55	8,920.74	8,737.44	32.32	32.22	86.01	-2,358.84	108.70	3,168.46	3,105.31	63.15	50.175		
9,050.00	8,924.46	8,980.96	8,766.86	32.47	32.32	85.77	-2,357.32	161.20	3,168.29	3,104.61	63.68	49.754		
9,100.00	8,955.05	9,066.42	8,802.74	32.63	32.62	85.51	-2,354.08	238.69	3,167.51	3,103.01	64.51	49.105		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	9,097.41	8,814.31	32.79	32.83	85.53	-2,352.69	267.40	3,166.25	3,101.34	64.91	48.778		
9,200.00	9,005.34	9,127.42	8,824.47	32.97	33.06	85.58	-2,351.43	295.60	3,164.96	3,099.62	65.34	48.435		
9,250.00	9,024.65	9,154.00	8,832.51	33.17	33.30	85.66	-2,350.40	320.92	3,163.66	3,097.89	65.77	48.100		
9,300.00	9,039.87	9,190.68	8,842.19	33.38	33.66	85.77	-2,349.07	356.27	3,162.32	3,095.96	66.36	47.653		
9,350.00	9,050.89	9,251.74	8,855.50	33.62	34.33	85.92	-2,346.81	415.81	3,160.78	3,093.49	67.29	46.971		
9,400.00	9,057.61	9,400.00	8,873.30	33.87	36.27	86.20	-2,339.99	538.10	3,158.46	3,088.93	69.54	45.422		
9,452.31	9,060.00	9,446.80	8,879.75	34.15	36.98	86.63	-2,334.45	608.81	3,154.52	3,083.98	70.54	44.717		
9,500.00	9,060.00	9,492.28	8,883.19	34.42	37.66	86.69	-2,330.84	654.01	3,150.80	3,079.29	71.51	44.061		
9,600.00	9,060.00	9,548.94	8,886.95	35.09	38.59	86.75	-2,326.74	710.40	3,143.75	3,070.65	73.11	43.003		
9,700.00	9,060.00	9,613.06	8,890.58	35.86	39.68	86.81	-2,322.88	774.29	3,137.97	3,063.01	74.96	41.863		
9,800.00	9,060.00	9,677.00	8,893.34	36.72	40.80	86.86	-2,319.55	838.09	3,133.18	3,056.24	76.94	40.722		
9,900.00	9,060.00	9,727.42	8,894.81	37.69	41.74	86.89	-2,317.57	888.45	3,129.77	3,050.96	78.82	39.710		
10,000.00	9,060.00	9,773.64	8,895.54	38.73	42.60	86.90	-2,316.57	934.65	3,128.10	3,047.42	80.68	38.770		
10,100.00	9,060.00	9,860.65	8,896.36	39.86	44.31	86.91	-2,315.57	1,021.65	3,127.50	3,043.99	83.50	37.454		
10,140.22	9,060.00	9,901.45	8,896.80	40.33	45.14	86.92	-2,315.19	1,062.44	3,127.34	3,042.53	84.81	36.876		
10,200.00	9,060.00	9,964.34	8,897.76	41.05	46.43	86.94	-2,314.57	1,125.33	3,126.44	3,039.61	86.82	36.009		
10,300.00	9,060.00	10,038.02	8,898.67	42.31	47.99	86.95	-2,314.12	1,199.00	3,122.52	3,032.89	89.63	34.837		
10,400.00	9,060.00	10,200.27	8,899.04	43.64	51.56	86.93	-2,312.18	1,361.23	3,114.65	3,020.06	94.59	32.927		
10,507.23	9,060.00	10,352.72	8,899.80	45.11	55.06	86.91	-2,307.72	1,513.62	3,100.48	3,000.89	99.59	31.132		
10,600.00	9,060.00	10,438.50	8,901.35	46.43	57.08	86.94	-2,304.70	1,599.32	3,087.35	2,984.42	102.93	29.995		
10,700.00	9,060.00	10,519.86	8,903.20	47.91	59.04	86.98	-2,302.13	1,680.62	3,076.87	2,970.53	106.34	28.934		
10,800.00	9,060.00	10,626.65	8,906.06	49.42	61.63	87.03	-2,299.05	1,787.32	3,070.12	2,959.66	110.46	27.793		
10,900.00	9,060.00	10,752.23	8,911.63	50.97	64.74	87.14	-2,294.70	1,912.71	3,066.17	2,951.02	115.15	26.626		
10,978.08	9,060.00	10,835.72	8,915.26	52.20	66.83	87.21	-2,291.45	1,996.05	3,065.19	2,946.70	118.49	25.868 CC		
11,000.00	9,060.00	10,860.81	8,916.25	52.55	67.47	87.22	-2,290.42	2,021.11	3,065.26	2,945.79	119.48	25.656		
11,100.00	9,060.00	10,957.04	8,919.40	54.14	69.91	87.28	-2,286.34	2,117.20	3,067.58	2,944.06	123.52	24.834		
11,207.23	9,060.00	11,045.03	8,921.76	55.87	72.16	87.33	-2,283.06	2,205.09	3,074.53	2,947.02	127.51	24.112		
11,300.00	9,060.00	11,106.00	8,923.84	57.39	73.72	87.37	-2,281.07	2,265.99	3,081.28	2,950.70	130.58	23.597		
11,400.00	9,060.00	11,161.15	8,925.77	59.06	75.15	87.42	-2,279.95	2,321.10	3,086.48	2,952.85	133.64	23.096		
11,506.63	9,060.00	11,219.22	8,927.39	60.88	76.66	87.45	-2,279.98	2,379.15	3,090.16	2,953.27	136.89	22.575		
11,600.00	9,060.00	11,334.31	8,931.25	62.49	79.67	87.53	-2,280.56	2,494.17	3,092.18	2,950.61	141.57	21.842		
11,700.00	9,060.00	11,423.87	8,935.33	64.24	82.03	87.60	-2,280.13	2,583.63	3,093.34	2,947.66	145.68	21.234		
11,800.00	9,060.00	11,486.00	8,937.44	66.01	83.67	87.64	-2,281.08	2,645.72	3,096.24	2,947.23	149.01	20.779		
11,900.00	9,060.00	11,562.25	8,939.02	67.79	85.69	87.67	-2,282.96	2,721.93	3,100.23	2,947.47	152.76	20.295		
12,000.00	9,060.00	11,651.64	8,939.81	69.58	88.07	87.69	-2,284.93	2,811.30	3,104.17	2,947.25	156.91	19.783		
12,100.00	9,060.00	11,819.23	8,940.02	71.39	92.55	87.70	-2,287.67	2,978.85	3,107.75	2,944.36	163.39	19.021		
12,200.00	9,060.00	11,989.90	8,937.15	73.21	97.15	87.65	-2,285.53	3,149.47	3,108.10	2,938.20	169.91	18.293		
12,234.52	9,060.00	12,016.84	8,936.61	73.85	97.88	87.64	-2,285.00	3,176.40	3,108.06	2,936.81	171.26	18.149		
12,300.00	9,060.00	12,068.80	8,935.90	75.05	99.28	87.63	-2,284.17	3,228.36	3,108.21	2,934.37	173.84	17.880		
12,400.00	9,060.00	12,152.99	8,934.91	76.89	101.56	87.61	-2,283.22	3,312.53	3,108.90	2,930.96	177.94	17.472		
12,500.00	9,060.00	12,272.82	8,932.96	78.74	104.83	87.57	-2,281.93	3,432.34	3,109.68	2,926.61	183.08	16.986		
12,600.00	9,060.00	12,400.25	8,932.75	80.61	108.30	87.57	-2,279.10	3,559.74	3,109.15	2,920.71	188.44	16.499		
12,696.03	9,060.00	12,478.41	8,933.95	82.40	110.44	87.59	-2,277.50	3,637.87	3,108.82	2,916.46	192.36	16.161		
12,700.00	9,060.00	12,481.40	8,934.01	82.48	110.52	87.59	-2,277.45	3,640.85	3,108.82	2,916.30	192.52	16.148		
12,800.00	9,060.00	12,558.78	8,936.09	84.36	112.64	87.63	-2,276.50	3,718.20	3,109.24	2,912.75	196.50	15.823		
12,900.00	9,060.00	12,642.32	8,938.07	86.24	114.94	87.67	-2,275.98	3,801.72	3,110.29	2,909.63	200.66	15.500		
13,000.00	9,060.00	12,763.33	8,940.90	88.14	118.27	87.72	-2,275.53	3,922.69	3,111.66	2,905.72	205.93	15.110		
13,100.00	9,060.00	12,905.56	8,946.34	90.04	122.20	87.82	-2,272.66	4,064.79	3,111.11	2,899.28	211.83	14.687		
13,200.00	9,060.00	13,028.38	8,952.14	91.94	125.59	87.93	-2,269.18	4,187.42	3,109.84	2,892.68	217.16	14.321		
13,300.00	9,060.00	13,103.00	8,954.95	93.86	127.65	87.98	-2,267.11	4,261.96	3,108.72	2,887.58	221.13	14.058		
13,380.06	9,060.00	13,162.85	8,956.28	95.39	129.31	88.00	-2,265.86	4,321.78	3,108.40	2,884.10	224.31	13.858		
13,400.00	9,060.00	13,176.84	8,956.43	95.77	129.70	88.00	-2,265.63	4,335.76	3,108.42	2,883.35	225.07	13.811		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,500.00	9,060.00	13,293.88	8,956.51	97.70	132.94	88.01	-2,263.69	4,452.79	3,108.57	2,878.31	230.26	13.500		
13,600.00	9,060.00	13,399.35	8,955.94	99.62	135.87	87.99	-2,261.35	4,558.23	3,108.13	2,873.01	235.12	13.219		
13,700.00	9,060.00	13,494.22	8,957.13	101.56	138.51	88.02	-2,259.31	4,653.07	3,107.70	2,868.02	239.69	12.966		
13,800.00	9,060.00	13,593.23	8,959.66	103.49	141.27	88.06	-2,257.26	4,752.03	3,107.31	2,862.93	244.39	12.715		
13,867.68	9,060.00	13,650.54	8,960.94	104.81	142.87	88.09	-2,256.20	4,809.31	3,107.20	2,859.91	247.29	12.565		
13,900.00	9,060.00	13,680.07	8,961.49	105.43	143.69	88.10	-2,255.72	4,838.83	3,107.23	2,858.48	248.74	12.492		
14,000.00	9,060.00	13,801.34	8,965.12	107.38	147.07	88.16	-2,253.28	4,960.02	3,106.86	2,852.75	254.11	12.227		
14,100.00	9,060.00	13,885.77	8,968.35	109.33	149.43	88.22	-2,251.45	5,044.37	3,106.37	2,847.96	258.41	12.021		
14,106.65	9,060.00	13,889.63	8,968.49	109.46	149.54	88.23	-2,251.39	5,048.22	3,106.37	2,847.72	258.64	12.010		
14,200.00	9,060.00	13,943.86	8,970.27	111.28	151.06	88.26	-2,250.83	5,102.42	3,106.95	2,845.03	261.92	11.862		
14,300.00	9,060.00	14,043.42	8,973.05	113.23	153.84	88.31	-2,250.59	5,201.94	3,108.40	2,841.72	266.67	11.656		
14,400.00	9,060.00	14,147.81	8,975.61	115.19	156.77	88.36	-2,250.06	5,306.30	3,109.58	2,838.01	271.58	11.450		
14,500.00	9,060.00	14,279.48	8,978.85	117.15	160.46	88.42	-2,248.50	5,437.92	3,110.06	2,832.77	277.30	11.216		
14,600.00	9,060.00	14,397.56	8,981.47	119.11	163.77	88.47	-2,246.45	5,555.95	3,110.05	2,827.45	282.60	11.005		
14,700.00	9,060.00	14,492.60	8,983.62	121.08	166.44	88.51	-2,244.26	5,650.94	3,109.46	2,822.23	287.24	10.825		
14,800.00	9,060.00	14,603.95	8,986.10	123.05	169.56	88.55	-2,242.07	5,762.24	3,109.24	2,816.89	292.35	10.635		
14,900.00	9,060.00	14,692.27	8,988.36	125.02	172.04	88.59	-2,240.02	5,850.51	3,108.63	2,811.83	296.80	10.474		
14,936.73	9,060.00	14,720.00	8,989.01	125.75	172.82	88.60	-2,239.50	5,878.23	3,108.57	2,810.27	298.30	10.421		
15,000.00	9,060.00	14,749.56	8,989.71	126.99	173.65	88.62	-2,239.15	5,907.78	3,108.91	2,808.59	300.32	10.352		
15,100.00	9,060.00	14,815.00	8,991.43	128.97	175.50	88.65	-2,239.57	5,973.19	3,111.01	2,806.96	304.05	10.232		
15,200.00	9,060.00	14,892.07	8,993.32	130.95	177.67	88.69	-2,240.77	6,050.23	3,114.11	2,805.99	308.12	10.107		
15,300.00	9,060.00	15,005.94	8,995.48	132.93	180.88	88.73	-2,241.85	6,164.07	3,116.78	2,803.40	313.38	9.946		
15,400.00	9,060.00	15,091.37	8,997.05	134.91	183.29	88.76	-2,242.70	6,249.49	3,119.50	2,801.79	317.72	9.818		
15,500.00	9,060.00	15,226.61	9,000.30	136.89	187.10	88.82	-2,243.71	6,384.68	3,121.99	2,798.33	323.66	9.646		
15,600.00	9,060.00	15,357.51	9,003.88	138.88	190.79	88.88	-2,243.11	6,515.53	3,123.21	2,793.79	329.43	9.481		
15,700.00	9,060.00	15,483.58	9,007.96	140.86	194.35	88.96	-2,241.51	6,641.52	3,123.66	2,788.63	335.03	9.324		
15,800.00	9,060.00	15,578.89	9,010.31	142.85	197.04	89.00	-2,239.96	6,736.79	3,123.75	2,784.05	339.71	9.195		
15,900.00	9,060.00	15,664.45	9,012.19	144.84	199.46	89.04	-2,238.82	6,822.32	3,124.15	2,780.05	344.10	9.079		
16,000.00	9,060.00	15,841.69	9,019.93	146.83	204.45	89.18	-2,233.89	6,999.31	3,122.70	2,771.55	351.15	8.893		
16,100.00	9,060.00	15,902.40	9,022.20	148.83	206.17	89.22	-2,232.00	7,059.94	3,121.36	2,766.49	354.87	8.796		
16,138.15	9,060.00	15,922.18	9,022.67	149.59	206.73	89.23	-2,231.60	7,079.71	3,121.25	2,765.08	356.17	8.763		
16,200.00	9,060.00	15,954.96	9,023.14	150.82	207.65	89.24	-2,231.18	7,112.48	3,121.54	2,763.26	358.28	8.713		
16,300.00	9,060.00	16,035.35	9,023.67	152.82	209.93	89.25	-2,230.77	7,192.88	3,122.79	2,760.28	362.51	8.614		
16,400.00	9,060.00	16,112.84	9,023.85	154.81	212.12	89.25	-2,230.88	7,270.36	3,124.70	2,758.08	366.62	8.523		
16,500.00	9,060.00	16,237.27	9,023.63	156.81	215.64	89.25	-2,231.33	7,394.79	3,126.89	2,754.66	372.22	8.401		
16,600.00	9,060.00	16,315.57	9,023.11	158.81	217.86	89.24	-2,231.37	7,473.09	3,128.71	2,752.34	376.37	8.313		
16,700.00	9,060.00	16,465.59	9,021.54	160.81	222.11	89.21	-2,230.87	7,623.10	3,130.19	2,747.44	382.75	8.178		
16,800.00	9,060.00	16,563.61	9,020.62	162.81	224.88	89.19	-2,229.54	7,721.10	3,130.62	2,743.10	387.52	8.079		
16,900.00	9,060.00	16,644.59	9,020.70	164.82	227.18	89.19	-2,228.95	7,802.08	3,131.64	2,739.86	391.78	7.993		
17,000.00	9,060.00	16,741.53	9,022.35	166.82	229.93	89.23	-2,228.57	7,899.00	3,132.98	2,736.46	396.53	7.901		
17,100.00	9,060.00	16,843.86	9,024.80	168.82	232.83	89.27	-2,228.12	8,001.30	3,134.28	2,732.84	401.45	7.807		
17,200.00	9,060.00	16,947.05	9,026.78	170.83	235.75	89.31	-2,227.65	8,104.47	3,135.57	2,729.17	406.39	7.716		
17,300.00	9,060.00	17,049.81	9,028.77	172.84	238.67	89.34	-2,226.97	8,207.21	3,136.65	2,725.32	411.33	7.626		
17,400.00	9,060.00	17,146.43	9,031.77	174.84	241.41	89.40	-2,226.42	8,303.79	3,137.81	2,721.73	416.08	7.541		
17,500.00	9,060.00	17,245.79	9,034.72	176.85	244.23	89.45	-2,225.92	8,403.10	3,139.04	2,718.13	420.91	7.458		
17,600.00	9,060.00	17,350.74	9,037.72	178.86	247.21	89.51	-2,225.32	8,508.01	3,140.21	2,714.29	425.92	7.373		
17,700.00	9,060.00	17,462.14	9,040.50	180.87	250.37	89.56	-2,224.39	8,619.37	3,141.12	2,709.99	431.13	7.286		
17,800.00	9,060.00	17,567.19	9,042.71	182.88	253.35	89.60	-2,223.20	8,724.38	3,141.74	2,705.60	436.14	7.204		
17,900.00	9,060.00	17,682.55	9,044.43	184.89	256.63	89.63	-2,221.33	8,839.71	3,141.85	2,700.40	441.45	7.117		
18,000.00	9,060.00	17,758.00	9,044.31	186.90	258.77	89.63	-2,220.42	8,915.16	3,142.38	2,696.82	445.56	7.053		
18,100.00	9,060.00	17,828.92	9,043.50	188.92	260.78	89.61	-2,220.16	8,986.08	3,143.76	2,694.26	449.51	6.994		
18,200.00	9,060.00	17,950.14	9,043.88	190.93	264.23	89.62	-2,219.99	9,107.29	3,145.43	2,690.40	455.03	6.913		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,300.00	9,060.00	18,039.85	9,046.55	192.94	266.78	89.67	-2,219.56	9,196.95	3,146.69	2,687.12	459.57	6.847	
18,400.00	9,060.00	18,161.68	9,050.52	194.96	270.24	89.74	-2,218.55	9,318.72	3,147.58	2,682.47	465.11	6.767	
18,500.00	9,060.00	18,242.04	9,052.61	196.97	272.52	89.78	-2,218.00	9,399.04	3,148.64	2,679.27	469.37	6.708	
18,600.00	9,060.00	18,334.64	9,054.56	198.99	275.16	89.82	-2,217.76	9,491.62	3,150.15	2,676.15	474.00	6.646	
18,700.00	9,060.00	18,447.31	9,056.11	201.00	278.36	89.84	-2,217.16	9,604.28	3,151.35	2,672.08	479.26	6.575	
18,800.00	9,060.00	18,528.62	9,056.22	203.02	280.67	89.85	-2,217.01	9,685.59	3,152.91	2,669.38	483.54	6.521	
18,900.00	9,060.00	18,653.75	9,055.33	205.04	284.23	89.83	-2,216.16	9,810.71	3,153.93	2,664.74	489.19	6.447	
19,000.00	9,060.00	18,758.70	9,055.72	207.06	287.22	89.84	-2,215.53	9,915.66	3,155.11	2,660.91	494.20	6.384	
19,100.00	9,060.00	18,907.88	9,058.29	209.07	291.46	89.88	-2,212.92	10,064.80	3,155.11	2,654.59	500.51	6.304	
19,200.00	9,060.00	18,987.23	9,059.50	211.09	293.71	89.91	-2,211.27	10,144.11	3,154.76	2,649.98	504.78	6.250	
19,300.00	9,060.00	19,108.37	9,061.25	213.11	297.16	89.94	-2,208.68	10,265.22	3,154.40	2,644.14	510.26	6.182	
19,373.20	9,060.00	19,158.00	9,061.95	214.59	298.57	89.95	-2,207.50	10,314.83	3,154.01	2,640.87	513.14	6.147	
19,400.00	9,060.00	19,158.00	9,061.95	215.13	298.57	89.95	-2,207.50	10,314.83	3,154.13	2,640.49	513.64	6.141 ES	
19,500.32	9,060.00	19,158.00	9,061.95	217.16	298.57	89.95	-2,207.50	10,314.83	3,156.57	2,641.39	515.18	6.127 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.964		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.230		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.897		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.893		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.596		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.575		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.905		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.386		
5,800.00	5,761.67	5,664.50	5,662.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,765.62	5,763.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,864.90	5,862.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,964.80	5,962.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.017		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.673		
9,350.00	9,050.89	9,350.00	9,294.90	33.62	32.86	93.00	-3,346.21	375.96	4,158.16	4,095.06	63.10	65.896		
9,400.00	9,057.61	9,966.67	9,298.04	33.87	37.27	93.02	-3,340.28	507.75	4,155.81	4,084.67	71.14	58.418		
9,452.31	9,060.00	10,020.82	9,299.73	34.15	38.12	93.26	-3,337.37	561.79	4,153.27	4,080.99	72.28	57.460		
9,500.00	9,060.00	10,051.00	9,300.79	34.42	38.59	93.28	-3,335.70	591.91	4,151.07	4,078.03	73.03	56.837		
9,600.00	9,060.00	10,106.91	9,302.58	35.09	39.54	93.31	-3,333.05	647.73	4,147.20	4,072.54	74.66	55.549		
9,700.00	9,060.00	10,157.71	9,303.73	35.86	40.41	93.32	-3,331.40	698.49	4,144.64	4,068.33	76.31	54.311		
9,800.00	9,060.00	10,236.40	9,305.24	36.72	41.83	93.35	-3,329.46	777.14	4,142.89	4,064.28	78.61	52.699		
9,900.00	9,060.00	10,297.12	9,307.09	37.69	42.99	93.37	-3,328.36	837.82	4,141.85	4,061.11	80.74	51.299		
9,963.47	9,060.00	10,338.00	9,309.29	38.35	43.78	93.40	-3,327.90	878.64	4,141.71	4,059.52	82.19	50.394		
10,000.00	9,060.00	10,368.00	9,311.25	38.73	44.38	93.43	-3,327.65	908.57	4,141.76	4,058.58	83.17	49.798		
10,100.00	9,060.00	10,477.61	9,319.12	39.86	46.62	93.54	-3,326.68	1,017.89	4,141.91	4,055.37	86.53	47.866		
10,140.22	9,060.00	10,532.36	9,322.76	40.33	47.77	93.59	-3,326.00	1,072.52	4,141.81	4,053.66	88.15	46.988		
10,200.00	9,060.00	10,590.90	9,325.90	41.05	49.04	93.63	-3,325.23	1,130.97	4,140.96	4,050.82	90.14	45.940		
10,300.00	9,060.00	10,659.14	9,328.39	42.31	50.54	93.68	-3,324.54	1,199.16	4,137.01	4,044.11	92.90	44.532		
10,400.00	9,060.00	10,719.00	9,329.83	43.64	51.88	93.71	-3,324.71	1,259.00	4,130.68	4,035.12	95.55	43.230		
10,507.23	9,060.00	10,791.83	9,331.29	45.11	53.56	93.75	-3,325.59	1,331.81	4,121.00	4,022.31	98.69	41.758		
10,600.00	9,060.00	10,928.83	9,334.28	46.43	56.76	93.79	-3,327.05	1,468.77	4,112.39	4,009.17	103.22	39.842		
10,700.00	9,060.00	10,997.51	9,335.79	47.91	58.41	93.81	-3,327.69	1,537.43	4,106.19	3,999.86	106.33	38.618		
10,800.00	9,060.00	11,160.69	9,339.49	49.42	62.39	93.86	-3,327.90	1,700.56	4,102.61	3,990.79	111.82	36.690		
10,871.08	9,060.00	11,239.90	9,341.54	50.52	64.36	93.89	-3,327.47	1,779.75	4,101.81	3,986.93	114.88	35.706		
10,900.00	9,060.00	11,273.38	9,342.44	50.97	65.19	93.90	-3,327.23	1,813.21	4,101.94	3,985.78	116.16	35.314		
11,000.00	9,060.00	11,369.64	9,345.25	52.55	67.62	93.94	-3,326.47	1,909.43	4,104.59	3,984.44	120.14	34.164		
11,100.00	9,060.00	11,451.97	9,347.30	54.14	69.71	93.97	-3,326.07	1,991.74	4,110.99	3,987.16	123.83	33.200		
11,207.23	9,060.00	11,540.18	9,348.11	55.87	71.97	93.99	-3,326.16	2,079.94	4,122.20	3,994.40	127.80	32.254		
11,300.00	9,060.00	11,617.29	9,348.82	57.39	73.96	93.98	-3,326.54	2,157.05	4,132.50	4,001.20	131.30	31.474		
11,400.00	9,060.00	11,712.20	9,349.73	59.06	76.43	93.97	-3,327.32	2,251.95	4,140.59	4,005.17	135.43	30.574		
11,506.63	9,060.00	11,839.47	9,351.03	60.88	79.77	93.98	-3,328.02	2,379.20	4,145.12	4,004.54	140.58	29.486		
11,600.00	9,060.00	11,972.35	9,352.63	62.49	83.28	94.00	-3,327.78	2,512.08	4,146.68	4,000.99	145.70	28.461		
11,700.00	9,060.00	12,075.32	9,354.56	64.24	86.01	94.02	-3,327.03	2,615.02	4,147.85	3,997.68	150.17	27.621		
11,800.00	9,060.00	12,190.76	9,357.75	66.01	89.10	94.07	-3,325.92	2,730.42	4,148.86	3,993.86	155.00	26.767		
11,900.00	9,060.00	11,900.00	9,363.70	67.79	81.27	94.15	-3,320.15	2,944.83	4,148.07	3,999.16	148.91	27.856		
12,000.00	9,060.00	12,527.00	9,366.82	69.58	98.13	94.20	-3,314.28	3,066.30	4,145.08	3,977.59	167.49	24.748		
12,100.00	9,060.00	12,587.50	9,367.80	71.39	99.76	94.21	-3,311.65	3,126.73	4,142.77	3,971.81	170.96	24.232		
12,200.00	9,060.00	12,655.98	9,368.22	73.21	101.62	94.22	-3,309.77	3,195.19	4,141.74	3,967.08	174.65	23.714		
12,300.00	9,060.00	12,742.10	9,368.28	75.05	103.97	94.22	-3,307.40	3,281.28	4,140.80	3,961.97	178.83	23.155		
12,340.15	9,060.00	12,760.93	9,368.26	75.79	104.48	94.22	-3,307.02	3,300.10	4,140.70	3,960.61	180.08	22.993		
12,400.00	9,060.00	12,789.00	9,368.21	76.89	105.25	94.22	-3,306.63	3,328.16	4,140.93	3,958.98	181.95	22.759		
12,500.00	9,060.00	12,850.97	9,368.11	78.74	106.94	94.22	-3,306.40	3,390.14	4,142.24	3,956.76	185.48	22.333		
12,600.00	9,060.00	12,926.48	9,368.19	80.61	109.01	94.22	-3,306.55	3,465.64	4,144.22	3,954.83	189.39	21.882		
12,700.00	9,060.00	13,002.00	9,369.37	82.48	111.09	94.23	-3,307.11	3,541.15	4,146.82	3,953.52	193.30	21.453		
12,800.00	9,060.00	13,114.17	9,372.12	84.36	114.17	94.27	-3,308.13	3,653.28	4,149.69	3,951.43	198.26	20.930		
12,900.00	9,060.00	13,267.52	9,375.59	86.24	118.40	94.31	-3,307.85	3,806.60	4,151.34	3,946.95	204.39	20.311		
13,000.00	9,060.00	13,339.75	9,377.10	88.14	120.40	94.33	-3,307.55	3,878.80	4,152.88	3,944.63	208.25	19.942		
13,100.00	9,060.00	13,449.05	9,379.72	90.04	123.43	94.37	-3,307.81	3,988.08	4,155.09	3,941.92	213.16	19.493		
13,200.00	9,060.00	13,534.21	9,382.35	91.94	125.79	94.40	-3,307.54	4,073.19	4,156.80	3,939.40	217.40	19.120		
13,300.00	9,060.00	13,680.54	9,386.57	93.86	129.85	94.46	-3,307.43	4,219.46	4,158.88	3,935.51	223.37	18.619		
13,400.00	9,060.00	13,791.90	9,389.24	95.77	132.95	94.49	-3,305.85	4,330.78	4,159.38	3,931.02	228.36	18.214		
13,500.00	9,060.00	13,858.00	9,389.88	97.70	134.79	94.50	-3,305.54	4,396.87	4,160.66	3,928.56	232.11	17.926		
13,600.00	9,060.00	13,931.09	9,389.24	99.62	136.83	94.49	-3,305.84	4,469.96	4,162.69	3,926.65	236.05	17.635		
13,700.00	9,060.00	14,002.70	9,387.80	101.56	138.83	94.47	-3,306.43	4,541.55	4,165.14	3,925.19	239.94	17.359		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	14,093.66	9,388.16	103.49	141.37	94.47	-3,307.70	4,632.50	4,168.31	3,923.91	244.40	17.055		
13,900.00	9,060.00	14,215.56	9,390.74	105.43	144.78	94.50	-3,308.66	4,754.36	4,171.00	3,921.24	249.75	16.700		
14,000.00	9,060.00	14,450.24	9,401.86	107.38	151.33	94.65	-3,304.78	4,988.72	4,170.90	3,912.69	258.21	16.153		
14,100.00	9,060.00	14,572.50	9,408.25	109.33	154.75	94.74	-3,300.90	5,110.76	4,169.91	3,906.41	263.51	15.825		
14,200.00	9,060.00	14,680.06	9,412.71	111.28	157.75	94.81	-3,297.19	5,218.16	4,168.57	3,900.15	268.43	15.530		
14,300.00	9,060.00	14,761.21	9,416.07	113.23	160.02	94.85	-3,294.44	5,299.19	4,167.32	3,894.68	272.64	15.285		
14,400.00	9,060.00	14,828.37	9,417.86	115.19	161.90	94.88	-3,292.71	5,366.31	4,166.75	3,890.26	276.49	15.070		
14,415.97	9,060.00	14,838.06	9,418.00	115.50	162.18	94.88	-3,292.52	5,375.99	4,166.74	3,889.67	277.07	15.038		
14,500.00	9,060.00	14,889.03	9,418.09	117.15	163.61	94.88	-3,291.81	5,426.95	4,167.07	3,886.93	280.14	14.875		
14,600.00	9,060.00	14,979.38	9,417.60	119.11	166.15	94.87	-3,291.17	5,517.30	4,168.07	3,883.44	284.63	14.644		
14,700.00	9,060.00	15,111.10	9,419.07	121.08	169.85	94.89	-3,289.65	5,649.00	4,168.80	3,878.51	290.28	14.361		
14,800.00	9,060.00	15,301.02	9,423.99	123.05	175.19	94.96	-3,284.47	5,838.77	4,168.13	3,870.66	297.47	14.012		
14,900.00	9,060.00	15,412.35	9,428.25	125.02	178.32	95.02	-3,279.93	5,949.93	4,166.16	3,863.66	302.50	13.772		
15,000.00	9,060.00	15,498.93	9,431.40	126.99	180.75	95.07	-3,276.14	6,036.37	4,163.91	3,857.01	306.90	13.568		
15,100.00	9,060.00	15,546.25	9,432.65	128.97	182.08	95.09	-3,274.62	6,083.65	4,162.71	3,852.46	310.25	13.417		
15,147.58	9,060.00	15,570.00	9,433.10	129.91	182.75	95.09	-3,274.10	6,107.39	4,162.58	3,850.72	311.86	13.347		
15,200.00	9,060.00	15,618.08	9,433.86	130.95	184.10	95.10	-3,273.23	6,155.46	4,162.62	3,848.38	314.24	13.246		
15,300.00	9,060.00	15,300.00	9,435.68	132.93	175.13	95.13	-3,270.53	6,280.25	4,162.34	3,855.09	307.26	13.547		
15,400.00	9,060.00	15,829.70	9,436.42	134.91	190.07	95.14	-3,268.39	6,367.00	4,161.76	3,837.64	324.12	12.840		
15,500.00	9,060.00	15,933.86	9,435.77	136.89	193.01	95.13	-3,266.56	6,471.14	4,161.72	3,832.69	329.03	12.648		
15,545.36	9,060.00	15,967.81	9,435.54	137.79	193.97	95.13	-3,265.90	6,505.08	4,161.62	3,830.73	330.89	12.577		
15,600.00	9,060.00	15,997.45	9,435.47	138.88	194.81	95.13	-3,265.47	6,534.72	4,161.78	3,828.98	332.81	12.505		
15,700.00	9,060.00	16,058.40	9,435.74	140.86	196.53	95.13	-3,265.10	6,595.67	4,162.93	3,826.44	336.48	12.372		
15,800.00	9,060.00	16,188.45	9,436.61	142.85	200.21	95.14	-3,264.36	6,725.71	4,164.20	3,822.06	342.15	12.171		
15,900.00	9,060.00	16,269.67	9,437.40	144.84	202.51	95.15	-3,263.43	6,806.92	4,164.98	3,818.57	346.41	12.023		
16,000.00	9,060.00	16,328.00	9,438.62	146.83	204.17	95.17	-3,263.46	6,865.24	4,166.87	3,816.89	349.98	11.906		
16,100.00	9,060.00	16,387.08	9,440.45	148.83	205.84	95.19	-3,264.01	6,924.29	4,169.76	3,816.21	353.55	11.794		
16,200.00	9,060.00	16,513.19	9,445.99	150.82	209.41	95.26	-3,265.32	7,050.27	4,173.02	3,813.90	359.12	11.620		
16,300.00	9,060.00	16,604.11	9,450.90	152.82	211.99	95.33	-3,265.73	7,141.06	4,175.72	3,812.10	363.62	11.484		
16,400.00	9,060.00	16,718.40	9,457.60	154.81	215.22	95.41	-3,266.18	7,255.15	4,178.43	3,809.61	368.82	11.329		
16,500.00	9,060.00	16,831.36	9,464.65	156.81	218.42	95.51	-3,266.15	7,367.89	4,180.75	3,806.79	373.97	11.179		
16,600.00	9,060.00	16,963.23	9,470.46	158.81	222.15	95.58	-3,265.87	7,499.63	4,182.78	3,803.10	379.68	11.017		
16,700.00	9,060.00	17,057.56	9,473.07	160.81	224.83	95.62	-3,265.22	7,593.91	4,184.13	3,799.81	384.31	10.887		
16,800.00	9,060.00	17,167.43	9,472.08	162.81	227.95	95.60	-3,265.13	7,703.77	4,185.72	3,796.30	389.43	10.748		
16,900.00	9,060.00	17,230.03	9,470.61	164.82	229.73	95.58	-3,265.20	7,766.36	4,187.42	3,794.26	393.16	10.651		
17,000.00	9,060.00	17,292.17	9,470.23	166.82	231.49	95.57	-3,265.90	7,828.49	4,190.19	3,793.35	396.84	10.559		
17,100.00	9,060.00	17,426.71	9,474.04	168.82	235.32	95.62	-3,267.00	7,962.96	4,193.09	3,790.40	402.69	10.413		
17,200.00	9,060.00	17,523.42	9,477.50	170.83	238.06	95.67	-3,267.01	8,059.61	4,195.21	3,787.82	407.39	10.298		
17,300.00	9,060.00	17,610.81	9,480.14	172.84	240.55	95.70	-3,267.54	8,146.96	4,197.85	3,786.04	411.82	10.193		
17,400.00	9,060.00	17,768.58	9,483.08	174.84	245.03	95.73	-3,267.79	8,304.70	4,200.01	3,781.66	418.34	10.040		
17,500.00	9,060.00	17,849.00	9,484.32	176.85	247.32	95.75	-3,267.41	8,385.11	4,201.47	3,778.88	422.59	9.942		
17,600.00	9,060.00	17,889.40	9,487.89	178.86	248.41	95.80	-3,267.30	8,425.32	4,203.92	3,778.39	425.53	9.879		
17,700.00	9,060.00	17,700.00	9,506.21	180.87	243.31	96.04	-3,267.27	8,502.58	4,207.92	3,785.69	422.23	9.966		
17,800.00	9,060.00	18,269.68	9,519.81	182.88	259.00	96.22	-3,265.25	8,801.68	4,209.88	3,769.99	439.89	9.570		
17,900.00	9,060.00	18,406.04	9,521.45	184.89	262.87	96.25	-3,260.67	8,937.96	4,208.42	3,762.76	445.65	9.443		
18,000.00	9,060.00	18,507.48	9,522.39	186.90	265.74	96.26	-3,256.84	9,039.32	4,206.52	3,756.01	450.50	9.337		
18,100.00	9,060.00	18,584.67	9,523.84	188.92	267.93	96.29	-3,254.05	9,116.45	4,204.89	3,750.17	454.72	9.247		
18,200.00	9,060.00	18,683.43	9,527.84	190.93	270.73	96.34	-3,250.62	9,215.07	4,203.64	3,744.17	459.47	9.149		
18,300.00	9,060.00	18,767.62	9,532.05	192.94	273.12	96.40	-3,247.67	9,299.10	4,202.46	3,738.63	463.83	9.060		
18,400.00	9,060.00	18,926.85	9,541.01	194.96	277.62	96.53	-3,241.30	9,457.94	4,200.90	3,730.81	470.08	8.936		
18,500.00	9,060.00	19,039.02	9,548.23	196.97	280.79	96.63	-3,235.84	9,569.75	4,198.56	3,723.44	475.12	8.837		
18,600.00	9,060.00	19,159.47	9,556.91	198.99	284.19	96.76	-3,229.10	9,689.70	4,195.56	3,715.23	480.33	8.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,700.00	9,060.00	19,172.00	9,557.83	201.00	284.54	96.77	-3,228.38	9,702.17	4,193.37	3,710.46	482.91	8.684	
18,742.61	9,060.00	19,172.00	9,557.83	201.86	284.54	96.77	-3,228.38	9,702.17	4,193.15	3,709.35	483.80	8.667	
18,800.00	9,060.00	19,172.00	9,557.83	203.02	284.54	96.77	-3,228.38	9,702.17	4,193.55	3,708.61	484.93	8.648	
18,900.00	9,060.00	19,172.00	9,557.83	205.04	284.54	96.77	-3,228.38	9,702.17	4,196.11	3,709.42	486.69	8.622	
19,000.00	9,060.00	19,172.00	9,557.83	207.06	284.54	96.77	-3,228.38	9,702.17	4,201.05	3,712.87	488.17	8.606	
19,100.00	9,060.00	19,172.00	9,557.83	209.07	284.54	96.77	-3,228.38	9,702.17	4,208.36	3,718.97	489.38	8.599 SF	
19,200.00	9,060.00	19,172.00	9,557.83	211.09	284.54	96.77	-3,228.38	9,702.17	4,218.03	3,727.70	490.32	8.603	
19,300.00	9,060.00	19,172.00	9,557.83	213.11	284.54	96.77	-3,228.38	9,702.17	4,230.04	3,739.05	490.99	8.615	
19,400.00	9,060.00	19,172.00	9,557.83	215.13	284.54	96.77	-3,228.38	9,702.17	4,244.37	3,752.98	491.40	8.637	
19,500.32	9,060.00	19,172.00	9,557.83	217.16	284.54	96.77	-3,228.38	9,702.17	4,261.06	3,769.52	491.54	8.669	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.965		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.231		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.898		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.894		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.597		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.576		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.906		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.387		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.018		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.674		
9,350.00	9,050.89	8,829.90	8,826.40	33.62	30.24	88.02	-3,333.66	-190.87	4,165.21	4,101.60	63.61	65.483		
9,400.00	9,057.61	8,835.35	8,831.85	33.87	30.26	87.48	-3,333.96	-190.94	4,171.29	4,107.42	63.88	65.300		
9,452.31	9,060.00	8,836.90	8,833.39	34.15	30.26	86.81	-3,334.04	-190.96	4,178.09	4,113.93	64.16	65.121		
9,500.00	9,060.00	8,836.36	8,832.85	34.42	30.26	86.81	-3,334.01	-190.95	4,184.73	4,120.30	64.42	64.957		
9,600.00	9,060.00	8,835.24	8,831.73	35.09	30.26	86.79	-3,333.95	-190.94	4,200.38	4,135.33	65.05	64.571		
9,700.00	9,060.00	8,834.12	8,830.62	35.86	30.25	86.78	-3,333.89	-190.92	4,218.34	4,152.57	65.77	64.141		
9,800.00	9,060.00	8,833.01	8,829.50	36.72	30.25	86.76	-3,333.83	-190.91	4,238.59	4,172.03	66.56	63.681		
9,900.00	9,060.00	8,831.89	8,828.39	37.69	30.24	86.74	-3,333.77	-190.90	4,261.08	4,193.66	67.42	63.202		
10,000.00	9,060.00	8,830.78	8,827.28	38.73	30.24	86.73	-3,333.71	-190.88	4,285.80	4,217.46	68.34	62.713		
10,100.00	9,060.00	8,829.67	8,826.17	39.86	30.24	86.71	-3,333.65	-190.87	4,312.69	4,243.38	69.31	62.226		
10,140.22	9,060.00	8,829.22	8,825.73	40.33	30.23	86.71	-3,333.63	-190.87	4,324.11	4,254.40	69.71	62.033		
10,200.00	9,060.00	8,828.59	8,825.09	41.05	30.23	86.72	-3,333.59	-190.86	4,341.12	4,270.80	70.31	61.739		
10,300.00	9,060.00	8,827.67	8,824.17	42.31	30.23	86.74	-3,333.54	-190.85	4,368.60	4,297.23	71.37	61.212		
10,400.00	9,060.00	8,826.92	8,823.42	43.64	30.23	86.76	-3,333.50	-190.84	4,394.84	4,322.38	72.46	60.649		
10,507.23	9,060.00	8,826.30	8,822.80	45.11	30.22	86.78	-3,333.47	-190.83	4,421.60	4,347.93	73.67	60.015		
10,600.00	9,060.00	8,825.77	8,822.28	46.43	30.22	86.75	-3,333.44	-190.82	4,446.49	4,371.75	74.74	59.492		
10,700.00	9,060.00	8,825.05	8,821.56	47.91	30.22	86.70	-3,333.40	-190.81	4,478.50	4,402.62	75.89	59.015		
10,800.00	9,060.00	8,824.16	8,820.67	49.42	30.22	86.64	-3,333.35	-190.80	4,515.75	4,438.73	77.02	58.631		
10,900.00	9,060.00	8,823.10	8,819.61	50.97	30.21	86.57	-3,333.30	-190.79	4,558.05	4,479.92	78.13	58.341		
11,000.00	9,060.00	8,821.89	8,818.40	52.55	30.21	86.49	-3,333.23	-190.78	4,605.22	4,526.02	79.20	58.146		
11,100.00	9,060.00	8,820.51	8,817.02	54.14	30.20	86.39	-3,333.16	-190.76	4,657.06	4,576.82	80.23	58.044		
11,207.23	9,060.00	8,818.86	8,815.37	55.87	30.20	86.27	-3,333.07	-190.74	4,717.57	4,636.29	81.29	58.037		
11,300.00	9,060.00	8,817.42	8,813.94	57.39	30.19	86.34	-3,332.99	-190.72	4,771.45	4,689.27	82.17	58.065		
11,400.00	9,060.00	8,816.03	8,812.55	59.06	30.19	86.40	-3,332.92	-190.71	4,828.12	4,744.98	83.14	58.070		
11,506.63	9,060.00	8,814.73	8,811.25	60.88	30.18	86.47	-3,332.85	-190.69	4,886.94	4,802.75	84.19	58.049		
11,600.00	9,060.00	8,813.68	8,810.20	62.49	30.18	86.46	-3,332.79	-190.68	4,938.33	4,853.24	85.09	58.034 SF		
11,700.00	9,060.00	8,812.55	8,809.07	64.24	30.17	86.44	-3,332.73	-190.66	4,994.72	4,908.67	86.05	58.047		
11,800.00	9,060.00	8,812.00	8,808.53	66.01	30.17	86.44	-3,332.70	-190.66	5,052.46	4,965.48	86.98	58.088		
11,900.00	9,060.00	8,812.00	8,808.53	67.79	30.17	86.44	-3,332.70	-190.66	5,111.50	5,023.61	87.89	58.158		
12,000.00	9,060.00	8,812.00	8,808.53	69.58	30.17	86.44	-3,332.70	-190.66	5,171.80	5,083.02	88.78	58.255		
12,100.00	9,060.00	8,812.00	8,808.53	71.39	30.17	86.44	-3,332.70	-190.66	5,233.32	5,143.68	89.64	58.380		
12,200.00	9,060.00	8,812.00	8,808.53	73.21	30.17	86.44	-3,332.70	-190.66	5,296.01	5,205.53	90.48	58.530		
12,300.00	9,060.00	8,812.00	8,808.53	75.05	30.17	86.44	-3,332.70	-190.66	5,359.83	5,268.53	91.30	58.705		
12,400.00	9,060.00	8,812.00	8,808.53	76.89	30.17	86.44	-3,332.70	-190.66	5,424.75	5,332.66	92.09	58.904		
12,500.00	9,060.00	8,812.00	8,808.53	78.74	30.17	86.44	-3,332.70	-190.66	5,490.72	5,397.86	92.86	59.126		
12,600.00	9,060.00	8,812.00	8,808.53	80.61	30.17	86.44	-3,332.70	-190.66	5,557.71	5,464.10	93.61	59.369		
12,700.00	9,060.00	8,812.00	8,808.53	82.48	30.17	86.44	-3,332.70	-190.66	5,625.68	5,531.34	94.34	59.633		
12,800.00	9,060.00	8,812.00	8,808.53	84.36	30.17	86.44	-3,332.70	-190.66	5,694.59	5,599.55	95.04	59.917		
12,900.00	9,060.00	8,812.00	8,808.53	86.24	30.17	86.44	-3,332.70	-190.66	5,764.41	5,668.69	95.72	60.220		
13,000.00	9,060.00	8,812.00	8,808.53	88.14	30.17	86.44	-3,332.70	-190.66	5,835.11	5,738.73	96.38	60.540		
13,100.00	9,060.00	8,812.00	8,808.53	90.04	30.17	86.44	-3,332.70	-190.66	5,906.66	5,809.64	97.02	60.878		
13,200.00	9,060.00	8,812.00	8,808.53	91.94	30.17	86.44	-3,332.70	-190.66	5,979.03	5,881.38	97.65	61.232		
13,300.00	9,060.00	8,812.00	8,808.53	93.86	30.17	86.44	-3,332.70	-190.66	6,052.18	5,953.93	98.25	61.602		
13,400.00	9,060.00	8,812.00	8,808.53	95.77	30.17	86.44	-3,332.70	-190.66	6,126.09	6,027.26	98.83	61.986		
13,500.00	9,060.00	8,812.00	8,808.53	97.70	30.17	86.44	-3,332.70	-190.66	6,200.73	6,101.34	99.39	62.385		
13,600.00	9,060.00	8,812.00	8,808.53	99.62	30.17	86.44	-3,332.70	-190.66	6,276.08	6,176.14	99.94	62.798		
13,700.00	9,060.00	8,812.00	8,808.53	101.56	30.17	86.44	-3,332.70	-190.66	6,352.11	6,251.64	100.47	63.223		
13,800.00	9,060.00	8,812.00	8,808.53	103.49	30.17	86.44	-3,332.70	-190.66	6,428.79	6,327.81	100.98	63.661		
13,900.00	9,060.00	8,812.00	8,808.53	105.43	30.17	86.44	-3,332.70	-190.66	6,506.11	6,404.63	101.48	64.111		
14,000.00	9,060.00	8,795.90	8,792.45	107.38	30.11	86.21	-3,331.86	-190.47	6,584.00	6,482.11	101.89	64.618		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,795.22	8,791.78	109.33	30.11	86.20	-3,331.83	-190.46	6,662.52	6,560.16	102.36	65.091		
14,200.00	9,060.00	8,794.56	8,791.11	111.28	30.11	86.19	-3,331.80	-190.46	6,741.60	6,638.80	102.81	65.575		
14,300.00	9,060.00	8,793.89	8,790.44	113.23	30.11	86.18	-3,331.76	-190.45	6,821.24	6,718.00	103.24	66.069		
14,400.00	9,060.00	8,793.23	8,789.78	115.19	30.11	86.17	-3,331.73	-190.44	6,901.40	6,797.74	103.67	66.573		
14,500.00	9,060.00	8,792.57	8,789.12	117.15	30.10	86.16	-3,331.70	-190.43	6,982.08	6,878.00	104.08	67.085		
14,600.00	9,060.00	8,791.91	8,788.47	119.11	30.10	86.16	-3,331.66	-190.43	7,063.25	6,958.77	104.48	67.606		
14,700.00	9,060.00	8,791.26	8,787.82	121.08	30.10	86.15	-3,331.63	-190.42	7,144.89	7,040.03	104.86	68.136		
14,800.00	9,060.00	8,790.61	8,787.17	123.05	30.10	86.14	-3,331.60	-190.41	7,227.00	7,121.76	105.24	68.673		
14,900.00	9,060.00	8,789.97	8,786.52	125.02	30.09	86.13	-3,331.56	-190.40	7,309.56	7,203.95	105.60	69.218		
15,000.00	9,060.00	8,789.32	8,785.88	126.99	30.09	86.12	-3,331.53	-190.40	7,392.54	7,286.59	105.96	69.770		
15,100.00	9,060.00	8,788.68	8,785.24	128.97	30.09	86.11	-3,331.50	-190.39	7,475.94	7,369.64	106.30	70.329		
15,200.00	9,060.00	8,788.05	8,784.61	130.95	30.09	86.10	-3,331.47	-190.38	7,559.75	7,453.11	106.63	70.895		
15,300.00	9,060.00	8,787.41	8,783.98	132.93	30.08	86.09	-3,331.44	-190.38	7,643.94	7,536.98	106.96	71.467		
15,400.00	9,060.00	8,786.78	8,783.35	134.91	30.08	86.08	-3,331.41	-190.37	7,728.51	7,621.24	107.27	72.046		
15,500.00	9,060.00	8,786.16	8,782.72	136.89	30.08	86.07	-3,331.37	-190.36	7,813.44	7,705.86	107.58	72.630		
15,600.00	9,060.00	8,785.53	8,782.10	138.88	30.08	86.07	-3,331.34	-190.36	7,898.73	7,790.85	107.88	73.220		
15,700.00	9,060.00	8,784.91	8,781.48	140.86	30.08	86.06	-3,331.31	-190.35	7,984.36	7,876.19	108.17	73.815		
15,800.00	9,060.00	8,784.30	8,780.86	142.85	30.07	86.05	-3,331.28	-190.34	8,070.32	7,961.87	108.45	74.416		
15,900.00	9,060.00	8,783.68	8,780.25	144.84	30.07	86.04	-3,331.25	-190.34	8,156.59	8,047.87	108.72	75.021		
16,000.00	9,060.00	8,783.07	8,779.64	146.83	30.07	86.03	-3,331.22	-190.33	8,243.18	8,134.19	108.99	75.631		
16,100.00	9,060.00	8,782.46	8,779.03	148.83	30.07	86.02	-3,331.19	-190.32	8,330.07	8,220.82	109.25	76.246		
16,200.00	9,060.00	8,781.85	8,778.42	150.82	30.06	86.01	-3,331.16	-190.32	8,417.25	8,307.75	109.51	76.866		
16,300.00	9,060.00	8,781.25	8,777.82	152.82	30.06	86.01	-3,331.13	-190.31	8,504.71	8,394.96	109.75	77.489		
16,400.00	9,060.00	8,780.65	8,777.22	154.81	30.06	86.00	-3,331.10	-190.30	8,592.45	8,482.45	110.00	78.117		
16,500.00	9,060.00	8,780.05	8,776.63	156.81	30.06	85.99	-3,331.07	-190.30	8,680.45	8,570.22	110.23	78.748		
16,600.00	9,060.00	8,779.46	8,776.03	158.81	30.06	85.98	-3,331.04	-190.29	8,768.71	8,658.25	110.46	79.383		
16,700.00	9,060.00	8,778.87	8,775.44	160.81	30.05	85.97	-3,331.02	-190.28	8,857.22	8,746.53	110.68	80.022		
16,800.00	9,060.00	8,778.28	8,774.85	162.81	30.05	85.96	-3,330.99	-190.28	8,945.96	8,835.06	110.90	80.664		
16,900.00	9,060.00	8,777.69	8,774.27	164.82	30.05	85.96	-3,330.96	-190.27	9,034.95	8,923.83	111.12	81.310		
17,000.00	9,060.00	8,777.11	8,773.69	166.82	30.05	85.95	-3,330.93	-190.27	9,124.16	9,012.83	111.33	81.959		
17,100.00	9,060.00	8,776.53	8,773.11	168.82	30.05	85.94	-3,330.90	-190.26	9,213.60	9,102.06	111.53	82.610		
17,200.00	9,060.00	8,775.95	8,772.53	170.83	30.04	85.93	-3,330.87	-190.25	9,303.24	9,191.51	111.73	83.265		
17,300.00	9,060.00	8,775.38	8,771.95	172.84	30.04	85.92	-3,330.85	-190.25	9,393.10	9,281.18	111.93	83.923		
17,400.00	9,060.00	8,774.81	8,771.38	174.84	30.04	85.92	-3,330.82	-190.24	9,483.16	9,371.05	112.12	84.583		
17,500.00	9,060.00	8,774.24	8,770.81	176.85	30.04	85.91	-3,330.79	-190.24	9,573.42	9,461.12	112.30	85.246		
17,600.00	9,060.00	8,773.67	8,770.25	178.86	30.04	85.90	-3,330.76	-190.23	9,663.87	9,551.38	112.49	85.911		
17,700.00	9,060.00	8,773.11	8,769.68	180.87	30.03	85.89	-3,330.74	-190.22	9,754.51	9,641.84	112.67	86.579		
17,800.00	9,060.00	8,772.54	8,769.12	182.88	30.03	85.88	-3,330.71	-190.22	9,845.33	9,732.48	112.84	87.249		
17,900.00	9,060.00	8,771.99	8,768.57	184.89	30.03	85.88	-3,330.68	-190.21	9,936.32	9,823.31	113.01	87.921		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,588.66	3.49	1,588.71					
100.00	100.00	88.30	88.30	0.52	0.51	179.87	-1,588.66	3.49	1,588.67	1,587.64	1.03	1,539.926		
200.00	200.00	188.30	188.30	0.70	0.67	179.87	-1,588.66	3.49	1,588.67	1,587.29	1.38	1,155.037		
300.00	300.00	288.30	288.30	0.99	0.95	179.87	-1,588.66	3.49	1,588.67	1,586.73	1.94	819.432		
400.00	400.00	388.30	388.30	1.31	1.27	179.87	-1,588.66	3.49	1,588.67	1,586.09	2.58	615.877		
500.00	500.00	488.30	488.30	1.65	1.61	179.87	-1,588.66	3.49	1,588.67	1,585.41	3.25	488.480		
600.00	600.00	588.30	588.30	1.99	1.95	179.87	-1,588.66	3.49	1,588.67	1,584.73	3.94	403.150		
700.00	700.00	688.30	688.30	2.34	2.30	179.87	-1,588.66	3.49	1,588.67	1,584.03	4.64	342.557		
800.00	800.00	788.30	788.30	2.69	2.65	179.87	-1,588.66	3.49	1,588.67	1,583.33	5.34	297.504		
900.00	900.00	888.30	888.30	3.04	3.00	179.87	-1,588.66	3.49	1,588.67	1,582.62	6.05	262.775		
1,000.00	1,000.00	988.30	988.30	3.40	3.36	179.87	-1,588.66	3.49	1,588.67	1,581.91	6.75	235.224		
1,100.00	1,100.00	1,088.30	1,088.30	3.75	3.71	179.87	-1,588.66	3.49	1,588.67	1,581.20	7.46	212.854		
1,200.00	1,200.00	1,188.30	1,188.30	4.11	4.07	179.87	-1,588.66	3.49	1,588.67	1,580.49	8.17	194.340		
1,300.00	1,300.00	1,288.30	1,288.30	4.46	4.42	179.87	-1,588.66	3.49	1,588.67	1,579.78	8.89	178.770		
1,400.00	1,400.00	1,388.30	1,388.30	4.82	4.78	179.87	-1,588.66	3.49	1,588.67	1,579.07	9.60	165.496		
1,500.00	1,500.00	1,488.30	1,488.30	5.18	5.14	179.87	-1,588.66	3.49	1,588.67	1,578.35	10.31	154.049		
1,600.00	1,600.00	1,588.30	1,588.30	5.53	5.49	179.87	-1,588.66	3.49	1,588.67	1,577.64	11.03	144.077		
1,700.00	1,700.00	1,688.30	1,688.30	5.89	5.85	179.87	-1,588.66	3.49	1,588.67	1,576.93	11.74	135.313		
1,800.00	1,800.00	1,788.30	1,788.30	6.25	6.21	179.87	-1,588.66	3.49	1,588.67	1,576.21	12.46	127.551		
1,900.00	1,900.00	1,888.30	1,888.30	6.61	6.56	179.87	-1,588.66	3.49	1,588.67	1,575.50	13.17	120.629		
2,000.00	2,000.00	1,988.30	1,988.30	6.96	6.92	179.87	-1,588.66	3.49	1,588.67	1,574.78	13.88	114.417		
2,100.00	2,100.00	2,088.30	2,088.30	7.32	7.28	179.87	-1,588.66	3.49	1,588.67	1,574.07	14.60	108.812		
2,200.00	2,200.00	2,188.30	2,188.30	7.68	7.64	179.87	-1,588.66	3.49	1,588.67	1,573.35	15.32	103.730		
2,300.00	2,300.00	2,288.30	2,288.30	8.04	7.99	179.87	-1,588.66	3.49	1,588.67	1,572.64	16.03	99.100		
2,350.00	2,350.00	2,338.30	2,338.30	8.22	8.17	179.87	-1,588.66	3.49	1,588.67	1,572.28	16.39	96.937 CC		
2,400.00	2,400.00	2,388.30	2,388.30	8.39	8.35	-164.09	-1,588.66	3.49	1,588.88	1,572.13	16.75	94.879 ES		
2,500.00	2,499.98	2,488.28	2,488.28	8.75	8.71	-164.10	-1,588.66	3.49	1,590.56	1,573.09	17.46	91.090		
2,600.00	2,599.92	2,571.72	2,571.72	9.11	9.00	-164.11	-1,589.04	3.24	1,594.37	1,576.26	18.10	88.064		
2,700.00	2,699.78	2,652.81	2,652.79	9.47	9.27	-164.10	-1,590.35	2.35	1,601.02	1,582.29	18.73	85.488		
2,800.00	2,799.54	2,733.64	2,733.57	9.82	9.53	-164.07	-1,592.61	0.82	1,610.51	1,591.16	19.34	83.256		
2,900.00	2,899.16	2,814.11	2,813.95	10.18	9.80	-164.03	-1,595.79	-1.33	1,622.82	1,602.86	19.96	81.315		
3,000.00	2,998.61	2,894.13	2,893.82	10.54	10.06	-163.97	-1,599.89	-4.10	1,637.94	1,617.38	20.57	79.640		
3,100.00	3,097.86	2,980.38	2,979.82	10.89	10.35	-163.90	-1,605.24	-7.73	1,655.78	1,634.58	21.20	78.103		
3,200.00	3,196.89	3,078.41	3,077.56	11.25	10.68	-163.82	-1,611.55	-11.99	1,675.50	1,653.62	21.88	76.571		
3,295.74	3,291.45	3,171.95	3,170.82	11.59	10.99	-163.77	-1,617.57	-16.06	1,695.92	1,673.39	22.53	75.259		
3,300.00	3,295.65	3,176.10	3,174.96	11.61	11.00	-163.77	-1,617.83	-16.24	1,696.86	1,674.30	22.56	75.201		
3,400.00	3,394.29	3,273.63	3,272.19	11.97	11.33	-163.77	-1,624.10	-20.48	1,718.97	1,695.73	23.25	73.947		
3,500.00	3,492.94	3,371.15	3,369.42	12.33	11.66	-163.78	-1,630.38	-24.73	1,741.08	1,717.15	23.93	72.756		
3,600.00	3,591.58	3,468.68	3,466.65	12.69	12.00	-163.79	-1,636.65	-28.97	1,763.19	1,738.57	24.62	71.625		
3,700.00	3,690.22	3,566.20	3,563.88	13.05	12.33	-163.80	-1,642.92	-33.21	1,785.30	1,760.00	25.31	70.549		
3,800.00	3,788.86	3,663.73	3,661.11	13.41	12.67	-163.80	-1,649.19	-37.46	1,807.41	1,781.41	26.00	69.526		
3,900.00	3,887.50	3,761.25	3,758.34	13.77	13.00	-163.81	-1,655.46	-41.70	1,829.52	1,802.83	26.69	68.550		
4,000.00	3,986.14	3,858.78	3,855.57	14.14	13.34	-163.82	-1,661.74	-45.94	1,851.63	1,824.25	27.38	67.620		
4,100.00	4,084.78	3,956.30	3,952.80	14.50	13.68	-163.82	-1,668.01	-50.19	1,873.74	1,845.66	28.08	66.732		
4,200.00	4,183.42	4,053.83	4,050.03	14.87	14.02	-163.83	-1,674.28	-54.43	1,895.85	1,867.07	28.78	65.883		
4,300.00	4,282.06	4,151.35	4,147.26	15.24	14.36	-163.84	-1,680.55	-58.67	1,917.96	1,888.49	29.47	65.072		
4,400.00	4,380.70	4,248.88	4,244.49	15.60	14.70	-163.84	-1,686.83	-62.91	1,940.07	1,909.90	30.17	64.296		
4,500.00	4,479.34	4,346.40	4,341.72	15.97	15.04	-163.85	-1,693.10	-67.16	1,962.18	1,931.31	30.88	63.552		
4,600.00	4,577.98	4,443.93	4,438.95	16.34	15.38	-163.85	-1,699.37	-71.40	1,984.29	1,952.71	31.58	62.840		
4,700.00	4,676.62	4,541.45	4,536.19	16.71	15.73	-163.86	-1,705.64	-75.64	2,006.40	1,974.12	32.28	62.156		
4,800.00	4,775.27	4,638.98	4,633.42	17.08	16.07	-163.86	-1,711.91	-79.89	2,028.51	1,995.53	32.98	61.499		
4,900.00	4,873.91	4,736.50	4,730.65	17.45	16.42	-163.87	-1,718.19	-84.13	2,050.62	2,016.93	33.69	60.869		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,834.03	4,827.88	17.82	16.76	-163.88	-1,724.46	-88.37	2,072.73	2,038.34	34.40	60.263		
5,100.00	5,071.19	4,931.55	4,925.11	18.19	17.11	-163.88	-1,730.73	-92.61	2,094.84	2,059.74	35.10	59.679		
5,200.00	5,169.83	5,029.08	5,022.34	18.56	17.45	-163.89	-1,737.00	-96.86	2,116.95	2,081.14	35.81	59.118		
5,300.00	5,268.47	5,126.60	5,119.57	18.93	17.80	-163.89	-1,743.27	-101.10	2,139.06	2,102.54	36.52	58.577		
5,400.00	5,367.11	5,224.13	5,216.80	19.31	18.15	-163.90	-1,749.55	-105.34	2,161.17	2,123.95	37.23	58.055		
5,500.00	5,465.75	5,321.65	5,314.03	19.68	18.49	-163.90	-1,755.82	-109.59	2,183.28	2,145.35	37.94	57.552		
5,600.00	5,564.39	5,419.18	5,411.26	20.05	18.84	-163.90	-1,762.09	-113.83	2,205.39	2,166.75	38.65	57.067		
5,700.00	5,663.03	5,516.70	5,508.49	20.42	19.19	-163.91	-1,768.36	-118.07	2,227.50	2,188.15	39.36	56.598		
5,800.00	5,761.67	5,614.23	5,605.72	20.80	19.54	-163.91	-1,774.63	-122.31	2,249.61	2,209.54	40.07	56.145		
5,900.00	5,860.31	5,711.75	5,702.95	21.17	19.89	-163.92	-1,780.91	-126.56	2,271.72	2,230.94	40.78	55.708		
6,000.00	5,958.96	5,809.28	5,800.18	21.54	20.24	-163.92	-1,787.18	-130.80	2,293.83	2,252.34	41.49	55.284		
6,100.00	6,057.60	5,906.80	5,897.41	21.92	20.59	-163.93	-1,793.45	-135.04	2,315.94	2,273.74	42.20	54.874		
6,200.00	6,156.24	6,004.33	5,994.64	22.29	20.94	-163.93	-1,799.72	-139.29	2,338.05	2,295.13	42.92	54.477		
6,300.00	6,254.88	6,101.85	6,091.87	22.67	21.29	-163.94	-1,806.00	-143.53	2,360.16	2,316.53	43.63	54.093		
6,400.00	6,353.52	6,200.62	6,189.10	23.04	21.64	-163.94	-1,812.27	-147.77	2,382.27	2,337.92	44.35	53.715		
6,500.00	6,452.16	6,303.10	6,286.33	23.42	22.01	-163.94	-1,818.54	-152.01	2,404.38	2,359.30	45.08	53.333		
6,600.00	6,550.80	6,394.43	6,383.56	23.79	22.34	-163.95	-1,824.81	-156.26	2,426.49	2,380.72	45.78	53.009		
6,700.00	6,649.44	6,508.05	6,480.80	24.17	22.75	-163.95	-1,831.08	-160.50	2,448.60	2,402.06	46.55	52.604		
6,800.00	6,748.08	6,589.48	6,578.03	24.54	23.04	-163.95	-1,837.36	-164.74	2,470.71	2,423.51	47.21	52.338		
6,900.00	6,846.72	6,687.00	6,675.26	24.92	23.39	-163.96	-1,843.63	-168.99	2,492.82	2,444.90	47.92	52.018		
7,000.00	6,945.36	6,784.53	6,772.49	25.29	23.74	-163.96	-1,849.90	-173.23	2,514.93	2,466.30	48.64	51.706		
7,100.00	7,044.00	6,882.05	6,869.72	25.67	24.09	-163.97	-1,856.17	-177.47	2,537.05	2,487.69	49.36	51.403		
7,200.00	7,142.65	6,979.58	6,966.95	26.04	24.45	-163.97	-1,862.44	-181.71	2,559.16	2,509.08	50.07	51.109		
7,300.00	7,241.29	7,077.10	7,064.18	26.42	24.80	-163.97	-1,868.72	-185.96	2,581.27	2,530.48	50.79	50.822		
7,400.00	7,339.93	7,174.63	7,161.41	26.79	25.15	-163.98	-1,874.99	-190.20	2,603.38	2,551.87	51.51	50.543		
7,500.00	7,438.57	7,272.15	7,258.64	27.17	25.50	-163.98	-1,881.26	-194.44	2,625.49	2,573.26	52.23	50.272		
7,571.77	7,509.37	7,342.15	7,328.42	27.44	25.75	-163.98	-1,885.76	-197.49	2,641.36	2,588.61	52.74	50.081		
7,600.00	7,537.23	7,369.70	7,355.89	27.55	25.85	-164.01	-1,887.53	-198.69	2,647.50	2,594.55	52.94	50.005		
7,700.00	7,636.18	7,467.63	7,453.53	27.92	26.21	-164.08	-1,893.83	-202.95	2,667.68	2,614.02	53.66	49.713		
7,800.00	7,735.48	7,566.04	7,551.65	28.29	26.56	-164.13	-1,900.16	-207.23	2,685.40	2,631.02	54.38	49.383		
7,900.00	7,835.05	7,664.86	7,650.16	28.65	26.92	-164.16	-1,906.52	-211.53	2,700.63	2,645.53	55.10	49.017		
8,000.00	7,934.83	7,764.01	7,749.01	29.01	27.28	-164.15	-1,912.89	-215.84	2,713.37	2,657.56	55.81	48.618		
8,100.00	8,034.74	7,867.34	7,852.03	29.36	27.66	-164.12	-1,919.53	-220.33	2,723.61	2,667.07	56.54	48.170		
8,202.27	8,137.00	8,116.74	8,101.15	29.72	28.55	179.92	-1,928.48	-226.39	2,728.59	2,670.64	57.95	47.086		
8,300.00	8,234.73	8,238.62	8,223.03	30.06	28.96	179.93	-1,928.66	-226.51	2,728.67	2,669.94	58.72	46.469		
8,400.00	8,334.73	8,338.62	8,323.03	30.41	29.30	179.93	-1,928.66	-226.51	2,728.67	2,669.26	59.41	45.929		
8,500.00	8,434.73	8,438.62	8,423.03	30.75	29.64	179.93	-1,928.66	-226.51	2,728.67	2,668.57	60.10	45.402		
8,552.31	8,487.04	8,490.93	8,475.34	30.94	29.82	179.93	-1,928.66	-226.51	2,728.67	2,668.20	60.46	45.131		
8,600.00	8,534.68	8,540.15	8,524.55	31.10	29.98	90.29	-1,928.65	-225.59	2,728.67	2,667.88	60.79	44.887		
8,650.00	8,584.26	8,592.73	8,576.83	31.26	30.16	90.32	-1,928.59	-220.20	2,728.65	2,667.52	61.13	44.636		
8,700.00	8,633.10	8,645.42	8,628.51	31.43	30.33	90.35	-1,928.48	-210.02	2,728.60	2,667.14	61.47	44.391		
8,750.00	8,680.83	8,698.20	8,679.12	31.58	30.50	90.37	-1,928.32	-195.11	2,728.54	2,666.74	61.80	44.152		
8,800.00	8,727.09	8,751.04	8,728.20	31.74	30.66	90.39	-1,928.10	-175.58	2,728.45	2,666.32	62.12	43.920		
8,850.00	8,771.52	8,803.92	8,775.31	31.89	30.82	90.41	-1,927.84	-151.59	2,728.33	2,665.89	62.44	43.693		
8,900.00	8,813.78	8,856.82	8,820.01	32.04	30.97	90.42	-1,927.53	-123.36	2,728.20	2,665.44	62.76	43.471		
8,950.00	8,853.56	8,909.70	8,861.91	32.18	31.12	90.43	-1,927.17	-91.14	2,728.04	2,664.97	63.07	43.251		
9,000.00	8,890.55	8,962.54	8,900.64	32.32	31.26	90.44	-1,926.78	-55.22	2,727.86	2,664.47	63.39	43.030		
9,050.00	8,924.46	9,015.31	8,935.85	32.47	31.42	90.44	-1,926.35	-15.93	2,727.67	2,663.95	63.72	42.804		
9,100.00	8,955.05	9,068.00	8,967.25	32.63	31.59	90.44	-1,925.88	26.35	2,727.46	2,663.39	64.07	42.568		
9,150.00	8,982.08	9,120.57	8,994.58	32.79	31.77	90.43	-1,925.39	71.24	2,727.23	2,662.79	64.44	42.319		
9,200.00	9,005.34	9,173.02	9,017.63	32.97	31.96	90.43	-1,924.87	118.32	2,726.99	2,662.15	64.84	42.054		
9,250.00	9,024.65	9,225.30	9,036.23	33.17	32.18	90.41	-1,924.33	167.16	2,726.75	2,661.47	65.28	41.770		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,277.41	9,050.27	33.38	32.42	90.40	-1,923.78	217.33	2,726.49	2,660.74	65.75	41.468		
9,350.00	9,050.89	9,329.34	9,059.66	33.62	32.68	90.38	-1,923.22	268.37	2,726.23	2,659.97	66.26	41.147		
9,400.00	9,057.61	9,381.06	9,064.38	33.87	32.96	90.36	-1,922.65	319.86	2,725.96	2,659.16	66.79	40.811		
9,452.31	9,060.00	9,434.16	9,065.00	34.15	33.27	90.35	-1,922.07	372.95	2,725.68	2,658.29	67.39	40.444		
9,500.00	9,060.00	9,481.85	9,065.00	34.42	33.56	90.35	-1,921.54	420.63	2,725.44	2,657.47	67.97	40.096		
9,600.00	9,060.00	9,581.85	9,065.00	35.09	34.27	90.35	-1,920.44	520.62	2,724.93	2,655.58	69.36	39.289		
9,700.00	9,060.00	9,681.85	9,065.00	35.86	35.09	90.35	-1,919.34	620.62	2,724.43	2,653.48	70.95	38.401		
9,800.00	9,060.00	9,781.85	9,065.00	36.72	36.00	90.35	-1,918.24	720.61	2,723.92	2,651.18	72.73	37.450		
9,900.00	9,060.00	9,881.85	9,065.00	37.69	37.01	90.35	-1,917.14	820.60	2,723.41	2,648.71	74.70	36.457		
10,000.00	9,060.00	9,981.84	9,065.00	38.73	38.10	90.35	-1,916.04	920.60	2,722.90	2,646.07	76.84	35.437		
10,100.00	9,060.00	10,081.84	9,065.00	39.86	39.26	90.35	-1,914.94	1,020.59	2,722.40	2,643.27	79.13	34.405		
10,140.22	9,060.00	10,122.07	9,065.00	40.33	39.75	90.35	-1,914.50	1,060.81	2,722.19	2,642.10	80.09	33.989		
10,200.00	9,060.00	10,181.83	9,065.00	41.05	40.50	90.35	-1,913.84	1,120.57	2,721.27	2,639.71	81.56	33.366		
10,300.00	9,060.00	10,281.74	9,065.00	42.31	41.80	90.35	-1,912.74	1,220.47	2,716.93	2,632.81	84.12	32.298		
10,400.00	9,060.00	10,381.42	9,065.00	43.64	43.15	90.35	-1,911.64	1,320.15	2,709.11	2,622.31	86.79	31.213		
10,507.23	9,060.00	10,487.94	9,065.00	45.11	44.65	90.36	-1,910.47	1,426.66	2,696.86	2,607.09	89.77	30.042		
10,600.00	9,060.00	10,580.08	9,065.00	46.43	45.99	90.36	-1,909.45	1,518.79	2,686.03	2,593.60	92.43	29.059		
10,700.00	9,060.00	10,679.73	9,065.00	47.91	47.49	90.36	-1,908.36	1,618.43	2,677.71	2,582.31	95.40	28.068		
10,800.00	9,060.00	10,779.60	9,065.00	49.42	49.02	90.36	-1,907.26	1,718.31	2,672.87	2,574.42	98.45	27.149		
10,888.75	9,060.00	10,868.34	9,065.00	50.80	50.42	90.36	-1,906.28	1,807.04	2,671.49	2,570.27	101.22	26.393		
10,900.00	9,060.00	10,879.59	9,065.00	50.97	50.60	90.36	-1,906.16	1,818.29	2,671.52	2,569.94	101.57	26.301		
11,000.00	9,060.00	10,979.56	9,065.00	52.55	52.21	90.36	-1,905.06	1,918.25	2,673.65	2,568.90	104.76	25.522		
11,100.00	9,060.00	11,079.40	9,065.00	54.14	53.84	90.36	-1,903.96	2,018.08	2,679.28	2,571.29	107.99	24.810		
11,207.23	9,060.00	11,186.16	9,065.00	55.87	55.62	90.36	-1,902.78	2,124.84	2,689.18	2,577.68	111.50	24.119		
11,300.00	9,060.00	11,278.51	9,065.00	57.39	57.18	90.36	-1,901.77	2,217.18	2,697.98	2,583.40	114.58	23.547		
11,400.00	9,060.00	11,378.32	9,065.00	59.06	58.89	90.35	-1,900.67	2,316.98	2,704.10	2,586.15	117.96	22.924		
11,506.63	9,060.00	11,484.91	9,065.00	60.88	60.73	90.35	-1,899.50	2,423.57	2,706.80	2,585.18	121.62	22.256		
11,600.00	9,060.00	11,578.28	9,065.00	62.49	62.37	90.35	-1,898.47	2,516.93	2,707.42	2,582.55	124.87	21.681		
11,700.00	9,060.00	11,678.27	9,065.00	64.24	64.14	90.35	-1,897.37	2,616.92	2,708.09	2,579.69	128.39	21.092		
11,800.00	9,060.00	11,778.27	9,065.00	66.01	65.92	90.35	-1,896.27	2,716.91	2,708.75	2,576.81	131.94	20.530		
11,900.00	9,060.00	11,878.27	9,065.00	67.79	67.72	90.35	-1,895.17	2,816.91	2,709.42	2,573.90	135.52	19.993		
12,000.00	9,060.00	11,978.27	9,065.00	69.58	69.53	90.35	-1,894.07	2,916.90	2,710.08	2,570.95	139.13	19.479		
12,100.00	9,060.00	12,078.27	9,065.00	71.39	71.36	90.35	-1,892.97	3,016.89	2,710.75	2,567.98	142.76	18.988		
12,200.00	9,060.00	12,178.26	9,065.00	73.21	73.20	90.35	-1,891.87	3,116.88	2,711.41	2,564.99	146.42	18.518		
12,300.00	9,060.00	12,278.26	9,065.00	75.05	75.04	90.35	-1,890.77	3,216.87	2,712.08	2,561.98	150.10	18.068		
12,400.00	9,060.00	12,378.26	9,065.00	76.89	76.90	90.35	-1,889.67	3,316.86	2,712.74	2,558.94	153.80	17.638		
12,500.00	9,060.00	12,478.26	9,065.00	78.74	78.77	90.35	-1,888.56	3,416.86	2,713.41	2,555.89	157.52	17.225		
12,600.00	9,060.00	12,578.25	9,065.00	80.61	80.64	90.35	-1,887.46	3,516.85	2,714.08	2,552.81	161.26	16.830		
12,700.00	9,060.00	12,678.25	9,065.00	82.48	82.53	90.35	-1,886.36	3,616.84	2,714.74	2,549.72	165.02	16.451		
12,800.00	9,060.00	12,778.25	9,065.00	84.36	84.42	90.35	-1,885.26	3,716.83	2,715.41	2,546.62	168.79	16.088		
12,900.00	9,060.00	12,878.25	9,065.00	86.24	86.32	90.35	-1,884.16	3,816.82	2,716.07	2,543.50	172.57	15.739		
13,000.00	9,060.00	12,978.25	9,065.00	88.14	88.22	90.35	-1,883.06	3,916.81	2,716.74	2,540.37	176.37	15.404		
13,100.00	9,060.00	13,078.24	9,065.00	90.04	90.13	90.35	-1,881.96	4,016.81	2,717.40	2,537.22	180.18	15.082		
13,200.00	9,060.00	13,178.24	9,065.00	91.94	92.05	90.35	-1,880.86	4,116.80	2,718.07	2,534.07	184.00	14.772		
13,300.00	9,060.00	13,278.24	9,065.00	93.86	93.97	90.35	-1,879.76	4,216.79	2,718.74	2,530.90	187.84	14.474		
13,400.00	9,060.00	13,378.24	9,065.00	95.77	95.90	90.35	-1,878.66	4,316.78	2,719.40	2,527.72	191.68	14.187		
13,500.00	9,060.00	13,478.23	9,065.00	97.70	97.83	90.35	-1,877.56	4,416.77	2,720.07	2,524.53	195.54	13.911		
13,600.00	9,060.00	13,578.23	9,065.00	99.62	99.77	90.35	-1,876.46	4,516.77	2,720.73	2,521.33	199.40	13.644		
13,700.00	9,060.00	13,678.23	9,065.00	101.56	101.71	90.35	-1,875.36	4,616.76	2,721.40	2,518.12	203.27	13.388		
13,800.00	9,060.00	13,778.23	9,065.00	103.49	103.65	90.35	-1,874.26	4,716.75	2,722.06	2,514.91	207.16	13.140		
13,900.00	9,060.00	13,878.23	9,065.00	105.43	105.60	90.35	-1,873.16	4,816.74	2,722.73	2,511.68	211.05	12.901		
14,000.00	9,060.00	13,978.22	9,065.00	107.38	107.55	90.35	-1,872.06	4,916.73	2,723.39	2,508.45	214.94	12.670		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	14,078.22	9,065.00	109.33	109.51	90.35	-1,870.96	5,016.72	2,724.06	2,505.22	218.84	12.447		
14,200.00	9,060.00	14,178.22	9,065.00	111.28	111.47	90.35	-1,869.86	5,116.72	2,724.73	2,501.97	222.76	12.232		
14,300.00	9,060.00	14,278.22	9,065.00	113.23	113.43	90.35	-1,868.76	5,216.71	2,725.39	2,498.72	226.67	12.024		
14,400.00	9,060.00	14,378.21	9,065.00	115.19	115.40	90.35	-1,867.66	5,316.70	2,726.06	2,495.46	230.59	11.822		
14,500.00	9,060.00	14,478.21	9,065.00	117.15	117.36	90.35	-1,866.55	5,416.69	2,726.72	2,492.20	234.52	11.627		
14,600.00	9,060.00	14,578.21	9,065.00	119.11	119.33	90.35	-1,865.45	5,516.68	2,727.39	2,488.93	238.46	11.438		
14,700.00	9,060.00	14,678.21	9,065.00	121.08	121.31	90.35	-1,864.35	5,616.67	2,728.05	2,485.66	242.39	11.255		
14,800.00	9,060.00	14,778.21	9,065.00	123.05	123.28	90.35	-1,863.25	5,716.67	2,728.72	2,482.38	246.34	11.077		
14,900.00	9,060.00	14,878.20	9,065.00	125.02	125.26	90.35	-1,862.15	5,816.66	2,729.39	2,479.10	250.29	10.905		
15,000.00	9,060.00	14,978.20	9,065.00	126.99	127.24	90.35	-1,861.05	5,916.65	2,730.05	2,475.81	254.24	10.738		
15,100.00	9,060.00	15,078.20	9,065.00	128.97	129.22	90.35	-1,859.95	6,016.64	2,730.72	2,472.52	258.20	10.576		
15,200.00	9,060.00	15,178.20	9,065.00	130.95	131.20	90.35	-1,858.85	6,116.63	2,731.38	2,469.23	262.16	10.419		
15,300.00	9,060.00	15,278.19	9,065.00	132.93	133.19	90.35	-1,857.75	6,216.62	2,732.05	2,465.93	266.12	10.266		
15,400.00	9,060.00	15,378.19	9,065.00	134.91	135.17	90.35	-1,856.65	6,316.62	2,732.71	2,462.62	270.09	10.118		
15,500.00	9,060.00	15,478.19	9,065.00	136.89	137.16	90.35	-1,855.55	6,416.61	2,733.38	2,459.32	274.06	9.974		
15,600.00	9,060.00	15,578.19	9,065.00	138.88	139.15	90.35	-1,854.45	6,516.60	2,734.04	2,456.01	278.04	9.833		
15,700.00	9,060.00	15,678.19	9,065.00	140.86	141.14	90.35	-1,853.35	6,616.59	2,734.71	2,452.69	282.02	9.697		
15,800.00	9,060.00	15,778.18	9,065.00	142.85	143.14	90.35	-1,852.25	6,716.58	2,735.38	2,449.38	286.00	9.564		
15,900.00	9,060.00	15,878.18	9,065.00	144.84	145.13	90.35	-1,851.15	6,816.57	2,736.04	2,446.06	289.98	9.435		
16,000.00	9,060.00	15,978.18	9,065.00	146.83	147.13	90.35	-1,850.05	6,916.57	2,736.71	2,442.74	293.97	9.309		
16,100.00	9,060.00	16,078.18	9,065.00	148.83	149.13	90.35	-1,848.95	7,016.56	2,737.37	2,439.41	297.96	9.187		
16,200.00	9,060.00	16,178.17	9,065.00	150.82	151.13	90.35	-1,847.85	7,116.55	2,738.04	2,436.08	301.95	9.068		
16,300.00	9,060.00	16,278.17	9,065.00	152.82	153.13	90.35	-1,846.75	7,216.54	2,738.70	2,432.75	305.95	8.951		
16,400.00	9,060.00	16,378.17	9,065.00	154.81	155.13	90.35	-1,845.65	7,316.53	2,739.37	2,429.42	309.95	8.838		
16,500.00	9,060.00	16,478.17	9,065.00	156.81	157.13	90.35	-1,844.54	7,416.53	2,740.03	2,426.09	313.95	8.728		
16,600.00	9,060.00	16,578.17	9,065.00	158.81	159.13	90.35	-1,843.44	7,516.52	2,740.70	2,422.75	317.95	8.620		
16,700.00	9,060.00	16,678.16	9,065.00	160.81	161.14	90.35	-1,842.34	7,616.51	2,741.37	2,419.41	321.96	8.515		
16,800.00	9,060.00	16,778.16	9,065.00	162.81	163.14	90.35	-1,841.24	7,716.50	2,742.03	2,416.07	325.96	8.412		
16,900.00	9,060.00	16,878.16	9,065.00	164.82	165.15	90.35	-1,840.14	7,816.49	2,742.70	2,412.73	329.97	8.312		
17,000.00	9,060.00	16,978.16	9,065.00	166.82	167.16	90.35	-1,839.04	7,916.48	2,743.36	2,409.38	333.98	8.214		
17,100.00	9,060.00	17,078.15	9,065.00	168.82	169.16	90.35	-1,837.94	8,016.48	2,744.03	2,406.03	338.00	8.119		
17,200.00	9,060.00	17,178.15	9,065.00	170.83	171.17	90.35	-1,836.84	8,116.47	2,744.69	2,402.68	342.01	8.025		
17,300.00	9,060.00	17,278.15	9,065.00	172.84	173.18	90.35	-1,835.74	8,216.46	2,745.36	2,399.33	346.03	7.934		
17,400.00	9,060.00	17,378.15	9,065.00	174.84	175.19	90.35	-1,834.64	8,316.45	2,746.03	2,395.98	350.04	7.845		
17,500.00	9,060.00	17,478.15	9,065.00	176.85	177.21	90.35	-1,833.54	8,416.44	2,746.69	2,392.63	354.06	7.758		
17,600.00	9,060.00	17,578.14	9,065.00	178.86	179.22	90.35	-1,832.44	8,516.43	2,747.36	2,389.27	358.09	7.672		
17,700.00	9,060.00	17,678.14	9,065.00	180.87	181.23	90.35	-1,831.34	8,616.43	2,748.02	2,385.91	362.11	7.589		
17,800.00	9,060.00	17,778.14	9,065.00	182.88	183.25	90.35	-1,830.24	8,716.42	2,748.69	2,382.56	366.13	7.507		
17,900.00	9,060.00	17,878.14	9,065.00	184.89	185.26	90.35	-1,829.14	8,816.41	2,749.35	2,379.20	370.16	7.428		
18,000.00	9,060.00	17,978.13	9,065.00	186.90	187.28	90.35	-1,828.04	8,916.40	2,750.02	2,375.83	374.19	7.349		
18,100.00	9,060.00	18,078.13	9,065.00	188.92	189.29	90.35	-1,826.94	9,016.39	2,750.68	2,372.47	378.21	7.273		
18,200.00	9,060.00	18,178.13	9,065.00	190.93	191.31	90.35	-1,825.84	9,116.38	2,751.35	2,369.11	382.24	7.198		
18,300.00	9,060.00	18,278.13	9,065.00	192.94	193.32	90.35	-1,824.74	9,216.38	2,752.02	2,365.74	386.27	7.125		
18,400.00	9,060.00	18,378.13	9,065.00	194.96	195.34	90.35	-1,823.64	9,316.37	2,752.68	2,362.38	390.31	7.053		
18,500.00	9,060.00	18,478.12	9,065.00	196.97	197.36	90.35	-1,822.53	9,416.36	2,753.35	2,359.01	394.34	6.982		
18,600.00	9,060.00	18,578.12	9,065.00	198.99	199.38	90.35	-1,821.43	9,516.35	2,754.01	2,355.64	398.37	6.913		
18,700.00	9,060.00	18,678.12	9,065.00	201.00	201.40	90.35	-1,820.33	9,616.34	2,754.68	2,352.27	402.41	6.845		
18,800.00	9,060.00	18,778.12	9,065.00	203.02	203.42	90.35	-1,819.23	9,716.34	2,755.34	2,348.90	406.45	6.779		
18,900.00	9,060.00	18,878.11	9,065.00	205.04	205.44	90.35	-1,818.13	9,816.33	2,756.01	2,345.53	410.48	6.714		
19,000.00	9,060.00	18,978.11	9,065.00	207.06	207.46	90.35	-1,817.03	9,916.32	2,756.68	2,342.15	414.52	6.650		
19,100.00	9,060.00	19,078.11	9,065.00	209.07	209.48	90.35	-1,815.93	10,016.31	2,757.34	2,338.78	418.56	6.588		
19,200.00	9,060.00	19,178.11	9,065.00	211.09	211.50	90.35	-1,814.83	10,116.30	2,758.01	2,335.40	422.60	6.526		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,278.11	9,065.00	213.11	213.52	90.35	-1,813.73	10,216.29	2,758.67	2,332.03	426.64	6.466	
19,400.00	9,060.00	19,378.10	9,065.00	215.13	215.55	90.35	-1,812.63	10,316.29	2,759.34	2,328.65	430.69	6.407	
19,500.32	9,060.00	19,456.84	9,065.00	217.16	217.14	90.35	-1,811.76	10,395.02	2,760.09	2,325.81	434.28	6.355 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	133.74	-2,939.76	3,071.78	4,252.26					
100.00	100.00	39.40	39.40	0.52	0.67	133.74	-2,939.76	3,071.78	4,251.83	4,250.64	1.18	3,591.107		
200.00	200.00	139.40	139.40	0.70	2.00	133.74	-2,939.76	3,071.78	4,251.83	4,249.12	2.70	1,572.717		
300.00	300.00	239.40	239.40	0.99	3.47	133.74	-2,939.76	3,071.78	4,251.83	4,247.37	4.46	953.521		
400.00	400.00	339.40	339.40	1.31	4.96	133.74	-2,939.76	3,071.78	4,251.83	4,245.56	6.27	678.389		
500.00	500.00	439.40	439.40	1.65	6.45	133.74	-2,939.76	3,071.78	4,251.83	4,243.73	8.10	525.157		
600.00	600.00	539.40	539.40	1.99	7.94	133.74	-2,939.76	3,071.78	4,251.83	4,241.89	9.93	427.974		
700.00	700.00	639.40	639.40	2.34	9.44	133.74	-2,939.76	3,071.78	4,251.83	4,240.05	11.78	360.979		
800.00	800.00	739.40	739.40	2.69	10.94	133.74	-2,939.76	3,071.78	4,251.83	4,238.20	13.63	312.045		
900.00	900.00	839.40	839.40	3.04	12.43	133.74	-2,939.76	3,071.78	4,251.83	4,236.35	15.47	274.756		
1,000.00	1,000.00	939.40	939.40	3.40	13.93	133.74	-2,939.76	3,071.78	4,251.83	4,234.50	17.33	245.408		
1,100.00	1,100.00	1,039.40	1,039.40	3.75	15.42	133.74	-2,939.76	3,071.78	4,251.83	4,232.65	19.18	221.712		
1,200.00	1,200.00	1,139.40	1,139.40	4.11	16.92	133.74	-2,939.76	3,071.78	4,251.83	4,230.80	21.03	202.182		
1,300.00	1,300.00	1,239.40	1,239.40	4.46	18.42	133.74	-2,939.76	3,071.78	4,251.83	4,228.94	22.88	185.809		
1,400.00	1,400.00	1,339.40	1,339.40	4.82	19.92	133.74	-2,939.76	3,071.78	4,251.83	4,227.09	24.74	171.886		
1,500.00	1,500.00	1,439.40	1,439.40	5.18	21.41	133.74	-2,939.76	3,071.78	4,251.83	4,225.24	26.59	159.903		
1,600.00	1,600.00	1,539.40	1,539.40	5.53	22.91	133.74	-2,939.76	3,071.78	4,251.83	4,223.38	28.44	149.479		
1,700.00	1,700.00	1,639.40	1,639.40	5.89	24.41	133.74	-2,939.76	3,071.78	4,251.83	4,221.53	30.30	140.331		
1,800.00	1,800.00	1,739.40	1,739.40	6.25	25.91	133.74	-2,939.76	3,071.78	4,251.83	4,219.67	32.15	132.236		
1,900.00	1,900.00	1,839.40	1,839.40	6.61	27.40	133.74	-2,939.76	3,071.78	4,251.83	4,217.82	34.01	125.024		
2,000.00	2,000.00	1,939.40	1,939.40	6.96	28.90	133.74	-2,939.76	3,071.78	4,251.83	4,215.96	35.86	118.558		
2,100.00	2,100.00	2,039.40	2,039.40	7.32	30.40	133.74	-2,939.76	3,071.78	4,251.83	4,214.11	37.72	112.727		
2,200.00	2,200.00	2,139.40	2,139.40	7.68	31.89	133.74	-2,939.76	3,071.78	4,251.83	4,212.25	39.57	107.443		
2,300.00	2,300.00	2,239.40	2,239.40	8.04	33.39	133.74	-2,939.76	3,071.78	4,251.83	4,210.40	41.43	102.631		
2,350.00	2,350.00	2,289.40	2,289.40	8.22	34.14	133.74	-2,939.76	3,071.78	4,251.83	4,209.47	42.36	100.384		
2,400.00	2,400.00	2,339.40	2,339.40	8.39	34.89	149.78	-2,939.76	3,071.78	4,252.01	4,208.73	43.28	98.237		
2,500.00	2,499.98	2,439.38	2,439.38	8.75	36.39	149.79	-2,939.76	3,071.78	4,253.52	4,208.39	45.14	94.235		
2,600.00	2,599.92	2,539.32	2,539.32	9.11	37.88	149.80	-2,939.76	3,071.78	4,256.54	4,209.55	46.99	90.583		
2,700.00	2,699.78	2,639.18	2,639.18	9.47	39.38	149.81	-2,939.76	3,071.78	4,261.06	4,212.22	48.84	87.241		
2,800.00	2,799.54	2,738.94	2,738.94	9.82	40.87	149.82	-2,939.76	3,071.78	4,267.10	4,216.41	50.69	84.176		
2,900.00	2,899.16	2,838.56	2,838.56	10.18	42.36	149.85	-2,939.76	3,071.78	4,274.64	4,222.10	52.54	81.360		
3,000.00	2,998.61	2,938.01	2,938.01	10.54	43.85	149.87	-2,939.76	3,071.78	4,283.69	4,229.31	54.38	78.767		
3,100.00	3,097.86	3,037.26	3,037.26	10.89	45.34	149.90	-2,939.76	3,071.78	4,294.25	4,238.03	56.23	76.375		
3,200.00	3,196.89	3,136.29	3,136.29	11.25	46.82	149.93	-2,939.76	3,071.78	4,306.32	4,248.26	58.06	74.165		
3,295.74	3,291.45	3,230.85	3,230.85	11.59	48.24	149.96	-2,939.76	3,071.78	4,319.30	4,259.48	59.82	72.205		
3,300.00	3,295.65	3,235.05	3,235.05	11.61	48.30	149.97	-2,939.76	3,071.78	4,319.91	4,260.01	59.90	72.120		
3,400.00	3,394.29	3,333.69	3,333.69	11.97	49.78	150.08	-2,939.76	3,071.78	4,334.19	4,272.46	61.73	70.212		
3,500.00	3,492.94	3,432.34	3,432.34	12.33	51.26	150.18	-2,939.76	3,071.78	4,348.48	4,284.92	63.56	68.412		
3,600.00	3,591.58	3,530.98	3,530.98	12.69	52.73	150.29	-2,939.76	3,071.78	4,362.80	4,297.40	65.40	66.712		
3,700.00	3,690.22	3,629.62	3,629.62	13.05	54.21	150.40	-2,939.76	3,071.78	4,377.12	4,309.89	67.23	65.104		
3,800.00	3,788.86	3,728.26	3,728.26	13.41	55.69	150.50	-2,939.76	3,071.78	4,391.46	4,322.39	69.07	63.582		
3,900.00	3,887.50	3,826.90	3,826.90	13.77	57.17	150.61	-2,939.76	3,071.78	4,405.82	4,334.91	70.90	62.137		
4,000.00	3,986.14	3,925.54	3,925.54	14.14	58.64	150.71	-2,939.76	3,071.78	4,420.19	4,347.45	72.74	60.765		
4,100.00	4,084.78	4,024.18	4,024.18	14.50	60.12	150.82	-2,939.76	3,071.78	4,434.57	4,359.99	74.58	59.461		
4,200.00	4,183.42	4,122.82	4,122.82	14.87	61.60	150.92	-2,939.76	3,071.78	4,448.97	4,372.55	76.42	58.218		
4,300.00	4,282.06	4,221.46	4,221.46	15.24	63.07	151.02	-2,939.76	3,071.78	4,463.39	4,385.13	78.26	57.034		
4,400.00	4,380.70	4,320.10	4,320.10	15.60	64.55	151.12	-2,939.76	3,071.78	4,477.81	4,397.71	80.10	55.904		
4,500.00	4,479.34	4,418.74	4,418.74	15.97	66.03	151.22	-2,939.76	3,071.78	4,492.25	4,410.31	81.94	54.825		
4,600.00	4,577.98	4,517.38	4,517.38	16.34	67.51	151.32	-2,939.76	3,071.78	4,506.71	4,422.93	83.78	53.793		
4,700.00	4,676.62	4,616.02	4,616.02	16.71	68.98	151.42	-2,939.76	3,071.78	4,521.17	4,435.55	85.62	52.805		
4,800.00	4,775.27	4,714.67	4,714.67	17.08	70.46	151.52	-2,939.76	3,071.78	4,535.66	4,448.19	87.46	51.859		
4,900.00	4,873.91	4,813.31	4,813.31	17.45	71.94	151.62	-2,939.76	3,071.78	4,550.15	4,460.85	89.30	50.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,911.95	4,911.95	17.82	73.42	151.72	-2,939.76	3,071.78	4,564.66	4,473.51	91.15	50.080		
5,100.00	5,071.19	5,010.59	5,010.59	18.19	74.89	151.81	-2,939.76	3,071.78	4,579.18	4,486.19	92.99	49.244		
5,200.00	5,169.83	5,109.23	5,109.23	18.56	76.37	151.91	-2,939.76	3,071.78	4,593.71	4,498.88	94.83	48.440		
5,300.00	5,268.47	5,207.87	5,207.87	18.93	77.85	152.01	-2,939.76	3,071.78	4,608.26	4,511.58	96.68	47.667		
5,400.00	5,367.11	5,306.51	5,306.51	19.31	79.32	152.10	-2,939.76	3,071.78	4,622.82	4,524.30	98.52	46.923		
5,500.00	5,465.75	5,405.15	5,405.15	19.68	80.80	152.20	-2,939.76	3,071.78	4,637.39	4,537.02	100.36	46.206		
5,600.00	5,564.39	5,503.79	5,503.79	20.05	82.28	152.29	-2,939.76	3,071.78	4,651.97	4,549.76	102.21	45.515		
5,700.00	5,663.03	5,602.43	5,602.43	20.42	83.76	152.38	-2,939.76	3,071.78	4,666.57	4,562.51	104.05	44.848		
5,800.00	5,761.67	5,701.07	5,701.07	20.80	85.23	152.48	-2,939.76	3,071.78	4,681.17	4,575.28	105.90	44.205		
5,900.00	5,860.31	5,799.71	5,799.71	21.17	86.71	152.57	-2,939.76	3,071.78	4,695.79	4,588.05	107.74	43.584		
6,000.00	5,958.96	5,898.36	5,898.36	21.54	88.19	152.66	-2,939.76	3,071.78	4,710.43	4,600.84	109.59	42.983		
6,100.00	6,057.60	5,997.00	5,997.00	21.92	89.67	152.75	-2,939.76	3,071.78	4,725.07	4,613.64	111.43	42.403		
6,200.00	6,156.24	6,095.64	6,095.64	22.29	91.14	152.84	-2,939.76	3,071.78	4,739.73	4,626.45	113.28	41.841		
6,300.00	6,254.88	6,194.28	6,194.28	22.67	92.62	152.93	-2,939.76	3,071.78	4,754.39	4,639.27	115.12	41.298		
6,400.00	6,353.52	6,292.92	6,292.92	23.04	94.10	153.02	-2,939.76	3,071.78	4,769.07	4,652.10	116.97	40.772		
6,500.00	6,452.16	6,391.56	6,391.56	23.42	95.57	153.11	-2,939.76	3,071.78	4,783.76	4,664.95	118.82	40.262		
6,600.00	6,550.80	6,490.20	6,490.20	23.79	97.05	153.20	-2,939.76	3,071.78	4,798.46	4,677.80	120.66	39.768		
6,700.00	6,649.44	6,588.84	6,588.84	24.17	98.53	153.29	-2,939.76	3,071.78	4,813.18	4,690.67	122.51	39.288		
6,800.00	6,748.08	6,687.48	6,687.48	24.54	100.01	153.38	-2,939.76	3,071.78	4,827.90	4,703.54	124.36	38.823		
6,900.00	6,846.72	6,786.12	6,786.12	24.92	101.48	153.46	-2,939.76	3,071.78	4,842.63	4,716.43	126.20	38.372		
7,000.00	6,945.36	6,884.76	6,884.76	25.29	102.96	153.55	-2,939.76	3,071.78	4,857.38	4,729.33	128.05	37.934		
7,100.00	7,044.00	6,983.40	6,983.40	25.67	104.44	153.64	-2,939.76	3,071.78	4,872.14	4,742.24	129.90	37.508		
7,200.00	7,142.65	7,082.05	7,082.05	26.04	105.92	153.72	-2,939.76	3,071.78	4,886.90	4,755.16	131.74	37.094		
7,300.00	7,241.29	7,180.69	7,180.69	26.42	107.39	153.81	-2,939.76	3,071.78	4,901.68	4,768.09	133.59	36.692		
7,400.00	7,339.93	7,279.33	7,279.33	26.79	108.87	153.89	-2,939.76	3,071.78	4,916.47	4,781.03	135.44	36.300		
7,500.00	7,438.57	7,377.97	7,377.97	27.17	110.35	153.97	-2,939.76	3,071.78	4,931.27	4,793.98	137.29	35.920		
7,571.77	7,509.37	7,448.77	7,448.77	27.44	111.41	154.03	-2,939.76	3,071.78	4,941.89	4,803.28	138.61	35.653		
7,600.00	7,537.23	7,476.63	7,476.63	27.55	111.83	154.08	-2,939.76	3,071.78	4,945.98	4,806.85	139.13	35.548		
7,700.00	7,636.18	7,575.58	7,575.58	27.92	113.31	154.24	-2,939.76	3,071.78	4,958.98	4,817.99	140.98	35.174		
7,800.00	7,735.48	7,674.88	7,674.88	28.29	114.79	154.37	-2,939.76	3,071.78	4,969.63	4,826.80	142.84	34.792		
7,900.00	7,835.05	7,774.45	7,774.45	28.65	116.29	154.47	-2,939.76	3,071.78	4,977.95	4,833.26	144.69	34.404		
8,000.00	7,934.83	7,874.23	7,874.23	29.01	117.78	154.54	-2,939.76	3,071.78	4,983.91	4,837.36	146.54	34.010		
8,100.00	8,034.74	7,974.14	7,974.14	29.36	119.28	154.58	-2,939.76	3,071.78	4,987.51	4,839.11	148.40	33.610		
8,202.27	8,137.00	8,076.40	8,076.40	29.72	120.81	138.56	-2,939.76	3,071.78	4,988.74	4,838.46	150.28	33.195		
8,300.00	8,234.73	8,174.13	8,174.13	30.06	122.27	138.56	-2,939.76	3,071.78	4,988.74	4,836.65	152.09	32.802		
8,400.00	8,334.73	8,274.13	8,274.13	30.41	123.77	138.56	-2,939.76	3,071.78	4,988.74	4,834.81	153.93	32.408		
8,500.00	8,434.73	8,374.13	8,374.13	30.75	125.27	138.56	-2,939.76	3,071.78	4,988.74	4,832.96	155.78	32.024		
8,552.31	8,487.04	8,426.44	8,426.44	30.94	126.05	138.56	-2,939.76	3,071.78	4,988.74	4,832.00	156.75	31.827		
8,600.00	8,534.68	8,474.08	8,474.08	31.10	126.76	49.01	-2,939.76	3,071.78	4,987.44	4,829.82	157.62	31.642		
8,650.00	8,584.26	8,523.66	8,523.66	31.26	127.51	49.39	-2,939.76	3,071.78	4,983.29	4,824.76	158.52	31.436		
8,700.00	8,633.10	8,572.50	8,572.50	31.43	128.24	50.01	-2,939.76	3,071.78	4,976.32	4,816.91	159.41	31.218		
8,750.00	8,680.83	8,620.23	8,620.23	31.58	128.95	50.91	-2,939.76	3,071.78	4,966.61	4,806.34	160.27	30.989		
8,800.00	8,727.09	8,666.49	8,666.49	31.74	129.64	52.07	-2,939.76	3,071.78	4,954.25	4,793.15	161.11	30.752		
8,850.00	8,771.52	8,710.92	8,710.92	31.89	130.31	53.51	-2,939.76	3,071.78	4,939.37	4,777.46	161.91	30.508		
8,900.00	8,813.78	8,753.18	8,753.18	32.04	130.94	55.23	-2,939.76	3,071.78	4,922.10	4,759.43	162.67	30.259		
8,950.00	8,853.56	8,792.96	8,792.96	32.18	131.54	57.24	-2,939.76	3,071.78	4,902.61	4,739.23	163.39	30.006		
9,000.00	8,890.55	8,829.95	8,829.95	32.32	132.09	59.55	-2,939.76	3,071.78	4,881.10	4,717.04	164.06	29.752		
9,050.00	8,924.46	8,863.86	8,863.86	32.47	132.60	62.14	-2,939.76	3,071.78	4,857.76	4,693.07	164.69	29.496		
9,100.00	8,955.05	8,894.45	8,894.45	32.63	133.06	65.01	-2,939.76	3,071.78	4,832.82	4,667.55	165.27	29.242		
9,150.00	8,982.08	8,921.48	8,921.48	32.79	133.46	68.14	-2,939.76	3,071.78	4,806.51	4,640.71	165.80	28.989		
9,200.00	9,005.34	8,944.74	8,944.74	32.97	133.81	71.50	-2,939.76	3,071.78	4,779.07	4,612.78	166.29	28.740		
9,250.00	9,024.65	8,964.05	8,964.05	33.17	134.10	75.04	-2,939.76	3,071.78	4,750.74	4,584.02	166.72	28.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,979.27	8,979.27	33.38	134.33	78.71	-2,939.76	3,071.78	4,721.78	4,554.67	167.11	28.255		
9,350.00	9,050.89	8,990.29	8,990.29	33.62	134.49	82.44	-2,939.76	3,071.78	4,692.44	4,524.99	167.45	28.023		
9,400.00	9,057.61	8,997.01	8,997.01	33.87	134.59	86.17	-2,939.76	3,071.78	4,662.97	4,495.22	167.74	27.798		
9,452.31	9,060.00	8,999.40	8,999.40	34.15	134.63	90.00	-2,939.76	3,071.78	4,632.25	4,464.25	168.00	27.573		
9,500.00	9,060.00	8,999.40	8,999.40	34.42	134.63	90.00	-2,939.76	3,071.78	4,604.55	4,436.34	168.22	27.373		
9,600.00	9,060.00	8,999.40	8,999.40	35.09	134.63	90.00	-2,939.76	3,071.78	4,547.54	4,378.79	168.74	26.949		
9,700.00	9,060.00	8,999.40	8,999.40	35.86	134.63	90.00	-2,939.76	3,071.78	4,492.03	4,322.66	169.37	26.522		
9,800.00	9,060.00	8,999.40	8,999.40	36.72	134.63	90.00	-2,939.76	3,071.78	4,438.08	4,267.98	170.10	26.091		
9,900.00	9,060.00	8,999.40	8,999.40	37.69	134.63	90.00	-2,939.76	3,071.78	4,385.75	4,214.82	170.93	25.659		
10,000.00	9,060.00	8,999.40	8,999.40	38.73	134.63	90.00	-2,939.76	3,071.78	4,335.09	4,163.23	171.85	25.225		
10,100.00	9,060.00	8,999.40	8,999.40	39.86	134.63	90.00	-2,939.76	3,071.78	4,286.17	4,113.29	172.88	24.793		
10,140.22	9,060.00	8,999.40	8,999.40	40.33	134.63	90.00	-2,939.76	3,071.78	4,266.99	4,093.67	173.32	24.620		
10,200.00	9,060.00	8,999.40	8,999.40	41.05	134.63	90.00	-2,939.76	3,071.78	4,238.49	4,064.49	173.99	24.360		
10,300.00	9,060.00	8,999.40	8,999.40	42.31	134.63	90.00	-2,939.76	3,071.78	4,189.81	4,014.63	175.18	23.917		
10,400.00	9,060.00	8,999.40	8,999.40	43.64	134.63	90.00	-2,939.76	3,071.78	4,139.90	3,963.47	176.43	23.464		
10,507.23	9,060.00	8,999.40	8,999.40	45.11	134.63	90.00	-2,939.76	3,071.78	4,085.04	3,907.20	177.84	22.970		
10,600.00	9,060.00	8,999.40	8,999.40	46.43	134.63	90.00	-2,939.76	3,071.78	4,039.06	3,859.94	179.12	22.549		
10,700.00	9,060.00	8,999.40	8,999.40	47.91	134.63	90.00	-2,939.76	3,071.78	3,994.33	3,813.72	180.61	22.116		
10,800.00	9,060.00	8,999.40	8,999.40	49.42	134.63	90.00	-2,939.76	3,071.78	3,954.82	3,772.63	182.18	21.708		
10,900.00	9,060.00	8,999.40	8,999.40	50.97	134.63	90.00	-2,939.76	3,071.78	3,920.73	3,736.89	183.84	21.327		
11,000.00	9,060.00	8,999.40	8,999.40	52.55	134.63	90.00	-2,939.76	3,071.78	3,892.26	3,706.69	185.57	20.975		
11,100.00	9,060.00	8,999.40	8,999.40	54.14	134.63	90.00	-2,939.76	3,071.78	3,869.56	3,682.21	187.35	20.654		
11,207.23	9,060.00	8,999.40	8,999.40	55.87	134.63	90.00	-2,939.76	3,071.78	3,851.78	3,662.48	189.31	20.347		
11,300.00	9,060.00	8,999.40	8,999.40	57.39	134.63	90.00	-2,939.76	3,071.78	3,838.98	3,647.96	191.02	20.097		
11,400.00	9,060.00	8,999.40	8,999.40	59.06	134.63	90.00	-2,939.76	3,071.78	3,824.32	3,631.43	192.89	19.827		
11,506.63	9,060.00	8,999.40	8,999.40	60.88	134.63	90.00	-2,939.76	3,071.78	3,807.69	3,612.80	194.89	19.538		
11,600.00	9,060.00	8,999.40	8,999.40	62.49	134.63	90.00	-2,939.76	3,071.78	3,793.81	3,597.16	196.65	19.292		
11,700.00	9,060.00	8,999.40	8,999.40	64.24	134.63	90.00	-2,939.76	3,071.78	3,781.45	3,582.90	198.54	19.046		
11,800.00	9,060.00	8,999.40	8,999.40	66.01	134.63	90.00	-2,939.76	3,071.78	3,771.69	3,571.26	200.43	18.818		
11,900.00	9,060.00	8,999.40	8,999.40	67.79	134.63	90.00	-2,939.76	3,071.78	3,764.57	3,562.26	202.31	18.608		
12,000.00	9,060.00	8,999.40	8,999.40	69.58	134.63	90.00	-2,939.76	3,071.78	3,760.10	3,555.92	204.18	18.416		
12,100.00	9,060.00	8,999.40	8,999.40	71.39	134.63	90.00	-2,939.76	3,071.78	3,758.28	3,552.26	206.02	18.242		
12,118.35	9,060.00	8,999.40	8,999.40	71.73	134.63	90.00	-2,939.76	3,071.78	3,758.23	3,551.88	206.36	18.212 CC		
12,200.00	9,060.00	8,999.40	8,999.40	73.21	134.63	90.00	-2,939.76	3,071.78	3,759.12	3,551.28	207.84	18.087 ES		
12,300.00	9,060.00	8,999.40	8,999.40	75.05	134.63	90.00	-2,939.76	3,071.78	3,762.62	3,553.00	209.62	17.950		
12,400.00	9,060.00	8,999.40	8,999.40	76.89	134.63	90.00	-2,939.76	3,071.78	3,768.77	3,557.41	211.37	17.831		
12,500.00	9,060.00	8,999.40	8,999.40	78.74	134.63	90.00	-2,939.76	3,071.78	3,777.56	3,564.49	213.07	17.729		
12,600.00	9,060.00	8,999.40	8,999.40	80.61	134.63	90.00	-2,939.76	3,071.78	3,788.97	3,574.25	214.73	17.646		
12,700.00	9,060.00	8,999.40	8,999.40	82.48	134.63	90.00	-2,939.76	3,071.78	3,802.98	3,586.65	216.33	17.579		
12,800.00	9,060.00	8,999.40	8,999.40	84.36	134.63	90.00	-2,939.76	3,071.78	3,819.55	3,601.66	217.89	17.530		
12,900.00	9,060.00	8,999.40	8,999.40	86.24	134.63	90.00	-2,939.76	3,071.78	3,838.66	3,619.27	219.38	17.497		
13,000.00	9,060.00	8,999.40	8,999.40	88.14	134.63	90.00	-2,939.76	3,071.78	3,860.26	3,639.44	220.82	17.481		
13,100.00	9,060.00	8,999.40	8,999.40	90.04	134.63	90.00	-2,939.76	3,071.78	3,884.32	3,662.12	222.21	17.481 SF		
13,200.00	9,060.00	8,999.40	8,999.40	91.94	134.63	90.00	-2,939.76	3,071.78	3,910.79	3,687.27	223.53	17.496		
13,300.00	9,060.00	8,999.40	8,999.40	93.86	134.63	90.00	-2,939.76	3,071.78	3,939.62	3,714.84	224.78	17.526		
13,400.00	9,060.00	8,999.40	8,999.40	95.77	134.63	90.00	-2,939.76	3,071.78	3,970.76	3,744.78	225.98	17.571		
13,500.00	9,060.00	8,999.40	8,999.40	97.70	134.63	90.00	-2,939.76	3,071.78	4,004.16	3,777.04	227.12	17.630		
13,600.00	9,060.00	8,999.40	8,999.40	99.62	134.63	90.00	-2,939.76	3,071.78	4,039.75	3,811.56	228.19	17.703		
13,700.00	9,060.00	8,999.40	8,999.40	101.56	134.63	90.00	-2,939.76	3,071.78	4,077.49	3,848.28	229.21	17.790		
13,800.00	9,060.00	8,999.40	8,999.40	103.49	134.63	90.00	-2,939.76	3,071.78	4,117.31	3,887.15	230.16	17.889		
13,900.00	9,060.00	8,999.40	8,999.40	105.43	134.63	90.00	-2,939.76	3,071.78	4,159.16	3,928.10	231.06	18.000		
14,000.00	9,060.00	8,999.40	8,999.40	107.38	134.63	90.00	-2,939.76	3,071.78	4,202.97	3,971.07	231.90	18.124		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,999.40	8,999.40	109.33	134.63	90.00	-2,939.76	3,071.78	4,248.68	4,015.99	232.69	18.259		
14,200.00	9,060.00	8,999.40	8,999.40	111.28	134.63	90.00	-2,939.76	3,071.78	4,296.23	4,062.81	233.42	18.406		
14,300.00	9,060.00	8,999.40	8,999.40	113.23	134.63	90.00	-2,939.76	3,071.78	4,345.56	4,111.46	234.10	18.563		
14,400.00	9,060.00	8,999.40	8,999.40	115.19	134.63	90.00	-2,939.76	3,071.78	4,396.62	4,161.88	234.73	18.730		
14,500.00	9,060.00	8,999.40	8,999.40	117.15	134.63	90.00	-2,939.76	3,071.78	4,449.33	4,214.01	235.32	18.908		
14,600.00	9,060.00	8,999.40	8,999.40	119.11	134.63	90.00	-2,939.76	3,071.78	4,503.65	4,267.79	235.86	19.095		
14,700.00	9,060.00	8,999.40	8,999.40	121.08	134.63	90.00	-2,939.76	3,071.78	4,559.52	4,323.16	236.36	19.291		
14,800.00	9,060.00	8,999.40	8,999.40	123.05	134.63	90.00	-2,939.76	3,071.78	4,616.88	4,380.06	236.82	19.496		
14,900.00	9,060.00	8,999.40	8,999.40	125.02	134.63	90.00	-2,939.76	3,071.78	4,675.67	4,438.43	237.24	19.709		
15,000.00	9,060.00	8,999.40	8,999.40	126.99	134.63	90.00	-2,939.76	3,071.78	4,735.84	4,498.22	237.62	19.930		
15,100.00	9,060.00	8,999.40	8,999.40	128.97	134.63	90.00	-2,939.76	3,071.78	4,797.35	4,559.38	237.97	20.160		
15,200.00	9,060.00	8,999.40	8,999.40	130.95	134.63	90.00	-2,939.76	3,071.78	4,860.13	4,621.85	238.28	20.396		
15,300.00	9,060.00	8,999.40	8,999.40	132.93	134.63	90.00	-2,939.76	3,071.78	4,924.14	4,685.58	238.57	20.640		
15,400.00	9,060.00	8,999.40	8,999.40	134.91	134.63	90.00	-2,939.76	3,071.78	4,989.34	4,750.52	238.83	20.891		
15,500.00	9,060.00	8,999.40	8,999.40	136.89	134.63	90.00	-2,939.76	3,071.78	5,055.68	4,816.62	239.06	21.148		
15,600.00	9,060.00	8,999.40	8,999.40	138.88	134.63	90.00	-2,939.76	3,071.78	5,123.10	4,883.84	239.26	21.412		
15,700.00	9,060.00	8,999.40	8,999.40	140.86	134.63	90.00	-2,939.76	3,071.78	5,191.58	4,952.14	239.44	21.682		
15,800.00	9,060.00	8,999.40	8,999.40	142.85	134.63	90.00	-2,939.76	3,071.78	5,261.07	5,021.47	239.60	21.957		
15,900.00	9,060.00	8,999.40	8,999.40	144.84	134.63	90.00	-2,939.76	3,071.78	5,331.53	5,091.78	239.74	22.239		
16,000.00	9,060.00	8,999.40	8,999.40	146.83	134.63	90.00	-2,939.76	3,071.78	5,402.92	5,163.05	239.86	22.525		
16,100.00	9,060.00	8,999.40	8,999.40	148.83	134.63	90.00	-2,939.76	3,071.78	5,475.20	5,235.24	239.97	22.817		
16,200.00	9,060.00	8,999.40	8,999.40	150.82	134.63	90.00	-2,939.76	3,071.78	5,548.35	5,308.30	240.05	23.113		
16,300.00	9,060.00	8,999.40	8,999.40	152.82	134.63	90.00	-2,939.76	3,071.78	5,622.32	5,382.20	240.12	23.414		
16,400.00	9,060.00	8,999.40	8,999.40	154.81	134.63	90.00	-2,939.76	3,071.78	5,697.09	5,456.91	240.18	23.720		
16,500.00	9,060.00	8,999.40	8,999.40	156.81	134.63	90.00	-2,939.76	3,071.78	5,772.62	5,532.40	240.22	24.030		
16,600.00	9,060.00	8,999.40	8,999.40	158.81	134.63	90.00	-2,939.76	3,071.78	5,848.89	5,608.63	240.26	24.344		
16,700.00	9,060.00	8,999.40	8,999.40	160.81	134.63	90.00	-2,939.76	3,071.78	5,925.86	5,685.58	240.28	24.663		
16,800.00	9,060.00	8,999.40	8,999.40	162.81	134.63	90.00	-2,939.76	3,071.78	6,003.51	5,763.22	240.29	24.985		
16,900.00	9,060.00	8,999.40	8,999.40	164.82	134.63	90.00	-2,939.76	3,071.78	6,081.82	5,841.53	240.29	25.311		
17,000.00	9,060.00	8,999.40	8,999.40	166.82	134.63	90.00	-2,939.76	3,071.78	6,160.75	5,920.47	240.28	25.640		
17,100.00	9,060.00	8,999.40	8,999.40	168.82	134.63	90.00	-2,939.76	3,071.78	6,240.28	6,000.02	240.26	25.973		
17,200.00	9,060.00	8,999.40	8,999.40	170.83	134.63	90.00	-2,939.76	3,071.78	6,320.40	6,080.16	240.24	26.309		
17,300.00	9,060.00	8,999.40	8,999.40	172.84	134.63	90.00	-2,939.76	3,071.78	6,401.08	6,160.87	240.21	26.648		
17,400.00	9,060.00	8,999.40	8,999.40	174.84	134.63	90.00	-2,939.76	3,071.78	6,482.29	6,242.12	240.18	26.990		
17,500.00	9,060.00	8,999.40	8,999.40	176.85	134.63	90.00	-2,939.76	3,071.78	6,564.03	6,323.89	240.13	27.335		
17,600.00	9,060.00	8,999.40	8,999.40	178.86	134.63	90.00	-2,939.76	3,071.78	6,646.26	6,406.17	240.09	27.683		
17,700.00	9,060.00	8,999.40	8,999.40	180.87	134.63	90.00	-2,939.76	3,071.78	6,728.98	6,488.94	240.04	28.033		
17,800.00	9,060.00	8,999.40	8,999.40	182.88	134.63	90.00	-2,939.76	3,071.78	6,812.15	6,572.17	239.98	28.386		
17,900.00	9,060.00	8,999.40	8,999.40	184.89	134.63	90.00	-2,939.76	3,071.78	6,895.78	6,655.86	239.92	28.742		
18,000.00	9,060.00	8,999.40	8,999.40	186.90	134.63	90.00	-2,939.76	3,071.78	6,979.84	6,739.97	239.86	29.100		
18,100.00	9,060.00	8,999.40	8,999.40	188.92	134.63	90.00	-2,939.76	3,071.78	7,064.31	6,824.51	239.80	29.460		
18,200.00	9,060.00	8,999.40	8,999.40	190.93	134.63	90.00	-2,939.76	3,071.78	7,149.18	6,909.45	239.73	29.822		
18,300.00	9,060.00	8,999.40	8,999.40	192.94	134.63	90.00	-2,939.76	3,071.78	7,234.44	6,994.78	239.66	30.187		
18,400.00	9,060.00	8,999.40	8,999.40	194.96	134.63	90.00	-2,939.76	3,071.78	7,320.07	7,080.48	239.59	30.553		
18,500.00	9,060.00	8,999.40	8,999.40	196.97	134.63	90.00	-2,939.76	3,071.78	7,406.06	7,166.55	239.51	30.921		
18,600.00	9,060.00	8,999.40	8,999.40	198.99	134.63	90.00	-2,939.76	3,071.78	7,492.40	7,252.97	239.44	31.292		
18,700.00	9,060.00	8,999.40	8,999.40	201.00	134.63	90.00	-2,939.76	3,071.78	7,579.08	7,339.72	239.36	31.664		
18,800.00	9,060.00	8,999.40	8,999.40	203.02	134.63	90.00	-2,939.76	3,071.78	7,666.08	7,426.80	239.28	32.038		
18,900.00	9,060.00	8,999.40	8,999.40	205.04	134.63	90.00	-2,939.76	3,071.78	7,753.39	7,514.19	239.20	32.414		
19,000.00	9,060.00	8,999.40	8,999.40	207.06	134.63	90.00	-2,939.76	3,071.78	7,841.01	7,601.88	239.12	32.791		
19,100.00	9,060.00	8,999.40	8,999.40	209.07	134.63	90.00	-2,939.76	3,071.78	7,928.92	7,689.87	239.04	33.169		
19,200.00	9,060.00	8,999.40	8,999.40	211.09	134.63	90.00	-2,939.76	3,071.78	8,017.11	7,778.15	238.96	33.550		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,999.40	8,999.40	213.11	134.63	90.00	-2,939.76	3,071.78	8,105.58	7,866.70	238.88	33.931	
19,400.00	9,060.00	8,999.40	8,999.40	215.13	134.63	90.00	-2,939.76	3,071.78	8,194.31	7,955.51	238.80	34.315	
19,500.32	9,060.00	8,999.40	8,999.40	217.16	134.63	90.00	-2,939.76	3,071.78	8,283.58	8,044.86	238.72	34.700	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	150.00	62.65	705.94	1,364.95	1,537.07					
100.00	100.00	66.40	66.40	0.52	150.00	62.65	705.94	1,364.95	1,536.70	1,386.18	150.52	10.209		
200.00	200.00	166.40	166.40	0.70	150.02	62.65	705.94	1,364.95	1,536.70	1,385.98	150.72	10.196		
300.00	300.00	266.40	266.40	0.99	150.05	62.65	705.94	1,364.95	1,536.70	1,385.66	151.04	10.174		
400.00	400.00	366.40	366.40	1.31	150.10	62.65	705.94	1,364.95	1,536.70	1,385.30	151.40	10.150		
500.00	500.00	466.40	466.40	1.65	150.16	62.65	705.94	1,364.95	1,536.70	1,384.90	151.80	10.123		
600.00	600.00	566.40	566.40	1.99	150.23	62.65	705.94	1,364.95	1,536.70	1,384.48	152.22	10.095	CC, ES, SF	
700.00	700.00	563.00	562.89	2.34	150.23	62.65	705.94	1,364.95	1,540.18	1,387.96	152.23	10.118		
800.00	800.00	563.00	562.89	2.69	150.23	62.65	705.94	1,364.95	1,550.12	1,398.50	151.61	10.224		
900.00	900.00	563.00	562.89	3.04	150.23	62.65	705.94	1,364.95	1,566.39	1,415.98	150.41	10.414		
1,000.00	1,000.00	563.00	562.89	3.40	150.23	62.65	705.94	1,364.95	1,588.80	1,440.14	148.65	10.688		
1,100.00	1,100.00	563.00	562.89	3.75	150.23	62.65	705.94	1,364.95	1,617.09	1,470.67	146.42	11.044		
1,200.00	1,200.00	563.00	562.89	4.11	150.23	62.65	705.94	1,364.95	1,650.96	1,507.18	143.78	11.483		
1,300.00	1,300.00	563.00	562.89	4.46	150.23	62.65	705.94	1,364.95	1,690.08	1,549.27	140.81	12.002		
1,400.00	1,400.00	563.00	562.89	4.82	150.23	62.65	705.94	1,364.95	1,734.09	1,596.50	137.60	12.603		
1,500.00	1,500.00	563.00	562.89	5.18	150.23	62.65	705.94	1,364.95	1,782.63	1,648.43	134.20	13.283		
1,600.00	1,600.00	563.00	562.89	5.53	150.23	62.65	705.94	1,364.95	1,835.34	1,704.65	130.70	14.043		
1,700.00	1,700.00	563.00	562.89	5.89	150.23	62.65	705.94	1,364.95	1,891.87	1,764.74	127.13	14.881		
1,800.00	1,800.00	563.00	562.89	6.25	150.23	62.65	705.94	1,364.95	1,951.89	1,828.33	123.56	15.797		
1,900.00	1,900.00	563.00	562.89	6.61	150.23	62.65	705.94	1,364.95	2,015.09	1,895.07	120.02	16.790		
2,000.00	2,000.00	563.00	562.89	6.96	150.23	62.65	705.94	1,364.95	2,081.18	1,964.64	116.53	17.859		
2,100.00	2,100.00	563.00	562.89	7.32	150.23	62.65	705.94	1,364.95	2,149.88	2,036.75	113.13	19.003		
2,200.00	2,200.00	563.00	562.89	7.68	150.23	62.65	705.94	1,364.95	2,220.97	2,111.14	109.83	20.222		
2,300.00	2,300.00	563.00	562.89	8.04	150.23	62.65	705.94	1,364.95	2,294.21	2,187.57	106.64	21.514		
2,350.00	2,350.00	563.00	562.89	8.22	150.23	62.65	705.94	1,364.95	2,331.58	2,226.49	105.09	22.187		
2,400.00	2,400.00	563.00	562.89	8.39	150.23	78.13	705.94	1,364.95	2,369.38	2,265.82	103.56	22.879		
2,500.00	2,499.98	563.00	562.89	8.75	150.23	76.96	705.94	1,364.95	2,446.13	2,345.54	100.60	24.316		
2,600.00	2,599.92	563.00	562.89	9.11	150.23	75.74	705.94	1,364.95	2,524.27	2,426.53	97.74	25.825		
2,700.00	2,699.78	563.00	562.89	9.47	150.23	74.48	705.94	1,364.95	2,603.65	2,508.64	95.00	27.405		
2,800.00	2,799.54	563.00	562.89	9.82	150.23	73.18	705.94	1,364.95	2,684.13	2,591.75	92.38	29.056		
2,900.00	2,899.16	563.00	562.89	10.18	150.23	71.84	705.94	1,364.95	2,765.60	2,675.73	89.86	30.775		
3,000.00	2,998.61	563.00	562.89	10.54	150.23	70.46	705.94	1,364.95	2,847.94	2,760.48	87.46	32.563		
3,100.00	3,097.86	563.00	562.89	10.89	150.23	69.06	705.94	1,364.95	2,931.07	2,845.91	85.16	34.417		
3,200.00	3,196.89	563.00	562.89	11.25	150.23	67.63	705.94	1,364.95	3,014.89	2,931.92	82.97	36.336		
3,295.74	3,291.45	563.00	562.89	11.59	150.23	66.24	705.94	1,364.95	3,095.71	3,014.74	80.97	38.232		
3,300.00	3,295.65	563.00	562.89	11.61	150.23	66.24	705.94	1,364.95	3,099.32	3,018.43	80.88	38.318		
3,400.00	3,394.29	563.00	562.89	11.97	150.23	66.24	705.94	1,364.95	3,184.49	3,105.58	78.90	40.360		
3,500.00	3,492.94	563.00	562.89	12.33	150.23	66.24	705.94	1,364.95	3,270.49	3,193.47	77.02	42.463		
3,600.00	3,591.58	563.00	562.89	12.69	150.23	66.24	705.94	1,364.95	3,357.28	3,282.04	75.23	44.626		
3,700.00	3,690.22	563.00	562.89	13.05	150.23	66.24	705.94	1,364.95	3,444.78	3,371.24	73.53	46.846		
3,800.00	3,788.86	563.00	562.89	13.41	150.23	66.24	705.94	1,364.95	3,532.94	3,461.02	71.92	49.122		
3,900.00	3,887.50	563.00	562.89	13.77	150.23	66.24	705.94	1,364.95	3,621.72	3,551.32	70.39	51.450		
4,000.00	3,986.14	563.00	562.89	14.14	150.23	66.24	705.94	1,364.95	3,711.07	3,642.12	68.94	53.829		
4,100.00	4,084.78	563.00	562.89	14.50	150.23	66.24	705.94	1,364.95	3,800.94	3,733.38	67.56	56.256		
4,200.00	4,183.42	563.00	562.89	14.87	150.23	66.24	705.94	1,364.95	3,891.32	3,825.06	66.26	58.730		
4,300.00	4,282.06	563.00	562.89	15.24	150.23	66.24	705.94	1,364.95	3,982.15	3,917.13	65.02	61.247		
4,400.00	4,380.70	563.00	562.89	15.60	150.23	66.24	705.94	1,364.95	4,073.41	4,009.57	63.84	63.805		
4,500.00	4,479.34	563.00	562.89	15.97	150.23	66.24	705.94	1,364.95	4,165.08	4,102.35	62.73	66.401		
4,600.00	4,577.98	563.00	562.89	16.34	150.23	66.24	705.94	1,364.95	4,257.12	4,195.45	61.67	69.034		
4,700.00	4,676.62	563.00	562.89	16.71	150.23	66.24	705.94	1,364.95	4,349.51	4,288.85	60.66	71.699		
4,800.00	4,775.27	563.00	562.89	17.08	150.23	66.24	705.94	1,364.95	4,442.23	4,382.52	59.71	74.395		
4,900.00	4,873.91	563.00	562.89	17.45	150.23	66.24	705.94	1,364.95	4,535.26	4,476.45	58.81	77.119		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	563.00	562.89	17.82	150.23	66.24	705.94	1,364.95	4,628.58	4,570.63	57.95	79.867		
5,100.00	5,071.19	563.00	562.89	18.19	150.23	66.24	705.94	1,364.95	4,722.18	4,665.03	57.14	82.638		
5,200.00	5,169.83	563.00	562.89	18.56	150.23	66.24	705.94	1,364.95	4,816.03	4,759.65	56.38	85.428		
5,300.00	5,268.47	563.00	562.89	18.93	150.23	66.24	705.94	1,364.95	4,910.12	4,854.47	55.65	88.235		
5,400.00	5,367.11	563.00	562.89	19.31	150.23	66.24	705.94	1,364.95	5,004.45	4,949.49	54.96	91.056		
5,500.00	5,465.75	563.00	562.89	19.68	150.23	66.24	705.94	1,364.95	5,098.98	5,044.68	54.31	93.888		
5,600.00	5,564.39	563.00	562.89	20.05	150.23	66.24	705.94	1,364.95	5,193.73	5,140.04	53.69	96.729		
5,700.00	5,663.03	563.00	562.89	20.42	150.23	66.24	705.94	1,364.95	5,288.67	5,235.55	53.11	99.575		
5,800.00	5,761.67	563.00	562.89	20.80	150.23	66.24	705.94	1,364.95	5,383.79	5,331.22	52.56	102.424		
5,900.00	5,860.31	563.00	562.89	21.17	150.23	66.24	705.94	1,364.95	5,479.08	5,427.04	52.05	105.274		
6,000.00	5,958.96	563.00	562.89	21.54	150.23	66.24	705.94	1,364.95	5,574.54	5,522.99	51.56	108.122		
6,100.00	6,057.60	563.00	562.89	21.92	150.23	66.24	705.94	1,364.95	5,670.16	5,619.06	51.10	110.965		
6,200.00	6,156.24	563.00	562.89	22.29	150.23	66.24	705.94	1,364.95	5,765.92	5,715.26	50.67	113.802		
6,300.00	6,254.88	563.00	562.89	22.67	150.23	66.24	705.94	1,364.95	5,861.83	5,811.57	50.26	116.628		
6,400.00	6,353.52	563.00	562.89	23.04	150.23	66.24	705.94	1,364.95	5,957.87	5,907.99	49.88	119.443		
6,500.00	6,452.16	563.00	562.89	23.42	150.23	66.24	705.94	1,364.95	6,054.04	6,004.52	49.52	122.244		
6,600.00	6,550.80	563.00	562.89	23.79	150.23	66.24	705.94	1,364.95	6,150.33	6,101.14	49.19	125.028		
6,700.00	6,649.44	563.00	562.89	24.17	150.23	66.24	705.94	1,364.95	6,246.74	6,197.86	48.88	127.794		
6,800.00	6,748.08	563.00	562.89	24.54	150.23	66.24	705.94	1,364.95	6,343.26	6,294.67	48.59	130.540		
6,900.00	6,846.72	563.00	562.89	24.92	150.23	66.24	705.94	1,364.95	6,439.88	6,391.56	48.32	133.263		
7,000.00	6,945.36	563.00	562.89	25.29	150.23	66.24	705.94	1,364.95	6,536.61	6,488.53	48.08	135.962		
7,100.00	7,044.00	563.00	562.89	25.67	150.23	66.24	705.94	1,364.95	6,633.44	6,585.59	47.85	138.635		
7,200.00	7,142.65	563.00	562.89	26.04	150.23	66.24	705.94	1,364.95	6,730.35	6,682.71	47.64	141.280		
7,300.00	7,241.29	563.00	562.89	26.42	150.23	66.24	705.94	1,364.95	6,827.36	6,779.91	47.45	143.895		
7,400.00	7,339.93	563.00	562.89	26.79	150.23	66.24	705.94	1,364.95	6,924.45	6,877.18	47.27	146.480		
7,500.00	7,438.57	563.00	562.89	27.17	150.23	66.24	705.94	1,364.95	7,021.62	6,974.51	47.11	149.033		
7,571.77	7,509.37	563.00	562.89	27.44	150.23	66.24	705.94	1,364.95	7,091.41	7,044.40	47.01	150.844		
7,600.00	7,537.23	563.00	562.89	27.55	150.23	67.89	705.94	1,364.95	7,118.88	7,071.91	46.97	151.554		
7,700.00	7,636.18	563.00	562.89	27.92	150.23	74.10	705.94	1,364.95	7,216.37	7,169.54	46.83	154.086		
7,800.00	7,735.48	563.00	562.89	28.29	150.23	80.83	705.94	1,364.95	7,314.09	7,267.39	46.69	156.647		
7,900.00	7,835.05	563.00	562.89	28.65	150.23	87.92	705.94	1,364.95	7,411.95	7,365.40	46.55	159.240		
8,000.00	7,934.83	563.00	562.89	29.01	150.23	95.18	705.94	1,364.95	7,509.88	7,463.48	46.40	161.865		
8,100.00	8,034.74	563.00	562.89	29.36	150.23	102.37	705.94	1,364.95	7,607.82	7,561.58	46.24	164.523		
8,202.27	8,137.00	563.00	562.89	29.72	150.23	93.37	705.94	1,364.95	7,707.92	7,661.84	46.08	167.273		
8,300.00	8,234.73	563.00	562.89	30.06	150.23	93.37	705.94	1,364.95	7,803.56	7,757.63	45.93	169.902		
8,400.00	8,334.73	563.00	562.89	30.41	150.23	93.37	705.94	1,364.95	7,901.47	7,855.68	45.79	172.562		
8,500.00	8,434.73	563.00	562.89	30.75	150.23	93.37	705.94	1,364.95	7,999.43	7,953.77	45.66	175.192		
8,552.31	8,487.04	563.00	562.89	30.94	150.23	93.37	705.94	1,364.95	8,050.69	8,005.09	45.60	176.555		
8,600.00	8,534.68	563.00	562.89	31.10	150.23	2.64	705.94	1,364.95	8,096.99	8,051.49	45.51	177.932		
8,650.00	8,584.26	563.00	562.89	31.26	150.23	2.03	705.94	1,364.95	8,144.37	8,099.04	45.33	179.660		
8,700.00	8,633.10	563.00	562.89	31.43	150.23	1.66	705.94	1,364.95	8,190.23	8,145.15	45.08	181.665		
8,750.00	8,680.83	563.00	562.89	31.58	150.23	1.41	705.94	1,364.95	8,234.25	8,189.48	44.77	183.942		
8,800.00	8,727.09	563.00	562.89	31.74	150.23	1.23	705.94	1,364.95	8,276.12	8,231.74	44.38	186.488		
8,850.00	8,771.52	563.00	562.89	31.89	150.23	1.10	705.94	1,364.95	8,315.56	8,271.63	43.93	189.300		
8,900.00	8,813.78	563.00	562.89	32.04	150.23	1.00	705.94	1,364.95	8,352.30	8,308.88	43.42	192.372		
8,950.00	8,853.56	563.00	562.89	32.18	150.23	0.93	705.94	1,364.95	8,386.11	8,343.26	42.85	195.701		
9,000.00	8,890.55	563.00	562.89	32.32	150.23	0.87	705.94	1,364.95	8,416.76	8,374.52	42.24	199.281		
9,050.00	8,924.46	563.00	562.89	32.47	150.23	0.82	705.94	1,364.95	8,444.06	8,402.48	41.58	203.102		
9,100.00	8,955.05	563.00	562.89	32.63	150.23	0.78	705.94	1,364.95	8,467.82	8,426.95	40.88	207.155		
9,150.00	8,982.08	563.00	562.89	32.79	150.23	0.75	705.94	1,364.95	8,487.91	8,447.77	40.15	211.427		
9,200.00	9,005.34	563.00	562.89	32.97	150.23	0.73	705.94	1,364.95	8,504.19	8,464.81	39.39	215.903		
9,250.00	9,024.65	563.00	562.89	33.17	150.23	0.71	705.94	1,364.95	8,516.57	8,477.96	38.61	220.564		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	563.00	562.89	33.38	150.23	0.70	705.94	1,364.95	8,524.96	8,487.14	37.82	225.388		
9,350.00	9,050.89	563.00	562.89	33.62	150.23	0.70	705.94	1,364.95	8,529.31	8,492.28	37.03	230.350		
9,400.00	9,057.61	563.00	562.89	33.87	150.23	0.70	705.94	1,364.95	8,529.60	8,493.37	36.23	235.423		
9,452.31	9,060.00	563.00	562.89	34.15	150.23	0.70	705.94	1,364.95	8,525.55	8,490.15	35.40	240.814		
9,500.00	9,060.00	563.00	562.89	34.42	150.23	0.70	705.94	1,364.95	8,519.97	8,485.31	34.66	245.841		
9,600.00	9,060.00	563.00	562.89	35.09	150.23	0.70	705.94	1,364.95	8,509.12	8,476.00	33.12	256.919		
9,700.00	9,060.00	563.00	562.89	35.86	150.23	0.70	705.94	1,364.95	8,499.43	8,467.81	31.63	268.719		
9,800.00	9,060.00	563.00	562.89	36.72	150.23	0.70	705.94	1,364.95	8,490.92	8,460.73	30.19	281.268		
9,900.00	9,060.00	563.00	562.89	37.69	150.23	0.70	705.94	1,364.95	8,483.57	8,454.77	28.80	294.558		
10,000.00	9,060.00	563.00	562.89	38.73	150.23	0.70	705.94	1,364.95	8,477.39	8,449.91	27.48	308.518		
10,100.00	9,060.00	563.00	562.89	39.86	150.23	0.70	705.94	1,364.95	8,472.39	8,446.15	26.24	322.913		
10,140.22	9,060.00	563.00	562.89	40.33	150.23	0.70	705.94	1,364.95	8,470.71	8,444.94	25.77	328.711		
10,200.00	9,060.00	563.00	562.89	41.05	150.23	0.66	705.94	1,364.95	8,468.56	8,443.45	25.12	337.171		
10,300.00	9,060.00	563.00	562.89	42.31	150.23	0.60	705.94	1,364.95	8,465.88	8,441.69	24.19	350.009		
10,400.00	9,060.00	563.00	562.89	43.64	150.23	0.57	705.94	1,364.95	8,464.33	8,440.69	23.64	358.047		
10,484.55	9,060.00	563.00	562.89	44.80	150.23	0.56	705.94	1,364.95	8,463.92	8,440.19	23.74	356.558		
10,507.23	9,060.00	563.00	562.89	45.11	150.23	0.57	705.94	1,364.95	8,463.95	8,440.08	23.88	354.491		
10,600.00	9,060.00	563.00	562.89	46.43	150.23	0.55	705.94	1,364.95	8,464.72	8,439.78	24.94	339.393		
10,700.00	9,060.00	563.00	562.89	47.91	150.23	0.51	705.94	1,364.95	8,466.71	8,440.02	26.69	317.254		
10,800.00	9,060.00	563.00	562.89	49.42	150.23	0.45	705.94	1,364.95	8,469.92	8,441.19	28.73	294.807		
10,900.00	9,060.00	563.00	562.89	50.97	150.23	0.36	705.94	1,364.95	8,474.33	8,443.42	30.91	274.134		
11,000.00	9,060.00	563.00	562.89	52.55	150.23	0.25	705.94	1,364.95	8,479.94	8,446.77	33.17	255.659		
11,100.00	9,060.00	563.00	562.89	54.14	150.23	0.11	705.94	1,364.95	8,486.74	8,451.27	35.47	239.288		
11,207.23	9,060.00	563.00	562.89	55.87	150.23	-0.06	705.94	1,364.95	8,495.34	8,457.38	37.96	223.813		
11,300.00	9,060.00	563.00	562.89	57.39	150.23	0.11	705.94	1,364.95	8,503.87	8,463.74	40.13	211.918		
11,400.00	9,060.00	563.00	562.89	59.06	150.23	0.32	705.94	1,364.95	8,514.17	8,471.69	42.48	200.423		
11,506.63	9,060.00	563.00	562.89	60.88	150.23	0.56	705.94	1,364.95	8,526.42	8,481.42	45.00	189.483		
11,600.00	9,060.00	563.00	562.89	62.49	150.23	0.56	705.94	1,364.95	8,538.20	8,491.00	47.21	180.870		
11,700.00	9,060.00	563.00	562.89	64.24	150.23	0.56	705.94	1,364.95	8,551.94	8,502.37	49.57	172.511		
11,800.00	9,060.00	563.00	562.89	66.01	150.23	0.56	705.94	1,364.95	8,566.82	8,514.88	51.94	164.938		
11,900.00	9,060.00	563.00	562.89	67.79	150.23	0.56	705.94	1,364.95	8,582.84	8,528.54	54.30	158.055		
12,000.00	9,060.00	563.00	562.89	69.58	150.23	0.56	705.94	1,364.95	8,600.00	8,543.34	56.66	151.778		
12,100.00	9,060.00	563.00	562.89	71.39	150.23	0.56	705.94	1,364.95	8,618.28	8,559.27	59.01	146.040		
12,200.00	9,060.00	563.00	562.89	73.21	150.23	0.56	705.94	1,364.95	8,637.68	8,576.32	61.36	140.778		
12,300.00	9,060.00	563.00	562.89	75.05	150.23	0.56	705.94	1,364.95	8,658.19	8,594.50	63.69	135.943		
12,400.00	9,060.00	563.00	562.89	76.89	150.23	0.56	705.94	1,364.95	8,679.81	8,613.79	66.01	131.488		
12,500.00	9,060.00	563.00	562.89	78.74	150.23	0.56	705.94	1,364.95	8,702.52	8,634.20	68.32	127.376		
12,600.00	9,060.00	563.00	562.89	80.61	150.23	0.56	705.94	1,364.95	8,726.31	8,655.70	70.62	123.573		
12,700.00	9,060.00	563.00	562.89	82.48	150.23	0.56	705.94	1,364.95	8,751.19	8,678.29	72.90	120.049		
12,800.00	9,060.00	563.00	562.89	84.36	150.23	0.56	705.94	1,364.95	8,777.13	8,701.97	75.16	116.778		
12,900.00	9,060.00	563.00	562.89	86.24	150.23	0.56	705.94	1,364.95	8,804.14	8,726.73	77.41	113.737		
13,000.00	9,060.00	563.00	562.89	88.14	150.23	0.56	705.94	1,364.95	8,832.19	8,752.55	79.64	110.905		
13,100.00	9,060.00	563.00	562.89	90.04	150.23	0.56	705.94	1,364.95	8,861.29	8,779.44	81.85	108.266		
13,200.00	9,060.00	563.00	562.89	91.94	150.23	0.56	705.94	1,364.95	8,891.41	8,807.37	84.04	105.802		
13,300.00	9,060.00	563.00	562.89	93.86	150.23	0.56	705.94	1,364.95	8,922.55	8,836.34	86.21	103.499		
13,400.00	9,060.00	563.00	562.89	95.77	150.23	0.56	705.94	1,364.95	8,954.70	8,866.34	88.36	101.345		
13,500.00	9,060.00	563.00	562.89	97.70	150.23	0.56	705.94	1,364.95	8,987.85	8,897.36	90.49	99.328		
13,600.00	9,060.00	563.00	562.89	99.62	150.23	0.56	705.94	1,364.95	9,021.98	8,929.39	92.59	97.438		
13,700.00	9,060.00	563.00	562.89	101.56	150.23	0.56	705.94	1,364.95	9,057.09	8,962.42	94.68	95.664		
13,800.00	9,060.00	563.00	562.89	103.49	150.23	0.56	705.94	1,364.95	9,093.17	8,996.43	96.74	94.000		
13,900.00	9,060.00	563.00	562.89	105.43	150.23	0.56	705.94	1,364.95	9,130.20	9,031.42	98.77	92.436		
14,000.00	9,060.00	563.00	562.89	107.38	150.23	0.56	705.94	1,364.95	9,168.17	9,067.38	100.79	90.967		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY												Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	563.00	562.89	109.33	150.23	0.56	705.94	1,364.95	9,207.06	9,104.29	102.78	89.585	
14,200.00	9,060.00	563.00	562.89	111.28	150.23	0.56	705.94	1,364.95	9,246.88	9,142.14	104.74	88.284	
14,300.00	9,060.00	563.00	562.89	113.23	150.23	0.56	705.94	1,364.95	9,287.60	9,180.92	106.68	87.061	
14,400.00	9,060.00	563.00	562.89	115.19	150.23	0.56	705.94	1,364.95	9,329.22	9,220.62	108.59	85.908	
14,500.00	9,060.00	563.00	562.89	117.15	150.23	0.56	705.94	1,364.95	9,371.72	9,261.23	110.49	84.823	
14,600.00	9,060.00	563.00	562.89	119.11	150.23	0.56	705.94	1,364.95	9,415.09	9,302.74	112.35	83.801	
14,700.00	9,060.00	563.00	562.89	121.08	150.23	0.56	705.94	1,364.95	9,459.31	9,345.12	114.19	82.838	
14,800.00	9,060.00	563.00	562.89	123.05	150.23	0.56	705.94	1,364.95	9,504.39	9,388.38	116.00	81.931	
14,900.00	9,060.00	563.00	562.89	125.02	150.23	0.56	705.94	1,364.95	9,550.30	9,432.50	117.79	81.076	
15,000.00	9,060.00	563.00	562.89	126.99	150.23	0.56	705.94	1,364.95	9,597.03	9,477.47	119.56	80.271	
15,100.00	9,060.00	563.00	562.89	128.97	150.23	0.56	705.94	1,364.95	9,644.57	9,523.27	121.30	79.512	
15,200.00	9,060.00	563.00	562.89	130.95	150.23	0.56	705.94	1,364.95	9,692.91	9,569.90	123.01	78.797	
15,300.00	9,060.00	563.00	562.89	132.93	150.23	0.56	705.94	1,364.95	9,742.03	9,617.33	124.70	78.125	
15,400.00	9,060.00	563.00	562.89	134.91	150.23	0.56	705.94	1,364.95	9,791.93	9,665.57	126.36	77.491	
15,500.00	9,060.00	563.00	562.89	136.89	150.23	0.56	705.94	1,364.95	9,842.60	9,714.60	128.00	76.895	
15,600.00	9,060.00	563.00	562.89	138.88	150.23	0.56	705.94	1,364.95	9,894.01	9,764.40	129.61	76.335	
15,700.00	9,060.00	563.00	562.89	140.86	150.23	0.56	705.94	1,364.95	9,946.17	9,814.97	131.20	75.808	
15,800.00	9,060.00	563.00	562.89	142.85	150.23	0.56	705.94	1,364.95	9,999.05	9,866.29	132.77	75.314	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

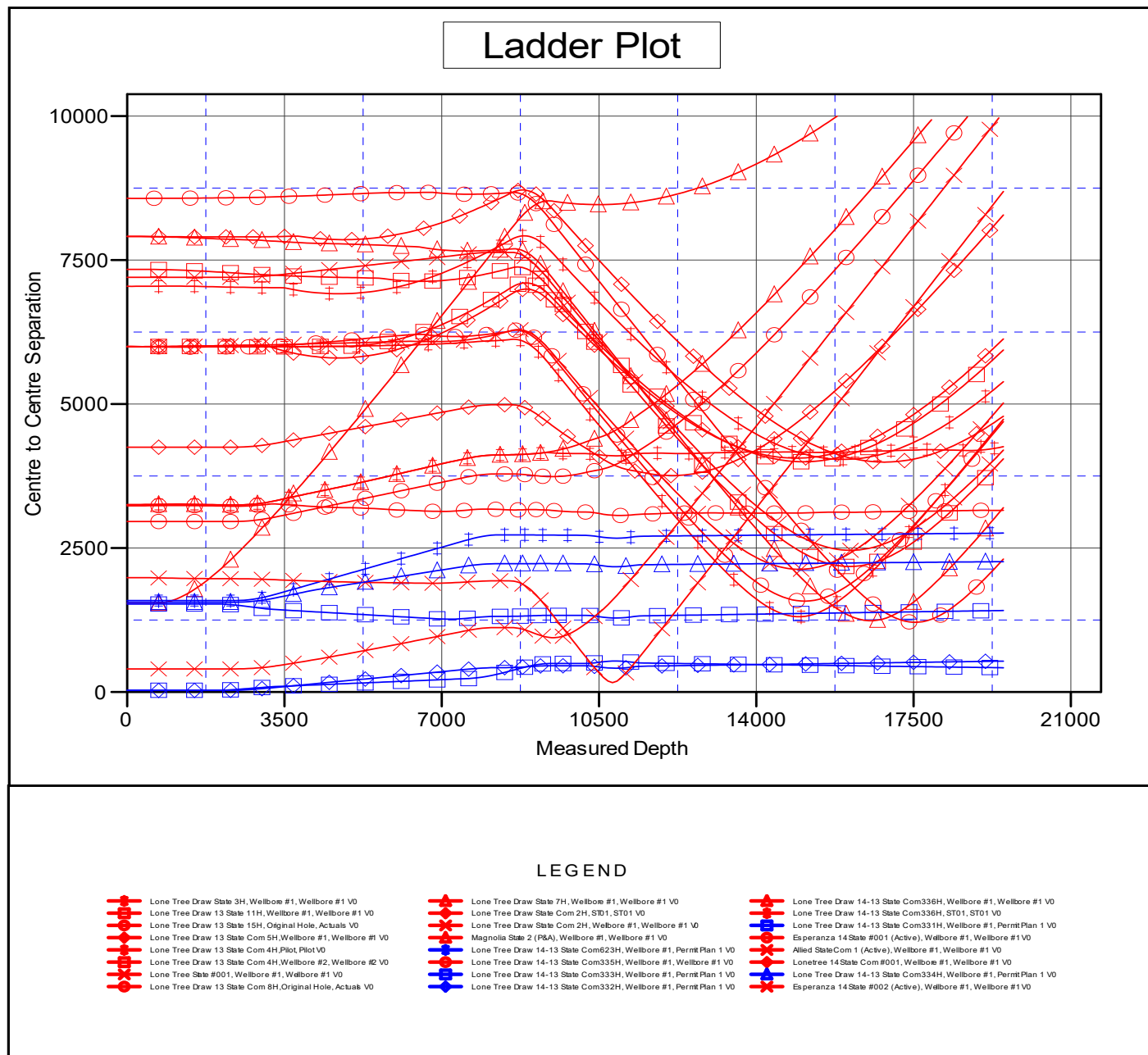
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

Offset Depths are relative to Offset Datum

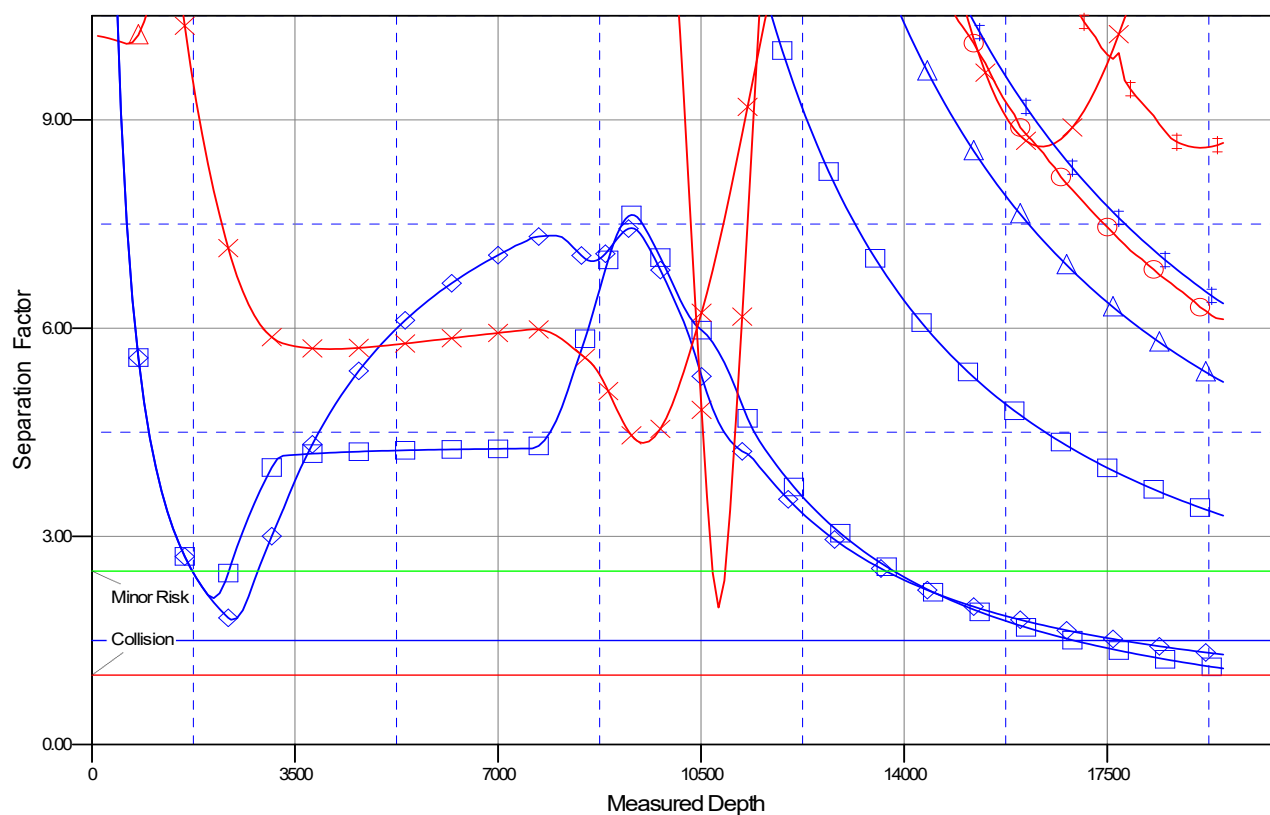
Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

	Lone Tree Draw State 3H, Wellbore #1, Wellbore #1 V0		Lone Tree Draw State 7H, Wellbore #1, Wellbore #1 V0		Lone Tree Draw 14-13 State Com 336H, Wellbore #1, Wellbore #1 V0
	Lone Tree Draw 13 State 11H, Wellbore #1, Wellbore #1 V0		Lone Tree Draw State Com 2H, ST01, ST01 V0		Lone Tree Draw 14-13 State Com 336H, ST01, ST01 V0
	Lone Tree Draw 13 State 15H, Original Hole, Actual V0		Lone Tree Draw State Com 2H, Wellbore #1, Wellbore #1 V0		Lone Tree Draw 14-13 State Com 331H, Wellbore #1, Permit Plan 1 V0
	Lone Tree Draw 13 State Com 5H, Wellbore #1, Wellbore #1 V0		Magnolia State 2 (P&A), Wellbore #1, Wellbore #1 V0		Esperanza 14 State #001 (Active), Wellbore #1, Wellbore #1 V0
	Lone Tree Draw 13 State Com 4H, Plot, Plot V0		Lone Tree Draw 14-13 State Com 623H, Wellbore #1, Permit Plan 1 V0		Allied State Com 1 (Active), Wellbore #1, Wellbore #1 V0
	Lone Tree Draw 13 State Com 4H, Wellbore #2, Wellbore #2 V0		Lone Tree Draw 14-13 State Com 335H, Wellbore #1, Wellbore #1 V0		Lone Tree 14 State Com #001, Wellbore #1, Wellbore #1 V0
	Lone Tree State #001, Wellbore #1, Wellbore #1 V0		Lone Tree Draw 14-13 State Com 333H, Wellbore #1, Permit Plan 1 V0		Lone Tree Draw 14-13 State Com 334H, Wellbore #1, Permit Plan 1 V0
	Lone Tree Draw 13 State Com 8H, Original Hole, Actual V0		Lone Tree Draw 14-13 State Com 332H, Wellbore #1, Permit Plan 1 V0		Esperanza 14 State #002 (Active), Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 14-T21S-R27E

Lone Tree Draw 14-13 State Com 621H

Wellbore #1

Permit Plan 1

Anticollision Report

09 October, 2019

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	10/9/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	10,202.00	Permit Plan 1 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1	

Summary							
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning	
Offset Well - Wellbore - Design	Depth (ft)	Depth (ft)	Between Centres (ft)	Between Ellipses (ft)			
Sec 13-T21S-R27E							
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,078.39	7,144.21	2,180.93	2,111.00	31.187	CC	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	16,100.00	7,144.60	2,181.03	2,110.90	31.100	ES	
Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #	18,800.00	18,800.00	3,484.32	3,277.00	16.807	SF	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,076.58	7,846.67	1,578.35	1,514.57	24.745	CC	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,100.00	7,846.77	1,578.53	1,514.54	24.668	ES	
Lone Tree Draw 13 State 15H - Original Hole - Actuals	15,400.00	7,848.11	1,611.15	1,544.67	24.237	SF	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	14,947.33	7,876.00	1,308.17	1,208.20	13.086	CC, ES	
Lone Tree Draw 13 State Com 4H - Pilot - Pilot	15,100.00	7,876.00	1,317.04	1,215.39	12.956	SF	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	14,700.00	14,700.00	4,014.52	3,917.67	41.451	ES	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	15,049.69	5,518.72	3,999.58	3,939.99	67.123	CC	
Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbo	16,200.00	16,200.00	4,156.76	4,017.05	29.754	SF	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,500.00	16,500.00	4,007.79	3,885.35	32.731	ES	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	16,851.53	5,617.15	3,992.48	3,918.98	54.318	CC	
Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbo	19,300.00	19,300.00	4,682.49	4,499.03	25.524	SF	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,535.31	8,227.17	1,210.78	1,133.15	15.595	CC, ES	
Lone Tree Draw 13 State Com 8H - Original Hole - Actua	17,800.00	8,230.79	1,239.37	1,158.34	15.294	SF	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	15,934.02	5,613.24	4,040.53	3,973.72	60.480	CC	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	16,000.00	5,612.84	4,041.06	3,973.71	59.998	ES	
Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1	17,400.00	5,603.40	4,298.24	4,220.35	55.178	SF	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,548.74	8,502.69	1,238.31	1,161.67	16.157	CC, ES	
Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1	16,700.00	8,501.71	1,247.52	1,169.35	15.959	SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,700.00	14,700.00	4,065.55	3,965.43	40.607	ES, SF	
Lone Tree Draw State Com 2H - ST01 - ST01	14,902.86	5,289.29	4,061.93	4,004.03	70.147	CC	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	14,956.60	6,978.42	2,130.71	2,053.33	27.538	CC, ES	
Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore	15,400.00	6,978.42	2,176.35	2,094.83	26.695	SF	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,096.85	8,967.40	2,461.55	2,178.65	8.701	CC	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,100.00	8,967.40	2,461.55	2,178.59	8.699	ES	
Lone Tree State #001 - Wellbore #1 - Wellbore #1	16,400.00	8,967.40	2,480.14	2,192.28	8.616	SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 14-T21S-R27E						
Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1	10,802.18	9,033.89	162.61	80.28	1.975	Minor Risk, CC, ES, SF
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,350.00	2,328.40	2,961.62	2,918.68	68.971	CC
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	2,500.00	2,478.38	2,963.57	2,917.84	64.817	ES
Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbo	10,700.00	9,038.40	3,898.38	3,716.42	21.424	SF
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,350.00	2,325.40	401.35	345.23	7.152	CC
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	2,600.00	2,575.32	404.62	342.66	6.530	ES
Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbo	9,500.00	9,035.40	944.55	727.25	4.347	Alert, SF
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	2,000.00	2,000.70	30.02	16.09	2.155	Minor Risk, CC, ES
Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - P	19,500.32	19,325.89	422.06	37.23	1.097	Major Risk, SF
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,350.00	2,349.40	29.99	13.56	1.826	Minor Risk, CC
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	2,400.00	2,400.60	30.20	13.41	1.799	Minor Risk, ES
Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - P	19,500.32	19,285.26	537.29	123.25	1.298	Major Risk, SF
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	7,162.27	7,392.62	1,265.14	1,212.34	23.958	CC
Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - P	19,500.32	19,312.03	1,415.97	986.74	3.299	Alert, ES, SF
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,350.00	2,338.90	1,558.66	1,542.27	95.093	CC
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	2,400.00	2,388.90	1,558.87	1,542.12	93.075	ES
Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - P	19,500.32	19,294.07	2,264.39	1,831.03	5.225	SF
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	10,978.08	10,835.72	3,065.19	2,946.70	25.868	CC
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,400.00	19,158.00	3,154.13	2,640.49	6.141	ES
Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - W	19,500.32	19,158.00	3,156.57	2,641.39	6.127	SF
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - ST01 - ST01	19,100.00	19,172.00	4,208.36	3,718.97	8.599	SF
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,418.64	2,459.72	3,249.17	3,232.89	199.587	CC
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	2,500.00	2,542.73	3,249.69	3,232.82	192.699	ES
Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - W	11,600.00	8,813.68	4,938.33	4,853.24	58.034	SF
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,350.00	2,338.30	1,588.67	1,572.28	96.937	CC
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	2,400.00	2,388.30	1,588.88	1,572.13	94.879	ES
Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - P	19,500.32	19,456.84	2,760.09	2,325.81	6.355	SF
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,118.35	8,999.40	3,758.23	3,551.88	18.212	CC
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	12,200.00	8,999.40	3,759.12	3,551.28	18.087	ES
Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1	13,100.00	8,999.40	3,884.32	3,662.12	17.481	SF
Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1	600.00	566.40	1,536.70	1,384.48	10.095	CC, ES, SF

Offset Design												Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1		Offset Site Error:		5.00 ft											
Survey Program:												111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:		0.50 ft	
Reference				Offset		Semi Major Axis			Distance							Warning											
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor															
	0.00	0.00	0.00	0.00	0.50	5.02	77.58	1,577.86	7,166.10	7,338.08																	
	100.00	100.00	20.86	20.86	0.52	5.03	77.58	1,577.86	7,166.12	7,337.78	7,332.24	5.54	1,323.845														
	200.00	200.00	87.28	87.28	0.70	5.03	77.58	1,577.86	7,166.37	7,338.15	7,332.43	5.73	1,280.996														
	300.00	300.00	300.00	198.29	0.99	5.09	77.58	1,577.85	7,166.94	7,338.65	7,332.57	6.08	1,207.491														
	400.00	400.00	267.96	267.96	1.31	5.07	77.59	1,577.60	7,167.35	7,339.20	7,332.81	6.38	1,149.847														
	500.00	500.00	544.17	544.09	1.65	5.30	77.63	1,571.87	7,168.17	7,339.35	7,332.41	6.94	1,056.814														
	600.00	600.00	635.07	634.96	1.99	5.41	77.65	1,569.72	7,167.19	7,337.81	7,330.41	7.40	991.654														
	700.00	700.00	737.48	737.33	2.34	5.56	77.66	1,567.30	7,166.34	7,336.49	7,328.59	7.89	929.614														
	800.00	800.00	843.87	843.69	2.69	5.73	77.68	1,564.85	7,165.19	7,334.94	7,326.53	8.41	871.888														
	900.00	900.00	950.34	950.13	3.04	5.92	77.70	1,562.57	7,164.00	7,333.39	7,324.43	8.95	819.030														
	1,000.00	1,000.00	1,056.44	1,056.20	3.40	6.12	77.71	1,560.48	7,162.65	7,331.72	7,322.21	9.51	770.788														

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,100.00	1,100.00	1,229.98	1,229.68	3.75	6.49	77.73	1,556.68	7,159.52	7,329.48	7,319.25	10.23	716.304		
1,200.00	1,200.00	1,396.95	1,396.54	4.11	6.89	77.75	1,553.19	7,154.83	7,326.27	7,315.30	10.97	667.835		
1,300.00	1,300.00	1,509.37	1,508.87	4.46	7.17	77.76	1,550.74	7,151.04	7,322.51	7,310.91	11.60	631.262		
1,400.00	1,400.00	1,615.58	1,614.98	4.82	7.45	77.78	1,548.17	7,147.44	7,318.68	7,306.46	12.23	598.642		
1,500.00	1,500.00	1,696.88	1,696.22	5.18	7.67	77.79	1,546.36	7,144.70	7,314.92	7,302.13	12.79	571.703		
1,600.00	1,600.00	1,787.61	1,786.88	5.53	7.92	77.80	1,544.44	7,141.84	7,311.39	7,297.99	13.39	545.852		
1,700.00	1,700.00	1,873.17	1,872.38	5.89	8.16	77.81	1,542.51	7,139.26	7,307.97	7,293.99	13.99	522.532		
1,800.00	1,800.00	2,046.34	2,045.39	6.25	8.66	77.84	1,537.69	7,133.65	7,304.25	7,289.42	14.83	492.610		
1,900.00	1,900.00	2,179.39	2,178.25	6.61	9.07	77.87	1,532.31	7,128.71	7,299.78	7,284.21	15.57	468.768		
2,000.00	2,000.00	2,280.94	2,279.63	6.96	9.39	77.89	1,528.35	7,124.59	7,294.99	7,278.76	16.23	449.425		
2,100.00	2,100.00	2,383.19	2,381.72	7.32	9.71	77.92	1,524.40	7,120.44	7,290.21	7,273.31	16.90	431.433		
2,200.00	2,200.00	2,503.48	2,501.81	7.68	10.10	77.94	1,520.11	7,115.17	7,285.16	7,267.54	17.62	413.455		
2,300.00	2,300.00	2,581.66	2,579.87	8.04	10.35	77.96	1,517.21	7,111.84	7,280.22	7,262.00	18.22	399.561		
2,350.00	2,350.00	2,617.61	2,615.76	8.22	10.47	77.97	1,515.77	7,110.42	7,277.88	7,259.36	18.51	393.132		
2,400.00	2,400.00	2,653.55	2,651.65	8.39	10.59	94.04	1,514.28	7,109.09	7,275.64	7,256.84	18.80	386.906		
2,500.00	2,499.98	2,802.17	2,800.03	8.75	11.08	94.14	1,508.24	7,103.21	7,271.05	7,251.43	19.63	370.482		
2,600.00	2,599.92	2,906.94	2,904.62	9.11	11.43	94.24	1,504.36	7,098.49	7,266.13	7,245.81	20.31	357.693		
2,700.00	2,699.78	2,987.86	2,985.41	9.47	11.70	94.34	1,501.43	7,094.94	7,261.49	7,240.56	20.93	346.944		
2,800.00	2,799.54	3,074.77	3,072.18	9.82	12.00	94.45	1,498.04	7,091.46	7,257.28	7,235.71	21.57	336.513		
2,900.00	2,899.16	3,191.60	3,188.84	10.18	12.39	94.59	1,493.95	7,086.56	7,253.12	7,230.83	22.30	325.294		
3,000.00	2,998.61	3,287.64	3,284.74	10.54	12.72	94.73	1,490.83	7,082.33	7,248.99	7,226.02	22.96	315.667		
3,100.00	3,097.86	3,392.84	3,389.78	10.89	13.08	94.89	1,487.31	7,077.82	7,245.11	7,221.44	23.66	306.193		
3,200.00	3,196.89	3,495.46	3,492.24	11.25	13.43	95.06	1,484.12	7,073.20	7,241.24	7,216.89	24.35	297.346		
3,295.74	3,291.45	3,589.26	3,585.91	11.59	13.76	95.23	1,481.38	7,068.94	7,237.73	7,212.73	25.00	289.486		
3,300.00	3,295.65	3,593.45	3,590.09	11.61	13.77	95.23	1,481.25	7,068.75	7,237.58	7,212.55	25.03	289.145		
3,400.00	3,394.29	3,691.98	3,688.48	11.97	14.11	95.37	1,478.53	7,064.26	7,234.04	7,208.32	25.71	281.342		
3,500.00	3,492.94	3,779.79	3,776.18	12.33	14.42	95.50	1,476.32	7,060.26	7,230.60	7,204.23	26.36	274.281		
3,600.00	3,591.58	3,879.23	3,875.48	12.69	14.76	95.64	1,473.99	7,055.79	7,227.29	7,200.24	27.05	267.184		
3,700.00	3,690.22	3,971.12	3,967.26	13.05	15.08	95.77	1,472.17	7,051.61	7,224.04	7,196.32	27.72	260.654		
3,800.00	3,788.86	4,059.29	4,055.33	13.41	15.38	95.89	1,470.26	7,047.73	7,220.95	7,192.58	28.37	254.521		
3,900.00	3,887.50	4,152.15	4,148.08	13.77	15.70	96.02	1,468.41	7,043.74	7,218.02	7,188.98	29.04	248.535		
4,000.00	3,986.14	4,239.09	4,234.93	14.14	15.99	96.13	1,467.75	7,039.89	7,215.23	7,185.54	29.69	242.988		
4,100.00	4,084.78	4,312.26	4,308.03	14.50	16.24	96.22	1,468.13	7,036.65	7,212.71	7,182.41	30.30	238.033		
4,200.00	4,183.42	4,387.80	4,383.50	14.87	16.48	96.30	1,469.34	7,033.51	7,210.64	7,179.72	30.92	233.228		
4,300.00	4,282.06	4,300.00	4,537.73	15.24	16.20	96.47	1,472.32	7,026.45	7,208.23	7,177.24	30.99	232.591		
4,400.00	4,380.70	4,617.85	4,613.24	15.60	17.24	96.55	1,473.89	7,022.64	7,205.52	7,173.11	32.40	222.358		
4,500.00	4,479.34	4,670.64	4,665.98	15.97	17.41	96.61	1,474.47	7,020.50	7,203.53	7,170.58	32.95	218.612		
4,600.00	4,577.98	4,733.98	4,729.28	16.34	17.63	96.69	1,474.61	7,018.35	7,202.12	7,168.59	33.53	214.783		
4,700.00	4,676.62	4,857.25	4,852.49	16.71	18.04	96.86	1,473.55	7,014.49	7,200.80	7,166.49	34.31	209.866		
4,800.00	4,775.27	4,934.46	4,929.66	17.08	18.31	96.96	1,472.82	7,012.10	7,199.55	7,164.61	34.94	206.049		
4,900.00	4,873.91	5,047.59	5,042.73	17.45	18.69	97.11	1,471.23	7,008.74	7,198.39	7,162.70	35.69	201.687		
5,000.00	4,972.55	5,151.53	5,146.61	17.82	19.05	97.25	1,469.97	7,005.42	7,197.08	7,160.67	36.41	197.661		
5,100.00	5,071.19	5,276.24	5,271.23	18.19	19.47	97.41	1,470.31	7,001.04	7,195.76	7,158.57	37.20	193.445		
5,200.00	5,169.83	5,428.22	5,423.05	18.56	19.99	97.58	1,472.22	6,994.19	7,193.53	7,155.46	38.07	188.941		
5,300.00	5,268.47	5,484.17	5,478.94	18.93	20.18	97.65	1,472.58	6,991.77	7,191.50	7,152.87	38.64	186.133		
5,400.00	5,367.11	5,576.08	5,570.79	19.31	20.49	97.76	1,472.88	6,988.24	7,189.93	7,150.61	39.32	182.867		
5,500.00	5,465.75	5,668.21	5,662.84	19.68	20.81	97.87	1,473.68	6,984.61	7,188.38	7,148.38	40.00	179.707		
5,600.00	5,564.39	5,759.50	5,754.05	20.05	21.11	97.97	1,475.26	6,981.02	7,186.99	7,146.31	40.68	176.666		
5,700.00	5,663.03	5,850.00	5,845.53	20.42	22.73	99.76	1,374.82	6,922.56	7,178.73	7,136.31	42.42	169.212		
5,800.00	5,761.67	6,626.00	6,588.32	20.80	22.75	99.93	1,356.23	6,921.70	7,168.43	7,125.57	42.86	167.249		
5,900.00	5,860.31	6,626.00	6,588.32	21.17	22.75	99.93	1,356.23	6,921.70	7,159.32	7,116.04	43.28	165.416		
6,000.00	5,958.96	6,640.99	6,599.90	21.54	22.76	100.02	1,346.71	6,921.59	7,151.49	7,107.79	43.70	163.632		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,100.00	6,057.60	6,658.00	6,612.69	21.92	22.77	100.13	1,335.50	6,921.75	7,145.00	7,100.87	44.13	161.922		
6,200.00	6,156.24	6,658.00	6,612.69	22.29	22.77	100.13	1,335.50	6,921.75	7,139.77	7,095.24	44.53	160.337		
6,300.00	6,254.88	6,677.81	6,627.07	22.67	22.79	100.26	1,321.88	6,922.26	7,135.83	7,090.89	44.95	158.760		
6,400.00	6,353.52	6,689.00	6,634.91	23.04	22.80	100.33	1,313.91	6,922.67	7,133.18	7,087.83	45.35	157.288		
6,500.00	6,452.16	6,710.03	6,649.20	23.42	22.81	100.47	1,298.52	6,923.62	7,131.79	7,086.03	45.76	155.837		
6,559.26	6,510.61	6,721.00	6,656.44	23.64	22.82	100.54	1,290.30	6,924.20	7,131.57	7,085.57	46.01	155.017		
6,600.00	6,550.80	6,721.00	6,656.44	23.79	22.82	100.54	1,290.30	6,924.20	7,131.69	7,085.53	46.16	154.502		
6,700.00	6,649.44	6,740.07	6,668.69	24.17	22.84	100.68	1,275.73	6,925.34	7,132.87	7,086.31	46.56	153.186		
6,800.00	6,748.08	6,766.15	6,684.75	24.54	22.86	100.86	1,255.26	6,927.13	7,135.36	7,088.38	46.98	151.889		
6,900.00	6,846.72	6,799.33	6,703.97	24.92	22.90	101.10	1,228.32	6,929.48	7,138.97	7,091.57	47.41	150.588		
7,000.00	6,945.36	6,816.00	6,713.08	25.29	22.92	101.22	1,214.42	6,930.74	7,143.88	7,096.08	47.80	149.456		
7,100.00	7,044.00	6,827.76	6,719.29	25.67	22.93	101.31	1,204.47	6,931.68	7,150.11	7,101.93	48.18	148.415		
7,200.00	7,142.65	6,847.00	6,729.03	26.04	22.96	101.45	1,187.96	6,933.32	7,157.68	7,109.11	48.57	147.379		
7,300.00	7,241.29	6,847.00	6,729.03	26.42	22.96	101.45	1,187.96	6,933.32	7,166.56	7,117.66	48.90	146.557		
7,400.00	7,339.93	6,859.95	6,735.31	26.79	22.97	101.55	1,176.69	6,934.48	7,176.78	7,127.51	49.26	145.685		
7,500.00	7,438.57	6,878.00	6,743.75	27.17	23.00	101.69	1,160.83	6,936.17	7,188.34	7,138.71	49.63	144.829		
7,571.77	7,509.37	6,878.00	6,743.75	27.44	23.00	101.69	1,160.83	6,936.17	7,197.44	7,147.58	49.86	144.362		
7,600.00	7,537.23	6,880.81	6,745.02	27.55	23.01	101.76	1,158.35	6,936.44	7,201.19	7,151.23	49.95	144.160		
7,700.00	7,636.18	6,904.17	6,755.34	27.92	23.05	102.15	1,137.50	6,938.67	7,214.94	7,164.61	50.33	143.356		
7,800.00	7,735.48	6,910.00	6,757.82	28.29	23.06	102.41	1,132.26	6,939.22	7,229.43	7,178.79	50.64	142.775		
7,900.00	7,835.05	6,926.62	6,764.65	28.65	23.09	102.76	1,117.19	6,940.82	7,244.65	7,193.68	50.97	142.134		
8,000.00	7,934.83	6,942.00	6,770.61	29.01	23.13	103.11	1,103.09	6,942.34	7,260.62	7,209.33	51.29	141.563		
8,100.00	8,034.74	6,948.49	6,773.01	29.36	23.14	103.40	1,097.10	6,942.99	7,277.29	7,225.72	51.57	141.128		
8,202.27	8,137.00	6,965.52	6,778.96	29.72	23.19	87.76	1,081.23	6,944.66	7,295.03	7,243.15	51.88	140.624		
8,300.00	8,234.73	6,973.00	6,781.41	30.06	23.21	87.81	1,074.20	6,945.38	7,312.91	7,260.78	52.13	140.285		
8,400.00	8,334.73	6,973.00	6,781.41	30.41	23.21	87.81	1,074.20	6,945.38	7,332.50	7,280.15	52.35	140.064		
8,500.00	8,434.73	6,987.70	6,786.01	30.75	23.25	87.92	1,060.31	6,946.83	7,353.32	7,300.70	52.63	139.721		
8,552.31	8,487.04	6,990.62	6,786.90	30.94	23.26	87.94	1,057.54	6,947.12	7,364.74	7,311.99	52.75	139.613		
8,600.00	8,534.68	7,005.00	6,791.14	31.10	23.31	-1.58	1,043.89	6,948.64	7,373.56	7,320.65	52.90	139.375		
8,650.00	8,584.26	7,005.00	6,791.14	31.26	23.31	-1.57	1,043.89	6,948.64	7,378.83	7,325.84	52.99	139.242		
8,700.00	8,633.10	7,005.00	6,791.14	31.43	23.31	-1.56	1,043.89	6,948.64	7,380.09	7,327.01	53.08	139.048		
8,750.00	8,680.83	7,005.00	6,791.14	31.58	23.31	-1.57	1,043.89	6,948.64	7,377.33	7,324.18	53.15	138.795		
8,800.00	8,727.09	7,005.00	6,791.14	31.74	23.31	-1.59	1,043.89	6,948.64	7,370.57	7,317.34	53.22	138.489		
8,850.00	8,771.52	7,005.00	6,791.14	31.89	23.31	-1.62	1,043.89	6,948.64	7,359.84	7,306.56	53.28	138.131		
8,900.00	8,813.78	7,005.00	6,791.14	32.04	23.31	-1.66	1,043.89	6,948.64	7,345.21	7,291.88	53.33	137.725		
8,950.00	8,853.56	7,005.00	6,791.14	32.18	23.31	-1.72	1,043.89	6,948.64	7,326.78	7,273.40	53.37	137.274		
9,000.00	8,890.55	7,005.00	6,791.14	32.32	23.31	-1.80	1,043.89	6,948.64	7,304.64	7,251.24	53.40	136.779		
9,050.00	8,924.46	7,005.00	6,791.14	32.47	23.31	-1.90	1,043.89	6,948.64	7,278.94	7,225.52	53.43	136.244		
9,100.00	8,955.05	7,018.98	6,794.98	32.63	23.35	-1.88	1,030.54	6,950.17	7,249.76	7,196.26	53.50	135.508		
9,150.00	8,982.08	7,020.95	6,795.50	32.79	23.36	-2.01	1,028.65	6,950.39	7,217.41	7,163.90	53.51	134.875		
9,200.00	9,005.34	7,022.78	6,795.97	32.97	23.37	-2.17	1,026.90	6,950.60	7,182.04	7,128.53	53.51	134.208		
9,250.00	9,024.65	7,036.00	6,799.19	33.17	23.42	-2.24	1,014.16	6,952.08	7,143.93	7,090.37	53.56	133.382		
9,300.00	9,039.87	7,036.00	6,799.19	33.38	23.42	-2.54	1,014.16	6,952.08	7,103.22	7,049.67	53.54	132.670		
9,350.00	9,050.89	7,036.00	6,799.19	33.62	23.42	-2.94	1,014.16	6,952.08	7,060.22	7,006.71	53.52	131.926		
9,400.00	9,057.61	7,036.00	6,799.19	33.87	23.42	-3.52	1,014.16	6,952.08	7,015.25	6,961.76	53.49	131.154		
9,452.31	9,060.00	7,036.00	6,799.19	34.15	23.42	-4.47	1,014.16	6,952.08	6,966.41	6,912.95	53.46	130.314		
9,500.00	9,060.00	7,036.00	6,799.19	34.42	23.42	-4.47	1,014.16	6,952.08	6,921.17	6,867.74	53.43	129.540		
9,600.00	9,060.00	7,036.00	6,799.19	35.09	23.42	-4.47	1,014.16	6,952.08	6,826.43	6,773.07	53.36	127.929		
9,700.00	9,060.00	7,036.00	6,799.19	35.86	23.42	-4.47	1,014.16	6,952.08	6,731.84	6,678.54	53.29	126.314		
9,800.00	9,060.00	7,036.00	6,799.19	36.72	23.42	-4.47	1,014.16	6,952.08	6,637.40	6,584.17	53.23	124.696		
9,900.00	9,060.00	7,036.00	6,799.19	37.69	23.42	-4.47	1,014.16	6,952.08	6,543.13	6,489.97	53.16	123.076		
10,000.00	9,060.00	7,036.00	6,799.19	38.73	23.42	-4.47	1,014.16	6,952.08	6,449.04	6,395.94	53.10	121.452		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,100.00	9,060.00	7,036.00	6,799.19	39.86	23.42	-4.47	1,014.16	6,952.08	6,355.12	6,302.08	53.04	119.826	
10,140.22	9,060.00	7,036.00	6,799.19	40.33	23.42	-4.47	1,014.16	6,952.08	6,317.40	6,264.38	53.01	119.170	
10,200.00	9,060.00	7,036.00	6,799.19	41.05	23.42	-7.65	1,014.16	6,952.08	6,261.41	6,208.44	52.97	118.196	
10,300.00	9,060.00	7,036.00	6,799.19	42.31	23.42	-12.77	1,014.16	6,952.08	6,168.06	6,115.15	52.92	116.564	
10,400.00	9,060.00	7,036.00	6,799.19	43.64	23.42	-17.60	1,014.16	6,952.08	6,075.21	6,022.35	52.86	114.929	
10,507.23	9,060.00	7,036.00	6,799.19	45.11	23.42	-22.39	1,014.16	6,952.08	5,976.36	5,923.55	52.81	113.167	
10,600.00	9,060.00	7,051.56	6,802.52	46.43	23.48	-18.01	999.07	6,953.89	5,890.95	5,838.10	52.84	111.483	
10,700.00	9,060.00	7,054.06	6,803.01	47.91	23.49	-13.40	996.63	6,954.19	5,798.83	5,746.01	52.81	109.799	
10,800.00	9,060.00	7,068.00	6,805.46	49.42	23.54	-8.40	983.02	6,955.88	5,706.74	5,653.91	52.83	108.019	
10,900.00	9,060.00	7,068.00	6,805.46	50.97	23.54	-3.68	983.02	6,955.88	5,614.59	5,561.80	52.79	106.362	
11,000.00	9,060.00	7,068.00	6,805.46	52.55	23.54	1.00	983.02	6,955.88	5,522.63	5,469.89	52.74	104.711	
11,100.00	9,060.00	7,068.00	6,805.46	54.14	23.54	5.57	983.02	6,955.88	5,430.97	5,378.28	52.69	103.070	
11,207.23	9,060.00	7,068.00	6,805.46	55.87	23.54	10.29	983.02	6,955.88	5,333.19	5,280.55	52.64	101.320	
11,300.00	9,060.00	7,068.00	6,805.46	57.39	23.54	6.30	983.02	6,955.88	5,248.89	5,196.30	52.59	99.803	
11,400.00	9,060.00	7,068.00	6,805.46	59.06	23.54	2.01	983.02	6,955.88	5,158.20	5,105.65	52.55	98.153	
11,506.63	9,060.00	7,068.00	6,805.46	60.88	23.54	-2.50	983.02	6,955.88	5,061.82	5,009.30	52.52	96.379	
11,600.00	9,060.00	7,068.00	6,805.46	62.49	23.54	-2.50	983.02	6,955.88	4,977.79	4,925.29	52.50	94.819	
11,700.00	9,060.00	7,068.00	6,805.46	64.24	23.54	-2.50	983.02	6,955.88	4,888.17	4,835.69	52.48	93.145	
11,800.00	9,060.00	7,068.00	6,805.46	66.01	23.54	-2.50	983.02	6,955.88	4,798.95	4,746.49	52.47	91.466	
11,900.00	9,060.00	7,068.00	6,805.46	67.79	23.54	-2.50	983.02	6,955.88	4,710.17	4,657.71	52.46	89.784	
12,000.00	9,060.00	7,068.00	6,805.46	69.58	23.54	-2.50	983.02	6,955.88	4,621.85	4,569.39	52.46	88.098	
12,100.00	9,060.00	7,068.00	6,805.46	71.39	23.54	-2.50	983.02	6,955.88	4,534.01	4,481.54	52.47	86.409	
12,200.00	9,060.00	7,068.00	6,805.46	73.21	23.54	-2.50	983.02	6,955.88	4,446.69	4,394.20	52.49	84.716	
12,300.00	9,060.00	7,068.00	6,805.46	75.05	23.54	-2.50	983.02	6,955.88	4,359.91	4,307.39	52.52	83.019	
12,400.00	9,060.00	7,068.00	6,805.46	76.89	23.54	-2.50	983.02	6,955.88	4,273.71	4,221.15	52.56	81.318	
12,500.00	9,060.00	7,068.00	6,805.46	78.74	23.54	-2.50	983.02	6,955.88	4,188.12	4,135.52	52.60	79.615	
12,600.00	9,060.00	7,068.00	6,805.46	80.61	23.54	-2.50	983.02	6,955.88	4,103.19	4,050.52	52.67	77.908	
12,700.00	9,060.00	7,081.21	6,807.34	82.48	23.60	-2.16	970.04	6,957.51	4,018.81	3,966.03	52.78	76.146	
12,800.00	9,060.00	7,082.85	6,807.54	84.36	23.61	-2.12	968.43	6,957.70	3,935.26	3,882.39	52.87	74.432	
12,900.00	9,060.00	7,084.48	6,807.73	86.24	23.62	-2.07	966.82	6,957.90	3,852.50	3,799.52	52.98	72.719	
13,000.00	9,060.00	7,086.10	6,807.91	88.14	23.62	-2.03	965.22	6,958.10	3,770.56	3,717.46	53.10	71.005	
13,100.00	9,060.00	7,099.00	6,809.13	90.04	23.68	-1.70	952.48	6,959.66	3,689.63	3,636.36	53.27	69.266	
13,200.00	9,060.00	7,099.00	6,809.13	91.94	23.68	-1.70	952.48	6,959.66	3,609.50	3,556.07	53.42	67.562	
13,300.00	9,060.00	7,099.00	6,809.13	93.86	23.68	-1.70	952.48	6,959.66	3,530.38	3,476.78	53.60	65.861	
13,400.00	9,060.00	7,099.00	6,809.13	95.77	23.68	-1.70	952.48	6,959.66	3,452.35	3,398.54	53.81	64.164	
13,500.00	9,060.00	7,099.00	6,809.13	97.70	23.68	-1.70	952.48	6,959.66	3,375.48	3,321.45	54.03	62.472	
13,600.00	9,060.00	7,099.00	6,809.13	99.62	23.68	-1.70	952.48	6,959.66	3,299.84	3,245.56	54.28	60.789	
13,700.00	9,060.00	7,099.00	6,809.13	101.56	23.68	-1.70	952.48	6,959.66	3,225.54	3,170.97	54.56	59.115	
13,800.00	9,060.00	7,099.00	6,809.13	103.49	23.68	-1.70	952.48	6,959.66	3,152.65	3,097.78	54.87	57.453	
13,900.00	9,060.00	7,099.00	6,809.13	105.43	23.68	-1.70	952.48	6,959.66	3,081.29	3,026.08	55.21	55.807	
14,000.00	9,060.00	7,099.00	6,809.13	107.38	23.68	-1.70	952.48	6,959.66	3,011.56	2,955.97	55.58	54.180	
14,100.00	9,060.00	7,099.00	6,809.13	109.33	23.68	-1.70	952.48	6,959.66	2,943.57	2,887.58	55.99	52.575	
14,200.00	9,060.00	7,099.00	6,809.13	111.28	23.68	-1.70	952.48	6,959.66	2,877.45	2,821.03	56.43	50.996	
14,300.00	9,060.00	7,110.67	6,809.88	113.23	23.74	-1.40	940.91	6,961.01	2,813.23	2,756.35	56.89	49.453	
14,400.00	9,060.00	7,112.84	6,809.99	115.19	23.75	-1.34	938.76	6,961.25	2,751.21	2,693.82	57.39	47.941	
14,500.00	9,060.00	7,114.95	6,810.09	117.15	23.76	-1.28	936.67	6,961.49	2,691.47	2,633.55	57.92	46.469	
14,600.00	9,060.00	7,116.99	6,810.18	119.11	23.77	-1.23	934.63	6,961.71	2,634.16	2,575.67	58.49	45.040	
14,700.00	9,060.00	7,128.00	6,810.49	121.08	23.82	-0.94	923.69	6,962.86	2,579.52	2,520.45	59.07	43.668	
14,800.00	9,060.00	7,128.00	6,810.49	123.05	23.82	-0.94	923.69	6,962.86	2,527.55	2,467.85	59.70	42.338	
14,900.00	9,060.00	7,128.00	6,810.49	125.02	23.82	-0.94	923.69	6,962.86	2,478.53	2,418.17	60.36	41.063	
15,000.00	9,060.00	7,128.00	6,810.49	126.99	23.82	-0.94	923.69	6,962.86	2,432.63	2,371.58	61.05	39.849	
15,100.00	9,060.00	7,128.00	6,810.49	128.97	23.82	-0.94	923.69	6,962.86	2,390.04	2,328.28	61.76	38.698	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 11H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 111-GYRO-NS-CT, 6243-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,200.00	9,060.00	7,128.00	6,810.49	130.95	23.82	-0.94	923.69	6,962.86	2,350.93	2,288.43	62.50	37.613	
15,300.00	9,060.00	7,128.00	6,810.49	132.93	23.82	-0.94	923.69	6,962.86	2,315.48	2,252.21	63.27	36.598	
15,400.00	9,060.00	7,128.00	6,810.49	134.91	23.82	-0.94	923.69	6,962.86	2,283.87	2,219.81	64.06	35.654	
15,500.00	9,060.00	7,128.00	6,810.49	136.89	23.82	-0.94	923.69	6,962.86	2,256.24	2,191.37	64.87	34.782	
15,600.00	9,060.00	7,128.00	6,810.49	138.88	23.82	-0.94	923.69	6,962.86	2,232.76	2,167.06	65.70	33.983	
15,700.00	9,060.00	7,128.00	6,810.49	140.86	23.82	-0.94	923.69	6,962.86	2,213.55	2,146.99	66.56	33.256	
15,800.00	9,060.00	7,128.00	6,810.49	142.85	23.82	-0.94	923.69	6,962.86	2,198.73	2,131.29	67.44	32.603	
15,900.00	9,060.00	7,141.03	6,810.58	144.84	23.88	-0.60	910.72	6,964.16	2,188.20	2,119.90	68.30	32.039	
16,000.00	9,060.00	7,142.82	6,810.57	146.83	23.89	-0.55	908.94	6,964.34	2,182.33	2,113.13	69.21	31.533	
16,078.39	9,060.00	7,144.21	6,810.56	148.40	23.90	-0.52	907.56	6,964.48	2,180.93	2,111.00	69.93	31.187 CC	
16,100.00	9,060.00	7,144.60	6,810.56	148.83	23.90	-0.51	907.18	6,964.51	2,181.03	2,110.90	70.13	31.100 ES	
16,200.00	9,060.00	7,146.36	6,810.54	150.82	23.91	-0.46	905.43	6,964.69	2,184.31	2,113.26	71.06	30.741	
16,300.00	9,060.00	7,159.00	6,810.25	152.82	23.98	-0.13	892.84	6,965.91	2,192.27	2,120.31	71.96	30.467	
16,400.00	9,060.00	7,159.00	6,810.25	154.81	23.98	-0.13	892.84	6,965.91	2,204.57	2,131.71	72.86	30.257	
16,500.00	9,060.00	7,159.00	6,810.25	156.81	23.98	-0.13	892.84	6,965.91	2,221.31	2,147.57	73.74	30.124	
16,600.00	9,060.00	7,159.00	6,810.25	158.81	23.98	-0.13	892.84	6,965.91	2,242.39	2,167.81	74.57	30.069	
16,700.00	9,060.00	7,159.00	6,810.25	160.81	23.98	-0.13	892.84	6,965.91	2,267.68	2,192.32	75.36	30.092	
16,800.00	9,060.00	7,159.00	6,810.25	162.81	23.98	-0.13	892.84	6,965.91	2,297.06	2,220.97	76.08	30.191	
16,900.00	9,060.00	7,159.00	6,810.25	164.82	23.98	-0.13	892.84	6,965.91	2,330.36	2,253.61	76.75	30.364	
17,000.00	9,060.00	7,159.00	6,810.25	166.82	23.98	-0.13	892.84	6,965.91	2,367.41	2,290.07	77.34	30.610	
17,100.00	9,060.00	7,159.00	6,810.25	168.82	23.98	-0.13	892.84	6,965.91	2,408.06	2,330.19	77.87	30.925	
17,200.00	9,060.00	7,159.00	6,810.25	170.83	23.98	-0.13	892.84	6,965.91	2,452.10	2,373.78	78.33	31.306	
17,300.00	9,060.00	7,173.69	6,809.72	172.84	24.06	0.25	878.24	6,967.31	2,499.30	2,420.56	78.73	31.743	
17,400.00	9,060.00	7,177.72	6,809.56	174.84	24.08	0.36	874.23	6,967.69	2,549.57	2,470.50	79.08	32.242	
17,500.00	9,060.00	7,181.72	6,809.40	176.85	24.10	0.46	870.24	6,968.07	2,602.71	2,523.35	79.36	32.795	
17,600.00	9,060.00	7,185.71	6,809.23	178.86	24.12	0.57	866.28	6,968.45	2,658.53	2,578.93	79.60	33.400	
17,700.00	9,060.00	7,189.67	6,809.05	180.87	24.14	0.67	862.34	6,968.82	2,716.88	2,637.09	79.78	34.053	
17,800.00	9,060.00	7,193.61	6,808.87	182.88	24.17	0.77	858.42	6,969.19	2,777.59	2,697.66	79.93	34.750	
17,900.00	9,060.00	7,197.52	6,808.68	184.89	24.19	0.88	854.53	6,969.56	2,840.52	2,760.48	80.04	35.489	
18,000.00	9,060.00	7,201.41	6,808.49	186.90	24.21	0.98	850.66	6,969.92	2,905.51	2,825.40	80.11	36.267	
18,100.00	9,060.00	7,205.28	6,808.30	188.92	24.23	1.08	846.81	6,970.28	2,972.44	2,892.28	80.16	37.081	
18,200.00	9,060.00	7,209.13	6,808.10	190.93	24.25	1.18	842.99	6,970.64	3,041.18	2,960.99	80.18	37.928	
18,300.00	9,060.00	7,222.00	6,807.39	192.94	24.33	1.51	830.19	6,971.83	3,111.62	3,031.39	80.24	38.781	
18,400.00	9,060.00	7,222.00	6,807.39	194.96	24.33	1.51	830.19	6,971.83	3,183.60	3,103.41	80.20	39.698	
18,500.00	9,060.00	7,222.00	6,807.39	196.97	24.33	1.51	830.19	6,971.83	3,257.06	3,176.92	80.14	40.642	
18,600.00	9,060.00	7,231.57	6,806.85	198.99	24.38	1.76	820.68	6,972.72	3,331.90	3,251.76	80.14	41.577	
18,700.00	9,060.00	7,520.93	6,806.31	201.00	26.44	9.24	532.99	7,002.09	3,407.68	3,323.16	84.52	40.317	
18,800.00	9,060.00	18,800.00	6,805.17	203.02	281.84	8.44	563.85	6,998.56	3,484.32	3,277.00	207.31	16.807 SF	
18,900.00	9,060.00	18,900.00	6,805.47	205.04	284.28	8.68	554.62	6,999.58	3,562.17	3,352.43	209.75	16.983	
19,000.00	9,060.00	7,525.49	6,806.44	207.06	26.48	9.36	528.46	7,002.59	3,641.00	3,556.74	84.27	43.207	
19,100.00	9,060.00	7,530.63	6,806.62	209.07	26.53	9.49	523.36	7,003.17	3,720.87	3,636.62	84.25	44.163	
19,200.00	9,060.00	7,535.71	6,806.79	211.09	26.57	9.62	518.32	7,003.75	3,801.68	3,717.45	84.23	45.134	
19,300.00	9,060.00	7,540.72	6,806.96	213.11	26.61	9.74	513.34	7,004.31	3,883.37	3,799.17	84.20	46.119	
19,400.00	9,060.00	7,545.66	6,807.12	215.13	26.65	9.87	508.44	7,004.86	3,965.89	3,881.72	84.17	47.115	
19,500.32	9,060.00	7,550.55	6,807.27	217.16	26.69	9.99	503.58	7,005.41	4,049.45	3,965.31	84.14	48.127	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.24	1,120.51	5,898.45	6,004.31					
100.00	100.00	31.15	31.15	0.52	5.00	79.24	1,120.45	5,898.47	6,003.95	5,998.43	5.52	1,088.077		
200.00	200.00	319.08	319.01	0.70	5.08	79.25	1,119.36	5,894.01	6,002.23	5,996.45	5.78	1,037.993		
300.00	300.00	395.00	394.88	0.99	5.14	79.23	1,120.22	5,891.52	5,999.24	5,993.12	6.12	980.126		
400.00	400.00	453.31	453.17	1.31	5.19	79.23	1,120.63	5,890.09	5,996.94	5,990.45	6.49	923.552		
500.00	500.00	535.97	535.82	1.65	5.27	79.22	1,120.98	5,888.49	5,995.11	5,988.20	6.92	866.858		
600.00	600.00	609.42	609.25	1.99	5.36	79.21	1,121.49	5,887.25	5,993.59	5,986.24	7.35	815.566		
700.00	700.00	691.98	691.80	2.34	5.48	79.21	1,122.28	5,886.21	5,992.52	5,984.71	7.81	767.266		
800.00	800.00	793.49	793.30	2.69	5.63	79.19	1,123.29	5,885.02	5,991.57	5,983.25	8.32	720.322		
900.00	900.00	938.15	937.94	3.04	5.89	79.18	1,124.07	5,882.95	5,990.29	5,981.37	8.93	671.134		
1,000.00	1,000.00	1,013.40	1,013.18	3.40	6.04	79.18	1,124.42	5,881.78	5,988.83	5,979.40	9.43	635.326		
1,100.00	1,100.00	1,070.12	1,069.90	3.75	6.15	79.17	1,124.76	5,881.15	5,987.85	5,977.95	9.90	605.055		
1,177.38	1,177.38	1,111.00	1,110.78	4.03	6.24	79.17	1,125.03	5,880.95	5,987.60	5,977.34	10.26	583.772		
1,200.00	1,200.00	1,128.31	1,128.09	4.11	6.27	79.17	1,125.16	5,880.93	5,987.60	5,977.23	10.37	577.215		
1,300.00	1,300.00	1,193.92	1,193.70	4.46	6.41	79.16	1,125.81	5,881.06	5,987.98	5,977.11	10.87	550.929		
1,400.00	1,400.00	1,262.68	1,262.45	4.82	6.56	79.16	1,126.61	5,881.56	5,988.91	5,977.53	11.37	526.529		
1,500.00	1,500.00	1,389.07	1,388.83	5.18	6.85	79.15	1,127.62	5,882.87	5,990.13	5,978.11	12.02	498.415		
1,600.00	1,600.00	1,468.88	1,468.63	5.53	7.04	79.15	1,127.93	5,883.52	5,991.02	5,978.45	12.56	476.866		
1,700.00	1,700.00	1,581.56	1,581.30	5.89	7.31	79.15	1,127.93	5,884.73	5,992.07	5,978.88	13.19	454.124		
1,800.00	1,800.00	1,692.39	1,692.13	6.25	7.59	79.15	1,127.64	5,885.71	5,992.90	5,979.07	13.83	433.247		
1,900.00	1,900.00	1,825.80	1,825.54	6.61	7.94	79.15	1,127.69	5,886.10	5,993.16	5,978.61	14.54	412.074		
2,000.00	2,000.00	1,919.63	1,919.37	6.96	8.20	79.16	1,127.46	5,886.30	5,993.32	5,978.16	15.16	395.428		
2,100.00	2,100.00	2,016.12	2,015.86	7.32	8.47	79.15	1,127.80	5,886.52	5,993.61	5,977.82	15.78	379.737		
2,200.00	2,200.00	2,168.73	2,168.46	7.68	8.91	79.15	1,128.28	5,886.31	5,993.57	5,976.99	16.58	361.495		
2,300.00	2,300.00	2,271.83	2,271.56	8.04	9.21	79.15	1,128.40	5,885.53	5,992.84	5,975.60	17.24	347.632		
2,350.00	2,350.00	2,306.62	2,306.35	8.22	9.31	79.15	1,128.35	5,885.36	5,992.59	5,975.07	17.52	342.048		
2,400.00	2,400.00	2,343.01	2,342.74	8.39	9.42	95.19	1,128.25	5,885.28	5,992.48	5,974.67	17.81	336.560		
2,424.04	2,424.04	2,364.72	2,364.45	8.48	9.48	95.19	1,128.19	5,885.26	5,992.47	5,974.52	17.95	333.764		
2,500.00	2,499.98	2,437.89	2,437.62	8.75	9.69	95.21	1,128.12	5,885.23	5,992.56	5,974.12	18.44	324.972		
2,600.00	2,599.92	2,559.17	2,558.90	9.11	10.06	95.24	1,128.26	5,884.59	5,992.33	5,973.16	19.16	312.718		
2,603.56	2,603.48	2,561.38	2,561.12	9.12	10.07	95.24	1,128.26	5,884.58	5,992.33	5,973.14	19.18	312.401		
2,700.00	2,699.78	2,621.38	2,621.11	9.47	10.25	95.27	1,128.43	5,884.49	5,992.69	5,972.99	19.71	304.070		
2,800.00	2,799.54	2,731.69	2,731.42	9.82	10.43	95.33	1,128.56	5,884.63	5,993.49	5,973.25	20.24	296.054		
2,900.00	2,899.16	2,810.79	2,810.52	10.18	10.46	95.39	1,128.66	5,884.64	5,994.38	5,973.75	20.63	290.563		
3,000.00	2,998.61	2,872.00	2,871.72	10.54	10.47	95.42	1,129.81	5,884.93	5,996.14	5,975.14	20.99	285.604		
3,100.00	3,097.86	2,916.86	2,916.54	10.89	10.48	95.43	1,131.35	5,885.37	5,998.83	5,977.47	21.36	280.845		
3,200.00	3,196.89	2,966.00	2,965.63	11.25	10.50	95.44	1,133.68	5,886.07	6,002.48	5,980.75	21.73	276.284		
3,295.74	3,291.45	3,027.56	3,027.06	11.59	10.52	95.46	1,137.45	5,887.24	6,006.80	5,984.71	22.09	271.936		
3,300.00	3,295.65	3,030.10	3,029.59	11.61	10.52	95.46	1,137.62	5,887.29	6,007.01	5,984.91	22.11	271.748		
3,400.00	3,394.29	3,106.93	3,106.18	11.97	10.56	95.53	1,143.35	5,889.07	6,012.23	5,989.73	22.50	267.235		
3,500.00	3,492.94	3,207.22	3,206.14	12.33	10.62	95.62	1,151.29	5,891.42	6,017.59	5,994.67	22.92	262.564		
3,600.00	3,591.58	3,313.72	3,312.26	12.69	10.70	95.71	1,159.82	5,893.80	6,022.88	5,999.52	23.36	257.834		
3,700.00	3,690.22	3,424.81	3,423.01	13.05	10.80	95.80	1,168.31	5,896.19	6,028.03	6,004.21	23.82	253.060		
3,800.00	3,788.86	3,487.97	3,485.94	13.41	10.86	95.86	1,173.39	5,897.58	6,033.35	6,009.11	24.24	248.873		
3,900.00	3,887.50	3,531.00	3,528.76	13.77	10.91	95.89	1,177.53	5,898.69	6,039.40	6,014.76	24.64	245.086		
4,000.00	3,986.14	3,589.26	3,586.65	14.14	10.98	95.92	1,183.84	5,900.55	6,046.23	6,021.17	25.07	241.188		
4,100.00	4,084.78	3,654.20	3,651.08	14.50	11.07	95.96	1,191.52	5,903.17	6,053.93	6,028.42	25.51	237.331		
4,200.00	4,183.42	3,788.50	3,784.28	14.87	11.26	96.02	1,207.84	5,908.31	6,061.56	6,035.49	26.07	232.486		
4,300.00	4,282.06	3,936.84	3,931.47	15.24	11.51	96.09	1,225.77	5,912.61	6,068.15	6,041.46	26.69	227.369		
4,400.00	4,380.70	4,002.00	3,996.05	15.60	11.62	96.11	1,234.23	5,914.54	6,075.02	6,047.86	27.16	223.655		
4,500.00	4,479.34	4,190.00	4,182.44	15.97	11.99	96.19	1,258.40	5,918.55	6,080.85	6,052.94	27.91	217.886		
4,600.00	4,577.98	4,255.97	4,247.86	16.34	12.13	96.21	1,266.80	5,919.59	6,086.50	6,058.10	28.41	214.244		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)					
4,700.00	4,676.62	4,369.31	4,360.14	16.71	12.38	96.25	1,282.06	5,922.25	6,092.93	6,063.91	29.03	209.899				
4,800.00	4,775.27	4,418.95	4,409.35	17.08	12.50	96.27	1,288.53	5,923.38	6,099.26	6,069.76	29.50	206.747				
4,900.00	4,873.91	4,472.00	4,461.89	17.45	12.63	96.29	1,295.58	5,925.17	6,106.54	6,076.55	29.98	203.670				
5,000.00	4,972.55	4,534.79	4,524.06	17.82	12.78	96.31	1,304.02	5,927.70	6,114.52	6,084.02	30.49	200.517				
5,100.00	5,071.19	4,678.15	4,666.07	18.19	13.14	96.36	1,322.84	5,933.36	6,122.50	6,091.27	31.23	196.058				
5,200.00	5,169.83	4,724.11	4,711.54	18.56	13.27	96.38	1,329.25	5,935.21	6,130.50	6,098.79	31.71	193.351				
5,300.00	5,268.47	4,815.79	4,802.10	18.93	13.53	96.40	1,343.05	5,939.10	6,139.03	6,106.70	32.32	189.932				
5,400.00	5,367.11	4,970.26	4,954.81	19.31	13.97	96.43	1,365.55	5,944.98	6,147.06	6,113.92	33.14	185.489				
5,500.00	5,465.75	5,104.40	5,087.58	19.68	14.37	96.47	1,384.09	5,949.21	6,154.31	6,120.41	33.90	181.519				
5,600.00	5,564.39	5,235.91	5,217.91	20.05	14.76	96.52	1,401.32	5,952.84	6,161.07	6,126.40	34.67	177.719				
5,700.00	5,663.03	5,331.84	5,313.04	20.42	15.05	96.56	1,413.44	5,955.44	6,167.71	6,132.38	35.32	174.603				
5,800.00	5,761.67	5,465.25	5,445.49	20.80	15.46	96.62	1,429.11	5,958.32	6,173.55	6,137.45	36.10	171.000				
5,900.00	5,860.31	5,567.07	5,546.54	21.17	15.77	96.67	1,441.38	5,960.70	6,179.74	6,142.96	36.79	167.992				
6,000.00	5,958.96	5,651.10	5,630.02	21.54	16.04	96.71	1,450.76	5,962.59	6,185.72	6,148.31	37.41	165.328				
6,100.00	6,057.60	5,754.84	5,732.99	21.92	16.37	96.76	1,463.15	5,965.29	6,192.17	6,154.06	38.11	162.467				
6,200.00	6,156.24	5,847.75	5,825.30	22.29	16.66	96.81	1,473.50	5,967.48	6,198.25	6,159.48	38.78	159.845				
6,300.00	6,254.88	5,955.03	5,932.01	22.67	17.00	96.88	1,484.02	5,970.56	6,204.65	6,165.17	39.48	157.148				
6,400.00	6,353.52	6,034.47	6,010.47	23.04	18.13	97.22	1,510.08	5,973.54	6,208.38	6,167.38	41.01	151.398				
6,500.00	6,452.16	6,151.30	6,127.19	23.42	18.46	97.35	1,514.89	5,972.17	6,209.95	6,168.24	41.71	148.867				
6,600.00	6,550.80	6,255.80	6,231.79	23.79	21.51	105.32	801.32	5,964.63	6,209.92	6,165.02	44.90	138.320				
6,700.00	6,649.44	6,350.70	6,326.70	24.17	21.47	105.28	806.41	5,964.48	6,199.87	6,154.56	45.31	136.843				
6,800.00	6,748.08	6,450.00	6,426.00	24.54	21.39	105.17	818.11	5,964.17	6,191.42	6,145.76	45.66	135.585				
6,900.00	6,846.72	6,550.00	6,526.00	24.92	21.39	105.17	818.11	5,964.17	6,184.55	6,138.45	46.10	134.168				
7,000.00	6,945.36	6,650.00	6,626.00	25.29	21.39	105.17	818.11	5,964.17	6,179.28	6,132.76	46.52	132.835				
7,100.00	7,044.00	6,750.00	6,726.00	25.67	21.32	105.07	829.31	5,963.90	6,175.61	6,128.75	46.86	131.786				
7,200.00	7,142.65	6,850.00	6,826.00	26.04	21.28	105.01	835.94	5,963.75	6,173.55	6,126.33	47.22	130.729				
7,278.47	7,220.05	6,950.00	6,926.05	26.34	21.24	104.96	841.07	5,963.63	6,173.06	6,125.55	47.50	129.950				
7,300.00	7,241.29	7,050.00	7,026.29	26.42	21.23	104.95	842.47	5,963.61	6,173.09	6,125.51	47.58	129.744				
7,400.00	7,339.93	7,150.00	7,126.00	26.79	21.19	104.89	849.09	5,963.47	6,174.24	6,126.32	47.92	128.832				
7,500.00	7,438.57	7,250.00	7,226.00	27.17	21.19	104.89	849.09	5,963.47	6,177.00	6,128.70	48.30	127.879				
7,571.77	7,509.37	7,350.00	7,326.00	27.44	21.19	104.89	849.09	5,963.47	6,179.98	6,131.41	48.57	127.240				
7,600.00	7,537.23	7,450.00	7,426.00	27.55	21.19	104.90	849.09	5,963.47	6,181.35	6,132.68	48.67	126.998				
7,700.00	7,636.18	7,550.00	7,526.00	27.92	21.12	104.87	861.00	5,963.26	6,186.78	6,137.82	48.96	126.368				
7,800.00	7,735.48	7,650.00	7,626.00	28.29	21.11	104.95	863.27	5,963.22	6,193.16	6,143.88	49.29	125.653				
7,900.00	7,835.05	7,750.00	7,726.00	28.65	21.10	105.04	864.63	5,963.20	6,200.48	6,150.87	49.61	124.988				
8,000.00	7,934.83	7,850.00	7,826.00	29.01	21.09	105.15	865.17	5,963.19	6,208.72	6,158.80	49.92	124.373				
8,100.00	8,034.74	7,950.00	7,926.00	29.36	21.10	105.29	864.96	5,963.20	6,217.87	6,167.65	50.22	123.808				
8,202.27	8,137.00	8,050.00	8,026.00	29.72	21.10	89.41	864.04	5,963.21	6,228.18	6,177.66	50.52	123.282				
8,300.00	8,234.73	8,150.00	8,126.00	30.06	21.11	89.42	862.88	5,963.23	6,239.22	6,188.43	50.79	122.833				
8,400.00	8,334.73	8,250.00	8,226.00	30.41	21.11	89.43	861.76	5,963.25	6,252.09	6,201.02	51.07	122.431				
8,500.00	8,434.73	8,350.00	8,326.00	30.75	21.12	89.44	860.71	5,963.26	6,266.52	6,215.20	51.33	122.086				
8,552.31	8,487.04	8,400.00	8,376.04	30.94	21.19	89.55	849.09	5,963.47	6,274.74	6,223.21	51.53	121.775				
8,600.00	8,534.68	8,500.00	8,476.00	31.10	21.19	-0.11	849.09	5,963.47	6,280.59	6,228.95	51.64	121.627				
8,650.00	8,584.26	8,550.00	8,526.00	31.26	21.19	-0.11	849.09	5,963.47	6,282.87	6,231.12	51.74	121.420				
8,700.00	8,633.10	8,650.00	8,626.00	31.43	21.19	-0.11	849.09	5,963.47	6,281.18	6,229.33	51.85	121.151				
8,750.00	8,680.83	8,700.00	8,676.00	31.58	21.19	-0.11	849.09	5,963.47	6,275.54	6,223.60	51.94	120.824				
8,800.00	8,727.09	8,750.00	8,726.00	31.74	21.19	-0.12	849.09	5,963.47	6,265.98	6,213.95	52.02	120.442				
8,850.00	8,771.52	8,800.00	8,776.00	31.89	21.19	-0.12	849.09	5,963.47	6,252.55	6,200.45	52.10	120.010				
8,900.00	8,813.78	8,850.00	8,829.00	32.04	21.19	-0.12	849.09	5,963.47	6,235.33	6,183.17	52.17	119.531				
8,950.00	8,853.56	8,900.00	8,879.00	32.18	21.19	-0.13	849.09	5,963.47	6,214.42	6,162.20	52.22	119.006				
9,000.00	8,890.55	8,950.00	8,929.00	32.32	21.19	-0.13	849.09	5,963.47	6,189.95	6,137.69	52.26	118.439				
9,050.00	8,924.46	9,000.00	8,980.00	32.47	21.19	-0.14	849.09	5,963.47	6,162.06	6,109.76	52.30	117.831				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,100.00	8,955.05	7,828.00	7,415.05	32.63	21.19	-0.15	849.09	5,963.47	6,130.91	6,078.59	52.32	117.185		
9,150.00	8,982.08	7,828.00	7,415.05	32.79	21.19	-0.17	849.09	5,963.47	6,096.70	6,044.37	52.33	116.503		
9,200.00	9,005.34	7,828.00	7,415.05	32.97	21.19	-0.18	849.09	5,963.47	6,059.63	6,007.30	52.33	115.787		
9,250.00	9,024.65	7,828.00	7,415.05	33.17	21.19	-0.20	849.09	5,963.47	6,019.95	5,967.62	52.33	115.038		
9,300.00	9,039.87	7,828.00	7,415.05	33.38	21.19	-0.23	849.09	5,963.47	5,977.89	5,925.57	52.32	114.259		
9,350.00	9,050.89	7,828.00	7,415.05	33.62	21.19	-0.28	849.09	5,963.47	5,933.74	5,881.43	52.30	113.451		
9,400.00	9,057.61	7,828.00	7,415.05	33.87	21.19	-0.34	849.09	5,963.47	5,887.78	5,835.50	52.28	112.616		
9,452.31	9,060.00	7,828.00	7,415.05	34.15	21.19	-0.45	849.09	5,963.47	5,838.11	5,785.85	52.26	111.715		
9,500.00	9,060.00	7,828.00	7,415.05	34.42	21.19	-0.45	849.09	5,963.47	5,792.21	5,739.98	52.24	110.886		
9,600.00	9,060.00	7,828.00	7,415.05	35.09	21.19	-0.45	849.09	5,963.47	5,696.06	5,643.88	52.18	109.156		
9,700.00	9,060.00	7,828.00	7,415.05	35.86	21.19	-0.45	849.09	5,963.47	5,600.05	5,547.92	52.13	107.425		
9,800.00	9,060.00	7,828.00	7,415.05	36.72	21.19	-0.45	849.09	5,963.47	5,504.17	5,452.10	52.08	105.693		
9,900.00	9,060.00	7,828.00	7,415.05	37.69	21.19	-0.45	849.09	5,963.47	5,408.45	5,356.42	52.02	103.960		
10,000.00	9,060.00	7,828.00	7,415.05	38.73	21.19	-0.45	849.09	5,963.47	5,312.88	5,260.91	51.97	102.227		
10,100.00	9,060.00	7,828.00	7,415.05	39.86	21.19	-0.45	849.09	5,963.47	5,217.48	5,165.56	51.92	100.493		
10,140.22	9,060.00	7,828.00	7,415.05	40.33	21.19	-0.45	849.09	5,963.47	5,179.16	5,127.26	51.90	99.795		
10,200.00	9,060.00	7,828.00	7,415.05	41.05	21.19	-4.15	849.09	5,963.47	5,122.26	5,070.40	51.87	98.759		
10,300.00	9,060.00	7,828.00	7,415.05	42.31	21.19	-10.16	849.09	5,963.47	5,027.31	4,975.49	51.81	97.026		
10,400.00	9,060.00	7,828.00	7,415.05	43.64	21.19	-15.82	849.09	5,963.47	4,932.75	4,880.99	51.76	95.295		
10,507.23	9,060.00	7,836.41	7,415.28	45.11	21.25	-21.15	840.69	5,963.64	4,831.96	4,780.20	51.76	93.351		
10,600.00	9,060.00	7,842.20	7,415.43	46.43	21.28	-16.24	834.90	5,963.77	4,744.98	4,693.23	51.75	91.683		
10,700.00	9,060.00	7,846.89	7,415.55	47.91	21.31	-10.80	830.21	5,963.87	4,651.15	4,599.41	51.74	89.897		
10,800.00	9,060.00	7,849.92	7,415.63	49.42	21.33	-5.33	827.18	5,963.95	4,557.33	4,505.62	51.71	88.129		
10,900.00	9,060.00	7,851.24	7,415.66	50.97	21.34	0.06	825.87	5,963.98	4,463.67	4,412.00	51.67	86.382		
11,000.00	9,060.00	7,850.80	7,415.65	52.55	21.34	5.26	826.31	5,963.97	4,370.29	4,318.66	51.62	84.658		
11,100.00	9,060.00	7,848.56	7,415.59	54.14	21.32	10.18	828.55	5,963.91	4,277.32	4,225.76	51.56	82.958		
11,207.23	9,060.00	7,844.10	7,415.48	55.87	21.30	15.07	833.01	5,963.81	4,178.26	4,126.78	51.48	81.160		
11,300.00	9,060.00	7,840.05	7,415.37	57.39	21.27	10.68	837.05	5,963.72	4,092.89	4,041.47	51.42	79.604		
11,400.00	9,060.00	7,837.38	7,415.30	59.06	21.25	5.98	839.72	5,963.66	4,000.99	3,949.63	51.36	77.902		
11,506.63	9,060.00	7,836.53	7,415.28	60.88	21.25	1.07	840.57	5,963.65	3,903.27	3,851.96	51.32	76.064		
11,600.00	9,060.00	7,836.70	7,415.29	62.49	21.25	1.08	840.39	5,963.65	3,818.06	3,766.78	51.29	74.447		
11,700.00	9,060.00	7,836.90	7,415.29	64.24	21.25	1.09	840.20	5,963.65	3,727.24	3,675.98	51.26	72.716		
11,800.00	9,060.00	7,837.10	7,415.30	66.01	21.25	1.09	840.00	5,963.66	3,636.89	3,585.66	51.23	70.986		
11,900.00	9,060.00	7,837.30	7,415.30	67.79	21.25	1.10	839.80	5,963.66	3,547.07	3,495.85	51.22	69.258		
12,000.00	9,060.00	7,837.51	7,415.31	69.58	21.25	1.11	839.59	5,963.67	3,457.80	3,406.59	51.20	67.530		
12,100.00	9,060.00	7,837.72	7,415.31	71.39	21.25	1.12	839.38	5,963.67	3,369.13	3,317.93	51.20	65.805		
12,200.00	9,060.00	7,837.93	7,415.32	73.21	21.26	1.12	839.17	5,963.68	3,281.12	3,229.92	51.20	64.081		
12,300.00	9,060.00	7,838.15	7,415.32	75.05	21.26	1.13	838.95	5,963.68	3,193.81	3,142.60	51.22	62.359		
12,400.00	9,060.00	7,838.37	7,415.33	76.89	21.26	1.14	838.73	5,963.68	3,107.27	3,056.03	51.24	60.639		
12,500.00	9,060.00	7,838.60	7,415.34	78.74	21.26	1.15	838.50	5,963.69	3,021.56	2,970.28	51.28	58.923		
12,600.00	9,060.00	7,838.83	7,415.34	80.61	21.26	1.16	838.27	5,963.69	2,936.75	2,885.42	51.33	57.210		
12,700.00	9,060.00	7,839.07	7,415.35	82.48	21.26	1.17	838.03	5,963.70	2,852.93	2,801.53	51.40	55.501		
12,800.00	9,060.00	7,839.31	7,415.36	84.36	21.26	1.17	837.79	5,963.71	2,770.18	2,718.69	51.49	53.798		
12,900.00	9,060.00	7,839.56	7,415.36	86.24	21.27	1.18	837.54	5,963.71	2,688.61	2,637.00	51.60	52.101		
13,000.00	9,060.00	7,839.81	7,415.37	88.14	21.27	1.19	837.29	5,963.72	2,608.31	2,556.57	51.74	50.411		
13,100.00	9,060.00	7,840.07	7,415.38	90.04	21.27	1.20	837.03	5,963.72	2,529.42	2,477.52	51.90	48.732		
13,200.00	9,060.00	7,840.34	7,415.38	91.94	21.27	1.21	836.76	5,963.73	2,452.08	2,399.97	52.10	47.064		
13,300.00	9,060.00	7,840.61	7,415.39	93.86	21.27	1.22	836.49	5,963.73	2,376.42	2,324.09	52.33	45.411		
13,400.00	9,060.00	7,840.88	7,415.40	95.77	21.27	1.23	836.22	5,963.74	2,302.62	2,250.02	52.60	43.777		
13,500.00	9,060.00	7,841.17	7,415.40	97.70	21.28	1.24	835.93	5,963.75	2,230.86	2,177.95	52.91	42.164		
13,600.00	9,060.00	7,841.46	7,415.41	99.62	21.28	1.25	835.65	5,963.75	2,161.35	2,108.09	53.26	40.578		
13,700.00	9,060.00	7,841.75	7,415.42	101.56	21.28	1.26	835.35	5,963.76	2,094.31	2,040.64	53.67	39.024		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.00	9,060.00	7,842.05	7,415.43	103.49	21.28	1.27	835.05	5,963.77	2,029.98	1,975.86	54.12	37.509		
13,900.00	9,060.00	7,842.36	7,415.43	105.43	21.28	1.29	834.74	5,963.77	1,968.63	1,914.00	54.63	36.039		
14,000.00	9,060.00	7,842.68	7,415.44	107.38	21.29	1.30	834.42	5,963.78	1,910.55	1,855.36	55.18	34.621		
14,100.00	9,060.00	7,843.01	7,415.45	109.33	21.29	1.31	834.09	5,963.79	1,856.04	1,800.24	55.80	33.265		
14,200.00	9,060.00	7,843.34	7,415.46	111.28	21.29	1.32	833.76	5,963.79	1,805.43	1,748.97	56.46	31.977		
14,300.00	9,060.00	7,843.68	7,415.47	113.23	21.29	1.33	833.42	5,963.80	1,759.05	1,701.88	57.17	30.767		
14,400.00	9,060.00	7,844.03	7,415.48	115.19	21.30	1.35	833.07	5,963.81	1,717.25	1,659.32	57.93	29.643		
14,500.00	9,060.00	7,844.39	7,415.49	117.15	21.30	1.36	832.71	5,963.82	1,680.37	1,621.64	58.73	28.612		
14,600.00	9,060.00	7,844.76	7,415.50	119.11	21.30	1.37	832.34	5,963.83	1,648.73	1,589.17	59.56	27.680		
14,700.00	9,060.00	7,845.14	7,415.51	121.08	21.30	1.39	831.96	5,963.83	1,622.65	1,562.23	60.42	26.854		
14,800.00	9,060.00	7,845.53	7,415.52	123.05	21.30	1.40	831.57	5,963.84	1,602.40	1,541.10	61.31	26.137		
14,900.00	9,060.00	7,845.93	7,415.53	125.02	21.31	1.41	831.17	5,963.85	1,588.20	1,526.00	62.20	25.533		
15,000.00	9,060.00	7,846.34	7,415.54	126.99	21.31	1.43	830.76	5,963.86	1,580.21	1,517.11	63.10	25.043		
15,076.58	9,060.00	7,846.67	7,415.54	128.51	21.31	1.44	830.44	5,963.87	1,578.35	1,514.57	63.78	24.745 CC		
15,100.00	9,060.00	7,846.77	7,415.55	128.97	21.31	1.45	830.34	5,963.87	1,578.53	1,514.54	63.99	24.668 ES		
15,200.00	9,060.00	7,847.20	7,415.56	130.95	21.32	1.46	829.90	5,963.88	1,583.17	1,518.31	64.86	24.409		
15,300.00	9,060.00	7,847.65	7,415.57	132.93	21.32	1.48	829.46	5,963.89	1,594.09	1,528.40	65.69	24.266		
15,400.00	9,060.00	7,848.11	7,415.58	134.91	21.32	1.49	829.00	5,963.90	1,611.15	1,544.67	66.48	24.237 SF		
15,500.00	9,060.00	7,848.58	7,415.59	136.89	21.32	1.51	828.52	5,963.91	1,634.16	1,566.97	67.19	24.320		
15,600.00	9,060.00	7,849.07	7,415.60	138.88	21.33	1.53	828.03	5,963.93	1,662.88	1,595.04	67.84	24.512		
15,700.00	9,060.00	7,849.57	7,415.62	140.86	21.33	1.55	827.53	5,963.94	1,697.01	1,628.61	68.40	24.810		
15,800.00	9,060.00	7,850.09	7,415.63	142.85	21.33	1.57	827.01	5,963.95	1,736.24	1,667.36	68.88	25.207		
15,900.00	9,060.00	7,850.63	7,415.64	144.84	21.34	1.59	826.48	5,963.96	1,780.23	1,710.96	69.27	25.699		
16,000.00	9,060.00	7,851.18	7,415.66	146.83	21.34	1.61	825.93	5,963.97	1,828.63	1,759.05	69.58	26.279		
16,100.00	9,060.00	7,851.75	7,415.67	148.83	21.35	1.63	825.36	5,963.99	1,881.11	1,811.29	69.82	26.941		
16,200.00	9,060.00	7,852.34	7,415.68	150.82	21.35	1.65	824.77	5,964.00	1,937.33	1,867.34	69.99	27.679		
16,300.00	9,060.00	7,852.95	7,415.70	152.82	21.35	1.67	824.16	5,964.02	1,996.98	1,926.88	70.10	28.486		
16,400.00	9,060.00	7,853.58	7,415.71	154.81	21.36	1.69	823.53	5,964.03	2,059.76	1,989.59	70.17	29.356		
16,500.00	9,060.00	7,854.23	7,415.73	156.81	21.36	1.72	822.88	5,964.05	2,125.39	2,055.21	70.18	30.283		
16,600.00	9,060.00	7,854.91	7,415.75	158.81	21.37	1.74	822.20	5,964.06	2,193.62	2,123.45	70.17	31.263		
16,700.00	9,060.00	7,855.61	7,415.76	160.81	21.37	1.77	821.50	5,964.08	2,264.21	2,194.09	70.12	32.291		
16,800.00	9,060.00	7,856.33	7,415.78	162.81	21.38	1.79	820.78	5,964.10	2,336.94	2,266.89	70.05	33.361		
16,900.00	9,060.00	7,857.08	7,415.80	164.82	21.38	1.82	820.03	5,964.12	2,411.63	2,341.67	69.96	34.470		
17,000.00	9,060.00	7,857.87	7,415.82	166.82	21.38	1.85	819.24	5,964.14	2,488.10	2,418.24	69.86	35.614		
17,100.00	9,060.00	7,858.68	7,415.84	168.82	21.39	1.88	818.43	5,964.16	2,566.19	2,496.43	69.75	36.790		
17,200.00	9,060.00	7,859.73	7,415.86	170.83	21.40	1.92	817.38	5,964.18	2,645.75	2,576.11	69.64	37.993		
17,300.00	9,060.00	7,861.02	7,415.89	172.84	21.41	1.96	816.09	5,964.22	2,726.66	2,657.14	69.52	39.220		
17,400.00	9,060.00	7,862.45	7,415.92	174.84	21.42	2.01	814.66	5,964.25	2,808.79	2,739.39	69.40	40.470		
17,500.00	9,060.00	7,864.04	7,415.96	176.85	21.43	2.07	813.07	5,964.30	2,892.06	2,822.77	69.29	41.740		
17,600.00	9,060.00	7,865.83	7,416.00	178.86	21.44	2.14	811.29	5,964.34	2,976.35	2,907.17	69.17	43.027		
17,700.00	9,060.00	7,867.84	7,416.04	180.87	21.45	2.21	809.28	5,964.40	3,061.58	2,992.52	69.06	44.329		
17,800.00	9,060.00	7,870.13	7,416.09	182.88	21.47	2.29	806.98	5,964.46	3,147.69	3,078.73	68.96	45.645		
17,900.00	9,060.00	7,872.76	7,416.15	184.89	21.49	2.39	804.35	5,964.54	3,234.59	3,165.73	68.86	46.971		
18,000.00	9,060.00	7,875.82	7,416.21	186.90	21.51	2.50	801.31	5,964.63	3,322.23	3,253.46	68.77	48.306		
18,100.00	9,060.00	7,879.40	7,416.28	188.92	21.53	2.63	797.73	5,964.74	3,410.55	3,341.86	68.70	49.647		
18,200.00	9,060.00	7,883.66	7,416.36	190.93	21.56	2.78	793.47	5,964.88	3,499.50	3,430.87	68.63	50.992		
18,300.00	9,060.00	7,888.81	7,416.46	192.94	21.60	2.97	788.32	5,965.05	3,589.02	3,520.45	68.58	52.337		
18,400.00	9,060.00	18,400.00	7,416.25	194.96	102.28	2.61	798.35	5,964.75	3,679.08	3,541.61	137.47	26.763		
18,500.00	9,060.00	18,500.00	7,416.28	196.97	103.08	2.65	797.17	5,964.78	3,769.65	3,631.30	138.35	27.248		
18,600.00	9,060.00	18,600.00	7,416.30	198.99	103.87	2.69	796.00	5,964.82	3,860.68	3,721.46	139.22	27.731		
18,700.00	9,060.00	18,700.00	7,416.33	201.00	104.67	2.73	794.83	5,964.85	3,952.15	3,812.07	140.08	28.213		
18,800.00	9,060.00	18,800.00	7,416.35	203.02	105.46	2.78	793.65	5,964.89	4,044.02	3,903.09	140.93	28.694		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State 15H - Original Hole - Actuals												Offset Site Error:	5.00 ft
Survey Program: 106-MWD+IGRF, 2746-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,900.00	9,060.00	18,900.00	7,416.38	205.04	106.25	2.82	792.48	5,964.92	4,136.27	3,994.49	141.78	29.173	
19,000.00	9,060.00	7,895.25	7,416.56	207.06	21.65	3.20	781.89	5,965.27	4,228.86	4,160.77	68.09	62.108	
19,100.00	9,060.00	7,896.39	7,416.58	209.07	21.66	3.25	780.74	5,965.31	4,321.78	4,253.74	68.04	63.517	
19,200.00	9,060.00	7,897.54	7,416.60	211.09	21.67	3.29	779.60	5,965.35	4,415.02	4,347.02	68.00	64.927	
19,300.00	9,060.00	7,898.69	7,416.62	213.11	21.68	3.33	778.44	5,965.38	4,508.54	4,440.58	67.96	66.339	
19,400.00	9,060.00	7,899.85	7,416.63	215.13	21.69	3.37	777.29	5,965.42	4,602.34	4,534.41	67.93	67.752	
19,500.32	9,060.00	7,901.02	7,416.65	217.16	21.70	3.41	776.12	5,965.46	4,696.69	4,628.79	67.90	69.170	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10					
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719		
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830		
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136		
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138		
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071		
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393		
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588		
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365		
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235		
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783		
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522		
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356		
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598		
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396		
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816		
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495		
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810		
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492		
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077		
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919		
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751		
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600		
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466		
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553		
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265		
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166		
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786		
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382		
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961		
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918		
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227		
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202		
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622		
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583		
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027		
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738		
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740		
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823		
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354		
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169		
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681		
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928		
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391		
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958		
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848		
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993		
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353		
4,400.00	4,380.70	4,326.65	4,326.54	15.60	15.69	93.30	1,571.52	5,782.75	6,001.91	5,970.63	31.28	191.866		
4,500.00	4,479.34	4,448.29	4,448.18	15.97	16.10	93.49	1,571.66	5,782.02	6,002.33	5,970.27	32.05	187.267		
4,600.00	4,577.98	4,559.15	4,559.03	16.34	16.47	93.66	1,571.40	5,781.11	6,002.50	5,969.71	32.79	183.068		
4,700.00	4,676.62	4,661.36	4,661.24	16.71	16.81	93.82	1,571.37	5,780.08	6,002.58	5,969.08	33.50	179.196		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	4,754.35	4,754.23	17.08	17.12	93.96	1,571.65	5,779.09	6,002.73	5,968.55	34.18	175.635		
4,900.00	4,873.91	4,843.75	4,843.62	17.45	17.42	94.10	1,572.03	5,778.25	6,003.05	5,968.21	34.85	172.274		
5,000.00	4,972.55	4,917.04	4,916.90	17.82	17.66	94.21	1,572.40	5,777.70	6,003.65	5,968.19	35.46	169.299		
5,100.00	5,071.19	4,979.31	4,979.17	18.19	17.87	94.30	1,572.78	5,777.62	6,004.86	5,968.82	36.04	166.616		
5,200.00	5,169.83	5,070.23	5,070.09	18.56	18.18	94.44	1,573.09	5,777.86	6,006.48	5,969.76	36.72	163.597		
5,300.00	5,268.47	5,152.21	5,152.08	18.93	18.45	94.57	1,573.09	5,778.32	6,008.33	5,970.97	37.36	160.822		
5,400.00	5,367.11	5,238.14	5,238.00	19.31	18.74	94.71	1,572.93	5,779.04	6,010.48	5,972.46	38.02	158.091		
5,500.00	5,465.75	5,339.17	5,339.03	19.68	19.08	94.87	1,572.80	5,779.99	6,012.78	5,974.05	38.73	155.247		
5,600.00	5,564.39	5,475.90	5,475.75	20.05	19.54	95.08	1,573.39	5,780.61	6,014.76	5,975.19	39.56	152.023		
5,700.00	5,663.03	5,599.25	5,599.10	20.42	19.96	95.26	1,574.02	5,780.50	6,016.26	5,975.91	40.35	149.088		
5,800.00	5,761.67	5,695.79	5,695.64	20.80	20.29	95.41	1,574.39	5,780.20	6,017.58	5,976.53	41.05	146.582		
5,900.00	5,860.31	5,785.09	5,784.94	21.17	20.59	95.54	1,574.73	5,780.07	6,019.09	5,977.36	41.73	144.248		
6,000.00	5,958.96	5,874.18	5,874.03	21.54	20.89	95.68	1,574.99	5,780.09	6,020.79	5,978.39	42.40	141.994		
6,100.00	6,057.60	5,976.20	5,976.05	21.92	21.24	95.84	1,575.02	5,780.26	6,022.64	5,979.52	43.12	139.670		
6,200.00	6,156.24	6,075.37	6,075.21	22.29	21.57	96.00	1,574.75	5,780.38	6,024.43	5,980.60	43.83	137.449		
6,300.00	6,254.88	6,180.28	6,180.12	22.67	21.93	96.17	1,573.80	5,780.61	6,026.25	5,981.69	44.56	135.238		
6,400.00	6,353.52	6,268.06	6,267.89	23.04	22.22	96.32	1,572.65	5,780.85	6,028.12	5,982.89	45.23	133.270		
6,500.00	6,452.16	6,355.38	6,355.20	23.42	22.52	96.46	1,571.61	5,781.26	6,030.24	5,984.34	45.90	131.369		
6,600.00	6,550.80	6,429.06	6,428.88	23.79	22.77	96.58	1,570.80	5,781.78	6,032.67	5,986.14	46.53	129.661		
6,700.00	6,649.44	6,496.77	6,496.58	24.17	23.00	96.70	1,570.09	5,782.59	6,035.63	5,988.50	47.13	128.069		
6,800.00	6,748.08	6,566.30	6,566.10	24.54	23.24	96.81	1,569.53	5,783.78	6,039.16	5,991.42	47.74	126.513		
6,900.00	6,846.72	6,672.57	6,672.35	24.92	23.61	96.99	1,568.70	5,785.78	6,042.92	5,994.45	48.47	124.665		
7,000.00	6,945.36	6,780.34	6,780.09	25.29	23.97	97.17	1,567.66	5,787.60	6,046.51	5,997.29	49.22	122.855		
7,100.00	7,044.00	6,876.98	6,876.72	25.67	24.31	97.32	1,567.26	5,789.16	6,050.16	6,000.24	49.92	121.195		
7,200.00	7,142.65	6,969.27	6,969.01	26.04	24.62	97.46	1,567.49	5,790.49	6,053.79	6,003.18	50.61	119.617		
7,300.00	7,241.29	7,034.05	7,033.77	26.42	24.84	97.56	1,567.78	5,791.69	6,057.90	6,006.70	51.20	118.319		
7,400.00	7,339.93	7,097.67	7,097.37	26.79	25.06	97.66	1,568.08	5,793.24	6,062.61	6,010.82	51.78	117.074		
7,500.00	7,438.57	7,162.22	7,161.89	27.17	25.29	97.76	1,568.29	5,795.19	6,067.91	6,015.54	52.37	115.864		
7,571.77	7,509.37	7,208.74	7,208.38	27.44	25.45	97.83	1,568.25	5,796.84	6,072.09	6,019.30	52.79	115.019		
7,600.00	7,537.23	7,227.96	7,227.59	27.55	25.51	97.89	1,568.18	5,797.59	6,073.80	6,020.84	52.96	114.685		
7,700.00	7,636.18	7,303.05	7,302.60	27.92	25.77	98.09	1,567.46	5,800.75	6,079.91	6,026.33	53.58	113.470		
7,800.00	7,735.48	7,389.70	7,389.16	28.29	26.08	98.30	1,566.16	5,804.73	6,085.99	6,031.75	54.24	112.202		
7,900.00	7,835.05	7,476.64	7,475.99	28.65	26.38	98.47	1,565.04	5,808.86	6,091.91	6,037.01	54.90	110.968		
8,000.00	7,934.83	7,713.46	7,712.63	29.01	27.20	98.72	1,562.60	5,817.66	6,096.49	6,040.38	56.11	108.652		
8,100.00	8,034.74	7,817.42	7,816.55	29.36	27.56	98.81	1,561.63	5,820.26	6,099.47	6,042.65	56.82	107.343		
8,202.27	8,137.00	7,876.00	7,875.11	29.72	27.77	82.83	1,561.12	5,821.70	6,102.22	6,044.85	57.37	106.366		
8,300.00	8,234.73	7,876.00	7,875.11	30.06	27.77	82.83	1,561.12	5,821.70	6,105.99	6,048.31	57.68	105.866		
8,400.00	8,334.73	7,876.00	7,875.11	30.41	27.77	82.83	1,561.12	5,821.70	6,111.45	6,053.47	57.98	105.408		
8,500.00	8,434.73	7,876.00	7,875.11	30.75	27.77	82.83	1,561.12	5,821.70	6,118.55	6,060.28	58.27	105.005		
8,552.31	8,487.04	7,876.00	7,875.11	30.94	27.77	82.83	1,561.12	5,821.70	6,122.91	6,064.49	58.42	104.815		
8,600.00	8,534.68	7,876.00	7,875.11	31.10	27.77	-6.80	1,561.12	5,821.70	6,125.31	6,066.76	58.54	104.630		
8,650.00	8,584.26	7,876.00	7,875.11	31.26	27.77	-6.82	1,561.12	5,821.70	6,123.99	6,065.32	58.67	104.388		
8,700.00	8,633.10	7,876.00	7,875.11	31.43	27.77	-6.88	1,561.12	5,821.70	6,118.75	6,059.97	58.78	104.092		
8,750.00	8,680.83	7,876.00	7,875.11	31.58	27.77	-6.99	1,561.12	5,821.70	6,109.63	6,050.74	58.89	103.744		
8,800.00	8,727.09	7,876.00	7,875.11	31.74	27.77	-7.16	1,561.12	5,821.70	6,096.68	6,037.69	58.99	103.349		
8,850.00	8,771.52	7,876.00	7,875.11	31.89	27.77	-7.38	1,561.12	5,821.70	6,079.97	6,020.89	59.08	102.909		
8,900.00	8,813.78	7,876.00	7,875.11	32.04	27.77	-7.67	1,561.12	5,821.70	6,059.59	6,000.43	59.16	102.427		
8,950.00	8,853.56	7,876.00	7,875.11	32.18	27.77	-8.05	1,561.12	5,821.70	6,035.68	5,976.45	59.23	101.905		
9,000.00	8,890.55	7,876.00	7,875.11	32.32	27.77	-8.52	1,561.12	5,821.70	6,008.36	5,949.08	59.29	101.346		
9,050.00	8,924.46	7,876.00	7,875.11	32.47	27.77	-9.11	1,561.12	5,821.70	5,977.80	5,918.47	59.33	100.753		
9,100.00	8,955.05	7,876.00	7,875.11	32.63	27.77	-9.86	1,561.12	5,821.70	5,944.19	5,884.83	59.37	100.126		
9,150.00	8,982.08	7,876.00	7,875.11	32.79	27.77	-10.81	1,561.12	5,821.70	5,907.73	5,848.34	59.39	99.469		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	7,876.00	7,875.11	32.97	27.77	-12.06	1,561.12	5,821.70	5,868.65	5,809.24	59.41	98.784		
9,250.00	9,024.65	7,876.00	7,875.11	33.17	27.77	-13.71	1,561.12	5,821.70	5,827.20	5,767.78	59.42	98.072		
9,300.00	9,039.87	7,876.00	7,875.11	33.38	27.77	-15.99	1,561.12	5,821.70	5,783.64	5,724.22	59.42	97.336		
9,350.00	9,050.89	7,876.00	7,875.11	33.62	27.77	-19.27	1,561.12	5,821.70	5,738.26	5,678.84	59.42	96.578		
9,400.00	9,057.61	7,876.00	7,875.11	33.87	27.77	-24.29	1,561.12	5,821.70	5,691.37	5,631.96	59.41	95.801		
9,452.31	9,060.00	7,876.00	7,875.11	34.15	27.77	-33.17	1,561.12	5,821.70	5,641.04	5,581.65	59.40	94.968		
9,500.00	9,060.00	7,876.00	7,875.11	34.42	27.77	-33.17	1,561.12	5,821.70	5,594.70	5,535.31	59.39	94.203		
9,600.00	9,060.00	7,876.00	7,875.11	35.09	27.77	-33.17	1,561.12	5,821.70	5,497.60	5,438.23	59.37	92.601		
9,700.00	9,060.00	7,876.00	7,875.11	35.86	27.77	-33.17	1,561.12	5,821.70	5,400.60	5,341.25	59.35	90.994		
9,800.00	9,060.00	7,876.00	7,875.11	36.72	27.77	-33.17	1,561.12	5,821.70	5,303.71	5,244.38	59.34	89.383		
9,900.00	9,060.00	7,876.00	7,875.11	37.69	27.77	-33.17	1,561.12	5,821.70	5,206.95	5,147.62	59.33	87.766		
10,000.00	9,060.00	7,876.00	7,875.11	38.73	27.77	-33.17	1,561.12	5,821.70	5,110.30	5,050.98	59.32	86.144		
10,100.00	9,060.00	7,876.00	7,875.11	39.86	27.77	-33.17	1,561.12	5,821.70	5,013.79	4,954.47	59.32	84.517		
10,140.22	9,060.00	7,876.00	7,875.11	40.33	27.77	-33.17	1,561.12	5,821.70	4,975.01	4,915.69	59.32	83.861		
10,200.00	9,060.00	7,876.00	7,875.11	41.05	27.77	-36.62	1,561.12	5,821.70	4,917.52	4,858.19	59.33	82.885		
10,300.00	9,060.00	7,876.00	7,875.11	42.31	27.77	-41.66	1,561.12	5,821.70	4,821.95	4,762.59	59.35	81.242		
10,400.00	9,060.00	7,876.00	7,875.11	43.64	27.77	-45.90	1,561.12	5,821.70	4,727.29	4,667.89	59.40	79.586		
10,507.23	9,060.00	7,876.00	7,875.11	45.11	27.77	-49.71	1,561.12	5,821.70	4,627.01	4,567.53	59.48	77.790		
10,600.00	9,060.00	7,876.00	7,875.11	46.43	27.77	-46.53	1,561.12	5,821.70	4,540.56	4,480.98	59.57	76.218		
10,700.00	9,060.00	7,876.00	7,875.11	47.91	27.77	-42.68	1,561.12	5,821.70	4,446.77	4,387.10	59.68	74.512		
10,800.00	9,060.00	7,876.00	7,875.11	49.42	27.77	-38.37	1,561.12	5,821.70	4,352.45	4,292.67	59.78	72.805		
10,900.00	9,060.00	7,876.00	7,875.11	50.97	27.77	-33.55	1,561.12	5,821.70	4,257.66	4,197.78	59.88	71.103		
11,000.00	9,060.00	7,876.00	7,875.11	52.55	27.77	-28.24	1,561.12	5,821.70	4,162.50	4,102.54	59.97	69.414		
11,100.00	9,060.00	7,876.00	7,875.11	54.14	27.77	-22.47	1,561.12	5,821.70	4,067.07	4,007.03	60.04	67.744		
11,207.23	9,060.00	7,876.00	7,875.11	55.87	27.77	-15.85	1,561.12	5,821.70	3,964.53	3,904.45	60.09	65.978		
11,300.00	9,060.00	7,876.00	7,875.11	57.39	27.77	-21.46	1,561.12	5,821.70	3,876.00	3,815.87	60.14	64.452		
11,400.00	9,060.00	7,876.00	7,875.11	59.06	27.77	-26.90	1,561.12	5,821.70	3,781.20	3,720.97	60.23	62.781		
11,506.63	9,060.00	7,876.00	7,875.11	60.88	27.77	-32.01	1,561.12	5,821.70	3,681.00	3,620.62	60.38	60.967		
11,600.00	9,060.00	7,876.00	7,875.11	62.49	27.77	-32.01	1,561.12	5,821.70	3,593.87	3,533.33	60.54	59.360		
11,700.00	9,060.00	7,876.00	7,875.11	64.24	27.77	-32.01	1,561.12	5,821.70	3,500.92	3,440.18	60.75	57.633		
11,800.00	9,060.00	7,876.00	7,875.11	66.01	27.77	-32.01	1,561.12	5,821.70	3,408.37	3,347.40	60.97	55.899		
11,900.00	9,060.00	7,876.00	7,875.11	67.79	27.77	-32.01	1,561.12	5,821.70	3,316.25	3,255.02	61.23	54.160		
12,000.00	9,060.00	7,876.00	7,875.11	69.58	27.77	-32.01	1,561.12	5,821.70	3,224.60	3,163.08	61.52	52.416		
12,100.00	9,060.00	7,876.00	7,875.11	71.39	27.77	-32.01	1,561.12	5,821.70	3,133.46	3,071.62	61.84	50.667		
12,200.00	9,060.00	7,876.00	7,875.11	73.21	27.77	-32.01	1,561.12	5,821.70	3,042.88	2,980.67	62.21	48.915		
12,300.00	9,060.00	7,876.00	7,875.11	75.05	27.77	-32.01	1,561.12	5,821.70	2,952.91	2,890.29	62.62	47.160		
12,400.00	9,060.00	7,876.00	7,875.11	76.89	27.77	-32.01	1,561.12	5,821.70	2,863.60	2,800.53	63.07	45.403		
12,500.00	9,060.00	7,876.00	7,875.11	78.74	27.77	-32.01	1,561.12	5,821.70	2,775.02	2,711.44	63.58	43.647		
12,600.00	9,060.00	7,876.00	7,875.11	80.61	27.77	-32.01	1,561.12	5,821.70	2,687.24	2,623.10	64.14	41.894		
12,700.00	9,060.00	7,876.00	7,875.11	82.48	27.77	-32.01	1,561.12	5,821.70	2,600.35	2,535.57	64.77	40.145		
12,800.00	9,060.00	7,876.00	7,875.11	84.36	27.77	-32.01	1,561.12	5,821.70	2,514.43	2,448.95	65.47	38.403		
12,900.00	9,060.00	7,876.00	7,875.11	86.24	27.77	-32.01	1,561.12	5,821.70	2,429.58	2,363.33	66.25	36.672		
13,000.00	9,060.00	7,876.00	7,875.11	88.14	27.77	-32.01	1,561.12	5,821.70	2,345.93	2,278.82	67.11	34.956		
13,100.00	9,060.00	7,876.00	7,875.11	90.04	27.77	-32.01	1,561.12	5,821.70	2,263.61	2,195.55	68.06	33.259		
13,200.00	9,060.00	7,876.00	7,875.11	91.94	27.77	-32.01	1,561.12	5,821.70	2,182.77	2,113.66	69.11	31.586		
13,300.00	9,060.00	7,876.00	7,875.11	93.86	27.77	-32.01	1,561.12	5,821.70	2,103.57	2,033.31	70.26	29.942		
13,400.00	9,060.00	7,876.00	7,875.11	95.77	27.77	-32.01	1,561.12	5,821.70	2,026.21	1,954.70	71.51	28.333		
13,500.00	9,060.00	7,876.00	7,875.11	97.70	27.77	-32.01	1,561.12	5,821.70	1,950.91	1,878.03	72.89	26.766		
13,600.00	9,060.00	7,876.00	7,875.11	99.62	27.77	-32.01	1,561.12	5,821.70	1,877.92	1,803.54	74.38	25.248		
13,700.00	9,060.00	7,876.00	7,875.11	101.56	27.77	-32.01	1,561.12	5,821.70	1,807.52	1,731.53	75.99	23.786		
13,800.00	9,060.00	7,876.00	7,875.11	103.49	27.77	-32.01	1,561.12	5,821.70	1,740.02	1,662.30	77.72	22.388		
13,900.00	9,060.00	7,876.00	7,875.11	105.43	27.77	-32.01	1,561.12	5,821.70	1,675.77	1,596.20	79.57	21.061		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	7,876.00	7,875.11	107.38	27.77	-32.01	1,561.12	5,821.70	1,615.16	1,533.64	81.51	19.814		
14,100.00	9,060.00	7,876.00	7,875.11	109.33	27.77	-32.01	1,561.12	5,821.70	1,558.61	1,475.06	83.55	18.654		
14,200.00	9,060.00	7,876.00	7,875.11	111.28	27.77	-32.01	1,561.12	5,821.70	1,506.59	1,420.93	85.66	17.588		
14,300.00	9,060.00	7,876.00	7,875.11	113.23	27.77	-32.01	1,561.12	5,821.70	1,459.57	1,371.76	87.80	16.623		
14,400.00	9,060.00	7,876.00	7,875.11	115.19	27.77	-32.01	1,561.12	5,821.70	1,418.05	1,328.10	89.96	15.764		
14,500.00	9,060.00	7,876.00	7,875.11	117.15	27.77	-32.01	1,561.12	5,821.70	1,382.53	1,290.46	92.07	15.016		
14,600.00	9,060.00	7,876.00	7,875.11	119.11	27.77	-32.01	1,561.12	5,821.70	1,353.49	1,259.38	94.11	14.382		
14,700.00	9,060.00	7,876.00	7,875.11	121.08	27.77	-32.01	1,561.12	5,821.70	1,331.34	1,235.31	96.03	13.864		
14,800.00	9,060.00	7,876.00	7,875.11	123.05	27.77	-32.01	1,561.12	5,821.70	1,316.44	1,218.66	97.78	13.464		
14,900.00	9,060.00	7,876.00	7,875.11	125.02	27.77	-32.01	1,561.12	5,821.70	1,309.02	1,209.70	99.32	13.180		
14,947.33	9,060.00	7,876.00	7,875.11	125.95	27.77	-32.01	1,561.12	5,821.70	1,308.17	1,208.20	99.96	13.086 CC, ES		
15,000.00	9,060.00	7,876.00	7,875.11	126.99	27.77	-32.01	1,561.12	5,821.70	1,309.23	1,208.61	100.62	13.012		
15,100.00	9,060.00	7,876.00	7,875.11	128.97	27.77	-32.01	1,561.12	5,821.70	1,317.04	1,215.39	101.65	12.956 SF		
15,200.00	9,060.00	7,876.00	7,875.11	130.95	27.77	-32.01	1,561.12	5,821.70	1,332.34	1,229.94	102.41	13.010		
15,300.00	9,060.00	7,876.00	7,875.11	132.93	27.77	-32.01	1,561.12	5,821.70	1,354.87	1,251.99	102.88	13.170		
15,400.00	9,060.00	7,876.00	7,875.11	134.91	27.77	-32.01	1,561.12	5,821.70	1,384.27	1,281.20	103.07	13.430		
15,500.00	9,060.00	7,876.00	7,875.11	136.89	27.77	-32.01	1,561.12	5,821.70	1,420.12	1,317.11	103.01	13.786		
15,600.00	9,060.00	7,876.00	7,875.11	138.88	27.77	-32.01	1,561.12	5,821.70	1,461.94	1,359.21	102.73	14.231		
15,700.00	9,060.00	7,876.00	7,875.11	140.86	27.77	-32.01	1,561.12	5,821.70	1,509.24	1,406.99	102.25	14.760		
15,800.00	9,060.00	7,876.00	7,875.11	142.85	27.77	-32.01	1,561.12	5,821.70	1,561.52	1,459.90	101.62	15.366		
15,900.00	9,060.00	7,876.00	7,875.11	144.84	27.77	-32.01	1,561.12	5,821.70	1,618.29	1,517.42	100.87	16.043		
16,000.00	9,060.00	7,876.00	7,875.11	146.83	27.77	-32.01	1,561.12	5,821.70	1,679.11	1,579.07	100.03	16.785		
16,100.00	9,060.00	7,876.00	7,875.11	148.83	27.77	-32.01	1,561.12	5,821.70	1,743.54	1,644.41	99.14	17.587		
16,200.00	9,060.00	7,876.00	7,875.11	150.82	27.77	-32.01	1,561.12	5,821.70	1,811.21	1,713.00	98.20	18.443		
16,300.00	9,060.00	7,876.00	7,875.11	152.82	27.77	-32.01	1,561.12	5,821.70	1,881.76	1,784.50	97.26	19.348		
16,400.00	9,060.00	7,876.00	7,875.11	154.81	27.77	-32.01	1,561.12	5,821.70	1,954.88	1,858.57	96.31	20.298		
16,500.00	9,060.00	7,876.00	7,875.11	156.81	27.77	-32.01	1,561.12	5,821.70	2,030.29	1,934.92	95.37	21.288		
16,600.00	9,060.00	7,876.00	7,875.11	158.81	27.77	-32.01	1,561.12	5,821.70	2,107.75	2,013.29	94.45	22.315		
16,700.00	9,060.00	7,876.00	7,875.11	160.81	27.77	-32.01	1,561.12	5,821.70	2,187.04	2,093.47	93.56	23.375		
16,800.00	9,060.00	7,876.00	7,875.11	162.81	27.77	-32.01	1,561.12	5,821.70	2,267.97	2,175.26	92.70	24.464		
16,900.00	9,060.00	7,876.00	7,875.11	164.82	27.77	-32.01	1,561.12	5,821.70	2,350.36	2,258.48	91.88	25.581		
17,000.00	9,060.00	7,876.00	7,875.11	166.82	27.77	-32.01	1,561.12	5,821.70	2,434.08	2,342.99	91.09	26.722		
17,100.00	9,060.00	7,876.00	7,875.11	168.82	27.77	-32.01	1,561.12	5,821.70	2,518.98	2,428.65	90.33	27.885		
17,200.00	9,060.00	7,876.00	7,875.11	170.83	27.77	-32.01	1,561.12	5,821.70	2,604.96	2,515.34	89.62	29.068		
17,300.00	9,060.00	7,876.00	7,875.11	172.84	27.77	-32.01	1,561.12	5,821.70	2,691.90	2,602.97	88.93	30.268		
17,400.00	9,060.00	7,876.00	7,875.11	174.84	27.77	-32.01	1,561.12	5,821.70	2,779.73	2,691.44	88.29	31.485		
17,500.00	9,060.00	7,876.00	7,875.11	176.85	27.77	-32.01	1,561.12	5,821.70	2,868.35	2,780.67	87.67	32.716		
17,600.00	9,060.00	7,876.00	7,875.11	178.86	27.77	-32.01	1,561.12	5,821.70	2,957.69	2,870.60	87.09	33.960		
17,700.00	9,060.00	7,876.00	7,875.11	180.87	27.77	-32.01	1,561.12	5,821.70	3,047.70	2,961.16	86.54	35.216		
17,800.00	9,060.00	7,876.00	7,875.11	182.88	27.77	-32.01	1,561.12	5,821.70	3,138.31	3,052.29	86.02	36.482		
17,900.00	9,060.00	7,876.00	7,875.11	184.89	27.77	-32.01	1,561.12	5,821.70	3,229.48	3,143.95	85.53	37.758		
18,000.00	9,060.00	7,876.00	7,875.11	186.90	27.77	-32.01	1,561.12	5,821.70	3,321.16	3,236.09	85.07	39.042		
18,100.00	9,060.00	7,876.00	7,875.11	188.92	27.77	-32.01	1,561.12	5,821.70	3,413.30	3,328.67	84.63	40.333		
18,200.00	9,060.00	7,876.00	7,875.11	190.93	27.77	-32.01	1,561.12	5,821.70	3,505.87	3,421.66	84.21	41.631		
18,300.00	9,060.00	7,876.00	7,875.11	192.94	27.77	-32.01	1,561.12	5,821.70	3,598.84	3,515.02	83.82	42.935		
18,400.00	9,060.00	7,876.00	7,875.11	194.96	27.77	-32.01	1,561.12	5,821.70	3,692.18	3,608.73	83.45	44.244		
18,500.00	9,060.00	7,876.00	7,875.11	196.97	27.77	-32.01	1,561.12	5,821.70	3,785.86	3,702.76	83.10	45.557		
18,600.00	9,060.00	7,876.00	7,875.11	198.99	27.77	-32.01	1,561.12	5,821.70	3,879.86	3,797.08	82.77	46.874		
18,700.00	9,060.00	7,876.00	7,875.11	201.00	27.77	-32.01	1,561.12	5,821.70	3,974.14	3,891.68	82.46	48.195		
18,800.00	9,060.00	7,876.00	7,875.11	203.02	27.77	-32.01	1,561.12	5,821.70	4,068.70	3,986.54	82.17	49.518		
18,900.00	9,060.00	7,876.00	7,875.11	205.04	27.77	-32.01	1,561.12	5,821.70	4,163.52	4,081.63	81.89	50.844		
19,000.00	9,060.00	7,876.00	7,875.11	207.06	27.77	-32.01	1,561.12	5,821.70	4,258.57	4,176.94	81.63	52.172		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Pilot - Pilot												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	7,876.00	7,875.11	209.07	27.77	-32.01	1,561.12	5,821.70	4,353.84	4,272.46	81.38	53.501	
19,200.00	9,060.00	7,876.00	7,875.11	211.09	27.77	-32.01	1,561.12	5,821.70	4,449.32	4,368.18	81.14	54.832	
19,300.00	9,060.00	7,876.00	7,875.11	213.11	27.77	-32.01	1,561.12	5,821.70	4,545.00	4,464.07	80.92	56.163	
19,400.00	9,060.00	7,876.00	7,875.11	215.13	27.77	-32.01	1,561.12	5,821.70	4,640.86	4,560.14	80.72	57.495	
19,500.32	9,060.00	7,876.00	7,875.11	217.16	27.77	-32.01	1,561.12	5,821.70	4,737.19	4,656.67	80.52	58.832	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,996.10					
100.00	100.00	7.93	7.93	0.52	5.02	74.82	1,569.79	5,786.48	5,995.65	5,990.11	5.54	1,081.719		
200.00	200.00	79.63	79.63	0.70	5.03	74.82	1,570.18	5,786.86	5,996.26	5,990.54	5.73	1,046.830		
300.00	300.00	177.13	177.12	0.99	5.04	74.82	1,570.40	5,787.60	5,997.06	5,991.03	6.03	995.136		
400.00	400.00	277.53	277.52	1.31	5.08	74.82	1,570.31	5,788.44	5,997.84	5,991.45	6.39	939.138		
500.00	500.00	377.10	377.09	1.65	5.14	74.82	1,570.31	5,789.25	5,998.62	5,991.84	6.79	884.071		
600.00	600.00	478.74	478.73	1.99	5.23	74.83	1,570.31	5,790.07	5,999.40	5,992.19	7.22	831.393		
700.00	700.00	583.16	583.14	2.34	5.34	74.83	1,570.12	5,790.90	6,000.13	5,992.45	7.68	781.588		
800.00	800.00	733.43	733.41	2.69	5.54	74.83	1,570.76	5,791.45	6,000.69	5,992.46	8.23	729.365		
900.00	900.00	900.00	868.52	3.04	5.80	74.82	1,570.83	5,790.53	5,999.98	5,991.13	8.85	678.235		
1,000.00	1,000.00	926.21	926.18	3.40	5.85	74.83	1,570.29	5,790.42	5,999.56	5,990.32	9.25	648.783		
1,003.97	1,003.97	928.40	928.37	3.41	5.85	74.83	1,570.27	5,790.42	5,999.56	5,990.30	9.27	647.522		
1,100.00	1,100.00	1,006.10	1,006.07	3.75	6.00	74.84	1,569.51	5,790.85	5,999.80	5,990.05	9.75	615.356		
1,200.00	1,200.00	1,112.43	1,112.39	4.11	6.21	74.84	1,568.84	5,791.32	6,000.06	5,989.75	10.32	581.598		
1,300.00	1,300.00	1,211.47	1,211.43	4.46	6.42	74.85	1,568.54	5,791.59	6,000.25	5,989.37	10.88	551.396		
1,400.00	1,400.00	1,308.80	1,308.76	4.82	6.64	74.85	1,568.34	5,791.89	6,000.49	5,989.04	11.46	523.816		
1,500.00	1,500.00	1,405.56	1,405.52	5.18	6.86	74.85	1,568.14	5,792.23	6,000.78	5,988.74	12.04	498.495		
1,600.00	1,600.00	1,506.17	1,506.13	5.53	7.11	74.86	1,567.75	5,792.66	6,001.09	5,988.46	12.64	474.810		
1,700.00	1,700.00	1,623.71	1,623.66	5.89	7.40	74.86	1,567.12	5,793.04	6,001.26	5,987.97	13.29	451.492		
1,800.00	1,800.00	1,740.77	1,740.73	6.25	7.71	74.87	1,566.49	5,793.07	6,001.15	5,987.20	13.95	430.077		
1,900.00	1,900.00	1,850.17	1,850.12	6.61	8.00	74.87	1,566.17	5,792.71	6,000.75	5,986.15	14.60	410.919		
2,000.00	2,000.00	1,951.86	1,951.81	6.96	8.28	74.87	1,566.20	5,792.24	6,000.32	5,985.08	15.24	393.751		
2,100.00	2,100.00	2,056.74	2,056.69	7.32	8.57	74.87	1,566.29	5,791.68	5,999.82	5,983.94	15.89	377.600		
2,200.00	2,200.00	2,163.60	2,163.55	7.68	8.88	74.86	1,566.42	5,790.99	5,999.23	5,982.68	16.55	362.466		
2,300.00	2,300.00	2,267.57	2,267.52	8.04	9.18	74.86	1,566.63	5,790.20	5,998.54	5,981.33	17.21	348.553		
2,350.00	2,350.00	2,314.08	2,314.02	8.22	9.31	74.86	1,566.75	5,789.83	5,998.20	5,980.68	17.52	342.265		
2,400.00	2,400.00	2,361.02	2,360.97	8.39	9.45	90.90	1,566.88	5,789.49	5,997.89	5,980.05	17.84	336.166		
2,500.00	2,499.98	2,450.81	2,450.75	8.75	9.72	90.92	1,567.18	5,788.92	5,997.39	5,978.93	18.47	324.786		
2,600.00	2,599.92	2,555.46	2,555.39	9.11	10.03	90.95	1,567.42	5,788.34	5,996.97	5,977.83	19.14	313.382		
2,700.00	2,699.78	2,654.64	2,654.58	9.47	10.34	91.00	1,567.42	5,787.83	5,996.56	5,976.77	19.79	302.961		
2,800.00	2,799.54	2,759.59	2,759.49	9.82	10.66	91.08	1,567.53	5,787.18	5,996.12	5,975.65	20.47	292.918		
2,900.00	2,899.16	2,870.61	2,870.54	10.18	11.00	91.17	1,567.95	5,786.36	5,995.68	5,974.51	21.17	283.227		
3,000.00	2,998.61	3,004.89	3,004.81	10.54	11.42	91.31	1,568.09	5,784.82	5,994.82	5,972.87	21.94	273.202		
3,100.00	3,097.86	3,089.57	3,089.48	10.89	11.69	91.41	1,567.82	5,783.78	5,993.83	5,971.27	22.57	265.622		
3,200.00	3,196.89	3,170.28	3,170.19	11.25	11.94	91.53	1,567.46	5,783.07	5,993.22	5,970.04	23.18	258.583		
3,295.74	3,291.45	3,252.12	3,252.03	11.59	12.20	91.65	1,567.25	5,782.54	5,992.96	5,969.18	23.78	252.027		
3,300.00	3,295.65	3,255.89	3,255.80	11.61	12.22	91.66	1,567.25	5,782.51	5,992.96	5,969.15	23.81	251.738		
3,344.77	3,339.81	3,295.55	3,295.46	11.77	12.34	91.72	1,567.43	5,782.24	5,992.92	5,968.83	24.09	248.740		
3,400.00	3,394.29	3,323.26	3,323.17	11.97	12.43	91.76	1,567.63	5,782.11	5,993.04	5,968.66	24.38	245.823		
3,500.00	3,492.94	3,385.60	3,385.50	12.33	12.63	91.86	1,568.17	5,782.21	5,993.89	5,968.96	24.94	240.354		
3,600.00	3,591.58	3,480.34	3,480.24	12.69	12.93	92.00	1,568.92	5,782.72	5,995.17	5,969.57	25.60	234.169		
3,700.00	3,690.22	3,595.95	3,595.84	13.05	13.30	92.18	1,569.39	5,783.12	5,996.21	5,969.87	26.34	227.681		
3,800.00	3,788.86	3,696.26	3,696.15	13.41	13.63	92.33	1,569.63	5,783.37	5,997.16	5,970.14	27.02	221.928		
3,900.00	3,887.50	3,798.62	3,798.52	13.77	13.96	92.49	1,569.83	5,783.60	5,998.13	5,970.42	27.72	216.391		
4,000.00	3,986.14	3,907.06	3,906.96	14.14	14.32	92.66	1,570.12	5,783.70	5,999.03	5,970.60	28.44	210.958		
4,100.00	4,084.78	4,012.32	4,012.22	14.50	14.66	92.82	1,570.44	5,783.61	5,999.82	5,970.67	29.15	205.848		
4,200.00	4,183.42	4,116.41	4,116.31	14.87	15.00	92.98	1,570.81	5,783.43	6,000.57	5,970.71	29.85	200.993		
4,300.00	4,282.06	4,220.39	4,220.28	15.24	15.34	93.14	1,571.19	5,783.14	6,001.27	5,970.70	30.56	196.353		
4,400.00	4,380.70	4,325.80	4,325.69	15.60	15.69	93.30	1,571.51	5,782.76	6,001.91	5,970.64	31.28	191.883		
4,500.00	4,479.34	4,369.00	4,368.89	15.97	15.76	93.37	1,571.55	5,782.60	6,002.81	5,971.10	31.71	189.304		
4,600.00	4,577.98	4,687.00	4,677.89	16.34	15.84	94.43	1,510.79	5,792.56	6,003.27	5,971.13	32.14	186.796		
4,700.00	4,676.62	4,718.00	4,705.14	16.71	15.86	94.61	1,496.18	5,794.84	6,002.13	5,969.60	32.53	184.483		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,736.82	4,712.94	4,733.28	4,718.25	16.85	15.87	94.71	1,488.45	5,796.17	6,002.02	5,969.33	32.69	183.631		
4,800.00	4,775.27	4,751.00	4,733.22	17.08	15.88	94.82	1,479.14	5,797.91	6,002.31	5,969.37	32.94	182.246		
4,900.00	4,873.91	4,751.00	4,733.22	17.45	15.88	94.82	1,479.14	5,797.91	6,003.97	5,970.67	33.30	180.287		
5,000.00	4,972.55	4,782.00	4,758.73	17.82	15.90	95.02	1,461.92	5,801.64	6,007.10	5,973.40	33.70	178.262		
5,100.00	5,071.19	4,782.00	4,758.73	18.19	15.90	95.02	1,461.92	5,801.64	6,011.72	5,977.67	34.05	176.545		
5,200.00	5,169.83	4,814.00	4,783.86	18.56	15.95	95.25	1,442.69	5,806.33	6,017.82	5,983.37	34.45	174.700		
5,300.00	5,268.47	4,826.82	4,793.55	18.93	15.97	95.34	1,434.54	5,808.39	6,025.35	5,990.53	34.81	173.091		
5,400.00	5,367.11	4,846.00	4,807.60	19.31	16.00	95.49	1,421.90	5,811.64	6,034.34	5,999.16	35.18	171.532		
5,500.00	5,465.75	4,864.00	4,820.31	19.68	16.03	95.63	1,409.57	5,814.85	6,044.80	6,009.25	35.55	170.059		
5,600.00	5,564.39	4,878.00	4,829.88	20.05	16.06	95.74	1,399.69	5,817.45	6,056.71	6,020.82	35.90	168.732		
5,700.00	5,663.03	4,892.43	4,839.45	20.42	16.09	95.85	1,389.26	5,820.23	6,070.13	6,033.88	36.24	167.477		
5,800.00	5,761.67	4,910.00	4,850.69	20.80	16.14	96.00	1,376.23	5,823.78	6,085.08	6,048.48	36.60	166.281		
5,900.00	5,860.31	4,910.00	4,850.69	21.17	16.14	96.00	1,376.23	5,823.78	6,101.51	6,064.62	36.89	165.400		
6,000.00	5,958.96	4,942.00	4,870.04	21.54	16.22	96.27	1,351.65	5,830.53	6,119.43	6,082.15	37.28	164.158		
6,100.00	6,057.60	4,942.00	4,870.04	21.92	16.22	96.27	1,351.65	5,830.53	6,138.79	6,101.24	37.56	163.456		
6,200.00	6,156.24	4,942.00	4,870.04	22.29	16.22	96.27	1,351.65	5,830.53	6,159.71	6,121.89	37.83	162.844		
6,300.00	6,254.88	4,959.16	4,879.80	22.67	16.28	96.41	1,338.05	5,834.31	6,182.03	6,143.88	38.15	162.042		
6,400.00	6,353.52	4,973.00	4,887.34	23.04	16.32	96.53	1,326.90	5,837.50	6,205.93	6,167.47	38.46	161.378		
6,500.00	6,452.16	4,973.00	4,887.34	23.42	16.32	96.53	1,326.90	5,837.50	6,231.23	6,192.53	38.70	161.008		
6,600.00	6,550.80	4,985.65	4,893.98	23.79	16.37	96.64	1,316.56	5,840.46	6,258.01	6,219.01	38.99	160.495		
6,700.00	6,649.44	5,005.00	4,903.67	24.17	16.44	96.82	1,300.43	5,844.98	6,286.17	6,246.87	39.30	159.942		
6,800.00	6,748.08	5,005.00	4,903.67	24.54	16.44	96.82	1,300.43	5,844.98	6,315.73	6,276.20	39.53	159.791		
6,900.00	6,846.72	5,017.61	4,909.69	24.92	16.49	96.93	1,289.74	5,847.94	6,346.66	6,306.86	39.80	159.471		
7,000.00	6,945.36	5,024.50	4,912.87	25.29	16.52	96.99	1,283.86	5,849.56	6,378.99	6,338.95	40.04	159.325		
7,100.00	7,044.00	5,037.00	4,918.48	25.67	16.58	97.10	1,273.09	5,852.54	6,412.70	6,372.40	40.30	159.140		
7,200.00	7,142.65	5,037.00	4,918.48	26.04	16.58	97.10	1,273.09	5,852.54	6,447.72	6,407.23	40.49	159.246		
7,300.00	7,241.29	5,037.00	4,918.48	26.42	16.58	97.10	1,273.09	5,852.54	6,484.10	6,443.43	40.68	159.411		
7,400.00	7,339.93	5,049.95	4,924.06	26.79	16.64	97.22	1,261.82	5,855.65	6,521.75	6,480.83	40.92	159.373		
7,500.00	7,438.57	5,055.82	4,926.51	27.17	16.66	97.27	1,256.67	5,857.06	6,560.71	6,519.58	41.12	159.531		
7,571.77	7,509.37	5,068.00	4,931.44	27.44	16.72	97.39	1,245.93	5,860.00	6,589.47	6,548.16	41.31	159.522		
7,600.00	7,537.23	5,068.00	4,931.44	27.55	16.72	97.57	1,245.93	5,860.00	6,600.92	6,559.57	41.35	159.619		
7,700.00	7,636.18	5,068.00	4,931.44	27.92	16.72	98.24	1,245.93	5,860.00	6,642.12	6,600.60	41.51	160.001		
7,800.00	7,735.48	5,068.00	4,931.44	28.29	16.72	98.93	1,245.93	5,860.00	6,684.21	6,642.55	41.66	160.439		
7,900.00	7,835.05	5,084.84	4,937.90	28.65	16.81	99.79	1,230.92	5,864.03	6,727.10	6,685.20	41.89	160.575		
8,000.00	7,934.83	5,099.00	4,943.00	29.01	16.88	100.63	1,218.13	5,867.36	6,770.77	6,728.67	42.10	160.822		
8,100.00	8,034.74	5,107.74	4,946.00	29.36	16.93	101.43	1,210.17	5,869.38	6,815.14	6,772.87	42.27	161.213		
8,202.27	8,137.00	5,195.00	4,970.67	29.72	17.45	86.93	1,128.37	5,886.72	6,861.10	6,818.19	42.91	159.887		
8,300.00	8,234.73	5,195.00	4,970.67	30.06	17.45	86.93	1,128.37	5,886.72	6,905.68	6,862.66	43.02	160.533		
8,400.00	8,334.73	5,195.00	4,970.67	30.41	17.45	86.93	1,128.37	5,886.72	6,952.42	6,909.30	43.12	161.228		
8,500.00	8,434.73	5,210.12	4,973.84	30.75	17.55	87.06	1,113.78	5,889.15	7,000.19	6,956.87	43.32	161.596		
8,552.31	8,487.04	5,212.09	4,974.22	30.94	17.57	87.08	1,111.88	5,889.46	7,025.63	6,982.25	43.38	161.943		
8,600.00	8,534.68	5,213.87	4,974.56	31.10	17.58	-2.45	1,110.15	5,889.74	7,047.34	7,003.90	43.43	162.257		
8,650.00	8,584.26	5,227.00	4,976.84	31.26	17.67	-2.26	1,097.38	5,891.75	7,066.56	7,023.01	43.55	162.280		
8,700.00	8,633.10	5,227.00	4,976.84	31.43	17.67	-2.19	1,097.38	5,891.75	7,081.94	7,038.37	43.57	162.540		
8,750.00	8,680.83	5,227.00	4,976.84	31.58	17.67	-2.15	1,097.38	5,891.75	7,093.45	7,049.86	43.59	162.734		
8,800.00	8,727.09	5,227.00	4,976.84	31.74	17.67	-2.12	1,097.38	5,891.75	7,101.02	7,057.42	43.60	162.865		
8,850.00	8,771.52	5,227.00	4,976.84	31.89	17.67	-2.11	1,097.38	5,891.75	7,104.61	7,061.00	43.60	162.935		
8,900.00	8,813.78	5,227.00	4,976.84	32.04	17.67	-2.11	1,097.38	5,891.75	7,104.19	7,060.59	43.60	162.944		
8,950.00	8,853.56	5,227.00	4,976.84	32.18	17.67	-2.12	1,097.38	5,891.75	7,099.77	7,056.19	43.58	162.896		
9,000.00	8,890.55	5,227.00	4,976.84	32.32	17.67	-2.16	1,097.38	5,891.75	7,091.38	7,047.81	43.56	162.789		
9,050.00	8,924.46	5,227.00	4,976.84	32.47	17.67	-2.20	1,097.38	5,891.75	7,079.06	7,035.53	43.53	162.624		
9,100.00	8,955.05	5,227.00	4,976.84	32.63	17.67	-2.27	1,097.38	5,891.75	7,062.88	7,019.39	43.49	162.402		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,227.00	4,976.84	32.79	17.67	-2.36	1,097.38	5,891.75	7,042.95	6,999.51	43.44	162.122		
9,200.00	9,005.34	5,227.00	4,976.84	32.97	17.67	-2.47	1,097.38	5,891.75	7,019.39	6,976.00	43.39	161.785		
9,250.00	9,024.65	5,227.00	4,976.84	33.17	17.67	-2.62	1,097.38	5,891.75	6,992.33	6,949.01	43.33	161.390		
9,300.00	9,039.87	5,239.90	4,978.76	33.38	17.75	-2.66	1,084.77	5,893.64	6,961.88	6,918.54	43.34	160.639		
9,350.00	9,050.89	5,241.34	4,978.96	33.62	17.76	-2.86	1,083.35	5,893.85	6,928.35	6,885.07	43.28	160.097		
9,400.00	9,057.61	5,242.68	4,979.13	33.87	17.77	-3.13	1,082.04	5,894.04	6,891.89	6,848.68	43.21	159.499		
9,452.31	9,060.00	5,243.96	4,979.30	34.15	17.78	-3.49	1,080.78	5,894.22	6,850.87	6,807.73	43.14	158.814		
9,500.00	9,060.00	5,245.08	4,979.44	34.42	17.79	-3.48	1,079.68	5,894.38	6,812.27	6,769.20	43.07	158.173		
9,600.00	9,060.00	5,259.00	4,981.01	35.09	17.89	-3.28	1,065.98	5,896.29	6,731.77	6,688.79	42.99	156.604		
9,700.00	9,060.00	5,259.00	4,981.01	35.86	17.89	-3.28	1,065.98	5,896.29	6,651.72	6,608.89	42.83	155.322		
9,800.00	9,060.00	5,259.00	4,981.01	36.72	17.89	-3.28	1,065.98	5,896.29	6,572.21	6,529.54	42.67	154.024		
9,900.00	9,060.00	5,259.00	4,981.01	37.69	17.89	-3.28	1,065.98	5,896.29	6,493.26	6,450.74	42.52	152.706		
10,000.00	9,060.00	5,259.00	4,981.01	38.73	17.89	-3.28	1,065.98	5,896.29	6,414.91	6,372.53	42.38	151.369		
10,100.00	9,060.00	5,259.00	4,981.01	39.86	17.89	-3.28	1,065.98	5,896.29	6,337.16	6,294.92	42.25	150.009		
10,140.22	9,060.00	5,259.00	4,981.01	40.33	17.89	-3.28	1,065.98	5,896.29	6,306.07	6,263.87	42.19	149.456		
10,200.00	9,060.00	5,259.00	4,981.01	41.05	17.89	-4.72	1,065.98	5,896.29	6,260.08	6,217.96	42.12	148.625		
10,300.00	9,060.00	5,259.00	4,981.01	42.31	17.89	-7.06	1,065.98	5,896.29	6,183.82	6,141.81	42.01	147.207		
10,400.00	9,060.00	5,259.00	4,981.01	43.64	17.89	-9.33	1,065.98	5,896.29	6,108.53	6,066.62	41.91	145.746		
10,507.23	9,060.00	5,259.00	4,981.01	45.11	17.89	-11.66	1,065.98	5,896.29	6,029.03	5,987.20	41.83	144.124		
10,600.00	9,060.00	5,259.00	4,981.01	46.43	17.89	-9.69	1,065.98	5,896.29	5,960.97	5,919.19	41.78	142.676		
10,700.00	9,060.00	5,259.00	4,981.01	47.91	17.89	-7.58	1,065.98	5,896.29	5,887.98	5,846.25	41.73	141.089		
10,800.00	9,060.00	5,274.38	4,982.28	49.42	18.00	-5.27	1,050.79	5,898.33	5,815.30	5,773.53	41.77	139.229		
10,900.00	9,060.00	5,275.96	4,982.39	50.97	18.01	-3.19	1,049.23	5,898.53	5,743.34	5,701.60	41.74	137.597		
11,000.00	9,060.00	5,277.12	4,982.46	52.55	18.02	-1.14	1,048.09	5,898.68	5,672.10	5,630.38	41.72	135.966		
11,100.00	9,060.00	5,291.00	4,983.12	54.14	18.12	1.04	1,034.34	5,900.48	5,601.81	5,560.05	41.76	134.152		
11,207.23	9,060.00	5,291.00	4,983.12	55.87	18.12	3.11	1,034.34	5,900.48	5,527.36	5,485.61	41.74	132.418		
11,300.00	9,060.00	5,291.00	4,983.12	57.39	18.12	1.37	1,034.34	5,900.48	5,463.82	5,422.08	41.74	130.887		
11,400.00	9,060.00	5,291.00	4,983.12	59.06	18.12	-0.47	1,034.34	5,900.48	5,396.23	5,354.45	41.77	129.180		
11,506.63	9,060.00	5,291.00	4,983.12	60.88	18.12	-2.37	1,034.34	5,900.48	5,325.30	5,283.47	41.83	127.296		
11,600.00	9,060.00	5,291.00	4,983.12	62.49	18.12	-2.37	1,034.34	5,900.48	5,264.23	5,222.31	41.91	125.602		
11,700.00	9,060.00	5,291.00	4,983.12	64.24	18.12	-2.37	1,034.34	5,900.48	5,199.88	5,157.86	42.02	123.757		
11,800.00	9,060.00	5,291.00	4,983.12	66.01	18.12	-2.37	1,034.34	5,900.48	5,136.67	5,094.52	42.14	121.882		
11,900.00	9,060.00	5,291.00	4,983.12	67.79	18.12	-2.37	1,034.34	5,900.48	5,074.64	5,032.35	42.30	119.979		
12,000.00	9,060.00	5,291.00	4,983.12	69.58	18.12	-2.37	1,034.34	5,900.48	5,013.84	4,971.37	42.47	118.049		
12,100.00	9,060.00	5,291.00	4,983.12	71.39	18.12	-2.37	1,034.34	5,900.48	4,954.32	4,911.65	42.67	116.098		
12,200.00	9,060.00	5,291.00	4,983.12	73.21	18.12	-2.37	1,034.34	5,900.48	4,896.11	4,853.21	42.90	114.127		
12,300.00	9,060.00	5,291.00	4,983.12	75.05	18.12	-2.37	1,034.34	5,900.48	4,839.27	4,796.12	43.15	112.140		
12,400.00	9,060.00	5,291.00	4,983.12	76.89	18.12	-2.37	1,034.34	5,900.48	4,783.85	4,740.41	43.43	110.143		
12,500.00	9,060.00	5,291.00	4,983.12	78.74	18.12	-2.37	1,034.34	5,900.48	4,729.89	4,686.15	43.74	108.138		
12,600.00	9,060.00	5,291.00	4,983.12	80.61	18.12	-2.37	1,034.34	5,900.48	4,677.44	4,633.37	44.07	106.131		
12,700.00	9,060.00	5,291.00	4,983.12	82.48	18.12	-2.37	1,034.34	5,900.48	4,626.57	4,582.14	44.43	104.127		
12,800.00	9,060.00	5,298.44	4,983.33	84.36	18.18	-2.26	1,026.96	5,901.44	4,577.27	4,532.44	44.83	102.097		
12,900.00	9,060.00	5,300.09	4,983.36	86.24	18.19	-2.24	1,025.32	5,901.66	4,529.66	4,484.42	45.25	100.110		
13,000.00	9,060.00	5,309.00	4,983.50	88.14	18.26	-2.11	1,016.50	5,902.84	4,483.82	4,438.12	45.70	98.118		
13,100.00	9,060.00	5,309.00	4,983.50	90.04	18.26	-2.11	1,016.50	5,902.84	4,439.69	4,393.53	46.16	96.182		
13,200.00	9,060.00	5,309.00	4,983.50	91.94	18.26	-2.11	1,016.50	5,902.84	4,397.39	4,350.75	46.65	94.272		
13,300.00	9,060.00	5,309.00	4,983.50	93.86	18.26	-2.11	1,016.50	5,902.84	4,356.98	4,309.83	47.16	92.393		
13,400.00	9,060.00	5,309.00	4,983.50	95.77	18.26	-2.11	1,016.50	5,902.84	4,318.51	4,270.82	47.69	90.549		
13,500.00	9,060.00	5,309.00	4,983.50	97.70	18.26	-2.11	1,016.50	5,902.84	4,282.03	4,233.78	48.25	88.744		
13,600.00	9,060.00	5,309.00	4,983.50	99.62	18.26	-2.11	1,016.50	5,902.84	4,247.59	4,198.76	48.83	86.982		
13,700.00	9,060.00	5,309.00	4,983.50	101.56	18.26	-2.11	1,016.50	5,902.84	4,215.24	4,165.80	49.44	85.267		
13,800.00	9,060.00	5,309.00	4,983.50	103.49	18.26	-2.11	1,016.50	5,902.84	4,185.03	4,134.97	50.06	83.600		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 18-GYRO-NS-CT, 4369-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,330.89	4,983.66	105.43	18.43	-1.80	994.82	5,905.88	4,156.86	4,106.14	50.72	81.964	
14,000.00	9,060.00	5,335.93	4,983.67	107.38	18.47	-1.73	989.83	5,906.61	4,131.00	4,079.62	51.38	80.403	
14,100.00	9,060.00	5,341.14	4,983.69	109.33	18.51	-1.65	984.68	5,907.37	4,107.39	4,055.33	52.06	78.897	
14,200.00	9,060.00	5,346.53	4,983.69	111.28	18.56	-1.58	979.34	5,908.17	4,086.07	4,033.32	52.76	77.449	
14,300.00	9,060.00	5,352.12	4,983.69	113.23	18.60	-1.50	973.82	5,909.02	4,067.09	4,013.62	53.47	76.059	
14,400.00	9,060.00	5,373.00	4,983.60	115.19	18.77	-1.20	953.20	5,912.30	4,050.53	3,996.32	54.21	74.717	
14,500.00	9,060.00	5,373.00	4,983.60	117.15	18.77	-1.20	953.20	5,912.30	4,036.26	3,981.30	54.95	73.449	
14,600.00	9,060.00	14,600.00	4,983.97	119.11	108.64	-0.51	904.95	5,920.57	4,024.12	3,928.05	96.07	41.888	
14,700.00	9,060.00	14,700.00	4,984.09	121.08	109.64	-0.29	890.01	5,923.13	4,014.52	3,917.67	96.85	41.451 ES	
14,800.00	9,060.00	5,493.65	4,984.85	123.05	19.86	0.51	834.33	5,932.89	4,007.24	3,949.74	57.50	69.686	
14,900.00	9,060.00	5,503.66	4,985.03	125.02	19.96	0.65	824.48	5,934.67	4,002.34	3,944.01	58.33	68.617	
15,000.00	9,060.00	5,513.71	4,985.19	126.99	20.06	0.79	814.60	5,936.46	3,999.88	3,940.72	59.17	67.604	
15,049.69	9,060.00	5,518.72	4,985.27	127.98	20.11	0.86	809.67	5,937.35	3,999.58	3,939.99	59.59	67.123 CC	
15,100.00	9,060.00	5,523.80	4,985.34	128.97	20.16	0.93	804.67	5,938.25	3,999.89	3,939.88	60.01	66.649	
15,200.00	9,060.00	5,533.93	4,985.48	130.95	20.26	1.07	794.70	5,940.06	4,002.36	3,941.49	60.87	65.751	
15,300.00	9,060.00	5,544.11	4,985.60	132.93	20.36	1.22	784.69	5,941.88	4,007.28	3,945.54	61.74	64.910	
15,400.00	9,060.00	5,562.00	4,985.77	134.91	20.53	1.47	767.09	5,945.09	4,014.65	3,952.01	62.64	64.088	
15,500.00	9,060.00	5,566.02	4,985.80	136.89	20.58	1.53	763.13	5,945.82	4,024.44	3,960.95	63.49	63.388	
15,600.00	9,060.00	5,581.94	4,985.94	138.88	20.74	1.75	747.48	5,948.67	4,036.63	3,972.23	64.40	62.681	
15,700.00	9,060.00	5,597.75	4,986.07	140.86	20.91	1.98	731.92	5,951.49	4,051.19	3,985.88	65.31	62.028	
15,800.00	9,060.00	5,613.46	4,986.20	142.85	21.07	2.20	716.47	5,954.29	4,068.09	4,001.87	66.22	61.430	
15,900.00	9,060.00	15,900.00	4,987.25	144.84	143.06	3.28	641.24	5,968.47	4,087.25	3,959.30	127.95	31.944	
16,000.00	9,060.00	5,799.86	4,990.19	146.83	23.17	4.82	533.72	5,990.65	4,108.60	4,039.11	69.49	59.125	
16,100.00	9,060.00	5,845.48	4,992.15	148.83	23.72	5.46	489.13	6,000.14	4,131.60	4,060.78	70.82	58.338	
16,200.00	9,060.00	16,200.00	4,991.84	150.82	153.44	5.35	496.92	5,998.47	4,156.76	4,017.05	139.70	29.754 SF	
16,300.00	9,060.00	5,846.00	4,992.17	152.82	23.72	5.47	488.63	6,000.25	4,184.18	4,111.79	72.39	57.799	
16,400.00	9,060.00	5,846.00	4,992.17	154.81	23.72	5.47	488.63	6,000.25	4,213.78	4,140.64	73.14	57.610	
16,500.00	9,060.00	5,846.00	4,992.17	156.81	23.72	5.47	488.63	6,000.25	4,245.54	4,171.66	73.87	57.471	
16,600.00	9,060.00	5,876.89	4,993.41	158.81	24.10	5.90	458.41	6,006.52	4,279.05	4,204.06	74.99	57.059	
16,700.00	9,060.00	5,882.81	4,993.61	160.81	24.18	5.98	452.61	6,007.70	4,314.82	4,239.05	75.76	56.952	
16,800.00	9,060.00	5,888.64	4,993.78	162.81	24.25	6.06	446.89	6,008.85	4,352.56	4,276.05	76.51	56.891	
16,900.00	9,060.00	5,894.40	4,993.94	164.82	24.32	6.15	441.25	6,009.98	4,392.24	4,315.01	77.23	56.874	
17,000.00	9,060.00	5,900.06	4,994.08	166.82	24.39	6.22	435.70	6,011.08	4,433.79	4,355.86	77.92	56.900	
17,100.00	9,060.00	5,905.65	4,994.21	168.82	24.46	6.30	430.21	6,012.17	4,477.17	4,398.57	78.59	56.967	
17,200.00	9,060.00	5,939.00	4,994.68	170.83	24.87	6.77	397.47	6,018.48	4,522.59	4,442.92	79.67	56.764	
17,300.00	9,060.00	5,939.00	4,994.68	172.84	24.87	6.77	397.47	6,018.48	4,569.37	4,489.16	80.21	56.967	
17,400.00	9,060.00	5,939.00	4,994.68	174.84	24.87	6.77	397.47	6,018.48	4,617.84	4,537.11	80.72	57.206	
17,500.00	9,060.00	5,939.00	4,994.68	176.85	24.87	6.77	397.47	6,018.48	4,667.94	4,586.73	81.21	57.480	
17,600.00	9,060.00	5,939.00	4,994.68	178.86	24.87	6.77	397.47	6,018.48	4,719.64	4,637.97	81.67	57.789	
17,700.00	9,060.00	5,939.00	4,994.68	180.87	24.87	6.77	397.47	6,018.48	4,772.87	4,690.76	82.11	58.130	
17,800.00	9,060.00	5,939.00	4,994.68	182.88	24.87	6.77	397.47	6,018.48	4,827.59	4,745.07	82.52	58.502	
17,900.00	9,060.00	5,939.00	4,994.68	184.89	24.87	6.77	397.47	6,018.48	4,883.74	4,800.83	82.91	58.905	
18,000.00	9,060.00	5,939.00	4,994.68	186.90	24.87	6.77	397.47	6,018.48	4,941.27	4,858.00	83.28	59.336	
18,100.00	9,060.00	5,939.00	4,994.68	188.92	24.87	6.77	397.47	6,018.48	5,000.15	4,916.52	83.62	59.795	
18,200.00	9,060.00	5,939.00	4,994.68	190.93	24.87	6.77	397.47	6,018.48	5,060.31	4,976.37	83.95	60.280	
18,300.00	9,060.00	5,939.00	4,994.68	192.94	24.87	6.77	397.47	6,018.48	5,121.72	5,037.47	84.25	60.790	
18,400.00	9,060.00	5,939.00	4,994.68	194.96	24.87	6.77	397.47	6,018.48	5,184.34	5,099.80	84.54	61.325	
18,500.00	9,060.00	5,939.00	4,994.68	196.97	24.87	6.77	397.47	6,018.48	5,248.11	5,163.30	84.81	61.882	
18,600.00	9,060.00	5,975.56	4,994.70	198.99	25.32	7.28	361.49	6,024.97	5,312.49	5,226.77	85.72	61.974	
18,700.00	9,060.00	5,979.31	4,994.68	201.00	25.37	7.33	357.80	6,025.61	5,378.35	5,292.32	86.03	62.518	
18,800.00	9,060.00	5,982.97	4,994.65	203.02	25.41	7.38	354.19	6,026.22	5,445.23	5,358.91	86.32	63.081	
18,900.00	9,060.00	5,986.55	4,994.62	205.04	25.46	7.43	350.66	6,026.81	5,513.11	5,426.52	86.60	63.664	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 4H - Wellbore #2 - Wellbore #2										Offset Site Error:	5.00 ft
Survey Program:		18-GYRO-NS-CT, 4369-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	5,990.06	4,994.58	207.06	25.50	7.48	347.20	6,027.38	5,581.95	5,495.09	86.86	64.264	
19,100.00	9,060.00	5,993.49	4,994.54	209.07	25.55	7.53	343.81	6,027.94	5,651.71	5,564.60	87.11	64.882	
19,200.00	9,060.00	5,996.85	4,994.49	211.09	25.59	7.58	340.50	6,028.48	5,722.36	5,635.01	87.34	65.516	
19,300.00	9,060.00	6,034.00	4,993.74	213.11	26.05	8.09	303.79	6,034.11	5,794.29	5,706.06	88.23	65.675	
19,400.00	9,060.00	6,034.00	4,993.74	215.13	26.05	8.09	303.79	6,034.11	5,866.54	5,778.16	88.38	66.381	
19,500.32	9,060.00	6,034.00	4,993.74	217.16	26.05	8.09	303.79	6,034.11	5,939.83	5,851.31	88.52	67.103	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,911.18				
100.00	100.00	13.81	13.81	0.52	5.02	77.36	1,731.24	7,718.92	7,910.69	7,905.14	5.54	1,427.216	
200.00	200.00	134.92	134.92	0.70	5.03	77.36	1,731.43	7,718.68	7,910.52	7,904.79	5.73	1,380.208	
300.00	300.00	260.04	260.03	0.99	5.05	77.35	1,731.94	7,718.00	7,910.09	7,904.05	6.03	1,311.157	
400.00	400.00	368.41	368.40	1.31	5.09	77.35	1,731.87	7,717.17	7,909.32	7,902.92	6.40	1,235.287	
500.00	500.00	452.05	452.04	1.65	5.15	77.35	1,731.53	7,716.73	7,908.72	7,901.92	6.80	1,163.752	
600.00	600.00	548.61	548.60	1.99	5.23	77.36	1,731.06	7,716.38	7,908.26	7,901.03	7.22	1,094.606	
700.00	700.00	658.53	658.52	2.34	5.35	77.36	1,730.43	7,715.92	7,907.72	7,900.03	7.69	1,027.790	
800.00	800.00	758.98	758.96	2.69	5.49	77.36	1,729.61	7,715.47	7,907.11	7,898.93	8.18	967.035	
900.00	900.00	839.49	839.47	3.04	5.61	77.37	1,729.01	7,715.19	7,906.60	7,897.96	8.65	914.199	
1,000.00	1,000.00	938.38	938.36	3.40	5.77	77.37	1,728.57	7,715.01	7,906.33	7,897.16	9.16	862.728	
1,100.00	1,100.00	1,036.78	1,036.75	3.75	5.94	77.37	1,728.05	7,714.76	7,905.96	7,896.27	9.70	815.405	
1,200.00	1,200.00	1,169.31	1,169.28	4.11	6.20	77.37	1,728.01	7,713.99	7,905.38	7,895.07	10.31	766.672	
1,300.00	1,300.00	1,240.90	1,240.87	4.46	6.35	77.37	1,728.24	7,713.57	7,904.86	7,894.04	10.82	730.743	
1,400.00	1,400.00	1,325.66	1,325.63	4.82	6.54	77.37	1,728.52	7,713.29	7,904.61	7,893.25	11.36	695.864	
1,500.00	1,500.00	1,422.34	1,422.31	5.18	6.76	77.37	1,728.77	7,713.08	7,904.46	7,892.52	11.94	662.173	
1,600.00	1,600.00	1,568.81	1,568.78	5.53	7.11	77.36	1,729.37	7,712.26	7,903.99	7,891.34	12.65	624.981	
1,700.00	1,700.00	1,654.80	1,654.76	5.89	7.33	77.36	1,729.56	7,711.57	7,903.27	7,890.05	13.22	597.822	
1,800.00	1,800.00	1,727.76	1,727.72	6.25	7.52	77.36	1,729.44	7,711.34	7,902.91	7,889.15	13.77	574.118	
1,900.00	1,900.00	1,813.49	1,813.45	6.61	7.74	77.36	1,729.05	7,711.34	7,902.80	7,888.46	14.35	550.799	
1,921.72	1,921.72	1,833.16	1,833.12	6.68	7.79	77.36	1,728.94	7,711.36	7,902.80	7,888.32	14.48	545.856	
2,000.00	2,000.00	1,902.53	1,902.49	6.96	7.98	77.37	1,728.60	7,711.47	7,902.84	7,887.90	14.94	528.831	
2,100.00	2,100.00	1,993.92	1,993.87	7.32	8.23	77.37	1,727.78	7,711.85	7,903.05	7,887.49	15.55	508.186	
2,200.00	2,200.00	2,116.41	2,116.36	7.68	8.57	77.38	1,726.59	7,712.18	7,903.09	7,886.84	16.25	486.287	
2,300.00	2,300.00	2,215.69	2,215.63	8.04	8.86	77.39	1,725.79	7,712.27	7,903.01	7,886.11	16.89	467.830	
2,350.00	2,350.00	2,263.18	2,263.12	8.22	9.00	77.39	1,725.70	7,712.28	7,902.99	7,885.78	17.21	459.242	
2,376.67	2,376.67	2,290.33	2,290.27	8.31	9.07	93.43	1,725.66	7,712.28	7,902.99	7,885.61	17.38	454.644	
2,400.00	2,400.00	2,314.07	2,314.02	8.39	9.14	93.43	1,725.61	7,712.28	7,902.99	7,885.46	17.54	450.692	
2,500.00	2,499.98	2,413.70	2,413.65	8.75	9.44	93.44	1,725.37	7,712.30	7,903.06	7,884.88	18.18	434.612	
2,600.00	2,599.92	2,507.61	2,507.55	9.11	9.72	93.47	1,724.98	7,712.39	7,903.28	7,884.46	18.82	419.956	
2,700.00	2,699.78	2,604.38	2,604.32	9.47	10.01	93.51	1,724.32	7,712.61	7,903.67	7,884.20	19.47	406.033	
2,800.00	2,799.54	2,706.40	2,706.34	9.82	10.32	93.56	1,723.75	7,712.82	7,904.17	7,884.04	20.13	392.649	
2,900.00	2,899.16	2,824.56	2,824.49	10.18	10.68	93.63	1,723.02	7,712.89	7,904.65	7,883.80	20.85	379.155	
3,000.00	2,998.61	2,922.64	2,922.58	10.54	10.98	93.70	1,722.80	7,712.73	7,905.11	7,883.61	21.51	367.555	
3,100.00	3,097.86	3,011.81	3,011.75	10.89	11.26	93.77	1,722.78	7,712.68	7,905.84	7,883.70	22.14	357.066	
3,200.00	3,196.89	3,122.46	3,122.40	11.25	11.61	93.87	1,722.92	7,712.56	7,906.70	7,883.86	22.84	346.107	
3,295.74	3,291.45	3,197.88	3,197.81	11.59	11.85	93.95	1,723.46	7,712.30	7,907.59	7,884.16	23.42	337.582	
3,300.00	3,295.65	3,200.16	3,200.09	11.61	11.85	93.95	1,723.48	7,712.30	7,907.64	7,884.19	23.45	337.262	
3,400.00	3,394.29	3,257.20	3,257.13	11.97	12.03	94.01	1,723.98	7,712.43	7,909.18	7,885.19	23.98	329.763	
3,500.00	3,492.94	3,333.61	3,333.54	12.33	12.27	94.10	1,724.48	7,712.94	7,911.15	7,886.57	24.58	321.789	
3,600.00	3,591.58	3,470.50	3,470.43	12.69	12.71	94.26	1,724.55	7,713.82	7,913.01	7,887.63	25.38	311.760	
3,700.00	3,690.22	3,568.72	3,568.65	13.05	13.03	94.38	1,724.17	7,714.32	7,914.69	7,888.63	26.06	303.733	
3,800.00	3,788.86	3,669.32	3,669.24	13.41	13.35	94.51	1,723.54	7,714.87	7,916.40	7,889.65	26.74	295.998	
3,900.00	3,887.50	3,785.00	3,785.08	13.77	21.55	103.08	740.77	7,748.92	7,907.14	7,872.15	34.99	226.011	
4,000.00	3,986.14	5,754.59	4,977.91	14.14	21.25	102.86	771.09	7,746.56	7,896.22	7,861.12	35.10	224.936	
4,100.00	4,084.78	5,749.01	4,977.90	14.50	21.20	102.82	776.65	7,746.15	7,886.66	7,851.20	35.46	222.408	
4,200.00	4,183.42	5,743.34	4,977.90	14.87	21.14	102.78	782.31	7,745.74	7,878.35	7,842.54	35.81	219.989	
4,300.00	4,282.06	5,737.56	4,977.92	15.24	21.09	102.74	788.07	7,745.32	7,871.29	7,835.13	36.16	217.678	
4,400.00	4,380.70	5,731.67	4,977.94	15.60	21.03	102.70	793.95	7,744.91	7,865.48	7,828.97	36.50	215.472	
4,500.00	4,479.34	5,725.67	4,977.97	15.97	20.97	102.66	799.93	7,744.49	7,860.92	7,824.08	36.84	213.370	
4,600.00	4,577.98	5,719.56	4,978.01	16.34	20.91	102.61	806.03	7,744.08	7,857.62	7,820.45	37.17	211.369	
4,700.00	4,676.62	5,694.00	4,978.30	16.71	20.66	102.43	831.53	7,742.42	7,855.65	7,818.33	37.32	210.522	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,800.00	4,775.27	5,694.00	4,978.30	17.08	20.66	102.43	831.53	7,742.42	7,854.83	7,817.13	37.70	208.355		
4,814.06	4,789.13	5,694.00	4,978.30	17.13	20.66	102.43	831.53	7,742.42	7,854.82	7,817.07	37.75	208.058		
4,900.00	4,873.91	5,694.00	4,978.30	17.45	20.66	102.43	831.53	7,742.42	7,855.29	7,817.21	38.08	206.289		
5,000.00	4,972.55	5,694.00	4,978.30	17.82	20.66	102.43	831.53	7,742.42	7,857.02	7,818.57	38.45	204.322		
5,100.00	5,071.19	5,679.87	4,978.49	18.19	20.54	102.33	845.63	7,741.54	7,860.01	7,821.31	38.70	203.123		
5,200.00	5,169.83	5,666.33	4,978.64	18.56	20.41	102.23	859.15	7,740.71	7,864.23	7,825.30	38.94	201.968		
5,300.00	5,268.47	5,653.14	4,978.76	18.93	20.29	102.13	872.32	7,739.90	7,869.70	7,830.52	39.18	200.868		
5,400.00	5,367.11	5,640.28	4,978.84	19.31	20.18	102.04	885.15	7,739.12	7,876.41	7,836.99	39.42	199.822		
5,500.00	5,465.75	5,627.75	4,978.90	19.68	20.06	101.95	897.66	7,738.36	7,884.35	7,844.69	39.65	198.831		
5,600.00	5,564.39	5,615.53	4,978.93	20.05	19.95	101.86	909.85	7,737.63	7,893.52	7,853.63	39.89	197.894		
5,700.00	5,663.03	5,603.00	4,978.93	20.42	19.84	101.77	922.36	7,736.89	7,903.92	7,863.81	40.11	197.039		
5,800.00	5,761.67	5,603.00	4,978.93	20.80	19.84	101.77	922.36	7,736.89	7,915.56	7,875.12	40.45	195.700		
5,900.00	5,860.31	5,603.00	4,978.93	21.17	19.84	101.77	922.36	7,736.89	7,928.45	7,887.67	40.78	194.442		
6,000.00	5,958.96	5,603.00	4,978.93	21.54	19.84	101.77	922.36	7,736.89	7,942.57	7,901.47	41.10	193.260		
6,100.00	6,057.60	5,603.00	4,978.93	21.92	19.84	101.77	922.36	7,736.89	7,957.93	7,916.51	41.41	192.152		
6,200.00	6,156.24	5,603.00	4,978.93	22.29	19.84	101.77	922.36	7,736.89	7,974.51	7,932.78	41.73	191.117		
6,300.00	6,254.88	5,603.00	4,978.93	22.67	19.84	101.77	922.36	7,736.89	7,992.30	7,950.27	42.03	190.152		
6,400.00	6,353.52	5,572.57	4,979.03	23.04	19.59	101.55	952.74	7,735.26	8,011.10	7,969.02	42.08	190.379		
6,500.00	6,452.16	5,567.96	4,979.07	23.42	19.55	101.52	957.35	7,735.04	8,031.23	7,988.90	42.34	189.702		
6,600.00	6,550.80	5,563.29	4,979.11	23.79	19.51	101.49	962.01	7,734.83	8,052.55	8,009.97	42.59	189.088		
6,700.00	6,649.44	5,558.56	4,979.16	24.17	19.47	101.45	966.74	7,734.62	8,075.05	8,032.22	42.83	188.534		
6,800.00	6,748.08	5,553.77	4,979.21	24.54	19.43	101.42	971.53	7,734.42	8,098.70	8,055.63	43.07	188.040		
6,900.00	6,846.72	5,548.91	4,979.27	24.92	19.39	101.38	976.39	7,734.23	8,123.51	8,080.21	43.30	187.604		
7,000.00	6,945.36	5,543.98	4,979.34	25.29	19.35	101.35	981.31	7,734.04	8,149.46	8,105.93	43.53	187.223		
7,100.00	7,044.00	5,513.00	4,979.91	25.67	19.09	101.13	1,012.27	7,733.07	8,176.68	8,133.14	43.54	187.802		
7,200.00	7,142.65	5,513.00	4,979.91	26.04	19.09	101.13	1,012.27	7,733.07	8,204.83	8,161.03	43.80	187.345		
7,300.00	7,241.29	5,513.00	4,979.91	26.42	19.09	101.13	1,012.27	7,733.07	8,234.09	8,190.05	44.05	186.941		
7,400.00	7,339.93	5,513.00	4,979.91	26.79	19.09	101.13	1,012.27	7,733.07	8,264.46	8,220.17	44.29	186.588		
7,500.00	7,438.57	5,513.00	4,979.91	27.17	19.09	101.13	1,012.27	7,733.07	8,295.93	8,251.40	44.53	186.285		
7,571.77	7,509.37	5,513.00	4,979.91	27.44	19.09	101.13	1,012.27	7,733.07	8,319.18	8,274.48	44.70	186.097		
7,600.00	7,537.23	5,513.00	4,979.91	27.55	19.09	101.27	1,012.27	7,733.07	8,328.46	8,283.69	44.77	186.030		
7,700.00	7,636.18	5,513.00	4,979.91	27.92	19.09	101.79	1,012.27	7,733.07	8,361.69	8,316.70	45.00	185.826		
7,800.00	7,735.48	5,513.00	4,979.91	28.29	19.09	102.32	1,012.27	7,733.07	8,395.49	8,350.27	45.22	185.673		
7,900.00	7,835.05	5,513.00	4,979.91	28.65	19.09	102.85	1,012.27	7,733.07	8,429.81	8,384.39	45.43	185.570		
8,000.00	7,934.83	5,513.00	4,979.91	29.01	19.09	103.39	1,012.27	7,733.07	8,464.63	8,419.00	45.63	185.513		
8,100.00	8,034.74	5,513.00	4,979.91	29.36	19.09	103.94	1,012.27	7,733.07	8,499.92	8,454.10	45.82	185.502		
8,202.27	8,137.00	5,513.00	4,979.91	29.72	19.09	88.47	1,012.27	7,733.07	8,536.46	8,490.45	46.01	185.535		
8,300.00	8,234.73	5,513.00	4,979.91	30.06	19.09	88.47	1,012.27	7,733.07	8,572.08	8,525.89	46.18	185.604		
8,400.00	8,334.73	5,513.00	4,979.91	30.41	19.09	88.47	1,012.27	7,733.07	8,609.52	8,563.16	46.36	185.709		
8,500.00	8,434.73	5,513.00	4,979.91	30.75	19.09	88.47	1,012.27	7,733.07	8,647.95	8,601.42	46.53	185.847		
8,552.31	8,487.04	5,513.00	4,979.91	30.94	19.09	88.47	1,012.27	7,733.07	8,668.44	8,621.82	46.62	185.932		
8,600.00	8,534.68	5,513.00	4,979.91	31.10	19.09	-1.15	1,012.27	7,733.07	8,685.52	8,638.83	46.69	186.006		
8,650.00	8,584.26	5,487.43	4,980.59	31.26	18.90	-1.29	1,037.83	7,732.54	8,699.54	8,652.96	46.59	186.742		
8,700.00	8,633.10	5,486.89	4,980.61	31.43	18.89	-1.27	1,038.36	7,732.53	8,709.70	8,663.05	46.65	186.716		
8,750.00	8,680.83	5,486.38	4,980.63	31.58	18.89	-1.26	1,038.87	7,732.52	8,715.84	8,669.14	46.70	186.626		
8,800.00	8,727.09	5,485.90	4,980.64	31.74	18.89	-1.26	1,039.36	7,732.52	8,717.91	8,671.16	46.75	186.475		
8,850.00	8,771.52	5,485.44	4,980.66	31.89	18.88	-1.27	1,039.82	7,732.51	8,715.92	8,669.12	46.79	186.267		
8,900.00	8,813.78	5,485.01	4,980.67	32.04	18.88	-1.29	1,040.24	7,732.50	8,709.86	8,663.03	46.83	186.006		
8,950.00	8,853.56	5,484.62	4,980.68	32.18	18.88	-1.31	1,040.64	7,732.50	8,699.78	8,652.93	46.85	185.692		
9,000.00	8,890.55	5,484.26	4,980.70	32.32	18.87	-1.35	1,040.99	7,732.49	8,685.73	8,638.87	46.87	185.330		
9,050.00	8,924.46	5,483.95	4,980.71	32.47	18.87	-1.40	1,041.30	7,732.49	8,667.82	8,620.95	46.87	184.921		
9,100.00	8,955.05	5,483.69	4,980.71	32.63	18.87	-1.46	1,041.56	7,732.48	8,646.15	8,599.27	46.87	184.465		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	5,483.48	4,980.72	32.79	18.87	-1.54	1,041.77	7,732.48	8,620.85	8,573.99	46.86	183.965		
9,200.00	9,005.34	5,483.33	4,980.73	32.97	18.87	-1.64	1,041.92	7,732.48	8,592.09	8,545.25	46.84	183.420		
9,250.00	9,024.65	5,483.23	4,980.73	33.17	18.87	-1.76	1,042.02	7,732.48	8,560.06	8,513.24	46.82	182.833		
9,300.00	9,039.87	5,483.19	4,980.73	33.38	18.87	-1.92	1,042.06	7,732.48	8,524.96	8,478.17	46.79	182.204		
9,350.00	9,050.89	5,483.21	4,980.73	33.62	18.87	-2.13	1,042.04	7,732.48	8,487.02	8,440.27	46.75	181.534		
9,400.00	9,057.61	5,483.30	4,980.73	33.87	18.87	-2.40	1,041.95	7,732.48	8,446.50	8,399.79	46.71	180.822		
9,452.31	9,060.00	5,483.46	4,980.72	34.15	18.87	-2.79	1,041.80	7,732.48	8,401.64	8,354.97	46.67	180.033		
9,500.00	9,060.00	5,483.63	4,980.72	34.42	18.87	-2.79	1,041.62	7,732.48	8,359.72	8,313.09	46.62	179.303		
9,600.00	9,060.00	5,484.02	4,980.70	35.09	18.87	-2.78	1,041.24	7,732.49	8,272.01	8,225.49	46.53	177.792		
9,700.00	9,060.00	5,484.41	4,980.69	35.86	18.87	-2.78	1,040.84	7,732.49	8,184.59	8,138.16	46.43	176.268		
9,800.00	9,060.00	5,484.82	4,980.68	36.72	18.88	-2.77	1,040.43	7,732.50	8,097.47	8,051.12	46.34	174.728		
9,900.00	9,060.00	5,485.24	4,980.66	37.69	18.88	-2.77	1,040.01	7,732.51	8,010.64	7,964.38	46.26	173.174		
10,000.00	9,060.00	5,485.68	4,980.65	38.73	18.88	-2.76	1,039.57	7,732.51	7,924.12	7,877.94	46.18	171.603		
10,100.00	9,060.00	5,486.13	4,980.63	39.86	18.89	-2.75	1,039.12	7,732.52	7,837.93	7,791.82	46.10	170.016		
10,140.22	9,060.00	5,486.32	4,980.63	40.33	18.89	-2.75	1,038.93	7,732.52	7,803.35	7,757.27	46.07	169.372		
10,200.00	9,060.00	5,486.91	4,980.61	41.05	18.89	-4.73	1,038.35	7,732.53	7,752.08	7,706.05	46.03	168.404		
10,300.00	9,060.00	5,489.30	4,980.54	42.31	18.91	-7.95	1,035.95	7,732.57	7,666.72	7,620.74	45.98	166.735		
10,400.00	9,060.00	5,493.55	4,980.41	43.64	18.94	-11.04	1,031.71	7,732.65	7,581.97	7,536.02	45.95	165.002		
10,507.23	9,060.00	5,513.00	4,979.91	45.11	19.09	-14.02	1,012.27	7,733.07	7,491.94	7,445.92	46.02	162.787		
10,600.00	9,060.00	5,513.00	4,979.91	46.43	19.09	-11.26	1,012.27	7,733.07	7,414.39	7,368.40	45.99	161.218		
10,700.00	9,060.00	5,513.00	4,979.91	47.91	19.09	-8.26	1,012.27	7,733.07	7,330.84	7,284.87	45.96	159.503		
10,800.00	9,060.00	5,513.00	4,979.91	49.42	19.09	-5.26	1,012.27	7,733.07	7,247.42	7,201.48	45.94	157.773		
10,900.00	9,060.00	5,513.00	4,979.91	50.97	19.09	-2.27	1,012.27	7,733.07	7,164.25	7,118.33	45.91	156.035		
11,000.00	9,060.00	5,513.00	4,979.91	52.55	19.09	0.68	1,012.27	7,733.07	7,081.43	7,035.53	45.90	154.292		
11,100.00	9,060.00	5,513.00	4,979.91	54.14	19.09	3.58	1,012.27	7,733.07	6,999.09	6,953.21	45.88	152.545		
11,207.23	9,060.00	5,513.00	4,979.91	55.87	19.09	6.61	1,012.27	7,733.07	6,911.46	6,865.58	45.87	150.668		
11,300.00	9,060.00	5,513.00	4,979.91	57.39	19.09	4.04	1,012.27	7,733.07	6,836.10	6,790.22	45.87	149.023		
11,400.00	9,060.00	5,501.19	4,980.20	59.06	19.00	1.12	1,024.07	7,732.80	6,755.20	6,709.38	45.82	147.423		
11,506.63	9,060.00	5,500.16	4,980.22	60.88	18.99	-1.78	1,025.10	7,732.77	6,669.47	6,623.62	45.85	145.461		
11,600.00	9,060.00	5,500.35	4,980.22	62.49	18.99	-1.77	1,024.92	7,732.78	6,594.92	6,549.03	45.90	143.693		
11,700.00	9,060.00	5,500.56	4,980.21	64.24	19.00	-1.77	1,024.71	7,732.78	6,515.62	6,469.66	45.96	141.778		
11,800.00	9,060.00	5,500.78	4,980.21	66.01	19.00	-1.77	1,024.49	7,732.79	6,436.89	6,390.86	46.03	139.839		
11,900.00	9,060.00	5,501.01	4,980.20	67.79	19.00	-1.76	1,024.25	7,732.79	6,358.76	6,312.64	46.12	137.877		
12,000.00	9,060.00	5,501.25	4,980.19	69.58	19.00	-1.76	1,024.01	7,732.80	6,281.25	6,235.03	46.22	135.893		
12,100.00	9,060.00	5,501.51	4,980.19	71.39	19.00	-1.76	1,023.75	7,732.80	6,204.38	6,158.04	46.34	133.887		
12,200.00	9,060.00	5,501.78	4,980.18	73.21	19.01	-1.75	1,023.48	7,732.81	6,128.19	6,081.71	46.48	131.860		
12,300.00	9,060.00	5,502.07	4,980.17	75.05	19.01	-1.75	1,023.19	7,732.81	6,052.68	6,006.05	46.63	129.813		
12,400.00	9,060.00	5,502.38	4,980.16	76.89	19.01	-1.74	1,022.88	7,732.82	5,977.89	5,931.10	46.79	127.747		
12,500.00	9,060.00	5,502.70	4,980.16	78.74	19.01	-1.74	1,022.56	7,732.83	5,903.85	5,856.87	46.98	125.664		
12,600.00	9,060.00	5,503.05	4,980.15	80.61	19.01	-1.73	1,022.21	7,732.84	5,830.59	5,783.40	47.19	123.565		
12,700.00	9,060.00	5,503.42	4,980.14	82.48	19.02	-1.73	1,021.85	7,732.84	5,758.13	5,710.71	47.41	121.452		
12,800.00	9,060.00	5,503.81	4,980.13	84.36	19.02	-1.72	1,021.45	7,732.85	5,686.50	5,638.84	47.65	119.328		
12,900.00	9,060.00	5,504.23	4,980.12	86.24	19.02	-1.72	1,021.03	7,732.86	5,615.74	5,567.82	47.92	117.193		
13,000.00	9,060.00	5,504.68	4,980.11	88.14	19.03	-1.71	1,020.58	7,732.87	5,545.88	5,497.68	48.20	115.051		
13,100.00	9,060.00	5,505.17	4,980.09	90.04	19.03	-1.70	1,020.10	7,732.88	5,476.96	5,428.45	48.51	112.905		
13,200.00	9,060.00	5,505.69	4,980.08	91.94	19.03	-1.70	1,019.57	7,732.89	5,409.01	5,360.17	48.84	110.756		
13,300.00	9,060.00	5,506.26	4,980.07	93.86	19.04	-1.69	1,019.01	7,732.91	5,342.06	5,292.87	49.19	108.608		
13,400.00	9,060.00	5,506.87	4,980.05	95.77	19.04	-1.68	1,018.39	7,732.92	5,276.16	5,226.60	49.56	106.464		
13,500.00	9,060.00	5,507.54	4,980.03	97.70	19.05	-1.67	1,017.72	7,732.94	5,211.35	5,161.40	49.95	104.326		
13,600.00	9,060.00	5,508.28	4,980.02	99.62	19.05	-1.66	1,016.99	7,732.96	5,147.66	5,097.29	50.37	102.198		
13,700.00	9,060.00	5,509.08	4,980.00	101.56	19.06	-1.65	1,016.19	7,732.97	5,085.14	5,034.33	50.81	100.084		
13,800.00	9,060.00	5,509.97	4,979.98	103.49	19.07	-1.63	1,015.30	7,733.00	5,023.84	4,972.57	51.27	97.986		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 233-GYRO-NS-CT, 4541-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,900.00	9,060.00	5,510.95	4,979.95	105.43	19.07	-1.62	1,014.31	7,733.02	4,963.79	4,912.03	51.76	95.907	
14,000.00	9,060.00	5,512.05	4,979.93	107.38	19.08	-1.60	1,013.22	7,733.05	4,905.04	4,852.78	52.26	93.851	
14,100.00	9,060.00	5,513.28	4,979.90	109.33	19.09	-1.59	1,011.99	7,733.08	4,847.65	4,794.86	52.79	91.822	
14,200.00	9,060.00	5,514.67	4,979.87	111.28	19.10	-1.57	1,010.60	7,733.11	4,791.66	4,738.31	53.35	89.821	
14,300.00	9,060.00	5,516.25	4,979.84	113.23	19.11	-1.54	1,009.02	7,733.16	4,737.11	4,683.19	53.92	87.853	
14,400.00	9,060.00	5,518.07	4,979.80	115.19	19.13	-1.52	1,007.20	7,733.21	4,684.07	4,629.55	54.52	85.920	
14,500.00	9,060.00	5,520.19	4,979.76	117.15	19.14	-1.49	1,005.09	7,733.26	4,632.57	4,577.44	55.13	84.025	
14,600.00	9,060.00	5,522.67	4,979.71	119.11	19.16	-1.45	1,002.60	7,733.33	4,582.68	4,526.91	55.77	82.170	
14,700.00	9,060.00	5,525.63	4,979.65	121.08	19.19	-1.41	999.64	7,733.42	4,534.45	4,478.02	56.43	80.358	
14,800.00	9,060.00	5,529.22	4,979.59	123.05	19.21	-1.36	996.06	7,733.53	4,487.92	4,430.82	57.10	78.592	
14,900.00	9,060.00	14,900.00	4,980.86	125.02	91.84	-1.95	1,037.18	7,732.86	4,443.10	4,336.85	106.25	41.818	
15,000.00	9,060.00	15,000.00	4,980.90	126.99	92.62	-1.96	1,038.08	7,732.85	4,400.16	4,293.32	106.84	41.185	
15,100.00	9,060.00	15,100.00	4,980.93	128.97	93.40	-1.97	1,038.98	7,732.84	4,359.08	4,251.65	107.43	40.576	
15,200.00	9,060.00	15,200.00	4,980.97	130.95	94.18	-1.99	1,039.88	7,732.83	4,319.93	4,211.90	108.03	39.989	
15,300.00	9,060.00	15,300.00	4,981.00	132.93	94.96	-2.00	1,040.78	7,732.82	4,282.75	4,174.12	108.63	39.425	
15,400.00	9,060.00	15,400.00	4,981.04	134.91	95.74	-2.01	1,041.68	7,732.82	4,247.61	4,138.37	109.24	38.882	
15,500.00	9,060.00	5,535.87	4,979.46	136.89	19.28	-1.26	989.42	7,733.75	4,214.63	4,152.37	62.26	67.697	
15,600.00	9,060.00	5,539.53	4,979.40	138.88	19.31	-1.21	985.76	7,733.88	4,183.69	4,120.64	63.05	66.357	
15,700.00	9,060.00	5,543.86	4,979.34	140.86	19.35	-1.15	981.43	7,734.04	4,154.93	4,091.08	63.85	65.074	
15,800.00	9,060.00	5,549.07	4,979.27	142.85	19.39	-1.07	976.23	7,734.23	4,128.39	4,063.73	64.66	63.847	
15,900.00	9,060.00	5,555.44	4,979.19	144.84	19.44	-0.98	969.86	7,734.49	4,104.11	4,038.63	65.48	62.676	
16,000.00	9,060.00	5,563.42	4,979.11	146.83	19.51	-0.87	961.89	7,734.83	4,082.14	4,015.83	66.31	61.560	
16,100.00	9,060.00	5,573.71	4,979.02	148.83	19.60	-0.72	951.61	7,735.31	4,062.50	3,995.35	67.15	60.498	
16,200.00	9,060.00	5,587.47	4,978.95	150.82	19.71	-0.52	937.87	7,736.01	4,045.23	3,977.23	68.00	59.485	
16,300.00	9,060.00	5,606.81	4,978.94	152.82	19.87	-0.25	918.56	7,737.12	4,030.35	3,961.48	68.88	58.515	
16,400.00	9,060.00	16,400.00	4,979.30	154.81	112.76	-0.78	955.81	7,735.47	4,017.77	3,896.31	121.45	33.081	
16,500.00	9,060.00	16,500.00	4,979.27	156.81	113.63	-0.74	953.34	7,735.57	4,007.79	3,885.35	122.45	32.731 ES	
16,600.00	9,060.00	5,603.00	4,978.93	158.81	19.84	-0.30	922.36	7,736.89	4,000.40	3,929.03	71.37	56.052	
16,700.00	9,060.00	5,603.00	4,978.93	160.81	19.84	-0.30	922.36	7,736.89	3,995.37	3,923.17	72.20	55.335	
16,800.00	9,060.00	5,603.00	4,978.93	162.81	19.84	-0.30	922.36	7,736.89	3,992.85	3,919.81	73.03	54.670	
16,851.53	9,060.00	5,617.15	4,978.93	163.85	19.97	-0.10	908.24	7,737.73	3,992.48	3,918.98	73.50	54.318 CC	
16,900.00	9,060.00	5,618.37	4,978.92	164.82	19.98	-0.08	907.02	7,737.80	3,992.77	3,918.87	73.91	54.025	
17,000.00	9,060.00	5,620.90	4,978.92	166.82	20.00	-0.04	904.49	7,737.95	3,995.24	3,920.50	74.74	53.459	
17,100.00	9,060.00	5,623.44	4,978.91	168.82	20.03	-0.01	901.96	7,738.11	4,000.19	3,924.64	75.56	52.943	
17,200.00	9,060.00	5,625.98	4,978.90	170.83	20.05	0.03	899.42	7,738.26	4,007.64	3,931.27	76.37	52.477	
17,300.00	9,060.00	5,628.54	4,978.90	172.84	20.07	0.07	896.87	7,738.41	4,017.56	3,940.39	77.17	52.061	
17,400.00	9,060.00	5,631.10	4,978.89	174.84	20.09	0.10	894.31	7,738.57	4,029.94	3,951.98	77.96	51.694	
17,500.00	9,060.00	5,633.68	4,978.88	176.85	20.12	0.14	891.74	7,738.72	4,044.74	3,966.02	78.73	51.377	
17,600.00	9,060.00	5,636.27	4,978.86	178.86	20.14	0.18	889.15	7,738.88	4,061.96	3,982.48	79.48	51.107	
17,700.00	9,060.00	5,638.86	4,978.85	180.87	20.16	0.21	886.56	7,739.03	4,081.54	4,001.33	80.21	50.885	
17,800.00	9,060.00	5,641.47	4,978.84	182.88	20.19	0.25	883.96	7,739.19	4,103.47	4,022.55	80.92	50.709	
17,900.00	9,060.00	5,644.09	4,978.82	184.89	20.21	0.29	881.35	7,739.35	4,127.71	4,046.10	81.61	50.579	
18,000.00	9,060.00	5,646.72	4,978.80	186.90	20.24	0.33	878.72	7,739.51	4,154.21	4,071.94	82.27	50.495	
18,100.00	9,060.00	5,649.35	4,978.78	188.92	20.26	0.36	876.09	7,739.67	4,182.93	4,100.02	82.90	50.455	
18,200.00	9,060.00	5,652.00	4,978.77	190.93	20.28	0.40	873.45	7,739.83	4,213.82	4,130.31	83.51	50.457	
18,300.00	9,060.00	5,654.66	4,978.74	192.94	20.31	0.44	870.79	7,739.99	4,246.84	4,162.75	84.09	50.502	
18,400.00	9,060.00	5,657.33	4,978.72	194.96	20.33	0.48	868.13	7,740.16	4,281.94	4,197.30	84.65	50.587	
18,500.00	9,060.00	5,660.01	4,978.70	196.97	20.36	0.52	865.45	7,740.32	4,319.07	4,233.90	85.17	50.712	
18,600.00	9,060.00	5,662.71	4,978.67	198.99	20.38	0.56	862.76	7,740.49	4,358.17	4,272.51	85.66	50.875	
18,700.00	9,060.00	5,665.41	4,978.65	201.00	20.41	0.59	860.07	7,740.65	4,399.20	4,313.07	86.13	51.075	
18,800.00	9,060.00	5,668.12	4,978.62	203.02	20.43	0.63	857.36	7,740.82	4,442.10	4,355.53	86.57	51.312	
18,900.00	9,060.00	18,900.00	4,978.23	205.04	153.62	1.45	800.76	7,744.62	4,486.80	4,311.94	174.86	25.659	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 5H - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		233-GYRO-NS-CT, 4541-MWD+HDGM										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	19,000.00	4,978.21	207.06	154.64	1.52	795.39	7,745.01	4,533.22	4,356.18	177.04	25.606	
19,100.00	9,060.00	19,100.00	4,978.20	209.07	155.65	1.60	790.02	7,745.39	4,581.34	4,402.14	179.20	25.566	
19,200.00	9,060.00	19,200.00	4,978.19	211.09	156.66	1.68	784.65	7,745.78	4,631.11	4,449.77	181.34	25.539	
19,300.00	9,060.00	19,300.00	4,978.17	213.11	157.68	1.75	779.27	7,746.16	4,682.49	4,499.03	183.46	25.524 SF	
19,400.00	9,060.00	5,815.44	4,978.33	215.13	21.86	2.74	710.43	7,751.41	4,735.40	4,645.61	89.79	52.740	
19,500.32	9,060.00	5,820.51	4,978.36	217.16	21.91	2.81	705.38	7,751.83	4,789.92	4,699.82	90.10	53.162	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.00	79.34	1,585.65	8,424.46	8,572.80					
100.00	100.00	17.01	17.01	0.52	5.00	79.34	1,585.64	8,424.46	8,572.38	8,566.87	5.52	1,553.588		
200.00	200.00	120.85	120.85	0.70	5.01	79.34	1,585.11	8,424.51	8,572.34	8,566.63	5.71	1,501.871		
285.14	285.14	201.15	201.14	0.94	5.03	79.35	1,584.72	8,424.55	8,572.30	8,566.33	5.97	1,436.223		
300.00	300.00	213.65	213.65	0.99	5.03	79.35	1,584.70	8,424.55	8,572.30	8,566.28	6.02	1,424.241		
400.00	400.00	301.05	301.05	1.31	5.07	79.35	1,584.95	8,424.61	8,572.42	8,566.03	6.38	1,342.856		
500.00	500.00	397.87	397.86	1.65	5.14	79.34	1,585.59	8,424.69	8,572.62	8,565.83	6.79	1,262.661		
600.00	600.00	498.10	498.09	1.99	5.24	79.34	1,586.36	8,424.75	8,572.82	8,565.60	7.23	1,186.214		
700.00	700.00	592.45	592.44	2.34	5.34	79.33	1,587.15	8,424.83	8,573.06	8,565.38	7.68	1,115.844		
800.00	800.00	685.74	685.72	2.69	5.47	79.33	1,588.06	8,424.96	8,573.38	8,565.22	8.16	1,050.929		
900.00	900.00	786.57	786.54	3.04	5.62	79.32	1,589.19	8,425.12	8,573.74	8,565.08	8.66	989.720		
1,000.00	1,000.00	897.63	897.60	3.40	5.81	79.31	1,590.68	8,425.16	8,574.03	8,564.82	9.20	931.491		
1,100.00	1,100.00	986.10	986.06	3.75	5.97	79.30	1,591.99	8,425.14	8,574.28	8,564.56	9.72	881.852		
1,200.00	1,200.00	1,070.18	1,070.13	4.11	6.14	79.29	1,593.45	8,425.25	8,574.73	8,564.48	10.24	837.020		
1,300.00	1,300.00	1,145.88	1,145.81	4.46	6.29	79.28	1,594.66	8,425.53	8,575.39	8,564.63	10.76	797.157		
1,400.00	1,400.00	1,235.78	1,235.71	4.82	6.49	79.28	1,595.86	8,426.16	8,576.33	8,565.02	11.31	758.328		
1,500.00	1,500.00	1,402.55	1,402.46	5.18	6.88	79.26	1,598.32	8,426.62	8,576.87	8,564.82	12.05	711.602		
1,600.00	1,600.00	1,481.96	1,481.85	5.53	7.07	79.25	1,599.60	8,426.59	8,577.14	8,564.54	12.60	680.551		
1,700.00	1,700.00	1,553.16	1,553.04	5.89	7.25	79.24	1,600.77	8,426.78	8,577.71	8,564.57	13.14	652.877		
1,800.00	1,800.00	1,626.36	1,626.23	6.25	7.44	79.24	1,601.92	8,427.23	8,578.60	8,564.92	13.68	626.967		
1,900.00	1,900.00	1,766.63	1,766.48	6.61	7.81	79.22	1,604.21	8,428.14	8,579.59	8,565.18	14.41	595.371		
2,000.00	2,000.00	1,863.88	1,863.72	6.96	8.08	79.21	1,605.87	8,428.43	8,580.20	8,565.17	15.03	570.793		
2,100.00	2,100.00	1,953.18	1,953.00	7.32	8.32	79.20	1,607.49	8,428.74	8,580.89	8,565.25	15.64	548.757		
2,200.00	2,200.00	2,052.69	2,052.49	7.68	8.60	79.19	1,609.49	8,429.04	8,581.57	8,565.29	16.28	527.273		
2,300.00	2,300.00	2,113.11	2,112.90	8.04	8.78	79.18	1,610.64	8,429.42	8,582.54	8,565.73	16.81	510.702		
2,350.00	2,350.00	2,226.00	2,225.77	8.22	9.11	79.17	1,612.80	8,430.01	8,583.00	8,565.69	17.31	495.779		
2,400.00	2,400.00	2,264.41	2,264.16	8.39	9.22	95.20	1,613.64	8,430.02	8,583.25	8,565.64	17.60	487.592		
2,500.00	2,499.98	2,320.50	2,320.24	8.75	9.39	95.19	1,614.89	8,430.27	8,584.26	8,566.14	18.12	473.617		
2,600.00	2,599.92	2,395.94	2,395.66	9.11	9.61	95.18	1,616.56	8,430.92	8,585.84	8,567.13	18.71	459.011		
2,700.00	2,699.78	2,569.56	2,569.23	9.47	10.14	95.20	1,620.57	8,431.39	8,586.81	8,567.22	19.59	438.425		
2,800.00	2,799.54	2,639.51	2,639.16	9.82	10.35	95.21	1,622.37	8,431.58	8,588.19	8,568.04	20.15	426.119		
2,900.00	2,899.16	2,730.48	2,730.09	10.18	10.63	95.23	1,624.75	8,432.04	8,589.97	8,569.18	20.79	413.187		
3,000.00	2,998.61	2,834.53	2,834.11	10.54	10.95	95.27	1,627.60	8,432.49	8,591.87	8,570.40	21.47	400.221		
3,100.00	3,097.86	2,909.46	2,909.01	10.89	11.19	95.29	1,629.65	8,432.87	8,594.03	8,571.97	22.06	389.631		
3,200.00	3,196.89	2,963.46	2,962.99	11.25	11.36	95.30	1,631.00	8,433.43	8,596.82	8,574.24	22.58	380.715		
3,295.74	3,291.45	3,131.46	3,130.92	11.59	11.89	95.43	1,635.28	8,434.61	8,599.24	8,575.79	23.45	366.634		
3,300.00	3,295.65	3,134.68	3,134.14	11.61	11.90	95.43	1,635.36	8,434.63	8,599.35	8,575.87	23.48	366.241		
3,400.00	3,394.29	3,215.71	3,215.14	11.97	12.16	95.50	1,637.45	8,435.08	8,601.96	8,577.87	24.10	356.999		
3,500.00	3,492.94	3,304.92	3,304.32	12.33	12.44	95.59	1,639.80	8,435.72	8,604.76	8,580.02	24.74	347.819		
3,600.00	3,591.58	3,400.20	3,399.57	12.69	12.75	95.68	1,642.32	8,436.47	8,607.65	8,582.25	25.41	338.814		
3,700.00	3,690.22	3,700.00	3,628.58	13.05	13.72	95.89	1,647.61	8,436.98	8,610.14	8,583.40	26.74	322.030		
3,800.00	3,788.86	3,686.33	3,685.63	13.41	13.68	95.95	1,648.20	8,436.54	8,611.51	8,584.46	27.05	318.297		
3,900.00	3,887.50	3,731.50	3,730.79	13.77	13.83	96.00	1,647.98	8,437.04	8,614.00	8,586.44	27.56	312.508		
4,000.00	3,886.14	3,849.56	3,848.82	14.14	14.21	96.12	1,649.08	8,437.99	8,616.76	8,588.45	28.31	304.336		
4,100.00	4,084.78	3,915.00	3,914.25	14.50	14.43	96.18	1,650.47	8,438.43	8,619.50	8,590.61	28.89	298.339		
4,200.00	4,183.42	3,964.09	3,963.33	14.87	14.59	96.23	1,651.40	8,439.02	8,622.72	8,593.30	29.42	293.127		
4,300.00	4,282.06	4,061.84	4,061.06	15.24	14.91	96.33	1,653.00	8,440.39	8,626.21	8,596.11	30.10	286.548		
4,400.00	4,380.70	4,178.92	4,178.12	15.60	15.30	96.45	1,654.12	8,441.94	8,629.55	8,598.69	30.86	279.659		
4,500.00	4,479.34	4,270.71	4,269.90	15.97	15.60	96.55	1,653.80	8,443.29	8,632.85	8,601.32	31.53	273.818		
4,600.00	4,577.98	4,353.32	4,352.49	16.34	15.87	96.64	1,654.53	8,444.46	8,636.32	8,604.15	32.17	268.472		
4,700.00	4,676.62	4,700.00	4,647.67	16.71	17.03	96.84	1,656.04	8,446.62	8,639.63	8,605.94	33.69	256.419		
4,800.00	4,775.27	4,631.54	4,630.68	17.08	16.80	96.93	1,657.10	8,446.71	8,642.00	8,608.16	33.83	255.425		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
4,900.00	4,873.91	4,671.00	4,670.14	17.45	16.93	96.97	1,657.48	8,447.07	8,645.08	8,610.74	34.33	251.805				
5,000.00	4,972.55	4,791.28	4,790.41	17.82	17.33	97.09	1,658.78	8,448.38	8,648.37	8,613.26	35.11	246.356				
5,100.00	5,071.19	4,890.63	4,889.74	18.19	17.67	97.19	1,659.97	8,449.36	8,651.60	8,615.80	35.81	241.610				
5,200.00	5,169.83	4,987.31	4,986.42	18.56	17.99	97.29	1,661.13	8,450.24	8,654.80	8,618.30	36.50	237.100				
5,300.00	5,268.47	5,100.96	5,100.05	18.93	18.38	97.41	1,662.32	8,451.46	8,658.18	8,620.93	37.26	232.396				
5,400.00	5,367.11	5,208.20	5,207.28	19.31	18.74	97.51	1,663.52	8,452.15	8,661.14	8,623.16	37.99	227.994				
5,500.00	5,465.75	5,368.75	5,367.82	19.68	19.28	97.68	1,664.68	8,452.86	8,663.92	8,625.02	38.90	222.710				
5,600.00	5,564.39	5,487.01	5,486.08	20.05	19.68	97.80	1,665.46	8,452.82	8,666.22	8,626.55	39.67	218.445				
5,700.00	5,663.03	5,585.23	5,584.30	20.42	20.01	97.90	1,666.00	8,452.65	8,668.40	8,628.03	40.38	214.694				
5,800.00	5,761.67	5,674.76	5,673.83	20.80	20.32	98.00	1,666.53	8,452.57	8,670.70	8,629.65	41.05	211.223				
5,900.00	5,860.31	6,099.81	6,098.77	21.17	21.76	98.43	1,669.08	8,444.66	8,671.54	8,628.71	42.83	202.444				
6,000.00	5,958.96	6,156.78	6,155.70	21.54	21.95	98.49	1,669.03	8,442.67	8,670.46	8,627.06	43.41	199.754				
6,100.00	6,057.60	6,225.28	6,224.16	21.92	22.18	98.56	1,668.95	8,440.59	8,669.85	8,625.84	44.01	196.978				
6,184.11	6,140.57	6,271.00	6,269.87	22.23	22.34	98.61	1,668.80	8,439.31	8,669.60	8,625.12	44.49	194.879				
6,200.00	6,156.24	6,271.00	6,269.87	22.29	22.34	98.61	1,668.80	8,439.31	8,669.62	8,625.07	44.55	194.614				
6,300.00	6,254.88	6,271.00	6,269.87	22.67	22.34	98.61	1,668.80	8,439.31	8,670.38	8,625.45	44.93	192.986				
6,400.00	6,353.52	6,311.02	6,309.88	23.04	22.47	98.65	1,668.75	8,438.67	8,671.75	8,626.31	45.44	190.848				
6,500.00	6,452.16	6,531.35	6,530.18	23.42	23.22	98.90	1,667.56	8,437.68	8,674.54	8,627.98	46.56	186.324				
6,600.00	6,550.80	6,625.89	6,624.67	23.79	23.54	99.01	1,665.26	8,436.27	8,675.32	8,628.07	47.25	183.596				
6,700.00	6,649.44	6,703.39	6,702.15	24.17	23.80	99.11	1,663.29	8,435.15	8,676.19	8,628.29	47.89	181.163				
6,800.00	6,748.08	8,141.00	7,763.66	24.54	28.21	104.58	996.13	8,418.45	8,676.89	8,624.51	52.38	165.655				
6,900.00	6,846.72	8,141.00	7,763.66	24.92	28.21	104.58	996.13	8,418.45	8,668.79	8,615.98	52.81	164.143				
7,000.00	6,945.36	8,129.31	7,763.04	25.29	28.12	104.50	1,007.79	8,418.03	8,661.82	8,608.68	53.14	162.995				
7,100.00	7,044.00	8,125.56	7,762.80	25.67	28.08	104.48	1,011.53	8,417.91	8,656.00	8,602.47	53.53	161.697				
7,200.00	7,142.65	8,122.10	7,762.58	26.04	28.05	104.45	1,014.98	8,417.80	8,651.33	8,597.41	53.92	160.450				
7,300.00	7,241.29	8,110.00	7,761.68	26.42	27.95	104.37	1,027.04	8,417.43	8,647.82	8,593.60	54.23	159.472				
7,400.00	7,339.93	8,110.00	7,761.68	26.79	27.95	104.37	1,027.04	8,417.43	8,645.45	8,590.82	54.63	158.247				
7,500.00	7,438.57	8,110.00	7,761.68	27.17	27.95	104.37	1,027.04	8,417.43	8,644.23	8,589.20	55.03	157.079				
7,555.30	7,493.11	8,110.00	7,761.68	27.38	27.95	104.37	1,027.04	8,417.43	8,644.06	8,588.81	55.25	156.457				
7,571.77	7,509.37	8,110.00	7,761.68	27.44	27.95	104.37	1,027.04	8,417.43	8,644.07	8,588.76	55.31	156.275				
7,600.00	7,537.23	8,110.00	7,761.68	27.55	27.95	104.37	1,027.04	8,417.43	8,644.15	8,588.72	55.42	155.966				
7,700.00	7,636.18	8,110.00	7,761.68	27.92	27.95	104.38	1,027.04	8,417.43	8,644.73	8,588.93	55.81	154.907				
7,800.00	7,735.48	8,110.00	7,761.68	28.29	27.95	104.40	1,027.04	8,417.43	8,645.83	8,589.65	56.18	153.900				
7,900.00	7,835.05	8,110.00	7,761.68	28.65	27.95	104.42	1,027.04	8,417.43	8,647.42	8,590.89	56.54	152.945				
8,000.00	7,934.83	8,110.00	7,761.68	29.01	27.95	104.45	1,027.04	8,417.43	8,649.53	8,592.64	56.89	152.041				
8,100.00	8,034.74	8,110.00	7,761.68	29.36	27.95	104.49	1,027.04	8,417.43	8,652.13	8,594.91	57.23	151.188				
8,202.27	8,137.00	8,110.00	7,761.68	29.72	27.95	88.50	1,027.04	8,417.43	8,655.31	8,597.75	57.56	150.365				
8,300.00	8,234.73	8,110.00	7,761.68	30.06	27.95	88.50	1,027.04	8,417.43	8,659.16	8,601.28	57.87	149.625				
8,400.00	8,334.73	8,110.00	7,761.68	30.41	27.95	88.50	1,027.04	8,417.43	8,664.22	8,606.04	58.18	148.911				
8,500.00	8,434.73	8,110.00	7,761.68	30.75	27.95	88.50	1,027.04	8,417.43	8,670.44	8,611.95	58.49	148.241				
8,552.31	8,487.04	8,110.00	7,761.68	30.94	27.95	88.50	1,027.04	8,417.43	8,674.15	8,615.51	58.65	147.907				
8,600.00	8,534.68	8,110.00	7,761.68	31.10	27.95	-1.16	1,027.04	8,417.43	8,675.83	8,617.05	58.78	147.593				
8,650.00	8,584.26	8,110.00	7,761.68	31.26	27.95	-1.17	1,027.04	8,417.43	8,673.61	8,614.69	58.92	147.218				
8,700.00	8,633.10	8,110.00	7,761.68	31.43	27.95	-1.18	1,027.04	8,417.43	8,667.33	8,608.28	59.05	146.790				
8,750.00	8,680.83	8,110.00	7,761.68	31.58	27.95	-1.20	1,027.04	8,417.43	8,657.03	8,597.86	59.17	146.315				
8,800.00	8,727.09	8,121.96	7,762.57	31.74	28.05	-1.15	1,015.13	8,417.79	8,642.74	8,583.36	59.38	145.548				
8,850.00	8,771.52	8,122.76	7,762.62	31.89	28.06	-1.18	1,014.33	8,417.82	8,624.61	8,565.12	59.49	144.975				
8,900.00	8,813.78	8,123.54	7,762.67	32.04	28.07	-1.23	1,013.55	8,417.84	8,602.73	8,543.14	59.59	144.368				
8,950.00	8,853.56	8,124.29	7,762.72	32.18	28.07	-1.29	1,012.80	8,417.87	8,577.24	8,517.56	59.68	143.730				
9,000.00	8,890.55	8,125.01	7,762.77	32.32	28.08	-1.36	1,012.08	8,417.89	8,548.30	8,488.54	59.75	143.063				
9,050.00	8,924.46	8,125.70	7,762.81	32.47	28.08	-1.46	1,011.39	8,417.91	8,516.09	8,456.27	59.82	142.372				
9,100.00	8,955.05	8,126.35	7,762.85	32.63	28.09	-1.59	1,010.74	8,417.93	8,480.83	8,420.96	59.87	141.659				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 13-T21S-R27E - Lone Tree Draw 13 State Com 8H - Original Hole - Actuals		Offset Site Error: 5.00 ft	
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error: 0.00 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
9,150.00	8,982.08	8,126.97	7,762.89	32.79	28.10	-1.75	1,010.13	8,417.95	8,442.74	8,382.83	59.91	140.926				
9,200.00	9,005.34	8,127.54	7,762.93	32.97	28.10	-1.97	1,009.56	8,417.97	8,402.08	8,342.14	59.94	140.176				
9,250.00	9,024.65	8,128.07	7,762.96	33.17	28.10	-2.28	1,009.03	8,417.99	8,359.13	8,299.17	59.96	139.411				
9,300.00	9,039.87	8,128.55	7,762.99	33.38	28.11	-2.72	1,008.55	8,418.01	8,314.18	8,254.20	59.97	138.631				
9,350.00	9,050.89	8,128.98	7,763.02	33.62	28.11	-3.40	1,008.12	8,418.02	8,267.54	8,207.56	59.98	137.840				
9,400.00	9,057.61	8,129.37	7,763.04	33.87	28.12	-4.59	1,007.73	8,418.03	8,219.53	8,159.55	59.98	137.038				
9,452.31	9,060.00	8,141.00	7,763.66	34.15	28.21	-6.81	996.13	8,418.45	8,168.27	8,108.20	60.07	135.977				
9,500.00	9,060.00	8,141.00	7,763.66	34.42	28.21	-6.81	996.13	8,418.45	8,121.12	8,061.05	60.06	135.207				
9,600.00	9,060.00	8,141.00	7,763.66	35.09	28.21	-6.81	996.13	8,418.45	8,022.27	7,962.22	60.05	133.599				
9,700.00	9,060.00	8,141.00	7,763.66	35.86	28.21	-6.81	996.13	8,418.45	7,923.45	7,863.42	60.03	131.989				
9,800.00	9,060.00	8,141.00	7,763.66	36.72	28.21	-6.81	996.13	8,418.45	7,824.66	7,764.64	60.02	130.376				
9,900.00	9,060.00	8,141.00	7,763.66	37.69	28.21	-6.81	996.13	8,418.45	7,725.90	7,665.90	60.00	128.762				
10,000.00	9,060.00	8,141.00	7,763.66	38.73	28.21	-6.81	996.13	8,418.45	7,627.17	7,567.18	59.99	127.145				
10,100.00	9,060.00	8,141.00	7,763.66	39.86	28.21	-6.81	996.13	8,418.45	7,528.48	7,468.50	59.98	125.527				
10,140.22	9,060.00	8,141.00	7,763.66	40.33	28.21	-6.81	996.13	8,418.45	7,488.79	7,428.82	59.97	124.875				
10,200.00	9,060.00	8,141.00	7,763.66	41.05	28.21	-13.82	996.13	8,418.45	7,429.84	7,369.87	59.96	123.907				
10,300.00	9,060.00	8,141.00	7,763.66	42.31	28.21	-24.48	996.13	8,418.45	7,331.37	7,271.42	59.95	122.288				
10,400.00	9,060.00	8,141.00	7,763.66	43.64	28.21	-33.47	996.13	8,418.45	7,233.21	7,173.27	59.94	120.669				
10,507.23	9,060.00	8,141.00	7,763.66	45.11	28.21	-41.27	996.13	8,418.45	7,128.45	7,068.52	59.94	118.931				
10,600.00	9,060.00	8,141.00	7,763.66	46.43	28.21	-34.72	996.13	8,418.45	7,037.91	6,977.97	59.94	117.420				
10,700.00	9,060.00	8,152.43	7,764.15	47.91	28.31	-25.96	984.71	8,418.88	6,939.94	6,879.91	60.04	115.596				
10,800.00	9,060.00	8,155.48	7,764.26	49.42	28.34	-16.14	981.67	8,419.00	6,841.74	6,781.68	60.06	113.910				
10,900.00	9,060.00	8,157.13	7,764.32	50.97	28.36	-5.46	980.02	8,419.06	6,743.41	6,683.34	60.07	112.250				
11,000.00	9,060.00	8,157.37	7,764.32	52.55	28.36	5.38	979.78	8,419.07	6,645.07	6,585.00	60.07	110.617				
11,100.00	9,060.00	8,156.20	7,764.28	54.14	28.35	15.64	980.95	8,419.03	6,546.84	6,486.78	60.06	109.012				
11,207.23	9,060.00	8,153.36	7,764.18	55.87	28.32	25.37	983.78	8,418.92	6,441.77	6,381.75	60.02	107.323				
11,300.00	9,060.00	8,150.80	7,764.09	57.39	28.30	16.94	986.34	8,418.82	6,350.94	6,290.94	59.99	105.859				
11,400.00	9,060.00	8,149.40	7,764.03	59.06	28.29	7.15	987.74	8,418.77	6,252.90	6,192.92	59.98	104.250				
11,506.63	9,060.00	8,149.48	7,764.04	60.88	28.29	-3.50	987.66	8,418.77	6,148.33	6,088.35	59.98	102.505				
11,600.00	9,060.00	8,150.26	7,764.07	62.49	28.29	-3.46	986.88	8,418.80	6,056.83	5,996.84	59.99	100.964				
11,700.00	9,060.00	8,151.10	7,764.10	64.24	28.30	-3.42	986.05	8,418.83	5,958.89	5,898.89	60.00	99.313				
11,800.00	9,060.00	8,151.94	7,764.13	66.01	28.31	-3.39	985.20	8,418.86	5,861.02	5,801.01	60.01	97.662				
11,900.00	9,060.00	8,152.79	7,764.16	67.79	28.32	-3.35	984.36	8,418.90	5,763.23	5,703.20	60.03	96.011				
12,000.00	9,060.00	8,153.64	7,764.19	69.58	28.32	-3.31	983.51	8,418.93	5,665.51	5,605.47	60.04	94.359				
12,100.00	9,060.00	8,154.49	7,764.23	71.39	28.33	-3.27	982.66	8,418.96	5,567.88	5,507.82	60.06	92.707				
12,200.00	9,060.00	8,155.35	7,764.26	73.21	28.34	-3.22	981.80	8,418.99	5,470.32	5,410.25	60.08	91.054				
12,300.00	9,060.00	8,156.21	7,764.28	75.05	28.35	-3.18	980.94	8,419.03	5,372.86	5,312.76	60.10	89.402				
12,400.00	9,060.00	8,157.08	7,764.31	76.89	28.35	-3.14	980.07	8,419.06	5,275.49	5,215.37	60.12	87.749				
12,500.00	9,060.00	8,157.95	7,764.34	78.74	28.36	-3.10	979.20	8,419.09	5,178.23	5,118.08	60.14	86.097				
12,600.00	9,060.00	8,158.83	7,764.37	80.61	28.37	-3.06	978.33	8,419.13	5,081.06	5,020.89	60.17	84.444				
12,700.00	9,060.00	8,159.71	7,764.40	82.48	28.38	-3.02	977.45	8,419.16	4,984.01	4,923.82	60.20	82.791				
12,800.00	9,060.00	8,160.59	7,764.42	84.36	28.39	-2.98	976.56	8,419.20	4,887.08	4,826.85	60.23	81.139				
12,900.00	9,060.00	8,161.48	7,764.45	86.24	28.39	-2.94	975.68	8,419.23	4,790.28	4,730.01	60.27	79.487				
13,000.00	9,060.00	8,162.37	7,764.48	88.14	28.40	-2.89	974.79	8,419.27	4,693.61	4,633.30	60.30	77.835				
13,100.00	9,060.00	8,163.27	7,764.50	90.04	28.41	-2.85	973.89	8,419.30	4,597.08	4,536.73	60.34	76.183				
13,200.00	9,060.00	8,164.17	7,764.53	91.94	28.42	-2.81	972.99	8,419.33	4,500.70	4,440.31	60.39	74.531				
13,300.00	9,060.00	8,172.00	7,764.71	93.86	28.49	-2.44	965.17	8,419.64	4,404.49	4,344.01	60.48	72.820				
13,400.00	9,060.00	8,172.00	7,764.71	95.77	28.49	-2.44	965.17	8,419.64	4,308.44	4,247.91	60.53	71.179				
13,500.00	9,060.00	8,172.00	7,764.71	97.70	28.49	-2.44	965.17	8,419.64	4,212.58	4,152.00	60.58	69.538				
13,600.00	9,060.00	8,172.00	7,764.71	99.62	28.49	-2.44	965.17	8,419.64	4,116.91	4,056.28	60.63	67.897				
13,700.00	9,060.00	8,172.00	7,764.71	101.56	28.49	-2.44	965.17	8,419.64	4,021.45	3,960.76	60.70	66.256				
13,800.00	9,060.00	8,172.00	7,764.71	103.49	28.49	-2.44	965.17	8,419.64	3,926.22	3,865.46	60.76	64.615				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDCS Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,900.00	9,060.00	8,172.00	7,764.71	105.43	28.49	-2.44	965.17	8,419.64	3,831.23	3,770.39	60.84	62.975		
14,000.00	9,060.00	8,172.00	7,764.71	107.38	28.49	-2.44	965.17	8,419.64	3,736.51	3,675.59	60.92	61.334		
14,100.00	9,060.00	8,173.21	7,764.73	109.33	28.50	-2.38	963.96	8,419.69	3,642.06	3,581.04	61.02	59.687		
14,200.00	9,060.00	8,175.52	7,764.77	111.28	28.52	-2.27	961.65	8,419.78	3,547.92	3,486.78	61.13	58.034		
14,300.00	9,060.00	8,177.74	7,764.81	113.23	28.54	-2.17	959.43	8,419.86	3,454.10	3,392.84	61.26	56.384		
14,400.00	9,060.00	8,179.88	7,764.85	115.19	28.56	-2.07	957.29	8,419.94	3,360.65	3,299.25	61.40	54.738		
14,500.00	9,060.00	8,181.95	7,764.88	117.15	28.58	-1.97	955.23	8,420.02	3,267.57	3,206.03	61.54	53.094		
14,600.00	9,060.00	8,183.94	7,764.91	119.11	28.59	-1.88	953.24	8,420.10	3,174.92	3,113.22	61.70	51.454		
14,700.00	9,060.00	8,185.87	7,764.94	121.08	28.61	-1.79	951.31	8,420.17	3,082.73	3,020.84	61.88	49.817		
14,800.00	9,060.00	8,187.73	7,764.96	123.05	28.63	-1.70	949.45	8,420.24	2,991.03	2,928.96	62.07	48.184		
14,900.00	9,060.00	8,189.53	7,764.98	125.02	28.65	-1.61	947.66	8,420.30	2,899.89	2,837.60	62.29	46.557		
15,000.00	9,060.00	8,191.27	7,765.00	126.99	28.66	-1.53	945.92	8,420.36	2,809.34	2,746.82	62.52	44.934		
15,100.00	9,060.00	8,192.95	7,765.02	128.97	28.68	-1.45	944.24	8,420.42	2,719.46	2,656.68	62.78	43.318		
15,200.00	9,060.00	8,194.58	7,765.04	130.95	28.69	-1.37	942.61	8,420.48	2,630.30	2,567.24	63.06	41.709		
15,300.00	9,060.00	8,196.16	7,765.06	132.93	28.71	-1.30	941.03	8,420.54	2,541.95	2,478.58	63.38	40.108		
15,400.00	9,060.00	8,197.69	7,765.07	134.91	28.72	-1.23	939.50	8,420.59	2,454.50	2,390.77	63.72	38.518		
15,500.00	9,060.00	8,199.17	7,765.08	136.89	28.73	-1.16	938.01	8,420.64	2,368.04	2,303.93	64.11	36.939		
15,600.00	9,060.00	8,200.61	7,765.09	138.88	28.75	-1.09	936.58	8,420.69	2,282.68	2,218.15	64.53	35.375		
15,700.00	9,060.00	8,202.01	7,765.10	140.86	28.76	-1.02	935.18	8,420.74	2,198.55	2,133.56	64.99	33.829		
15,800.00	9,060.00	8,203.37	7,765.11	142.85	28.77	-0.96	933.82	8,420.79	2,115.81	2,050.31	65.50	32.302		
15,900.00	9,060.00	8,204.72	7,765.12	144.84	28.78	-0.90	932.47	8,420.83	2,034.62	1,968.56	66.06	30.800		
16,000.00	9,060.00	8,206.10	7,765.13	146.83	28.80	-0.83	931.09	8,420.88	1,955.17	1,888.50	66.67	29.327		
16,100.00	9,060.00	8,207.48	7,765.14	148.83	28.81	-0.76	929.71	8,420.92	1,877.68	1,810.35	67.33	27.889		
16,200.00	9,060.00	8,208.86	7,765.14	150.82	28.82	-0.70	928.34	8,420.97	1,802.41	1,734.37	68.04	26.491		
16,300.00	9,060.00	8,210.23	7,765.15	152.82	28.84	-0.63	926.96	8,421.02	1,729.64	1,660.84	68.80	25.140		
16,400.00	9,060.00	8,211.61	7,765.16	154.81	28.85	-0.57	925.59	8,421.06	1,659.71	1,590.11	69.60	23.846		
16,500.00	9,060.00	8,212.98	7,765.17	156.81	28.86	-0.50	924.22	8,421.11	1,593.00	1,522.56	70.44	22.616		
16,600.00	9,060.00	8,214.35	7,765.17	158.81	28.88	-0.44	922.84	8,421.16	1,529.91	1,458.61	71.29	21.459		
16,700.00	9,060.00	8,215.73	7,765.18	160.81	28.89	-0.37	921.47	8,421.20	1,470.92	1,398.77	72.15	20.387		
16,800.00	9,060.00	8,217.10	7,765.18	162.81	28.90	-0.31	920.10	8,421.25	1,416.53	1,343.55	72.98	19.409		
16,900.00	9,060.00	8,218.47	7,765.19	164.82	28.92	-0.24	918.73	8,421.29	1,367.31	1,293.54	73.77	18.535		
17,000.00	9,060.00	8,219.84	7,765.20	166.82	28.93	-0.18	917.36	8,421.34	1,323.82	1,249.34	74.47	17.775		
17,100.00	9,060.00	8,221.21	7,765.20	168.82	28.94	-0.12	915.99	8,421.39	1,286.64	1,211.56	75.09	17.136		
17,200.00	9,060.00	8,222.58	7,765.21	170.83	28.95	-0.05	914.62	8,421.43	1,256.35	1,180.74	75.60	16.618		
17,300.00	9,060.00	8,223.95	7,765.21	172.84	28.97	0.01	913.25	8,421.48	1,233.43	1,157.36	76.07	16.214		
17,400.00	9,060.00	8,225.32	7,765.22	174.84	28.98	0.08	911.88	8,421.52	1,218.32	1,141.73	76.59	15.908		
17,500.00	9,060.00	8,226.69	7,765.22	176.85	28.99	0.14	910.51	8,421.57	1,211.30	1,133.99	77.31	15.668		
17,535.31	9,060.00	8,227.17	7,765.22	177.56	29.00	0.17	910.03	8,421.59	1,210.78	1,133.15	77.64	15.595 CC, ES		
17,600.00	9,060.00	8,228.06	7,765.22	178.86	29.01	0.21	909.15	8,421.62	1,212.51	1,134.16	78.35	15.476		
17,700.00	9,060.00	8,229.42	7,765.23	180.87	29.02	0.27	907.78	8,421.66	1,221.93	1,142.28	79.65	15.342		
17,800.00	9,060.00	8,230.79	7,765.23	182.88	29.03	0.34	906.42	8,421.71	1,239.37	1,158.34	81.04	15.294 SF		
17,900.00	9,060.00	8,232.15	7,765.23	184.89	29.05	0.40	905.05	8,421.75	1,264.50	1,182.17	82.33	15.359		
18,000.00	9,060.00	8,233.52	7,765.24	186.90	29.06	0.47	903.69	8,421.80	1,296.87	1,213.46	83.42	15.547		
18,100.00	9,060.00	8,234.88	7,765.24	188.92	29.07	0.53	902.33	8,421.85	1,335.96	1,251.71	84.25	15.857		
18,200.00	9,060.00	8,236.25	7,765.24	190.93	29.09	0.60	900.96	8,421.89	1,381.20	1,296.36	84.83	16.281		
18,300.00	9,060.00	8,237.61	7,765.24	192.94	29.10	0.66	899.60	8,421.94	1,432.00	1,346.81	85.18	16.811		
18,400.00	9,060.00	8,238.97	7,765.25	194.96	29.11	0.73	898.24	8,421.98	1,487.79	1,402.46	85.33	17.435		
18,500.00	9,060.00	8,240.33	7,765.25	196.97	29.12	0.79	896.88	8,422.03	1,548.03	1,462.71	85.32	18.144		
18,600.00	9,060.00	8,241.69	7,765.25	198.99	29.14	0.85	895.52	8,422.07	1,612.24	1,527.05	85.18	18.926		
18,700.00	9,060.00	8,243.05	7,765.25	201.00	29.15	0.92	894.16	8,422.12	1,679.94	1,594.99	84.95	19.775		
18,800.00	9,060.00	8,244.41	7,765.25	203.02	29.16	0.98	892.80	8,422.17	1,750.74	1,666.09	84.65	20.682		
18,900.00	9,060.00	8,245.77	7,765.25	205.04	29.18	1.05	891.44	8,422.21	1,824.27	1,739.97	84.30	21.639		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	5.00 ft
Survey Program: 81-GYRO-NS, 7138-MWD+IGRF												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,000.00	9,060.00	8,247.13	7,765.25	207.06	29.19	1.11	890.09	8,422.26	1,900.22	1,816.29	83.93	22.642	
19,100.00	9,060.00	8,248.49	7,765.25	209.07	29.20	1.18	888.73	8,422.30	1,978.31	1,894.78	83.53	23.683	
19,200.00	9,060.00	8,249.84	7,765.25	211.09	29.22	1.24	887.37	8,422.35	2,058.29	1,975.16	83.13	24.759	
19,300.00	9,060.00	8,251.20	7,765.25	213.11	29.23	1.30	886.02	8,422.39	2,139.96	2,057.23	82.73	25.865	
19,400.00	9,060.00	8,252.55	7,765.25	215.13	29.24	1.37	884.66	8,422.44	2,223.13	2,140.78	82.34	26.998	
19,500.32	9,060.00	8,253.91	7,765.25	217.16	29.25	1.43	883.31	8,422.48	2,307.90	2,225.93	81.97	28.157	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.07	1,576.15	6,866.20	7,045.13					
100.00	100.00	21.35	21.35	0.52	5.03	77.07	1,576.17	6,866.21	7,044.81	7,039.26	5.54	1,270.988		
200.00	200.00	91.59	91.59	0.70	5.03	77.07	1,576.54	6,866.37	7,045.15	7,039.42	5.73	1,229.833		
300.00	300.00	209.93	209.93	0.99	5.05	77.06	1,577.41	6,866.73	7,045.61	7,039.57	6.04	1,166.700		
400.00	400.00	288.02	288.01	1.31	5.09	77.06	1,578.29	6,866.91	7,046.08	7,039.68	6.40	1,101.605		
500.00	500.00	411.74	411.71	1.65	5.17	77.04	1,580.34	6,867.03	7,046.56	7,039.74	6.82	1,033.290		
600.00	600.00	509.89	509.86	1.99	5.27	77.03	1,581.66	6,867.00	7,046.83	7,039.57	7.26	971.090		
700.00	700.00	585.16	585.11	2.34	5.35	77.02	1,582.68	6,867.13	7,047.30	7,039.61	7.69	916.403		
800.00	800.00	700.14	700.08	2.69	5.50	77.01	1,584.76	6,867.34	7,047.89	7,039.70	8.19	860.123		
900.00	900.00	801.34	801.26	3.04	5.66	76.99	1,586.57	6,867.36	7,048.31	7,039.61	8.70	809.979		
1,000.00	1,000.00	871.04	870.95	3.40	5.78	76.98	1,587.76	6,867.54	7,048.94	7,039.77	9.17	768.470		
1,100.00	1,100.00	1,052.16	1,052.03	3.75	6.12	76.95	1,591.23	6,867.46	7,049.43	7,039.56	9.87	714.413		
1,200.00	1,200.00	1,210.09	1,209.93	4.11	6.45	76.93	1,593.64	6,865.70	7,048.68	7,038.13	10.55	667.862		
1,300.00	1,300.00	1,317.87	1,317.70	4.46	6.69	76.92	1,594.82	6,864.09	7,047.47	7,036.32	11.15	631.954		
1,400.00	1,400.00	1,400.00	1,399.82	4.82	6.88	76.91	1,595.42	6,863.02	7,046.36	7,034.66	11.70	602.226		
1,500.00	1,500.00	1,532.83	1,532.62	5.18	7.21	76.90	1,596.59	6,861.04	7,045.10	7,032.72	12.38	569.018		
1,600.00	1,600.00	1,635.46	1,635.23	5.53	7.47	76.89	1,597.85	6,859.17	7,043.60	7,030.60	13.00	541.825		
1,700.00	1,700.00	1,700.00	1,768.10	5.89	7.64	76.87	1,599.34	6,856.49	7,041.90	7,028.37	13.52	520.661		
1,800.00	1,800.00	1,870.37	1,870.08	6.25	8.10	76.86	1,600.02	6,854.07	7,039.74	7,025.40	14.34	490.921		
1,900.00	1,900.00	1,900.00	1,982.53	6.61	8.18	76.85	1,600.55	6,851.54	7,037.65	7,022.87	14.78	476.223		
2,000.00	2,000.00	2,058.11	2,057.77	6.96	8.62	76.85	1,600.77	6,849.80	7,035.52	7,019.94	15.58	451.629		
2,100.00	2,100.00	2,149.88	2,149.52	7.32	8.88	76.84	1,601.01	6,848.33	7,033.99	7,017.79	16.20	434.257		
2,200.00	2,200.00	2,248.41	2,248.04	7.68	9.17	76.84	1,600.90	6,846.43	7,032.09	7,015.25	16.84	417.563		
2,300.00	2,300.00	2,310.89	2,310.51	8.04	9.35	76.84	1,601.12	6,845.49	7,030.70	7,013.31	17.38	404.470		
2,350.00	2,350.00	2,347.32	2,346.93	8.22	9.46	76.83	1,601.26	6,845.07	7,030.18	7,012.51	17.67	397.880		
2,400.00	2,400.00	2,383.75	2,383.37	8.39	9.57	92.88	1,601.33	6,844.73	7,029.76	7,011.81	17.96	391.502		
2,500.00	2,499.98	2,493.43	2,493.04	8.75	9.90	92.90	1,601.36	6,843.86	7,029.09	7,010.45	18.64	377.097		
2,600.00	2,599.92	2,651.85	2,651.44	9.11	10.38	92.95	1,601.11	6,841.63	7,027.80	7,008.33	19.47	360.871		
2,700.00	2,699.78	2,759.98	2,759.55	9.47	10.71	93.01	1,600.64	6,839.76	7,026.29	7,006.13	20.16	348.493		
2,800.00	2,799.54	2,854.69	2,854.25	9.82	11.00	93.08	1,600.29	6,838.05	7,024.82	7,004.01	20.81	337.558		
2,900.00	2,899.16	2,929.56	2,929.11	10.18	11.24	93.15	1,600.03	6,836.84	7,023.65	7,002.25	21.40	328.207		
3,000.00	2,998.61	3,000.00	2,999.54	10.54	11.46	93.21	1,599.86	6,836.08	7,023.09	7,001.11	21.98	319.570		
3,100.00	3,097.86	3,115.07	3,114.61	10.89	11.82	93.33	1,599.77	6,834.91	7,022.78	7,000.09	22.69	309.447		
3,200.00	3,196.89	3,240.37	3,239.89	11.25	12.22	93.47	1,599.88	6,832.98	7,022.11	6,998.66	23.45	299.477		
3,295.74	3,291.45	3,327.20	3,326.71	11.59	12.50	93.59	1,599.75	6,831.60	7,021.51	6,997.44	24.07	291.748		
3,300.00	3,295.65	3,330.48	3,330.00	11.61	12.51	93.59	1,599.74	6,831.55	7,021.49	6,997.40	24.09	291.435		
3,400.00	3,394.29	3,410.73	3,410.24	11.97	12.77	93.70	1,599.55	6,830.51	7,021.20	6,996.49	24.71	284.160		
3,500.00	3,492.94	6,337.07	4,971.01	12.33	28.52	108.82	-9.63	6,814.68	7,019.21	6,979.15	40.06	175.218		
3,600.00	3,591.58	6,333.51	4,970.90	12.69	28.47	108.79	-6.07	6,814.76	7,002.84	6,962.38	40.47	173.048		
3,700.00	3,690.22	6,329.93	4,970.79	13.05	28.43	108.76	-2.50	6,814.86	6,987.86	6,946.99	40.87	170.971		
3,800.00	3,788.86	6,326.34	4,970.68	13.41	28.39	108.73	1.08	6,814.95	6,974.27	6,933.00	41.27	168.985		
3,900.00	3,887.50	6,322.74	4,970.57	13.77	28.35	108.70	4.68	6,815.06	6,962.09	6,920.42	41.67	167.089		
4,000.00	3,986.14	6,319.12	4,970.47	14.14	28.30	108.67	8.30	6,815.16	6,951.32	6,909.26	42.06	165.280		
4,100.00	4,084.78	6,315.49	4,970.36	14.50	28.26	108.64	11.93	6,815.28	6,941.96	6,899.52	42.44	163.558		
4,200.00	4,183.42	6,311.84	4,970.26	14.87	28.22	108.61	15.57	6,815.39	6,934.03	6,891.20	42.82	161.921		
4,300.00	4,282.06	6,280.00	4,969.39	15.24	27.84	108.35	47.38	6,816.62	6,927.72	6,884.86	42.87	161.610		
4,400.00	4,380.70	6,280.00	4,969.39	15.60	27.84	108.35	47.38	6,816.62	6,922.60	6,879.32	43.28	159.955		
4,500.00	4,479.34	6,280.00	4,969.39	15.97	27.84	108.35	47.38	6,816.62	6,918.92	6,875.24	43.68	158.388		
4,600.00	4,577.98	6,280.00	4,969.39	16.34	27.84	108.35	47.38	6,816.62	6,916.68	6,872.60	44.08	156.904		
4,700.00	4,676.62	6,280.00	4,969.39	16.71	27.84	108.35	47.38	6,816.62	6,915.89	6,871.42	44.47	155.503		
4,704.73	4,681.29	6,280.00	4,969.39	16.73	27.84	108.35	47.38	6,816.62	6,915.89	6,871.40	44.49	155.439		
4,800.00	4,775.27	6,280.00	4,969.39	17.08	27.84	108.35	47.38	6,816.62	6,916.55	6,871.69	44.86	154.182		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,280.00	4,969.39	17.45	27.84	108.35	47.38	6,816.62	6,918.65	6,873.41	45.24	152.940		
5,000.00	4,972.55	6,280.00	4,969.39	17.82	27.84	108.35	47.38	6,816.62	6,922.19	6,876.58	45.61	151.774		
5,100.00	5,071.19	6,274.46	4,969.26	18.19	27.77	108.30	52.91	6,816.86	6,927.17	6,881.27	45.91	150.891		
5,200.00	5,169.83	6,261.70	4,968.95	18.56	27.63	108.20	65.65	6,817.43	6,933.58	6,887.46	46.12	150.345		
5,300.00	5,268.47	5,955.68	4,963.82	18.93	24.17	105.69	371.50	6,824.31	6,940.83	6,897.79	43.04	161.273		
5,400.00	5,367.11	5,948.42	4,963.66	19.31	24.09	105.63	378.76	6,824.32	6,949.46	6,906.16	43.30	160.486		
5,500.00	5,465.75	5,941.18	4,963.49	19.68	24.02	105.57	386.00	6,824.35	6,959.50	6,915.94	43.56	159.768		
5,600.00	5,564.39	5,933.95	4,963.33	20.05	23.94	105.51	393.23	6,824.38	6,970.95	6,927.14	43.81	159.116		
5,700.00	5,663.03	5,926.73	4,963.16	20.42	23.86	105.45	400.45	6,824.42	6,983.80	6,939.75	44.05	158.530		
5,800.00	5,761.67	5,919.53	4,963.00	20.80	23.78	105.39	407.65	6,824.46	6,998.04	6,953.75	44.29	158.007		
5,900.00	5,860.31	5,901.00	4,962.57	21.17	23.58	105.24	426.17	6,824.61	7,013.68	6,969.29	44.40	157.979		
6,000.00	5,958.96	5,901.00	4,962.57	21.54	23.58	105.24	426.17	6,824.61	7,030.66	6,985.97	44.69	157.306		
6,100.00	6,057.60	5,895.76	4,962.45	21.92	23.53	105.20	431.40	6,824.65	7,049.02	7,004.09	44.93	156.886		
6,200.00	6,156.24	5,883.19	4,962.16	22.29	23.40	105.09	443.97	6,824.77	7,068.73	7,023.64	45.08	156.789		
6,300.00	6,254.88	5,870.53	4,961.88	22.67	23.26	104.99	456.63	6,824.89	7,089.77	7,044.54	45.23	156.748		
6,400.00	6,353.52	5,857.78	4,961.60	23.04	23.13	104.88	469.37	6,825.01	7,112.12	7,066.75	45.37	156.765		
6,500.00	6,452.16	5,845.00	4,959.09	23.42	22.98	104.77	482.11	6,825.13	7,135.74	7,083.74	45.50	156.782		
6,600.00	6,550.80	5,832.24	4,956.12	23.79	22.84	104.66	494.85	6,824.44	7,160.49	7,116.41	44.08	162.428		
6,700.00	6,649.44	5,819.48	4,953.78	24.17	22.70	104.55	507.59	6,824.30	7,186.46	7,142.20	44.26	162.372		
6,800.00	6,748.08	5,806.72	4,951.44	24.54	22.56	104.44	520.33	6,824.17	7,213.71	7,169.28	44.43	162.368		
6,900.00	6,846.72	5,793.96	4,949.10	24.92	22.42	104.33	533.07	6,824.04	7,242.22	7,197.63	44.59	162.415		
7,000.00	6,945.36	5,781.20	4,946.76	25.29	22.28	104.22	545.81	6,823.92	7,271.98	7,227.23	44.75	162.513		
7,100.00	7,044.00	5,768.44	4,944.42	25.67	22.14	104.11	558.55	6,823.80	7,302.98	7,258.08	44.90	162.659		
7,200.00	7,142.64	5,755.68	4,942.08	26.04	22.00	104.00	571.29	6,823.69	7,335.19	7,290.15	45.04	162.852		
7,300.00	7,241.28	5,742.92	4,939.74	26.42	21.86	103.89	584.03	6,823.58	7,368.62	7,323.43	45.18	163.080		
7,400.00	7,339.92	5,730.16	4,937.40	26.79	21.72	103.78	596.77	6,823.44	7,403.22	7,357.92	45.30	163.422		
7,500.00	7,438.56	5,717.40	4,935.06	27.17	21.58	103.67	609.51	6,823.30	7,439.00	7,393.58	45.41	163.811		
7,571.77	7,509.37	5,699.28	4,932.56	27.44	21.44	103.56	622.25	6,823.21	7,465.38	7,419.89	45.49	164.118		
7,600.00	7,537.23	5,587.34	4,952.44	27.55	20.48	102.83	739.62	6,823.17	7,475.90	7,430.38	45.52	164.243		
7,700.00	7,636.18	5,575.20	4,950.08	27.92	20.40	103.35	748.64	6,823.06	7,513.54	7,467.91	45.63	164.670		
7,800.00	7,735.48	5,562.96	4,947.72	28.29	20.34	103.90	755.46	6,822.98	7,551.74	7,505.99	45.75	165.073		
7,900.00	7,835.05	5,550.72	4,945.36	28.65	20.30	104.47	760.05	6,822.93	7,590.49	7,544.61	45.88	165.449		
8,000.00	7,934.83	5,538.48	4,943.00	29.01	20.28	105.07	762.36	6,822.90	7,629.75	7,583.74	46.02	165.796		
8,100.00	8,034.74	5,526.24	4,940.64	29.36	20.28	105.70	762.34	6,822.90	7,669.50	7,623.33	46.17	166.113		
8,202.27	8,137.00	5,514.00	4,938.28	29.72	20.30	90.33	759.84	6,822.93	7,710.60	7,664.26	46.34	166.401		
8,300.00	8,234.73	5,501.76	4,935.92	30.06	20.34	90.36	756.22	6,822.97	7,750.61	7,704.11	46.50	166.674		
8,400.00	8,334.73	5,489.52	4,933.56	30.41	20.37	90.39	752.47	6,823.02	7,792.60	7,745.93	46.67	166.985		
8,500.00	8,434.73	5,477.28	4,931.20	30.75	20.40	90.42	748.65	6,823.06	7,835.64	7,788.81	46.83	167.327		
8,552.31	8,487.04	5,465.04	4,928.84	30.94	20.42	90.43	746.63	6,823.08	7,858.56	7,811.65	46.91	167.517		
8,600.00	8,534.68	5,452.80	4,926.48	31.10	20.44	0.76	744.77	6,823.11	7,877.91	7,830.93	46.98	167.687		
8,650.00	8,584.26	5,440.56	4,924.12	31.26	20.46	0.75	742.79	6,823.13	7,894.50	7,847.46	47.04	167.819		
8,700.00	8,633.10	5,428.32	4,921.76	31.43	20.47	0.75	740.80	6,823.16	7,907.21	7,860.11	47.10	167.887		
8,750.00	8,680.83	5,416.08	4,919.40	31.58	20.49	0.75	738.81	6,823.18	7,915.96	7,868.81	47.15	167.892		
8,800.00	8,727.09	5,403.84	4,917.04	31.74	20.51	0.76	736.83	6,823.21	7,920.70	7,873.51	47.19	167.840		
8,850.00	8,771.52	5,391.60	4,914.68	31.89	20.53	0.77	734.85	6,823.23	7,921.40	7,874.17	47.23	167.732		
8,900.00	8,813.78	5,379.36	4,912.32	32.04	20.54	0.79	732.99	6,823.25	7,918.06	7,870.80	47.25	167.571		
8,950.00	8,853.56	5,367.12	4,910.00	32.18	20.56	0.82	731.15	6,823.28	7,910.69	7,863.42	47.27	167.359		
9,000.00	8,890.55	5,354.88	4,907.64	32.32	20.58	0.85	729.39	6,823.30	7,899.34	7,852.07	47.27	167.098		
9,050.00	8,924.46	5,342.64	4,905.28	32.47	20.59	0.88	727.72	6,823.32	7,884.08	7,836.81	47.27	166.789		
9,100.00	8,955.05	5,330.40	4,902.92	32.63	20.60	0.93	726.15	6,823.34	7,865.01	7,817.75	47.26	166.434		
9,150.00	8,982.08	5,318.16	4,900.56	32.79	20.62	0.98	724.71	6,823.36	7,842.24	7,795.01	47.23	166.032		
9,200.00	9,005.34	5,305.92	4,898.20	32.97	20.63	1.05	723.40	6,823.38	7,815.91	7,768.71	47.20	165.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,604.75	4,953.16	33.17	20.64	1.13	722.24	6,823.39	7,786.20	7,739.03	47.16	165.093		
9,300.00	9,039.87	5,605.75	4,953.20	33.38	20.65	1.23	721.23	6,823.41	7,753.28	7,706.16	47.12	164.556		
9,350.00	9,050.89	5,606.59	4,953.24	33.62	20.66	1.36	720.39	6,823.42	7,717.37	7,670.30	47.06	163.976		
9,400.00	9,057.61	5,607.26	4,953.26	33.87	20.66	1.52	719.73	6,823.42	7,678.70	7,631.70	47.01	163.351		
9,452.31	9,060.00	5,607.76	4,953.28	34.15	20.67	1.74	719.23	6,823.43	7,635.58	7,588.63	46.94	162.651		
9,500.00	9,060.00	5,608.12	4,953.30	34.42	20.67	1.74	718.87	6,823.44	7,595.15	7,548.26	46.88	162.001		
9,600.00	9,060.00	5,608.88	4,953.33	35.09	20.68	1.76	718.11	6,823.45	7,510.65	7,463.90	46.75	160.658		
9,700.00	9,060.00	5,609.65	4,953.36	35.86	20.68	1.77	717.34	6,823.46	7,426.53	7,379.91	46.62	159.303		
9,800.00	9,060.00	5,610.43	4,953.40	36.72	20.69	1.78	716.56	6,823.47	7,342.81	7,296.32	46.49	157.935		
9,900.00	9,060.00	5,611.21	4,953.43	37.69	20.70	1.79	715.78	6,823.48	7,259.51	7,213.14	46.37	156.554		
10,000.00	9,060.00	5,612.01	4,953.46	38.73	20.70	1.80	714.99	6,823.49	7,176.63	7,130.38	46.25	155.157		
10,100.00	9,060.00	5,612.80	4,953.50	39.86	20.71	1.81	714.19	6,823.50	7,094.20	7,048.05	46.14	153.746		
10,140.22	9,060.00	5,613.13	4,953.51	40.33	20.71	1.82	713.87	6,823.50	7,061.16	7,015.06	46.10	153.173		
10,200.00	9,060.00	5,614.28	4,953.56	41.05	20.72	0.13	712.71	6,823.52	7,012.21	6,966.17	46.04	152.301		
10,300.00	9,060.00	5,619.23	4,953.77	42.31	20.77	-2.62	707.77	6,823.59	6,930.69	6,884.72	45.97	150.756		
10,400.00	9,060.00	5,628.00	4,954.15	43.64	20.85	-5.24	699.01	6,823.71	6,849.75	6,803.82	45.94	149.105		
10,507.23	9,060.00	5,633.36	4,954.37	45.11	20.90	-8.03	693.66	6,823.79	6,763.75	6,717.86	45.89	147.393		
10,600.00	9,060.00	5,641.44	4,954.72	46.43	20.98	-5.49	685.58	6,823.91	6,689.82	6,643.94	45.88	145.819		
10,700.00	9,060.00	5,647.80	4,954.99	47.91	21.04	-2.80	679.23	6,824.00	6,610.46	6,564.61	45.85	144.163		
10,800.00	9,060.00	5,651.67	4,955.15	49.42	21.08	-0.18	675.36	6,824.06	6,531.56	6,485.74	45.82	142.551		
10,900.00	9,060.00	5,653.01	4,955.21	50.97	21.09	2.36	674.03	6,824.08	6,453.24	6,407.47	45.77	140.981		
11,000.00	9,060.00	5,651.79	4,955.16	52.55	21.08	4.80	675.25	6,824.07	6,375.61	6,329.89	45.72	139.453		
11,100.00	9,060.00	5,647.97	4,954.99	54.14	21.04	7.13	679.06	6,824.01	6,298.80	6,253.15	45.66	137.963		
11,207.23	9,060.00	5,640.96	4,954.70	55.87	20.98	9.50	686.06	6,823.90	6,217.48	6,171.90	45.58	136.402		
11,300.00	9,060.00	5,634.66	4,954.43	57.39	20.92	7.33	692.35	6,823.81	6,147.78	6,102.25	45.53	135.025		
11,400.00	9,060.00	5,630.33	4,954.25	59.06	20.88	5.03	696.68	6,823.74	6,073.04	6,027.54	45.51	133.450		
11,506.63	9,060.00	5,634.50	4,954.44	60.88	20.90	2.73	692.51	6,823.80	5,993.93	5,948.37	45.56	131.568		
11,600.00	9,060.00	5,634.15	4,954.42	62.49	20.90	2.73	692.87	6,823.79	5,925.30	5,879.71	45.59	129.965		
11,700.00	9,060.00	5,633.77	4,954.40	64.24	20.90	2.72	693.25	6,823.79	5,852.55	5,806.91	45.64	128.223		
11,800.00	9,060.00	5,633.38	4,954.39	66.01	20.89	2.72	693.63	6,823.78	5,780.62	5,734.91	45.71	126.456		
11,900.00	9,060.00	5,632.99	4,954.37	67.79	20.89	2.71	694.02	6,823.78	5,709.54	5,663.74	45.80	124.663		
12,000.00	9,060.00	5,632.59	4,954.35	69.58	20.89	2.71	694.42	6,823.77	5,639.33	5,593.42	45.91	122.846		
12,100.00	9,060.00	5,632.20	4,954.34	71.39	20.88	2.70	694.82	6,823.77	5,570.03	5,524.00	46.03	121.005		
12,200.00	9,060.00	5,631.79	4,954.32	73.21	20.88	2.70	695.22	6,823.76	5,501.68	5,455.50	46.18	119.143		
12,300.00	9,060.00	5,631.39	4,954.30	75.05	20.88	2.69	695.62	6,823.76	5,434.30	5,387.96	46.34	117.262		
12,400.00	9,060.00	5,630.98	4,954.28	76.89	20.87	2.68	696.03	6,823.75	5,367.95	5,321.42	46.53	115.362		
12,500.00	9,060.00	5,630.56	4,954.26	78.74	20.87	2.68	696.45	6,823.74	5,302.65	5,255.91	46.74	113.446		
12,600.00	9,060.00	5,630.14	4,954.25	80.61	20.87	2.67	696.87	6,823.74	5,238.44	5,191.47	46.97	111.517		
12,700.00	9,060.00	5,629.72	4,954.23	82.48	20.86	2.67	697.29	6,823.73	5,175.37	5,128.14	47.23	109.578		
12,800.00	9,060.00	5,629.29	4,954.21	84.36	20.86	2.66	697.72	6,823.73	5,113.48	5,065.97	47.51	107.632		
12,900.00	9,060.00	5,628.86	4,954.19	86.24	20.85	2.65	698.15	6,823.72	5,052.81	5,005.00	47.81	105.681		
13,000.00	9,060.00	5,628.43	4,954.17	88.14	20.85	2.65	698.58	6,823.71	4,993.41	4,945.27	48.14	103.730		
13,100.00	9,060.00	5,627.99	4,954.15	90.04	20.85	2.64	699.02	6,823.71	4,935.31	4,886.82	48.49	101.781		
13,200.00	9,060.00	5,627.54	4,954.13	91.94	20.84	2.64	699.47	6,823.70	4,878.58	4,829.71	48.86	99.839		
13,300.00	9,060.00	5,627.09	4,954.11	93.86	20.84	2.63	699.92	6,823.69	4,823.25	4,773.99	49.26	97.907		
13,400.00	9,060.00	5,626.63	4,954.09	95.77	20.83	2.62	700.37	6,823.69	4,769.38	4,719.69	49.69	95.989		
13,500.00	9,060.00	5,626.17	4,954.07	97.70	20.83	2.62	700.83	6,823.68	4,717.01	4,666.87	50.13	94.088		
13,600.00	9,060.00	5,625.71	4,954.05	99.62	20.83	2.61	701.30	6,823.68	4,666.19	4,615.59	50.60	92.209		
13,700.00	9,060.00	5,625.24	4,954.03	101.56	20.82	2.60	701.76	6,823.67	4,616.99	4,565.89	51.10	90.354		
13,800.00	9,060.00	5,624.77	4,954.01	103.49	20.82	2.60	702.24	6,823.66	4,569.44	4,517.82	51.62	88.528		
13,900.00	9,060.00	5,624.29	4,953.99	105.43	20.81	2.59	702.72	6,823.66	4,523.60	4,471.45	52.16	86.734		
14,000.00	9,060.00	5,623.80	4,953.97	107.38	20.81	2.58	703.20	6,823.65	4,479.53	4,426.81	52.72	84.974		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	5,623.31	4,953.95	109.33	20.81	2.58	703.69	6,823.64	4,437.27	4,383.97	53.30	83.253	
14,200.00	9,060.00	5,622.81	4,953.93	111.28	20.80	2.57	704.19	6,823.64	4,396.88	4,342.98	53.90	81.573	
14,300.00	9,060.00	5,622.31	4,953.90	113.23	20.80	2.56	704.69	6,823.63	4,358.42	4,303.89	54.52	79.936	
14,400.00	9,060.00	5,621.80	4,953.88	115.19	20.79	2.55	705.20	6,823.62	4,321.92	4,266.75	55.17	78.344	
14,500.00	9,060.00	5,621.29	4,953.86	117.15	20.79	2.55	705.71	6,823.61	4,287.45	4,231.62	55.83	76.800	
14,600.00	9,060.00	5,620.77	4,953.84	119.11	20.78	2.54	706.23	6,823.61	4,255.04	4,198.54	56.50	75.305	
14,700.00	9,060.00	5,620.25	4,953.82	121.08	20.78	2.53	706.75	6,823.60	4,224.76	4,167.56	57.20	73.862	
14,800.00	9,060.00	5,619.72	4,953.79	123.05	20.77	2.53	707.28	6,823.59	4,196.64	4,138.73	57.91	72.470	
14,900.00	9,060.00	5,619.18	4,953.77	125.02	20.77	2.52	707.82	6,823.59	4,170.73	4,112.10	58.63	71.131	
15,000.00	9,060.00	5,618.64	4,953.75	126.99	20.76	2.51	708.36	6,823.58	4,147.07	4,087.70	59.37	69.846	
15,100.00	9,060.00	5,618.09	4,953.72	128.97	20.76	2.50	708.91	6,823.57	4,125.70	4,065.57	60.13	68.616	
15,200.00	9,060.00	5,617.53	4,953.70	130.95	20.75	2.49	709.47	6,823.56	4,106.66	4,045.76	60.89	67.439	
15,300.00	9,060.00	5,616.97	4,953.68	132.93	20.75	2.49	710.03	6,823.55	4,089.97	4,028.29	61.67	66.318	
15,400.00	9,060.00	5,616.40	4,953.65	134.91	20.74	2.48	710.60	6,823.55	4,075.66	4,013.20	62.46	65.251	
15,500.00	9,060.00	5,615.82	4,953.63	136.89	20.74	2.47	711.17	6,823.54	4,063.77	4,000.51	63.26	64.240	
15,600.00	9,060.00	5,615.24	4,953.60	138.88	20.73	2.46	711.75	6,823.53	4,054.31	3,990.24	64.07	63.282	
15,700.00	9,060.00	5,614.65	4,953.58	140.86	20.73	2.45	712.34	6,823.52	4,047.30	3,982.42	64.88	62.380	
15,800.00	9,060.00	5,614.05	4,953.55	142.85	20.72	2.44	712.94	6,823.52	4,042.75	3,977.05	65.70	61.532	
15,900.00	9,060.00	5,613.45	4,953.53	144.84	20.72	2.44	713.54	6,823.51	4,040.67	3,974.14	66.53	60.738	
15,934.02	9,060.00	5,613.24	4,953.52	145.52	20.72	2.43	713.75	6,823.50	4,040.53	3,973.72	66.81	60.480 CC	
16,000.00	9,060.00	5,612.84	4,953.50	146.83	20.71	2.43	714.16	6,823.50	4,041.06	3,973.71	67.35	59.998 ES	
16,100.00	9,060.00	5,612.22	4,953.47	148.83	20.71	2.42	714.77	6,823.49	4,043.93	3,975.75	68.18	59.312	
16,200.00	9,060.00	5,611.59	4,953.45	150.82	20.70	2.41	715.40	6,823.48	4,049.27	3,980.27	69.01	58.681	
16,300.00	9,060.00	5,610.96	4,953.42	152.82	20.69	2.40	716.04	6,823.47	4,057.07	3,987.24	69.83	58.103	
16,400.00	9,060.00	5,610.31	4,953.39	154.81	20.69	2.39	716.68	6,823.47	4,067.31	3,996.67	70.64	57.578	
16,500.00	9,060.00	5,609.66	4,953.36	156.81	20.68	2.38	717.33	6,823.46	4,079.97	4,008.53	71.44	57.107	
16,600.00	9,060.00	5,609.00	4,953.34	158.81	20.68	2.37	717.99	6,823.45	4,095.04	4,022.81	72.24	56.689	
16,700.00	9,060.00	5,608.33	4,953.31	160.81	20.67	2.36	718.65	6,823.44	4,112.49	4,039.47	73.01	56.324	
16,800.00	9,060.00	5,607.66	4,953.28	162.81	20.67	2.35	719.33	6,823.43	4,132.28	4,058.51	73.78	56.011	
16,900.00	9,060.00	5,606.97	4,953.25	164.82	20.66	2.34	720.02	6,823.42	4,154.39	4,079.87	74.52	55.749	
17,000.00	9,060.00	5,606.28	4,953.22	166.82	20.65	2.33	720.71	6,823.41	4,178.77	4,103.53	75.24	55.537	
17,100.00	9,060.00	5,605.57	4,953.19	168.82	20.65	2.32	721.41	6,823.40	4,205.39	4,129.45	75.94	55.376	
17,200.00	9,060.00	5,604.86	4,953.16	170.83	20.64	2.31	722.13	6,823.39	4,234.21	4,157.59	76.62	55.262	
17,300.00	9,060.00	5,604.14	4,953.13	172.84	20.63	2.30	722.85	6,823.38	4,265.17	4,187.90	77.27	55.197	
17,400.00	9,060.00	5,603.40	4,953.10	174.84	20.63	2.29	723.58	6,823.37	4,298.24	4,220.35	77.90	55.178 SF	
17,500.00	9,060.00	5,602.66	4,953.07	176.85	20.62	2.28	724.32	6,823.36	4,333.37	4,254.87	78.50	55.204	
17,600.00	9,060.00	5,601.91	4,953.04	178.86	20.61	2.27	725.07	6,823.35	4,370.50	4,291.43	79.07	55.273	
17,700.00	9,060.00	5,601.15	4,953.01	180.87	20.61	2.26	725.84	6,823.34	4,409.59	4,329.97	79.62	55.386	
17,800.00	9,060.00	5,600.37	4,952.98	182.88	20.60	2.25	726.61	6,823.33	4,450.58	4,370.44	80.13	55.539	
17,900.00	9,060.00	5,599.59	4,952.94	184.89	20.59	2.24	727.39	6,823.32	4,493.42	4,412.80	80.62	55.732	
18,000.00	9,060.00	5,598.79	4,952.91	186.90	20.59	2.23	728.19	6,823.31	4,538.06	4,456.97	81.09	55.964	
18,100.00	9,060.00	5,597.99	4,952.88	188.92	20.58	2.22	728.99	6,823.30	4,584.45	4,502.93	81.53	56.233	
18,200.00	9,060.00	5,597.17	4,952.84	190.93	20.57	2.21	729.81	6,823.29	4,632.54	4,550.60	81.94	56.537	
18,300.00	9,060.00	5,596.34	4,952.81	192.94	20.56	2.19	730.64	6,823.28	4,682.26	4,599.94	82.32	56.876	
18,400.00	9,060.00	5,595.50	4,952.78	194.96	20.56	2.18	731.48	6,823.27	4,733.58	4,650.89	82.69	57.248	
18,500.00	9,060.00	5,594.64	4,952.74	196.97	20.55	2.17	732.33	6,823.26	4,786.43	4,703.41	83.02	57.652	
18,600.00	9,060.00	5,593.78	4,952.70	198.99	20.54	2.16	733.20	6,823.25	4,840.78	4,757.44	83.34	58.086	
18,700.00	9,060.00	5,592.90	4,952.67	201.00	20.53	2.14	734.08	6,823.24	4,896.56	4,812.93	83.63	58.550	
18,800.00	9,060.00	5,592.00	4,952.63	203.02	20.53	2.13	734.97	6,823.23	4,953.73	4,869.83	83.90	59.042	
18,900.00	9,060.00	5,591.10	4,952.60	205.04	20.52	2.12	735.87	6,823.22	5,012.25	4,928.10	84.15	59.561	
19,000.00	9,060.00	5,590.18	4,952.56	207.06	20.51	2.11	736.79	6,823.21	5,072.06	4,987.68	84.39	60.106	
19,100.00	9,060.00	5,589.24	4,952.52	209.07	20.50	2.09	737.73	6,823.19	5,133.13	5,048.53	84.60	60.676	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 3H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 4452-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,588.30	4,952.48	211.09	20.49	2.08	738.67	6,823.18	5,195.40	5,110.60	84.80	61.270	
19,300.00	9,060.00	5,587.33	4,952.44	213.11	20.48	2.07	739.64	6,823.17	5,258.83	5,173.86	84.98	61.886	
19,400.00	9,060.00	5,586.36	4,952.40	215.13	20.48	2.05	740.61	6,823.16	5,323.39	5,238.25	85.14	62.525	
19,500.32	9,060.00	5,585.36	4,952.36	217.16	20.47	2.04	741.61	6,823.15	5,389.24	5,303.95	85.29	63.187	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	77.36	1,731.23	7,718.93	7,910.99					
100.00	100.00	28.73	28.73	0.52	5.03	77.36	1,731.24	7,718.93	7,910.69	7,905.15	5.54	1,427.192		
200.00	200.00	128.36	128.36	0.70	5.03	77.36	1,731.29	7,718.99	7,910.77	7,905.04	5.73	1,380.028		
300.00	300.00	254.70	254.70	0.99	5.07	77.36	1,731.70	7,718.73	7,910.63	7,904.58	6.06	1,306.040		
400.00	400.00	419.80	419.80	1.31	5.18	77.35	1,731.62	7,717.69	7,910.06	7,903.57	6.49	1,219.440		
500.00	500.00	601.22	601.17	1.65	5.37	77.37	1,729.12	7,714.96	7,908.18	7,901.16	7.01	1,127.749		
600.00	600.00	667.79	667.73	1.99	5.46	77.37	1,728.08	7,713.88	7,906.24	7,898.80	7.44	1,062.161		
700.00	700.00	745.22	745.15	2.34	5.57	77.38	1,727.35	7,712.82	7,904.69	7,896.79	7.90	1,000.152		
800.00	800.00	851.52	851.44	2.69	5.74	77.38	1,726.73	7,711.42	7,903.29	7,894.87	8.42	938.147		
900.00	900.00	985.58	985.47	3.04	5.98	77.38	1,726.31	7,709.12	7,901.55	7,892.53	9.02	876.288		
1,000.00	1,000.00	1,063.07	1,062.95	3.40	6.13	77.38	1,726.22	7,707.67	7,899.70	7,890.18	9.52	829.591		
1,100.00	1,100.00	1,100.00	1,256.38	3.75	6.21	77.38	1,725.12	7,703.93	7,897.93	7,887.98	9.95	793.766		
1,200.00	1,200.00	1,400.00	1,399.74	4.11	6.89	77.39	1,721.94	7,699.73	7,894.48	7,883.51	10.98	719.311		
1,300.00	1,300.00	1,472.97	1,472.65	4.46	7.07	77.41	1,719.75	7,697.82	7,891.27	7,879.76	11.51	685.581		
1,400.00	1,400.00	1,548.20	1,547.83	4.82	7.27	77.42	1,717.54	7,696.08	7,888.37	7,876.31	12.06	654.286		
1,500.00	1,500.00	1,649.59	1,649.15	5.18	7.53	77.44	1,714.61	7,693.99	7,885.74	7,873.06	12.68	622.134		
1,600.00	1,600.00	1,750.48	1,749.97	5.53	7.81	77.45	1,711.75	7,691.65	7,882.85	7,869.55	13.30	592.666		
1,700.00	1,700.00	1,844.03	1,843.46	5.89	8.07	77.47	1,709.18	7,689.69	7,880.20	7,866.29	13.91	566.389		
1,800.00	1,800.00	1,978.72	1,978.06	6.25	8.45	77.49	1,705.17	7,686.56	7,877.29	7,862.64	14.65	537.835		
1,900.00	1,900.00	2,132.92	2,132.12	6.61	8.91	77.52	1,700.43	7,681.98	7,873.67	7,858.23	15.44	509.790		
2,000.00	2,000.00	2,200.00	2,199.14	6.96	9.11	77.53	1,698.51	7,679.84	7,869.98	7,853.98	16.00	491.872		
2,100.00	2,100.00	2,273.94	2,273.02	7.32	9.33	77.54	1,696.41	7,677.77	7,866.66	7,850.08	16.58	474.545		
2,200.00	2,200.00	2,368.43	2,367.45	7.68	9.62	77.56	1,693.60	7,675.54	7,863.71	7,846.49	17.22	456.715		
2,300.00	2,300.00	2,455.12	2,454.07	8.04	9.89	77.57	1,691.00	7,673.47	7,860.74	7,842.90	17.84	440.658		
2,350.00	2,350.00	2,492.82	2,491.74	8.22	10.01	77.58	1,689.92	7,672.65	7,859.36	7,841.23	18.13	433.432		
2,400.00	2,400.00	2,541.86	2,540.75	8.39	10.16	93.64	1,688.55	7,671.61	7,858.05	7,839.59	18.46	425.643		
2,500.00	2,499.98	2,642.86	2,641.69	8.75	10.47	93.70	1,685.76	7,669.46	7,855.48	7,836.35	19.13	410.649		
2,600.00	2,599.92	2,732.75	2,731.53	9.11	10.76	93.76	1,683.39	7,667.54	7,853.06	7,833.30	19.77	397.317		
2,700.00	2,699.78	2,810.48	2,809.22	9.47	10.95	93.82	1,681.54	7,666.03	7,850.99	7,830.68	20.31	386.561		
2,800.00	2,799.54	2,887.17	2,885.89	9.82	11.07	93.88	1,680.39	7,664.61	7,849.34	7,828.55	20.79	377.592		
2,900.00	2,899.16	3,304.35	3,302.53	10.18	11.25	94.11	1,686.85	7,648.16	7,847.88	7,826.59	21.29	368.562		
3,000.00	2,998.61	3,403.47	3,401.29	10.54	11.30	94.19	1,691.55	7,641.07	7,842.61	7,820.91	21.71	361.284		
3,100.00	3,097.86	3,504.25	3,501.69	10.89	11.37	94.29	1,696.29	7,633.85	7,837.45	7,815.32	22.13	354.087		
3,200.00	3,196.89	3,602.27	3,599.35	11.25	11.45	94.39	1,700.92	7,626.83	7,832.44	7,809.86	22.57	347.015		
3,295.74	3,291.45	3,696.78	3,693.52	11.59	11.54	94.51	1,705.40	7,620.08	7,827.78	7,804.78	23.00	340.335		
3,300.00	3,295.65	3,701.14	3,697.85	11.61	11.54	94.51	1,705.61	7,619.76	7,827.58	7,804.56	23.02	340.037		
3,400.00	3,394.29	3,802.48	3,798.81	11.97	11.65	94.59	1,710.55	7,612.47	7,822.78	7,799.30	23.48	333.122		
3,500.00	3,492.94	3,899.43	3,895.39	12.33	11.75	94.66	1,715.32	7,605.49	7,817.99	7,794.04	23.95	326.374		
3,600.00	3,591.58	3,961.00	3,956.73	12.69	11.83	94.70	1,718.30	7,601.09	7,813.35	7,788.96	24.39	320.299		
3,700.00	3,690.22	4,023.97	4,019.49	13.05	11.91	94.75	1,721.46	7,596.88	7,809.19	7,784.35	24.84	314.355		
3,800.00	3,788.86	4,183.09	4,178.14	13.41	12.12	94.88	1,728.09	7,586.94	7,805.35	7,779.93	25.42	307.061		
3,900.00	3,887.50	4,246.00	4,240.89	13.77	12.22	94.94	1,729.88	7,582.78	7,800.88	7,775.00	25.88	301.420		
4,000.00	3,986.14	4,293.32	4,288.10	14.14	12.29	94.98	1,731.32	7,579.90	7,797.04	7,770.72	26.32	296.194		
4,100.00	4,084.78	4,340.00	4,334.69	14.50	12.36	95.02	1,732.98	7,577.59	7,794.13	7,767.37	26.77	291.186		
4,200.00	4,183.42	4,390.30	4,384.91	14.87	12.44	95.06	1,734.93	7,575.40	7,791.90	7,764.68	27.22	286.269		
4,300.00	4,282.06	4,481.44	4,475.89	15.24	12.59	95.14	1,738.54	7,571.53	7,789.94	7,762.20	27.74	280.830		
4,400.00	4,380.70	4,577.13	4,571.43	15.60	12.76	95.23	1,742.24	7,567.54	7,788.04	7,759.77	28.27	275.446		
4,500.00	4,479.34	4,673.19	4,667.34	15.97	12.93	95.31	1,745.96	7,563.58	7,786.22	7,757.40	28.82	270.186		
4,600.00	4,577.98	4,766.30	4,760.31	16.34	13.11	95.39	1,749.45	7,559.80	7,784.45	7,755.09	29.36	265.106		
4,700.00	4,676.62	4,859.83	4,853.70	16.71	13.29	95.47	1,752.90	7,556.13	7,782.81	7,752.89	29.92	260.152		
4,800.00	4,775.27	4,962.05	4,955.78	17.08	13.49	95.57	1,756.66	7,552.12	7,781.20	7,750.71	30.49	255.177		
4,900.00	4,873.91	5,052.45	5,046.05	17.45	13.68	95.65	1,759.92	7,548.58	7,779.60	7,748.55	31.05	250.527		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,266.22	5,259.39	17.82	14.15	95.83	1,768.85	7,538.66	7,777.46	7,745.57	31.88	243.925		
5,100.00	5,071.19	5,359.85	5,352.77	18.19	14.36	95.90	1,773.26	7,533.49	7,774.52	7,742.05	32.47	239.427		
5,200.00	5,169.83	5,462.85	5,455.52	18.56	14.61	95.99	1,777.86	7,527.93	7,771.68	7,738.59	33.08	234.905		
5,300.00	5,268.47	5,541.85	5,534.34	18.93	14.80	96.05	1,781.10	7,523.76	7,768.90	7,735.26	33.65	230.895		
5,400.00	5,367.11	5,627.21	5,619.54	19.31	15.01	96.13	1,784.28	7,519.55	7,766.42	7,732.19	34.23	226.907		
5,500.00	5,465.75	5,723.64	5,715.78	19.68	15.25	96.21	1,787.88	7,514.88	7,764.04	7,729.21	34.84	222.861		
5,600.00	5,564.39	5,809.39	5,801.39	20.05	15.47	96.29	1,790.89	7,510.82	7,761.75	7,726.32	35.43	219.093		
5,700.00	5,663.03	6,096.79	6,088.07	20.42	16.23	96.54	1,800.82	7,493.44	7,757.79	7,721.27	36.52	212.407		
5,800.00	5,761.67	6,147.98	6,139.09	20.80	16.37	96.58	1,803.03	7,489.94	7,753.59	7,716.55	37.04	209.328		
5,900.00	5,860.31	6,256.43	6,247.19	21.17	16.67	96.67	1,807.82	7,482.77	7,749.66	7,711.95	37.71	205.527		
6,000.00	5,958.96	6,374.08	6,364.49	21.54	17.01	96.77	1,812.24	7,474.74	7,745.42	7,707.02	38.40	201.704		
6,100.00	6,057.60	6,420.00	6,410.26	21.92	17.14	96.81	1,814.20	7,471.57	7,741.39	7,702.48	38.91	198.965		
6,200.00	6,156.24	6,479.11	6,469.18	22.29	17.31	96.85	1,817.09	7,467.80	7,737.93	7,698.47	39.45	196.131		
6,300.00	6,254.88	6,514.00	6,503.96	22.67	17.41	96.88	1,818.98	7,465.86	7,735.31	7,695.38	39.93	193.717		
6,400.00	6,353.52	6,580.56	6,570.35	23.04	17.60	96.93	1,822.47	7,462.60	7,733.30	7,692.81	40.50	190.967		
6,500.00	6,452.16	8,661.63	7,754.67	23.42	25.59	106.49	711.53	7,437.40	7,728.12	7,679.58	48.53	159.239		
6,600.00	6,550.80	8,643.00	7,754.88	23.79	25.43	106.35	730.15	7,437.05	7,715.45	7,666.65	48.80	158.098		
6,700.00	6,649.44	8,643.00	7,754.88	24.17	25.43	106.35	730.15	7,437.05	7,704.02	7,654.79	49.23	156.484		
6,800.00	6,748.08	8,630.50	7,755.02	24.54	25.33	106.26	742.66	7,436.84	7,693.86	7,644.31	49.55	155.265		
6,900.00	6,846.72	8,620.13	7,755.08	24.92	25.25	106.18	753.02	7,436.68	7,684.97	7,635.08	49.89	154.048		
7,000.00	6,945.36	8,610.25	7,755.10	25.29	25.16	106.11	762.90	7,436.54	7,677.34	7,627.12	50.22	152.877		
7,100.00	7,044.00	8,600.84	7,755.09	25.67	25.09	106.04	772.31	7,436.42	7,670.99	7,620.44	50.55	151.751		
7,200.00	7,142.65	8,591.85	7,755.04	26.04	25.01	105.97	781.30	7,436.31	7,665.93	7,615.05	50.88	150.671		
7,300.00	7,241.29	8,583.26	7,754.97	26.42	24.95	105.91	789.89	7,436.22	7,662.14	7,610.94	51.20	149.637		
7,400.00	7,339.93	8,575.05	7,754.87	26.79	24.88	105.85	798.10	7,436.14	7,659.65	7,608.12	51.53	148.649		
7,500.00	7,438.57	8,567.18	7,754.75	27.17	24.81	105.79	805.96	7,436.08	7,658.44	7,606.59	51.85	147.708		
7,545.42	7,483.37	8,549.00	7,754.38	27.34	24.67	105.66	824.14	7,435.95	7,658.35	7,606.48	51.87	147.644		
7,571.77	7,509.37	8,549.00	7,754.38	27.44	24.67	105.66	824.14	7,435.95	7,658.39	7,606.42	51.97	147.361		
7,600.00	7,537.23	8,549.00	7,754.38	27.55	24.67	105.66	824.14	7,435.95	7,658.51	7,606.44	52.08	147.063		
7,700.00	7,636.18	8,549.00	7,754.38	27.92	24.67	105.67	824.14	7,435.95	7,659.32	7,606.88	52.45	146.043		
7,800.00	7,735.48	8,530.57	7,753.96	28.29	24.53	105.55	842.57	7,435.83	7,660.73	7,608.07	52.66	145.471		
7,900.00	7,835.05	8,446.52	7,752.29	28.65	23.90	104.95	926.59	7,434.71	7,662.66	7,610.30	52.37	146.330		
8,000.00	7,934.83	8,440.22	7,752.18	29.01	23.85	104.94	932.88	7,434.59	7,665.21	7,612.55	52.66	145.569		
8,100.00	8,034.74	8,437.29	7,752.13	29.36	23.83	104.97	935.82	7,434.54	7,668.38	7,615.42	52.96	144.794		
8,202.27	8,137.00	8,437.83	7,752.14	29.72	23.84	88.99	935.27	7,434.55	7,672.27	7,618.98	53.28	143.989		
8,300.00	8,234.73	8,440.11	7,752.18	30.06	23.85	89.01	933.00	7,434.59	7,676.92	7,623.32	53.60	143.237		
8,400.00	8,334.73	8,442.47	7,752.22	30.41	23.87	89.02	930.64	7,434.64	7,682.96	7,629.05	53.91	142.517		
8,500.00	8,434.73	8,444.86	7,752.26	30.75	23.88	89.04	928.25	7,434.68	7,690.29	7,636.08	54.22	141.845		
8,552.31	8,487.04	8,446.12	7,752.28	30.94	23.89	89.05	926.99	7,434.70	7,694.64	7,640.27	54.37	141.512		
8,600.00	8,534.68	8,447.31	7,752.30	31.10	23.90	-0.60	925.80	7,434.72	7,696.94	7,642.43	54.51	141.197		
8,650.00	8,584.26	8,448.63	7,752.32	31.26	23.91	-0.59	924.48	7,434.75	7,695.40	7,640.75	54.65	140.817		
8,700.00	8,633.10	8,700.00	7,753.38	31.43	25.81	-0.21	872.76	7,435.39	7,689.70	7,633.04	56.66	135.708		
8,750.00	8,680.83	8,750.00	7,753.40	31.58	26.20	-0.20	871.68	7,435.40	7,680.14	7,622.98	57.15	134.379		
8,800.00	8,727.09	8,800.00	7,753.42	31.74	26.58	-0.20	870.62	7,435.41	7,666.64	7,609.00	57.63	133.024		
8,850.00	8,771.52	8,850.00	7,753.44	31.89	26.96	-0.20	869.57	7,435.42	7,649.28	7,591.18	58.10	131.648		
8,900.00	8,813.78	8,900.00	7,753.46	32.04	27.34	-0.19	868.54	7,435.43	7,628.18	7,569.62	58.56	130.255		
8,950.00	8,853.56	8,950.00	7,753.48	32.18	27.73	-0.20	867.54	7,435.45	7,603.47	7,544.45	59.01	128.846		
9,000.00	8,890.55	9,000.00	7,753.50	32.32	28.11	-0.20	866.58	7,435.46	7,575.29	7,515.84	59.45	127.426		
9,050.00	8,924.46	8,549.00	7,754.38	32.47	24.67	0.22	824.14	7,435.95	7,543.94	7,487.82	56.12	134.433		
9,100.00	8,955.05	8,549.00	7,754.38	32.63	24.67	0.23	824.14	7,435.95	7,509.38	7,453.22	56.16	133.720		
9,150.00	8,982.08	8,549.00	7,754.38	32.79	24.67	0.26	824.14	7,435.95	7,471.96	7,415.77	56.19	132.983		
9,200.00	9,005.34	8,549.00	7,754.38	32.97	24.67	0.29	824.14	7,435.95	7,431.92	7,375.71	56.21	132.222		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,250.00	9,024.65	8,549.00	7,754.38	33.17	24.67	0.34	824.14	7,435.95	7,389.53	7,333.31	56.22	131.440	
9,300.00	9,039.87	8,549.00	7,754.38	33.38	24.67	0.40	824.14	7,435.95	7,345.06	7,288.84	56.22	130.639	
9,350.00	9,050.89	8,549.00	7,754.38	33.62	24.67	0.49	824.14	7,435.95	7,298.83	7,242.61	56.22	129.821	
9,400.00	9,057.61	8,549.00	7,754.38	33.87	24.67	0.65	824.14	7,435.95	7,251.15	7,194.94	56.22	128.986	
9,452.31	9,060.00	8,549.00	7,754.38	34.15	24.67	0.99	824.14	7,435.95	7,200.09	7,143.89	56.21	128.098	
9,500.00	9,060.00	8,549.00	7,754.38	34.42	24.67	0.99	824.14	7,435.95	7,153.12	7,096.92	56.20	127.283	
9,600.00	9,060.00	8,549.00	7,754.38	35.09	24.67	0.99	824.14	7,435.95	7,054.65	6,998.47	56.18	125.582	
9,700.00	9,060.00	8,549.00	7,754.38	35.86	24.67	0.99	824.14	7,435.95	6,956.22	6,900.06	56.15	123.880	
9,800.00	9,060.00	9,800.00	7,753.67	36.72	34.27	-0.61	858.74	7,435.55	6,857.75	6,792.25	65.50	104.704	
9,900.00	9,060.00	9,900.00	7,753.68	37.69	35.04	-0.59	858.16	7,435.56	6,759.41	6,693.19	66.22	102.070	
10,000.00	9,060.00	10,000.00	7,753.69	38.73	35.82	-0.56	857.59	7,435.56	6,661.13	6,594.18	66.95	99.495	
10,100.00	9,060.00	10,100.00	7,753.70	39.86	36.59	-0.53	857.01	7,435.57	6,562.90	6,495.22	67.68	96.975	
10,140.22	9,060.00	10,140.22	7,753.71	40.33	36.90	-0.52	856.78	7,435.57	6,523.40	6,455.43	67.97	95.977	
10,200.00	9,060.00	10,200.00	7,753.73	41.05	37.36	-6.61	855.81	7,435.58	6,464.73	6,396.32	68.40	94.510	
10,300.00	9,060.00	10,300.00	7,753.82	42.31	38.14	-16.15	851.41	7,435.63	6,366.69	6,297.56	69.13	92.101	
10,400.00	9,060.00	10,400.00	7,753.98	43.64	38.91	-24.59	843.52	7,435.73	6,268.90	6,199.05	69.85	89.747	
10,507.23	9,060.00	10,507.23	7,754.24	45.11	39.75	-32.25	831.21	7,435.87	6,164.48	6,093.85	70.63	87.282	
10,600.00	9,060.00	10,600.00	7,754.46	46.43	40.47	-25.01	820.32	7,436.00	6,074.21	6,002.91	71.30	85.192	
10,700.00	9,060.00	8,572.03	7,754.83	47.91	24.85	-15.92	801.11	7,436.12	5,976.56	5,920.42	56.14	106.459	
10,800.00	9,060.00	8,574.10	7,754.85	49.42	24.87	-6.85	799.05	7,436.13	5,878.86	5,822.72	56.14	104.713	
10,900.00	9,060.00	8,574.61	7,754.86	50.97	24.87	2.36	798.54	7,436.14	5,781.14	5,725.01	56.13	102.990	
11,000.00	9,060.00	8,573.54	7,754.85	52.55	24.87	11.21	799.60	7,436.13	5,683.54	5,627.43	56.11	101.290	
11,100.00	9,060.00	8,570.88	7,754.81	54.14	24.84	19.34	802.27	7,436.11	5,586.17	5,530.09	56.08	99.613	
11,207.23	9,060.00	11,207.23	7,754.41	55.87	45.18	26.41	823.05	7,435.97	5,482.23	5,406.53	75.70	72.420	
11,300.00	9,060.00	11,300.00	7,754.22	57.39	45.91	19.37	831.78	7,435.86	5,392.34	5,315.96	76.37	70.606	
11,400.00	9,060.00	11,400.00	7,754.10	59.06	46.68	11.33	837.83	7,435.79	5,295.27	5,218.17	77.10	68.684	
11,506.63	9,060.00	11,506.63	7,754.05	60.88	47.51	2.58	840.45	7,435.76	5,191.70	5,113.84	77.86	66.676	
11,600.00	9,060.00	11,600.00	7,754.03	62.49	48.24	2.55	841.01	7,435.76	5,101.08	5,022.54	78.54	64.952	
11,700.00	9,060.00	11,700.00	7,754.02	64.24	49.02	2.52	841.61	7,435.75	5,004.13	4,924.87	79.25	63.140	
11,800.00	9,060.00	11,800.00	7,754.01	66.01	49.80	2.50	842.20	7,435.74	4,907.30	4,827.33	79.97	61.363	
11,900.00	9,060.00	11,900.00	7,754.00	67.79	50.58	2.47	842.80	7,435.74	4,810.60	4,729.92	80.69	59.621	
12,000.00	9,060.00	12,000.00	7,753.98	69.58	51.35	2.44	843.40	7,435.73	4,714.05	4,632.65	81.40	57.912	
12,100.00	9,060.00	12,100.00	7,753.97	71.39	52.13	2.41	843.99	7,435.72	4,617.63	4,535.52	82.11	56.235	
12,200.00	9,060.00	12,200.00	7,753.96	73.21	52.91	2.39	844.59	7,435.71	4,521.38	4,438.55	82.82	54.591	
12,300.00	9,060.00	12,300.00	7,753.95	75.05	53.69	2.36	845.19	7,435.71	4,425.29	4,341.75	83.53	52.977	
12,400.00	9,060.00	8,568.31	7,754.85	76.89	24.81	4.22	804.84	7,436.04	4,329.41	4,273.36	56.05	77.240	
12,500.00	9,060.00	8,564.67	7,754.76	78.74	24.79	4.05	808.48	7,436.03	4,233.70	4,177.66	56.04	75.548	
12,600.00	9,060.00	8,561.25	7,754.68	80.61	24.76	3.90	811.89	7,436.01	4,138.18	4,082.15	56.03	73.851	
12,700.00	9,060.00	8,558.05	7,754.60	82.48	24.73	3.75	815.10	7,436.00	4,042.88	3,986.85	56.03	72.151	
12,800.00	9,060.00	8,555.03	7,754.53	84.36	24.71	3.61	818.12	7,435.99	3,947.82	3,891.78	56.04	70.447	
12,900.00	9,060.00	8,552.18	7,754.46	86.24	24.69	3.48	820.96	7,435.97	3,853.00	3,796.95	56.05	68.739	
13,000.00	9,060.00	8,549.49	7,754.39	88.14	24.67	3.35	823.65	7,435.96	3,758.45	3,702.38	56.07	67.029	
13,100.00	9,060.00	8,546.95	7,754.33	90.04	24.65	3.24	826.19	7,435.94	3,664.19	3,608.09	56.10	65.316	
13,200.00	9,060.00	8,544.53	7,754.28	91.94	24.63	3.12	828.60	7,435.93	3,570.24	3,514.11	56.13	63.601	
13,300.00	9,060.00	8,542.25	7,754.22	93.86	24.62	3.02	830.89	7,435.91	3,476.63	3,420.45	56.18	61.884	
13,400.00	9,060.00	8,540.07	7,754.17	95.77	24.60	2.92	833.06	7,435.90	3,383.38	3,327.14	56.24	60.165	
13,500.00	9,060.00	8,538.01	7,754.13	97.70	24.58	2.82	835.13	7,435.88	3,290.53	3,234.23	56.30	58.444	
13,600.00	9,060.00	8,536.04	7,754.08	99.62	24.57	2.73	837.10	7,435.87	3,198.11	3,141.72	56.38	56.722	
13,700.00	9,060.00	8,534.16	7,754.04	101.56	24.55	2.64	838.98	7,435.86	3,106.15	3,049.68	56.48	54.999	
13,800.00	9,060.00	8,532.37	7,754.00	103.49	24.54	2.56	840.77	7,435.84	3,014.71	2,958.13	56.59	53.276	
13,900.00	9,060.00	8,530.65	7,753.96	105.43	24.53	2.48	842.48	7,435.83	2,923.83	2,867.12	56.71	51.553	
14,000.00	9,060.00	8,529.01	7,753.92	107.38	24.51	2.41	844.12	7,435.82	2,833.56	2,776.70	56.86	49.831	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,527.44	7,753.89	109.33	24.50	2.33	845.69	7,435.80	2,743.97	2,686.94	57.04	48.110		
14,200.00	9,060.00	8,525.94	7,753.85	111.28	24.49	2.26	847.19	7,435.79	2,655.12	2,597.89	57.23	46.392		
14,300.00	9,060.00	8,524.50	7,753.82	113.23	24.48	2.20	848.64	7,435.78	2,567.09	2,509.63	57.46	44.676		
14,400.00	9,060.00	8,523.11	7,753.79	115.19	24.47	2.13	850.02	7,435.77	2,479.97	2,422.25	57.72	42.966		
14,500.00	9,060.00	8,521.78	7,753.76	117.15	24.46	2.07	851.35	7,435.75	2,393.85	2,335.83	58.02	41.262		
14,600.00	9,060.00	8,520.50	7,753.73	119.11	24.45	2.01	852.63	7,435.74	2,308.85	2,250.50	58.35	39.567		
14,700.00	9,060.00	8,519.27	7,753.71	121.08	24.44	1.96	853.86	7,435.73	2,225.10	2,166.36	58.74	37.883		
14,800.00	9,060.00	8,518.08	7,753.68	123.05	24.43	1.90	855.05	7,435.72	2,142.74	2,083.57	59.17	36.213		
14,900.00	9,060.00	8,516.94	7,753.65	125.02	24.42	1.85	856.19	7,435.71	2,061.95	2,002.28	59.66	34.561		
15,000.00	9,060.00	8,515.84	7,753.63	126.99	24.42	1.80	857.29	7,435.70	1,982.90	1,922.69	60.21	32.931		
15,100.00	9,060.00	8,514.77	7,753.61	128.97	24.41	1.75	858.36	7,435.69	1,905.82	1,844.99	60.83	31.328		
15,200.00	9,060.00	8,513.75	7,753.59	130.95	24.40	1.70	859.39	7,435.68	1,830.96	1,769.44	61.53	29.759		
15,300.00	9,060.00	8,512.75	7,753.56	132.93	24.39	1.65	860.38	7,435.67	1,758.61	1,696.31	62.30	28.230		
15,400.00	9,060.00	8,511.79	7,753.54	134.91	24.38	1.61	861.34	7,435.66	1,689.07	1,625.93	63.14	26.749		
15,500.00	9,060.00	8,510.87	7,753.52	136.89	24.38	1.57	862.26	7,435.65	1,622.72	1,558.65	64.07	25.326		
15,600.00	9,060.00	8,509.97	7,753.51	138.88	24.37	1.53	863.16	7,435.64	1,559.96	1,494.88	65.08	23.969		
15,700.00	9,060.00	8,509.10	7,753.49	140.86	24.36	1.49	864.03	7,435.63	1,501.25	1,435.08	66.17	22.688		
15,800.00	9,060.00	8,508.26	7,753.47	142.85	24.36	1.45	864.87	7,435.62	1,447.07	1,379.75	67.32	21.495		
15,900.00	9,060.00	8,507.44	7,753.45	144.84	24.35	1.41	865.69	7,435.61	1,397.95	1,329.42	68.53	20.398		
16,000.00	9,060.00	8,506.65	7,753.44	146.83	24.35	1.37	866.48	7,435.60	1,354.45	1,284.65	69.79	19.407		
16,100.00	9,060.00	8,505.88	7,753.42	148.83	24.34	1.34	867.25	7,435.59	1,317.11	1,246.04	71.07	18.531		
16,200.00	9,060.00	8,505.13	7,753.40	150.82	24.33	1.30	868.00	7,435.59	1,286.48	1,214.11	72.37	17.777		
16,300.00	9,060.00	8,504.41	7,753.39	152.82	24.33	1.27	868.72	7,435.58	1,263.05	1,189.40	73.65	17.149		
16,400.00	9,060.00	8,503.70	7,753.37	154.81	24.32	1.24	869.42	7,435.57	1,247.21	1,172.31	74.90	16.652		
16,500.00	9,060.00	8,503.02	7,753.36	156.81	24.32	1.20	870.11	7,435.56	1,239.27	1,163.18	76.09	16.287		
16,548.74	9,060.00	8,502.69	7,753.35	157.79	24.32	1.19	870.43	7,435.56	1,238.31	1,161.67	76.64	16.157 CC, ES		
16,600.00	9,060.00	8,502.36	7,753.35	158.81	24.31	1.17	870.77	7,435.55	1,239.37	1,162.18	77.19	16.056		
16,700.00	9,060.00	8,501.71	7,753.33	160.81	24.31	1.14	871.42	7,435.55	1,247.52	1,169.35	78.17	15.959 SF		
16,800.00	9,060.00	8,501.08	7,753.32	162.81	24.30	1.11	872.05	7,435.54	1,263.55	1,184.55	79.00	15.994		
16,900.00	9,060.00	8,500.47	7,753.31	164.82	24.30	1.09	872.66	7,435.53	1,287.17	1,207.52	79.65	16.160		
17,000.00	9,060.00	8,499.87	7,753.29	166.82	24.29	1.06	873.26	7,435.52	1,317.97	1,237.86	80.12	16.451		
17,100.00	9,060.00	8,499.29	7,753.28	168.82	24.29	1.03	873.84	7,435.52	1,355.47	1,275.07	80.40	16.860		
17,200.00	9,060.00	8,498.73	7,753.27	170.83	24.29	1.01	874.40	7,435.51	1,399.12	1,318.62	80.51	17.379		
17,300.00	9,060.00	8,498.17	7,753.26	172.84	24.28	0.98	874.95	7,435.50	1,448.38	1,367.91	80.46	18.000		
17,400.00	9,060.00	8,497.64	7,753.25	174.84	24.28	0.96	875.49	7,435.50	1,502.68	1,422.38	80.30	18.714		
17,500.00	9,060.00	8,497.11	7,753.24	176.85	24.27	0.93	876.02	7,435.49	1,561.50	1,481.47	80.03	19.512		
17,600.00	9,060.00	8,496.60	7,753.23	178.86	24.27	0.91	876.53	7,435.48	1,624.35	1,544.67	79.69	20.385		
17,700.00	9,060.00	8,496.10	7,753.22	180.87	24.27	0.88	877.03	7,435.48	1,690.79	1,611.50	79.29	21.325		
17,800.00	9,060.00	8,495.61	7,753.21	182.88	24.26	0.86	877.51	7,435.47	1,760.40	1,681.55	78.85	22.325		
17,900.00	9,060.00	8,495.14	7,753.20	184.89	24.26	0.84	877.99	7,435.47	1,832.83	1,754.43	78.40	23.378		
18,000.00	9,060.00	8,494.67	7,753.19	186.90	24.25	0.82	878.45	7,435.46	1,907.75	1,829.81	77.94	24.478		
18,100.00	9,060.00	8,494.22	7,753.18	188.92	24.25	0.80	878.91	7,435.45	1,984.88	1,907.41	77.47	25.620		
18,200.00	9,060.00	8,493.77	7,753.17	190.93	24.25	0.78	879.35	7,435.45	2,063.97	1,986.96	77.02	26.799		
18,300.00	9,060.00	8,493.34	7,753.16	192.94	24.24	0.76	879.79	7,435.44	2,144.82	2,068.24	76.57	28.010		
18,400.00	9,060.00	8,492.91	7,753.15	194.96	24.24	0.74	880.21	7,435.44	2,227.21	2,151.07	76.14	29.250		
18,500.00	9,060.00	8,492.50	7,753.14	196.97	24.24	0.72	880.63	7,435.43	2,311.00	2,235.27	75.73	30.516		
18,600.00	9,060.00	8,492.09	7,753.14	198.99	24.24	0.70	881.03	7,435.43	2,396.03	2,320.69	75.34	31.803		
18,700.00	9,060.00	8,491.70	7,753.13	201.00	24.23	0.68	881.43	7,435.42	2,482.18	2,407.21	74.97	33.111		
18,800.00	9,060.00	8,491.31	7,753.12	203.02	24.23	0.66	881.82	7,435.42	2,569.33	2,494.71	74.61	34.435		
18,900.00	9,060.00	8,490.93	7,753.11	205.04	24.23	0.64	882.20	7,435.41	2,657.38	2,583.10	74.28	35.775		
19,000.00	9,060.00	8,490.55	7,753.11	207.06	24.22	0.63	882.57	7,435.41	2,746.25	2,672.29	73.97	37.127		
19,100.00	9,060.00	8,490.19	7,753.10	209.07	24.22	0.61	882.94	7,435.40	2,835.87	2,762.19	73.68	38.491		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State 7H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-GYRO-NS-CT, 2922-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	8,489.83	7,753.09	211.09	24.22	0.59	883.29	7,435.40	2,926.16	2,852.76	73.40	39.866	
19,300.00	9,060.00	8,489.48	7,753.08	213.11	24.22	0.58	883.65	7,435.39	3,017.06	2,943.91	73.14	41.248	
19,400.00	9,060.00	8,489.14	7,753.08	215.13	24.21	0.56	883.99	7,435.39	3,108.52	3,035.61	72.90	42.639	
19,500.32	9,060.00	8,488.80	7,753.07	217.16	24.21	0.55	884.33	7,435.38	3,200.78	3,128.10	72.68	44.040	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	6,436.00	4,944.58	10.89	29.67	110.65	-193.54	5,686.70	6,016.33	5,977.45	38.88	154.738		
3,200.00	3,196.89	6,436.00	4,944.58	11.25	29.67	110.91	-193.54	5,686.70	5,989.85	5,950.47	39.38	152.095		
3,295.74	3,291.45	6,436.00	4,944.58	11.59	29.67	111.14	-193.54	5,686.70	5,966.53	5,926.67	39.86	149.686		
3,300.00	3,295.65	6,436.00	4,944.58	11.61	29.67	111.14	-193.54	5,686.70	5,965.54	5,925.66	39.88	149.582		
3,400.00	3,394.29	6,436.00	4,944.58	11.97	29.67	111.14	-193.54	5,686.70	5,943.09	5,902.71	40.38	147.185		
3,500.00	3,492.94	6,436.00	4,944.58	12.33	29.67	111.14	-193.54	5,686.70	5,922.25	5,881.38	40.87	144.897		
3,600.00	3,591.58	6,436.00	4,944.58	12.69	29.67	111.14	-193.54	5,686.70	5,903.03	5,861.66	41.36	142.718		
3,700.00	3,690.22	6,436.00	4,944.58	13.05	29.67	111.14	-193.54	5,686.70	5,885.44	5,843.59	41.85	140.645		
3,800.00	3,788.86	6,436.00	4,944.58	13.41	29.67	111.14	-193.54	5,686.70	5,869.50	5,827.18	42.33	138.676		
3,900.00	3,887.50	6,436.00	4,944.58	13.77	29.67	111.14	-193.54	5,686.70	5,855.23	5,812.43	42.80	136.810		
4,000.00	3,986.14	6,436.00	4,944.58	14.14	29.67	111.14	-193.54	5,686.70	5,842.64	5,799.37	43.26	135.043		
4,100.00	4,084.78	6,436.00	4,944.58	14.50	29.67	111.14	-193.54	5,686.70	5,831.73	5,788.01	43.72	133.376		
4,200.00	4,183.42	6,436.00	4,944.58	14.87	29.67	111.14	-193.54	5,686.70	5,822.52	5,778.35	44.18	131.804		
4,300.00	4,282.06	6,399.64	4,944.27	15.24	29.24	110.78	-157.25	5,688.85	5,814.56	5,770.38	44.18	131.596		
4,400.00	4,380.70	6,395.82	4,944.26	15.60	29.19	110.74	-153.44	5,689.12	5,808.67	5,764.10	44.57	130.317		
4,500.00	4,479.34	6,391.93	4,944.26	15.97	29.14	110.71	-149.56	5,689.39	5,804.49	5,759.54	44.95	129.126		
4,600.00	4,577.98	6,387.97	4,944.27	16.34	29.10	110.67	-145.61	5,689.68	5,802.02	5,756.70	45.32	128.023		
4,694.33	4,671.04	6,384.17	4,944.29	16.69	29.05	110.63	-141.82	5,689.96	5,801.26	5,755.60	45.66	127.059		
4,700.00	4,676.62	6,383.94	4,944.29	16.71	29.05	110.63	-141.59	5,689.98	5,801.26	5,755.58	45.68	127.004		
4,800.00	4,775.27	6,379.84	4,944.31	17.08	29.00	110.59	-137.50	5,690.29	5,802.21	5,756.19	46.02	126.069		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	6,375.66	4,944.34	17.45	28.95	110.55	-133.33	5,690.62	5,804.88	5,758.52	46.36	125.215		
5,000.00	4,972.55	6,341.00	4,944.83	17.82	28.54	110.21	-98.81	5,693.66	5,809.55	5,763.23	46.32	125.424		
5,100.00	5,071.19	6,341.00	4,944.83	18.19	28.54	110.21	-98.81	5,693.66	5,815.55	5,768.87	46.68	124.576		
5,200.00	5,169.83	6,341.00	4,944.83	18.56	28.54	110.21	-98.81	5,693.66	5,823.26	5,776.22	47.04	123.806		
5,300.00	5,268.47	6,341.00	4,944.83	18.93	28.54	110.21	-98.81	5,693.66	5,832.67	5,785.29	47.38	123.113		
5,400.00	5,367.11	6,341.00	4,944.83	19.31	28.54	110.21	-98.81	5,693.66	5,843.77	5,796.07	47.71	122.495		
5,500.00	5,465.75	6,341.00	4,944.83	19.68	28.54	110.21	-98.81	5,693.66	5,856.57	5,808.54	48.02	121.949		
5,600.00	5,564.39	6,341.00	4,944.83	20.05	28.54	110.21	-98.81	5,693.66	5,871.04	5,822.71	48.33	121.475		
5,700.00	5,663.03	6,341.00	4,944.83	20.42	28.54	110.21	-98.81	5,693.66	5,887.17	5,838.55	48.63	121.069		
5,800.00	5,761.67	6,341.00	4,944.83	20.80	28.54	110.21	-98.81	5,693.66	5,904.96	5,856.05	48.91	120.731		
5,900.00	5,860.31	6,317.10	4,945.35	21.17	28.26	109.98	-75.03	5,695.98	5,924.29	5,875.38	48.91	121.135		
6,000.00	5,958.96	6,306.89	4,945.58	21.54	28.14	109.88	-64.87	5,697.00	5,945.24	5,896.19	49.05	121.206		
6,100.00	6,057.60	6,296.62	4,945.81	21.92	28.02	109.78	-54.66	5,698.04	5,967.77	5,918.58	49.18	121.336		
6,200.00	6,156.24	6,026.18	4,943.70	22.29	24.94	107.14	214.87	5,718.29	5,991.69	5,945.29	46.39	129.146		
6,300.00	6,254.88	6,018.26	4,943.44	22.67	24.86	107.06	222.78	5,718.67	6,016.68	5,970.14	46.55	129.259		
6,400.00	6,353.52	6,010.17	4,943.19	23.04	24.77	106.99	230.85	5,719.07	6,043.21	5,996.52	46.69	129.435		
6,500.00	6,452.16	6,001.92	4,942.94	23.42	24.68	106.91	239.09	5,719.49	6,071.26	6,024.44	46.82	129.674		
6,600.00	6,550.80	5,993.49	4,942.70	23.79	24.59	106.82	247.50	5,719.92	6,100.80	6,053.86	46.94	129.973		
6,700.00	6,649.44	5,984.89	4,942.47	24.17	24.49	106.74	256.08	5,720.37	6,131.80	6,084.76	47.05	130.332		
6,800.00	6,748.08	6,000.00	4,941.49	24.54	33.17	106.29	302.34	5,722.78	6,164.23	6,108.56	55.67	110.733		
6,900.00	6,846.72	6,900.00	4,941.23	24.92	34.24	106.15	316.05	5,723.46	6,198.03	6,141.16	56.86	109.000		
7,000.00	6,945.36	5,865.21	4,940.16	25.29	23.22	105.57	375.59	5,726.40	6,233.35	6,186.98	46.37	134.432		
7,100.00	7,044.00	5,843.98	4,939.88	25.67	23.01	105.37	396.80	5,727.31	6,269.79	6,223.46	46.33	135.326		
7,200.00	7,142.65	5,822.38	4,939.62	26.04	22.79	105.16	418.38	5,728.23	6,307.56	6,261.28	46.28	136.277		
7,300.00	7,241.29	5,800.41	4,939.38	26.42	22.56	104.94	440.33	5,729.14	6,346.63	6,300.40	46.23	137.285		
7,400.00	7,339.93	5,778.06	4,939.17	26.79	22.34	104.73	462.65	5,730.05	6,386.98	6,340.81	46.17	138.349		
7,500.00	7,438.57	5,774.00	4,939.13	27.17	22.30	104.69	466.71	5,730.21	6,428.59	6,382.32	46.27	138.930		
7,571.77	7,509.37	5,774.00	4,939.13	27.44	22.30	104.69	466.71	5,730.21	6,459.25	6,412.87	46.37	139.289		
7,600.00	7,537.23	5,774.00	4,939.13	27.55	22.30	104.88	466.71	5,730.21	6,471.46	6,425.05	46.41	139.436		
7,700.00	7,636.18	5,774.00	4,939.13	27.92	22.30	105.59	466.71	5,730.21	6,515.13	6,468.58	46.54	139.986		
7,800.00	7,735.48	5,774.00	4,939.13	28.29	22.30	106.30	466.71	5,730.21	6,559.40	6,512.74	46.66	140.575		
7,900.00	7,835.05	5,774.00	4,939.13	28.65	22.30	107.02	466.71	5,730.21	6,604.24	6,557.47	46.77	141.204		
8,000.00	7,934.83	5,774.00	4,939.13	29.01	22.30	107.75	466.71	5,730.21	6,649.60	6,602.73	46.87	141.869		
8,100.00	8,034.74	5,774.00	4,939.13	29.36	22.30	108.48	466.71	5,730.21	6,695.44	6,648.48	46.96	142.569		
8,202.27	8,137.00	5,774.00	4,939.13	29.72	22.30	93.20	466.71	5,730.21	6,742.78	6,695.73	47.05	143.318		
8,300.00	8,234.73	5,774.00	4,939.13	30.06	22.30	93.20	466.71	5,730.21	6,788.78	6,741.65	47.12	144.065		
8,400.00	8,334.73	5,774.00	4,939.13	30.41	22.30	93.20	466.71	5,730.21	6,836.97	6,789.77	47.20	144.858		
8,500.00	8,434.73	5,774.00	4,939.13	30.75	22.30	93.20	466.71	5,730.21	6,886.27	6,839.00	47.27	145.681		
8,552.31	8,487.04	5,774.00	4,939.13	30.94	22.30	93.20	466.71	5,730.21	6,912.49	6,865.19	47.31	146.123		
8,600.00	8,534.68	5,774.00	4,939.13	31.10	22.30	3.39	466.71	5,730.21	6,934.93	6,887.60	47.33	146.523		
8,650.00	8,584.26	5,774.00	4,939.13	31.26	22.30	3.26	466.71	5,730.21	6,954.91	6,907.57	47.34	146.902		
8,700.00	8,633.10	5,774.00	4,939.13	31.43	22.30	3.16	466.71	5,730.21	6,971.14	6,923.79	47.35	147.221		
8,750.00	8,680.83	5,774.00	4,939.13	31.58	22.30	3.09	466.71	5,730.21	6,983.53	6,936.18	47.35	147.482		
8,800.00	8,727.09	5,774.00	4,939.13	31.74	22.30	3.05	466.71	5,730.21	6,992.01	6,944.66	47.34	147.687		
8,850.00	8,771.52	5,774.00	4,939.13	31.89	22.30	3.02	466.71	5,730.21	6,996.51	6,949.19	47.33	147.836		
8,900.00	8,813.78	5,774.00	4,939.13	32.04	22.30	3.02	466.71	5,730.21	6,997.03	6,949.73	47.30	147.930		
8,950.00	8,853.56	5,774.00	4,939.13	32.18	22.30	3.04	466.71	5,730.21	6,993.54	6,946.28	47.26	147.969		
9,000.00	8,890.55	5,774.00	4,939.13	32.32	22.30	3.08	466.71	5,730.21	6,986.08	6,938.87	47.22	147.954		
9,050.00	8,924.46	5,774.00	4,939.13	32.47	22.30	3.14	466.71	5,730.21	6,974.69	6,927.53	47.16	147.883		
9,100.00	8,955.05	5,747.83	4,938.92	32.63	22.04	3.00	492.85	5,731.38	6,959.31	6,912.43	46.88	148.449		
9,150.00	8,982.08	5,747.05	4,938.92	32.79	22.03	3.11	493.64	5,731.41	6,940.27	6,893.47	46.80	148.286		
9,200.00	9,005.34	5,746.20	4,938.91	32.97	22.03	3.24	494.49	5,731.46	6,917.58	6,870.86	46.72	148.066		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	5,745.28	4,938.91	33.17	22.02	3.41	495.40	5,731.50	6,891.36	6,844.73	46.63	147.791		
9,300.00	9,039.87	5,744.32	4,938.90	33.38	22.01	3.62	496.37	5,731.55	6,861.78	6,815.25	46.53	147.458		
9,350.00	9,050.89	5,743.30	4,938.89	33.62	22.00	3.90	497.38	5,731.60	6,829.02	6,782.59	46.43	147.067		
9,400.00	9,057.61	5,742.25	4,938.88	33.87	21.99	4.25	498.43	5,731.65	6,793.29	6,746.96	46.33	146.617		
9,452.31	9,060.00	5,741.10	4,938.88	34.15	21.98	4.73	499.57	5,731.71	6,752.98	6,706.75	46.23	146.083		
9,500.00	9,060.00	5,740.04	4,938.87	34.42	21.97	4.71	500.63	5,731.77	6,714.99	6,668.87	46.13	145.577		
9,600.00	9,060.00	5,737.77	4,938.85	35.09	21.94	4.68	502.90	5,731.88	6,635.76	6,589.85	45.91	144.537		
9,700.00	9,060.00	5,735.44	4,938.84	35.86	21.92	4.65	505.23	5,732.01	6,557.09	6,511.39	45.70	143.487		
9,800.00	9,060.00	5,733.05	4,938.82	36.72	21.90	4.62	507.62	5,732.14	6,479.00	6,433.51	45.49	142.423		
9,900.00	9,060.00	5,730.59	4,938.81	37.69	21.87	4.58	510.07	5,732.27	6,401.53	6,356.24	45.29	141.346		
10,000.00	9,060.00	5,728.06	4,938.79	38.73	21.85	4.55	512.60	5,732.41	6,324.68	6,279.59	45.09	140.253		
10,100.00	9,060.00	5,725.46	4,938.78	39.86	21.82	4.51	515.19	5,732.55	6,248.49	6,203.58	44.91	139.143		
10,140.22	9,060.00	5,724.40	4,938.77	40.33	21.81	4.50	516.26	5,732.61	6,218.03	6,173.19	44.83	138.692		
10,200.00	9,060.00	5,723.06	4,938.76	41.05	21.80	3.11	517.60	5,732.69	6,172.94	6,128.21	44.73	138.009		
10,300.00	9,060.00	5,721.98	4,938.75	42.31	21.79	0.83	518.68	5,732.75	6,097.98	6,053.42	44.57	136.829		
10,400.00	9,060.00	5,722.41	4,938.76	43.64	21.79	-1.38	518.24	5,732.73	6,023.72	5,979.30	44.42	135.598		
10,507.23	9,060.00	5,724.63	4,938.77	45.11	21.82	-3.67	516.03	5,732.60	5,945.00	5,900.71	44.29	134.220		
10,600.00	9,060.00	5,726.71	4,938.78	46.43	21.84	-1.68	513.95	5,732.48	5,877.62	5,833.43	44.19	133.000		
10,700.00	9,060.00	5,727.47	4,938.79	47.91	21.84	0.40	513.19	5,732.44	5,805.71	5,761.62	44.09	131.687		
10,800.00	9,060.00	5,726.61	4,938.78	49.42	21.84	2.41	514.05	5,732.49	5,734.65	5,690.67	43.99	130.376		
10,900.00	9,060.00	5,724.06	4,938.77	50.97	21.81	4.33	516.59	5,732.63	5,664.57	5,620.69	43.89	129.067		
11,000.00	9,060.00	5,719.74	4,938.74	52.55	21.77	6.17	520.91	5,732.88	5,595.60	5,551.80	43.80	127.759		
11,100.00	9,060.00	5,713.56	4,938.71	54.14	21.71	7.91	527.07	5,733.25	5,527.83	5,484.11	43.72	126.450		
11,207.23	9,060.00	5,704.79	4,938.66	55.87	21.62	9.67	535.83	5,733.79	5,456.65	5,413.01	43.64	125.041		
11,300.00	9,060.00	5,680.00	4,938.56	57.39	21.38	7.75	560.56	5,735.46	5,396.08	5,352.61	43.46	124.148		
11,400.00	9,060.00	5,680.00	4,938.56	59.06	21.38	6.07	560.56	5,735.46	5,331.36	5,287.86	43.49	122.577		
11,506.63	9,060.00	5,680.00	4,938.56	60.88	21.38	4.30	560.56	5,735.46	5,263.25	5,219.70	43.54	120.873		
11,600.00	9,060.00	5,680.00	4,938.56	62.49	21.38	4.30	560.56	5,735.46	5,204.55	5,160.95	43.61	119.356		
11,700.00	9,060.00	5,680.00	4,938.56	64.24	21.38	4.30	560.56	5,735.46	5,142.83	5,099.13	43.69	117.701		
11,800.00	9,060.00	5,680.00	4,938.56	66.01	21.38	4.30	560.56	5,735.46	5,082.32	5,038.52	43.81	116.015		
11,900.00	9,060.00	5,680.00	4,938.56	67.79	21.38	4.30	560.56	5,735.46	5,023.08	4,979.13	43.95	114.301		
12,000.00	9,060.00	5,680.00	4,938.56	69.58	21.38	4.30	560.56	5,735.46	4,965.14	4,921.03	44.11	112.561		
12,100.00	9,060.00	5,680.00	4,938.56	71.39	21.38	4.30	560.56	5,735.46	4,908.56	4,864.26	44.30	110.799		
12,200.00	9,060.00	5,680.00	4,938.56	73.21	21.38	4.30	560.56	5,735.46	4,853.38	4,808.86	44.52	109.016		
12,300.00	9,060.00	5,680.00	4,938.56	75.05	21.38	4.30	560.56	5,735.46	4,799.64	4,754.88	44.77	107.218		
12,400.00	9,060.00	5,652.78	4,938.48	76.89	21.13	3.92	587.69	5,737.68	4,747.20	4,702.36	44.84	105.865		
12,500.00	9,060.00	5,648.57	4,938.47	78.74	21.09	3.87	591.89	5,738.07	4,696.45	4,651.34	45.11	104.106		
12,600.00	9,060.00	5,644.11	4,938.46	80.61	21.05	3.80	596.32	5,738.50	4,647.29	4,601.88	45.41	102.344		
12,700.00	9,060.00	5,639.38	4,938.45	82.48	21.01	3.74	601.03	5,738.97	4,599.76	4,554.03	45.73	100.584		
12,800.00	9,060.00	5,634.37	4,938.44	84.36	20.96	3.67	606.01	5,739.48	4,553.92	4,507.84	46.08	98.831		
12,900.00	9,060.00	5,629.03	4,938.43	86.24	20.92	3.59	611.32	5,740.05	4,509.82	4,463.37	46.45	97.090		
13,000.00	9,060.00	5,623.35	4,938.42	88.14	20.86	3.51	616.97	5,740.68	4,467.51	4,420.66	46.85	95.364		
13,100.00	9,060.00	5,617.28	4,938.41	90.04	20.81	3.43	623.00	5,741.38	4,427.03	4,379.77	47.27	93.659		
13,200.00	9,060.00	5,610.78	4,938.41	91.94	20.75	3.34	629.45	5,742.16	4,388.44	4,340.73	47.71	91.980		
13,300.00	9,060.00	5,585.00	4,938.39	93.86	20.51	2.98	655.00	5,745.55	4,351.87	4,303.82	48.05	90.569		
13,400.00	9,060.00	5,585.00	4,938.39	95.77	20.51	2.98	655.00	5,745.55	4,317.15	4,268.56	48.59	88.852		
13,500.00	9,060.00	5,585.00	4,938.39	97.70	20.51	2.98	655.00	5,745.55	4,284.47	4,235.32	49.15	87.172		
13,600.00	9,060.00	5,585.00	4,938.39	99.62	20.51	2.98	655.00	5,745.55	4,253.90	4,204.17	49.73	85.532		
13,700.00	9,060.00	5,585.00	4,938.39	101.56	20.51	2.98	655.00	5,745.55	4,225.47	4,175.13	50.34	83.935		
13,800.00	9,060.00	5,585.00	4,938.39	103.49	20.51	2.98	655.00	5,745.55	4,199.24	4,148.27	50.97	82.384		
13,900.00	9,060.00	5,559.86	4,938.31	105.43	20.29	2.63	679.88	5,749.15	4,175.06	4,123.59	51.46	81.127		
14,000.00	9,060.00	5,552.69	4,938.25	107.38	20.23	2.53	686.98	5,750.19	4,153.21	4,101.12	52.09	79.734		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	5,545.40	4,938.18	109.33	20.17	2.43	694.19	5,751.26	4,133.64	4,080.90	52.73	78.388		
14,200.00	9,060.00	5,538.02	4,938.09	111.28	20.11	2.33	701.49	5,752.35	4,116.37	4,062.98	53.40	77.092		
14,300.00	9,060.00	5,530.52	4,937.98	113.23	20.04	2.22	708.90	5,753.47	4,101.44	4,047.37	54.07	75.848		
14,400.00	9,060.00	5,522.92	4,937.86	115.19	19.98	2.12	716.42	5,754.61	4,088.87	4,034.10	54.77	74.655		
14,500.00	9,060.00	5,515.20	4,937.72	117.15	19.91	2.01	724.05	5,755.78	4,078.69	4,023.21	55.48	73.516		
14,600.00	9,060.00	5,490.00	4,937.15	119.11	19.69	1.66	748.94	5,759.67	4,070.98	4,014.87	56.11	72.554		
14,700.00	9,060.00	14,700.00	4,937.18	121.08	99.99	1.68	747.58	5,759.47	4,065.55	3,965.43	100.12	40.607 ES, SF		
14,800.00	9,060.00	5,494.69	4,937.27	123.05	19.73	1.72	744.31	5,758.94	4,062.57	4,004.87	57.70	70.403		
14,900.00	9,060.00	5,289.38	4,936.26	125.02	18.18	-1.13	947.48	5,788.07	4,061.93	4,004.05	57.88	70.174		
14,902.86	9,060.00	5,289.29	4,936.27	125.08	18.18	-1.14	947.58	5,788.08	4,061.93	4,004.03	57.91	70.147 CC		
15,000.00	9,060.00	5,275.00	4,936.47	126.99	18.08	-1.34	961.76	5,789.78	4,063.15	4,004.47	58.68	69.242		
15,100.00	9,060.00	5,275.00	4,936.47	128.97	18.08	-1.34	961.76	5,789.78	4,066.72	4,007.23	59.49	68.361		
15,200.00	9,060.00	5,275.00	4,936.47	130.95	18.08	-1.34	961.76	5,789.78	4,072.74	4,012.44	60.30	67.542		
15,300.00	9,060.00	5,275.00	4,936.47	132.93	18.08	-1.34	961.76	5,789.78	4,081.21	4,020.10	61.11	66.784		
15,400.00	9,060.00	5,275.00	4,936.47	134.91	18.08	-1.34	961.76	5,789.78	4,092.10	4,030.18	61.92	66.089		
15,500.00	9,060.00	5,275.00	4,936.47	136.89	18.08	-1.34	961.76	5,789.78	4,105.40	4,042.68	62.72	65.455		
15,600.00	9,060.00	5,275.00	4,936.47	138.88	18.08	-1.34	961.76	5,789.78	4,121.09	4,057.57	63.52	64.882		
15,700.00	9,060.00	5,275.00	4,936.47	140.86	18.08	-1.34	961.76	5,789.78	4,139.13	4,074.83	64.30	64.371		
15,800.00	9,060.00	5,275.00	4,936.47	142.85	18.08	-1.34	961.76	5,789.78	4,159.50	4,094.43	65.07	63.920		
15,900.00	9,060.00	5,275.00	4,936.47	144.84	18.08	-1.34	961.76	5,789.78	4,182.16	4,116.33	65.83	63.529		
16,000.00	9,060.00	5,275.00	4,936.47	146.83	18.08	-1.34	961.76	5,789.78	4,207.08	4,140.51	66.57	63.196		
16,100.00	9,060.00	5,275.00	4,936.47	148.83	18.08	-1.34	961.76	5,789.78	4,234.21	4,166.92	67.29	62.921		
16,200.00	9,060.00	5,275.00	4,936.47	150.82	18.08	-1.34	961.76	5,789.78	4,263.52	4,195.52	68.00	62.703		
16,300.00	9,060.00	5,275.00	4,936.47	152.82	18.08	-1.34	961.76	5,789.78	4,294.95	4,226.28	68.68	62.540		
16,400.00	9,060.00	5,275.00	4,936.47	154.81	18.08	-1.34	961.76	5,789.78	4,328.47	4,259.14	69.33	62.430		
16,500.00	9,060.00	5,275.00	4,936.47	156.81	18.08	-1.34	961.76	5,789.78	4,364.02	4,294.05	69.97	62.372		
16,600.00	9,060.00	5,260.42	4,936.34	158.81	17.99	-1.54	976.25	5,791.44	4,401.28	4,330.71	70.57	62.367		
16,700.00	9,060.00	5,259.32	4,936.31	160.81	17.98	-1.55	977.34	5,791.56	4,440.71	4,369.55	71.15	62.409		
16,800.00	9,060.00	5,258.23	4,936.27	162.81	17.97	-1.57	978.42	5,791.68	4,482.02	4,410.30	71.71	62.498		
16,900.00	9,060.00	5,244.00	4,935.58	164.82	17.88	-1.77	992.55	5,793.18	4,525.38	4,453.14	72.25	62.639		
17,000.00	9,060.00	5,244.00	4,935.58	166.82	17.88	-1.77	992.55	5,793.18	4,570.27	4,497.51	72.75	62.817		
17,100.00	9,060.00	5,244.00	4,935.58	168.82	17.88	-1.77	992.55	5,793.18	4,616.88	4,543.64	73.24	63.038		
17,200.00	9,060.00	5,244.00	4,935.58	170.83	17.88	-1.77	992.55	5,793.18	4,665.17	4,591.47	73.70	63.299		
17,300.00	9,060.00	5,244.00	4,935.58	172.84	17.88	-1.77	992.55	5,793.18	4,715.09	4,640.95	74.14	63.599		
17,400.00	9,060.00	5,244.00	4,935.58	174.84	17.88	-1.77	992.55	5,793.18	4,766.58	4,692.03	74.55	63.937		
17,500.00	9,060.00	5,244.00	4,935.58	176.85	17.88	-1.77	992.55	5,793.18	4,819.60	4,744.66	74.94	64.310		
17,600.00	9,060.00	5,244.00	4,935.58	178.86	17.88	-1.77	992.55	5,793.18	4,874.10	4,798.78	75.31	64.718		
17,700.00	9,060.00	5,244.00	4,935.58	180.87	17.88	-1.77	992.55	5,793.18	4,930.02	4,854.35	75.66	65.159		
17,800.00	9,060.00	5,244.00	4,935.58	182.88	17.88	-1.77	992.55	5,793.18	4,987.31	4,911.32	75.99	65.631		
17,900.00	9,060.00	5,244.00	4,935.58	184.89	17.88	-1.77	992.55	5,793.18	5,045.94	4,969.64	76.30	66.133		
18,000.00	9,060.00	5,244.00	4,935.58	186.90	17.88	-1.77	992.55	5,793.18	5,105.86	5,029.27	76.59	66.664		
18,100.00	9,060.00	5,244.00	4,935.58	188.92	17.88	-1.77	992.55	5,793.18	5,167.01	5,090.15	76.86	67.223		
18,200.00	9,060.00	5,244.00	4,935.58	190.93	17.88	-1.77	992.55	5,793.18	5,229.37	5,152.25	77.12	67.809		
18,300.00	9,060.00	5,244.00	4,935.58	192.94	17.88	-1.77	992.55	5,793.18	5,292.87	5,215.51	77.36	68.419		
18,400.00	9,060.00	5,244.00	4,935.58	194.96	17.88	-1.77	992.55	5,793.18	5,357.50	5,279.91	77.58	69.054		
18,500.00	9,060.00	5,244.00	4,935.58	196.97	17.88	-1.77	992.55	5,793.18	5,423.19	5,345.40	77.79	69.712		
18,600.00	9,060.00	5,244.00	4,935.58	198.99	17.88	-1.77	992.55	5,793.18	5,489.92	5,411.93	77.99	70.392		
18,700.00	9,060.00	5,230.48	4,934.60	201.00	17.80	-1.96	1,005.97	5,794.57	5,557.58	5,479.41	78.17	71.099		
18,800.00	9,060.00	5,227.84	4,934.38	203.02	17.78	-1.99	1,008.59	5,794.85	5,626.24	5,547.90	78.34	71.822		
18,900.00	9,060.00	5,225.19	4,934.17	205.04	17.76	-2.03	1,011.21	5,795.12	5,695.82	5,617.33	78.49	72.563		
19,000.00	9,060.00	5,212.00	4,932.98	207.06	17.68	-2.21	1,024.28	5,796.49	5,766.34	5,687.70	78.64	73.327		
19,100.00	9,060.00	5,212.00	4,932.98	209.07	17.68	-2.21	1,024.28	5,796.49	5,837.65	5,758.87	78.78	74.104		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - ST01 - ST01												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT, 4361-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	5,212.00	4,932.98	211.09	17.68	-2.21	1,024.28	5,796.49	5,909.79	5,830.88	78.90	74.898	
19,300.00	9,060.00	5,212.00	4,932.98	213.11	17.68	-2.21	1,024.28	5,796.49	5,982.73	5,903.71	79.02	75.708	
19,400.00	9,060.00	5,212.00	4,932.98	215.13	17.68	-2.21	1,024.28	5,796.49	6,056.44	5,977.31	79.13	76.533	
19,500.32	9,060.00	5,212.00	4,932.98	217.16	17.68	-2.21	1,024.28	5,796.49	6,131.14	6,051.90	79.24	77.376	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	74.82	1,569.78	5,786.47	5,995.95					
100.00	100.00	33.87	33.87	0.52	5.03	74.82	1,569.78	5,786.48	5,995.63	5,990.09	5.54	1,081.687		
200.00	200.00	127.80	127.80	0.70	5.03	74.82	1,569.72	5,786.62	5,995.76	5,990.02	5.73	1,045.674		
300.00	300.00	223.16	223.16	0.99	5.06	74.82	1,569.62	5,786.84	5,995.95	5,989.90	6.05	991.479		
400.00	400.00	318.95	318.95	1.31	5.11	74.83	1,569.48	5,787.15	5,996.23	5,989.81	6.42	934.054		
500.00	500.00	412.78	412.78	1.65	5.18	74.83	1,569.29	5,787.54	5,996.57	5,989.75	6.83	878.425		
600.00	600.00	504.44	504.44	1.99	5.27	74.83	1,569.05	5,788.07	5,997.06	5,989.80	7.26	826.239		
700.00	700.00	595.14	595.14	2.34	5.37	74.84	1,568.69	5,788.74	5,997.67	5,989.96	7.71	777.824		
800.00	800.00	687.70	687.69	2.69	5.50	74.84	1,568.24	5,789.62	5,998.46	5,990.28	8.19	732.848		
900.00	900.00	782.18	782.15	3.04	5.64	74.85	1,567.45	5,790.67	5,999.32	5,990.64	8.68	691.139		
1,000.00	1,000.00	869.79	869.75	3.40	5.78	74.86	1,566.57	5,791.83	6,000.33	5,991.15	9.18	653.605		
1,100.00	1,100.00	956.47	956.42	3.75	5.94	74.88	1,565.55	5,793.23	6,001.58	5,991.89	9.69	619.224		
1,200.00	1,200.00	1,051.10	1,051.02	4.11	6.12	74.89	1,564.31	5,794.95	6,003.00	5,992.76	10.23	586.699		
1,300.00	1,300.00	1,155.11	1,155.00	4.46	6.34	74.91	1,562.56	5,796.94	6,004.41	5,993.60	10.81	555.694		
1,400.00	1,400.00	1,254.77	1,254.62	4.82	6.57	74.94	1,560.45	5,798.90	6,005.75	5,994.37	11.38	527.584		
1,500.00	1,500.00	1,353.67	1,353.45	5.18	6.80	74.97	1,557.54	5,801.13	6,007.17	5,995.20	11.97	501.727		
1,600.00	1,600.00	1,462.26	1,461.96	5.53	7.07	75.01	1,554.33	5,803.49	6,008.50	5,995.90	12.60	476.950		
1,700.00	1,700.00	1,574.16	1,573.81	5.89	7.35	75.04	1,551.34	5,805.64	6,009.67	5,996.43	13.24	453.872		
1,800.00	1,800.00	1,653.30	1,652.92	6.25	7.56	75.06	1,549.70	5,807.03	6,010.85	5,997.05	13.80	435.417		
1,900.00	1,900.00	1,742.48	1,742.07	6.61	7.80	75.08	1,548.24	5,808.87	6,012.41	5,998.01	14.40	417.533		
2,000.00	2,000.00	1,868.49	1,868.05	6.96	8.15	75.09	1,546.80	5,811.11	6,013.85	5,998.75	15.10	398.230		
2,100.00	2,100.00	1,975.84	1,975.38	7.32	8.44	75.11	1,545.96	5,812.54	6,014.93	5,999.17	15.76	381.711		
2,200.00	2,200.00	2,078.87	2,078.40	7.68	8.74	75.12	1,545.28	5,813.76	6,015.91	5,999.51	16.41	366.656		
2,300.00	2,300.00	2,165.33	2,164.85	8.04	8.99	75.12	1,544.57	5,814.93	6,017.01	6,000.00	17.01	353.646		
2,350.00	2,350.00	2,212.82	2,212.34	8.22	9.13	75.13	1,544.12	5,815.66	6,017.62	6,000.29	17.33	347.206		
2,400.00	2,400.00	2,260.57	2,260.08	8.39	9.27	91.17	1,543.68	5,816.40	6,018.26	6,000.61	17.65	340.971		
2,500.00	2,499.98	2,359.77	2,359.27	8.75	9.56	91.19	1,542.78	5,817.97	6,019.59	6,001.29	18.30	328.920		
2,600.00	2,599.92	2,464.47	2,463.95	9.11	9.87	91.22	1,541.95	5,819.56	6,020.93	6,001.96	18.97	317.370		
2,700.00	2,699.78	2,570.68	2,570.14	9.47	10.20	91.27	1,541.27	5,821.01	6,022.21	6,002.56	19.65	306.489		
2,800.00	2,799.54	2,673.20	2,672.66	9.82	10.51	91.34	1,540.57	5,822.34	6,023.46	6,003.14	20.32	296.454		
2,900.00	2,899.16	2,772.60	2,772.05	10.18	10.82	91.41	1,539.88	5,823.61	6,024.73	6,003.75	20.98	287.157		
3,000.00	2,998.61	2,865.90	2,865.33	10.54	11.11	91.50	1,539.12	5,824.87	6,026.11	6,004.48	21.63	278.646		
3,100.00	3,097.86	2,963.31	2,962.72	10.89	11.41	91.61	1,538.28	5,826.32	6,027.67	6,005.39	22.29	270.450		
3,200.00	3,196.89	3,064.85	3,064.26	11.25	11.73	91.74	1,537.56	5,827.72	6,029.26	6,006.30	22.96	262.552		
3,295.74	3,291.45	3,150.88	3,150.27	11.59	12.01	91.86	1,537.08	5,828.91	6,030.91	6,007.33	23.58	255.783		
3,300.00	3,295.65	3,154.46	3,153.86	11.61	12.02	91.86	1,537.06	5,828.97	6,030.99	6,007.38	23.60	255.499		
3,400.00	3,394.29	3,236.81	3,236.19	11.97	12.28	92.00	1,536.72	5,830.27	6,033.01	6,008.78	24.22	249.047		
3,500.00	3,492.94	3,323.56	3,322.93	12.33	12.56	92.14	1,536.53	5,831.86	6,035.35	6,010.49	24.86	242.770		
3,600.00	3,591.58	3,438.24	3,437.59	12.69	12.93	92.32	1,536.61	5,833.85	6,037.74	6,012.15	25.59	235.946		
3,700.00	3,690.22	3,550.89	3,550.24	13.05	13.29	92.50	1,536.94	5,835.32	6,039.79	6,013.47	26.31	229.524		
3,800.00	3,788.86	3,657.02	3,656.35	13.41	13.63	92.66	1,537.43	5,836.55	6,041.78	6,014.76	27.02	223.600		
3,900.00	3,887.50	3,755.76	3,755.08	13.77	13.95	92.81	1,538.19	5,837.53	6,043.74	6,016.04	27.70	218.151		
4,000.00	3,986.14	3,859.66	3,858.98	14.14	14.29	92.96	1,539.25	5,838.48	6,045.71	6,017.30	28.41	212.822		
4,100.00	4,084.78	3,958.42	3,957.73	14.50	14.61	93.11	1,540.26	5,839.34	6,047.68	6,018.59	29.10	207.857		
4,200.00	4,183.42	4,074.77	4,074.07	14.87	14.99	93.28	1,541.33	5,840.15	6,049.50	6,019.66	29.84	202.709		
4,300.00	4,282.06	4,177.09	4,176.39	15.24	15.33	93.43	1,542.20	5,840.76	6,051.25	6,020.70	30.55	198.099		
4,400.00	4,380.70	4,282.82	4,282.11	15.60	15.68	93.59	1,543.08	5,841.25	6,052.92	6,021.65	31.26	193.615		
4,500.00	4,479.34	4,383.67	4,382.95	15.97	16.01	93.74	1,543.91	5,841.67	6,054.56	6,022.60	31.96	189.418		
4,600.00	4,577.98	4,482.04	4,481.32	16.34	16.34	93.89	1,544.66	5,842.06	6,056.23	6,023.57	32.66	185.441		
4,700.00	4,676.62	4,582.53	4,581.81	16.71	16.67	94.04	1,545.45	5,842.47	6,057.95	6,024.59	33.36	181.587		
4,800.00	4,775.27	4,688.25	4,687.52	17.08	17.02	94.19	1,546.26	5,842.82	6,059.63	6,025.55	34.08	177.793		
4,900.00	4,873.91	4,797.17	4,796.44	17.45	17.39	94.36	1,547.07	5,843.02	6,061.21	6,026.40	34.82	174.095		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,897.54	4,896.81	17.82	17.72	94.50	1,547.90	5,843.08	6,062.73	6,027.21	35.52	170.681		
5,100.00	5,071.19	4,986.09	4,985.36	18.19	18.02	94.63	1,548.84	5,843.16	6,064.36	6,028.17	36.19	167.580		
5,200.00	5,169.83	5,060.40	5,059.65	18.56	18.27	94.74	1,549.88	5,843.39	6,066.30	6,029.49	36.81	164.811		
5,300.00	5,268.47	5,140.93	5,140.17	18.93	18.54	94.85	1,551.23	5,843.91	6,068.66	6,031.21	37.45	162.052		
5,400.00	5,367.11	5,228.17	5,227.39	19.31	18.83	94.97	1,552.88	5,844.65	6,071.29	6,033.17	38.11	159.294		
5,500.00	5,465.75	5,335.87	5,335.07	19.68	19.20	95.12	1,555.05	5,845.63	6,074.05	6,035.20	38.85	156.348		
5,600.00	5,564.39	5,445.88	5,445.06	20.05	19.57	95.27	1,557.18	5,846.33	6,076.55	6,036.96	39.59	153.471		
5,700.00	5,663.03	5,543.00	5,542.15	20.42	19.90	95.41	1,559.13	5,846.89	6,079.05	6,038.76	40.30	150.863		
5,800.00	5,761.67	5,659.99	5,659.12	20.80	20.29	95.57	1,561.06	5,847.53	6,081.49	6,040.43	41.07	148.094		
5,900.00	5,860.31	5,743.61	5,742.74	21.17	20.58	95.69	1,561.86	5,848.06	6,083.93	6,042.21	41.72	145.826		
6,000.00	5,958.96	5,863.00	5,862.13	21.54	20.98	95.88	1,561.91	5,848.96	6,086.37	6,043.87	42.50	143.212		
6,100.00	6,057.60	5,990.84	5,989.96	21.92	21.42	96.08	1,560.72	5,849.65	6,088.50	6,045.19	43.31	140.590		
6,200.00	6,156.24	6,136.22	6,135.32	22.29	21.91	96.33	1,558.68	5,849.56	6,089.99	6,045.82	44.17	137.869		
6,300.00	6,254.88	6,389.58	6,388.62	22.67	22.76	96.73	1,556.21	5,845.06	6,090.01	6,044.63	45.38	134.193		
6,400.00	6,353.52	6,473.36	6,472.35	23.04	23.05	96.87	1,554.88	5,842.56	6,088.75	6,042.70	46.04	132.244		
6,500.00	6,452.16	6,562.52	6,561.46	23.42	23.35	97.02	1,553.00	5,840.31	6,087.89	6,041.17	46.72	130.308		
6,600.00	6,550.80	6,642.29	6,641.19	23.79	23.62	97.16	1,551.06	5,838.39	6,087.16	6,039.80	47.37	128.511		
6,682.55	6,632.22	6,696.95	6,695.82	24.10	23.80	97.25	1,549.91	5,837.31	6,086.97	6,039.11	47.87	127.169		
6,700.00	6,649.44	6,711.90	6,710.77	24.17	23.85	97.27	1,549.62	5,837.04	6,086.98	6,038.99	47.98	126.861		
6,800.00	6,748.08	6,816.45	6,815.28	24.54	24.21	97.45	1,547.84	5,835.25	6,087.14	6,038.42	48.71	124.966		
6,900.00	6,846.72	6,957.73	6,956.51	24.92	24.69	97.68	1,545.46	5,831.79	6,086.54	6,036.98	49.56	122.815		
6,959.59	6,905.50	6,978.42	6,977.18	25.14	24.76	97.72	1,545.14	5,831.25	6,086.28	6,036.43	49.86	122.073		
7,000.00	6,945.36	6,978.42	6,977.18	25.29	24.76	97.72	1,545.14	5,831.25	6,086.42	6,036.40	50.01	121.696		
7,100.00	7,044.00	6,978.42	6,977.18	25.67	24.76	97.72	1,545.14	5,831.25	6,087.90	6,037.51	50.39	120.814		
7,200.00	7,142.65	6,978.42	6,977.18	26.04	24.76	97.72	1,545.14	5,831.25	6,091.03	6,040.27	50.76	120.003		
7,300.00	7,241.29	6,978.42	6,977.18	26.42	24.76	97.72	1,545.14	5,831.25	6,095.80	6,044.68	51.11	119.261		
7,400.00	7,339.93	6,978.42	6,977.18	26.79	24.76	97.72	1,545.14	5,831.25	6,102.20	6,050.74	51.46	118.587		
7,500.00	7,438.57	6,978.42	6,977.18	27.17	24.76	97.72	1,545.14	5,831.25	6,110.23	6,058.44	51.79	117.979		
7,571.77	7,509.37	6,978.42	6,977.18	27.44	24.76	97.72	1,545.14	5,831.25	6,116.99	6,064.97	52.02	117.582		
7,600.00	7,537.23	6,978.42	6,977.18	27.55	24.76	97.76	1,545.14	5,831.25	6,119.87	6,067.76	52.11	117.435		
7,700.00	7,636.18	6,978.42	6,977.18	27.92	24.76	97.92	1,545.14	5,831.25	6,130.86	6,078.44	52.42	116.956		
7,800.00	7,735.48	6,978.42	6,977.18	28.29	24.76	98.11	1,545.14	5,831.25	6,143.11	6,090.40	52.71	116.541		
7,900.00	7,835.05	6,978.42	6,977.18	28.65	24.76	98.31	1,545.14	5,831.25	6,156.59	6,103.60	52.99	116.189		
8,000.00	7,934.83	6,978.42	6,977.18	29.01	24.76	98.53	1,545.14	5,831.25	6,171.29	6,118.04	53.25	115.898		
8,100.00	8,034.74	6,978.42	6,977.18	29.36	24.76	98.77	1,545.14	5,831.25	6,187.19	6,133.69	53.49	115.666		
8,202.27	8,137.00	6,978.42	6,977.18	29.72	24.76	82.99	1,545.14	5,831.25	6,204.66	6,150.94	53.73	115.489		
8,300.00	8,234.73	6,978.42	6,977.18	30.06	24.76	82.99	1,545.14	5,831.25	6,222.69	6,168.75	53.94	115.372		
8,400.00	8,334.73	6,978.42	6,977.18	30.41	24.76	82.99	1,545.14	5,831.25	6,242.66	6,188.52	54.14	115.303		
8,500.00	8,434.73	6,978.42	6,977.18	30.75	24.76	82.99	1,545.14	5,831.25	6,264.17	6,209.83	54.34	115.285		
8,552.31	8,487.04	6,978.42	6,977.18	30.94	24.76	82.99	1,545.14	5,831.25	6,276.03	6,221.59	54.43	115.295		
8,600.00	8,534.68	6,978.42	6,977.18	31.10	24.76	-6.56	1,545.14	5,831.25	6,285.27	6,230.75	54.52	115.292		
8,650.00	8,584.26	6,978.42	6,977.18	31.26	24.76	-6.49	1,545.14	5,831.25	6,291.16	6,236.56	54.59	115.239		
8,700.00	8,633.10	6,978.42	6,977.18	31.43	24.76	-6.47	1,545.14	5,831.25	6,293.12	6,238.45	54.66	115.126		
8,750.00	8,680.83	6,978.42	6,977.18	31.58	24.76	-6.49	1,545.14	5,831.25	6,291.14	6,236.42	54.73	114.956		
8,800.00	8,727.09	6,978.42	6,977.18	31.74	24.76	-6.56	1,545.14	5,831.25	6,285.24	6,230.46	54.78	114.730		
8,850.00	8,771.52	6,978.42	6,977.18	31.89	24.76	-6.68	1,545.14	5,831.25	6,275.45	6,220.62	54.83	114.453		
8,900.00	8,813.78	6,978.42	6,977.18	32.04	24.76	-6.84	1,545.14	5,831.25	6,261.83	6,206.96	54.87	114.125		
8,950.00	8,853.56	6,978.42	6,977.18	32.18	24.76	-7.07	1,545.14	5,831.25	6,244.45	6,189.55	54.90	113.749		
9,000.00	8,890.55	6,978.42	6,977.18	32.32	24.76	-7.36	1,545.14	5,831.25	6,223.41	6,168.50	54.92	113.326		
9,050.00	8,924.46	6,978.42	6,977.18	32.47	24.76	-7.73	1,545.14	5,831.25	6,198.85	6,143.92	54.93	112.859		
9,100.00	8,955.05	6,978.42	6,977.18	32.63	24.76	-8.20	1,545.14	5,831.25	6,170.90	6,115.97	54.93	112.349		
9,150.00	8,982.08	6,978.42	6,977.18	32.79	24.76	-8.78	1,545.14	5,831.25	6,139.73	6,084.81	54.92	111.797		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	6,978.42	6,977.18	32.97	24.76	-9.53	1,545.14	5,831.25	6,105.54	6,050.63	54.90	111.205		
9,250.00	9,024.65	6,978.42	6,977.18	33.17	24.76	-10.49	1,545.14	5,831.25	6,068.53	6,013.65	54.88	110.575		
9,300.00	9,039.87	6,978.42	6,977.18	33.38	24.76	-11.74	1,545.14	5,831.25	6,028.94	5,974.09	54.85	109.907		
9,350.00	9,050.89	6,978.42	6,977.18	33.62	24.76	-13.42	1,545.14	5,831.25	5,987.02	5,932.20	54.82	109.204		
9,400.00	9,057.61	6,978.42	6,977.18	33.87	24.76	-15.75	1,545.14	5,831.25	5,943.05	5,888.25	54.79	108.467		
9,452.31	9,060.00	6,978.42	6,977.18	34.15	24.76	-19.34	1,545.14	5,831.25	5,895.16	5,840.40	54.76	107.662		
9,500.00	9,060.00	6,978.42	6,977.18	34.42	24.76	-19.34	1,545.14	5,831.25	5,850.75	5,796.02	54.72	106.916		
9,600.00	9,060.00	6,978.42	6,977.18	35.09	24.76	-19.34	1,545.14	5,831.25	5,757.80	5,703.15	54.65	105.360		
9,700.00	9,060.00	6,978.42	6,977.18	35.86	24.76	-19.34	1,545.14	5,831.25	5,665.09	5,610.52	54.58	103.798		
9,800.00	9,060.00	6,978.42	6,977.18	36.72	24.76	-19.34	1,545.14	5,831.25	5,572.64	5,518.13	54.51	102.231		
9,900.00	9,060.00	6,978.42	6,977.18	37.69	24.76	-19.34	1,545.14	5,831.25	5,480.45	5,426.00	54.45	100.658		
10,000.00	9,060.00	6,978.42	6,977.18	38.73	24.76	-19.34	1,545.14	5,831.25	5,388.54	5,334.15	54.39	99.078		
10,100.00	9,060.00	6,978.42	6,977.18	39.86	24.76	-19.34	1,545.14	5,831.25	5,296.92	5,242.59	54.33	97.493		
10,140.22	9,060.00	6,978.42	6,977.18	40.33	24.76	-19.34	1,545.14	5,831.25	5,260.15	5,205.84	54.31	96.853		
10,200.00	9,060.00	6,978.42	6,977.18	41.05	24.76	-21.81	1,545.14	5,831.25	5,205.70	5,151.42	54.28	95.899		
10,300.00	9,060.00	6,978.42	6,977.18	42.31	24.76	-25.68	1,545.14	5,831.25	5,115.32	5,061.07	54.25	94.292		
10,400.00	9,060.00	6,978.42	6,977.18	43.64	24.76	-29.21	1,545.14	5,831.25	5,025.98	4,971.74	54.24	92.663		
10,507.23	9,060.00	6,978.42	6,977.18	45.11	24.76	-32.63	1,545.14	5,831.25	4,931.53	4,877.27	54.26	90.888		
10,600.00	9,060.00	6,978.42	6,977.18	46.43	24.76	-29.76	1,545.14	5,831.25	4,850.30	4,796.00	54.30	89.328		
10,700.00	9,060.00	6,978.42	6,977.18	47.91	24.76	-26.51	1,545.14	5,831.25	4,762.39	4,708.05	54.34	87.638		
10,800.00	9,060.00	6,978.42	6,977.18	49.42	24.76	-23.12	1,545.14	5,831.25	4,674.23	4,619.84	54.38	85.949		
10,900.00	9,060.00	6,978.42	6,977.18	50.97	24.76	-19.60	1,545.14	5,831.25	4,585.89	4,531.47	54.42	84.269		
11,000.00	9,060.00	6,978.42	6,977.18	52.55	24.76	-16.00	1,545.14	5,831.25	4,497.48	4,443.03	54.44	82.607		
11,100.00	9,060.00	6,978.42	6,977.18	54.14	24.76	-12.34	1,545.14	5,831.25	4,409.10	4,354.65	54.45	80.969		
11,207.23	9,060.00	6,978.42	6,977.18	55.87	24.76	-8.39	1,545.14	5,831.25	4,314.51	4,260.07	54.44	79.246		
11,300.00	9,060.00	6,978.42	6,977.18	57.39	24.76	-11.73	1,545.14	5,831.25	4,233.14	4,178.70	54.44	77.757		
11,400.00	9,060.00	6,978.42	6,977.18	59.06	24.76	-15.13	1,545.14	5,831.25	4,146.30	4,091.83	54.47	76.119		
11,506.63	9,060.00	6,978.42	6,977.18	60.88	24.76	-18.53	1,545.14	5,831.25	4,054.90	4,000.34	54.55	74.331		
11,600.00	9,060.00	6,978.42	6,977.18	62.49	24.76	-18.53	1,545.14	5,831.25	3,975.76	3,921.10	54.66	72.742		
11,700.00	9,060.00	6,978.42	6,977.18	64.24	24.76	-18.53	1,545.14	5,831.25	3,891.70	3,836.91	54.79	71.034		
11,800.00	9,060.00	6,978.42	6,977.18	66.01	24.76	-18.53	1,545.14	5,831.25	3,808.41	3,753.47	54.94	69.319		
11,900.00	9,060.00	6,978.42	6,977.18	67.79	24.76	-18.53	1,545.14	5,831.25	3,725.95	3,670.83	55.12	67.600		
12,000.00	9,060.00	6,978.42	6,977.18	69.58	24.76	-18.53	1,545.14	5,831.25	3,644.36	3,589.04	55.32	65.876		
12,100.00	9,060.00	6,978.42	6,977.18	71.39	24.76	-18.53	1,545.14	5,831.25	3,563.71	3,508.16	55.55	64.149		
12,200.00	9,060.00	6,978.42	6,977.18	73.21	24.76	-18.53	1,545.14	5,831.25	3,484.07	3,428.25	55.82	62.420		
12,300.00	9,060.00	6,978.42	6,977.18	75.05	24.76	-18.53	1,545.14	5,831.25	3,405.50	3,349.39	56.11	60.692		
12,400.00	9,060.00	6,978.42	6,977.18	76.89	24.76	-18.53	1,545.14	5,831.25	3,328.08	3,271.64	56.44	58.967		
12,500.00	9,060.00	6,978.42	6,977.18	78.74	24.76	-18.53	1,545.14	5,831.25	3,251.89	3,195.08	56.80	57.247		
12,600.00	9,060.00	6,978.42	6,977.18	80.61	24.76	-18.53	1,545.14	5,831.25	3,177.02	3,119.81	57.21	55.534		
12,700.00	9,060.00	6,978.42	6,977.18	82.48	24.76	-18.53	1,545.14	5,831.25	3,103.57	3,045.92	57.65	53.833		
12,800.00	9,060.00	6,978.42	6,977.18	84.36	24.76	-18.53	1,545.14	5,831.25	3,031.64	2,973.50	58.14	52.146		
12,900.00	9,060.00	6,978.42	6,977.18	86.24	24.76	-18.53	1,545.14	5,831.25	2,961.33	2,902.67	58.67	50.478		
13,000.00	9,060.00	6,978.42	6,977.18	88.14	24.76	-18.53	1,545.14	5,831.25	2,892.78	2,833.54	59.24	48.833		
13,100.00	9,060.00	6,978.42	6,977.18	90.04	24.76	-18.53	1,545.14	5,831.25	2,826.10	2,766.25	59.86	47.214		
13,200.00	9,060.00	6,978.42	6,977.18	91.94	24.76	-18.53	1,545.14	5,831.25	2,761.44	2,700.92	60.52	45.628		
13,300.00	9,060.00	6,978.42	6,977.18	93.86	24.76	-18.53	1,545.14	5,831.25	2,698.93	2,637.70	61.23	44.078		
13,400.00	9,060.00	6,978.42	6,977.18	95.77	24.76	-18.53	1,545.14	5,831.25	2,638.73	2,576.74	61.99	42.570		
13,500.00	9,060.00	6,978.42	6,977.18	97.70	24.76	-18.53	1,545.14	5,831.25	2,581.00	2,518.22	62.78	41.109		
13,600.00	9,060.00	6,978.42	6,977.18	99.62	24.76	-18.53	1,545.14	5,831.25	2,525.92	2,462.29	63.63	39.699		
13,700.00	9,060.00	6,978.42	6,977.18	101.56	24.76	-18.53	1,545.14	5,831.25	2,473.65	2,409.14	64.51	38.346		
13,800.00	9,060.00	6,978.42	6,977.18	103.49	24.76	-18.53	1,545.14	5,831.25	2,424.38	2,358.95	65.43	37.055		
13,900.00	9,060.00	6,978.42	6,977.18	105.43	24.76	-18.53	1,545.14	5,831.25	2,378.30	2,311.92	66.38	35.829		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	6,978.42	6,977.18	107.38	24.76	-18.53	1,545.14	5,831.25	2,335.59	2,268.23	67.36	34.672		
14,100.00	9,060.00	6,978.42	6,977.18	109.33	24.76	-18.53	1,545.14	5,831.25	2,296.45	2,228.08	68.37	33.588		
14,200.00	9,060.00	6,978.42	6,977.18	111.28	24.76	-18.53	1,545.14	5,831.25	2,261.05	2,191.65	69.40	32.580		
14,300.00	9,060.00	6,978.42	6,977.18	113.23	24.76	-18.53	1,545.14	5,831.25	2,229.58	2,159.14	70.44	31.650		
14,400.00	9,060.00	6,978.42	6,977.18	115.19	24.76	-18.53	1,545.14	5,831.25	2,202.21	2,130.70	71.50	30.800		
14,500.00	9,060.00	6,978.42	6,977.18	117.15	24.76	-18.53	1,545.14	5,831.25	2,179.08	2,106.51	72.56	30.029		
14,600.00	9,060.00	6,978.42	6,977.18	119.11	24.76	-18.53	1,545.14	5,831.25	2,160.34	2,086.71	73.63	29.340		
14,700.00	9,060.00	6,978.42	6,977.18	121.08	24.76	-18.53	1,545.14	5,831.25	2,146.10	2,071.41	74.69	28.732		
14,800.00	9,060.00	6,978.42	6,977.18	123.05	24.76	-18.53	1,545.14	5,831.25	2,136.45	2,060.70	75.75	28.204		
14,900.00	9,060.00	6,978.42	6,977.18	125.02	24.76	-18.53	1,545.14	5,831.25	2,131.46	2,054.66	76.79	27.756		
14,956.60	9,060.00	6,978.42	6,977.18	126.14	24.76	-18.53	1,545.14	5,831.25	2,130.71	2,053.33	77.37	27.538	CC, ES	
15,000.00	9,060.00	6,978.42	6,977.18	126.99	24.76	-18.53	1,545.14	5,831.25	2,131.15	2,053.33	77.81	27.387		
15,100.00	9,060.00	6,978.42	6,977.18	128.97	24.76	-18.53	1,545.14	5,831.25	2,135.53	2,056.72	78.81	27.098		
15,200.00	9,060.00	6,978.42	6,977.18	130.95	24.76	-18.53	1,545.14	5,831.25	2,144.56	2,064.80	79.76	26.887		
15,300.00	9,060.00	6,978.42	6,977.18	132.93	24.76	-18.53	1,545.14	5,831.25	2,158.20	2,077.53	80.67	26.753		
15,400.00	9,060.00	6,978.42	6,977.18	134.91	24.76	-18.53	1,545.14	5,831.25	2,176.35	2,094.83	81.53	26.695	SF	
15,500.00	9,060.00	6,978.42	6,977.18	136.89	24.76	-18.53	1,545.14	5,831.25	2,198.91	2,116.59	82.32	26.713		
15,600.00	9,060.00	6,978.42	6,977.18	138.88	24.76	-18.53	1,545.14	5,831.25	2,225.73	2,142.70	83.03	26.805		
15,700.00	9,060.00	6,978.42	6,977.18	140.86	24.76	-18.53	1,545.14	5,831.25	2,256.67	2,172.99	83.68	26.968		
15,800.00	9,060.00	6,978.42	6,977.18	142.85	24.76	-18.53	1,545.14	5,831.25	2,291.56	2,207.31	84.25	27.200		
15,900.00	9,060.00	6,978.42	6,977.18	144.84	24.76	-18.53	1,545.14	5,831.25	2,330.22	2,245.48	84.74	27.499		
16,000.00	9,060.00	6,978.42	6,977.18	146.83	24.76	-18.53	1,545.14	5,831.25	2,372.47	2,287.32	85.15	27.862		
16,100.00	9,060.00	6,978.42	6,977.18	148.83	24.76	-18.53	1,545.14	5,831.25	2,418.12	2,332.62	85.49	28.285		
16,200.00	9,060.00	6,978.42	6,977.18	150.82	24.76	-18.53	1,545.14	5,831.25	2,466.97	2,381.21	85.76	28.766		
16,300.00	9,060.00	6,978.42	6,977.18	152.82	24.76	-18.53	1,545.14	5,831.25	2,518.86	2,432.89	85.97	29.301		
16,400.00	9,060.00	6,978.42	6,977.18	154.81	24.76	-18.53	1,545.14	5,831.25	2,573.58	2,487.47	86.11	29.887		
16,500.00	9,060.00	6,978.42	6,977.18	156.81	24.76	-18.53	1,545.14	5,831.25	2,630.97	2,544.77	86.20	30.521		
16,600.00	9,060.00	6,978.42	6,977.18	158.81	24.76	-18.53	1,545.14	5,831.25	2,690.85	2,604.61	86.24	31.201		
16,700.00	9,060.00	6,978.42	6,977.18	160.81	24.76	-18.53	1,545.14	5,831.25	2,753.07	2,666.82	86.24	31.923		
16,800.00	9,060.00	6,978.42	6,977.18	162.81	24.76	-18.53	1,545.14	5,831.25	2,817.45	2,731.25	86.20	32.684		
16,900.00	9,060.00	6,978.42	6,977.18	164.82	24.76	-18.53	1,545.14	5,831.25	2,883.87	2,797.74	86.13	33.483		
17,000.00	9,060.00	6,978.42	6,977.18	166.82	24.76	-18.53	1,545.14	5,831.25	2,952.19	2,866.16	86.03	34.315		
17,100.00	9,060.00	6,978.42	6,977.18	168.82	24.76	-18.53	1,545.14	5,831.25	3,022.27	2,936.36	85.91	35.180		
17,200.00	9,060.00	6,978.42	6,977.18	170.83	24.76	-18.53	1,545.14	5,831.25	3,093.99	3,008.22	85.77	36.075		
17,300.00	9,060.00	6,978.42	6,977.18	172.84	24.76	-18.53	1,545.14	5,831.25	3,167.25	3,081.64	85.61	36.998		
17,400.00	9,060.00	6,978.42	6,977.18	174.84	24.76	-18.53	1,545.14	5,831.25	3,241.93	3,156.50	85.43	37.946		
17,500.00	9,060.00	6,978.42	6,977.18	176.85	24.76	-18.53	1,545.14	5,831.25	3,317.95	3,232.70	85.25	38.919		
17,600.00	9,060.00	6,978.42	6,977.18	178.86	24.76	-18.53	1,545.14	5,831.25	3,395.22	3,310.15	85.06	39.914		
17,700.00	9,060.00	6,978.42	6,977.18	180.87	24.76	-18.53	1,545.14	5,831.25	3,473.64	3,388.77	84.87	40.931		
17,800.00	9,060.00	6,978.42	6,977.18	182.88	24.76	-18.53	1,545.14	5,831.25	3,553.15	3,468.48	84.67	41.966		
17,900.00	9,060.00	6,978.42	6,977.18	184.89	24.76	-18.53	1,545.14	5,831.25	3,633.67	3,549.20	84.46	43.020		
18,000.00	9,060.00	6,978.42	6,977.18	186.90	24.76	-18.53	1,545.14	5,831.25	3,715.13	3,630.87	84.26	44.091		
18,100.00	9,060.00	6,978.42	6,977.18	188.92	24.76	-18.53	1,545.14	5,831.25	3,797.49	3,713.43	84.06	45.177		
18,200.00	9,060.00	6,978.42	6,977.18	190.93	24.76	-18.53	1,545.14	5,831.25	3,880.67	3,796.81	83.86	46.277		
18,300.00	9,060.00	6,978.42	6,977.18	192.94	24.76	-18.53	1,545.14	5,831.25	3,964.63	3,880.97	83.66	47.392		
18,400.00	9,060.00	6,978.42	6,977.18	194.96	24.76	-18.53	1,545.14	5,831.25	4,049.31	3,965.85	83.46	48.518		
18,500.00	9,060.00	6,978.42	6,977.18	196.97	24.76	-18.53	1,545.14	5,831.25	4,134.69	4,051.42	83.27	49.656		
18,600.00	9,060.00	6,978.42	6,977.18	198.99	24.76	-18.53	1,545.14	5,831.25	4,220.70	4,137.62	83.08	50.805		
18,700.00	9,060.00	6,978.42	6,977.18	201.00	24.76	-18.53	1,545.14	5,831.25	4,307.32	4,224.43	82.89	51.964		
18,800.00	9,060.00	6,978.42	6,977.18	203.02	24.76	-18.53	1,545.14	5,831.25	4,394.50	4,311.79	82.71	53.132		
18,900.00	9,060.00	6,978.42	6,977.18	205.04	24.76	-18.53	1,545.14	5,831.25	4,482.23	4,399.69	82.53	54.309		
19,000.00	9,060.00	6,978.42	6,977.18	207.06	24.76	-18.53	1,545.14	5,831.25	4,570.45	4,488.09	82.36	55.493		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree Draw State Com 2H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 80-GYRO-NS-CT												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
19,100.00	9,060.00	6,978.42	6,977.18	209.07	24.76	-18.53	1,545.14	5,831.25	4,659.15	4,576.96	82.19	56.684	
19,200.00	9,060.00	6,978.42	6,977.18	211.09	24.76	-18.53	1,545.14	5,831.25	4,748.30	4,666.27	82.03	57.883	
19,300.00	9,060.00	6,978.42	6,977.18	213.11	24.76	-18.53	1,545.14	5,831.25	4,837.88	4,756.00	81.88	59.087	
19,400.00	9,060.00	6,978.42	6,977.18	215.13	24.76	-18.53	1,545.14	5,831.25	4,927.85	4,846.13	81.73	60.297	
19,500.32	9,060.00	6,978.42	6,977.18	217.16	24.76	-18.53	1,545.14	5,831.25	5,018.50	4,936.92	81.58	61.516	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	5.02	102.62	-1,573.01	7,026.75	7,201.26					
100.00	100.00	12.60	7.40	0.52	5.03	102.62	-1,573.01	7,026.75	7,200.67	7,195.12	5.54	1,299.092		
200.00	200.00	107.40	107.40	0.70	5.23	102.62	-1,573.01	7,026.75	7,200.67	7,194.73	5.93	1,213.433		
300.00	300.00	207.40	207.40	0.99	5.83	102.62	-1,573.01	7,026.75	7,200.67	7,193.85	6.82	1,056.417		
400.00	400.00	307.40	307.40	1.31	6.71	102.62	-1,573.01	7,026.75	7,200.67	7,192.65	8.02	897.697		
500.00	500.00	407.40	407.40	1.65	7.79	102.62	-1,573.01	7,026.75	7,200.67	7,191.24	9.43	763.483		
600.00	600.00	507.40	507.40	1.99	8.98	102.62	-1,573.01	7,026.75	7,200.67	7,189.70	10.97	656.346		
700.00	700.00	607.40	607.40	2.34	10.25	102.62	-1,573.01	7,026.75	7,200.67	7,188.07	12.59	571.756		
800.00	800.00	707.40	707.40	2.69	11.58	102.62	-1,573.01	7,026.75	7,200.67	7,186.39	14.27	504.502		
900.00	900.00	807.40	807.40	3.04	12.95	102.62	-1,573.01	7,026.75	7,200.67	7,184.68	15.99	450.316		
1,000.00	1,000.00	907.40	907.40	3.40	14.34	102.62	-1,573.01	7,026.75	7,200.67	7,182.93	17.74	406.011		
1,100.00	1,100.00	1,007.40	1,007.40	3.75	15.75	102.62	-1,573.01	7,026.75	7,200.67	7,181.17	19.50	369.260		
1,200.00	1,200.00	1,107.40	1,107.40	4.11	17.17	102.62	-1,573.01	7,026.75	7,200.67	7,179.39	21.28	338.368		
1,300.00	1,300.00	1,207.40	1,207.40	4.46	18.61	102.62	-1,573.01	7,026.75	7,200.67	7,177.59	23.07	312.088		
1,400.00	1,400.00	1,307.40	1,307.40	4.82	20.05	102.62	-1,573.01	7,026.75	7,200.67	7,175.79	24.87	289.488		
1,500.00	1,500.00	1,407.40	1,407.40	5.18	21.51	102.62	-1,573.01	7,026.75	7,200.67	7,173.98	26.68	269.867		
1,600.00	1,600.00	1,507.40	1,507.40	5.53	22.96	102.62	-1,573.01	7,026.75	7,200.67	7,172.17	28.50	252.683		
1,700.00	1,700.00	1,607.40	1,607.40	5.89	24.43	102.62	-1,573.01	7,026.75	7,200.67	7,170.35	30.32	237.519		
1,800.00	1,800.00	1,707.40	1,707.40	6.25	25.89	102.62	-1,573.01	7,026.75	7,200.67	7,168.53	32.14	224.044		
1,900.00	1,900.00	1,807.40	1,807.40	6.61	27.36	102.62	-1,573.01	7,026.75	7,200.67	7,166.70	33.97	211.994		
2,000.00	2,000.00	1,907.40	1,907.40	6.96	28.83	102.62	-1,573.01	7,026.75	7,200.67	7,164.87	35.80	201.158		
2,100.00	2,100.00	2,007.40	2,007.40	7.32	30.31	102.62	-1,573.01	7,026.75	7,200.67	7,163.04	37.63	191.364		
2,200.00	2,200.00	2,107.40	2,107.40	7.68	31.78	102.62	-1,573.01	7,026.75	7,200.67	7,161.20	39.46	182.469		
2,300.00	2,300.00	2,207.40	2,207.40	8.04	33.26	102.62	-1,573.01	7,026.75	7,200.67	7,159.37	41.30	174.356		
2,350.00	2,350.00	2,257.40	2,257.40	8.22	34.00	102.62	-1,573.01	7,026.75	7,200.67	7,158.45	42.22	170.562		
2,400.00	2,400.00	2,307.40	2,307.40	8.39	34.74	118.66	-1,573.01	7,026.75	7,200.77	7,157.64	43.14	166.932		
2,500.00	2,499.98	2,407.38	2,407.38	8.75	36.22	118.66	-1,573.01	7,026.75	7,201.61	7,156.63	44.97	160.129		
2,600.00	2,599.92	2,507.32	2,507.32	9.11	37.71	118.67	-1,573.01	7,026.75	7,203.28	7,156.47	46.81	153.879		
2,700.00	2,699.78	2,607.18	2,607.18	9.47	39.19	118.69	-1,573.01	7,026.75	7,205.80	7,157.15	48.65	148.119		
2,800.00	2,799.54	2,706.94	2,706.94	9.82	40.67	118.71	-1,573.01	7,026.75	7,209.15	7,158.67	50.48	142.798		
2,900.00	2,899.16	2,806.56	2,806.56	10.18	42.15	118.73	-1,573.01	7,026.75	7,213.35	7,161.03	52.32	137.871		
3,000.00	2,998.61	2,906.01	2,906.01	10.54	43.63	118.76	-1,573.01	7,026.75	7,218.40	7,164.25	54.15	133.298		
3,100.00	3,097.86	3,005.26	3,005.26	10.89	45.10	118.79	-1,573.01	7,026.75	7,224.30	7,168.32	55.98	129.045		
3,200.00	3,196.89	3,104.29	3,104.29	11.25	46.57	118.83	-1,573.01	7,026.75	7,231.06	7,173.25	57.81	125.081		
3,295.74	3,291.45	3,198.85	3,198.85	11.59	47.98	118.87	-1,573.01	7,026.75	7,238.34	7,178.78	59.56	121.534		
3,300.00	3,295.65	3,203.05	3,203.05	11.61	48.04	118.87	-1,573.01	7,026.75	7,238.68	7,179.04	59.64	121.381		
3,400.00	3,394.29	3,301.69	3,301.69	11.97	49.51	118.98	-1,573.01	7,026.75	7,246.71	7,185.25	61.46	117.908		
3,500.00	3,492.94	3,400.34	3,400.34	12.33	50.98	119.10	-1,573.01	7,026.75	7,254.77	7,191.48	63.29	114.634		
3,600.00	3,591.58	3,498.98	3,498.98	12.69	52.45	119.21	-1,573.01	7,026.75	7,262.86	7,197.74	65.11	111.540		
3,700.00	3,690.22	3,597.62	3,597.62	13.05	53.92	119.32	-1,573.01	7,026.75	7,270.97	7,204.03	66.94	108.614		
3,800.00	3,788.86	3,696.26	3,696.26	13.41	55.39	119.43	-1,573.01	7,026.75	7,279.12	7,210.34	68.77	105.842		
3,900.00	3,887.50	3,794.90	3,794.90	13.77	56.86	119.54	-1,573.01	7,026.75	7,287.29	7,216.68	70.61	103.212		
4,000.00	3,986.14	3,893.54	3,893.54	14.14	58.33	119.65	-1,573.01	7,026.75	7,295.49	7,223.05	72.44	100.714		
4,100.00	4,084.78	3,992.18	3,992.18	14.50	59.80	119.76	-1,573.01	7,026.75	7,303.72	7,229.45	74.27	98.338		
4,200.00	4,183.42	4,090.82	4,090.82	14.87	61.27	119.88	-1,573.01	7,026.75	7,311.97	7,235.87	76.11	96.076		
4,300.00	4,282.06	4,189.46	4,189.46	15.24	62.74	119.99	-1,573.01	7,026.75	7,320.26	7,242.31	77.94	93.920		
4,400.00	4,380.70	4,288.10	4,288.10	15.60	64.21	120.10	-1,573.01	7,026.75	7,328.57	7,248.79	79.78	91.862		
4,500.00	4,479.34	4,386.74	4,386.74	15.97	65.69	120.21	-1,573.01	7,026.75	7,336.90	7,255.29	81.61	89.897		
4,600.00	4,577.98	4,485.38	4,485.38	16.34	67.16	120.32	-1,573.01	7,026.75	7,345.27	7,261.82	83.45	88.017		
4,700.00	4,676.62	4,584.02	4,584.02	16.71	68.63	120.43	-1,573.01	7,026.75	7,353.66	7,268.37	85.29	86.218		
4,800.00	4,775.27	4,682.67	4,682.67	17.08	70.10	120.53	-1,573.01	7,026.75	7,362.08	7,274.95	87.13	84.495		
4,900.00	4,873.91	4,781.31	4,781.31	17.45	71.57	120.64	-1,573.01	7,026.75	7,370.53	7,281.56	88.97	82.843		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,879.95	4,879.95	17.82	73.05	120.75	-1,573.01	7,026.75	7,379.00	7,288.19	90.81	81.258		
5,100.00	5,071.19	4,978.59	4,978.59	18.19	74.52	120.86	-1,573.01	7,026.75	7,387.50	7,294.85	92.65	79.735		
5,200.00	5,169.83	5,077.23	5,077.23	18.56	75.99	120.97	-1,573.01	7,026.75	7,396.03	7,301.54	94.49	78.272		
5,300.00	5,268.47	5,175.87	5,175.87	18.93	77.46	121.08	-1,573.01	7,026.75	7,404.58	7,308.25	96.33	76.864		
5,400.00	5,367.11	5,274.51	5,274.51	19.31	78.94	121.18	-1,573.01	7,026.75	7,413.16	7,314.99	98.18	75.510		
5,500.00	5,465.75	5,373.15	5,373.15	19.68	80.41	121.29	-1,573.01	7,026.75	7,421.77	7,321.75	100.02	74.205		
5,600.00	5,564.39	5,471.79	5,471.79	20.05	81.88	121.40	-1,573.01	7,026.75	7,430.40	7,328.54	101.86	72.947		
5,700.00	5,663.03	5,570.43	5,570.43	20.42	83.36	121.51	-1,573.01	7,026.75	7,439.06	7,335.36	103.70	71.734		
5,800.00	5,761.67	5,669.07	5,669.07	20.80	84.83	121.61	-1,573.01	7,026.75	7,447.75	7,342.20	105.55	70.563		
5,900.00	5,860.31	5,767.71	5,767.71	21.17	86.30	121.72	-1,573.01	7,026.75	7,456.46	7,349.07	107.39	69.433		
6,000.00	5,958.96	5,866.36	5,866.36	21.54	87.78	121.83	-1,573.01	7,026.75	7,465.19	7,355.96	109.23	68.341		
6,100.00	6,057.60	5,965.00	5,965.00	21.92	89.25	121.93	-1,573.01	7,026.75	7,473.96	7,362.88	111.08	67.285		
6,200.00	6,156.24	6,063.64	6,063.64	22.29	90.72	122.04	-1,573.01	7,026.75	7,482.75	7,369.82	112.92	66.264		
6,300.00	6,254.88	6,162.28	6,162.28	22.67	92.20	122.14	-1,573.01	7,026.75	7,491.56	7,376.79	114.77	65.275		
6,400.00	6,353.52	6,260.92	6,260.92	23.04	93.67	122.25	-1,573.01	7,026.75	7,500.40	7,383.79	116.61	64.318		
6,500.00	6,452.16	6,359.56	6,359.56	23.42	95.15	122.35	-1,573.01	7,026.75	7,509.27	7,390.81	118.46	63.391		
6,600.00	6,550.80	6,458.20	6,458.20	23.79	96.62	122.46	-1,573.01	7,026.75	7,518.16	7,397.86	120.30	62.493		
6,700.00	6,649.44	6,556.84	6,556.84	24.17	98.09	122.56	-1,573.01	7,026.75	7,527.08	7,404.93	122.15	61.621		
6,800.00	6,748.08	6,655.48	6,655.48	24.54	99.57	122.67	-1,573.01	7,026.75	7,536.02	7,412.02	124.00	60.776		
6,900.00	6,846.72	6,754.12	6,754.12	24.92	101.04	122.77	-1,573.01	7,026.75	7,544.99	7,419.14	125.84	59.956		
7,000.00	6,945.36	6,852.76	6,852.76	25.29	102.52	122.87	-1,573.01	7,026.75	7,553.98	7,426.29	127.69	59.159		
7,100.00	7,044.00	6,951.40	6,951.40	25.67	103.99	122.98	-1,573.01	7,026.75	7,563.00	7,433.46	129.54	58.386		
7,200.00	7,142.65	7,050.05	7,050.05	26.04	105.47	123.08	-1,573.01	7,026.75	7,572.04	7,440.66	131.38	57.634		
7,300.00	7,241.29	7,148.69	7,148.69	26.42	106.94	123.18	-1,573.01	7,026.75	7,581.11	7,447.88	133.23	56.903		
7,400.00	7,339.93	7,247.33	7,247.33	26.79	108.41	123.29	-1,573.01	7,026.75	7,590.20	7,455.12	135.08	56.192		
7,500.00	7,438.57	7,345.97	7,345.97	27.17	109.89	123.39	-1,573.01	7,026.75	7,599.31	7,462.39	136.92	55.501		
7,571.77	7,509.37	7,416.77	7,416.77	27.44	110.95	123.46	-1,573.01	7,026.75	7,605.87	7,467.62	138.25	55.016		
7,600.00	7,537.23	7,444.63	7,444.63	27.55	111.36	123.52	-1,573.01	7,026.75	7,608.40	7,469.63	138.77	54.827		
7,700.00	7,636.18	7,543.58	7,543.58	27.92	112.84	123.71	-1,573.01	7,026.75	7,616.43	7,475.81	140.62	54.163		
7,800.00	7,735.48	7,642.88	7,642.88	28.29	114.33	123.87	-1,573.01	7,026.75	7,623.04	7,480.57	142.47	53.506		
7,900.00	7,835.05	7,742.45	7,742.45	28.65	115.82	123.99	-1,573.01	7,026.75	7,628.19	7,483.87	144.32	52.856		
8,000.00	7,934.83	7,842.23	7,842.23	29.01	117.31	124.08	-1,573.01	7,026.75	7,631.89	7,485.72	146.17	52.212		
8,100.00	8,034.74	7,942.14	7,942.14	29.36	118.80	124.13	-1,573.01	7,026.75	7,634.13	7,486.11	148.02	51.575		
8,202.27	8,137.00	8,044.40	8,044.40	29.72	120.33	108.11	-1,573.01	7,026.75	7,634.89	7,484.99	149.91	50.931		
8,300.00	8,234.73	8,142.13	8,142.13	30.06	121.79	108.11	-1,573.01	7,026.75	7,634.89	7,483.19	151.71	50.327		
8,400.00	8,334.73	8,242.13	8,242.13	30.41	123.29	108.11	-1,573.01	7,026.75	7,634.89	7,481.35	153.55	49.723		
8,500.00	8,434.73	8,342.13	8,342.13	30.75	124.78	108.11	-1,573.01	7,026.75	7,634.89	7,479.50	155.39	49.134		
8,552.31	8,487.04	8,394.44	8,394.44	30.94	125.56	108.11	-1,573.01	7,026.75	7,634.89	7,478.54	156.35	48.831		
8,600.00	8,534.68	8,442.08	8,442.08	31.10	126.28	18.51	-1,573.01	7,026.75	7,633.01	7,475.79	157.23	48.548		
8,650.00	8,584.26	8,491.66	8,491.66	31.26	127.02	18.72	-1,573.01	7,026.75	7,627.01	7,468.89	158.13	48.233		
8,700.00	8,633.10	8,540.50	8,540.50	31.43	127.75	19.08	-1,573.01	7,026.75	7,616.94	7,457.93	159.01	47.902		
8,750.00	8,680.83	8,588.23	8,588.23	31.58	128.46	19.60	-1,573.01	7,026.75	7,602.87	7,443.00	159.87	47.557		
8,800.00	8,727.09	8,634.49	8,634.49	31.74	129.15	20.31	-1,573.01	7,026.75	7,584.91	7,424.21	160.70	47.200		
8,850.00	8,771.52	8,678.92	8,678.92	31.89	129.82	21.22	-1,573.01	7,026.75	7,563.21	7,401.72	161.49	46.834		
8,900.00	8,813.78	8,721.18	8,721.18	32.04	130.45	22.39	-1,573.01	7,026.75	7,537.92	7,375.69	162.24	46.463		
8,950.00	8,853.56	8,760.96	8,760.96	32.18	131.04	23.85	-1,573.01	7,026.75	7,509.26	7,346.32	162.93	46.088		
9,000.00	8,890.55	8,797.95	8,797.95	32.32	131.60	25.68	-1,573.01	7,026.75	7,477.43	7,313.85	163.58	45.711		
9,050.00	8,924.46	8,831.86	8,831.86	32.47	132.10	27.99	-1,573.01	7,026.75	7,442.70	7,278.53	164.17	45.335		
9,100.00	8,955.05	8,862.45	8,862.45	32.63	132.56	30.89	-1,573.01	7,026.75	7,405.32	7,240.62	164.70	44.963		
9,150.00	8,982.08	8,889.48	8,889.48	32.79	132.97	34.59	-1,573.01	7,026.75	7,365.58	7,200.41	165.17	44.595		
9,200.00	9,005.34	8,912.74	8,912.74	32.97	133.31	39.34	-1,573.01	7,026.75	7,323.80	7,158.23	165.57	44.234		
9,250.00	9,024.65	8,932.05	8,932.05	33.17	133.60	45.49	-1,573.01	7,026.75	7,280.30	7,114.39	165.91	43.881		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,947.27	8,947.27	33.38	133.83	53.44	-1,573.01	7,026.75	7,235.40	7,069.22	166.18	43.538		
9,350.00	9,050.89	8,958.29	8,958.29	33.62	133.99	63.54	-1,573.01	7,026.75	7,189.46	7,023.07	166.39	43.208		
9,400.00	9,057.61	8,965.01	8,965.01	33.87	134.10	75.77	-1,573.01	7,026.75	7,142.83	6,976.30	166.54	42.890		
9,452.31	9,060.00	8,967.40	8,967.40	34.15	134.13	90.00	-1,573.01	7,026.75	7,093.70	6,927.08	166.62	42.574		
9,500.00	9,060.00	8,967.40	8,967.40	34.42	134.13	90.00	-1,573.01	7,026.75	7,048.88	6,882.21	166.67	42.293		
9,600.00	9,060.00	8,967.40	8,967.40	35.09	134.13	90.00	-1,573.01	7,026.75	6,955.02	6,788.24	166.78	41.702		
9,700.00	9,060.00	8,967.40	8,967.40	35.86	134.13	90.00	-1,573.01	7,026.75	6,861.33	6,694.42	166.91	41.107		
9,800.00	9,060.00	8,967.40	8,967.40	36.72	134.13	90.00	-1,573.01	7,026.75	6,767.83	6,600.76	167.07	40.509		
9,900.00	9,060.00	8,967.40	8,967.40	37.69	134.13	90.00	-1,573.01	7,026.75	6,674.51	6,507.26	167.25	39.907		
10,000.00	9,060.00	8,967.40	8,967.40	38.73	134.13	90.00	-1,573.01	7,026.75	6,581.40	6,413.94	167.46	39.302		
10,100.00	9,060.00	8,967.40	8,967.40	39.86	134.13	90.00	-1,573.01	7,026.75	6,488.48	6,320.79	167.69	38.693		
10,140.22	9,060.00	8,967.40	8,967.40	40.33	134.13	90.00	-1,573.01	7,026.75	6,451.17	6,283.37	167.79	38.447		
10,200.00	9,060.00	8,967.40	8,967.40	41.05	134.13	90.00	-1,573.01	7,026.75	6,395.55	6,227.60	167.95	38.080		
10,300.00	9,060.00	8,967.40	8,967.40	42.31	134.13	90.00	-1,573.01	7,026.75	6,301.67	6,133.46	168.22	37.462		
10,400.00	9,060.00	8,967.40	8,967.40	43.64	134.13	90.00	-1,573.01	7,026.75	6,206.82	6,038.33	168.48	36.839		
10,507.23	9,060.00	8,967.40	8,967.40	45.11	134.13	90.00	-1,573.01	7,026.75	6,104.10	5,935.34	168.76	36.170		
10,600.00	9,060.00	8,967.40	8,967.40	46.43	134.13	90.00	-1,573.01	7,026.75	6,015.29	5,846.27	169.02	35.589		
10,700.00	9,060.00	8,967.40	8,967.40	47.91	134.13	90.00	-1,573.01	7,026.75	5,920.74	5,751.39	169.35	34.961		
10,800.00	9,060.00	8,967.40	8,967.40	49.42	134.13	90.00	-1,573.01	7,026.75	5,827.60	5,657.85	169.75	34.331		
10,900.00	9,060.00	8,967.40	8,967.40	50.97	134.13	90.00	-1,573.01	7,026.75	5,736.04	5,565.83	170.22	33.698		
11,000.00	9,060.00	8,967.40	8,967.40	52.55	134.13	90.00	-1,573.01	7,026.75	5,646.27	5,475.50	170.77	33.064		
11,100.00	9,060.00	8,967.40	8,967.40	54.14	134.13	90.00	-1,573.01	7,026.75	5,558.48	5,387.07	171.40	32.429		
11,207.23	9,060.00	8,967.40	8,967.40	55.87	134.13	90.00	-1,573.01	7,026.75	5,466.77	5,294.58	172.19	31.748		
11,300.00	9,060.00	8,967.40	8,967.40	57.39	134.13	90.00	-1,573.01	7,026.75	5,388.00	5,215.07	172.94	31.156		
11,400.00	9,060.00	8,967.40	8,967.40	59.06	134.13	90.00	-1,573.01	7,026.75	5,301.85	5,128.09	173.76	30.513		
11,506.63	9,060.00	8,967.40	8,967.40	60.88	134.13	90.00	-1,573.01	7,026.75	5,208.58	5,033.93	174.65	29.823		
11,600.00	9,060.00	8,967.40	8,967.40	62.49	134.13	90.00	-1,573.01	7,026.75	5,126.48	4,951.03	175.46	29.218		
11,700.00	9,060.00	8,967.40	8,967.40	64.24	134.13	90.00	-1,573.01	7,026.75	5,038.99	4,862.62	176.38	28.570		
11,800.00	9,060.00	8,967.40	8,967.40	66.01	134.13	90.00	-1,573.01	7,026.75	4,951.98	4,774.62	177.36	27.921		
11,900.00	9,060.00	8,967.40	8,967.40	67.79	134.13	90.00	-1,573.01	7,026.75	4,865.46	4,687.06	178.40	27.273		
12,000.00	9,060.00	8,967.40	8,967.40	69.58	134.13	90.00	-1,573.01	7,026.75	4,779.47	4,599.96	179.51	26.625		
12,100.00	9,060.00	8,967.40	8,967.40	71.39	134.13	90.00	-1,573.01	7,026.75	4,694.04	4,513.35	180.68	25.979		
12,200.00	9,060.00	8,967.40	8,967.40	73.21	134.13	90.00	-1,573.01	7,026.75	4,609.19	4,427.26	181.93	25.335		
12,300.00	9,060.00	8,967.40	8,967.40	75.05	134.13	90.00	-1,573.01	7,026.75	4,524.96	4,341.71	183.24	24.694		
12,400.00	9,060.00	8,967.40	8,967.40	76.89	134.13	90.00	-1,573.01	7,026.75	4,441.38	4,256.75	184.63	24.055		
12,500.00	9,060.00	8,967.40	8,967.40	78.74	134.13	90.00	-1,573.01	7,026.75	4,358.50	4,172.40	186.10	23.420		
12,600.00	9,060.00	8,967.40	8,967.40	80.61	134.13	90.00	-1,573.01	7,026.75	4,276.35	4,088.70	187.64	22.790		
12,700.00	9,060.00	8,967.40	8,967.40	82.48	134.13	90.00	-1,573.01	7,026.75	4,194.97	4,005.70	189.27	22.164		
12,800.00	9,060.00	8,967.40	8,967.40	84.36	134.13	90.00	-1,573.01	7,026.75	4,114.41	3,923.43	190.98	21.544		
12,900.00	9,060.00	8,967.40	8,967.40	86.24	134.13	90.00	-1,573.01	7,026.75	4,034.73	3,841.96	192.77	20.930		
13,000.00	9,060.00	8,967.40	8,967.40	88.14	134.13	90.00	-1,573.01	7,026.75	3,955.96	3,761.31	194.65	20.323		
13,100.00	9,060.00	8,967.40	8,967.40	90.04	134.13	90.00	-1,573.01	7,026.75	3,878.18	3,681.56	196.62	19.724		
13,200.00	9,060.00	8,967.40	8,967.40	91.94	134.13	90.00	-1,573.01	7,026.75	3,801.44	3,602.75	198.69	19.133		
13,300.00	9,060.00	8,967.40	8,967.40	93.86	134.13	90.00	-1,573.01	7,026.75	3,725.79	3,524.95	200.84	18.551		
13,400.00	9,060.00	8,967.40	8,967.40	95.77	134.13	90.00	-1,573.01	7,026.75	3,651.33	3,448.24	203.09	17.979		
13,500.00	9,060.00	8,967.40	8,967.40	97.70	134.13	90.00	-1,573.01	7,026.75	3,578.10	3,372.67	205.44	17.417		
13,600.00	9,060.00	8,967.40	8,967.40	99.62	134.13	90.00	-1,573.01	7,026.75	3,506.20	3,298.32	207.88	16.867		
13,700.00	9,060.00	8,967.40	8,967.40	101.56	134.13	90.00	-1,573.01	7,026.75	3,435.71	3,225.29	210.42	16.328		
13,800.00	9,060.00	8,967.40	8,967.40	103.49	134.13	90.00	-1,573.01	7,026.75	3,366.71	3,153.65	213.05	15.802		
13,900.00	9,060.00	8,967.40	8,967.40	105.43	134.13	90.00	-1,573.01	7,026.75	3,299.29	3,083.51	215.79	15.290		
14,000.00	9,060.00	8,967.40	8,967.40	107.38	134.13	90.00	-1,573.01	7,026.75	3,233.57	3,014.96	218.61	14.791		
14,100.00	9,060.00	8,967.40	8,967.40	109.33	134.13	90.00	-1,573.01	7,026.75	3,169.64	2,948.11	221.53	14.308		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,200.00	9,060.00	8,967.40	8,967.40	111.28	134.13	90.00	-1,573.01	7,026.75	3,107.61	2,883.07	224.54	13.840		
14,300.00	9,060.00	8,967.40	8,967.40	113.23	134.13	90.00	-1,573.01	7,026.75	3,047.60	2,819.97	227.63	13.388		
14,400.00	9,060.00	8,967.40	8,967.40	115.19	134.13	90.00	-1,573.01	7,026.75	2,989.73	2,758.93	230.80	12.954		
14,500.00	9,060.00	8,967.40	8,967.40	117.15	134.13	90.00	-1,573.01	7,026.75	2,934.13	2,700.10	234.03	12.537		
14,600.00	9,060.00	8,967.40	8,967.40	119.11	134.13	90.00	-1,573.01	7,026.75	2,880.93	2,643.59	237.33	12.139		
14,700.00	9,060.00	8,967.40	8,967.40	121.08	134.13	90.00	-1,573.01	7,026.75	2,830.26	2,589.58	240.68	11.759		
14,800.00	9,060.00	8,967.40	8,967.40	123.05	134.13	90.00	-1,573.01	7,026.75	2,782.27	2,538.20	244.07	11.399		
14,900.00	9,060.00	8,967.40	8,967.40	125.02	134.13	90.00	-1,573.01	7,026.75	2,737.09	2,489.61	247.48	11.060		
15,000.00	9,060.00	8,967.40	8,967.40	126.99	134.13	90.00	-1,573.01	7,026.75	2,694.86	2,443.97	250.90	10.741		
15,100.00	9,060.00	8,967.40	8,967.40	128.97	134.13	90.00	-1,573.01	7,026.75	2,655.73	2,401.43	254.30	10.443		
15,200.00	9,060.00	8,967.40	8,967.40	130.95	134.13	90.00	-1,573.01	7,026.75	2,619.84	2,362.16	257.67	10.167		
15,300.00	9,060.00	8,967.40	8,967.40	132.93	134.13	90.00	-1,573.01	7,026.75	2,587.31	2,326.32	260.99	9.913		
15,400.00	9,060.00	8,967.40	8,967.40	134.91	134.13	90.00	-1,573.01	7,026.75	2,558.28	2,294.04	264.24	9.682		
15,500.00	9,060.00	8,967.40	8,967.40	136.89	134.13	90.00	-1,573.01	7,026.75	2,532.87	2,265.49	267.38	9.473		
15,600.00	9,060.00	8,967.40	8,967.40	138.88	134.13	90.00	-1,573.01	7,026.75	2,511.19	2,240.78	270.41	9.287		
15,700.00	9,060.00	8,967.40	8,967.40	140.86	134.13	90.00	-1,573.01	7,026.75	2,493.33	2,220.04	273.29	9.124		
15,800.00	9,060.00	8,967.40	8,967.40	142.85	134.13	90.00	-1,573.01	7,026.75	2,479.38	2,203.38	276.00	8.983		
15,900.00	9,060.00	8,967.40	8,967.40	144.84	134.13	90.00	-1,573.01	7,026.75	2,469.40	2,190.88	278.53	8.866		
16,000.00	9,060.00	8,967.40	8,967.40	146.83	134.13	90.00	-1,573.01	7,026.75	2,463.45	2,182.60	280.85	8.771		
16,096.85	9,060.00	8,967.40	8,967.40	148.76	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.65	282.90	8.701 CC		
16,100.00	9,060.00	8,967.40	8,967.40	148.83	134.13	90.00	-1,573.01	7,026.75	2,461.55	2,178.59	282.96	8.699 ES		
16,200.00	9,060.00	8,967.40	8,967.40	150.82	134.13	90.00	-1,573.01	7,026.75	2,463.71	2,178.87	284.83	8.650		
16,300.00	9,060.00	8,967.40	8,967.40	152.82	134.13	90.00	-1,573.01	7,026.75	2,469.91	2,183.45	286.47	8.622		
16,400.00	9,060.00	8,967.40	8,967.40	154.81	134.13	90.00	-1,573.01	7,026.75	2,480.14	2,192.28	287.86	8.616 SF		
16,500.00	9,060.00	8,967.40	8,967.40	156.81	134.13	90.00	-1,573.01	7,026.75	2,494.34	2,205.34	289.00	8.631		
16,600.00	9,060.00	8,967.40	8,967.40	158.81	134.13	90.00	-1,573.01	7,026.75	2,512.44	2,222.54	289.91	8.666		
16,700.00	9,060.00	8,967.40	8,967.40	160.81	134.13	90.00	-1,573.01	7,026.75	2,534.36	2,243.79	290.58	8.722		
16,800.00	9,060.00	8,967.40	8,967.40	162.81	134.13	90.00	-1,573.01	7,026.75	2,560.01	2,268.99	291.01	8.797		
16,900.00	9,060.00	8,967.40	8,967.40	164.82	134.13	90.00	-1,573.01	7,026.75	2,589.26	2,298.02	291.24	8.891		
17,000.00	9,060.00	8,967.40	8,967.40	166.82	134.13	90.00	-1,573.01	7,026.75	2,622.00	2,330.75	291.26	9.002		
17,100.00	9,060.00	8,967.40	8,967.40	168.82	134.13	90.00	-1,573.01	7,026.75	2,658.11	2,367.02	291.09	9.132		
17,200.00	9,060.00	8,967.40	8,967.40	170.83	134.13	90.00	-1,573.01	7,026.75	2,697.44	2,406.69	290.74	9.278		
17,300.00	9,060.00	8,967.40	8,967.40	172.84	134.13	90.00	-1,573.01	7,026.75	2,739.85	2,449.61	290.24	9.440		
17,400.00	9,060.00	8,967.40	8,967.40	174.84	134.13	90.00	-1,573.01	7,026.75	2,785.21	2,495.61	289.61	9.617		
17,500.00	9,060.00	8,967.40	8,967.40	176.85	134.13	90.00	-1,573.01	7,026.75	2,833.38	2,544.54	288.84	9.809		
17,600.00	9,060.00	8,967.40	8,967.40	178.86	134.13	90.00	-1,573.01	7,026.75	2,884.21	2,596.24	287.97	10.016		
17,700.00	9,060.00	8,967.40	8,967.40	180.87	134.13	90.00	-1,573.01	7,026.75	2,937.57	2,650.56	287.01	10.235		
17,800.00	9,060.00	8,967.40	8,967.40	182.88	134.13	90.00	-1,573.01	7,026.75	2,993.32	2,707.35	285.97	10.467		
17,900.00	9,060.00	8,967.40	8,967.40	184.89	134.13	90.00	-1,573.01	7,026.75	3,051.32	2,766.46	284.86	10.712		
18,000.00	9,060.00	8,967.40	8,967.40	186.90	134.13	90.00	-1,573.01	7,026.75	3,111.46	2,827.76	283.70	10.967		
18,100.00	9,060.00	8,967.40	8,967.40	188.92	134.13	90.00	-1,573.01	7,026.75	3,173.62	2,891.12	282.50	11.234		
18,200.00	9,060.00	8,967.40	8,967.40	190.93	134.13	90.00	-1,573.01	7,026.75	3,237.66	2,956.41	281.26	11.511		
18,300.00	9,060.00	8,967.40	8,967.40	192.94	134.13	90.00	-1,573.01	7,026.75	3,303.50	3,023.50	280.00	11.798		
18,400.00	9,060.00	8,967.40	8,967.40	194.96	134.13	90.00	-1,573.01	7,026.75	3,371.01	3,092.29	278.72	12.095		
18,500.00	9,060.00	8,967.40	8,967.40	196.97	134.13	90.00	-1,573.01	7,026.75	3,440.11	3,162.68	277.43	12.400		
18,600.00	9,060.00	8,967.40	8,967.40	198.99	134.13	90.00	-1,573.01	7,026.75	3,510.70	3,234.55	276.14	12.713		
18,700.00	9,060.00	8,967.40	8,967.40	201.00	134.13	90.00	-1,573.01	7,026.75	3,582.68	3,307.83	274.86	13.035		
18,800.00	9,060.00	8,967.40	8,967.40	203.02	134.13	90.00	-1,573.01	7,026.75	3,655.99	3,382.42	273.57	13.364		
18,900.00	9,060.00	8,967.40	8,967.40	205.04	134.13	90.00	-1,573.01	7,026.75	3,730.53	3,458.23	272.30	13.700		
19,000.00	9,060.00	8,967.40	8,967.40	207.06	134.13	90.00	-1,573.01	7,026.75	3,806.25	3,535.20	271.04	14.043		
19,100.00	9,060.00	8,967.40	8,967.40	209.07	134.13	90.00	-1,573.01	7,026.75	3,883.06	3,613.26	269.80	14.392		
19,200.00	9,060.00	8,967.40	8,967.40	211.09	134.13	90.00	-1,573.01	7,026.75	3,960.91	3,692.33	268.58	14.748		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 13-T21S-R27E - Lone Tree State #001 - Wellbore #1 - Wellbore #1										Offset Site Error:	5.00 ft
Survey Program:		10-INC-ONLY										Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,967.40	8,967.40	213.11	134.13	90.00	-1,573.01	7,026.75	4,039.73	3,772.36	267.37	15.109	
19,400.00	9,060.00	8,967.40	8,967.40	215.13	134.13	90.00	-1,573.01	7,026.75	4,119.47	3,853.28	266.19	15.476	
19,500.32	9,060.00	8,967.40	8,967.40	217.16	134.13	90.00	-1,573.01	7,026.75	4,200.34	3,935.31	265.02	15.849	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.50	10.00	58.50	1,038.14	1,693.77	1,986.84				
100.00	100.00	64.70	64.70	0.52	10.00	58.50	1,038.04	1,693.92	1,986.68	1,976.16	10.52	188.880	
200.00	200.00	167.21	167.20	0.70	10.01	58.52	1,037.53	1,694.54	1,986.94	1,976.24	10.71	185.530	
300.00	300.00	276.71	276.70	0.99	10.03	58.55	1,036.61	1,694.95	1,986.83	1,975.81	11.02	180.343	
400.00	400.00	386.96	386.94	1.31	10.07	58.59	1,034.99	1,695.13	1,986.20	1,974.83	11.38	174.601	
500.00	500.00	499.41	499.36	1.65	10.12	58.66	1,032.44	1,695.12	1,985.01	1,973.25	11.77	168.711	
600.00	600.00	595.76	595.67	1.99	10.18	58.72	1,029.75	1,695.16	1,983.59	1,971.42	12.17	163.004	
700.00	700.00	700.66	700.53	2.34	10.26	58.79	1,026.83	1,695.17	1,982.16	1,969.56	12.59	157.393	
800.00	800.00	798.62	798.45	2.69	10.34	58.87	1,023.86	1,695.23	1,980.64	1,967.61	13.03	152.027	
900.00	900.00	900.59	900.36	3.04	10.44	58.96	1,020.48	1,695.46	1,979.12	1,965.64	13.48	146.821	
1,000.00	1,000.00	999.08	998.79	3.40	10.55	59.04	1,017.18	1,695.69	1,977.60	1,963.66	13.94	141.859	
1,100.00	1,100.00	1,100.28	1,099.94	3.75	10.67	59.13	1,013.79	1,695.94	1,976.08	1,961.67	14.42	137.077	
1,200.00	1,200.00	1,196.68	1,196.28	4.11	10.80	59.21	1,010.65	1,696.18	1,974.63	1,959.73	14.90	132.559	
1,300.00	1,300.00	1,293.57	1,293.12	4.46	10.93	59.30	1,007.45	1,696.64	1,973.35	1,957.96	15.39	128.244	
1,400.00	1,400.00	1,387.76	1,387.25	4.82	11.07	59.39	1,004.24	1,697.38	1,972.29	1,956.41	15.88	124.162	
1,500.00	1,500.00	1,484.92	1,484.35	5.18	11.23	59.48	1,001.06	1,698.33	1,971.47	1,955.07	16.40	120.246	
1,600.00	1,600.00	1,579.44	1,578.82	5.53	11.38	59.58	997.99	1,699.45	1,970.84	1,953.93	16.91	116.547	
1,700.00	1,700.00	1,678.15	1,677.47	5.89	11.56	59.68	994.84	1,700.82	1,970.42	1,952.98	17.44	112.979	
1,800.00	1,800.00	1,780.52	1,779.78	6.25	11.75	59.78	991.51	1,702.22	1,969.97	1,951.98	17.99	109.526	
1,900.00	1,900.00	1,882.06	1,881.25	6.61	11.94	59.89	988.05	1,703.56	1,969.39	1,950.86	18.54	106.229	
2,000.00	2,000.00	1,981.36	1,980.48	6.96	12.14	59.99	984.65	1,704.86	1,968.80	1,949.71	19.10	103.103	
2,100.00	2,100.00	2,073.05	2,072.11	7.32	12.33	60.09	981.53	1,706.24	1,968.42	1,948.78	19.64	100.208	
2,200.00	2,200.00	2,177.73	2,176.72	7.68	12.55	60.20	978.16	1,708.00	1,968.28	1,948.05	20.22	97.322	
2,300.00	2,300.00	2,275.85	2,274.80	8.04	12.77	60.28	975.53	1,709.06	1,967.89	1,947.09	20.80	94.629	
2,350.00	2,350.00	2,323.50	2,322.44	8.22	12.87	60.31	974.56	1,709.50	1,967.78	1,946.70	21.08	93.350	
2,400.00	2,400.00	2,371.35	2,370.28	8.39	12.98	76.39	973.74	1,709.91	1,967.68	1,946.32	21.36	92.101	
2,500.00	2,499.98	2,470.57	2,469.49	8.75	13.20	76.48	972.47	1,710.64	1,967.27	1,945.33	21.94	89.650	
2,600.00	2,599.92	2,568.64	2,567.55	9.11	13.42	76.62	971.56	1,711.17	1,966.48	1,943.96	22.52	87.305	
2,700.00	2,699.78	2,673.59	2,672.50	9.47	13.67	76.81	970.88	1,711.59	1,965.31	1,942.18	23.13	84.986	
2,800.00	2,799.54	2,772.79	2,771.69	9.82	13.90	77.04	970.21	1,711.72	1,963.51	1,939.79	23.72	82.790	
2,900.00	2,899.16	2,873.53	2,872.44	10.18	14.15	77.33	969.70	1,711.84	1,961.43	1,937.12	24.32	80.662	
3,000.00	2,998.61	2,972.58	2,971.48	10.54	14.39	77.66	969.31	1,711.82	1,958.95	1,934.03	24.92	78.621	
3,100.00	3,097.86	3,069.50	3,068.40	10.89	14.63	78.02	969.27	1,711.70	1,956.24	1,930.72	25.51	76.672	
3,200.00	3,196.89	3,167.91	3,166.81	11.25	14.88	78.44	969.33	1,711.64	1,953.35	1,927.22	26.12	74.782	
3,295.74	3,291.45	3,262.21	3,261.12	11.59	15.12	78.89	969.36	1,711.60	1,950.35	1,923.64	26.71	73.033	
3,300.00	3,295.65	3,266.39	3,265.29	11.61	15.13	78.91	969.36	1,711.60	1,950.21	1,923.48	26.73	72.956	
3,400.00	3,394.29	3,362.87	3,361.77	11.97	15.39	79.36	969.57	1,711.53	1,947.10	1,919.76	27.34	71.215	
3,500.00	3,492.94	3,462.26	3,461.16	12.33	15.65	79.83	969.94	1,711.47	1,944.21	1,916.25	27.96	69.526	
3,600.00	3,591.58	3,561.40	3,560.30	12.69	15.91	80.28	970.48	1,711.23	1,941.36	1,912.77	28.59	67.902	
3,700.00	3,690.22	3,659.02	3,657.92	13.05	16.18	80.73	971.01	1,711.04	1,938.68	1,909.46	29.22	66.353	
3,800.00	3,788.86	3,759.89	3,758.78	13.41	16.45	81.20	971.55	1,710.86	1,936.13	1,906.27	29.86	64.846	
3,900.00	3,887.50	3,863.77	3,862.67	13.77	16.74	81.67	972.26	1,710.35	1,933.49	1,902.98	30.51	63.374	
4,000.00	3,986.14	3,964.80	3,963.69	14.14	17.03	82.14	972.91	1,709.63	1,930.75	1,899.59	31.16	61.968	
4,100.00	4,084.78	4,063.92	4,062.80	14.50	17.31	82.59	973.64	1,708.83	1,928.10	1,896.29	31.80	60.626	
4,200.00	4,183.42	4,162.49	4,161.37	14.87	17.59	83.04	974.36	1,708.04	1,925.56	1,893.11	32.45	59.338	
4,300.00	4,282.06	4,264.09	4,262.97	15.24	17.88	83.50	975.10	1,707.19	1,923.11	1,890.00	33.11	58.083	
4,400.00	4,380.70	4,361.35	4,360.22	15.60	18.16	83.94	975.84	1,706.23	1,920.66	1,886.90	33.76	56.893	
4,500.00	4,479.34	4,458.52	4,457.37	15.97	18.45	84.38	976.71	1,705.40	1,918.51	1,884.09	34.41	55.752	
4,600.00	4,577.98	4,559.08	4,557.93	16.34	18.74	84.84	977.60	1,704.52	1,916.45	1,881.37	35.08	54.638	
4,700.00	4,676.62	4,658.63	4,657.47	16.71	19.04	85.29	978.62	1,703.50	1,914.41	1,878.67	35.74	53.566	
4,800.00	4,775.27	4,757.08	4,755.91	17.08	19.33	85.74	979.62	1,702.50	1,912.51	1,876.11	36.40	52.538	
4,900.00	4,873.91	4,859.18	4,857.99	17.45	19.64	86.20	980.55	1,701.46	1,910.69	1,873.61	37.08	51.532	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,959.95	4,958.76	17.82	19.94	86.66	981.30	1,700.26	1,908.78	1,871.03	37.75	50.562		
5,100.00	5,071.19	5,058.85	5,057.65	18.19	20.24	87.12	981.97	1,699.11	1,906.98	1,868.56	38.42	49.634		
5,200.00	5,169.83	5,157.17	5,155.96	18.56	20.54	87.58	982.60	1,697.96	1,905.30	1,866.21	39.09	48.741		
5,300.00	5,268.47	5,255.88	5,254.67	18.93	20.84	88.04	983.15	1,696.88	1,903.79	1,864.02	39.76	47.879		
5,400.00	5,367.11	5,351.89	5,350.67	19.31	21.13	88.49	983.59	1,695.87	1,902.42	1,861.99	40.43	47.057		
5,500.00	5,465.75	5,447.29	5,446.07	19.68	21.43	88.95	983.98	1,695.12	1,901.41	1,860.31	41.09	46.270		
5,600.00	5,564.39	5,544.40	5,543.18	20.05	21.73	89.43	983.64	1,694.67	1,900.62	1,858.86	41.76	45.508		
5,700.00	5,663.03	5,640.63	5,639.39	20.42	22.02	89.94	982.56	1,694.56	1,900.09	1,857.66	42.44	44.776		
5,800.00	5,761.67	5,737.55	5,736.31	20.80	22.33	90.46	981.19	1,694.64	1,899.84	1,856.73	43.11	44.069		
5,900.00	5,860.31	5,840.03	5,838.77	21.17	22.65	91.01	979.62	1,694.74	1,899.74	1,855.94	43.80	43.369		
6,000.00	5,958.96	5,961.41	5,960.13	21.54	23.03	91.66	977.84	1,694.03	1,899.20	1,854.65	44.55	42.627		
6,100.00	6,057.60	6,079.16	6,077.84	21.92	23.40	92.29	975.77	1,691.78	1,897.44	1,852.15	45.29	41.895		
6,200.00	6,156.24	6,180.69	6,179.32	22.29	23.72	92.85	973.29	1,689.45	1,895.35	1,849.36	45.98	41.218		
6,300.00	6,254.88	6,271.97	6,270.53	22.67	24.01	93.38	970.23	1,687.66	1,893.54	1,846.89	46.65	40.589		
6,400.00	6,353.52	6,366.34	6,364.83	23.04	24.32	93.93	967.00	1,686.17	1,892.28	1,844.95	47.33	39.980		
6,500.00	6,452.16	6,469.34	6,467.77	23.42	24.65	94.53	963.69	1,684.48	1,891.20	1,843.17	48.03	39.373		
6,600.00	6,550.80	6,566.94	6,565.31	23.79	24.96	95.07	961.27	1,682.49	1,890.08	1,841.36	48.72	38.794		
6,700.00	6,649.44	6,656.95	6,655.29	24.17	25.25	95.57	959.32	1,680.85	1,889.40	1,840.02	49.39	38.258		
6,747.24	6,696.04	6,698.45	6,696.78	24.34	25.38	95.79	958.46	1,680.25	1,889.32	1,839.62	49.70	38.016		
6,800.00	6,748.08	6,746.99	6,745.30	24.54	25.54	96.06	957.48	1,679.66	1,889.39	1,839.34	50.05	37.748		
6,900.00	6,846.72	6,835.99	6,834.28	24.92	25.83	96.55	955.67	1,678.83	1,889.94	1,839.23	50.71	37.266		
7,000.00	6,945.36	6,918.54	6,916.81	25.29	26.10	97.01	953.88	1,678.63	1,891.32	1,839.97	51.36	36.828		
7,100.00	7,044.00	6,994.39	6,992.64	25.67	26.34	97.44	952.25	1,679.25	1,893.92	1,841.95	51.97	36.443		
7,200.00	7,142.65	7,092.54	7,090.76	26.04	26.66	97.98	950.33	1,680.67	1,897.32	1,844.66	52.66	36.028		
7,300.00	7,241.29	7,188.27	7,186.47	26.42	26.97	98.51	948.55	1,682.06	1,900.91	1,847.57	53.35	35.634		
7,400.00	7,339.93	7,282.04	7,280.20	26.79	27.28	99.03	946.62	1,683.61	1,904.87	1,850.84	54.02	35.261		
7,500.00	7,438.57	7,377.32	7,375.44	27.17	27.59	99.56	944.59	1,685.40	1,909.20	1,854.50	54.71	34.900		
7,571.77	7,509.37	7,450.67	7,448.77	27.44	27.83	99.96	943.31	1,686.77	1,912.45	1,857.23	55.21	34.637		
7,600.00	7,537.23	7,480.47	7,478.56	27.55	27.93	100.13	942.89	1,687.27	1,913.68	1,858.26	55.42	34.532		
7,700.00	7,636.18	7,577.71	7,575.78	27.92	28.25	100.64	941.77	1,688.81	1,917.79	1,861.69	56.10	34.183		
7,800.00	7,735.48	7,673.36	7,671.41	28.29	28.56	101.07	940.65	1,690.49	1,921.69	1,864.91	56.78	33.845		
7,900.00	7,835.05	7,769.65	7,767.68	28.65	28.88	101.42	939.54	1,692.34	1,925.33	1,867.87	57.45	33.511		
8,000.00	7,934.83	7,869.01	7,867.02	29.01	29.20	101.68	939.11	1,694.31	1,928.59	1,870.46	58.13	33.174		
8,100.00	8,034.74	7,985.45	7,983.43	29.36	29.58	101.81	940.33	1,696.10	1,931.03	1,872.15	58.88	32.796		
8,202.27	8,137.00	8,095.01	8,092.98	29.72	29.94	85.79	941.94	1,696.90	1,932.17	1,872.57	59.60	32.419		
8,300.00	8,234.73	8,201.50	8,199.46	30.06	30.29	85.76	942.85	1,697.34	1,932.63	1,872.34	60.29	32.055		
8,400.00	8,334.73	8,327.25	8,325.21	30.41	30.70	85.76	943.01	1,696.87	1,932.28	1,871.23	61.06	31.648		
8,500.00	8,434.73	8,448.86	8,446.78	30.75	31.11	85.82	940.52	1,694.79	1,930.38	1,868.58	61.80	31.235		
8,552.31	8,487.04	8,501.92	8,499.80	30.94	31.28	85.87	939.06	1,693.71	1,929.21	1,867.06	62.16	31.037		
8,600.00	8,534.68	8,537.37	8,535.23	31.10	31.40	-3.79	938.08	1,693.10	1,926.32	1,863.88	62.44	30.850		
8,650.00	8,584.26	8,574.78	8,572.63	31.26	31.53	-3.82	937.08	1,692.68	1,919.36	1,856.64	62.73	30.598		
8,700.00	8,633.10	8,612.28	8,610.11	31.43	31.65	-3.88	936.09	1,692.50	1,908.43	1,845.42	63.01	30.288		
8,750.00	8,680.83	8,650.28	8,648.10	31.58	31.78	-3.98	935.10	1,692.51	1,893.56	1,830.27	63.29	29.921		
8,800.00	8,727.09	8,687.24	8,685.05	31.74	31.90	-4.12	934.15	1,692.71	1,874.82	1,811.27	63.55	29.503		
8,850.00	8,771.52	8,727.40	8,725.19	31.89	32.04	-4.32	933.12	1,693.10	1,852.31	1,788.50	63.81	29.027		
8,900.00	8,813.78	8,768.08	8,765.86	32.04	32.17	-4.58	932.14	1,693.54	1,826.07	1,762.00	64.07	28.502		
8,950.00	8,853.56	8,808.70	8,806.47	32.18	32.31	-4.93	931.21	1,694.01	1,796.26	1,731.94	64.31	27.929		
9,000.00	8,890.55	8,856.47	8,854.23	32.32	32.47	-5.42	930.30	1,694.37	1,762.94	1,698.37	64.57	27.301		
9,050.00	8,924.46	8,899.80	8,897.55	32.47	32.61	-6.08	929.68	1,694.44	1,726.33	1,661.53	64.80	26.640		
9,100.00	8,955.05	8,930.97	8,928.72	32.63	32.72	-6.95	929.30	1,694.40	1,686.82	1,621.85	64.98	25.960		
9,150.00	8,982.08	8,958.44	8,956.18	32.79	32.81	-8.14	928.94	1,694.35	1,644.81	1,579.68	65.13	25.255		
9,200.00	9,005.34	8,982.04	8,979.79	32.97	32.89	-9.84	928.63	1,694.30	1,600.61	1,535.36	65.25	24.530		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,001.60	8,999.34	33.17	32.95	-12.42	928.37	1,694.26	1,554.57	1,489.22	65.35	23.787		
9,300.00	9,039.87	9,016.33	9,014.07	33.38	33.00	-16.66	928.16	1,694.23	1,507.05	1,441.63	65.43	23.034		
9,350.00	9,050.89	9,027.01	9,024.76	33.62	33.04	-24.67	928.02	1,694.21	1,458.41	1,392.93	65.48	22.272		
9,400.00	9,057.61	9,033.51	9,031.25	33.87	33.06	-43.26	927.93	1,694.19	1,409.03	1,343.51	65.51	21.507		
9,452.31	9,060.00	9,035.75	9,033.49	34.15	33.07	-92.01	927.90	1,694.19	1,356.97	1,291.44	65.53	20.708		
9,500.00	9,060.00	9,035.67	9,033.41	34.42	33.07	-91.97	927.90	1,694.19	1,309.46	1,243.93	65.53	19.981		
9,600.00	9,060.00	9,035.48	9,033.22	35.09	33.07	-91.88	927.90	1,694.19	1,209.89	1,144.35	65.55	18.458		
9,700.00	9,060.00	9,035.30	9,033.04	35.86	33.07	-91.79	927.90	1,694.19	1,110.40	1,044.83	65.56	16.936		
9,800.00	9,060.00	9,035.12	9,032.86	36.72	33.07	-91.70	927.91	1,694.19	1,011.01	945.42	65.59	15.414		
9,900.00	9,060.00	9,034.94	9,032.68	37.69	33.06	-91.61	927.91	1,694.19	911.75	846.12	65.63	13.893		
10,000.00	9,060.00	9,034.75	9,032.49	38.73	33.06	-91.52	927.91	1,694.19	812.67	746.98	65.68	12.373		
10,100.00	9,060.00	9,034.57	9,032.31	39.86	33.06	-91.43	927.91	1,694.19	713.84	648.08	65.76	10.855		
10,140.22	9,060.00	9,034.49	9,032.23	40.33	33.06	-91.39	927.91	1,694.19	674.19	608.38	65.81	10.245		
10,200.00	9,060.00	9,034.39	9,032.13	41.05	33.06	-91.21	927.92	1,694.19	615.52	549.62	65.90	9.340		
10,300.00	9,060.00	9,034.26	9,032.00	42.31	33.06	-91.00	927.92	1,694.19	518.66	452.48	66.17	7.838		
10,400.00	9,060.00	9,034.17	9,031.91	43.64	33.06	-90.88	927.92	1,694.19	424.48	357.71	66.77	6.357		
10,507.23	9,060.00	9,034.13	9,031.87	45.11	33.06	-90.80	927.92	1,694.19	329.29	260.99	68.29	4.822 Alert		
10,600.00	9,060.00	9,034.10	9,031.84	46.43	33.06	-90.83	927.92	1,694.19	254.92	183.73	71.19	3.581 Alert		
10,700.00	9,060.00	9,034.02	9,031.76	47.91	33.06	-90.82	927.92	1,694.19	190.50	113.58	76.92	2.477 Minor Risk		
10,800.00	9,060.00	9,033.90	9,031.64	49.42	33.06	-90.79	927.92	1,694.19	162.63	80.33	82.30	1.976 Minor Risk		
10,802.18	9,060.00	9,033.89	9,031.63	49.46	33.06	-90.79	927.92	1,694.19	162.61	80.28	82.34	1.975 Minor Risk, CC, ES, SF		
10,900.00	9,060.00	9,033.72	9,031.46	50.97	33.06	-90.72	927.92	1,694.19	188.33	108.61	79.72	2.362 Minor Risk		
11,000.00	9,060.00	9,033.50	9,031.24	52.55	33.06	-90.62	927.93	1,694.19	251.68	177.15	74.52	3.377 Alert		
11,100.00	9,060.00	9,033.22	9,030.96	54.14	33.06	-90.51	927.93	1,694.19	331.71	260.62	71.08	4.666 Alert		
11,207.23	9,060.00	9,032.88	9,030.62	55.87	33.06	-90.37	927.94	1,694.20	425.37	356.39	68.98	6.167		
11,300.00	9,060.00	9,032.57	9,030.32	57.39	33.06	-90.30	927.94	1,694.20	510.64	442.68	67.96	7.514		
11,400.00	9,060.00	9,032.29	9,030.03	59.06	33.06	-90.23	927.94	1,694.20	606.00	538.64	67.37	8.996		
11,506.63	9,060.00	9,032.04	9,029.78	60.88	33.05	-90.17	927.95	1,694.20	709.95	642.92	67.03	10.592		
11,600.00	9,060.00	9,031.85	9,029.59	62.49	33.05	-90.08	927.95	1,694.20	801.85	735.00	66.85	11.995		
11,700.00	9,060.00	9,031.64	9,029.38	64.24	33.05	-89.99	927.95	1,694.20	900.61	833.90	66.72	13.499		
11,800.00	9,060.00	9,031.43	9,029.17	66.01	33.05	-89.90	927.96	1,694.20	999.62	933.00	66.63	15.003		
11,900.00	9,060.00	9,031.22	9,028.96	67.79	33.05	-89.81	927.96	1,694.20	1,098.81	1,032.25	66.57	16.507		
12,000.00	9,060.00	9,031.01	9,028.75	69.58	33.05	-89.72	927.96	1,694.20	1,198.14	1,131.61	66.52	18.011		
12,100.00	9,060.00	9,030.80	9,028.54	71.39	33.05	-89.63	927.96	1,694.20	1,297.56	1,231.07	66.50	19.514		
12,200.00	9,060.00	9,030.59	9,028.33	73.21	33.05	-89.54	927.97	1,694.20	1,397.07	1,330.59	66.48	21.015		
12,300.00	9,060.00	9,030.37	9,028.11	75.05	33.05	-89.45	927.97	1,694.20	1,496.65	1,430.18	66.47	22.516		
12,400.00	9,060.00	9,030.16	9,027.90	76.89	33.05	-89.36	927.97	1,694.20	1,596.28	1,529.80	66.47	24.015		
12,500.00	9,060.00	9,029.95	9,027.69	78.74	33.05	-89.26	927.98	1,694.20	1,695.95	1,629.47	66.48	25.512		
12,600.00	9,060.00	9,029.73	9,027.47	80.61	33.05	-89.17	927.98	1,694.20	1,795.65	1,729.17	66.49	27.008		
12,700.00	9,060.00	9,029.52	9,027.26	82.48	33.05	-89.08	927.98	1,694.20	1,895.39	1,828.89	66.50	28.502		
12,800.00	9,060.00	9,029.30	9,027.04	84.36	33.05	-88.99	927.98	1,694.20	1,995.16	1,928.64	66.52	29.994		
12,900.00	9,060.00	9,029.08	9,026.83	86.24	33.04	-88.89	927.99	1,694.20	2,094.95	2,028.41	66.54	31.485		
13,000.00	9,060.00	9,028.87	9,026.61	88.14	33.04	-88.80	927.99	1,694.20	2,194.75	2,128.19	66.56	32.973		
13,100.00	9,060.00	9,028.65	9,026.39	90.04	33.04	-88.71	927.99	1,694.20	2,294.58	2,227.99	66.59	34.460		
13,200.00	9,060.00	9,028.43	9,026.17	91.94	33.04	-88.61	928.00	1,694.20	2,394.41	2,327.80	66.61	35.944		
13,300.00	9,060.00	9,028.21	9,025.95	93.86	33.04	-88.52	928.00	1,694.20	2,494.27	2,427.62	66.64	37.426		
13,400.00	9,060.00	9,027.99	9,025.73	95.77	33.04	-88.42	928.00	1,694.20	2,594.13	2,527.45	66.68	38.906		
13,500.00	9,060.00	9,027.77	9,025.51	97.70	33.04	-88.33	928.01	1,694.20	2,694.00	2,627.29	66.71	40.384		
13,600.00	9,060.00	9,027.55	9,025.29	99.62	33.04	-88.24	928.01	1,694.21	2,793.88	2,727.14	66.74	41.859		
13,700.00	9,060.00	9,027.33	9,025.07	101.56	33.04	-88.14	928.01	1,694.21	2,893.77	2,826.99	66.78	43.332		
13,800.00	9,060.00	9,027.11	9,024.85	103.49	33.04	-88.04	928.02	1,694.21	2,993.67	2,926.85	66.82	44.802		
13,900.00	9,060.00	9,026.88	9,024.63	105.43	33.04	-87.95	928.02	1,694.21	3,093.57	3,026.72	66.86	46.270		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	9,026.66	9,024.40	107.38	33.04	-87.85	928.02	1,694.21	3,193.48	3,126.58	66.90	47.736		
14,100.00	9,060.00	9,026.44	9,024.18	109.33	33.04	-87.76	928.02	1,694.21	3,293.40	3,226.46	66.94	49.198		
14,200.00	9,060.00	9,026.21	9,023.95	111.28	33.04	-87.66	928.03	1,694.21	3,393.32	3,326.34	66.98	50.658		
14,300.00	9,060.00	9,025.99	9,023.73	113.23	33.03	-87.56	928.03	1,694.21	3,493.24	3,426.22	67.03	52.115		
14,400.00	9,060.00	9,025.76	9,023.50	115.19	33.03	-87.47	928.03	1,694.21	3,593.17	3,526.10	67.07	53.570		
14,500.00	9,060.00	9,025.53	9,023.27	117.15	33.03	-87.37	928.04	1,694.21	3,693.11	3,625.99	67.12	55.021		
14,600.00	9,060.00	9,025.31	9,023.05	119.11	33.03	-87.27	928.04	1,694.21	3,793.04	3,725.87	67.17	56.470		
14,700.00	9,060.00	9,025.08	9,022.82	121.08	33.03	-87.17	928.04	1,694.21	3,892.98	3,825.76	67.22	57.916		
14,800.00	9,060.00	9,024.85	9,022.59	123.05	33.03	-87.08	928.05	1,694.21	3,992.93	3,925.66	67.27	59.359		
14,900.00	9,060.00	9,024.62	9,022.36	125.02	33.03	-86.98	928.05	1,694.21	4,092.87	4,025.55	67.32	60.798		
15,000.00	9,060.00	9,024.39	9,022.13	126.99	33.03	-86.88	928.05	1,694.21	4,192.82	4,125.45	67.37	62.235		
15,100.00	9,060.00	9,024.16	9,021.90	128.97	33.03	-86.78	928.06	1,694.21	4,292.77	4,225.35	67.42	63.669		
15,200.00	9,060.00	9,023.93	9,021.67	130.95	33.03	-86.68	928.06	1,694.21	4,392.72	4,325.24	67.48	65.099		
15,300.00	9,060.00	9,023.69	9,021.43	132.93	33.03	-86.58	928.06	1,694.21	4,492.68	4,425.14	67.53	66.527		
15,400.00	9,060.00	9,023.46	9,021.20	134.91	33.03	-86.48	928.07	1,694.21	4,592.63	4,525.05	67.59	67.951		
15,500.00	9,060.00	9,023.23	9,020.97	136.89	33.03	-86.38	928.07	1,694.21	4,692.59	4,624.95	67.64	69.371		
15,600.00	9,060.00	9,022.99	9,020.73	138.88	33.02	-86.28	928.07	1,694.21	4,792.55	4,724.85	67.70	70.789		
15,700.00	9,060.00	9,022.76	9,020.50	140.86	33.02	-86.18	928.07	1,694.21	4,892.51	4,824.75	67.76	72.203		
15,800.00	9,060.00	9,022.52	9,020.26	142.85	33.02	-86.08	928.08	1,694.22	4,992.48	4,924.66	67.82	73.614		
15,900.00	9,060.00	9,022.28	9,020.02	144.84	33.02	-85.98	928.08	1,694.22	5,092.44	5,024.56	67.88	75.021		
16,000.00	9,060.00	9,022.04	9,019.79	146.83	33.02	-85.88	928.08	1,694.22	5,192.41	5,124.47	67.94	76.425		
16,100.00	9,060.00	9,021.81	9,019.55	148.83	33.02	-85.77	928.09	1,694.22	5,292.38	5,224.37	68.00	77.825		
16,200.00	9,060.00	9,021.57	9,019.31	150.82	33.02	-85.67	928.09	1,694.22	5,392.35	5,324.28	68.07	79.222		
16,300.00	9,060.00	9,021.33	9,019.07	152.82	33.02	-85.57	928.09	1,694.22	5,492.32	5,424.19	68.13	80.615		
16,400.00	9,060.00	9,021.09	9,018.83	154.81	33.02	-85.47	928.10	1,694.22	5,592.29	5,524.09	68.19	82.005		
16,500.00	9,060.00	9,020.85	9,018.59	156.81	33.02	-85.36	928.10	1,694.22	5,692.26	5,624.00	68.26	83.391		
16,600.00	9,060.00	9,020.60	9,018.35	158.81	33.02	-85.26	928.10	1,694.22	5,792.23	5,723.90	68.33	84.774		
16,700.00	9,060.00	9,020.36	9,018.10	160.81	33.02	-85.16	928.11	1,694.22	5,892.20	5,823.81	68.39	86.152		
16,800.00	9,060.00	9,020.12	9,017.86	162.81	33.02	-85.05	928.11	1,694.22	5,992.18	5,923.72	68.46	87.527		
16,900.00	9,060.00	9,019.87	9,017.61	164.82	33.01	-84.95	928.11	1,694.22	6,092.15	6,023.63	68.53	88.899		
17,000.00	9,060.00	9,019.63	9,017.37	166.82	33.01	-84.85	928.12	1,694.22	6,192.13	6,123.53	68.60	90.266		
17,100.00	9,060.00	9,019.38	9,017.12	168.82	33.01	-84.74	928.12	1,694.22	6,292.11	6,223.44	68.67	91.630		
17,200.00	9,060.00	9,019.14	9,016.88	170.83	33.01	-84.64	928.12	1,694.22	6,392.09	6,323.35	68.74	92.990		
17,300.00	9,060.00	9,018.89	9,016.63	172.84	33.01	-84.53	928.13	1,694.22	6,492.06	6,423.25	68.81	94.346		
17,400.00	9,060.00	9,018.64	9,016.38	174.84	33.01	-84.43	928.13	1,694.22	6,592.04	6,523.16	68.88	95.698		
17,500.00	9,060.00	9,018.39	9,016.13	176.85	33.01	-84.32	928.13	1,694.22	6,692.02	6,623.07	68.96	97.046		
17,600.00	9,060.00	9,018.14	9,015.88	178.86	33.01	-84.21	928.14	1,694.22	6,792.00	6,722.97	69.03	98.390		
17,700.00	9,060.00	9,017.89	9,015.63	180.87	33.01	-84.11	928.14	1,694.22	6,891.98	6,822.88	69.11	99.731		
17,800.00	9,060.00	9,017.64	9,015.38	182.88	33.01	-84.00	928.15	1,694.22	6,991.96	6,922.78	69.18	101.067		
17,900.00	9,060.00	9,017.39	9,015.13	184.89	33.01	-83.89	928.15	1,694.23	7,091.95	7,022.69	69.26	102.400		
18,000.00	9,060.00	9,017.13	9,014.88	186.90	33.01	-83.79	928.15	1,694.23	7,191.93	7,122.59	69.33	103.728		
18,100.00	9,060.00	9,016.88	9,014.62	188.92	33.00	-83.68	928.16	1,694.23	7,291.91	7,222.50	69.41	105.052		
18,200.00	9,060.00	9,016.63	9,014.37	190.93	33.00	-83.57	928.16	1,694.23	7,391.90	7,322.40	69.49	106.373		
18,300.00	9,060.00	9,016.37	9,014.11	192.94	33.00	-83.46	928.16	1,694.23	7,491.88	7,422.31	69.57	107.689		
18,400.00	9,060.00	9,016.11	9,013.86	194.96	33.00	-83.36	928.17	1,694.23	7,591.86	7,522.21	69.65	109.001		
18,500.00	9,060.00	9,015.86	9,013.60	196.97	33.00	-83.25	928.17	1,694.23	7,691.85	7,622.12	69.73	110.309		
18,600.00	9,060.00	9,015.60	9,013.34	198.99	33.00	-83.14	928.17	1,694.23	7,791.83	7,722.02	69.81	111.613		
18,700.00	9,060.00	9,015.34	9,013.08	201.00	33.00	-83.03	928.18	1,694.23	7,891.82	7,821.92	69.89	112.913		
18,800.00	9,060.00	9,015.08	9,012.82	203.02	33.00	-82.92	928.18	1,694.23	7,991.80	7,921.83	69.98	114.209		
18,900.00	9,060.00	9,014.82	9,012.56	205.04	33.00	-82.81	928.18	1,694.23	8,091.79	8,021.73	70.06	115.500		
19,000.00	9,060.00	9,014.56	9,012.30	207.06	33.00	-82.70	928.19	1,694.23	8,191.78	8,121.63	70.14	116.787		
19,100.00	9,060.00	9,014.30	9,012.04	209.07	33.00	-82.59	928.19	1,694.23	8,291.76	8,221.54	70.23	118.071		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Allied State Com 1 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 100-GYRO-NS-CT, 11735-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	9,014.03	9,011.78	211.09	32.99	-82.48	928.19	1,694.23	8,391.75	8,321.44	70.31	119.349	
19,300.00	9,060.00	9,013.77	9,011.51	213.11	32.99	-82.37	928.20	1,694.23	8,491.74	8,421.34	70.40	120.624	
19,400.00	9,060.00	9,013.51	9,011.25	215.13	32.99	-82.26	928.20	1,694.23	8,591.72	8,521.24	70.48	121.895	
19,500.32	9,060.00	9,013.24	9,010.98	217.16	32.99	-82.14	928.21	1,694.23	8,692.03	8,621.46	70.57	123.165	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	172.62	-2,937.12	380.22	2,961.70					
100.00	100.00	78.40	78.40	0.52	1.14	172.62	-2,937.12	380.22	2,961.62	2,959.97	1.66	1,786.635		
200.00	200.00	178.40	178.40	0.70	2.57	172.62	-2,937.12	380.22	2,961.62	2,958.35	3.27	904.804		
300.00	300.00	278.40	278.40	0.99	4.05	172.62	-2,937.12	380.22	2,961.62	2,956.59	5.04	587.858		
400.00	400.00	378.40	378.40	1.31	5.54	172.62	-2,937.12	380.22	2,961.62	2,954.78	6.85	432.416		
500.00	500.00	478.40	478.40	1.65	7.03	172.62	-2,937.12	380.22	2,961.62	2,952.95	8.68	341.246		
600.00	600.00	578.40	578.40	1.99	8.53	172.62	-2,937.12	380.22	2,961.62	2,951.11	10.52	281.580		
700.00	700.00	678.40	678.40	2.34	10.02	172.62	-2,937.12	380.22	2,961.62	2,949.26	12.36	239.574		
800.00	800.00	778.40	778.40	2.69	11.52	172.62	-2,937.12	380.22	2,961.62	2,947.42	14.21	208.428		
900.00	900.00	878.40	878.40	3.04	13.02	172.62	-2,937.12	380.22	2,961.62	2,945.57	16.06	184.425		
1,000.00	1,000.00	978.40	978.40	3.40	14.51	172.62	-2,937.12	380.22	2,961.62	2,943.72	17.91	165.366		
1,100.00	1,100.00	1,078.40	1,078.40	3.75	16.01	172.62	-2,937.12	380.22	2,961.62	2,941.86	19.76	149.870		
1,200.00	1,200.00	1,178.40	1,178.40	4.11	17.51	172.62	-2,937.12	380.22	2,961.62	2,940.01	21.61	137.025		
1,300.00	1,300.00	1,278.40	1,278.40	4.46	19.00	172.62	-2,937.12	380.22	2,961.62	2,938.16	23.47	126.205		
1,400.00	1,400.00	1,378.40	1,378.40	4.82	20.50	172.62	-2,937.12	380.22	2,961.62	2,936.30	25.32	116.966		
1,500.00	1,500.00	1,478.40	1,478.40	5.18	22.00	172.62	-2,937.12	380.22	2,961.62	2,934.45	27.17	108.986		
1,600.00	1,600.00	1,578.40	1,578.40	5.53	23.49	172.62	-2,937.12	380.22	2,961.62	2,932.60	29.03	102.025		
1,700.00	1,700.00	1,678.40	1,678.40	5.89	24.99	172.62	-2,937.12	380.22	2,961.62	2,930.74	30.88	95.898		
1,800.00	1,800.00	1,778.40	1,778.40	6.25	26.49	172.62	-2,937.12	380.22	2,961.62	2,928.89	32.74	90.466		
1,900.00	1,900.00	1,878.40	1,878.40	6.61	27.99	172.62	-2,937.12	380.22	2,961.62	2,927.03	34.59	85.615		
2,000.00	2,000.00	1,978.40	1,978.40	6.96	29.48	172.62	-2,937.12	380.22	2,961.62	2,925.18	36.45	81.258		
2,100.00	2,100.00	2,078.40	2,078.40	7.32	30.98	172.62	-2,937.12	380.22	2,961.62	2,923.32	38.30	77.322		
2,200.00	2,200.00	2,178.40	2,178.40	7.68	32.48	172.62	-2,937.12	380.22	2,961.62	2,921.47	40.16	73.750		
2,300.00	2,300.00	2,278.40	2,278.40	8.04	33.98	172.62	-2,937.12	380.22	2,961.62	2,919.61	42.01	70.494		
2,350.00	2,350.00	2,328.40	2,328.40	8.22	34.72	172.62	-2,937.12	380.22	2,961.62	2,918.68	42.94	68.971 CC		
2,400.00	2,400.00	2,378.40	2,378.40	8.39	35.47	-171.34	-2,937.12	380.22	2,961.84	2,917.97	43.87	67.518		
2,500.00	2,499.98	2,478.38	2,478.38	8.75	36.97	-171.34	-2,937.12	380.22	2,963.57	2,917.84	45.72	64.817 ES		
2,600.00	2,599.92	2,578.32	2,578.32	9.11	38.47	-171.34	-2,937.12	380.22	2,967.02	2,919.44	47.58	62.364		
2,700.00	2,699.78	2,678.18	2,678.18	9.47	39.96	-171.35	-2,937.12	380.22	2,972.19	2,922.76	49.43	60.131		
2,800.00	2,799.54	2,777.94	2,777.94	9.82	41.46	-171.36	-2,937.12	380.22	2,979.09	2,927.81	51.28	58.095		
2,900.00	2,899.16	2,877.56	2,877.56	10.18	42.95	-171.37	-2,937.12	380.22	2,987.70	2,934.58	53.13	56.235		
3,000.00	2,998.61	2,977.01	2,977.01	10.54	44.44	-171.39	-2,937.12	380.22	2,998.04	2,943.07	54.97	54.535		
3,100.00	3,097.86	3,076.26	3,076.26	10.89	45.92	-171.40	-2,937.12	380.22	3,010.09	2,953.27	56.82	52.978		
3,200.00	3,196.89	3,175.29	3,175.29	11.25	47.41	-171.42	-2,937.12	380.22	3,023.86	2,965.20	58.66	51.552		
3,295.74	3,291.45	3,269.85	3,269.85	11.59	48.82	-171.44	-2,937.12	380.22	3,038.63	2,978.22	60.41	50.297		
3,300.00	3,295.65	3,274.05	3,274.05	11.61	48.89	-171.44	-2,937.12	380.22	3,039.33	2,978.83	60.49	50.243		
3,400.00	3,394.29	3,372.69	3,372.69	11.97	50.36	-171.49	-2,937.12	380.22	3,055.58	2,993.26	62.33	49.026		
3,500.00	3,492.94	3,471.34	3,471.34	12.33	51.84	-171.54	-2,937.12	380.22	3,071.84	3,007.68	64.16	47.878		
3,600.00	3,591.58	3,569.98	3,569.98	12.69	53.32	-171.58	-2,937.12	380.22	3,088.10	3,022.10	65.99	46.794		
3,700.00	3,690.22	3,668.62	3,668.62	13.05	54.80	-171.63	-2,937.12	380.22	3,104.36	3,036.53	67.83	45.767		
3,800.00	3,788.86	3,767.26	3,767.26	13.41	56.27	-171.67	-2,937.12	380.22	3,120.62	3,050.95	69.67	44.794		
3,900.00	3,887.50	3,865.90	3,865.90	13.77	57.75	-171.71	-2,937.12	380.22	3,136.88	3,065.38	71.50	43.870		
4,000.00	3,986.14	3,964.54	3,964.54	14.14	59.23	-171.76	-2,937.12	380.22	3,153.15	3,079.81	73.34	42.993		
4,100.00	4,084.78	4,063.18	4,063.18	14.50	60.70	-171.80	-2,937.12	380.22	3,169.41	3,094.23	75.18	42.158		
4,200.00	4,183.42	4,161.82	4,161.82	14.87	62.18	-171.84	-2,937.12	380.22	3,185.68	3,108.66	77.02	41.362		
4,300.00	4,282.06	4,260.46	4,260.46	15.24	63.66	-171.88	-2,937.12	380.22	3,201.95	3,123.09	78.86	40.604		
4,400.00	4,380.70	4,359.10	4,359.10	15.60	65.14	-171.92	-2,937.12	380.22	3,218.22	3,137.53	80.70	39.879		
4,500.00	4,479.34	4,457.74	4,457.74	15.97	66.61	-171.96	-2,937.12	380.22	3,234.50	3,151.96	82.54	39.187		
4,600.00	4,577.98	4,556.38	4,556.38	16.34	68.09	-172.00	-2,937.12	380.22	3,250.77	3,166.39	84.38	38.525		
4,700.00	4,676.62	4,655.02	4,655.02	16.71	69.57	-172.04	-2,937.12	380.22	3,267.05	3,180.83	86.22	37.891		
4,800.00	4,775.27	4,753.67	4,753.67	17.08	71.05	-172.08	-2,937.12	380.22	3,283.33	3,195.26	88.06	37.283		
4,900.00	4,873.91	4,852.31	4,852.31	17.45	72.52	-172.12	-2,937.12	380.22	3,299.61	3,209.70	89.91	36.700		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,950.95	4,950.95	17.82	74.00	-172.16	-2,937.12	380.22	3,315.89	3,224.14	91.75	36.141		
5,100.00	5,071.19	5,049.59	5,049.59	18.19	75.48	-172.20	-2,937.12	380.22	3,332.17	3,238.58	93.59	35.603		
5,200.00	5,169.83	5,148.23	5,148.23	18.56	76.95	-172.24	-2,937.12	380.22	3,348.46	3,253.02	95.44	35.086		
5,300.00	5,268.47	5,246.87	5,246.87	18.93	78.43	-172.28	-2,937.12	380.22	3,364.74	3,267.46	97.28	34.588		
5,400.00	5,367.11	5,345.51	5,345.51	19.31	79.91	-172.31	-2,937.12	380.22	3,381.03	3,281.91	99.12	34.109		
5,500.00	5,465.75	5,444.15	5,444.15	19.68	81.39	-172.35	-2,937.12	380.22	3,397.32	3,296.35	100.97	33.648		
5,600.00	5,564.39	5,542.79	5,542.79	20.05	82.86	-172.39	-2,937.12	380.22	3,413.61	3,310.79	102.81	33.202		
5,700.00	5,663.03	5,641.43	5,641.43	20.42	84.34	-172.42	-2,937.12	380.22	3,429.90	3,325.24	104.66	32.773		
5,800.00	5,761.67	5,740.07	5,740.07	20.80	85.82	-172.46	-2,937.12	380.22	3,446.19	3,339.69	106.50	32.358		
5,900.00	5,860.31	5,838.71	5,838.71	21.17	87.29	-172.50	-2,937.12	380.22	3,462.48	3,354.14	108.35	31.957		
6,000.00	5,958.96	5,937.36	5,937.36	21.54	88.77	-172.53	-2,937.12	380.22	3,478.78	3,368.59	110.19	31.570		
6,100.00	6,057.60	6,036.00	6,036.00	21.92	90.25	-172.57	-2,937.12	380.22	3,495.08	3,383.04	112.04	31.196		
6,200.00	6,156.24	6,134.64	6,134.64	22.29	91.73	-172.60	-2,937.12	380.22	3,511.37	3,397.49	113.88	30.833		
6,300.00	6,254.88	6,233.28	6,233.28	22.67	93.20	-172.64	-2,937.12	380.22	3,527.67	3,411.94	115.73	30.482		
6,400.00	6,353.52	6,331.92	6,331.92	23.04	94.68	-172.67	-2,937.12	380.22	3,543.97	3,426.40	117.58	30.142		
6,500.00	6,452.16	6,430.56	6,430.56	23.42	96.16	-172.70	-2,937.12	380.22	3,560.27	3,440.85	119.42	29.813		
6,600.00	6,550.80	6,529.20	6,529.20	23.79	97.64	-172.74	-2,937.12	380.22	3,576.58	3,455.31	121.27	29.493		
6,700.00	6,649.44	6,627.84	6,627.84	24.17	99.11	-172.77	-2,937.12	380.22	3,592.88	3,469.76	123.12	29.183		
6,800.00	6,748.08	6,726.48	6,726.48	24.54	100.59	-172.80	-2,937.12	380.22	3,609.18	3,484.22	124.96	28.882		
6,900.00	6,846.72	6,825.12	6,825.12	24.92	102.07	-172.84	-2,937.12	380.22	3,625.49	3,498.68	126.81	28.590		
7,000.00	6,945.36	6,923.76	6,923.76	25.29	103.54	-172.87	-2,937.12	380.22	3,641.80	3,513.14	128.66	28.306		
7,100.00	7,044.00	7,022.40	7,022.40	25.67	105.02	-172.90	-2,937.12	380.22	3,658.11	3,527.60	130.50	28.031		
7,200.00	7,142.65	7,121.05	7,121.05	26.04	106.50	-172.93	-2,937.12	380.22	3,674.41	3,542.06	132.35	27.763		
7,300.00	7,241.29	7,219.69	7,219.69	26.42	107.98	-172.96	-2,937.12	380.22	3,690.73	3,556.53	134.20	27.502		
7,400.00	7,339.93	7,318.33	7,318.33	26.79	109.45	-172.99	-2,937.12	380.22	3,707.04	3,570.99	136.05	27.248		
7,500.00	7,438.57	7,416.97	7,416.97	27.17	110.93	-173.02	-2,937.12	380.22	3,723.35	3,585.46	137.89	27.002		
7,571.77	7,509.37	7,487.77	7,487.77	27.44	111.99	-173.05	-2,937.12	380.22	3,735.06	3,595.84	139.22	26.828		
7,600.00	7,537.23	7,515.63	7,515.63	27.55	112.41	-173.06	-2,937.12	380.22	3,739.56	3,599.82	139.74	26.760		
7,700.00	7,636.18	7,614.58	7,614.58	27.92	113.89	-173.12	-2,937.12	380.22	3,753.87	3,612.27	141.59	26.512		
7,800.00	7,735.48	7,713.88	7,713.88	28.29	115.38	-173.16	-2,937.12	380.22	3,765.59	3,622.15	143.45	26.251		
7,900.00	7,835.05	7,813.45	7,813.45	28.65	116.87	-173.19	-2,937.12	380.22	3,774.74	3,629.44	145.30	25.979		
8,000.00	7,934.83	7,913.23	7,913.23	29.01	118.36	-173.21	-2,937.12	380.22	3,781.29	3,634.14	147.15	25.696		
8,100.00	8,034.74	8,013.14	8,013.14	29.36	119.86	-173.23	-2,937.12	380.22	3,785.25	3,636.24	149.01	25.403		
8,202.27	8,137.00	8,115.40	8,115.40	29.72	121.39	170.73	-2,937.12	380.22	3,786.61	3,635.71	150.90	25.094		
8,300.00	8,234.73	8,213.13	8,213.13	30.06	122.85	170.73	-2,937.12	380.22	3,786.61	3,633.91	152.70	24.798		
8,400.00	8,334.73	8,313.13	8,313.13	30.41	124.35	170.73	-2,937.12	380.22	3,786.61	3,632.06	154.55	24.501		
8,500.00	8,434.73	8,413.13	8,413.13	30.75	125.85	170.73	-2,937.12	380.22	3,786.61	3,630.22	156.39	24.212		
8,552.31	8,487.04	8,465.44	8,465.44	30.94	126.63	170.73	-2,937.12	380.22	3,786.61	3,629.25	157.36	24.063		
8,600.00	8,534.68	8,513.08	8,513.08	31.10	127.35	81.13	-2,937.12	380.22	3,786.30	3,628.07	158.23	23.928		
8,650.00	8,584.26	8,562.66	8,562.66	31.26	128.09	81.32	-2,937.12	380.22	3,785.33	3,626.19	159.14	23.786		
8,700.00	8,633.10	8,611.50	8,611.50	31.43	128.82	81.63	-2,937.12	380.22	3,783.72	3,623.68	160.03	23.643		
8,750.00	8,680.83	8,659.23	8,659.23	31.58	129.54	82.06	-2,937.12	380.22	3,781.51	3,620.61	160.91	23.501		
8,800.00	8,727.09	8,705.49	8,705.49	31.74	130.23	82.60	-2,937.12	380.22	3,778.78	3,617.03	161.76	23.361		
8,850.00	8,771.52	8,749.92	8,749.92	31.89	130.89	83.22	-2,937.12	380.22	3,775.61	3,613.03	162.58	23.224		
8,900.00	8,813.78	8,792.18	8,792.18	32.04	131.53	83.91	-2,937.12	380.22	3,772.08	3,608.71	163.36	23.090		
8,950.00	8,853.56	8,831.96	8,831.96	32.18	132.12	84.65	-2,937.12	380.22	3,768.30	3,604.18	164.11	22.962		
9,000.00	8,890.55	8,868.95	8,868.95	32.32	132.68	85.42	-2,937.12	380.22	3,764.38	3,599.56	164.83	22.839		
9,050.00	8,924.46	8,902.86	8,902.86	32.47	133.18	86.20	-2,937.12	380.22	3,760.45	3,594.95	165.50	22.722		
9,100.00	8,955.05	8,933.45	8,933.45	32.63	133.64	86.95	-2,937.12	380.22	3,756.60	3,590.48	166.13	22.613		
9,150.00	8,982.08	8,960.48	8,960.48	32.79	134.05	87.66	-2,937.12	380.22	3,752.97	3,586.25	166.72	22.511		
9,200.00	9,005.34	8,983.74	8,983.74	32.97	134.40	88.31	-2,937.12	380.22	3,749.65	3,582.38	167.26	22.418		
9,250.00	9,024.65	9,003.05	9,003.05	33.17	134.68	88.87	-2,937.12	380.22	3,746.74	3,578.97	167.77	22.333		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,018.27	9,018.27	33.38	134.91	89.33	-2,937.12	380.22	3,744.34	3,576.11	168.23	22.257		
9,350.00	9,050.89	9,029.29	9,029.29	33.62	135.08	89.68	-2,937.12	380.22	3,742.50	3,573.85	168.65	22.192		
9,400.00	9,057.61	9,036.01	9,036.01	33.87	135.18	89.91	-2,937.12	380.22	3,741.28	3,572.26	169.01	22.136		
9,452.31	9,060.00	9,038.40	9,038.40	34.15	135.21	90.00	-2,937.12	380.22	3,740.70	3,571.36	169.34	22.090		
9,467.38	9,060.00	9,038.40	9,038.40	34.24	135.21	90.00	-2,937.12	380.22	3,740.67	3,571.24	169.43	22.078		
9,500.00	9,060.00	9,038.40	9,038.40	34.42	135.21	90.00	-2,937.12	380.22	3,740.81	3,571.19	169.62	22.054		
9,600.00	9,060.00	9,038.40	9,038.40	35.09	135.21	90.00	-2,937.12	380.22	3,743.02	3,572.72	170.30	21.979		
9,700.00	9,060.00	9,038.40	9,038.40	35.86	135.21	90.00	-2,937.12	380.22	3,747.90	3,576.83	171.07	21.909		
9,800.00	9,060.00	9,038.40	9,038.40	36.72	135.21	90.00	-2,937.12	380.22	3,755.43	3,583.51	171.92	21.844		
9,900.00	9,060.00	9,038.40	9,038.40	37.69	135.21	90.00	-2,937.12	380.22	3,765.61	3,592.75	172.85	21.785		
10,000.00	9,060.00	9,038.40	9,038.40	38.73	135.21	90.00	-2,937.12	380.22	3,778.40	3,604.55	173.85	21.734		
10,100.00	9,060.00	9,038.40	9,038.40	39.86	135.21	90.00	-2,937.12	380.22	3,793.79	3,618.89	174.89	21.692		
10,140.22	9,060.00	9,038.40	9,038.40	40.33	135.21	90.00	-2,937.12	380.22	3,800.70	3,625.38	175.33	21.678		
10,200.00	9,060.00	9,038.40	9,038.40	41.05	135.21	90.00	-2,937.12	380.22	3,811.13	3,635.14	175.99	21.656		
10,300.00	9,060.00	9,038.40	9,038.40	42.31	135.21	90.00	-2,937.12	380.22	3,827.85	3,650.73	177.12	21.611		
10,400.00	9,060.00	9,038.40	9,038.40	43.64	135.21	90.00	-2,937.12	380.22	3,843.67	3,665.37	178.30	21.557		
10,507.23	9,060.00	9,038.40	9,038.40	45.11	135.21	90.00	-2,937.12	380.22	3,859.63	3,680.03	179.60	21.491		
10,600.00	9,060.00	9,038.40	9,038.40	46.43	135.21	90.00	-2,937.12	380.22	3,875.55	3,694.81	180.73	21.443		
10,700.00	9,060.00	9,038.40	9,038.40	47.91	135.21	90.00	-2,937.12	380.22	3,898.38	3,716.42	181.96	21.424 SF		
10,800.00	9,060.00	9,038.40	9,038.40	49.42	135.21	90.00	-2,937.12	380.22	3,926.99	3,743.81	183.18	21.438		
10,900.00	9,060.00	9,038.40	9,038.40	50.97	135.21	90.00	-2,937.12	380.22	3,961.20	3,776.83	184.37	21.486		
11,000.00	9,060.00	9,038.40	9,038.40	52.55	135.21	90.00	-2,937.12	380.22	4,000.83	3,815.31	185.52	21.566		
11,100.00	9,060.00	9,038.40	9,038.40	54.14	135.21	90.00	-2,937.12	380.22	4,045.67	3,859.05	186.63	21.678		
11,207.23	9,060.00	9,038.40	9,038.40	55.87	135.21	90.00	-2,937.12	380.22	4,099.30	3,911.54	187.76	21.833		
11,300.00	9,060.00	9,038.40	9,038.40	57.39	135.21	90.00	-2,937.12	380.22	4,147.57	3,958.86	188.71	21.978		
11,400.00	9,060.00	9,038.40	9,038.40	59.06	135.21	90.00	-2,937.12	380.22	4,198.43	4,008.69	189.74	22.128		
11,506.63	9,060.00	9,038.40	9,038.40	60.88	135.21	90.00	-2,937.12	380.22	4,251.29	4,060.46	190.83	22.278		
11,600.00	9,060.00	9,038.40	9,038.40	62.49	135.21	90.00	-2,937.12	380.22	4,297.73	4,105.96	191.77	22.410		
11,700.00	9,060.00	9,038.40	9,038.40	64.24	135.21	90.00	-2,937.12	380.22	4,349.14	4,156.38	192.76	22.563		
11,800.00	9,060.00	9,038.40	9,038.40	66.01	135.21	90.00	-2,937.12	380.22	4,402.23	4,208.51	193.71	22.725		
11,900.00	9,060.00	9,038.40	9,038.40	67.79	135.21	90.00	-2,937.12	380.22	4,456.92	4,262.28	194.64	22.898		
12,000.00	9,060.00	9,038.40	9,038.40	69.58	135.21	90.00	-2,937.12	380.22	4,513.17	4,317.64	195.53	23.081		
12,100.00	9,060.00	9,038.40	9,038.40	71.39	135.21	90.00	-2,937.12	380.22	4,570.91	4,374.52	196.40	23.274		
12,200.00	9,060.00	9,038.40	9,038.40	73.21	135.21	90.00	-2,937.12	380.22	4,630.10	4,432.87	197.23	23.476		
12,300.00	9,060.00	9,038.40	9,038.40	75.05	135.21	90.00	-2,937.12	380.22	4,690.67	4,492.63	198.03	23.686		
12,400.00	9,060.00	9,038.40	9,038.40	76.89	135.21	90.00	-2,937.12	380.22	4,752.57	4,553.76	198.81	23.905		
12,500.00	9,060.00	9,038.40	9,038.40	78.74	135.21	90.00	-2,937.12	380.22	4,815.75	4,616.19	199.55	24.132		
12,600.00	9,060.00	9,038.40	9,038.40	80.61	135.21	90.00	-2,937.12	380.22	4,880.16	4,679.89	200.27	24.368		
12,700.00	9,060.00	9,038.40	9,038.40	82.48	135.21	90.00	-2,937.12	380.22	4,945.76	4,744.80	200.96	24.610		
12,800.00	9,060.00	9,038.40	9,038.40	84.36	135.21	90.00	-2,937.12	380.22	5,012.49	4,810.86	201.63	24.860		
12,900.00	9,060.00	9,038.40	9,038.40	86.24	135.21	90.00	-2,937.12	380.22	5,080.32	4,878.05	202.27	25.117		
13,000.00	9,060.00	9,038.40	9,038.40	88.14	135.21	90.00	-2,937.12	380.22	5,149.19	4,946.31	202.88	25.380		
13,100.00	9,060.00	9,038.40	9,038.40	90.04	135.21	90.00	-2,937.12	380.22	5,219.07	5,015.60	203.47	25.650		
13,200.00	9,060.00	9,038.40	9,038.40	91.94	135.21	90.00	-2,937.12	380.22	5,289.92	5,085.88	204.04	25.926		
13,300.00	9,060.00	9,038.40	9,038.40	93.86	135.21	90.00	-2,937.12	380.22	5,361.70	5,157.12	204.58	26.208		
13,400.00	9,060.00	9,038.40	9,038.40	95.77	135.21	90.00	-2,937.12	380.22	5,434.37	5,229.26	205.11	26.495		
13,500.00	9,060.00	9,038.40	9,038.40	97.70	135.21	90.00	-2,937.12	380.22	5,507.90	5,302.29	205.61	26.788		
13,600.00	9,060.00	9,038.40	9,038.40	99.62	135.21	90.00	-2,937.12	380.22	5,582.25	5,376.15	206.09	27.086		
13,700.00	9,060.00	9,038.40	9,038.40	101.56	135.21	90.00	-2,937.12	380.22	5,657.39	5,450.83	206.56	27.389		
13,800.00	9,060.00	9,038.40	9,038.40	103.49	135.21	90.00	-2,937.12	380.22	5,733.29	5,526.28	207.00	27.697		
13,900.00	9,060.00	9,038.40	9,038.40	105.43	135.21	90.00	-2,937.12	380.22	5,809.92	5,602.48	207.43	28.009		
14,000.00	9,060.00	9,038.40	9,038.40	107.38	135.21	90.00	-2,937.12	380.22	5,887.25	5,679.40	207.85	28.325		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #001 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	9,038.40	9,038.40	109.33	135.21	90.00	-2,937.12	380.22	5,965.25	5,757.01	208.24	28.646	
14,200.00	9,060.00	9,038.40	9,038.40	111.28	135.21	90.00	-2,937.12	380.22	6,043.90	5,835.28	208.62	28.970	
14,300.00	9,060.00	9,038.40	9,038.40	113.23	135.21	90.00	-2,937.12	380.22	6,123.18	5,914.19	208.99	29.299	
14,400.00	9,060.00	9,038.40	9,038.40	115.19	135.21	90.00	-2,937.12	380.22	6,203.05	5,993.71	209.34	29.631	
14,500.00	9,060.00	9,038.40	9,038.40	117.15	135.21	90.00	-2,937.12	380.22	6,283.50	6,073.82	209.68	29.967	
14,600.00	9,060.00	9,038.40	9,038.40	119.11	135.21	90.00	-2,937.12	380.22	6,364.51	6,154.50	210.01	30.306	
14,700.00	9,060.00	9,038.40	9,038.40	121.08	135.21	90.00	-2,937.12	380.22	6,446.05	6,235.72	210.33	30.648	
14,800.00	9,060.00	9,038.40	9,038.40	123.05	135.21	90.00	-2,937.12	380.22	6,528.10	6,317.47	210.63	30.993	
14,900.00	9,060.00	9,038.40	9,038.40	125.02	135.21	90.00	-2,937.12	380.22	6,610.64	6,399.72	210.92	31.341	
15,000.00	9,060.00	9,038.40	9,038.40	126.99	135.21	90.00	-2,937.12	380.22	6,693.67	6,482.46	211.21	31.693	
15,100.00	9,060.00	9,038.40	9,038.40	128.97	135.21	90.00	-2,937.12	380.22	6,777.15	6,565.67	211.48	32.046	
15,200.00	9,060.00	9,038.40	9,038.40	130.95	135.21	90.00	-2,937.12	380.22	6,861.07	6,649.33	211.74	32.403	
15,300.00	9,060.00	9,038.40	9,038.40	132.93	135.21	90.00	-2,937.12	380.22	6,945.42	6,733.42	212.00	32.762	
15,400.00	9,060.00	9,038.40	9,038.40	134.91	135.21	90.00	-2,937.12	380.22	7,030.17	6,817.93	212.24	33.124	
15,500.00	9,060.00	9,038.40	9,038.40	136.89	135.21	90.00	-2,937.12	380.22	7,115.33	6,902.85	212.48	33.487	
15,600.00	9,060.00	9,038.40	9,038.40	138.88	135.21	90.00	-2,937.12	380.22	7,200.86	6,988.16	212.71	33.853	
15,700.00	9,060.00	9,038.40	9,038.40	140.86	135.21	90.00	-2,937.12	380.22	7,286.77	7,073.84	212.93	34.221	
15,800.00	9,060.00	9,038.40	9,038.40	142.85	135.21	90.00	-2,937.12	380.22	7,373.03	7,159.88	213.14	34.592	
15,900.00	9,060.00	9,038.40	9,038.40	144.84	135.21	90.00	-2,937.12	380.22	7,459.63	7,246.28	213.35	34.964	
16,000.00	9,060.00	9,038.40	9,038.40	146.83	135.21	90.00	-2,937.12	380.22	7,546.57	7,333.01	213.55	35.338	
16,100.00	9,060.00	9,038.40	9,038.40	148.83	135.21	90.00	-2,937.12	380.22	7,633.82	7,420.07	213.75	35.714	
16,200.00	9,060.00	9,038.40	9,038.40	150.82	135.21	90.00	-2,937.12	380.22	7,721.38	7,507.44	213.94	36.092	
16,300.00	9,060.00	9,038.40	9,038.40	152.82	135.21	90.00	-2,937.12	380.22	7,809.24	7,595.12	214.12	36.471	
16,400.00	9,060.00	9,038.40	9,038.40	154.81	135.21	90.00	-2,937.12	380.22	7,897.39	7,683.10	214.30	36.852	
16,500.00	9,060.00	9,038.40	9,038.40	156.81	135.21	90.00	-2,937.12	380.22	7,985.82	7,771.35	214.47	37.235	
16,600.00	9,060.00	9,038.40	9,038.40	158.81	135.21	90.00	-2,937.12	380.22	8,074.52	7,859.88	214.64	37.619	
16,700.00	9,060.00	9,038.40	9,038.40	160.81	135.21	90.00	-2,937.12	380.22	8,163.48	7,948.68	214.80	38.004	
16,800.00	9,060.00	9,038.40	9,038.40	162.81	135.21	90.00	-2,937.12	380.22	8,252.70	8,037.74	214.96	38.391	
16,900.00	9,060.00	9,038.40	9,038.40	164.82	135.21	90.00	-2,937.12	380.22	8,342.16	8,127.04	215.12	38.780	
17,000.00	9,060.00	9,038.40	9,038.40	166.82	135.21	90.00	-2,937.12	380.22	8,431.85	8,216.58	215.27	39.169	
17,100.00	9,060.00	9,038.40	9,038.40	168.82	135.21	90.00	-2,937.12	380.22	8,521.78	8,306.36	215.41	39.560	
17,200.00	9,060.00	9,038.40	9,038.40	170.83	135.21	90.00	-2,937.12	380.22	8,611.92	8,396.37	215.56	39.952	
17,300.00	9,060.00	9,038.40	9,038.40	172.84	135.21	90.00	-2,937.12	380.22	8,702.29	8,486.59	215.70	40.345	
17,400.00	9,060.00	9,038.40	9,038.40	174.84	135.21	90.00	-2,937.12	380.22	8,792.86	8,577.02	215.83	40.739	
17,500.00	9,060.00	9,038.40	9,038.40	176.85	135.21	90.00	-2,937.12	380.22	8,883.63	8,667.66	215.97	41.135	
17,600.00	9,060.00	9,038.40	9,038.40	178.86	135.21	90.00	-2,937.12	380.22	8,974.60	8,758.50	216.09	41.531	
17,700.00	9,060.00	9,038.40	9,038.40	180.87	135.21	90.00	-2,937.12	380.22	9,065.76	8,849.54	216.22	41.928	
17,800.00	9,060.00	9,038.40	9,038.40	182.88	135.21	90.00	-2,937.12	380.22	9,157.10	8,940.76	216.35	42.326	
17,900.00	9,060.00	9,038.40	9,038.40	184.89	135.21	90.00	-2,937.12	380.22	9,248.63	9,032.16	216.47	42.725	
18,000.00	9,060.00	9,038.40	9,038.40	186.90	135.21	90.00	-2,937.12	380.22	9,340.32	9,123.74	216.58	43.125	
18,100.00	9,060.00	9,038.40	9,038.40	188.92	135.21	90.00	-2,937.12	380.22	9,432.19	9,215.49	216.70	43.526	
18,200.00	9,060.00	9,038.40	9,038.40	190.93	135.21	90.00	-2,937.12	380.22	9,524.22	9,307.40	216.81	43.928	
18,300.00	9,060.00	9,038.40	9,038.40	192.94	135.21	90.00	-2,937.12	380.22	9,616.41	9,399.48	216.93	44.330	
18,400.00	9,060.00	9,038.40	9,038.40	194.96	135.21	90.00	-2,937.12	380.22	9,708.75	9,491.71	217.04	44.734	
18,500.00	9,060.00	9,038.40	9,038.40	196.97	135.21	90.00	-2,937.12	380.22	9,801.24	9,584.10	217.14	45.137	
18,600.00	9,060.00	9,038.40	9,038.40	198.99	135.21	90.00	-2,937.12	380.22	9,893.88	9,676.63	217.25	45.542	
18,700.00	9,060.00	9,038.40	9,038.40	201.00	135.21	90.00	-2,937.12	380.22	9,986.66	9,769.31	217.35	45.947	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	10.00	110.53	-140.75	375.86	402.10					
100.00	100.00	75.40	75.40	0.52	10.09	110.53	-140.75	375.86	401.35	390.74	10.60	37.846		
200.00	200.00	175.40	175.40	0.70	10.55	110.53	-140.75	375.86	401.35	390.10	11.25	35.684		
300.00	300.00	275.40	275.40	0.99	11.35	110.53	-140.75	375.86	401.35	389.01	12.34	32.530		
400.00	400.00	375.40	375.40	1.31	12.44	110.53	-140.75	375.86	401.35	387.60	13.75	29.199		
500.00	500.00	475.40	475.40	1.65	13.74	110.53	-140.75	375.86	401.35	385.97	15.38	26.093		
600.00	600.00	575.40	575.40	1.99	15.19	110.53	-140.75	375.86	401.35	384.16	17.18	23.355		
700.00	700.00	675.40	675.40	2.34	16.77	110.53	-140.75	375.86	401.35	382.24	19.11	21.003		
800.00	800.00	775.40	775.40	2.69	18.43	110.53	-140.75	375.86	401.35	380.22	21.12	18.999		
900.00	900.00	875.40	875.40	3.04	20.16	110.53	-140.75	375.86	401.35	378.14	23.21	17.294		
1,000.00	1,000.00	975.40	975.40	3.40	21.94	110.53	-140.75	375.86	401.35	376.01	25.34	15.838		
1,100.00	1,100.00	1,075.40	1,075.40	3.75	23.76	110.53	-140.75	375.86	401.35	373.83	27.51	14.587		
1,200.00	1,200.00	1,175.40	1,175.40	4.11	25.61	110.53	-140.75	375.86	401.35	371.63	29.72	13.504		
1,300.00	1,300.00	1,275.40	1,275.40	4.46	27.49	110.53	-140.75	375.86	401.35	369.40	31.95	12.562		
1,400.00	1,400.00	1,375.40	1,375.40	4.82	29.38	110.53	-140.75	375.86	401.35	367.15	34.20	11.735		
1,500.00	1,500.00	1,475.40	1,475.40	5.18	31.29	110.53	-140.75	375.86	401.35	364.88	36.47	11.006		
1,600.00	1,600.00	1,575.40	1,575.40	5.53	33.21	110.53	-140.75	375.86	401.35	362.60	38.75	10.358		
1,700.00	1,700.00	1,675.40	1,675.40	5.89	35.15	110.53	-140.75	375.86	401.35	360.31	41.04	9.780		
1,800.00	1,800.00	1,775.40	1,775.40	6.25	37.09	110.53	-140.75	375.86	401.35	358.01	43.34	9.260		
1,900.00	1,900.00	1,875.40	1,875.40	6.61	39.05	110.53	-140.75	375.86	401.35	355.70	45.65	8.792		
2,000.00	2,000.00	1,975.40	1,975.40	6.96	41.00	110.53	-140.75	375.86	401.35	353.38	47.97	8.367		
2,100.00	2,100.00	2,075.40	2,075.40	7.32	42.97	110.53	-140.75	375.86	401.35	351.06	50.29	7.981		
2,200.00	2,200.00	2,175.40	2,175.40	7.68	44.94	110.53	-140.75	375.86	401.35	348.73	52.62	7.628		
2,300.00	2,300.00	2,275.40	2,275.40	8.04	46.91	110.53	-140.75	375.86	401.35	346.40	54.95	7.304		
2,350.00	2,350.00	2,325.40	2,325.40	8.22	47.90	110.53	-140.75	375.86	401.35	345.23	56.12	7.152 CC		
2,400.00	2,400.00	2,375.40	2,375.40	8.39	48.89	126.59	-140.75	375.86	401.48	344.19	57.29	7.008		
2,500.00	2,499.98	2,475.38	2,475.38	8.75	50.87	126.79	-140.75	375.86	402.52	342.90	59.62	6.751		
2,600.00	2,599.92	2,575.32	2,575.32	9.11	52.86	127.16	-140.75	375.86	404.62	342.66	61.96	6.530 ES		
2,700.00	2,699.78	2,675.18	2,675.18	9.47	54.84	127.72	-140.75	375.86	407.81	343.50	64.31	6.342		
2,800.00	2,799.54	2,774.94	2,774.94	9.82	56.83	128.46	-140.75	375.86	412.12	345.47	66.65	6.184		
2,900.00	2,899.16	2,874.56	2,874.56	10.18	58.82	129.35	-140.75	375.86	417.60	348.62	68.99	6.053		
3,000.00	2,998.61	2,974.01	2,974.01	10.54	60.80	130.39	-140.75	375.86	424.33	353.00	71.33	5.949		
3,100.00	3,097.86	3,073.26	3,073.26	10.89	62.78	131.55	-140.75	375.86	432.35	358.69	73.66	5.869		
3,200.00	3,196.89	3,172.29	3,172.29	11.25	64.76	132.82	-140.75	375.86	441.75	365.75	76.00	5.813		
3,295.74	3,291.45	3,266.85	3,266.85	11.59	66.65	134.13	-140.75	375.86	452.10	373.87	78.23	5.779		
3,300.00	3,295.65	3,271.05	3,271.05	11.61	66.73	134.19	-140.75	375.86	452.59	374.26	78.33	5.778		
3,400.00	3,394.29	3,369.69	3,369.69	11.97	68.71	135.64	-140.75	375.86	464.27	383.61	80.66	5.756		
3,500.00	3,492.94	3,468.34	3,468.34	12.33	70.68	137.01	-140.75	375.86	476.23	393.24	82.99	5.739		
3,600.00	3,591.58	3,566.98	3,566.98	12.69	72.66	138.32	-140.75	375.86	488.45	403.13	85.32	5.725		
3,700.00	3,690.22	3,665.62	3,665.62	13.05	74.64	139.56	-140.75	375.86	500.92	413.26	87.66	5.715		
3,800.00	3,788.86	3,764.26	3,764.26	13.41	76.62	140.74	-140.75	375.86	513.60	423.61	89.99	5.707		
3,900.00	3,887.50	3,862.90	3,862.90	13.77	78.59	141.87	-140.75	375.86	526.50	434.16	92.33	5.702		
4,000.00	3,986.14	3,961.54	3,961.54	14.14	80.57	142.94	-140.75	375.86	539.58	444.91	94.67	5.699		
4,100.00	4,084.78	4,060.18	4,060.18	14.50	82.56	143.96	-140.75	375.86	552.85	455.83	97.02	5.699		
4,200.00	4,183.42	4,158.82	4,158.82	14.87	84.54	144.94	-140.75	375.86	566.28	466.92	99.36	5.699		
4,300.00	4,282.06	4,257.46	4,257.46	15.24	86.52	145.87	-140.75	375.86	579.86	478.16	101.70	5.702		
4,400.00	4,380.70	4,356.10	4,356.10	15.60	88.50	146.75	-140.75	375.86	593.59	489.54	104.05	5.705		
4,500.00	4,479.34	4,454.74	4,454.74	15.97	90.49	147.60	-140.75	375.86	607.45	501.06	106.39	5.709		
4,600.00	4,577.98	4,553.38	4,553.38	16.34	92.47	148.41	-140.75	375.86	621.44	512.70	108.74	5.715		
4,700.00	4,676.62	4,652.02	4,652.02	16.71	94.45	149.18	-140.75	375.86	635.55	524.46	111.09	5.721		
4,800.00	4,775.27	4,750.67	4,750.67	17.08	96.44	149.92	-140.75	375.86	649.76	536.32	113.44	5.728		
4,900.00	4,873.91	4,849.31	4,849.31	17.45	98.42	150.63	-140.75	375.86	664.08	548.29	115.79	5.735		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,947.95	4,947.95	17.82	100.41	151.31	-140.75	375.86	678.49	560.35	118.14	5.743		
5,100.00	5,071.19	5,046.59	5,046.59	18.19	102.40	151.96	-140.75	375.86	693.00	572.50	120.49	5.751		
5,200.00	5,169.83	5,145.23	5,145.23	18.56	104.38	152.58	-140.75	375.86	707.58	584.74	122.84	5.760		
5,300.00	5,268.47	5,243.87	5,243.87	18.93	106.37	153.18	-140.75	375.86	722.25	597.05	125.20	5.769		
5,400.00	5,367.11	5,342.51	5,342.51	19.31	108.36	153.75	-140.75	375.86	736.99	609.44	127.55	5.778		
5,500.00	5,465.75	5,441.15	5,441.15	19.68	110.34	154.31	-140.75	375.86	751.80	621.90	129.90	5.787		
5,600.00	5,564.39	5,539.79	5,539.79	20.05	112.33	154.84	-140.75	375.86	766.68	634.42	132.26	5.797		
5,700.00	5,663.03	5,638.43	5,638.43	20.42	114.32	155.35	-140.75	375.86	781.62	647.00	134.61	5.806		
5,800.00	5,761.67	5,737.07	5,737.07	20.80	116.31	155.84	-140.75	375.86	796.61	659.65	136.97	5.816		
5,900.00	5,860.31	5,835.71	5,835.71	21.17	118.30	156.31	-140.75	375.86	811.67	672.34	139.32	5.826		
6,000.00	5,958.96	5,934.36	5,934.36	21.54	120.28	156.77	-140.75	375.86	826.77	685.09	141.68	5.836		
6,100.00	6,057.60	6,033.00	6,033.00	21.92	122.27	157.21	-140.75	375.86	841.93	697.89	144.04	5.845		
6,200.00	6,156.24	6,131.64	6,131.64	22.29	124.26	157.64	-140.75	375.86	857.13	710.74	146.39	5.855		
6,300.00	6,254.88	6,230.28	6,230.28	22.67	126.25	158.05	-140.75	375.86	872.38	723.63	148.75	5.865		
6,400.00	6,353.52	6,328.92	6,328.92	23.04	128.24	158.44	-140.75	375.86	887.67	736.56	151.11	5.874		
6,500.00	6,452.16	6,427.56	6,427.56	23.42	130.23	158.82	-140.75	375.86	903.00	749.53	153.47	5.884		
6,600.00	6,550.80	6,526.20	6,526.20	23.79	132.22	159.19	-140.75	375.86	918.37	762.54	155.83	5.894		
6,700.00	6,649.44	6,624.84	6,624.84	24.17	134.21	159.55	-140.75	375.86	933.77	775.58	158.19	5.903		
6,800.00	6,748.08	6,723.48	6,723.48	24.54	136.20	159.90	-140.75	375.86	949.21	788.66	160.54	5.912		
6,900.00	6,846.72	6,822.12	6,822.12	24.92	138.19	160.23	-140.75	375.86	964.68	801.77	162.90	5.922		
7,000.00	6,945.36	6,920.76	6,920.76	25.29	140.18	160.56	-140.75	375.86	980.18	814.92	165.26	5.931		
7,100.00	7,044.00	7,019.40	7,019.40	25.67	142.17	160.87	-140.75	375.86	995.71	828.09	167.62	5.940		
7,200.00	7,142.65	7,118.05	7,118.05	26.04	144.17	161.18	-140.75	375.86	1,011.27	841.29	169.99	5.949		
7,300.00	7,241.29	7,216.69	7,216.69	26.42	146.16	161.47	-140.75	375.86	1,026.86	854.52	172.35	5.958		
7,400.00	7,339.93	7,315.33	7,315.33	26.79	148.15	161.76	-140.75	375.86	1,042.48	867.77	174.71	5.967		
7,500.00	7,438.57	7,413.97	7,413.97	27.17	150.14	162.04	-140.75	375.86	1,058.11	881.05	177.07	5.976		
7,571.77	7,509.37	7,484.77	7,484.77	27.44	151.57	162.23	-140.75	375.86	1,069.35	890.59	178.76	5.982		
7,600.00	7,537.23	7,512.63	7,512.63	27.55	152.13	162.32	-140.75	375.86	1,073.68	894.25	179.43	5.984		
7,700.00	7,636.18	7,611.58	7,611.58	27.92	154.13	162.62	-140.75	375.86	1,087.43	905.63	181.80	5.982		
7,800.00	7,735.48	7,710.88	7,710.88	28.29	156.13	162.85	-140.75	375.86	1,098.72	914.55	184.17	5.966		
7,900.00	7,835.05	7,810.45	7,810.45	28.65	158.14	163.03	-140.75	375.86	1,107.52	920.98	186.54	5.937		
8,000.00	7,934.83	7,910.23	7,910.23	29.01	160.16	163.16	-140.75	375.86	1,113.84	924.93	188.91	5.896		
8,100.00	8,034.74	8,010.14	8,010.14	29.36	162.18	163.23	-140.75	375.86	1,117.65	926.37	191.29	5.843		
8,202.27	8,137.00	8,112.40	8,112.40	29.72	164.24	147.22	-140.75	375.86	1,118.97	925.25	193.71	5.776		
8,300.00	8,234.73	8,210.13	8,210.13	30.06	166.22	147.22	-140.75	375.86	1,118.97	922.94	196.02	5.708		
8,400.00	8,334.73	8,310.13	8,310.13	30.41	168.23	147.22	-140.75	375.86	1,118.97	920.57	198.39	5.640		
8,500.00	8,434.73	8,410.13	8,410.13	30.75	170.25	147.22	-140.75	375.86	1,118.97	918.20	200.76	5.574		
8,552.31	8,487.04	8,462.44	8,462.44	30.94	171.31	147.22	-140.75	375.86	1,118.97	916.96	202.00	5.539		
8,600.00	8,534.68	8,510.08	8,510.08	31.10	172.27	57.73	-140.75	375.86	1,117.90	914.78	203.12	5.504		
8,650.00	8,584.26	8,559.66	8,559.66	31.26	173.28	58.29	-140.75	375.86	1,114.53	910.25	204.28	5.456		
8,700.00	8,633.10	8,608.50	8,608.50	31.43	174.26	59.24	-140.75	375.86	1,108.93	903.50	205.43	5.398		
8,750.00	8,680.83	8,656.23	8,656.23	31.58	175.23	60.55	-140.75	375.86	1,101.22	894.68	206.54	5.332		
8,800.00	8,727.09	8,702.49	8,702.49	31.74	176.16	62.23	-140.75	375.86	1,091.60	883.97	207.62	5.258		
8,850.00	8,771.52	8,746.92	8,746.92	31.89	177.06	64.25	-140.75	375.86	1,080.29	871.63	208.66	5.177		
8,900.00	8,813.78	8,789.18	8,789.18	32.04	177.91	66.58	-140.75	375.86	1,067.58	857.92	209.66	5.092		
8,950.00	8,853.56	8,828.96	8,828.96	32.18	178.71	69.16	-140.75	375.86	1,053.81	843.20	210.60	5.004		
9,000.00	8,890.55	8,865.95	8,865.95	32.32	179.46	71.93	-140.75	375.86	1,039.32	827.82	211.50	4.914 Alert		
9,050.00	8,924.46	8,899.86	8,899.86	32.47	180.15	74.80	-140.75	375.86	1,024.53	812.19	212.34	4.825 Alert		
9,100.00	8,955.05	8,930.45	8,930.45	32.63	180.77	77.67	-140.75	375.86	1,009.85	796.74	213.12	4.738 Alert		
9,150.00	8,982.08	8,957.48	8,957.48	32.79	181.31	80.44	-140.75	375.86	995.73	781.88	213.85	4.656 Alert		
9,200.00	9,005.34	8,980.74	8,980.74	32.97	181.78	83.01	-140.75	375.86	982.60	768.07	214.52	4.580 Alert		
9,250.00	9,024.65	9,000.05	9,000.05	33.17	182.17	85.28	-140.75	375.86	970.87	755.72	215.14	4.513 Alert		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,015.27	9,015.27	33.38	182.48	87.17	-140.75	375.86	960.93	745.22	215.71	4.455	Alert	
9,350.00	9,050.89	9,026.29	9,026.29	33.62	182.70	88.61	-140.75	375.86	953.11	736.91	216.21	4.408	Alert	
9,400.00	9,057.61	9,033.01	9,033.01	33.87	182.84	89.56	-140.75	375.86	947.68	731.04	216.64	4.375	Alert	
9,452.31	9,060.00	9,035.40	9,035.40	34.15	182.89	90.00	-140.75	375.86	944.73	727.73	217.00	4.354	Alert	
9,479.62	9,060.00	9,035.40	9,035.40	34.31	182.89	90.00	-140.75	375.86	944.33	727.16	217.17	4.348	Alert	
9,500.00	9,060.00	9,035.40	9,035.40	34.42	182.89	90.00	-140.75	375.86	944.55	727.25	217.30	4.347	Alert, SF	
9,600.00	9,060.00	9,035.40	9,035.40	35.09	182.89	90.00	-140.75	375.86	951.98	734.02	217.96	4.368	Alert	
9,700.00	9,060.00	9,035.40	9,035.40	35.86	182.89	90.00	-140.75	375.86	969.71	751.09	218.62	4.436	Alert	
9,800.00	9,060.00	9,035.40	9,035.40	36.72	182.89	90.00	-140.75	375.86	997.20	777.95	219.25	4.548	Alert	
9,900.00	9,060.00	9,035.40	9,035.40	37.69	182.89	90.00	-140.75	375.86	1,033.68	813.86	219.81	4.703	Alert	
10,000.00	9,060.00	9,035.40	9,035.40	38.73	182.89	90.00	-140.75	375.86	1,078.22	857.93	220.30	4.894	Alert	
10,100.00	9,060.00	9,035.40	9,035.40	39.86	182.89	90.00	-140.75	375.86	1,129.89	909.19	220.70	5.120		
10,140.22	9,060.00	9,035.40	9,035.40	40.33	182.89	90.00	-140.75	375.86	1,152.46	931.63	220.84	5.219		
10,200.00	9,060.00	9,035.40	9,035.40	41.05	182.89	90.00	-140.75	375.86	1,187.24	966.22	221.02	5.372		
10,300.00	9,060.00	9,035.40	9,035.40	42.31	182.89	90.00	-140.75	375.86	1,247.50	1,026.22	221.28	5.638		
10,400.00	9,060.00	9,035.40	9,035.40	43.64	182.89	90.00	-140.75	375.86	1,310.01	1,088.52	221.49	5.915		
10,507.23	9,060.00	9,035.40	9,035.40	45.11	182.89	90.00	-140.75	375.86	1,379.09	1,157.43	221.66	6.222		
10,600.00	9,060.00	9,035.40	9,035.40	46.43	182.89	90.00	-140.75	375.86	1,442.47	1,220.70	221.77	6.504		
10,700.00	9,060.00	9,035.40	9,035.40	47.91	182.89	90.00	-140.75	375.86	1,516.42	1,294.57	221.85	6.835		
10,800.00	9,060.00	9,035.40	9,035.40	49.42	182.89	90.00	-140.75	375.86	1,595.36	1,373.45	221.91	7.189		
10,900.00	9,060.00	9,035.40	9,035.40	50.97	182.89	90.00	-140.75	375.86	1,678.48	1,456.54	221.94	7.563		
11,000.00	9,060.00	9,035.40	9,035.40	52.55	182.89	90.00	-140.75	375.86	1,765.11	1,543.15	221.96	7.952		
11,100.00	9,060.00	9,035.40	9,035.40	54.14	182.89	90.00	-140.75	375.86	1,854.65	1,632.68	221.97	8.356		
11,207.23	9,060.00	9,035.40	9,035.40	55.87	182.89	90.00	-140.75	375.86	1,953.33	1,731.36	221.97	8.800		
11,300.00	9,060.00	9,035.40	9,035.40	57.39	182.89	90.00	-140.75	375.86	2,039.49	1,817.52	221.97	9.188		
11,400.00	9,060.00	9,035.40	9,035.40	59.06	182.89	90.00	-140.75	375.86	2,131.76	1,909.80	221.96	9.604		
11,506.63	9,060.00	9,035.40	9,035.40	60.88	182.89	90.00	-140.75	375.86	2,229.44	2,007.48	221.96	10.044		
11,600.00	9,060.00	9,035.40	9,035.40	62.49	182.89	90.00	-140.75	375.86	2,314.96	2,093.00	221.96	10.430		
11,700.00	9,060.00	9,035.40	9,035.40	64.24	182.89	90.00	-140.75	375.86	2,407.19	2,185.24	221.95	10.846		
11,800.00	9,060.00	9,035.40	9,035.40	66.01	182.89	90.00	-140.75	375.86	2,500.02	2,278.07	221.95	11.264		
11,900.00	9,060.00	9,035.40	9,035.40	67.79	182.89	90.00	-140.75	375.86	2,593.39	2,371.44	221.95	11.685		
12,000.00	9,060.00	9,035.40	9,035.40	69.58	182.89	90.00	-140.75	375.86	2,687.23	2,465.28	221.94	12.108		
12,100.00	9,060.00	9,035.40	9,035.40	71.39	182.89	90.00	-140.75	375.86	2,781.50	2,559.56	221.94	12.533		
12,200.00	9,060.00	9,035.40	9,035.40	73.21	182.89	90.00	-140.75	375.86	2,876.16	2,654.22	221.94	12.959		
12,300.00	9,060.00	9,035.40	9,035.40	75.05	182.89	90.00	-140.75	375.86	2,971.17	2,749.22	221.94	13.387		
12,400.00	9,060.00	9,035.40	9,035.40	76.89	182.89	90.00	-140.75	375.86	3,066.49	2,844.55	221.94	13.817		
12,500.00	9,060.00	9,035.40	9,035.40	78.74	182.89	90.00	-140.75	375.86	3,162.11	2,940.16	221.95	14.247		
12,600.00	9,060.00	9,035.40	9,035.40	80.61	182.89	90.00	-140.75	375.86	3,257.98	3,036.03	221.95	14.679		
12,700.00	9,060.00	9,035.40	9,035.40	82.48	182.89	90.00	-140.75	375.86	3,354.10	3,132.14	221.96	15.111		
12,800.00	9,060.00	9,035.40	9,035.40	84.36	182.89	90.00	-140.75	375.86	3,450.44	3,228.47	221.97	15.545		
12,900.00	9,060.00	9,035.40	9,035.40	86.24	182.89	90.00	-140.75	375.86	3,546.98	3,325.01	221.98	15.979		
13,000.00	9,060.00	9,035.40	9,035.40	88.14	182.89	90.00	-140.75	375.86	3,643.71	3,421.72	221.99	16.414		
13,100.00	9,060.00	9,035.40	9,035.40	90.04	182.89	90.00	-140.75	375.86	3,740.61	3,518.61	222.00	16.850		
13,200.00	9,060.00	9,035.40	9,035.40	91.94	182.89	90.00	-140.75	375.86	3,837.67	3,615.66	222.01	17.286		
13,300.00	9,060.00	9,035.40	9,035.40	93.86	182.89	90.00	-140.75	375.86	3,934.88	3,712.85	222.03	17.723		
13,400.00	9,060.00	9,035.40	9,035.40	95.77	182.89	90.00	-140.75	375.86	4,032.22	3,810.18	222.04	18.160		
13,500.00	9,060.00	9,035.40	9,035.40	97.70	182.89	90.00	-140.75	375.86	4,129.69	3,907.63	222.06	18.597		
13,600.00	9,060.00	9,035.40	9,035.40	99.62	182.89	90.00	-140.75	375.86	4,227.28	4,005.20	222.08	19.035		
13,700.00	9,060.00	9,035.40	9,035.40	101.56	182.89	90.00	-140.75	375.86	4,324.98	4,102.88	222.10	19.473		
13,800.00	9,060.00	9,035.40	9,035.40	103.49	182.89	90.00	-140.75	375.86	4,422.78	4,200.66	222.12	19.911		
13,900.00	9,060.00	9,035.40	9,035.40	105.43	182.89	90.00	-140.75	375.86	4,520.68	4,298.53	222.15	20.350		
14,000.00	9,060.00	9,035.40	9,035.40	107.38	182.89	90.00	-140.75	375.86	4,618.66	4,396.49	222.17	20.789		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Esperanza 14 State #002 (Active) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	9,035.40	9,035.40	109.33	182.89	90.00	-140.75	375.86	4,716.74	4,494.54	222.20	21.228	
14,200.00	9,060.00	9,035.40	9,035.40	111.28	182.89	90.00	-140.75	375.86	4,814.89	4,592.66	222.22	21.667	
14,300.00	9,060.00	9,035.40	9,035.40	113.23	182.89	90.00	-140.75	375.86	4,913.11	4,690.86	222.25	22.106	
14,400.00	9,060.00	9,035.40	9,035.40	115.19	182.89	90.00	-140.75	375.86	5,011.41	4,789.13	222.28	22.545	
14,500.00	9,060.00	9,035.40	9,035.40	117.15	182.89	90.00	-140.75	375.86	5,109.77	4,887.46	222.31	22.985	
14,600.00	9,060.00	9,035.40	9,035.40	119.11	182.89	90.00	-140.75	375.86	5,208.20	4,985.85	222.34	23.424	
14,700.00	9,060.00	9,035.40	9,035.40	121.08	182.89	90.00	-140.75	375.86	5,306.68	5,084.30	222.38	23.863	
14,800.00	9,060.00	9,035.40	9,035.40	123.05	182.89	90.00	-140.75	375.86	5,405.22	5,182.81	222.41	24.303	
14,900.00	9,060.00	9,035.40	9,035.40	125.02	182.89	90.00	-140.75	375.86	5,503.81	5,281.37	222.45	24.742	
15,000.00	9,060.00	9,035.40	9,035.40	126.99	182.89	90.00	-140.75	375.86	5,602.45	5,379.97	222.48	25.182	
15,100.00	9,060.00	9,035.40	9,035.40	128.97	182.89	90.00	-140.75	375.86	5,701.14	5,478.62	222.52	25.621	
15,200.00	9,060.00	9,035.40	9,035.40	130.95	182.89	90.00	-140.75	375.86	5,799.88	5,577.32	222.56	26.060	
15,300.00	9,060.00	9,035.40	9,035.40	132.93	182.89	90.00	-140.75	375.86	5,898.65	5,676.06	222.60	26.499	
15,400.00	9,060.00	9,035.40	9,035.40	134.91	182.89	90.00	-140.75	375.86	5,997.47	5,774.83	222.64	26.938	
15,500.00	9,060.00	9,035.40	9,035.40	136.89	182.89	90.00	-140.75	375.86	6,096.33	5,873.65	222.68	27.377	
15,600.00	9,060.00	9,035.40	9,035.40	138.88	182.89	90.00	-140.75	375.86	6,195.22	5,972.50	222.72	27.816	
15,700.00	9,060.00	9,035.40	9,035.40	140.86	182.89	90.00	-140.75	375.86	6,294.15	6,071.38	222.77	28.254	
15,800.00	9,060.00	9,035.40	9,035.40	142.85	182.89	90.00	-140.75	375.86	6,393.11	6,170.30	222.81	28.693	
15,900.00	9,060.00	9,035.40	9,035.40	144.84	182.89	90.00	-140.75	375.86	6,492.10	6,269.24	222.86	29.131	
16,000.00	9,060.00	9,035.40	9,035.40	146.83	182.89	90.00	-140.75	375.86	6,591.12	6,368.22	222.90	29.569	
16,100.00	9,060.00	9,035.40	9,035.40	148.83	182.89	90.00	-140.75	375.86	6,690.18	6,467.23	222.95	30.007	
16,200.00	9,060.00	9,035.40	9,035.40	150.82	182.89	90.00	-140.75	375.86	6,789.26	6,566.26	223.00	30.445	
16,300.00	9,060.00	9,035.40	9,035.40	152.82	182.89	90.00	-140.75	375.86	6,888.36	6,665.31	223.05	30.883	
16,400.00	9,060.00	9,035.40	9,035.40	154.81	182.89	90.00	-140.75	375.86	6,987.50	6,764.40	223.10	31.320	
16,500.00	9,060.00	9,035.40	9,035.40	156.81	182.89	90.00	-140.75	375.86	7,086.65	6,863.50	223.15	31.757	
16,600.00	9,060.00	9,035.40	9,035.40	158.81	182.89	90.00	-140.75	375.86	7,185.83	6,962.63	223.20	32.194	
16,700.00	9,060.00	9,035.40	9,035.40	160.81	182.89	90.00	-140.75	375.86	7,285.03	7,061.78	223.26	32.631	
16,800.00	9,060.00	9,035.40	9,035.40	162.81	182.89	90.00	-140.75	375.86	7,384.26	7,160.95	223.31	33.067	
16,900.00	9,060.00	9,035.40	9,035.40	164.82	182.89	90.00	-140.75	375.86	7,483.50	7,260.14	223.37	33.503	
17,000.00	9,060.00	9,035.40	9,035.40	166.82	182.89	90.00	-140.75	375.86	7,582.77	7,359.35	223.42	33.939	
17,100.00	9,060.00	9,035.40	9,035.40	168.82	182.89	90.00	-140.75	375.86	7,682.05	7,458.57	223.48	34.375	
17,200.00	9,060.00	9,035.40	9,035.40	170.83	182.89	90.00	-140.75	375.86	7,781.35	7,557.82	223.54	34.810	
17,300.00	9,060.00	9,035.40	9,035.40	172.84	182.89	90.00	-140.75	375.86	7,880.67	7,657.08	223.59	35.245	
17,400.00	9,060.00	9,035.40	9,035.40	174.84	182.89	90.00	-140.75	375.86	7,980.01	7,756.36	223.65	35.680	
17,500.00	9,060.00	9,035.40	9,035.40	176.85	182.89	90.00	-140.75	375.86	8,079.36	7,855.65	223.71	36.115	
17,600.00	9,060.00	9,035.40	9,035.40	178.86	182.89	90.00	-140.75	375.86	8,178.73	7,954.96	223.77	36.549	
17,700.00	9,060.00	9,035.40	9,035.40	180.87	182.89	90.00	-140.75	375.86	8,278.11	8,054.28	223.84	36.983	
17,800.00	9,060.00	9,035.40	9,035.40	182.88	182.89	90.00	-140.75	375.86	8,377.51	8,153.61	223.90	37.417	
17,900.00	9,060.00	9,035.40	9,035.40	184.89	182.89	90.00	-140.75	375.86	8,476.92	8,252.96	223.96	37.850	
18,000.00	9,060.00	9,035.40	9,035.40	186.90	182.89	90.00	-140.75	375.86	8,576.35	8,352.33	224.02	38.283	
18,100.00	9,060.00	9,035.40	9,035.40	188.92	182.89	90.00	-140.75	375.86	8,675.79	8,451.70	224.09	38.716	
18,200.00	9,060.00	9,035.40	9,035.40	190.93	182.89	90.00	-140.75	375.86	8,775.24	8,551.09	224.15	39.148	
18,300.00	9,060.00	9,035.40	9,035.40	192.94	182.89	90.00	-140.75	375.86	8,874.71	8,650.49	224.22	39.580	
18,400.00	9,060.00	9,035.40	9,035.40	194.96	182.89	90.00	-140.75	375.86	8,974.18	8,749.90	224.29	40.012	
18,500.00	9,060.00	9,035.40	9,035.40	196.97	182.89	90.00	-140.75	375.86	9,073.67	8,849.32	224.36	40.443	
18,600.00	9,060.00	9,035.40	9,035.40	198.99	182.89	90.00	-140.75	375.86	9,173.17	8,948.75	224.42	40.874	
18,700.00	9,060.00	9,035.40	9,035.40	201.00	182.89	90.00	-140.75	375.86	9,272.68	9,048.19	224.49	41.305	
18,800.00	9,060.00	9,035.40	9,035.40	203.02	182.89	90.00	-140.75	375.86	9,372.20	9,147.64	224.56	41.735	
18,900.00	9,060.00	9,035.40	9,035.40	205.04	182.89	90.00	-140.75	375.86	9,471.73	9,247.10	224.63	42.165	
19,000.00	9,060.00	9,035.40	9,035.40	207.06	182.89	90.00	-140.75	375.86	9,571.27	9,346.57	224.71	42.595	
19,100.00	9,060.00	9,035.40	9,035.40	209.07	182.89	90.00	-140.75	375.86	9,670.82	9,446.04	224.78	43.024	
19,200.00	9,060.00	9,035.40	9,035.40	211.09	182.89	90.00	-140.75	375.86	9,770.38	9,545.53	224.85	43.453	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	9,035.40	9,035.40	213.11	182.89	90.00	-140.75	375.86	9,869.95	9,645.02	224.92	43.881	
19,400.00	9,060.00	9,035.40	9,035.40	215.13	182.89	90.00	-140.75	375.86	9,969.52	9,744.53	225.00	44.309	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.70	0.70	0.50	0.50	-0.19	30.02	-0.10	30.02				
100.00	100.00	100.70	100.70	0.52	0.52	-0.19	30.02	-0.10	30.02	28.98	1.04	28.972	
200.00	200.00	200.70	200.70	0.70	0.70	-0.19	30.02	-0.10	30.02	28.61	1.41	21.352	
300.00	300.00	300.70	300.70	0.99	0.99	-0.19	30.02	-0.10	30.02	28.04	1.98	15.186	
400.00	400.00	400.70	400.70	1.31	1.31	-0.19	30.02	-0.10	30.02	27.40	2.62	11.456	
500.00	500.00	500.70	500.70	1.65	1.65	-0.19	30.02	-0.10	30.02	26.73	3.29	9.112	
600.00	600.00	600.70	600.70	1.99	1.99	-0.19	30.02	-0.10	30.02	26.04	3.98	7.536	
700.00	700.00	700.70	700.70	2.34	2.34	-0.19	30.02	-0.10	30.02	25.34	4.68	6.413	
800.00	800.00	800.70	800.70	2.69	2.69	-0.19	30.02	-0.10	30.02	24.64	5.38	5.576	
900.00	900.00	900.70	900.70	3.04	3.05	-0.19	30.02	-0.10	30.02	23.93	6.09	4.930 Alert	
1,000.00	1,000.00	1,000.70	1,000.70	3.40	3.40	-0.19	30.02	-0.10	30.02	23.22	6.80	4.416 Alert	
1,100.00	1,100.00	1,100.70	1,100.70	3.75	3.76	-0.19	30.02	-0.10	30.02	22.51	7.51	3.999 Alert	
1,200.00	1,200.00	1,200.70	1,200.70	4.11	4.11	-0.19	30.02	-0.10	30.02	21.80	8.22	3.653 Alert	
1,300.00	1,300.00	1,300.70	1,300.70	4.46	4.47	-0.19	30.02	-0.10	30.02	21.09	8.93	3.361 Alert	
1,400.00	1,400.00	1,400.70	1,400.70	4.82	4.82	-0.19	30.02	-0.10	30.02	20.38	9.64	3.113 Alert	
1,500.00	1,500.00	1,500.70	1,500.70	5.18	5.18	-0.19	30.02	-0.10	30.02	19.66	10.36	2.899 Alert	
1,600.00	1,600.00	1,600.70	1,600.70	5.53	5.54	-0.19	30.02	-0.10	30.02	18.95	11.07	2.712 Alert	
1,700.00	1,700.00	1,700.70	1,700.70	5.89	5.89	-0.19	30.02	-0.10	30.02	18.24	11.78	2.547 Alert	
1,800.00	1,800.00	1,800.70	1,800.70	6.25	6.25	-0.19	30.02	-0.10	30.02	17.52	12.50	2.402 Minor Risk	
1,900.00	1,900.00	1,900.70	1,900.70	6.61	6.61	-0.19	30.02	-0.10	30.02	16.81	13.21	2.272 Minor Risk	
2,000.00	2,000.00	2,000.70	2,000.70	6.96	6.97	-0.19	30.02	-0.10	30.02	16.09	13.93	2.155 Minor Risk, CC, ES	
2,100.00	2,100.00	2,100.18	2,100.17	7.32	7.32	-0.52	30.88	-0.28	30.88	16.24	14.64	2.109 Minor Risk	
2,200.00	2,200.00	2,199.59	2,199.55	7.68	7.68	-1.38	33.42	-0.81	33.45	18.10	15.35	2.180 Minor Risk	
2,300.00	2,300.00	2,298.89	2,298.76	8.04	8.03	-2.56	37.65	-1.69	37.74	21.69	16.05	2.351 Minor Risk	
2,350.00	2,350.00	2,348.48	2,348.26	8.22	8.21	-3.20	40.39	-2.25	40.53	24.13	16.40	2.471 Minor Risk	
2,400.00	2,400.00	2,398.03	2,397.71	8.39	8.39	12.27	43.55	-2.91	43.54	26.79	16.75	2.600 Alert	
2,500.00	2,499.98	2,497.04	2,496.42	8.75	8.74	11.44	51.12	-4.48	49.57	32.13	17.44	2.842 Alert	
2,600.00	2,599.92	2,595.96	2,594.89	9.11	9.09	10.93	60.34	-6.40	55.61	37.49	18.13	3.068 Alert	
2,700.00	2,699.78	2,694.77	2,693.07	9.47	9.45	10.63	71.21	-8.66	61.66	42.85	18.81	3.278 Alert	
2,800.00	2,799.54	2,793.48	2,790.95	9.82	9.80	10.50	83.73	-11.26	67.70	48.22	19.48	3.475 Alert	
2,900.00	2,899.16	2,892.09	2,888.49	10.18	10.15	10.49	97.88	-14.20	73.74	53.58	20.16	3.658 Alert	
3,000.00	2,998.61	2,990.59	2,985.67	10.54	10.50	10.57	113.65	-17.47	79.77	58.95	20.82	3.831 Alert	
3,100.00	3,097.86	3,089.00	3,082.45	10.89	10.86	10.73	131.04	-21.09	85.80	64.31	21.49	3.993 Alert	
3,200.00	3,196.89	3,188.41	3,179.99	11.25	11.21	10.98	149.84	-24.99	91.39	69.20	22.19	4.119 Alert	
3,295.74	3,291.45	3,284.07	3,273.84	11.59	11.56	11.38	168.00	-28.76	95.21	72.33	22.88	4.162 Alert	
3,300.00	3,295.65	3,288.33	3,278.01	11.61	11.58	11.40	168.81	-28.93	95.35	72.44	22.91	4.162 Alert	
3,400.00	3,394.29	3,388.27	3,376.06	11.97	11.94	11.89	187.78	-32.87	98.53	74.89	23.64	4.169 Alert	
3,500.00	3,492.94	3,488.22	3,474.11	12.33	12.31	12.35	206.75	-36.81	101.72	77.35	24.36	4.175 Alert	
3,600.00	3,591.58	3,588.16	3,572.16	12.69	12.67	12.78	225.72	-40.75	104.91	79.82	25.09	4.181 Alert	
3,700.00	3,690.22	3,688.11	3,670.21	13.05	13.04	13.19	244.69	-44.70	108.11	82.29	25.83	4.186 Alert	
3,800.00	3,788.86	3,788.06	3,768.26	13.41	13.41	13.57	263.66	-48.64	111.32	84.76	26.56	4.191 Alert	
3,900.00	3,887.50	3,888.00	3,866.31	13.77	13.78	13.93	282.63	-52.58	114.53	87.23	27.30	4.196 Alert	
4,000.00	3,986.14	3,987.95	3,964.36	14.14	14.15	14.27	301.60	-56.52	117.74	89.71	28.03	4.200 Alert	
4,100.00	4,084.78	4,087.89	4,062.41	14.50	14.52	14.60	320.57	-60.46	120.96	92.19	28.77	4.204 Alert	
4,200.00	4,183.42	4,187.84	4,160.46	14.87	14.90	14.90	339.54	-64.40	124.18	94.67	29.51	4.208 Alert	
4,300.00	4,282.06	4,287.79	4,258.51	15.24	15.27	15.20	358.51	-68.34	127.41	97.16	30.25	4.212 Alert	
4,400.00	4,380.70	4,387.73	4,356.56	15.60	15.65	15.47	377.48	-72.28	130.63	99.64	30.99	4.215 Alert	
4,500.00	4,479.34	4,487.68	4,454.61	15.97	16.02	15.74	396.45	-76.22	133.87	102.13	31.74	4.218 Alert	
4,600.00	4,577.98	4,587.62	4,552.66	16.34	16.40	15.99	415.42	-80.16	137.10	104.62	32.48	4.221 Alert	
4,700.00	4,676.62	4,687.57	4,650.71	16.71	16.77	16.23	434.39	-84.10	140.34	107.11	33.22	4.224 Alert	
4,800.00	4,775.27	4,787.52	4,748.76	17.08	17.15	16.46	453.36	-88.04	143.57	109.61	33.97	4.227 Alert	
4,900.00	4,873.91	4,887.46	4,846.81	17.45	17.53	16.67	472.33	-91.99	146.82	112.10	34.72	4.229 Alert	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.00	4,972.55	4,987.41	4,944.86	17.82	17.91	16.88	491.30	-95.93	150.06	114.60	35.46	4.231	Alert
5,100.00	5,071.19	5,087.35	5,042.91	18.19	18.28	17.08	510.27	-99.87	153.30	117.09	36.21	4.234	Alert
5,200.00	5,169.83	5,187.30	5,140.96	18.56	18.66	17.28	529.24	-103.81	156.55	119.59	36.96	4.236	Alert
5,300.00	5,268.47	5,287.25	5,239.01	18.93	19.04	17.46	548.21	-107.75	159.80	122.09	37.71	4.238	Alert
5,400.00	5,367.11	5,387.19	5,337.06	19.31	19.42	17.64	567.18	-111.69	163.05	124.59	38.46	4.240	Alert
5,500.00	5,465.75	5,487.14	5,435.11	19.68	19.80	17.81	586.15	-115.63	166.30	127.09	39.21	4.242	Alert
5,600.00	5,564.39	5,587.08	5,533.16	20.05	20.18	17.97	605.12	-119.57	169.55	129.59	39.96	4.243	Alert
5,700.00	5,663.03	5,687.03	5,631.21	20.42	20.56	18.13	624.09	-123.51	172.81	132.10	40.71	4.245	Alert
5,800.00	5,761.67	5,786.98	5,729.26	20.80	20.94	18.28	643.06	-127.45	176.06	134.60	41.46	4.247	Alert
5,900.00	5,860.31	5,886.92	5,827.31	21.17	21.33	18.42	662.03	-131.39	179.32	137.11	42.21	4.248	Alert
6,000.00	5,958.96	5,986.87	5,925.36	21.54	21.71	18.57	681.00	-135.34	182.57	139.61	42.96	4.250	Alert
6,100.00	6,057.60	6,086.81	6,023.41	21.92	22.09	18.70	699.97	-139.28	185.83	142.12	43.72	4.251	Alert
6,200.00	6,156.24	6,186.76	6,121.46	22.29	22.47	18.83	718.94	-143.22	189.09	144.62	44.47	4.252	Alert
6,300.00	6,254.88	6,286.70	6,219.51	22.67	22.85	18.96	737.91	-147.16	192.35	147.13	45.22	4.254	Alert
6,400.00	6,353.52	6,386.65	6,317.56	23.04	23.24	19.08	756.88	-151.10	195.62	149.64	45.98	4.255	Alert
6,500.00	6,452.16	6,486.60	6,415.61	23.42	23.62	19.20	775.85	-155.04	198.88	152.15	46.73	4.256	Alert
6,600.00	6,550.80	6,586.54	6,513.66	23.79	24.00	19.31	794.82	-158.98	202.14	154.66	47.48	4.257	Alert
6,700.00	6,649.44	6,686.49	6,611.71	24.17	24.38	19.43	813.79	-162.92	205.41	157.17	48.24	4.258	Alert
6,800.00	6,748.08	6,786.43	6,709.76	24.54	24.77	19.53	832.76	-166.86	208.67	159.68	48.99	4.259	Alert
6,900.00	6,846.72	6,886.38	6,807.81	24.92	25.15	19.64	851.73	-170.80	211.94	162.19	49.75	4.260	Alert
7,000.00	6,945.36	6,986.33	6,905.86	25.29	25.53	19.74	870.70	-174.74	215.20	164.70	50.50	4.261	Alert
7,100.00	7,044.00	7,086.27	7,003.91	25.67	25.92	19.84	889.67	-178.68	218.47	167.21	51.26	4.262	Alert
7,200.00	7,142.65	7,186.22	7,101.96	26.04	26.30	19.93	908.64	-182.63	221.74	169.72	52.02	4.263	Alert
7,300.00	7,241.29	7,286.16	7,200.01	26.42	26.68	20.02	927.61	-186.57	225.00	172.23	52.77	4.264	Alert
7,400.00	7,339.93	7,386.11	7,298.06	26.79	27.07	20.11	946.58	-190.51	228.27	174.75	53.53	4.265	Alert
7,500.00	7,438.57	7,486.06	7,396.11	27.17	27.45	20.20	965.55	-194.45	231.54	177.26	54.28	4.265	Alert
7,571.77	7,509.37	7,557.79	7,466.49	27.44	27.73	20.26	979.16	-197.28	233.89	179.06	54.83	4.266	Alert
7,600.00	7,537.23	7,586.00	7,494.16	27.55	27.84	20.28	984.51	-198.39	234.91	179.87	55.04	4.268	Alert
7,700.00	7,636.18	7,685.86	7,592.13	27.92	28.22	20.22	1,003.47	-202.33	240.10	184.31	55.79	4.303	Alert
7,800.00	7,735.48	7,785.56	7,689.93	28.29	28.60	19.97	1,022.39	-206.26	247.74	191.20	56.54	4.382	Alert
7,900.00	7,835.05	7,885.02	7,787.51	28.65	28.99	19.55	1,041.27	-210.18	257.85	200.57	57.28	4.502	Alert
8,000.00	7,934.83	7,984.18	7,884.79	29.01	29.37	18.99	1,060.09	-214.09	270.43	212.42	58.01	4.662	Alert
8,100.00	8,034.74	8,082.98	7,981.71	29.36	29.75	18.33	1,078.84	-217.98	285.50	226.76	58.74	4.861	Alert
8,202.27	8,137.00	8,183.56	8,080.38	29.72	30.14	1.55	1,097.93	-221.95	303.50	244.03	59.47	5.103	
8,300.00	8,234.73	8,279.43	8,174.44	30.06	30.51	0.77	1,116.13	-225.73	321.99	261.82	60.17	5.352	
8,400.00	8,334.73	8,377.47	8,270.63	30.41	30.88	0.10	1,134.74	-229.40	340.96	280.08	60.88	5.600	
8,500.00	8,434.73	8,474.47	8,365.49	30.75	31.24	1.22	1,153.16	-222.50	360.09	298.52	61.58	5.848	
8,552.31	8,487.04	8,523.54	8,412.69	30.94	31.41	2.72	1,162.36	-212.81	370.45	308.54	61.91	5.984	
8,600.00	8,534.68	8,567.10	8,453.78	31.10	31.56	-84.43	1,170.39	-200.79	380.23	318.07	62.17	6.116	
8,650.00	8,584.26	8,612.06	8,495.10	31.26	31.70	-81.94	1,178.49	-185.09	390.68	328.27	62.41	6.260	
8,700.00	8,633.10	8,656.35	8,534.51	31.43	31.83	-79.62	1,186.23	-166.44	401.17	338.55	62.62	6.407	
8,750.00	8,680.83	8,700.07	8,571.91	31.58	31.95	-77.46	1,193.60	-145.05	411.59	348.79	62.79	6.555	
8,800.00	8,727.09	8,743.28	8,607.18	31.74	32.06	-75.46	1,200.58	-121.11	421.80	358.86	62.94	6.702	
8,850.00	8,771.52	8,786.03	8,640.24	31.89	32.17	-73.63	1,207.14	-94.82	431.70	368.64	63.06	6.846	
8,900.00	8,813.78	8,828.40	8,671.01	32.04	32.26	-71.97	1,213.27	-66.36	441.17	378.01	63.17	6.984	
8,950.00	8,853.56	8,870.43	8,699.41	32.18	32.35	-70.46	1,218.95	-35.92	450.14	386.87	63.26	7.115	
9,000.00	8,890.55	8,912.16	8,725.36	32.32	32.45	-69.12	1,224.17	-3.67	458.49	395.14	63.36	7.237	
9,050.00	8,924.46	8,953.64	8,748.81	32.47	32.55	-67.93	1,228.91	30.21	466.17	402.71	63.46	7.345	
9,100.00	8,955.05	8,994.92	8,769.68	32.63	32.66	-66.89	1,233.16	65.55	473.11	409.51	63.59	7.440	
9,150.00	8,982.08	9,036.01	8,787.94	32.79	32.80	-66.00	1,236.92	102.17	479.23	415.48	63.75	7.517	
9,200.00	9,005.34	9,076.97	8,803.51	32.97	32.96	-65.25	1,240.16	139.90	484.50	420.54	63.96	7.576	
9,250.00	9,024.65	9,117.81	8,816.37	33.17	33.13	-64.65	1,242.88	178.55	488.86	424.66	64.20	7.614	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.00	9,039.87	9,158.56	8,826.47	33.38	33.32	-64.19	1,245.07	217.96	492.29	427.79	64.51	7.632	
9,350.00	9,050.89	9,199.25	8,833.79	33.62	33.52	-63.86	1,246.72	257.95	494.76	429.89	64.87	7.627	
9,400.00	9,057.61	9,239.90	8,838.30	33.87	33.73	-63.67	1,247.84	298.32	496.25	430.96	65.29	7.601	
9,452.31	9,060.00	9,282.41	8,840.00	34.15	33.96	-63.62	1,248.42	340.78	496.74	430.95	65.79	7.550	
9,454.79	9,060.00	9,284.53	8,840.00	34.16	33.97	-63.62	1,248.43	342.79	496.74	430.93	65.82	7.547	
9,500.00	9,060.00	9,329.62	8,840.00	34.42	34.25	-63.62	1,248.70	388.00	496.74	430.39	66.35	7.486	
9,600.00	9,060.00	9,429.62	8,840.00	35.09	34.92	-63.62	1,249.29	488.00	496.74	429.08	67.66	7.342	
9,700.00	9,060.00	9,529.62	8,840.00	35.86	35.69	-63.62	1,249.88	587.99	496.74	427.60	69.14	7.184	
9,800.00	9,060.00	9,629.62	8,840.00	36.72	36.57	-63.62	1,250.48	687.99	496.74	425.95	70.80	7.017	
9,900.00	9,060.00	9,729.62	8,840.00	37.69	37.53	-63.62	1,251.07	787.99	496.74	424.14	72.60	6.842	
10,000.00	9,060.00	9,829.62	8,840.00	38.73	38.58	-63.62	1,251.67	887.99	496.74	422.19	74.55	6.663	
10,100.00	9,060.00	9,929.62	8,840.00	39.86	39.70	-63.62	1,252.26	987.99	496.74	420.11	76.63	6.482	
10,140.22	9,060.00	9,969.85	8,840.00	40.33	40.17	-63.62	1,252.50	1,028.21	496.74	419.24	77.50	6.409	
10,200.00	9,060.00	10,029.62	8,840.00	41.05	40.90	-63.65	1,252.85	1,087.98	497.30	418.45	78.85	6.307	
10,300.00	9,060.00	10,129.54	8,840.00	42.31	42.16	-63.81	1,253.44	1,187.90	500.74	419.50	81.24	6.164	
10,400.00	9,060.00	10,229.27	8,840.00	43.64	43.47	-64.12	1,254.04	1,287.63	507.31	423.51	83.81	6.053	
10,507.23	9,060.00	10,335.84	8,840.00	45.11	44.94	-64.59	1,254.67	1,394.20	517.88	431.14	86.74	5.970	
10,600.00	9,060.00	10,428.03	8,840.00	46.43	46.25	-65.16	1,255.22	1,486.39	527.27	437.91	89.36	5.900	
10,700.00	9,060.00	10,527.72	8,840.00	47.91	47.72	-65.57	1,255.81	1,586.08	534.38	442.16	92.22	5.795	
10,800.00	9,060.00	10,627.62	8,840.00	49.42	49.23	-65.79	1,256.40	1,685.98	538.33	443.24	95.09	5.661	
10,900.00	9,060.00	10,727.62	8,840.00	50.97	50.77	-65.83	1,256.99	1,785.97	539.10	441.14	97.97	5.503	
11,000.00	9,060.00	10,827.58	8,840.00	52.55	52.35	-65.70	1,257.59	1,885.93	536.69	435.86	100.83	5.323	
11,100.00	9,060.00	10,927.38	8,840.00	54.14	53.96	-65.38	1,258.18	1,985.73	531.11	427.45	103.65	5.124	
11,207.23	9,060.00	11,034.09	8,840.00	55.87	55.72	-64.82	1,258.81	2,092.44	521.63	415.02	106.61	4.893 Alert	
11,300.00	9,060.00	11,126.40	8,840.00	57.39	57.26	-64.45	1,259.36	2,184.74	513.25	404.08	109.17	4.701 Alert	
11,400.00	9,060.00	11,226.17	8,840.00	59.06	58.94	-64.18	1,259.95	2,284.52	507.27	395.22	112.05	4.527 Alert	
11,506.63	9,060.00	11,332.75	8,840.00	60.88	60.77	-64.05	1,260.58	2,391.09	504.36	389.08	115.28	4.375 Alert	
11,600.00	9,060.00	11,426.11	8,840.00	62.49	62.39	-63.99	1,261.14	2,484.45	503.37	385.18	118.19	4.259 Alert	
11,700.00	9,060.00	11,526.10	8,840.00	64.24	64.14	-63.94	1,261.73	2,584.44	502.32	380.98	121.34	4.140 Alert	
11,800.00	9,060.00	11,626.10	8,840.00	66.01	65.91	-63.88	1,262.33	2,684.43	501.27	376.75	124.51	4.026 Alert	
11,900.00	9,060.00	11,726.09	8,840.00	67.79	67.69	-63.82	1,262.92	2,784.42	500.21	372.50	127.71	3.917 Alert	
12,000.00	9,060.00	11,826.08	8,840.00	69.58	69.49	-63.76	1,263.51	2,884.42	499.16	368.22	130.94	3.812 Alert	
12,100.00	9,060.00	11,926.08	8,840.00	71.39	71.30	-63.70	1,264.11	2,984.41	498.11	363.92	134.19	3.712 Alert	
12,200.00	9,060.00	12,026.07	8,840.00	73.21	73.12	-63.64	1,264.70	3,084.40	497.06	359.61	137.45	3.616 Alert	
12,300.00	9,060.00	12,126.06	8,840.00	75.05	74.96	-63.58	1,265.29	3,184.39	496.01	355.27	140.74	3.524 Alert	
12,400.00	9,060.00	12,226.06	8,840.00	76.89	76.80	-63.52	1,265.89	3,284.38	494.96	350.92	144.04	3.436 Alert	
12,500.00	9,060.00	12,326.05	8,840.00	78.74	78.66	-63.46	1,266.48	3,384.37	493.91	346.56	147.35	3.352 Alert	
12,600.00	9,060.00	12,426.04	8,840.00	80.61	80.53	-63.40	1,267.07	3,484.36	492.86	342.18	150.68	3.271 Alert	
12,700.00	9,060.00	12,526.04	8,840.00	82.48	82.40	-63.34	1,267.67	3,584.36	491.81	337.79	154.02	3.193 Alert	
12,800.00	9,060.00	12,626.03	8,840.00	84.36	84.28	-63.27	1,268.26	3,684.35	490.76	333.39	157.38	3.118 Alert	
12,900.00	9,060.00	12,726.02	8,840.00	86.24	86.17	-63.21	1,268.85	3,784.34	489.72	328.98	160.74	3.047 Alert	
13,000.00	9,060.00	12,826.02	8,840.00	88.14	88.07	-63.15	1,269.45	3,884.33	488.67	324.56	164.11	2.978 Alert	
13,100.00	9,060.00	12,926.01	8,840.00	90.04	89.97	-63.09	1,270.04	3,984.32	487.62	320.13	167.50	2.911 Alert	
13,200.00	9,060.00	13,026.00	8,840.00	91.94	91.88	-63.03	1,270.63	4,084.31	486.58	315.69	170.89	2.847 Alert	
13,300.00	9,060.00	13,125.99	8,840.00	93.86	93.79	-62.96	1,271.23	4,184.30	485.53	311.25	174.28	2.786 Alert	
13,400.00	9,060.00	13,225.99	8,840.00	95.77	95.71	-62.90	1,271.82	4,284.30	484.49	306.80	177.69	2.727 Alert	
13,500.00	9,060.00	13,325.98	8,840.00	97.70	97.64	-62.84	1,272.41	4,384.29	483.45	302.35	181.10	2.670 Alert	
13,600.00	9,060.00	13,425.97	8,840.00	99.62	99.57	-62.77	1,273.01	4,484.28	482.40	297.89	184.51	2.614 Alert	
13,700.00	9,060.00	13,525.97	8,840.00	101.56	101.50	-62.71	1,273.60	4,584.27	481.36	293.43	187.93	2.561 Alert	
13,800.00	9,060.00	13,625.96	8,840.00	103.49	103.44	-62.64	1,274.19	4,684.26	480.32	288.96	191.35	2.510 Alert	
13,900.00	9,060.00	13,725.95	8,840.00	105.43	105.38	-62.58	1,274.79	4,784.25	479.28	284.49	194.78	2.461 Minor Risk	
14,000.00	9,060.00	13,825.95	8,840.00	107.38	107.33	-62.52	1,275.38	4,884.24	478.24	280.02	198.21	2.413 Minor Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	13,925.94	8,840.00	109.33	109.28	-62.45	1,275.97	4,984.23	477.20	275.55	201.65	2.366 Minor Risk		
14,200.00	9,060.00	14,025.93	8,840.00	111.28	111.24	-62.39	1,276.57	5,084.23	476.16	271.07	205.08	2.322 Minor Risk		
14,300.00	9,060.00	14,125.93	8,840.00	113.23	113.19	-62.32	1,277.16	5,184.22	475.12	266.60	208.52	2.279 Minor Risk		
14,400.00	9,060.00	14,225.92	8,840.00	115.19	115.15	-62.25	1,277.75	5,284.21	474.08	262.12	211.96	2.237 Minor Risk		
14,500.00	9,060.00	14,325.91	8,840.00	117.15	117.12	-62.19	1,278.35	5,384.20	473.04	257.64	215.40	2.196 Minor Risk		
14,600.00	9,060.00	14,425.91	8,840.00	119.11	119.08	-62.12	1,278.94	5,484.19	472.00	253.16	218.84	2.157 Minor Risk		
14,700.00	9,060.00	14,525.90	8,840.00	121.08	121.05	-62.05	1,279.53	5,584.18	470.97	248.68	222.29	2.119 Minor Risk		
14,800.00	9,060.00	14,625.89	8,840.00	123.05	123.02	-61.99	1,280.13	5,684.17	469.93	244.20	225.73	2.082 Minor Risk		
14,900.00	9,060.00	14,725.88	8,840.00	125.02	125.00	-61.92	1,280.72	5,784.17	468.90	239.72	229.18	2.046 Minor Risk		
15,000.00	9,060.00	14,825.88	8,840.00	126.99	126.97	-61.85	1,281.31	5,884.16	467.86	235.24	232.62	2.011 Minor Risk		
15,100.00	9,060.00	14,925.87	8,840.00	128.97	128.95	-61.78	1,281.91	5,984.15	466.83	230.77	236.06	1.978 Minor Risk		
15,200.00	9,060.00	15,025.86	8,840.00	130.95	130.93	-61.72	1,282.50	6,084.14	465.80	226.29	239.51	1.945 Minor Risk		
15,300.00	9,060.00	15,125.86	8,840.00	132.93	132.91	-61.65	1,283.09	6,184.13	464.76	221.82	242.95	1.913 Minor Risk		
15,400.00	9,060.00	15,225.85	8,840.00	134.91	134.90	-61.58	1,283.69	6,284.12	463.73	217.34	246.39	1.882 Minor Risk		
15,500.00	9,060.00	15,325.84	8,840.00	136.89	136.88	-61.51	1,284.28	6,384.11	462.70	212.87	249.83	1.852 Minor Risk		
15,600.00	9,060.00	15,425.84	8,840.00	138.88	138.87	-61.44	1,284.87	6,484.11	461.67	208.40	253.27	1.823 Minor Risk		
15,700.00	9,060.00	15,525.83	8,840.00	140.86	140.86	-61.37	1,285.47	6,584.10	460.64	203.93	256.71	1.794 Minor Risk		
15,800.00	9,060.00	15,625.82	8,840.00	142.85	142.85	-61.30	1,286.06	6,684.09	459.61	199.47	260.14	1.767 Minor Risk		
15,900.00	9,060.00	15,725.82	8,840.00	144.84	144.84	-61.23	1,286.65	6,784.08	458.58	195.01	263.58	1.740 Minor Risk		
16,000.00	9,060.00	15,825.81	8,840.00	146.83	146.84	-61.16	1,287.25	6,884.07	457.56	190.55	267.01	1.714 Minor Risk		
16,100.00	9,060.00	15,925.80	8,840.00	148.83	148.83	-61.09	1,287.84	6,984.06	456.53	186.09	270.44	1.688 Minor Risk		
16,200.00	9,060.00	16,025.80	8,840.00	150.82	150.83	-61.02	1,288.43	7,084.05	455.50	181.64	273.87	1.663 Minor Risk		
16,300.00	9,060.00	16,125.79	8,840.00	152.82	152.83	-60.95	1,289.03	7,184.04	454.48	177.19	277.29	1.639 Minor Risk		
16,400.00	9,060.00	16,225.78	8,840.00	154.81	154.83	-60.87	1,289.62	7,284.04	453.45	172.74	280.71	1.615 Minor Risk		
16,500.00	9,060.00	16,325.77	8,840.00	156.81	156.83	-60.80	1,290.21	7,384.03	452.43	168.30	284.13	1.592 Minor Risk		
16,600.00	9,060.00	16,425.77	8,840.00	158.81	158.83	-60.73	1,290.81	7,484.02	451.40	163.86	287.55	1.570 Minor Risk		
16,700.00	9,060.00	16,525.76	8,840.00	160.81	160.83	-60.66	1,291.40	7,584.01	450.38	159.42	290.96	1.548 Minor Risk		
16,800.00	9,060.00	16,625.75	8,840.00	162.81	162.83	-60.58	1,291.99	7,684.00	449.36	154.99	294.37	1.527 Minor Risk		
16,900.00	9,060.00	16,725.75	8,840.00	164.82	164.84	-60.51	1,292.59	7,783.99	448.34	150.56	297.78	1.506 Minor Risk		
17,000.00	9,060.00	16,825.74	8,840.00	166.82	166.85	-60.44	1,293.18	7,883.98	447.32	146.14	301.18	1.485 Major Risk		
17,100.00	9,060.00	16,925.73	8,840.00	168.82	168.85	-60.36	1,293.77	7,983.98	446.30	141.72	304.58	1.465 Major Risk		
17,200.00	9,060.00	17,025.73	8,840.00	170.83	170.86	-60.29	1,294.37	8,083.97	445.28	137.30	307.98	1.446 Major Risk		
17,300.00	9,060.00	17,125.72	8,840.00	172.84	172.87	-60.21	1,294.96	8,183.96	444.26	132.89	311.37	1.427 Major Risk		
17,400.00	9,060.00	17,225.71	8,840.00	174.84	174.88	-60.14	1,295.55	8,283.95	443.24	128.48	314.76	1.408 Major Risk		
17,500.00	9,060.00	17,325.71	8,840.00	176.85	176.89	-60.06	1,296.15	8,383.94	442.23	124.08	318.14	1.390 Major Risk		
17,600.00	9,060.00	17,425.70	8,840.00	178.86	178.90	-59.98	1,296.74	8,483.93	441.21	119.69	321.52	1.372 Major Risk		
17,700.00	9,060.00	17,525.69	8,840.00	180.87	180.91	-59.91	1,297.33	8,583.92	440.20	115.30	324.90	1.355 Major Risk		
17,800.00	9,060.00	17,625.69	8,840.00	182.88	182.92	-59.83	1,297.93	8,683.92	439.18	110.91	328.27	1.338 Major Risk		
17,900.00	9,060.00	17,725.68	8,840.00	184.89	184.94	-59.75	1,298.52	8,783.91	438.17	106.53	331.64	1.321 Major Risk		
18,000.00	9,060.00	17,825.67	8,840.00	186.90	186.95	-59.68	1,299.11	8,883.90	437.16	102.15	335.00	1.305 Major Risk		
18,100.00	9,060.00	17,925.66	8,840.00	188.92	188.97	-59.60	1,299.71	8,983.89	436.14	97.78	338.36	1.289 Major Risk		
18,200.00	9,060.00	18,025.66	8,840.00	190.93	190.98	-59.52	1,300.30	9,083.88	435.13	93.42	341.71	1.273 Major Risk		
18,300.00	9,060.00	18,125.65	8,840.00	192.94	193.00	-59.44	1,300.89	9,183.87	434.12	89.06	345.06	1.258 Major Risk		
18,400.00	9,060.00	18,225.64	8,840.00	194.96	195.02	-59.36	1,301.49	9,283.86	433.11	84.71	348.40	1.243 Major Risk		
18,500.00	9,060.00	18,325.64	8,840.00	196.97	197.03	-59.28	1,302.08	9,383.85	432.10	80.36	351.74	1.228 Major Risk		
18,600.00	9,060.00	18,425.63	8,840.00	198.99	199.05	-59.20	1,302.67	9,483.85	431.10	76.02	355.08	1.214 Major Risk		
18,700.00	9,060.00	18,525.62	8,840.00	201.00	201.07	-59.12	1,303.27	9,583.84	430.09	71.69	358.40	1.200 Major Risk		
18,800.00	9,060.00	18,625.62	8,840.00	203.02	203.09	-59.04	1,303.86	9,683.83	429.08	67.36	361.73	1.186 Major Risk		
18,900.00	9,060.00	18,725.61	8,840.00	205.04	205.11	-58.96	1,304.45	9,783.82	428.08	63.04	365.04	1.173 Major Risk		
19,000.00	9,060.00	18,825.60	8,840.00	207.06	207.13	-58.88	1,305.05	9,883.81	427.07	58.72	368.35	1.159 Major Risk		
19,100.00	9,060.00	18,925.60	8,840.00	209.07	209.15	-58.80	1,305.64	9,983.80	426.07	54.41	371.66	1.146 Major Risk		
19,200.00	9,060.00	19,025.59	8,840.00	211.09	211.17	-58.72	1,306.23	10,083.79	425.07	50.11	374.96	1.134 Major Risk		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 331H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,125.58	8,840.00	213.11	213.19	-58.64	1,306.83	10,183.79	424.07	45.81	378.25	1.121	Major Risk
19,400.00	9,060.00	19,225.58	8,840.00	215.13	215.21	-58.55	1,307.42	10,283.78	423.06	41.52	381.54	1.109	Major Risk
19,500.32	9,060.00	19,325.89	8,840.00	217.16	217.24	-58.47	1,308.02	10,384.09	422.06	37.23	384.84	1.097	Major Risk, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.60	-0.60	0.50	0.50	179.85	-29.99	0.08	29.99				
100.00	100.00	100.60	99.40	0.52	0.52	179.85	-29.99	0.08	29.99	28.95	1.04	28.946	
200.00	200.00	200.60	199.40	0.70	0.70	179.85	-29.99	0.08	29.99	28.58	1.41	21.334	
300.00	300.00	300.60	299.40	0.99	0.99	179.85	-29.99	0.08	29.99	28.01	1.98	15.173	
400.00	400.00	400.60	399.40	1.31	1.31	179.85	-29.99	0.08	29.99	27.37	2.62	11.446	
500.00	500.00	500.60	499.40	1.65	1.65	179.85	-29.99	0.08	29.99	26.70	3.29	9.104	
600.00	600.00	600.60	599.40	1.99	1.99	179.85	-29.99	0.08	29.99	26.01	3.98	7.529	
700.00	700.00	700.60	699.40	2.34	2.34	179.85	-29.99	0.08	29.99	25.31	4.68	6.407	
800.00	800.00	800.60	799.40	2.69	2.69	179.85	-29.99	0.08	29.99	24.61	5.38	5.571	
900.00	900.00	900.60	899.40	3.04	3.05	179.85	-29.99	0.08	29.99	23.90	6.09	4.925 Alert	
1,000.00	1,000.00	1,000.60	999.40	3.40	3.40	179.85	-29.99	0.08	29.99	23.19	6.80	4.412 Alert	
1,100.00	1,100.00	1,100.60	1,099.40	3.75	3.75	179.85	-29.99	0.08	29.99	22.48	7.51	3.995 Alert	
1,200.00	1,200.00	1,200.60	1,199.40	4.11	4.11	179.85	-29.99	0.08	29.99	21.77	8.22	3.649 Alert	
1,300.00	1,300.00	1,300.60	1,299.40	4.46	4.47	179.85	-29.99	0.08	29.99	21.06	8.93	3.358 Alert	
1,400.00	1,400.00	1,400.60	1,399.40	4.82	4.82	179.85	-29.99	0.08	29.99	20.35	9.64	3.110 Alert	
1,500.00	1,500.00	1,500.60	1,499.40	5.18	5.18	179.85	-29.99	0.08	29.99	19.63	10.36	2.896 Alert	
1,600.00	1,600.00	1,600.60	1,599.40	5.53	5.54	179.85	-29.99	0.08	29.99	18.92	11.07	2.709 Alert	
1,700.00	1,700.00	1,700.60	1,699.40	5.89	5.89	179.85	-29.99	0.08	29.99	18.21	11.78	2.545 Alert	
1,800.00	1,800.00	1,800.60	1,799.40	6.25	6.25	179.85	-29.99	0.08	29.99	17.49	12.50	2.399 Minor Risk	
1,900.00	1,900.00	1,900.60	1,899.40	6.61	6.61	179.85	-29.99	0.08	29.99	16.78	13.21	2.270 Minor Risk	
2,000.00	2,000.00	2,000.60	1,999.40	6.96	6.97	179.85	-29.99	0.08	29.99	16.06	13.93	2.153 Minor Risk	
2,100.00	2,100.00	2,100.60	2,099.40	7.32	7.32	179.85	-29.99	0.08	29.99	15.35	14.64	2.048 Minor Risk	
2,200.00	2,200.00	2,200.60	2,199.40	7.68	7.68	179.85	-29.99	0.08	29.99	14.63	15.36	1.953 Minor Risk	
2,300.00	2,300.00	2,300.60	2,299.40	8.04	8.04	179.85	-29.99	0.08	29.99	13.92	16.07	1.866 Minor Risk	
2,350.00	2,350.00	2,349.40	2,349.40	8.22	8.21	179.85	-29.99	0.08	29.99	13.56	16.43	1.826 Minor Risk, CC	
2,400.00	2,400.00	2,400.60	2,399.40	8.39	8.40	-164.23	-29.99	0.08	30.20	13.41	16.79	1.799 Minor Risk, ES	
2,500.00	2,499.98	2,500.62	2,499.38	8.75	8.75	-165.07	-29.99	0.08	31.88	14.38	17.51	1.821 Minor Risk	
2,600.00	2,599.92	2,600.68	2,599.32	9.11	9.11	-166.53	-29.99	0.08	35.27	17.05	18.22	1.936 Minor Risk	
2,700.00	2,699.78	2,699.18	2,699.18	9.47	9.46	-168.25	-29.99	0.08	40.37	21.44	18.93	2.133 Minor Risk	
2,800.00	2,799.54	2,799.68	2,799.68	9.82	9.82	-169.54	-29.24	-0.35	46.44	26.79	19.64	2.364 Minor Risk	
2,900.00	2,899.16	2,900.28	2,900.24	10.18	10.18	-170.10	-26.95	-1.65	52.63	32.27	20.35	2.586 Alert	
3,000.00	2,998.61	3,000.99	3,000.85	10.54	10.54	-170.15	-23.12	-3.82	58.93	37.87	21.06	2.798 Alert	
3,100.00	3,097.86	3,101.78	3,101.45	10.89	10.90	-169.83	-17.75	-6.87	65.33	43.57	21.76	3.002 Alert	
3,200.00	3,196.89	3,202.67	3,202.03	11.25	11.26	-169.25	-10.83	-10.80	71.85	49.39	22.46	3.199 Alert	
3,295.74	3,291.45	3,301.22	3,297.71	11.59	11.61	-168.56	-2.96	-15.27	78.36	55.21	23.15	3.385 Alert	
3,300.00	3,295.65	3,303.03	3,301.94	11.61	11.62	-168.54	-2.61	-15.47	78.67	55.51	23.17	3.396 Alert	
3,400.00	3,394.29	3,402.75	3,401.19	11.97	11.97	-168.00	5.76	-20.22	86.09	62.20	23.88	3.604 Alert	
3,500.00	3,492.94	3,502.47	3,500.45	12.33	12.33	-167.55	14.13	-24.97	93.51	68.91	24.60	3.801 Alert	
3,600.00	3,591.58	3,602.19	3,599.71	12.69	12.68	-167.17	22.49	-29.72	100.94	75.62	25.32	3.986 Alert	
3,700.00	3,690.22	3,701.91	3,698.96	13.05	13.04	-166.84	30.86	-34.47	108.37	82.33	26.04	4.161 Alert	
3,800.00	3,788.86	3,801.64	3,798.22	13.41	13.40	-166.55	39.22	-39.23	115.80	89.04	26.76	4.327 Alert	
3,900.00	3,887.50	3,901.36	3,897.48	13.77	13.76	-166.30	47.59	-43.98	123.24	95.75	27.48	4.484 Alert	
4,000.00	3,986.14	4,001.08	3,996.73	14.14	14.12	-166.07	55.95	-48.73	130.67	102.47	28.21	4.633 Alert	
4,100.00	4,084.78	4,100.80	4,095.99	14.50	14.47	-165.87	64.32	-53.48	138.11	109.18	28.93	4.774 Alert	
4,200.00	4,183.42	4,200.52	4,195.25	14.87	14.83	-165.69	72.68	-58.23	145.55	115.90	29.66	4.908 Alert	
4,300.00	4,282.06	4,300.25	4,294.50	15.24	15.19	-165.53	81.05	-62.98	153.00	122.61	30.38	5.036	
4,400.00	4,380.70	4,400.03	4,393.76	15.60	15.55	-165.38	89.42	-67.73	160.44	129.33	31.11	5.157	
4,500.00	4,479.34	4,499.69	4,493.02	15.97	15.91	-165.24	97.78	-72.48	167.89	136.05	31.84	5.273	
4,600.00	4,577.98	4,599.41	4,592.27	16.34	16.27	-165.12	106.15	-77.23	175.33	142.77	32.57	5.384	
4,700.00	4,676.62	4,700.87	4,691.53	16.71	16.64	-165.01	114.51	-81.98	182.78	149.48	33.30	5.489	
4,800.00	4,775.27	4,801.15	4,790.79	17.08	17.00	-164.90	122.88	-86.73	190.22	156.19	34.03	5.589	
4,900.00	4,873.91	4,901.42	4,890.04	17.45	17.36	-164.81	131.24	-91.48	197.67	162.91	34.76	5.686	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,001.70	4,989.30	17.82	17.72	-164.72	139.61	-96.24	205.12	169.62	35.50	5.779		
5,100.00	5,071.19	5,101.98	5,088.56	18.19	18.09	-164.63	147.97	-100.99	212.57	176.34	36.23	5.867		
5,200.00	5,169.83	5,202.26	5,187.81	18.56	18.45	-164.56	156.34	-105.74	220.02	183.05	36.96	5.952		
5,300.00	5,268.47	5,302.54	5,287.07	18.93	18.81	-164.48	164.71	-110.49	227.47	189.77	37.70	6.034		
5,400.00	5,367.11	5,402.82	5,386.33	19.31	19.18	-164.42	173.07	-115.24	234.92	196.49	38.43	6.113		
5,500.00	5,465.75	5,503.09	5,485.58	19.68	19.54	-164.35	181.44	-119.99	242.37	203.20	39.17	6.188		
5,600.00	5,564.39	5,603.37	5,584.84	20.05	19.90	-164.29	189.80	-124.74	249.82	209.92	39.90	6.261		
5,700.00	5,663.03	5,703.65	5,684.10	20.42	20.27	-164.24	198.17	-129.49	257.27	216.63	40.64	6.331		
5,800.00	5,761.67	5,803.93	5,783.35	20.80	20.63	-164.18	206.53	-134.24	264.72	223.35	41.37	6.399		
5,900.00	5,860.31	5,904.21	5,882.61	21.17	20.99	-164.13	214.90	-138.99	272.17	230.06	42.11	6.464		
6,000.00	5,958.96	5,995.52	5,981.87	21.54	21.33	-164.09	223.26	-143.74	279.62	236.81	42.81	6.532		
6,100.00	6,057.60	6,104.76	6,081.12	21.92	21.72	-164.04	231.63	-148.49	287.07	243.49	43.58	6.587		
6,200.00	6,156.24	6,205.04	6,180.38	22.29	22.09	-164.00	240.00	-153.24	294.52	250.21	44.32	6.646		
6,300.00	6,254.88	6,305.32	6,279.63	22.67	22.45	-163.96	248.36	-158.00	301.97	256.92	45.05	6.703		
6,400.00	6,353.52	6,405.60	6,378.89	23.04	22.81	-163.92	256.73	-162.75	309.43	263.64	45.79	6.758		
6,500.00	6,452.16	6,505.88	6,478.15	23.42	23.18	-163.88	265.09	-167.50	316.88	270.35	46.53	6.811		
6,600.00	6,550.80	6,606.15	6,577.40	23.79	23.54	-163.85	273.46	-172.25	324.33	277.07	47.26	6.862		
6,700.00	6,649.44	6,706.43	6,676.66	24.17	23.91	-163.81	281.82	-177.00	331.78	283.78	48.00	6.912		
6,800.00	6,748.08	6,806.71	6,775.92	24.54	24.27	-163.78	290.19	-181.75	339.23	290.50	48.74	6.960		
6,900.00	6,846.72	6,906.99	6,875.17	24.92	24.64	-163.75	298.55	-186.50	346.69	297.21	49.48	7.007		
7,000.00	6,945.36	7,007.27	6,974.43	25.29	25.00	-163.72	306.92	-191.25	354.14	303.92	50.22	7.052		
7,100.00	7,044.00	7,107.55	7,073.69	25.67	25.37	-163.69	315.29	-196.00	361.59	310.64	50.95	7.096		
7,200.00	7,142.65	7,207.82	7,172.94	26.04	25.73	-163.66	323.65	-200.75	369.04	317.35	51.69	7.139		
7,300.00	7,241.29	7,291.90	7,272.20	26.42	26.04	-163.64	332.02	-205.50	376.50	324.12	52.37	7.189		
7,400.00	7,339.93	7,408.38	7,371.46	26.79	26.46	-163.61	340.38	-210.25	383.95	330.78	53.17	7.221		
7,500.00	7,438.57	7,508.66	7,470.71	27.17	26.83	-163.59	348.75	-215.01	391.40	337.49	53.91	7.260		
7,571.77	7,509.37	7,562.92	7,541.95	27.44	27.02	-163.57	354.75	-218.42	396.75	342.38	54.38	7.296		
7,600.00	7,537.23	7,591.07	7,569.98	27.55	27.13	-163.57	357.11	-219.76	398.76	344.17	54.58	7.305		
7,700.00	7,636.18	7,684.93	7,663.45	27.92	27.47	-163.54	364.51	-223.95	404.78	349.48	55.30	7.320		
7,800.00	7,735.48	7,776.33	7,754.64	28.29	27.80	-163.56	369.87	-227.00	410.27	354.29	55.98	7.329		
7,900.00	7,835.05	7,867.65	7,845.87	28.65	28.12	-163.63	373.34	-228.97	415.34	358.70	56.64	7.333		
8,000.00	7,934.83	7,958.88	7,937.08	29.01	28.45	-163.76	374.91	-229.86	419.96	362.69	57.27	7.333		
8,100.00	8,034.74	8,055.95	8,034.14	29.36	28.79	-163.91	375.01	-229.92	423.67	365.73	57.95	7.311		
8,202.27	8,137.00	8,158.20	8,136.40	29.72	29.16	179.99	375.01	-229.92	424.99	366.32	58.67	7.244		
8,300.00	8,234.73	8,255.93	8,234.13	30.06	29.50	179.99	375.01	-229.92	424.99	365.63	59.36	7.160		
8,400.00	8,334.73	8,356.00	8,334.20	30.41	29.85	179.95	375.01	-229.66	424.99	364.93	60.06	7.076		
8,435.88	8,370.61	8,391.89	8,370.01	30.53	29.97	179.66	375.02	-227.47	424.98	364.68	60.30	7.048		
8,500.00	8,434.73	8,454.83	8,432.24	30.75	30.18	178.41	375.08	-218.22	425.09	364.38	60.71	7.002		
8,552.31	8,487.04	8,504.22	8,480.13	30.94	30.35	176.80	375.15	-206.22	425.56	364.56	61.00	6.976		
8,600.00	8,534.68	8,547.79	8,521.39	31.10	30.49	85.40	375.23	-192.24	426.47	365.24	61.23	6.965		
8,650.00	8,584.26	8,592.57	8,562.55	31.26	30.63	83.63	375.34	-174.65	427.83	366.41	61.42	6.965		
8,700.00	8,633.10	8,636.51	8,601.50	31.43	30.77	81.92	375.46	-154.32	429.55	367.98	61.57	6.977		
8,750.00	8,680.83	8,679.69	8,638.14	31.58	30.91	80.28	375.60	-131.49	431.57	369.91	61.66	6.999		
8,800.00	8,727.09	8,722.20	8,672.43	31.74	31.04	78.72	375.75	-106.39	433.83	372.13	61.70	7.032		
8,850.00	8,771.52	8,764.09	8,704.31	31.89	31.17	77.25	375.91	-79.23	436.26	374.57	61.68	7.073		
8,900.00	8,813.78	8,805.44	8,733.75	32.04	31.30	75.88	376.08	-50.20	438.79	377.17	61.62	7.120		
8,950.00	8,853.56	8,846.30	8,760.71	32.18	31.44	74.61	376.27	-19.51	441.36	379.83	61.53	7.173		
9,000.00	8,890.55	8,886.73	8,785.16	32.32	31.58	73.45	376.46	12.67	443.91	382.49	61.42	7.228		
9,050.00	8,924.46	8,926.78	8,807.10	32.47	31.72	72.40	376.66	46.17	446.37	385.07	61.29	7.282		
9,100.00	8,955.05	8,966.50	8,826.48	32.63	31.87	71.46	376.86	80.83	448.68	387.50	61.18	7.333		
9,150.00	8,982.08	9,005.94	8,843.31	32.79	32.03	70.64	377.08	116.49	450.81	389.71	61.10	7.378		
9,200.00	9,005.34	9,045.14	8,857.57	32.97	32.20	69.94	377.30	153.00	452.70	391.63	61.07	7.412		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD+IFR1															Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
9,250.00	9,024.65	9,084.14	8,869.24	33.17	32.38	69.36	377.52	190.20	454.31	393.21	61.11	7.435					
9,300.00	9,039.87	9,122.99	8,878.33	33.38	32.57	68.90	377.74	227.96	455.62	394.40	61.22	7.442					
9,350.00	9,050.89	9,161.71	8,884.82	33.62	32.77	68.57	377.97	266.13	456.60	395.17	61.42	7.434					
9,400.00	9,057.61	9,200.00	8,888.68	33.87	32.98	68.36	378.20	304.22	457.22	395.50	61.72	7.408					
9,452.31	9,060.00	9,241.30	8,890.00	34.15	33.21	68.27	378.44	345.49	457.48	395.34	62.15	7.361					
9,500.00	9,060.00	9,288.99	8,890.00	34.42	33.50	68.27	378.73	393.18	457.48	394.83	62.65	7.302					
9,600.00	9,060.00	9,388.99	8,890.00	35.09	34.19	68.27	379.33	493.17	457.48	393.60	63.88	7.162					
9,700.00	9,060.00	9,488.99	8,890.00	35.86	34.98	68.27	379.92	593.17	457.47	392.17	65.30	7.006					
9,800.00	9,060.00	9,588.99	8,890.00	36.72	35.87	68.27	380.52	693.17	457.47	390.56	66.91	6.837					
9,900.00	9,060.00	9,688.99	8,890.00	37.69	36.86	68.27	381.12	793.17	457.47	388.76	68.71	6.658					
10,000.00	9,060.00	9,788.99	8,890.00	38.73	37.93	68.27	381.71	893.17	457.47	386.81	70.66	6.474					
10,100.00	9,060.00	9,888.99	8,890.00	39.86	39.08	68.27	382.31	993.16	457.46	384.70	72.77	6.287					
10,140.22	9,060.00	9,929.21	8,890.00	40.33	39.56	68.27	382.55	1,033.39	457.46	383.81	73.65	6.211					
10,200.00	9,060.00	9,988.99	8,890.00	41.05	40.30	68.23	382.91	1,093.16	456.88	381.89	74.99	6.092					
10,300.00	9,060.00	10,088.91	8,890.00	42.31	41.58	68.03	383.50	1,193.08	453.32	376.05	77.27	5.867					
10,400.00	9,060.00	10,188.63	8,890.00	43.64	42.92	67.62	384.10	1,292.80	446.54	366.98	79.57	5.612					
10,507.23	9,060.00	10,304.79	8,890.00	45.11	44.55	66.95	384.73	1,399.38	435.73	353.60	82.13	5.306					
10,600.00	9,060.00	10,387.40	8,890.00	46.43	45.75	66.48	385.28	1,491.57	426.20	342.05	84.15	5.065					
10,700.00	9,060.00	10,487.09	8,890.00	47.91	47.23	66.12	385.88	1,591.25	419.03	332.41	86.63	4.837	Alert				
10,800.00	9,060.00	10,586.99	8,890.00	49.42	48.76	65.91	386.48	1,691.15	415.07	325.79	89.28	4.649	Alert				
10,874.32	9,060.00	10,661.30	8,890.00	50.57	49.92	65.86	386.92	1,765.47	414.19	322.81	91.38	4.532	Alert				
10,900.00	9,060.00	10,686.98	8,890.00	50.97	50.33	65.86	387.07	1,791.14	414.29	322.17	92.13	4.497	Alert				
11,000.00	9,060.00	10,786.94	8,890.00	52.55	51.93	65.99	387.67	1,891.10	416.71	321.55	95.16	4.379	Alert				
11,100.00	9,060.00	10,886.75	8,890.00	54.14	53.55	66.29	388.26	1,990.91	422.31	323.94	98.37	4.293	Alert				
11,207.23	9,060.00	11,006.54	8,890.00	55.87	55.54	66.77	388.90	2,097.62	431.89	329.69	102.20	4.226	Alert				
11,300.00	9,060.00	11,085.77	8,890.00	57.39	56.88	67.31	389.45	2,189.92	440.43	335.23	105.19	4.187	Alert				
11,400.00	9,060.00	11,185.54	8,890.00	59.06	58.58	67.68	390.05	2,289.69	446.56	337.98	108.58	4.113	Alert				
11,506.63	9,060.00	11,307.89	8,890.00	60.88	60.70	67.86	390.68	2,396.26	449.55	337.18	112.37	4.001	Alert				
11,600.00	9,060.00	11,385.48	8,890.00	62.49	62.06	67.91	391.24	2,489.63	450.56	335.37	115.19	3.911	Alert				
11,700.00	9,060.00	11,485.47	8,890.00	64.24	63.82	67.97	391.84	2,589.62	451.64	333.12	118.53	3.810	Alert				
11,800.00	9,060.00	11,585.47	8,890.00	66.01	65.60	68.03	392.43	2,689.61	452.73	330.83	121.89	3.714	Alert				
11,900.00	9,060.00	11,685.46	8,890.00	67.79	67.40	68.08	393.03	2,789.60	453.81	328.52	125.29	3.622	Alert				
12,000.00	9,060.00	11,785.45	8,890.00	69.58	69.21	68.14	393.63	2,889.59	454.90	326.18	128.72	3.534	Alert				
12,100.00	9,060.00	11,885.44	8,890.00	71.39	71.03	68.19	394.23	2,989.58	455.98	323.81	132.17	3.450	Alert				
12,200.00	9,060.00	11,985.44	8,890.00	73.21	72.86	68.24	394.82	3,089.58	457.07	321.42	135.65	3.369	Alert				
12,300.00	9,060.00	12,085.43	8,890.00	75.05	74.71	68.30	395.42	3,189.57	458.15	319.00	139.15	3.292	Alert				
12,400.00	9,060.00	12,185.42	8,890.00	76.89	76.57	68.35	396.02	3,289.56	459.24	316.57	142.67	3.219	Alert				
12,500.00	9,060.00	12,285.42	8,890.00	78.74	78.43	68.41	396.61	3,389.55	460.33	314.11	146.22	3.148	Alert				
12,600.00	9,060.00	12,385.41	8,890.00	80.61	80.31	68.46	397.21	3,489.54	461.42	311.64	149.78	3.081	Alert				
12,700.00	9,060.00	12,485.40	8,890.00	82.48	82.19	68.51	397.81	3,589.53	462.50	309.14	153.36	3.016	Alert				
12,800.00	9,060.00	12,585.40	8,890.00	84.36	84.08	68.57	398.40	3,689.52	463.59	306.64	156.96	2.954	Alert				
12,900.00	9,060.00	12,685.39	8,890.00	86.24	85.97	68.62	399.00	3,789.52	464.68	304.11	160.57	2.894	Alert				
13,000.00	9,060.00	12,785.38	8,890.00	88.14	87.88	68.67	399.60	3,889.51	465.77	301.57	164.19	2.837	Alert				
13,100.00	9,060.00	12,885.38	8,890.00	90.04	89.79	68.72	400.19	3,989.50	466.86	299.02	167.83	2.782	Alert				
13,200.00	9,060.00	12,985.37	8,890.00	91.94	91.70	68.78	400.79	4,089.49	467.95	296.46	171.49	2.729	Alert				
13,300.00	9,060.00	13,085.36	8,890.00	93.86	93.63	68.83	401.39	4,189.48	469.04	293.88	175.15	2.678	Alert				
13,400.00	9,060.00	13,185.36	8,890.00	95.77	95.55	68.88	401.98	4,289.47	470.13	291.30	178.83	2.629	Alert				
13,500.00	9,060.00	13,285.35	8,890.00	97.70	97.48	68.93	402.58	4,389.46	471.22	288.70	182.52	2.582	Alert				
13,600.00	9,060.00	13,385.34	8,890.00	99.62	99.42	68.98	403.18	4,489.45	472.31	286.09	186.22	2.536	Alert				
13,700.00	9,060.00	13,485.34	8,890.00	101.56	101.36	69.03	403.77	4,589.45	473.40	283.47	189.93	2.493	Minor Risk				
13,800.00	9,060.00	13,585.33	8,890.00	103.49	103.31	69.08	404.37	4,689.44	474.50	280.85	193.65	2.450	Minor Risk				
13,900.00	9,060.00	13,685.32	8,890.00	105.43	105.25	69.13	404.97	4,789.43	475.59	278.21	197.38	2.410	Minor Risk				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 332H - Wellbore #1 - Permit Plan 1												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
14,000.00	9,060.00	13,785.31	8,890.00	107.38	107.21	69.18	405.56	4,889.42	476.68	275.57	201.12	2.370 Minor Risk	
14,100.00	9,060.00	13,885.31	8,890.00	109.33	109.16	69.23	406.16	4,989.41	477.77	272.91	204.86	2.332 Minor Risk	
14,200.00	9,060.00	13,985.30	8,890.00	111.28	111.12	69.28	406.76	5,089.40	478.87	270.25	208.61	2.295 Minor Risk	
14,300.00	9,060.00	14,085.29	8,890.00	113.23	113.08	69.33	407.35	5,189.39	479.96	267.59	212.37	2.260 Minor Risk	
14,400.00	9,060.00	14,185.29	8,890.00	115.19	115.05	69.38	407.95	5,289.39	481.06	264.91	216.14	2.226 Minor Risk	
14,500.00	9,060.00	14,285.28	8,890.00	117.15	117.01	69.43	408.55	5,389.38	482.15	262.23	219.92	2.192 Minor Risk	
14,600.00	9,060.00	14,385.27	8,890.00	119.11	118.98	69.48	409.14	5,489.37	483.25	259.55	223.70	2.160 Minor Risk	
14,700.00	9,060.00	14,485.27	8,890.00	121.08	120.96	69.53	409.74	5,589.36	484.34	256.85	227.49	2.129 Minor Risk	
14,800.00	9,060.00	14,585.26	8,890.00	123.05	122.93	69.57	410.34	5,689.35	485.44	254.15	231.28	2.099 Minor Risk	
14,900.00	9,060.00	14,685.25	8,890.00	125.02	124.91	69.62	410.94	5,789.34	486.53	251.45	235.08	2.070 Minor Risk	
15,000.00	9,060.00	14,785.25	8,890.00	126.99	126.89	69.67	411.53	5,889.33	487.63	248.74	238.89	2.041 Minor Risk	
15,100.00	9,060.00	14,885.24	8,890.00	128.97	128.87	69.72	412.13	5,989.33	488.73	246.02	242.70	2.014 Minor Risk	
15,200.00	9,060.00	14,985.23	8,890.00	130.95	130.85	69.77	412.73	6,089.32	489.82	243.30	246.52	1.987 Minor Risk	
15,300.00	9,060.00	15,085.23	8,890.00	132.93	132.84	69.81	413.32	6,189.31	490.92	240.58	250.34	1.961 Minor Risk	
15,400.00	9,060.00	15,185.22	8,890.00	134.91	134.83	69.86	413.92	6,289.30	492.02	237.85	254.17	1.936 Minor Risk	
15,500.00	9,060.00	15,285.21	8,890.00	136.89	136.82	69.91	414.52	6,389.29	493.12	235.11	258.00	1.911 Minor Risk	
15,600.00	9,060.00	15,385.21	8,890.00	138.88	138.81	69.95	415.11	6,489.28	494.21	232.38	261.84	1.887 Minor Risk	
15,700.00	9,060.00	15,485.20	8,890.00	140.86	140.80	70.00	415.71	6,589.27	495.31	229.63	265.68	1.864 Minor Risk	
15,800.00	9,060.00	15,585.19	8,890.00	142.85	142.79	70.05	416.31	6,689.27	496.41	226.89	269.52	1.842 Minor Risk	
15,900.00	9,060.00	15,685.18	8,890.00	144.84	144.79	70.09	416.90	6,789.26	497.51	224.14	273.37	1.820 Minor Risk	
16,000.00	9,060.00	15,785.18	8,890.00	146.83	146.79	70.14	417.50	6,889.25	498.61	221.38	277.23	1.799 Minor Risk	
16,100.00	9,060.00	15,885.17	8,890.00	148.83	148.78	70.18	418.10	6,989.24	499.71	218.62	281.09	1.778 Minor Risk	
16,200.00	9,060.00	15,985.16	8,890.00	150.82	150.78	70.23	418.69	7,089.23	500.81	215.86	284.95	1.758 Minor Risk	
16,300.00	9,060.00	16,085.16	8,890.00	152.82	152.78	70.27	419.29	7,189.22	501.91	213.10	288.81	1.738 Minor Risk	
16,400.00	9,060.00	16,185.15	8,890.00	154.81	154.79	70.32	419.89	7,289.21	503.01	210.33	292.68	1.719 Minor Risk	
16,500.00	9,060.00	16,285.14	8,890.00	156.81	156.79	70.36	420.48	7,389.20	504.11	207.56	296.56	1.700 Minor Risk	
16,600.00	9,060.00	16,385.14	8,890.00	158.81	158.79	70.41	421.08	7,489.20	505.21	204.78	300.43	1.682 Minor Risk	
16,700.00	9,060.00	16,485.13	8,890.00	160.81	160.80	70.45	421.68	7,589.19	506.32	202.00	304.31	1.664 Minor Risk	
16,800.00	9,060.00	16,585.12	8,890.00	162.81	162.80	70.50	422.27	7,689.18	507.42	199.22	308.19	1.646 Minor Risk	
16,900.00	9,060.00	16,685.12	8,890.00	164.82	164.81	70.54	422.87	7,789.17	508.52	196.44	312.08	1.629 Minor Risk	
17,000.00	9,060.00	16,785.11	8,890.00	166.82	166.82	70.58	423.47	7,889.16	509.62	193.65	315.97	1.613 Minor Risk	
17,100.00	9,060.00	16,885.10	8,890.00	168.83	168.83	70.63	424.06	7,989.15	510.73	190.86	319.86	1.597 Minor Risk	
17,200.00	9,060.00	16,985.10	8,890.00	170.83	170.84	70.67	424.66	8,089.14	511.83	188.07	323.76	1.581 Minor Risk	
17,300.00	9,060.00	17,085.09	8,890.00	172.84	172.85	70.71	425.26	8,189.14	512.93	185.28	327.66	1.565 Minor Risk	
17,400.00	9,060.00	17,185.08	8,890.00	174.84	174.86	70.76	425.85	8,289.13	514.04	182.48	331.56	1.550 Minor Risk	
17,500.00	9,060.00	17,285.08	8,890.00	176.85	176.87	70.80	426.45	8,389.12	515.14	179.68	335.46	1.536 Minor Risk	
17,600.00	9,060.00	17,385.07	8,890.00	178.86	178.89	70.84	427.05	8,489.11	516.25	176.88	339.37	1.521 Minor Risk	
17,700.00	9,060.00	17,485.06	8,890.00	180.87	180.90	70.89	427.65	8,589.10	517.35	174.08	343.28	1.507 Minor Risk	
17,800.00	9,060.00	17,585.06	8,890.00	182.88	182.91	70.93	428.24	8,689.09	518.46	171.27	347.19	1.493 Major Risk	
17,900.00	9,060.00	17,685.05	8,890.00	184.89	184.93	70.97	428.84	8,789.08	519.56	168.46	351.10	1.480 Major Risk	
18,000.00	9,060.00	17,785.04	8,890.00	186.90	186.94	71.01	429.44	8,889.08	520.67	165.65	355.02	1.467 Major Risk	
18,100.00	9,060.00	17,885.03	8,890.00	188.92	188.96	71.05	430.03	8,989.07	521.77	162.84	358.94	1.454 Major Risk	
18,200.00	9,060.00	17,985.03	8,890.00	190.93	190.98	71.10	430.63	9,089.06	522.88	160.02	362.86	1.441 Major Risk	
18,300.00	9,060.00	18,085.02	8,890.00	192.94	193.00	71.14	431.23	9,189.05	523.98	157.20	366.78	1.429 Major Risk	
18,400.00	9,060.00	18,185.01	8,890.00	194.96	195.01	71.18	431.82	9,289.04	525.09	154.38	370.71	1.416 Major Risk	
18,500.00	9,060.00	18,285.01	8,890.00	196.97	197.03	71.22	432.42	9,389.03	526.20	151.56	374.63	1.405 Major Risk	
18,600.00	9,060.00	18,385.00	8,890.00	198.99	199.05	71.26	433.02	9,489.02	527.31	148.74	378.57	1.393 Major Risk	
18,700.00	9,060.00	18,484.99	8,890.00	201.00	201.07	71.30	433.61	9,589.02	528.41	145.92	382.50	1.381 Major Risk	
18,800.00	9,060.00	18,584.99	8,890.00	203.02	203.09	71.34	434.21	9,689.01	529.52	143.09	386.43	1.370 Major Risk	
18,900.00	9,060.00	18,684.98	8,890.00	205.04	205.11	71.38	434.81	9,789.00	530.63	140.26	390.37	1.359 Major Risk	
19,000.00	9,060.00	18,784.97	8,890.00	207.06	207.14	71.42	435.40	9,888.99	531.74	137.43	394.31	1.349 Major Risk	
19,100.00	9,060.00	18,884.97	8,890.00	209.07	209.16	71.46	436.00	9,988.98	532.85	134.60	398.25	1.338 Major Risk	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	18,984.96	8,890.00	211.09	211.18	71.50	436.60	10,088.97	533.95	131.76	402.19	1.328 Major Risk	
19,300.00	9,060.00	19,084.95	8,890.00	213.11	213.20	71.54	437.19	10,188.96	535.06	128.93	406.13	1.317 Major Risk	
19,400.00	9,060.00	19,184.95	8,890.00	215.13	215.23	71.58	437.79	10,288.96	536.17	126.09	410.08	1.307 Major Risk	
19,500.32	9,060.00	19,285.26	8,890.00	217.16	217.26	71.62	438.39	10,389.26	537.29	123.25	414.04	1.298 Major Risk, SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,528.68	3.38	1,528.72					
100.00	100.00	89.20	89.20	0.52	0.51	179.87	-1,528.68	3.38	1,528.69	1,527.65	1.03	1,481.382		
200.00	200.00	189.20	189.20	0.70	0.68	179.87	-1,528.68	3.38	1,528.69	1,527.31	1.38	1,109.682		
300.00	300.00	289.20	289.20	0.99	0.95	179.87	-1,528.68	3.38	1,528.69	1,526.75	1.94	787.379		
400.00	400.00	389.20	389.20	1.31	1.27	179.87	-1,528.68	3.38	1,528.69	1,526.10	2.58	591.944		
500.00	500.00	489.20	489.20	1.65	1.61	179.87	-1,528.68	3.38	1,528.69	1,525.43	3.26	469.595		
600.00	600.00	589.20	589.20	1.99	1.95	179.87	-1,528.68	3.38	1,528.69	1,524.74	3.94	387.622		
700.00	700.00	689.20	689.20	2.34	2.30	179.87	-1,528.68	3.38	1,528.69	1,524.05	4.64	329.400		
800.00	800.00	789.20	789.20	2.69	2.65	179.87	-1,528.68	3.38	1,528.69	1,523.34	5.34	286.102		
900.00	900.00	889.20	889.20	3.04	3.01	179.87	-1,528.68	3.38	1,528.69	1,522.64	6.05	252.721		
1,000.00	1,000.00	989.20	989.20	3.40	3.36	179.87	-1,528.68	3.38	1,528.69	1,521.93	6.76	226.236		
1,100.00	1,100.00	1,089.20	1,089.20	3.75	3.71	179.87	-1,528.68	3.38	1,528.69	1,521.22	7.47	204.730		
1,200.00	1,200.00	1,189.20	1,189.20	4.11	4.07	179.87	-1,528.68	3.38	1,528.69	1,520.51	8.18	186.929		
1,300.00	1,300.00	1,289.20	1,289.20	4.46	4.43	179.87	-1,528.68	3.38	1,528.69	1,519.80	8.89	171.958		
1,400.00	1,400.00	1,389.20	1,389.20	4.82	4.78	179.87	-1,528.68	3.38	1,528.69	1,519.08	9.60	159.195		
1,500.00	1,500.00	1,489.20	1,489.20	5.18	5.14	179.87	-1,528.68	3.38	1,528.69	1,518.37	10.32	148.187		
1,600.00	1,600.00	1,589.20	1,589.20	5.53	5.50	179.87	-1,528.68	3.38	1,528.69	1,517.66	11.03	138.597		
1,700.00	1,700.00	1,689.20	1,689.20	5.89	5.85	179.87	-1,528.68	3.38	1,528.69	1,516.94	11.74	130.169		
1,800.00	1,800.00	1,789.20	1,789.20	6.25	6.21	179.87	-1,528.68	3.38	1,528.69	1,516.23	12.46	122.704		
1,900.00	1,900.00	1,889.20	1,889.20	6.61	6.57	179.87	-1,528.68	3.38	1,528.69	1,515.51	13.17	116.046		
2,000.00	2,000.00	1,989.20	1,989.20	6.96	6.92	179.87	-1,528.68	3.38	1,528.69	1,514.80	13.89	110.072		
2,100.00	2,100.00	2,120.58	2,120.57	7.32	7.39	179.88	-1,527.45	3.10	1,527.77	1,513.06	14.71	103.840		
2,200.00	2,200.00	2,255.62	2,255.53	7.68	7.88	179.92	-1,523.12	2.12	1,524.57	1,509.02	15.54	98.084		
2,300.00	2,300.00	2,390.38	2,390.08	8.04	8.36	179.98	-1,515.72	0.44	1,519.07	1,502.71	16.37	92.819		
2,350.00	2,350.00	2,457.60	2,457.12	8.22	8.60	-179.97	-1,510.87	-0.66	1,515.47	1,498.69	16.77	90.348		
2,400.00	2,400.00	2,524.73	2,524.00	8.39	8.84	-163.90	-1,505.27	-1.93	1,511.50	1,494.32	17.18	87.987		
2,500.00	2,499.98	2,658.74	2,657.29	8.75	9.32	-163.83	-1,491.79	-4.99	1,503.12	1,485.14	17.98	83.593		
2,600.00	2,599.92	2,792.39	2,789.87	9.11	9.79	-163.76	-1,475.33	-8.72	1,494.14	1,475.36	18.77	79.582		
2,700.00	2,699.78	2,925.68	2,921.66	9.47	10.27	-163.69	-1,455.92	-13.13	1,484.57	1,465.01	19.56	75.902		
2,800.00	2,799.54	3,058.58	3,052.56	9.82	10.75	-163.62	-1,433.59	-18.19	1,474.42	1,454.09	20.33	72.509		
2,900.00	2,899.16	3,191.06	3,182.50	10.18	11.22	-163.54	-1,408.39	-23.91	1,463.69	1,442.59	21.10	69.367		
3,000.00	2,998.61	3,308.49	3,280.78	10.54	11.65	-163.50	-1,388.10	-28.51	1,453.45	1,431.57	21.88	66.423		
3,100.00	3,097.86	3,408.87	3,378.24	10.89	12.02	-163.47	-1,367.98	-33.07	1,444.87	1,422.27	22.61	63.917		
3,200.00	3,196.89	3,509.11	3,475.83	11.25	12.38	-163.46	-1,347.84	-37.64	1,437.96	1,414.63	23.33	61.633		
3,295.74	3,291.45	3,586.50	3,569.37	11.59	12.67	-163.46	-1,328.53	-42.02	1,432.91	1,408.96	23.96	59.806		
3,300.00	3,295.65	3,609.25	3,573.53	11.61	12.75	-163.46	-1,327.67	-42.21	1,432.72	1,408.67	24.06	59.552		
3,400.00	3,394.29	3,709.35	3,671.26	11.97	13.12	-163.46	-1,307.50	-46.79	1,428.25	1,403.46	24.79	57.617		
3,500.00	3,492.94	3,809.45	3,769.00	12.33	13.49	-163.45	-1,287.33	-51.37	1,423.78	1,398.26	25.52	55.789		
3,600.00	3,591.58	3,909.55	3,866.73	12.69	13.87	-163.45	-1,267.15	-55.94	1,419.30	1,393.05	26.26	54.058		
3,700.00	3,690.22	4,009.65	3,964.47	13.05	14.24	-163.45	-1,246.98	-60.52	1,414.83	1,387.84	26.99	52.418		
3,800.00	3,788.86	4,109.75	4,062.20	13.41	14.62	-163.44	-1,226.81	-65.09	1,410.36	1,382.63	27.73	50.863		
3,900.00	3,887.50	4,190.15	4,159.94	13.77	14.92	-163.44	-1,206.63	-69.67	1,405.88	1,377.49	28.39	49.513		
4,000.00	3,986.14	4,309.95	4,257.67	14.14	15.37	-163.43	-1,186.46	-74.24	1,401.41	1,372.20	29.21	47.980		
4,100.00	4,084.78	4,389.95	4,355.41	14.50	15.67	-163.43	-1,166.28	-78.82	1,396.93	1,367.06	29.87	46.760		
4,200.00	4,183.42	4,489.85	4,453.14	14.87	16.05	-163.43	-1,146.11	-83.40	1,392.46	1,361.84	30.62	45.480		
4,300.00	4,282.06	4,589.75	4,550.88	15.24	16.43	-163.42	-1,125.94	-87.97	1,387.99	1,356.63	31.36	44.260		
4,400.00	4,380.70	4,689.65	4,648.61	15.60	16.81	-163.42	-1,105.76	-92.55	1,383.51	1,351.41	32.10	43.094		
4,500.00	4,479.34	4,789.55	4,746.35	15.97	17.19	-163.41	-1,085.59	-97.12	1,379.04	1,346.19	32.85	41.980		
4,600.00	4,577.98	4,889.45	4,844.08	16.34	17.57	-163.41	-1,065.42	-101.70	1,374.57	1,340.97	33.60	40.915		
4,700.00	4,676.62	4,989.35	4,941.82	16.71	17.95	-163.40	-1,045.24	-106.28	1,370.09	1,335.75	34.34	39.894		
4,800.00	4,775.27	5,089.25	5,039.55	17.08	18.33	-163.40	-1,025.07	-110.85	1,365.62	1,330.53	35.09	38.917		
4,900.00	4,873.91	5,189.15	5,137.28	17.45	18.71	-163.39	-1,004.89	-115.43	1,361.15	1,325.31	35.84	37.979		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD+IFR1															Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
5,000.00	4,972.55	5,289.05	5,235.02	17.82	19.09	-163.39	-984.72	-120.00	1,356.67	1,320.08	36.59	37.079					
5,100.00	5,071.19	5,388.95	5,332.75	18.19	19.48	-163.39	-964.55	-124.58	1,352.20	1,314.86	37.34	36.214					
5,200.00	5,169.83	5,488.85	5,430.49	18.56	19.86	-163.38	-944.37	-129.16	1,347.73	1,309.64	38.09	35.383					
5,300.00	5,268.47	5,588.75	5,528.22	18.93	20.24	-163.38	-924.20	-133.73	1,343.25	1,304.41	38.84	34.584					
5,400.00	5,367.11	5,688.65	5,625.96	19.31	20.63	-163.37	-904.03	-138.31	1,338.78	1,299.19	39.59	33.814					
5,500.00	5,465.75	5,788.55	5,723.69	19.68	21.01	-163.37	-883.85	-142.88	1,334.30	1,293.96	40.34	33.073					
5,600.00	5,564.39	5,888.45	5,821.43	20.05	21.40	-163.36	-863.68	-147.46	1,329.83	1,288.73	41.10	32.358					
5,700.00	5,663.03	5,988.35	5,919.16	20.42	21.78	-163.36	-843.51	-152.04	1,325.36	1,283.51	41.85	31.669					
5,800.00	5,761.67	6,088.25	6,016.90	20.80	22.17	-163.35	-823.33	-156.61	1,320.88	1,278.28	42.60	31.004					
5,900.00	5,860.31	6,188.15	6,114.63	21.17	22.55	-163.35	-803.16	-161.19	1,316.41	1,273.05	43.36	30.361					
6,000.00	5,958.96	6,288.05	6,212.37	21.54	22.94	-163.34	-782.98	-165.76	1,311.94	1,267.82	44.11	29.741					
6,100.00	6,057.60	6,387.95	6,310.10	21.92	23.32	-163.34	-762.81	-170.34	1,307.46	1,262.60	44.87	29.141					
6,200.00	6,156.24	6,487.85	6,407.83	22.29	23.71	-163.33	-742.64	-174.91	1,302.99	1,257.37	45.62	28.560					
6,300.00	6,254.88	6,587.75	6,505.57	22.67	24.10	-163.33	-722.46	-179.49	1,298.52	1,252.14	46.38	27.999					
6,400.00	6,353.52	6,687.65	6,603.30	23.04	24.48	-163.32	-702.29	-184.07	1,294.04	1,246.91	47.13	27.455					
6,500.00	6,452.16	6,787.55	6,701.04	23.42	24.87	-163.32	-682.12	-188.64	1,289.57	1,241.68	47.89	26.928					
6,600.00	6,550.80	6,887.45	6,798.77	23.79	25.26	-163.31	-661.94	-193.22	1,285.10	1,236.45	48.65	26.417					
6,700.00	6,649.44	6,987.35	6,896.51	24.17	25.64	-163.31	-641.77	-197.79	1,280.62	1,231.22	49.40	25.922					
6,800.00	6,748.08	7,087.25	6,994.24	24.54	26.03	-163.30	-621.59	-202.37	1,276.15	1,225.99	50.16	25.441					
6,900.00	6,846.72	7,187.15	7,091.98	24.92	26.42	-163.30	-601.42	-206.95	1,271.68	1,220.76	50.92	24.975					
7,000.00	6,945.36	7,269.93	7,173.04	25.29	26.74	-163.30	-585.06	-210.66	1,267.68	1,216.02	51.66	24.541					
7,100.00	7,044.00	7,345.53	7,247.35	25.67	27.03	-163.31	-571.51	-213.73	1,265.52	1,213.15	52.37	24.165					
7,162.27	7,105.43	7,392.62	7,293.78	25.90	27.21	-163.33	-563.80	-215.48	1,265.14	1,212.34	52.81	23.958	CC				
7,200.00	7,142.65	7,421.16	7,321.95	26.04	27.31	-163.35	-559.40	-216.48	1,265.28	1,212.21	53.07	23.843					
7,300.00	7,241.29	7,500.00	7,399.97	26.42	27.61	-163.39	-548.30	-218.99	1,266.97	1,213.22	53.76	23.569					
7,400.00	7,339.93	7,572.27	7,471.67	26.79	27.88	-163.45	-539.52	-220.99	1,270.58	1,216.18	54.40	23.355					
7,500.00	7,438.57	7,647.64	7,546.62	27.17	28.15	-163.53	-531.76	-222.75	1,276.12	1,221.08	55.04	23.185					
7,571.77	7,509.37	7,700.00	7,598.77	27.44	28.34	-163.59	-527.23	-223.77	1,281.28	1,225.80	55.48	23.095					
7,600.00	7,537.23	7,722.80	7,621.51	27.55	28.42	-163.63	-525.47	-224.17	1,283.48	1,227.82	55.66	23.060					
7,700.00	7,636.18	7,800.00	7,698.53	27.92	28.70	-163.75	-520.50	-225.30	1,290.90	1,234.63	56.27	22.943					
7,800.00	7,735.48	7,872.83	7,771.28	28.29	28.95	-163.85	-517.21	-226.05	1,297.71	1,240.89	56.82	22.837					
7,900.00	7,835.05	7,947.74	7,846.17	28.65	29.21	-163.94	-515.24	-226.49	1,303.93	1,246.56	57.37	22.728					
8,000.00	7,934.83	8,025.60	7,924.03	29.01	29.48	-164.02	-514.68	-226.62	1,309.54	1,251.62	57.92	22.610					
8,100.00	8,034.74	8,125.52	8,023.94	29.36	29.81	-164.09	-514.68	-226.62	1,313.37	1,254.75	58.62	22.406					
8,202.27	8,137.00	8,227.78	8,126.20	29.72	30.16	179.85	-514.68	-226.62	1,314.69	1,255.36	59.33	22.160					
8,300.00	8,234.73	8,325.51	8,223.93	30.06	30.50	179.85	-514.68	-226.62	1,314.69	1,254.68	60.00	21.910					
8,400.00	8,334.73	8,425.75	8,324.05	30.41	30.83	179.71	-514.66	-223.25	1,314.68	1,253.99	60.69	21.663					
8,409.41	8,344.15	8,435.11	8,333.35	30.44	30.86	179.66	-514.66	-222.17	1,314.68	1,253.93	60.75	21.641					
8,500.00	8,434.73	8,522.57	8,418.96	30.75	31.14	178.90	-514.55	-204.71	1,314.81	1,253.49	61.32	21.442					
8,552.31	8,487.04	8,570.07	8,464.06	30.94	31.29	178.25	-514.46	-189.83	1,315.13	1,253.52	61.62	21.344					
8,600.00	8,534.68	8,611.68	8,502.42	31.10	31.41	87.91	-514.37	-173.76	1,315.67	1,253.82	61.86	21.269					
8,650.00	8,584.26	8,654.32	8,540.43	31.26	31.53	87.20	-514.25	-154.44	1,316.44	1,254.34	62.09	21.201					
8,700.00	8,633.10	8,696.08	8,576.16	31.43	31.65	86.52	-514.12	-132.84	1,317.37	1,255.06	62.31	21.142					
8,750.00	8,680.83	8,737.05	8,609.59	31.58	31.76	85.87	-513.98	-109.18	1,318.45	1,255.94	62.51	21.092					
8,800.00	8,727.09	8,777.32	8,640.72	31.74	31.87	85.23	-513.83	-83.65	1,319.64	1,256.95	62.70	21.048					
8,850.00	8,771.52	8,816.96	8,669.54	31.89	31.97	84.63	-513.67	-56.44	1,320.91	1,258.04	62.87	21.010					
8,900.00	8,813.78	8,856.06	8,696.05	32.04	32.07	84.06	-513.50	-27.72	1,322.23	1,259.20	63.03	20.976					
8,950.00	8,853.56	8,894.67	8,720.26	32.18	32.18	83.53	-513.32	2.36	1,323.57	1,260.37	63.20	20.944					
9,000.00	8,890.55	8,932.85	8,742.15	32.32	32.29	83.04	-513.13	33.64	1,324.89	1,261.53	63.36	20.910					
9,050.00	8,924.46	8,970.67	8,761.72	32.47	32.40	82.59	-512.94	65.98	1,326.17	1,262.63	63.54	20.872					
9,100.00	8,955.05	9,008.16	8,778.99	32.63	32.52	82.18	-512.74	99.25	1,327.37	1,263.64	63.73	20.828					
9,150.00	8,982.08	9,045.38	8,793.93	32.79	32.66	81.82	-512.54	133.33	1,328.48	1,264.53	63.95	20.775					

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.00	9,005.34	9,082.36	8,806.57	32.97	32.80	81.51	-512.33	168.08	1,329.47	1,265.27	64.19	20.710		
9,250.00	9,024.65	9,119.16	8,816.88	33.17	32.96	81.25	-512.12	203.40	1,330.31	1,265.83	64.48	20.632		
9,300.00	9,039.87	9,155.80	8,824.88	33.38	33.12	81.04	-511.91	239.15	1,331.00	1,266.20	64.80	20.539		
9,350.00	9,050.89	9,192.33	8,830.57	33.62	33.30	80.89	-511.69	275.22	1,331.52	1,266.35	65.17	20.431		
9,400.00	9,057.61	9,228.78	8,833.94	33.87	33.49	80.79	-511.48	311.51	1,331.85	1,266.27	65.58	20.308		
9,452.31	9,060.00	9,268.07	8,835.00	34.15	33.70	80.75	-511.24	350.78	1,332.00	1,265.94	66.06	20.163		
9,500.00	9,060.00	9,315.76	8,835.00	34.42	33.98	80.75	-510.96	398.47	1,332.00	1,265.39	66.61	19.997		
9,600.00	9,060.00	9,415.76	8,835.00	35.09	34.65	80.75	-510.36	498.47	1,332.00	1,264.08	67.92	19.612		
9,700.00	9,060.00	9,515.76	8,835.00	35.86	35.43	80.75	-509.77	598.47	1,332.00	1,262.56	69.44	19.183		
9,800.00	9,060.00	9,615.76	8,835.00	36.72	36.32	80.75	-509.17	698.47	1,331.99	1,260.84	71.15	18.720		
9,900.00	9,060.00	9,715.76	8,835.00	37.69	37.29	80.75	-508.57	798.47	1,331.99	1,258.94	73.05	18.233		
10,000.00	9,060.00	9,815.76	8,835.00	38.73	38.36	80.75	-507.98	898.46	1,331.99	1,256.86	75.12	17.731		
10,100.00	9,060.00	9,915.76	8,835.00	39.86	39.50	80.75	-507.38	998.46	1,331.99	1,254.64	77.35	17.220		
10,140.22	9,060.00	9,955.99	8,835.00	40.33	39.98	80.75	-507.14	1,038.69	1,331.98	1,253.69	78.29	17.014		
10,200.00	9,060.00	10,015.76	8,835.00	41.05	40.71	80.74	-506.79	1,098.46	1,331.37	1,251.65	79.72	16.701		
10,300.00	9,060.00	10,115.68	8,835.00	42.31	41.98	80.70	-506.19	1,198.38	1,327.58	1,245.37	82.21	16.149		
10,400.00	9,060.00	10,215.41	8,835.00	43.64	43.32	80.63	-505.60	1,298.10	1,320.36	1,235.55	84.81	15.568		
10,507.23	9,060.00	10,321.99	8,835.00	45.11	44.80	80.50	-504.96	1,404.68	1,308.81	1,221.11	87.70	14.924		
10,600.00	9,060.00	10,414.18	8,835.00	46.43	46.13	80.46	-504.41	1,496.87	1,298.59	1,208.30	90.29	14.383		
10,700.00	9,060.00	10,513.87	8,835.00	47.91	47.60	80.43	-503.82	1,596.55	1,290.87	1,197.70	93.18	13.854		
10,800.00	9,060.00	10,613.77	8,835.00	49.42	49.13	80.41	-503.22	1,696.45	1,286.60	1,190.44	96.16	13.379		
10,874.30	9,060.00	10,688.06	8,835.00	50.57	50.28	80.41	-502.78	1,770.74	1,285.65	1,187.21	98.44	13.060		
10,900.00	9,060.00	10,713.76	8,835.00	50.97	50.68	80.41	-502.63	1,796.44	1,285.76	1,186.53	99.23	12.957		
11,000.00	9,060.00	10,813.72	8,835.00	52.55	52.28	80.42	-502.03	1,896.40	1,288.37	1,186.00	102.37	12.585		
11,100.00	9,060.00	10,913.52	8,835.00	54.14	53.90	80.45	-501.44	1,996.20	1,294.41	1,188.84	105.57	12.261		
11,207.23	9,060.00	11,020.24	8,835.00	55.87	55.66	80.49	-500.80	2,102.91	1,304.71	1,195.65	109.05	11.964		
11,300.00	9,060.00	11,112.54	8,835.00	57.39	57.21	80.58	-500.25	2,195.22	1,313.84	1,201.74	112.11	11.719		
11,400.00	9,060.00	11,212.32	8,835.00	59.06	58.91	80.65	-499.66	2,294.99	1,320.39	1,204.93	115.46	11.436		
11,506.63	9,060.00	11,318.89	8,835.00	60.88	60.74	80.69	-499.02	2,401.56	1,323.58	1,204.49	119.08	11.115		
11,600.00	9,060.00	11,412.25	8,835.00	62.49	62.37	80.69	-498.46	2,494.93	1,324.66	1,202.36	122.29	10.832		
11,700.00	9,060.00	11,512.25	8,835.00	64.24	64.13	80.70	-497.87	2,594.92	1,325.81	1,200.04	125.77	10.542		
11,800.00	9,060.00	11,612.24	8,835.00	66.01	65.90	80.71	-497.27	2,694.91	1,326.97	1,197.69	129.28	10.265		
11,900.00	9,060.00	11,712.23	8,835.00	67.79	67.70	80.72	-496.68	2,794.90	1,328.12	1,195.31	132.81	10.000		
12,000.00	9,060.00	11,812.23	8,835.00	69.58	69.50	80.73	-496.08	2,894.89	1,329.28	1,192.90	136.38	9.747		
12,100.00	9,060.00	11,912.22	8,835.00	71.39	71.32	80.73	-495.49	2,994.88	1,330.43	1,190.46	139.97	9.505		
12,200.00	9,060.00	12,012.21	8,835.00	73.21	73.15	80.74	-494.89	3,094.87	1,331.59	1,188.00	143.59	9.274		
12,300.00	9,060.00	12,112.21	8,835.00	75.05	74.99	80.75	-494.29	3,194.86	1,332.74	1,185.51	147.23	9.052		
12,400.00	9,060.00	12,212.20	8,835.00	76.89	76.84	80.76	-493.70	3,294.86	1,333.90	1,183.01	150.89	8.840		
12,500.00	9,060.00	12,312.19	8,835.00	78.74	78.70	80.77	-493.10	3,394.85	1,335.05	1,180.48	154.57	8.637		
12,600.00	9,060.00	12,412.19	8,835.00	80.61	80.57	80.77	-492.51	3,494.84	1,336.21	1,177.94	158.26	8.443		
12,700.00	9,060.00	12,512.18	8,835.00	82.48	82.45	80.78	-491.91	3,594.83	1,337.36	1,175.38	161.98	8.256		
12,800.00	9,060.00	12,612.17	8,835.00	84.36	84.34	80.79	-491.31	3,694.82	1,338.52	1,172.81	165.71	8.078		
12,900.00	9,060.00	12,712.17	8,835.00	86.24	86.23	80.80	-490.72	3,794.81	1,339.67	1,170.22	169.45	7.906		
13,000.00	9,060.00	12,812.16	8,835.00	88.14	88.13	80.81	-490.12	3,894.80	1,340.83	1,167.62	173.21	7.741		
13,100.00	9,060.00	12,912.15	8,835.00	90.04	90.04	80.81	-489.53	3,994.80	1,341.98	1,165.00	176.98	7.583		
13,200.00	9,060.00	13,012.14	8,835.00	91.94	91.95	80.82	-488.93	4,094.79	1,343.14	1,162.37	180.76	7.430		
13,300.00	9,060.00	13,112.14	8,835.00	93.86	93.87	80.83	-488.33	4,194.78	1,344.29	1,159.73	184.56	7.284		
13,400.00	9,060.00	13,212.13	8,835.00	95.77	95.79	80.84	-487.74	4,294.77	1,345.45	1,157.08	188.36	7.143		
13,500.00	9,060.00	13,312.12	8,835.00	97.70	97.72	80.85	-487.14	4,394.76	1,346.60	1,154.42	192.18	7.007		
13,600.00	9,060.00	13,412.12	8,835.00	99.62	99.66	80.85	-486.55	4,494.75	1,347.76	1,151.75	196.00	6.876		
13,700.00	9,060.00	13,512.11	8,835.00	101.56	101.59	80.86	-485.95	4,594.74	1,348.91	1,149.07	199.84	6.750		
13,800.00	9,060.00	13,612.10	8,835.00	103.49	103.54	80.87	-485.36	4,694.74	1,350.07	1,146.39	203.68	6.628		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 333H - Wellbore #1 - Permit Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
13,900.00	9,060.00	13,712.10	8,835.00	105.43	105.48	80.88	-484.76	4,794.73	1,351.22	1,143.69	207.53	6.511				
14,000.00	9,060.00	13,812.09	8,835.00	107.38	107.43	80.89	-484.16	4,894.72	1,352.38	1,140.99	211.39	6.398				
14,100.00	9,060.00	13,912.08	8,835.00	109.33	109.38	80.89	-483.57	4,994.71	1,353.53	1,138.28	215.25	6.288				
14,200.00	9,060.00	14,012.08	8,835.00	111.28	111.34	80.90	-482.97	5,094.70	1,354.69	1,135.57	219.13	6.182				
14,300.00	9,060.00	14,112.07	8,835.00	113.23	113.30	80.91	-482.38	5,194.69	1,355.85	1,132.84	223.00	6.080				
14,400.00	9,060.00	14,212.06	8,835.00	115.19	115.26	80.92	-481.78	5,294.68	1,357.00	1,130.11	226.89	5.981				
14,500.00	9,060.00	14,312.06	8,835.00	117.15	117.23	80.93	-481.18	5,394.68	1,358.16	1,127.38	230.78	5.885				
14,600.00	9,060.00	14,412.05	8,835.00	119.11	119.20	80.93	-480.59	5,494.67	1,359.31	1,124.64	234.67	5.792				
14,700.00	9,060.00	14,512.04	8,835.00	121.08	121.17	80.94	-479.99	5,594.66	1,360.47	1,121.89	238.57	5.703				
14,800.00	9,060.00	14,612.04	8,835.00	123.05	123.14	80.95	-479.40	5,694.65	1,361.62	1,119.14	242.48	5.615				
14,900.00	9,060.00	14,712.03	8,835.00	125.02	125.12	80.96	-478.80	5,794.64	1,362.78	1,116.39	246.39	5.531				
15,000.00	9,060.00	14,812.02	8,835.00	126.99	127.09	80.96	-478.20	5,894.63	1,363.94	1,113.63	250.30	5.449				
15,100.00	9,060.00	14,912.01	8,835.00	128.97	129.07	80.97	-477.61	5,994.62	1,365.09	1,110.87	254.22	5.370				
15,200.00	9,060.00	15,012.01	8,835.00	130.95	131.06	80.98	-477.01	6,094.61	1,366.25	1,108.10	258.15	5.292				
15,300.00	9,060.00	15,112.00	8,835.00	132.93	133.04	80.99	-476.42	6,194.61	1,367.40	1,105.33	262.08	5.218				
15,400.00	9,060.00	15,211.99	8,835.00	134.91	135.03	80.99	-475.82	6,294.60	1,368.56	1,102.55	266.01	5.145				
15,500.00	9,060.00	15,311.99	8,835.00	136.89	137.01	81.00	-475.23	6,394.59	1,369.71	1,099.77	269.94	5.074				
15,600.00	9,060.00	15,411.98	8,835.00	138.88	139.00	81.01	-474.63	6,494.58	1,370.87	1,096.99	273.88	5.005				
15,700.00	9,060.00	15,511.97	8,835.00	140.86	140.99	81.02	-474.03	6,594.57	1,372.03	1,094.20	277.82	4.938	Alert			
15,800.00	9,060.00	15,611.97	8,835.00	142.85	142.99	81.03	-473.44	6,694.56	1,373.18	1,091.41	281.77	4.873	Alert			
15,900.00	9,060.00	15,711.96	8,835.00	144.84	144.98	81.03	-472.84	6,794.55	1,374.34	1,088.62	285.72	4.810	Alert			
16,000.00	9,060.00	15,811.95	8,835.00	146.83	146.98	81.04	-472.25	6,894.55	1,375.49	1,085.83	289.67	4.749	Alert			
16,100.00	9,060.00	15,911.95	8,835.00	148.83	148.97	81.05	-471.65	6,994.54	1,376.65	1,083.03	293.62	4.689	Alert			
16,200.00	9,060.00	16,011.94	8,835.00	150.82	150.97	81.06	-471.05	7,094.53	1,377.81	1,080.23	297.58	4.630	Alert			
16,300.00	9,060.00	16,111.93	8,835.00	152.82	152.97	81.06	-470.46	7,194.52	1,378.96	1,077.42	301.54	4.573	Alert			
16,400.00	9,060.00	16,211.93	8,835.00	154.81	154.97	81.07	-469.86	7,294.51	1,380.12	1,074.62	305.50	4.518	Alert			
16,500.00	9,060.00	16,311.92	8,835.00	156.81	156.97	81.08	-469.27	7,394.50	1,381.27	1,071.81	309.46	4.463	Alert			
16,600.00	9,060.00	16,411.91	8,835.00	158.81	158.97	81.09	-468.67	7,494.49	1,382.43	1,069.00	313.43	4.411	Alert			
16,700.00	9,060.00	16,511.91	8,835.00	160.81	160.98	81.09	-468.07	7,594.49	1,383.59	1,066.19	317.40	4.359	Alert			
16,800.00	9,060.00	16,611.90	8,835.00	162.81	162.98	81.10	-467.48	7,694.48	1,384.74	1,063.37	321.37	4.309	Alert			
16,900.00	9,060.00	16,711.89	8,835.00	164.82	164.99	81.11	-466.88	7,794.47	1,385.90	1,060.55	325.34	4.260	Alert			
17,000.00	9,060.00	16,811.88	8,835.00	166.82	167.00	81.12	-466.29	7,894.46	1,387.05	1,057.73	329.32	4.212	Alert			
17,100.00	9,060.00	16,911.88	8,835.00	168.82	169.00	81.12	-465.69	7,994.45	1,388.21	1,054.91	333.30	4.165	Alert			
17,200.00	9,060.00	17,011.87	8,835.00	170.83	171.01	81.13	-465.10	8,094.44	1,389.37	1,052.09	337.28	4.119	Alert			
17,300.00	9,060.00	17,111.86	8,835.00	172.84	173.02	81.14	-464.50	8,194.43	1,390.52	1,049.27	341.26	4.075	Alert			
17,400.00	9,060.00	17,211.86	8,835.00	174.84	175.03	81.15	-463.90	8,294.43	1,391.68	1,046.44	345.24	4.031	Alert			
17,500.00	9,060.00	17,311.85	8,835.00	176.85	177.04	81.15	-463.31	8,394.42	1,392.84	1,043.61	349.23	3.988	Alert			
17,600.00	9,060.00	17,411.84	8,835.00	178.86	179.06	81.16	-462.71	8,494.41	1,393.99	1,040.78	353.21	3.947	Alert			
17,700.00	9,060.00	17,511.84	8,835.00	180.87	181.07	81.17	-462.12	8,594.40	1,395.15	1,037.95	357.20	3.906	Alert			
17,800.00	9,060.00	17,611.83	8,835.00	182.88	183.08	81.18	-461.52	8,694.39	1,396.30	1,035.11	361.19	3.866	Alert			
17,900.00	9,060.00	17,711.82	8,835.00	184.89	185.10	81.18	-460.92	8,794.38	1,397.46	1,032.28	365.18	3.827	Alert			
18,000.00	9,060.00	17,811.82	8,835.00	186.90	187.11	81.19	-460.33	8,894.37	1,398.62	1,029.44	369.17	3.789	Alert			
18,100.00	9,060.00	17,911.81	8,835.00	188.92	189.13	81.20	-459.73	8,994.36	1,399.77	1,026.61	373.17	3.751	Alert			
18,200.00	9,060.00	18,011.80	8,835.00	190.93	191.14	81.20	-459.14	9,094.36	1,400.93	1,023.77	377.16	3.714	Alert			
18,300.00	9,060.00	18,111.80	8,835.00	192.94	193.16	81.21	-458.54	9,194.35	1,402.09	1,020.93	381.16	3.678	Alert			
18,400.00	9,060.00	18,211.79	8,835.00	194.96	195.18	81.22	-457.95	9,294.34	1,403.24	1,018.08	385.16	3.643	Alert			
18,500.00	9,060.00	18,311.78	8,835.00	196.97	197.20	81.23	-457.35	9,394.33	1,404.40	1,015.24	389.16	3.609	Alert			
18,600.00	9,060.00	18,411.78	8,835.00	198.99	199.22	81.23	-456.75	9,494.32	1,405.56	1,012.40	393.16	3.575	Alert			
18,700.00	9,060.00	18,511.77	8,835.00	201.00	201.23	81.24	-456.16	9,594.31	1,406.71	1,009.55	397.16	3.542	Alert			
18,800.00	9,060.00	18,611.76	8,835.00	203.02	203.25	81.25	-455.56	9,694.30	1,407.87	1,006.71	401.16	3.509	Alert			
18,900.00	9,060.00	18,711.75	8,835.00	205.04	205.28	81.26	-454.97	9,794.30	1,409.03	1,003.86	405.17	3.478	Alert			
19,000.00	9,060.00	18,811.75	8,835.00	207.06	207.30	81.26	-454.37	9,894.29	1,410.18	1,001.01	409.17	3.446	Alert			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,100.00	9,060.00	18,911.74	8,835.00	209.07	209.32	81.27	-453.77	9,994.28	1,411.34	998.16	413.18	3.416	Alert
19,200.00	9,060.00	19,011.73	8,835.00	211.09	211.34	81.28	-453.18	10,094.27	1,412.50	995.31	417.19	3.386	Alert
19,300.00	9,060.00	19,111.73	8,835.00	213.11	213.36	81.28	-452.58	10,194.26	1,413.65	992.46	421.20	3.356	Alert
19,400.00	9,060.00	19,211.72	8,835.00	215.13	215.38	81.29	-451.99	10,294.25	1,414.81	989.60	425.21	3.327	Alert
19,500.32	9,060.00	19,312.03	8,835.00	217.16	217.41	81.30	-451.39	10,394.56	1,415.97	986.74	429.23	3.299	Alert, ES, SF

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,558.65	3.44	1,558.70					
100.00	100.00	88.90	88.90	0.52	0.51	179.87	-1,558.65	3.44	1,558.66	1,557.63	1.03	1,510.563		
200.00	200.00	188.90	188.90	0.70	0.67	179.87	-1,558.65	3.44	1,558.66	1,557.28	1.38	1,132.031		
300.00	300.00	288.90	288.90	0.99	0.95	179.87	-1,558.65	3.44	1,558.66	1,556.72	1.94	803.194		
400.00	400.00	388.90	388.90	1.31	1.27	179.87	-1,558.65	3.44	1,558.66	1,556.08	2.58	603.780		
500.00	500.00	488.90	488.90	1.65	1.61	179.87	-1,558.65	3.44	1,558.66	1,555.40	3.25	478.951		
600.00	600.00	588.90	588.90	1.99	1.95	179.87	-1,558.65	3.44	1,558.66	1,554.71	3.94	395.326		
700.00	700.00	688.90	688.90	2.34	2.30	179.87	-1,558.65	3.44	1,558.66	1,554.02	4.64	335.934		
800.00	800.00	788.90	788.90	2.69	2.65	179.87	-1,558.65	3.44	1,558.66	1,553.31	5.34	291.769		
900.00	900.00	888.90	888.90	3.04	3.00	179.87	-1,558.65	3.44	1,558.66	1,552.61	6.05	257.720		
1,000.00	1,000.00	988.90	988.90	3.40	3.36	179.87	-1,558.65	3.44	1,558.66	1,551.90	6.76	230.708		
1,100.00	1,100.00	1,088.90	1,088.90	3.75	3.71	179.87	-1,558.65	3.44	1,558.66	1,551.19	7.47	208.774		
1,200.00	1,200.00	1,188.90	1,188.90	4.11	4.07	179.87	-1,558.65	3.44	1,558.66	1,550.48	8.18	190.619		
1,300.00	1,300.00	1,288.90	1,288.90	4.46	4.42	179.87	-1,558.65	3.44	1,558.66	1,549.77	8.89	175.350		
1,400.00	1,400.00	1,388.90	1,388.90	4.82	4.78	179.87	-1,558.65	3.44	1,558.66	1,549.06	9.60	162.334		
1,500.00	1,500.00	1,488.90	1,488.90	5.18	5.14	179.87	-1,558.65	3.44	1,558.66	1,548.34	10.31	151.108		
1,600.00	1,600.00	1,588.90	1,588.90	5.53	5.49	179.87	-1,558.65	3.44	1,558.66	1,547.63	11.03	141.328		
1,700.00	1,700.00	1,688.90	1,688.90	5.89	5.85	179.87	-1,558.65	3.44	1,558.66	1,546.91	11.74	132.733		
1,800.00	1,800.00	1,788.90	1,788.90	6.25	6.21	179.87	-1,558.65	3.44	1,558.66	1,546.20	12.46	125.120		
1,900.00	1,900.00	1,888.90	1,888.90	6.61	6.57	179.87	-1,558.65	3.44	1,558.66	1,545.48	13.17	118.331		
2,000.00	2,000.00	1,988.90	1,988.90	6.96	6.92	179.87	-1,558.65	3.44	1,558.66	1,544.77	13.89	112.238		
2,100.00	2,100.00	2,088.90	2,088.90	7.32	7.28	179.87	-1,558.65	3.44	1,558.66	1,544.05	14.60	106.741		
2,200.00	2,200.00	2,188.90	2,188.90	7.68	7.64	179.87	-1,558.65	3.44	1,558.66	1,543.34	15.32	101.756		
2,300.00	2,300.00	2,288.90	2,288.90	8.04	8.00	179.87	-1,558.65	3.44	1,558.66	1,542.62	16.03	97.215		
2,350.00	2,350.00	2,338.90	2,338.90	8.22	8.18	179.87	-1,558.65	3.44	1,558.66	1,542.27	16.39	95.093 CC		
2,400.00	2,400.00	2,388.90	2,388.90	8.39	8.35	-164.09	-1,558.65	3.44	1,558.87	1,542.12	16.75	93.075 ES		
2,500.00	2,499.98	2,488.88	2,488.88	8.75	8.71	-164.10	-1,558.65	3.44	1,560.55	1,543.08	17.46	89.360		
2,600.00	2,599.92	2,588.82	2,588.82	9.11	9.07	-164.13	-1,558.65	3.44	1,563.90	1,545.72	18.18	86.030		
2,700.00	2,699.78	2,688.68	2,688.68	9.47	9.43	-164.17	-1,558.65	3.44	1,568.94	1,550.04	18.89	83.042		
2,800.00	2,799.54	2,788.44	2,788.44	9.82	9.78	-164.22	-1,558.65	3.44	1,575.65	1,556.04	19.61	80.359		
2,900.00	2,899.16	2,888.06	2,888.06	10.18	10.14	-164.28	-1,558.65	3.44	1,584.04	1,563.72	20.32	77.950		
3,000.00	2,998.61	2,987.51	2,987.51	10.54	10.50	-164.35	-1,558.65	3.44	1,594.11	1,573.07	21.03	75.786		
3,100.00	3,097.86	3,086.76	3,086.76	10.89	10.85	-164.44	-1,558.65	3.44	1,605.85	1,584.11	21.75	73.845		
3,200.00	3,196.89	3,185.79	3,185.79	11.25	11.21	-164.54	-1,558.65	3.44	1,619.27	1,596.81	22.46	72.103		
3,295.74	3,291.45	3,280.35	3,280.35	11.59	11.55	-164.64	-1,558.65	3.44	1,633.69	1,610.55	23.14	70.607		
3,300.00	3,295.65	3,284.55	3,284.55	11.61	11.56	-164.64	-1,558.65	3.44	1,634.36	1,611.20	23.17	70.543		
3,400.00	3,394.29	3,383.19	3,383.19	11.97	11.91	-164.79	-1,558.65	3.44	1,650.23	1,626.35	23.88	69.112		
3,500.00	3,492.94	3,481.84	3,481.84	12.33	12.27	-164.94	-1,558.65	3.44	1,666.11	1,641.52	24.59	67.761		
3,600.00	3,591.58	3,580.48	3,580.48	12.69	12.62	-165.09	-1,558.65	3.44	1,681.99	1,656.69	25.30	66.484		
3,700.00	3,690.22	3,679.12	3,679.12	13.05	12.97	-165.23	-1,558.65	3.44	1,697.89	1,671.88	26.01	65.275		
3,800.00	3,788.86	3,777.76	3,777.76	13.41	13.33	-165.37	-1,558.65	3.44	1,713.80	1,687.07	26.72	64.129		
3,900.00	3,887.50	3,876.40	3,876.40	13.77	13.68	-165.51	-1,558.65	3.44	1,729.71	1,702.28	27.44	63.041		
4,000.00	3,986.14	3,975.04	3,975.04	14.14	14.03	-165.64	-1,558.65	3.44	1,745.64	1,717.49	28.15	62.007		
4,100.00	4,084.78	4,087.76	4,087.76	14.50	14.43	-165.77	-1,558.32	2.85	1,761.28	1,732.36	28.92	60.906		
4,200.00	4,183.42	4,205.69	4,205.64	14.87	14.85	-165.85	-1,556.84	0.23	1,775.90	1,746.21	29.70	59.801		
4,300.00	4,282.06	4,324.01	4,323.84	15.24	15.26	-165.85	-1,554.15	-4.53	1,789.46	1,758.98	30.48	58.716		
4,400.00	4,380.70	4,438.11	4,437.68	15.60	15.66	-165.79	-1,550.44	-11.09	1,801.97	1,770.73	31.24	57.680		
4,500.00	4,479.34	4,537.34	4,536.65	15.97	16.01	-165.72	-1,546.90	-17.35	1,814.17	1,782.21	31.96	56.771		
4,600.00	4,577.98	4,636.57	4,635.62	16.34	16.36	-165.65	-1,543.37	-23.60	1,826.37	1,793.70	32.67	55.900		
4,700.00	4,676.62	4,735.80	4,734.59	16.71	16.71	-165.59	-1,539.84	-29.85	1,838.57	1,805.18	33.39	55.065		
4,800.00	4,775.27	4,835.03	4,833.57	17.08	17.06	-165.52	-1,536.30	-36.10	1,850.78	1,816.67	34.11	54.264		
4,900.00	4,873.91	4,934.26	4,932.54	17.45	17.41	-165.46	-1,532.77	-42.35	1,862.99	1,828.16	34.83	53.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	5,033.49	5,031.51	17.82	17.77	-165.40	-1,529.24	-48.61	1,875.20	1,839.65	35.54	52.756		
5,100.00	5,071.19	5,132.72	5,130.48	18.19	18.12	-165.33	-1,525.70	-54.86	1,887.41	1,851.14	36.26	52.046		
5,200.00	5,169.83	5,231.95	5,229.45	18.56	18.47	-165.27	-1,522.17	-61.11	1,899.62	1,862.64	36.98	51.362		
5,300.00	5,268.47	5,331.18	5,328.42	18.93	18.82	-165.21	-1,518.63	-67.36	1,911.84	1,874.13	37.71	50.704		
5,400.00	5,367.11	5,430.41	5,427.39	19.31	19.17	-165.15	-1,515.10	-73.61	1,924.06	1,885.63	38.43	50.069		
5,500.00	5,465.75	5,529.64	5,526.36	19.68	19.53	-165.09	-1,511.57	-79.87	1,936.28	1,897.13	39.15	49.457		
5,600.00	5,564.39	5,628.87	5,625.33	20.05	19.88	-165.03	-1,508.03	-86.12	1,948.50	1,908.63	39.87	48.867		
5,700.00	5,663.03	5,728.10	5,724.30	20.42	20.23	-164.98	-1,504.50	-92.37	1,960.73	1,920.13	40.60	48.298		
5,800.00	5,761.67	5,827.33	5,823.27	20.80	20.59	-164.92	-1,500.97	-98.62	1,972.96	1,931.64	41.32	47.747		
5,900.00	5,860.31	5,926.57	5,922.24	21.17	20.94	-164.86	-1,497.43	-104.87	1,985.18	1,943.14	42.04	47.216		
6,000.00	5,958.96	6,025.80	6,021.21	21.54	21.30	-164.81	-1,493.90	-111.12	1,997.42	1,954.65	42.77	46.702		
6,100.00	6,057.60	6,125.03	6,120.18	21.92	21.65	-164.75	-1,490.37	-117.38	2,009.65	1,966.15	43.49	46.204		
6,200.00	6,156.24	6,224.26	6,219.15	22.29	22.01	-164.70	-1,486.83	-123.63	2,021.88	1,977.66	44.22	45.723		
6,300.00	6,254.88	6,323.49	6,318.12	22.67	22.36	-164.64	-1,483.30	-129.88	2,034.12	1,989.17	44.95	45.256		
6,400.00	6,353.52	6,422.72	6,417.09	23.04	22.72	-164.59	-1,479.76	-136.13	2,046.36	2,000.68	45.67	44.805		
6,500.00	6,452.16	6,521.95	6,516.06	23.42	23.07	-164.54	-1,476.23	-142.38	2,058.60	2,012.20	46.40	44.367		
6,600.00	6,550.80	6,621.18	6,615.03	23.79	23.43	-164.48	-1,472.70	-148.64	2,070.84	2,023.71	47.13	43.942		
6,700.00	6,649.44	6,720.41	6,714.00	24.17	23.78	-164.43	-1,469.16	-154.89	2,083.08	2,035.23	47.85	43.530		
6,800.00	6,748.08	6,819.64	6,812.97	24.54	24.14	-164.38	-1,465.63	-161.14	2,095.33	2,046.74	48.58	43.130		
6,900.00	6,846.72	6,918.87	6,911.94	24.92	24.49	-164.33	-1,462.10	-167.39	2,107.57	2,058.26	49.31	42.742		
7,000.00	6,945.36	7,018.10	7,010.91	25.29	24.85	-164.28	-1,458.56	-173.64	2,119.82	2,069.78	50.04	42.365		
7,100.00	7,044.00	7,117.33	7,109.88	25.67	25.20	-164.23	-1,455.03	-179.90	2,132.07	2,081.30	50.77	41.998		
7,200.00	7,142.65	7,216.56	7,208.85	26.04	25.56	-164.19	-1,451.49	-186.15	2,144.32	2,092.83	51.49	41.642		
7,300.00	7,241.29	7,315.79	7,307.82	26.42	25.92	-164.14	-1,447.96	-192.40	2,156.57	2,104.35	52.22	41.295		
7,400.00	7,339.93	7,415.02	7,406.79	26.79	26.27	-164.09	-1,444.43	-198.65	2,168.83	2,115.87	52.95	40.958		
7,500.00	7,438.57	7,514.25	7,505.76	27.17	26.63	-164.04	-1,440.89	-204.90	2,181.08	2,127.40	53.68	40.630		
7,571.77	7,509.37	7,585.48	7,576.80	27.44	26.89	-164.01	-1,438.36	-209.39	2,189.88	2,135.67	54.21	40.399		
7,600.00	7,537.23	7,613.50	7,604.75	27.55	26.99	-164.01	-1,437.36	-211.16	2,193.24	2,138.83	54.41	40.308		
7,700.00	7,636.18	7,712.93	7,703.92	27.92	27.34	-163.99	-1,433.82	-217.42	2,203.54	2,148.40	55.14	39.963		
7,800.00	7,735.48	7,791.92	7,782.75	28.29	27.63	-163.98	-1,431.34	-221.80	2,211.78	2,156.00	55.78	39.652		
7,900.00	7,835.05	7,869.49	7,860.25	28.65	27.91	-163.98	-1,429.69	-224.73	2,218.50	2,162.09	56.40	39.332		
8,000.00	7,934.83	7,947.11	7,937.84	29.01	28.18	-164.00	-1,428.81	-226.28	2,223.71	2,166.69	57.02	38.999		
8,100.00	8,034.74	8,032.92	8,023.64	29.36	28.49	-164.03	-1,428.65	-226.56	2,227.34	2,169.68	57.66	38.626		
8,202.27	8,137.00	8,135.17	8,125.90	29.72	28.85	179.91	-1,428.65	-226.56	2,228.66	2,170.27	58.39	38.171		
8,300.00	8,234.73	8,232.90	8,223.63	30.06	29.20	179.91	-1,428.65	-226.56	2,228.66	2,169.58	59.07	37.726		
8,400.00	8,334.73	8,332.90	8,323.63	30.41	29.55	179.91	-1,428.65	-226.56	2,228.66	2,168.88	59.78	37.282		
8,500.00	8,434.73	8,435.48	8,425.85	30.75	29.90	179.73	-1,428.58	-219.64	2,228.60	2,168.13	60.48	36.852		
8,552.31	8,487.04	8,487.58	8,476.88	30.94	30.07	179.47	-1,428.46	-209.23	2,228.56	2,167.73	60.83	36.637		
8,576.06	8,510.78	8,510.65	8,499.14	31.02	30.15	89.66	-1,428.40	-203.15	2,228.55	2,167.57	60.98	36.545		
8,600.00	8,534.68	8,533.69	8,521.10	31.10	30.22	89.52	-1,428.32	-196.19	2,228.56	2,167.42	61.14	36.453		
8,650.00	8,584.26	8,581.10	8,565.32	31.26	30.38	89.22	-1,428.13	-179.13	2,228.60	2,167.16	61.45	36.270		
8,700.00	8,633.10	8,627.64	8,607.20	31.43	30.53	88.93	-1,427.91	-158.87	2,228.68	2,166.93	61.75	36.094		
8,750.00	8,680.83	8,673.36	8,646.62	31.58	30.67	88.66	-1,427.65	-135.73	2,228.80	2,166.76	62.04	35.925		
8,800.00	8,727.09	8,718.35	8,683.48	31.74	30.81	88.39	-1,427.37	-109.96	2,228.94	2,166.61	62.33	35.762		
8,850.00	8,771.52	8,762.66	8,717.70	31.89	30.96	88.13	-1,427.06	-81.84	2,229.10	2,166.49	62.61	35.605		
8,900.00	8,813.78	8,806.36	8,749.22	32.04	31.10	87.89	-1,426.73	-51.59	2,229.28	2,166.39	62.88	35.450		
8,950.00	8,853.56	8,849.50	8,778.00	32.18	31.24	87.66	-1,426.38	-19.45	2,229.46	2,166.30	63.16	35.297		
9,000.00	8,890.55	8,892.15	8,803.98	32.32	31.39	87.45	-1,426.00	14.35	2,229.64	2,166.19	63.45	35.141		
9,050.00	8,924.46	8,934.34	8,827.15	32.47	31.55	87.25	-1,425.62	49.60	2,229.81	2,166.07	63.74	34.981		
9,100.00	8,955.05	8,976.15	8,847.48	32.63	31.71	87.08	-1,425.21	86.12	2,229.96	2,165.91	64.05	34.814		
9,150.00	8,982.08	9,017.60	8,864.95	32.79	31.89	86.92	-1,424.80	123.69	2,230.09	2,165.70	64.38	34.638		
9,200.00	9,005.34	9,058.75	8,879.57	32.97	32.07	86.78	-1,424.38	162.14	2,230.18	2,165.44	64.74	34.450		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	9,100.00	8,891.42	33.17	32.26	86.67	-1,423.94	201.65	2,230.24	2,165.12	65.12	34.248		
9,300.00	9,039.87	9,140.31	8,900.22	33.38	32.47	86.57	-1,423.51	240.97	2,230.26	2,164.72	65.53	34.033		
9,350.00	9,050.89	9,180.80	8,906.26	33.62	32.68	86.50	-1,423.07	281.00	2,230.22	2,164.25	65.98	33.803		
9,400.00	9,057.61	9,221.15	8,909.45	33.87	32.91	86.45	-1,422.63	321.21	2,230.14	2,163.70	66.45	33.563		
9,452.31	9,060.00	9,267.37	8,910.00	34.15	33.18	86.43	-1,422.12	367.43	2,229.99	2,162.99	67.00	33.286		
9,500.00	9,060.00	9,315.06	8,910.00	34.42	33.48	86.43	-1,421.60	415.11	2,229.74	2,162.17	67.57	32.997		
9,600.00	9,060.00	9,415.06	8,910.00	35.09	34.19	86.43	-1,420.50	515.11	2,229.24	2,160.29	68.95	32.333		
9,700.00	9,060.00	9,515.06	8,910.00	35.86	35.01	86.43	-1,419.40	615.10	2,228.73	2,158.20	70.53	31.600		
9,800.00	9,060.00	9,615.06	8,910.00	36.72	35.93	86.43	-1,418.30	715.09	2,228.23	2,155.92	72.31	30.815		
9,900.00	9,060.00	9,715.06	8,910.00	37.69	36.93	86.43	-1,417.20	815.08	2,227.72	2,153.45	74.27	29.995		
10,000.00	9,060.00	9,815.06	8,910.00	38.73	38.02	86.42	-1,416.10	915.08	2,227.22	2,150.82	76.40	29.152		
10,100.00	9,060.00	9,915.06	8,910.00	39.86	39.19	86.42	-1,415.00	1,015.07	2,226.71	2,148.03	78.68	28.299		
10,140.22	9,060.00	9,955.28	8,910.00	40.33	39.68	86.42	-1,414.56	1,055.29	2,226.51	2,146.86	79.65	27.955		
10,200.00	9,060.00	10,015.05	8,910.00	41.05	40.43	86.42	-1,413.90	1,115.05	2,225.58	2,144.48	81.11	27.440		
10,300.00	9,060.00	10,114.95	8,910.00	42.31	41.72	86.41	-1,412.80	1,214.95	2,221.26	2,137.59	83.66	26.550		
10,400.00	9,060.00	10,214.64	8,910.00	43.64	43.08	86.39	-1,411.70	1,314.63	2,213.45	2,127.12	86.33	25.640		
10,507.23	9,060.00	10,321.16	8,910.00	45.11	44.58	86.35	-1,410.53	1,421.14	2,201.23	2,111.93	89.30	24.650		
10,600.00	9,060.00	10,413.29	8,910.00	46.43	45.93	86.35	-1,409.52	1,513.27	2,190.42	2,098.47	91.95	23.821		
10,700.00	9,060.00	10,512.94	8,910.00	47.91	47.42	86.34	-1,408.42	1,612.92	2,182.12	2,087.21	94.91	22.991		
10,800.00	9,060.00	10,612.82	8,910.00	49.42	48.96	86.34	-1,407.32	1,712.79	2,177.29	2,079.33	97.95	22.228		
10,888.73	9,060.00	10,701.54	8,910.00	50.80	50.36	86.34	-1,406.35	1,801.50	2,175.92	2,075.20	100.72	21.604		
10,900.00	9,060.00	10,712.80	8,910.00	50.97	50.54	86.34	-1,406.22	1,812.77	2,175.94	2,074.87	101.07	21.528		
11,000.00	9,060.00	10,812.78	8,910.00	52.55	52.14	86.34	-1,405.13	1,912.73	2,178.07	2,073.82	104.25	20.892		
11,100.00	9,060.00	10,912.61	8,910.00	54.14	53.78	86.34	-1,404.03	2,012.56	2,183.69	2,076.20	107.48	20.317		
11,207.23	9,060.00	11,019.37	8,910.00	55.87	55.56	86.35	-1,402.85	2,119.32	2,193.57	2,082.58	110.99	19.764		
11,300.00	9,060.00	11,111.73	8,910.00	57.39	57.12	86.37	-1,401.84	2,211.66	2,202.35	2,088.28	114.06	19.308		
11,400.00	9,060.00	11,211.53	8,910.00	59.06	58.83	86.39	-1,400.74	2,311.47	2,208.46	2,091.02	117.44	18.805		
11,506.63	9,060.00	11,318.12	8,910.00	60.88	60.68	86.40	-1,399.57	2,418.05	2,211.15	2,090.05	121.10	18.258		
11,600.00	9,060.00	11,411.49	8,910.00	62.49	62.31	86.40	-1,398.54	2,511.41	2,211.77	2,087.42	124.35	17.787		
11,700.00	9,060.00	11,511.49	8,910.00	64.24	64.08	86.40	-1,397.44	2,611.40	2,212.44	2,084.58	127.86	17.303		
11,800.00	9,060.00	11,611.49	8,910.00	66.01	65.87	86.40	-1,396.34	2,711.39	2,213.10	2,081.70	131.41	16.842		
11,900.00	9,060.00	11,711.48	8,910.00	67.79	67.67	86.40	-1,395.24	2,811.39	2,213.77	2,078.79	134.98	16.400		
12,000.00	9,060.00	11,811.48	8,910.00	69.58	69.48	86.40	-1,394.14	2,911.38	2,214.44	2,075.85	138.59	15.979		
12,100.00	9,060.00	11,911.48	8,910.00	71.39	71.31	86.40	-1,393.04	3,011.37	2,215.10	2,072.88	142.22	15.576		
12,200.00	9,060.00	12,011.48	8,910.00	73.21	73.14	86.41	-1,391.94	3,111.36	2,215.77	2,069.90	145.87	15.190		
12,300.00	9,060.00	12,111.47	8,910.00	75.05	74.99	86.41	-1,390.84	3,211.35	2,216.43	2,066.89	149.54	14.821		
12,400.00	9,060.00	12,211.47	8,910.00	76.89	76.85	86.41	-1,389.74	3,311.35	2,217.10	2,063.86	153.24	14.468		
12,500.00	9,060.00	12,311.47	8,910.00	78.74	78.72	86.41	-1,388.64	3,411.34	2,217.76	2,060.81	156.95	14.130		
12,600.00	9,060.00	12,411.47	8,910.00	80.61	80.60	86.41	-1,387.54	3,511.33	2,218.43	2,057.74	160.69	13.806		
12,700.00	9,060.00	12,511.47	8,910.00	82.48	82.48	86.41	-1,386.44	3,611.32	2,219.09	2,054.65	164.44	13.495		
12,800.00	9,060.00	12,611.46	8,910.00	84.36	84.37	86.41	-1,385.34	3,711.31	2,219.76	2,051.55	168.20	13.197		
12,900.00	9,060.00	12,711.46	8,910.00	86.24	86.27	86.41	-1,384.24	3,811.30	2,220.42	2,048.44	171.98	12.911		
13,000.00	9,060.00	12,811.46	8,910.00	88.14	88.18	86.41	-1,383.14	3,911.30	2,221.09	2,045.31	175.77	12.636		
13,100.00	9,060.00	12,911.46	8,910.00	90.04	90.09	86.42	-1,382.04	4,011.29	2,221.75	2,042.17	179.58	12.372		
13,200.00	9,060.00	13,011.45	8,910.00	91.94	92.00	86.42	-1,380.95	4,111.28	2,222.42	2,039.02	183.40	12.118		
13,300.00	9,060.00	13,111.45	8,910.00	93.86	93.93	86.42	-1,379.85	4,211.27	2,223.08	2,035.86	187.23	11.874		
13,400.00	9,060.00	13,211.45	8,910.00	95.77	95.85	86.42	-1,378.75	4,311.26	2,223.75	2,032.68	191.06	11.639		
13,500.00	9,060.00	13,311.45	8,910.00	97.70	97.79	86.42	-1,377.65	4,411.25	2,224.41	2,029.50	194.91	11.412		
13,600.00	9,060.00	13,411.45	8,910.00	99.62	99.72	86.42	-1,376.55	4,511.25	2,225.08	2,026.31	198.77	11.194		
13,700.00	9,060.00	13,511.44	8,910.00	101.56	101.67	86.42	-1,375.45	4,611.24	2,225.74	2,023.10	202.64	10.984		
13,800.00	9,060.00	13,611.44	8,910.00	103.49	103.61	86.42	-1,374.35	4,711.23	2,226.41	2,019.89	206.51	10.781		
13,900.00	9,060.00	13,711.44	8,910.00	105.43	105.56	86.42	-1,373.25	4,811.22	2,227.07	2,016.68	210.40	10.585		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,060.00	13,811.44	8,910.00	107.38	107.51	86.43	-1,372.15	4,911.21	2,227.74	2,013.45	214.29	10.396		
14,100.00	9,060.00	13,911.43	8,910.00	109.33	109.47	86.43	-1,371.05	5,011.20	2,228.40	2,010.22	218.18	10.213		
14,200.00	9,060.00	14,011.43	8,910.00	111.28	111.43	86.43	-1,369.95	5,111.20	2,229.07	2,006.98	222.09	10.037		
14,300.00	9,060.00	14,111.43	8,910.00	113.23	113.39	86.43	-1,368.85	5,211.19	2,229.73	2,003.73	226.00	9.866		
14,400.00	9,060.00	14,211.43	8,910.00	115.19	115.35	86.43	-1,367.75	5,311.18	2,230.40	2,000.48	229.92	9.701		
14,500.00	9,060.00	14,311.43	8,910.00	117.15	117.32	86.43	-1,366.65	5,411.17	2,231.06	1,997.23	233.84	9.541		
14,600.00	9,060.00	14,411.42	8,910.00	119.11	119.29	86.43	-1,365.55	5,511.16	2,231.73	1,993.96	237.77	9.386		
14,700.00	9,060.00	14,511.42	8,910.00	121.08	121.27	86.43	-1,364.45	5,611.15	2,232.39	1,990.70	241.70	9.236		
14,800.00	9,060.00	14,611.42	8,910.00	123.05	123.24	86.43	-1,363.35	5,711.15	2,233.06	1,987.42	245.64	9.091		
14,900.00	9,060.00	14,711.42	8,910.00	125.02	125.22	86.43	-1,362.25	5,811.14	2,233.72	1,984.15	249.58	8.950		
15,000.00	9,060.00	14,811.41	8,910.00	126.99	127.20	86.44	-1,361.15	5,911.13	2,234.39	1,980.86	253.52	8.813		
15,100.00	9,060.00	14,911.41	8,910.00	128.97	129.18	86.44	-1,360.05	6,011.12	2,235.05	1,977.58	257.47	8.681		
15,200.00	9,060.00	15,011.41	8,910.00	130.95	131.16	86.44	-1,358.95	6,111.11	2,235.72	1,974.29	261.43	8.552		
15,300.00	9,060.00	15,111.41	8,910.00	132.93	133.15	86.44	-1,357.85	6,211.11	2,236.38	1,971.00	265.39	8.427		
15,400.00	9,060.00	15,211.41	8,910.00	134.91	135.14	86.44	-1,356.75	6,311.10	2,237.05	1,967.70	269.35	8.305		
15,500.00	9,060.00	15,311.40	8,910.00	136.89	137.12	86.44	-1,355.65	6,411.09	2,237.71	1,964.40	273.32	8.187		
15,600.00	9,060.00	15,411.40	8,910.00	138.88	139.11	86.44	-1,354.55	6,511.08	2,238.38	1,961.09	277.29	8.072		
15,700.00	9,060.00	15,511.40	8,910.00	140.86	141.11	86.44	-1,353.45	6,611.07	2,239.04	1,957.79	281.26	7.961		
15,800.00	9,060.00	15,611.40	8,910.00	142.85	143.10	86.44	-1,352.35	6,711.06	2,239.71	1,954.48	285.23	7.852		
15,900.00	9,060.00	15,711.39	8,910.00	144.84	145.10	86.45	-1,351.25	6,811.06	2,240.37	1,951.16	289.21	7.746		
16,000.00	9,060.00	15,811.39	8,910.00	146.83	147.09	86.45	-1,350.15	6,911.05	2,241.04	1,947.85	293.19	7.644		
16,100.00	9,060.00	15,911.39	8,910.00	148.83	149.09	86.45	-1,349.05	7,011.04	2,241.71	1,944.53	297.18	7.543		
16,200.00	9,060.00	16,011.39	8,910.00	150.82	151.09	86.45	-1,347.95	7,111.03	2,242.37	1,941.21	301.16	7.446		
16,300.00	9,060.00	16,111.39	8,910.00	152.82	153.09	86.45	-1,346.85	7,211.02	2,243.04	1,937.88	305.15	7.351		
16,400.00	9,060.00	16,211.38	8,910.00	154.81	155.09	86.45	-1,345.75	7,311.01	2,243.70	1,934.56	309.15	7.258		
16,500.00	9,060.00	16,311.38	8,910.00	156.81	157.09	86.45	-1,344.65	7,411.01	2,244.37	1,931.23	313.14	7.167		
16,600.00	9,060.00	16,411.38	8,910.00	158.81	159.10	86.45	-1,343.55	7,511.00	2,245.03	1,927.89	317.14	7.079		
16,700.00	9,060.00	16,511.38	8,910.00	160.81	161.10	86.45	-1,342.46	7,610.99	2,245.70	1,924.56	321.13	6.993		
16,800.00	9,060.00	16,611.37	8,910.00	162.81	163.11	86.45	-1,341.36	7,710.98	2,246.36	1,921.23	325.13	6.909		
16,900.00	9,060.00	16,711.37	8,910.00	164.82	165.11	86.46	-1,340.26	7,810.97	2,247.03	1,917.89	329.14	6.827		
17,000.00	9,060.00	16,811.37	8,910.00	166.82	167.12	86.46	-1,339.16	7,910.96	2,247.69	1,914.55	333.14	6.747		
17,100.00	9,060.00	16,911.37	8,910.00	168.82	169.13	86.46	-1,338.06	8,010.96	2,248.36	1,911.21	337.15	6.669		
17,200.00	9,060.00	17,011.37	8,910.00	170.83	171.14	86.46	-1,336.96	8,110.95	2,249.02	1,907.87	341.16	6.592		
17,300.00	9,060.00	17,111.36	8,910.00	172.84	173.15	86.46	-1,335.86	8,210.94	2,249.69	1,904.52	345.17	6.518		
17,400.00	9,060.00	17,211.36	8,910.00	174.84	175.16	86.46	-1,334.76	8,310.93	2,250.35	1,901.17	349.18	6.445		
17,500.00	9,060.00	17,311.36	8,910.00	176.85	177.17	86.46	-1,333.66	8,410.92	2,251.02	1,897.83	353.19	6.373		
17,600.00	9,060.00	17,411.36	8,910.00	178.86	179.18	86.46	-1,332.56	8,510.92	2,251.68	1,894.48	357.21	6.304		
17,700.00	9,060.00	17,511.35	8,910.00	180.87	181.20	86.46	-1,331.46	8,610.91	2,252.35	1,891.13	361.22	6.235		
17,800.00	9,060.00	17,611.35	8,910.00	182.88	183.21	86.47	-1,330.36	8,710.90	2,253.01	1,887.77	365.24	6.169		
17,900.00	9,060.00	17,711.35	8,910.00	184.89	185.23	86.47	-1,329.26	8,810.89	2,253.68	1,884.42	369.26	6.103		
18,000.00	9,060.00	17,811.35	8,910.00	186.90	187.24	86.47	-1,328.16	8,910.88	2,254.34	1,881.06	373.28	6.039		
18,100.00	9,060.00	17,911.35	8,910.00	188.92	189.26	86.47	-1,327.06	9,010.87	2,255.01	1,877.71	377.30	5.977		
18,200.00	9,060.00	18,011.34	8,910.00	190.93	191.27	86.47	-1,325.96	9,110.87	2,255.67	1,874.35	381.32	5.915		
18,300.00	9,060.00	18,111.34	8,910.00	192.94	193.29	86.47	-1,324.86	9,210.86	2,256.34	1,870.99	385.35	5.855		
18,400.00	9,060.00	18,211.34	8,910.00	194.96	195.31	86.47	-1,323.76	9,310.85	2,257.00	1,867.63	389.38	5.796		
18,500.00	9,060.00	18,311.34	8,910.00	196.97	197.33	86.47	-1,322.66	9,410.84	2,257.67	1,864.27	393.40	5.739		
18,600.00	9,060.00	18,411.33	8,910.00	198.99	199.35	86.47	-1,321.56	9,510.83	2,258.33	1,860.90	397.43	5.682		
18,700.00	9,060.00	18,511.33	8,910.00	201.00	201.37	86.47	-1,320.46	9,610.82	2,259.00	1,857.54	401.46	5.627		
18,800.00	9,060.00	18,611.33	8,910.00	203.02	203.39	86.48	-1,319.36	9,710.82	2,259.66	1,854.18	405.49	5.573		
18,900.00	9,060.00	18,711.33	8,910.00	205.04	205.41	86.48	-1,318.26	9,810.81	2,260.33	1,850.81	409.52	5.519		
19,000.00	9,060.00	18,811.33	8,910.00	207.06	207.43	86.48	-1,317.16	9,910.80	2,260.99	1,847.44	413.55	5.467		
19,100.00	9,060.00	18,911.32	8,910.00	209.07	209.45	86.48	-1,316.06	10,010.79	2,261.66	1,844.07	417.59	5.416		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 334H - Wellbore #1 - Permit Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,200.00	9,060.00	19,011.32	8,910.00	211.09	211.47	86.48	-1,314.96	10,110.78	2,262.32	1,840.71	421.62	5.366	
19,300.00	9,060.00	19,111.32	8,910.00	213.11	213.49	86.48	-1,313.86	10,210.77	2,262.99	1,837.34	425.65	5.316	
19,400.00	9,060.00	19,211.32	8,910.00	215.13	215.52	86.48	-1,312.76	10,310.77	2,263.66	1,833.96	429.69	5.268	
19,500.32	9,060.00	19,294.07	8,910.00	217.16	217.19	86.48	-1,311.85	10,393.51	2,264.39	1,831.03	433.36	5.225 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	4.53	4.53	0.50	0.50	-178.58	-3,232.90	-80.25	3,233.89					
100.00	100.00	101.00	101.00	0.52	0.53	-178.58	-3,232.96	-80.14	3,233.95	3,232.91	1.05	3,091.497		
200.00	200.00	197.47	197.47	0.70	0.60	-178.59	-3,233.13	-79.83	3,234.12	3,232.82	1.30	2,481.671		
300.00	300.00	293.93	293.93	0.99	0.70	-178.59	-3,233.41	-79.31	3,234.40	3,232.71	1.69	1,911.525		
400.00	400.00	390.39	390.39	1.31	0.83	-178.61	-3,233.80	-78.60	3,234.79	3,232.65	2.14	1,513.876		
500.00	500.00	481.18	481.17	1.65	1.04	-178.62	-3,234.31	-77.79	3,235.34	3,232.65	2.68	1,206.047		
600.00	600.00	581.75	581.74	1.99	1.36	-178.64	-3,235.16	-76.99	3,236.15	3,232.80	3.35	964.944		
700.00	700.00	685.09	685.06	2.34	1.71	-178.65	-3,235.81	-76.25	3,236.77	3,232.72	4.05	798.735		
800.00	800.00	789.60	789.57	2.69	2.08	-178.66	-3,236.41	-75.56	3,237.32	3,232.56	4.76	679.444		
900.00	900.00	875.60	875.57	3.04	2.38	-178.67	-3,236.99	-75.25	3,237.99	3,232.57	5.42	597.771		
1,000.00	1,000.00	1,004.14	1,004.10	3.40	2.82	-178.68	-3,237.62	-74.40	3,238.47	3,232.25	6.22	520.713		
1,100.00	1,100.00	1,112.40	1,112.36	3.75	3.20	-178.70	-3,237.43	-73.70	3,238.28	3,231.33	6.95	465.922		
1,200.00	1,200.00	1,214.90	1,214.86	4.11	3.56	-178.71	-3,237.21	-72.83	3,238.04	3,230.38	7.66	422.515		
1,300.00	1,300.00	1,330.80	1,330.74	4.46	3.96	-178.74	-3,236.64	-71.28	3,237.53	3,229.10	8.42	384.288		
1,400.00	1,400.00	1,433.14	1,433.08	4.82	4.32	-178.76	-3,235.78	-70.06	3,236.67	3,227.53	9.14	354.192		
1,500.00	1,500.00	1,522.35	1,522.28	5.18	4.63	-178.78	-3,235.18	-68.82	3,235.96	3,226.15	9.81	329.887		
1,600.00	1,600.00	1,632.75	1,632.66	5.53	5.02	-178.80	-3,234.44	-67.52	3,235.27	3,224.71	10.55	306.517		
1,700.00	1,700.00	1,723.81	1,723.71	5.89	5.34	-178.82	-3,233.86	-66.53	3,234.60	3,223.37	11.23	287.942		
1,800.00	1,800.00	1,830.98	1,830.87	6.25	5.72	-178.85	-3,233.11	-65.08	3,233.87	3,221.90	11.97	270.155		
1,900.00	1,900.00	1,928.44	1,928.33	6.61	6.07	-178.87	-3,232.39	-63.72	3,233.11	3,220.43	12.67	255.103		
2,000.00	2,000.00	2,038.89	2,038.76	6.96	6.46	-178.90	-3,231.55	-62.29	3,232.33	3,218.91	13.42	240.832		
2,100.00	2,100.00	2,163.65	2,163.51	7.32	6.89	-178.90	-3,229.68	-61.73	3,230.81	3,216.60	14.21	227.340		
2,200.00	2,200.00	2,260.89	2,260.73	7.68	7.23	-178.90	-3,227.89	-61.82	3,228.96	3,214.06	14.90	216.664		
2,300.00	2,300.00	2,359.73	2,359.55	8.04	7.57	-178.90	-3,226.21	-62.13	3,227.28	3,211.68	15.60	206.879		
2,350.00	2,350.00	2,409.91	2,409.72	8.22	7.74	-178.89	-3,225.35	-62.32	3,226.42	3,210.47	15.95	202.268		
2,400.00	2,400.00	2,459.53	2,459.33	8.39	7.91	-162.85	-3,224.51	-62.47	3,225.78	3,209.48	16.30	197.890		
2,448.27	2,448.26	2,506.02	2,505.82	8.57	8.07	-162.85	-3,223.73	-62.58	3,225.57	3,208.94	16.63	193.913		
2,500.00	2,499.98	2,554.99	2,554.78	8.75	8.24	-162.86	-3,222.94	-62.68	3,225.82	3,208.83	16.99	189.881		
2,600.00	2,599.92	2,643.71	2,643.49	9.11	8.55	-162.87	-3,221.70	-62.58	3,227.76	3,210.10	17.66	182.801		
2,700.00	2,699.78	2,743.86	2,743.64	9.47	8.90	-162.89	-3,220.55	-62.20	3,231.61	3,213.24	18.37	175.958		
2,800.00	2,799.54	2,843.54	2,843.31	9.82	9.25	-162.91	-3,219.33	-62.48	3,237.05	3,217.98	19.07	169.742		
2,900.00	2,899.16	2,900.00	2,982.17	10.18	9.44	-162.94	-3,216.94	-62.87	3,243.71	3,224.09	19.62	165.316		
3,000.00	2,998.61	3,146.85	3,146.47	10.54	10.31	-163.00	-3,210.72	-63.54	3,249.71	3,228.87	20.83	155.985		
3,100.00	3,097.86	3,247.94	3,247.47	10.89	10.66	-163.03	-3,206.26	-63.87	3,256.99	3,235.44	21.55	151.161		
3,200.00	3,196.89	3,342.96	3,342.38	11.25	11.00	-163.07	-3,202.02	-64.18	3,265.88	3,243.64	22.24	146.848		
3,295.74	3,291.45	4,008.93	4,001.24	11.59	13.40	-163.30	-3,114.86	-79.50	3,267.22	3,242.69	24.54	133.155		
3,300.00	3,295.65	4,014.31	4,006.48	11.61	13.43	-163.30	-3,113.70	-79.78	3,266.97	3,242.40	24.57	132.967		
3,400.00	3,394.29	4,095.04	4,085.17	11.97	13.73	-163.29	-3,096.19	-84.24	3,261.03	3,235.79	25.24	129.195		
3,500.00	3,492.94	4,153.00	4,141.80	12.33	13.95	-163.27	-3,084.34	-87.59	3,256.30	3,230.44	25.86	125.926		
3,600.00	3,591.58	4,303.98	4,289.29	12.69	14.54	-163.26	-3,052.92	-94.96	3,251.10	3,224.39	26.71	121.741		
3,700.00	3,690.22	4,386.33	4,369.68	13.05	14.86	-163.26	-3,035.39	-98.49	3,245.53	3,218.15	27.39	118.502		
3,800.00	3,788.86	4,475.18	4,456.57	13.41	15.21	-163.26	-3,017.28	-102.40	3,240.83	3,212.74	28.09	115.380		
3,900.00	3,887.50	4,605.67	4,584.03	13.77	15.73	-163.29	-2,989.68	-106.87	3,235.31	3,206.42	28.89	111.980		
4,000.00	3,886.14	4,686.70	4,663.18	14.14	16.06	-163.31	-2,972.46	-109.06	3,229.76	3,200.18	29.58	109.197		
4,100.00	4,084.78	4,762.46	4,737.30	14.50	16.36	-163.34	-2,956.95	-111.11	3,224.98	3,194.73	30.25	106.610		
4,200.00	4,183.42	4,875.47	4,847.99	14.87	16.82	-163.37	-2,934.37	-114.32	3,220.75	3,189.74	31.02	103.839		
4,300.00	4,282.06	4,978.16	4,948.41	15.24	17.23	-163.43	-2,912.95	-115.75	3,215.57	3,183.81	31.76	101.249		
4,400.00	4,380.70	5,046.48	5,015.32	15.60	17.51	-163.47	-2,899.15	-116.34	3,211.09	3,178.67	32.42	99.059		
4,500.00	4,479.34	5,105.00	5,072.76	15.97	17.75	-163.51	-2,887.99	-117.05	3,207.76	3,174.71	33.04	97.072		
4,600.00	4,577.98	5,182.81	5,149.27	16.34	18.06	-163.55	-2,873.90	-118.17	3,205.40	3,171.68	33.72	95.051		
4,700.00	4,676.62	5,268.41	5,233.55	16.71	18.41	-163.59	-2,858.98	-119.63	3,203.72	3,169.30	34.42	93.073		
4,800.00	4,775.27	5,385.93	5,349.25	17.08	18.88	-163.64	-2,838.52	-121.95	3,202.09	3,166.88	35.21	90.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	5,448.92	5,411.29	17.45	19.13	-163.68	-2,827.64	-123.00	3,200.59	3,164.74	35.85	89.289		
5,000.00	4,972.55	5,527.30	5,488.63	17.82	19.45	-163.72	-2,815.00	-124.23	3,200.20	3,163.68	36.52	87.622		
5,100.00	5,071.19	5,719.60	5,677.92	18.19	20.23	-163.88	-2,781.24	-123.73	3,198.25	3,160.73	37.52	85.251		
5,200.00	5,169.83	5,805.93	5,762.78	18.56	20.58	-163.96	-2,765.35	-123.26	3,195.56	3,157.34	38.22	83.607		
5,300.00	5,268.47	5,900.00	5,904.49	18.93	18.47	-164.06	-2,737.48	-124.31	3,191.91	3,155.26	36.65	87.088		
5,400.00	5,367.11	6,026.22	5,978.79	19.31	21.49	-164.08	-2,722.42	-126.44	3,187.90	3,148.14	39.76	80.173		
5,500.00	5,465.75	6,104.27	6,055.44	19.68	21.82	-164.09	-2,708.04	-129.62	3,185.17	3,144.72	40.45	78.744		
5,600.00	5,564.39	6,273.44	6,221.29	20.05	22.53	-164.10	-2,675.54	-136.89	3,181.85	3,140.47	41.38	76.903		
5,700.00	5,663.03	6,398.71	6,343.58	20.42	23.06	-164.09	-2,649.01	-142.92	3,176.29	3,134.10	42.19	75.292		
5,800.00	5,761.67	6,502.34	6,444.72	20.80	23.51	-164.09	-2,627.02	-147.81	3,170.77	3,127.82	42.95	73.833		
5,900.00	5,860.31	6,564.35	6,505.29	21.17	23.77	-164.10	-2,613.90	-150.01	3,165.44	3,121.84	43.60	72.599		
6,000.00	5,958.96	6,628.00	6,567.76	21.54	24.04	-164.12	-2,601.87	-151.81	3,162.01	3,117.76	44.26	71.446		
6,100.00	6,057.60	6,666.56	6,605.73	21.92	24.20	-164.14	-2,595.16	-152.61	3,159.93	3,115.09	44.84	70.475		
6,200.00	6,156.24	6,779.73	6,717.24	22.29	24.67	-164.21	-2,575.89	-153.42	3,158.74	3,113.12	45.62	69.240		
6,300.00	6,254.88	6,957.86	6,891.95	22.67	25.42	-164.34	-2,541.21	-154.51	3,154.51	3,107.94	46.57	67.731		
6,400.00	6,353.52	7,021.50	6,954.38	23.04	25.69	-164.39	-2,528.87	-154.76	3,150.85	3,103.62	47.23	66.713		
6,500.00	6,452.16	7,125.05	7,056.07	23.42	26.12	-164.46	-2,509.35	-155.80	3,147.78	3,099.79	47.99	65.595		
6,600.00	6,550.80	7,250.50	7,179.03	23.79	26.66	-164.52	-2,484.62	-157.89	3,143.75	3,094.95	48.80	64.416		
6,700.00	6,649.44	7,297.00	7,224.62	24.17	26.86	-164.55	-2,475.46	-158.65	3,140.20	3,090.79	49.41	63.548		
6,800.00	6,748.08	7,360.05	7,286.60	24.54	27.12	-164.58	-2,463.93	-159.53	3,137.96	3,087.90	50.06	62.684		
6,900.00	6,846.72	7,438.88	7,364.38	24.92	27.45	-164.63	-2,451.18	-160.36	3,137.52	3,086.77	50.75	61.827		
7,000.00	6,945.36	7,526.80	7,451.09	25.29	27.81	-164.69	-2,436.62	-161.33	3,136.83	3,085.38	51.46	60.960		
7,008.93	6,954.18	7,531.79	7,456.01	25.32	27.83	-164.69	-2,435.83	-161.39	3,136.83	3,085.32	51.51	60.894		
7,100.00	7,044.00	7,583.00	7,506.62	25.67	28.04	-164.72	-2,428.05	-162.06	3,137.41	3,085.34	52.07	60.254		
7,200.00	7,142.65	7,622.18	7,545.43	26.04	28.19	-164.74	-2,422.71	-162.69	3,139.66	3,087.04	52.61	59.672		
7,300.00	7,241.29	7,678.00	7,600.88	26.42	28.41	-164.77	-2,416.41	-163.86	3,143.94	3,090.73	53.20	59.093		
7,400.00	7,339.93	7,766.65	7,689.03	26.79	28.75	-164.81	-2,407.16	-165.34	3,149.31	3,095.41	53.90	58.427		
7,500.00	7,438.57	7,831.94	7,753.96	27.17	28.99	-164.86	-2,400.32	-165.50	3,154.77	3,100.26	54.51	57.872		
7,571.77	7,509.37	7,868.00	7,789.86	27.44	29.13	-164.90	-2,396.89	-165.17	3,159.46	3,104.55	54.91	57.542		
7,600.00	7,537.23	7,888.57	7,810.34	27.55	29.20	-164.93	-2,395.07	-164.84	3,161.38	3,106.30	55.08	57.392		
7,700.00	7,636.18	7,938.39	7,860.00	27.92	29.39	-165.01	-2,391.21	-163.63	3,167.63	3,112.01	55.61	56.958		
7,800.00	7,735.48	8,000.42	7,921.88	28.29	29.61	-165.10	-2,387.35	-161.72	3,172.84	3,116.66	56.18	56.476		
7,900.00	7,835.05	8,082.87	8,004.21	28.65	29.90	-165.16	-2,382.95	-161.32	3,176.40	3,119.57	56.82	55.898		
8,000.00	7,934.83	8,177.59	8,098.78	29.01	30.23	-165.17	-2,377.96	-162.51	3,177.50	3,119.98	57.52	55.244		
8,100.00	8,034.74	8,249.00	8,170.12	29.36	30.49	-165.17	-2,374.87	-163.35	3,176.93	3,118.83	58.10	54.677		
8,202.27	8,137.00	8,337.96	8,259.01	29.72	30.79	178.82	-2,371.60	-164.59	3,174.44	3,115.68	58.76	54.021		
8,300.00	8,234.73	8,437.36	8,358.21	30.06	31.13	178.74	-2,367.81	-160.40	3,170.80	3,111.35	59.45	53.334		
8,400.00	8,334.73	8,538.27	8,456.52	30.41	31.46	178.36	-2,363.20	-139.27	3,166.66	3,106.53	60.14	52.657		
8,500.00	8,434.73	8,600.08	8,513.31	30.75	31.64	177.92	-2,360.58	-115.14	3,163.53	3,102.89	60.64	52.168		
8,552.31	8,487.04	8,630.00	8,539.42	30.94	31.72	177.65	-2,359.59	-100.58	3,162.60	3,101.71	60.89	51.940		
8,600.00	8,534.68	8,630.00	8,539.42	31.10	31.72	88.04	-2,359.59	-100.58	3,162.17	3,101.19	60.98	51.852		
8,629.74	8,564.23	8,645.36	8,552.41	31.20	31.75	87.92	-2,359.22	-92.39	3,162.07	3,100.96	61.11	51.747		
8,650.00	8,584.26	8,650.67	8,556.83	31.26	31.76	87.87	-2,359.13	-89.44	3,162.11	3,100.95	61.17	51.698		
8,700.00	8,633.10	8,677.00	8,578.17	31.43	31.83	87.65	-2,358.98	-74.04	3,162.62	3,101.26	61.37	51.536		
8,750.00	8,680.83	8,677.00	8,578.17	31.58	31.83	87.58	-2,358.98	-74.04	3,163.36	3,101.92	61.44	51.489		
8,800.00	8,727.09	8,694.63	8,591.98	31.74	31.86	87.37	-2,359.10	-63.08	3,164.57	3,102.98	61.59	51.382		
8,850.00	8,771.52	8,725.00	8,614.96	31.89	31.92	87.10	-2,359.66	-43.23	3,166.18	3,104.38	61.80	51.233		
8,900.00	8,813.78	8,749.29	8,632.51	32.04	31.96	86.85	-2,360.20	-26.46	3,167.89	3,105.91	61.99	51.107		
8,950.00	8,853.56	8,890.48	8,720.96	32.18	32.17	86.16	-2,359.47	83.34	3,168.40	3,105.52	62.87	50.393		
9,000.00	8,890.55	8,920.74	8,737.44	32.32	32.22	86.01	-2,358.84	108.70	3,168.46	3,105.31	63.15	50.175		
9,050.00	8,924.46	8,980.96	8,766.86	32.47	32.32	85.77	-2,357.32	161.20	3,168.29	3,104.61	63.68	49.754		
9,100.00	8,955.05	9,066.42	8,802.74	32.63	32.62	85.51	-2,354.08	238.69	3,167.51	3,103.01	64.51	49.105		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,150.00	8,982.08	9,097.41	8,814.31	32.79	32.83	85.53	-2,352.69	267.40	3,166.25	3,101.34	64.91	48.778		
9,200.00	9,005.34	9,127.42	8,824.47	32.97	33.06	85.58	-2,351.43	295.60	3,164.96	3,099.62	65.34	48.435		
9,250.00	9,024.65	9,154.00	8,832.51	33.17	33.30	85.66	-2,350.40	320.92	3,163.66	3,097.89	65.77	48.100		
9,300.00	9,039.87	9,190.68	8,842.19	33.38	33.66	85.77	-2,349.07	356.27	3,162.32	3,095.96	66.36	47.653		
9,350.00	9,050.89	9,251.74	8,855.50	33.62	34.33	85.92	-2,346.81	415.81	3,160.78	3,093.49	67.29	46.971		
9,400.00	9,057.61	9,400.00	8,873.30	33.87	36.27	86.20	-2,339.99	538.10	3,158.46	3,088.93	69.54	45.422		
9,452.31	9,060.00	9,446.80	8,879.75	34.15	36.98	86.63	-2,334.45	608.81	3,154.52	3,083.98	70.54	44.717		
9,500.00	9,060.00	9,492.28	8,883.19	34.42	37.66	86.69	-2,330.84	654.01	3,150.80	3,079.29	71.51	44.061		
9,600.00	9,060.00	9,548.94	8,886.95	35.09	38.59	86.75	-2,326.74	710.40	3,143.75	3,070.65	73.11	43.003		
9,700.00	9,060.00	9,613.06	8,890.58	35.86	39.68	86.81	-2,322.88	774.29	3,137.97	3,063.01	74.96	41.863		
9,800.00	9,060.00	9,677.00	8,893.34	36.72	40.80	86.86	-2,319.55	838.09	3,133.18	3,056.24	76.94	40.722		
9,900.00	9,060.00	9,727.42	8,894.81	37.69	41.74	86.89	-2,317.57	888.45	3,129.77	3,050.96	78.82	39.710		
10,000.00	9,060.00	9,773.64	8,895.54	38.73	42.60	86.90	-2,316.57	934.65	3,128.10	3,047.42	80.68	38.770		
10,100.00	9,060.00	9,860.65	8,896.36	39.86	44.31	86.91	-2,315.57	1,021.65	3,127.50	3,043.99	83.50	37.454		
10,140.22	9,060.00	9,901.45	8,896.80	40.33	45.14	86.92	-2,315.19	1,062.44	3,127.34	3,042.53	84.81	36.876		
10,200.00	9,060.00	9,964.34	8,897.76	41.05	46.43	86.94	-2,314.57	1,125.33	3,126.44	3,039.61	86.82	36.009		
10,300.00	9,060.00	10,038.02	8,898.67	42.31	47.99	86.95	-2,314.12	1,199.00	3,122.52	3,032.89	89.63	34.837		
10,400.00	9,060.00	10,200.27	8,899.04	43.64	51.56	86.93	-2,312.18	1,361.23	3,114.65	3,020.06	94.59	32.927		
10,507.23	9,060.00	10,352.72	8,899.80	45.11	55.06	86.91	-2,307.72	1,513.62	3,100.48	3,000.89	99.59	31.132		
10,600.00	9,060.00	10,438.50	8,901.35	46.43	57.08	86.94	-2,304.70	1,599.32	3,087.35	2,984.42	102.93	29.995		
10,700.00	9,060.00	10,519.86	8,903.20	47.91	59.04	86.98	-2,302.13	1,680.62	3,076.87	2,970.53	106.34	28.934		
10,800.00	9,060.00	10,626.65	8,906.06	49.42	61.63	87.03	-2,299.05	1,787.32	3,070.12	2,959.66	110.46	27.793		
10,900.00	9,060.00	10,752.23	8,911.63	50.97	64.74	87.14	-2,294.70	1,912.71	3,066.17	2,951.02	115.15	26.626		
10,978.08	9,060.00	10,835.72	8,915.26	52.20	66.83	87.21	-2,291.45	1,996.05	3,065.19	2,946.70	118.49	25.868 CC		
11,000.00	9,060.00	10,860.81	8,916.25	52.55	67.47	87.22	-2,290.42	2,021.11	3,065.26	2,945.79	119.48	25.656		
11,100.00	9,060.00	10,957.04	8,919.40	54.14	69.91	87.28	-2,286.34	2,117.20	3,067.58	2,944.06	123.52	24.834		
11,207.23	9,060.00	11,045.03	8,921.76	55.87	72.16	87.33	-2,283.06	2,205.09	3,074.53	2,947.02	127.51	24.112		
11,300.00	9,060.00	11,106.00	8,923.84	57.39	73.72	87.37	-2,281.07	2,265.99	3,081.28	2,950.70	130.58	23.597		
11,400.00	9,060.00	11,161.15	8,925.77	59.06	75.15	87.42	-2,279.95	2,321.10	3,086.48	2,952.85	133.64	23.096		
11,506.63	9,060.00	11,219.22	8,927.39	60.88	76.66	87.45	-2,279.98	2,379.15	3,090.16	2,953.27	136.89	22.575		
11,600.00	9,060.00	11,334.31	8,931.25	62.49	79.67	87.53	-2,280.56	2,494.17	3,092.18	2,950.61	141.57	21.842		
11,700.00	9,060.00	11,423.87	8,935.33	64.24	82.03	87.60	-2,280.13	2,583.63	3,093.34	2,947.66	145.68	21.234		
11,800.00	9,060.00	11,486.00	8,937.44	66.01	83.67	87.64	-2,281.08	2,645.72	3,096.24	2,947.23	149.01	20.779		
11,900.00	9,060.00	11,562.25	8,939.02	67.79	85.69	87.67	-2,282.96	2,721.93	3,100.23	2,947.47	152.76	20.295		
12,000.00	9,060.00	11,651.64	8,939.81	69.58	88.07	87.69	-2,284.93	2,811.30	3,104.17	2,947.25	156.91	19.783		
12,100.00	9,060.00	11,819.23	8,940.02	71.39	92.55	87.70	-2,287.67	2,978.85	3,107.75	2,944.36	163.39	19.021		
12,200.00	9,060.00	11,989.90	8,937.15	73.21	97.15	87.65	-2,285.53	3,149.47	3,108.10	2,938.20	169.91	18.293		
12,234.52	9,060.00	12,016.84	8,936.61	73.85	97.88	87.64	-2,285.00	3,176.40	3,108.06	2,936.81	171.26	18.149		
12,300.00	9,060.00	12,068.80	8,935.90	75.05	99.28	87.63	-2,284.17	3,228.36	3,108.21	2,934.37	173.84	17.880		
12,400.00	9,060.00	12,152.99	8,934.91	76.89	101.56	87.61	-2,283.22	3,312.53	3,108.90	2,930.96	177.94	17.472		
12,500.00	9,060.00	12,272.82	8,932.96	78.74	104.83	87.57	-2,281.93	3,432.34	3,109.68	2,926.61	183.08	16.986		
12,600.00	9,060.00	12,400.25	8,932.75	80.61	108.30	87.57	-2,279.10	3,559.74	3,109.15	2,920.71	188.44	16.499		
12,696.03	9,060.00	12,478.41	8,933.95	82.40	110.44	87.59	-2,277.50	3,637.87	3,108.82	2,916.46	192.36	16.161		
12,700.00	9,060.00	12,481.40	8,934.01	82.48	110.52	87.59	-2,277.45	3,640.85	3,108.82	2,916.30	192.52	16.148		
12,800.00	9,060.00	12,558.78	8,936.09	84.36	112.64	87.63	-2,276.50	3,718.20	3,109.24	2,912.75	196.50	15.823		
12,900.00	9,060.00	12,642.32	8,938.07	86.24	114.94	87.67	-2,275.98	3,801.72	3,110.29	2,909.63	200.66	15.500		
13,000.00	9,060.00	12,763.33	8,940.90	88.14	118.27	87.72	-2,275.53	3,922.69	3,111.66	2,905.72	205.93	15.110		
13,100.00	9,060.00	12,905.56	8,946.34	90.04	122.20	87.82	-2,272.66	4,064.79	3,111.11	2,899.28	211.83	14.687		
13,200.00	9,060.00	13,028.38	8,952.14	91.94	125.59	87.93	-2,269.18	4,187.42	3,109.84	2,892.68	217.16	14.321		
13,300.00	9,060.00	13,103.00	8,954.95	93.86	127.65	87.98	-2,267.11	4,261.96	3,108.72	2,887.58	221.13	14.058		
13,380.06	9,060.00	13,162.85	8,956.28	95.39	129.31	88.00	-2,265.86	4,321.78	3,108.40	2,884.10	224.31	13.858		
13,400.00	9,060.00	13,176.84	8,956.43	95.77	129.70	88.00	-2,265.63	4,335.76	3,108.42	2,883.35	225.07	13.811		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,500.00	9,060.00	13,293.88	8,956.51	97.70	132.94	88.01	-2,263.69	4,452.79	3,108.57	2,878.31	230.26	13.500		
13,600.00	9,060.00	13,399.35	8,955.94	99.62	135.87	87.99	-2,261.35	4,558.23	3,108.13	2,873.01	235.12	13.219		
13,700.00	9,060.00	13,494.22	8,957.13	101.56	138.51	88.02	-2,259.31	4,653.07	3,107.70	2,868.02	239.69	12.966		
13,800.00	9,060.00	13,593.23	8,959.66	103.49	141.27	88.06	-2,257.26	4,752.03	3,107.31	2,862.93	244.39	12.715		
13,867.68	9,060.00	13,650.54	8,960.94	104.81	142.87	88.09	-2,256.20	4,809.31	3,107.20	2,859.91	247.29	12.565		
13,900.00	9,060.00	13,680.07	8,961.49	105.43	143.69	88.10	-2,255.72	4,838.83	3,107.23	2,858.48	248.74	12.492		
14,000.00	9,060.00	13,801.34	8,965.12	107.38	147.07	88.16	-2,253.28	4,960.02	3,106.86	2,852.75	254.11	12.227		
14,100.00	9,060.00	13,885.77	8,968.35	109.33	149.43	88.22	-2,251.45	5,044.37	3,106.37	2,847.96	258.41	12.021		
14,106.65	9,060.00	13,889.63	8,968.49	109.46	149.54	88.23	-2,251.39	5,048.22	3,106.37	2,847.72	258.64	12.010		
14,200.00	9,060.00	13,943.86	8,970.27	111.28	151.06	88.26	-2,250.83	5,102.42	3,106.95	2,845.03	261.92	11.862		
14,300.00	9,060.00	14,043.42	8,973.05	113.23	153.84	88.31	-2,250.59	5,201.94	3,108.40	2,841.72	266.67	11.656		
14,400.00	9,060.00	14,147.81	8,975.61	115.19	156.77	88.36	-2,250.06	5,306.30	3,109.58	2,838.01	271.58	11.450		
14,500.00	9,060.00	14,279.48	8,978.85	117.15	160.46	88.42	-2,248.50	5,437.92	3,110.06	2,832.77	277.30	11.216		
14,600.00	9,060.00	14,397.56	8,981.47	119.11	163.77	88.47	-2,246.45	5,555.95	3,110.05	2,827.45	282.60	11.005		
14,700.00	9,060.00	14,492.60	8,983.62	121.08	166.44	88.51	-2,244.26	5,650.94	3,109.46	2,822.23	287.24	10.825		
14,800.00	9,060.00	14,603.95	8,986.10	123.05	169.56	88.55	-2,242.07	5,762.24	3,109.24	2,816.89	292.35	10.635		
14,900.00	9,060.00	14,692.27	8,988.36	125.02	172.04	88.59	-2,240.02	5,850.51	3,108.63	2,811.83	296.80	10.474		
14,936.73	9,060.00	14,720.00	8,989.01	125.75	172.82	88.60	-2,239.50	5,878.23	3,108.57	2,810.27	298.30	10.421		
15,000.00	9,060.00	14,749.56	8,989.71	126.99	173.65	88.62	-2,239.15	5,907.78	3,108.91	2,808.59	300.32	10.352		
15,100.00	9,060.00	14,815.00	8,991.43	128.97	175.50	88.65	-2,239.57	5,973.19	3,111.01	2,806.96	304.05	10.232		
15,200.00	9,060.00	14,892.07	8,993.32	130.95	177.67	88.69	-2,240.77	6,050.23	3,114.11	2,805.99	308.12	10.107		
15,300.00	9,060.00	15,005.94	8,995.48	132.93	180.88	88.73	-2,241.85	6,164.07	3,116.78	2,803.40	313.38	9.946		
15,400.00	9,060.00	15,091.37	8,997.05	134.91	183.29	88.76	-2,242.70	6,249.49	3,119.50	2,801.79	317.72	9.818		
15,500.00	9,060.00	15,226.61	9,000.30	136.89	187.10	88.82	-2,243.71	6,384.68	3,121.99	2,798.33	323.66	9.646		
15,600.00	9,060.00	15,357.51	9,003.88	138.88	190.79	88.88	-2,243.11	6,515.53	3,123.21	2,793.79	329.43	9.481		
15,700.00	9,060.00	15,483.58	9,007.96	140.86	194.35	88.96	-2,241.51	6,641.52	3,123.66	2,788.63	335.03	9.324		
15,800.00	9,060.00	15,578.89	9,010.31	142.85	197.04	89.00	-2,239.96	6,736.79	3,123.75	2,784.05	339.71	9.195		
15,900.00	9,060.00	15,664.45	9,012.19	144.84	199.46	89.04	-2,238.82	6,822.32	3,124.15	2,780.05	344.10	9.079		
16,000.00	9,060.00	15,841.69	9,019.93	146.83	204.45	89.18	-2,233.89	6,999.31	3,122.70	2,771.55	351.15	8.893		
16,100.00	9,060.00	15,902.40	9,022.20	148.83	206.17	89.22	-2,232.00	7,059.94	3,121.36	2,766.49	354.87	8.796		
16,138.15	9,060.00	15,922.18	9,022.67	149.59	206.73	89.23	-2,231.60	7,079.71	3,121.25	2,765.08	356.17	8.763		
16,200.00	9,060.00	15,954.96	9,023.14	150.82	207.65	89.24	-2,231.18	7,112.48	3,121.54	2,763.26	358.28	8.713		
16,300.00	9,060.00	16,035.35	9,023.67	152.82	209.93	89.25	-2,230.77	7,192.88	3,122.79	2,760.28	362.51	8.614		
16,400.00	9,060.00	16,112.84	9,023.85	154.81	212.12	89.25	-2,230.88	7,270.36	3,124.70	2,758.08	366.62	8.523		
16,500.00	9,060.00	16,237.27	9,023.63	156.81	215.64	89.25	-2,231.33	7,394.79	3,126.89	2,754.66	372.22	8.401		
16,600.00	9,060.00	16,315.57	9,023.11	158.81	217.86	89.24	-2,231.37	7,473.09	3,128.71	2,752.34	376.37	8.313		
16,700.00	9,060.00	16,465.59	9,021.54	160.81	222.11	89.21	-2,230.87	7,623.10	3,130.19	2,747.44	382.75	8.178		
16,800.00	9,060.00	16,563.61	9,020.62	162.81	224.88	89.19	-2,229.54	7,721.10	3,130.62	2,743.10	387.52	8.079		
16,900.00	9,060.00	16,644.59	9,020.70	164.82	227.18	89.19	-2,228.95	7,802.08	3,131.64	2,739.86	391.78	7.993		
17,000.00	9,060.00	16,741.53	9,022.35	166.82	229.93	89.23	-2,228.57	7,899.00	3,132.98	2,736.46	396.53	7.901		
17,100.00	9,060.00	16,843.86	9,024.80	168.82	232.83	89.27	-2,228.12	8,001.30	3,134.28	2,732.84	401.45	7.807		
17,200.00	9,060.00	16,947.05	9,026.78	170.83	235.75	89.31	-2,227.65	8,104.47	3,135.57	2,729.17	406.39	7.716		
17,300.00	9,060.00	17,049.81	9,028.77	172.84	238.67	89.34	-2,226.97	8,207.21	3,136.65	2,725.32	411.33	7.626		
17,400.00	9,060.00	17,146.43	9,031.77	174.84	241.41	89.40	-2,226.42	8,303.79	3,137.81	2,721.73	416.08	7.541		
17,500.00	9,060.00	17,245.79	9,034.72	176.85	244.23	89.45	-2,225.92	8,403.10	3,139.04	2,718.13	420.91	7.458		
17,600.00	9,060.00	17,350.74	9,037.72	178.86	247.21	89.51	-2,225.32	8,508.01	3,140.21	2,714.29	425.92	7.373		
17,700.00	9,060.00	17,462.14	9,040.50	180.87	250.37	89.56	-2,224.39	8,619.37	3,141.12	2,709.99	431.13	7.286		
17,800.00	9,060.00	17,567.19	9,042.71	182.88	253.35	89.60	-2,223.20	8,724.38	3,141.74	2,705.60	436.14	7.204		
17,900.00	9,060.00	17,682.55	9,044.43	184.89	256.63	89.63	-2,221.33	8,839.71	3,141.85	2,700.40	441.45	7.117		
18,000.00	9,060.00	17,758.00	9,044.31	186.90	258.77	89.63	-2,220.42	8,915.16	3,142.38	2,696.82	445.56	7.053		
18,100.00	9,060.00	17,828.92	9,043.50	188.92	260.78	89.61	-2,220.16	8,986.08	3,143.76	2,694.26	449.51	6.994		
18,200.00	9,060.00	17,950.14	9,043.88	190.93	264.23	89.62	-2,219.99	9,107.29	3,145.43	2,690.40	455.03	6.913		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 335H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 431-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,300.00	9,060.00	18,039.85	9,046.55	192.94	266.78	89.67	-2,219.56	9,196.95	3,146.69	2,687.12	459.57	6.847	
18,400.00	9,060.00	18,161.68	9,050.52	194.96	270.24	89.74	-2,218.55	9,318.72	3,147.58	2,682.47	465.11	6.767	
18,500.00	9,060.00	18,242.04	9,052.61	196.97	272.52	89.78	-2,218.00	9,399.04	3,148.64	2,679.27	469.37	6.708	
18,600.00	9,060.00	18,334.64	9,054.56	198.99	275.16	89.82	-2,217.76	9,491.62	3,150.15	2,676.15	474.00	6.646	
18,700.00	9,060.00	18,447.31	9,056.11	201.00	278.36	89.84	-2,217.16	9,604.28	3,151.35	2,672.08	479.26	6.575	
18,800.00	9,060.00	18,528.62	9,056.22	203.02	280.67	89.85	-2,217.01	9,685.59	3,152.91	2,669.38	483.54	6.521	
18,900.00	9,060.00	18,653.75	9,055.33	205.04	284.23	89.83	-2,216.16	9,810.71	3,153.93	2,664.74	489.19	6.447	
19,000.00	9,060.00	18,758.70	9,055.72	207.06	287.22	89.84	-2,215.53	9,915.66	3,155.11	2,660.91	494.20	6.384	
19,100.00	9,060.00	18,907.88	9,058.29	209.07	291.46	89.88	-2,212.92	10,064.80	3,155.11	2,654.59	500.51	6.304	
19,200.00	9,060.00	18,987.23	9,059.50	211.09	293.71	89.91	-2,211.27	10,144.11	3,154.76	2,649.98	504.78	6.250	
19,300.00	9,060.00	19,108.37	9,061.25	213.11	297.16	89.94	-2,208.68	10,265.22	3,154.40	2,644.14	510.26	6.182	
19,373.20	9,060.00	19,158.00	9,061.95	214.59	298.57	89.95	-2,207.50	10,314.83	3,154.01	2,640.87	513.14	6.147	
19,400.00	9,060.00	19,158.00	9,061.95	215.13	298.57	89.95	-2,207.50	10,314.83	3,154.13	2,640.49	513.64	6.141 ES	
19,500.32	9,060.00	19,158.00	9,061.95	217.16	298.57	89.95	-2,207.50	10,314.83	3,156.57	2,641.39	515.18	6.127 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70				
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807	
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.964	
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247	
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.230	
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716	
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.897	
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.893	
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049	
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925	
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540	
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796	
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742	
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341	
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216	
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984	
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970	
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862	
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835	
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868	
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877	
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730	
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464	
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984	
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091	
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308	
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC	
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES	
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247	
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486	
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744	
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397	
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943	
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786	
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539	
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883	
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741	
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.596	
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.575	
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992	
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024	
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070	
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266	
4,000.00	3,986.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488	
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.905	
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292	
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127	
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869	
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593	
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539	
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562	
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.386		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.017		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.673		
9,350.00	9,050.89	9,350.00	9,294.90	33.62	32.86	93.00	-3,346.21	375.96	4,158.16	4,095.06	63.10	65.896		
9,400.00	9,057.61	9,966.67	9,298.04	33.87	37.27	93.02	-3,340.28	507.75	4,155.81	4,084.67	71.14	58.418		
9,452.31	9,060.00	10,020.82	9,299.73	34.15	38.12	93.26	-3,337.37	561.79	4,153.27	4,080.99	72.28	57.460		
9,500.00	9,060.00	10,051.00	9,300.79	34.42	38.59	93.28	-3,335.70	591.91	4,151.07	4,078.03	73.03	56.837		
9,600.00	9,060.00	10,106.91	9,302.58	35.09	39.54	93.31	-3,333.05	647.73	4,147.20	4,072.54	74.66	55.549		
9,700.00	9,060.00	10,157.71	9,303.73	35.86	40.41	93.32	-3,331.40	698.49	4,144.64	4,068.33	76.31	54.311		
9,800.00	9,060.00	10,236.40	9,305.24	36.72	41.83	93.35	-3,329.46	777.14	4,142.89	4,064.28	78.61	52.699		
9,900.00	9,060.00	10,297.12	9,307.09	37.69	42.99	93.37	-3,328.36	837.82	4,141.85	4,061.11	80.74	51.299		
9,963.47	9,060.00	10,338.00	9,309.29	38.35	43.78	93.40	-3,327.90	878.64	4,141.71	4,059.52	82.19	50.394		
10,000.00	9,060.00	10,368.00	9,311.25	38.73	44.38	93.43	-3,327.65	908.57	4,141.76	4,058.58	83.17	49.798		
10,100.00	9,060.00	10,477.61	9,319.12	39.86	46.62	93.54	-3,326.68	1,017.89	4,141.91	4,055.37	86.53	47.866		
10,140.22	9,060.00	10,532.36	9,322.76	40.33	47.77	93.59	-3,326.00	1,072.52	4,141.81	4,053.66	88.15	46.988		
10,200.00	9,060.00	10,590.90	9,325.90	41.05	49.04	93.63	-3,325.23	1,130.97	4,140.96	4,050.82	90.14	45.940		
10,300.00	9,060.00	10,659.14	9,328.39	42.31	50.54	93.68	-3,324.54	1,199.16	4,137.01	4,044.11	92.90	44.532		
10,400.00	9,060.00	10,719.00	9,329.83	43.64	51.88	93.71	-3,324.71	1,259.00	4,130.68	4,035.12	95.55	43.230		
10,507.23	9,060.00	10,791.83	9,331.29	45.11	53.56	93.75	-3,325.59	1,331.81	4,121.00	4,022.31	98.69	41.758		
10,600.00	9,060.00	10,928.83	9,334.28	46.43	56.76	93.79	-3,327.05	1,468.77	4,112.39	4,009.17	103.22	39.842		
10,700.00	9,060.00	10,997.51	9,335.79	47.91	58.41	93.81	-3,327.69	1,537.43	4,106.19	3,999.86	106.33	38.618		
10,800.00	9,060.00	11,160.69	9,339.49	49.42	62.39	93.86	-3,327.90	1,700.56	4,102.61	3,990.79	111.82	36.690		
10,871.08	9,060.00	11,239.90	9,341.54	50.52	64.36	93.89	-3,327.47	1,779.75	4,101.81	3,986.93	114.88	35.706		
10,900.00	9,060.00	11,273.38	9,342.44	50.97	65.19	93.90	-3,327.23	1,813.21	4,101.94	3,985.78	116.16	35.314		
11,000.00	9,060.00	11,369.64	9,345.25	52.55	67.62	93.94	-3,326.47	1,909.43	4,104.59	3,984.44	120.14	34.164		
11,100.00	9,060.00	11,451.97	9,347.30	54.14	69.71	93.97	-3,326.07	1,991.74	4,110.99	3,987.16	123.83	33.200		
11,207.23	9,060.00	11,540.18	9,348.11	55.87	71.97	93.99	-3,326.16	2,079.94	4,122.20	3,994.40	127.80	32.254		
11,300.00	9,060.00	11,617.29	9,348.82	57.39	73.96	93.98	-3,326.54	2,157.05	4,132.50	4,001.20	131.30	31.474		
11,400.00	9,060.00	11,712.20	9,349.73	59.06	76.43	93.97	-3,327.32	2,251.95	4,140.59	4,005.17	135.43	30.574		
11,506.63	9,060.00	11,839.47	9,351.03	60.88	79.77	93.98	-3,328.02	2,379.20	4,145.12	4,004.54	140.58	29.486		
11,600.00	9,060.00	11,972.35	9,352.63	62.49	83.28	94.00	-3,327.78	2,512.08	4,146.68	4,000.99	145.70	28.461		
11,700.00	9,060.00	12,075.32	9,354.56	64.24	86.01	94.02	-3,327.03	2,615.02	4,147.85	3,997.68	150.17	27.621		
11,800.00	9,060.00	12,190.76	9,357.75	66.01	89.10	94.07	-3,325.92	2,730.42	4,148.86	3,993.86	155.00	26.767		
11,900.00	9,060.00	11,900.00	9,363.70	67.79	81.27	94.15	-3,320.15	2,944.83	4,148.07	3,999.16	148.91	27.856		
12,000.00	9,060.00	12,527.00	9,366.82	69.58	98.13	94.20	-3,314.28	3,066.30	4,145.08	3,977.59	167.49	24.748		
12,100.00	9,060.00	12,587.50	9,367.80	71.39	99.76	94.21	-3,311.65	3,126.73	4,142.77	3,971.81	170.96	24.232		
12,200.00	9,060.00	12,655.98	9,368.22	73.21	101.62	94.22	-3,309.77	3,195.19	4,141.74	3,967.08	174.65	23.714		
12,300.00	9,060.00	12,742.10	9,368.28	75.05	103.97	94.22	-3,307.40	3,281.28	4,140.80	3,961.97	178.83	23.155		
12,340.15	9,060.00	12,760.93	9,368.26	75.79	104.48	94.22	-3,307.02	3,300.10	4,140.70	3,960.61	180.08	22.993		
12,400.00	9,060.00	12,789.00	9,368.21	76.89	105.25	94.22	-3,306.63	3,328.16	4,140.93	3,958.98	181.95	22.759		
12,500.00	9,060.00	12,850.97	9,368.11	78.74	106.94	94.22	-3,306.40	3,390.14	4,142.24	3,956.76	185.48	22.333		
12,600.00	9,060.00	12,926.48	9,368.19	80.61	109.01	94.22	-3,306.55	3,465.64	4,144.22	3,954.83	189.39	21.882		
12,700.00	9,060.00	13,002.00	9,369.37	82.48	111.09	94.23	-3,307.11	3,541.15	4,146.82	3,953.52	193.30	21.453		
12,800.00	9,060.00	13,114.17	9,372.12	84.36	114.17	94.27	-3,308.13	3,653.28	4,149.69	3,951.43	198.26	20.930		
12,900.00	9,060.00	13,267.52	9,375.59	86.24	118.40	94.31	-3,307.85	3,806.60	4,151.34	3,946.95	204.39	20.311		
13,000.00	9,060.00	13,339.75	9,377.10	88.14	120.40	94.33	-3,307.55	3,878.80	4,152.88	3,944.63	208.25	19.942		
13,100.00	9,060.00	13,449.05	9,379.72	90.04	123.43	94.37	-3,307.81	3,988.08	4,155.09	3,941.92	213.16	19.493		
13,200.00	9,060.00	13,534.21	9,382.35	91.94	125.79	94.40	-3,307.54	4,073.19	4,156.80	3,939.40	217.40	19.120		
13,300.00	9,060.00	13,680.54	9,386.57	93.86	129.85	94.46	-3,307.43	4,219.46	4,158.88	3,935.51	223.37	18.619		
13,400.00	9,060.00	13,791.90	9,389.24	95.77	132.95	94.49	-3,305.85	4,330.78	4,159.38	3,931.02	228.36	18.214		
13,500.00	9,060.00	13,858.00	9,389.88	97.70	134.79	94.50	-3,305.54	4,396.87	4,160.66	3,928.56	232.11	17.926		
13,600.00	9,060.00	13,931.09	9,389.24	99.62	136.83	94.49	-3,305.84	4,469.96	4,162.69	3,926.65	236.05	17.635		
13,700.00	9,060.00	14,002.70	9,387.80	101.56	138.83	94.47	-3,306.43	4,541.55	4,165.14	3,925.19	239.94	17.359		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - ST01 - ST01		Offset Site Error: 0.00 ft	
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis		Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
13,800.00	9,060.00	14,093.66	9,388.16	103.49	141.37	94.47	-3,307.70	4,632.50	4,168.31	3,923.91	244.40	17.055				
13,900.00	9,060.00	14,215.56	9,390.74	105.43	144.78	94.50	-3,308.66	4,754.36	4,171.00	3,921.24	249.75	16.700				
14,000.00	9,060.00	14,450.24	9,401.86	107.38	151.33	94.65	-3,304.78	4,988.72	4,170.90	3,912.69	258.21	16.153				
14,100.00	9,060.00	14,572.50	9,408.25	109.33	154.75	94.74	-3,300.90	5,110.76	4,169.91	3,906.41	263.51	15.825				
14,200.00	9,060.00	14,680.06	9,412.71	111.28	157.75	94.81	-3,297.19	5,218.16	4,168.57	3,900.15	268.43	15.530				
14,300.00	9,060.00	14,761.21	9,416.07	113.23	160.02	94.85	-3,294.44	5,299.19	4,167.32	3,894.68	272.64	15.285				
14,400.00	9,060.00	14,828.37	9,417.86	115.19	161.90	94.88	-3,292.71	5,366.31	4,166.75	3,890.26	276.49	15.070				
14,415.97	9,060.00	14,838.06	9,418.00	115.50	162.18	94.88	-3,292.52	5,375.99	4,166.74	3,889.67	277.07	15.038				
14,500.00	9,060.00	14,889.03	9,418.09	117.15	163.61	94.88	-3,291.81	5,426.95	4,167.07	3,886.93	280.14	14.875				
14,600.00	9,060.00	14,979.38	9,417.60	119.11	166.15	94.87	-3,291.17	5,517.30	4,168.07	3,883.44	284.63	14.644				
14,700.00	9,060.00	15,111.10	9,419.07	121.08	169.85	94.89	-3,289.65	5,649.00	4,168.80	3,878.51	290.28	14.361				
14,800.00	9,060.00	15,301.02	9,423.99	123.05	175.19	94.96	-3,284.47	5,838.77	4,168.13	3,870.66	297.47	14.012				
14,900.00	9,060.00	15,412.35	9,428.25	125.02	178.32	95.02	-3,279.93	5,949.93	4,166.16	3,863.66	302.50	13.772				
15,000.00	9,060.00	15,498.93	9,431.40	126.99	180.75	95.07	-3,276.14	6,036.37	4,163.91	3,857.01	306.90	13.568				
15,100.00	9,060.00	15,546.25	9,432.65	128.97	182.08	95.09	-3,274.62	6,083.65	4,162.71	3,852.46	310.25	13.417				
15,147.58	9,060.00	15,570.00	9,433.10	129.91	182.75	95.09	-3,274.10	6,107.39	4,162.58	3,850.72	311.86	13.347				
15,200.00	9,060.00	15,618.08	9,433.86	130.95	184.10	95.10	-3,273.23	6,155.46	4,162.62	3,848.38	314.24	13.246				
15,300.00	9,060.00	15,300.00	9,435.68	132.93	175.13	95.13	-3,270.53	6,280.25	4,162.34	3,855.09	307.26	13.547				
15,400.00	9,060.00	15,829.70	9,436.42	134.91	190.07	95.14	-3,268.39	6,367.00	4,161.76	3,837.64	324.12	12.840				
15,500.00	9,060.00	15,933.86	9,435.77	136.89	193.01	95.13	-3,266.56	6,471.14	4,161.72	3,832.69	329.03	12.648				
15,545.36	9,060.00	15,967.81	9,435.54	137.79	193.97	95.13	-3,265.90	6,505.08	4,161.62	3,830.73	330.89	12.577				
15,600.00	9,060.00	15,997.45	9,435.47	138.88	194.81	95.13	-3,265.47	6,534.72	4,161.78	3,828.98	332.81	12.505				
15,700.00	9,060.00	16,058.40	9,435.74	140.86	196.53	95.13	-3,265.10	6,595.67	4,162.93	3,826.44	336.48	12.372				
15,800.00	9,060.00	16,188.45	9,436.61	142.85	200.21	95.14	-3,264.36	6,725.71	4,164.20	3,822.06	342.15	12.171				
15,900.00	9,060.00	16,269.67	9,437.40	144.84	202.51	95.15	-3,263.43	6,806.92	4,164.98	3,818.57	346.41	12.023				
16,000.00	9,060.00	16,328.00	9,438.62	146.83	204.17	95.17	-3,263.46	6,865.24	4,166.87	3,816.89	349.98	11.906				
16,100.00	9,060.00	16,387.08	9,440.45	148.83	205.84	95.19	-3,264.01	6,924.29	4,169.76	3,816.21	353.55	11.794				
16,200.00	9,060.00	16,513.19	9,445.99	150.82	209.41	95.26	-3,265.32	7,050.27	4,173.02	3,813.90	359.12	11.620				
16,300.00	9,060.00	16,604.11	9,450.90	152.82	211.99	95.33	-3,265.73	7,141.06	4,175.72	3,812.10	363.62	11.484				
16,400.00	9,060.00	16,718.40	9,457.60	154.81	215.22	95.41	-3,266.18	7,255.15	4,178.43	3,809.61	368.82	11.329				
16,500.00	9,060.00	16,831.36	9,464.65	156.81	218.42	95.51	-3,266.15	7,367.89	4,180.75	3,806.79	373.97	11.179				
16,600.00	9,060.00	16,963.23	9,470.46	158.81	222.15	95.58	-3,265.87	7,499.63	4,182.78	3,803.10	379.68	11.017				
16,700.00	9,060.00	17,057.56	9,473.07	160.81	224.83	95.62	-3,265.22	7,593.91	4,184.13	3,799.81	384.31	10.887				
16,800.00	9,060.00	17,167.43	9,472.08	162.81	227.95	95.60	-3,265.13	7,703.77	4,185.72	3,796.30	389.43	10.748				
16,900.00	9,060.00	17,230.03	9,470.61	164.82	229.73	95.58	-3,265.20	7,766.36	4,187.42	3,794.26	393.16	10.651				
17,000.00	9,060.00	17,292.17	9,470.23	166.82	231.49	95.57	-3,265.90	7,828.49	4,190.19	3,793.35	396.84	10.559				
17,100.00	9,060.00	17,426.71	9,474.04	168.82	235.32	95.62	-3,267.00	7,962.96	4,193.09	3,790.40	402.69	10.413				
17,200.00	9,060.00	17,523.42	9,477.50	170.83	238.06	95.67	-3,267.01	8,059.61	4,195.21	3,787.82	407.39	10.298				
17,300.00	9,060.00	17,610.81	9,480.14	172.84	240.55	95.70	-3,267.54	8,146.96	4,197.85	3,786.04	411.82	10.193				
17,400.00	9,060.00	17,768.58	9,483.08	174.84	245.03	95.73	-3,267.79	8,304.70	4,200.01	3,781.66	418.34	10.040				
17,500.00	9,060.00	17,849.00	9,484.32	176.85	247.32	95.75	-3,267.41	8,385.11	4,201.47	3,778.88	422.59	9.942				
17,600.00	9,060.00	17,889.40	9,487.89	178.86	248.41	95.80	-3,267.30	8,425.32	4,203.92	3,778.39	425.53	9.879				
17,700.00	9,060.00	17,700.00	9,506.21	180.87	243.31	96.04	-3,267.27	8,502.58	4,207.92	3,785.69	422.23	9.966				
17,800.00	9,060.00	18,269.68	9,519.81	182.88	259.00	96.22	-3,265.25	8,801.68	4,209.88	3,769.99	439.89	9.570				
17,900.00	9,060.00	18,406.04	9,521.45	184.89	262.87	96.25	-3,260.67	8,937.96	4,208.42	3,762.76	445.65	9.443				
18,000.00	9,060.00	18,507.48	9,522.39	186.90	265.74	96.26	-3,256.84	9,039.32	4,206.52	3,756.01	450.50	9.337				
18,100.00	9,060.00	18,584.67	9,523.84	188.92	267.93	96.29	-3,254.05	9,116.45	4,204.89	3,750.17	454.72	9.247				
18,200.00	9,060.00	18,683.43	9,527.84	190.93	270.73	96.34	-3,250.62	9,215.07	4,203.64	3,744.17	459.47	9.149				
18,300.00	9,060.00	18,767.62	9,532.05	192.94	273.12	96.40	-3,247.67	9,299.10	4,202.46	3,738.63	463.83	9.060				
18,400.00	9,060.00	18,926.85	9,541.01	194.96	277.62	96.53	-3,241.30	9,457.94	4,200.90	3,730.81	470.08	8.936				
18,500.00	9,060.00	19,039.02	9,548.23	196.97	280.79	96.63	-3,235.84	9,569.75	4,198.56	3,723.44	475.12	8.837				
18,600.00	9,060.00	19,159.47	9,556.91	198.99	284.19	96.76	-3,229.10	9,689.70	4,195.56	3,715.23	480.33	8.735				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM, 9290-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
18,700.00	9,060.00	19,172.00	9,557.83	201.00	284.54	96.77	-3,228.38	9,702.17	4,193.37	3,710.46	482.91	8.684	
18,742.61	9,060.00	19,172.00	9,557.83	201.86	284.54	96.77	-3,228.38	9,702.17	4,193.15	3,709.35	483.80	8.667	
18,800.00	9,060.00	19,172.00	9,557.83	203.02	284.54	96.77	-3,228.38	9,702.17	4,193.55	3,708.61	484.93	8.648	
18,900.00	9,060.00	19,172.00	9,557.83	205.04	284.54	96.77	-3,228.38	9,702.17	4,196.11	3,709.42	486.69	8.622	
19,000.00	9,060.00	19,172.00	9,557.83	207.06	284.54	96.77	-3,228.38	9,702.17	4,201.05	3,712.87	488.17	8.606	
19,100.00	9,060.00	19,172.00	9,557.83	209.07	284.54	96.77	-3,228.38	9,702.17	4,208.36	3,718.97	489.38	8.599 SF	
19,200.00	9,060.00	19,172.00	9,557.83	211.09	284.54	96.77	-3,228.38	9,702.17	4,218.03	3,727.70	490.32	8.603	
19,300.00	9,060.00	19,172.00	9,557.83	213.11	284.54	96.77	-3,228.38	9,702.17	4,230.04	3,739.05	490.99	8.615	
19,400.00	9,060.00	19,172.00	9,557.83	215.13	284.54	96.77	-3,228.38	9,702.17	4,244.37	3,752.98	491.40	8.637	
19,500.32	9,060.00	19,172.00	9,557.83	217.16	284.54	96.77	-3,228.38	9,702.17	4,261.06	3,769.52	491.54	8.669	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	3.28	3.28	0.50	0.50	-178.18	-3,252.06	-103.26	3,253.70					
100.00	100.00	96.89	96.89	0.52	0.53	-178.18	-3,252.16	-103.16	3,253.80	3,252.76	1.04	3,116.807		
200.00	200.00	190.50	190.50	0.70	0.60	-178.19	-3,252.45	-102.89	3,254.10	3,252.81	1.30	2,508.965		
300.00	300.00	284.11	284.10	0.99	0.69	-178.20	-3,252.93	-102.43	3,254.60	3,252.92	1.68	1,936.247		
400.00	400.00	377.71	377.70	1.31	0.81	-178.21	-3,253.60	-101.79	3,255.29	3,253.17	2.12	1,535.231		
500.00	500.00	470.71	470.70	1.65	0.99	-178.22	-3,254.46	-100.98	3,256.19	3,253.55	2.64	1,233.716		
600.00	600.00	567.00	566.97	1.99	1.30	-178.24	-3,255.55	-100.10	3,257.29	3,254.00	3.29	988.898		
700.00	700.00	665.54	665.51	2.34	1.64	-178.25	-3,256.66	-99.38	3,258.40	3,254.43	3.97	819.894		
800.00	800.00	761.86	761.82	2.69	1.97	-178.26	-3,257.87	-98.94	3,259.64	3,254.98	4.66	700.049		
900.00	900.00	863.75	863.69	3.04	2.32	-178.27	-3,259.18	-98.36	3,260.91	3,255.55	5.36	607.925		
1,000.00	1,000.00	957.17	957.11	3.40	2.65	-178.29	-3,260.40	-97.56	3,262.19	3,256.14	6.05	539.540		
1,100.00	1,100.00	1,087.70	1,087.62	3.75	3.11	-178.31	-3,261.91	-95.96	3,263.36	3,256.50	6.86	475.796		
1,200.00	1,200.00	1,239.94	1,239.85	4.11	3.62	-178.30	-3,261.17	-96.64	3,262.80	3,255.08	7.72	422.742		
1,300.00	1,300.00	1,365.85	1,365.71	4.46	4.03	-178.25	-3,259.18	-99.55	3,261.29	3,252.80	8.49	384.341		
1,400.00	1,400.00	1,457.41	1,457.22	4.82	4.34	-178.20	-3,257.47	-102.10	3,259.52	3,250.37	9.15	356.216		
1,500.00	1,500.00	1,539.21	1,538.98	5.18	4.61	-178.17	-3,256.31	-104.31	3,258.18	3,248.39	9.78	332.984		
1,600.00	1,600.00	1,636.39	1,636.12	5.53	4.94	-178.12	-3,255.23	-106.98	3,257.15	3,246.68	10.47	310.970		
1,700.00	1,700.00	1,741.92	1,741.60	5.89	5.31	-178.07	-3,254.01	-109.86	3,256.09	3,244.90	11.19	290.862		
1,800.00	1,800.00	1,851.02	1,850.64	6.25	5.68	-178.01	-3,252.46	-112.91	3,254.76	3,242.83	11.93	272.835		
1,900.00	1,900.00	1,945.64	1,945.22	6.61	6.01	-177.97	-3,251.00	-115.33	3,253.31	3,240.69	12.62	257.868		
2,000.00	2,000.00	2,033.55	2,033.09	6.96	6.32	-177.93	-3,249.99	-117.47	3,252.25	3,238.97	13.28	244.877		
2,100.00	2,100.00	2,128.21	2,127.72	7.32	6.65	-177.89	-3,249.13	-119.88	3,251.43	3,237.46	13.97	232.730		
2,200.00	2,200.00	2,227.59	2,227.06	7.68	7.00	-177.84	-3,248.32	-122.67	3,250.72	3,236.05	14.68	221.464		
2,300.00	2,300.00	2,331.84	2,331.27	8.04	7.37	-177.78	-3,247.39	-125.63	3,249.93	3,234.53	15.40	210.984		
2,350.00	2,350.00	2,384.18	2,383.59	8.22	7.55	-177.76	-3,246.87	-127.09	3,249.49	3,233.72	15.77	206.091		
2,400.00	2,400.00	2,439.21	2,438.59	8.39	7.75	-161.69	-3,246.25	-128.67	3,249.20	3,233.06	16.14	201.308		
2,418.64	2,418.64	2,459.72	2,459.09	8.46	7.82	-161.68	-3,246.00	-129.29	3,249.17	3,232.89	16.28	199.587 CC		
2,500.00	2,499.98	2,542.73	2,542.05	8.75	8.11	-161.64	-3,244.92	-131.82	3,249.69	3,232.82	16.86	192.699 ES		
2,600.00	2,599.92	2,636.45	2,635.72	9.11	8.45	-161.60	-3,243.75	-134.67	3,251.88	3,234.33	17.55	185.247		
2,700.00	2,699.78	2,729.47	2,728.69	9.47	8.78	-161.57	-3,242.84	-137.47	3,255.99	3,237.75	18.24	178.486		
2,800.00	2,799.54	2,839.79	2,838.96	9.82	9.17	-161.54	-3,241.67	-140.55	3,261.67	3,242.68	18.99	171.744		
2,900.00	2,899.16	2,923.00	2,922.13	10.18	9.47	-161.51	-3,240.69	-143.05	3,268.92	3,249.27	19.65	166.397		
3,000.00	2,998.61	2,991.45	2,990.55	10.54	9.71	-161.49	-3,240.37	-144.98	3,278.56	3,258.32	20.25	161.943		
3,100.00	3,097.86	3,063.97	3,063.06	10.89	9.97	-161.47	-3,240.95	-146.49	3,290.96	3,270.11	20.86	157.786		
3,200.00	3,196.89	3,153.33	3,152.39	11.25	10.28	-161.46	-3,242.10	-148.37	3,305.53	3,284.00	21.53	153.539		
3,295.74	3,291.45	3,235.68	3,234.71	11.59	10.57	-161.45	-3,243.29	-149.98	3,321.17	3,299.01	22.16	149.883		
3,300.00	3,295.65	3,238.69	3,237.72	11.61	10.58	-161.46	-3,243.34	-150.02	3,321.91	3,299.72	22.18	149.741		
3,400.00	3,394.29	3,309.76	3,308.77	11.97	10.83	-161.52	-3,244.95	-150.25	3,339.75	3,316.97	22.78	146.597		
3,500.00	3,492.94	3,385.19	3,384.16	12.33	11.09	-161.60	-3,247.24	-149.47	3,358.32	3,334.93	23.39	143.576		
3,600.00	3,591.58	3,587.66	3,586.58	12.69	11.78	-161.83	-3,250.35	-146.58	3,375.08	3,350.63	24.46	137.992		
3,700.00	3,690.22	3,675.43	3,674.33	13.05	12.08	-161.93	-3,250.78	-145.35	3,391.16	3,366.04	25.12	135.024		
3,800.00	3,788.86	3,770.55	3,769.44	13.41	12.40	-162.04	-3,251.41	-143.92	3,407.42	3,381.62	25.80	132.070		
3,900.00	3,887.50	3,865.81	3,864.69	13.77	12.73	-162.14	-3,252.14	-142.60	3,423.79	3,397.30	26.49	129.266		
4,000.00	3,886.14	3,967.33	3,966.20	14.14	13.08	-162.25	-3,252.90	-141.51	3,440.17	3,412.97	27.20	126.488		
4,100.00	4,084.78	4,065.02	4,063.88	14.50	13.42	-162.35	-3,253.64	-140.56	3,456.56	3,428.66	27.90	123.906		
4,200.00	4,183.42	4,172.03	4,170.89	14.87	13.79	-162.45	-3,254.19	-139.69	3,472.73	3,444.09	28.63	121.292		
4,300.00	4,282.06	4,257.76	4,256.62	15.24	14.09	-162.53	-3,254.78	-139.10	3,489.08	3,459.79	29.29	119.127		
4,400.00	4,380.70	4,356.36	4,355.21	15.60	14.43	-162.62	-3,255.63	-138.67	3,505.62	3,475.62	30.00	116.869		
4,500.00	4,479.34	4,462.88	4,461.73	15.97	14.80	-162.71	-3,256.35	-138.43	3,521.98	3,491.25	30.73	114.593		
4,600.00	4,577.98	4,560.48	4,559.33	16.34	15.15	-162.79	-3,256.97	-138.15	3,538.31	3,506.87	31.44	112.539		
4,700.00	4,676.62	4,658.71	4,657.55	16.71	15.49	-162.87	-3,257.57	-138.13	3,554.63	3,522.48	32.15	110.562		
4,800.00	4,775.27	4,754.83	4,753.67	17.08	15.83	-162.95	-3,258.23	-138.12	3,571.03	3,538.18	32.85	108.696		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.00	4,873.91	4,857.13	4,855.97	17.45	16.19	-163.02	-3,258.91	-138.27	3,587.43	3,553.85	33.58	106.830		
5,000.00	4,972.55	4,943.77	4,942.61	17.82	16.50	-163.09	-3,259.44	-138.43	3,603.78	3,569.54	34.25	105.225		
5,100.00	5,071.19	5,013.83	5,012.66	18.19	16.74	-163.13	-3,260.39	-139.30	3,620.87	3,586.02	34.85	103.897		
5,200.00	5,169.83	5,115.95	5,114.74	18.56	17.10	-163.17	-3,262.05	-141.32	3,638.24	3,602.66	35.58	102.258		
5,300.00	5,268.47	5,211.39	5,210.14	18.93	17.44	-163.21	-3,263.61	-143.40	3,655.62	3,619.33	36.28	100.757		
5,400.00	5,367.11	5,306.49	5,305.21	19.31	17.78	-163.25	-3,265.24	-145.50	3,673.07	3,636.09	36.98	99.317		
5,500.00	5,465.75	5,399.18	5,397.85	19.68	18.11	-163.29	-3,266.96	-147.75	3,690.67	3,653.00	37.68	97.959		
5,600.00	5,564.39	5,497.91	5,496.50	20.05	18.46	-163.30	-3,268.81	-151.46	3,708.31	3,669.91	38.39	96.588		
5,700.00	5,663.03	5,584.96	5,583.42	20.42	18.77	-163.30	-3,270.57	-155.80	3,726.10	3,687.04	39.06	95.387		
5,800.00	5,761.67	5,684.50	5,682.84	20.80	19.05	-163.30	-3,272.52	-159.72	3,744.31	3,704.61	39.70	94.309		
5,900.00	5,860.31	5,785.62	5,783.82	21.17	19.41	-163.30	-3,275.23	-164.29	3,762.75	3,722.31	40.43	93.065		
6,000.00	5,958.96	5,884.90	5,882.97	21.54	19.77	-163.31	-3,277.83	-168.63	3,781.11	3,739.96	41.15	91.879		
6,100.00	6,057.60	5,984.80	5,982.75	21.92	20.12	-163.32	-3,280.41	-172.66	3,799.45	3,757.57	41.88	90.727		
6,200.00	6,156.24	6,076.57	6,074.42	22.29	20.52	-163.33	-3,283.15	-176.72	3,817.65	3,774.99	42.65	89.506		
6,300.00	6,254.88	6,193.00	6,190.75	22.67	20.94	-163.35	-3,285.28	-181.01	3,835.21	3,791.77	43.45	88.275		
6,400.00	6,353.52	6,280.53	6,278.21	23.04	21.25	-163.37	-3,286.91	-184.06	3,852.84	3,808.72	44.12	87.325		
6,500.00	6,452.16	6,361.68	6,359.29	23.42	21.54	-163.39	-3,288.71	-186.80	3,870.81	3,826.04	44.77	86.463		
6,600.00	6,550.80	6,435.92	6,433.47	23.79	21.81	-163.40	-3,290.78	-189.14	3,889.34	3,843.95	45.39	85.695		
6,700.00	6,649.44	6,531.80	6,529.26	24.17	22.15	-163.43	-3,293.77	-192.01	3,908.19	3,862.10	46.10	84.785		
6,800.00	6,748.08	6,622.96	6,620.32	24.54	22.48	-163.45	-3,296.72	-195.09	3,927.17	3,880.39	46.78	83.942		
6,900.00	6,846.72	6,728.13	6,725.34	24.92	22.86	-163.45	-3,300.17	-199.50	3,946.19	3,898.66	47.54	83.016		
7,000.00	6,945.36	6,881.13	6,878.24	25.29	23.41	-163.50	-3,303.66	-203.58	3,964.13	3,915.64	48.49	81.754		
7,100.00	7,044.00	6,995.60	6,992.69	25.67	23.82	-163.55	-3,305.47	-205.34	3,981.46	3,932.19	49.28	80.799		
7,200.00	7,142.65	7,095.54	7,092.61	26.04	24.17	-163.60	-3,306.71	-206.35	3,998.47	3,948.47	50.00	79.964		
7,300.00	7,241.29	7,252.63	7,249.64	26.42	24.71	-163.76	-3,306.94	-203.13	4,014.12	3,963.18	50.94	78.796		
7,400.00	7,339.93	7,325.80	7,322.77	26.79	24.96	-163.84	-3,307.08	-200.43	4,030.12	3,978.57	51.55	78.179		
7,500.00	7,438.57	7,404.55	7,401.50	27.17	25.23	-163.92	-3,307.72	-198.56	4,046.71	3,994.54	52.18	77.555		
7,571.77	7,509.37	7,474.80	7,471.73	27.44	25.47	-163.99	-3,308.42	-197.34	4,058.77	4,006.09	52.69	77.037		
7,600.00	7,537.23	7,502.90	7,499.82	27.55	25.57	-164.03	-3,308.70	-196.90	4,063.42	4,010.53	52.89	76.831		
7,700.00	7,636.18	7,603.14	7,600.05	27.92	25.92	-164.16	-3,309.69	-195.95	4,078.26	4,024.66	53.61	76.078		
7,800.00	7,735.48	7,701.41	7,698.32	28.29	26.26	-164.26	-3,310.64	-195.70	4,090.60	4,036.28	54.32	75.310		
7,900.00	7,835.05	7,786.86	7,783.76	28.65	26.56	-164.33	-3,311.55	-195.50	4,100.55	4,045.58	54.97	74.594		
8,000.00	7,934.83	7,851.00	7,847.89	29.01	26.79	-164.38	-3,312.69	-195.28	4,108.67	4,053.14	55.53	73.987		
8,100.00	8,034.74	8,000.72	7,997.58	29.36	27.31	-164.46	-3,314.69	-193.25	4,113.74	4,057.30	56.44	72.885		
8,202.27	8,137.00	8,089.55	8,086.39	29.72	27.62	179.47	-3,315.85	-191.75	4,116.38	4,059.29	57.10	72.092		
8,300.00	8,234.73	8,211.16	8,207.95	30.06	28.04	179.42	-3,317.03	-188.66	4,117.35	4,059.47	57.87	71.143		
8,400.00	8,334.73	8,288.17	8,284.95	30.41	28.31	179.41	-3,317.66	-187.57	4,118.23	4,059.75	58.48	70.425		
8,500.00	8,434.73	8,357.19	8,353.96	30.75	28.55	179.41	-3,318.88	-187.37	4,119.96	4,060.92	59.05	69.774		
8,552.31	8,487.04	8,407.33	8,404.09	30.94	28.73	179.41	-3,319.92	-187.48	4,121.05	4,061.64	59.41	69.371		
8,600.00	8,534.68	8,452.07	8,448.82	31.10	28.89	89.68	-3,320.88	-187.69	4,122.05	4,062.33	59.72	69.018		
8,650.00	8,584.26	8,497.45	8,494.19	31.26	29.05	89.65	-3,321.89	-188.06	4,123.13	4,063.09	60.05	68.665		
8,700.00	8,633.10	8,540.65	8,537.37	31.43	29.20	89.67	-3,322.89	-188.55	4,124.26	4,063.90	60.36	68.328		
8,750.00	8,680.83	8,579.84	8,576.55	31.58	29.34	89.72	-3,323.88	-188.92	4,125.49	4,064.84	60.65	68.017		
8,800.00	8,727.09	8,617.89	8,614.58	31.74	29.48	89.78	-3,324.91	-189.15	4,126.87	4,065.93	60.94	67.718		
8,850.00	8,771.52	8,648.14	8,644.83	31.89	29.59	89.82	-3,325.81	-189.28	4,128.46	4,067.26	61.20	67.464		
8,900.00	8,813.78	8,675.89	8,672.56	32.04	29.69	89.84	-3,326.73	-189.43	4,130.33	4,068.90	61.44	67.228		
8,950.00	8,853.56	8,701.94	8,698.59	32.18	29.78	89.84	-3,327.68	-189.60	4,132.54	4,070.86	61.68	67.005		
9,000.00	8,890.55	8,717.00	8,713.64	32.32	29.83	89.72	-3,328.27	-189.72	4,135.11	4,073.25	61.87	66.838		
9,050.00	8,924.46	8,746.95	8,743.56	32.47	29.94	89.73	-3,329.53	-189.97	4,138.06	4,075.92	62.13	66.598		
9,100.00	8,955.05	8,766.01	8,762.59	32.63	30.01	89.60	-3,330.40	-190.15	4,141.44	4,079.08	62.36	66.409		
9,150.00	8,982.08	8,782.75	8,779.32	32.79	30.07	89.41	-3,331.21	-190.33	4,145.27	4,082.68	62.59	66.225		
9,200.00	9,005.34	8,797.07	8,793.62	32.97	30.12	89.15	-3,331.92	-190.48	4,149.56	4,086.73	62.83	66.044		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,250.00	9,024.65	8,812.00	8,808.53	33.17	30.17	88.87	-3,332.70	-190.66	4,154.32	4,091.24	63.09	65.849		
9,300.00	9,039.87	8,820.60	8,817.12	33.38	30.20	88.46	-3,333.16	-190.76	4,159.54	4,096.21	63.34	65.674		
9,350.00	9,050.89	8,829.90	8,826.40	33.62	30.24	88.02	-3,333.66	-190.87	4,165.21	4,101.60	63.61	65.483		
9,400.00	9,057.61	8,835.35	8,831.85	33.87	30.26	87.48	-3,333.96	-190.94	4,171.29	4,107.42	63.88	65.300		
9,452.31	9,060.00	8,836.90	8,833.39	34.15	30.26	86.81	-3,334.04	-190.96	4,178.09	4,113.93	64.16	65.121		
9,500.00	9,060.00	8,836.36	8,832.85	34.42	30.26	86.81	-3,334.01	-190.95	4,184.73	4,120.30	64.42	64.957		
9,600.00	9,060.00	8,835.24	8,831.73	35.09	30.26	86.79	-3,333.95	-190.94	4,200.38	4,135.33	65.05	64.571		
9,700.00	9,060.00	8,834.12	8,830.62	35.86	30.25	86.78	-3,333.89	-190.92	4,218.34	4,152.57	65.77	64.141		
9,800.00	9,060.00	8,833.01	8,829.50	36.72	30.25	86.76	-3,333.83	-190.91	4,238.59	4,172.03	66.56	63.681		
9,900.00	9,060.00	8,831.89	8,828.39	37.69	30.24	86.74	-3,333.77	-190.90	4,261.08	4,193.66	67.42	63.202		
10,000.00	9,060.00	8,830.78	8,827.28	38.73	30.24	86.73	-3,333.71	-190.88	4,285.80	4,217.46	68.34	62.713		
10,100.00	9,060.00	8,829.67	8,826.17	39.86	30.24	86.71	-3,333.65	-190.87	4,312.69	4,243.38	69.31	62.226		
10,140.22	9,060.00	8,829.22	8,825.73	40.33	30.23	86.71	-3,333.63	-190.87	4,324.11	4,254.40	69.71	62.033		
10,200.00	9,060.00	8,828.59	8,825.09	41.05	30.23	86.72	-3,333.59	-190.86	4,341.12	4,270.80	70.31	61.739		
10,300.00	9,060.00	8,827.67	8,824.17	42.31	30.23	86.74	-3,333.54	-190.85	4,368.60	4,297.23	71.37	61.212		
10,400.00	9,060.00	8,826.92	8,823.42	43.64	30.23	86.76	-3,333.50	-190.84	4,394.84	4,322.38	72.46	60.649		
10,507.23	9,060.00	8,826.30	8,822.80	45.11	30.22	86.78	-3,333.47	-190.83	4,421.60	4,347.93	73.67	60.015		
10,600.00	9,060.00	8,825.77	8,822.28	46.43	30.22	86.75	-3,333.44	-190.82	4,446.49	4,371.75	74.74	59.492		
10,700.00	9,060.00	8,825.05	8,821.56	47.91	30.22	86.70	-3,333.40	-190.81	4,478.50	4,402.62	75.89	59.015		
10,800.00	9,060.00	8,824.16	8,820.67	49.42	30.22	86.64	-3,333.35	-190.80	4,515.75	4,438.73	77.02	58.631		
10,900.00	9,060.00	8,823.10	8,819.61	50.97	30.21	86.57	-3,333.30	-190.79	4,558.05	4,479.92	78.13	58.341		
11,000.00	9,060.00	8,821.89	8,818.40	52.55	30.21	86.49	-3,333.23	-190.78	4,605.22	4,526.02	79.20	58.146		
11,100.00	9,060.00	8,820.51	8,817.02	54.14	30.20	86.39	-3,333.16	-190.76	4,657.06	4,576.82	80.23	58.044		
11,207.23	9,060.00	8,818.86	8,815.37	55.87	30.20	86.27	-3,333.07	-190.74	4,717.57	4,636.29	81.29	58.037		
11,300.00	9,060.00	8,817.42	8,813.94	57.39	30.19	86.34	-3,332.99	-190.72	4,771.45	4,689.27	82.17	58.065		
11,400.00	9,060.00	8,816.03	8,812.55	59.06	30.19	86.40	-3,332.92	-190.71	4,828.12	4,744.98	83.14	58.070		
11,506.63	9,060.00	8,814.73	8,811.25	60.88	30.18	86.47	-3,332.85	-190.69	4,886.94	4,802.75	84.19	58.049		
11,600.00	9,060.00	8,813.68	8,810.20	62.49	30.18	86.46	-3,332.79	-190.68	4,938.33	4,853.24	85.09	58.034 SF		
11,700.00	9,060.00	8,812.55	8,809.07	64.24	30.17	86.44	-3,332.73	-190.66	4,994.72	4,908.67	86.05	58.047		
11,800.00	9,060.00	8,812.00	8,808.53	66.01	30.17	86.44	-3,332.70	-190.66	5,052.46	4,965.48	86.98	58.088		
11,900.00	9,060.00	8,812.00	8,808.53	67.79	30.17	86.44	-3,332.70	-190.66	5,111.50	5,023.61	87.89	58.158		
12,000.00	9,060.00	8,812.00	8,808.53	69.58	30.17	86.44	-3,332.70	-190.66	5,171.80	5,083.02	88.78	58.255		
12,100.00	9,060.00	8,812.00	8,808.53	71.39	30.17	86.44	-3,332.70	-190.66	5,233.32	5,143.68	89.64	58.380		
12,200.00	9,060.00	8,812.00	8,808.53	73.21	30.17	86.44	-3,332.70	-190.66	5,296.01	5,205.53	90.48	58.530		
12,300.00	9,060.00	8,812.00	8,808.53	75.05	30.17	86.44	-3,332.70	-190.66	5,359.83	5,268.53	91.30	58.705		
12,400.00	9,060.00	8,812.00	8,808.53	76.89	30.17	86.44	-3,332.70	-190.66	5,424.75	5,332.66	92.09	58.904		
12,500.00	9,060.00	8,812.00	8,808.53	78.74	30.17	86.44	-3,332.70	-190.66	5,490.72	5,397.86	92.86	59.126		
12,600.00	9,060.00	8,812.00	8,808.53	80.61	30.17	86.44	-3,332.70	-190.66	5,557.71	5,464.10	93.61	59.369		
12,700.00	9,060.00	8,812.00	8,808.53	82.48	30.17	86.44	-3,332.70	-190.66	5,625.68	5,531.34	94.34	59.633		
12,800.00	9,060.00	8,812.00	8,808.53	84.36	30.17	86.44	-3,332.70	-190.66	5,694.59	5,599.55	95.04	59.917		
12,900.00	9,060.00	8,812.00	8,808.53	86.24	30.17	86.44	-3,332.70	-190.66	5,764.41	5,668.69	95.72	60.220		
13,000.00	9,060.00	8,812.00	8,808.53	88.14	30.17	86.44	-3,332.70	-190.66	5,835.11	5,738.73	96.38	60.540		
13,100.00	9,060.00	8,812.00	8,808.53	90.04	30.17	86.44	-3,332.70	-190.66	5,906.66	5,809.64	97.02	60.878		
13,200.00	9,060.00	8,812.00	8,808.53	91.94	30.17	86.44	-3,332.70	-190.66	5,979.03	5,881.38	97.65	61.232		
13,300.00	9,060.00	8,812.00	8,808.53	93.86	30.17	86.44	-3,332.70	-190.66	6,052.18	5,953.93	98.25	61.602		
13,400.00	9,060.00	8,812.00	8,808.53	95.77	30.17	86.44	-3,332.70	-190.66	6,126.09	6,027.26	98.83	61.986		
13,500.00	9,060.00	8,812.00	8,808.53	97.70	30.17	86.44	-3,332.70	-190.66	6,200.73	6,101.34	99.39	62.385		
13,600.00	9,060.00	8,812.00	8,808.53	99.62	30.17	86.44	-3,332.70	-190.66	6,276.08	6,176.14	99.94	62.798		
13,700.00	9,060.00	8,812.00	8,808.53	101.56	30.17	86.44	-3,332.70	-190.66	6,352.11	6,251.64	100.47	63.223		
13,800.00	9,060.00	8,812.00	8,808.53	103.49	30.17	86.44	-3,332.70	-190.66	6,428.79	6,327.81	100.98	63.661		
13,900.00	9,060.00	8,812.00	8,808.53	105.43	30.17	86.44	-3,332.70	-190.66	6,506.11	6,404.63	101.48	64.111		
14,000.00	9,060.00	8,795.90	8,792.45	107.38	30.11	86.21	-3,331.86	-190.47	6,584.00	6,482.11	101.89	64.618		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 336H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 438-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	8,795.22	8,791.78	109.33	30.11	86.20	-3,331.83	-190.46	6,662.52	6,560.16	102.36	65.091	
14,200.00	9,060.00	8,794.56	8,791.11	111.28	30.11	86.19	-3,331.80	-190.46	6,741.60	6,638.80	102.81	65.575	
14,300.00	9,060.00	8,793.89	8,790.44	113.23	30.11	86.18	-3,331.76	-190.45	6,821.24	6,718.00	103.24	66.069	
14,400.00	9,060.00	8,793.23	8,789.78	115.19	30.11	86.17	-3,331.73	-190.44	6,901.40	6,797.74	103.67	66.573	
14,500.00	9,060.00	8,792.57	8,789.12	117.15	30.10	86.16	-3,331.70	-190.43	6,982.08	6,878.00	104.08	67.085	
14,600.00	9,060.00	8,791.91	8,788.47	119.11	30.10	86.16	-3,331.66	-190.43	7,063.25	6,958.77	104.48	67.606	
14,700.00	9,060.00	8,791.26	8,787.82	121.08	30.10	86.15	-3,331.63	-190.42	7,144.89	7,040.03	104.86	68.136	
14,800.00	9,060.00	8,790.61	8,787.17	123.05	30.10	86.14	-3,331.60	-190.41	7,227.00	7,121.76	105.24	68.673	
14,900.00	9,060.00	8,789.97	8,786.52	125.02	30.09	86.13	-3,331.56	-190.40	7,309.56	7,203.95	105.60	69.218	
15,000.00	9,060.00	8,789.32	8,785.88	126.99	30.09	86.12	-3,331.53	-190.40	7,392.54	7,286.59	105.96	69.770	
15,100.00	9,060.00	8,788.68	8,785.24	128.97	30.09	86.11	-3,331.50	-190.39	7,475.94	7,369.64	106.30	70.329	
15,200.00	9,060.00	8,788.05	8,784.61	130.95	30.09	86.10	-3,331.47	-190.38	7,559.75	7,453.11	106.63	70.895	
15,300.00	9,060.00	8,787.41	8,783.98	132.93	30.08	86.09	-3,331.44	-190.38	7,643.94	7,536.98	106.96	71.467	
15,400.00	9,060.00	8,786.78	8,783.35	134.91	30.08	86.08	-3,331.41	-190.37	7,728.51	7,621.24	107.27	72.046	
15,500.00	9,060.00	8,786.16	8,782.72	136.89	30.08	86.07	-3,331.37	-190.36	7,813.44	7,705.86	107.58	72.630	
15,600.00	9,060.00	8,785.53	8,782.10	138.88	30.08	86.07	-3,331.34	-190.36	7,898.73	7,790.85	107.88	73.220	
15,700.00	9,060.00	8,784.91	8,781.48	140.86	30.08	86.06	-3,331.31	-190.35	7,984.36	7,876.19	108.17	73.815	
15,800.00	9,060.00	8,784.30	8,780.86	142.85	30.07	86.05	-3,331.28	-190.34	8,070.32	7,961.87	108.45	74.416	
15,900.00	9,060.00	8,783.68	8,780.25	144.84	30.07	86.04	-3,331.25	-190.34	8,156.59	8,047.87	108.72	75.021	
16,000.00	9,060.00	8,783.07	8,779.64	146.83	30.07	86.03	-3,331.22	-190.33	8,243.18	8,134.19	108.99	75.631	
16,100.00	9,060.00	8,782.46	8,779.03	148.83	30.07	86.02	-3,331.19	-190.32	8,330.07	8,220.82	109.25	76.246	
16,200.00	9,060.00	8,781.85	8,778.42	150.82	30.06	86.01	-3,331.16	-190.32	8,417.25	8,307.75	109.51	76.866	
16,300.00	9,060.00	8,781.25	8,777.82	152.82	30.06	86.01	-3,331.13	-190.31	8,504.71	8,394.96	109.75	77.489	
16,400.00	9,060.00	8,780.65	8,777.22	154.81	30.06	86.00	-3,331.10	-190.30	8,592.45	8,482.45	110.00	78.117	
16,500.00	9,060.00	8,780.05	8,776.63	156.81	30.06	85.99	-3,331.07	-190.30	8,680.45	8,570.22	110.23	78.748	
16,600.00	9,060.00	8,779.46	8,776.03	158.81	30.06	85.98	-3,331.04	-190.29	8,768.71	8,658.25	110.46	79.383	
16,700.00	9,060.00	8,778.87	8,775.44	160.81	30.05	85.97	-3,331.02	-190.28	8,857.22	8,746.53	110.68	80.022	
16,800.00	9,060.00	8,778.28	8,774.85	162.81	30.05	85.96	-3,330.99	-190.28	8,945.96	8,835.06	110.90	80.664	
16,900.00	9,060.00	8,777.69	8,774.27	164.82	30.05	85.96	-3,330.96	-190.27	9,034.95	8,923.83	111.12	81.310	
17,000.00	9,060.00	8,777.11	8,773.69	166.82	30.05	85.95	-3,330.93	-190.27	9,124.16	9,012.83	111.33	81.959	
17,100.00	9,060.00	8,776.53	8,773.11	168.82	30.05	85.94	-3,330.90	-190.26	9,213.60	9,102.06	111.53	82.610	
17,200.00	9,060.00	8,775.95	8,772.53	170.83	30.04	85.93	-3,330.87	-190.25	9,303.24	9,191.51	111.73	83.265	
17,300.00	9,060.00	8,775.38	8,771.95	172.84	30.04	85.92	-3,330.85	-190.25	9,393.10	9,281.18	111.93	83.923	
17,400.00	9,060.00	8,774.81	8,771.38	174.84	30.04	85.92	-3,330.82	-190.24	9,483.16	9,371.05	112.12	84.583	
17,500.00	9,060.00	8,774.24	8,770.81	176.85	30.04	85.91	-3,330.79	-190.24	9,573.42	9,461.12	112.30	85.246	
17,600.00	9,060.00	8,773.67	8,770.25	178.86	30.04	85.90	-3,330.76	-190.23	9,663.87	9,551.38	112.49	85.911	
17,700.00	9,060.00	8,773.11	8,769.68	180.87	30.03	85.89	-3,330.74	-190.22	9,754.51	9,641.84	112.67	86.579	
17,800.00	9,060.00	8,772.54	8,769.12	182.88	30.03	85.88	-3,330.71	-190.22	9,845.33	9,732.48	112.84	87.249	
17,900.00	9,060.00	8,771.99	8,768.57	184.89	30.03	85.88	-3,330.68	-190.21	9,936.32	9,823.31	113.01	87.921	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	179.87	-1,588.66	3.49	1,588.71					
100.00	100.00	88.30	88.30	0.52	0.51	179.87	-1,588.66	3.49	1,588.67	1,587.64	1.03	1,539.926		
200.00	200.00	188.30	188.30	0.70	0.67	179.87	-1,588.66	3.49	1,588.67	1,587.29	1.38	1,155.037		
300.00	300.00	288.30	288.30	0.99	0.95	179.87	-1,588.66	3.49	1,588.67	1,586.73	1.94	819.432		
400.00	400.00	388.30	388.30	1.31	1.27	179.87	-1,588.66	3.49	1,588.67	1,586.09	2.58	615.877		
500.00	500.00	488.30	488.30	1.65	1.61	179.87	-1,588.66	3.49	1,588.67	1,585.41	3.25	488.480		
600.00	600.00	588.30	588.30	1.99	1.95	179.87	-1,588.66	3.49	1,588.67	1,584.73	3.94	403.150		
700.00	700.00	688.30	688.30	2.34	2.30	179.87	-1,588.66	3.49	1,588.67	1,584.03	4.64	342.557		
800.00	800.00	788.30	788.30	2.69	2.65	179.87	-1,588.66	3.49	1,588.67	1,583.33	5.34	297.504		
900.00	900.00	888.30	888.30	3.04	3.00	179.87	-1,588.66	3.49	1,588.67	1,582.62	6.05	262.775		
1,000.00	1,000.00	988.30	988.30	3.40	3.36	179.87	-1,588.66	3.49	1,588.67	1,581.91	6.75	235.224		
1,100.00	1,100.00	1,088.30	1,088.30	3.75	3.71	179.87	-1,588.66	3.49	1,588.67	1,581.20	7.46	212.854		
1,200.00	1,200.00	1,188.30	1,188.30	4.11	4.07	179.87	-1,588.66	3.49	1,588.67	1,580.49	8.17	194.340		
1,300.00	1,300.00	1,288.30	1,288.30	4.46	4.42	179.87	-1,588.66	3.49	1,588.67	1,579.78	8.89	178.770		
1,400.00	1,400.00	1,388.30	1,388.30	4.82	4.78	179.87	-1,588.66	3.49	1,588.67	1,579.07	9.60	165.496		
1,500.00	1,500.00	1,488.30	1,488.30	5.18	5.14	179.87	-1,588.66	3.49	1,588.67	1,578.35	10.31	154.049		
1,600.00	1,600.00	1,588.30	1,588.30	5.53	5.49	179.87	-1,588.66	3.49	1,588.67	1,577.64	11.03	144.077		
1,700.00	1,700.00	1,688.30	1,688.30	5.89	5.85	179.87	-1,588.66	3.49	1,588.67	1,576.93	11.74	135.313		
1,800.00	1,800.00	1,788.30	1,788.30	6.25	6.21	179.87	-1,588.66	3.49	1,588.67	1,576.21	12.46	127.551		
1,900.00	1,900.00	1,888.30	1,888.30	6.61	6.56	179.87	-1,588.66	3.49	1,588.67	1,575.50	13.17	120.629		
2,000.00	2,000.00	1,988.30	1,988.30	6.96	6.92	179.87	-1,588.66	3.49	1,588.67	1,574.78	13.88	114.417		
2,100.00	2,100.00	2,088.30	2,088.30	7.32	7.28	179.87	-1,588.66	3.49	1,588.67	1,574.07	14.60	108.812		
2,200.00	2,200.00	2,188.30	2,188.30	7.68	7.64	179.87	-1,588.66	3.49	1,588.67	1,573.35	15.32	103.730		
2,300.00	2,300.00	2,288.30	2,288.30	8.04	7.99	179.87	-1,588.66	3.49	1,588.67	1,572.64	16.03	99.100		
2,350.00	2,350.00	2,338.30	2,338.30	8.22	8.17	179.87	-1,588.66	3.49	1,588.67	1,572.28	16.39	96.937 CC		
2,400.00	2,400.00	2,388.30	2,388.30	8.39	8.35	-164.09	-1,588.66	3.49	1,588.88	1,572.13	16.75	94.879 ES		
2,500.00	2,499.98	2,488.28	2,488.28	8.75	8.71	-164.10	-1,588.66	3.49	1,590.56	1,573.09	17.46	91.090		
2,600.00	2,599.92	2,571.72	2,571.72	9.11	9.00	-164.11	-1,589.04	3.24	1,594.37	1,576.26	18.10	88.064		
2,700.00	2,699.78	2,652.81	2,652.79	9.47	9.27	-164.10	-1,590.35	2.35	1,601.02	1,582.29	18.73	85.488		
2,800.00	2,799.54	2,733.64	2,733.57	9.82	9.53	-164.07	-1,592.61	0.82	1,610.51	1,591.16	19.34	83.256		
2,900.00	2,899.16	2,814.11	2,813.95	10.18	9.80	-164.03	-1,595.79	-1.33	1,622.82	1,602.86	19.96	81.315		
3,000.00	2,998.61	2,894.13	2,893.82	10.54	10.06	-163.97	-1,599.89	-4.10	1,637.94	1,617.38	20.57	79.640		
3,100.00	3,097.86	2,980.38	2,979.82	10.89	10.35	-163.90	-1,605.24	-7.73	1,655.78	1,634.58	21.20	78.103		
3,200.00	3,196.89	3,078.41	3,077.56	11.25	10.68	-163.82	-1,611.55	-11.99	1,675.50	1,653.62	21.88	76.571		
3,295.74	3,291.45	3,171.95	3,170.82	11.59	10.99	-163.77	-1,617.57	-16.06	1,695.92	1,673.39	22.53	75.259		
3,300.00	3,295.65	3,176.10	3,174.96	11.61	11.00	-163.77	-1,617.83	-16.24	1,696.86	1,674.30	22.56	75.201		
3,400.00	3,394.29	3,273.63	3,272.19	11.97	11.33	-163.77	-1,624.10	-20.48	1,718.97	1,695.73	23.25	73.947		
3,500.00	3,492.94	3,371.15	3,369.42	12.33	11.66	-163.78	-1,630.38	-24.73	1,741.08	1,717.15	23.93	72.756		
3,600.00	3,591.58	3,468.68	3,466.65	12.69	12.00	-163.79	-1,636.65	-28.97	1,763.19	1,738.57	24.62	71.625		
3,700.00	3,690.22	3,566.20	3,563.88	13.05	12.33	-163.80	-1,642.92	-33.21	1,785.30	1,760.00	25.31	70.549		
3,800.00	3,788.86	3,663.73	3,661.11	13.41	12.67	-163.80	-1,649.19	-37.46	1,807.41	1,781.41	26.00	69.526		
3,900.00	3,887.50	3,761.25	3,758.34	13.77	13.00	-163.81	-1,655.46	-41.70	1,829.52	1,802.83	26.69	68.550		
4,000.00	3,986.14	3,858.78	3,855.57	14.14	13.34	-163.82	-1,661.74	-45.94	1,851.63	1,824.25	27.38	67.620		
4,100.00	4,084.78	3,956.30	3,952.80	14.50	13.68	-163.82	-1,668.01	-50.19	1,873.74	1,845.66	28.08	66.732		
4,200.00	4,183.42	4,053.83	4,050.03	14.87	14.02	-163.83	-1,674.28	-54.43	1,895.85	1,867.07	28.78	65.883		
4,300.00	4,282.06	4,151.35	4,147.26	15.24	14.36	-163.84	-1,680.55	-58.67	1,917.96	1,888.49	29.47	65.072		
4,400.00	4,380.70	4,248.88	4,244.49	15.60	14.70	-163.84	-1,686.83	-62.91	1,940.07	1,909.90	30.17	64.296		
4,500.00	4,479.34	4,346.40	4,341.72	15.97	15.04	-163.85	-1,693.10	-67.16	1,962.18	1,931.31	30.88	63.552		
4,600.00	4,577.98	4,443.93	4,438.95	16.34	15.38	-163.85	-1,699.37	-71.40	1,984.29	1,952.71	31.58	62.840		
4,700.00	4,676.62	4,541.45	4,536.19	16.71	15.73	-163.86	-1,705.64	-75.64	2,006.40	1,974.12	32.28	62.156		
4,800.00	4,775.27	4,638.98	4,633.42	17.08	16.07	-163.86	-1,711.91	-79.89	2,028.51	1,995.53	32.98	61.499		
4,900.00	4,873.91	4,736.50	4,730.65	17.45	16.42	-163.87	-1,718.19	-84.13	2,050.62	2,016.93	33.69	60.869		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,834.03	4,827.88	17.82	16.76	-163.88	-1,724.46	-88.37	2,072.73	2,038.34	34.40	60.263		
5,100.00	5,071.19	4,931.55	4,925.11	18.19	17.11	-163.88	-1,730.73	-92.61	2,094.84	2,059.74	35.10	59.679		
5,200.00	5,169.83	5,029.08	5,022.34	18.56	17.45	-163.89	-1,737.00	-96.86	2,116.95	2,081.14	35.81	59.118		
5,300.00	5,268.47	5,126.60	5,119.57	18.93	17.80	-163.89	-1,743.27	-101.10	2,139.06	2,102.54	36.52	58.577		
5,400.00	5,367.11	5,224.13	5,216.80	19.31	18.15	-163.90	-1,749.55	-105.34	2,161.17	2,123.95	37.23	58.055		
5,500.00	5,465.75	5,321.65	5,314.03	19.68	18.49	-163.90	-1,755.82	-109.59	2,183.28	2,145.35	37.94	57.552		
5,600.00	5,564.39	5,419.18	5,411.26	20.05	18.84	-163.90	-1,762.09	-113.83	2,205.39	2,166.75	38.65	57.067		
5,700.00	5,663.03	5,516.70	5,508.49	20.42	19.19	-163.91	-1,768.36	-118.07	2,227.50	2,188.15	39.36	56.598		
5,800.00	5,761.67	5,614.23	5,605.72	20.80	19.54	-163.91	-1,774.63	-122.31	2,249.61	2,209.54	40.07	56.145		
5,900.00	5,860.31	5,711.75	5,702.95	21.17	19.89	-163.92	-1,780.91	-126.56	2,271.72	2,230.94	40.78	55.708		
6,000.00	5,958.96	5,809.28	5,800.18	21.54	20.24	-163.92	-1,787.18	-130.80	2,293.83	2,252.34	41.49	55.284		
6,100.00	6,057.60	5,906.80	5,897.41	21.92	20.59	-163.93	-1,793.45	-135.04	2,315.94	2,273.74	42.20	54.874		
6,200.00	6,156.24	6,004.33	5,994.64	22.29	20.94	-163.93	-1,799.72	-139.29	2,338.05	2,295.13	42.92	54.477		
6,300.00	6,254.88	6,101.85	6,091.87	22.67	21.29	-163.94	-1,806.00	-143.53	2,360.16	2,316.53	43.63	54.093		
6,400.00	6,353.52	6,200.62	6,189.10	23.04	21.64	-163.94	-1,812.27	-147.77	2,382.27	2,337.92	44.35	53.715		
6,500.00	6,452.16	6,303.10	6,286.33	23.42	22.01	-163.94	-1,818.54	-152.01	2,404.38	2,359.30	45.08	53.333		
6,600.00	6,550.80	6,394.43	6,383.56	23.79	22.34	-163.95	-1,824.81	-156.26	2,426.49	2,380.72	45.78	53.009		
6,700.00	6,649.44	6,508.05	6,480.80	24.17	22.75	-163.95	-1,831.08	-160.50	2,448.60	2,402.06	46.55	52.604		
6,800.00	6,748.08	6,589.48	6,578.03	24.54	23.04	-163.95	-1,837.36	-164.74	2,470.71	2,423.51	47.21	52.338		
6,900.00	6,846.72	6,687.00	6,675.26	24.92	23.39	-163.96	-1,843.63	-168.99	2,492.82	2,444.90	47.92	52.018		
7,000.00	6,945.36	6,784.53	6,772.49	25.29	23.74	-163.96	-1,849.90	-173.23	2,514.93	2,466.30	48.64	51.706		
7,100.00	7,044.00	6,882.05	6,869.72	25.67	24.09	-163.97	-1,856.17	-177.47	2,537.05	2,487.69	49.36	51.403		
7,200.00	7,142.65	6,979.58	6,966.95	26.04	24.45	-163.97	-1,862.44	-181.71	2,559.16	2,509.08	50.07	51.109		
7,300.00	7,241.29	7,077.10	7,064.18	26.42	24.80	-163.97	-1,868.72	-185.96	2,581.27	2,530.48	50.79	50.822		
7,400.00	7,339.93	7,174.63	7,161.41	26.79	25.15	-163.98	-1,874.99	-190.20	2,603.38	2,551.87	51.51	50.543		
7,500.00	7,438.57	7,272.15	7,258.64	27.17	25.50	-163.98	-1,881.26	-194.44	2,625.49	2,573.26	52.23	50.272		
7,571.77	7,509.37	7,342.15	7,328.42	27.44	25.75	-163.98	-1,885.76	-197.49	2,641.36	2,588.61	52.74	50.081		
7,600.00	7,537.23	7,369.70	7,355.89	27.55	25.85	-164.01	-1,887.53	-198.69	2,647.50	2,594.55	52.94	50.005		
7,700.00	7,636.18	7,467.63	7,453.53	27.92	26.21	-164.08	-1,893.83	-202.95	2,667.68	2,614.02	53.66	49.713		
7,800.00	7,735.48	7,566.04	7,551.65	28.29	26.56	-164.13	-1,900.16	-207.23	2,685.40	2,631.02	54.38	49.383		
7,900.00	7,835.05	7,664.86	7,650.16	28.65	26.92	-164.16	-1,906.52	-211.53	2,700.63	2,645.53	55.10	49.017		
8,000.00	7,934.83	7,764.01	7,749.01	29.01	27.28	-164.15	-1,912.89	-215.84	2,713.37	2,657.56	55.81	48.618		
8,100.00	8,034.74	7,867.34	7,852.03	29.36	27.66	-164.12	-1,919.53	-220.33	2,723.61	2,667.07	56.54	48.170		
8,202.27	8,137.00	8,116.74	8,101.15	29.72	28.55	179.92	-1,928.48	-226.39	2,728.59	2,670.64	57.95	47.086		
8,300.00	8,234.73	8,238.62	8,223.03	30.06	28.96	179.93	-1,928.66	-226.51	2,728.67	2,669.94	58.72	46.469		
8,400.00	8,334.73	8,338.62	8,323.03	30.41	29.30	179.93	-1,928.66	-226.51	2,728.67	2,669.26	59.41	45.929		
8,500.00	8,434.73	8,438.62	8,423.03	30.75	29.64	179.93	-1,928.66	-226.51	2,728.67	2,668.57	60.10	45.402		
8,552.31	8,487.04	8,490.93	8,475.34	30.94	29.82	179.93	-1,928.66	-226.51	2,728.67	2,668.20	60.46	45.131		
8,600.00	8,534.68	8,540.15	8,524.55	31.10	29.98	90.29	-1,928.65	-225.59	2,728.67	2,667.88	60.79	44.887		
8,650.00	8,584.26	8,592.73	8,576.83	31.26	30.16	90.32	-1,928.59	-220.20	2,728.65	2,667.52	61.13	44.636		
8,700.00	8,633.10	8,645.42	8,628.51	31.43	30.33	90.35	-1,928.48	-210.02	2,728.60	2,667.14	61.47	44.391		
8,750.00	8,680.83	8,698.20	8,679.12	31.58	30.50	90.37	-1,928.32	-195.11	2,728.54	2,666.74	61.80	44.152		
8,800.00	8,727.09	8,751.04	8,728.20	31.74	30.66	90.39	-1,928.10	-175.58	2,728.45	2,666.32	62.12	43.920		
8,850.00	8,771.52	8,803.92	8,775.31	31.89	30.82	90.41	-1,927.84	-151.59	2,728.33	2,665.89	62.44	43.693		
8,900.00	8,813.78	8,856.82	8,820.01	32.04	30.97	90.42	-1,927.53	-123.36	2,728.20	2,665.44	62.76	43.471		
8,950.00	8,853.56	8,909.70	8,861.91	32.18	31.12	90.43	-1,927.17	-91.14	2,728.04	2,664.97	63.07	43.251		
9,000.00	8,890.55	8,962.54	8,900.64	32.32	31.26	90.44	-1,926.78	-55.22	2,727.86	2,664.47	63.39	43.030		
9,050.00	8,924.46	9,015.31	8,935.85	32.47	31.42	90.44	-1,926.35	-15.93	2,727.67	2,663.95	63.72	42.804		
9,100.00	8,955.05	9,068.00	8,967.25	32.63	31.59	90.44	-1,925.88	26.35	2,727.46	2,663.39	64.07	42.568		
9,150.00	8,982.08	9,120.57	8,994.58	32.79	31.77	90.43	-1,925.39	71.24	2,727.23	2,662.79	64.44	42.319		
9,200.00	9,005.34	9,173.02	9,017.63	32.97	31.96	90.43	-1,924.87	118.32	2,726.99	2,662.15	64.84	42.054		
9,250.00	9,024.65	9,225.30	9,036.23	33.17	32.18	90.41	-1,924.33	167.16	2,726.75	2,661.47	65.28	41.770		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	9,277.41	9,050.27	33.38	32.42	90.40	-1,923.78	217.33	2,726.49	2,660.74	65.75	41.468		
9,350.00	9,050.89	9,329.34	9,059.66	33.62	32.68	90.38	-1,923.22	268.37	2,726.23	2,659.97	66.26	41.147		
9,400.00	9,057.61	9,381.06	9,064.38	33.87	32.96	90.36	-1,922.65	319.86	2,725.96	2,659.16	66.79	40.811		
9,452.31	9,060.00	9,434.16	9,065.00	34.15	33.27	90.35	-1,922.07	372.95	2,725.68	2,658.29	67.39	40.444		
9,500.00	9,060.00	9,481.85	9,065.00	34.42	33.56	90.35	-1,921.54	420.63	2,725.44	2,657.47	67.97	40.096		
9,600.00	9,060.00	9,581.85	9,065.00	35.09	34.27	90.35	-1,920.44	520.62	2,724.93	2,655.58	69.36	39.289		
9,700.00	9,060.00	9,681.85	9,065.00	35.86	35.09	90.35	-1,919.34	620.62	2,724.43	2,653.48	70.95	38.401		
9,800.00	9,060.00	9,781.85	9,065.00	36.72	36.00	90.35	-1,918.24	720.61	2,723.92	2,651.18	72.73	37.450		
9,900.00	9,060.00	9,881.85	9,065.00	37.69	37.01	90.35	-1,917.14	820.60	2,723.41	2,648.71	74.70	36.457		
10,000.00	9,060.00	9,981.84	9,065.00	38.73	38.10	90.35	-1,916.04	920.60	2,722.90	2,646.07	76.84	35.437		
10,100.00	9,060.00	10,081.84	9,065.00	39.86	39.26	90.35	-1,914.94	1,020.59	2,722.40	2,643.27	79.13	34.405		
10,140.22	9,060.00	10,122.07	9,065.00	40.33	39.75	90.35	-1,914.50	1,060.81	2,722.19	2,642.10	80.09	33.989		
10,200.00	9,060.00	10,181.83	9,065.00	41.05	40.50	90.35	-1,913.84	1,120.57	2,721.27	2,639.71	81.56	33.366		
10,300.00	9,060.00	10,281.74	9,065.00	42.31	41.80	90.35	-1,912.74	1,220.47	2,716.93	2,632.81	84.12	32.298		
10,400.00	9,060.00	10,381.42	9,065.00	43.64	43.15	90.35	-1,911.64	1,320.15	2,709.11	2,622.31	86.79	31.213		
10,507.23	9,060.00	10,487.94	9,065.00	45.11	44.65	90.36	-1,910.47	1,426.66	2,696.86	2,607.09	89.77	30.042		
10,600.00	9,060.00	10,580.08	9,065.00	46.43	45.99	90.36	-1,909.45	1,518.79	2,686.03	2,593.60	92.43	29.059		
10,700.00	9,060.00	10,679.73	9,065.00	47.91	47.49	90.36	-1,908.36	1,618.43	2,677.71	2,582.31	95.40	28.068		
10,800.00	9,060.00	10,779.60	9,065.00	49.42	49.02	90.36	-1,907.26	1,718.31	2,672.87	2,574.42	98.45	27.149		
10,888.75	9,060.00	10,868.34	9,065.00	50.80	50.42	90.36	-1,906.28	1,807.04	2,671.49	2,570.27	101.22	26.393		
10,900.00	9,060.00	10,879.59	9,065.00	50.97	50.60	90.36	-1,906.16	1,818.29	2,671.52	2,569.94	101.57	26.301		
11,000.00	9,060.00	10,979.56	9,065.00	52.55	52.21	90.36	-1,905.06	1,918.25	2,673.65	2,568.90	104.76	25.522		
11,100.00	9,060.00	11,079.40	9,065.00	54.14	53.84	90.36	-1,903.96	2,018.08	2,679.28	2,571.29	107.99	24.810		
11,207.23	9,060.00	11,186.16	9,065.00	55.87	55.62	90.36	-1,902.78	2,124.84	2,689.18	2,577.68	111.50	24.119		
11,300.00	9,060.00	11,278.51	9,065.00	57.39	57.18	90.36	-1,901.77	2,217.18	2,697.98	2,583.40	114.58	23.547		
11,400.00	9,060.00	11,378.32	9,065.00	59.06	58.89	90.35	-1,900.67	2,316.98	2,704.10	2,586.15	117.96	22.924		
11,506.63	9,060.00	11,484.91	9,065.00	60.88	60.73	90.35	-1,899.50	2,423.57	2,706.80	2,585.18	121.62	22.256		
11,600.00	9,060.00	11,578.28	9,065.00	62.49	62.37	90.35	-1,898.47	2,516.93	2,707.42	2,582.55	124.87	21.681		
11,700.00	9,060.00	11,678.27	9,065.00	64.24	64.14	90.35	-1,897.37	2,616.92	2,708.09	2,579.69	128.39	21.092		
11,800.00	9,060.00	11,778.27	9,065.00	66.01	65.92	90.35	-1,896.27	2,716.91	2,708.75	2,576.81	131.94	20.530		
11,900.00	9,060.00	11,878.27	9,065.00	67.79	67.72	90.35	-1,895.17	2,816.91	2,709.42	2,573.90	135.52	19.993		
12,000.00	9,060.00	11,978.27	9,065.00	69.58	69.53	90.35	-1,894.07	2,916.90	2,710.08	2,570.95	139.13	19.479		
12,100.00	9,060.00	12,078.27	9,065.00	71.39	71.36	90.35	-1,892.97	3,016.89	2,710.75	2,567.98	142.76	18.988		
12,200.00	9,060.00	12,178.26	9,065.00	73.21	73.20	90.35	-1,891.87	3,116.88	2,711.41	2,564.99	146.42	18.518		
12,300.00	9,060.00	12,278.26	9,065.00	75.05	75.04	90.35	-1,890.77	3,216.87	2,712.08	2,561.98	150.10	18.068		
12,400.00	9,060.00	12,378.26	9,065.00	76.89	76.90	90.35	-1,889.67	3,316.86	2,712.74	2,558.94	153.80	17.638		
12,500.00	9,060.00	12,478.26	9,065.00	78.74	78.77	90.35	-1,888.56	3,416.86	2,713.41	2,555.89	157.52	17.225		
12,600.00	9,060.00	12,578.25	9,065.00	80.61	80.64	90.35	-1,887.46	3,516.85	2,714.08	2,552.81	161.26	16.830		
12,700.00	9,060.00	12,678.25	9,065.00	82.48	82.53	90.35	-1,886.36	3,616.84	2,714.74	2,549.72	165.02	16.451		
12,800.00	9,060.00	12,778.25	9,065.00	84.36	84.42	90.35	-1,885.26	3,716.83	2,715.41	2,546.62	168.79	16.088		
12,900.00	9,060.00	12,878.25	9,065.00	86.24	86.32	90.35	-1,884.16	3,816.82	2,716.07	2,543.50	172.57	15.739		
13,000.00	9,060.00	12,978.25	9,065.00	88.14	88.22	90.35	-1,883.06	3,916.81	2,716.74	2,540.37	176.37	15.404		
13,100.00	9,060.00	13,078.24	9,065.00	90.04	90.13	90.35	-1,881.96	4,016.81	2,717.40	2,537.22	180.18	15.082		
13,200.00	9,060.00	13,178.24	9,065.00	91.94	92.05	90.35	-1,880.86	4,116.80	2,718.07	2,534.07	184.00	14.772		
13,300.00	9,060.00	13,278.24	9,065.00	93.86	93.97	90.35	-1,879.76	4,216.79	2,718.74	2,530.90	187.84	14.474		
13,400.00	9,060.00	13,378.24	9,065.00	95.77	95.90	90.35	-1,878.66	4,316.78	2,719.40	2,527.72	191.68	14.187		
13,500.00	9,060.00	13,478.23	9,065.00	97.70	97.83	90.35	-1,877.56	4,416.77	2,720.07	2,524.53	195.54	13.911		
13,600.00	9,060.00	13,578.23	9,065.00	99.62	99.77	90.35	-1,876.46	4,516.77	2,720.73	2,521.33	199.40	13.644		
13,700.00	9,060.00	13,678.23	9,065.00	101.56	101.71	90.35	-1,875.36	4,616.76	2,721.40	2,518.12	203.27	13.388		
13,800.00	9,060.00	13,778.23	9,065.00	103.49	103.65	90.35	-1,874.26	4,716.75	2,722.06	2,514.91	207.16	13.140		
13,900.00	9,060.00	13,878.23	9,065.00	105.43	105.60	90.35	-1,873.16	4,816.74	2,722.73	2,511.68	211.05	12.901		
14,000.00	9,060.00	13,978.22	9,065.00	107.38	107.55	90.35	-1,872.06	4,916.73	2,723.39	2,508.45	214.94	12.670		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	14,078.22	9,065.00	109.33	109.51	90.35	-1,870.96	5,016.72	2,724.06	2,505.22	218.84	12.447		
14,200.00	9,060.00	14,178.22	9,065.00	111.28	111.47	90.35	-1,869.86	5,116.72	2,724.73	2,501.97	222.76	12.232		
14,300.00	9,060.00	14,278.22	9,065.00	113.23	113.43	90.35	-1,868.76	5,216.71	2,725.39	2,498.72	226.67	12.024		
14,400.00	9,060.00	14,378.21	9,065.00	115.19	115.40	90.35	-1,867.66	5,316.70	2,726.06	2,495.46	230.59	11.822		
14,500.00	9,060.00	14,478.21	9,065.00	117.15	117.36	90.35	-1,866.55	5,416.69	2,726.72	2,492.20	234.52	11.627		
14,600.00	9,060.00	14,578.21	9,065.00	119.11	119.33	90.35	-1,865.45	5,516.68	2,727.39	2,488.93	238.46	11.438		
14,700.00	9,060.00	14,678.21	9,065.00	121.08	121.31	90.35	-1,864.35	5,616.67	2,728.05	2,485.66	242.39	11.255		
14,800.00	9,060.00	14,778.21	9,065.00	123.05	123.28	90.35	-1,863.25	5,716.67	2,728.72	2,482.38	246.34	11.077		
14,900.00	9,060.00	14,878.20	9,065.00	125.02	125.26	90.35	-1,862.15	5,816.66	2,729.39	2,479.10	250.29	10.905		
15,000.00	9,060.00	14,978.20	9,065.00	126.99	127.24	90.35	-1,861.05	5,916.65	2,730.05	2,475.81	254.24	10.738		
15,100.00	9,060.00	15,078.20	9,065.00	128.97	129.22	90.35	-1,859.95	6,016.64	2,730.72	2,472.52	258.20	10.576		
15,200.00	9,060.00	15,178.20	9,065.00	130.95	131.20	90.35	-1,858.85	6,116.63	2,731.38	2,469.23	262.16	10.419		
15,300.00	9,060.00	15,278.19	9,065.00	132.93	133.19	90.35	-1,857.75	6,216.62	2,732.05	2,465.93	266.12	10.266		
15,400.00	9,060.00	15,378.19	9,065.00	134.91	135.17	90.35	-1,856.65	6,316.62	2,732.71	2,462.62	270.09	10.118		
15,500.00	9,060.00	15,478.19	9,065.00	136.89	137.16	90.35	-1,855.55	6,416.61	2,733.38	2,459.32	274.06	9.974		
15,600.00	9,060.00	15,578.19	9,065.00	138.88	139.15	90.35	-1,854.45	6,516.60	2,734.04	2,456.01	278.04	9.833		
15,700.00	9,060.00	15,678.19	9,065.00	140.86	141.14	90.35	-1,853.35	6,616.59	2,734.71	2,452.69	282.02	9.697		
15,800.00	9,060.00	15,778.18	9,065.00	142.85	143.14	90.35	-1,852.25	6,716.58	2,735.38	2,449.38	286.00	9.564		
15,900.00	9,060.00	15,878.18	9,065.00	144.84	145.13	90.35	-1,851.15	6,816.57	2,736.04	2,446.06	289.98	9.435		
16,000.00	9,060.00	15,978.18	9,065.00	146.83	147.13	90.35	-1,850.05	6,916.57	2,736.71	2,442.74	293.97	9.309		
16,100.00	9,060.00	16,078.18	9,065.00	148.83	149.13	90.35	-1,848.95	7,016.56	2,737.37	2,439.41	297.96	9.187		
16,200.00	9,060.00	16,178.17	9,065.00	150.82	151.13	90.35	-1,847.85	7,116.55	2,738.04	2,436.08	301.95	9.068		
16,300.00	9,060.00	16,278.17	9,065.00	152.82	153.13	90.35	-1,846.75	7,216.54	2,738.70	2,432.75	305.95	8.951		
16,400.00	9,060.00	16,378.17	9,065.00	154.81	155.13	90.35	-1,845.65	7,316.53	2,739.37	2,429.42	309.95	8.838		
16,500.00	9,060.00	16,478.17	9,065.00	156.81	157.13	90.35	-1,844.54	7,416.53	2,740.03	2,426.09	313.95	8.728		
16,600.00	9,060.00	16,578.17	9,065.00	158.81	159.13	90.35	-1,843.44	7,516.52	2,740.70	2,422.75	317.95	8.620		
16,700.00	9,060.00	16,678.16	9,065.00	160.81	161.14	90.35	-1,842.34	7,616.51	2,741.37	2,419.41	321.96	8.515		
16,800.00	9,060.00	16,778.16	9,065.00	162.81	163.14	90.35	-1,841.24	7,716.50	2,742.03	2,416.07	325.96	8.412		
16,900.00	9,060.00	16,878.16	9,065.00	164.82	165.15	90.35	-1,840.14	7,816.49	2,742.70	2,412.73	329.97	8.312		
17,000.00	9,060.00	16,978.16	9,065.00	166.82	167.16	90.35	-1,839.04	7,916.48	2,743.36	2,409.38	333.98	8.214		
17,100.00	9,060.00	17,078.15	9,065.00	168.82	169.16	90.35	-1,837.94	8,016.48	2,744.03	2,406.03	338.00	8.119		
17,200.00	9,060.00	17,178.15	9,065.00	170.83	171.17	90.35	-1,836.84	8,116.47	2,744.69	2,402.68	342.01	8.025		
17,300.00	9,060.00	17,278.15	9,065.00	172.84	173.18	90.35	-1,835.74	8,216.46	2,745.36	2,399.33	346.03	7.934		
17,400.00	9,060.00	17,378.15	9,065.00	174.84	175.19	90.35	-1,834.64	8,316.45	2,746.03	2,395.98	350.04	7.845		
17,500.00	9,060.00	17,478.15	9,065.00	176.85	177.21	90.35	-1,833.54	8,416.44	2,746.69	2,392.63	354.06	7.758		
17,600.00	9,060.00	17,578.14	9,065.00	178.86	179.22	90.35	-1,832.44	8,516.43	2,747.36	2,389.27	358.09	7.672		
17,700.00	9,060.00	17,678.14	9,065.00	180.87	181.23	90.35	-1,831.34	8,616.43	2,748.02	2,385.91	362.11	7.589		
17,800.00	9,060.00	17,778.14	9,065.00	182.88	183.25	90.35	-1,830.24	8,716.42	2,748.69	2,382.56	366.13	7.507		
17,900.00	9,060.00	17,878.14	9,065.00	184.89	185.26	90.35	-1,829.14	8,816.41	2,749.35	2,379.20	370.16	7.428		
18,000.00	9,060.00	17,978.13	9,065.00	186.90	187.28	90.35	-1,828.04	8,916.40	2,750.02	2,375.83	374.19	7.349		
18,100.00	9,060.00	18,078.13	9,065.00	188.92	189.29	90.35	-1,826.94	9,016.39	2,750.68	2,372.47	378.21	7.273		
18,200.00	9,060.00	18,178.13	9,065.00	190.93	191.31	90.35	-1,825.84	9,116.38	2,751.35	2,369.11	382.24	7.198		
18,300.00	9,060.00	18,278.13	9,065.00	192.94	193.32	90.35	-1,824.74	9,216.38	2,752.02	2,365.74	386.27	7.125		
18,400.00	9,060.00	18,378.13	9,065.00	194.96	195.34	90.35	-1,823.64	9,316.37	2,752.68	2,362.38	390.31	7.053		
18,500.00	9,060.00	18,478.12	9,065.00	196.97	197.36	90.35	-1,822.53	9,416.36	2,753.35	2,359.01	394.34	6.982		
18,600.00	9,060.00	18,578.12	9,065.00	198.99	199.38	90.35	-1,821.43	9,516.35	2,754.01	2,355.64	398.37	6.913		
18,700.00	9,060.00	18,678.12	9,065.00	201.00	201.40	90.35	-1,820.33	9,616.34	2,754.68	2,352.27	402.41	6.845		
18,800.00	9,060.00	18,778.12	9,065.00	203.02	203.42	90.35	-1,819.23	9,716.34	2,755.34	2,348.90	406.45	6.779		
18,900.00	9,060.00	18,878.11	9,065.00	205.04	205.44	90.35	-1,818.13	9,816.33	2,756.01	2,345.53	410.48	6.714		
19,000.00	9,060.00	18,978.11	9,065.00	207.06	207.46	90.35	-1,817.03	9,916.32	2,756.68	2,342.15	414.52	6.650		
19,100.00	9,060.00	19,078.11	9,065.00	209.07	209.48	90.35	-1,815.93	10,016.31	2,757.34	2,338.78	418.56	6.588		
19,200.00	9,060.00	19,178.11	9,065.00	211.09	211.50	90.35	-1,814.83	10,116.30	2,758.01	2,335.40	422.60	6.526		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design		Sec 14-T21S-R27E - Lone Tree Draw 14-13 State Com 623H - Wellbore #1 - Permit Plan 1										Offset Site Error:	0.00 ft
Survey Program: 0-MWD+IFR1												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	19,278.11	9,065.00	213.11	213.52	90.35	-1,813.73	10,216.29	2,758.67	2,332.03	426.64	6.466	
19,400.00	9,060.00	19,378.10	9,065.00	215.13	215.55	90.35	-1,812.63	10,316.29	2,759.34	2,328.65	430.69	6.407	
19,500.32	9,060.00	19,456.84	9,065.00	217.16	217.14	90.35	-1,811.76	10,395.02	2,760.09	2,325.81	434.28	6.355 SF	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	0.50	133.74	-2,939.76	3,071.78	4,252.26					
100.00	100.00	39.40	39.40	0.52	0.67	133.74	-2,939.76	3,071.78	4,251.83	4,250.64	1.18	3,591.107		
200.00	200.00	139.40	139.40	0.70	2.00	133.74	-2,939.76	3,071.78	4,251.83	4,249.12	2.70	1,572.717		
300.00	300.00	239.40	239.40	0.99	3.47	133.74	-2,939.76	3,071.78	4,251.83	4,247.37	4.46	953.521		
400.00	400.00	339.40	339.40	1.31	4.96	133.74	-2,939.76	3,071.78	4,251.83	4,245.56	6.27	678.389		
500.00	500.00	439.40	439.40	1.65	6.45	133.74	-2,939.76	3,071.78	4,251.83	4,243.73	8.10	525.157		
600.00	600.00	539.40	539.40	1.99	7.94	133.74	-2,939.76	3,071.78	4,251.83	4,241.89	9.93	427.974		
700.00	700.00	639.40	639.40	2.34	9.44	133.74	-2,939.76	3,071.78	4,251.83	4,240.05	11.78	360.979		
800.00	800.00	739.40	739.40	2.69	10.94	133.74	-2,939.76	3,071.78	4,251.83	4,238.20	13.63	312.045		
900.00	900.00	839.40	839.40	3.04	12.43	133.74	-2,939.76	3,071.78	4,251.83	4,236.35	15.47	274.756		
1,000.00	1,000.00	939.40	939.40	3.40	13.93	133.74	-2,939.76	3,071.78	4,251.83	4,234.50	17.33	245.408		
1,100.00	1,100.00	1,039.40	1,039.40	3.75	15.42	133.74	-2,939.76	3,071.78	4,251.83	4,232.65	19.18	221.712		
1,200.00	1,200.00	1,139.40	1,139.40	4.11	16.92	133.74	-2,939.76	3,071.78	4,251.83	4,230.80	21.03	202.182		
1,300.00	1,300.00	1,239.40	1,239.40	4.46	18.42	133.74	-2,939.76	3,071.78	4,251.83	4,228.94	22.88	185.809		
1,400.00	1,400.00	1,339.40	1,339.40	4.82	19.92	133.74	-2,939.76	3,071.78	4,251.83	4,227.09	24.74	171.886		
1,500.00	1,500.00	1,439.40	1,439.40	5.18	21.41	133.74	-2,939.76	3,071.78	4,251.83	4,225.24	26.59	159.903		
1,600.00	1,600.00	1,539.40	1,539.40	5.53	22.91	133.74	-2,939.76	3,071.78	4,251.83	4,223.38	28.44	149.479		
1,700.00	1,700.00	1,639.40	1,639.40	5.89	24.41	133.74	-2,939.76	3,071.78	4,251.83	4,221.53	30.30	140.331		
1,800.00	1,800.00	1,739.40	1,739.40	6.25	25.91	133.74	-2,939.76	3,071.78	4,251.83	4,219.67	32.15	132.236		
1,900.00	1,900.00	1,839.40	1,839.40	6.61	27.40	133.74	-2,939.76	3,071.78	4,251.83	4,217.82	34.01	125.024		
2,000.00	2,000.00	1,939.40	1,939.40	6.96	28.90	133.74	-2,939.76	3,071.78	4,251.83	4,215.96	35.86	118.558		
2,100.00	2,100.00	2,039.40	2,039.40	7.32	30.40	133.74	-2,939.76	3,071.78	4,251.83	4,214.11	37.72	112.727		
2,200.00	2,200.00	2,139.40	2,139.40	7.68	31.89	133.74	-2,939.76	3,071.78	4,251.83	4,212.25	39.57	107.443		
2,300.00	2,300.00	2,239.40	2,239.40	8.04	33.39	133.74	-2,939.76	3,071.78	4,251.83	4,210.40	41.43	102.631		
2,350.00	2,350.00	2,289.40	2,289.40	8.22	34.14	133.74	-2,939.76	3,071.78	4,251.83	4,209.47	42.36	100.384		
2,400.00	2,400.00	2,339.40	2,339.40	8.39	34.89	149.78	-2,939.76	3,071.78	4,252.01	4,208.73	43.28	98.237		
2,500.00	2,499.98	2,439.38	2,439.38	8.75	36.39	149.79	-2,939.76	3,071.78	4,253.52	4,208.39	45.14	94.235		
2,600.00	2,599.92	2,539.32	2,539.32	9.11	37.88	149.80	-2,939.76	3,071.78	4,256.54	4,209.55	46.99	90.583		
2,700.00	2,699.78	2,639.18	2,639.18	9.47	39.38	149.81	-2,939.76	3,071.78	4,261.06	4,212.22	48.84	87.241		
2,800.00	2,799.54	2,738.94	2,738.94	9.82	40.87	149.82	-2,939.76	3,071.78	4,267.10	4,216.41	50.69	84.176		
2,900.00	2,899.16	2,838.56	2,838.56	10.18	42.36	149.85	-2,939.76	3,071.78	4,274.64	4,222.10	52.54	81.360		
3,000.00	2,998.61	2,938.01	2,938.01	10.54	43.85	149.87	-2,939.76	3,071.78	4,283.69	4,229.31	54.38	78.767		
3,100.00	3,097.86	3,037.26	3,037.26	10.89	45.34	149.90	-2,939.76	3,071.78	4,294.25	4,238.03	56.23	76.375		
3,200.00	3,196.89	3,136.29	3,136.29	11.25	46.82	149.93	-2,939.76	3,071.78	4,306.32	4,248.26	58.06	74.165		
3,295.74	3,291.45	3,230.85	3,230.85	11.59	48.24	149.96	-2,939.76	3,071.78	4,319.30	4,259.48	59.82	72.205		
3,300.00	3,295.65	3,235.05	3,235.05	11.61	48.30	149.97	-2,939.76	3,071.78	4,319.91	4,260.01	59.90	72.120		
3,400.00	3,394.29	3,333.69	3,333.69	11.97	49.78	150.08	-2,939.76	3,071.78	4,334.19	4,272.46	61.73	70.212		
3,500.00	3,492.94	3,432.34	3,432.34	12.33	51.26	150.18	-2,939.76	3,071.78	4,348.48	4,284.92	63.56	68.412		
3,600.00	3,591.58	3,530.98	3,530.98	12.69	52.73	150.29	-2,939.76	3,071.78	4,362.80	4,297.40	65.40	66.712		
3,700.00	3,690.22	3,629.62	3,629.62	13.05	54.21	150.40	-2,939.76	3,071.78	4,377.12	4,309.89	67.23	65.104		
3,800.00	3,788.86	3,728.26	3,728.26	13.41	55.69	150.50	-2,939.76	3,071.78	4,391.46	4,322.39	69.07	63.582		
3,900.00	3,887.50	3,826.90	3,826.90	13.77	57.17	150.61	-2,939.76	3,071.78	4,405.82	4,334.91	70.90	62.137		
4,000.00	3,986.14	3,925.54	3,925.54	14.14	58.64	150.71	-2,939.76	3,071.78	4,420.19	4,347.45	72.74	60.765		
4,100.00	4,084.78	4,024.18	4,024.18	14.50	60.12	150.82	-2,939.76	3,071.78	4,434.57	4,359.99	74.58	59.461		
4,200.00	4,183.42	4,122.82	4,122.82	14.87	61.60	150.92	-2,939.76	3,071.78	4,448.97	4,372.55	76.42	58.218		
4,300.00	4,282.06	4,221.46	4,221.46	15.24	63.07	151.02	-2,939.76	3,071.78	4,463.39	4,385.13	78.26	57.034		
4,400.00	4,380.70	4,320.10	4,320.10	15.60	64.55	151.12	-2,939.76	3,071.78	4,477.81	4,397.71	80.10	55.904		
4,500.00	4,479.34	4,418.74	4,418.74	15.97	66.03	151.22	-2,939.76	3,071.78	4,492.25	4,410.31	81.94	54.825		
4,600.00	4,577.98	4,517.38	4,517.38	16.34	67.51	151.32	-2,939.76	3,071.78	4,506.71	4,422.93	83.78	53.793		
4,700.00	4,676.62	4,616.02	4,616.02	16.71	68.98	151.42	-2,939.76	3,071.78	4,521.17	4,435.55	85.62	52.805		
4,800.00	4,775.27	4,714.67	4,714.67	17.08	70.46	151.52	-2,939.76	3,071.78	4,535.66	4,448.19	87.46	51.859		
4,900.00	4,873.91	4,813.31	4,813.31	17.45	71.94	151.62	-2,939.76	3,071.78	4,550.15	4,460.85	89.30	50.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	4,911.95	4,911.95	17.82	73.42	151.72	-2,939.76	3,071.78	4,564.66	4,473.51	91.15	50.080		
5,100.00	5,071.19	5,010.59	5,010.59	18.19	74.89	151.81	-2,939.76	3,071.78	4,579.18	4,486.19	92.99	49.244		
5,200.00	5,169.83	5,109.23	5,109.23	18.56	76.37	151.91	-2,939.76	3,071.78	4,593.71	4,498.88	94.83	48.440		
5,300.00	5,268.47	5,207.87	5,207.87	18.93	77.85	152.01	-2,939.76	3,071.78	4,608.26	4,511.58	96.68	47.667		
5,400.00	5,367.11	5,306.51	5,306.51	19.31	79.32	152.10	-2,939.76	3,071.78	4,622.82	4,524.30	98.52	46.923		
5,500.00	5,465.75	5,405.15	5,405.15	19.68	80.80	152.20	-2,939.76	3,071.78	4,637.39	4,537.02	100.36	46.206		
5,600.00	5,564.39	5,503.79	5,503.79	20.05	82.28	152.29	-2,939.76	3,071.78	4,651.97	4,549.76	102.21	45.515		
5,700.00	5,663.03	5,602.43	5,602.43	20.42	83.76	152.38	-2,939.76	3,071.78	4,666.57	4,562.51	104.05	44.848		
5,800.00	5,761.67	5,701.07	5,701.07	20.80	85.23	152.48	-2,939.76	3,071.78	4,681.17	4,575.28	105.90	44.205		
5,900.00	5,860.31	5,799.71	5,799.71	21.17	86.71	152.57	-2,939.76	3,071.78	4,695.79	4,588.05	107.74	43.584		
6,000.00	5,958.96	5,898.36	5,898.36	21.54	88.19	152.66	-2,939.76	3,071.78	4,710.43	4,600.84	109.59	42.983		
6,100.00	6,057.60	5,997.00	5,997.00	21.92	89.67	152.75	-2,939.76	3,071.78	4,725.07	4,613.64	111.43	42.403		
6,200.00	6,156.24	6,095.64	6,095.64	22.29	91.14	152.84	-2,939.76	3,071.78	4,739.73	4,626.45	113.28	41.841		
6,300.00	6,254.88	6,194.28	6,194.28	22.67	92.62	152.93	-2,939.76	3,071.78	4,754.39	4,639.27	115.12	41.298		
6,400.00	6,353.52	6,292.92	6,292.92	23.04	94.10	153.02	-2,939.76	3,071.78	4,769.07	4,652.10	116.97	40.772		
6,500.00	6,452.16	6,391.56	6,391.56	23.42	95.57	153.11	-2,939.76	3,071.78	4,783.76	4,664.95	118.82	40.262		
6,600.00	6,550.80	6,490.20	6,490.20	23.79	97.05	153.20	-2,939.76	3,071.78	4,798.46	4,677.80	120.66	39.768		
6,700.00	6,649.44	6,588.84	6,588.84	24.17	98.53	153.29	-2,939.76	3,071.78	4,813.18	4,690.67	122.51	39.288		
6,800.00	6,748.08	6,687.48	6,687.48	24.54	100.01	153.38	-2,939.76	3,071.78	4,827.90	4,703.54	124.36	38.823		
6,900.00	6,846.72	6,786.12	6,786.12	24.92	101.48	153.46	-2,939.76	3,071.78	4,842.63	4,716.43	126.20	38.372		
7,000.00	6,945.36	6,884.76	6,884.76	25.29	102.96	153.55	-2,939.76	3,071.78	4,857.38	4,729.33	128.05	37.934		
7,100.00	7,044.00	6,983.40	6,983.40	25.67	104.44	153.64	-2,939.76	3,071.78	4,872.14	4,742.24	129.90	37.508		
7,200.00	7,142.65	7,082.05	7,082.05	26.04	105.92	153.72	-2,939.76	3,071.78	4,886.90	4,755.16	131.74	37.094		
7,300.00	7,241.29	7,180.69	7,180.69	26.42	107.39	153.81	-2,939.76	3,071.78	4,901.68	4,768.09	133.59	36.692		
7,400.00	7,339.93	7,279.33	7,279.33	26.79	108.87	153.89	-2,939.76	3,071.78	4,916.47	4,781.03	135.44	36.300		
7,500.00	7,438.57	7,377.97	7,377.97	27.17	110.35	153.97	-2,939.76	3,071.78	4,931.27	4,793.98	137.29	35.920		
7,571.77	7,509.37	7,448.77	7,448.77	27.44	111.41	154.03	-2,939.76	3,071.78	4,941.89	4,803.28	138.61	35.653		
7,600.00	7,537.23	7,476.63	7,476.63	27.55	111.83	154.08	-2,939.76	3,071.78	4,945.98	4,806.85	139.13	35.548		
7,700.00	7,636.18	7,575.58	7,575.58	27.92	113.31	154.24	-2,939.76	3,071.78	4,958.98	4,817.99	140.98	35.174		
7,800.00	7,735.48	7,674.88	7,674.88	28.29	114.79	154.37	-2,939.76	3,071.78	4,969.63	4,826.80	142.84	34.792		
7,900.00	7,835.05	7,774.45	7,774.45	28.65	116.29	154.47	-2,939.76	3,071.78	4,977.95	4,833.26	144.69	34.404		
8,000.00	7,934.83	7,874.23	7,874.23	29.01	117.78	154.54	-2,939.76	3,071.78	4,983.91	4,837.36	146.54	34.010		
8,100.00	8,034.74	7,974.14	7,974.14	29.36	119.28	154.58	-2,939.76	3,071.78	4,987.51	4,839.11	148.40	33.610		
8,202.27	8,137.00	8,076.40	8,076.40	29.72	120.81	138.56	-2,939.76	3,071.78	4,988.74	4,838.46	150.28	33.195		
8,300.00	8,234.73	8,174.13	8,174.13	30.06	122.27	138.56	-2,939.76	3,071.78	4,988.74	4,836.65	152.09	32.802		
8,400.00	8,334.73	8,274.13	8,274.13	30.41	123.77	138.56	-2,939.76	3,071.78	4,988.74	4,834.81	153.93	32.408		
8,500.00	8,434.73	8,374.13	8,374.13	30.75	125.27	138.56	-2,939.76	3,071.78	4,988.74	4,832.96	155.78	32.024		
8,552.31	8,487.04	8,426.44	8,426.44	30.94	126.05	138.56	-2,939.76	3,071.78	4,988.74	4,832.00	156.75	31.827		
8,600.00	8,534.68	8,474.08	8,474.08	31.10	126.76	49.01	-2,939.76	3,071.78	4,987.44	4,829.82	157.62	31.642		
8,650.00	8,584.26	8,523.66	8,523.66	31.26	127.51	49.39	-2,939.76	3,071.78	4,983.29	4,824.76	158.52	31.436		
8,700.00	8,633.10	8,572.50	8,572.50	31.43	128.24	50.01	-2,939.76	3,071.78	4,976.32	4,816.91	159.41	31.218		
8,750.00	8,680.83	8,620.23	8,620.23	31.58	128.95	50.91	-2,939.76	3,071.78	4,966.61	4,806.34	160.27	30.989		
8,800.00	8,727.09	8,666.49	8,666.49	31.74	129.64	52.07	-2,939.76	3,071.78	4,954.25	4,793.15	161.11	30.752		
8,850.00	8,771.52	8,710.92	8,710.92	31.89	130.31	53.51	-2,939.76	3,071.78	4,939.37	4,777.46	161.91	30.508		
8,900.00	8,813.78	8,753.18	8,753.18	32.04	130.94	55.23	-2,939.76	3,071.78	4,922.10	4,759.43	162.67	30.259		
8,950.00	8,853.56	8,792.96	8,792.96	32.18	131.54	57.24	-2,939.76	3,071.78	4,902.61	4,739.23	163.39	30.006		
9,000.00	8,890.55	8,829.95	8,829.95	32.32	132.09	59.55	-2,939.76	3,071.78	4,881.10	4,717.04	164.06	29.752		
9,050.00	8,924.46	8,863.86	8,863.86	32.47	132.60	62.14	-2,939.76	3,071.78	4,857.76	4,693.07	164.69	29.496		
9,100.00	8,955.05	8,894.45	8,894.45	32.63	133.06	65.01	-2,939.76	3,071.78	4,832.82	4,667.55	165.27	29.242		
9,150.00	8,982.08	8,921.48	8,921.48	32.79	133.46	68.14	-2,939.76	3,071.78	4,806.51	4,640.71	165.80	28.989		
9,200.00	9,005.34	8,944.74	8,944.74	32.97	133.81	71.50	-2,939.76	3,071.78	4,779.07	4,612.78	166.29	28.740		
9,250.00	9,024.65	8,964.05	8,964.05	33.17	134.10	75.04	-2,939.76	3,071.78	4,750.74	4,584.02	166.72	28.495		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	8,979.27	8,979.27	33.38	134.33	78.71	-2,939.76	3,071.78	4,721.78	4,554.67	167.11	28.255		
9,350.00	9,050.89	8,990.29	8,990.29	33.62	134.49	82.44	-2,939.76	3,071.78	4,692.44	4,524.99	167.45	28.023		
9,400.00	9,057.61	8,997.01	8,997.01	33.87	134.59	86.17	-2,939.76	3,071.78	4,662.97	4,495.22	167.74	27.798		
9,452.31	9,060.00	8,999.40	8,999.40	34.15	134.63	90.00	-2,939.76	3,071.78	4,632.25	4,464.25	168.00	27.573		
9,500.00	9,060.00	8,999.40	8,999.40	34.42	134.63	90.00	-2,939.76	3,071.78	4,604.55	4,436.34	168.22	27.373		
9,600.00	9,060.00	8,999.40	8,999.40	35.09	134.63	90.00	-2,939.76	3,071.78	4,547.54	4,378.79	168.74	26.949		
9,700.00	9,060.00	8,999.40	8,999.40	35.86	134.63	90.00	-2,939.76	3,071.78	4,492.03	4,322.66	169.37	26.522		
9,800.00	9,060.00	8,999.40	8,999.40	36.72	134.63	90.00	-2,939.76	3,071.78	4,438.08	4,267.98	170.10	26.091		
9,900.00	9,060.00	8,999.40	8,999.40	37.69	134.63	90.00	-2,939.76	3,071.78	4,385.75	4,214.82	170.93	25.659		
10,000.00	9,060.00	8,999.40	8,999.40	38.73	134.63	90.00	-2,939.76	3,071.78	4,335.09	4,163.23	171.85	25.225		
10,100.00	9,060.00	8,999.40	8,999.40	39.86	134.63	90.00	-2,939.76	3,071.78	4,286.17	4,113.29	172.88	24.793		
10,140.22	9,060.00	8,999.40	8,999.40	40.33	134.63	90.00	-2,939.76	3,071.78	4,266.99	4,093.67	173.32	24.620		
10,200.00	9,060.00	8,999.40	8,999.40	41.05	134.63	90.00	-2,939.76	3,071.78	4,238.49	4,064.49	173.99	24.360		
10,300.00	9,060.00	8,999.40	8,999.40	42.31	134.63	90.00	-2,939.76	3,071.78	4,189.81	4,014.63	175.18	23.917		
10,400.00	9,060.00	8,999.40	8,999.40	43.64	134.63	90.00	-2,939.76	3,071.78	4,139.90	3,963.47	176.43	23.464		
10,507.23	9,060.00	8,999.40	8,999.40	45.11	134.63	90.00	-2,939.76	3,071.78	4,085.04	3,907.20	177.84	22.970		
10,600.00	9,060.00	8,999.40	8,999.40	46.43	134.63	90.00	-2,939.76	3,071.78	4,039.06	3,859.94	179.12	22.549		
10,700.00	9,060.00	8,999.40	8,999.40	47.91	134.63	90.00	-2,939.76	3,071.78	3,994.33	3,813.72	180.61	22.116		
10,800.00	9,060.00	8,999.40	8,999.40	49.42	134.63	90.00	-2,939.76	3,071.78	3,954.82	3,772.63	182.18	21.708		
10,900.00	9,060.00	8,999.40	8,999.40	50.97	134.63	90.00	-2,939.76	3,071.78	3,920.73	3,736.89	183.84	21.327		
11,000.00	9,060.00	8,999.40	8,999.40	52.55	134.63	90.00	-2,939.76	3,071.78	3,892.26	3,706.69	185.57	20.975		
11,100.00	9,060.00	8,999.40	8,999.40	54.14	134.63	90.00	-2,939.76	3,071.78	3,869.56	3,682.21	187.35	20.654		
11,207.23	9,060.00	8,999.40	8,999.40	55.87	134.63	90.00	-2,939.76	3,071.78	3,851.78	3,662.48	189.31	20.347		
11,300.00	9,060.00	8,999.40	8,999.40	57.39	134.63	90.00	-2,939.76	3,071.78	3,838.98	3,647.96	191.02	20.097		
11,400.00	9,060.00	8,999.40	8,999.40	59.06	134.63	90.00	-2,939.76	3,071.78	3,824.32	3,631.43	192.89	19.827		
11,506.63	9,060.00	8,999.40	8,999.40	60.88	134.63	90.00	-2,939.76	3,071.78	3,807.69	3,612.80	194.89	19.538		
11,600.00	9,060.00	8,999.40	8,999.40	62.49	134.63	90.00	-2,939.76	3,071.78	3,793.81	3,597.16	196.65	19.292		
11,700.00	9,060.00	8,999.40	8,999.40	64.24	134.63	90.00	-2,939.76	3,071.78	3,781.45	3,582.90	198.54	19.046		
11,800.00	9,060.00	8,999.40	8,999.40	66.01	134.63	90.00	-2,939.76	3,071.78	3,771.69	3,571.26	200.43	18.818		
11,900.00	9,060.00	8,999.40	8,999.40	67.79	134.63	90.00	-2,939.76	3,071.78	3,764.57	3,562.26	202.31	18.608		
12,000.00	9,060.00	8,999.40	8,999.40	69.58	134.63	90.00	-2,939.76	3,071.78	3,760.10	3,555.92	204.18	18.416		
12,100.00	9,060.00	8,999.40	8,999.40	71.39	134.63	90.00	-2,939.76	3,071.78	3,758.28	3,552.26	206.02	18.242		
12,118.35	9,060.00	8,999.40	8,999.40	71.73	134.63	90.00	-2,939.76	3,071.78	3,758.23	3,551.88	206.36	18.212 CC		
12,200.00	9,060.00	8,999.40	8,999.40	73.21	134.63	90.00	-2,939.76	3,071.78	3,759.12	3,551.28	207.84	18.087 ES		
12,300.00	9,060.00	8,999.40	8,999.40	75.05	134.63	90.00	-2,939.76	3,071.78	3,762.62	3,553.00	209.62	17.950		
12,400.00	9,060.00	8,999.40	8,999.40	76.89	134.63	90.00	-2,939.76	3,071.78	3,768.77	3,557.41	211.37	17.831		
12,500.00	9,060.00	8,999.40	8,999.40	78.74	134.63	90.00	-2,939.76	3,071.78	3,777.56	3,564.49	213.07	17.729		
12,600.00	9,060.00	8,999.40	8,999.40	80.61	134.63	90.00	-2,939.76	3,071.78	3,788.97	3,574.25	214.73	17.646		
12,700.00	9,060.00	8,999.40	8,999.40	82.48	134.63	90.00	-2,939.76	3,071.78	3,802.98	3,586.65	216.33	17.579		
12,800.00	9,060.00	8,999.40	8,999.40	84.36	134.63	90.00	-2,939.76	3,071.78	3,819.55	3,601.66	217.89	17.530		
12,900.00	9,060.00	8,999.40	8,999.40	86.24	134.63	90.00	-2,939.76	3,071.78	3,838.66	3,619.27	219.38	17.497		
13,000.00	9,060.00	8,999.40	8,999.40	88.14	134.63	90.00	-2,939.76	3,071.78	3,860.26	3,639.44	220.82	17.481		
13,100.00	9,060.00	8,999.40	8,999.40	90.04	134.63	90.00	-2,939.76	3,071.78	3,884.32	3,662.12	222.21	17.481 SF		
13,200.00	9,060.00	8,999.40	8,999.40	91.94	134.63	90.00	-2,939.76	3,071.78	3,910.79	3,687.27	223.53	17.496		
13,300.00	9,060.00	8,999.40	8,999.40	93.86	134.63	90.00	-2,939.76	3,071.78	3,939.62	3,714.84	224.78	17.526		
13,400.00	9,060.00	8,999.40	8,999.40	95.77	134.63	90.00	-2,939.76	3,071.78	3,970.76	3,744.78	225.98	17.571		
13,500.00	9,060.00	8,999.40	8,999.40	97.70	134.63	90.00	-2,939.76	3,071.78	4,004.16	3,777.04	227.12	17.630		
13,600.00	9,060.00	8,999.40	8,999.40	99.62	134.63	90.00	-2,939.76	3,071.78	4,039.75	3,811.56	228.19	17.703		
13,700.00	9,060.00	8,999.40	8,999.40	101.56	134.63	90.00	-2,939.76	3,071.78	4,077.49	3,848.28	229.21	17.790		
13,800.00	9,060.00	8,999.40	8,999.40	103.49	134.63	90.00	-2,939.76	3,071.78	4,117.31	3,887.15	230.16	17.889		
13,900.00	9,060.00	8,999.40	8,999.40	105.43	134.63	90.00	-2,939.76	3,071.78	4,159.16	3,928.10	231.06	18.000		
14,000.00	9,060.00	8,999.40	8,999.40	107.38	134.63	90.00	-2,939.76	3,071.78	4,202.97	3,971.07	231.90	18.124		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,100.00	9,060.00	8,999.40	8,999.40	109.33	134.63	90.00	-2,939.76	3,071.78	4,248.68	4,015.99	232.69	18.259		
14,200.00	9,060.00	8,999.40	8,999.40	111.28	134.63	90.00	-2,939.76	3,071.78	4,296.23	4,062.81	233.42	18.406		
14,300.00	9,060.00	8,999.40	8,999.40	113.23	134.63	90.00	-2,939.76	3,071.78	4,345.56	4,111.46	234.10	18.563		
14,400.00	9,060.00	8,999.40	8,999.40	115.19	134.63	90.00	-2,939.76	3,071.78	4,396.62	4,161.88	234.73	18.730		
14,500.00	9,060.00	8,999.40	8,999.40	117.15	134.63	90.00	-2,939.76	3,071.78	4,449.33	4,214.01	235.32	18.908		
14,600.00	9,060.00	8,999.40	8,999.40	119.11	134.63	90.00	-2,939.76	3,071.78	4,503.65	4,267.79	235.86	19.095		
14,700.00	9,060.00	8,999.40	8,999.40	121.08	134.63	90.00	-2,939.76	3,071.78	4,559.52	4,323.16	236.36	19.291		
14,800.00	9,060.00	8,999.40	8,999.40	123.05	134.63	90.00	-2,939.76	3,071.78	4,616.88	4,380.06	236.82	19.496		
14,900.00	9,060.00	8,999.40	8,999.40	125.02	134.63	90.00	-2,939.76	3,071.78	4,675.67	4,438.43	237.24	19.709		
15,000.00	9,060.00	8,999.40	8,999.40	126.99	134.63	90.00	-2,939.76	3,071.78	4,735.84	4,498.22	237.62	19.930		
15,100.00	9,060.00	8,999.40	8,999.40	128.97	134.63	90.00	-2,939.76	3,071.78	4,797.35	4,559.38	237.97	20.160		
15,200.00	9,060.00	8,999.40	8,999.40	130.95	134.63	90.00	-2,939.76	3,071.78	4,860.13	4,621.85	238.28	20.396		
15,300.00	9,060.00	8,999.40	8,999.40	132.93	134.63	90.00	-2,939.76	3,071.78	4,924.14	4,685.58	238.57	20.640		
15,400.00	9,060.00	8,999.40	8,999.40	134.91	134.63	90.00	-2,939.76	3,071.78	4,989.34	4,750.52	238.83	20.891		
15,500.00	9,060.00	8,999.40	8,999.40	136.89	134.63	90.00	-2,939.76	3,071.78	5,055.68	4,816.62	239.06	21.148		
15,600.00	9,060.00	8,999.40	8,999.40	138.88	134.63	90.00	-2,939.76	3,071.78	5,123.10	4,883.84	239.26	21.412		
15,700.00	9,060.00	8,999.40	8,999.40	140.86	134.63	90.00	-2,939.76	3,071.78	5,191.58	4,952.14	239.44	21.682		
15,800.00	9,060.00	8,999.40	8,999.40	142.85	134.63	90.00	-2,939.76	3,071.78	5,261.07	5,021.47	239.60	21.957		
15,900.00	9,060.00	8,999.40	8,999.40	144.84	134.63	90.00	-2,939.76	3,071.78	5,331.53	5,091.78	239.74	22.239		
16,000.00	9,060.00	8,999.40	8,999.40	146.83	134.63	90.00	-2,939.76	3,071.78	5,402.92	5,163.05	239.86	22.525		
16,100.00	9,060.00	8,999.40	8,999.40	148.83	134.63	90.00	-2,939.76	3,071.78	5,475.20	5,235.24	239.97	22.817		
16,200.00	9,060.00	8,999.40	8,999.40	150.82	134.63	90.00	-2,939.76	3,071.78	5,548.35	5,308.30	240.05	23.113		
16,300.00	9,060.00	8,999.40	8,999.40	152.82	134.63	90.00	-2,939.76	3,071.78	5,622.32	5,382.20	240.12	23.414		
16,400.00	9,060.00	8,999.40	8,999.40	154.81	134.63	90.00	-2,939.76	3,071.78	5,697.09	5,456.91	240.18	23.720		
16,500.00	9,060.00	8,999.40	8,999.40	156.81	134.63	90.00	-2,939.76	3,071.78	5,772.62	5,532.40	240.22	24.030		
16,600.00	9,060.00	8,999.40	8,999.40	158.81	134.63	90.00	-2,939.76	3,071.78	5,848.89	5,608.63	240.26	24.344		
16,700.00	9,060.00	8,999.40	8,999.40	160.81	134.63	90.00	-2,939.76	3,071.78	5,925.86	5,685.58	240.28	24.663		
16,800.00	9,060.00	8,999.40	8,999.40	162.81	134.63	90.00	-2,939.76	3,071.78	6,003.51	5,763.22	240.29	24.985		
16,900.00	9,060.00	8,999.40	8,999.40	164.82	134.63	90.00	-2,939.76	3,071.78	6,081.82	5,841.53	240.29	25.311		
17,000.00	9,060.00	8,999.40	8,999.40	166.82	134.63	90.00	-2,939.76	3,071.78	6,160.75	5,920.47	240.28	25.640		
17,100.00	9,060.00	8,999.40	8,999.40	168.82	134.63	90.00	-2,939.76	3,071.78	6,240.28	6,000.02	240.26	25.973		
17,200.00	9,060.00	8,999.40	8,999.40	170.83	134.63	90.00	-2,939.76	3,071.78	6,320.40	6,080.16	240.24	26.309		
17,300.00	9,060.00	8,999.40	8,999.40	172.84	134.63	90.00	-2,939.76	3,071.78	6,401.08	6,160.87	240.21	26.648		
17,400.00	9,060.00	8,999.40	8,999.40	174.84	134.63	90.00	-2,939.76	3,071.78	6,482.29	6,242.12	240.18	26.990		
17,500.00	9,060.00	8,999.40	8,999.40	176.85	134.63	90.00	-2,939.76	3,071.78	6,564.03	6,323.89	240.13	27.335		
17,600.00	9,060.00	8,999.40	8,999.40	178.86	134.63	90.00	-2,939.76	3,071.78	6,646.26	6,406.17	240.09	27.683		
17,700.00	9,060.00	8,999.40	8,999.40	180.87	134.63	90.00	-2,939.76	3,071.78	6,728.98	6,488.94	240.04	28.033		
17,800.00	9,060.00	8,999.40	8,999.40	182.88	134.63	90.00	-2,939.76	3,071.78	6,812.15	6,572.17	239.98	28.386		
17,900.00	9,060.00	8,999.40	8,999.40	184.89	134.63	90.00	-2,939.76	3,071.78	6,895.78	6,655.86	239.92	28.742		
18,000.00	9,060.00	8,999.40	8,999.40	186.90	134.63	90.00	-2,939.76	3,071.78	6,979.84	6,739.97	239.86	29.100		
18,100.00	9,060.00	8,999.40	8,999.40	188.92	134.63	90.00	-2,939.76	3,071.78	7,064.31	6,824.51	239.80	29.460		
18,200.00	9,060.00	8,999.40	8,999.40	190.93	134.63	90.00	-2,939.76	3,071.78	7,149.18	6,909.45	239.73	29.822		
18,300.00	9,060.00	8,999.40	8,999.40	192.94	134.63	90.00	-2,939.76	3,071.78	7,234.44	6,994.78	239.66	30.187		
18,400.00	9,060.00	8,999.40	8,999.40	194.96	134.63	90.00	-2,939.76	3,071.78	7,320.07	7,080.48	239.59	30.553		
18,500.00	9,060.00	8,999.40	8,999.40	196.97	134.63	90.00	-2,939.76	3,071.78	7,406.06	7,166.55	239.51	30.921		
18,600.00	9,060.00	8,999.40	8,999.40	198.99	134.63	90.00	-2,939.76	3,071.78	7,492.40	7,252.97	239.44	31.292		
18,700.00	9,060.00	8,999.40	8,999.40	201.00	134.63	90.00	-2,939.76	3,071.78	7,579.08	7,339.72	239.36	31.664		
18,800.00	9,060.00	8,999.40	8,999.40	203.02	134.63	90.00	-2,939.76	3,071.78	7,666.08	7,426.80	239.28	32.038		
18,900.00	9,060.00	8,999.40	8,999.40	205.04	134.63	90.00	-2,939.76	3,071.78	7,753.39	7,514.19	239.20	32.414		
19,000.00	9,060.00	8,999.40	8,999.40	207.06	134.63	90.00	-2,939.76	3,071.78	7,841.01	7,601.88	239.12	32.791		
19,100.00	9,060.00	8,999.40	8,999.40	209.07	134.63	90.00	-2,939.76	3,071.78	7,928.92	7,689.87	239.04	33.169		
19,200.00	9,060.00	8,999.40	8,999.40	211.09	134.63	90.00	-2,939.76	3,071.78	8,017.11	7,778.15	238.96	33.550		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Lonetree 14 State Com #001 - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 10-INC-ONLY												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
19,300.00	9,060.00	8,999.40	8,999.40	213.11	134.63	90.00	-2,939.76	3,071.78	8,105.58	7,866.70	238.88	33.931	
19,400.00	9,060.00	8,999.40	8,999.40	215.13	134.63	90.00	-2,939.76	3,071.78	8,194.31	7,955.51	238.80	34.315	
19,500.32	9,060.00	8,999.40	8,999.40	217.16	134.63	90.00	-2,939.76	3,071.78	8,283.58	8,044.86	238.72	34.700	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.50	150.00	62.65	705.94	1,364.95	1,537.07					
100.00	100.00	66.40	66.40	0.52	150.00	62.65	705.94	1,364.95	1,536.70	1,386.18	150.52	10.209		
200.00	200.00	166.40	166.40	0.70	150.02	62.65	705.94	1,364.95	1,536.70	1,385.98	150.72	10.196		
300.00	300.00	266.40	266.40	0.99	150.05	62.65	705.94	1,364.95	1,536.70	1,385.66	151.04	10.174		
400.00	400.00	366.40	366.40	1.31	150.10	62.65	705.94	1,364.95	1,536.70	1,385.30	151.40	10.150		
500.00	500.00	466.40	466.40	1.65	150.16	62.65	705.94	1,364.95	1,536.70	1,384.90	151.80	10.123		
600.00	600.00	566.40	566.40	1.99	150.23	62.65	705.94	1,364.95	1,536.70	1,384.48	152.22	10.095	CC, ES, SF	
700.00	700.00	563.00	562.89	2.34	150.23	62.65	705.94	1,364.95	1,540.18	1,387.96	152.23	10.118		
800.00	800.00	563.00	562.89	2.69	150.23	62.65	705.94	1,364.95	1,550.12	1,398.50	151.61	10.224		
900.00	900.00	563.00	562.89	3.04	150.23	62.65	705.94	1,364.95	1,566.39	1,415.98	150.41	10.414		
1,000.00	1,000.00	563.00	562.89	3.40	150.23	62.65	705.94	1,364.95	1,588.80	1,440.14	148.65	10.688		
1,100.00	1,100.00	563.00	562.89	3.75	150.23	62.65	705.94	1,364.95	1,617.09	1,470.67	146.42	11.044		
1,200.00	1,200.00	563.00	562.89	4.11	150.23	62.65	705.94	1,364.95	1,650.96	1,507.18	143.78	11.483		
1,300.00	1,300.00	563.00	562.89	4.46	150.23	62.65	705.94	1,364.95	1,690.08	1,549.27	140.81	12.002		
1,400.00	1,400.00	563.00	562.89	4.82	150.23	62.65	705.94	1,364.95	1,734.09	1,596.50	137.60	12.603		
1,500.00	1,500.00	563.00	562.89	5.18	150.23	62.65	705.94	1,364.95	1,782.63	1,648.43	134.20	13.283		
1,600.00	1,600.00	563.00	562.89	5.53	150.23	62.65	705.94	1,364.95	1,835.34	1,704.65	130.70	14.043		
1,700.00	1,700.00	563.00	562.89	5.89	150.23	62.65	705.94	1,364.95	1,891.87	1,764.74	127.13	14.881		
1,800.00	1,800.00	563.00	562.89	6.25	150.23	62.65	705.94	1,364.95	1,951.89	1,828.33	123.56	15.797		
1,900.00	1,900.00	563.00	562.89	6.61	150.23	62.65	705.94	1,364.95	2,015.09	1,895.07	120.02	16.790		
2,000.00	2,000.00	563.00	562.89	6.96	150.23	62.65	705.94	1,364.95	2,081.18	1,964.64	116.53	17.859		
2,100.00	2,100.00	563.00	562.89	7.32	150.23	62.65	705.94	1,364.95	2,149.88	2,036.75	113.13	19.003		
2,200.00	2,200.00	563.00	562.89	7.68	150.23	62.65	705.94	1,364.95	2,220.97	2,111.14	109.83	20.222		
2,300.00	2,300.00	563.00	562.89	8.04	150.23	62.65	705.94	1,364.95	2,294.21	2,187.57	106.64	21.514		
2,350.00	2,350.00	563.00	562.89	8.22	150.23	62.65	705.94	1,364.95	2,331.58	2,226.49	105.09	22.187		
2,400.00	2,400.00	563.00	562.89	8.39	150.23	78.13	705.94	1,364.95	2,369.38	2,265.82	103.56	22.879		
2,500.00	2,499.98	563.00	562.89	8.75	150.23	76.96	705.94	1,364.95	2,446.13	2,345.54	100.60	24.316		
2,600.00	2,599.92	563.00	562.89	9.11	150.23	75.74	705.94	1,364.95	2,524.27	2,426.53	97.74	25.825		
2,700.00	2,699.78	563.00	562.89	9.47	150.23	74.48	705.94	1,364.95	2,603.65	2,508.64	95.00	27.405		
2,800.00	2,799.54	563.00	562.89	9.82	150.23	73.18	705.94	1,364.95	2,684.13	2,591.75	92.38	29.056		
2,900.00	2,899.16	563.00	562.89	10.18	150.23	71.84	705.94	1,364.95	2,765.60	2,675.73	89.86	30.775		
3,000.00	2,998.61	563.00	562.89	10.54	150.23	70.46	705.94	1,364.95	2,847.94	2,760.48	87.46	32.563		
3,100.00	3,097.86	563.00	562.89	10.89	150.23	69.06	705.94	1,364.95	2,931.07	2,845.91	85.16	34.417		
3,200.00	3,196.89	563.00	562.89	11.25	150.23	67.63	705.94	1,364.95	3,014.89	2,931.92	82.97	36.336		
3,295.74	3,291.45	563.00	562.89	11.59	150.23	66.24	705.94	1,364.95	3,095.71	3,014.74	80.97	38.232		
3,300.00	3,295.65	563.00	562.89	11.61	150.23	66.24	705.94	1,364.95	3,099.32	3,018.43	80.88	38.318		
3,400.00	3,394.29	563.00	562.89	11.97	150.23	66.24	705.94	1,364.95	3,184.49	3,105.58	78.90	40.360		
3,500.00	3,492.94	563.00	562.89	12.33	150.23	66.24	705.94	1,364.95	3,270.49	3,193.47	77.02	42.463		
3,600.00	3,591.58	563.00	562.89	12.69	150.23	66.24	705.94	1,364.95	3,357.28	3,282.04	75.23	44.626		
3,700.00	3,690.22	563.00	562.89	13.05	150.23	66.24	705.94	1,364.95	3,444.78	3,371.24	73.53	46.846		
3,800.00	3,788.86	563.00	562.89	13.41	150.23	66.24	705.94	1,364.95	3,532.94	3,461.02	71.92	49.122		
3,900.00	3,887.50	563.00	562.89	13.77	150.23	66.24	705.94	1,364.95	3,621.72	3,551.32	70.39	51.450		
4,000.00	3,986.14	563.00	562.89	14.14	150.23	66.24	705.94	1,364.95	3,711.07	3,642.12	68.94	53.829		
4,100.00	4,084.78	563.00	562.89	14.50	150.23	66.24	705.94	1,364.95	3,800.94	3,733.38	67.56	56.256		
4,200.00	4,183.42	563.00	562.89	14.87	150.23	66.24	705.94	1,364.95	3,891.32	3,825.06	66.26	58.730		
4,300.00	4,282.06	563.00	562.89	15.24	150.23	66.24	705.94	1,364.95	3,982.15	3,917.13	65.02	61.247		
4,400.00	4,380.70	563.00	562.89	15.60	150.23	66.24	705.94	1,364.95	4,073.41	4,009.57	63.84	63.805		
4,500.00	4,479.34	563.00	562.89	15.97	150.23	66.24	705.94	1,364.95	4,165.08	4,102.35	62.73	66.401		
4,600.00	4,577.98	563.00	562.89	16.34	150.23	66.24	705.94	1,364.95	4,257.12	4,195.45	61.67	69.034		
4,700.00	4,676.62	563.00	562.89	16.71	150.23	66.24	705.94	1,364.95	4,349.51	4,288.85	60.66	71.699		
4,800.00	4,775.27	563.00	562.89	17.08	150.23	66.24	705.94	1,364.95	4,442.23	4,382.52	59.71	74.395		
4,900.00	4,873.91	563.00	562.89	17.45	150.23	66.24	705.94	1,364.95	4,535.26	4,476.45	58.81	77.119		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.00	4,972.55	563.00	562.89	17.82	150.23	66.24	705.94	1,364.95	4,628.58	4,570.63	57.95	79.867		
5,100.00	5,071.19	563.00	562.89	18.19	150.23	66.24	705.94	1,364.95	4,722.18	4,665.03	57.14	82.638		
5,200.00	5,169.83	563.00	562.89	18.56	150.23	66.24	705.94	1,364.95	4,816.03	4,759.65	56.38	85.428		
5,300.00	5,268.47	563.00	562.89	18.93	150.23	66.24	705.94	1,364.95	4,910.12	4,854.47	55.65	88.235		
5,400.00	5,367.11	563.00	562.89	19.31	150.23	66.24	705.94	1,364.95	5,004.45	4,949.49	54.96	91.056		
5,500.00	5,465.75	563.00	562.89	19.68	150.23	66.24	705.94	1,364.95	5,098.98	5,044.68	54.31	93.888		
5,600.00	5,564.39	563.00	562.89	20.05	150.23	66.24	705.94	1,364.95	5,193.73	5,140.04	53.69	96.729		
5,700.00	5,663.03	563.00	562.89	20.42	150.23	66.24	705.94	1,364.95	5,288.67	5,235.55	53.11	99.575		
5,800.00	5,761.67	563.00	562.89	20.80	150.23	66.24	705.94	1,364.95	5,383.79	5,331.22	52.56	102.424		
5,900.00	5,860.31	563.00	562.89	21.17	150.23	66.24	705.94	1,364.95	5,479.08	5,427.04	52.05	105.274		
6,000.00	5,958.96	563.00	562.89	21.54	150.23	66.24	705.94	1,364.95	5,574.54	5,522.99	51.56	108.122		
6,100.00	6,057.60	563.00	562.89	21.92	150.23	66.24	705.94	1,364.95	5,670.16	5,619.06	51.10	110.965		
6,200.00	6,156.24	563.00	562.89	22.29	150.23	66.24	705.94	1,364.95	5,765.92	5,715.26	50.67	113.802		
6,300.00	6,254.88	563.00	562.89	22.67	150.23	66.24	705.94	1,364.95	5,861.83	5,811.57	50.26	116.628		
6,400.00	6,353.52	563.00	562.89	23.04	150.23	66.24	705.94	1,364.95	5,957.87	5,907.99	49.88	119.443		
6,500.00	6,452.16	563.00	562.89	23.42	150.23	66.24	705.94	1,364.95	6,054.04	6,004.52	49.52	122.244		
6,600.00	6,550.80	563.00	562.89	23.79	150.23	66.24	705.94	1,364.95	6,150.33	6,101.14	49.19	125.028		
6,700.00	6,649.44	563.00	562.89	24.17	150.23	66.24	705.94	1,364.95	6,246.74	6,197.86	48.88	127.794		
6,800.00	6,748.08	563.00	562.89	24.54	150.23	66.24	705.94	1,364.95	6,343.26	6,294.67	48.59	130.540		
6,900.00	6,846.72	563.00	562.89	24.92	150.23	66.24	705.94	1,364.95	6,439.88	6,391.56	48.32	133.263		
7,000.00	6,945.36	563.00	562.89	25.29	150.23	66.24	705.94	1,364.95	6,536.61	6,488.53	48.08	135.962		
7,100.00	7,044.00	563.00	562.89	25.67	150.23	66.24	705.94	1,364.95	6,633.44	6,585.59	47.85	138.635		
7,200.00	7,142.65	563.00	562.89	26.04	150.23	66.24	705.94	1,364.95	6,730.35	6,682.71	47.64	141.280		
7,300.00	7,241.29	563.00	562.89	26.42	150.23	66.24	705.94	1,364.95	6,827.36	6,779.91	47.45	143.895		
7,400.00	7,339.93	563.00	562.89	26.79	150.23	66.24	705.94	1,364.95	6,924.45	6,877.18	47.27	146.480		
7,500.00	7,438.57	563.00	562.89	27.17	150.23	66.24	705.94	1,364.95	7,021.62	6,974.51	47.11	149.033		
7,571.77	7,509.37	563.00	562.89	27.44	150.23	66.24	705.94	1,364.95	7,091.41	7,044.40	47.01	150.844		
7,600.00	7,537.23	563.00	562.89	27.55	150.23	67.89	705.94	1,364.95	7,118.88	7,071.91	46.97	151.554		
7,700.00	7,636.18	563.00	562.89	27.92	150.23	74.10	705.94	1,364.95	7,216.37	7,169.54	46.83	154.086		
7,800.00	7,735.48	563.00	562.89	28.29	150.23	80.83	705.94	1,364.95	7,314.09	7,267.39	46.69	156.647		
7,900.00	7,835.05	563.00	562.89	28.65	150.23	87.92	705.94	1,364.95	7,411.95	7,365.40	46.55	159.240		
8,000.00	7,934.83	563.00	562.89	29.01	150.23	95.18	705.94	1,364.95	7,509.88	7,463.48	46.40	161.865		
8,100.00	8,034.74	563.00	562.89	29.36	150.23	102.37	705.94	1,364.95	7,607.82	7,561.58	46.24	164.523		
8,202.27	8,137.00	563.00	562.89	29.72	150.23	93.37	705.94	1,364.95	7,707.92	7,661.84	46.08	167.273		
8,300.00	8,234.73	563.00	562.89	30.06	150.23	93.37	705.94	1,364.95	7,803.56	7,757.63	45.93	169.902		
8,400.00	8,334.73	563.00	562.89	30.41	150.23	93.37	705.94	1,364.95	7,901.47	7,855.68	45.79	172.562		
8,500.00	8,434.73	563.00	562.89	30.75	150.23	93.37	705.94	1,364.95	7,999.43	7,953.77	45.66	175.192		
8,552.31	8,487.04	563.00	562.89	30.94	150.23	93.37	705.94	1,364.95	8,050.69	8,005.09	45.60	176.555		
8,600.00	8,534.68	563.00	562.89	31.10	150.23	2.64	705.94	1,364.95	8,096.99	8,051.49	45.51	177.932		
8,650.00	8,584.26	563.00	562.89	31.26	150.23	2.03	705.94	1,364.95	8,144.37	8,099.04	45.33	179.660		
8,700.00	8,633.10	563.00	562.89	31.43	150.23	1.66	705.94	1,364.95	8,190.23	8,145.15	45.08	181.665		
8,750.00	8,680.83	563.00	562.89	31.58	150.23	1.41	705.94	1,364.95	8,234.25	8,189.48	44.77	183.942		
8,800.00	8,727.09	563.00	562.89	31.74	150.23	1.23	705.94	1,364.95	8,276.12	8,231.74	44.38	186.488		
8,850.00	8,771.52	563.00	562.89	31.89	150.23	1.10	705.94	1,364.95	8,315.56	8,271.63	43.93	189.300		
8,900.00	8,813.78	563.00	562.89	32.04	150.23	1.00	705.94	1,364.95	8,352.30	8,308.88	43.42	192.372		
8,950.00	8,853.56	563.00	562.89	32.18	150.23	0.93	705.94	1,364.95	8,386.11	8,343.26	42.85	195.701		
9,000.00	8,890.55	563.00	562.89	32.32	150.23	0.87	705.94	1,364.95	8,416.76	8,374.52	42.24	199.281		
9,050.00	8,924.46	563.00	562.89	32.47	150.23	0.82	705.94	1,364.95	8,444.06	8,402.48	41.58	203.102		
9,100.00	8,955.05	563.00	562.89	32.63	150.23	0.78	705.94	1,364.95	8,467.82	8,426.95	40.88	207.155		
9,150.00	8,982.08	563.00	562.89	32.79	150.23	0.75	705.94	1,364.95	8,487.91	8,447.77	40.15	211.427		
9,200.00	9,005.34	563.00	562.89	32.97	150.23	0.73	705.94	1,364.95	8,504.19	8,464.81	39.39	215.903		
9,250.00	9,024.65	563.00	562.89	33.17	150.23	0.71	705.94	1,364.95	8,516.57	8,477.96	38.61	220.564		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY													Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,300.00	9,039.87	563.00	562.89	33.38	150.23	0.70	705.94	1,364.95	8,524.96	8,487.14	37.82	225.388		
9,350.00	9,050.89	563.00	562.89	33.62	150.23	0.70	705.94	1,364.95	8,529.31	8,492.28	37.03	230.350		
9,400.00	9,057.61	563.00	562.89	33.87	150.23	0.70	705.94	1,364.95	8,529.60	8,493.37	36.23	235.423		
9,452.31	9,060.00	563.00	562.89	34.15	150.23	0.70	705.94	1,364.95	8,525.55	8,490.15	35.40	240.814		
9,500.00	9,060.00	563.00	562.89	34.42	150.23	0.70	705.94	1,364.95	8,519.97	8,485.31	34.66	245.841		
9,600.00	9,060.00	563.00	562.89	35.09	150.23	0.70	705.94	1,364.95	8,509.12	8,476.00	33.12	256.919		
9,700.00	9,060.00	563.00	562.89	35.86	150.23	0.70	705.94	1,364.95	8,499.43	8,467.81	31.63	268.719		
9,800.00	9,060.00	563.00	562.89	36.72	150.23	0.70	705.94	1,364.95	8,490.92	8,460.73	30.19	281.268		
9,900.00	9,060.00	563.00	562.89	37.69	150.23	0.70	705.94	1,364.95	8,483.57	8,454.77	28.80	294.558		
10,000.00	9,060.00	563.00	562.89	38.73	150.23	0.70	705.94	1,364.95	8,477.39	8,449.91	27.48	308.518		
10,100.00	9,060.00	563.00	562.89	39.86	150.23	0.70	705.94	1,364.95	8,472.39	8,446.15	26.24	322.913		
10,140.22	9,060.00	563.00	562.89	40.33	150.23	0.70	705.94	1,364.95	8,470.71	8,444.94	25.77	328.711		
10,200.00	9,060.00	563.00	562.89	41.05	150.23	0.66	705.94	1,364.95	8,468.56	8,443.45	25.12	337.171		
10,300.00	9,060.00	563.00	562.89	42.31	150.23	0.60	705.94	1,364.95	8,465.88	8,441.69	24.19	350.009		
10,400.00	9,060.00	563.00	562.89	43.64	150.23	0.57	705.94	1,364.95	8,464.33	8,440.69	23.64	358.047		
10,484.55	9,060.00	563.00	562.89	44.80	150.23	0.56	705.94	1,364.95	8,463.92	8,440.19	23.74	356.558		
10,507.23	9,060.00	563.00	562.89	45.11	150.23	0.57	705.94	1,364.95	8,463.95	8,440.08	23.88	354.491		
10,600.00	9,060.00	563.00	562.89	46.43	150.23	0.55	705.94	1,364.95	8,464.72	8,439.78	24.94	339.393		
10,700.00	9,060.00	563.00	562.89	47.91	150.23	0.51	705.94	1,364.95	8,466.71	8,440.02	26.69	317.254		
10,800.00	9,060.00	563.00	562.89	49.42	150.23	0.45	705.94	1,364.95	8,469.92	8,441.19	28.73	294.807		
10,900.00	9,060.00	563.00	562.89	50.97	150.23	0.36	705.94	1,364.95	8,474.33	8,443.42	30.91	274.134		
11,000.00	9,060.00	563.00	562.89	52.55	150.23	0.25	705.94	1,364.95	8,479.94	8,446.77	33.17	255.659		
11,100.00	9,060.00	563.00	562.89	54.14	150.23	0.11	705.94	1,364.95	8,486.74	8,451.27	35.47	239.288		
11,207.23	9,060.00	563.00	562.89	55.87	150.23	-0.06	705.94	1,364.95	8,495.34	8,457.38	37.96	223.813		
11,300.00	9,060.00	563.00	562.89	57.39	150.23	0.11	705.94	1,364.95	8,503.87	8,463.74	40.13	211.918		
11,400.00	9,060.00	563.00	562.89	59.06	150.23	0.32	705.94	1,364.95	8,514.17	8,471.69	42.48	200.423		
11,506.63	9,060.00	563.00	562.89	60.88	150.23	0.56	705.94	1,364.95	8,526.42	8,481.42	45.00	189.483		
11,600.00	9,060.00	563.00	562.89	62.49	150.23	0.56	705.94	1,364.95	8,538.20	8,491.00	47.21	180.870		
11,700.00	9,060.00	563.00	562.89	64.24	150.23	0.56	705.94	1,364.95	8,551.94	8,502.37	49.57	172.511		
11,800.00	9,060.00	563.00	562.89	66.01	150.23	0.56	705.94	1,364.95	8,566.82	8,514.88	51.94	164.938		
11,900.00	9,060.00	563.00	562.89	67.79	150.23	0.56	705.94	1,364.95	8,582.84	8,528.54	54.30	158.055		
12,000.00	9,060.00	563.00	562.89	69.58	150.23	0.56	705.94	1,364.95	8,600.00	8,543.34	56.66	151.778		
12,100.00	9,060.00	563.00	562.89	71.39	150.23	0.56	705.94	1,364.95	8,618.28	8,559.27	59.01	146.040		
12,200.00	9,060.00	563.00	562.89	73.21	150.23	0.56	705.94	1,364.95	8,637.68	8,576.32	61.36	140.778		
12,300.00	9,060.00	563.00	562.89	75.05	150.23	0.56	705.94	1,364.95	8,658.19	8,594.50	63.69	135.943		
12,400.00	9,060.00	563.00	562.89	76.89	150.23	0.56	705.94	1,364.95	8,679.81	8,613.79	66.01	131.488		
12,500.00	9,060.00	563.00	562.89	78.74	150.23	0.56	705.94	1,364.95	8,702.52	8,634.20	68.32	127.376		
12,600.00	9,060.00	563.00	562.89	80.61	150.23	0.56	705.94	1,364.95	8,726.31	8,655.70	70.62	123.573		
12,700.00	9,060.00	563.00	562.89	82.48	150.23	0.56	705.94	1,364.95	8,751.19	8,678.29	72.90	120.049		
12,800.00	9,060.00	563.00	562.89	84.36	150.23	0.56	705.94	1,364.95	8,777.13	8,701.97	75.16	116.778		
12,900.00	9,060.00	563.00	562.89	86.24	150.23	0.56	705.94	1,364.95	8,804.14	8,726.73	77.41	113.737		
13,000.00	9,060.00	563.00	562.89	88.14	150.23	0.56	705.94	1,364.95	8,832.19	8,752.55	79.64	110.905		
13,100.00	9,060.00	563.00	562.89	90.04	150.23	0.56	705.94	1,364.95	8,861.29	8,779.44	81.85	108.266		
13,200.00	9,060.00	563.00	562.89	91.94	150.23	0.56	705.94	1,364.95	8,891.41	8,807.37	84.04	105.802		
13,300.00	9,060.00	563.00	562.89	93.86	150.23	0.56	705.94	1,364.95	8,922.55	8,836.34	86.21	103.499		
13,400.00	9,060.00	563.00	562.89	95.77	150.23	0.56	705.94	1,364.95	8,954.70	8,866.34	88.36	101.345		
13,500.00	9,060.00	563.00	562.89	97.70	150.23	0.56	705.94	1,364.95	8,987.85	8,897.36	90.49	99.328		
13,600.00	9,060.00	563.00	562.89	99.62	150.23	0.56	705.94	1,364.95	9,021.98	8,929.39	92.59	97.438		
13,700.00	9,060.00	563.00	562.89	101.56	150.23	0.56	705.94	1,364.95	9,057.09	8,962.42	94.68	95.664		
13,800.00	9,060.00	563.00	562.89	103.49	150.23	0.56	705.94	1,364.95	9,093.17	8,996.43	96.74	94.000		
13,900.00	9,060.00	563.00	562.89	105.43	150.23	0.56	705.94	1,364.95	9,130.20	9,031.42	98.77	92.436		
14,000.00	9,060.00	563.00	562.89	107.38	150.23	0.56	705.94	1,364.95	9,168.17	9,067.38	100.79	90.967		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 14-T21S-R27E - Magnolia State 2 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 5-INC-ONLY												Offset Well Error:	150.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
14,100.00	9,060.00	563.00	562.89	109.33	150.23	0.56	705.94	1,364.95	9,207.06	9,104.29	102.78	89.585	
14,200.00	9,060.00	563.00	562.89	111.28	150.23	0.56	705.94	1,364.95	9,246.88	9,142.14	104.74	88.284	
14,300.00	9,060.00	563.00	562.89	113.23	150.23	0.56	705.94	1,364.95	9,287.60	9,180.92	106.68	87.061	
14,400.00	9,060.00	563.00	562.89	115.19	150.23	0.56	705.94	1,364.95	9,329.22	9,220.62	108.59	85.908	
14,500.00	9,060.00	563.00	562.89	117.15	150.23	0.56	705.94	1,364.95	9,371.72	9,261.23	110.49	84.823	
14,600.00	9,060.00	563.00	562.89	119.11	150.23	0.56	705.94	1,364.95	9,415.09	9,302.74	112.35	83.801	
14,700.00	9,060.00	563.00	562.89	121.08	150.23	0.56	705.94	1,364.95	9,459.31	9,345.12	114.19	82.838	
14,800.00	9,060.00	563.00	562.89	123.05	150.23	0.56	705.94	1,364.95	9,504.39	9,388.38	116.00	81.931	
14,900.00	9,060.00	563.00	562.89	125.02	150.23	0.56	705.94	1,364.95	9,550.30	9,432.50	117.79	81.076	
15,000.00	9,060.00	563.00	562.89	126.99	150.23	0.56	705.94	1,364.95	9,597.03	9,477.47	119.56	80.271	
15,100.00	9,060.00	563.00	562.89	128.97	150.23	0.56	705.94	1,364.95	9,644.57	9,523.27	121.30	79.512	
15,200.00	9,060.00	563.00	562.89	130.95	150.23	0.56	705.94	1,364.95	9,692.91	9,569.90	123.01	78.797	
15,300.00	9,060.00	563.00	562.89	132.93	150.23	0.56	705.94	1,364.95	9,742.03	9,617.33	124.70	78.125	
15,400.00	9,060.00	563.00	562.89	134.91	150.23	0.56	705.94	1,364.95	9,791.93	9,665.57	126.36	77.491	
15,500.00	9,060.00	563.00	562.89	136.89	150.23	0.56	705.94	1,364.95	9,842.60	9,714.60	128.00	76.895	
15,600.00	9,060.00	563.00	562.89	138.88	150.23	0.56	705.94	1,364.95	9,894.01	9,764.40	129.61	76.335	
15,700.00	9,060.00	563.00	562.89	140.86	150.23	0.56	705.94	1,364.95	9,946.17	9,814.97	131.20	75.808	
15,800.00	9,060.00	563.00	562.89	142.85	150.23	0.56	705.94	1,364.95	9,999.05	9,866.29	132.77	75.314	

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

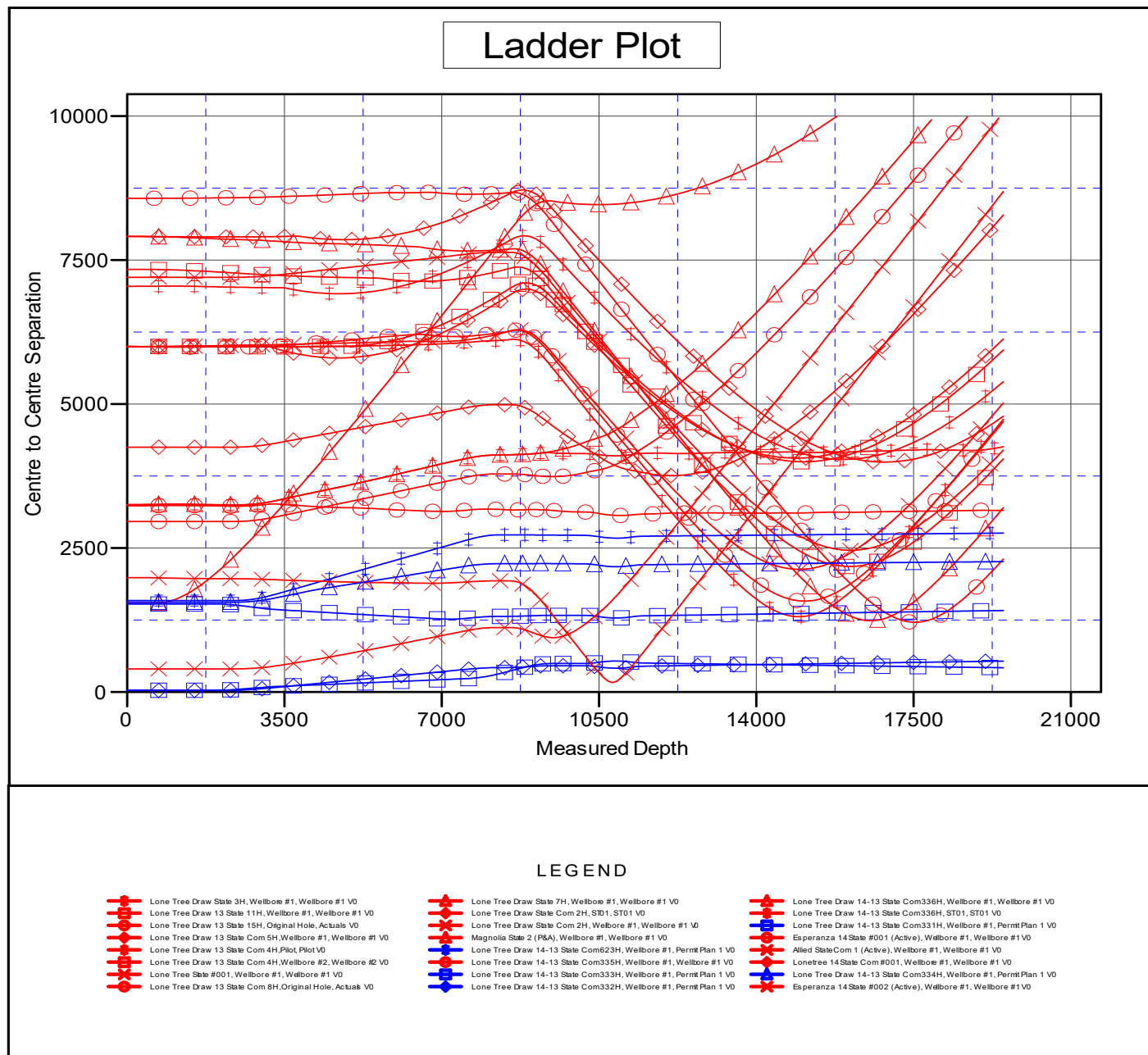
Offset Depths are relative to Offset Datum

Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Lone Tree Draw 14-13 State Com 621H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3280.60ft
Reference Site:	Sec 14-T21S-R27E	MD Reference:	RKB @ 3280.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Lone Tree Draw 14-13 State Com 621H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3280.60ft

Offset Depths are relative to Offset Datum

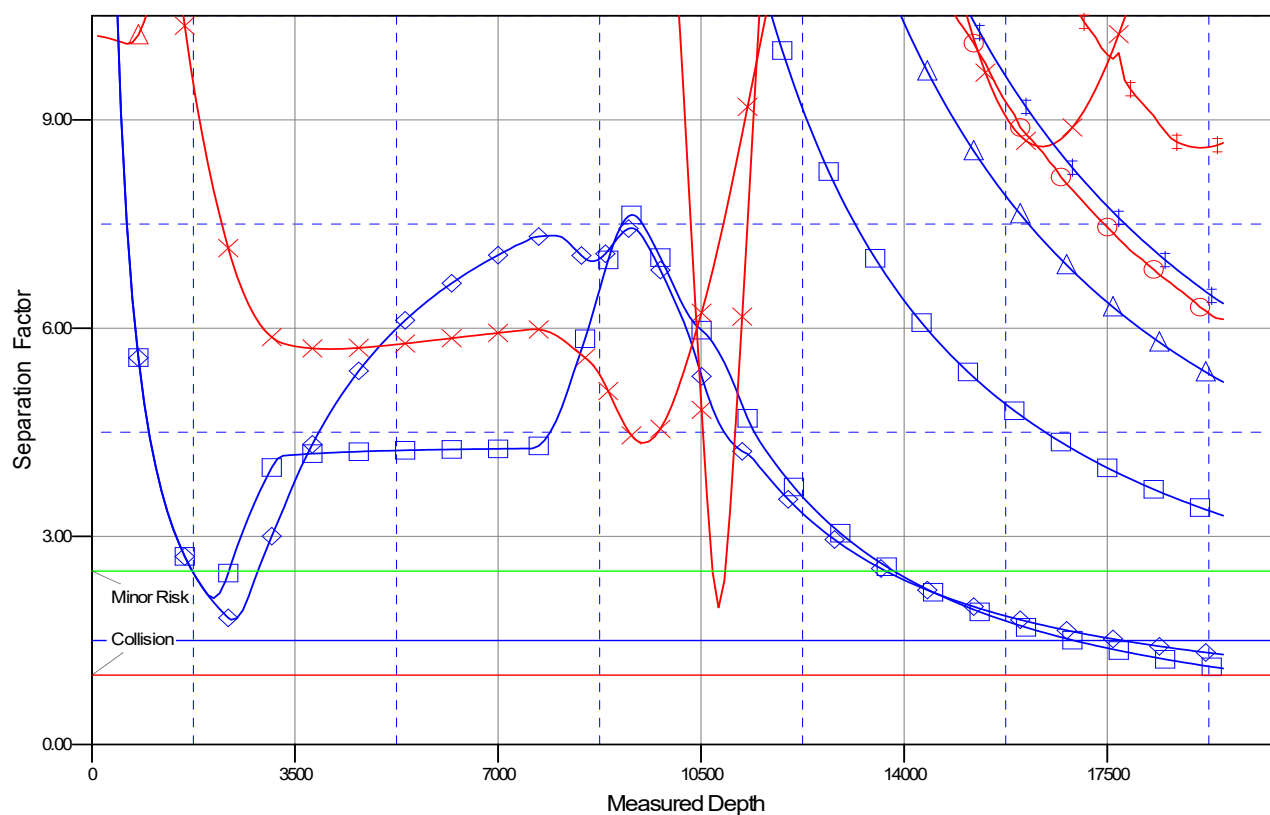
Central Meridian is -104.333334

Coordinates are relative to: Lone Tree Draw 14-13 State Com 621H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.09°

Separation Factor Plot



LEGEND

- Lone Tree Draw State 3H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 13 State 11H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 13 State 15H, Original Hole, Actual V0 - Lone Tree Draw 13 State Com 5H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 13 State Com 4H, Wellbore #2, Wellbore #2 V0 - Lone Tree State #001, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 13 State Com 8H, Original Hole, Actual V0	- Lone Tree Draw State 7H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw State Com 2H, ST01, ST01 V0 - Lone Tree Draw State Com 2H, Wellbore #1, Wellbore #1 V0 - Magnolia State 2 (P&A), Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 14-13 State Com 623H, Wellbore #1, Permit Plan 1 V0 - Lone Tree Draw 14-13 State Com 335H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 14-13 State Com 333H, Wellbore #1, Permit Plan 1 V0 - Lone Tree Draw 14-13 State Com 332H, Wellbore #1, Permit Plan 1 V0	- Lone Tree Draw 14-13 State Com 336H, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 14-13 State Com 336H, ST01, ST01 V0 - Lone Tree Draw 14-13 State Com 331H, Wellbore #1, Permit Plan 1 V0 - Esperanza 14 State #001 (Active), Wellbore #1, Wellbore #1 V0 - Allied State Com 1 (Active), Wellbore #1, Wellbore #1 V0 - Lone Tree 14 State Com #001, Wellbore #1, Wellbore #1 V0 - Lone Tree Draw 14-13 State Com 334H, Wellbore #1, Permit Plan 1 V0 - Esperanza 14 State #002 (Active), Wellbore #1, Wellbore #1 V0



**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

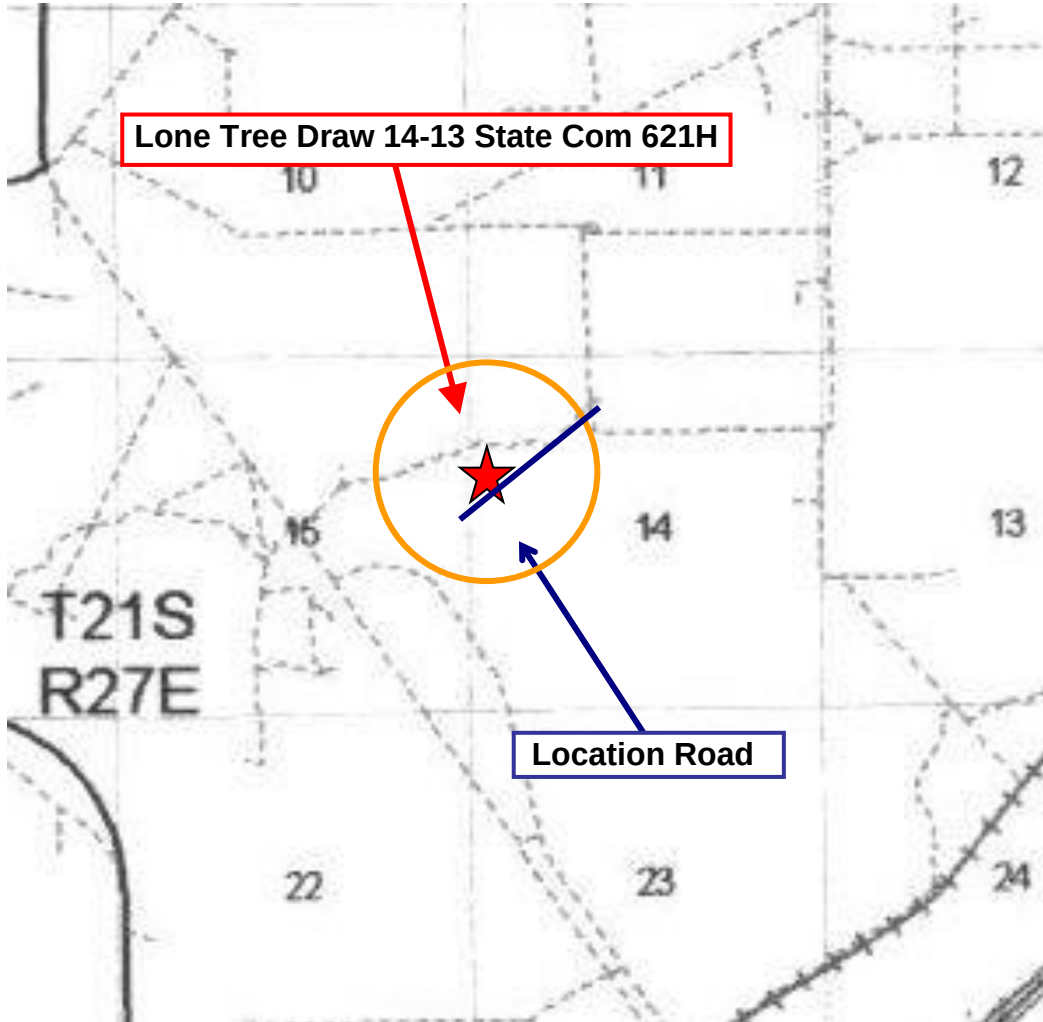
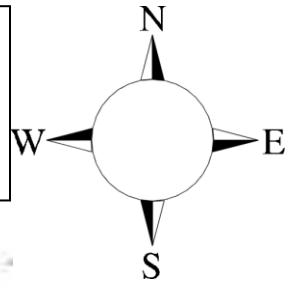
Lone Tree Draw 14-13 State Com 621H

**Sec-14 T-21S R-27E
1685 FNL & 280' FWL
LAT. = 32.4828638' N (NAD83)
LONG = 104.1681875' W**

Eddy County NM

Lone Tree Draw 14-13 State Com 621H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm **ROE = 3000'** (**Radius of Exposure**)
100 ppm H₂S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the “buddy system” to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico’s ‘Hazardous Materials Emergency Response Plan’ (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

6. Communication:

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

7. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

<u>Devon Energy Corp. Company Call List</u>		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
<u>Agency Call List</u>		
<u>Lea County (575)</u>	Hobbs	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	911
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
<u>Eddy County (575)</u>	Carlsbad	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	911
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control	(915) 699-0139 (915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
<u>Give GPS position:</u>	Native Air – Emergency Helicopter – Hobbs (NM and TX)	(800)642-7828
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small





