

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBBS OCD

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

FEB 13 2019

RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMLC061869
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY		6. If Indian, Allottee or Tribe Name
Contact: LINDA GOOD E-Mail: linda.good@dvn.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address P O BOX 250 ARTESIA, NM 88201	3b. Phone No. (include area code) Ph: 405.552.6558	8. Well Name and No. VAN DOO DAH 21-33 FED COM 233H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 21 T25S R32E SESW 200FSL 1480FWL 32.109173 N Lat, 103.683907 W Lon		9. API Well No. 30-025-45235-00-X1
		10. Field and Pool or Exploratory Area WC025G08S253235G-LWR BONE SPF
		11. County or Parish, State LEA COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A PD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Attention Haque & Chris:

Devon Energy Production Co., L.P. respectfully request permission to change the bottomhole location from 330 FSL 1650 FWL, Sec 33-T25S-R32E to 20 FNL 330 FWL, Sec 16-T25S-R32E.

Attachments: Drilling Plan, Dir Plan, Permit Plan, Plot & AC Report.

Carlsbad Field Office
OCD Hobbs

14. I hereby certify that the foregoing is true and correct. Electronic Submission #444351 verified by the BLM Well Information System For DEVON ENERGY PRODUCTION COMPANY LP, sent to the Hobbs Committed to AFMSS for processing by PRISCILLA PEREZ on 11/16/2018 (19PP0442SE)	
Name (Printed/Typed) LINDA GOOD	Title REGULATORY COMPLIANCE SPECIALI
Signature (Electronic Submission)	Date 11/16/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By LONG VO	Title PETROLEUM ENGINEER	Date 02/12/2019
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

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: (505) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 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 30-025-45235	² Pool Code 97903	³ Pool Name WC-025 G-08 S253235G; Bone Spring
⁴ Property Code 322486	⁵ Property Name VAN DOO DAH 21-33 FED COM	
⁶ OGRID No. 6137	⁷ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁸ Well Number 233H
		⁹ Elevation 3390.2

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	21	25 S	32 E		200	SOUTH	1480	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	16	25 S	32 E		20	NORTH	330	WEST	LEA

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

NW CORNER SEC. 16 LAT. = 32.1376330°N LONG. = 103.6886037°W NMSP EAST (FT) N = 414403.87 E = 740898.71 LAST TAKE POINT 100' PSL 330' FWL LAT. = 32.1373644°N LONG. = 103.6875393°W NMSP EAST (FT) N = 414308.13 E = 741228.77		1189°15'43"E 2651.26 FT 330 BHL LTP N O CORNER SEC. 16 LAT. = 32.1376830°N LONG. = 103.6800405°W NMSP EAST (FT) N = 414438.01 E = 743549.18 NE CORNER SEC. 16 LAT. = 32.1377224°N LONG. = 103.6714339°W NMSP EAST (FT) N = 414468.64 E = 746213.13		¹⁶ 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>Linda Good</i> 11/8/2018 Signature Date Linda Good Printed Name linda.good@dvn.com E-mail Address	
SEC. 16 LAT. = 32.1375843°N LONG. = 103.6875381°W NMSP EAST (FT) N = 414388.12 E = 741228.67 NOTE: LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LONGITUDE COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD83.		SEC. 21 LAT. = 32.1231544°N LONG. = 103.6800770°W NMSP EAST (FT) N = 409152.64 E = 743569.95 NE CORNER SEC. 21 LAT. = 32.1232250°N LONG. = 103.6714858°W NMSP EAST (FT) N = 409194.57 E = 746229.47		¹⁷ 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. NOVEMBER 6, 2018 Date of Survey F. JARAMILLO NEW MEXICO 12797 Signature and Seal of Professional Surveyor Certificate Number: F. JARAMILLO, PLS 12797 SURVEY NO. 5884C	
NW CORNER SEC. 21 LAT. = 32.1231388°N LONG. = 103.6886842°W NMSP EAST (FT) N = 409130.93 E = 740905.34 W O CORNER SEC. 21 LAT. = 32.1158978°N LONG. = 103.6886867°W NMSP EAST (FT) N = 406496.74 E = 740920.33 SW CORNER SEC. 21 LAT. = 32.1085668°N LONG. = 103.6886834°W NMSP EAST (FT) N = 403829.87 E = 740937.30		SEC. 21 LAT. = 32.1231544°N LONG. = 103.6800770°W NMSP EAST (FT) N = 409152.64 E = 743569.95 NE CORNER SEC. 21 LAT. = 32.1232250°N LONG. = 103.6714858°W NMSP EAST (FT) N = 409194.57 E = 746229.47		SEC. 21 LAT. = 32.1087081°N LONG. = 103.6714983°W NMSP EAST (FT) N = 403912.78 E = 746258.05	

Intent ☐ As Drilled ☐

API #

Operator Name:

DEVON ENERGY PRODUCTION CO., L.P.

Property Name:

VAN DOO DAH 21-33 FED COM

Well Number

233H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
Latitude					Longitude			NAD	

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
M	21	25S	32E		100	SOUTH	330	WEST	LEA
Latitude					Longitude			NAD	
32.1088543					103.6876180			83	

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
D	16	25S	32E		100	NORTH	330	WEST	LEA
Latitude					Longitude			NAD	
32.1373644					103.6875393			83	

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

Is this well an infill well? ☐

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

API #

Operator Name:

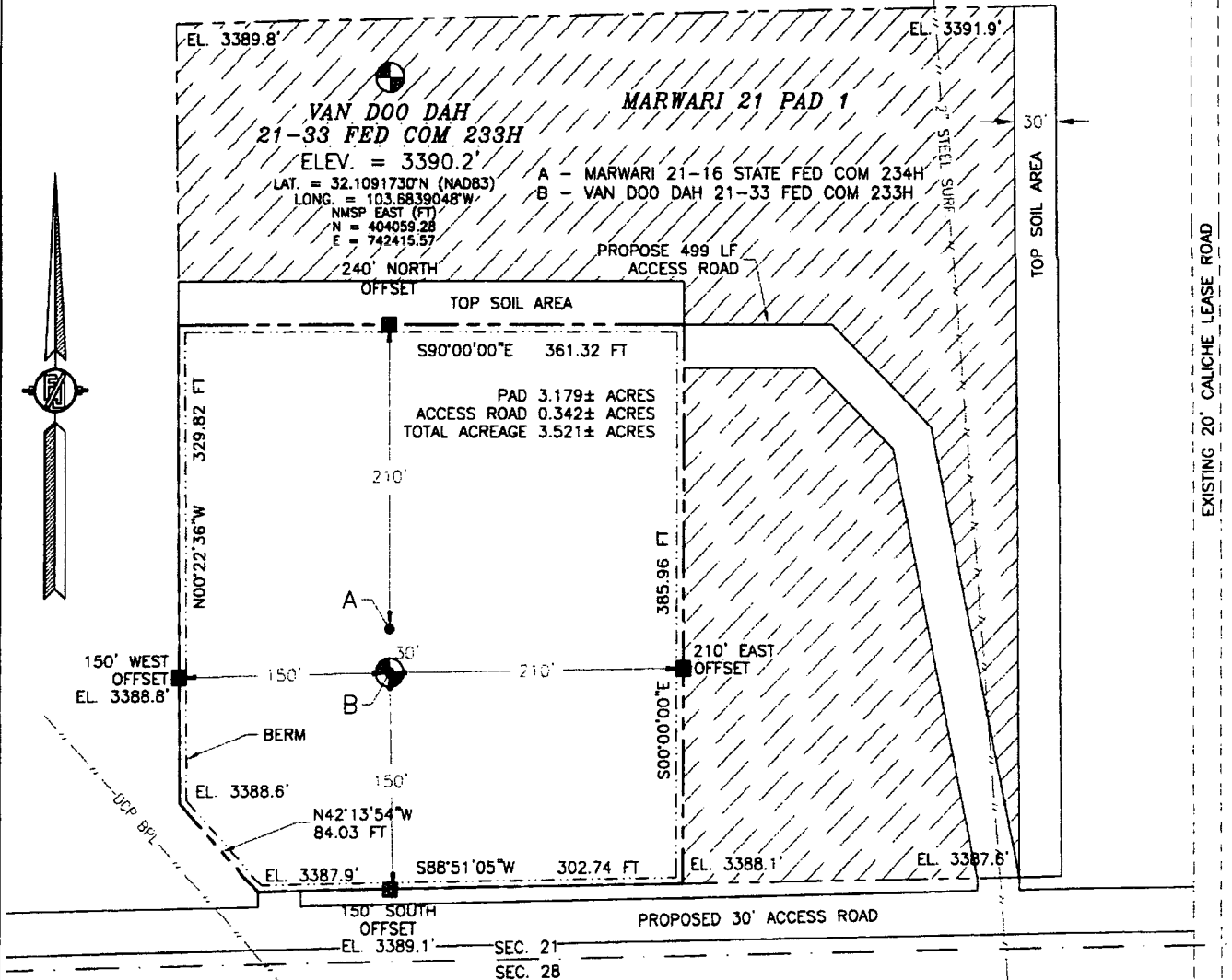
Property Name:

Well Number

KZ 06/29/2018

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP

NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83) LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83). BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD88.



012 60 120 240

SCALE 1" = 120'

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CR 1 (ORLA) & MONSANTO ROAD GO WEST APPROX. 0.65 MILE. GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX. 1.09 MILES. FOLLOW ROAD SURVEY WEST FOR 152'. THEN GO NORTH-NORTHWEST-WEST 524' TO NORTHEAST PAD CORNER FOR THIS LOCATION.

DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH 21-33 FED COM 233H
LOCATED 200 FT. FROM THE SOUTH LINE
AND 1480 FT. FROM THE WEST LINE OF
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

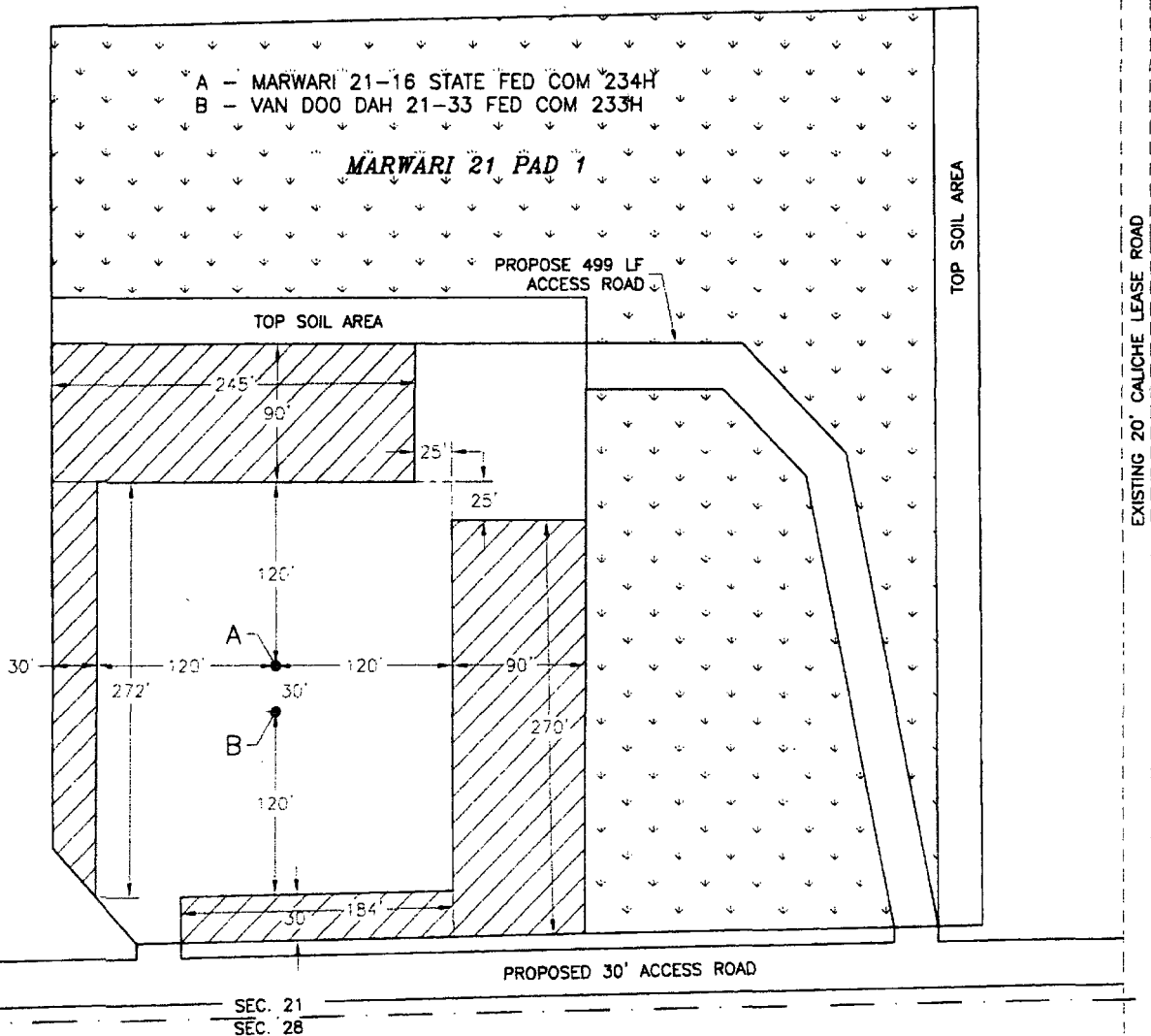
NOVEMBER 6, 2018

SURVEY NO. 5884C

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

CARLSBAD, NEW MEXICO

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
INTERIM SITE BUILD PLAN



012 60 120 240
SCALE 1" = 120'

1.369± ACRES INTERIM PAD RECLAMATION AREA
 4.703± ACRES GRADING SITE RECLAMATION AREA
 2.152± ACRES NON-RECLAIMED AREA
 8.224± ACRES MARWARI 21 PAD 1

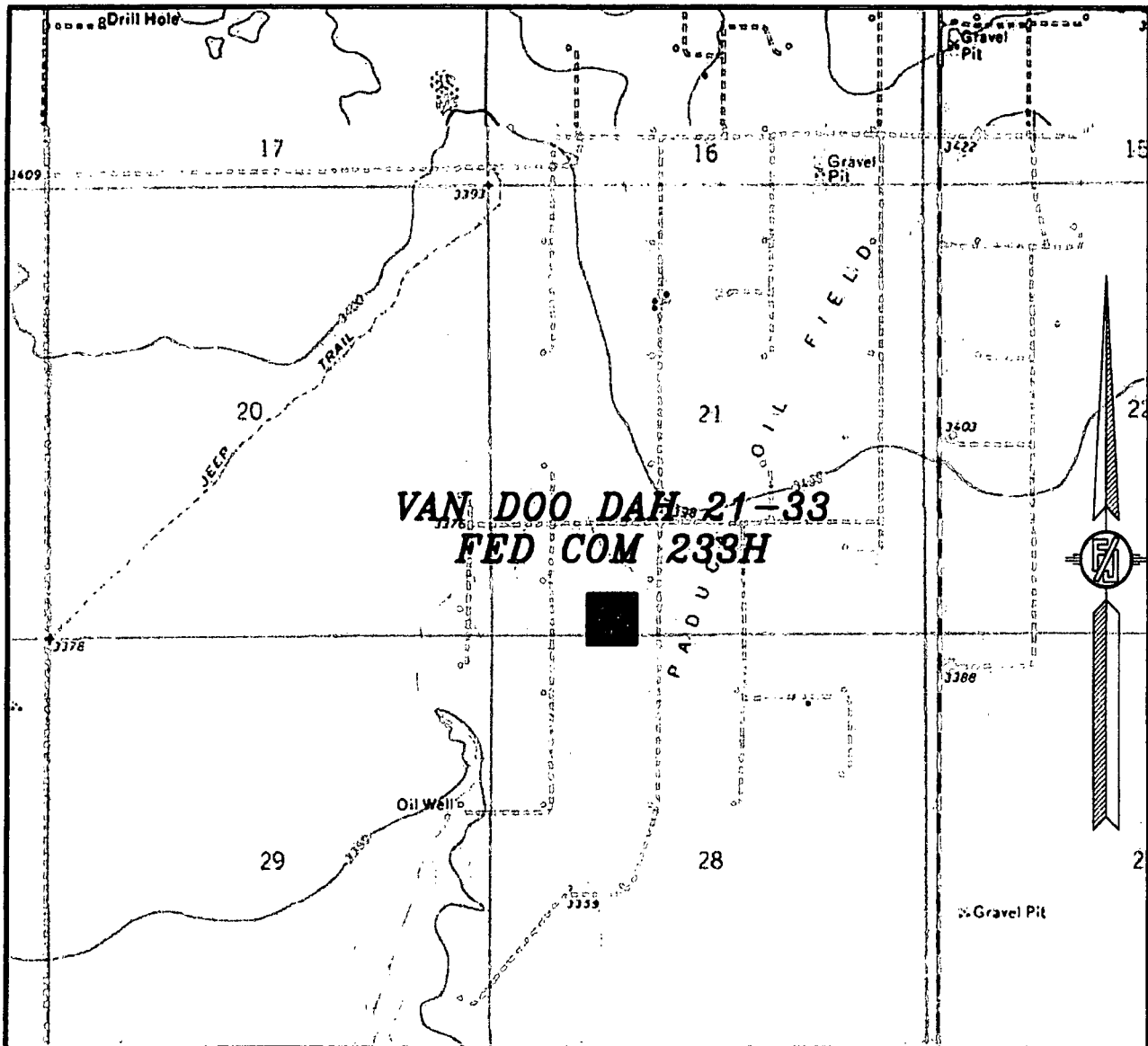
DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH 21-33 FED COM 233H
 LOCATED 200 FT. FROM THE SOUTH LINE
 AND 1480 FT. FROM THE WEST LINE OF
 SECTION 21, TOWNSHIP 25 SOUTH,
 RANGE 32 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 5884C

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

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
LOCATION VERIFICATION MAP



USGS QUAD MAP:
PADUCA BREAKS WEST

NOT TO SCALE

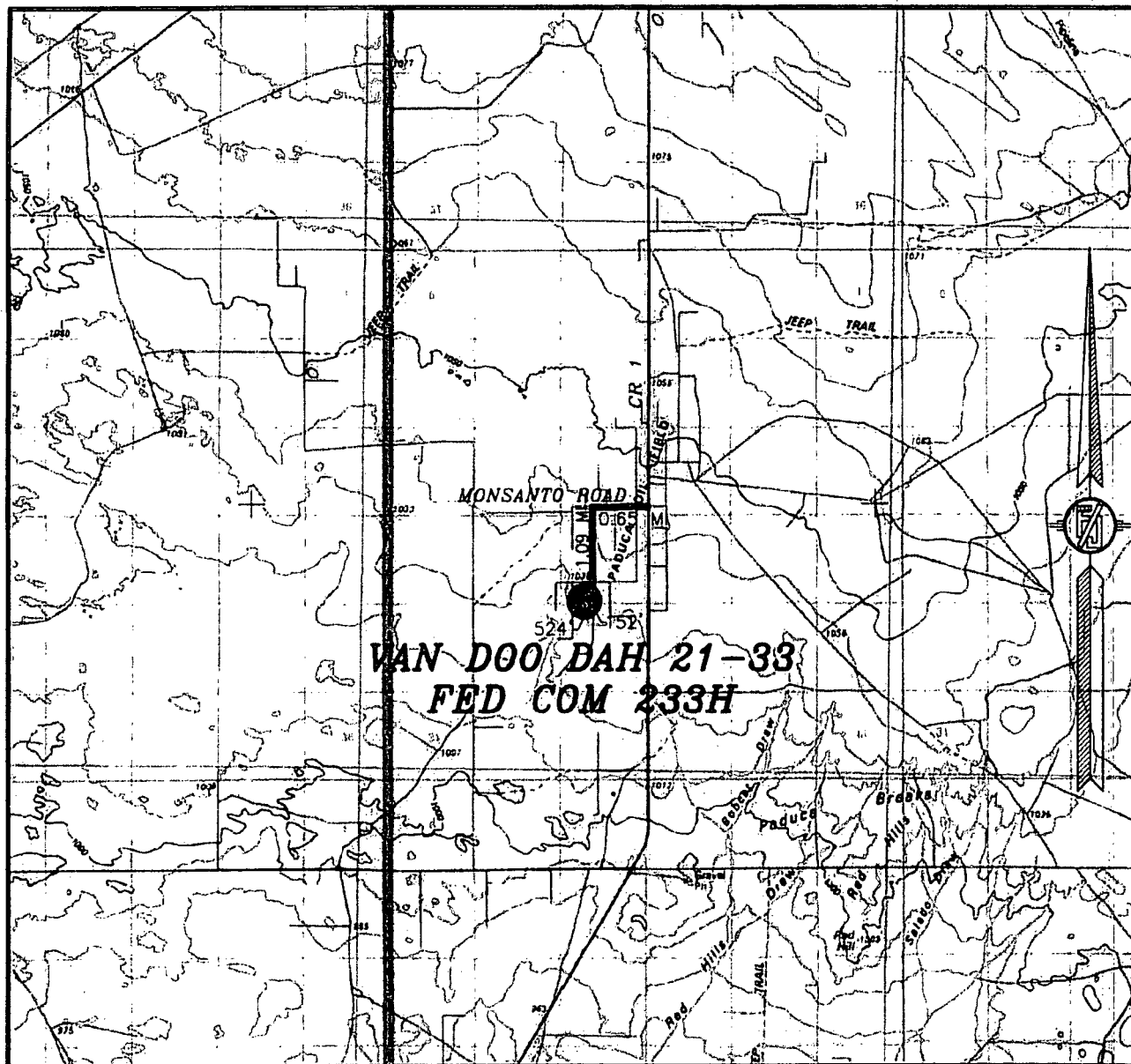
DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH 21-33 FED COM 233H
LOCATED 200 FT. FROM THE SOUTH LINE
AND 1480 FT. FROM THE WEST LINE OF
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 5884C

MADRON SURVEYING, INC. 301 SOUTH CANAL CARLSBAD, NEW MEXICO
(575) 234-3541

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
VICINITY MAP



DISTANCES IN MILES

NOT TO SCALE

DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH 21-33 FED COM 233H
LOCATED 200 FT. FROM THE SOUTH LINE
AND 1480 FT. FROM THE WEST LINE OF
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

DIRECTIONS TO LOCATION

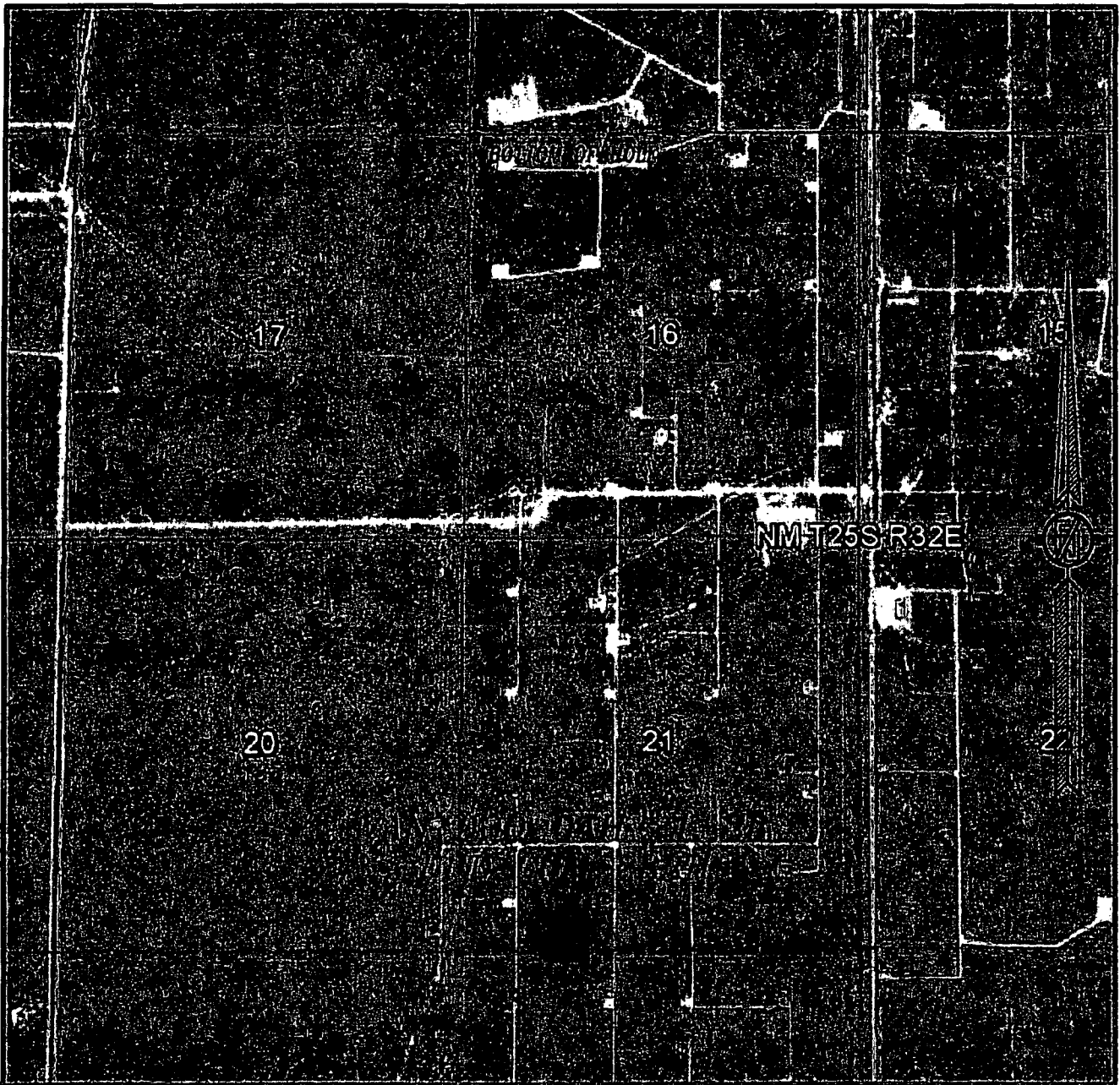
FROM THE INTERSECTION OF CR 1 (ORLA) & MONSANTO ROAD GO WEST
APPROX. 0.85 MILE, GO SOUTH ON 20' CALICHE LEASE ROAD FOR APPROX.
1.09 MILES, FOLLOW ROAD SURVEY WEST FOR 152', THEN GO
NORTH-NORTHWEST-WEST 524' TO NORTHEAST PAD CORNER FOR THIS
LOCATION.

NOVEMBER 6, 2018

SURVEY NO. 5884C

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

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
AERIAL PHOTO



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

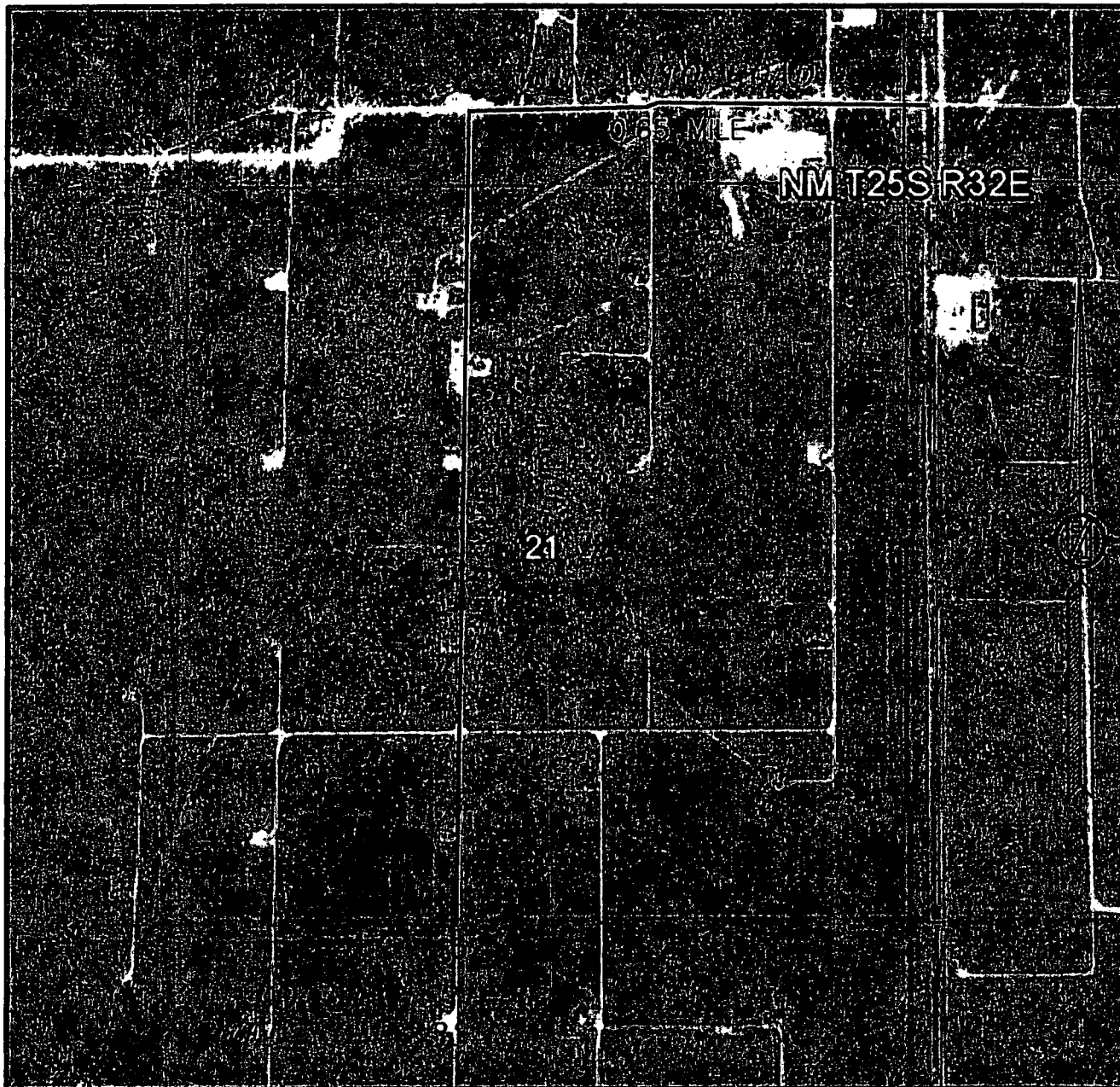
DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH-21-33 FED COM 233H
LOCATED 200 FT. FROM THE SOUTH LINE
AND 1480 FT. FROM THE WEST LINE OF
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 5884C

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

SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
ACCESS AERIAL ROUTE MAP



NOT TO SCALE
AERIAL PHOTO:
GOOGLE EARTH
NOVEMBER 2015

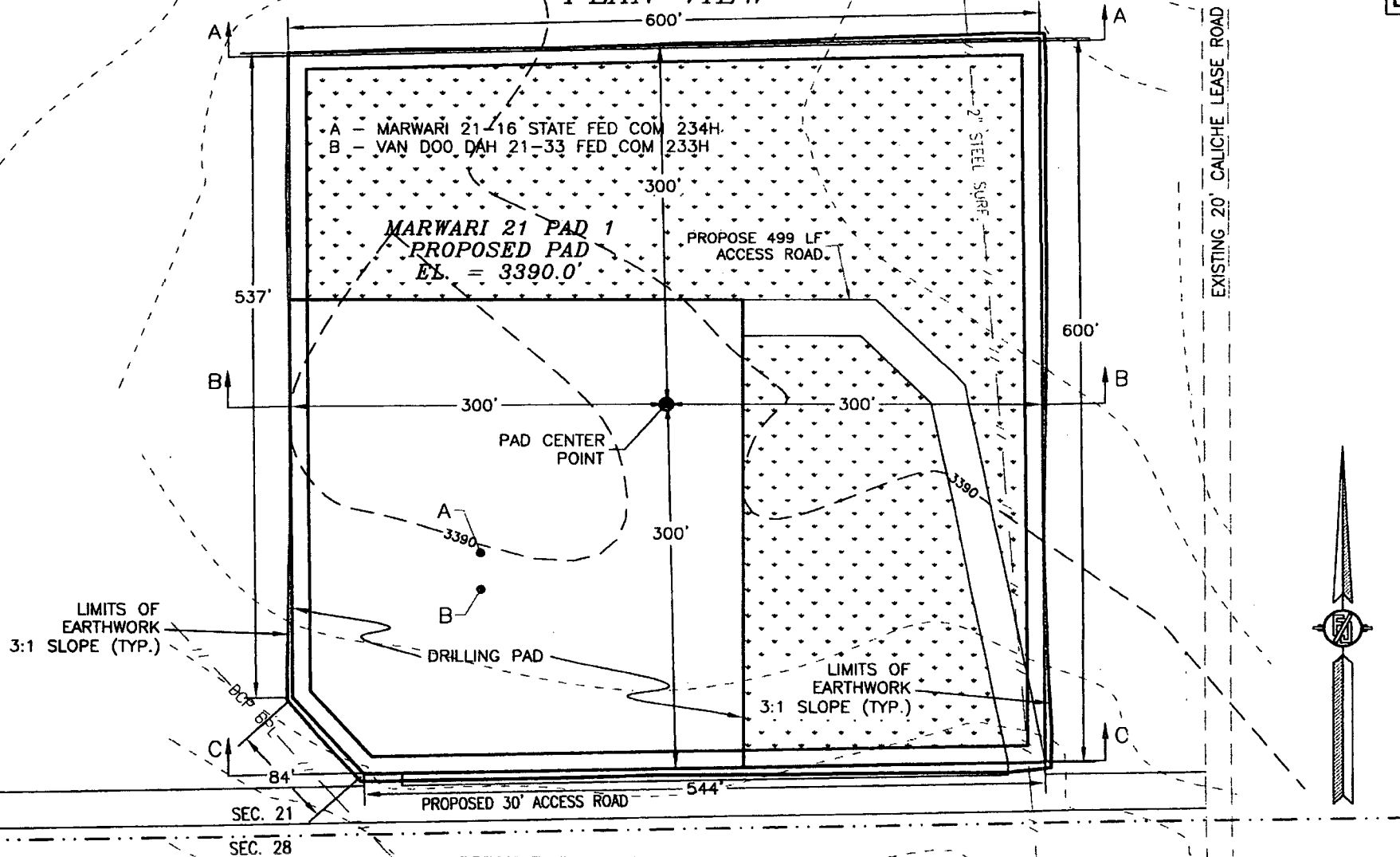
DEVON ENERGY PRODUCTION COMPANY, L.P.
VAN DOO DAH 21-33 FED COM 233H
LOCATED 200 FT. FROM THE SOUTH LINE
AND 1480 FT. FROM THE WEST LINE OF
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

SURVEY NO. 5884C

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

PLAN VIEW



DEVON ENERGY PRODUCTION COMPANY, L.P.
 GRADING PLAN AND CROSS SECTIONS
VAN DOO DAH 21-33 FED COM 233H
 SECTION 21, TOWNSHIP 25 SOUTH,
 RANGE 32 EAST, N.M.P.M.
 LEA COUNTY, STATE OF NEW MEXICO

NOVEMBER 6, 2018

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

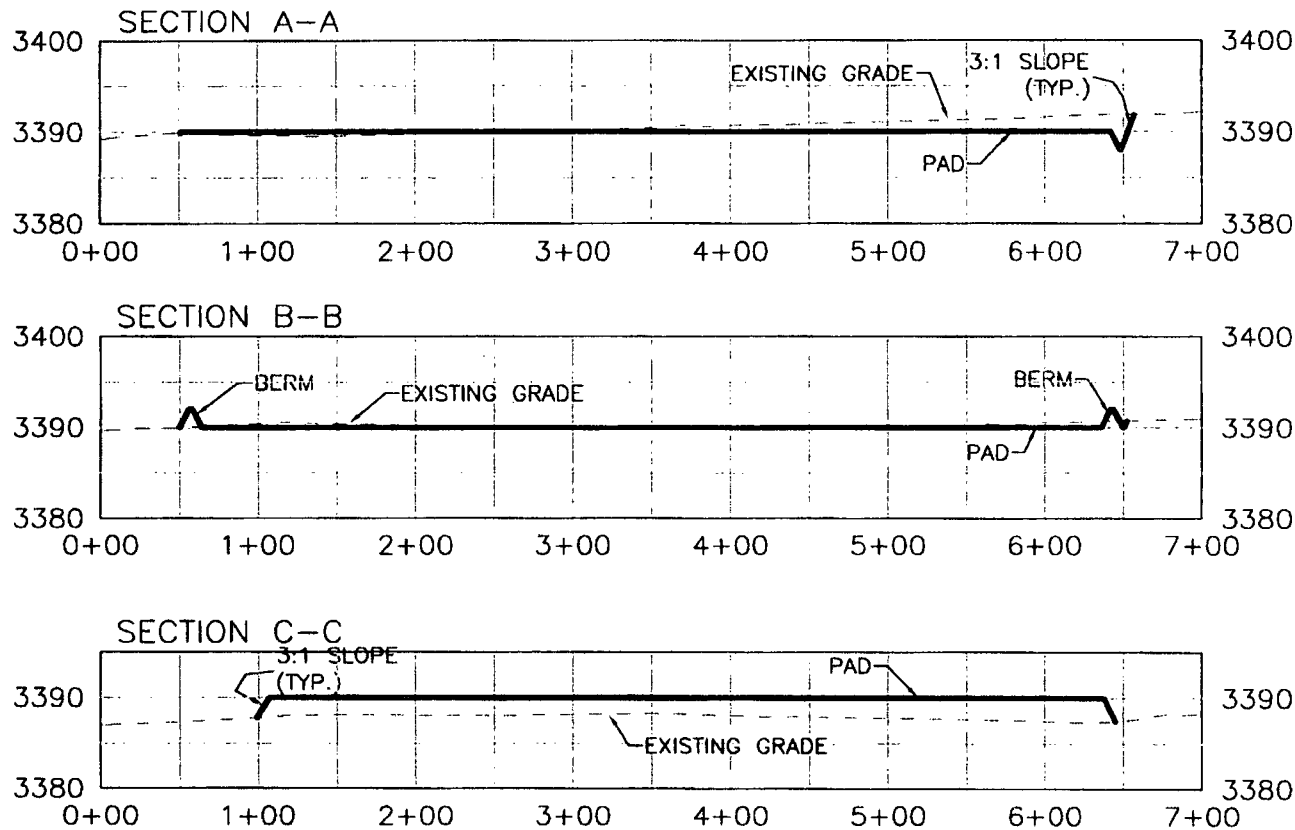
012 60 120 240
 SCALE 1" = 120'

CUT	FILL	NET
3259 CU. YD	5520 CU. YD	2261 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

SHEET 1-2
 SURVEY NO. 5884C

CROSS SECTIONS



DEVON ENERGY PRODUCTION COMPANY, L.P.
GRADING PLAN AND CROSS SECTIONS
VAN DOO DAH 21-33 FED COM 233H
SECTION 21, TOWNSHIP 25 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

0 12 60 120 240
SCALE 1" = 120' - 1" = 20' VER

CUT	FILL	NET
3259 CU. YD	5520 CU. YD	2261 CU. YD (FILL)

EARTHWORK QUANTITIES ARE ESTIMATED

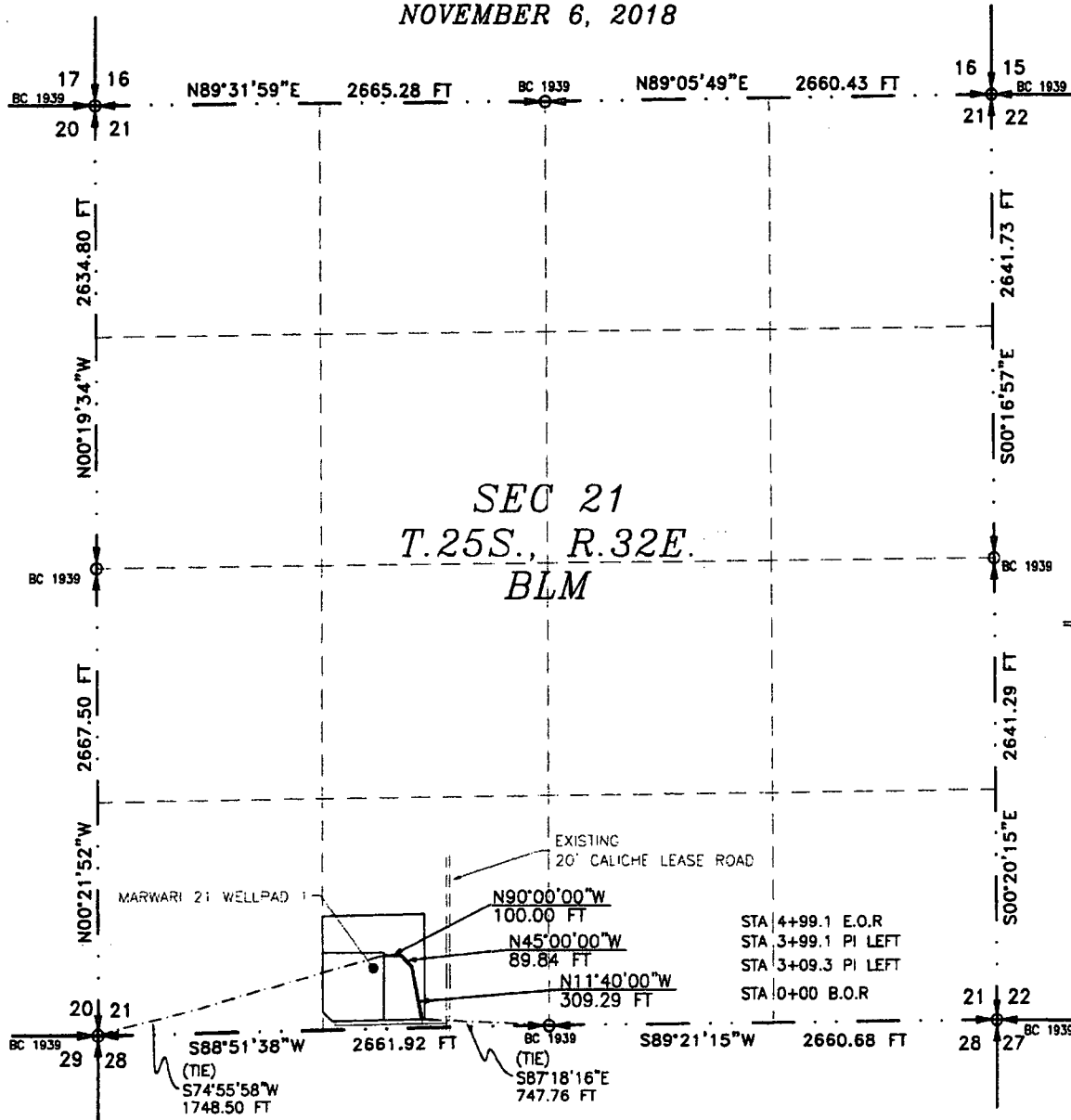
NOVEMBER 6, 2018
MADRON SURVEYING, INC. 301 SOUTH CANAL, CARLSBAD, NEW MEXICO
(575) 234-3341

SHEET 2-2
SURVEY NO. 5884C

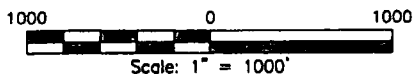
ACCESS ROAD PLAT

ACCESS ROAD TO THE MARWARI 21 WELLPAD 1
(MARWARI 21-16 STATE FED COM 234H & VAN DOO DAH 21-33 FED COM 233H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018



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.

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 DAY OF NOVEMBER 2018

FILMON F. JARAMILLO, S.S. 12797
MADRON SURVEYING, INC.
301 SOUTH CANAL
CARLSBAD, NEW MEXICO 88220
Phone (575) 234-3341

SURVEY NO. 5884C
CARLSBAD, NEW MEXICO

ACCESS ROAD PLAT
ACCESS ROAD TO THE MARWARI 21 WELLPAD 1
(MARWARI 21-16 STATE FED COM 234H & VAN DOO DAH 21-33 FED COM 233H)

DEVON ENERGY PRODUCTION COMPANY, L.P.
CENTERLINE SURVEY OF AN ACCESS ROAD CROSSING
SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
NOVEMBER 6, 2018

DESCRIPTION

A STRIP OF LAND 30 FEET WIDE CROSSING BUREAU OF LAND MANAGEMENT LAND IN SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, STATE OF NEW MEXICO AND BEING 15 FEET EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE SURVEY:

BEGINNING AT A POINT WITHIN THE SE/4 SW/4 OF SAID SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M., WHENCE THE SOUTH QUARTER CORNER OF SAID SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S87°18'16"E, A DISTANCE OF 747.76 FEET;

THENCE N11°40'00"W A DISTANCE OF 309.29 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N45°00'00"W A DISTANCE OF 89.84 FEET TO AN ANGLE POINT OF THE LINE HEREIN DESCRIBED;

THENCE N90°00'00"W A DISTANCE OF 100.00 FEET THE TERMINUS OF THIS CENTERLINE SURVEY, WHENCE THE SOUTHWEST CORNER OF SAID SECTION 21, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M. BEARS S74°55'58"W, A DISTANCE OF 1748.50 FEET;

SAID STRIP OF LAND BEING 499.13 FEET OR 30.25 RODS IN LENGTH, CONTAINING 0.344 ACRES MORE OR LESS AND BEING ALLOCATED BY FORTIES AS FOLLOWS:

SE/4 SW/4 499.13 L.F. 30.25 RODS 0.344 ACRES

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.

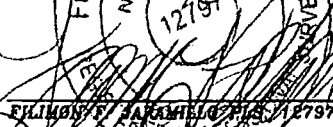
SHEET: 2-2

MADRON SURVEYING, INC.

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 12TH DAY OF NOVEMBER, 2018


FILMON F. JARAMILLO, 12797
301 SOUTH CANAL
(575) 234-3341

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

SURVEY NO. 5884C

CARLSBAD, NEW MEXICO

Devon Energy, Van Doo Dah 21-33 Fed 233H

1. Geologic Formations

TVD of target	10,328'	Pilot hole depth	N/A
MD at TD:	20,554'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	790		
Salado	1160		
Base of Salt	4336		
Delaware	4570		
Lower Brushy Canyon	8330		
Bone Spring	8540		
Leonard A	8675		
Leonard B	9035		
Leonard C	9280		
1 st Bone Spring Sand	9545		
2 nd Bone Spring Lime	10030		
2 nd Bone Spring Sand	10230		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	815'	13.375"	48	H40	STC	1.125	1	1.6
12.25"	0	4,450'	9.625"	40	J55	LTC	1.125	1	1.6
8.75"	0	20,424'	5.5"	17	P110	BTC	1.125	1	1.6
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N

Devon Energy, Van Doo Dah 21-33 Fed 233H

Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft ³ / sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	632	14.8	1.33	6.32	6	Lead: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Inter.	742	10.3	3.65	22.06	24	Lead: (50:50) Poz (Silica) 3 lbm/sk Kol-Seal, .125 lbm/sk Poly-E-Flake
	153	14.8	1.33	6.32	6	Tail: Class C Cement + 0.125 lbs/sack Poly-F-Flake
Prod.	801	9	3.27	13.5	21	Lead: Tuned Light Cement
	2487	14.5	1.2	5.31	25	Tail: (50:50) Clas H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

Casing String	TOC	% Excess
13-3/8" Surface	0'	50%
9-5/8" Intermediate	0'	30%
5-1/2" Production	4250'	25%

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
---	--

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. ○ Wellhead will be installed by wellhead representatives. ○ If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. ○ Wellhead representative will install the test plug for the initial BOP test. ○ Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the packoff, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. ○ If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. ○ Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. ○ Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi. Low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a Kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

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	Devon's proposed wellhead manufactures will be EMC Technologies, Cactus Wellhead, or Cameron. The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	815	FW Gel	8.5-9.0	28-34	N/C
815	4,250	Saturated Brine	10.0-11.0	28-34	N/C
4,250	20,554	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and eight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	KOP to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4942 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? Potentially

1. If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
2. The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
3. The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

1. Spudder rig will move in and drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
2. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
3. The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
4. A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
5. Spudder rig operations is expected to take 4-5 days per well on a multi well pad.
6. The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
7. Drilling operations will be performed with the drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

- ☒ Directional Plan
☐ Other, describe

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 21-T25S-R32E

Van Doo Dah 21-33 Fed Com 233H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

16 November, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3415.20ft
Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project	Lea County (NAD83 New Mexico East)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Sec 21-T25S-R32E			
Site Position:		Northing:	409,130.93 usft	Latitude: 32.123139
From:	Map	Easting:	740,905.34 usft	Longitude: -103.688684
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.34 °

Well	Van Doo Dah 21-33 Fed Com 233H			
Well Position	+N/-S	0.00 ft	Northing:	404,059.28 usft
	+E/-W	0.00 ft	Easting:	742,415.57 usft
Position Uncertainty	0.50 ft	Wellhead Elevation:	Ground Level: 3,390.20 ft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/15/2018	6.84	59.92	47,713.19180778

Design	Permit Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	353.44

Plan Survey Tool Program	Date	11/15/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,554.39 Permit Plan 1 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,556.91	10.57	277.92	3,550.93	13.40	-96.28	1.00	1.00	0.00	277.92	
9,003.78	10.57	277.92	8,905.38	151.07	-1,085.81	0.00	0.00	0.00	0.00	
9,708.38	0.00	0.00	9,606.00	160.00	-1,150.00	1.50	-1.50	0.00	180.00	
10,058.42	0.00	0.00	9,956.04	160.00	-1,150.00	0.00	0.00	0.00	0.00	
10,958.42	90.00	359.79	10,529.00	732.96	-1,152.08	10.00	10.00	0.00	359.79	PBHL - Van Doo Dah
20,554.39	90.00	359.79	10,529.00	10,328.86	-1,186.90	0.00	0.00	0.00	0.00	PBHL - Van Doo Dah

Planning Report - Geographic

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Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
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Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
100.00	0.00	0.00	100.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
200.00	0.00	0.00	200.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
300.00	0.00	0.00	300.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
400.00	0.00	0.00	400.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
500.00	0.00	0.00	500.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
600.00	0.00	0.00	600.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
700.00	0.00	0.00	700.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
800.00	0.00	0.00	800.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
900.00	0.00	0.00	900.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,000.00	0.00	0.00	1,000.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,100.00	0.00	0.00	1,100.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,200.00	0.00	0.00	1,200.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,300.00	0.00	0.00	1,300.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,400.00	0.00	0.00	1,400.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,500.00	0.00	0.00	1,500.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,600.00	0.00	0.00	1,600.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,700.00	0.00	0.00	1,700.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,800.00	0.00	0.00	1,800.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
1,900.00	0.00	0.00	1,900.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,000.00	0.00	0.00	2,000.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,100.00	0.00	0.00	2,100.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,200.00	0.00	0.00	2,200.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,300.00	0.00	0.00	2,300.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,400.00	0.00	0.00	2,400.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,500.00	0.00	0.00	2,500.00	0.00	0.00	404,059.28	742,415.57	32.109173	-103.683905
2,600.00	1.00	277.92	2,599.99	0.12	-0.86	404,059.40	742,414.70	32.109173	-103.683908
2,700.00	2.00	277.92	2,699.96	0.48	-3.46	404,059.76	742,412.11	32.109175	-103.683916
2,800.00	3.00	277.92	2,799.86	1.08	-7.78	404,060.36	742,407.79	32.109176	-103.683930
2,900.00	4.00	277.92	2,899.68	1.92	-13.82	404,061.20	742,401.74	32.109179	-103.683950
3,000.00	5.00	277.92	2,999.37	3.00	-21.59	404,062.28	742,393.97	32.109182	-103.683975
3,100.00	6.00	277.92	3,098.90	4.33	-31.09	404,063.60	742,384.48	32.109186	-103.684005
3,200.00	7.00	277.92	3,198.26	5.89	-42.30	404,065.16	742,373.27	32.109190	-103.684042
3,300.00	8.00	277.92	3,297.40	7.68	-55.23	404,066.96	742,360.34	32.109195	-103.684083
3,400.00	9.00	277.92	3,396.30	9.72	-69.87	404,069.00	742,345.70	32.109201	-103.684131
3,500.00	10.00	277.92	3,494.93	12.00	-86.21	404,071.27	742,329.35	32.109208	-103.684183
3,556.91	10.57	277.92	3,550.93	13.40	-96.28	404,072.67	742,319.29	32.109212	-103.684216
3,600.00	10.57	277.92	3,593.29	14.48	-104.11	404,073.76	742,311.46	32.109215	-103.684241
3,700.00	10.57	277.92	3,691.59	17.01	-122.27	404,076.29	742,293.29	32.109222	-103.684300
3,800.00	10.57	277.92	3,789.89	19.54	-140.44	404,078.82	742,275.13	32.109229	-103.684358
3,900.00	10.57	277.92	3,888.20	22.07	-158.61	404,081.35	742,256.96	32.109236	-103.684417
4,000.00	10.57	277.92	3,986.50	24.59	-176.77	404,083.87	742,238.79	32.109244	-103.684476
4,100.00	10.57	277.92	4,084.80	27.12	-194.94	404,086.40	742,220.63	32.109251	-103.684534
4,200.00	10.57	277.92	4,183.11	29.65	-213.11	404,088.93	742,202.46	32.109258	-103.684593
4,300.00	10.57	277.92	4,281.41	32.18	-231.28	404,091.46	742,184.29	32.109265	-103.684651
4,400.00	10.57	277.92	4,379.71	34.71	-249.44	404,093.98	742,166.12	32.109273	-103.684710
4,500.00	10.57	277.92	4,478.02	37.23	-267.61	404,096.51	742,147.96	32.109280	-103.684769
4,600.00	10.57	277.92	4,576.32	39.76	-285.78	404,099.04	742,129.79	32.109287	-103.684827
4,700.00	10.57	277.92	4,674.62	42.29	-303.94	404,101.57	742,111.62	32.109294	-103.684886
4,800.00	10.57	277.92	4,772.93	44.82	-322.11	404,104.09	742,093.46	32.109302	-103.684944
4,900.00	10.57	277.92	4,871.23	47.34	-340.28	404,106.62	742,075.29	32.109309	-103.685003
5,000.00	10.57	277.92	4,969.53	49.87	-358.45	404,109.15	742,057.12	32.109316	-103.685062
5,100.00	10.57	277.92	5,067.84	52.40	-376.61	404,111.68	742,038.95	32.109323	-103.685120
5,200.00	10.57	277.92	5,166.14	54.93	-394.78	404,114.20	742,020.79	32.109331	-103.685179
5,300.00	10.57	277.92	5,264.44	57.45	-412.95	404,116.73	742,002.62	32.109338	-103.685238

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3415.20ft
Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	10.57	277.92	5,362.75	59.98	-431.11	404,119.26	741,984.45	32.109345	-103.685296
5,500.00	10.57	277.92	5,461.05	62.51	-449.28	404,121.79	741,966.29	32.109352	-103.685355
5,600.00	10.57	277.92	5,559.35	65.04	-467.45	404,124.32	741,948.12	32.109360	-103.685413
5,700.00	10.57	277.92	5,657.66	67.56	-485.62	404,126.84	741,929.95	32.109367	-103.685472
5,800.00	10.57	277.92	5,755.96	70.09	-503.78	404,129.37	741,911.79	32.109374	-103.685531
5,900.00	10.57	277.92	5,854.26	72.62	-521.95	404,131.90	741,893.62	32.109381	-103.685589
6,000.00	10.57	277.92	5,952.57	75.15	-540.12	404,134.43	741,875.45	32.109389	-103.685648
6,100.00	10.57	277.92	6,050.87	77.67	-558.28	404,136.95	741,857.28	32.109396	-103.685707
6,200.00	10.57	277.92	6,149.18	80.20	-576.45	404,139.48	741,839.12	32.109403	-103.685765
6,300.00	10.57	277.92	6,247.48	82.73	-594.62	404,142.01	741,820.95	32.109410	-103.685824
6,400.00	10.57	277.92	6,345.78	85.26	-612.78	404,144.54	741,802.78	32.109418	-103.685882
6,500.00	10.57	277.92	6,444.09	87.78	-630.95	404,147.06	741,784.62	32.109425	-103.685941
6,600.00	10.57	277.92	6,542.39	90.31	-649.12	404,149.59	741,766.45	32.109432	-103.686000
6,700.00	10.57	277.92	6,640.69	92.84	-667.29	404,152.12	741,748.28	32.109439	-103.686058
6,800.00	10.57	277.92	6,739.00	95.37	-685.45	404,154.65	741,730.12	32.109447	-103.686117
6,900.00	10.57	277.92	6,837.30	97.89	-703.62	404,157.17	741,711.95	32.109454	-103.686176
7,000.00	10.57	277.92	6,935.60	100.42	-721.79	404,159.70	741,693.78	32.109461	-103.686234
7,100.00	10.57	277.92	7,033.91	102.95	-739.95	404,162.23	741,675.61	32.109468	-103.686293
7,200.00	10.57	277.92	7,132.21	105.48	-758.12	404,164.76	741,657.45	32.109476	-103.686351
7,300.00	10.57	277.92	7,230.51	108.01	-776.29	404,167.28	741,639.28	32.109483	-103.686410
7,400.00	10.57	277.92	7,328.82	110.53	-794.46	404,169.81	741,621.11	32.109490	-103.686469
7,500.00	10.57	277.92	7,427.12	113.06	-812.62	404,172.34	741,602.95	32.109497	-103.686527
7,600.00	10.57	277.92	7,525.42	115.59	-830.79	404,174.87	741,584.78	32.109505	-103.686586
7,700.00	10.57	277.92	7,623.73	118.12	-848.96	404,177.39	741,566.61	32.109512	-103.686645
7,800.00	10.57	277.92	7,722.03	120.64	-867.12	404,179.92	741,548.44	32.109519	-103.686703
7,900.00	10.57	277.92	7,820.33	123.17	-885.29	404,182.45	741,530.28	32.109526	-103.686762
8,000.00	10.57	277.92	7,918.64	125.70	-903.46	404,184.98	741,512.11	32.109534	-103.686820
8,100.00	10.57	277.92	8,016.94	128.23	-921.63	404,187.50	741,493.94	32.109541	-103.686879
8,200.00	10.57	277.92	8,115.24	130.75	-939.79	404,190.03	741,475.78	32.109548	-103.686938
8,300.00	10.57	277.92	8,213.55	133.28	-957.96	404,192.56	741,457.61	32.109555	-103.686996
8,400.00	10.57	277.92	8,311.85	135.81	-976.13	404,195.09	741,439.44	32.109563	-103.687055
8,500.00	10.57	277.92	8,410.15	138.34	-994.29	404,197.62	741,421.28	32.109570	-103.687114
8,600.00	10.57	277.92	8,508.46	140.86	-1,012.46	404,200.14	741,403.11	32.109577	-103.687172
8,700.00	10.57	277.92	8,606.76	143.39	-1,030.63	404,202.67	741,384.94	32.109584	-103.687231
8,800.00	10.57	277.92	8,705.06	145.92	-1,048.79	404,205.20	741,366.77	32.109592	-103.687289
8,900.00	10.57	277.92	8,803.37	148.45	-1,066.96	404,207.73	741,348.61	32.109599	-103.687348
9,000.00	10.57	277.92	8,901.67	150.97	-1,085.13	404,210.25	741,330.44	32.109606	-103.687407
9,003.78	10.57	277.92	8,905.38	151.07	-1,085.81	404,210.35	741,329.75	32.109606	-103.687409
9,100.00	9.13	277.92	9,000.19	153.34	-1,102.11	404,212.62	741,313.45	32.109613	-103.687461
9,200.00	7.63	277.92	9,099.12	155.34	-1,116.54	404,214.62	741,299.03	32.109619	-103.687508
9,300.00	6.13	277.92	9,198.40	156.99	-1,128.40	404,216.27	741,287.17	32.109623	-103.687546
9,400.00	4.63	277.92	9,297.95	158.29	-1,137.68	404,217.56	741,277.89	32.109627	-103.687576
9,500.00	3.13	277.92	9,397.72	159.22	-1,144.37	404,218.50	741,271.20	32.109630	-103.687598
9,600.00	1.63	277.92	9,497.63	159.79	-1,148.48	404,219.07	741,267.09	32.109631	-103.687611
9,700.00	0.13	277.92	9,597.62	160.00	-1,149.99	404,219.28	741,265.58	32.109632	-103.687616
9,708.38	0.00	0.00	9,606.00	160.00	-1,150.00	404,219.28	741,265.57	32.109632	-103.687616
9,800.00	0.00	0.00	9,697.62	160.00	-1,150.00	404,219.28	741,265.57	32.109632	-103.687616
9,900.00	0.00	0.00	9,797.62	160.00	-1,150.00	404,219.28	741,265.57	32.109632	-103.687616
10,000.00	0.00	0.00	9,897.62	160.00	-1,150.00	404,219.28	741,265.57	32.109632	-103.687616
10,058.42	0.00	0.00	9,956.04	160.00	-1,150.00	404,219.28	741,265.57	32.109632	-103.687616
KOP & FTP @ 10058' MD, 360' FSL, 330' FWL									
10,100.00	4.16	359.79	9,997.58	161.51	-1,150.01	404,220.79	741,265.56	32.109636	-103.687616
10,200.00	14.16	359.79	10,096.18	177.40	-1,150.06	404,236.68	741,265.51	32.109680	-103.687616
10,300.00	24.16	359.79	10,190.52	210.18	-1,150.18	404,269.46	741,265.39	32.109770	-103.687616

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3415.20ft
Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,400.00	34.16	359.79	10,277.74	258.84	-1,150.36	404,318.12	741,265.21	32.109904	-103.687615
10,500.00	44.16	359.79	10,355.18	321.90	-1,150.59	404,381.18	741,264.98	32.110077	-103.687615
10,600.00	54.16	359.79	10,420.50	397.46	-1,150.86	404,456.74	741,264.71	32.110285	-103.687614
10,700.00	64.16	359.79	10,471.70	483.21	-1,151.17	404,542.48	741,264.40	32.110520	-103.687614
10,800.00	74.16	359.79	10,507.24	576.54	-1,151.51	404,635.82	741,264.06	32.110777	-103.687613
10,900.00	84.16	359.79	10,526.02	674.63	-1,151.87	404,733.91	741,263.70	32.111047	-103.687612
10,958.42	90.00	359.79	10,529.00	732.96	-1,152.08	404,792.23	741,263.49	32.111207	-103.687612
11,000.00	90.00	359.79	10,529.00	774.53	-1,152.23	404,833.81	741,263.34	32.111321	-103.687611
11,100.00	90.00	359.79	10,529.00	874.53	-1,152.59	404,933.81	741,262.98	32.111596	-103.687611
11,200.00	90.00	359.79	10,529.00	974.53	-1,152.96	405,033.81	741,262.61	32.111871	-103.687610
11,300.00	90.00	359.79	10,529.00	1,074.53	-1,153.32	405,133.81	741,262.25	32.112146	-103.687609
11,400.00	90.00	359.79	10,529.00	1,174.53	-1,153.68	405,233.81	741,261.89	32.112421	-103.687608
11,500.00	90.00	359.79	10,529.00	1,274.53	-1,154.04	405,333.80	741,261.52	32.112696	-103.687607
11,600.00	90.00	359.79	10,529.00	1,374.53	-1,154.41	405,433.80	741,261.16	32.112970	-103.687607
11,700.00	90.00	359.79	10,529.00	1,474.53	-1,154.77	405,533.80	741,260.80	32.113245	-103.687606
11,800.00	90.00	359.79	10,529.00	1,574.53	-1,155.13	405,633.80	741,260.44	32.113520	-103.687605
11,900.00	90.00	359.79	10,529.00	1,674.53	-1,155.50	405,733.80	741,260.07	32.113795	-103.687604
12,000.00	90.00	359.79	10,529.00	1,774.52	-1,155.86	405,833.80	741,259.71	32.114070	-103.687604
12,100.00	90.00	359.79	10,529.00	1,874.52	-1,156.22	405,933.80	741,259.35	32.114345	-103.687603
12,200.00	90.00	359.79	10,529.00	1,974.52	-1,156.58	406,033.80	741,258.98	32.114620	-103.687602
12,300.00	90.00	359.79	10,529.00	2,074.52	-1,156.95	406,133.80	741,258.62	32.114895	-103.687601
12,400.00	90.00	359.79	10,529.00	2,174.52	-1,157.31	406,233.80	741,258.26	32.115170	-103.687601
12,500.00	90.00	359.79	10,529.00	2,274.52	-1,157.67	406,333.80	741,257.90	32.115444	-103.687600
12,600.00	90.00	359.79	10,529.00	2,374.52	-1,158.04	406,433.80	741,257.53	32.115719	-103.687599
12,700.00	90.00	359.79	10,529.00	2,474.52	-1,158.40	406,533.79	741,257.17	32.115994	-103.687598
12,800.00	90.00	359.79	10,529.00	2,574.52	-1,158.76	406,633.79	741,256.81	32.116269	-103.687598
12,900.00	90.00	359.79	10,529.00	2,674.52	-1,159.13	406,733.79	741,256.44	32.116544	-103.687597
13,000.00	90.00	359.79	10,529.00	2,774.52	-1,159.49	406,833.79	741,256.08	32.116819	-103.687596
13,100.00	90.00	359.79	10,529.00	2,874.52	-1,159.85	406,933.79	741,255.72	32.117094	-103.687595
13,200.00	90.00	359.79	10,529.00	2,974.52	-1,160.21	407,033.79	741,255.36	32.117369	-103.687595
13,300.00	90.00	359.79	10,529.00	3,074.52	-1,160.58	407,133.79	741,254.99	32.117643	-103.687594
13,400.00	90.00	359.79	10,529.00	3,174.52	-1,160.94	407,233.79	741,254.63	32.117918	-103.687593
13,500.00	90.00	359.79	10,529.00	3,274.51	-1,161.30	407,333.79	741,254.27	32.118193	-103.687592
13,600.00	90.00	359.79	10,529.00	3,374.51	-1,161.67	407,433.79	741,253.90	32.118468	-103.687591
13,700.00	90.00	359.79	10,529.00	3,474.51	-1,162.03	407,533.79	741,253.54	32.118743	-103.687591
13,800.00	90.00	359.79	10,529.00	3,574.51	-1,162.39	407,633.78	741,253.18	32.119018	-103.687590
13,900.00	90.00	359.79	10,529.00	3,674.51	-1,162.75	407,733.78	741,252.81	32.119293	-103.687589
14,000.00	90.00	359.79	10,529.00	3,774.51	-1,163.12	407,833.78	741,252.45	32.119568	-103.687588
14,100.00	90.00	359.79	10,529.00	3,874.51	-1,163.48	407,933.78	741,252.09	32.119842	-103.687588
14,200.00	90.00	359.79	10,529.00	3,974.51	-1,163.84	408,033.78	741,251.73	32.120117	-103.687587
14,300.00	90.00	359.79	10,529.00	4,074.51	-1,164.21	408,133.78	741,251.36	32.120392	-103.687586
14,400.00	90.00	359.79	10,529.00	4,174.51	-1,164.57	408,233.78	741,251.00	32.120667	-103.687585
14,500.00	90.00	359.79	10,529.00	4,274.51	-1,164.93	408,333.78	741,250.64	32.120942	-103.687585
14,600.00	90.00	359.79	10,529.00	4,374.51	-1,165.29	408,433.78	741,250.27	32.121217	-103.687584
14,700.00	90.00	359.79	10,529.00	4,474.51	-1,165.66	408,533.78	741,249.91	32.121492	-103.687583
14,800.00	90.00	359.79	10,529.00	4,574.51	-1,166.02	408,633.78	741,249.55	32.121767	-103.687582
14,900.00	90.00	359.79	10,529.00	4,674.51	-1,166.38	408,733.78	741,249.19	32.122042	-103.687582
15,000.00	90.00	359.79	10,529.00	4,774.51	-1,166.75	408,833.77	741,248.82	32.122316	-103.687581
15,100.00	90.00	359.79	10,529.00	4,874.50	-1,167.11	408,933.77	741,248.46	32.122591	-103.687580
15,200.00	90.00	359.79	10,529.00	4,974.50	-1,167.47	409,033.77	741,248.10	32.122866	-103.687579
15,300.00	90.00	359.79	10,529.00	5,074.50	-1,167.83	409,133.77	741,247.73	32.123141	-103.687578
15,305.00	90.00	359.79	10,529.00	5,079.50	-1,167.85	409,138.77	741,247.72	32.123155	-103.687578
Cross Section @ 15305' MD, 0' FSL, 330' FWL									
15,400.00	90.00	359.79	10,529.00	5,174.50	-1,168.20	409,233.77	741,247.37	32.123416	-103.687578

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3415.20ft
Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,500.00	90.00	359.79	10,529.00	5,274.50	-1,168.56	409,333.77	741,247.01	32.123691	-103.687577
15,600.00	90.00	359.79	10,529.00	5,374.50	-1,168.92	409,433.77	741,246.65	32.123966	-103.687576
15,700.00	90.00	359.79	10,529.00	5,474.50	-1,169.29	409,533.77	741,246.28	32.124241	-103.687575
15,800.00	90.00	359.79	10,529.00	5,574.50	-1,169.65	409,633.77	741,245.92	32.124515	-103.687575
15,900.00	90.00	359.79	10,529.00	5,674.50	-1,170.01	409,733.77	741,245.56	32.124790	-103.687574
16,000.00	90.00	359.79	10,529.00	5,774.50	-1,170.37	409,833.77	741,245.19	32.125065	-103.687573
16,100.00	90.00	359.79	10,529.00	5,874.50	-1,170.74	409,933.77	741,244.83	32.125340	-103.687572
16,200.00	90.00	359.79	10,529.00	5,974.50	-1,171.10	410,033.76	741,244.47	32.125615	-103.687572
16,300.00	90.00	359.79	10,529.00	6,074.50	-1,171.46	410,133.76	741,244.11	32.125890	-103.687571
16,400.00	90.00	359.79	10,529.00	6,174.50	-1,171.83	410,233.76	741,243.74	32.126165	-103.687570
16,500.00	90.00	359.79	10,529.00	6,274.50	-1,172.19	410,333.76	741,243.38	32.126440	-103.687569
16,600.00	90.00	359.79	10,529.00	6,374.49	-1,172.55	410,433.76	741,243.02	32.126715	-103.687569
16,700.00	90.00	359.79	10,529.00	6,474.49	-1,172.92	410,533.76	741,242.65	32.126989	-103.687568
16,800.00	90.00	359.79	10,529.00	6,574.49	-1,173.28	410,633.76	741,242.29	32.127264	-103.687567
16,900.00	90.00	359.79	10,529.00	6,674.49	-1,173.64	410,733.76	741,241.93	32.127539	-103.687566
17,000.00	90.00	359.79	10,529.00	6,774.49	-1,174.00	410,833.76	741,241.57	32.127814	-103.687565
17,100.00	90.00	359.79	10,529.00	6,874.49	-1,174.37	410,933.76	741,241.20	32.128089	-103.687565
17,200.00	90.00	359.79	10,529.00	6,974.49	-1,174.73	411,033.76	741,240.84	32.128364	-103.687564
17,300.00	90.00	359.79	10,529.00	7,074.49	-1,175.09	411,133.75	741,240.48	32.128639	-103.687563
17,400.00	90.00	359.79	10,529.00	7,174.49	-1,175.46	411,233.75	741,240.11	32.128914	-103.687562
17,500.00	90.00	359.79	10,529.00	7,274.49	-1,175.82	411,333.75	741,239.75	32.129188	-103.687562
17,600.00	90.00	359.79	10,529.00	7,374.49	-1,176.18	411,433.75	741,239.39	32.129463	-103.687561
17,700.00	90.00	359.79	10,529.00	7,474.49	-1,176.54	411,533.75	741,239.02	32.129738	-103.687560
17,800.00	90.00	359.79	10,529.00	7,574.49	-1,176.91	411,633.75	741,238.66	32.130013	-103.687559
17,900.00	90.00	359.79	10,529.00	7,674.49	-1,177.27	411,733.75	741,238.30	32.130288	-103.687559
18,000.00	90.00	359.79	10,529.00	7,774.49	-1,177.63	411,833.75	741,237.94	32.130563	-103.687558
18,100.00	90.00	359.79	10,529.00	7,874.48	-1,178.00	411,933.75	741,237.57	32.130838	-103.687557
18,200.00	90.00	359.79	10,529.00	7,974.48	-1,178.36	412,033.75	741,237.21	32.131113	-103.687556
18,300.00	90.00	359.79	10,529.00	8,074.48	-1,178.72	412,133.75	741,236.85	32.131387	-103.687556
18,400.00	90.00	359.79	10,529.00	8,174.48	-1,179.08	412,233.75	741,236.48	32.131662	-103.687555
18,500.00	90.00	359.79	10,529.00	8,274.48	-1,179.45	412,333.74	741,236.12	32.131937	-103.687554
18,600.00	90.00	359.79	10,529.00	8,374.48	-1,179.81	412,433.74	741,235.76	32.132212	-103.687553
18,700.00	90.00	359.79	10,529.00	8,474.48	-1,180.17	412,533.74	741,235.40	32.132487	-103.687552
18,800.00	90.00	359.79	10,529.00	8,574.48	-1,180.54	412,633.74	741,235.03	32.132762	-103.687552
18,900.00	90.00	359.79	10,529.00	8,674.48	-1,180.90	412,733.74	741,234.67	32.133037	-103.687551
19,000.00	90.00	359.79	10,529.00	8,774.48	-1,181.26	412,833.74	741,234.31	32.133312	-103.687550
19,100.00	90.00	359.79	10,529.00	8,874.48	-1,181.62	412,933.74	741,233.94	32.133587	-103.687549
19,200.00	90.00	359.79	10,529.00	8,974.48	-1,181.99	413,033.74	741,233.58	32.133861	-103.687549
19,300.00	90.00	359.79	10,529.00	9,074.48	-1,182.35	413,133.74	741,233.22	32.134136	-103.687548
19,400.00	90.00	359.79	10,529.00	9,174.48	-1,182.71	413,233.74	741,232.86	32.134411	-103.687547
19,500.00	90.00	359.79	10,529.00	9,274.48	-1,183.08	413,333.74	741,232.49	32.134686	-103.687546
19,600.00	90.00	359.79	10,529.00	9,374.47	-1,183.44	413,433.74	741,232.13	32.134961	-103.687546
19,700.00	90.00	359.79	10,529.00	9,474.47	-1,183.80	413,533.73	741,231.77	32.135236	-103.687545
19,800.00	90.00	359.79	10,529.00	9,574.47	-1,184.16	413,633.73	741,231.40	32.135511	-103.687544
19,900.00	90.00	359.79	10,529.00	9,674.47	-1,184.53	413,733.73	741,231.04	32.135786	-103.687543
20,000.00	90.00	359.79	10,529.00	9,774.47	-1,184.89	413,833.73	741,230.68	32.136060	-103.687543
20,100.00	90.00	359.79	10,529.00	9,874.47	-1,185.25	413,933.73	741,230.32	32.136335	-103.687542
20,200.00	90.00	359.79	10,529.00	9,974.47	-1,185.62	414,033.73	741,229.95	32.136610	-103.687541
20,300.00	90.00	359.79	10,529.00	10,074.47	-1,185.98	414,133.73	741,229.59	32.136885	-103.687540
20,400.00	90.00	359.79	10,529.00	10,174.47	-1,186.34	414,233.73	741,229.23	32.137160	-103.687539
20,474.38	90.00	359.79	10,529.00	10,248.85	-1,186.61	414,308.11	741,228.96	32.137364	-103.687539
LTP @ 20474' MD, 100' FNL, 330' FWL									
20,500.00	90.00	359.79	10,529.00	10,274.47	-1,186.71	414,333.73	741,228.86	32.137435	-103.687539

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3415.20ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3415.20ft
Site:	Sec 21-T25S-R32E	North Reference:	Grid
Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,554.38	90.00	359.79	10,529.00	10,328.85	-1,186.90	414,388.11	741,228.67	32.137584	-103.687538
PBHL; 20' FNL, 330' FWL									
20,554.39	90.00	359.79	10,529.00	10,328.86	-1,186.90	414,388.12	741,228.67	32.137584	-103.687538

Design Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Van Doo Dah 21	- Shape	0.00	0.00	0.00	10,328.86	-1,186.90	414,388.12	741,228.67	32.137584	-103.687538
- plan misses target center by 10396.83ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)										
- Point										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
10,058.42	9,956.04	160.00	-1,150.00	KOP & FTP @ 10058' MD, 360' FSL, 330' FWL
15,305.00	10,529.00	5,079.50	-1,167.85	Cross Section @ 15305' MD, 0' FSL, 330' FWL
20,474.38	10,529.00	10,248.85	-1,186.61	LTP @ 20474' MD, 100' FNL, 330' FWL
20,554.38	10,529.00	10,328.85	-1,186.90	PBHL; 20' FNL, 330' FWL

Devon Energy

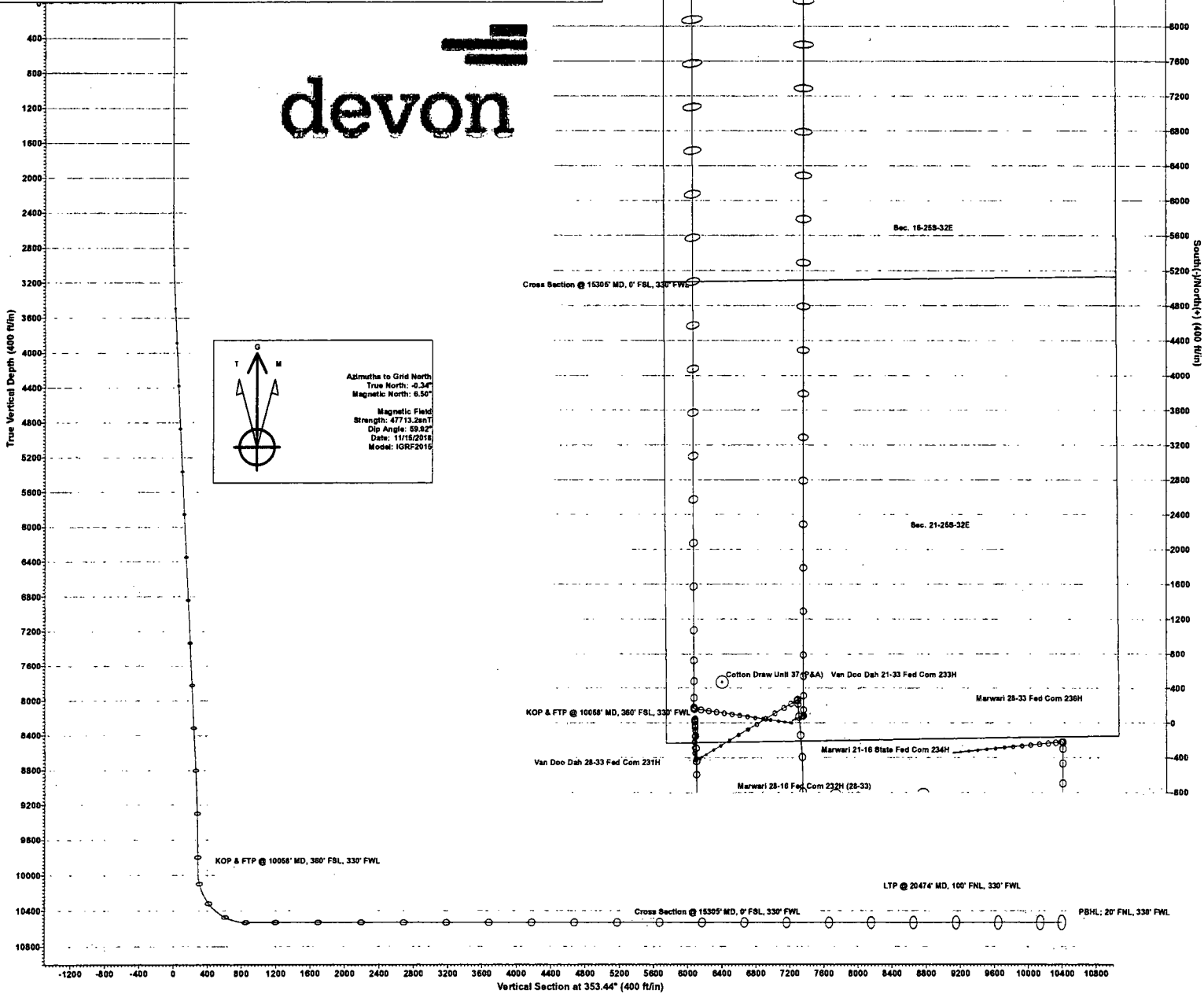
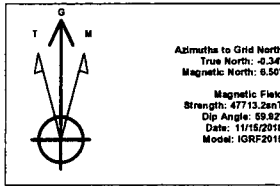
WELL DETAILS: Van Doo Dah 21-33 Fed Com 233H

RKB @ 3415.20ft

3390.20
Northing 404059.28 Easting 742416.57
Latitude 32.109173 Longitude -103.683905

SECTION DETAILS Permit Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	V Sct	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	
3558.91	10.57	277.92	3550.93	13.40	-96.28	1.00	24.30	
9003.78	10.57	277.92	8905.38	151.07	-1085.81	0.00	274.04	
9708.38	0.00	0.00	9808.00	180.00	-1150.00	1.50	290.24	
10058.42	0.00	0.00	9958.04	180.00	-1150.00	0.00	290.24	KOP & FTP @ 10058' MD, 360' FSL, 330' FWL
10058.42	90.00	359.79	10529.00	732.98	-1152.08	10.00	859.68	
20554.39	90.00	359.79	10529.00	10328.86	-1186.90	0.00	10398.83	PBHL: 20' FNL, 330' FWL



WCDSC Permian NM

Van Doo Dah 21-33 Fed Com 233H - Permit Plan 1

Lea County (NAD83 New Mexico East)

Sec 21-T25S-R32E

Your Ref:

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0	0	0	0	0	0	0	0
100	0	0	100	0	0	0	0
200	0	0	200	0	0	0	0
300	0	0	300	0	0	0	0
400	0	0	400	0	0	0	0
500	0	0	500	0	0	0	0
600	0	0	600	0	0	0	0
700	0	0	700	0	0	0	0
800	0	0	800	0	0	0	0
900	0	0	900	0	0	0	0
1000	0	0	1000	0	0	0	0
1100	0	0	1100	0	0	0	0
1200	0	0	1200	0	0	0	0
1300	0	0	1300	0	0	0	0
1400	0	0	1400	0	0	0	0
1500	0	0	1500	0	0	0	0
1600	0	0	1600	0	0	0	0
1700	0	0	1700	0	0	0	0
1800	0	0	1800	0	0	0	0
1900	0	0	1900	0	0	0	0
2000	0	0	2000	0	0	0	0
2100	0	0	2100	0	0	0	0
2200	0	0	2200	0	0	0	0
2300	0	0	2300	0	0	0	0
2400	0	0	2400	0	0	0	0
2500	0	0	2500	0	0	0	0
2600	1	277.921	2599.99	0.12	-0.86	0.22	1
2700	2	277.921	2699.96	0.48	-3.46	0.87	1
2800	3	277.921	2799.86	1.08	-7.78	1.96	1
2900	4	277.921	2899.68	1.92	-13.82	3.49	1
3000	5	277.921	2999.37	3	-21.59	5.45	1
3100	6	277.921	3098.9	4.33	-31.09	7.85	1

3200	7	277.921	3198.26	5.89	-42.3	10.68	1
3300	8	277.921	3297.4	7.68	-55.23	13.94	1
3400	9	277.921	3396.3	9.72	-69.87	17.63	1
3500	10	277.921	3494.93	12	-86.21	21.76	1
3556.91	10.569	277.921	3550.93	13.4	-96.28	24.3	1
3600	10.569	277.921	3593.29	14.48	-104.11	26.27	0
3700	10.569	277.921	3691.59	17.01	-122.27	30.86	0
3800	10.569	277.921	3789.89	19.54	-140.44	35.44	0
3900	10.569	277.921	3888.2	22.07	-158.61	40.03	0
4000	10.569	277.921	3986.5	24.59	-176.77	44.61	0
4100	10.569	277.921	4084.8	27.12	-194.94	49.2	0
4200	10.569	277.921	4183.11	29.65	-213.11	53.78	0
4300	10.569	277.921	4281.41	32.18	-231.28	58.37	0
4400	10.569	277.921	4379.71	34.71	-249.44	62.95	0
4500	10.569	277.921	4478.02	37.23	-267.61	67.54	0
4600	10.569	277.921	4576.32	39.76	-285.78	72.12	0
4700	10.569	277.921	4674.62	42.29	-303.94	76.71	0
4800	10.569	277.921	4772.93	44.82	-322.11	81.29	0
4900	10.569	277.921	4871.23	47.34	-340.28	85.88	0
5000	10.569	277.921	4969.53	49.87	-358.45	90.46	0
5100	10.569	277.921	5067.84	52.4	-376.61	95.05	0
5200	10.569	277.921	5166.14	54.93	-394.78	99.63	0
5300	10.569	277.921	5264.44	57.45	-412.95	104.22	0
5400	10.569	277.921	5362.75	59.98	-431.11	108.8	0
5500	10.569	277.921	5461.05	62.51	-449.28	113.39	0
5600	10.569	277.921	5559.35	65.04	-467.45	117.97	0
5700	10.569	277.921	5657.66	67.56	-485.62	122.56	0
5800	10.569	277.921	5755.96	70.09	-503.78	127.14	0
5900	10.569	277.921	5854.26	72.62	-521.95	131.73	0
6000	10.569	277.921	5952.57	75.15	-540.12	136.32	0
6100	10.569	277.921	6050.87	77.67	-558.28	140.9	0
6200	10.569	277.921	6149.17	80.2	-576.45	145.49	0
6300	10.569	277.921	6247.48	82.73	-594.62	150.07	0
6400	10.569	277.921	6345.78	85.26	-612.78	154.66	0
6500	10.569	277.921	6444.09	87.78	-630.95	159.24	0
6600	10.569	277.921	6542.39	90.31	-649.12	163.83	0
6700	10.569	277.921	6640.69	92.84	-667.29	168.41	0
6800	10.569	277.921	6739	95.37	-685.45	173	0
6900	10.569	277.921	6837.3	97.89	-703.62	177.58	0
7000	10.569	277.921	6935.6	100.42	-721.79	182.17	0
7100	10.569	277.921	7033.91	102.95	-739.95	186.75	0
7200	10.569	277.921	7132.21	105.48	-758.12	191.34	0
7300	10.569	277.921	7230.51	108.01	-776.29	195.92	0
7400	10.569	277.921	7328.82	110.53	-794.46	200.51	0
7500	10.569	277.921	7427.12	113.06	-812.62	205.09	0
7600	10.569	277.921	7525.42	115.59	-830.79	209.68	0
7700	10.569	277.921	7623.73	118.12	-848.96	214.26	0

7800	10.569	277.921	7722.03	120.64	-867.12	218.85	0
7900	10.569	277.921	7820.33	123.17	-885.29	223.43	0
8000	10.569	277.921	7918.64	125.7	-903.46	228.02	0
8100	10.569	277.921	8016.94	128.23	-921.63	232.6	0
8200	10.569	277.921	8115.24	130.75	-939.79	237.19	0
8300	10.569	277.921	8213.55	133.28	-957.96	241.77	0
8400	10.569	277.921	8311.85	135.81	-976.13	246.36	0
8500	10.569	277.921	8410.15	138.34	-994.29	250.94	0
8600	10.569	277.921	8508.46	140.86	-1012.46	255.53	0
8700	10.569	277.921	8606.76	143.39	-1030.63	260.11	0
8800	10.569	277.921	8705.06	145.92	-1048.79	264.7	0
8900	10.569	277.921	8803.37	148.45	-1066.96	269.28	0
9000	10.569	277.921	8901.67	150.97	-1085.13	273.87	0
9003.78	10.569	277.921	8905.38	151.07	-1085.81	274.04	0
9100	9.126	277.921	9000.19	153.34	-1102.11	278.15	1.5
9200	7.626	277.921	9099.12	155.34	-1116.54	281.79	1.5
9300	6.126	277.921	9198.4	156.99	-1128.4	284.79	1.5
9400	4.626	277.921	9297.95	158.29	-1137.68	287.13	1.5
9500	3.126	277.921	9397.72	159.22	-1144.37	288.82	1.5
9600	1.626	277.921	9497.63	159.79	-1148.48	289.85	1.5
9700	0.126	277.921	9597.62	160	-1149.99	290.24	1.5
9708.38	0	0	9606	160	-1150	290.24	1.5
9800	0	0	9697.62	160	-1150	290.24	0
9900	0	0	9797.62	160	-1150	290.24	0
10000	0	0	9897.62	160	-1150	290.24	0
10058.42	0	0	9956.04	160	-1150	290.24	0
10100	4.158	359.792	9997.58	161.51	-1150.01	291.74	10
10200	14.158	359.792	10096.18	177.4	-1150.06	307.53	10
10300	24.158	359.792	10190.52	210.18	-1150.18	340.11	10
10400	34.158	359.792	10277.74	258.84	-1150.36	388.47	10
10500	44.158	359.792	10355.18	321.9	-1150.59	451.15	10
10600	54.158	359.792	10420.5	397.46	-1150.86	526.24	10
10700	64.158	359.792	10471.7	483.21	-1151.17	611.47	10
10800	74.158	359.792	10507.24	576.54	-1151.51	704.23	10
10900	84.158	359.792	10526.02	674.63	-1151.87	801.72	10
10958.42	90	359.792	10529	732.96	-1152.08	859.68	10
11000	90	359.792	10529	774.53	-1152.23	901.01	0
11100	90	359.792	10529	874.53	-1152.59	1000.39	0
11200	90	359.792	10529	974.53	-1152.96	1099.78	0
11300	90	359.792	10529	1074.53	-1153.32	1199.17	0
11400	90	359.792	10529	1174.53	-1153.68	1298.55	0
11500	90	359.792	10529	1274.53	-1154.04	1397.94	0
11600	90	359.792	10529	1374.53	-1154.41	1497.33	0
11700	90	359.792	10529	1474.53	-1154.77	1596.72	0
11800	90	359.792	10529	1574.53	-1155.13	1696.1	0
11900	90	359.792	10529	1674.53	-1155.5	1795.49	0
12000	90	359.792	10529	1774.52	-1155.86	1894.88	0

12100	90	359.792	10529	1874.52	-1156.22	1994.26	0
12200	90	359.792	10529	1974.52	-1156.58	2093.65	0
12300	90	359.792	10529	2074.52	-1156.95	2193.04	0
12400	90	359.792	10529	2174.52	-1157.31	2292.42	0
12500	90	359.792	10529	2274.52	-1157.67	2391.81	0
12600	90	359.792	10529	2374.52	-1158.04	2491.2	0
12700	90	359.792	10529	2474.52	-1158.4	2590.59	0
12800	90	359.792	10529	2574.52	-1158.76	2689.97	0
12900	90	359.792	10529	2674.52	-1159.13	2789.36	0
13000	90	359.792	10529	2774.52	-1159.49	2888.75	0
13100	90	359.792	10529	2874.52	-1159.85	2988.13	0
13200	90	359.792	10529	2974.52	-1160.21	3087.52	0
13300	90	359.792	10529	3074.52	-1160.58	3186.91	0
13400	90	359.792	10529	3174.52	-1160.94	3286.29	0
13500	90	359.792	10529	3274.51	-1161.3	3385.68	0
13600	90	359.792	10529	3374.51	-1161.67	3485.07	0
13700	90	359.792	10529	3474.51	-1162.03	3584.46	0
13800	90	359.792	10529	3574.51	-1162.39	3683.84	0
13900	90	359.792	10529	3674.51	-1162.75	3783.23	0
14000	90	359.792	10529	3774.51	-1163.12	3882.62	0
14100	90	359.792	10529	3874.51	-1163.48	3982	0
14200	90	359.792	10529	3974.51	-1163.84	4081.39	0
14300	90	359.792	10529	4074.51	-1164.21	4180.78	0
14400	90	359.792	10529	4174.51	-1164.57	4280.16	0
14500	90	359.792	10529	4274.51	-1164.93	4379.55	0
14600	90	359.792	10529	4374.51	-1165.29	4478.94	0
14700	90	359.792	10529	4474.51	-1165.66	4578.33	0
14800	90	359.792	10529	4574.51	-1166.02	4677.71	0
14900	90	359.792	10529	4674.51	-1166.38	4777.1	0
15000	90	359.792	10529	4774.5	-1166.75	4876.49	0
15100	90	359.792	10529	4874.5	-1167.11	4975.87	0
15200	90	359.792	10529	4974.5	-1167.47	5075.26	0
15300	90	359.792	10529	5074.5	-1167.83	5174.65	0
15400	90	359.792	10529	5174.5	-1168.2	5274.03	0
15500	90	359.792	10529	5274.5	-1168.56	5373.42	0
15600	90	359.792	10529	5374.5	-1168.92	5472.81	0
15700	90	359.792	10529	5474.5	-1169.29	5572.2	0
15800	90	359.792	10529	5574.5	-1169.65	5671.58	0
15900	90	359.792	10529	5674.5	-1170.01	5770.97	0
16000	90	359.792	10529	5774.5	-1170.37	5870.36	0
16100	90	359.792	10529	5874.5	-1170.74	5969.74	0
16200	90	359.792	10529	5974.5	-1171.1	6069.13	0
16300	90	359.792	10529	6074.5	-1171.46	6168.52	0
16400	90	359.792	10529	6174.5	-1171.83	6267.9	0
16500	90	359.792	10529	6274.5	-1172.19	6367.29	0
16600	90	359.792	10529	6374.49	-1172.55	6466.68	0
16700	90	359.792	10529	6474.49	-1172.92	6566.07	0

16800	90	359.792	10529	6574.49	-1173.28	6665.45	0
16900	90	359.792	10529	6674.49	-1173.64	6764.84	0
17000	90	359.792	10529	6774.49	-1174	6864.23	0
17100	90	359.792	10529	6874.49	-1174.37	6963.61	0
17200	90	359.792	10529	6974.49	-1174.73	7063	0
17300	90	359.792	10529	7074.49	-1175.09	7162.39	0
17400	90	359.792	10529	7174.49	-1175.46	7261.77	0
17500	90	359.792	10529	7274.49	-1175.82	7361.16	0
17600	90	359.792	10529	7374.49	-1176.18	7460.55	0
17700	90	359.792	10529	7474.49	-1176.54	7559.94	0
17800	90	359.792	10529	7574.49	-1176.91	7659.32	0
17900	90	359.792	10529	7674.49	-1177.27	7758.71	0
18000	90	359.792	10529	7774.49	-1177.63	7858.1	0
18100	90	359.792	10529	7874.48	-1178	7957.48	0
18200	90	359.792	10529	7974.48	-1178.36	8056.87	0
18300	90	359.792	10529	8074.48	-1178.72	8156.26	0
18400	90	359.792	10529	8174.48	-1179.08	8255.65	0
18500	90	359.792	10529	8274.48	-1179.45	8355.03	0
18600	90	359.792	10529	8374.48	-1179.81	8454.42	0
18700	90	359.792	10529	8474.48	-1180.17	8553.81	0
18800	90	359.792	10529	8574.48	-1180.54	8653.19	0
18900	90	359.792	10529	8674.48	-1180.9	8752.58	0
19000	90	359.792	10529	8774.48	-1181.26	8851.97	0
19100	90	359.792	10529	8874.48	-1181.62	8951.35	0
19200	90	359.792	10529	8974.48	-1181.99	9050.74	0
19300	90	359.792	10529	9074.48	-1182.35	9150.13	0
19400	90	359.792	10529	9174.48	-1182.71	9249.52	0
19500	90	359.792	10529	9274.48	-1183.08	9348.9	0
19600	90	359.792	10529	9374.47	-1183.44	9448.29	0
19700	90	359.792	10529	9474.47	-1183.8	9547.68	0
19800	90	359.792	10529	9574.47	-1184.16	9647.06	0
19900	90	359.792	10529	9674.47	-1184.53	9746.45	0
20000	90	359.792	10529	9774.47	-1184.89	9845.84	0
20100	90	359.792	10529	9874.47	-1185.25	9945.22	0
20200	90	359.792	10529	9974.47	-1185.62	10044.61	0
20300	90	359.792	10529	10074.47	-1185.98	10144	0
20400	90	359.792	10529	10174.47	-1186.34	10243.39	0
20500	90	359.792	10529	10274.47	-1186.7	10342.77	0
20554.39	90	359.792	10529	10328.86	-1186.9	10396.83	0

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Slot and calculated along an Azimuth of 353.445° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.
Central meridian is -104.333° .
Grid Convergence at Surface is 0.345° .

Based upon Minimum Curvature type calculations, at a Measured Depth of 20554.39ft.,
the Bottom Hole Displacement is 10396.83ft., in the Direction of 353.445° (Grid).

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 21-T25S-R32E

Van Doo Dah 21-33 Fed Com 233H

Wellbore #1

Permit Plan 1

Anticollision Report

16 November, 2018

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are 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:	MD Interval 50.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,500.00 ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date: 11/15/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	20,554.39	Permit Plan 1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM

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 21-T25S-R32E						
Cotton Draw Unit 37 (P&A) - Wellbore #1 - Wellbore #1	5,312.85	5,258.88	576.91	478.63	5.870	CC, ES, SF
Marwari 21-16 State Fed Com 234H - Wellbore #1 - Perm	1,000.00	991.80	30.06	23.29	4.443	Alert, CC
Marwari 21-16 State Fed Com 234H - Wellbore #1 - Perm	1,200.00	1,191.61	30.65	22.48	3.750	Alert, ES
Marwari 21-16 State Fed Com 234H - Wellbore #1 - Perm	1,500.00	1,491.06	35.10	24.81	3.412	Alert, SF
Sec 28-T25S-R32E						
Cotton Draw Unit 101 (Active) - Wellbore #1 - Wellbore #						Out of range
Cotton Draw Unit 47 (P&A) - Wellbore #1 - Wellbore #1	2,500.00	2,486.80	982.26	935.09	20.824	CC
Cotton Draw Unit 47 (P&A) - Wellbore #1 - Wellbore #1	2,650.00	2,636.78	983.50	933.64	19.724	ES
Cotton Draw Unit 47 (P&A) - Wellbore #1 - Wellbore #1	5,250.00	5,202.09	1,280.31	1,183.12	13.174	SF
Cotton Draw Unit 500 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Cotton Draw Unit 51 (Active) - Wellbore #1 - Wellbore #1						Out of range
Marwari 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sp	5,665.14	5,707.14	107.55	64.37	2.491	Minor Risk, CC, ES, SF
Marwari 28-33 Fed Com 236H - Wellbore #1 - Permit Pla						Out of range
SOL 28 Fed #2 (Active) - Wellbore #1 - Wellbore #1						Out of range
SOL 28 Fed 1H (Active) - Wellbore #1 - Wellbore #1						Out of range
Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Actu	10,052.23	9,975.39	119.44	45.59	1.617	Minor Risk, CC, ES, SF
Van Doo Dah 28-33 Fed Com 235H - Wellbore #1 - Perm						Out of range

Offset Design											
Sec 21-T25S-R32E - Cotton Draw Unit 37 (P&A) - Wellbore #1 - Wellbore #1											
Survey Program: 10-INC-ONLY											
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)
0.00	0.00	0.00	0.00	0.50	10.00	-60.30	468.21	-820.72	945.05		
50.00	50.00	31.80	31.80	0.50	10.01	-60.30	468.21	-820.72	944.88	934.37	10.51
100.00	100.00	81.80	81.80	0.52	10.06	-60.30	468.21	-820.72	944.88	934.30	10.58
150.00	150.00	131.80	131.80	0.59	10.17	-60.30	468.21	-820.72	944.88	934.12	10.76
200.00	200.00	181.80	181.80	0.70	10.33	-60.30	468.21	-820.72	944.88	933.85	11.03
250.00	250.00	231.80	231.80	0.84	10.54	-60.30	468.21	-820.72	944.88	933.50	11.37
300.00	300.00	281.80	281.80	0.99	10.80	-60.30	468.21	-820.72	944.88	933.09	11.78
350.00	350.00	331.80	331.80	1.15	11.10	-60.30	468.21	-820.72	944.88	932.63	12.25
400.00	400.00	381.80	381.80	1.31	11.45	-60.30	468.21	-820.72	944.88	932.12	12.75
450.00	450.00	431.80	431.80	1.48	11.83	-60.30	468.21	-820.72	944.88	931.57	13.30
											71.020

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
500.00	500.00	481.80	481.80	1.65	12.24	-60.30	468.21	-820.72	944.88	930.99	13.89	68.024		
550.00	550.00	531.80	531.80	1.82	12.89	-60.30	468.21	-820.72	944.88	930.37	14.51	65.124		
600.00	600.00	581.80	581.80	1.99	13.17	-60.30	468.21	-820.72	944.88	929.72	15.16	62.343		
650.00	650.00	631.80	631.80	2.16	13.66	-60.30	468.21	-820.72	944.88	929.05	15.83	59.693		
700.00	700.00	681.80	681.80	2.34	14.19	-60.30	468.21	-820.72	944.88	928.35	16.52	57.180		
750.00	750.00	731.80	731.80	2.51	14.73	-60.30	468.21	-820.72	944.88	927.64	17.24	54.806		
800.00	800.00	781.80	781.80	2.69	15.28	-60.30	468.21	-820.72	944.88	926.90	17.97	52.567		
850.00	850.00	831.80	831.80	2.87	15.86	-60.30	468.21	-820.72	944.88	926.15	18.72	50.461		
900.00	900.00	881.80	881.80	3.04	16.45	-60.30	468.21	-820.72	944.88	925.39	19.49	48.482		
950.00	950.00	931.80	931.80	3.22	17.05	-60.30	468.21	-820.72	944.88	924.61	20.27	46.622		
1,000.00	1,000.00	981.80	981.80	3.40	17.66	-60.30	468.21	-820.72	944.88	923.82	21.06	44.875		
1,050.00	1,050.00	1,031.80	1,031.80	3.58	18.28	-60.30	468.21	-820.72	944.88	923.02	21.86	43.233		
1,100.00	1,100.00	1,081.80	1,081.80	3.75	18.91	-60.30	468.21	-820.72	944.88	922.21	22.66	41.690		
1,150.00	1,150.00	1,131.80	1,131.80	3.93	19.55	-60.30	468.21	-820.72	944.88	921.40	23.48	40.239		
1,200.00	1,200.00	1,181.80	1,181.80	4.11	20.20	-60.30	468.21	-820.72	944.88	920.57	24.31	38.874		
1,250.00	1,250.00	1,231.80	1,231.80	4.29	20.85	-60.30	468.21	-820.72	944.88	919.74	25.14	37.587		
1,300.00	1,300.00	1,281.80	1,281.80	4.46	21.51	-60.30	468.21	-820.72	944.88	918.90	25.98	36.375		
1,350.00	1,350.00	1,331.80	1,331.80	4.64	22.18	-60.30	468.21	-820.72	944.88	918.06	26.82	35.230		
1,400.00	1,400.00	1,381.80	1,381.80	4.82	22.85	-60.30	468.21	-820.72	944.88	917.21	27.67	34.149		
1,450.00	1,450.00	1,431.80	1,431.80	5.00	23.52	-60.30	468.21	-820.72	944.88	916.35	28.52	33.127		
1,500.00	1,500.00	1,481.80	1,481.80	5.18	24.20	-60.30	468.21	-820.72	944.88	915.50	29.38	32.159		
1,550.00	1,550.00	1,531.80	1,531.80	5.36	24.89	-60.30	468.21	-820.72	944.88	914.63	30.24	31.242		
1,600.00	1,600.00	1,581.80	1,581.80	5.53	25.58	-60.30	468.21	-820.72	944.88	913.77	31.11	30.373		
1,650.00	1,650.00	1,631.80	1,631.80	5.71	26.27	-60.30	468.21	-820.72	944.88	912.90	31.98	29.547		
1,700.00	1,700.00	1,681.80	1,681.80	5.89	26.96	-60.30	468.21	-820.72	944.88	912.03	32.85	28.762		
1,750.00	1,750.00	1,731.80	1,731.80	6.07	27.66	-60.30	468.21	-820.72	944.88	911.15	33.73	28.016		
1,800.00	1,800.00	1,781.80	1,781.80	6.25	28.36	-60.30	468.21	-820.72	944.88	910.27	34.60	27.305		
1,850.00	1,850.00	1,831.80	1,831.80	6.43	29.06	-60.30	468.21	-820.72	944.88	909.39	35.49	26.627		
1,900.00	1,900.00	1,881.80	1,881.80	6.61	29.76	-60.30	468.21	-820.72	944.88	908.51	36.37	25.981		
1,950.00	1,950.00	1,931.80	1,931.80	6.78	30.47	-60.30	468.21	-820.72	944.88	907.62	37.25	25.364		
2,000.00	2,000.00	1,981.80	1,981.80	6.96	31.18	-60.30	468.21	-820.72	944.88	906.74	38.14	24.774		
2,050.00	2,050.00	2,031.80	2,031.80	7.14	31.89	-60.30	468.21	-820.72	944.88	905.85	39.03	24.209		
2,100.00	2,100.00	2,081.80	2,081.80	7.32	32.60	-60.30	468.21	-820.72	944.88	904.96	39.92	23.669		
2,150.00	2,150.00	2,131.80	2,131.80	7.50	33.31	-60.30	468.21	-820.72	944.88	904.05	40.81	23.152		
2,200.00	2,200.00	2,181.80	2,181.80	7.68	34.03	-60.30	468.21	-820.72	944.88	903.17	41.71	22.656		
2,250.00	2,250.00	2,231.80	2,231.80	7.86	34.74	-60.30	468.21	-820.72	944.88	902.28	42.60	22.179		
2,300.00	2,300.00	2,281.80	2,281.80	8.04	35.46	-60.30	468.21	-820.72	944.88	901.38	43.50	21.722		
2,350.00	2,350.00	2,331.80	2,331.80	8.22	36.18	-60.30	468.21	-820.72	944.88	900.48	44.40	21.283		
2,400.00	2,400.00	2,381.80	2,381.80	8.39	36.90	-60.30	468.21	-820.72	944.88	899.58	45.30	20.860		
2,450.00	2,450.00	2,431.80	2,431.80	8.57	37.62	-60.30	468.21	-820.72	944.88	898.68	46.20	20.454		
2,500.00	2,500.00	2,481.80	2,481.80	8.75	38.35	-60.30	468.21	-820.72	944.88	897.78	47.10	20.062		
2,550.00	2,550.00	2,531.80	2,531.80	8.93	39.07	21.79	468.21	-820.72	944.67	896.58	48.00	19.683		
2,600.00	2,599.99	2,581.79	2,581.79	9.10	39.79	21.81	468.21	-820.72	944.07	895.17	48.89	19.308		
2,650.00	2,649.98	2,631.78	2,631.78	9.27	40.52	21.83	468.21	-820.72	943.05	893.26	49.79	18.940		
2,700.00	2,699.96	2,681.76	2,681.76	9.45	41.24	21.87	468.21	-820.72	941.64	890.95	50.69	18.577		
2,750.00	2,749.92	2,731.72	2,731.72	9.62	41.97	21.93	468.21	-820.72	939.82	888.23	51.59	18.218		
2,800.00	2,799.86	2,781.66	2,781.66	9.79	42.70	21.99	468.21	-820.72	937.59	885.10	52.49	17.864		
2,850.00	2,849.78	2,831.58	2,831.58	9.97	43.42	22.06	468.21	-820.72	934.96	881.58	53.39	17.513		
2,900.00	2,899.68	2,881.48	2,881.48	10.14	44.15	22.15	468.21	-820.72	931.93	877.65	54.29	17.167		
2,950.00	2,949.54	2,931.34	2,931.34	10.31	44.88	22.25	468.21	-820.72	928.50	873.31	55.19	16.825		
3,000.00	2,999.37	2,981.17	2,981.17	10.49	45.61	22.36	468.21	-820.72	924.67	868.58	56.09	16.486		
3,050.00	3,049.16	3,030.96	3,030.96	10.67	46.33	22.49	468.21	-820.72	920.44	863.45	56.99	16.151		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Cotton Draw Unit 37 (P&A) - 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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
3,100.00	3,098.90	3,080.70	3,080.70	10.84	47.06	22.62	468.21	-820.72	915.81	857.91	57.89	15.820			
3,150.00	3,148.61	3,130.41	3,130.41	11.02	47.79	22.77	468.21	-820.72	910.78	851.99	58.79	15.491			
3,200.00	3,198.26	3,180.06	3,180.06	11.20	48.52	22.94	468.21	-820.72	905.36	845.66	59.69	15.167			
3,250.00	3,247.86	3,229.66	3,229.66	11.38	49.24	23.12	468.21	-820.72	899.54	838.95	60.60	14.845			
3,300.00	3,297.40	3,279.20	3,279.20	11.56	49.97	23.31	468.21	-820.72	893.34	831.84	61.50	14.526			
3,350.00	3,346.89	3,328.69	3,328.69	11.74	50.70	23.52	468.21	-820.72	886.74	824.35	62.40	14.211			
3,400.00	3,396.30	3,378.10	3,378.10	11.92	51.42	23.75	468.21	-820.72	879.76	816.46	63.30	13.898			
3,450.00	3,445.85	3,427.45	3,427.45	12.10	52.15	23.99	468.21	-820.72	872.40	808.20	64.20	13.588			
3,500.00	3,494.93	3,476.73	3,476.73	12.29	52.87	24.25	468.21	-820.72	864.65	799.55	65.10	13.282			
3,550.00	3,544.13	3,525.93	3,525.93	12.48	53.60	24.53	468.21	-820.72	856.53	790.52	66.00	12.977			
3,600.00	3,593.29	3,575.09	3,575.09	12.66	54.32	24.79	468.21	-820.72	848.17	781.27	66.90	12.678			
3,650.00	3,642.44	3,624.24	3,624.24	12.85	55.04	25.05	468.21	-820.72	839.83	772.02	67.80	12.386			
3,700.00	3,691.59	3,673.39	3,673.39	13.04	55.77	25.32	468.21	-820.72	831.50	762.80	68.71	12.102			
3,750.00	3,740.74	3,722.54	3,722.54	13.23	56.49	25.59	468.21	-820.72	823.20	753.59	69.61	11.826			
3,800.00	3,789.89	3,771.69	3,771.69	13.43	57.22	25.87	468.21	-820.72	814.91	744.40	70.51	11.557			
3,850.00	3,839.04	3,820.84	3,820.84	13.62	57.94	26.15	468.21	-820.72	806.64	735.22	71.42	11.294			
3,900.00	3,888.20	3,870.00	3,870.00	13.81	58.67	26.44	468.21	-820.72	798.39	726.07	72.32	11.039			
3,950.00	3,937.35	3,919.15	3,919.15	14.01	59.39	26.74	468.21	-820.72	790.16	716.93	73.23	10.790			
4,000.00	3,986.50	3,968.30	3,968.30	14.20	60.12	27.04	468.21	-820.72	781.95	707.82	74.14	10.547			
4,050.00	4,035.65	4,017.45	4,017.45	14.40	60.84	27.34	468.21	-820.72	773.77	698.72	75.05	10.310			
4,100.00	4,084.80	4,066.60	4,066.60	14.60	61.57	27.66	468.21	-820.72	765.60	689.65	75.96	10.079			
4,150.00	4,133.95	4,115.75	4,115.75	14.80	62.30	27.98	468.21	-820.72	757.46	680.50	76.87	9.854			
4,200.00	4,183.11	4,164.91	4,164.91	15.00	63.02	28.31	468.21	-820.72	749.35	671.57	77.78	9.634			
4,250.00	4,232.26	4,214.06	4,214.06	15.20	63.75	28.64	468.21	-820.72	741.25	662.56	78.69	9.420			
4,300.00	4,281.41	4,263.21	4,263.21	15.39	64.48	28.98	468.21	-820.72	733.19	653.58	79.60	9.210			
4,350.00	4,330.56	4,312.36	4,312.36	15.60	65.21	29.33	468.21	-820.72	725.14	644.63	80.52	9.006			
4,400.00	4,379.71	4,361.51	4,361.51	15.80	65.93	29.69	468.21	-820.72	717.13	635.70	81.43	8.807			
4,450.00	4,428.86	4,410.66	4,410.66	16.00	66.66	30.06	468.21	-820.72	709.15	626.80	82.35	8.612			
4,500.00	4,478.02	4,459.82	4,459.82	16.20	67.39	30.43	468.21	-820.72	701.19	617.93	83.26	8.421			
4,550.00	4,527.17	4,508.97	4,508.97	16.40	68.12	30.81	468.21	-820.72	693.26	609.08	84.18	8.235			
4,600.00	4,576.32	4,558.12	4,558.12	16.61	68.84	31.20	468.21	-820.72	685.37	600.27	85.10	8.054			
4,650.00	4,625.47	4,607.27	4,607.27	16.81	69.57	31.60	468.21	-820.72	677.50	591.48	86.02	7.876			
4,700.00	4,674.62	4,656.42	4,656.42	17.02	70.30	32.01	468.21	-820.72	669.67	582.74	86.94	7.703			
4,750.00	4,723.77	4,705.57	4,705.57	17.22	71.03	32.43	468.21	-820.72	661.88	574.02	87.86	7.534			
4,800.00	4,772.93	4,754.73	4,754.73	17.43	71.76	32.86	468.21	-820.72	654.12	565.34	88.78	7.368			
4,850.00	4,822.08	4,803.88	4,803.88	17.63	72.49	33.30	468.21	-820.72	646.39	556.69	89.70	7.206			
4,900.00	4,871.23	4,853.03	4,853.03	17.84	73.22	33.75	468.21	-820.72	638.71	548.08	90.62	7.048			
4,950.00	4,920.38	4,902.18	4,902.18	18.04	73.95	34.21	468.21	-820.72	631.06	539.51	91.55	6.893			
5,000.00	4,969.53	4,951.33	4,951.33	18.25	74.68	34.68	468.21	-820.72	623.46	530.98	92.47	6.742			
5,050.00	5,018.69	5,000.49	5,000.49	18.46	75.41	35.16	468.21	-820.72	615.90	522.50	93.40	6.594			
5,100.00	5,067.84	5,049.64	5,049.64	18.67	76.14	35.66	468.21	-820.72	608.38	514.05	94.33	6.450			
5,150.00	5,116.99	5,098.79	5,098.79	18.87	76.86	36.16	468.21	-820.72	600.91	505.65	95.25	6.308			
5,200.00	5,166.14	5,147.94	5,147.94	19.08	77.59	36.68	468.21	-820.72	593.48	497.30	96.18	6.170			
5,250.00	5,215.29	5,197.09	5,197.09	19.29	78.32	37.22	468.21	-820.72	586.11	489.00	97.11	6.035			
5,300.00	5,264.44	5,246.24	5,246.24	19.50	79.06	37.76	468.21	-820.72	578.79	480.74	98.04	5.903			
5,312.85	5,277.08	5,258.88	5,258.88	19.55	79.24	37.90	468.21	-820.72	576.91	478.63	98.28	5.870 CC, ES, SF			
5,350.00	5,313.60	4,784.00	4,783.03	19.71	72.19	33.11	468.21	-820.72	767.56	697.11	70.45	10.896			
5,400.00	5,362.75	4,784.00	4,783.03	19.92	72.19	33.11	468.21	-820.72	796.08	728.40	67.68	11.763			
5,450.00	5,411.90	4,784.00	4,783.03	20.13	72.19	33.11	468.21	-820.72	826.64	761.65	64.98	12.720			
5,500.00	5,461.05	4,784.00	4,783.03	20.34	72.19	33.11	468.21	-820.72	859.02	796.63	62.39	13.768			
5,550.00	5,510.20	4,784.00	4,783.03	20.55	72.19	33.11	468.21	-820.72	893.03	833.11	59.92	14.903			
5,600.00	5,559.35	4,784.00	4,783.03	20.76	72.19	33.11	468.21	-820.72	928.49	870.91	57.59	16.124			

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 Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Cotton Draw Unit 37 (P&A) - 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 Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,650.00	5,608.51	4,784.00	4,783.03	20.97	72.19	33.11	468.21	-820.72	965.24	909.85	55.39	17.427			
5,700.00	5,657.66	4,784.00	4,783.03	21.18	72.19	33.11	468.21	-820.72	1,003.13	949.80	53.33	18.811			
5,750.00	5,706.81	4,784.00	4,783.03	21.39	72.19	33.11	468.21	-820.72	1,042.05	990.64	51.41	20.270			
5,800.00	5,755.96	4,784.00	4,783.03	21.60	72.19	33.11	468.21	-820.72	1,081.87	1,032.26	49.62	21.803			
5,850.00	5,805.11	4,784.00	4,783.03	21.81	72.19	33.11	468.21	-820.72	1,122.52	1,074.55	47.96	23.405			
5,900.00	5,854.26	4,784.00	4,783.03	22.03	72.19	33.11	468.21	-820.72	1,163.89	1,117.46	46.42	25.071			
5,950.00	5,903.42	4,784.00	4,783.03	22.24	72.19	33.11	468.21	-820.72	1,205.91	1,160.91	45.00	26.796			
6,000.00	5,952.57	4,784.00	4,783.03	22.45	72.19	33.11	468.21	-820.72	1,248.52	1,204.83	43.69	28.576			
6,050.00	6,001.72	4,784.00	4,783.03	22.66	72.19	33.11	468.21	-820.72	1,291.67	1,249.19	42.48	30.407			
6,100.00	6,050.87	4,784.00	4,783.03	22.88	72.19	33.11	468.21	-820.72	1,335.29	1,293.92	41.36	32.282			
6,150.00	6,100.02	4,784.00	4,783.03	23.09	72.19	33.11	468.21	-820.72	1,379.34	1,339.00	40.33	34.197			
6,200.00	6,149.18	4,784.00	4,783.03	23.30	72.19	33.11	468.21	-820.72	1,423.79	1,384.40	39.39	36.147			
6,250.00	6,198.33	4,784.00	4,783.03	23.51	72.19	33.11	468.21	-820.72	1,468.59	1,430.07	38.52	38.127			

Anticollision Report

Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 21-T25S-R32E
Site Error: 0.00 ft
Reference Well: Van Doo Dah 21-33 Fed Com 233H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Van Doo Dah 21-33 Fed Com 233H
TVD Reference: RKB @ 3415.20ft
MD Reference: RKB @ 3415.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directional)														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	8.20	-8.20	0.50	0.50	-0.40	30.06	-0.21	30.06						
50.00	50.00	41.80	41.80	0.50	0.50	-0.40	30.06	-0.21	30.06	29.06	1.01	29.907			
100.00	100.00	108.20	91.80	0.52	0.53	-0.40	30.06	-0.21	30.06	29.02	1.04	28.796			
150.00	150.00	141.80	141.80	0.59	0.58	-0.40	30.06	-0.21	30.06	28.90	1.17	25.794			
200.00	200.00	208.20	191.80	0.70	0.72	-0.40	30.06	-0.21	30.06	28.64	1.43	21.093			
250.00	250.00	241.80	241.80	0.84	0.81	-0.40	30.06	-0.21	30.06	28.41	1.65	18.196			
300.00	300.00	308.20	291.80	0.99	1.01	-0.40	30.06	-0.21	30.06	28.06	2.00	15.029			
350.00	350.00	341.80	341.80	1.15	1.12	-0.40	30.06	-0.21	30.06	27.80	2.26	13.274			
400.00	400.00	408.20	391.80	1.31	1.34	-0.40	30.06	-0.21	30.06	27.42	2.65	11.363			
450.00	450.00	441.80	441.80	1.48	1.45	-0.40	30.06	-0.21	30.06	27.14	2.93	10.277			
500.00	500.00	508.20	491.80	1.65	1.67	-0.40	30.06	-0.21	30.06	26.74	3.32	9.054			
550.00	550.00	541.80	541.80	1.82	1.79	-0.40	30.06	-0.21	30.06	26.45	3.61	8.334			
600.00	600.00	608.20	591.80	1.99	2.02	-0.40	30.06	-0.21	30.06	26.05	4.01	7.497			
650.00	650.00	641.80	641.80	2.16	2.14	-0.40	30.06	-0.21	30.06	25.76	4.30	6.990			
700.00	700.00	708.20	691.80	2.34	2.37	-0.40	30.06	-0.21	30.06	25.35	4.71	6.386			
750.00	750.00	741.80	741.80	2.51	2.49	-0.40	30.06	-0.21	30.06	25.06	5.00	6.011			
800.00	800.00	808.20	791.80	2.69	2.72	-0.40	30.06	-0.21	30.06	24.65	5.41	5.556			
850.00	850.00	841.80	841.80	2.87	2.84	-0.40	30.06	-0.21	30.06	24.36	5.70	5.269			
900.00	900.00	908.20	891.80	3.04	3.07	-0.40	30.06	-0.21	30.06	23.94	6.12	4.915 Alert			
950.00	950.00	941.80	941.80	3.22	3.19	-0.40	30.06	-0.21	30.06	23.65	6.41	4.688 Alert			
1,000.00	1,000.00	991.80	991.80	3.40	3.37	-0.40	30.06	-0.21	30.06	23.29	6.77	4.443 Alert, CC			
1,050.00	1,050.00	1,041.76	1,041.76	3.58	3.54	-0.26	30.09	-0.14	30.09	22.97	7.12	4.227 Alert			
1,100.00	1,100.00	1,091.72	1,091.71	3.75	3.72	0.25	30.19	0.13	30.19	22.72	7.47	4.041 Alert			
1,150.00	1,150.00	1,141.67	1,141.66	3.93	3.89	1.15	30.37	0.61	30.37	22.55	7.82	3.883 Alert			
1,200.00	1,200.00	1,191.61	1,191.60	4.11	4.06	2.41	30.62	1.29	30.65	22.48	8.17	3.750 Alert, ES			
1,250.00	1,250.00	1,241.55	1,241.53	4.29	4.24	4.02	30.95	2.18	31.03	22.50	8.52	3.640 Alert			
1,300.00	1,300.00	1,291.47	1,291.44	4.46	4.41	5.94	31.36	3.26	31.53	22.65	8.88	3.552 Alert			
1,350.00	1,350.00	1,341.39	1,341.34	4.64	4.59	8.14	31.84	4.55	32.16	22.94	9.23	3.486 Alert			
1,400.00	1,400.00	1,391.30	1,391.22	4.82	4.76	10.58	32.40	6.05	32.96	23.38	9.58	3.440 Alert			
1,450.00	1,450.00	1,441.18	1,441.08	5.00	4.94	13.20	33.03	7.75	33.93	24.00	9.93	3.416 Alert			
1,500.00	1,500.00	1,491.06	1,490.91	5.18	5.11	15.96	33.74	9.65	35.10	24.81	10.29	3.412 Alert, SF			
1,550.00	1,550.00	1,540.91	1,540.71	5.36	5.29	18.80	34.52	11.75	36.48	25.84	10.64	3.429 Alert			
1,600.00	1,600.00	1,590.74	1,590.48	5.53	5.46	21.66	35.38	14.05	38.09	27.10	10.99	3.465 Alert			
1,650.00	1,650.00	1,640.56	1,640.22	5.71	5.64	24.51	36.32	16.56	39.94	28.60	11.35	3.520 Alert			
1,700.00	1,700.00	1,690.34	1,689.92	5.89	5.82	27.30	37.33	19.27	42.05	30.35	11.70	3.594 Alert			
1,750.00	1,750.00	1,740.10	1,739.59	6.07	6.00	30.00	38.41	22.17	44.41	32.36	12.05	3.684 Alert			
1,800.00	1,800.00	1,789.84	1,789.21	6.25	6.17	32.58	39.57	25.28	47.03	34.52	12.41	3.791 Alert			
1,850.00	1,850.00	1,839.54	1,838.79	6.43	6.35	35.02	40.81	28.59	49.92	37.16	12.76	3.913 Alert			
1,900.00	1,900.00	1,889.21	1,888.32	6.61	6.53	37.31	42.11	32.10	53.07	39.96	13.11	4.048 Alert			
1,950.00	1,950.00	1,938.85	1,937.80	6.78	6.71	39.46	43.50	35.80	56.48	43.02	13.46	4.196 Alert			
2,000.00	2,000.00	1,988.45	1,987.22	6.96	6.89	41.45	44.95	39.71	60.15	46.34	13.81	4.355 Alert			
2,050.00	2,050.00	2,038.02	2,036.60	7.14	7.07	43.30	46.48	43.81	64.08	49.92	14.16	4.524 Alert			
2,100.00	2,100.00	2,087.54	2,085.91	7.32	7.25	45.01	48.09	48.11	68.27	53.76	14.51	4.704 Alert			
2,150.00	2,150.00	2,137.03	2,135.16	7.50	7.43	46.59	49.76	52.60	72.71	57.85	14.87	4.891 Alert			
2,200.00	2,200.00	2,186.47	2,184.35	7.68	7.61	48.04	51.51	57.29	77.40	62.18	15.22	5.087			
2,250.00	2,250.00	2,236.11	2,233.72	7.86	7.79	49.37	53.32	62.14	82.28	66.71	15.57	5.285			
2,300.00	2,300.00	2,285.84	2,283.18	8.04	7.98	50.55	55.14	67.01	87.21	71.28	15.92	5.476			
2,350.00	2,350.00	2,335.56	2,332.63	8.22	8.16	51.61	56.96	71.88	92.17	75.89	16.28	5.661			
2,400.00	2,400.00	2,385.29	2,382.08	8.39	8.35	52.56	58.77	76.75	97.16	80.52	16.64	5.840			
2,450.00	2,450.00	2,435.02	2,431.54	8.57	8.53	53.41	60.59	81.62	102.17	85.17	16.99	6.012			
2,500.00	2,500.00	2,484.74	2,480.99	8.75	8.71	54.19	62.41	86.49	107.20	89.85	17.35	6.179			
2,550.00	2,550.00	2,534.45	2,530.42	8.93	8.90	137.01	64.22	91.36	112.41	94.71	17.70	6.350			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona													Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)						
2,600.00	2,599.99	2,584.11	2,579.81	9.10	9.08	137.83	66.04	96.22	117.96	99.90	18.05	6.533		
2,650.00	2,649.98	2,633.72	2,629.15	9.27	9.27	138.70	67.85	101.08	123.86	105.45	18.40	6.730		
2,700.00	2,699.96	2,683.65	2,678.81	9.45	9.46	139.62	69.67	105.95	130.09	111.33	18.76	6.936		
2,750.00	2,749.92	2,734.37	2,729.29	9.62	9.64	140.56	71.39	110.57	136.36	117.24	19.12	7.131		
2,800.00	2,799.86	2,785.14	2,779.87	9.79	9.83	141.49	72.96	114.77	142.56	123.08	19.48	7.317		
2,850.00	2,849.78	2,835.98	2,830.54	9.97	10.02	142.43	74.37	118.56	148.71	128.87	19.85	7.494		
2,900.00	2,899.68	2,886.88	2,881.31	10.14	10.21	143.36	75.63	121.94	154.81	134.61	20.21	7.662		
2,950.00	2,949.54	2,937.84	2,932.17	10.31	10.39	144.29	76.73	124.89	160.87	140.30	20.57	7.822		
3,000.00	2,999.37	2,988.85	2,983.11	10.49	10.58	145.22	77.68	127.42	166.87	145.95	20.93	7.975		
3,050.00	3,049.16	3,039.92	3,034.14	10.67	10.76	146.16	78.47	129.53	172.85	151.56	21.28	8.121		
3,100.00	3,098.90	3,091.05	3,085.23	10.84	10.95	147.10	79.09	131.22	178.78	157.14	21.64	8.261		
3,150.00	3,148.61	3,142.23	3,136.39	11.02	11.13	148.05	79.56	132.47	184.69	162.69	22.00	8.396		
3,200.00	3,198.26	3,193.46	3,187.62	11.20	11.31	149.00	79.87	133.30	190.57	168.22	22.35	8.526		
3,250.00	3,247.86	3,244.73	3,238.89	11.38	11.49	149.95	80.02	133.71	196.43	173.73	22.70	8.652		
3,300.00	3,297.40	3,304.95	3,289.20	11.56	11.70	150.89	80.04	133.75	202.35	179.27	23.09	8.764		
3,350.00	3,346.89	3,344.53	3,338.69	11.74	11.84	151.82	80.04	133.75	208.67	185.27	23.40	8.917		
3,400.00	3,396.30	3,406.05	3,388.10	11.92	12.05	152.74	80.04	133.75	215.42	191.63	23.79	9.054		
3,450.00	3,445.65	3,443.30	3,437.45	12.10	12.18	153.65	80.04	133.75	222.61	198.51	24.10	9.238		
3,500.00	3,494.93	3,507.42	3,486.73	12.29	12.41	154.55	80.04	133.75	230.25	205.75	24.50	9.399		
3,550.00	3,544.13	3,541.78	3,535.93	12.48	12.53	155.43	80.04	133.75	238.33	213.54	24.79	9.614		
3,600.00	3,593.29	3,609.07	3,585.09	12.66	12.76	156.31	80.04	133.75	246.72	221.52	25.20	9.790		
3,650.00	3,642.44	3,640.08	3,634.24	12.85	12.87	157.14	80.04	133.75	255.17	229.68	25.49	10.012		
3,700.00	3,691.59	3,689.24	3,683.39	13.04	13.04	157.91	80.04	133.75	263.67	237.83	25.83	10.206		
3,750.00	3,740.74	3,738.39	3,732.54	13.23	13.22	158.63	80.04	133.75	272.21	246.02	26.18	10.396		
3,800.00	3,789.89	3,787.54	3,781.69	13.43	13.39	159.31	80.04	133.75	280.78	254.25	26.53	10.583		
3,850.00	3,839.04	3,836.69	3,830.84	13.62	13.56	159.95	80.04	133.75	289.40	262.52	26.88	10.766		
3,900.00	3,888.20	3,885.84	3,880.00	13.81	13.73	160.56	80.04	133.75	298.05	270.82	27.23	10.945		
3,950.00	3,937.35	3,934.99	3,929.15	14.01	13.91	161.13	80.04	133.75	306.73	279.15	27.58	11.121		
4,000.00	3,986.50	3,984.15	3,978.30	14.20	14.08	161.67	80.04	133.75	315.43	287.50	27.93	11.293		
4,050.00	4,035.65	4,033.30	4,027.45	14.40	14.25	162.17	80.04	133.75	324.17	295.89	28.28	11.462		
4,100.00	4,084.80	4,082.45	4,076.60	14.60	14.43	162.66	80.04	133.75	332.92	304.29	28.63	11.628		
4,150.00	4,133.95	4,131.60	4,125.75	14.80	14.60	163.11	80.04	133.75	341.70	312.72	28.98	11.789		
4,200.00	4,183.11	4,180.75	4,174.91	15.00	14.77	163.55	80.04	133.75	350.50	321.16	29.34	11.948		
4,250.00	4,232.26	4,229.90	4,224.06	15.20	14.94	163.96	80.04	133.75	359.32	329.63	29.69	12.103		
4,300.00	4,281.41	4,279.06	4,273.21	15.39	15.12	164.36	80.04	133.75	368.15	338.11	30.04	12.256		
4,350.00	4,330.56	4,328.21	4,322.36	15.60	15.29	164.73	80.04	133.75	377.00	346.61	30.39	12.405		
4,400.00	4,379.71	4,377.36	4,371.51	15.80	15.46	165.09	80.04	133.75	385.86	355.12	30.74	12.551		
4,450.00	4,428.86	4,426.51	4,420.66	16.00	15.64	165.43	80.04	133.75	394.74	363.65	31.10	12.694		
4,500.00	4,478.02	4,475.66	4,469.82	16.20	15.81	165.76	80.04	133.75	403.64	372.19	31.45	12.834		
4,550.00	4,527.17	4,524.81	4,518.97	16.40	15.99	166.07	80.04	133.75	412.54	380.74	31.80	12.971		
4,600.00	4,576.32	4,573.97	4,568.12	16.61	16.16	166.37	80.04	133.75	421.46	389.30	32.16	13.106		
4,650.00	4,625.47	4,623.12	4,617.27	16.81	16.33	166.66	80.04	133.75	430.38	397.87	32.51	13.238		
4,700.00	4,674.62	4,672.27	4,666.42	17.02	16.51	166.94	80.04	133.75	439.32	406.45	32.86	13.367		
4,750.00	4,723.77	4,721.42	4,715.57	17.22	16.68	167.20	80.04	133.75	448.26	415.05	33.22	13.494		
4,800.00	4,772.93	4,770.57	4,764.73	17.43	16.85	167.45	80.04	133.75	457.22	423.65	33.57	13.618		
4,850.00	4,822.08	4,819.72	4,813.88	17.63	17.03	167.70	80.04	133.75	466.18	432.25	33.93	13.740		
4,900.00	4,871.23	4,868.88	4,863.03	17.84	17.20	167.93	80.04	133.75	475.15	440.87	34.28	13.860		
4,950.00	4,920.38	4,918.03	4,912.18	18.04	17.38	168.16	80.04	133.75	484.13	449.49	34.64	13.977		
5,000.00	4,969.53	4,967.18	4,961.33	18.25	17.55	168.38	80.04	133.75	493.12	458.12	34.99	14.092		
5,050.00	5,018.69	5,016.33	5,010.49	18.46	17.72	168.59	80.04	133.75	502.11	466.76	35.35	14.204		
5,100.00	5,067.84	5,065.48	5,059.64	18.67	17.90	168.79	80.04	133.75	511.11	475.41	35.70	14.315		
5,150.00	5,116.99	5,114.64	5,108.79	18.87	18.07	168.99	80.04	133.75	520.11	484.05	36.06	14.423		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
5,200.00	5,166.14	5,163.79	5,157.94	19.08	18.25	169.18	80.04	133.75	529.13	492.71	36.42	14.530			
5,250.00	5,215.29	5,212.94	5,207.09	19.29	18.42	169.36	80.04	133.75	538.14	501.37	36.77	14.634			
5,300.00	5,264.44	5,262.09	5,256.24	19.50	18.59	169.54	80.04	133.75	547.16	510.03	37.13	14.737			
5,350.00	5,313.60	5,311.24	5,305.40	19.71	18.77	169.71	80.04	133.75	556.19	518.70	37.49	14.838			
5,400.00	5,362.75	5,360.39	5,354.55	19.92	18.94	169.88	80.04	133.75	565.22	527.38	37.84	14.936			
5,450.00	5,411.90	5,409.55	5,403.70	20.13	19.12	170.04	80.04	133.75	574.25	536.06	38.20	15.033			
5,500.00	5,461.05	5,458.70	5,452.85	20.34	19.29	170.19	80.04	133.75	583.29	544.74	38.56	15.129			
5,550.00	5,510.20	5,507.85	5,502.00	20.55	19.47	170.34	80.04	133.75	592.34	553.42	38.91	15.222			
5,600.00	5,559.35	5,557.00	5,551.15	20.76	19.64	170.49	80.04	133.75	601.38	562.12	39.27	15.314			
5,650.00	5,608.51	5,606.15	5,600.31	20.97	19.81	170.63	80.04	133.75	610.44	570.81	39.63	15.405			
5,700.00	5,657.66	5,655.30	5,649.46	21.18	19.99	170.77	80.04	133.75	619.49	579.51	39.98	15.493			
5,750.00	5,706.81	5,704.46	5,698.61	21.39	20.16	170.91	80.04	133.75	628.55	588.21	40.34	15.581			
5,800.00	5,755.96	5,753.61	5,747.76	21.60	20.34	171.04	80.04	133.75	637.61	596.91	40.70	15.666			
5,850.00	5,805.11	5,802.76	5,796.91	21.81	20.51	171.16	80.04	133.75	646.67	605.62	41.06	15.751			
5,900.00	5,854.26	5,851.91	5,846.06	22.03	20.69	171.29	80.04	133.75	655.74	614.33	41.41	15.833			
5,950.00	5,903.42	5,901.06	5,895.22	22.24	20.86	171.41	80.04	133.75	664.81	623.04	41.77	15.915			
6,000.00	5,952.57	5,950.21	5,944.37	22.45	21.04	171.52	80.04	133.75	673.88	631.75	42.13	15.995			
6,050.00	6,001.72	6,000.63	5,995.52	22.66	21.22	171.63	80.04	133.75	682.96	640.46	42.49	16.072			
6,100.00	6,050.87	6,048.52	6,042.67	22.88	21.39	171.75	80.04	133.75	692.04	649.19	42.85	16.151			
6,150.00	6,100.02	6,102.33	6,091.82	23.09	21.58	171.85	80.04	133.75	701.12	657.89	43.22	16.221			
6,200.00	6,149.18	6,146.82	6,140.98	23.30	21.74	171.96	80.04	133.75	710.20	666.63	43.56	16.302			
6,250.00	6,198.33	6,204.03	6,190.13	23.51	21.94	172.06	80.04	133.75	719.28	675.33	43.95	16.365			
6,300.00	6,247.48	6,245.12	6,239.28	23.73	22.09	172.16	80.04	133.75	728.37	684.09	44.28	16.448			
6,350.00	6,296.63	6,305.72	6,288.43	23.94	22.30	172.26	80.04	133.75	737.46	692.78	44.68	16.505			
6,400.00	6,345.78	6,343.43	6,337.58	24.16	22.44	172.35	80.04	133.75	746.55	701.55	45.00	16.590			
6,450.00	6,394.93	6,407.42	6,386.73	24.37	22.66	172.44	80.04	133.75	755.65	710.23	45.41	16.640			
6,500.00	6,444.09	6,441.73	6,435.89	24.58	22.79	172.53	80.04	133.75	764.74	719.02	45.72	16.727			
6,550.00	6,493.24	6,509.12	6,485.04	24.80	23.02	172.62	80.04	133.75	773.84	727.69	46.14	16.771			
6,600.00	6,542.39	6,540.04	6,534.19	25.01	23.13	172.71	80.04	133.75	782.94	736.50	46.44	16.860			
6,650.00	6,591.54	6,589.19	6,583.34	25.23	23.31	172.79	80.04	133.75	792.04	745.24	46.80	16.925			
6,700.00	6,640.69	6,638.34	6,632.49	25.44	23.48	172.88	80.04	133.75	801.14	753.98	47.16	16.989			
6,750.00	6,689.84	6,687.49	6,681.64	25.66	23.66	172.96	80.04	133.75	810.24	762.73	47.52	17.052			
6,800.00	6,739.00	6,736.64	6,730.80	25.87	23.83	173.03	80.04	133.75	819.35	771.47	47.88	17.114			
6,850.00	6,788.15	6,785.79	6,779.95	26.09	24.01	173.11	80.04	133.75	828.45	780.22	48.24	17.175			
6,900.00	6,837.30	6,834.95	6,829.10	26.30	24.18	173.19	80.04	133.75	837.56	788.96	48.59	17.236			
6,950.00	6,886.45	6,884.10	6,878.25	26.52	24.36	173.26	80.04	133.75	846.67	797.71	48.95	17.295			
7,000.00	6,935.60	6,933.25	6,927.40	26.73	24.54	173.33	80.04	133.75	855.78	806.46	49.31	17.353			
7,050.00	6,984.75	6,982.40	6,976.55	26.95	24.71	173.40	80.04	133.75	864.89	815.22	49.67	17.411			
7,100.00	7,033.91	7,031.55	7,025.71	27.16	24.89	173.47	80.04	133.75	874.00	823.97	50.04	17.468			
7,150.00	7,083.06	7,080.70	7,074.86	27.38	25.06	173.54	80.04	133.75	883.12	832.72	50.40	17.524			
7,200.00	7,132.21	7,129.86	7,124.01	27.59	25.24	173.61	80.04	133.75	892.23	841.48	50.76	17.579			
7,250.00	7,181.36	7,179.01	7,173.16	27.81	25.41	173.67	80.04	133.75	901.35	850.23	51.12	17.633			
7,300.00	7,230.51	7,228.16	7,222.31	28.03	25.59	173.73	80.04	133.75	910.47	858.99	51.48	17.687			
7,350.00	7,279.66	7,277.31	7,271.46	28.24	25.76	173.80	80.04	133.75	919.59	867.75	51.84	17.740			
7,400.00	7,328.82	7,326.46	7,320.62	28.46	25.94	173.86	80.04	133.75	928.71	876.51	52.20	17.792			
7,450.00	7,377.97	7,375.61	7,369.77	28.68	26.11	173.92	80.04	133.75	937.83	885.27	52.56	17.844			
7,500.00	7,427.12	7,424.77	7,418.92	28.89	26.29	173.98	80.04	133.75	946.95	894.03	52.92	17.894			
7,550.00	7,476.27	7,473.92	7,468.07	29.11	26.46	174.03	80.04	133.75	956.07	902.79	53.28	17.944			
7,600.00	7,525.42	7,523.07	7,517.22	29.32	26.64	174.09	80.04	133.75	965.19	911.55	53.64	17.994			
7,650.00	7,574.58	7,572.22	7,566.38	29.54	26.81	174.15	80.04	133.75	974.32	920.32	54.00	18.042			
7,700.00	7,623.73	7,621.37	7,615.53	29.76	26.99	174.20	80.04	133.75	983.44	929.08	54.36	18.090			
7,750.00	7,672.88	7,670.52	7,664.68	29.98	27.16	174.25	80.04	133.75	992.57	937.85	54.72	18.138			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design														Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona		Offset Site Error: 0.00 ft	
Survey Program: 0-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					
7,800.00	7,722.03	7,719.68	7,713.83	30.19	27.34	174.31	80.04	133.75	1,001.70	946.61	55.08	18.185					
7,850.00	7,771.18	7,768.83	7,762.98	30.41	27.51	174.36	80.04	133.75	1,010.82	955.38	55.45	18.231					
7,900.00	7,820.33	7,817.98	7,812.13	30.63	27.69	174.41	80.04	133.75	1,019.95	964.15	55.81	18.276					
7,950.00	7,869.49	7,867.13	7,861.29	30.84	27.86	174.46	80.04	133.75	1,029.08	972.91	56.17	18.321					
8,000.00	7,918.64	7,916.28	7,910.44	31.06	28.04	174.51	80.04	133.75	1,038.21	981.68	56.53	18.366					
8,050.00	7,967.79	7,965.44	7,959.59	31.28	28.21	174.56	80.04	133.75	1,047.34	990.45	56.89	18.410					
8,100.00	8,016.94	8,014.59	8,008.74	31.50	28.39	174.60	80.04	133.75	1,056.47	999.22	57.25	18.453					
8,150.00	8,066.09	8,063.74	8,057.89	31.71	28.57	174.65	80.04	133.75	1,065.61	1,007.99	57.61	18.496					
8,200.00	8,115.24	8,112.89	8,107.04	31.93	28.74	174.69	80.04	133.75	1,074.74	1,016.76	57.98	18.538					
8,250.00	8,164.40	8,162.04	8,156.20	32.15	28.92	174.74	80.04	133.75	1,083.87	1,025.53	58.34	18.579					
8,300.00	8,213.55	8,211.19	8,205.35	32.37	29.09	174.78	80.04	133.75	1,093.01	1,034.31	58.70	18.621					
8,350.00	8,262.70	8,260.35	8,254.50	32.58	29.27	174.83	80.04	133.75	1,102.14	1,043.08	59.06	18.661					
8,400.00	8,311.85	8,309.50	8,303.65	32.80	29.44	174.87	80.04	133.75	1,111.28	1,051.85	59.42	18.701					
8,450.00	8,361.00	8,358.65	8,352.80	33.02	29.62	174.91	80.04	133.75	1,120.41	1,060.63	59.78	18.741					
8,500.00	8,410.15	8,407.80	8,401.95	33.24	29.79	174.95	80.04	133.75	1,129.55	1,069.40	60.15	18.780					
8,550.00	8,459.31	8,456.95	8,451.11	33.46	29.97	174.99	80.04	133.75	1,138.68	1,078.18	60.51	18.819					
8,600.00	8,508.46	8,506.10	8,500.26	33.67	30.14	175.03	80.04	133.75	1,147.82	1,086.95	60.87	18.857					
8,650.00	8,557.61	8,555.26	8,549.41	33.89	30.32	175.07	80.04	133.75	1,156.96	1,095.73	61.23	18.895					
8,700.00	8,606.76	8,604.41	8,598.56	34.11	30.50	175.11	80.04	133.75	1,166.10	1,104.50	61.59	18.932					
8,750.00	8,655.91	8,653.56	8,647.71	34.33	30.67	175.15	80.04	133.75	1,175.24	1,113.28	61.96	18.969					
8,800.00	8,705.06	8,702.71	8,696.86	34.55	30.85	175.19	80.04	133.75	1,184.38	1,122.06	62.32	19.005					
8,850.00	8,754.22	8,751.86	8,746.02	34.77	31.02	175.22	80.04	133.75	1,193.52	1,130.84	62.68	19.041					
8,900.00	8,803.37	8,801.01	8,795.17	34.98	31.20	175.26	80.04	133.75	1,202.66	1,139.62	63.04	19.077					
8,950.00	8,852.52	8,850.17	8,844.32	35.20	31.37	175.30	80.04	133.75	1,211.80	1,148.39	63.41	19.112					
9,000.00	8,901.67	8,900.68	8,893.47	35.42	31.55	175.33	80.04	133.75	1,220.94	1,157.17	63.77	19.145					
9,050.00	8,950.87	8,948.52	8,942.67	35.64	31.72	175.37	80.04	133.75	1,229.81	1,165.68	64.13	19.177					
9,100.00	9,000.19	9,002.17	8,991.99	35.85	31.92	175.42	80.04	133.75	1,238.03	1,173.53	64.51	19.192					
9,150.00	9,049.60	9,047.25	9,041.40	36.06	32.08	175.45	80.04	133.75	1,245.62	1,180.77	64.85	19.207					
9,200.00	9,099.12	9,103.24	9,090.92	36.26	32.28	175.49	80.04	133.75	1,252.56	1,187.32	65.24	19.200					
9,250.00	9,148.72	9,146.36	9,140.52	36.46	32.43	175.52	80.04	133.75	1,258.85	1,193.27	65.57	19.197					
9,300.00	9,198.40	9,203.96	9,190.20	36.65	32.64	175.54	80.04	133.75	1,264.49	1,198.53	65.96	19.170					
9,350.00	9,248.14	9,245.79	9,239.94	36.84	32.79	175.57	80.04	133.75	1,269.49	1,203.19	66.29	19.150					
9,400.00	9,297.95	9,304.40	9,289.75	37.03	33.00	175.59	80.04	133.75	1,273.83	1,207.15	66.68	19.103					
9,450.00	9,347.82	9,345.46	9,339.62	37.21	33.14	175.60	80.04	133.75	1,277.53	1,210.52	67.01	19.065					
9,500.00	9,397.72	9,404.63	9,389.52	37.39	33.35	175.62	80.04	133.75	1,280.57	1,213.17	67.40	19.000					
9,550.00	9,447.66	9,445.31	9,439.46	37.56	33.50	175.63	80.04	133.75	1,282.96	1,215.24	67.72	18.945					
9,600.00	9,497.63	9,504.72	9,489.43	37.73	33.71	175.64	80.04	133.75	1,284.70	1,216.60	68.11	18.863					
9,650.00	9,547.62	9,545.27	9,539.42	37.90	33.86	175.64	80.04	133.75	1,285.79	1,217.37	68.42	18.791					
9,700.00	9,597.62	9,604.74	9,589.42	38.06	34.07	175.64	80.04	133.75	1,286.23	1,217.42	68.81	18.693					
9,750.00	9,647.62	9,645.26	9,639.42	38.22	34.21	93.56	80.04	133.75	1,286.24	1,217.11	69.12	18.608					
9,800.00	9,697.62	9,700.46	9,694.59	38.37	34.41	93.51	81.27	133.75	1,286.17	1,216.67	69.50	18.506					
9,850.00	9,747.62	9,757.75	9,751.47	38.53	34.61	93.22	87.87	133.75	1,285.83	1,215.95	69.88	18.399					
9,900.00	9,797.62	9,813.19	9,805.63	38.69	34.81	92.69	99.64	133.75	1,285.27	1,215.01	70.26	18.294					
9,950.00	9,847.62	9,865.90	9,855.83	38.85	34.99	91.98	115.63	133.75	1,284.62	1,214.01	70.61	18.193					
10,000.00	9,897.62	9,915.26	9,901.33	39.01	35.15	91.13	134.72	133.75	1,284.05	1,213.11	70.95	18.099					
10,050.00	9,947.62	9,960.92	9,941.82	39.17	35.29	90.19	155.81	133.75	1,283.76	1,212.50	71.26	18.016					
10,059.44	9,957.06	9,989.15	9,948.93	39.20	35.31	90.21	159.95	133.75	1,283.75	1,212.44	71.31	18.002					
10,100.00	9,997.58	10,003.55	9,977.99	39.33	35.41	89.42	178.36	133.75	1,283.92	1,212.37	71.55	17.945					
10,150.00	10,047.23	10,044.73	10,011.25	39.49	35.53	88.45	202.63	133.75	1,284.56	1,212.74	71.82	17.886					
10,200.00	10,096.18	10,084.69	10,041.77	39.65	35.65	87.49	228.41	133.75	1,285.66	1,213.59	72.07	17.839					
10,250.00	10,144.07	10,123.59	10,069.69	39.81	35.77	86.54	255.49	133.75	1,287.15	1,214.85	72.30	17.803					
10,300.00	10,190.52	10,161.58	10,095.12	39.96	35.88	85.61	283.70	133.75	1,288.99	1,216.48	72.51	17.776					

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
10,350.00	10,235.19	10,198.77	10,118.15	40.11	36.00	84.70	312.89	133.75	1,291.12	1,218.42	72.70	17.760			
10,400.00	10,277.74	10,235.27	10,138.86	40.25	36.11	83.82	342.93	133.75	1,293.48	1,220.61	72.87	17.751			
10,450.00	10,317.84	10,271.17	10,157.33	40.39	36.22	82.97	373.71	133.75	1,296.01	1,222.99	73.02	17.750			
10,500.00	10,355.18	10,306.54	10,173.61	40.51	36.33	82.15	405.10	133.75	1,298.65	1,225.50	73.15	17.753			
10,550.00	10,389.49	10,341.45	10,187.75	40.64	36.44	81.37	437.02	133.75	1,301.35	1,228.08	73.27	17.760			
10,600.00	10,420.50	10,375.97	10,199.79	40.75	36.55	80.65	469.36	133.75	1,304.05	1,230.67	73.39	17.770			
10,650.00	10,447.97	10,410.14	10,209.77	40.86	36.65	79.97	502.04	133.75	1,306.70	1,233.20	73.50	17.779			
10,700.00	10,471.70	10,444.01	10,217.72	40.97	36.76	79.35	534.95	133.75	1,309.24	1,235.63	73.61	17.786			
10,750.00	10,491.51	10,477.62	10,223.68	41.09	36.87	78.78	568.03	133.75	1,311.63	1,237.90	73.73	17.790			
10,800.00	10,507.24	10,511.02	10,227.66	41.20	36.97	78.29	601.18	133.75	1,313.83	1,239.97	73.85	17.790			
10,850.00	10,518.77	10,544.23	10,229.71	41.32	37.08	77.85	634.33	133.75	1,315.80	1,241.80	73.99	17.783			
10,900.00	10,526.02	10,584.54	10,230.01	41.45	37.20	77.46	674.63	133.75	1,317.44	1,243.25	74.19	17.758			
10,950.00	10,528.94	10,634.44	10,230.01	41.58	37.38	77.26	724.53	133.75	1,318.26	1,243.76	74.49	17.697			
11,000.00	10,529.00	10,684.43	10,230.01	41.73	37.56	77.26	774.53	133.75	1,318.45	1,243.61	74.83	17.618			
11,050.00	10,529.00	10,734.43	10,230.01	41.89	37.76	77.26	824.53	133.75	1,318.62	1,243.41	75.21	17.532			
11,100.00	10,529.00	10,784.43	10,230.01	42.07	37.96	77.26	874.53	133.75	1,318.80	1,243.20	75.60	17.444			
11,150.00	10,529.00	10,834.43	10,230.01	42.26	38.19	77.26	924.53	133.75	1,318.98	1,242.95	76.03	17.348			
11,200.00	10,529.00	10,884.43	10,230.01	42.46	38.42	77.27	974.53	133.75	1,319.15	1,242.69	76.47	17.251			
11,250.00	10,529.00	10,934.43	10,230.01	42.67	38.66	77.27	1,024.53	133.75	1,319.33	1,242.39	76.94	17.147			
11,300.00	10,529.00	10,984.43	10,230.01	42.90	38.92	77.27	1,074.53	133.75	1,319.51	1,242.08	77.43	17.042			
11,350.00	10,529.00	11,034.43	10,230.01	43.14	39.19	77.27	1,124.53	133.75	1,319.69	1,241.73	77.95	16.930			
11,400.00	10,529.00	11,084.43	10,230.01	43.39	39.47	77.27	1,174.53	133.75	1,319.86	1,241.38	78.48	16.818			
11,450.00	10,529.00	11,134.43	10,230.01	43.66	39.76	77.27	1,224.53	133.75	1,320.04	1,240.99	79.05	16.699			
11,500.00	10,529.00	11,184.43	10,230.01	43.93	40.06	77.28	1,274.53	133.75	1,320.22	1,240.59	79.62	16.581			
11,550.00	10,529.00	11,234.43	10,230.01	44.22	40.38	77.28	1,324.53	133.75	1,320.39	1,240.16	80.23	16.457			
11,600.00	10,529.00	11,284.43	10,230.01	44.51	40.70	77.28	1,374.53	133.75	1,320.57	1,239.72	80.85	16.333			
11,650.00	10,529.00	11,334.43	10,230.01	44.82	41.04	77.28	1,424.53	133.75	1,320.75	1,239.25	81.50	16.205			
11,700.00	10,529.00	11,384.43	10,230.01	45.14	41.38	77.28	1,474.53	133.75	1,320.92	1,238.77	82.16	16.078			
11,750.00	10,529.00	11,434.43	10,230.01	45.47	41.74	77.28	1,524.53	133.75	1,321.10	1,238.25	82.85	15.946			
11,800.00	10,529.00	11,484.43	10,230.01	45.81	42.10	77.29	1,574.53	133.75	1,321.28	1,237.73	83.54	15.815			
11,850.00	10,529.00	11,534.43	10,230.01	46.16	42.47	77.29	1,624.53	133.75	1,321.46	1,237.18	84.27	15.681			
11,900.00	10,529.00	11,584.43	10,230.01	46.51	42.85	77.29	1,674.53	133.75	1,321.63	1,236.63	85.00	15.548			
11,950.00	10,529.00	11,634.43	10,230.01	46.88	43.25	77.29	1,724.53	133.75	1,321.81	1,236.04	85.76	15.412			
12,000.00	10,529.00	11,684.43	10,230.01	47.25	43.64	77.29	1,774.52	133.75	1,321.99	1,235.45	86.53	15.278			
12,050.00	10,529.00	11,734.43	10,230.01	47.64	44.05	77.29	1,824.52	133.75	1,322.16	1,234.84	87.33	15.140			
12,100.00	10,529.00	11,784.43	10,230.01	48.03	44.47	77.30	1,874.52	133.75	1,322.34	1,234.21	88.13	15.005			
12,150.00	10,529.00	11,834.43	10,230.01	48.43	44.89	77.30	1,924.52	133.75	1,322.52	1,233.56	88.95	14.868			
12,200.00	10,529.00	11,884.43	10,230.01	48.84	45.32	77.30	1,974.52	133.75	1,322.69	1,232.91	89.78	14.732			
12,250.00	10,529.00	11,934.43	10,230.01	49.25	45.76	77.30	2,024.52	133.75	1,322.87	1,232.23	90.64	14.595			
12,300.00	10,529.00	11,984.43	10,230.01	49.67	46.21	77.30	2,074.52	133.75	1,323.05	1,231.55	91.50	14.460			
12,350.00	10,529.00	12,034.43	10,230.01	50.11	46.66	77.31	2,124.52	133.75	1,323.23	1,230.84	92.38	14.323			
12,400.00	10,529.00	12,084.43	10,230.01	50.54	47.12	77.31	2,174.52	133.75	1,323.40	1,230.13	93.27	14.189			
12,450.00	10,529.00	12,134.43	10,230.01	50.99	47.59	77.31	2,224.52	133.75	1,323.58	1,229.40	94.18	14.053			
12,500.00	10,529.00	12,184.42	10,230.01	51.43	48.06	77.31	2,274.52	133.75	1,323.76	1,228.66	95.10	13.920			
12,550.00	10,529.00	12,234.42	10,230.01	51.89	48.54	77.31	2,324.52	133.75	1,323.93	1,227.90	96.03	13.786			
12,600.00	10,529.00	12,284.42	10,230.01	52.35	49.03	77.31	2,374.52	133.75	1,324.11	1,227.14	96.97	13.654			
12,650.00	10,529.00	12,334.42	10,230.01	52.82	49.52	77.32	2,424.52	133.75	1,324.29	1,226.36	97.93	13.523			
12,700.00	10,529.00	12,384.42	10,230.01	53.30	50.01	77.32	2,474.52	133.75	1,324.46	1,225.57	98.89	13.393			
12,750.00	10,529.00	12,434.42	10,230.01	53.78	50.52	77.32	2,524.52	133.75	1,324.64	1,224.77	99.88	13.263			
12,800.00	10,529.00	12,484.42	10,230.01	54.26	51.02	77.32	2,574.52	133.75	1,324.82	1,223.96	100.86	13.135			
12,850.00	10,529.00	12,534.42	10,230.01	54.76	51.54	77.32	2,624.52	133.75	1,325.00	1,223.13	101.86	13.008			
12,900.00	10,529.00	12,584.42	10,230.01	55.25	52.06	77.32	2,674.52	133.75	1,325.17	1,222.30	102.87	12.882			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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+HDGM													Offset Well Error:	0.50 ft
Reference														
Offset														
Semi Major Axis														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	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	
12,950.00	10,529.00	12,634.42	10,230.01	55.75	52.58	77.33	2,724.52	133.75	1,325.35	1,221.46	103.89	12.757		
13,000.00	10,529.00	12,684.42	10,230.01	56.26	53.11	77.33	2,774.52	133.75	1,325.53	1,220.61	104.92	12.634		
13,050.00	10,529.00	12,734.42	10,230.01	56.77	53.64	77.33	2,824.52	133.75	1,325.70	1,219.75	105.96	12.512		
13,100.00	10,529.00	12,784.42	10,230.01	57.29	54.18	77.33	2,874.52	133.75	1,325.88	1,218.88	107.00	12.391		
13,150.00	10,529.00	12,834.42	10,230.01	57.81	54.72	77.33	2,924.52	133.75	1,326.06	1,218.00	108.06	12.271		
13,200.00	10,529.00	12,884.42	10,230.01	58.33	55.26	77.33	2,974.52	133.75	1,326.23	1,217.11	109.12	12.154		
13,250.00	10,529.00	12,934.42	10,230.01	58.86	55.81	77.34	3,024.52	133.75	1,326.41	1,216.21	110.20	12.037		
13,300.00	10,529.00	12,984.42	10,230.01	59.39	56.37	77.34	3,074.52	133.75	1,326.59	1,215.31	111.27	11.922		
13,350.00	10,529.00	13,034.42	10,230.01	59.93	56.92	77.34	3,124.52	133.75	1,326.77	1,214.40	112.36	11.808		
13,400.00	10,529.00	13,084.42	10,230.01	60.47	57.48	77.34	3,174.52	133.75	1,326.94	1,213.48	113.46	11.695		
13,450.00	10,529.00	13,134.42	10,230.01	61.02	58.05	77.34	3,224.52	133.75	1,327.12	1,212.56	114.56	11.584		
13,500.00	10,529.00	13,184.42	10,230.01	61.57	58.62	77.34	3,274.51	133.75	1,327.30	1,211.63	115.67	11.475		
13,550.00	10,529.00	13,234.42	10,230.01	62.12	59.19	77.35	3,324.51	133.75	1,327.47	1,210.68	116.79	11.366		
13,600.00	10,529.00	13,284.42	10,230.01	62.68	59.77	77.35	3,374.51	133.75	1,327.65	1,209.74	117.91	11.260		
13,650.00	10,529.00	13,334.42	10,230.01	63.24	60.34	77.35	3,424.51	133.75	1,327.83	1,208.78	119.05	11.154		
13,700.00	10,529.00	13,384.42	10,230.01	63.80	60.93	77.35	3,474.51	133.75	1,328.00	1,207.83	120.18	11.050		
13,750.00	10,529.00	13,434.42	10,230.01	64.37	61.51	77.35	3,524.51	133.75	1,328.18	1,206.86	121.32	10.947		
13,800.00	10,529.00	13,484.42	10,230.01	64.94	62.10	77.36	3,574.51	133.75	1,328.36	1,205.89	122.47	10.846		
13,850.00	10,529.00	13,534.42	10,230.01	65.51	62.69	77.36	3,624.51	133.75	1,328.54	1,204.91	123.63	10.746		
13,900.00	10,529.00	13,584.42	10,230.01	66.09	63.28	77.36	3,674.51	133.75	1,328.71	1,203.93	124.79	10.648		
13,950.00	10,529.00	13,634.42	10,230.01	66.67	63.88	77.36	3,724.51	133.75	1,328.89	1,202.94	125.95	10.551		
14,000.00	10,529.00	13,684.41	10,230.01	67.25	64.48	77.36	3,774.51	133.75	1,329.07	1,201.94	127.12	10.455		
14,050.00	10,529.00	13,734.41	10,230.01	67.83	65.08	77.36	3,824.51	133.75	1,329.24	1,200.94	128.30	10.360		
14,100.00	10,529.00	13,784.41	10,230.01	68.42	65.68	77.37	3,874.51	133.75	1,329.42	1,199.94	129.48	10.267		
14,150.00	10,529.00	13,834.41	10,230.01	69.01	66.29	77.37	3,924.51	133.75	1,329.60	1,198.93	130.67	10.175		
14,200.00	10,529.00	13,884.41	10,230.01	69.60	66.90	77.37	3,974.51	133.75	1,329.78	1,197.91	131.86	10.085		
14,250.00	10,529.00	13,934.41	10,230.01	70.20	67.51	77.37	4,024.51	133.75	1,329.95	1,196.89	133.06	9.995		
14,300.00	10,529.00	13,984.41	10,230.01	70.79	68.12	77.37	4,074.51	133.75	1,330.13	1,195.87	134.26	9.907		
14,350.00	10,529.00	14,034.41	10,230.01	71.39	68.74	77.37	4,124.51	133.75	1,330.31	1,194.84	135.46	9.820		
14,400.00	10,529.00	14,084.41	10,230.01	72.00	69.36	77.38	4,174.51	133.75	1,330.48	1,193.81	136.67	9.735		
14,450.00	10,529.00	14,134.41	10,230.01	72.60	69.98	77.38	4,224.51	133.75	1,330.66	1,192.77	137.89	9.650		
14,500.00	10,529.00	14,184.41	10,230.01	73.21	70.60	77.38	4,274.51	133.75	1,330.84	1,191.73	139.10	9.567		
14,550.00	10,529.00	14,234.41	10,230.01	73.82	71.22	77.38	4,324.51	133.75	1,331.01	1,190.69	140.33	9.485		
14,600.00	10,529.00	14,284.41	10,230.01	74.43	71.85	77.38	4,374.51	133.75	1,331.19	1,189.64	141.55	9.404		
14,650.00	10,529.00	14,334.41	10,230.01	75.04	72.47	77.38	4,424.51	133.75	1,331.37	1,188.59	142.78	9.324		
14,700.00	10,529.00	14,384.41	10,230.01	75.66	73.10	77.39	4,474.51	133.75	1,331.55	1,187.53	144.01	9.246		
14,750.00	10,529.00	14,434.41	10,230.01	76.27	73.73	77.39	4,524.51	133.75	1,331.72	1,186.47	145.25	9.168		
14,800.00	10,529.00	14,484.41	10,230.01	76.89	74.37	77.39	4,574.51	133.75	1,331.90	1,185.41	146.49	9.092		
14,850.00	10,529.00	14,534.41	10,230.01	77.51	75.00	77.39	4,624.51	133.75	1,332.08	1,184.34	147.74	9.017		
14,900.00	10,529.00	14,584.41	10,230.01	78.13	75.64	77.39	4,674.51	133.75	1,332.25	1,183.27	148.98	8.942		
14,950.00	10,529.00	14,634.41	10,230.01	78.76	76.28	77.39	4,724.51	133.75	1,332.43	1,182.20	150.23	8.869		
15,000.00	10,529.00	14,684.41	10,230.01	79.39	76.91	77.40	4,774.51	133.75	1,332.61	1,181.12	151.49	8.797		
15,050.00	10,529.00	14,734.41	10,230.01	80.01	77.56	77.40	4,824.50	133.75	1,332.79	1,180.04	152.74	8.726		
15,100.00	10,529.00	14,784.41	10,230.01	80.64	78.20	77.40	4,874.50	133.75	1,332.96	1,178.96	154.00	8.655		
15,150.00	10,529.00	14,834.41	10,230.01	81.28	78.84	77.40	4,924.50	133.75	1,333.14	1,177.87	155.27	8.586		
15,200.00	10,529.00	14,884.41	10,230.01	81.91	79.49	77.40	4,974.50	133.75	1,333.32	1,176.79	156.53	8.518		
15,250.00	10,529.00	14,934.41	10,230.01	82.54	80.13	77.40	5,024.50	133.75	1,333.49	1,175.69	157.80	8.451		
15,300.00	10,529.00	14,984.41	10,230.01	83.18	80.78	77.41	5,074.50	133.75	1,333.67	1,174.60	159.07	8.384		
15,350.00	10,529.00	15,034.41	10,230.01	83.82	81.43	77.41	5,124.50	133.75	1,333.85	1,173.50	160.34	8.319		
15,400.00	10,529.00	15,084.41	10,230.01	84.45	82.08	77.41	5,174.50	133.75	1,334.02	1,172.41	161.62	8.254		
15,450.00	10,529.00	15,134.41	10,230.01	85.09	82.73	77.41	5,224.50	133.75	1,334.20	1,171.30	162.90	8.190		
15,500.00	10,529.00	15,184.41	10,230.01	85.74	83.39	77.41	5,274.50	133.75	1,334.38	1,170.20	164.18	8.128		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)							
15,550.00	10,529.00	15,234.40	10,230.01	86.38	84.04	77.41	5,324.50	133.75	1,334.56	1,169.09	165.46	8.066			
15,600.00	10,529.00	15,284.40	10,230.01	87.02	84.70	77.42	5,374.50	133.75	1,334.73	1,167.98	166.75	8.004			
15,650.00	10,529.00	15,334.40	10,230.01	87.67	85.35	77.42	5,424.50	133.75	1,334.91	1,166.87	168.04	7.944			
15,700.00	10,529.00	15,384.40	10,230.01	88.32	86.01	77.42	5,474.50	133.75	1,335.09	1,165.76	169.33	7.885			
15,750.00	10,529.00	15,434.40	10,230.01	88.96	86.67	77.42	5,524.50	133.75	1,335.26	1,164.64	170.62	7.826			
15,800.00	10,529.00	15,484.40	10,230.01	89.61	87.33	77.42	5,574.50	133.75	1,335.44	1,163.53	171.92	7.768			
15,850.00	10,529.00	15,534.40	10,230.01	90.26	87.99	77.42	5,624.50	133.75	1,335.62	1,162.41	173.21	7.711			
15,900.00	10,529.00	15,584.40	10,230.01	90.92	88.65	77.43	5,674.50	133.75	1,335.80	1,161.28	174.51	7.654			
15,950.00	10,529.00	15,634.40	10,230.01	91.57	89.31	77.43	5,724.50	133.75	1,335.97	1,160.16	175.81	7.599			
16,000.00	10,529.00	15,684.40	10,230.01	92.22	89.98	77.43	5,774.50	133.75	1,336.15	1,159.03	177.12	7.544			
16,050.00	10,529.00	15,734.40	10,230.01	92.88	90.64	77.43	5,824.50	133.75	1,336.33	1,157.90	178.42	7.490			
16,100.00	10,529.00	15,784.40	10,230.01	93.53	91.31	77.43	5,874.50	133.75	1,336.50	1,156.78	179.73	7.436			
16,150.00	10,529.00	15,834.40	10,230.01	94.19	91.98	77.44	5,924.50	133.75	1,336.68	1,155.64	181.04	7.383			
16,200.00	10,529.00	15,884.40	10,230.01	94.85	92.64	77.44	5,974.50	133.75	1,336.86	1,154.51	182.35	7.331			
16,250.00	10,529.00	15,934.40	10,230.01	95.51	93.31	77.44	6,024.50	133.75	1,337.04	1,153.37	183.66	7.280			
16,300.00	10,529.00	15,984.40	10,230.01	96.17	93.98	77.44	6,074.50	133.75	1,337.21	1,152.24	184.98	7.229			
16,350.00	10,529.00	16,034.40	10,230.01	96.83	94.65	77.44	6,124.50	133.75	1,337.39	1,151.10	186.29	7.179			
16,400.00	10,529.00	16,084.40	10,230.01	97.49	95.32	77.44	6,174.50	133.75	1,337.57	1,149.96	187.61	7.130			
16,450.00	10,529.00	16,134.40	10,230.01	98.15	95.99	77.45	6,224.50	133.75	1,337.74	1,148.81	188.93	7.081			
16,500.00	10,529.00	16,184.40	10,230.01	98.82	96.67	77.45	6,274.50	133.75	1,337.92	1,147.67	190.25	7.032			
16,550.00	10,529.00	16,234.40	10,230.01	99.48	97.34	77.45	6,324.49	133.75	1,338.10	1,146.53	191.57	6.985			
16,600.00	10,529.00	16,284.40	10,230.01	100.15	98.01	77.45	6,374.49	133.75	1,338.28	1,145.38	192.90	6.938			
16,650.00	10,529.00	16,334.40	10,230.01	100.81	98.69	77.45	6,424.49	133.75	1,338.45	1,144.23	194.22	6.891			
16,700.00	10,529.00	16,384.40	10,230.01	101.48	99.36	77.45	6,474.49	133.75	1,338.63	1,143.08	195.55	6.845			
16,750.00	10,529.00	16,434.40	10,230.01	102.15	100.04	77.46	6,524.49	133.75	1,338.81	1,141.93	196.88	6.800			
16,800.00	10,529.00	16,484.40	10,230.01	102.82	100.72	77.46	6,574.49	133.75	1,338.98	1,140.78	198.21	6.755			
16,850.00	10,529.00	16,534.40	10,230.01	103.49	101.39	77.46	6,624.49	133.75	1,339.16	1,139.62	199.54	6.711			
16,900.00	10,529.00	16,584.40	10,230.01	104.16	102.07	77.46	6,674.49	133.75	1,339.34	1,138.47	200.87	6.668			
16,950.00	10,529.00	16,634.40	10,230.01	104.83	102.75	77.46	6,724.49	133.75	1,339.52	1,137.31	202.21	6.625			
17,000.00	10,529.00	16,684.40	10,230.01	105.50	103.43	77.46	6,774.49	133.75	1,339.69	1,136.15	203.54	6.582			
17,050.00	10,529.00	16,734.39	10,230.01	106.17	104.11	77.47	6,824.49	133.75	1,339.87	1,134.99	204.88	6.540			
17,100.00	10,529.00	16,784.39	10,230.01	106.85	104.79	77.47	6,874.49	133.75	1,340.05	1,133.83	206.21	6.498			
17,150.00	10,529.00	16,834.39	10,230.01	107.52	105.47	77.47	6,924.49	133.75	1,340.22	1,132.67	207.55	6.457			
17,200.00	10,529.00	16,884.39	10,230.01	108.19	106.16	77.47	6,974.49	133.75	1,340.40	1,131.51	208.89	6.417			
17,250.00	10,529.00	16,934.39	10,230.01	108.87	106.84	77.47	7,024.49	133.75	1,340.58	1,130.34	210.24	6.377			
17,300.00	10,529.00	16,984.39	10,230.01	109.55	107.52	77.47	7,074.49	133.75	1,340.75	1,129.18	211.58	6.337			
17,350.00	10,529.00	17,034.39	10,230.01	110.22	108.20	77.48	7,124.49	133.75	1,340.93	1,128.01	212.92	6.298			
17,400.00	10,529.00	17,084.39	10,230.01	110.90	108.89	77.48	7,174.49	133.75	1,341.11	1,126.84	214.27	6.259			
17,450.00	10,529.00	17,134.39	10,230.01	111.58	109.57	77.48	7,224.49	133.75	1,341.29	1,125.67	215.61	6.221			
17,500.00	10,529.00	17,184.39	10,230.01	112.26	110.26	77.48	7,274.49	133.75	1,341.46	1,124.50	216.96	6.183			
17,550.00	10,529.00	17,234.39	10,230.01	112.94	110.94	77.48	7,324.49	133.75	1,341.64	1,123.33	218.31	6.146			
17,600.00	10,529.00	17,284.39	10,230.01	113.61	111.63	77.48	7,374.49	133.75	1,341.82	1,122.16	219.66	6.109			
17,650.00	10,529.00	17,334.39	10,230.01	114.30	112.32	77.49	7,424.49	133.75	1,341.99	1,120.99	221.01	6.072			
17,700.00	10,529.00	17,384.39	10,230.01	114.98	113.00	77.49	7,474.49	133.75	1,342.17	1,119.81	222.36	6.036			
17,750.00	10,529.00	17,434.39	10,230.01	115.66	113.69	77.49	7,524.49	133.75	1,342.35	1,118.64	223.71	6.000			
17,800.00	10,529.00	17,484.39	10,230.01	116.34	114.38	77.49	7,574.49	133.75	1,342.53	1,117.46	225.06	5.965			
17,850.00	10,529.00	17,534.39	10,230.01	117.02	115.07	77.49	7,624.49	133.75	1,342.70	1,116.28	226.42	5.930			
17,900.00	10,529.00	17,584.39	10,230.01	117.70	115.76	77.49	7,674.49	133.75	1,342.88	1,115.11	227.77	5.896			
17,950.00	10,529.00	17,634.39	10,230.01	118.39	116.45	77.50	7,724.49	133.75	1,343.06	1,113.93	229.13	5.862			
18,000.00	10,529.00	17,684.39	10,230.01	119.07	117.14	77.50	7,774.49	133.75	1,343.23	1,112.75	230.49	5.828			
18,050.00	10,529.00	17,734.39	10,230.01	119.76	117.83	77.50	7,824.48	133.75	1,343.41	1,111.57	231.84	5.794			
18,100.00	10,529.00	17,784.39	10,230.01	120.44	118.52	77.50	7,874.48	133.75	1,343.59	1,110.39	233.20	5.761			

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

Anticollision Report

Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 21-T25S-R32E
Site Error: 0.00 ft
Reference Well: Van Doo Dah 21-33 Fed Com 233H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Van Doo Dah 21-33 Fed Com 233H
TVD Reference: RKB @ 3415.20ft
MD Reference: RKB @ 3415.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Offset Design Sec 21-T25S-R32E - Marwari 21-16 State Fed Com 234H - Wellbore #1 - Permit Plan 1 (Pro Directiona												Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM												Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Tooface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
18,150.00	10,529.00	17,834.39	10,230.01	121.13	119.21	77.50	7,924.48	133.75	1,343.77	1,109.20	234.56	5.729	
18,200.00	10,529.00	17,884.39	10,230.01	121.81	119.90	77.50	7,974.48	133.75	1,343.94	1,108.02	235.92	5.697	
18,250.00	10,529.00	17,934.39	10,230.01	122.50	120.60	77.51	8,024.48	133.75	1,344.12	1,106.84	237.28	5.665	
18,300.00	10,529.00	17,984.39	10,230.01	123.19	121.29	77.51	8,074.48	133.75	1,344.30	1,105.65	238.65	5.633	
18,350.00	10,529.00	18,034.39	10,230.01	123.87	121.98	77.51	8,124.48	133.75	1,344.47	1,104.47	240.01	5.602	
18,400.00	10,529.00	18,084.39	10,230.01	124.56	122.67	77.51	8,174.48	133.75	1,344.65	1,103.28	241.37	5.571	
18,450.00	10,529.00	18,134.39	10,230.01	125.25	123.37	77.51	8,224.48	133.75	1,344.83	1,102.09	242.74	5.540	
18,500.00	10,529.00	18,184.39	10,230.01	125.94	124.06	77.51	8,274.48	133.75	1,345.01	1,100.90	244.10	5.510	
18,550.00	10,529.00	18,234.39	10,230.01	126.63	124.76	77.52	8,324.48	133.75	1,345.18	1,099.72	245.47	5.480	
18,600.00	10,529.00	18,284.38	10,230.01	127.32	125.45	77.52	8,374.48	133.75	1,345.36	1,098.53	246.83	5.450	
18,650.00	10,529.00	18,334.38	10,230.01	128.01	126.15	77.52	8,424.48	133.75	1,345.54	1,097.34	248.20	5.421	
18,700.00	10,529.00	18,384.38	10,230.01	128.70	126.84	77.52	8,474.48	133.75	1,345.72	1,096.15	249.57	5.392	
18,750.00	10,529.00	18,434.38	10,230.01	129.39	127.54	77.52	8,524.48	133.75	1,345.89	1,094.95	250.94	5.363	
18,800.00	10,529.00	18,484.38	10,230.01	130.08	128.23	77.52	8,574.48	133.75	1,346.07	1,093.76	252.31	5.335	
18,850.00	10,529.00	18,534.38	10,230.01	130.77	128.93	77.53	8,624.48	133.75	1,346.25	1,092.57	253.68	5.307	
18,900.00	10,529.00	18,584.38	10,230.01	131.46	129.63	77.53	8,674.48	133.75	1,346.42	1,091.38	255.05	5.279	
18,950.00	10,529.00	18,634.38	10,230.01	132.16	130.32	77.53	8,724.48	133.75	1,346.60	1,090.18	256.42	5.252	
19,000.00	10,529.00	18,684.38	10,230.01	132.85	131.02	77.53	8,774.48	133.75	1,346.78	1,088.99	257.79	5.224	
19,050.00	10,529.00	18,734.38	10,230.01	133.54	131.72	77.53	8,824.48	133.75	1,346.96	1,087.79	259.17	5.197	
19,100.00	10,529.00	18,784.38	10,230.01	134.24	132.42	77.53	8,874.48	133.75	1,347.13	1,086.59	260.54	5.171	
19,150.00	10,529.00	18,834.38	10,230.01	134.93	133.11	77.54	8,924.48	133.75	1,347.31	1,085.40	261.91	5.144	
19,200.00	10,529.00	18,884.38	10,230.01	135.62	133.81	77.54	8,974.48	133.75	1,347.49	1,084.20	263.29	5.118	
19,250.00	10,529.00	18,934.38	10,230.01	136.32	134.51	77.54	9,024.48	133.75	1,347.66	1,083.00	264.66	5.092	
19,300.00	10,529.00	18,984.38	10,230.01	137.01	135.21	77.54	9,074.48	133.75	1,347.84	1,081.80	266.04	5.066	
19,350.00	10,529.00	19,034.38	10,230.01	137.71	135.91	77.54	9,124.48	133.75	1,348.02	1,080.60	267.41	5.041	
19,400.00	10,529.00	19,084.38	10,230.01	138.40	136.61	77.54	9,174.48	133.75	1,348.20	1,079.40	268.79	5.016	
19,450.00	10,529.00	19,134.38	10,230.01	139.10	137.31	77.55	9,224.48	133.75	1,348.37	1,078.20	270.17	4.991 Alert	
19,500.00	10,529.00	19,184.38	10,230.01	139.79	138.01	77.55	9,274.48	133.75	1,348.55	1,077.00	271.55	4.966 Alert	
19,550.00	10,529.00	19,234.38	10,230.01	140.49	138.71	77.55	9,324.48	133.75	1,348.73	1,075.80	272.93	4.942 Alert	
19,600.00	10,529.00	19,284.38	10,230.01	141.19	139.41	77.55	9,374.47	133.75	1,348.90	1,074.60	274.30	4.918 Alert	
19,650.00	10,529.00	19,334.38	10,230.01	141.89	140.11	77.55	9,424.47	133.75	1,349.08	1,073.40	275.68	4.894 Alert	
19,700.00	10,529.00	19,384.38	10,230.01	142.58	140.81	77.55	9,474.47	133.75	1,349.26	1,072.19	277.06	4.870 Alert	
19,750.00	10,529.00	19,434.38	10,230.01	143.28	141.52	77.56	9,524.47	133.75	1,349.44	1,070.99	278.45	4.846 Alert	
19,800.00	10,529.00	19,484.38	10,230.01	143.98	142.22	77.56	9,574.47	133.75	1,349.61	1,069.79	279.83	4.823 Alert	
19,850.00	10,529.00	19,534.38	10,230.01	144.68	142.92	77.56	9,624.47	133.75	1,349.79	1,068.58	281.21	4.800 Alert	
19,900.00	10,529.00	19,584.38	10,230.01	145.37	143.62	77.56	9,674.47	133.75	1,349.97	1,067.38	282.59	4.777 Alert	
19,950.00	10,529.00	19,634.38	10,230.01	146.07	144.33	77.56	9,724.47	133.75	1,350.14	1,066.17	283.97	4.754 Alert	
20,000.00	10,529.00	19,684.38	10,230.01	146.77	145.03	77.56	9,774.47	133.75	1,350.32	1,064.97	285.36	4.732 Alert	
20,050.00	10,529.00	19,734.38	10,230.01	147.47	145.73	77.57	9,824.47	133.75	1,350.50	1,063.76	286.74	4.710 Alert	
20,100.00	10,529.00	19,784.37	10,230.01	148.17	146.43	77.57	9,874.47	133.75	1,350.68	1,062.55	288.12	4.688 Alert	
20,150.00	10,529.00	19,834.37	10,230.01	148.87	147.14	77.57	9,924.47	133.75	1,350.85	1,061.34	289.51	4.666 Alert	
20,200.00	10,529.00	19,884.37	10,230.01	149.57	147.84	77.57	9,974.47	133.75	1,351.03	1,060.14	290.89	4.644 Alert	
20,250.00	10,529.00	19,934.37	10,230.01	150.27	148.55	77.57	10,024.47	133.75	1,351.21	1,058.93	292.28	4.623 Alert	
20,300.00	10,529.00	19,984.78	10,230.01	150.97	148.71	77.57	10,035.88	133.75	1,351.94	1,059.24	292.69	4.619 Alert	
20,350.00	10,529.00	19,945.78	10,230.01	151.67	148.71	77.57	10,035.88	133.75	1,354.46	1,061.96	292.50	4.631 Alert	
20,400.00	10,529.00	19,945.78	10,230.01	152.37	148.71	77.57	10,035.88	133.75	1,358.83	1,066.88	291.94	4.654 Alert	
20,450.00	10,529.00	19,945.78	10,230.01	153.07	148.71	77.57	10,035.88	133.75	1,365.01	1,073.97	291.03	4.690 Alert	
20,500.00	10,529.00	19,945.78	10,230.01	153.78	148.71	77.57	10,035.88	133.75	1,372.98	1,083.20	289.79	4.738 Alert	
20,550.00	10,529.00	19,945.78	10,230.01	154.48	148.71	77.57	10,035.88	133.75	1,382.72	1,094.50	288.22	4.797 Alert	
20,554.39	10,529.00	19,945.78	10,230.01	154.54	148.71	77.57	10,035.88	133.75	1,383.66	1,095.59	288.07	4.803 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 Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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
Sec 28-T25S-R32E - Cotton Draw Unit 47 (P&A) - Wellbore #1 - Wellbore #1													Offset Well Error:		10.00 ft
Survey Program: 10-INC-ONLY															
Reference		Offset		Semi-Major Axis		Highside Toolface	Offset Wellbore Centre		Distance		Minimum Separation	Separation Factor	Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset		+N/-S	+E/-W	Between Centres	Between Ellipses					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)				
0.00	0.00	0.00	0.00	0.50	10.00	148.55	-837.99	512.45	982.35						
50.00	50.00	36.80	36.80	0.50	10.01	148.55	-837.99	512.45	982.26	971.75	10.51	93.459			
100.00	100.00	86.80	86.80	0.52	10.07	148.55	-837.99	512.45	982.26	971.67	10.58	92.809			
150.00	150.00	136.80	136.80	0.59	10.18	148.55	-837.99	512.45	982.26	971.49	10.77	91.212			
200.00	200.00	186.80	186.80	0.70	10.34	148.55	-837.99	512.45	982.26	971.21	11.05	88.919			
250.00	250.00	236.80	236.80	0.84	10.56	148.55	-837.99	512.45	982.26	970.86	11.40	86.172			
300.00	300.00	286.80	286.80	0.99	10.83	148.55	-837.99	512.45	982.26	970.44	11.81	83.154			
350.00	350.00	336.80	336.80	1.15	11.13	148.55	-837.99	512.45	982.26	969.98	12.28	79.995			
400.00	400.00	386.80	386.80	1.31	11.48	148.55	-837.99	512.45	982.26	969.47	12.79	76.790			
450.00	450.00	436.80	436.80	1.48	11.87	148.55	-837.99	512.45	982.26	968.91	13.34	73.607			
500.00	500.00	486.80	486.80	1.65	12.29	148.55	-837.99	512.45	982.26	968.32	13.93	70.494			
550.00	550.00	536.80	536.80	1.82	12.74	148.55	-837.99	512.45	982.26	967.70	14.56	67.485			
600.00	600.00	586.80	586.80	1.99	13.21	148.55	-837.99	512.45	982.26	967.05	15.20	64.601			
650.00	650.00	636.80	636.80	2.16	13.72	148.55	-837.99	512.45	982.26	966.38	15.88	61.854			
700.00	700.00	686.80	686.80	2.34	14.24	148.55	-837.99	512.45	982.26	965.68	16.58	59.251			
750.00	750.00	736.80	736.80	2.51	14.78	148.55	-837.99	512.45	982.26	964.96	17.30	56.792			
800.00	800.00	786.80	786.80	2.69	15.34	148.55	-837.99	512.45	982.26	964.23	18.03	54.475			
850.00	850.00	836.80	836.80	2.87	15.92	148.55	-837.99	512.45	982.26	963.47	18.78	52.295			
900.00	900.00	886.80	886.80	3.04	16.51	148.55	-837.99	512.45	982.26	962.71	19.55	50.246			
950.00	950.00	936.80	936.80	3.22	17.11	148.55	-837.99	512.45	982.26	961.93	20.33	48.321			
1,000.00	1,000.00	986.80	986.80	3.40	17.72	148.55	-837.99	512.45	982.26	961.14	21.12	46.513			
1,050.00	1,050.00	1,036.80	1,036.80	3.58	18.34	148.55	-837.99	512.45	982.26	960.34	21.92	44.815			
1,100.00	1,100.00	1,086.80	1,086.80	3.75	18.98	148.55	-837.99	512.45	982.26	959.53	22.73	43.218			
1,150.00	1,150.00	1,136.80	1,136.80	3.93	19.62	148.55	-837.99	512.45	982.26	958.71	23.55	41.717			
1,200.00	1,200.00	1,186.80	1,186.80	4.11	20.26	148.55	-837.99	512.45	982.26	957.89	24.37	40.303			
1,250.00	1,250.00	1,236.80	1,236.80	4.29	20.92	148.55	-837.99	512.45	982.26	957.05	25.20	38.972			
1,300.00	1,300.00	1,286.80	1,286.80	4.46	21.58	148.55	-837.99	512.45	982.26	956.21	26.04	37.717			
1,350.00	1,350.00	1,336.80	1,336.80	4.64	22.25	148.55	-837.99	512.45	982.26	955.37	26.89	36.532			
1,400.00	1,400.00	1,386.80	1,386.80	4.82	22.92	148.55	-837.99	512.45	982.26	954.52	27.74	35.413			
1,450.00	1,450.00	1,436.80	1,436.80	5.00	23.59	148.55	-837.99	512.45	982.26	953.67	28.59	34.355			
1,500.00	1,500.00	1,486.80	1,486.80	5.18	24.27	148.55	-837.99	512.45	982.26	952.81	29.45	33.354			
1,550.00	1,550.00	1,536.80	1,536.80	5.36	24.96	148.55	-837.99	512.45	982.26	951.94	30.31	32.404			
1,600.00	1,600.00	1,586.80	1,586.80	5.53	25.64	148.55	-837.99	512.45	982.26	951.08	31.18	31.504			
1,650.00	1,650.00	1,636.80	1,636.80	5.71	26.34	148.55	-837.99	512.45	982.26	950.21	32.05	30.649			
1,700.00	1,700.00	1,686.80	1,686.80	5.89	27.03	148.55	-837.99	512.45	982.26	949.34	32.92	29.837			
1,750.00	1,750.00	1,736.80	1,736.80	6.07	27.73	148.55	-837.99	512.45	982.26	948.46	33.80	29.064			
1,800.00	1,800.00	1,786.80	1,786.80	6.25	28.43	148.55	-837.99	512.45	982.26	947.58	34.68	28.327			
1,850.00	1,850.00	1,836.80	1,836.80	6.43	29.13	148.55	-837.99	512.45	982.26	946.70	35.56	27.626			
1,900.00	1,900.00	1,886.80	1,886.80	6.61	29.83	148.55	-837.99	512.45	982.26	945.82	36.44	26.956			
1,950.00	1,950.00	1,936.80	1,936.80	6.78	30.54	148.55	-837.99	512.45	982.26	944.93	37.32	26.317			
2,000.00	2,000.00	1,986.80	1,986.80	6.96	31.25	148.55	-837.99	512.45	982.26	944.05	38.21	25.706			
2,050.00	2,050.00	2,036.80	2,036.80	7.14	31.96	148.55	-837.99	512.45	982.26	943.16	39.10	25.121			
2,100.00	2,100.00	2,086.80	2,086.80	7.32	32.67	148.55	-837.99	512.45	982.26	942.27	39.99	24.562			
2,150.00	2,150.00	2,136.80	2,136.80	7.50	33.38	148.55	-837.99	512.45	982.26	941.37	40.88	24.025			
2,200.00	2,200.00	2,186.80	2,186.80	7.68	34.10	148.55	-837.99	512.45	982.26	940.48	41.78	23.511			
2,250.00	2,250.00	2,236.80	2,236.80	7.86	34.82	148.55	-837.99	512.45	982.26	939.58	42.67	23.018			
2,300.00	2,300.00	2,286.80	2,286.80	8.04	35.53	148.55	-837.99	512.45	982.26	938.69	43.57	22.544			
2,350.00	2,350.00	2,336.80	2,336.80	8.22	36.25	148.55	-837.99	512.45	982.26	937.79	44.47	22.089			
2,400.00	2,400.00	2,386.80	2,386.80	8.39	36.97	148.55	-837.99	512.45	982.26	936.89	45.37	21.651			
2,450.00	2,450.00	2,436.80	2,436.80	8.57	37.70	148.55	-837.99	512.45	982.26	935.99	46.27	21.230			
2,500.00	2,500.00	2,486.80	2,486.80	8.75	38.42	148.55	-837.99	512.45	982.26	935.09	47.17	20.824 CC			
2,550.00	2,550.00	2,536.80	2,536.80	8.93	39.14	-129.38	-837.99	512.45	982.40	934.33	48.07	20.438			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Cotton Draw Unit 47 (P&A) - 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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
2,600.00	2,599.99	2,586.79	2,586.79	9.10	39.87	-129.40	-837.99	512.45	982.81	933.84	48.97	20.071			
2,650.00	2,649.98	2,636.78	2,636.78	9.27	40.59	-129.45	-837.99	512.45	983.50	933.84	49.86	19.724 ES			
2,700.00	2,699.96	2,686.76	2,686.76	9.45	41.32	-129.51	-837.99	512.45	984.47	933.71	50.76	19.394			
2,750.00	2,749.92	2,736.72	2,736.72	9.62	42.04	-129.59	-837.99	512.45	985.73	934.06	51.66	19.081			
2,800.00	2,799.86	2,786.66	2,786.66	9.79	42.77	-129.68	-837.99	512.45	987.26	934.70	52.56	18.783			
2,850.00	2,849.78	2,836.58	2,836.58	9.97	43.50	-129.79	-837.99	512.45	989.07	935.61	53.46	18.501			
2,900.00	2,899.68	2,886.48	2,886.48	10.14	44.22	-129.92	-837.99	512.45	991.17	936.81	54.36	18.233			
2,950.00	2,949.54	2,936.34	2,936.34	10.31	44.95	-130.07	-837.99	512.45	993.55	938.29	55.26	17.978			
3,000.00	2,999.37	2,986.17	2,986.17	10.49	45.68	-130.23	-837.99	512.45	996.23	940.06	56.17	17.737			
3,050.00	3,049.16	3,035.96	3,035.96	10.67	46.41	-130.41	-837.99	512.45	999.20	942.13	57.07	17.509			
3,100.00	3,098.90	3,085.70	3,085.70	10.84	47.14	-130.60	-837.99	512.45	1,002.46	944.49	57.97	17.292			
3,150.00	3,148.61	3,135.41	3,135.41	11.02	47.86	-130.81	-837.99	512.45	1,006.02	947.15	58.88	17.087			
3,200.00	3,198.26	3,185.06	3,185.06	11.20	48.59	-131.03	-837.99	512.45	1,009.89	950.11	59.78	16.894			
3,250.00	3,247.86	3,234.66	3,234.66	11.38	49.32	-131.26	-837.99	512.45	1,014.06	953.37	60.68	16.711			
3,300.00	3,297.40	3,284.20	3,284.20	11.56	50.04	-131.51	-837.99	512.45	1,018.54	956.95	61.59	16.538			
3,350.00	3,346.89	3,333.69	3,333.69	11.74	50.77	-131.78	-837.99	512.45	1,023.33	960.84	62.49	16.376			
3,400.00	3,396.30	3,383.10	3,383.10	11.92	51.50	-132.05	-837.99	512.45	1,028.45	965.05	63.40	16.223			
3,450.00	3,445.65	3,432.45	3,432.45	12.10	52.22	-132.34	-837.99	512.45	1,033.88	969.58	64.30	16.079			
3,500.00	3,494.93	3,481.73	3,481.73	12.29	52.95	-132.64	-837.99	512.45	1,039.65	974.44	65.20	15.944			
3,550.00	3,544.13	3,530.93	3,530.93	12.48	53.67	-132.95	-837.99	512.45	1,045.75	979.64	66.11	15.818			
3,600.00	3,593.29	3,580.09	3,580.09	12.66	54.39	-133.31	-837.99	512.45	1,052.07	985.06	67.01	15.699			
3,650.00	3,642.44	3,629.24	3,629.24	12.85	55.12	-133.67	-837.99	512.45	1,058.44	990.52	67.92	15.584			
3,700.00	3,691.59	3,678.39	3,678.39	13.04	55.84	-134.02	-837.99	512.45	1,064.85	996.02	68.83	15.471			
3,750.00	3,740.74	3,727.54	3,727.54	13.23	56.57	-134.37	-837.99	512.45	1,071.30	1,001.56	69.73	15.363			
3,800.00	3,789.89	3,776.69	3,776.69	13.43	57.29	-134.71	-837.99	512.45	1,077.78	1,007.14	70.64	15.257			
3,850.00	3,839.04	3,825.84	3,825.84	13.62	58.02	-135.06	-837.99	512.45	1,084.31	1,012.76	71.55	15.154			
3,900.00	3,888.20	3,875.00	3,875.00	13.81	58.74	-135.39	-837.99	512.45	1,090.88	1,018.42	72.46	15.055			
3,950.00	3,937.35	3,924.15	3,924.15	14.01	59.47	-135.73	-837.99	512.45	1,097.48	1,024.11	73.37	14.958			
4,000.00	3,986.50	3,973.30	3,973.30	14.20	60.19	-136.06	-837.99	512.45	1,104.12	1,029.84	74.28	14.864			
4,050.00	4,035.65	4,022.45	4,022.45	14.40	60.92	-136.38	-837.99	512.45	1,110.79	1,035.60	75.19	14.772			
4,100.00	4,084.80	4,071.60	4,071.60	14.60	61.64	-136.70	-837.99	512.45	1,117.51	1,041.40	76.11	14.684			
4,150.00	4,133.95	4,120.75	4,120.75	14.80	62.37	-137.02	-837.99	512.45	1,124.25	1,047.23	77.02	14.597			
4,200.00	4,183.11	4,169.91	4,169.91	15.00	63.10	-137.34	-837.99	512.45	1,131.03	1,053.10	77.93	14.513			
4,250.00	4,232.26	4,219.06	4,219.06	15.20	63.82	-137.65	-837.99	512.45	1,137.84	1,059.00	78.84	14.431			
4,300.00	4,281.41	4,268.21	4,268.21	15.39	64.55	-137.95	-837.99	512.45	1,144.69	1,064.93	79.76	14.352			
4,350.00	4,330.56	4,317.36	4,317.36	15.60	65.28	-138.26	-837.99	512.45	1,151.57	1,070.90	80.67	14.275			
4,400.00	4,379.71	4,366.51	4,366.51	15.80	66.01	-138.56	-837.99	512.45	1,158.48	1,076.89	81.59	14.199			
4,450.00	4,428.86	4,415.66	4,415.66	16.00	66.73	-138.85	-837.99	512.45	1,165.42	1,082.92	82.50	14.126			
4,500.00	4,478.02	4,464.82	4,464.82	16.20	67.46	-139.15	-837.99	512.45	1,172.39	1,088.97	83.42	14.054			
4,550.00	4,527.17	4,513.97	4,513.97	16.40	68.19	-139.44	-837.99	512.45	1,179.39	1,095.06	84.33	13.985			
4,600.00	4,576.32	4,563.12	4,563.12	16.61	68.92	-139.72	-837.99	512.45	1,186.43	1,101.18	85.25	13.917			
4,650.00	4,625.47	4,612.27	4,612.27	16.81	69.65	-140.00	-837.99	512.45	1,193.49	1,107.32	86.17	13.851			
4,700.00	4,674.62	4,661.42	4,661.42	17.02	70.38	-140.28	-837.99	512.45	1,200.58	1,113.49	87.08	13.787			
4,750.00	4,723.77	4,710.57	4,710.57	17.22	71.10	-140.56	-837.99	512.45	1,207.69	1,119.69	88.00	13.724			
4,800.00	4,772.93	4,759.73	4,759.73	17.43	71.83	-140.83	-837.99	512.45	1,214.84	1,125.92	88.92	13.663			
4,850.00	4,822.08	4,808.88	4,808.88	17.63	72.56	-141.10	-837.99	512.45	1,222.01	1,132.18	89.84	13.603			
4,900.00	4,871.23	4,858.03	4,858.03	17.84	73.29	-141.37	-837.99	512.45	1,229.21	1,138.46	90.75	13.545			
4,950.00	4,920.38	4,907.18	4,907.18	18.04	74.02	-141.63	-837.99	512.45	1,236.43	1,144.76	91.67	13.488			
5,000.00	4,969.53	4,956.33	4,956.33	18.25	74.75	-141.89	-837.99	512.45	1,243.68	1,151.10	92.59	13.432			
5,050.00	5,018.69	5,005.49	5,005.49	18.46	75.48	-142.15	-837.99	512.45	1,250.96	1,157.45	93.51	13.378			
5,100.00	5,067.84	5,054.64	5,054.64	18.67	76.21	-142.41	-837.99	512.45	1,258.26	1,163.83	94.43	13.325			
5,150.00	5,116.99	5,103.79	5,103.79	18.87	76.94	-142.66	-837.99	512.45	1,265.58	1,170.24	95.34	13.274			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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
Sec 28-T25S-R32E - Cotton Draw Unit 47 (P&A) - Wellbore #1 - Wellbore #1												Offset Well Error:	10.00 ft
Survey Program: 10-INC-ONLY													
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,200.00	5,166.14	5,152.94	5,152.94	19.08	77.67	-142.91	-837.99	512.45	1,272.93	1,176.67	96.26	13.224	
5,250.00	5,215.29	5,202.09	5,202.09	19.29	78.40	-143.15	-837.99	512.45	1,280.31	1,183.12	97.18	13.174 SF	
5,300.00	5,264.44	4,750.00	4,749.04	19.50	71.69	-140.77	-837.99	512.45	1,382.17	1,297.59	84.57	16.343	
5,350.00	5,313.60	4,750.00	4,749.04	19.71	71.69	-140.77	-837.99	512.45	1,407.60	1,323.85	83.74	16.808	
5,400.00	5,362.75	4,750.00	4,749.04	19.92	71.69	-140.77	-837.99	512.45	1,434.32	1,351.44	82.88	17.306	
5,450.00	5,411.90	4,750.00	4,749.04	20.13	71.69	-140.77	-837.99	512.45	1,462.26	1,380.28	81.99	17.835	
5,500.00	5,461.05	4,750.00	4,749.04	20.34	71.69	-140.77	-837.99	512.45	1,491.36	1,410.28	81.08	18.394	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at:	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Marwari 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sperry Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/S (ft)	+E/W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	4.90	4.90	0.50	0.50	-110.38	-396.27	-1,066.45	1,137.70						
50.00	50.00	45.10	45.10	0.50	0.50	-110.38	-396.27	-1,066.45	1,137.70	1,136.69	1.00	1,132.116			
100.00	100.00	104.90	95.10	0.52	0.52	-110.38	-396.27	-1,066.45	1,137.70	1,136.66	1.04	1,097.782			
150.00	150.00	145.10	145.10	0.59	0.57	-110.38	-396.27	-1,066.45	1,137.70	1,136.53	1.16	977.264			
200.00	200.00	204.90	195.10	0.70	0.70	-110.38	-396.27	-1,066.45	1,137.70	1,136.29	1.41	808.898			
250.00	250.00	245.10	245.10	0.84	0.81	-110.38	-396.27	-1,066.45	1,137.70	1,136.05	1.65	689.490			
300.00	300.00	304.90	295.10	0.99	0.99	-110.38	-396.27	-1,066.45	1,137.70	1,135.72	1.98	575.333			
350.00	350.00	345.10	345.10	1.15	1.12	-110.38	-396.27	-1,066.45	1,137.70	1,135.43	2.26	502.879			
400.00	400.00	404.90	395.10	1.31	1.31	-110.38	-396.27	-1,066.45	1,137.70	1,135.07	2.62	434.042			
450.00	450.00	445.10	445.10	1.48	1.45	-110.38	-396.27	-1,066.45	1,137.70	1,134.77	2.92	389.265			
500.00	500.00	504.90	495.10	1.65	1.65	-110.38	-396.27	-1,066.45	1,137.70	1,134.40	3.30	345.253			
550.00	550.00	545.10	545.10	1.82	1.79	-110.38	-396.27	-1,066.45	1,137.70	1,134.09	3.60	315.615			
600.00	600.00	604.90	595.10	1.99	1.99	-110.38	-396.27	-1,066.45	1,137.70	1,133.71	3.98	285.543			
650.00	650.00	645.10	645.10	2.16	2.13	-110.38	-396.27	-1,066.45	1,137.70	1,133.40	4.30	264.698			
700.00	700.00	704.90	695.10	2.34	2.34	-110.38	-396.27	-1,066.45	1,137.70	1,133.01	4.68	243.005			
750.00	750.00	745.10	745.10	2.51	2.48	-110.38	-396.27	-1,066.45	1,137.70	1,132.70	5.00	227.624			
800.00	800.00	804.90	795.10	2.69	2.69	-110.38	-396.27	-1,066.45	1,137.70	1,132.31	5.38	211.296			
850.00	850.00	845.10	845.10	2.87	2.84	-110.38	-396.27	-1,066.45	1,137.70	1,131.99	5.70	199.512			
900.00	900.00	904.90	895.10	3.04	3.05	-110.38	-396.27	-1,066.45	1,137.70	1,131.61	6.09	186.805			
950.00	950.00	945.10	945.10	3.22	3.19	-110.38	-396.27	-1,066.45	1,137.70	1,131.29	6.41	177.503			
1,000.00	1,000.00	1,004.90	995.10	3.40	3.40	-110.38	-396.27	-1,066.45	1,137.70	1,130.90	6.80	167.345			
1,050.00	1,050.00	1,045.10	1,045.10	3.58	3.54	-110.38	-396.27	-1,066.45	1,137.70	1,130.58	7.12	159.822			
1,100.00	1,100.00	1,104.90	1,095.10	3.75	3.76	-110.38	-396.27	-1,066.45	1,137.70	1,130.19	7.51	151.523			
1,150.00	1,150.00	1,145.10	1,145.10	3.93	3.90	-110.38	-396.27	-1,066.45	1,137.70	1,129.87	7.83	145.318			
1,200.00	1,200.00	1,204.90	1,195.10	4.11	4.11	-110.38	-396.27	-1,066.45	1,137.70	1,129.48	8.22	138.414			
1,250.00	1,250.00	1,245.10	1,245.10	4.29	4.25	-110.38	-396.27	-1,066.45	1,137.70	1,129.15	8.54	133.211			
1,300.00	1,300.00	1,304.90	1,295.10	4.46	4.47	-110.38	-396.27	-1,066.45	1,137.70	1,128.76	8.93	127.379			
1,350.00	1,350.00	1,345.10	1,345.10	4.64	4.61	-110.38	-396.27	-1,066.45	1,137.70	1,128.44	9.25	122.955			
1,400.00	1,400.00	1,404.90	1,395.10	4.82	4.82	-110.38	-396.27	-1,066.45	1,137.70	1,128.05	9.64	117.965			
1,450.00	1,450.00	1,445.10	1,445.10	5.00	4.97	-110.38	-396.27	-1,066.45	1,137.70	1,127.73	9.97	114.158			
1,500.00	1,500.00	1,504.90	1,495.10	5.18	5.18	-110.38	-396.27	-1,066.45	1,137.70	1,127.34	10.36	109.841			
1,550.00	1,550.00	1,545.10	1,545.10	5.36	5.32	-110.38	-396.27	-1,066.45	1,137.70	1,127.02	10.68	106.530			
1,600.00	1,600.00	1,604.90	1,595.10	5.53	5.54	-110.38	-396.27	-1,066.45	1,137.70	1,126.62	11.07	102.799			
1,650.00	1,650.00	1,645.10	1,645.10	5.71	5.68	-110.38	-396.27	-1,066.45	1,137.70	1,126.30	11.39	99.854			
1,700.00	1,700.00	1,704.90	1,695.10	5.89	5.89	-110.38	-396.27	-1,066.45	1,137.70	1,125.91	11.79	96.532			
1,750.00	1,750.00	1,745.10	1,745.10	6.07	6.04	-110.38	-396.27	-1,066.45	1,137.70	1,125.59	12.11	93.963			
1,800.00	1,800.00	1,804.90	1,795.10	6.25	6.25	-110.38	-396.27	-1,066.45	1,137.70	1,125.20	12.50	91.014			
1,850.00	1,850.00	1,845.10	1,845.10	6.43	6.40	-110.38	-396.27	-1,066.45	1,137.70	1,124.87	12.82	88.726			
1,900.00	1,900.00	1,904.90	1,895.10	6.61	6.61	-110.38	-396.27	-1,066.45	1,137.70	1,124.48	13.21	86.092			
1,950.00	1,950.00	1,945.10	1,945.10	6.78	6.75	-110.38	-396.27	-1,066.45	1,137.70	1,124.16	13.54	84.041			
2,000.00	2,000.00	2,004.90	1,995.10	6.96	6.97	-110.38	-396.27	-1,066.45	1,137.70	1,123.77	13.93	81.673			
2,050.00	2,050.00	2,045.10	2,045.10	7.14	7.11	-110.38	-396.27	-1,066.45	1,137.70	1,123.44	14.25	79.824			
2,100.00	2,100.00	2,095.10	2,095.10	7.32	7.29	-110.38	-396.27	-1,066.45	1,137.70	1,123.09	14.61	77.871			
2,150.00	2,150.00	2,156.06	2,156.06	7.50	7.50	-110.38	-396.13	-1,066.22	1,137.48	1,122.47	15.00	75.812			
2,200.00	2,200.00	2,218.21	2,218.20	7.68	7.72	-110.37	-395.66	-1,065.40	1,136.73	1,121.33	15.40	73.813			
2,250.00	2,250.00	2,280.32	2,280.29	7.86	7.94	-110.36	-394.84	-1,064.00	1,135.45	1,119.65	15.79	71.902			
2,300.00	2,300.00	2,342.39	2,342.32	8.04	8.16	-110.34	-393.68	-1,062.03	1,133.63	1,117.45	16.18	70.054			
2,350.00	2,350.00	2,404.40	2,404.26	8.22	8.38	-110.31	-392.19	-1,059.47	1,131.28	1,114.71	16.57	68.268			
2,400.00	2,400.00	2,466.35	2,466.10	8.39	8.59	-110.28	-390.36	-1,056.35	1,128.40	1,111.44	16.96	66.540			
2,450.00	2,450.00	2,528.21	2,527.81	8.57	8.81	-110.24	-388.19	-1,052.65	1,124.99	1,107.65	17.34	64.864			
2,500.00	2,500.00	2,589.96	2,589.37	8.75	9.03	-110.20	-385.70	-1,048.38	1,121.05	1,103.32	17.73	63.240			
2,550.00	2,550.00	2,651.59	2,650.73	8.93	9.25	-28.10	-382.87	-1,043.55	1,116.39	1,098.29	18.10	61.665			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore:	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Marwari 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sperry Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
2,600.00	2,599.99	2,713.03	2,711.86	9.10	9.47	-28.09	-379.73	-1,038.17	1,110.82	1,092.34	18.48	60.112			
2,650.00	2,649.98	2,774.25	2,772.70	9.27	9.69	-28.09	-376.26	-1,032.25	1,104.35	1,085.50	18.85	58.592			
2,700.00	2,699.96	2,835.23	2,833.22	9.45	9.91	-28.10	-372.48	-1,025.79	1,096.98	1,077.76	19.21	57.090			
2,750.00	2,749.92	2,895.94	2,893.38	9.62	10.13	-28.12	-368.40	-1,018.81	1,088.71	1,069.13	19.58	55.607			
2,800.00	2,799.86	2,956.34	2,953.16	9.79	10.35	-28.15	-364.01	-1,011.32	1,079.55	1,059.61	19.94	54.141			
2,850.00	2,849.78	3,016.41	3,012.51	9.97	10.57	-28.20	-359.34	-1,003.33	1,069.50	1,049.20	20.30	52.690			
2,900.00	2,899.68	3,076.11	3,071.40	10.14	10.79	-28.26	-354.38	-994.86	1,058.58	1,037.92	20.65	51.256			
2,950.00	2,949.54	3,135.42	3,129.80	10.31	11.02	-28.33	-349.15	-985.92	1,046.78	1,025.77	21.00	49.836			
3,000.00	2,999.37	3,194.32	3,187.68	10.49	11.24	-28.42	-343.66	-976.53	1,034.12	1,012.76	21.35	48.430			
3,050.00	3,049.16	3,252.77	3,245.01	10.67	11.46	-28.51	-337.90	-966.70	1,020.60	998.90	21.70	47.037			
3,100.00	3,098.90	3,310.75	3,301.76	10.84	11.69	-28.63	-331.91	-956.45	1,006.23	984.19	22.04	45.656			
3,150.00	3,148.61	3,368.25	3,357.91	11.02	11.91	-28.76	-325.68	-945.80	991.03	968.65	22.38	44.287			
3,200.00	3,198.26	3,425.22	3,413.44	11.20	12.14	-28.90	-319.22	-934.76	974.99	952.28	22.71	42.929			
3,250.00	3,247.86	3,481.66	3,468.31	11.38	12.37	-29.06	-312.55	-923.36	958.14	935.10	23.04	41.582			
3,300.00	3,297.40	3,534.35	3,519.42	11.56	12.58	-29.24	-306.09	-912.32	940.50	917.13	23.37	40.240			
3,350.00	3,346.89	3,580.94	3,564.59	11.74	12.77	-29.42	-300.32	-902.47	922.42	898.71	23.71	38.906			
3,400.00	3,396.30	3,627.39	3,609.63	11.92	12.97	-29.63	-294.58	-892.65	903.98	879.94	24.04	37.596			
3,450.00	3,445.65	3,673.69	3,654.52	12.10	13.16	-29.85	-288.85	-882.86	885.20	860.82	24.38	36.308			
3,500.00	3,494.93	3,719.84	3,699.26	12.29	13.35	-30.11	-283.14	-873.10	866.07	841.36	24.72	35.041			
3,550.00	3,544.13	3,765.83	3,743.85	12.48	13.55	-30.38	-277.46	-863.38	846.60	821.55	25.05	33.794			
3,600.00	3,593.29	3,811.72	3,788.35	12.66	13.74	-30.59	-271.78	-853.68	826.92	801.53	25.39	32.572			
3,650.00	3,642.44	3,857.62	3,832.84	12.85	13.94	-30.79	-266.10	-843.98	807.24	781.51	25.72	31.381			
3,700.00	3,691.59	3,903.51	3,877.33	13.04	14.13	-31.00	-260.43	-834.28	787.57	761.51	26.06	30.222			
3,750.00	3,740.74	3,949.40	3,921.83	13.23	14.33	-31.22	-254.75	-824.58	767.91	741.51	26.40	29.090			
3,800.00	3,789.89	4,004.71	3,966.32	13.43	14.57	-31.45	-249.07	-814.87	748.26	721.49	26.77	27.950			
3,850.00	3,839.04	4,041.18	4,010.81	13.62	14.73	-31.69	-243.40	-805.17	728.62	701.54	27.08	26.910			
3,900.00	3,888.20	4,087.07	4,055.30	13.81	14.93	-31.95	-237.72	-795.47	708.99	681.58	27.42	25.861			
3,950.00	3,937.35	4,132.96	4,099.80	14.01	15.13	-32.22	-232.04	-785.77	689.38	661.62	27.76	24.836			
4,000.00	3,986.50	4,178.85	4,144.29	14.20	15.34	-32.51	-226.37	-776.07	669.78	641.68	28.10	23.836			
4,050.00	4,035.65	4,224.74	4,188.78	14.40	15.54	-32.81	-220.69	-766.37	650.19	621.75	28.44	22.860			
4,100.00	4,084.80	4,270.63	4,233.27	14.60	15.74	-33.13	-215.02	-756.66	630.62	601.84	28.79	21.907			
4,150.00	4,133.95	4,316.52	4,277.77	14.80	15.95	-33.48	-209.34	-746.96	611.07	581.94	29.13	20.976			
4,200.00	4,183.11	4,362.41	4,322.26	15.00	16.15	-33.85	-203.66	-737.26	591.54	562.07	29.48	20.068			
4,250.00	4,232.26	4,408.30	4,366.75	15.20	16.36	-34.24	-197.99	-727.56	572.03	542.21	29.82	19.180			
4,300.00	4,281.41	4,454.19	4,411.25	15.39	16.57	-34.66	-192.31	-717.86	552.55	522.38	30.17	18.313			
4,350.00	4,330.56	4,500.08	4,455.74	15.60	16.77	-35.10	-186.63	-708.16	533.09	502.57	30.52	17.466			
4,400.00	4,379.71	4,545.97	4,500.23	15.80	16.98	-35.59	-180.96	-698.46	513.67	482.79	30.87	16.639			
4,450.00	4,428.86	4,608.14	4,544.72	16.00	17.26	-36.11	-175.28	-688.75	494.27	462.99	31.29	15.799			
4,500.00	4,478.02	4,637.76	4,589.22	16.20	17.40	-36.67	-169.61	-679.05	474.92	443.34	31.58	15.040			
4,550.00	4,527.17	4,683.65	4,633.71	16.40	17.61	-37.28	-163.93	-669.35	455.61	423.67	31.93	14.268			
4,600.00	4,576.32	4,729.54	4,678.20	16.61	17.82	-37.94	-158.25	-659.65	436.34	404.05	32.29	13.514			
4,650.00	4,625.47	4,775.43	4,722.70	16.81	18.03	-38.67	-152.58	-649.95	417.13	384.48	32.65	12.777			
4,700.00	4,674.62	4,821.32	4,767.19	17.02	18.24	-39.46	-146.90	-640.25	397.98	364.98	33.01	12.057			
4,750.00	4,723.77	4,867.21	4,811.68	17.22	18.45	-40.33	-141.22	-630.55	378.91	345.54	33.37	11.353			
4,800.00	4,772.93	4,913.10	4,856.17	17.43	18.66	-41.29	-135.55	-620.84	359.92	326.18	33.74	10.667			
4,850.00	4,822.08	4,958.99	4,900.67	17.63	18.87	-42.36	-129.87	-611.14	341.03	306.91	34.12	9.996			
4,900.00	4,871.23	5,004.88	4,945.16	17.84	19.09	-43.55	-124.20	-601.44	322.25	287.76	34.49	9.343			
4,950.00	4,920.38	5,050.77	4,989.65	18.04	19.30	-44.88	-118.52	-591.74	303.61	268.73	34.88	8.705			
5,000.00	4,969.53	5,096.66	5,034.15	18.25	19.51	-46.38	-112.84	-582.04	285.13	249.86	35.27	8.084			
5,050.00	5,018.69	5,142.55	5,078.64	18.46	19.73	-48.09	-107.17	-572.34	266.86	231.18	35.68	7.480			
5,100.00	5,067.84	5,188.44	5,123.13	18.67	19.94	-50.03	-101.49	-562.64	248.82	212.72	36.09	6.894			
5,150.00	5,116.99	5,234.33	5,167.62	18.87	20.15	-52.27	-95.81	-552.93	231.08	194.55	36.53	6.326			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Marwari 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sperry Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HOGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,200.00	5,166.14	5,280.22	5,212.12	19.08	20.37	-54.85	-90.14	-543.23	213.71	176.72	36.99	5.778			
5,250.00	5,215.29	5,326.11	5,256.61	19.29	20.58	-57.87	-84.46	-533.53	196.81	159.33	37.48	5.252			
5,300.00	5,264.44	5,372.01	5,301.10	19.50	20.80	-61.41	-78.79	-523.83	180.51	142.50	38.00	4.750 Alert			
5,350.00	5,313.60	5,417.90	5,345.60	19.71	21.02	-65.58	-73.11	-514.13	164.99	126.41	38.58	4.276 Alert			
5,400.00	5,362.75	5,463.79	5,390.09	19.92	21.23	-70.52	-67.43	-504.43	150.49	111.27	39.23	3.837 Alert			
5,450.00	5,411.90	5,509.68	5,434.58	20.13	21.45	-76.37	-61.76	-494.73	137.34	97.41	39.94	3.439 Alert			
5,500.00	5,461.05	5,555.57	5,479.07	20.34	21.66	-83.23	-56.08	-485.02	125.96	85.24	40.72	3.093 Alert			
5,550.00	5,510.20	5,601.46	5,523.57	20.55	21.88	-91.14	-50.40	-475.32	116.87	75.32	41.54	2.813 Alert			
5,600.00	5,559.35	5,647.35	5,568.06	20.76	22.10	-100.01	-44.73	-465.62	110.62	68.28	42.34	2.613 Alert			
5,650.00	5,608.51	5,706.76	5,612.55	20.97	22.38	-109.52	-39.05	-455.92	107.72	64.64	43.08	2.501 Alert			
5,665.14	5,623.39	5,707.14	5,626.03	21.03	22.38	-112.46	-37.33	-452.98	107.55	64.37	43.18	2.491 Minor Risk, CC, ES, SF			
5,700.00	5,657.66	5,739.13	5,657.05	21.18	22.53	-119.19	-33.38	-446.22	108.44	64.95	43.49	2.494 Minor Risk			
5,750.00	5,706.81	5,785.02	5,701.54	21.39	22.75	-128.49	-27.70	-436.52	112.71	68.96	43.74	2.577 Alert			
5,800.00	5,755.96	5,830.91	5,746.03	21.60	22.97	-137.01	-22.02	-426.82	120.14	76.30	43.84	2.740 Alert			
5,850.00	5,805.11	5,876.80	5,790.52	21.81	23.19	-144.51	-16.35	-417.11	130.21	86.34	43.86	2.968 Alert			
5,900.00	5,854.26	5,922.69	5,835.02	22.03	23.41	-150.96	-10.67	-407.41	142.34	98.47	43.88	3.244 Alert			
5,950.00	5,903.42	5,968.58	5,879.51	22.24	23.62	-156.44	-4.99	-397.71	156.07	112.15	43.92	3.554 Alert			
6,000.00	5,952.57	6,014.47	5,924.00	22.45	23.84	-161.06	0.68	-388.01	171.00	127.00	44.00	3.886 Alert			
6,050.00	6,001.72	6,060.36	5,968.49	22.66	24.06	-164.97	6.36	-378.31	186.85	142.73	44.12	4.235 Alert			
6,100.00	6,050.87	6,106.26	6,012.99	22.88	24.28	-168.29	12.03	-368.61	203.41	159.12	44.29	4.593 Alert			
6,150.00	6,100.02	6,152.15	6,057.48	23.09	24.50	-171.12	17.71	-358.91	220.50	176.02	44.48	4.957 Alert			
6,200.00	6,149.18	6,201.96	6,101.97	23.30	24.74	-173.56	23.39	-349.20	238.03	193.31	44.72	5.322			
6,250.00	6,198.33	6,243.93	6,146.47	23.51	24.94	-175.68	29.06	-339.50	255.90	210.95	44.95	5.693			
6,300.00	6,247.48	6,289.82	6,190.96	23.73	25.16	-177.52	34.74	-329.80	274.04	228.82	45.21	6.061			
6,350.00	6,296.63	6,335.71	6,235.45	23.94	25.38	-179.14	40.42	-320.10	292.40	246.91	45.49	6.428			
6,400.00	6,345.78	6,381.60	6,279.94	24.16	25.60	-179.43	46.09	-310.40	310.94	265.16	45.78	6.792			
6,450.00	6,394.93	6,427.49	6,324.44	24.37	25.82	-178.15	51.77	-300.70	329.64	283.56	46.08	7.154			
6,500.00	6,444.09	6,473.38	6,368.93	24.58	26.04	-177.02	57.44	-291.00	348.46	302.08	46.39	7.512			
6,550.00	6,493.24	6,519.27	6,413.42	24.80	26.26	-175.99	63.12	-281.29	367.40	320.69	46.70	7.867			
6,600.00	6,542.39	6,565.16	6,457.92	25.01	26.49	-175.07	68.80	-271.59	386.42	339.40	47.02	8.218			
6,650.00	6,591.54	6,611.05	6,502.41	25.23	26.71	-174.23	74.47	-261.89	405.52	358.18	47.35	8.565			
6,700.00	6,640.69	6,656.94	6,546.90	25.44	26.93	-173.46	80.15	-252.19	424.70	377.02	47.68	8.908			
6,750.00	6,689.84	6,702.83	6,591.39	25.66	27.15	-172.77	85.83	-242.49	443.93	395.92	48.01	9.247			
6,800.00	6,739.00	6,748.72	6,635.89	25.87	27.37	-172.12	91.50	-232.79	463.21	414.87	48.34	9.581			
6,850.00	6,788.15	6,794.61	6,680.38	26.09	27.59	-171.53	97.18	-223.09	482.54	433.86	48.68	9.912			
6,900.00	6,837.30	6,840.51	6,724.67	26.30	27.82	-170.99	102.85	-213.38	501.91	452.89	49.02	10.238			
6,950.00	6,886.45	6,886.40	6,769.37	26.52	28.04	-170.48	108.53	-203.68	521.32	471.95	49.37	10.560			
7,000.00	6,935.60	6,932.29	6,813.86	26.73	28.26	-170.01	114.21	-193.98	540.76	491.05	49.71	10.878			
7,050.00	6,984.75	6,978.18	6,858.35	26.95	28.48	-169.58	119.88	-184.28	560.23	510.17	50.06	11.191			
7,100.00	7,033.91	7,024.07	6,902.84	27.16	28.70	-169.17	125.56	-174.58	579.72	529.32	50.41	11.501			
7,150.00	7,083.06	7,069.96	6,947.34	27.38	28.93	-168.79	131.24	-164.88	599.24	548.48	50.76	11.806			
7,200.00	7,132.21	7,115.85	6,991.83	27.59	29.15	-168.43	136.91	-155.17	618.78	567.67	51.11	12.108			
7,250.00	7,181.36	7,161.74	7,036.32	27.81	29.37	-168.09	142.59	-145.47	638.34	586.88	51.46	12.405			
7,300.00	7,230.51	7,207.63	7,080.82	28.03	29.60	-167.78	148.26	-135.77	657.91	606.10	51.81	12.699			
7,350.00	7,279.66	7,253.52	7,125.31	28.24	29.82	-167.48	153.94	-126.07	677.50	625.34	52.16	12.988			
7,400.00	7,328.82	7,299.41	7,169.80	28.46	30.04	-167.20	159.62	-116.37	697.11	644.59	52.52	13.274			
7,450.00	7,377.97	7,345.30	7,214.29	28.68	30.26	-166.94	165.29	-106.67	716.73	663.86	52.87	13.556			
7,500.00	7,427.12	7,408.81	7,258.79	28.89	30.57	-166.68	170.97	-96.97	736.36	683.06	53.30	13.816			
7,550.00	7,476.27	7,437.08	7,303.28	29.11	30.71	-166.45	176.65	-87.25	756.00	702.42	53.58	14.109			
7,600.00	7,525.42	7,482.97	7,347.77	29.32	30.93	-166.22	182.32	-77.56	775.66	721.72	53.94	14.380			
7,650.00	7,574.58	7,528.86	7,392.26	29.54	31.16	-166.00	188.00	-67.86	795.32	741.02	54.30	14.647			
7,700.00	7,623.73	7,574.76	7,436.76	29.76	31.38	-165.80	193.67	-58.16	815.00	760.34	54.66	14.911			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Marwari 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sperry Plan 2														Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N-S (ft)	+E-W (ft)							
7,750.00	7,672.88	7,620.65	7,481.25	29.98	31.61	165.60	199.35	-48.46	834.68	779.66	55.01	15.172			
7,800.00	7,722.03	7,666.54	7,525.74	30.19	31.83	165.42	205.03	-38.76	854.37	798.99	55.37	15.429			
7,850.00	7,771.18	7,720.85	7,578.45	30.41	32.09	165.21	211.64	-27.45	873.91	818.06	55.85	15.647			
7,900.00	7,820.33	7,779.51	7,635.58	30.63	32.37	165.03	218.37	-15.95	892.84	836.46	56.38	15.836			
7,950.00	7,869.49	7,838.87	7,693.58	30.84	32.64	164.87	224.73	-5.08	911.13	854.22	56.90	16.012			
8,000.00	7,918.64	7,898.91	7,752.45	31.06	32.91	164.75	230.70	5.13	928.74	871.32	57.42	16.174			
8,050.00	7,967.79	7,959.82	7,812.15	31.28	33.18	164.66	236.26	14.63	945.68	887.75	57.93	16.324			
8,100.00	8,016.94	8,020.98	7,872.66	31.50	33.44	164.59	241.39	23.40	961.93	903.49	58.44	16.461			
8,150.00	8,066.09	8,082.96	7,933.84	31.71	33.69	164.55	246.08	31.41	977.47	918.54	58.93	16.586			
8,200.00	8,115.24	8,145.54	7,995.96	31.93	33.94	164.54	250.30	38.62	992.30	932.88	59.42	16.699			
8,250.00	8,164.40	8,208.69	8,058.68	32.15	34.18	164.55	254.04	45.01	1,006.41	946.50	59.90	16.801			
8,300.00	8,213.55	8,272.40	8,122.06	32.37	34.42	164.58	257.28	50.54	1,019.78	959.41	60.37	16.892			
8,350.00	8,262.70	8,336.62	8,186.06	32.58	34.65	164.64	260.00	55.20	1,032.41	971.58	60.83	16.972			
8,400.00	8,311.85	8,401.34	8,250.63	32.80	34.88	164.72	262.20	58.96	1,044.29	983.01	61.28	17.042			
8,450.00	8,361.00	8,466.51	8,315.71	33.02	35.09	164.82	263.85	61.78	1,055.41	993.70	61.71	17.102			
8,500.00	8,410.15	8,532.10	8,381.27	33.24	35.30	164.95	264.95	63.66	1,065.77	1,003.63	62.14	17.152			
8,550.00	8,459.31	8,598.09	8,447.25	33.46	35.51	165.10	265.48	64.56	1,075.35	1,012.81	62.55	17.193			
8,600.00	8,508.46	8,654.40	8,503.56	33.67	35.68	165.24	265.53	64.65	1,084.30	1,021.38	62.92	17.233			
8,650.00	8,557.61	8,703.55	8,552.71	33.89	35.83	165.36	265.53	64.65	1,093.18	1,029.91	63.27	17.277			
8,700.00	8,606.76	8,752.70	8,601.86	34.11	35.97	165.48	265.53	64.65	1,102.06	1,038.44	63.63	17.321			
8,750.00	8,655.91	8,801.85	8,651.01	34.33	36.12	165.60	265.53	64.65	1,110.95	1,046.98	63.98	17.365			
8,800.00	8,705.06	8,851.00	8,700.16	34.55	36.27	165.72	265.53	64.65	1,119.85	1,055.52	64.33	17.408			
8,850.00	8,754.22	8,900.16	8,749.32	34.77	36.42	165.83	265.53	64.65	1,128.75	1,064.06	64.68	17.450			
8,900.00	8,803.37	8,949.31	8,798.47	34.98	36.57	165.94	265.53	64.65	1,137.65	1,072.61	65.04	17.493			
8,950.00	8,852.52	9,001.54	8,847.62	35.20	36.73	166.05	265.53	64.65	1,146.56	1,081.16	65.40	17.532			
9,000.00	8,901.67	9,047.61	8,896.77	35.42	36.87	166.16	265.53	64.65	1,155.47	1,089.73	65.74	17.576			
9,050.00	8,950.87	9,103.19	8,945.97	35.64	37.03	166.30	265.53	64.65	1,164.12	1,098.00	66.11	17.608			
9,100.00	9,000.19	9,146.13	8,995.29	35.85	37.16	166.42	265.53	64.65	1,172.14	1,105.70	66.45	17.641			
9,150.00	9,049.60	9,204.46	9,044.70	36.06	37.34	166.53	265.53	64.65	1,179.54	1,112.72	66.83	17.651			
9,200.00	9,099.12	9,245.06	9,094.22	36.26	37.47	166.64	265.53	64.65	1,186.32	1,119.17	67.15	17.667			
9,250.00	9,148.72	9,305.34	9,143.82	36.46	37.65	166.73	265.53	64.65	1,192.46	1,124.93	67.53	17.658			
9,300.00	9,198.40	9,344.34	9,193.50	36.65	37.77	166.81	265.53	64.65	1,197.97	1,130.13	67.85	17.657			
9,350.00	9,248.14	9,405.92	9,243.24	36.84	37.96	166.88	265.53	64.65	1,202.85	1,134.62	68.23	17.629			
9,400.00	9,297.95	9,443.89	9,293.05	37.03	38.08	166.94	265.53	64.65	1,207.10	1,138.56	68.54	17.612			
9,450.00	9,347.82	9,506.25	9,342.92	37.21	38.27	166.99	265.53	64.65	1,210.71	1,141.78	68.92	17.566			
9,500.00	9,397.72	9,543.66	9,392.82	37.39	38.38	167.04	265.53	64.65	1,213.68	1,144.46	69.23	17.532			
9,550.00	9,447.66	9,606.40	9,442.76	37.56	38.58	167.07	265.53	64.65	1,216.02	1,146.41	69.61	17.468			
9,600.00	9,497.63	9,643.57	9,492.73	37.73	38.69	167.09	265.53	64.65	1,217.72	1,147.81	69.91	17.418			
9,650.00	9,547.62	9,706.44	9,542.72	37.90	38.89	167.11	265.53	64.65	1,218.79	1,148.50	70.29	17.339			
9,700.00	9,597.62	9,743.56	9,592.72	38.06	39.00	167.11	265.53	64.65	1,219.21	1,148.63	70.59	17.273			
9,750.00	9,647.62	9,806.44	9,642.72	38.22	39.20	85.03	265.53	64.65	1,219.22	1,148.26	70.96	17.181			
9,800.00	9,697.62	9,843.56	9,692.72	38.37	39.31	85.03	265.53	64.65	1,219.22	1,147.97	71.26	17.111			
9,850.00	9,747.62	9,906.44	9,742.72	38.53	39.51	85.03	265.53	64.65	1,219.22	1,147.59	71.63	17.020			
9,900.00	9,797.62	9,943.56	9,792.72	38.69	39.62	85.03	265.53	64.65	1,219.22	1,147.30	71.93	16.951			
9,950.00	9,847.62	10,006.44	9,842.72	38.85	39.82	85.03	265.53	64.65	1,219.22	1,146.92	72.30	16.863			
10,000.00	9,897.62	10,043.56	9,892.72	39.01	39.94	85.03	265.53	64.65	1,219.22	1,146.63	72.60	16.795			
10,050.00	9,947.62	10,093.56	9,942.72	39.17	40.09	85.03	265.53	64.65	1,219.22	1,146.29	72.93	16.717			
10,100.00	9,997.62	10,143.40	9,992.55	39.33	40.24	85.35	264.91	64.70	1,219.10	1,145.83	73.27	16.639			
10,150.00	10,047.23	10,191.69	10,040.63	39.49	40.37	85.85	260.66	65.07	1,218.68	1,145.09	73.59	16.560			
10,200.00	10,096.18	10,236.52	10,084.81	39.65	40.49	86.67	253.12	65.73	1,218.17	1,144.25	73.91	16.481			
10,250.00	10,144.07	10,276.48	10,123.58	39.81	40.58	87.65	243.51	66.57	1,217.89	1,143.67	74.22	16.408			
10,252.65	10,146.57	10,278.45	10,125.48	39.81	40.58	87.71	242.96	66.62	1,217.89	1,143.65	74.24	16.405			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Sec 28-T25S-R32E - Marwan 28-16 Fed Com 232H (28-33) - Wellbore #1 - Sperry Plan 2		Offset Site Error:	0.00 ft
Survey Program: 0-MWD+HDGM															Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)			
10,300.00	10,190.52	10,310.82	10,156.29	39.96	40.65	88.64	233.12	67.48	1,218.23	1,143.72	74.52	16.349				
10,350.00	10,235.19	10,339.32	10,182.93	40.11	40.71	89.49	223.02	68.37	1,219.59	1,144.81	74.78	16.309				
10,400.00	10,277.74	10,362.19	10,203.91	40.25	40.75	90.10	213.98	69.16	1,222.29	1,147.27	75.02	16.294				
10,450.00	10,317.84	10,379.84	10,219.86	40.39	40.78	90.40	206.43	69.82	1,226.59	1,151.38	75.22	16.308				
10,500.00	10,355.18	10,392.84	10,231.44	40.51	40.80	90.35	200.56	70.33	1,232.68	1,157.30	75.38	16.354				
10,550.00	10,389.49	10,400.00	10,237.77	40.64	40.81	89.87	197.21	70.62	1,240.63	1,165.15	75.49	16.435				
10,600.00	10,420.50	10,407.05	10,243.96	40.75	40.82	89.19	193.84	70.92	1,250.47	1,174.88	75.59	16.543				
10,650.00	10,447.97	10,409.30	10,245.92	40.86	40.82	88.09	192.75	71.02	1,262.13	1,186.48	75.65	16.684				
10,700.00	10,471.70	10,408.90	10,245.57	40.97	40.82	86.69	192.95	71.00	1,275.50	1,199.81	75.69	16.851				
10,750.00	10,491.51	10,400.00	10,237.77	41.09	40.81	84.72	197.21	70.62	1,290.45	1,214.80	75.66	17.057				
10,800.00	10,507.24	10,400.00	10,237.77	41.20	40.81	83.01	197.21	70.62	1,306.71	1,230.99	75.73	17.256				
10,850.00	10,518.77	10,400.00	10,237.77	41.32	40.81	81.16	197.21	70.62	1,324.17	1,248.35	75.82	17.464				
10,900.00	10,526.02	10,387.45	10,226.65	41.45	40.79	78.67	203.03	70.12	1,342.52	1,266.72	75.80	17.711				
10,950.00	10,528.94	10,378.38	10,218.55	41.58	40.77	76.28	207.07	69.76	1,361.58	1,285.74	75.85	17.952				
11,000.00	10,529.00	10,368.80	10,209.92	41.73	40.76	75.55	211.20	69.40	1,381.46	1,305.55	75.91	18.199				
11,050.00	10,529.00	10,350.00	10,192.78	41.89	40.73	74.79	218.90	68.73	1,402.76	1,326.90	75.86	18.490				
11,100.00	10,529.00	10,350.00	10,192.78	42.07	40.73	74.79	218.90	68.73	1,425.22	1,349.19	76.03	18.745				
11,150.00	10,529.00	10,350.00	10,192.78	42.26	40.73	74.79	218.90	68.73	1,449.05	1,372.84	76.21	19.014				
11,200.00	10,529.00	10,336.23	10,180.07	42.46	40.70	74.23	224.18	68.27	1,474.03	1,397.82	76.21	19.342				

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

Anticollision Report

Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 21-T25S-R32E
Site Error: 0.00 ft
Reference Well: Van Doo Dah 21-33 Fed Com 233H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Van Doo Dah 21-33 Fed Com 233H
TVD Reference: RKB @ 3415.20ft
MD Reference: RKB @ 3415.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Offset Design Sec 28-T25S-R32E - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Actual														Offset Site Error:	0.00 ft
Survey Program: 141-MWD+HDGM														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.00	0.00	0.00	0.00	0.50	0.50	-111.79	-426.21	-1,066.14	1,148.19						
50.00	50.00	42.51	42.51	0.50	0.50	-111.79	-426.20	-1,066.19	1,148.22	1,147.22	1.01	1,142.047			
100.00	100.00	89.96	89.96	0.52	0.52	-111.78	-426.16	-1,066.37	1,148.38	1,147.35	1.03	1,111.831			
150.00	150.00	137.40	137.40	0.59	0.53	-111.77	-426.09	-1,066.67	1,148.65	1,147.52	1.12	1,021.203			
200.00	200.00	188.46	188.46	0.70	0.62	-111.76	-426.00	-1,067.04	1,148.95	1,147.63	1.32	870.067			
250.00	250.00	239.82	239.82	0.84	0.74	-111.75	-425.92	-1,067.34	1,149.20	1,147.62	1.58	727.630			
300.00	300.00	290.04	290.03	0.99	0.88	-111.74	-425.73	-1,067.65	1,149.41	1,147.54	1.87	614.746			
350.00	350.00	340.36	340.36	1.15	1.04	-111.72	-425.38	-1,068.01	1,149.61	1,147.43	2.18	527.106			
400.00	400.00	390.48	390.47	1.31	1.20	-111.69	-424.95	-1,068.38	1,149.80	1,147.30	2.50	459.126			
450.00	450.00	440.78	440.76	1.48	1.36	-111.66	-424.48	-1,068.77	1,149.99	1,147.15	2.84	405.397			
500.00	500.00	491.36	491.34	1.65	1.53	-111.63	-423.88	-1,069.19	1,150.15	1,146.98	3.18	362.160			
550.00	550.00	541.63	541.60	1.82	1.70	-111.58	-423.16	-1,069.62	1,150.29	1,146.77	3.52	326.967			
600.00	600.00	591.67	591.63	1.99	1.87	-111.54	-422.41	-1,070.07	1,150.43	1,146.57	3.86	297.840			
650.00	650.00	643.78	643.74	2.16	2.05	-111.49	-421.57	-1,070.52	1,150.53	1,146.32	4.22	272.871			
700.00	700.00	696.56	696.51	2.34	2.24	-111.44	-420.54	-1,070.91	1,150.52	1,145.95	4.57	251.517			
750.00	750.00	748.16	748.09	2.51	2.42	-111.38	-419.47	-1,071.21	1,150.41	1,145.48	4.93	233.388			
800.00	800.00	799.17	799.09	2.69	2.59	-111.33	-418.45	-1,071.42	1,150.24	1,144.95	5.28	217.715			
850.00	850.00	848.56	848.47	2.87	2.77	-111.28	-417.45	-1,071.62	1,150.06	1,144.43	5.63	204.179			
900.00	900.00	897.95	897.85	3.04	2.94	-111.23	-416.43	-1,071.86	1,149.92	1,143.94	5.98	192.206			
950.00	950.00	947.15	947.03	3.22	3.11	-111.18	-415.36	-1,072.16	1,149.80	1,143.47	6.33	181.552			
1,000.00	1,000.00	997.33	997.20	3.40	3.29	-111.12	-414.22	-1,072.49	1,149.71	1,143.02	6.69	171.912			
1,050.00	1,050.00	1,047.79	1,047.65	3.58	3.47	-111.06	-413.06	-1,072.82	1,149.59	1,142.55	7.04	163.207			
1,100.00	1,100.00	1,095.79	1,095.64	3.75	3.64	-111.00	-411.96	-1,073.16	1,149.51	1,142.12	7.39	155.514			
1,120.25	1,120.25	1,115.21	1,115.05	3.82	3.71	-110.98	-411.52	-1,073.32	1,149.50	1,141.97	7.53	152.604			
1,150.00	1,150.00	1,143.73	1,143.57	3.93	3.81	-110.94	-410.88	-1,073.58	1,149.52	1,141.78	7.74	148.523			
1,200.00	1,200.00	1,190.41	1,190.23	4.11	3.98	-110.88	-409.84	-1,074.11	1,149.65	1,141.56	8.08	142.218			
1,250.00	1,250.00	1,237.17	1,236.97	4.29	4.14	-110.82	-408.78	-1,074.78	1,149.92	1,141.49	8.43	136.437			
1,300.00	1,300.00	1,283.56	1,283.34	4.46	4.31	-110.76	-407.76	-1,075.58	1,150.34	1,141.57	8.77	131.145			
1,350.00	1,350.00	1,330.20	1,329.96	4.64	4.48	-110.70	-406.80	-1,076.52	1,150.91	1,141.80	9.12	126.256			
1,400.00	1,400.00	1,377.86	1,377.61	4.82	4.65	-110.64	-405.91	-1,077.57	1,151.61	1,142.15	9.46	121.688			
1,450.00	1,450.00	1,425.67	1,425.39	5.00	4.82	-110.58	-405.11	-1,078.68	1,152.41	1,142.59	9.81	117.451			
1,500.00	1,500.00	1,473.92	1,473.63	5.18	4.99	-110.54	-404.51	-1,079.81	1,153.29	1,143.12	10.16	113.500			
1,550.00	1,550.00	1,522.52	1,522.22	5.36	5.16	-110.50	-404.14	-1,080.94	1,154.24	1,143.73	10.51	109.809			
1,600.00	1,600.00	1,571.71	1,571.39	5.53	5.33	-110.47	-403.92	-1,082.06	1,155.23	1,144.37	10.86	106.346			
1,650.00	1,650.00	1,621.49	1,621.16	5.71	5.51	-110.45	-403.84	-1,083.18	1,156.26	1,145.04	11.22	103.083			
1,700.00	1,700.00	1,671.81	1,671.46	5.89	5.69	-110.42	-403.75	-1,084.31	1,157.27	1,145.70	11.57	100.003			
1,750.00	1,750.00	1,723.30	1,722.95	6.07	5.87	-110.40	-403.65	-1,085.42	1,158.26	1,146.32	11.93	97.066			
1,800.00	1,800.00	1,775.27	1,774.90	6.25	6.05	-110.38	-403.60	-1,086.44	1,159.16	1,146.86	12.29	94.282			
1,850.00	1,850.00	1,829.77	1,829.39	6.43	6.24	-110.36	-403.55	-1,087.29	1,159.87	1,147.20	12.67	91.574			
1,900.00	1,900.00	1,877.49	1,877.10	6.61	6.41	-110.35	-403.50	-1,088.04	1,160.58	1,147.57	13.01	89.186			
1,950.00	1,950.00	1,923.55	1,923.16	6.78	6.58	-110.33	-403.45	-1,088.87	1,161.41	1,148.05	13.35	86.971			
2,000.00	2,000.00	1,967.14	1,966.74	6.96	6.73	-110.31	-403.39	-1,089.88	1,162.48	1,148.79	13.69	84.940			
2,050.00	2,050.00	2,011.26	2,010.84	7.14	6.89	-110.29	-403.33	-1,091.17	1,163.82	1,149.80	14.02	83.014			
2,100.00	2,100.00	2,057.26	2,056.81	7.32	7.05	-110.26	-403.31	-1,092.69	1,165.36	1,151.00	14.36	81.154			
2,150.00	2,150.00	2,103.55	2,103.07	7.50	7.22	-110.23	-403.38	-1,094.36	1,167.08	1,152.38	14.70	79.386			
2,200.00	2,200.00	2,151.78	2,151.27	7.68	7.39	-110.21	-403.54	-1,096.17	1,168.90	1,153.85	15.05	77.669			
2,250.00	2,250.00	2,200.80	2,200.25	7.86	7.56	-110.19	-403.80	-1,098.06	1,170.80	1,155.40	15.40	76.020			
2,300.00	2,300.00	2,253.32	2,252.74	8.04	7.75	-110.18	-404.26	-1,099.96	1,172.65	1,156.88	15.77	74.381			
2,350.00	2,350.00	2,303.61	2,303.00	8.22	7.92	-110.18	-404.90	-1,101.61	1,174.40	1,158.28	16.12	72.849			
2,400.00	2,400.00	2,350.20	2,349.56	8.39	8.09	-110.18	-405.48	-1,103.23	1,176.26	1,159.79	16.46	71.452			
2,450.00	2,450.00	2,399.14	2,398.45	8.57	8.26	-110.17	-406.02	-1,105.10	1,178.23	1,161.42	16.81	70.079			
2,500.00	2,500.00	2,452.67	2,451.94	8.75	8.45	-110.16	-406.44	-1,107.10	1,180.13	1,162.94	17.18	68.682			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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: 141-MWD+HDGM													Offset Well Error:		0.50 ft
Reference		Offset		Semi Major Axis			Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	+N/-S (ft)		+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
2,550.00	2,550.00	2,505.62	2,504.87	8.93	8.64	-28.06	-406.71	-1,108.97	1,181.68	1,164.13	17.55	67.348			
2,600.00	2,599.99	2,558.14	2,557.35	9.10	8.83	-28.06	-407.06	-1,110.67	1,182.74	1,164.83	17.91	66.047			
2,650.00	2,649.98	2,606.06	2,605.25	9.27	9.00	-28.07	-407.47	-1,112.16	1,183.38	1,165.13	18.25	64.850			
2,700.00	2,699.96	2,652.49	2,651.65	9.45	9.16	-28.10	-407.94	-1,113.71	1,183.78	1,165.20	18.58	63.705			
2,750.00	2,749.92	2,701.31	2,700.44	9.62	9.34	-28.14	-408.47	-1,115.45	1,183.91	1,164.98	18.93	62.553			
2,800.00	2,799.86	2,751.10	2,750.20	9.79	9.52	-28.19	-409.00	-1,117.24	1,183.67	1,164.39	19.27	61.410			
2,850.00	2,849.78	2,804.69	2,803.75	9.97	9.71	-28.25	-409.57	-1,119.11	1,182.98	1,163.35	19.64	60.238			
2,900.00	2,899.68	2,859.08	2,858.11	10.14	9.90	-28.34	-410.12	-1,120.80	1,181.74	1,161.73	20.01	59.071			
2,950.00	2,949.54	2,913.09	2,912.10	10.31	10.09	-28.44	-410.64	-1,122.28	1,179.93	1,159.56	20.37	57.923			
3,000.00	2,999.37	2,966.19	2,965.18	10.49	10.28	-28.55	-411.11	-1,123.56	1,177.57	1,156.84	20.73	56.798			
3,050.00	3,049.16	3,017.32	3,016.29	10.67	10.46	-28.67	-411.47	-1,124.74	1,174.75	1,153.66	21.09	55.707			
3,100.00	3,098.90	3,070.64	3,069.59	10.84	10.65	-28.80	-411.73	-1,125.93	1,171.48	1,150.03	21.45	54.611			
3,150.00	3,148.61	3,126.70	3,125.65	11.02	10.85	-28.95	-411.89	-1,126.94	1,167.60	1,145.77	21.83	53.496			
3,200.00	3,198.26	3,180.61	3,179.56	11.20	11.05	-29.12	-411.97	-1,127.68	1,163.11	1,140.92	22.19	52.411			
3,250.00	3,247.86	3,233.79	3,232.73	11.38	11.24	-29.30	-412.03	-1,128.23	1,158.10	1,135.54	22.56	51.343			
3,300.00	3,297.40	3,284.41	3,283.35	11.56	11.41	-29.49	-412.12	-1,128.63	1,152.61	1,129.70	22.91	50.310			
3,350.00	3,346.89	3,335.37	3,334.31	11.74	11.59	-29.70	-412.26	-1,128.97	1,146.72	1,123.45	23.27	49.288			
3,400.00	3,396.30	3,389.83	3,388.77	11.92	11.79	-29.94	-412.34	-1,129.19	1,140.31	1,116.68	23.63	48.255			
3,450.00	3,445.65	3,443.15	3,442.09	12.10	11.97	-30.19	-412.28	-1,129.22	1,133.33	1,109.34	23.99	47.240			
3,500.00	3,494.93	3,494.88	3,493.82	12.29	12.15	-30.45	-412.12	-1,129.14	1,125.87	1,101.53	24.34	46.249			
3,550.00	3,544.13	3,544.21	3,543.14	12.48	12.32	-30.72	-411.92	-1,129.00	1,117.98	1,093.29	24.69	45.283			
3,600.00	3,593.29	3,591.91	3,590.84	12.66	12.48	-30.95	-411.77	-1,128.91	1,109.92	1,084.89	25.03	44.346			
3,650.00	3,642.44	3,640.52	3,639.46	12.85	12.64	-31.19	-411.66	-1,128.84	1,101.92	1,076.55	25.37	43.429			
3,700.00	3,691.59	3,689.70	3,688.64	13.04	12.81	-31.43	-411.51	-1,128.79	1,093.95	1,068.23	25.72	42.534			
3,750.00	3,740.74	3,738.85	3,737.78	13.23	12.98	-31.67	-411.34	-1,128.76	1,085.99	1,059.93	26.07	41.659			
3,800.00	3,789.89	3,787.97	3,786.90	13.43	13.15	-31.92	-411.16	-1,128.73	1,078.06	1,051.64	26.42	40.807			
3,850.00	3,839.04	3,838.95	3,837.88	13.62	13.33	-32.18	-411.00	-1,128.64	1,070.12	1,043.34	26.77	39.972			
3,900.00	3,888.20	3,890.41	3,889.34	13.81	13.50	-32.46	-410.93	-1,128.40	1,062.09	1,034.96	27.13	39.154			
3,950.00	3,937.35	3,939.28	3,938.21	14.01	13.66	-32.73	-410.95	-1,128.08	1,054.03	1,026.56	27.47	38.370			
4,000.00	3,986.50	3,988.00	3,986.93	14.20	13.82	-33.01	-411.06	-1,127.73	1,046.01	1,018.20	27.81	37.607			
4,050.00	4,035.65	4,038.24	4,037.17	14.40	13.99	-33.31	-411.26	-1,127.31	1,038.00	1,009.84	28.16	36.857			
4,100.00	4,084.80	4,088.68	4,087.61	14.60	14.16	-33.63	-411.54	-1,126.79	1,029.96	1,001.45	28.51	36.123			
4,150.00	4,133.95	4,141.04	4,139.96	14.80	14.33	-33.96	-411.85	-1,126.10	1,021.83	992.97	28.87	35.396			
4,200.00	4,183.11	4,191.64	4,190.55	15.00	14.50	-34.29	-412.13	-1,125.27	1,013.59	984.37	29.22	34.688			
4,250.00	4,232.26	4,238.49	4,237.39	15.20	14.65	-34.61	-412.45	-1,124.52	1,005.42	975.86	29.56	34.008			
4,300.00	4,281.41	4,286.85	4,285.75	15.39	14.82	-34.94	-412.88	-1,123.80	997.38	967.47	29.91	33.343			
4,350.00	4,330.56	4,338.93	4,337.82	15.60	14.99	-35.31	-413.42	-1,122.88	989.29	959.02	30.27	32.681			
4,400.00	4,379.71	4,386.46	4,385.33	15.80	15.15	-35.67	-414.00	-1,121.90	981.13	950.51	30.62	32.043			
4,450.00	4,428.86	4,429.19	4,428.05	16.00	15.29	-35.99	-414.65	-1,121.18	973.27	942.31	30.96	31.440			
4,500.00	4,478.02	4,472.45	4,471.31	16.20	15.44	-36.33	-415.45	-1,120.70	965.76	934.46	31.30	30.859			
4,550.00	4,527.17	4,517.16	4,516.00	16.40	15.59	-36.67	-416.29	-1,120.45	958.53	926.89	31.64	30.294			
4,600.00	4,576.32	4,562.00	4,560.84	16.61	15.74	-37.01	-417.08	-1,120.46	951.57	919.59	31.99	29.749			
4,650.00	4,625.47	4,607.11	4,605.94	16.81	15.90	-37.35	-417.84	-1,120.71	944.87	912.53	32.34	29.221			
4,700.00	4,674.62	4,652.78	4,651.60	17.02	16.06	-37.69	-418.59	-1,121.20	938.41	905.73	32.69	28.710			
4,750.00	4,723.77	4,707.43	4,706.24	17.22	16.25	-38.10	-419.38	-1,121.76	931.93	898.87	33.07	28.184			
4,800.00	4,772.93	4,759.92	4,758.73	17.43	16.43	-38.49	-420.00	-1,122.05	925.22	891.78	33.44	27.668			
4,850.00	4,822.08	4,807.79	4,806.59	17.63	16.60	-38.86	-420.58	-1,122.29	918.54	884.74	33.80	27.176			
4,900.00	4,871.23	4,856.32	4,855.12	17.84	16.77	-39.24	-421.22	-1,122.58	911.96	877.79	34.16	26.694			
4,950.00	4,920.38	4,906.06	4,904.85	18.04	16.94	-39.64	-421.90	-1,122.85	905.41	870.88	34.53	26.221			
5,000.00	4,969.53	4,956.17	4,954.96	18.25	17.11	-40.04	-422.56	-1,123.09	898.87	863.97	34.90	25.756			
5,050.00	5,018.69	5,006.77	5,005.56	18.46	17.29	-40.45	-423.10	-1,123.33	892.30	857.03	35.27	25.299			
5,100.00	5,067.84	5,056.37	5,055.15	18.67	17.46	-40.85	-423.52	-1,123.56	885.71	850.07	35.64	24.852			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference 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: 141-MWD+HDGM													Offset Well Error:	0.50 ft
Reference														
Offset														
Semi Major Axis														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	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	
5,150.00	5,116.99	5,105.18	5,103.96	18.87	17.63	-41.25	-423.95	-1,123.78	879.18	843.17	36.01	24.416		
5,200.00	5,166.14	5,153.49	5,152.27	19.08	17.80	-41.66	-424.43	-1,124.01	872.72	836.34	36.38	23.992		
5,250.00	5,215.29	5,201.53	5,200.30	19.29	17.97	-42.06	-424.94	-1,124.28	866.37	829.62	36.74	23.579		
5,300.00	5,264.44	5,252.56	5,251.33	19.50	18.15	-42.51	-425.50	-1,124.58	860.07	822.95	37.12	23.171		
5,350.00	5,313.60	5,303.83	5,302.59	19.71	18.33	-42.96	-425.98	-1,124.74	853.68	816.18	37.50	22.768		
5,400.00	5,362.75	5,355.00	5,353.77	19.92	18.50	-43.42	-426.48	-1,124.74	847.22	809.35	37.87	22.371		
5,450.00	5,411.90	5,403.44	5,402.20	20.13	18.67	-43.87	-426.95	-1,124.75	840.81	802.56	38.24	21.986		
5,500.00	5,461.05	5,453.62	5,452.38	20.34	18.85	-44.30	-427.00	-1,125.00	834.40	795.79	38.62	21.606		
5,550.00	5,510.20	5,504.12	5,502.88	20.55	19.03	-44.71	-426.62	-1,125.49	827.98	788.98	39.00	21.232		
5,600.00	5,559.35	5,554.76	5,553.51	20.76	19.20	-45.12	-426.07	-1,126.01	821.51	782.14	39.38	20.863		
5,650.00	5,608.51	5,612.08	5,610.82	20.97	19.41	-45.57	-425.14	-1,126.47	814.85	775.09	39.77	20.490		
5,700.00	5,657.66	5,671.62	5,670.34	21.18	19.61	-46.04	-423.49	-1,126.55	807.62	767.46	40.16	20.110		
5,750.00	5,706.81	5,723.43	5,722.11	21.39	19.79	-46.42	-421.53	-1,126.56	800.07	759.53	40.54	19.737		
5,800.00	5,755.96	5,777.34	5,775.96	21.60	19.98	-46.79	-418.96	-1,126.62	792.30	751.38	40.91	19.365		
5,850.00	5,805.11	5,832.71	5,831.23	21.81	20.17	-47.15	-415.68	-1,126.69	784.19	742.90	41.29	18.992		
5,900.00	5,854.26	5,884.80	5,883.19	22.03	20.35	-47.46	-411.99	-1,126.79	775.79	734.12	41.67	18.619		
5,950.00	5,903.42	5,935.32	5,933.54	22.24	20.53	-47.72	-407.91	-1,127.17	767.30	725.26	42.04	18.252		
6,000.00	5,952.57	5,989.58	5,987.57	22.45	20.72	-47.96	-402.93	-1,127.79	758.64	716.23	42.41	17.888		
6,050.00	6,001.72	6,044.75	6,042.43	22.66	20.91	-48.16	-397.13	-1,128.47	749.60	706.82	42.78	17.523		
6,100.00	6,050.87	6,095.45	6,092.79	22.88	21.09	-48.31	-391.25	-1,129.23	740.33	697.18	43.15	17.157		
6,150.00	6,100.02	6,146.69	6,143.62	23.09	21.27	-48.43	-384.88	-1,130.17	730.93	687.41	43.52	16.796		
6,200.00	6,149.18	6,198.84	6,195.29	23.30	21.45	-48.52	-377.95	-1,131.26	721.36	677.47	43.89	16.437		
6,250.00	6,198.33	6,248.59	6,245.52	23.51	21.62	-48.58	-370.79	-1,132.42	711.59	667.33	44.25	16.079		
6,300.00	6,247.48	6,298.38	6,293.78	23.73	21.79	-48.62	-363.70	-1,133.66	701.80	657.17	44.63	15.726		
6,350.00	6,296.63	6,346.84	6,341.69	23.94	21.97	-48.65	-356.57	-1,135.01	692.04	647.03	45.00	15.378		
6,400.00	6,345.78	6,394.92	6,389.26	24.16	22.14	-48.70	-349.68	-1,136.27	682.33	636.95	45.38	15.037		
6,450.00	6,394.93	6,443.66	6,437.51	24.37	22.31	-48.77	-342.94	-1,137.41	672.68	626.93	45.75	14.703		
6,500.00	6,444.09	6,493.07	6,486.47	24.58	22.49	-48.87	-336.31	-1,138.38	663.03	616.90	46.13	14.374		
6,550.00	6,493.24	6,542.45	6,535.41	24.80	22.67	-48.99	-329.84	-1,139.18	653.34	606.84	46.50	14.050		
6,600.00	6,542.39	6,591.80	6,584.34	25.01	22.84	-49.12	-323.39	-1,139.93	643.64	596.76	46.88	13.730		
6,650.00	6,591.54	6,643.73	6,635.82	25.23	23.03	-49.27	-316.58	-1,140.62	633.85	586.60	47.25	13.416		
6,700.00	6,640.69	6,696.92	6,688.52	25.44	23.22	-49.44	-309.48	-1,140.98	623.75	576.14	47.61	13.102		
6,750.00	6,689.84	6,746.04	6,737.20	25.66	23.40	-49.61	-302.88	-1,141.10	613.46	565.48	47.98	12.785		
6,800.00	6,739.00	6,794.66	6,785.39	25.87	23.57	-49.79	-296.42	-1,141.19	603.20	554.84	48.36	12.472		
6,850.00	6,788.15	6,843.05	6,833.36	26.09	23.75	-49.98	-290.05	-1,141.26	592.98	544.23	48.75	12.165		
6,900.00	6,837.30	6,891.44	6,881.34	26.30	23.92	-50.18	-283.76	-1,141.32	582.81	533.68	49.13	11.863		
6,950.00	6,886.45	6,942.13	6,931.60	26.52	24.10	-50.41	-277.18	-1,141.30	572.59	523.09	49.50	11.568		
7,000.00	6,935.60	6,992.83	6,981.86	26.73	24.29	-50.65	-270.52	-1,141.14	562.23	512.35	49.87	11.274		
7,050.00	6,984.75	7,040.83	7,029.45	26.95	24.46	-50.89	-264.22	-1,140.93	551.84	501.58	50.26	10.980		
7,100.00	7,033.91	7,089.34	7,077.54	27.16	24.64	-51.15	-257.92	-1,140.73	541.51	490.87	50.64	10.693		
7,150.00	7,083.06	7,139.58	7,127.34	27.38	24.82	-51.41	-251.24	-1,140.60	531.14	480.13	51.02	10.411		
7,200.00	7,132.21	7,188.84	7,176.12	27.59	25.00	-51.64	-244.41	-1,140.56	520.67	469.27	51.40	10.130		
7,250.00	7,181.36	7,235.37	7,222.21	27.81	25.17	-51.87	-238.00	-1,140.66	510.32	458.53	51.80	9.852		
7,300.00	7,230.51	7,282.90	7,269.31	28.03	25.34	-52.11	-231.61	-1,140.88	500.20	448.01	52.19	9.584		
7,350.00	7,279.66	7,333.81	7,319.73	28.24	25.53	-52.35	-224.60	-1,141.18	490.02	437.46	52.56	9.323		
7,400.00	7,328.82	7,384.37	7,369.76	28.46	25.72	-52.58	-217.32	-1,141.52	479.65	426.72	52.94	9.061		
7,450.00	7,377.97	7,434.37	7,419.23	28.68	25.90	-52.81	-210.00	-1,141.77	469.16	415.85	53.31	8.800		
7,500.00	7,427.12	7,482.85	7,467.18	28.89	26.08	-53.05	-202.87	-1,141.94	458.59	404.89	53.70	8.540		
7,550.00	7,476.27	7,529.69	7,513.55	29.11	26.25	-53.31	-196.24	-1,142.07	448.20	394.10	54.11	8.284		
7,600.00	7,525.42	7,578.62	7,562.01	29.32	26.43	-53.63	-189.58	-1,142.17	437.99	383.49	54.50	8.037		
7,650.00	7,574.58	7,629.47	7,612.39	29.54	26.62	-54.00	-182.63	-1,142.06	427.62	372.75	54.87	7.794		
7,700.00	7,623.73	7,679.19	7,661.64	29.76	26.80	-54.40	-175.80	-1,141.71	417.07	361.82	55.25	7.549		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Actual													Offset Site Error:	0.00 ft
Survey Program: 141-MWD+HDGM													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
7,750.00	7,672.88	7,728.32	7,710.32	29.98	26.98	-54.85	-169.19	-1,141.15	406.50	350.86	55.64	7.306		
7,800.00	7,722.03	7,778.77	7,760.30	30.19	27.17	-55.35	-162.39	-1,140.42	395.84	339.82	56.02	7.066		
7,850.00	7,771.18	7,829.56	7,810.57	30.41	27.36	-55.85	-155.19	-1,139.69	384.96	328.57	56.39	6.827		
7,900.00	7,820.33	7,878.04	7,858.53	30.63	27.54	-56.33	-148.12	-1,139.01	373.97	317.19	56.79	6.586		
7,950.00	7,869.49	7,926.31	7,906.29	30.84	27.72	-56.83	-141.12	-1,138.36	363.06	305.88	57.19	6.349		
8,000.00	7,918.64	7,974.19	7,953.68	31.06	27.90	-57.38	-134.31	-1,137.69	352.27	294.67	57.60	6.116		
8,050.00	7,967.79	8,022.07	8,001.09	31.28	28.07	-58.01	-127.74	-1,136.93	341.62	283.61	58.01	5.889		
8,100.00	8,016.94	8,072.20	8,050.73	31.50	28.26	-58.69	-120.79	-1,136.15	330.98	272.58	58.40	5.668		
8,150.00	8,066.09	8,122.33	8,100.31	31.71	28.45	-59.35	-113.43	-1,135.51	320.17	261.39	58.78	5.447		
8,200.00	8,115.24	8,169.04	8,146.52	31.93	28.62	-60.00	-106.58	-1,135.01	309.47	250.25	59.22	5.226		
8,250.00	8,164.40	8,216.25	8,193.25	32.15	28.80	-60.72	-99.91	-1,134.58	299.06	239.41	59.65	5.013		
8,300.00	8,213.55	8,264.10	8,240.65	32.37	28.98	-61.51	-93.34	-1,134.22	288.91	228.83	60.08	4.809 Alert		
8,350.00	8,262.70	8,312.11	8,288.23	32.58	29.16	-62.37	-86.88	-1,133.94	278.97	218.46	60.51	4.610 Alert		
8,400.00	8,311.85	8,360.74	8,336.41	32.80	29.34	-63.26	-80.32	-1,133.80	269.18	208.25	60.93	4.418 Alert		
8,450.00	8,361.00	8,409.26	8,384.47	33.02	29.52	-64.18	-73.69	-1,133.85	259.50	198.14	61.35	4.229 Alert		
8,500.00	8,410.15	8,457.15	8,431.92	33.24	29.70	-65.14	-67.23	-1,134.03	250.02	188.23	61.79	4.046 Alert		
8,550.00	8,459.31	8,505.51	8,479.86	33.46	29.88	-66.19	-60.88	-1,134.28	240.81	178.58	62.23	3.870 Alert		
8,600.00	8,508.46	8,555.18	8,529.10	33.67	30.07	-67.35	-54.30	-1,134.53	231.64	169.00	62.64	3.698 Alert		
8,650.00	8,557.61	8,603.98	8,577.45	33.89	30.25	-68.58	-47.72	-1,134.72	222.44	159.37	63.07	3.527 Alert		
8,700.00	8,606.76	8,651.20	8,624.28	34.11	30.43	-69.91	-41.65	-1,134.91	213.61	150.07	63.54	3.362 Alert		
8,750.00	8,655.91	8,699.14	8,671.87	34.33	30.61	-71.42	-35.89	-1,135.11	205.29	141.29	64.00	3.208 Alert		
8,800.00	8,705.06	8,748.38	8,720.77	34.55	30.79	-73.13	-30.06	-1,135.22	197.17	132.73	64.44	3.060 Alert		
8,850.00	8,754.22	8,797.08	8,769.12	34.77	30.97	-75.01	-24.33	-1,135.19	189.20	124.31	64.89	2.916 Alert		
8,900.00	8,803.37	8,845.01	8,816.76	34.98	31.15	-77.16	-19.05	-1,134.80	181.67	116.31	65.36	2.780 Alert		
8,950.00	8,852.52	8,893.45	8,864.94	35.20	31.33	-79.67	-14.12	-1,134.03	174.68	108.86	65.82	2.654 Alert		
9,000.00	8,901.67	8,942.51	8,913.74	35.42	31.51	-82.49	-9.19	-1,133.03	168.07	101.79	66.27	2.536 Alert		
9,050.00	8,950.87	8,990.84	8,961.82	35.64	31.69	-85.34	-4.36	-1,131.95	161.92	95.19	66.73	2.427 Minor Risk		
9,100.00	9,000.19	9,038.83	9,009.58	35.85	31.87	-88.03	0.22	-1,131.26	156.55	89.37	67.18	2.330 Minor Risk		
9,150.00	9,049.80	9,086.62	9,057.18	36.06	32.04	-90.52	4.50	-1,131.00	151.93	84.32	67.61	2.247 Minor Risk		
9,200.00	9,099.12	9,134.32	9,104.73	36.26	32.22	-92.78	8.29	-1,131.15	148.17	80.14	68.03	2.178 Minor Risk		
9,250.00	9,148.72	9,182.74	9,153.03	36.46	32.39	-94.84	11.66	-1,131.63	145.14	76.71	68.42	2.121 Minor Risk		
9,300.00	9,198.40	9,231.58	9,201.77	36.65	32.57	-96.72	14.76	-1,132.20	142.54	73.75	68.80	2.072 Minor Risk		
9,350.00	9,248.14	9,280.77	9,250.87	36.84	32.75	-98.42	17.62	-1,132.80	140.29	71.13	69.15	2.029 Minor Risk		
9,400.00	9,297.95	9,330.10	9,300.12	37.03	32.93	-99.94	20.32	-1,133.32	138.23	68.72	69.51	1.989 Minor Risk		
9,450.00	9,347.82	9,379.47	9,349.43	37.21	33.11	-101.25	22.85	-1,133.84	136.32	66.47	69.85	1.952 Minor Risk		
9,500.00	9,397.72	9,428.90	9,398.80	37.39	33.28	-102.26	25.20	-1,134.49	134.52	64.33	70.19	1.917 Minor Risk		
9,550.00	9,447.66	9,477.66	9,447.52	37.56	33.46	-103.05	27.23	-1,135.06	132.93	62.40	70.53	1.885 Minor Risk		
9,600.00	9,497.63	9,526.50	9,496.32	37.73	33.63	-103.68	28.85	-1,135.36	131.65	60.79	70.86	1.858 Minor Risk		
9,650.00	9,547.62	9,575.75	9,545.56	37.90	33.81	-104.16	30.17	-1,135.42	130.57	59.39	71.19	1.834 Minor Risk		
9,700.00	9,597.62	9,625.26	9,595.06	38.06	33.98	-104.45	31.26	-1,135.26	129.61	58.09	71.52	1.812 Minor Risk		
9,750.00	9,647.62	9,675.56	9,645.34	38.22	34.16	-104.73	32.36	-1,135.14	128.53	56.68	71.85	1.789 Minor Risk		
9,800.00	9,697.62	9,725.84	9,695.61	38.37	34.34	-104.99	33.57	-1,135.15	127.34	55.15	72.19	1.764 Minor Risk		
9,850.00	9,747.62	9,776.11	9,745.86	38.53	34.52	-105.25	34.89	-1,135.20	126.03	53.50	72.53	1.738 Minor Risk		
9,900.00	9,797.62	9,826.62	9,796.35	38.69	34.69	-105.50	36.35	-1,135.27	124.58	51.72	72.86	1.710 Minor Risk		
9,950.00	9,847.62	9,877.36	9,847.05	38.85	34.88	-105.74	38.09	-1,135.34	122.85	49.65	73.21	1.678 Minor Risk		
10,000.00	9,897.62	9,927.78	9,897.44	39.01	35.06	-105.98	40.07	-1,135.99	120.85	47.30	73.54	1.643 Minor Risk		
10,050.00	9,947.62	9,973.49	9,943.12	39.17	35.22	-106.22	41.33	-1,136.40	119.45	45.61	73.85	1.618 Minor Risk		
10,052.23	9,949.85	9,975.39	9,945.03	39.17	35.22	-106.22	41.33	-1,136.41	119.44	45.59	73.86	1.617 Minor Risk, CC, ES, SF		
10,100.00	9,997.58	10,014.38	9,983.99	39.33	35.35	-106.46	40.15	-1,136.57	122.39	48.51	73.88	1.657 Minor Risk		
10,150.00	10,047.23	10,054.63	10,024.01	39.49	35.48	-106.70	35.96	-1,136.62	133.25	59.56	73.69	1.808 Minor Risk		
10,200.00	10,096.18	10,093.38	10,062.25	39.65	35.60	-106.94	29.66	-1,136.58	151.12	77.72	73.39	2.059 Minor Risk		
10,250.00	10,144.07	10,127.66	10,095.68	39.81	35.70	-107.18	22.16	-1,136.82	175.49	102.59	72.89	2.407 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 Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T25S-R32E - Van Doo Dah 28-33 Fed Com 231H - Wellbore #1 - Actual													Offset Site Error:	0.00 ft
Survey Program: 141-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		
10,300.00	10,190.52	10,157.14	10,124.05	39.96	35.78	175.34	14.13	-1,136.93	205.83	133.57	72.26	2,848	Alert	
10,350.00	10,235.19	10,182.16	10,147.74	40.11	35.85	175.52	6.10	-1,137.08	241.34	169.72	71.62	3,370	Alert	
10,400.00	10,277.74	10,203.90	10,168.05	40.25	35.90	175.49	-1.66	-1,137.02	280.99	209.88	71.12	3,951	Alert	
10,450.00	10,317.84	10,221.19	10,184.01	40.39	35.94	175.17	-8.30	-1,136.79	323.93	253.25	70.68	4,583	Alert	
10,500.00	10,355.18	10,234.45	10,196.13	40.51	35.98	174.53	-13.69	-1,136.58	369.45	299.13	70.32	5,254		
10,550.00	10,389.49	10,241.00	10,202.06	40.64	35.99	173.15	-16.45	-1,136.47	416.91	347.05	69.86	5,968		
10,600.00	10,420.50	10,250.07	10,210.23	40.75	36.02	170.55	-20.37	-1,136.29	465.67	395.81	69.86	6,666		
10,650.00	10,447.97	10,253.36	10,213.19	40.86	36.02	161.52	-21.83	-1,136.21	515.26	445.48	69.78	7,384		
10,700.00	10,471.70	10,254.20	10,213.94	40.97	36.03	62.04	-22.20	-1,136.19	565.20	495.42	69.78	8,099		
10,750.00	10,491.51	10,252.87	10,212.75	41.09	36.02	12.39	-21.61	-1,136.22	615.10	545.22	69.87	8,803		
10,800.00	10,507.24	10,249.65	10,209.86	41.20	36.01	6.30	-20.19	-1,136.30	664.60	594.56	70.03	9,490		
10,850.00	10,518.77	10,241.00	10,202.06	41.32	35.99	3.98	-16.45	-1,136.47	713.41	643.30	70.11	10,176		
10,900.00	10,526.02	10,241.00	10,202.06	41.45	35.99	2.99	-16.45	-1,136.47	761.21	690.50	70.61	10,781		
10,950.00	10,528.94	10,230.26	10,192.31	41.58	35.97	2.27	-11.96	-1,136.65	807.78	736.96	70.81	11,407		
11,000.00	10,529.00	10,221.60	10,184.39	41.73	35.95	2.13	-8.47	-1,136.78	853.53	782.41	71.13	12,000		
11,050.00	10,529.00	10,208.00	10,171.85	41.89	35.91	2.02	-3.19	-1,136.97	899.58	828.31	71.27	12,623		
11,100.00	10,529.00	10,208.00	10,171.85	42.07	35.91	2.02	-3.19	-1,136.97	945.79	874.05	71.74	13,184		
11,150.00	10,529.00	10,198.15	10,162.70	42.26	35.89	1.96	0.46	-1,137.07	992.25	920.33	71.92	13,797		
11,200.00	10,529.00	10,191.04	10,156.06	42.46	35.87	1.92	3.01	-1,137.10	1,038.91	966.77	72.14	14,402		
11,250.00	10,529.00	10,177.00	10,142.88	42.67	35.83	1.86	7.84	-1,137.05	1,085.82	1,013.64	72.19	15,042		
11,300.00	10,529.00	10,177.00	10,142.88	42.90	35.83	1.86	7.84	-1,137.05	1,132.78	1,060.27	72.51	15,622		
11,350.00	10,529.00	10,177.00	10,142.88	43.14	35.83	1.86	7.84	-1,137.05	1,179.98	1,107.18	72.80	16,208		
11,400.00	10,529.00	10,177.00	10,142.88	43.39	35.83	1.86	7.84	-1,137.05	1,227.41	1,154.34	73.07	16,799		
11,450.00	10,529.00	10,163.04	10,129.67	43.66	35.79	1.82	12.33	-1,136.96	1,274.77	1,201.71	73.07	17,447		
11,500.00	10,529.00	10,158.64	10,125.48	43.93	35.78	1.80	13.68	-1,136.93	1,322.38	1,249.16	73.22	18,061		
11,550.00	10,529.00	10,146.00	10,113.38	44.22	35.75	1.76	17.34	-1,136.90	1,370.21	1,296.98	73.23	18,710		
11,600.00	10,529.00	10,146.00	10,113.38	44.51	35.75	1.76	17.34	-1,136.90	1,417.99	1,344.56	73.43	19,310		
11,650.00	10,529.00	10,146.00	10,113.38	44.82	35.75	1.76	17.34	-1,136.90	1,465.92	1,392.31	73.62	19,913		

Anticollision Report

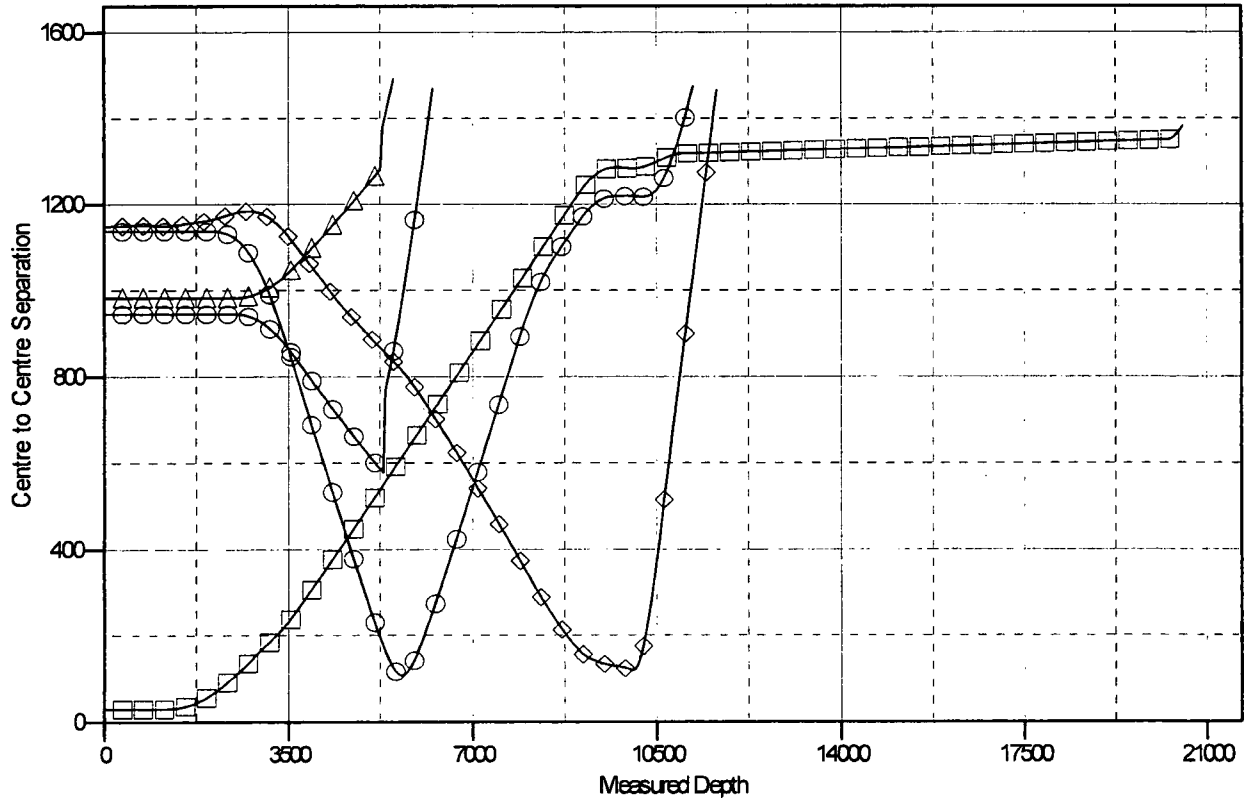
Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Reference Site: Sec 21-T25S-R32E
Site Error: 0.00 ft
Reference Well: Van Doo Dah 21-33 Fed Com 233H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 1

Local Co-ordinate Reference: Well Van Doo Dah 21-33 Fed Com 233H
TVD Reference: RKB @ 3415.20ft
MD Reference: RKB @ 3415.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000.141_Prod US
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3415.20ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Van Doo Dah 21-33 Fed Com 233H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.35°

Ladder Plot



LEGEND

Manwan 21-16 State Fed Com 234H Wellbore #1, Permit Plan 1 (Pre Directional) VO
 Van Doo Dah 28-33 Fed Com 231H Wellbore #1, Actual VO

Manwan 28-16 Fed Com 232H (28-33), Wellbore #1, Permit Plan 2 VO
 Cotton Draw Unit 47 (P&A), Wellbore #1, Wellbore #1 VO

Cotton Draw Unit 37 (P&A), Wellbore #1, Wellbore #1 VO

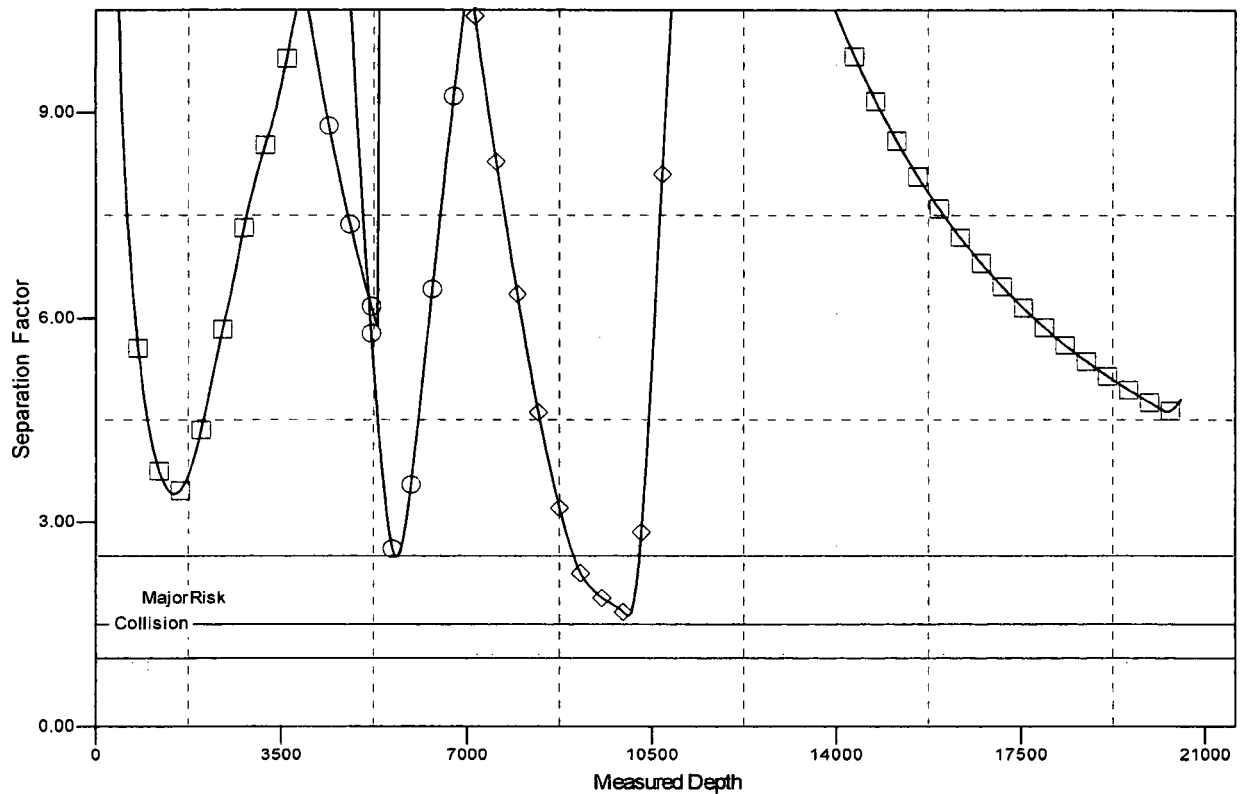
Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Van Doo Dah 21-33 Fed Com 233H
Project:	Lea County (NAD83 New Mexico East)	TVD Reference:	RKB @ 3415.20ft
Reference Site:	Sec 21-T25S-R32E	MD Reference:	RKB @ 3415.20ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Van Doo Dah 21-33 Fed Com 233H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are 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 @ 3415.20ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Van Doo Dah 21-33 Fed Com 233H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.35°

Separation Factor Plot



LEGEND

Marwan 21-16 State Fed Com 234H, Wellbore #1, Permit Plan 1 (Pro Directional) VD	Marwan 25-16 Fed Com 232H (25-33), Wellbore #1, Sperry Plan 2 VD	Cotton Draw Unit 37 (P&A), Wellbore #1, Wellbore #1 VD
Van Doo Dah 25-33 Fed Com 231H, Wellbore #1, Actual/VD	Cotton Draw Unit 47 (P&A), Wellbore #1, Wellbore #1 VD	