

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-015-44983
1. Type of Well: Oil Well ☐ Gas Well ☒ Other		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, LP.		6. State Oil & Gas Lease No.
3. Address of Operator 333 WEST SHERIDAN AVENUE, OKC, OK 73102		7. Lease Name or Unit Agreement Name Turquoise PWU 27
4. Well Location Unit Letter <u>D</u> : <u>770</u> feet from the <u>North</u> line and <u>165</u> feet from the <u>West</u> line Section <u>27</u> Township <u>19S</u> Range <u>29E</u> NMPM Eddy, County New Mexico		8. Well Number <u>9H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3343'		9. OGRID Number 6137
		10. Pool name or Wildcat 98199 PARKWAY; BONE SPRING, WEST

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL. ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: Change to original APD ☒		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Devon Energy Production Company, LP Respectfully requests approval of a location change for the subject well:

From: SHL Section 27, T19S, R29E 770 FNL/165 FWL,
BHL Section 27, T19S, R29E 330 FNL/230 FEL
Elevation: 3343

TO: SHL Section 28, T19S, R29E 992 FNL//243 FEL
BHL Section 27, T19S, R29E 330 FNL/230 FEL
Elevation: 3344.7'

NM OIL CONSERVATION
ARTESIA DISTRICT

AUG 01 2018

RECEIVED

Attachments: C-102

Directional Survey
Drilling Plan
Plot plan

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Erin Workman TITLE Regulatory Compliance Analyst DATE 07.31.18

Type or print name Erin Workman E-mail address: Erin.workman@dmn.com PHONE: (405)552-7970
For State Use Only

APPROVED BY: Raymond W. Padany TITLE Geologist DATE 8-2-18
Conditions of Approval (if any):

API Number

DRAWN BY: CM

Devon Energy, Turquoise PWU 27 9H

1. Geologic Formations

TVD of target	9123	Pilot hole depth	N/A
MD at TD:	14,047	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
RUSTLER	0		
TOP SALT	330		
BASE SALT			
TANSILL	1295		
YATES	1420		
SEVEN RIVERS	1700		
DELAWARE	3375		
LOWER BRUSHY	5060		
1ST BONE LIME	5225		
1ST BONE SAND	6965		
2ND BONE LIME	7150		
2ND BONE SAND	7800		
3RD BONE LIME	8075		
3RD BONE SAND	8685		
WOLFCAMP	9220		

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

Devon Energy, Turquoise PWU 27 9H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn.
	From	To				
20"	0	200	13.375"	48	H-40	STC
12.25"	0	3,390	9.625"	36	J-55	LTC
8.75"	0	TD	5.5"	17	P-110	BTC
BLM Minimum Safety Factor				Collapse: 1.125	Burst: 1.00	Tension: 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

Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.

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
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?	

Devon Energy, Turquoise PWU 27 9H

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	H ₂ O gal/sk	Yld ft ³ / sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	226	14.8	6.368	1.33	4 hr 48 mn	C + Adds
9-5/8" Inter.	488	12.5	10.654	1.94	31 hr 40 mn	35:65 Poz:C + Adds
	294	14.8	6.352	1.33	6 hr 48 mn	C + Adds
5-1/2" Prod	595	10.5	15.442	2.43	19 hr 3 mn	C + Adds
	1130	14.5	5.175	1.2	9 hr 6 mn	50:50 Poz:H + Adds

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	25%
9-5/8" Intermediate	0'	25%
5-1/2" Production Casing	2390'	10%

Devon Energy, Turquoise PWU 27 9H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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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% testing 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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Devon Energy, Turquoise PWU 27 9H

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 may be 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 pack-off, 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.

Devon Energy, Turquoise PWU 27 9H

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	200	FW Gel	8.6-8.8	28-34	N/C
200	3390	Saturated Brine	10.0-10.2	28-34	N/C
3390	TD	Cut Brine	8.5-8.7	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight 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	Intermediate shoe to TD
PEX	

Devon Energy, Turquoise PWU 27 9H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	3960 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S 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

Will be pre-setting casing? Yes

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 13-3/8" 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.

Is this a walking operation? Yes

Will be pre-setting casing? Yes

Attachments

☒ Directional Plan

☐ Other, describe

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 27-T19S-R29E

Turquoise PWU 27-9H

Wellbore #1

Permit Plan 3

Anticollision Report

24 July, 2018

Anticollision Report

Company:	WCDSO Permian NM	Local Co-ordinate Reference:	Well Turquoise PWU 27-9H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3373.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3373.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-9H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 3	Offset TVD Reference:	Offset Datum

Reference	Permit Plan 3		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.00ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,500.00 ft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 7/24/2018			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	14,047.55	Permit Plan 3 (Wellbore #1)	MWD+IFR1	OWSG MWD + IFR1

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Sec 27-T19S-R29E						
Coral PWU 28-27 11H - Wellbore #1 - Permit Plan 2						Out of range
Coral PWU 28-27 11H - Wellbore #1 - Prelim Plan 1						Out of range
Coral PWU 28-27 12H - Wellbore #1 - Permit Plan 2						Out of range
Coral PWU 28-27 12H - Wellbore #1 - Prelim Plan 1						Out of range
Coral PWU 28-27 62H - Wellbore #1 - Prelim Plan 1						Out of range
Coral PWU 28-27 62H - Wellbore #1 - Permit Plan 2						Out of range
Parkway West Unit #20 (Active) - Wellbore #1 - Wellbore						Out of range
Parkway West Unit 10 - Original Hole - Original Hole						Out of range
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	0.00	0.00	721.82			
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	9,500.00	9,105.88	725.08	657.26	10.692	ES
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	9,550.00	9,105.28	726.90	658.86	10.684	SF
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1	384.92	356.98	1,390.09	1,387.75	594.896	CC
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1	2,750.00	2,717.14	1,399.52	1,380.50	73.571	ES
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1	4,150.00	4,137.66	1,497.10	1,468.02	51.488	SF
Turquoise PWU 27-4H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	7,100.00	11,814.00	555.30	426.53	4.312	Alert, SF
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	7,136.71	11,814.00	554.09	425.74	4.317	Alert, CC, ES
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	7,141.34	7,119.88	457.23	407.00	9.104	CC
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	7,200.00	7,174.87	457.48	406.86	9.038	ES
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	8,250.00	8,226.07	481.35	423.35	8.300	SF
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	7,139.49	7,118.05	459.08	404.10	8.350	CC
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	7,200.00	7,174.76	459.35	403.92	8.286	ES
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	7,350.00	7,313.56	461.86	405.35	8.173	SF
Turquoise PWU 27-3H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2	2,700.00	2,703.00	30.00	11.06	1.584	Minor Risk, CC
Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2	2,850.00	2,846.99	30.41	10.42	1.521	Minor Risk, ES
Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2	2,900.00	2,903.02	30.89	10.52	1.517	Minor Risk, SF
Turquoise PWU 27-7H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-8H - Wellbore #1 - Wellbore #1						Out of range

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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

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 28-T19S-R29E						
Coral PWU 28-3H - Wellbore #1 - Wellbore #1						Out of range
Coral PWU 28-4H - Wellbore #1 - Wellbore #1	7,997.84	12,048.23	783.49	665.86	6.661	CC
Coral PWU 28-4H - Wellbore #1 - Wellbore #1	8,000.00	12,048.45	783.49	665.84	6.660	ES, SF
Coral PWU 28-7H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28 61H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28 62H - Wellbore #1 - Wellbore #1						Out of range
Onyx PWU 29-28011H - Wellbore #1 - Wellbore #1						Out of range
Parkway #021 (Active) - Wellbore #1 - Wellbore #1						Out of range
Parkway Unit 16 (Active) - Wellbore #1 - Wellbore #1						Out of range
Parkway West Unit #3 - Wellbore #1 - Wellbore #1						Out of range
Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1	2,700.00	2,677.00	549.10	496.93	10.524	CC
Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1	2,850.00	2,826.99	550.10	495.28	10.034	ES
Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1	8,550.00	8,507.02	982.84	824.21	6.196	SF
Turquoise PWU 27 10H - Original Hole - Actuals	384.92	356.98	1,390.12	1,379.88	135.672	CC
Turquoise PWU 27 10H - Original Hole - Actuals	2,750.00	2,717.14	1,399.56	1,378.08	65.158	ES
Turquoise PWU 27 10H - Original Hole - Actuals	4,150.00	4,137.66	1,497.14	1,466.40	48.703	SF
Turquoise PWU 27 10H - Original Hole - P3v1	384.92	356.98	1,390.12	1,379.88	135.671	CC
Turquoise PWU 27 10H - Original Hole - P3v1	2,750.00	2,717.14	1,399.56	1,378.08	65.158	ES
Turquoise PWU 27 10H - Original Hole - P3v1	4,150.00	4,137.66	1,497.14	1,466.40	48.704	SF
Turquoise PWU 27 10H - Original Hole - Plan 1	2,700.00	2,672.00	1,390.42	1,369.11	65.252	CC
Turquoise PWU 27 10H - Original Hole - Plan 1	2,750.00	2,722.00	1,390.44	1,368.81	64.296	ES
Turquoise PWU 27 10H - Original Hole - Plan 1	4,300.00	4,267.31	1,499.50	1,467.63	47.059	SF
Turquoise PWU 27 10H - Original Hole - PTL	384.92	356.98	1,390.12	1,379.88	135.671	CC
Turquoise PWU 27 10H - Original Hole - PTL	2,750.00	2,717.14	1,399.56	1,378.08	65.158	ES
Turquoise PWU 27 10H - Original Hole - PTL	4,150.00	4,137.66	1,497.14	1,466.40	48.704	SF
Turquoise PWU 27 10H - Original Hole - T&D	358.75	329.90	1,390.22	1,380.09	137.175	CC
Turquoise PWU 27 10H - Original Hole - T&D	2,750.00	2,722.20	1,390.44	1,374.58	87.668	ES
Turquoise PWU 27 10H - Original Hole - T&D	4,300.00	4,267.17	1,499.32	1,478.34	71.452	SF
Sec 29-19S-29E						
Onyx PWU 29 28 061H - Wellbore #1 - Wellbore #1	8,775.29	19,087.00	952.57	728.00	4.242	Alert, CC
Onyx PWU 29 28 061H - Wellbore #1 - Wellbore #1	8,800.00	19,087.00	953.00	726.90	4.215	Alert, ES
Onyx PWU 29 28 061H - Wellbore #1 - Wellbore #1	8,900.00	19,087.00	963.42	733.12	4.183	Alert, SF
Onyx PWU 29-28 9H - Original Hole - Original Hole	8,850.00	18,909.00	280.74	171.68	2.574	Alert, SF
Onyx PWU 29-28 9H - Original Hole - Original Hole	8,900.00	18,909.00	264.33	163.07	2.611	Alert, ES
Onyx PWU 29-28 9H - Original Hole - Original Hole	8,936.62	18,909.00	260.62	166.74	2.776	Alert, CC

Offset Design												Offset Site Error: 5.00 ft	
Sec 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1												Offset Well Error: 10.00 ft	
Survey Program: 200-MWD+IGRF													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	10.00	113.75	-290.74	660.62	721.82				
50.00	50.00	38.71	38.71	0.50	10.00	113.73	-290.54	660.77	721.83	711.33	10.50	68.735	
100.00	100.00	85.89	85.88	0.52	10.00	113.66	-289.75	661.38	722.08	711.57	10.52	68.657	
150.00	150.00	133.03	132.98	0.59	10.00	113.52	-288.38	662.46	722.54	711.95	10.59	68.232	
200.00	200.00	180.10	179.99	0.70	10.01	113.33	-286.37	663.99	723.20	712.49	10.70	67.575	
250.00	250.00	229.81	229.59	0.83	10.01	113.07	-283.72	666.00	724.01	713.17	10.84	66.775	
300.00	300.00	281.50	281.15	0.98	10.02	112.79	-280.76	668.08	724.74	713.74	11.00	65.872	
350.00	350.00	332.02	331.54	1.14	10.03	112.51	-277.75	670.05	725.40	714.22	11.17	64.916	
400.00	400.00	380.24	379.64	1.30	10.05	112.25	-274.90	671.95	726.09	714.74	11.35	63.949	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
450.00	450.00	427.55	426.84	1.47	10.07	112.00	-272.30	673.90	726.97	715.43	11.54	62.995		
500.00	500.00	474.88	474.06	1.64	10.09	111.77	-269.90	675.95	728.04	716.31	11.73	62.058		
550.00	550.00	522.21	521.29	1.81	10.12	111.54	-267.72	678.09	729.30	717.37	11.93	61.142		
600.00	600.00	570.52	569.51	1.98	10.15	111.33	-265.70	680.38	730.73	718.60	12.13	60.246		
650.00	650.00	621.84	620.73	2.16	10.18	111.11	-263.63	682.75	732.16	719.82	12.34	59.345		
700.00	700.00	672.43	671.23	2.33	10.22	110.90	-261.62	684.98	733.51	720.96	12.55	58.452		
750.00	750.00	722.04	720.76	2.51	10.26	110.71	-259.75	687.14	734.87	722.11	12.76	57.577		
800.00	800.00	771.67	770.31	2.68	10.30	110.52	-257.99	689.28	736.27	723.28	12.98	56.719		
850.00	850.00	821.30	819.87	2.86	10.35	110.34	-256.35	691.39	737.68	724.48	13.20	55.876		
900.00	900.00	871.76	870.25	3.04	10.40	110.17	-254.77	693.51	739.11	725.69	13.43	55.044		
950.00	950.00	922.75	921.19	3.21	10.45	110.00	-253.17	695.58	740.48	726.83	13.66	54.220		
1,000.00	1,000.00	973.76	972.12	3.39	10.51	109.83	-251.56	697.58	741.79	727.90	13.89	53.405		
1,050.00	1,050.00	1,024.76	1,023.07	3.57	10.57	109.66	-249.93	699.50	743.03	728.90	14.13	52.600		
1,100.00	1,100.00	1,074.63	1,072.88	3.75	10.63	109.50	-248.33	701.34	744.23	729.87	14.36	51.815		
1,150.00	1,150.00	1,124.06	1,122.25	3.92	10.69	109.34	-246.81	703.18	745.47	730.87	14.60	51.051		
1,200.00	1,200.00	1,173.50	1,171.63	4.10	10.76	109.19	-245.34	705.03	746.75	731.90	14.84	50.304		
1,250.00	1,250.00	1,222.93	1,221.01	4.28	10.82	109.04	-243.93	706.89	748.06	732.97	15.09	49.575		
1,300.00	1,300.00	1,273.72	1,271.74	4.46	10.90	108.89	-242.53	708.79	749.38	734.04	15.34	48.854		
1,350.00	1,350.00	1,324.70	1,322.67	4.64	10.97	108.75	-241.16	710.60	750.63	735.04	15.59	48.143		
1,400.00	1,400.00	1,375.69	1,373.61	4.81	11.05	108.61	-239.84	712.33	751.82	735.97	15.85	47.442		
1,450.00	1,450.00	1,426.75	1,424.63	4.99	11.13	108.48	-238.55	713.97	752.94	736.84	16.11	46.751		
1,500.00	1,500.00	1,478.23	1,476.07	5.17	11.21	108.35	-237.30	715.51	753.98	737.62	16.37	46.069		
1,550.00	1,550.00	1,529.71	1,527.52	5.35	11.30	108.23	-236.10	716.93	754.92	738.29	16.63	45.396		
1,600.00	1,600.00	1,581.21	1,578.99	5.53	11.39	108.11	-234.94	718.22	755.77	738.87	16.90	44.731		
1,650.00	1,650.00	1,632.74	1,630.50	5.71	11.48	108.01	-233.83	719.39	756.51	739.35	17.16	44.076		
1,700.00	1,700.00	1,684.30	1,682.04	5.89	11.57	107.90	-232.72	720.45	757.15	739.72	17.43	43.431		
1,750.00	1,750.00	1,735.87	1,733.58	6.06	11.66	107.80	-231.60	721.39	757.70	739.99	17.71	42.793		
1,800.00	1,800.00	1,787.44	1,785.13	6.24	11.76	107.70	-230.48	722.23	758.13	740.15	17.98	42.165		
1,850.00	1,850.00	1,839.01	1,836.68	6.42	11.86	107.60	-229.36	722.95	758.47	740.21	18.26	41.545		
1,900.00	1,900.00	1,890.58	1,888.24	6.60	11.96	107.51	-228.23	723.56	758.70	740.17	18.54	40.933		
1,950.00	1,950.00	1,940.10	1,937.75	6.78	12.06	107.42	-227.21	724.09	758.91	740.10	18.81	40.344		
2,000.00	2,000.00	1,989.86	1,987.49	6.96	12.15	107.34	-226.29	724.61	759.13	740.04	19.09	39.768		
2,050.00	2,050.00	2,039.62	2,037.24	7.14	12.26	107.27	-225.45	725.12	759.37	740.00	19.37	39.206		
2,100.00	2,100.00	2,089.38	2,087.00	7.32	12.36	107.21	-224.72	725.62	759.63	739.98	19.65	38.657		
2,150.00	2,150.00	2,139.14	2,136.76	7.49	12.46	107.15	-224.08	726.10	759.90	739.97	19.93	38.121		
2,200.00	2,200.00	2,188.97	2,186.57	7.67	12.57	107.10	-223.54	726.56	760.19	739.97	20.22	37.597		
2,250.00	2,250.00	2,238.93	2,236.54	7.85	12.68	107.05	-223.03	727.02	760.48	739.97	20.51	37.086		
2,300.00	2,300.00	2,288.90	2,286.50	8.03	12.79	107.01	-222.54	727.48	760.77	739.98	20.79	36.586		
2,350.00	2,350.00	2,338.87	2,336.46	8.21	12.90	106.97	-222.07	727.94	761.07	739.99	21.08	36.097		
2,400.00	2,400.00	2,388.84	2,386.42	8.39	13.01	106.92	-221.61	728.39	761.37	739.99	21.38	35.619		
2,450.00	2,450.00	2,438.80	2,436.39	8.57	13.13	106.88	-221.18	728.84	761.67	740.00	21.67	35.151		
2,500.00	2,500.00	2,488.91	2,486.49	8.75	13.24	106.84	-220.75	729.28	761.97	740.01	21.96	34.694		
2,550.00	2,550.00	2,539.20	2,536.78	8.93	13.36	106.80	-220.32	729.71	762.26	740.00	22.26	34.244		
2,600.00	2,600.00	2,589.49	2,587.06	9.10	13.48	106.76	-219.88	730.13	762.53	739.97	22.56	33.804		
2,650.00	2,650.00	2,639.78	2,637.35	9.28	13.60	106.72	-219.42	730.53	762.78	739.92	22.86	33.373		
2,700.00	2,700.00	2,690.08	2,687.64	9.46	13.72	106.68	-218.95	730.91	763.01	739.85	23.16	32.949		
2,750.00	2,750.00	2,740.37	2,737.93	9.64	13.84	86.63	-218.47	731.27	763.21	739.76	23.46	32.535		
2,800.00	2,800.00	2,790.66	2,788.22	9.82	13.97	86.62	-217.98	731.62	763.39	739.62	23.76	32.127		
2,850.00	2,849.99	2,840.96	2,838.51	10.00	14.09	86.63	-217.47	731.95	763.51	739.45	24.06	31.728		
2,900.00	2,899.98	2,891.25	2,888.80	10.18	14.22	86.68	-216.96	732.27	763.59	739.22	24.37	31.334		
2,950.00	2,949.95	2,941.53	2,939.08	10.36	14.35	86.76	-216.43	732.56	763.63	738.96	24.67	30.948		
3,000.00	2,999.91	2,991.81	2,989.35	10.53	14.48	86.87	-215.89	732.85	763.63	738.64	24.98	30.568		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	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	
3,050.00	3,049.84	3,042.08	3,039.62	10.71	14.61	87.02	-215.34	733.11	763.58	738.29	25.29	30.194		
3,100.00	3,099.75	3,092.64	3,090.18	10.89	14.74	87.20	-214.78	733.34	763.49	737.89	25.60	29.827		
3,150.00	3,149.64	3,143.18	3,140.71	11.07	14.87	87.41	-214.22	733.53	763.35	737.44	25.91	29.465		
3,200.00	3,199.49	3,193.68	3,191.21	11.25	15.00	87.66	-213.68	733.68	763.16	736.94	26.22	29.109		
3,250.00	3,249.31	3,244.16	3,241.68	11.43	15.13	87.95	-213.13	733.78	762.92	736.40	26.53	28.759		
3,300.00	3,299.12	3,294.62	3,292.14	11.60	15.27	88.24	-212.60	733.84	762.67	735.83	26.84	28.416		
3,350.00	3,348.93	3,345.08	3,342.60	11.78	15.40	88.53	-212.06	733.85	762.39	735.24	27.15	28.078		
3,400.00	3,398.74	3,395.54	3,393.05	11.96	15.54	88.82	-211.53	733.82	762.09	734.62	27.47	27.746		
3,450.00	3,448.55	3,445.99	3,443.50	12.14	15.67	89.12	-211.01	733.74	761.77	733.99	27.78	27.420		
3,500.00	3,498.36	3,495.73	3,493.24	12.32	15.81	89.41	-210.47	733.67	761.47	733.37	28.09	27.104		
3,550.00	3,548.17	3,545.71	3,543.22	12.50	15.94	89.70	-209.91	733.60	761.17	732.76	28.41	26.793		
3,600.00	3,597.98	3,595.68	3,593.19	12.67	16.08	89.99	-209.32	733.52	760.89	732.16	28.73	26.488		
3,650.00	3,647.79	3,645.71	3,643.21	12.85	16.22	90.27	-208.70	733.44	760.61	731.57	29.04	26.190		
3,700.00	3,697.60	3,695.76	3,693.26	13.03	16.36	90.55	-208.01	733.38	760.34	730.98	29.36	25.896		
3,750.00	3,747.41	3,745.82	3,743.31	13.21	16.50	90.83	-207.26	733.33	760.08	730.40	29.68	25.609		
3,800.00	3,797.22	3,795.90	3,793.38	13.39	16.64	91.10	-206.43	733.29	759.82	729.82	30.00	25.327		
3,850.00	3,847.03	3,845.77	3,843.25	13.57	16.78	91.37	-205.57	733.26	759.57	729.25	30.32	25.051		
3,900.00	3,896.84	3,895.60	3,893.07	13.75	16.92	91.64	-204.73	733.22	759.34	728.70	30.64	24.781		
3,950.00	3,946.84	3,945.43	3,942.89	13.93	17.07	91.91	-203.92	733.17	759.13	728.17	30.96	24.516		
4,000.00	3,996.45	3,995.26	3,992.72	14.11	17.21	92.19	-203.12	733.12	758.94	727.65	31.29	24.257		
4,050.00	4,046.26	4,046.10	4,043.55	14.29	17.36	92.46	-202.28	733.05	758.74	727.12	31.61	24.000		
4,100.00	4,096.07	4,096.95	4,094.39	14.48	17.50	92.74	-201.35	732.95	758.49	726.54	31.94	23.747		
4,150.00	4,145.88	4,147.80	4,145.23	14.64	17.65	93.00	-200.32	732.81	758.19	725.92	32.27	23.497		
4,200.00	4,195.69	4,198.67	4,196.09	14.82	17.80	93.27	-199.21	732.64	757.84	725.24	32.60	23.250		
4,250.00	4,245.50	4,247.19	4,244.60	15.00	17.94	93.51	-198.09	732.53	757.54	724.62	32.92	23.011		
4,300.00	4,295.31	4,296.16	4,293.55	15.18	18.09	93.75	-196.92	732.50	757.30	724.06	33.25	22.779		
4,350.00	4,345.12	4,345.14	4,342.52	15.36	18.23	93.99	-195.70	732.56	757.15	723.58	33.57	22.553		
4,400.00	4,394.93	4,394.64	4,392.00	15.54	18.38	94.22	-194.41	732.70	757.06	723.16	33.90	22.332		
4,450.00	4,444.74	4,445.17	4,442.51	15.72	18.54	94.45	-192.98	732.87	756.96	722.73	34.23	22.112		
4,500.00	4,494.55	4,495.72	4,493.04	15.90	18.69	94.67	-191.42	733.07	756.84	722.27	34.57	21.896		
4,550.00	4,544.36	4,546.29	4,543.57	16.08	18.84	94.88	-189.71	733.27	756.68	721.78	34.90	21.682		
4,600.00	4,594.17	4,595.98	4,593.23	16.26	18.99	95.08	-187.92	733.50	756.51	721.28	35.23	21.472		
4,650.00	4,643.98	4,644.94	4,642.16	16.44	19.15	95.27	-186.20	733.77	756.40	720.84	35.56	21.269		
4,700.00	4,693.79	4,693.89	4,691.08	16.62	19.30	95.47	-184.53	734.08	756.36	720.47	35.89	21.072		
4,700.49	4,694.28	4,694.37	4,691.56	16.62	19.30	95.47	-184.51	734.08	756.36	720.46	35.90	21.070		
4,750.00	4,743.60	4,742.85	4,740.01	16.80	19.45	95.67	-182.91	734.43	756.40	720.17	36.23	20.880		
4,800.00	4,793.41	4,793.36	4,790.49	16.98	19.60	95.88	-181.27	734.82	756.47	719.91	36.56	20.690		
4,850.00	4,843.22	4,844.71	4,841.82	17.16	19.76	96.09	-179.54	735.14	756.48	719.57	36.90	20.499		
4,900.00	4,893.03	4,896.07	4,893.14	17.34	19.92	96.29	-177.76	735.38	756.39	719.15	37.24	20.310		
4,950.00	4,942.84	4,947.42	4,944.46	17.52	20.08	96.50	-175.92	735.55	756.23	718.64	37.58	20.122		
5,000.00	4,992.65	4,997.01	4,994.01	17.70	20.24	96.70	-174.10	735.69	756.03	718.11	37.92	19.938		
5,050.00	5,042.46	5,046.46	5,043.43	17.88	20.40	96.89	-172.26	735.87	755.87	717.62	38.25	19.759		
5,100.00	5,092.27	5,095.91	5,092.85	18.06	20.55	97.08	-170.41	736.09	755.75	717.16	38.59	19.584		
5,150.00	5,142.08	5,145.52	5,142.42	18.24	20.71	97.27	-168.54	736.36	755.68	716.75	38.93	19.412		
5,200.00	5,191.89	5,197.14	5,194.00	18.42	20.87	97.48	-166.61	736.57	755.56	716.29	39.27	19.240		
5,250.00	5,241.70	5,248.74	5,245.57	18.60	21.03	97.69	-164.73	736.63	755.34	715.73	39.61	19.068		
5,300.00	5,291.51	5,300.33	5,297.13	18.78	21.20	97.90	-162.90	736.53	755.02	715.06	39.96	18.896		
5,350.00	5,341.32	5,349.69	5,346.46	18.96	21.35	98.12	-161.21	736.34	754.65	714.36	40.29	18.729		
5,400.00	5,391.13	5,398.25	5,394.99	19.14	21.51	98.34	-159.62	736.20	754.38	713.75	40.63	18.567		
5,450.00	5,440.94	5,446.81	5,443.52	19.32	21.66	98.56	-158.11	736.13	754.21	713.24	40.97	18.411		
5,500.00	5,490.75	5,495.36	5,492.06	19.50	21.82	98.78	-156.67	736.11	754.14	712.84	41.30	18.259		
5,508.92	5,499.64	5,504.02	5,500.72	19.54	21.84	98.82	-156.42	736.11	754.14	712.78	41.36	18.233		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1		Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft		
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,550.00	5,540.56	5,544.77	5,541.45	19.68	21.97	99.01	-155.27	738.14	754.16	712.52	41.64	18.111				
5,600.00	5,590.37	5,595.55	5,592.21	19.86	22.14	99.25	-153.81	736.16	754.17	712.18	41.98	17.964				
5,650.00	5,640.18	5,646.85	5,643.49	20.04	22.30	99.48	-152.26	736.13	754.12	711.79	42.33	17.816				
5,700.00	5,689.99	5,696.66	5,695.26	20.22	22.47	99.70	-150.47	736.10	753.96	711.29	42.67	17.668				
5,750.00	5,739.80	5,749.59	5,746.15	20.41	22.63	99.91	-148.53	736.05	753.71	710.69	43.02	17.521				
5,800.00	5,789.61	5,800.21	5,796.74	20.59	22.80	100.12	-146.62	735.93	753.42	710.06	43.36	17.376				
5,850.00	5,839.41	5,850.82	5,847.31	20.77	22.96	100.33	-144.73	735.75	753.10	709.39	43.70	17.231				
5,900.00	5,889.22	5,901.43	5,897.89	20.95	23.12	100.55	-142.86	735.49	752.74	708.69	44.05	17.089				
5,950.00	5,939.03	5,952.03	5,948.45	21.13	23.29	100.77	-141.02	735.17	752.34	707.95	44.39	16.947				
6,000.00	5,988.84	6,002.62	5,999.01	21.31	23.45	101.00	-139.20	734.78	751.92	707.18	44.74	16.807				
6,050.00	6,038.65	6,052.15	6,048.51	21.49	23.61	101.22	-137.46	734.37	751.49	706.41	45.08	16.671				
6,100.00	6,088.46	6,101.75	6,098.08	21.67	23.77	101.45	-135.77	733.96	751.10	705.68	45.42	16.537				
6,150.00	6,138.27	6,150.36	6,146.66	21.85	23.93	101.69	-134.25	733.53	750.78	705.02	45.76	16.407				
6,200.00	6,188.08	6,199.05	6,195.33	22.03	24.09	101.93	-132.91	733.07	750.55	704.45	46.10	16.281				
6,250.00	6,237.89	6,247.82	6,243.88	22.21	24.25	102.19	-131.65	732.67	750.42	703.98	46.44	16.159				
6,288.85	6,278.60	6,285.37	6,281.62	22.35	24.37	102.38	-130.69	732.41	750.39	703.69	46.70	16.068				
6,300.00	6,287.70	6,296.20	6,292.45	22.39	24.40	102.44	-130.42	732.35	750.39	703.61	46.78	16.042				
6,350.00	6,337.51	6,344.78	6,341.01	22.57	24.56	102.68	-129.21	732.11	750.47	703.35	47.12	15.928				
6,400.00	6,387.32	6,394.12	6,390.33	22.75	24.72	102.93	-128.00	731.95	750.63	703.17	47.46	15.816				
6,450.00	6,437.13	6,445.65	6,441.85	22.93	24.89	103.20	-126.73	731.73	750.76	702.96	47.81	15.704				
6,500.00	6,486.94	6,496.13	6,492.31	23.11	25.06	103.46	-125.47	731.40	750.81	702.66	48.15	15.592				
6,550.00	6,536.75	6,544.98	6,541.15	23.30	25.22	103.71	-124.31	731.08	750.91	702.42	48.49	15.485				
6,600.00	6,586.56	6,593.83	6,589.98	23.48	25.38	103.97	-123.23	730.79	751.09	702.26	48.83	15.380				
6,650.00	6,636.37	6,642.67	6,638.81	23.66	25.54	104.23	-122.24	730.53	751.36	702.19	49.18	15.279				
6,700.00	6,686.18	6,691.45	6,687.58	23.84	25.70	104.50	-121.34	730.29	751.72	702.20	49.52	15.181				
6,750.00	6,735.99	6,740.18	6,736.31	24.02	25.85	104.77	-120.49	730.09	752.17	702.31	49.86	15.086				
6,800.00	6,785.80	6,788.91	6,785.03	24.20	26.02	105.04	-119.70	729.95	752.70	702.51	50.20	14.994				
6,850.00	6,835.61	6,837.64	6,833.75	24.38	26.18	105.31	-118.97	729.86	753.34	702.80	50.54	14.906				
6,900.00	6,885.42	6,886.32	6,882.43	24.56	26.34	105.58	-118.30	729.81	754.06	703.18	50.88	14.820				
6,950.00	6,935.23	6,934.96	6,931.07	24.74	26.50	105.86	-117.70	729.82	754.89	703.67	51.22	14.737				
7,000.00	6,985.04	6,983.60	6,979.71	24.92	26.66	106.13	-117.16	729.86	755.81	704.25	51.56	14.658				
7,050.00	7,034.85	7,032.23	7,028.33	25.10	26.82	106.41	-116.70	729.96	756.83	704.93	51.91	14.581				
7,100.00	7,084.66	7,081.88	7,077.98	25.28	26.98	106.69	-116.29	730.08	757.93	705.68	52.25	14.506				
7,150.00	7,134.47	7,132.01	7,128.11	25.47	27.15	106.98	-115.90	730.17	759.03	706.43	52.60	14.431				
7,200.00	7,184.28	7,182.14	7,178.24	25.65	27.31	107.27	-115.52	730.23	760.13	707.19	52.94	14.357				
7,250.00	7,234.09	7,232.26	7,228.36	25.83	27.48	107.56	-115.16	730.25	761.24	707.94	53.29	14.284				
7,300.00	7,283.90	7,280.60	7,276.70	26.01	27.64	107.84	-114.82	730.29	762.39	708.76	53.63	14.215				
7,350.00	7,333.71	7,328.62	7,324.72	26.19	27.80	108.11	-114.51	730.46	763.68	709.71	53.97	14.150				
7,400.00	7,383.52	7,376.65	7,372.74	26.37	27.96	108.38	-114.22	730.77	765.11	710.80	54.31	14.088				
7,450.00	7,433.33	7,424.67	7,420.76	26.55	28.12	108.64	-113.94	731.20	766.67	712.02	54.65	14.030				
7,500.00	7,483.14	7,476.63	7,472.71	26.73	28.29	108.91	-113.53	731.77	768.26	713.26	55.00	13.968				
7,550.00	7,532.95	7,529.22	7,525.30	26.91	28.46	109.17	-112.84	732.33	769.69	714.33	55.36	13.903				
7,600.00	7,582.76	7,581.85	7,577.92	27.09	28.64	109.40	-111.85	732.90	770.95	715.23	55.72	13.836				
7,650.00	7,632.57	7,634.52	7,630.56	27.28	28.82	109.63	-110.56	733.47	772.05	715.97	56.08	13.768				
7,700.00	7,682.38	7,686.51	7,682.53	27.46	28.99	109.83	-109.08	734.00	773.01	716.57	56.44	13.697				
7,750.00	7,732.18	7,738.66	7,734.65	27.64	29.17	110.03	-107.40	734.51	773.83	717.04	56.79	13.625				
7,800.00	7,781.99	7,790.83	7,786.79	27.82	29.35	110.22	-105.53	734.97	774.52	717.36	57.15	13.552				
7,850.00	7,831.80	7,840.82	7,836.74	28.00	29.52	110.39	-103.62	735.38	775.11	717.60	57.50	13.480				
7,900.00	7,881.61	7,889.29	7,885.18	28.18	29.69	110.57	-101.94	735.72	775.78	717.93	57.85	13.410				
7,950.00	7,931.42	7,938.07	7,933.93	28.36	29.85	110.77	-100.43	736.03	776.55	718.35	58.20	13.344				
8,000.00	7,981.23	7,987.02	7,982.86	28.54	30.02	110.96	-98.94	736.40	777.39	718.85	58.54	13.279				
8,050.00	8,031.04	8,035.67	8,031.48	28.72	30.18	111.16	-97.51	736.80	778.31	719.42	58.89	13.216				

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft
Survey Program: 200-MWD+IGRF													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)			
8,100.00	8,080.85	8,084.13	8,079.93	28.91	30.35	111.36	-96.29	737.15	779.33	720.10	59.24	13.156	
8,150.00	8,130.67	8,132.34	8,128.13	29.09	30.51	111.58	-95.23	737.49	780.45	720.87	59.58	13.099	
8,200.00	8,180.52	8,180.49	8,178.26	29.27	30.68	111.76	-94.15	737.99	781.51	721.59	59.93	13.041	
8,250.00	8,230.42	8,229.84	8,225.80	29.45	30.85	111.89	-93.00	738.65	782.42	722.15	60.27	12.981	
8,300.00	8,280.35	8,279.62	8,275.36	29.63	31.02	111.97	-91.75	739.43	783.11	722.48	60.62	12.918	
8,350.00	8,330.32	8,329.02	8,324.73	29.81	31.18	111.99	-90.52	740.21	783.57	722.60	60.97	12.852	
8,400.00	8,380.30	8,378.34	8,374.03	29.99	31.35	111.99	-89.51	740.86	783.83	722.52	61.32	12.783	
8,450.00	8,430.30	8,427.97	8,423.66	30.16	31.52	111.96	-88.73	741.35	783.88	722.22	61.66	12.712	
8,453.16	8,433.46	8,431.11	8,426.80	30.17	31.53	111.96	-88.69	741.37	783.88	722.20	61.69	12.708	
8,500.00	8,480.28	8,477.65	8,473.33	30.34	31.69	111.96	-88.20	741.64	784.09	722.08	62.01	12.645	
8,550.00	8,530.02	8,524.53	8,520.21	30.52	31.84	112.08	-87.94	741.81	785.90	723.56	62.34	12.606	
8,600.00	8,579.14	8,570.66	8,566.34	30.71	32.00	112.30	-87.93	742.01	789.60	726.93	62.67	12.598	
8,650.00	8,627.27	8,619.57	8,615.25	30.89	32.15	112.68	-88.10	742.16	795.17	732.16	63.01	12.619	
8,700.00	8,674.24	8,667.62	8,663.30	31.07	32.30	105.54	-88.31	742.16	801.61	738.27	63.35	12.655	
8,750.00	8,720.43	8,713.67	8,709.35	31.25	32.44	96.28	-88.56	742.06	805.53	741.86	63.67	12.652	
8,800.00	8,765.56	8,758.49	8,754.17	31.44	32.58	89.66	-88.87	741.91	806.80	742.81	63.99	12.609	
8,850.00	8,809.28	8,804.63	8,800.30	31.62	32.72	85.32	-89.20	741.66	805.58	741.26	64.31	12.526	
8,900.00	8,851.27	8,849.41	8,845.08	31.80	32.86	82.70	-89.46	741.22	802.02	737.38	64.63	12.409	
8,950.00	8,891.20	8,888.61	8,884.28	31.98	32.98	81.26	-89.67	740.71	796.50	731.57	64.93	12.267	
9,000.00	8,928.77	8,924.10	8,919.76	32.16	33.09	80.72	-89.94	740.24	789.55	724.33	65.21	12.107	
9,050.00	8,963.68	8,956.96	8,952.62	32.35	33.19	80.91	-90.27	739.81	781.52	716.03	65.49	11.933	
9,100.00	8,995.69	8,986.95	8,982.61	32.53	33.29	81.61	-90.63	739.41	772.82	707.06	65.76	11.752	
9,150.00	9,024.54	9,013.87	9,009.52	32.73	33.37	82.66	-91.01	739.05	763.84	697.82	66.03	11.568	
9,200.00	9,050.01	9,037.52	9,033.16	32.94	33.44	83.89	-91.39	738.74	755.01	688.72	66.29	11.389	
9,250.00	9,071.92	9,057.73	9,053.37	33.15	33.51	85.18	-91.74	738.47	746.72	680.17	66.56	11.219	
9,300.00	9,090.08	9,075.04	9,070.68	33.39	33.56	86.44	-92.05	738.25	739.36	672.54	66.82	11.064	
9,350.00	9,104.37	9,088.81	9,084.45	33.64	33.60	87.54	-92.30	738.08	733.26	666.17	67.09	10.929	
9,400.00	9,114.68	9,098.60	9,094.23	33.90	33.63	88.37	-92.47	737.96	728.70	661.36	67.35	10.820	
9,450.00	9,120.93	9,104.31	9,099.94	34.18	33.65	88.87	-92.57	737.89	725.93	658.34	67.59	10.740	
9,496.81	9,123.05	9,105.90	9,101.53	34.45	33.65	89.01	-92.60	737.87	725.07	657.27	67.80	10.694	
9,500.00	9,123.06	9,105.88	9,101.51	34.47	33.65	89.01	-92.60	737.87	725.08	657.26	67.81	10.692 ES	
9,550.00	9,123.06	9,105.28	9,100.91	34.79	33.65	88.96	-92.59	737.88	726.90	658.86	68.04	10.684 SF	
9,600.00	9,123.06	9,104.69	9,100.32	35.11	33.65	88.91	-92.58	737.89	732.14	663.91	68.23	10.730	
9,650.00	9,123.06	9,104.08	9,099.71	35.49	33.65	88.87	-92.57	737.89	740.72	672.28	68.44	10.823	
9,700.00	9,123.06	9,103.48	9,099.11	35.86	33.65	88.82	-92.56	737.90	752.54	683.92	68.61	10.969	
9,750.00	9,123.06	9,102.88	9,098.51	36.28	33.65	88.77	-92.55	737.91	767.43	698.64	68.79	11.156	
9,800.00	9,123.06	9,102.27	9,097.90	36.71	33.64	88.72	-92.54	737.91	785.24	716.31	68.93	11.392	
9,850.00	9,123.06	9,101.66	9,097.29	37.18	33.64	88.67	-92.53	737.92	805.75	736.68	69.07	11.668	
9,900.00	9,123.06	9,101.05	9,096.68	37.65	33.64	88.63	-92.52	737.93	828.78	759.61	69.17	11.982	
9,950.00	9,123.06	9,100.43	9,096.06	38.16	33.64	88.58	-92.51	737.94	854.11	784.85	69.27	12.331	
10,000.00	9,123.06	9,099.81	9,095.44	38.67	33.64	88.53	-92.49	737.94	881.56	812.23	69.33	12.715	
10,050.00	9,123.06	9,099.19	9,094.83	39.22	33.63	88.48	-92.48	737.95	910.93	841.52	69.40	13.125	
10,100.00	9,123.06	9,098.57	9,094.20	39.77	33.63	88.43	-92.47	737.96	942.03	872.59	69.44	13.566	
10,150.00	9,123.06	9,097.95	9,093.58	40.36	33.63	88.38	-92.46	737.96	974.71	905.23	69.48	14.028	
10,200.00	9,123.06	9,097.32	9,092.95	40.95	33.63	88.33	-92.45	737.97	1,008.81	939.31	69.50	14.515	
10,250.00	9,123.06	9,096.69	9,092.32	41.57	33.63	88.28	-92.44	737.98	1,044.19	974.66	69.52	15.019	
10,300.00	9,123.06	9,096.06	9,091.69	42.19	33.62	88.23	-92.43	737.99	1,080.72	1,011.19	69.53	15.544	
10,350.00	9,123.06	9,095.43	9,091.06	42.84	33.62	88.18	-92.42	738.00	1,118.30	1,048.76	69.54	16.082	
10,400.00	9,123.06	9,094.79	9,090.42	43.50	33.62	88.13	-92.41	738.00	1,156.82	1,087.28	69.53	16.637	
10,450.00	9,123.06	9,094.15	9,089.78	44.17	33.62	88.08	-92.40	738.01	1,196.18	1,126.65	69.53	17.203	
10,500.00	9,123.06	9,093.51	9,089.14	44.85	33.62	88.03	-92.38	738.02	1,236.32	1,166.79	69.53	17.782	
10,550.00	9,123.06	9,092.86	9,088.50	45.56	33.61	87.98	-92.37	738.03	1,277.15	1,207.63	69.52	18.371	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Parkway West Unit SWD - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 200-MWD+IGRF													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,600.00	9,123.06	9,092.22	9,087.85	46.26	33.61	87.93	-92.36	738.03	1,318.61	1,249.11	69.51	18.971		
10,650.00	9,123.06	9,091.57	9,087.20	46.99	33.61	87.88	-92.35	738.04	1,360.65	1,291.15	69.50	19.578		
10,700.00	9,123.06	9,090.92	9,086.55	47.72	33.61	87.83	-92.34	738.05	1,403.21	1,333.72	69.49	20.194		
10,750.00	9,123.06	9,090.26	9,085.90	48.47	33.61	87.77	-92.33	738.06	1,446.25	1,376.77	69.48	20.816		
10,800.00	9,123.06	9,089.61	9,085.24	49.22	33.60	87.72	-92.32	738.07	1,489.72	1,420.25	69.46	21.446		

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Turquoise PWU 27-9H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3373.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3373.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-9H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 3	Offset TVD Reference:	Offset Datum

Offset Design : Sec 27-T19S-R29E - Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF													Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.50	0.50	-178.61		-1,389.97	-33.82	1,390.67				
50.00	50.00	21.07	21.07	0.50	0.50	-178.60		-1,389.98	-33.85	1,390.39	1,389.39	1.00	1,388.888	
100.00	100.00	68.87	68.86	0.52	0.51	-178.59		-1,390.04	-34.16	1,390.46	1,389.44	1.03	1,353.865	
150.00	150.00	116.85	116.84	0.59	0.53	-178.57		-1,390.16	-34.81	1,390.81	1,389.49	1.12	1,244.441	
200.00	200.00	165.88	165.87	0.70	0.57	-178.53		-1,390.35	-35.80	1,390.83	1,389.56	1.27	1,096.016	
250.00	250.00	217.36	217.33	0.83	0.68	-178.48		-1,390.51	-36.86	1,391.01	1,389.50	1.51	919.120	
300.00	300.00	292.42	292.37	0.98	0.89	-178.42		-1,390.03	-38.37	1,390.71	1,388.84	1.87	744.641	
350.00	350.00	330.43	330.38	1.14	1.00	-178.39		-1,389.62	-39.02	1,390.19	1,388.05	2.14	649.659	
384.92	384.92	356.98	356.92	1.25	1.08	-178.37		-1,389.52	-39.55	1,390.09	1,387.75	2.34	594.896 CC	
400.00	400.00	372.00	371.94	1.30	1.13	-178.36		-1,389.54	-39.87	1,390.11	1,387.68	2.43	571.065	
450.00	450.00	415.21	415.14	1.47	1.27	-178.32		-1,389.69	-40.86	1,390.31	1,387.57	2.74	506.844	
500.00	500.00	462.88	462.79	1.64	1.43	-178.27		-1,389.93	-41.98	1,390.60	1,387.53	3.07	452.617	
550.00	550.00	517.94	517.84	1.81	1.62	-178.22		-1,390.16	-43.21	1,390.84	1,387.41	3.43	405.346	
600.00	600.00	569.89	569.77	1.98	1.80	-178.18		-1,390.21	-44.23	1,390.92	1,387.13	3.78	367.686	
650.00	650.00	615.89	615.77	2.16	1.96	-178.15		-1,390.33	-45.02	1,391.07	1,386.95	4.12	337.963	
700.00	700.00	664.14	664.01	2.33	2.13	-178.12		-1,390.58	-45.74	1,391.35	1,386.89	4.46	312.063	
750.00	750.00	716.83	716.50	2.51	2.31	-178.09		-1,390.81	-46.39	1,391.59	1,386.78	4.82	288.888	
800.00	800.00	769.31	769.18	2.68	2.49	-178.07		-1,390.95	-46.91	1,391.74	1,386.57	5.18	268.808	
850.00	850.00	822.12	821.99	2.86	2.68	-178.05		-1,390.99	-47.34	1,391.80	1,386.26	5.54	251.261	
900.00	900.00	871.00	870.86	3.04	2.85	-178.04		-1,390.99	-47.64	1,391.81	1,385.92	5.89	238.403	
950.00	950.00	919.52	919.38	3.21	3.02	-178.03		-1,391.05	-47.83	1,391.88	1,385.64	6.23	223.238	
1,000.00	1,000.00	971.99	971.85	3.39	3.21	-178.02		-1,391.10	-48.05	1,391.93	1,385.33	6.60	211.000	
1,046.38	1,046.38	1,020.66	1,020.52	3.56	3.38	-178.01		-1,391.05	-48.36	1,391.89	1,384.96	6.93	200.766	
1,050.00	1,050.00	1,022.07	1,021.93	3.57	3.38	-178.01		-1,391.06	-48.36	1,391.90	1,384.95	6.95	200.279	
1,100.00	1,100.00	1,066.45	1,066.31	3.75	3.54	-178.00		-1,391.15	-48.54	1,392.00	1,384.72	7.28	191.191	
1,150.00	1,150.00	1,113.29	1,113.15	3.92	3.70	-178.00		-1,391.42	-48.56	1,392.30	1,384.68	7.62	182.734	
1,200.00	1,200.00	1,166.20	1,166.06	4.10	3.88	-178.00		-1,391.70	-48.53	1,392.56	1,384.59	7.98	174.584	
1,250.00	1,250.00	1,218.46	1,218.32	4.28	4.06	-178.00		-1,391.88	-48.54	1,392.73	1,384.40	8.33	167.111	
1,300.00	1,300.00	1,270.25	1,270.10	4.46	4.24	-177.99		-1,391.98	-48.74	1,392.83	1,384.14	8.69	160.236	
1,350.00	1,350.00	1,320.55	1,320.41	4.64	4.41	-177.98		-1,392.02	-49.04	1,392.89	1,383.84	9.05	153.944	
1,400.00	1,400.00	1,370.37	1,370.23	4.81	4.59	-177.98		-1,392.08	-49.19	1,392.95	1,383.54	9.40	148.141	
1,450.00	1,450.00	1,421.26	1,421.12	4.99	4.77	-177.97		-1,392.12	-49.30	1,393.00	1,383.24	9.76	142.702	
1,500.00	1,500.00	1,472.32	1,472.18	5.17	4.95	-177.96		-1,392.13	-49.51	1,393.01	1,382.89	10.12	137.636	
1,509.08	1,509.08	1,481.59	1,481.45	5.20	4.98	-177.96		-1,392.13	-49.56	1,393.01	1,382.82	10.19	136.754	
1,550.00	1,550.00	1,516.66	1,516.51	5.35	5.11	-177.95		-1,392.20	-49.83	1,393.11	1,382.65	10.46	133.219	
1,600.00	1,600.00	1,561.03	1,560.88	5.53	5.27	-177.93		-1,392.45	-50.34	1,393.40	1,382.61	10.79	129.094	
1,650.00	1,650.00	1,610.81	1,610.65	5.71	5.45	-177.90		-1,392.83	-51.02	1,393.81	1,382.66	11.15	125.006	
1,700.00	1,700.00	1,660.97	1,660.81	5.89	5.62	-177.87		-1,393.21	-51.71	1,394.22	1,382.71	11.51	121.154	
1,750.00	1,750.00	1,716.02	1,715.85	6.06	5.82	-177.85		-1,393.53	-52.36	1,394.53	1,382.64	11.88	117.353	
1,800.00	1,800.00	1,771.07	1,770.90	6.24	6.02	-177.83		-1,393.66	-52.78	1,394.66	1,382.40	12.26	113.770	
1,850.00	1,850.00	1,818.85	1,818.68	6.42	6.19	-177.81		-1,393.75	-53.19	1,394.77	1,382.16	12.61	110.826	
1,900.00	1,900.00	1,866.61	1,866.44	6.60	6.36	-177.80		-1,393.87	-53.65	1,394.91	1,381.96	12.96	107.656	
1,950.00	1,950.00	1,911.64	1,911.47	6.78	6.52	-177.78		-1,394.12	-54.06	1,395.20	1,381.91	13.30	104.934	
2,000.00	2,000.00	1,958.39	1,958.21	6.96	6.69	-177.77		-1,394.53	-54.42	1,395.66	1,382.02	13.64	102.314	
2,050.00	2,050.00	2,009.52	2,009.34	7.14	6.87	-177.75		-1,395.00	-54.82	1,396.13	1,382.13	14.00	99.713	
2,100.00	2,100.00	2,061.85	2,061.67	7.32	7.06	-177.73		-1,395.42	-55.28	1,396.56	1,382.19	14.37	97.207	
2,150.00	2,150.00	2,115.70	2,115.51	7.49	7.25	-177.71		-1,395.73	-55.74	1,396.86	1,382.12	14.74	94.778	
2,200.00	2,200.00	2,166.32	2,166.13	7.67	7.43	-177.70		-1,395.92	-56.14	1,397.06	1,381.97	15.10	92.533	
2,250.00	2,250.00	2,215.66	2,215.47	7.85	7.61	-177.68		-1,396.13	-56.52	1,397.29	1,381.83	15.45	90.420	
2,300.00	2,300.00	2,266.42	2,266.22	8.03	7.79	-177.67		-1,396.34	-56.89	1,397.51	1,381.70	15.81	88.373	
2,350.00	2,350.00	2,317.42	2,317.23	8.21	7.97	-177.65		-1,396.52	-57.22	1,397.70	1,381.52	16.18	86.411	
2,400.00	2,400.00	2,364.74	2,364.55	8.39	8.14	-177.64		-1,396.71	-57.50	1,397.91	1,381.39	16.52	84.607	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1													Offset Site Error:
Survey Program: 154-MWD+IGRF													Offset Well Error:
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)			
2,450.00	2,450.00	2,411.87	2,411.87	8.57	8.31	-177.63	-1,397.00	-57.75	1,398.23	1,381.36	16.87	82.887	
2,500.00	2,500.00	2,463.35	2,463.15	8.75	8.49	-177.63	-1,397.35	-57.94	1,398.58	1,381.35	17.23	81.174	
2,550.00	2,550.00	2,515.16	2,514.96	8.93	8.67	-177.62	-1,397.64	-58.03	1,398.88	1,381.27	17.59	79.522	
2,600.00	2,600.00	2,568.47	2,568.27	9.10	8.86	-177.62	-1,397.84	-58.15	1,399.06	1,381.10	17.96	77.906	
2,650.00	2,650.00	2,619.42	2,619.22	9.28	9.04	-177.61	-1,397.93	-58.38	1,399.15	1,380.83	18.32	76.382	
2,700.00	2,700.00	2,666.96	2,666.76	9.46	9.21	-177.60	-1,398.06	-58.56	1,399.29	1,380.63	18.67	74.966	
2,750.00	2,750.00	2,717.14	2,716.94	9.64	9.39	162.40	-1,398.26	-58.68	1,399.52	1,380.50	19.02	73.571 ES	
2,800.00	2,800.00	2,771.48	2,771.27	9.82	9.58	162.41	-1,398.37	-58.79	1,399.96	1,380.56	19.39	72.187	
2,850.00	2,849.99	2,821.15	2,820.94	10.00	9.76	162.42	-1,398.37	-58.89	1,400.71	1,380.96	19.75	70.829	
2,900.00	2,899.98	2,868.58	2,868.38	10.18	9.92	162.44	-1,398.44	-59.04	1,401.06	1,381.86	20.10	69.766	
2,950.00	2,949.95	2,919.89	2,919.69	10.36	10.11	162.46	-1,398.57	-59.24	1,403.67	1,383.21	20.46	68.620	
3,000.00	2,999.91	2,973.06	2,972.85	10.53	10.29	162.49	-1,398.58	-59.37	1,405.89	1,384.86	20.82	67.508	
3,050.00	3,049.84	3,020.44	3,020.24	10.71	10.46	162.51	-1,398.58	-59.46	1,408.10	1,386.94	21.17	66.518	
3,100.00	3,099.75	3,067.33	3,067.12	10.89	10.63	162.55	-1,398.68	-59.62	1,411.04	1,389.53	21.51	65.590	
3,150.00	3,149.64	3,117.06	3,116.85	11.07	10.81	162.59	-1,398.84	-59.82	1,414.46	1,392.59	21.87	64.678	
3,200.00	3,199.49	3,167.13	3,166.92	11.25	10.98	162.63	-1,399.00	-60.03	1,418.29	1,396.06	22.23	63.811	
3,250.00	3,249.31	3,220.36	3,220.16	11.43	11.17	162.68	-1,399.10	-60.21	1,422.45	1,399.85	22.59	62.959	
3,300.00	3,299.12	3,272.14	3,271.94	11.60	11.36	162.74	-1,399.08	-60.31	1,426.60	1,403.64	22.95	62.149	
3,350.00	3,348.93	3,320.72	3,320.51	11.78	11.53	162.80	-1,399.07	-60.46	1,430.76	1,407.45	23.31	61.392	
3,400.00	3,398.74	3,369.63	3,369.42	11.96	11.70	162.85	-1,399.10	-60.56	1,434.95	1,411.29	23.66	60.654	
3,450.00	3,448.55	3,418.96	3,418.75	12.14	11.88	162.90	-1,399.15	-60.61	1,439.17	1,415.16	24.01	59.938	
3,500.00	3,498.36	3,468.34	3,468.13	12.32	12.05	162.95	-1,399.21	-60.64	1,443.41	1,419.04	24.36	59.243	
3,550.00	3,548.17	3,518.16	3,517.96	12.50	12.23	163.01	-1,399.29	-60.66	1,447.65	1,422.94	24.72	58.567	
3,600.00	3,597.98	3,568.00	3,567.80	12.67	12.40	163.06	-1,399.36	-60.69	1,451.90	1,426.83	25.07	57.909	
3,650.00	3,647.79	3,617.66	3,617.45	12.85	12.58	163.11	-1,399.43	-60.85	1,456.15	1,430.72	25.43	57.267	
3,700.00	3,697.60	3,667.13	3,666.92	13.03	12.76	163.16	-1,399.49	-61.24	1,460.40	1,434.62	25.78	56.644	
3,750.00	3,747.41	3,716.36	3,716.15	13.21	12.93	163.25	-1,399.56	-61.76	1,464.68	1,438.54	26.14	56.038	
3,800.00	3,797.22	3,765.75	3,765.54	13.39	13.11	163.32	-1,399.64	-62.42	1,468.97	1,442.48	26.49	55.448	
3,850.00	3,847.03	3,815.53	3,815.30	13.57	13.29	163.41	-1,399.71	-63.34	1,473.27	1,446.42	26.85	54.871	
3,900.00	3,896.84	3,866.73	3,866.49	13.75	13.47	163.50	-1,399.76	-64.59	1,477.57	1,450.38	27.21	54.298	
3,950.00	3,946.64	3,919.85	3,919.59	13.93	13.66	163.62	-1,399.68	-66.27	1,481.77	1,454.19	27.58	53.723	
4,000.00	3,996.45	3,974.39	3,974.08	14.11	13.88	163.75	-1,399.43	-68.35	1,485.86	1,457.90	27.96	53.149	
4,050.00	4,046.26	4,029.67	4,029.32	14.29	14.05	163.89	-1,398.97	-70.56	1,489.78	1,461.43	28.33	52.579	
4,100.00	4,096.07	4,084.18	4,083.78	14.46	14.25	164.02	-1,398.33	-72.66	1,493.50	1,464.80	28.71	52.025	
4,150.00	4,145.88	4,137.66	4,137.23	14.64	14.44	164.14	-1,397.56	-74.44	1,497.10	1,468.02	29.08	51.488 SF	

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-NS-Gyro-DP, 6595-MWD+IGRF												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)					
5,750.00	5,739.80	11,814.00	7,066.47	20.41	155.11	36.61	643.37	585.82	1,493.31	1,421.03	72.28	20.660	
5,800.00	5,789.61	11,814.00	7,066.47	20.59	155.11	36.61	643.37	585.82	1,447.00	1,373.64	73.36	19.725	
5,850.00	5,839.41	11,814.00	7,066.47	20.77	155.11	36.61	643.37	585.82	1,400.94	1,326.43	74.51	18.802	
5,900.00	5,889.22	11,814.00	7,066.47	20.95	155.11	36.61	643.37	585.82	1,355.16	1,279.43	75.74	17.893	
5,950.00	5,939.03	11,814.00	7,066.47	21.13	155.11	36.61	643.37	585.82	1,309.69	1,232.65	77.05	16.999	
6,000.00	5,988.84	11,814.00	7,066.47	21.31	155.11	36.61	643.37	585.82	1,264.57	1,186.12	78.44	16.121	
6,050.00	6,038.65	11,814.00	7,066.47	21.49	155.11	36.61	643.37	585.82	1,219.82	1,139.88	79.94	15.260	
6,100.00	6,088.46	11,814.00	7,066.47	21.67	155.11	36.61	643.37	585.82	1,175.49	1,093.96	81.54	14.417	
6,150.00	6,138.27	11,814.00	7,066.47	21.85	155.11	36.61	643.37	585.82	1,131.64	1,048.39	83.25	13.594	
6,200.00	6,188.08	11,814.00	7,066.47	22.03	155.11	36.61	643.37	585.82	1,088.32	1,003.24	85.08	12.791	
6,250.00	6,237.89	11,814.00	7,066.47	22.21	155.11	36.61	643.37	585.82	1,045.60	958.55	87.05	12.012	
6,300.00	6,287.70	11,814.00	7,066.47	22.39	155.11	36.61	643.37	585.82	1,003.54	914.39	89.15	11.256	
6,350.00	6,337.51	11,814.00	7,066.47	22.57	155.11	36.61	643.37	585.82	962.25	870.85	91.41	10.527	
6,400.00	6,387.32	11,814.00	7,066.47	22.75	155.11	36.61	643.37	585.82	921.82	828.01	93.81	9.826	
6,450.00	6,437.13	11,814.00	7,066.47	22.93	155.11	36.61	643.37	585.82	882.38	786.00	96.38	9.155	
6,500.00	6,486.94	11,814.00	7,066.47	23.11	155.11	36.61	643.37	585.82	844.05	744.94	99.11	8.517	
6,550.00	6,536.75	11,814.00	7,066.47	23.30	155.11	36.61	643.37	585.82	807.00	705.01	101.99	7.913	
6,600.00	6,586.56	11,814.00	7,066.47	23.48	155.11	36.61	643.37	585.82	771.41	666.40	105.01	7.346	
6,650.00	6,636.37	11,814.00	7,066.47	23.66	155.11	36.61	643.37	585.82	737.50	629.35	108.15	6.819	
6,700.00	6,686.18	11,814.00	7,066.47	23.84	155.11	36.61	643.37	585.82	705.50	594.13	111.37	6.335	
6,750.00	6,735.99	11,814.00	7,066.47	24.02	155.11	36.61	643.37	585.82	675.69	561.08	114.61	5.895	
6,800.00	6,785.80	11,814.00	7,066.47	24.20	155.11	36.61	643.37	585.82	648.37	530.58	117.80	5.504	
6,850.00	6,835.61	11,814.00	7,066.47	24.38	155.11	36.61	643.37	585.82	623.87	503.05	120.82	5.164	
6,900.00	6,885.42	11,814.00	7,066.47	24.56	155.11	36.61	643.37	585.82	602.53	478.98	123.56	4.877 Alert	
6,950.00	6,935.23	11,814.00	7,066.47	24.74	155.11	36.61	643.37	585.82	584.70	458.84	125.86	4.646 Alert	
7,000.00	6,985.04	11,814.00	7,066.47	24.92	155.11	36.61	643.37	585.82	570.71	443.12	127.59	4.473 Alert	
7,050.00	7,034.85	11,814.00	7,066.47	25.10	155.11	36.61	643.37	585.82	560.83	432.24	128.59	4.361 Alert	
7,100.00	7,084.66	11,814.00	7,066.47	25.28	155.11	36.61	643.37	585.82	555.30	426.53	128.77	4.312 Alert, SF	
7,136.71	7,121.23	11,814.00	7,066.47	25.42	155.11	36.61	643.37	585.82	554.09	425.74	128.35	4.317 Alert, CC, ES	
7,150.00	7,134.47	11,814.00	7,066.47	25.47	155.11	36.61	643.37	585.82	554.25	426.17	128.08	4.327 Alert	
7,200.00	7,184.28	11,814.00	7,066.47	25.65	155.11	36.61	643.37	585.82	557.69	431.18	126.51	4.408 Alert	
7,250.00	7,234.09	11,814.00	7,066.47	25.83	155.11	36.61	643.37	585.82	565.55	441.39	124.18	4.555 Alert	
7,300.00	7,283.90	11,814.00	7,066.47	26.01	155.11	36.61	643.37	585.82	577.65	456.50	121.15	4.768 Alert	
7,350.00	7,333.71	11,814.00	7,066.47	26.19	155.11	36.61	643.37	585.82	593.72	476.09	117.63	5.047	
7,400.00	7,383.52	11,814.00	7,066.47	26.37	155.11	36.61	643.37	585.82	613.46	499.68	113.78	5.392	
7,450.00	7,433.33	11,814.00	7,066.47	26.55	155.11	36.61	643.37	585.82	636.53	526.77	109.76	5.799	
7,500.00	7,483.14	11,814.00	7,066.47	26.73	155.11	36.61	643.37	585.82	662.57	556.87	105.70	6.269	
7,550.00	7,532.95	11,814.00	7,066.47	26.91	155.11	36.61	643.37	585.82	691.25	589.55	101.70	6.797	
7,600.00	7,582.76	11,814.00	7,066.47	27.09	155.11	36.61	643.37	585.82	722.25	624.40	97.85	7.381	
7,650.00	7,632.57	11,814.00	7,066.47	27.28	155.11	36.61	643.37	585.82	755.30	661.10	94.21	8.018	
7,700.00	7,682.38	11,814.00	7,066.47	27.46	155.11	36.61	643.37	585.82	790.13	699.34	90.79	8.703	
7,750.00	7,732.18	11,814.00	7,066.47	27.64	155.11	36.61	643.37	585.82	826.52	738.90	87.62	9.433	
7,800.00	7,781.99	11,814.00	7,066.47	27.82	155.11	36.61	643.37	585.82	864.27	779.57	84.70	10.204	
7,850.00	7,831.80	11,814.00	7,066.47	28.00	155.11	36.61	643.37	585.82	903.21	821.19	82.02	11.011	
7,900.00	7,881.61	11,814.00	7,066.47	28.18	155.11	36.61	643.37	585.82	943.20	863.61	79.59	11.851	
7,950.00	7,931.42	11,814.00	7,066.47	28.36	155.11	36.61	643.37	585.82	984.10	906.73	77.37	12.719	
8,000.00	7,981.23	11,814.00	7,066.47	28.54	155.11	36.61	643.37	585.82	1,025.81	950.45	75.36	13.612	
8,050.00	8,031.04	11,814.00	7,066.47	28.72	155.11	36.61	643.37	585.82	1,068.23	994.68	73.54	14.525	
8,100.00	8,080.85	11,814.00	7,066.47	28.91	155.11	36.61	643.37	585.82	1,111.28	1,039.38	71.90	15.455	
8,150.00	8,130.67	11,814.00	7,066.47	29.09	155.11	36.86	643.37	585.82	1,154.90	1,084.47	70.43	16.399	
8,200.00	8,180.52	11,814.00	7,066.47	29.27	155.11	37.73	643.37	585.82	1,199.20	1,130.07	69.13	17.346	
8,250.00	8,230.42	11,814.00	7,066.47	29.45	155.11	38.68	643.37	585.82	1,244.16	1,176.14	68.02	18.291	

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference:	Well Turquoise PWU 27-9H
Project:	Eddy County (NAD 83 NM Eastern)	TVD Reference:	RKB @ 3373.00ft
Reference Site:	Sec 27-T19S-R29E	MD Reference:	RKB @ 3373.00ft
Site Error:	5.00 ft	North Reference:	Grid
Reference Well:	Turquoise PWU 27-9H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.50 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Permit Plan 3	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 100-NS-Gyro-DP, 6595-MWD+IGRF													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				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)	Minimum Separation (ft)	Separation Factor		
8,300.00	8,280.35	11,814.00	7,066.47	29.63	155.11	39.72	643.37	585.82	1,289.70	1,222.63	67.06	19.231		
8,350.00	8,330.32	11,814.00	7,066.47	29.81	155.11	40.87	643.37	585.82	1,335.75	1,269.50	66.25	20.163		
8,400.00	8,380.30	11,814.00	7,066.47	29.99	155.11	42.13	643.37	585.82	1,382.26	1,316.70	65.55	21.086		
8,450.00	8,430.30	11,814.00	7,066.47	30.16	155.11	43.51	643.37	585.82	1,429.17	1,364.20	64.97	21.997		
8,500.00	8,480.28	11,814.00	7,066.47	30.34	155.11	38.37	643.37	585.82	1,476.19	1,411.77	64.42	22.915		

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore														Offset Site Error:	5.00 ft
Survey Program: 100-MWD+IGRF														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	81.36	87.54	575.86	582.54						
50.00	50.00	40.33	40.33	0.50	0.50	81.36	87.50	575.91	582.52	581.51	1.00	579.935			
100.00	100.00	88.91	88.91	0.52	0.51	81.38	87.32	576.09	582.68	581.65	1.03	565.455			
150.00	150.00	138.07	138.07	0.59	0.57	81.41	87.07	576.39	582.94	581.79	1.16	504.242			
200.00	200.00	187.40	187.40	0.70	0.67	81.43	86.87	576.75	583.27	581.90	1.37	425.928			
250.00	250.00	235.91	235.91	0.83	0.80	81.45	86.73	577.17	583.87	582.04	1.63	357.889			
300.00	300.00	284.14	284.13	0.98	0.94	81.47	86.63	577.72	584.23	582.31	1.92	304.140			
350.00	350.00	333.42	333.41	1.14	1.09	81.49	86.59	578.40	584.90	582.67	2.23	262.060			
400.00	400.00	383.23	383.21	1.30	1.25	81.50	86.60	579.11	585.60	583.05	2.56	229.092			
450.00	450.00	432.76	432.74	1.47	1.42	81.50	86.63	579.83	586.33	583.44	2.89	203.059			
500.00	500.00	482.15	482.12	1.64	1.58	81.51	86.64	580.60	587.10	583.88	3.22	182.120			
550.00	550.00	532.01	531.97	1.81	1.76	81.52	86.65	581.41	587.91	584.35	3.57	164.895			
600.00	600.00	582.15	582.10	1.98	1.93	81.53	86.72	582.22	588.72	584.81	3.91	150.535			
650.00	650.00	631.82	631.77	2.16	2.10	81.53	86.84	583.01	589.52	585.26	4.26	138.486			
700.00	700.00	681.23	681.18	2.33	2.27	81.53	86.92	583.85	590.37	585.77	4.60	128.236			
750.00	750.00	730.48	730.42	2.51	2.45	81.54	86.96	584.74	591.27	586.32	4.95	119.413			
800.00	800.00	779.63	779.56	2.68	2.62	81.55	87.04	585.69	592.25	586.95	5.30	111.746			
850.00	850.00	829.03	829.95	2.86	2.79	81.55	87.15	586.72	593.28	587.63	5.65	105.003			
900.00	900.00	878.61	878.52	3.04	2.97	81.56	87.26	587.78	594.36	588.36	6.00	99.032			
950.00	950.00	927.59	927.48	3.21	3.14	81.56	87.38	588.87	595.48	589.13	6.35	93.753			
1,000.00	1,000.00	976.11	975.99	3.39	3.32	81.56	87.55	590.06	596.72	590.02	6.70	89.058			
1,050.00	1,050.00	1,023.51	1,023.37	3.57	3.49	81.56	87.77	591.35	598.11	591.06	7.05	84.893			
1,100.00	1,100.00	1,069.82	1,069.65	3.75	3.65	81.56	87.97	592.89	599.78	592.39	7.39	81.197			
1,150.00	1,150.00	1,116.96	1,116.75	3.92	3.82	81.57	88.14	594.73	601.74	594.01	7.73	77.833			
1,200.00	1,200.00	1,165.66	1,165.41	4.10	4.00	81.58	88.29	596.79	603.85	595.76	8.08	74.716			
1,250.00	1,250.00	1,215.64	1,215.34	4.28	4.18	81.60	88.43	598.98	606.04	597.60	8.44	71.824			
1,300.00	1,300.00	1,268.69	1,268.35	4.46	4.37	81.61	88.65	601.13	608.07	599.27	8.81	69.053			
1,350.00	1,350.00	1,321.14	1,320.77	4.64	4.56	81.61	88.94	602.98	609.86	600.69	9.17	66.494			
1,400.00	1,400.00	1,372.71	1,372.30	4.81	4.74	81.61	89.21	604.65	611.49	601.96	9.53	64.138			
1,450.00	1,450.00	1,424.39	1,423.97	4.99	4.93	81.61	89.46	606.18	613.00	603.10	9.90	61.937			
1,500.00	1,500.00	1,476.22	1,475.78	5.17	5.12	81.60	89.71	607.56	614.35	604.09	10.26	59.874			
1,550.00	1,550.00	1,528.11	1,527.65	5.35	5.30	81.59	89.97	608.79	615.55	604.93	10.62	57.938			
1,600.00	1,600.00	1,580.05	1,579.58	5.53	5.49	81.58	90.24	609.85	616.60	605.61	10.99	56.114			
1,650.00	1,650.00	1,631.41	1,630.93	5.71	5.67	81.57	90.51	610.74	617.50	606.15	11.35	54.405			
1,700.00	1,700.00	1,682.41	1,681.92	5.89	5.86	81.56	90.77	611.54	618.32	606.61	11.71	52.800			
1,750.00	1,750.00	1,732.60	1,732.11	6.06	6.03	81.54	91.02	612.27	619.07	607.00	12.07	51.299			
1,800.00	1,800.00	1,782.37	1,781.87	6.24	6.21	81.53	91.26	613.01	619.84	607.42	12.42	49.890			
1,850.00	1,850.00	1,834.19	1,833.69	6.42	6.40	81.52	91.51	613.74	620.57	607.79	12.79	48.530			
1,900.00	1,900.00	1,887.15	1,886.65	6.60	6.59	81.51	91.72	614.25	621.08	607.93	13.15	47.214			
1,950.00	1,950.00	1,937.85	1,937.34	6.78	6.77	81.49	91.92	614.57	621.42	607.91	13.51	45.986			
2,000.00	2,000.00	1,987.83	1,987.32	6.96	6.94	81.48	92.15	614.88	621.76	607.89	13.87	44.829			
2,050.00	2,050.00	2,038.34	2,037.83	7.14	7.12	81.46	92.41	615.17	622.08	607.85	14.23	43.725			
2,100.00	2,100.00	2,089.02	2,088.51	7.32	7.30	81.44	92.64	615.41	622.35	607.76	14.59	42.670			
2,150.00	2,150.00	2,139.33	2,138.82	7.49	7.48	81.42	92.85	615.60	622.57	607.63	14.94	41.666			
2,200.00	2,200.00	2,189.55	2,189.03	7.67	7.66	81.41	93.04	615.79	622.78	607.48	15.30	40.709			
2,250.00	2,250.00	2,239.50	2,238.98	7.85	7.83	81.39	93.22	615.96	622.98	607.32	15.65	39.797			
2,300.00	2,300.00	2,289.38	2,288.87	8.03	8.01	81.38	93.45	616.13	623.18	607.17	16.01	38.928			
2,350.00	2,350.00	2,339.78	2,339.26	8.21	8.19	81.35	93.71	616.30	623.38	607.02	16.37	38.092			
2,400.00	2,400.00	2,390.32	2,389.80	8.39	8.36	81.34	93.93	616.42	623.54	606.82	16.72	37.289			
2,450.00	2,450.00	2,440.22	2,439.70	8.57	8.54	81.32	94.15	616.53	623.68	606.60	17.08	36.523			
2,500.00	2,500.00	2,489.96	2,489.45	8.75	8.71	81.30	94.38	616.65	623.83	606.40	17.43	35.790			
2,550.00	2,550.00	2,540.38	2,539.86	8.93	8.89	81.28	94.65	616.76	623.98	606.20	17.79	35.084			

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore													Offset Site Error: 5.00 ft
Survey Program: 100-MWD+IGRF													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Highside Tooface (')	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	2,600.00	2,590.97	2,590.45	9.10	9.07	81.25	94.95	616.83	624.09	605.95	18.14	34.402	
2,650.00	2,650.00	2,641.55	2,641.02	9.28	9.24	81.22	95.27	616.84	624.15	605.66	18.50	33.747	
2,700.00	2,700.00	2,692.12	2,691.60	9.46	9.41	81.19	95.56	616.81	624.17	605.32	18.85	33.115	
2,750.00	2,750.00	2,742.90	2,742.37	9.64	9.59	81.17	95.83	616.73	624.12	604.92	19.20	32.505	
2,800.00	2,800.00	2,793.70	2,793.18	9.82	9.76	81.18	96.08	616.59	623.85	604.30	19.55	31.907	
2,850.00	2,849.99	2,844.67	2,844.14	10.00	9.93	81.22	96.31	616.37	623.30	603.40	19.90	31.319	
2,900.00	2,899.98	2,895.64	2,895.11	10.18	10.10	81.30	96.57	616.07	622.48	602.21	20.25	30.737	
2,950.00	2,949.95	2,945.71	2,945.18	10.36	10.27	81.42	96.83	615.73	621.37	600.77	20.60	30.168	
3,000.00	2,999.91	2,995.68	2,995.15	10.53	10.44	81.57	97.07	615.39	620.06	599.12	20.94	29.608	
3,050.00	3,049.84	3,046.24	3,045.71	10.71	10.61	81.77	97.26	615.03	618.54	597.25	21.29	29.054	
3,100.00	3,099.75	3,096.82	3,096.29	10.89	10.78	82.02	97.38	614.62	616.76	595.12	21.64	28.506	
3,150.00	3,149.64	3,147.91	3,147.37	11.07	10.95	82.31	97.47	614.14	614.71	592.73	21.98	27.962	
3,200.00	3,199.49	3,198.98	3,198.44	11.25	11.12	82.63	97.57	613.55	612.37	590.04	22.33	27.423	
3,250.00	3,249.31	3,248.19	3,247.65	11.43	11.28	82.99	97.63	612.96	609.84	587.17	22.67	26.897	
3,300.00	3,299.12	3,297.35	3,296.80	11.60	11.44	83.34	97.61	612.43	607.33	584.31	23.01	26.388	
3,350.00	3,348.93	3,347.09	3,346.55	11.78	11.61	83.71	97.55	611.93	604.87	581.51	23.36	25.895	
3,400.00	3,398.74	3,403.13	3,396.32	11.96	11.80	84.08	97.47	611.44	602.44	578.72	23.72	25.394	
3,450.00	3,448.55	3,446.66	3,446.11	12.14	11.94	84.46	97.38	610.94	600.04	575.99	24.05	24.952	
3,500.00	3,498.36	3,496.44	3,495.89	12.32	12.11	84.84	97.29	610.44	597.66	573.27	24.39	24.501	
3,550.00	3,548.17	3,546.13	3,545.57	12.50	12.28	85.22	97.23	609.95	595.32	570.58	24.74	24.064	
3,600.00	3,597.98	3,595.82	3,595.26	12.67	12.44	85.60	97.20	609.46	593.00	567.92	25.08	23.640	
3,650.00	3,647.79	3,645.87	3,645.31	12.85	12.61	85.98	97.21	608.96	590.71	565.28	25.43	23.227	
3,700.00	3,697.60	3,695.96	3,695.39	13.03	12.78	86.36	97.23	608.43	588.42	562.64	25.78	22.824	
3,750.00	3,747.41	3,745.18	3,744.61	13.21	12.95	86.74	97.29	607.92	586.17	560.04	26.13	22.435	
3,800.00	3,797.22	3,794.33	3,793.76	13.39	13.12	87.11	97.41	607.47	583.99	557.52	26.47	22.059	
3,850.00	3,847.03	3,844.18	3,843.61	13.57	13.29	87.49	97.56	607.03	581.87	555.05	26.82	21.693	
3,900.00	3,896.84	3,894.11	3,893.54	13.75	13.46	87.87	97.69	606.58	579.77	552.60	27.17	21.336	
3,950.00	3,946.64	3,944.03	3,943.45	13.93	13.63	88.26	97.81	606.12	577.68	550.16	27.52	20.989	
4,000.00	3,996.45	3,993.94	3,993.36	14.11	13.80	88.65	97.93	605.65	575.61	547.74	27.87	20.651	
4,050.00	4,046.26	4,043.56	4,042.98	14.29	13.97	89.03	98.06	605.19	573.57	545.34	28.22	20.323	
4,100.00	4,096.07	4,093.15	4,092.57	14.46	14.14	89.42	98.22	604.75	571.57	543.00	28.57	20.004	
4,150.00	4,145.88	4,143.01	4,142.42	14.64	14.32	89.81	98.41	604.31	569.61	540.68	28.92	19.693	
4,200.00	4,195.69	4,192.91	4,192.32	14.82	14.49	90.20	98.66	603.86	567.66	538.39	29.28	19.390	
4,250.00	4,245.50	4,241.26	4,240.67	15.00	14.66	90.57	99.00	603.40	565.80	536.17	29.63	19.098	
4,300.00	4,295.31	4,289.39	4,288.80	15.18	14.83	90.92	99.51	603.24	564.10	534.13	29.97	18.820	
4,350.00	4,345.12	4,337.42	4,336.82	15.36	14.99	91.25	100.18	603.16	562.59	532.27	30.32	18.553	
4,400.00	4,394.93	4,385.43	4,384.83	15.54	15.16	91.58	100.98	603.24	561.26	530.59	30.67	18.298	
4,450.00	4,444.74	4,434.23	4,433.62	15.72	15.34	91.90	101.86	603.46	560.09	529.06	31.03	18.053	
4,500.00	4,494.55	4,483.36	4,482.74	15.90	15.51	92.23	102.71	603.75	559.01	527.63	31.38	17.815	
4,550.00	4,544.36	4,534.09	4,533.46	16.08	15.69	92.57	103.62	604.08	557.97	526.23	31.74	17.580	
4,600.00	4,594.17	4,585.67	4,585.02	16.26	15.87	92.88	104.89	604.28	556.80	524.70	32.10	17.346	
4,650.00	4,643.98	4,636.54	4,635.87	16.44	16.06	93.15	106.44	604.36	555.53	523.07	32.46	17.114	
4,700.00	4,693.79	4,687.13	4,686.43	16.62	16.23	93.41	108.17	604.39	554.20	521.38	32.82	16.887	
4,750.00	4,743.60	4,738.04	4,737.30	16.80	16.41	93.65	110.13	604.35	552.82	519.64	33.18	16.662	
4,800.00	4,793.41	4,789.08	4,788.29	16.98	16.60	93.85	112.46	604.25	551.34	517.80	33.54	16.439	
4,850.00	4,843.22	4,839.94	4,839.08	17.16	16.78	94.03	115.04	604.06	549.77	515.88	33.90	16.218	
4,900.00	4,893.03	4,890.74	4,889.81	17.34	16.96	94.20	117.85	603.80	548.14	513.88	34.26	16.000	
4,950.00	4,942.84	4,941.65	4,940.66	17.52	17.14	94.39	120.23	603.45	546.42	511.80	34.62	15.784	
5,000.00	4,992.65	4,992.57	4,991.52	17.70	17.32	94.59	122.65	602.99	544.62	509.64	34.98	15.570	
5,050.00	5,042.46	5,043.01	5,041.90	17.88	17.49	94.80	124.94	602.46	542.76	507.42	35.34	15.360	
5,100.00	5,092.27	5,093.36	5,092.20	18.06	17.67	95.01	127.19	601.88	540.86	505.17	35.70	15.152	
5,150.00	5,142.08	5,143.69	5,142.48	18.24	17.85	95.24	129.41	601.27	538.93	502.88	36.05	14.948	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore											Offset Site Error: 5.00 ft		
Survey Program: 100-MWD+IGRF									Offset Well Error: 0.50 ft				
Reference		Offset		Semi Major Axis			Distance						
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	Warning
5,200.00	5,191.89	5,194.01	5,192.74	18.42	18.03	75.46	131.57	600.61	536.98	500.56	36.41	14.747	
5,250.00	5,241.70	5,243.19	5,241.88	18.60	18.20	75.70	133.57	599.96	535.04	498.27	36.77	14.552	
5,300.00	5,291.51	5,292.20	5,290.86	18.78	18.38	75.97	135.29	599.37	533.19	496.07	37.12	14.363	
5,350.00	5,341.32	5,342.64	5,341.26	18.96	18.55	76.26	136.95	598.78	531.38	493.90	37.48	14.177	
5,400.00	5,391.13	5,393.35	5,391.94	19.14	18.73	76.54	138.77	598.13	529.52	491.68	37.84	13.993	
5,450.00	5,440.94	5,443.17	5,441.72	19.32	18.91	76.80	140.65	597.46	527.62	489.42	38.20	13.813	
5,500.00	5,490.75	5,492.86	5,491.37	19.50	19.09	77.06	142.55	596.81	525.76	487.20	38.56	13.636	
5,550.00	5,540.56	5,542.86	5,541.32	19.68	19.27	77.33	144.50	596.17	523.91	485.00	38.91	13.463	
5,600.00	5,590.37	5,592.91	5,591.33	19.86	19.44	77.58	146.51	595.53	522.06	482.79	39.27	13.293	
5,650.00	5,640.18	5,644.18	5,642.55	20.04	19.63	77.84	148.65	594.81	520.16	480.53	39.63	13.124	
5,700.00	5,689.99	5,695.65	5,693.96	20.22	19.81	78.09	150.90	593.95	518.12	478.13	40.00	12.955	
5,750.00	5,739.80	5,747.22	5,745.48	20.41	19.99	78.35	153.19	592.93	515.93	475.58	40.36	12.785	
5,800.00	5,789.61	5,798.79	5,796.98	20.59	20.18	78.61	155.45	591.74	513.60	472.88	40.72	12.614	
5,850.00	5,839.41	5,849.54	5,847.66	20.77	20.36	78.87	157.66	590.44	511.14	470.07	41.08	12.444	
5,900.00	5,889.22	5,900.26	5,898.32	20.95	20.54	79.14	159.90	589.06	508.62	467.19	41.43	12.275	
5,950.00	5,939.03	5,950.99	5,948.98	21.13	20.72	79.40	162.18	587.60	506.02	464.23	41.79	12.108	
6,000.00	5,988.84	6,001.72	5,999.63	21.31	20.90	79.65	164.56	586.07	503.35	461.20	42.15	11.942	
6,050.00	6,038.65	6,052.28	6,050.10	21.49	21.08	79.91	166.98	584.48	500.62	458.11	42.51	11.776	
6,100.00	6,088.46	6,103.00	6,100.73	21.67	21.26	80.16	169.46	582.82	497.82	454.96	42.87	11.613	
6,150.00	6,138.27	6,156.49	6,154.13	21.85	21.46	80.44	172.03	580.80	494.81	451.58	43.23	11.447	
6,200.00	6,188.08	6,209.91	6,207.44	22.03	21.65	80.75	174.46	578.37	491.43	447.85	43.58	11.276	
6,250.00	6,237.89	6,259.27	6,256.68	22.21	21.82	81.05	176.66	576.00	487.96	444.02	43.94	11.105	
6,300.00	6,287.70	6,309.25	6,306.56	22.39	22.00	81.35	178.90	573.57	484.47	440.17	44.30	10.937	
6,350.00	6,337.51	6,356.53	6,353.74	22.57	22.17	81.65	180.91	571.39	481.14	436.49	44.66	10.775	
6,400.00	6,387.32	6,404.31	6,401.45	22.75	22.34	81.97	182.81	569.38	478.04	433.03	45.01	10.620	
6,450.00	6,437.13	6,452.78	6,449.85	22.93	22.51	82.32	184.56	567.47	475.14	429.77	45.37	10.472	
6,500.00	6,486.94	6,501.24	6,498.24	23.11	22.69	82.69	186.09	565.66	472.40	426.67	45.73	10.331	
6,550.00	6,536.75	6,549.69	6,546.65	23.30	22.86	83.09	187.40	563.94	469.82	423.74	46.08	10.195	
6,600.00	6,586.56	6,598.13	6,595.05	23.48	23.03	83.52	188.47	562.31	467.42	420.98	46.44	10.065	
6,650.00	6,636.37	6,644.98	6,641.87	23.66	23.20	83.96	189.36	560.92	465.27	418.48	46.79	9.943	
6,700.00	6,686.18	6,691.78	6,688.65	23.84	23.36	84.39	190.17	559.82	463.48	416.33	47.15	9.831	
6,750.00	6,735.99	6,740.10	6,736.96	24.02	23.53	84.85	190.94	558.93	461.97	414.47	47.50	9.726	
6,800.00	6,785.80	6,788.75	6,785.60	24.20	23.71	85.32	191.63	558.15	460.63	412.78	47.85	9.626	
6,850.00	6,835.61	6,836.62	6,833.46	24.38	23.87	85.80	192.14	557.49	459.48	411.28	48.20	9.532	
6,900.00	6,885.42	6,884.21	6,881.04	24.56	24.04	86.32	192.24	556.95	458.61	410.06	48.55	9.446	
6,950.00	6,935.23	6,932.11	6,928.94	24.74	24.20	86.88	192.00	556.54	458.01	409.11	48.90	9.367	
7,000.00	6,985.04	6,980.18	6,977.02	24.92	24.37	87.45	191.71	556.31	457.65	408.41	49.24	9.294	
7,050.00	7,034.85	7,029.54	7,026.37	25.10	24.53	88.03	191.40	556.21	457.48	407.89	49.59	9.226	
7,100.00	7,084.66	7,079.77	7,076.60	25.28	24.70	88.62	191.07	556.07	457.32	407.38	49.94	9.158	
7,141.34	7,125.84	7,119.88	7,116.71	25.43	24.84	89.10	190.79	555.95	457.23	407.00	50.22	9.104 CC	
7,150.00	7,134.47	7,128.01	7,124.83	25.47	24.86	89.20	190.72	555.94	457.23	406.95	50.28	9.094	
7,200.00	7,184.28	7,174.87	7,171.70	25.65	25.02	89.76	190.20	556.04	457.48	406.86	50.62	9.038 ES	
7,250.00	7,234.09	7,222.58	7,219.40	25.83	25.18	90.35	189.50	556.38	458.07	407.11	50.96	8.989	
7,300.00	7,283.90	7,271.29	7,268.10	26.01	25.35	90.94	188.82	556.89	458.86	407.56	51.30	8.945	
7,350.00	7,333.71	7,316.03	7,312.82	26.19	25.50	91.49	188.02	557.52	459.95	408.33	51.62	8.910	
7,400.00	7,383.52	7,366.44	7,363.21	26.37	25.67	92.17	186.52	558.35	461.41	409.43	51.97	8.878	
7,450.00	7,433.33	7,416.87	7,413.61	26.55	25.84	92.84	185.12	559.13	462.85	410.52	52.33	8.845	
7,500.00	7,483.14	7,467.32	7,464.04	26.73	26.01	93.49	183.81	559.85	464.27	411.59	52.68	8.813	
7,550.00	7,532.95	7,517.78	7,514.48	26.91	26.18	94.14	182.58	560.53	465.87	412.64	53.04	8.780	
7,600.00	7,582.76	7,568.27	7,564.95	27.09	26.36	94.77	181.45	561.16	467.05	413.66	53.39	8.748	
7,650.00	7,632.57	7,618.77	7,615.44	27.28	26.53	95.40	180.40	561.74	468.40	414.65	53.74	8.715	
7,700.00	7,682.38	7,669.28	7,665.94	27.46	26.70	96.01	179.45	562.26	469.72	415.62	54.10	8.683	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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

Survey Program: 100-MWD+IGRF													Offset Site Error: 5.00 ft
Sec 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore													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)			
7,750.00	7,732.18	7,719.82	7,716.47	27.64	26.87	96.61	178.58	562.74	471.01	416.56	54.45	8.650	
7,800.00	7,781.99	7,770.37	7,767.01	27.82	27.04	97.20	177.80	563.17	472.26	417.46	54.81	8.617	
7,850.00	7,831.80	7,820.93	7,817.56	28.00	27.21	97.78	177.12	563.55	473.48	418.32	55.16	8.584	
7,900.00	7,881.61	7,871.51	7,868.14	28.18	27.39	98.35	176.52	563.88	474.67	419.15	55.52	8.550	
7,950.00	7,931.42	7,922.10	7,918.73	28.36	27.56	98.92	176.02	564.16	475.81	419.94	55.87	8.516	
8,000.00	7,981.23	7,972.71	7,969.33	28.54	27.73	99.47	175.60	564.39	476.91	420.68	56.22	8.482	
8,050.00	8,031.04	8,023.33	8,019.95	28.72	27.90	100.02	175.28	564.57	477.96	421.38	56.58	8.448	
8,100.00	8,080.85	8,073.96	8,070.59	28.91	28.07	100.55	175.04	564.70	478.97	422.04	56.93	8.413	
8,150.00	8,130.67	8,124.61	8,121.24	29.09	28.25	101.08	174.90	564.78	479.93	422.64	57.29	8.377	
8,200.00	8,180.52	8,175.32	8,171.94	29.27	28.42	101.55	174.84	564.81	480.73	423.09	57.64	8.340	
8,250.00	8,230.42	8,226.07	8,222.70	29.45	28.59	101.94	174.88	564.79	481.35	423.35	58.00	8.300 SF	
8,300.00	8,280.35	8,180.00	8,176.62	29.63	28.44	101.75	174.84	564.81	491.23	434.13	57.10	8.603	
8,350.00	8,330.32	8,180.00	8,176.62	29.81	28.44	101.94	174.84	564.81	503.70	447.49	56.20	8.962	
8,400.00	8,380.30	8,180.00	8,176.62	29.99	28.44	102.20	174.84	564.81	520.56	465.55	55.00	9.485	
8,450.00	8,430.30	8,180.00	8,176.62	30.16	28.44	102.53	174.84	564.81	541.40	487.80	53.60	10.102	
8,500.00	8,480.28	8,180.00	8,176.62	30.34	28.44	100.86	174.84	564.81	565.97	513.88	52.08	10.867	
8,550.00	8,530.02	8,180.00	8,176.62	30.52	28.44	97.45	174.84	564.81	594.33	543.77	50.57	11.754	
8,600.00	8,579.14	8,180.00	8,176.62	30.71	28.44	93.41	174.84	564.81	625.84	576.72	49.12	12.740	
8,650.00	8,627.27	8,180.00	8,176.62	30.89	28.44	88.78	174.84	564.81	659.83	612.02	47.81	13.802	
8,700.00	8,674.24	8,180.00	8,176.62	31.07	28.44	78.34	174.84	564.81	695.14	648.52	46.62	14.911	
8,750.00	8,720.43	8,180.00	8,176.62	31.25	28.44	66.91	174.84	564.81	729.47	684.01	45.46	16.045	
8,800.00	8,765.56	8,180.00	8,176.62	31.44	28.44	57.97	174.84	564.81	762.55	718.21	44.34	17.199	
8,850.00	8,809.28	8,180.00	8,176.62	31.62	28.44	51.04	174.84	564.81	794.28	751.03	43.25	18.363	
8,900.00	8,851.27	8,180.00	8,176.62	31.80	28.44	45.65	174.84	564.81	824.61	782.38	42.22	19.529	
8,950.00	8,891.20	8,180.00	8,176.62	31.98	28.44	41.40	174.84	564.81	853.45	812.19	41.28	20.685	
9,000.00	8,928.77	8,180.00	8,176.62	32.16	28.44	38.02	174.84	564.81	880.75	840.38	40.37	21.815	
9,050.00	8,963.68	8,180.00	8,176.62	32.35	28.44	35.30	174.84	564.81	906.45	866.88	39.58	22.904	
9,100.00	8,995.69	8,180.00	8,176.62	32.53	28.44	33.10	174.84	564.81	930.49	891.61	38.88	23.932	
9,150.00	9,024.54	8,180.00	8,176.62	32.73	28.44	31.31	174.84	564.81	952.83	914.53	38.30	24.879	
9,200.00	9,050.01	8,180.00	8,176.62	32.94	28.44	29.86	174.84	564.81	973.40	935.56	37.84	25.724	
9,250.00	9,071.92	8,180.00	8,176.62	33.15	28.44	28.70	174.84	564.81	992.18	954.67	37.52	26.447	
9,300.00	9,090.08	8,180.00	8,176.62	33.39	28.44	27.77	174.84	564.81	1,009.12	971.79	37.33	27.032	
9,350.00	9,104.37	8,180.00	8,176.62	33.64	28.44	27.06	174.84	564.81	1,024.19	986.90	37.29	27.484	
9,400.00	9,114.68	8,180.00	8,176.62	33.90	28.44	26.53	174.84	564.81	1,037.36	999.96	37.40	27.736	
9,450.00	9,120.93	8,180.00	8,176.62	34.18	28.44	26.18	174.84	564.81	1,048.60	1,010.94	37.66	27.846	
9,500.00	9,123.06	8,180.00	8,176.62	34.47	28.44	25.99	174.84	564.81	1,057.88	1,019.83	38.05	27.799	
9,550.00	9,123.06	8,180.00	8,176.62	34.79	28.44	25.99	174.84	564.81	1,067.25	1,028.66	38.59	27.655	
9,600.00	9,123.06	8,180.00	8,176.62	35.11	28.44	25.99	174.84	564.81	1,078.86	1,039.64	39.22	27.509	
9,650.00	9,123.06	8,180.00	8,176.62	35.49	28.44	25.99	174.84	564.81	1,092.63	1,052.68	39.95	27.353	
9,700.00	9,123.06	8,180.00	8,176.62	35.86	28.44	25.99	174.84	564.81	1,108.49	1,067.76	40.73	27.218	
9,750.00	9,123.06	8,180.00	8,176.62	36.28	28.44	25.99	174.84	564.81	1,126.35	1,084.78	41.57	27.098	
9,800.00	9,123.06	8,180.00	8,176.62	36.71	28.44	25.99	174.84	564.81	1,146.11	1,103.69	42.42	27.017	
9,850.00	9,123.06	8,180.00	8,176.62	37.18	28.44	25.99	174.84	564.81	1,167.68	1,124.37	43.30	26.964	
9,900.00	9,123.06	8,180.00	8,176.62	37.65	28.44	25.99	174.84	564.81	1,190.96	1,146.78	44.18	26.958	
9,950.00	9,123.06	8,180.00	8,176.62	38.16	28.44	25.99	174.84	564.81	1,215.85	1,170.80	45.05	26.988	
10,000.00	9,123.06	8,180.00	8,176.62	38.67	28.44	25.99	174.84	564.81	1,242.25	1,196.36	45.90	27.066	
10,050.00	9,123.06	8,180.00	8,176.62	39.22	28.44	25.99	174.84	564.81	1,270.08	1,223.35	46.73	27.180	
10,100.00	9,123.06	8,180.00	8,176.62	39.77	28.44	25.99	174.84	564.81	1,299.24	1,251.71	47.52	27.340	
10,150.00	9,123.06	8,180.00	8,176.62	40.36	28.44	25.99	174.84	564.81	1,329.63	1,281.34	48.29	27.534	
10,200.00	9,123.06	8,180.00	8,176.62	40.95	28.44	25.99	174.84	564.81	1,361.19	1,312.17	49.02	27.769	
10,250.00	9,123.06	8,180.00	8,176.62	41.57	28.44	25.99	174.84	564.81	1,393.82	1,344.11	49.72	28.035	
10,300.00	9,123.06	8,180.00	8,176.62	42.19	28.44	25.99	174.84	564.81	1,427.46	1,377.09	50.37	28.337	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore													Offset Site Error:	5.00 ft
Survey Program: 100-MWD+IGRF													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance				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)	Minimum Separation (ft)	Separation Factor		
10,350.00	9,123.06	8,180.00	8,176.62	42.84	28.44	25.99	174.84	564.81	1,462.04	1,411.04	51.00	28.668		
10,400.00	9,123.06	8,180.00	8,176.62	43.50	28.44	25.99	174.84	564.81	1,497.49	1,445.90	51.59	29.026		

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1														Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF														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)		
0.00	0.00	0.00	0.00	0.50	0.50	81.36	87.54	575.88	582.54						
50.00	50.00	40.33	40.33	0.50	0.50	81.36	87.50	575.91	582.52	1.01	579.324				
100.00	100.00	88.91	88.91	0.52	0.52	81.38	87.32	576.09	582.68	1.04	562.712				
150.00	150.00	138.07	138.07	0.59	0.59	81.41	87.07	576.39	582.94	1.18	494.390				
200.00	200.00	187.40	187.40	0.70	0.72	81.43	86.87	576.75	583.27	1.42	410.211				
250.00	250.00	235.91	235.91	0.83	0.88	81.45	86.73	577.17	583.67	1.72	340.308				
300.00	300.00	284.14	284.13	0.98	1.05	81.47	86.63	577.72	584.23	2.04	286.783				
350.00	350.00	333.42	333.41	1.14	1.24	81.49	86.59	578.40	584.90	2.38	245.679				
400.00	400.00	383.23	383.21	1.30	1.43	81.50	86.60	579.11	585.60	2.74	213.911				
450.00	450.00	432.76	432.74	1.47	1.63	81.50	86.63	579.83	586.33	3.10	189.089				
500.00	500.00	482.15	482.12	1.64	1.83	81.51	86.64	580.60	587.10	3.47	169.266				
550.00	550.00	532.01	531.97	1.81	2.03	81.52	86.65	581.41	587.91	3.84	153.032				
600.00	600.00	582.15	582.10	1.98	2.23	81.53	86.72	582.22	588.72	4.22	139.546				
650.00	650.00	631.82	631.77	2.16	2.44	81.53	86.84	583.01	589.52	4.60	128.252				
700.00	700.00	681.23	681.18	2.33	2.64	81.53	86.92	583.85	590.37	4.98	118.663				
750.00	750.00	730.48	730.42	2.51	2.85	81.54	86.96	584.74	591.27	5.36	110.361				
800.00	800.00	779.63	779.56	2.68	3.06	81.55	87.04	585.69	592.25	5.74	103.129				
850.00	850.00	829.03	828.95	2.86	3.27	81.55	87.15	586.72	593.28	6.13	96.748				
900.00	900.00	878.61	878.52	3.04	3.49	81.56	87.26	587.78	594.36	6.52	91.091				
950.00	950.00	927.59	927.48	3.21	3.70	81.56	87.38	588.87	595.48	6.92	86.089				
1,000.00	1,000.00	976.11	975.99	3.39	3.92	81.56	87.55	590.06	596.72	7.31	81.644				
1,050.00	1,050.00	1,023.51	1,023.37	3.57	4.13	81.56	87.77	591.35	598.11	7.70	77.709				
1,100.00	1,100.00	1,069.82	1,069.65	3.75	4.34	81.56	87.97	592.89	599.78	8.08	74.224				
1,150.00	1,150.00	1,116.96	1,116.75	3.92	4.55	81.57	88.14	594.73	601.74	8.47	71.051				
1,200.00	1,200.00	1,165.66	1,165.41	4.10	4.77	81.58	88.29	596.79	603.85	8.87	68.108				
1,250.00	1,250.00	1,215.64	1,215.34	4.28	4.99	81.60	88.43	598.98	606.04	9.27	65.379				
1,300.00	1,300.00	1,268.69	1,268.35	4.46	5.23	81.61	88.65	601.13	608.07	9.69	62.757				
1,350.00	1,350.00	1,321.14	1,320.77	4.64	5.47	81.61	88.94	602.98	609.86	10.11	60.344				
1,400.00	1,400.00	1,372.71	1,372.30	4.81	5.71	81.61	89.21	604.65	611.49	10.52	58.127				
1,450.00	1,450.00	1,424.39	1,423.97	4.99	5.94	81.61	89.46	606.18	613.00	10.93	56.061				
1,500.00	1,500.00	1,476.22	1,475.78	5.17	6.18	81.60	89.71	607.56	614.35	11.35	54.128				
1,550.00	1,550.00	1,528.11	1,527.65	5.35	6.42	81.59	89.97	608.79	615.55	11.77	52.316				
1,600.00	1,600.00	1,580.05	1,579.58	5.53	6.65	81.58	90.24	609.85	616.60	12.18	50.613				
1,650.00	1,650.00	1,631.41	1,630.93	5.71	6.88	81.57	90.51	610.74	617.50	12.59	49.057				
1,700.00	1,700.00	1,682.41	1,681.92	5.89	7.10	81.56	90.77	611.54	618.32	12.98	47.618				
1,750.00	1,750.00	1,732.60	1,732.11	6.06	7.31	81.54	91.02	612.27	619.07	13.37	46.303				
1,800.00	1,800.00	1,782.37	1,781.87	6.24	7.51	81.53	91.26	613.01	619.84	13.75	45.084				
1,850.00	1,850.00	1,834.19	1,833.69	6.42	7.71	81.52	91.51	613.74	620.57	14.14	43.900				
1,900.00	1,900.00	1,887.15	1,886.65	6.60	7.93	81.51	91.72	614.25	621.08	14.53	42.750				
1,950.00	1,950.00	1,937.85	1,937.34	6.78	8.13	81.49	91.92	614.57	621.42	14.91	41.673				
2,000.00	2,000.00	1,987.83	1,987.32	6.96	8.33	81.48	92.15	614.88	621.76	15.29	40.657				
2,050.00	2,050.00	2,038.34	2,037.83	7.14	8.54	81.46	92.41	615.17	622.08	15.68	39.682				
2,100.00	2,100.00	2,089.02	2,088.51	7.32	8.75	81.44	92.64	615.41	622.35	16.06	38.749				
2,150.00	2,150.00	2,139.33	2,138.82	7.49	8.95	81.42	92.85	615.60	622.57	16.44	37.859				
2,200.00	2,200.00	2,189.55	2,189.03	7.67	9.15	81.41	93.04	615.79	622.78	16.83	37.009				
2,250.00	2,250.00	2,239.50	2,238.98	7.85	9.36	81.39	93.22	615.96	622.98	17.21	36.197				
2,300.00	2,300.00	2,289.38	2,288.87	8.03	9.56	81.38	93.45	616.13	623.18	17.59	35.422				
2,350.00	2,350.00	2,339.78	2,339.26	8.21	9.77	81.35	93.71	616.30	623.38	17.98	34.675				
2,400.00	2,400.00	2,390.32	2,389.80	8.39	9.97	81.34	93.93	616.42	623.54	18.36	33.955				
2,450.00	2,450.00	2,440.22	2,439.70	8.57	10.18	81.32	94.15	616.53	623.68	18.75	33.268				
2,500.00	2,500.00	2,489.96	2,489.45	8.75	10.38	81.30	94.38	616.65	623.83	19.13	32.611				
2,550.00	2,550.00	2,540.38	2,539.86	8.93	10.59	81.28	94.65	616.76	623.98	19.52	31.974				

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft	
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF													Offset Well Error: 0.50 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,600.00	2,600.00	2,590.97	2,590.45	9.10	10.80	81.25	94.95	616.83	624.09	604.19	19.90	31.358		
2,650.00	2,650.00	2,641.55	2,641.02	9.28	11.01	81.22	95.27	616.84	624.15	603.86	20.29	30.764		
2,700.00	2,700.00	2,692.12	2,691.60	9.46	11.21	81.19	95.56	616.81	624.17	603.49	20.68	30.189		
2,750.00	2,750.00	2,742.90	2,742.37	9.64	11.42	81.17	95.83	616.73	624.12	603.06	21.06	29.631		
2,800.00	2,800.00	2,793.70	2,793.18	9.82	11.63	81.18	96.08	616.59	623.85	602.40	21.45	29.083		
2,850.00	2,849.99	2,844.67	2,844.14	10.00	11.84	81.22	96.31	616.37	623.30	601.46	21.84	28.542		
2,900.00	2,899.98	2,895.64	2,895.11	10.18	12.05	81.30	96.57	616.07	622.46	600.23	22.23	28.006		
2,950.00	2,949.95	2,945.71	2,945.18	10.36	12.26	81.42	96.83	615.73	621.37	598.75	22.61	27.481		
3,000.00	2,999.91	2,995.68	2,995.15	10.53	12.46	81.57	97.07	615.39	620.06	597.07	22.99	26.966		
3,050.00	3,049.84	3,046.24	3,045.71	10.71	12.67	81.77	97.26	615.03	618.54	595.16	23.38	26.455		
3,100.00	3,099.75	3,096.82	3,096.29	10.89	12.88	82.02	97.38	614.62	616.76	592.99	23.77	25.951		
3,150.00	3,149.64	3,147.91	3,147.37	11.07	13.09	82.31	97.47	614.14	614.71	590.55	24.15	25.449		
3,200.00	3,199.49	3,198.98	3,198.44	11.25	13.30	82.63	97.57	613.55	612.37	587.83	24.54	24.952		
3,250.00	3,249.31	3,248.19	3,247.65	11.43	13.51	82.99	97.63	612.96	609.84	584.91	24.92	24.469		
3,300.00	3,299.12	3,297.35	3,296.80	11.60	13.71	83.34	97.61	612.43	607.33	582.02	25.30	24.001		
3,350.00	3,348.93	3,347.09	3,346.55	11.78	13.92	83.71	97.55	611.93	604.87	579.19	25.69	23.548		
3,400.00	3,398.74	3,403.13	3,396.32	11.96	14.15	84.08	97.47	611.44	602.44	576.35	26.10	23.085		
3,450.00	3,448.55	3,446.66	3,446.11	12.14	14.33	84.46	97.38	610.94	600.04	573.59	26.45	22.682		
3,500.00	3,498.36	3,496.44	3,495.89	12.32	14.53	84.84	97.29	610.44	597.66	570.82	26.84	22.269		
3,550.00	3,548.17	3,546.13	3,545.57	12.50	14.74	85.22	97.23	609.95	595.32	568.09	27.22	21.869		
3,600.00	3,597.98	3,595.82	3,595.26	12.67	14.95	85.60	97.20	609.46	593.00	565.40	27.61	21.481		
3,650.00	3,647.79	3,645.87	3,645.31	12.85	15.15	85.98	97.21	608.96	590.71	562.72	27.99	21.104		
3,700.00	3,697.60	3,695.96	3,695.39	13.03	15.36	86.36	97.23	608.43	588.42	560.05	28.38	20.736		
3,750.00	3,747.41	3,745.18	3,744.61	13.21	15.57	86.74	97.29	607.92	586.17	557.41	28.76	20.382		
3,800.00	3,797.22	3,794.33	3,793.76	13.39	15.77	87.11	97.41	607.47	583.99	554.85	29.14	20.040		
3,850.00	3,847.03	3,844.18	3,843.61	13.57	15.98	87.49	97.56	607.03	581.87	552.35	29.53	19.706		
3,900.00	3,896.84	3,894.11	3,893.54	13.75	16.18	87.87	97.69	606.58	579.77	549.88	29.91	19.382		
3,950.00	3,946.64	3,944.03	3,943.45	13.93	16.39	88.26	97.81	606.12	577.68	547.38	30.30	19.066		
4,000.00	3,996.45	3,993.94	3,993.36	14.11	16.60	88.65	97.93	605.65	575.61	544.93	30.68	18.759		
4,050.00	4,046.26	4,043.56	4,042.98	14.29	16.80	89.03	98.06	605.19	573.57	542.50	31.07	18.461		
4,100.00	4,096.07	4,093.15	4,092.57	14.46	17.01	89.42	98.22	604.75	571.57	540.11	31.45	18.172		
4,150.00	4,145.88	4,143.01	4,142.42	14.64	17.22	89.81	98.41	604.31	569.61	537.77	31.84	17.890		
4,200.00	4,195.69	4,192.91	4,192.32	14.82	17.42	90.20	98.66	603.86	567.66	535.44	32.23	17.615		
4,250.00	4,245.50	4,241.26	4,240.67	15.00	17.63	90.57	99.00	603.48	565.80	533.19	32.61	17.352		
4,300.00	4,295.31	4,289.39	4,288.80	15.18	17.83	90.92	99.51	603.24	564.10	531.12	32.99	17.101		
4,350.00	4,345.12	4,337.42	4,336.82	15.36	18.03	91.25	100.18	603.16	562.59	529.22	33.37	16.861		
4,400.00	4,394.93	4,385.43	4,384.83	15.54	18.23	91.58	100.98	603.24	561.26	527.51	33.75	16.631		
4,450.00	4,444.74	4,434.23	4,433.62	15.72	18.44	91.90	101.86	603.46	560.09	525.95	34.13	16.409		
4,500.00	4,494.55	4,483.36	4,482.74	15.90	18.65	92.23	102.71	603.75	559.01	524.49	34.52	16.194		
4,550.00	4,544.36	4,534.09	4,533.46	16.08	18.86	92.57	103.62	604.08	557.97	523.05	34.91	15.982		
4,600.00	4,594.17	4,585.67	4,585.02	16.26	19.09	92.88	104.89	604.28	556.80	521.50	35.31	15.770		
4,650.00	4,643.98	4,636.54	4,635.87	16.44	19.30	93.15	106.44	604.36	555.53	519.83	35.70	15.562		
4,700.00	4,693.79	4,687.13	4,686.43	16.62	19.52	93.41	108.17	604.39	554.20	518.12	36.09	15.358		
4,750.00	4,743.60	4,738.04	4,737.30	16.80	19.73	93.65	110.13	604.35	552.82	516.34	36.48	15.156		
4,800.00	4,793.41	4,789.08	4,788.29	16.98	19.95	93.85	112.46	604.25	551.34	514.47	36.87	14.955		
4,850.00	4,843.22	4,839.56	4,838.70	17.16	20.17	94.03	114.99	604.07	549.79	512.54	37.25	14.759		
4,900.00	4,893.03	4,889.87	4,888.95	17.34	20.38	94.22	117.42	603.86	548.21	510.57	37.64	14.565		
4,950.00	4,942.84	4,940.17	4,939.20	17.52	20.59	94.42	119.76	603.60	546.60	508.58	38.02	14.375		
5,000.00	4,992.65	4,990.47	4,989.44	17.70	20.81	94.63	122.00	603.31	544.97	506.56	38.41	14.188		
5,050.00	5,042.46	5,040.75	5,039.68	17.88	21.02	94.86	124.14	602.97	543.31	504.51	38.80	14.004		
5,100.00	5,092.27	5,091.02	5,089.91	18.06	21.24	95.09	126.18	602.59	541.63	502.44	39.18	13.824		
5,150.00	5,142.08	5,141.28	5,140.13	18.24	21.45	95.34	128.13	602.18	539.92	500.35	39.57	13.646		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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													Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF													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	
5,200.00	5,191.89	5,191.53	5,180.34	18.42	21.67	75.60	129.98	601.72	538.19	498.24	39.95	13.471		
5,250.00	5,241.70	5,241.77	5,240.55	18.60	21.88	75.87	131.74	601.22	536.45	496.11	40.34	13.299		
5,300.00	5,291.51	5,291.99	5,290.74	18.78	22.10	76.16	133.40	600.68	534.69	493.96	40.72	13.130		
5,350.00	5,341.32	5,342.62	5,341.34	18.96	22.32	76.45	135.06	600.09	532.89	491.78	41.11	12.963		
5,400.00	5,391.13	5,393.34	5,392.02	19.14	22.53	76.72	136.87	599.43	531.03	489.54	41.49	12.798		
5,450.00	5,440.94	5,443.17	5,441.81	19.32	22.75	76.99	138.76	598.76	529.14	487.26	41.88	12.635		
5,500.00	5,490.75	5,492.86	5,491.46	19.50	22.96	77.25	140.66	598.12	527.29	485.02	42.26	12.476		
5,550.00	5,540.56	5,542.85	5,541.41	19.68	23.18	77.51	142.60	597.48	525.45	482.80	42.65	12.321		
5,600.00	5,590.37	5,592.91	5,591.42	19.86	23.39	77.77	144.62	596.83	523.61	480.57	43.03	12.168		
5,650.00	5,640.18	5,644.19	5,642.65	20.04	23.61	78.03	146.76	596.12	521.71	478.29	43.42	12.015		
5,700.00	5,689.99	5,695.66	5,694.07	20.22	23.84	78.28	149.01	595.26	519.68	475.87	43.81	11.862		
5,750.00	5,739.80	5,747.24	5,745.59	20.41	24.06	78.53	151.30	594.24	517.50	473.30	44.20	11.709		
5,800.00	5,789.61	5,798.81	5,797.09	20.59	24.28	78.79	153.56	593.05	515.17	470.58	44.59	11.554		
5,850.00	5,839.41	5,849.56	5,847.78	20.77	24.50	79.06	155.77	591.75	512.73	467.75	44.97	11.401		
5,900.00	5,889.22	5,900.29	5,898.44	20.95	24.72	79.32	158.01	590.37	510.21	464.85	45.36	11.248		
5,950.00	5,939.03	5,951.02	5,949.10	21.13	24.94	79.59	160.29	588.91	507.62	461.88	45.75	11.097		
6,000.00	5,988.84	6,001.76	5,999.76	21.31	25.16	79.84	162.67	587.38	504.96	458.83	46.13	10.946		
6,050.00	6,038.65	6,052.32	6,050.23	21.49	25.37	80.10	165.09	585.78	502.23	455.71	46.52	10.796		
6,100.00	6,088.46	6,103.05	6,100.87	21.67	25.59	80.35	167.57	584.12	499.44	452.54	46.91	10.648		
6,150.00	6,138.27	6,156.54	6,154.27	21.85	25.82	80.63	170.14	582.11	496.43	449.14	47.29	10.497		
6,200.00	6,188.08	6,209.97	6,207.59	22.03	26.05	80.94	172.57	579.67	493.07	445.39	47.68	10.341		
6,250.00	6,237.89	6,259.32	6,256.83	22.21	26.26	81.24	174.77	577.30	489.80	441.53	48.07	10.186		
6,300.00	6,287.70	6,309.30	6,306.71	22.39	26.48	81.54	177.01	574.87	486.12	437.66	48.45	10.033		
6,350.00	6,337.51	6,356.57	6,353.88	22.57	26.68	81.84	179.02	572.70	482.80	433.96	48.84	9.885		
6,400.00	6,387.32	6,404.35	6,401.57	22.75	26.89	82.16	180.92	570.68	479.71	430.48	49.23	9.744		
6,450.00	6,437.13	6,452.80	6,449.96	22.93	27.09	82.51	182.67	568.78	476.82	427.20	49.62	9.609		
6,500.00	6,486.94	6,501.25	6,498.35	23.11	27.30	82.88	184.20	566.96	474.09	424.07	50.01	9.479		
6,550.00	6,536.75	6,549.69	6,546.74	23.30	27.51	83.28	185.51	565.24	471.52	421.12	50.40	9.355		
6,600.00	6,586.56	6,598.12	6,595.13	23.48	27.72	83.71	186.58	563.62	469.13	418.34	50.79	9.236		
6,650.00	6,636.37	6,644.95	6,641.94	23.66	27.92	84.15	187.47	562.23	466.99	415.81	51.18	9.124		
6,700.00	6,686.18	6,691.75	6,688.71	23.84	28.12	84.58	188.28	561.13	465.21	413.65	51.57	9.021		
6,750.00	6,735.99	6,740.06	6,737.01	24.02	28.33	85.04	189.05	560.24	463.72	411.76	51.96	8.925		
6,800.00	6,785.80	6,788.70	6,785.64	24.20	28.54	85.50	189.74	559.46	462.39	410.04	52.35	8.833		
6,850.00	6,835.61	6,836.56	6,833.49	24.38	28.74	85.98	190.25	558.80	461.26	408.52	52.74	8.746		
6,900.00	6,885.42	6,884.13	6,881.06	24.56	28.94	86.50	190.34	558.28	460.40	407.27	53.12	8.667		
6,950.00	6,935.23	6,932.02	6,928.94	24.74	29.14	87.06	190.11	557.85	459.81	406.30	53.51	8.593		
7,000.00	6,985.04	6,980.09	6,977.01	24.92	29.34	87.63	189.82	557.61	459.46	405.57	53.89	8.526		
7,050.00	7,034.85	7,029.43	7,026.36	25.10	29.55	88.20	189.50	557.51	459.31	405.02	54.28	8.462		
7,100.00	7,084.66	7,079.67	7,076.59	25.28	29.75	88.79	189.18	557.38	459.17	404.49	54.67	8.398		
7,139.49	7,124.00	7,118.05	7,114.97	25.43	29.91	89.25	188.91	557.26	459.08	404.10	54.98	8.350 CC		
7,150.00	7,134.47	7,127.90	7,124.82	25.47	29.95	89.36	188.83	557.25	459.09	404.03	55.06	8.338		
7,200.00	7,184.28	7,174.76	7,171.68	25.65	30.15	89.93	188.31	557.35	459.35	403.92	55.44	8.286 ES		
7,250.00	7,234.09	7,222.45	7,219.36	25.83	30.34	90.51	187.61	557.69	459.96	404.14	55.81	8.241		
7,300.00	7,283.90	7,271.16	7,268.06	26.01	30.54	91.10	186.93	558.20	460.76	404.56	56.20	8.199		
7,350.00	7,333.71	7,313.56	7,310.45	26.19	30.68	91.60	186.36	558.85	461.86	405.35	56.51	8.173 SF		
7,400.00	7,383.52	7,346.72	7,343.57	26.37	30.75	91.98	185.58	560.31	464.50	407.83	56.67	8.197		
7,450.00	7,433.33	7,379.72	7,376.45	26.55	30.82	92.34	184.39	562.88	468.95	412.20	56.75	8.263		
7,500.00	7,483.14	7,414.32	7,410.80	26.73	30.84	92.69	182.98	566.78	475.14	418.38	56.76	8.371		
7,550.00	7,532.95	7,449.78	7,445.84	26.91	30.84	92.91	182.04	572.12	482.81	426.09	56.72	8.512		
7,600.00	7,582.76	7,480.27	7,475.77	27.09	30.85	93.02	181.44	577.85	492.11	435.56	56.56	8.701		
7,650.00	7,632.57	7,509.90	7,504.53	27.28	30.85	92.98	181.53	584.97	503.33	447.01	56.32	8.937		
7,700.00	7,682.38	7,541.53	7,534.77	27.46	30.86	92.75	182.64	594.18	516.28	460.20	56.08	9.206		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance				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)			Minimum Separation (ft)
7,750.00	7,732.18	7,568.23	7,559.86	27.64	30.86	92.44	184.25	603.14	530.93	475.25	55.68	9.535	
7,800.00	7,781.99	7,592.59	7,582.33	27.82	30.87	92.10	185.87	612.43	547.61	492.43	55.17	9.925	
7,850.00	7,831.80	7,612.00	7,599.92	28.00	30.88	91.81	187.10	620.52	568.28	511.81	54.47	10.398	
7,900.00	7,881.61	7,642.00	7,626.62	28.18	30.90	91.34	188.89	634.08	586.63	532.53	54.10	10.844	
7,950.00	7,931.42	7,667.06	7,648.48	28.36	30.91	90.93	190.32	646.25	608.58	555.02	53.57	11.362	
8,000.00	7,981.23	7,691.05	7,669.00	28.54	30.93	90.53	191.66	658.60	632.01	579.01	53.00	11.925	
8,050.00	8,031.04	7,715.21	7,689.25	28.72	30.96	90.12	192.97	671.71	656.86	604.40	52.46	12.522	
8,100.00	8,080.85	7,738.00	7,708.03	28.91	30.98	89.74	194.16	684.57	682.91	631.03	51.88	13.163	
8,150.00	8,130.67	7,763.95	7,729.01	29.09	31.02	89.45	195.50	699.77	710.09	658.64	51.45	13.802	
8,200.00	8,180.52	7,784.25	7,745.08	29.27	31.06	89.59	196.55	712.12	738.43	687.59	50.84	14.525	
8,250.00	8,230.42	7,801.00	7,758.05	29.45	31.09	89.81	197.40	722.69	768.00	717.87	50.13	15.319	
8,300.00	8,280.35	7,817.93	7,770.84	29.63	31.12	90.04	198.19	733.75	798.78	749.31	49.47	16.147	
8,350.00	8,330.32	7,833.00	7,781.93	29.81	31.16	90.32	198.81	743.94	830.75	781.97	48.78	17.032	
8,400.00	8,380.30	7,844.67	7,790.30	29.99	31.19	90.71	199.24	752.07	863.88	815.85	48.01	17.993	
8,450.00	8,430.30	7,864.00	7,803.65	30.16	31.24	90.93	199.83	766.02	898.17	850.82	47.55	18.888	
8,500.00	8,480.28	7,884.00	7,803.65	30.34	31.24	88.03	199.83	766.02	933.29	886.81	46.48	20.077	
8,550.00	8,530.02	7,878.02	7,812.95	30.52	31.29	82.65	200.18	776.51	969.29	923.34	45.95	21.095	
8,600.00	8,579.14	7,896.00	7,824.39	30.71	31.35	77.39	200.54	790.38	1,005.84	960.25	45.59	22.062	
8,650.00	8,627.27	7,896.00	7,824.39	30.89	31.35	72.22	200.54	790.38	1,042.39	997.68	44.72	23.307	
8,700.00	8,674.24	7,915.35	7,836.22	31.07	31.42	62.89	200.89	805.69	1,078.36	1,033.84	44.51	24.227	
8,750.00	8,720.43	7,927.00	7,843.15	31.25	31.47	52.82	201.11	815.05	1,112.06	1,068.04	44.02	25.261	
8,800.00	8,765.56	7,951.19	7,857.15	31.44	31.58	45.16	201.75	834.76	1,143.10	1,099.24	43.86	26.061	
8,850.00	8,809.28	7,971.36	7,868.43	31.62	31.69	39.28	202.52	851.47	1,171.37	1,127.83	43.54	26.901	
8,900.00	8,851.27	7,990.00	7,878.52	31.80	31.79	34.77	203.47	867.11	1,196.75	1,153.60	43.15	27.735	
8,950.00	8,891.20	8,005.24	7,886.42	31.98	31.88	31.26	204.38	880.11	1,219.31	1,176.67	42.64	28.594	
9,000.00	8,928.77	8,021.00	7,894.17	32.16	31.97	28.52	205.43	893.79	1,239.08	1,196.95	42.13	29.410	
9,050.00	8,963.68	8,021.00	7,894.17	32.35	31.97	26.29	205.43	893.79	1,256.22	1,215.00	41.21	30.481	
9,100.00	8,995.69	8,021.00	7,894.17	32.53	31.97	24.52	205.43	893.79	1,271.00	1,230.69	40.32	31.526	
9,150.00	9,024.54	8,076.25	7,918.84	32.73	32.44	23.30	209.34	943.06	1,280.41	1,239.63	40.79	31.392	
9,200.00	9,050.01	8,095.81	7,926.73	32.94	32.60	22.23	210.78	960.89	1,287.95	1,247.58	40.37	31.903	
9,250.00	9,071.92	8,115.48	7,934.23	33.15	32.77	21.39	212.24	979.02	1,292.31	1,252.34	39.97	32.336	
9,300.00	9,090.08	8,170.00	7,952.60	33.39	33.23	20.81	216.42	1,030.17	1,294.66	1,254.30	40.36	32.078	
9,350.00	9,104.37	8,170.00	7,952.60	33.64	33.23	20.31	216.42	1,030.17	1,291.68	1,252.15	39.53	32.673	
9,400.00	9,114.68	8,170.00	7,952.60	33.90	33.23	19.96	216.42	1,030.17	1,286.28	1,247.51	38.77	33.181	
9,450.00	9,120.93	8,202.00	7,961.85	34.18	33.58	19.80	218.92	1,060.71	1,277.82	1,239.10	38.72	33.003	
9,500.00	9,123.06	8,221.65	7,967.09	34.47	33.81	19.77	220.41	1,079.59	1,266.08	1,227.64	38.44	32.933	
9,550.00	9,123.06	8,244.69	7,972.90	34.79	34.09	19.80	222.00	1,101.83	1,253.09	1,214.81	38.28	32.738	
9,600.00	9,123.06	8,265.00	7,977.64	35.11	34.34	19.82	223.26	1,121.53	1,241.12	1,203.04	38.08	32.594	
9,650.00	9,123.06	8,286.88	7,982.31	35.49	34.63	19.84	224.43	1,142.87	1,230.23	1,192.27	37.96	32.406	
9,700.00	9,123.06	8,296.00	7,984.11	35.86	34.75	19.85	224.87	1,151.81	1,220.60	1,182.95	37.66	32.413	
9,750.00	9,123.06	8,327.81	7,989.64	36.28	35.21	19.88	226.31	1,183.10	1,211.88	1,174.08	37.80	32.058	
9,800.00	9,123.06	8,359.00	7,993.88	36.71	35.66	19.89	227.70	1,213.96	1,204.56	1,166.82	37.94	31.747	
9,850.00	9,123.06	8,370.07	7,995.11	37.18	35.83	19.89	228.19	1,224.95	1,198.20	1,160.36	37.84	31.666	
9,900.00	9,123.06	8,391.00	7,997.09	37.65	36.16	19.88	229.10	1,245.77	1,193.08	1,155.16	37.92	31.463	
9,950.00	9,123.06	8,421.48	7,999.35	38.16	36.67	19.86	230.35	1,276.14	1,188.96	1,150.78	38.18	31.144	
10,000.00	9,123.06	8,449.94	8,000.94	38.67	37.15	19.84	231.39	1,304.54	1,185.74	1,147.31	38.43	30.857	
10,050.00	9,123.06	8,485.00	8,002.21	39.22	37.74	19.82	232.51	1,339.55	1,183.45	1,144.67	38.78	30.518	
10,100.00	9,123.06	8,534.68	8,003.56	39.77	38.65	19.76	234.38	1,389.18	1,181.55	1,142.25	39.30	30.065	
10,150.00	9,123.06	8,594.87	8,005.47	40.38	39.79	19.64	237.71	1,449.24	1,179.14	1,139.22	39.92	29.535	
10,200.00	9,123.06	8,645.82	8,007.15	40.95	40.80	19.52	240.91	1,500.07	1,176.56	1,136.10	40.46	29.078	
10,250.00	9,123.06	8,696.96	8,008.85	41.57	41.84	19.40	244.24	1,551.07	1,173.93	1,132.91	41.02	28.616	
10,300.00	9,123.06	8,748.35	8,010.66	42.19	42.93	19.29	247.46	1,602.32	1,171.25	1,129.65	41.60	28.152	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1												Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF												Offset Well Error:	0.50 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,350.00	9,123.06	8,796.01	8,012.39	42.84	43.96	19.18	250.39	1,649.87	1,168.58	1,126.39	42.17	27.711	
10,400.00	9,123.06	8,841.35	8,013.75	43.50	44.97	19.06	253.47	1,695.08	1,166.04	1,123.34	42.70	27.307	
10,450.00	9,123.06	8,884.90	8,014.77	44.17	45.95	18.93	256.72	1,738.50	1,163.75	1,120.53	43.22	26.927	
10,500.00	9,123.06	8,926.81	8,015.39	44.85	46.92	18.79	260.06	1,780.27	1,161.79	1,118.08	43.71	26.579	
10,550.00	9,123.06	8,973.31	8,015.67	45.56	48.01	18.61	264.02	1,826.60	1,160.15	1,115.90	44.25	26.219	
10,600.00	9,123.06	9,031.62	8,016.02	46.28	49.40	18.36	269.68	1,884.63	1,158.34	1,113.47	44.87	25.813	
10,650.00	9,123.06	9,086.93	8,016.52	46.99	50.74	18.09	275.68	1,939.61	1,156.23	1,110.77	45.46	25.432	
10,700.00	9,123.06	9,140.79	8,017.19	47.72	52.06	17.82	281.60	1,993.14	1,153.95	1,107.92	46.03	25.067	
10,750.00	9,123.06	9,189.66	8,017.87	48.47	53.28	17.58	287.02	2,041.70	1,151.61	1,105.04	46.57	24.728	
10,800.00	9,123.06	9,237.98	8,018.47	49.22	54.50	17.33	292.44	2,089.72	1,149.35	1,102.26	47.09	24.408	
10,850.00	9,123.06	9,290.08	8,019.03	49.99	55.83	17.05	298.62	2,141.45	1,147.10	1,099.46	47.64	24.080	
10,900.00	9,123.06	9,342.86	8,019.51	50.75	57.18	16.73	305.57	2,193.76	1,144.76	1,096.61	48.15	23.775	
10,950.00	9,123.06	9,399.27	8,020.26	51.54	58.65	16.38	313.12	2,249.67	1,142.22	1,093.52	48.70	23.456	
11,000.00	9,123.06	9,451.80	8,021.27	52.32	60.03	16.06	320.02	2,301.72	1,139.46	1,090.25	49.21	23.155	
11,050.00	9,123.06	9,499.90	8,022.13	53.13	61.30	15.76	326.57	2,349.37	1,136.74	1,087.06	49.68	22.883	
11,100.00	9,123.06	9,551.87	8,022.99	53.93	62.68	15.43	333.79	2,400.83	1,134.07	1,083.91	50.16	22.610	
11,150.00	9,123.06	9,607.66	8,024.41	54.74	64.18	15.11	340.69	2,456.17	1,131.21	1,080.49	50.72	22.303	
11,200.00	9,123.06	9,657.37	8,026.11	55.56	65.53	14.88	345.93	2,505.57	1,128.21	1,076.94	51.27	22.004	
11,250.00	9,123.06	9,705.82	8,027.96	56.39	66.85	14.70	350.10	2,553.80	1,125.28	1,073.42	51.86	21.698	
11,300.00	9,123.06	9,756.88	8,030.03	57.22	68.26	14.54	353.99	2,604.68	1,122.37	1,069.88	52.50	21.377	
11,350.00	9,123.06	9,808.28	8,032.12	58.06	69.68	14.36	358.18	2,655.86	1,119.39	1,066.26	53.14	21.066	
11,400.00	9,123.06	9,849.43	8,033.69	58.90	70.83	14.23	361.39	2,696.86	1,116.60	1,062.94	53.66	20.808	
11,450.00	9,123.06	9,891.11	8,035.08	59.76	72.00	14.11	364.19	2,738.42	1,114.18	1,059.96	54.22	20.551	
11,500.00	9,123.06	9,940.35	8,036.56	60.61	73.38	13.98	367.15	2,787.55	1,112.00	1,057.13	54.87	20.265	
11,550.00	9,123.06	9,991.91	8,038.16	61.47	74.84	13.85	370.36	2,838.98	1,109.78	1,054.21	55.55	19.977	
11,600.00	9,123.06	10,047.86	8,040.05	62.34	76.42	13.69	373.99	2,894.78	1,107.36	1,051.09	56.27	19.678	
11,650.00	9,123.06	10,104.05	8,042.26	63.21	78.02	13.54	377.72	2,950.81	1,104.69	1,047.69	57.00	19.381	
11,700.00	9,123.06	10,153.66	8,044.30	64.08	79.44	13.39	381.06	3,000.26	1,101.92	1,044.27	57.64	19.116	
11,750.00	9,123.06	10,201.37	8,046.28	64.96	80.81	13.26	384.31	3,047.82	1,099.12	1,040.86	58.27	18.864	
11,800.00	9,123.06	10,243.95	8,047.82	65.84	82.03	13.13	387.24	3,090.27	1,096.60	1,037.78	58.82	18.643	
11,850.00	9,123.06	10,287.16	8,049.08	66.73	83.27	13.00	390.24	3,133.36	1,094.41	1,035.03	59.38	18.431	
11,900.00	9,123.06	10,333.21	8,050.13	67.62	84.60	12.83	393.76	3,179.26	1,092.45	1,032.51	59.94	18.226	
11,950.00	9,123.06	10,379.67	8,050.92	68.52	85.94	12.64	397.78	3,225.54	1,090.68	1,030.21	60.47	18.037	
12,000.00	9,123.06	10,429.90	8,051.66	69.42	87.40	12.41	402.38	3,275.56	1,088.98	1,027.97	61.01	17.849	
12,050.00	9,123.06	10,480.60	8,052.40	70.32	88.87	12.18	407.12	3,326.02	1,087.28	1,025.73	61.55	17.666	
12,100.00	9,123.06	10,532.91	8,053.20	71.22	90.39	11.93	412.32	3,378.07	1,085.51	1,023.43	62.07	17.487	
12,150.00	9,123.06	10,585.02	8,054.03	72.13	91.91	11.65	417.90	3,429.88	1,083.64	1,021.07	62.57	17.318	
12,200.00	9,123.06	10,636.86	8,054.86	73.04	93.41	11.35	423.94	3,481.35	1,081.70	1,018.67	63.03	17.162	
12,250.00	9,123.06	10,687.25	8,055.68	73.96	94.88	11.04	430.15	3,531.36	1,079.70	1,016.25	63.45	17.016	
12,300.00	9,123.06	10,736.80	8,056.57	74.88	96.33	10.76	435.88	3,580.57	1,077.73	1,013.84	63.89	16.869	
12,350.00	9,123.06	10,784.18	8,057.45	75.80	97.72	10.50	440.99	3,627.66	1,075.83	1,011.50	64.33	16.723	
12,400.00	9,123.06	10,830.62	8,058.22	76.72	99.08	10.26	445.76	3,673.85	1,074.10	1,009.31	64.78	16.580	
12,450.00	9,123.06	10,877.19	8,058.89	77.64	100.45	10.03	450.29	3,720.19	1,072.53	1,007.29	65.25	16.438	
12,500.00	9,123.06	10,923.88	8,059.49	78.57	101.83	9.82	454.47	3,766.68	1,071.14	1,005.41	65.73	16.296	
12,550.00	9,123.06	10,972.25	8,060.08	79.50	103.26	9.63	458.34	3,814.90	1,069.87	1,003.61	66.26	16.147	
12,600.00	9,123.06	11,021.67	8,060.78	80.43	104.73	9.47	461.51	3,864.21	1,068.65	1,001.81	66.85	15.987	
12,650.00	9,123.06	11,069.82	8,061.53	81.37	106.16	9.35	463.94	3,912.29	1,067.48	1,000.02	67.46	15.823	
12,700.00	9,123.06	11,117.44	8,062.21	82.30	107.58	9.25	466.11	3,959.86	1,066.42	998.33	68.09	15.662	
12,750.00	9,123.06	11,164.98	8,062.80	83.24	109.00	9.15	468.13	4,007.36	1,065.48	996.75	68.72	15.504	
12,800.00	9,123.06	11,212.50	8,063.29	84.18	110.42	9.05	470.16	4,054.82	1,064.65	995.30	69.35	15.352	
12,850.00	9,123.06	11,266.09	8,063.80	85.13	112.02	8.93	472.64	4,108.36	1,063.83	993.80	70.04	15.190	
12,900.00	9,123.06	11,321.80	8,064.52	86.07	113.69	8.77	475.83	4,163.97	1,062.76	992.06	70.70	15.032	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 100-NSG-GYC_Drop, 7392-MWD+IGRF													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,950.00	9,123.06	11,389.93	8,065.16	87.02	115.13	8.61	479.01	4,211.99	1,061.61	990.35	71.26	14.898		
13,000.00	9,123.06	11,418.74	8,065.70	87.98	116.59	8.43	482.53	4,260.67	1,060.54	988.74	71.80	14.770		
13,050.00	9,123.06	11,474.24	8,066.39	88.91	118.26	8.21	488.87	4,315.99	1,059.37	986.98	72.38	14.635		
13,100.00	9,123.06	11,528.92	8,067.32	89.86	119.90	7.97	491.43	4,370.48	1,057.95	985.01	72.94	14.504		
13,150.00	9,123.06	11,582.32	8,068.42	90.82	121.50	7.74	495.94	4,423.68	1,056.35	982.87	73.48	14.375		
13,200.00	9,123.06	11,635.87	8,069.71	91.77	123.11	7.51	500.47	4,477.02	1,054.60	980.58	74.03	14.246		
13,250.00	9,123.06	11,689.51	8,071.19	92.73	124.72	7.28	505.07	4,530.44	1,052.69	978.12	74.57	14.117		
13,300.00	9,123.06	11,748.65	8,073.16	93.68	126.49	7.02	510.24	4,589.32	1,050.50	975.35	75.15	13.979		
13,350.00	9,123.06	11,808.78	8,075.74	94.64	128.30	6.75	515.61	4,649.15	1,047.84	972.10	75.73	13.836		
13,400.00	9,123.06	11,843.31	8,076.97	95.60	129.34	6.59	518.74	4,693.52	1,045.47	969.34	76.13	13.733		
13,450.00	9,123.06	11,883.18	8,078.09	96.56	130.54	6.40	522.41	4,723.20	1,043.55	966.99	76.56	13.631		
13,500.00	9,123.06	11,928.02	8,079.01	97.53	131.89	6.18	526.59	4,767.84	1,042.02	965.00	77.02	13.530		
13,550.00	9,123.06	11,973.38	8,079.74	98.49	133.26	5.95	530.88	4,812.99	1,040.72	963.24	77.48	13.432		
13,600.00	9,123.06	12,028.17	8,080.58	99.46	134.91	5.67	536.23	4,867.51	1,039.47	961.46	78.01	13.326		
13,650.00	9,123.06	12,086.80	8,081.85	100.42	136.68	5.35	542.30	4,925.81	1,037.90	959.35	78.54	13.214		
13,700.00	9,123.06	12,155.49	8,084.28	101.39	138.75	4.95	549.75	4,994.06	1,035.65	956.51	79.14	13.087		
13,750.00	9,123.06	12,220.78	8,087.66	102.36	140.71	4.58	557.21	5,058.83	1,032.58	952.88	79.70	12.956		
13,800.00	9,123.06	12,284.88	8,091.86	103.33	142.64	4.15	565.11	5,122.30	1,028.83	948.59	80.24	12.822		
13,850.00	9,123.06	12,330.10	8,094.90	104.30	143.99	3.85	570.73	5,167.07	1,025.00	944.29	80.70	12.701		
13,900.00	9,123.06	12,345.00	8,095.92	105.27	144.44	3.75	572.60	5,181.81	1,021.76	940.74	81.02	12.612		
13,943.54	9,123.06	12,345.00	8,095.92	106.12	144.44	3.75	572.60	5,181.81	1,020.83	939.64	81.19	12.574		
13,950.00	9,123.06	12,345.00	8,095.92	106.24	144.44	3.75	572.60	5,181.81	1,020.85	939.64	81.21	12.571		
14,000.00	9,123.06	12,345.00	8,095.92	107.21	144.44	3.75	572.60	5,181.81	1,022.39	941.05	81.34	12.569		
14,047.55	9,123.06	12,345.00	8,095.92	108.14	144.44	3.75	572.60	5,181.81	1,026.11	944.70	81.42	12.603		

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2		Offset Site Error: 5.00 ft	
Survey Program: 0-MWD+IFR1													Offset Well Error: 0.50 ft			
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
							+N/-S (ft)	+E/-W (ft)								
0.00	0.00	3.00	-3.00	0.50	0.50	-90.00	0.00	-30.00	30.00							
50.00	50.00	47.00	47.00	0.50	0.50	-90.00	0.00	-30.00	30.00	28.99	1.01	29.836				
100.00	100.00	103.00	97.00	0.52	0.52	-90.00	0.00	-30.00	30.00	28.96	1.04	28.931				
150.00	150.00	147.00	147.00	0.59	0.58	-90.00	0.00	-30.00	30.00	28.83	1.17	25.601				
200.00	200.00	203.00	197.00	0.70	0.71	-90.00	0.00	-30.00	30.00	28.59	1.41	21.310				
250.00	250.00	247.00	247.00	0.83	0.83	-90.00	0.00	-30.00	30.00	28.34	1.66	18.048				
300.00	300.00	303.00	297.00	0.98	1.00	-90.00	0.00	-30.00	30.00	28.02	1.98	15.159				
350.00	350.00	347.00	347.00	1.14	1.14	-90.00	0.00	-30.00	30.00	27.72	2.28	13.180				
400.00	400.00	403.00	397.00	1.30	1.32	-90.00	0.00	-30.00	30.00	27.38	2.62	11.438				
450.00	450.00	447.00	447.00	1.47	1.47	-90.00	0.00	-30.00	30.00	27.06	2.94	10.214				
500.00	500.00	503.00	497.00	1.64	1.66	-90.00	0.00	-30.00	30.00	26.70	3.30	9.099				
550.00	550.00	547.00	547.00	1.81	1.81	-90.00	0.00	-30.00	30.00	26.38	3.62	8.288				
600.00	600.00	603.00	597.00	1.98	2.00	-90.00	0.00	-30.00	30.00	26.01	3.99	7.526				
650.00	650.00	647.00	647.00	2.16	2.15	-90.00	0.00	-30.00	30.00	25.69	4.31	6.956				
700.00	700.00	703.00	697.00	2.33	2.35	-90.00	0.00	-30.00	30.00	25.32	4.68	6.405				
750.00	750.00	747.00	747.00	2.51	2.50	-90.00	0.00	-30.00	30.00	24.99	5.01	5.984				
800.00	800.00	803.00	797.00	2.68	2.70	-90.00	0.00	-30.00	30.00	24.61	5.39	5.570				
850.00	850.00	847.00	847.00	2.86	2.86	-90.00	0.00	-30.00	30.00	24.28	5.72	5.247				
900.00	900.00	903.00	897.00	3.04	3.05	-90.00	0.00	-30.00	30.00	23.91	6.09	4.924	Alert			
950.00	950.00	947.00	947.00	3.21	3.21	-90.00	0.00	-30.00	30.00	23.58	6.42	4.670	Alert			
1,000.00	1,000.00	1,003.00	997.00	3.39	3.41	-90.00	0.00	-30.00	30.00	23.20	6.80	4.412	Alert			
1,050.00	1,050.00	1,047.00	1,047.00	3.57	3.56	-90.00	0.00	-30.00	30.00	22.87	7.13	4.205	Alert			
1,100.00	1,100.00	1,103.00	1,097.00	3.75	3.76	-90.00	0.00	-30.00	30.00	22.49	7.51	3.995	Alert			
1,150.00	1,150.00	1,147.00	1,147.00	3.92	3.92	-90.00	0.00	-30.00	30.00	22.16	7.84	3.824	Alert			
1,200.00	1,200.00	1,203.00	1,197.00	4.10	4.12	-90.00	0.00	-30.00	30.00	21.78	8.22	3.649	Alert			
1,250.00	1,250.00	1,247.00	1,247.00	4.28	4.28	-90.00	0.00	-30.00	30.00	21.44	8.56	3.506	Alert			
1,300.00	1,300.00	1,303.00	1,297.00	4.46	4.48	-90.00	0.00	-30.00	30.00	21.07	8.93	3.358	Alert			
1,350.00	1,350.00	1,347.00	1,347.00	4.64	4.63	-90.00	0.00	-30.00	30.00	20.73	9.27	3.237	Alert			
1,400.00	1,400.00	1,403.00	1,397.00	4.81	4.83	-90.00	0.00	-30.00	30.00	20.35	9.65	3.110	Alert			
1,450.00	1,450.00	1,447.00	1,447.00	4.99	4.99	-90.00	0.00	-30.00	30.00	20.02	9.98	3.006	Alert			
1,500.00	1,500.00	1,503.00	1,497.00	5.17	5.19	-90.00	0.00	-30.00	30.00	19.64	10.36	2.896	Alert			
1,550.00	1,550.00	1,547.00	1,547.00	5.35	5.35	-90.00	0.00	-30.00	30.00	19.31	10.69	2.805	Alert			
1,600.00	1,600.00	1,603.00	1,597.00	5.53	5.55	-90.00	0.00	-30.00	30.00	18.93	11.07	2.709	Alert			
1,650.00	1,650.00	1,647.00	1,647.00	5.71	5.70	-90.00	0.00	-30.00	30.00	18.59	11.41	2.630	Alert			
1,700.00	1,700.00	1,703.00	1,697.00	5.89	5.90	-90.00	0.00	-30.00	30.00	18.21	11.79	2.545	Alert			
1,750.00	1,750.00	1,747.00	1,747.00	6.06	6.06	-90.00	0.00	-30.00	30.00	17.88	12.12	2.475	Minor Risk			
1,800.00	1,800.00	1,803.00	1,797.00	6.24	6.26	-90.00	0.00	-30.00	30.00	17.50	12.50	2.400	Minor Risk			
1,850.00	1,850.00	1,847.00	1,847.00	6.42	6.42	-90.00	0.00	-30.00	30.00	17.16	12.84	2.337	Minor Risk			
1,900.00	1,900.00	1,903.00	1,897.00	6.60	6.62	-90.00	0.00	-30.00	30.00	16.78	13.22	2.270	Minor Risk			
1,950.00	1,950.00	1,947.00	1,947.00	6.78	6.77	-90.00	0.00	-30.00	30.00	16.45	13.55	2.214	Minor Risk			
2,000.00	2,000.00	2,003.00	1,997.00	6.96	6.97	-90.00	0.00	-30.00	30.00	16.07	13.93	2.153	Minor Risk			
2,050.00	2,050.00	2,047.00	2,047.00	7.14	7.13	-90.00	0.00	-30.00	30.00	15.73	14.27	2.103	Minor Risk			
2,100.00	2,100.00	2,103.00	2,097.00	7.32	7.33	-90.00	0.00	-30.00	30.00	15.35	14.65	2.048	Minor Risk			
2,150.00	2,150.00	2,147.00	2,147.00	7.49	7.49	-90.00	0.00	-30.00	30.00	15.02	14.98	2.002	Minor Risk			
2,200.00	2,200.00	2,203.00	2,197.00	7.67	7.69	-90.00	0.00	-30.00	30.00	14.64	15.36	1.953	Minor Risk			
2,250.00	2,250.00	2,247.00	2,247.00	7.85	7.85	-90.00	0.00	-30.00	30.00	14.30	15.70	1.911	Minor Risk			
2,300.00	2,300.00	2,303.00	2,297.00	8.03	8.05	-90.00	0.00	-30.00	30.00	13.92	16.08	1.868	Minor Risk			
2,350.00	2,350.00	2,347.00	2,347.00	8.21	8.20	-90.00	0.00	-30.00	30.00	13.59	16.41	1.828	Minor Risk			
2,400.00	2,400.00	2,403.00	2,397.00	8.39	8.41	-90.00	0.00	-30.00	30.00	13.21	16.79	1.786	Minor Risk			
2,450.00	2,450.00	2,447.00	2,447.00	8.57	8.56	-90.00	0.00	-30.00	30.00	12.87	17.13	1.751	Minor Risk			
2,500.00	2,500.00	2,503.00	2,497.00	8.75	8.76	-90.00	0.00	-30.00	30.00	12.49	17.51	1.713	Minor Risk			
2,550.00	2,550.00	2,547.00	2,547.00	8.93	8.92	-90.00	0.00	-30.00	30.00	12.15	17.85	1.681	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
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2													Offset Site Error: 5.00 ft
Survey Program: O-MWD+IFR1													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	2,600.00	2,603.00	2,597.00	9.10	9.12	-90.00	0.00	-30.00	30.00	11.78	18.22	1.646 Minor Risk	
2,650.00	2,650.00	2,647.00	2,647.00	9.28	9.28	-90.00	0.00	-30.00	30.00	11.44	18.56	1.616 Minor Risk	
2,700.00	2,700.00	2,703.00	2,697.00	9.46	9.48	-90.00	0.00	-30.00	30.00	11.06	18.94	1.584 Minor Risk, CC	
2,700.02	2,700.02	2,702.98	2,697.02	9.46	9.48	-90.00	0.00	-30.00	30.00	11.06	18.94	1.584 Minor Risk	
2,750.00	2,750.00	2,747.00	2,747.00	9.64	9.64	-110.04	0.00	-30.00	30.01	10.73	19.28	1.557 Minor Risk	
2,800.00	2,800.00	2,803.00	2,797.00	9.82	9.84	-110.66	0.00	-30.00	30.13	10.47	19.66	1.533 Minor Risk	
2,850.00	2,849.99	2,846.99	2,846.99	10.00	9.99	-112.04	0.00	-30.00	30.41	10.42	19.99	1.521 Minor Risk, ES	
2,900.00	2,899.98	2,903.02	2,896.98	10.18	10.19	-114.14	0.00	-30.00	30.89	10.52	20.37	1.517 Minor Risk, SF	
2,950.00	2,949.95	2,946.95	2,946.95	10.36	10.35	-116.87	0.00	-30.00	31.81	10.90	20.71	1.526 Minor Risk	
3,000.00	2,999.91	3,003.09	2,996.91	10.53	10.55	-120.14	0.00	-30.00	32.61	11.52	21.09	1.547 Minor Risk	
3,050.00	3,049.84	3,046.84	3,046.84	10.71	10.71	-123.82	0.00	-30.00	33.95	12.53	21.42	1.585 Minor Risk	
3,100.00	3,099.75	3,103.25	3,096.75	10.89	10.91	-127.76	0.00	-30.00	35.69	13.89	21.80	1.637 Minor Risk	
3,150.00	3,149.64	3,146.64	3,146.64	11.07	11.07	-131.81	0.00	-30.00	37.87	15.74	22.13	1.711 Minor Risk	
3,200.00	3,199.49	3,203.51	3,196.49	11.25	11.27	-135.83	0.00	-30.00	40.53	18.02	22.51	1.800 Minor Risk	
3,250.00	3,249.31	3,246.31	3,246.31	11.43	11.42	-139.70	0.00	-30.00	43.68	20.84	22.85	1.912 Minor Risk	
3,300.00	3,299.12	3,303.88	3,296.12	11.60	11.63	-143.13	0.00	-30.00	47.10	23.87	23.23	2.027 Minor Risk	
3,350.00	3,348.93	3,345.93	3,345.93	11.78	11.78	-146.08	0.00	-30.00	50.66	27.10	23.56	2.150 Minor Risk	
3,400.00	3,398.74	3,395.74	3,395.74	11.96	11.96	-148.65	0.00	-30.00	54.33	30.42	23.91	2.272 Minor Risk	
3,450.00	3,448.55	3,445.04	3,445.03	12.14	12.13	-150.96	-0.20	-30.09	58.30	34.04	24.26	2.403 Minor Risk	
3,500.00	3,498.36	3,494.19	3,494.18	12.32	12.30	-153.17	-0.89	-30.37	62.84	38.24	24.60	2.554 Alert	
3,550.00	3,548.17	3,543.22	3,543.20	12.50	12.46	-155.24	-2.07	-30.86	67.95	43.02	24.93	2.725 Alert	
3,600.00	3,597.98	3,592.13	3,592.08	12.67	12.61	-157.17	-3.72	-31.55	73.64	48.38	25.26	2.915 Alert	
3,650.00	3,647.79	3,640.91	3,640.80	12.85	12.77	-158.93	-5.84	-32.43	79.91	54.32	25.59	3.123 Alert	
3,700.00	3,697.60	3,689.93	3,689.74	13.03	12.93	-160.54	-8.42	-33.50	86.70	60.78	25.92	3.345 Alert	
3,750.00	3,747.41	3,739.40	3,739.12	13.21	13.09	-161.95	-11.09	-34.61	93.62	67.37	26.25	3.566 Alert	
3,800.00	3,797.22	3,788.87	3,788.51	13.39	13.26	-163.16	-13.76	-35.72	100.59	74.00	26.59	3.783 Alert	
3,850.00	3,847.03	3,838.34	3,837.89	13.57	13.42	-164.21	-16.43	-36.83	107.61	80.67	26.93	3.995 Alert	
3,900.00	3,896.84	3,887.81	3,887.28	13.75	13.58	-165.13	-19.11	-37.95	114.65	87.37	27.27	4.204 Alert	
3,950.00	3,946.64	3,937.28	3,936.66	13.93	13.75	-165.95	-21.78	-39.06	121.72	94.10	27.62	4.408 Alert	
4,000.00	3,996.45	3,986.75	3,986.05	14.11	13.91	-166.68	-24.45	-40.17	128.81	100.85	27.96	4.607 Alert	
4,050.00	4,046.26	4,036.22	4,035.43	14.29	14.07	-167.33	-27.13	-41.28	135.92	107.62	28.30	4.803 Alert	
4,100.00	4,096.07	4,085.69	4,084.82	14.46	14.24	-167.91	-29.80	-42.39	143.04	114.40	28.64	4.994 Alert	
4,150.00	4,145.88	4,135.15	4,134.20	14.64	14.40	-168.44	-32.47	-43.50	150.18	121.19	28.98	5.181	
4,200.00	4,195.69	4,184.62	4,183.59	14.82	14.57	-168.93	-35.14	-44.61	157.33	128.00	29.33	5.364	
4,250.00	4,245.50	4,234.09	4,232.97	15.00	14.73	-169.37	-37.82	-45.73	164.49	134.81	29.67	5.544	
4,300.00	4,295.31	4,283.56	4,282.36	15.18	14.90	-169.77	-40.49	-46.84	171.65	141.64	30.02	5.719	
4,350.00	4,345.12	4,333.03	4,331.74	15.36	15.06	-170.14	-43.16	-47.95	178.83	148.47	30.36	5.890	
4,400.00	4,394.93	4,382.50	4,381.13	15.54	15.23	-170.49	-45.83	-49.06	186.01	155.31	30.70	6.058	
4,450.00	4,444.74	4,431.97	4,430.51	15.72	15.40	-170.80	-48.51	-50.17	193.20	162.15	31.05	6.222	
4,500.00	4,494.55	4,481.44	4,479.90	15.90	15.56	-171.10	-51.18	-51.28	200.39	169.00	31.39	6.383	
4,550.00	4,544.36	4,530.91	4,529.28	16.08	15.73	-171.37	-53.85	-52.39	207.59	175.85	31.74	6.540	
4,600.00	4,594.17	4,580.38	4,578.67	16.26	15.90	-171.63	-56.52	-53.51	214.79	182.71	32.09	6.694	
4,650.00	4,643.98	4,629.85	4,628.05	16.44	16.07	-171.87	-59.20	-54.62	222.00	189.57	32.43	6.845	
4,700.00	4,693.79	4,679.32	4,677.44	16.62	16.23	-172.09	-61.87	-55.73	229.21	196.43	32.78	6.993	
4,750.00	4,743.60	4,728.79	4,726.82	16.80	16.40	-172.30	-64.54	-56.84	236.42	203.30	33.13	7.137	
4,800.00	4,793.41	4,778.26	4,776.21	16.98	16.57	-172.50	-67.21	-57.95	243.64	210.17	33.47	7.279	
4,850.00	4,843.22	4,827.73	4,825.59	17.16	16.74	-172.69	-69.89	-59.06	250.86	217.04	33.82	7.418	
4,900.00	4,893.03	4,877.20	4,874.98	17.34	16.91	-172.86	-72.56	-60.17	258.08	223.91	34.17	7.553	
4,950.00	4,942.84	4,926.67	4,924.36	17.52	17.08	-173.03	-75.23	-61.29	265.31	230.79	34.52	7.687	
5,000.00	4,992.65	4,976.14	4,973.75	17.70	17.25	-173.19	-77.90	-62.40	272.53	237.67	34.86	7.817	
5,050.00	5,042.46	5,025.61	5,023.13	17.88	17.42	-173.34	-80.58	-63.51	279.76	244.55	35.21	7.945	
5,100.00	5,092.27	5,075.08	5,072.52	18.06	17.59	-173.48	-83.25	-64.62	286.99	251.43	35.56	8.071	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2														Offset Site Error:	5.00 ft
Survey Program: O-MWD+IFR1														Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	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)										
5,150.00	5,142.08	5,124.55	5,121.90	18.24	17.76	-173.61	-85.92	-65.73	-85.92	-65.73	294.22	258.31	35.91	8.194	
5,200.00	5,191.89	5,174.02	5,171.29	18.42	17.93	-173.74	-88.60	-66.84	-88.60	-66.84	301.45	265.20	36.26	8.314	
5,250.00	5,241.70	5,223.49	5,220.67	18.60	18.10	-173.87	-91.27	-67.95	-91.27	-67.95	308.69	272.08	36.61	8.433	
5,300.00	5,291.51	5,272.96	5,270.06	18.78	18.27	-173.98	-93.94	-69.07	-93.94	-69.07	315.92	278.97	36.96	8.549	
5,350.00	5,341.32	5,322.43	5,319.44	18.96	18.44	-174.09	-96.61	-70.18	-96.61	-70.18	323.16	285.85	37.31	8.663	
5,400.00	5,391.13	5,371.90	5,368.83	19.14	18.61	-174.20	-99.29	-71.29	-99.29	-71.29	330.40	292.74	37.65	8.774	
5,450.00	5,440.94	5,421.37	5,418.21	19.32	18.78	-174.30	-101.96	-72.40	-101.96	-72.40	337.64	299.63	38.00	8.884	
5,500.00	5,490.75	5,470.84	5,467.59	19.50	18.95	-174.40	-104.63	-73.51	-104.63	-73.51	344.88	306.52	38.35	8.992	
5,550.00	5,540.56	5,520.31	5,516.98	19.68	19.12	-174.50	-107.30	-74.62	-107.30	-74.62	352.12	313.41	38.70	9.098	
5,600.00	5,590.37	5,569.78	5,566.36	19.86	19.29	-174.59	-109.98	-75.73	-109.98	-75.73	359.36	320.30	39.05	9.201	
5,650.00	5,640.18	5,619.25	5,615.75	20.04	19.47	-174.67	-112.65	-76.85	-112.65	-76.85	366.60	327.20	39.41	9.303	
5,700.00	5,689.99	5,668.71	5,665.13	20.22	19.64	-174.76	-115.32	-77.96	-115.32	-77.96	373.84	334.09	39.78	9.403	
5,750.00	5,739.80	5,718.18	5,714.52	20.41	19.81	-174.84	-117.99	-79.07	-117.99	-79.07	381.09	340.98	40.11	9.502	
5,800.00	5,789.61	5,767.65	5,763.90	20.59	19.98	-174.91	-120.67	-80.18	-120.67	-80.18	388.33	347.88	40.46	9.598	
5,850.00	5,839.41	5,817.12	5,813.29	20.77	20.15	-174.99	-123.34	-81.29	-123.34	-81.29	395.58	354.77	40.81	9.693	
5,900.00	5,889.22	5,866.59	5,862.87	20.95	20.33	-175.06	-126.01	-82.40	-126.01	-82.40	402.83	361.67	41.16	9.787	
5,950.00	5,939.03	5,916.06	5,912.06	21.13	20.50	-175.13	-128.68	-83.51	-128.68	-83.51	410.07	368.56	41.51	9.879	
6,000.00	5,988.84	5,965.53	5,961.44	21.31	20.67	-175.19	-131.36	-84.63	-131.36	-84.63	417.32	375.46	41.86	9.969	
6,050.00	6,038.65	6,015.00	6,010.83	21.49	20.85	-175.26	-134.03	-85.74	-134.03	-85.74	424.57	382.35	42.21	10.057	
6,100.00	6,088.46	6,064.47	6,060.21	21.67	21.02	-175.32	-136.70	-86.85	-136.70	-86.85	431.82	389.25	42.57	10.145	
6,150.00	6,138.27	6,113.94	6,109.60	21.85	21.19	-175.38	-139.37	-87.96	-139.37	-87.96	439.06	396.15	42.92	10.230	
6,200.00	6,188.08	6,163.41	6,158.98	22.03	21.36	-175.44	-142.05	-89.07	-142.05	-89.07	446.31	403.04	43.27	10.315	
6,250.00	6,237.89	6,212.88	6,208.37	22.21	21.54	-175.50	-144.72	-90.18	-144.72	-90.18	453.56	409.94	43.62	10.398	
6,300.00	6,287.70	6,262.35	6,257.75	22.39	21.71	-175.55	-147.39	-91.29	-147.39	-91.29	460.81	416.84	43.97	10.479	
6,350.00	6,337.51	6,311.82	6,307.14	22.57	21.88	-175.60	-150.07	-92.40	-150.07	-92.40	468.06	423.74	44.33	10.559	
6,400.00	6,387.32	6,361.29	6,356.52	22.75	22.06	-175.65	-152.74	-93.52	-152.74	-93.52	475.32	430.64	44.68	10.638	
6,450.00	6,437.13	6,410.78	6,405.91	22.93	22.23	-175.70	-155.41	-94.63	-155.41	-94.63	482.57	437.53	45.03	10.716	
6,500.00	6,486.94	6,460.23	6,455.29	23.11	22.41	-175.75	-158.08	-95.74	-158.08	-95.74	489.82	444.43	45.38	10.793	
6,550.00	6,536.75	6,509.70	6,504.68	23.30	22.58	-175.80	-160.76	-96.85	-160.76	-96.85	497.07	451.33	45.74	10.868	
6,600.00	6,586.56	6,559.17	6,554.06	23.48	22.75	-175.84	-163.43	-97.96	-163.43	-97.96	504.32	458.23	46.09	10.942	
6,650.00	6,636.37	6,608.64	6,603.45	23.66	22.93	-175.89	-166.10	-99.07	-166.10	-99.07	511.58	465.13	46.44	11.015	
6,700.00	6,686.18	6,658.11	6,652.83	23.84	23.10	-175.93	-168.77	-100.18	-168.77	-100.18	518.83	472.03	46.80	11.087	
6,750.00	6,735.99	6,707.58	6,702.22	24.02	23.28	-175.97	-171.45	-101.30	-171.45	-101.30	526.08	478.93	47.15	11.158	
6,800.00	6,785.80	6,757.05	6,751.60	24.20	23.45	-176.01	-174.12	-102.41	-174.12	-102.41	533.33	485.83	47.50	11.227	
6,850.00	6,835.61	6,806.52	6,800.99	24.38	23.62	-176.05	-176.79	-103.52	-176.79	-103.52	540.59	492.73	47.86	11.296	
6,900.00	6,885.42	6,855.99	6,850.37	24.56	23.80	-176.09	-179.46	-104.63	-179.46	-104.63	547.84	499.63	48.21	11.364	
6,950.00	6,935.23	6,905.46	6,899.76	24.74	23.97	-176.13	-182.14	-105.74	-182.14	-105.74	555.10	506.53	48.56	11.430	
7,000.00	6,985.04	6,954.93	6,949.14	24.92	24.15	-176.17	-184.81	-106.85	-184.81	-106.85	562.35	513.43	48.92	11.496	
7,050.00	7,034.85	7,004.40	6,998.53	25.10	24.32	-176.20	-187.48	-107.96	-187.48	-107.96	569.61	520.33	49.27	11.561	
7,100.00	7,084.66	7,053.87	7,047.91	25.28	24.50	-176.24	-190.15	-109.08	-190.15	-109.08	576.86	527.24	49.62	11.624	
7,150.00	7,134.47	7,103.34	7,097.30	25.47	24.67	-176.27	-192.83	-110.19	-192.83	-110.19	584.12	534.14	49.98	11.687	
7,200.00	7,184.28	7,152.81	7,146.68	25.65	24.85	-176.30	-195.50	-111.30	-195.50	-111.30	591.37	541.04	50.33	11.749	
7,250.00	7,234.09	7,202.28	7,196.07	25.83	25.02	-176.34	-198.17	-112.41	-198.17	-112.41	598.63	547.94	50.69	11.810	
7,300.00	7,283.90	7,251.74	7,245.45	26.01	25.20	-176.37	-200.84	-113.52	-200.84	-113.52	605.88	554.84	51.04	11.871	
7,350.00	7,333.71	7,301.21	7,294.84	26.19	25.37	-176.40	-203.52	-114.63	-203.52	-114.63	613.14	561.74	51.39	11.930	
7,400.00	7,383.52	7,350.68	7,344.22	26.37	25.55	-176.43	-206.19	-115.74	-206.19	-115.74	620.39	568.64	51.75	11.988	
7,450.00	7,433.33	7,400.15	7,393.61	26.55	25.72	-176.46	-208.86	-116.86	-208.86	-116.86	627.65	575.55	52.10	12.046	
7,500.00	7,483.14	7,449.62	7,442.99	26.73	25.90	-176.49	-211.54	-117.97	-211.54	-117.97	634.91	582.45	52.46	12.103	
7,550.00	7,532.95	7,500.91	7,493.38	26.91	26.08	-176.51	-214.21	-119.08	-214.21	-119.08	642.16	589.34	52.82	12.158	
7,600.00	7,582.76	7,548.56	7,541.76	27.09	26.25	-176.54	-216.88	-120.19	-216.88	-120.19	649.42	596.25	53.17	12.215	
7,650.00	7,632.57	7,601.97	7,591.15	27.28	26.44	-176.57	-219.55	-121.30	-219.55	-121.30	656.67	603.14	53.54	12.266	
7,700.00	7,682.38	7,647.50	7,640.53	27.46	26.60	-176.59	-222.23	-122.41	-222.23	-122.41	663.93	610.06	53.88	12.323	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2													Offset Site Error: 5.00 ft
Survey Program: 0-MWD+JFR1													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,750.00	7,732.18	7,703.03	7,689.92	27.64	26.80	-176.62	-224.90	-123.52	671.19	616.94	54.25	12.372	
7,800.00	7,781.99	7,746.44	7,739.30	27.82	26.95	-176.64	-227.57	-124.64	678.45	623.86	54.59	12.429	
7,850.00	7,831.80	7,795.91	7,788.69	28.00	27.13	-176.67	-230.24	-125.75	685.70	630.76	54.94	12.481	
7,900.00	7,881.61	7,845.38	7,838.07	28.18	27.30	-176.69	-232.92	-126.86	692.96	637.66	55.30	12.532	
7,950.00	7,931.42	7,899.67	7,892.28	28.36	27.50	-176.72	-235.77	-128.04	700.14	644.46	55.69	12.573	
8,000.00	7,981.23	7,960.43	7,952.98	28.54	27.71	-176.75	-238.22	-129.06	706.67	650.55	56.12	12.592	
8,050.00	8,031.04	8,021.43	8,013.95	28.72	27.93	-176.77	-239.78	-129.71	712.40	655.86	56.54	12.599	
8,100.00	8,080.85	8,082.65	8,075.16	28.91	28.14	-176.80	-240.45	-129.99	717.34	660.38	56.95	12.595	
8,150.00	8,130.67	8,135.15	8,127.67	29.09	28.32	-176.82	-240.47	-130.00	721.68	664.36	57.32	12.590	
8,200.00	8,180.52	8,185.00	8,177.52	29.27	28.49	-176.84	-240.47	-130.00	725.51	667.84	57.67	12.580	
8,250.00	8,230.42	8,234.90	8,227.42	29.45	28.67	-176.85	-240.47	-130.00	728.69	670.66	58.03	12.558	
8,300.00	8,280.35	8,284.84	8,277.35	29.63	28.84	-176.87	-240.47	-130.00	731.21	672.84	58.38	12.526	
8,350.00	8,330.32	8,334.80	8,327.32	29.81	29.01	-176.88	-240.47	-130.00	733.09	674.36	58.73	12.482	
8,400.00	8,380.30	8,384.79	8,377.30	29.99	29.18	-176.88	-240.47	-130.00	734.31	675.22	59.08	12.429	
8,450.00	8,430.30	8,434.78	8,427.30	30.16	29.36	-176.89	-240.47	-130.00	734.87	675.44	59.43	12.365	
8,500.00	8,480.28	8,525.72	8,517.92	30.34	29.67	-177.36	-240.59	-123.61	734.54	674.66	59.88	12.266	
8,500.27	8,480.55	8,526.23	8,518.42	30.34	29.67	-177.36	-240.59	-123.54	734.54	674.65	59.89	12.266	
8,550.00	8,530.02	8,617.51	8,607.21	30.52	29.97	-178.90	-240.97	-102.75	735.32	675.12	60.20	12.215	
8,600.00	8,579.14	8,701.79	8,685.30	30.71	30.23	-178.78	-241.55	-71.27	738.11	677.68	60.45	12.211	
8,650.00	8,627.27	8,776.79	8,750.26	30.89	30.46	-176.03	-242.24	-33.90	743.71	683.00	60.72	12.249	
8,700.00	8,674.24	8,843.09	8,803.19	31.07	30.65	-164.88	-242.98	5.96	752.23	691.17	61.06	12.319	
8,750.00	8,720.43	8,904.38	8,847.72	31.25	30.84	-151.06	-243.75	48.02	761.58	700.11	61.47	12.390	
8,800.00	8,765.56	8,961.68	8,885.08	31.44	31.03	-139.67	-244.56	91.43	771.52	709.60	61.92	12.460	
8,850.00	8,809.28	9,015.64	8,916.12	31.62	31.21	-130.28	-245.37	135.53	781.99	719.59	62.41	12.530	
8,900.00	8,851.27	9,066.77	8,941.59	31.80	31.41	-122.42	-246.19	179.83	792.89	729.98	62.90	12.605	
8,950.00	8,891.20	9,115.51	8,962.11	31.98	31.61	-115.74	-247.00	224.03	804.06	740.68	63.39	12.685	
9,000.00	8,928.77	9,162.21	8,978.17	32.16	31.81	-109.97	-247.81	267.86	815.38	751.53	63.86	12.769	
9,050.00	8,963.68	9,207.17	8,990.21	32.35	32.03	-104.94	-248.61	311.16	826.69	762.40	64.30	12.858	
9,100.00	8,995.69	9,250.62	8,998.59	32.53	32.25	-100.52	-249.40	353.77	837.83	773.13	64.70	12.948	
9,150.00	9,024.54	9,292.75	9,003.60	32.73	32.48	-96.61	-250.17	395.58	848.65	783.56	65.09	13.039	
9,200.00	9,050.01	9,333.94	9,005.54	32.94	32.72	-93.14	-250.93	436.71	859.01	793.57	65.45	13.126	
9,250.00	9,071.92	9,378.44	9,006.27	33.15	33.00	-90.08	-251.75	481.20	868.65	802.81	65.83	13.194	
9,300.00	9,090.08	9,424.75	9,007.04	33.39	33.31	-87.54	-252.60	527.49	877.18	810.91	66.27	13.237	
9,350.00	9,104.37	9,472.52	9,007.83	33.64	33.65	-85.56	-253.48	575.25	884.32	817.56	66.76	13.246	
9,400.00	9,114.68	9,521.38	9,008.64	33.90	34.03	-84.13	-254.39	624.10	889.84	822.52	67.31	13.219	
9,450.00	9,120.93	9,570.97	9,009.47	34.18	34.44	-83.27	-255.30	673.68	893.59	825.64	67.95	13.151	
9,500.00	9,123.06	9,620.91	9,010.29	34.47	34.87	-82.96	-256.22	723.60	895.46	826.81	68.65	13.044	
9,550.00	9,123.06	9,670.90	9,011.12	34.79	35.34	-83.02	-257.14	773.57	896.36	826.92	69.43	12.910	
9,600.00	9,123.06	9,720.88	9,011.95	35.11	35.82	-83.08	-258.07	823.53	897.25	827.01	70.24	12.775	
9,650.00	9,123.06	9,770.86	9,012.78	35.49	36.33	-83.14	-258.99	873.50	898.14	827.03	71.12	12.629	
9,700.00	9,123.06	9,820.84	9,013.61	35.86	36.86	-83.20	-259.91	923.47	899.04	827.02	72.02	12.484	
9,750.00	9,123.06	9,870.83	9,014.44	36.28	37.41	-83.26	-260.83	973.44	899.94	826.95	72.99	12.330	
9,800.00	9,123.06	9,920.81	9,015.27	36.71	37.97	-83.32	-261.75	1,023.41	900.83	826.85	73.98	12.177	
9,850.00	9,123.06	9,970.79	9,016.09	37.18	38.56	-83.38	-262.68	1,073.37	901.73	826.69	75.04	12.017	
9,900.00	9,123.06	10,020.78	9,016.92	37.65	39.17	-83.44	-263.60	1,123.34	902.63	826.52	76.11	11.859	
9,950.00	9,123.06	10,070.76	9,017.75	38.16	39.79	-83.50	-264.52	1,173.31	903.53	826.28	77.25	11.696	
10,000.00	9,123.06	10,120.74	9,018.58	38.67	40.43	-83.56	-265.44	1,223.28	904.43	826.03	78.40	11.536	
10,050.00	9,123.06	10,170.73	9,019.41	39.22	41.09	-83.62	-266.36	1,273.24	905.34	825.73	79.61	11.373	
10,100.00	9,123.06	10,220.71	9,020.24	39.77	41.76	-83.68	-267.29	1,323.21	906.24	825.41	80.83	11.212	
10,150.00	9,123.06	10,270.69	9,021.07	40.36	42.44	-83.73	-268.21	1,373.18	907.14	825.04	82.10	11.049	
10,200.00	9,123.06	10,320.68	9,021.90	40.95	43.14	-83.79	-269.13	1,423.15	908.05	824.66	83.39	10.890	
10,250.00	9,123.06	10,370.66	9,022.72	41.57	43.85	-83.85	-270.05	1,473.12	908.95	824.23	84.72	10.729	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2													Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1													Offset Well Error:	0.50 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	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	
10,300.00	9,123.06	10,420.64	9,023.55	42.19	44.57	83.91	-270.97	1,523.08	909.88	823.80	86.06	10.572		
10,350.00	9,123.06	10,470.62	9,024.38	42.84	45.31	83.97	-271.90	1,573.05	910.77	823.32	87.45	10.414		
10,400.00	9,123.06	10,520.61	9,025.21	43.50	46.05	84.03	-272.82	1,623.02	911.68	822.83	88.85	10.281		
10,450.00	9,123.06	10,570.59	9,026.04	44.17	46.81	84.09	-273.74	1,672.99	912.59	822.30	90.29	10.107		
10,500.00	9,123.06	10,620.57	9,026.87	44.85	47.57	84.14	-274.66	1,722.95	913.50	821.76	91.74	9.958		
10,550.00	9,123.06	10,670.56	9,027.70	45.56	48.35	84.20	-275.58	1,772.92	914.41	821.19	93.22	9.809		
10,600.00	9,123.06	10,720.54	9,028.53	46.26	49.13	84.26	-276.51	1,822.89	915.32	820.61	94.71	9.664		
10,650.00	9,123.06	10,770.52	9,029.35	46.99	49.93	84.32	-277.43	1,872.86	916.24	820.00	96.24	9.521		
10,700.00	9,123.06	10,820.51	9,030.18	47.72	50.73	84.38	-278.35	1,922.82	917.15	819.39	97.77	9.381		
10,750.00	9,123.06	10,870.49	9,031.01	48.47	51.54	84.43	-279.27	1,972.79	918.07	818.74	99.33	9.243		
10,800.00	9,123.06	10,920.47	9,031.84	49.22	52.36	84.49	-280.19	2,022.76	918.98	818.09	100.90	9.108		
10,850.00	9,123.06	10,970.46	9,032.67	49.99	53.18	84.55	-281.12	2,072.73	919.90	817.41	102.49	8.975		
10,900.00	9,123.06	11,020.44	9,033.50	50.75	54.01	84.60	-282.04	2,122.70	920.82	816.72	104.10	8.846		
10,950.00	9,123.06	11,070.42	9,034.33	51.54	54.85	84.66	-282.96	2,172.66	921.74	816.02	105.72	8.718		
11,000.00	9,123.06	11,120.41	9,035.16	52.32	55.70	84.72	-283.88	2,222.63	922.66	815.30	107.36	8.594		
11,050.00	9,123.06	11,170.39	9,035.98	53.13	56.55	84.78	-284.80	2,272.60	923.58	814.57	109.01	8.472		
11,100.00	9,123.06	11,220.37	9,036.81	53.93	57.40	84.83	-285.73	2,322.57	924.50	813.83	110.67	8.353		
11,150.00	9,123.06	11,270.35	9,037.64	54.74	58.26	84.89	-286.65	2,372.53	925.43	813.07	112.36	8.237		
11,200.00	9,123.06	11,320.34	9,038.47	55.56	59.13	84.95	-287.57	2,422.50	926.35	812.31	114.04	8.123		
11,250.00	9,123.06	11,370.32	9,039.30	56.39	60.00	85.00	-288.49	2,472.47	927.27	811.53	115.75	8.011		
11,300.00	9,123.06	11,420.30	9,040.13	57.22	60.88	85.06	-289.41	2,522.44	928.20	810.74	117.46	7.902		
11,350.00	9,123.06	11,470.29	9,040.96	58.06	61.76	85.12	-290.34	2,572.41	929.13	809.94	119.19	7.796		
11,400.00	9,123.06	11,520.27	9,041.79	58.90	62.64	85.17	-291.26	2,622.37	930.05	809.14	120.92	7.692		
11,450.00	9,123.06	11,570.25	9,042.61	59.76	63.53	85.23	-292.18	2,672.34	930.98	808.32	122.66	7.590		
11,500.00	9,123.06	11,620.24	9,043.44	60.61	64.43	85.28	-293.10	2,722.31	931.91	807.50	124.42	7.490		
11,550.00	9,123.06	11,670.22	9,044.27	61.47	65.32	85.34	-294.02	2,772.28	932.84	806.66	126.18	7.393		
11,600.00	9,123.06	11,720.21	9,045.15	62.34	66.23	85.40	-294.95	2,822.25	933.77	805.81	127.96	7.297		
11,650.00	9,123.06	11,770.19	9,046.32	63.21	67.14	85.47	-295.88	2,872.21	934.67	804.93	129.75	7.204		
11,700.00	9,123.06	11,820.17	9,047.49	64.08	68.05	85.55	-296.80	2,922.66	935.58	804.04	131.54	7.113		
11,750.00	9,123.06	11,870.16	9,048.65	64.96	68.96	85.63	-297.72	2,972.62	936.49	803.15	133.34	7.023		
11,800.00	9,123.06	11,920.16	9,049.82	65.84	69.87	85.70	-298.64	3,022.57	937.40	802.25	135.15	6.936		
11,850.00	9,123.06	11,970.15	9,050.99	66.73	70.79	85.78	-299.56	3,072.52	938.31	801.35	136.96	6.851		
11,900.00	9,123.06	12,020.15	9,052.16	67.62	71.71	85.85	-300.49	3,122.48	939.22	800.44	138.78	6.768		
11,950.00	9,123.06	12,070.15	9,053.33	68.52	72.64	85.93	-301.41	3,172.43	940.14	799.53	140.61	6.686		
12,000.00	9,123.06	12,120.15	9,054.50	69.42	73.56	86.00	-302.33	3,222.39	941.06	798.61	142.44	6.607		
12,050.00	9,123.06	12,170.15	9,055.67	70.32	74.49	86.08	-303.25	3,272.34	941.97	797.69	144.29	6.529		
12,100.00	9,123.06	12,220.14	9,056.83	71.22	75.42	86.15	-304.17	3,322.29	942.89	796.76	146.13	6.452		
12,150.00	9,123.06	12,270.14	9,058.00	72.13	76.36	86.23	-305.10	3,372.25	943.82	795.83	147.98	6.378		
12,200.00	9,123.06	12,320.13	9,059.17	73.04	77.29	86.30	-306.02	3,422.20	944.74	794.90	149.84	6.305		
12,250.00	9,123.06	12,370.13	9,060.34	73.96	78.23	86.38	-306.94	3,472.16	945.66	793.96	151.70	6.234		
12,300.00	9,123.06	12,420.13	9,061.51	74.88	79.17	86.45	-307.86	3,522.11	946.59	793.02	153.57	6.164		
12,350.00	9,123.06	12,470.13	9,062.68	75.80	80.11	86.53	-308.78	3,572.07	947.52	792.08	155.44	6.096		
12,400.00	9,123.06	12,520.13	9,063.85	76.72	81.06	86.60	-309.70	3,622.02	948.45	791.13	157.32	6.029		
12,450.00	9,123.06	12,570.13	9,065.02	77.64	82.00	86.68	-310.63	3,671.97	949.38	790.18	159.20	5.964		
12,500.00	9,123.06	12,620.13	9,066.18	78.57	82.95	86.75	-311.55	3,721.93	950.31	789.23	161.08	5.900		
12,550.00	9,123.06	12,670.13	9,067.35	79.50	83.90	86.82	-312.47	3,771.88	951.24	788.27	162.97	5.837		
12,600.00	9,123.06	12,720.13	9,068.52	80.43	84.85	86.90	-313.39	3,821.84	952.18	787.31	164.86	5.776		
12,650.00	9,123.06	12,770.13	9,069.69	81.37	85.81	86.97	-314.31	3,871.79	953.12	786.35	166.76	5.715		
12,700.00	9,123.06	12,820.13	9,070.86	82.30	86.76	87.04	-315.23	3,921.74	954.06	785.39	168.66	5.657		
12,750.00	9,123.06	12,870.13	9,072.03	83.24	87.72	87.12	-316.16	3,971.70	955.00	784.43	170.57	5.599		
12,800.00	9,123.06	12,920.13	9,073.20	84.18	88.68	87.19	-317.08	4,021.65	955.94	783.46	172.47	5.542		
12,850.00	9,123.06	12,970.12	9,074.37	85.13	89.63	87.26	-318.00	4,071.61	956.88	782.49	174.39	5.487		

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

Anticollision Report

Company: WCDSC Permian NM
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Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Permit Plan 2		Offset Site Error:	5.00 ft
Survey Program: 0-MWD+IFR1															Offset Well Error:	0.50 ft
Reference				Offset		Semi Major Axis		Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
12,900.00	9,123.06	13,020.10	9,075.53	88.07	90.60	87.34	-318.92	4,121.56	957.83	781.53	176.30	5.433				
12,950.00	9,123.06	13,070.07	9,076.70	87.02	91.56	87.41	-319.84	4,171.51	958.77	780.55	178.22	5.380				
13,000.00	9,123.06	13,120.05	9,077.87	87.96	92.52	87.48	-320.77	4,221.47	959.72	779.58	180.14	5.328				
13,050.00	9,123.06	13,170.03	9,079.04	88.91	93.49	87.55	-321.69	4,271.42	960.67	778.61	182.06	5.277				
13,100.00	9,123.06	13,220.00	9,080.21	89.86	94.45	87.62	-322.61	4,321.38	961.62	777.63	183.99	5.227				
13,150.00	9,123.06	13,269.98	9,081.38	90.82	95.42	87.70	-323.53	4,371.33	962.57	776.65	185.92	5.177				
13,200.00	9,123.06	13,319.95	9,082.55	91.77	96.39	87.77	-324.45	4,421.29	963.53	775.68	187.85	5.129				
13,250.00	9,123.06	13,369.93	9,083.72	92.73	97.36	87.84	-325.37	4,471.24	964.48	774.70	189.78	5.082				
13,300.00	9,123.06	13,419.91	9,084.88	93.68	98.33	87.91	-326.30	4,521.19	965.44	773.72	191.72	5.036				
13,350.00	9,123.06	13,469.88	9,086.05	94.64	99.30	87.98	-327.22	4,571.15	966.40	772.74	193.66	4.990 Alert				
13,400.00	9,123.06	13,519.86	9,087.22	95.60	100.27	88.05	-328.14	4,621.10	967.36	771.76	195.60	4.946 Alert				
13,450.00	9,123.06	13,569.84	9,088.39	96.56	101.25	88.13	-329.06	4,671.06	968.32	770.78	197.54	4.902 Alert				
13,500.00	9,123.06	13,619.81	9,089.56	97.53	102.22	88.20	-329.98	4,721.01	969.28	769.80	199.49	4.859 Alert				
13,550.00	9,123.06	13,669.79	9,090.73	98.49	103.20	88.27	-330.90	4,770.96	970.25	768.81	201.44	4.817 Alert				
13,600.00	9,123.06	13,719.76	9,091.90	99.46	104.18	88.34	-331.83	4,820.92	971.21	767.83	203.39	4.775 Alert				
13,650.00	9,123.06	13,769.74	9,093.06	100.42	105.15	88.41	-332.75	4,870.87	972.18	766.84	205.34	4.735 Alert				
13,700.00	9,123.06	13,819.72	9,094.23	101.39	106.13	88.48	-333.67	4,920.83	973.15	765.86	207.29	4.695 Alert				
13,750.00	9,123.06	13,869.69	9,095.40	102.36	107.11	88.55	-334.59	4,970.78	974.12	764.88	209.25	4.655 Alert				
13,800.00	9,123.06	13,919.67	9,096.57	103.33	108.09	88.62	-335.51	5,020.73	975.09	763.89	211.20	4.617 Alert				
13,850.00	9,123.06	13,969.65	9,097.74	104.30	109.07	88.69	-336.44	5,070.69	976.07	762.91	213.16	4.579 Alert				
13,900.00	9,123.06	14,019.62	9,098.91	105.27	110.06	88.76	-337.36	5,120.64	977.04	761.92	215.12	4.542 Alert				
13,950.00	9,123.06	14,069.60	9,100.08	106.24	111.04	88.83	-338.28	5,170.60	978.02	760.94	217.08	4.505 Alert				
14,000.00	9,123.06	14,119.58	9,101.25	107.21	112.02	88.90	-339.20	5,220.55	979.00	759.95	219.05	4.469 Alert				
14,047.55	9,123.06	14,167.10	9,102.36	108.14	112.96	88.96	-340.08	5,268.06	979.93	759.01	220.91	4.436 Alert				

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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-T19S-R29E - Coral PWU 28-4H - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft
Survey Program: 200-NSG-GYC_Drop, 7387-MWD+IGRF													Offset Well Error: 0.50 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (')	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
6,750.00	6,735.99	11,923.26	7,955.67	24.53	86.53	-119.99	273.48	-631.48	1,468.43	1,399.67	68.76	21.356	
6,800.00	6,785.80	11,929.01	7,955.79	24.71	86.63	-119.58	279.23	-631.55	1,426.60	1,356.42	70.18	20.328	
6,850.00	6,835.61	11,934.58	7,955.90	24.89	86.73	-119.18	284.80	-631.62	1,385.28	1,313.61	71.67	19.327	
6,900.00	6,885.42	11,939.98	7,956.00	25.07	86.83	-118.79	290.20	-631.70	1,344.54	1,271.28	73.25	18.355	
6,950.00	6,935.23	11,945.22	7,956.08	25.24	86.93	-118.42	295.44	-631.78	1,304.42	1,229.50	74.92	17.411	
7,000.00	6,985.04	11,950.31	7,956.16	25.42	87.02	-118.06	300.52	-631.87	1,264.98	1,188.31	76.67	16.498	
7,050.00	7,034.85	11,955.24	7,956.22	25.60	87.11	-117.70	305.46	-631.97	1,226.29	1,147.77	78.52	15.617	
7,100.00	7,084.66	11,960.05	7,956.28	25.77	87.19	-117.36	310.26	-632.06	1,188.43	1,107.97	80.47	14.769	
7,150.00	7,134.47	11,964.89	7,956.35	25.95	87.28	-117.01	315.10	-632.16	1,151.48	1,068.97	82.51	13.956	
7,200.00	7,184.28	11,969.73	7,956.41	26.13	87.37	-116.66	319.94	-632.25	1,115.52	1,030.88	84.65	13.178	
7,250.00	7,234.09	11,974.58	7,956.48	26.31	87.46	-116.31	324.79	-632.34	1,080.66	993.78	86.88	12.438	
7,300.00	7,283.90	11,979.44	7,956.54	26.49	87.54	-115.96	329.65	-632.43	1,047.01	957.80	89.21	11.737	
7,350.00	7,333.71	11,984.31	7,956.61	26.68	87.63	-115.60	334.52	-632.52	1,014.68	923.07	91.61	11.076	
7,400.00	7,383.52	11,989.19	7,956.68	26.84	87.72	-115.25	339.39	-632.61	983.81	889.73	94.08	10.457	
7,450.00	7,433.33	11,994.08	7,956.74	27.02	87.81	-114.90	344.28	-632.69	954.54	857.93	96.61	9.881	
7,500.00	7,483.14	11,998.97	7,956.81	27.20	87.90	-114.54	349.18	-632.78	927.01	827.85	99.16	9.349	
7,550.00	7,532.95	12,003.88	7,956.88	27.37	87.98	-114.19	354.08	-632.87	901.39	799.68	101.71	8.862	
7,600.00	7,582.76	12,008.79	7,956.95	27.55	88.07	-113.83	358.99	-632.95	877.85	773.62	104.23	8.422	
7,650.00	7,632.57	12,013.72	7,957.02	27.73	88.16	-113.47	363.92	-633.03	856.56	749.89	106.87	8.030	
7,700.00	7,682.38	12,018.65	7,957.09	27.91	88.25	-113.11	368.85	-633.11	837.69	728.69	108.99	7.688	
7,750.00	7,732.18	12,023.60	7,957.16	28.09	88.34	-112.75	373.79	-633.20	821.40	710.25	111.14	7.390	
7,800.00	7,781.99	12,028.55	7,957.23	28.26	88.43	-112.39	378.74	-633.28	807.85	694.78	113.07	7.145	
7,850.00	7,831.80	12,033.51	7,957.30	28.44	88.52	-112.03	383.70	-633.35	797.18	682.46	114.72	6.949	
7,900.00	7,881.61	12,038.48	7,957.37	28.62	88.61	-111.67	388.67	-633.43	789.52	673.46	116.06	6.803	
7,950.00	7,931.42	12,043.46	7,957.44	28.80	88.70	-111.31	393.65	-633.51	784.93	667.89	117.04	6.706	
7,997.84	7,979.08	12,048.23	7,957.51	28.97	88.79	-110.96	398.42	-633.58	783.49	665.86	117.83	6.661 CC	
8,000.00	7,981.23	12,048.45	7,957.52	28.98	88.79	-110.95	398.64	-633.58	783.49	665.84	117.65	6.660 ES, SF	
8,050.00	8,031.04	12,053.68	7,957.59	29.16	88.88	-110.56	403.87	-633.66	785.21	667.34	117.87	6.662	
8,100.00	8,080.85	12,058.93	7,957.67	29.33	88.98	-110.18	409.12	-633.74	790.05	672.35	117.70	6.712	
8,150.00	8,130.67	12,064.13	7,957.74	29.51	89.07	-109.84	414.32	-633.81	797.97	680.81	117.16	6.811	
8,200.00	8,180.52	12,068.82	7,957.81	29.69	89.16	-109.66	419.00	-633.87	808.72	692.44	116.28	6.955	
8,250.00	8,230.42	12,072.82	7,957.88	29.87	89.23	-109.56	423.00	-633.92	822.14	707.06	115.07	7.144	
8,300.00	8,280.35	12,076.14	7,957.91	30.05	89.29	-109.56	426.33	-633.96	838.11	724.51	113.60	7.378	
8,350.00	8,330.32	12,078.79	7,957.95	30.22	89.34	-109.65	428.98	-633.99	856.49	744.59	111.90	7.654	
8,400.00	8,380.30	12,080.77	7,957.97	30.40	89.37	-109.82	430.96	-634.01	877.14	767.12	110.02	7.973	
8,450.00	8,430.30	12,082.08	7,957.99	30.58	89.40	-110.09	432.27	-634.03	899.90	791.89	108.00	8.332	
8,500.00	8,480.28	12,083.74	7,958.01	30.75	89.43	-108.34	433.93	-634.05	924.89	818.97	105.93	8.731	
8,550.00	8,530.02	12,089.45	7,958.09	30.93	89.53	-104.68	439.63	-634.11	952.88	848.94	103.94	9.188	
8,600.00	8,579.14	12,099.47	7,958.22	31.11	89.71	-100.19	449.65	-634.21	983.41	881.31	102.10	9.632	
8,650.00	8,627.27	12,113.73	7,958.40	31.29	89.97	-94.94	463.91	-634.33	1,015.93	915.48	100.45	10.114	
8,700.00	8,674.24	12,131.26	7,958.62	31.47	90.29	-98.94	481.43	-634.44	1,050.43	951.42	99.01	10.609	
8,750.00	8,720.43	12,148.76	7,958.82	31.65	90.60	-105.98	498.93	-634.53	1,088.45	990.84	97.82	11.127	
8,800.00	8,765.56	12,164.07	7,958.98	31.83	90.88	-109.92	514.25	-634.58	1,129.57	1,032.73	96.84	11.664	
8,850.00	8,809.28	12,179.26	7,959.13	32.01	91.16	-110.61	529.44	-634.63	1,173.18	1,077.05	96.13	12.204	
8,900.00	8,851.27	12,193.79	7,959.26	32.19	91.42	-107.87	543.97	-634.66	1,218.72	1,123.06	95.67	12.739	
8,950.00	8,891.20	12,207.57	7,959.36	32.37	91.67	-101.05	557.75	-634.69	1,265.69	1,170.25	95.44	13.262	
9,000.00	8,928.77	12,220.51	7,959.45	32.55	91.90	-89.26	570.68	-634.70	1,313.62	1,218.19	95.43	13.765	
9,050.00	8,963.68	12,232.52	7,959.53	32.73	92.12	-72.62	582.69	-634.70	1,362.08	1,268.46	95.62	14.245	
9,100.00	8,995.69	12,243.52	7,959.59	32.92	92.32	-54.18	593.70	-634.70	1,410.70	1,314.72	95.98	14.697	
9,150.00	9,024.54	12,252.21	7,959.64	33.11	92.48	-38.16	602.38	-634.72	1,459.14	1,362.65	96.49	15.123	

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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-T19S-R29E - Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1													Offset Site Error: 5.00 ft	
Survey Program: 10-INC-ONLY													Offset Well Error: 10.00 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft) +E/-W (ft)		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	5.02	11.18	-129.57	-349.78	-423.28	549.59					
50.00	50.00	27.00	27.00	5.03	11.18	-129.57	-349.78	-423.28	549.10	532.90	16.21	33.878		
100.00	100.00	77.00	77.00	5.03	11.23	-129.57	-349.78	-423.28	549.10	532.85	16.25	33.787		
150.00	150.00	127.00	127.00	5.03	11.32	-129.57	-349.78	-423.28	549.10	532.75	16.35	33.582		
200.00	200.00	177.00	177.00	5.05	11.46	-129.57	-349.78	-423.28	549.10	532.60	16.51	33.269		
250.00	250.00	227.00	227.00	5.07	11.64	-129.57	-349.78	-423.28	549.10	532.39	16.71	32.857		
300.00	300.00	277.00	277.00	5.10	11.87	-129.57	-349.78	-423.28	549.10	532.13	16.97	32.358		
350.00	350.00	327.00	327.00	5.13	12.15	-129.57	-349.78	-423.28	549.10	531.83	17.27	31.786		
400.00	400.00	377.00	377.00	5.17	12.46	-129.57	-349.78	-423.28	549.10	531.48	17.63	31.154		
450.00	450.00	427.00	427.00	5.21	12.81	-129.57	-349.78	-423.28	549.10	531.09	18.02	30.475		
500.00	500.00	477.00	477.00	5.26	13.19	-129.57	-349.78	-423.28	549.10	530.65	18.45	29.782		
550.00	550.00	527.00	527.00	5.32	13.60	-129.57	-349.78	-423.28	549.10	530.19	18.92	29.026		
600.00	600.00	577.00	577.00	5.38	14.04	-129.57	-349.78	-423.28	549.10	529.69	19.42	28.277		
650.00	650.00	627.00	627.00	5.45	14.50	-129.57	-349.78	-423.28	549.10	529.15	19.95	27.523		
700.00	700.00	677.00	677.00	5.52	14.99	-129.57	-349.78	-423.28	549.10	528.59	20.51	26.772		
750.00	750.00	727.00	727.00	5.59	15.50	-129.57	-349.78	-423.28	549.10	528.01	21.10	26.029		
800.00	800.00	777.00	777.00	5.68	16.03	-129.57	-349.78	-423.28	549.10	527.40	21.70	25.299		
850.00	850.00	827.00	827.00	5.76	16.57	-129.57	-349.78	-423.28	549.10	526.77	22.33	24.585		
900.00	900.00	877.00	877.00	5.85	17.13	-129.57	-349.78	-423.28	549.10	526.12	22.98	23.890		
950.00	950.00	927.00	927.00	5.94	17.71	-129.57	-349.78	-423.28	549.10	525.45	23.65	23.215		
1,000.00	1,000.00	977.00	977.00	6.04	18.30	-129.57	-349.78	-423.28	549.10	524.77	24.34	22.563		
1,050.00	1,050.00	1,027.00	1,027.00	6.14	18.89	-129.57	-349.78	-423.28	549.10	524.07	25.04	21.932		
1,100.00	1,100.00	1,077.00	1,077.00	6.25	19.50	-129.57	-349.78	-423.28	549.10	523.35	25.75	21.324		
1,150.00	1,150.00	1,127.00	1,127.00	6.36	20.12	-129.57	-349.78	-423.28	549.10	522.63	26.48	20.739		
1,200.00	1,200.00	1,177.00	1,177.00	6.47	20.75	-129.57	-349.78	-423.28	549.10	521.89	27.21	20.177		
1,250.00	1,250.00	1,227.00	1,227.00	6.58	21.38	-129.57	-349.78	-423.28	549.10	521.14	27.96	19.637		
1,300.00	1,300.00	1,277.00	1,277.00	6.70	22.02	-129.57	-349.78	-423.28	549.10	520.38	28.72	19.118		
1,350.00	1,350.00	1,327.00	1,327.00	6.82	22.67	-129.57	-349.78	-423.28	549.10	519.61	29.49	18.620		
1,400.00	1,400.00	1,377.00	1,377.00	6.94	23.33	-129.57	-349.78	-423.28	549.10	518.84	30.27	18.142		
1,450.00	1,450.00	1,427.00	1,427.00	7.07	23.99	-129.57	-349.78	-423.28	549.10	518.05	31.05	17.684		
1,500.00	1,500.00	1,477.00	1,477.00	7.19	24.65	-129.57	-349.78	-423.28	549.10	517.26	31.84	17.244		
1,550.00	1,550.00	1,527.00	1,527.00	7.32	25.32	-129.57	-349.78	-423.28	549.10	516.46	32.64	16.822		
1,600.00	1,600.00	1,577.00	1,577.00	7.45	25.99	-129.57	-349.78	-423.28	549.10	515.66	33.45	16.417		
1,650.00	1,650.00	1,627.00	1,627.00	7.59	26.67	-129.57	-349.78	-423.28	549.10	514.84	34.26	16.028		
1,700.00	1,700.00	1,677.00	1,677.00	7.72	27.35	-129.57	-349.78	-423.28	549.10	514.03	35.08	15.655		
1,750.00	1,750.00	1,727.00	1,727.00	7.86	28.04	-129.57	-349.78	-423.28	549.10	513.21	35.90	15.296		
1,800.00	1,800.00	1,777.00	1,777.00	8.00	28.73	-129.57	-349.78	-423.28	549.10	512.38	36.72	14.952		
1,850.00	1,850.00	1,827.00	1,827.00	8.14	29.42	-129.57	-349.78	-423.28	549.10	511.55	37.56	14.621		
1,900.00	1,900.00	1,877.00	1,877.00	8.28	30.11	-129.57	-349.78	-423.28	549.10	510.71	38.39	14.303		
1,950.00	1,950.00	1,927.00	1,927.00	8.42	30.81	-129.57	-349.78	-423.28	549.10	509.87	39.23	13.996		
2,000.00	2,000.00	1,977.00	1,977.00	8.57	31.51	-129.57	-349.78	-423.28	549.10	509.03	40.08	13.702		
2,050.00	2,050.00	2,027.00	2,027.00	8.71	32.21	-129.57	-349.78	-423.28	549.10	508.18	40.92	13.418		
2,100.00	2,100.00	2,077.00	2,077.00	8.86	32.91	-129.57	-349.78	-423.28	549.10	507.33	41.77	13.145		
2,150.00	2,150.00	2,127.00	2,127.00	9.01	33.62	-129.57	-349.78	-423.28	549.10	506.48	42.63	12.882		
2,200.00	2,200.00	2,177.00	2,177.00	9.16	34.32	-129.57	-349.78	-423.28	549.10	505.62	43.48	12.628		
2,250.00	2,250.00	2,227.00	2,227.00	9.31	35.03	-129.57	-349.78	-423.28	549.10	504.76	44.34	12.384		
2,300.00	2,300.00	2,277.00	2,277.00	9.46	35.74	-129.57	-349.78	-423.28	549.10	503.90	45.20	12.148		
2,350.00	2,350.00	2,327.00	2,327.00	9.61	36.46	-129.57	-349.78	-423.28	549.10	503.04	46.07	11.920		
2,400.00	2,400.00	2,377.00	2,377.00	9.77	37.17	-129.57	-349.78	-423.28	549.10	502.17	46.93	11.699		
2,450.00	2,450.00	2,427.00	2,427.00	9.92	37.88	-129.57	-349.78	-423.28	549.10	501.30	47.80	11.487		
2,500.00	2,500.00	2,477.00	2,477.00	10.07	38.60	-129.57	-349.78	-423.28	549.10	500.43	48.67	11.281		
2,550.00	2,550.00	2,527.00	2,527.00	10.23	39.32	-129.57	-349.78	-423.28	549.10	499.56	49.55	11.083		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 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)	
2,600.00	2,600.00	2,577.00	2,577.00	10.39	40.04	-129.57	-349.78	-423.28	549.10	498.68	10.890			
2,650.00	2,650.00	2,627.00	2,627.00	10.54	40.76	-129.57	-349.78	-423.28	549.10	497.81	10.704			
2,700.00	2,700.00	2,677.00	2,677.00	10.70	41.48	-129.57	-349.78	-423.28	549.10	496.93	10.524 CC			
2,700.01	2,700.01	2,677.01	2,677.01	10.70	41.48	-129.57	-349.78	-423.28	549.10	496.93	10.524			
2,750.00	2,750.00	2,727.00	2,727.00	10.86	42.20	-149.57	-349.78	-423.28	549.12	496.06	10.350			
2,800.00	2,800.00	2,777.00	2,777.00	11.02	42.92	-149.59	-349.78	-423.28	549.42	495.48	10.186			
2,850.00	2,849.99	2,826.99	2,826.99	11.18	43.64	-149.62	-349.78	-423.28	550.10	495.28	10.034 ES			
2,900.00	2,899.98	2,876.98	2,876.98	11.34	44.37	-149.68	-349.78	-423.28	551.15	495.45	9.894			
2,950.00	2,949.95	2,926.95	2,926.95	11.50	45.09	-149.76	-349.78	-423.28	552.59	496.00	9.765			
3,000.00	2,999.91	2,976.91	2,976.91	11.66	45.82	-149.86	-349.78	-423.28	554.40	496.92	9.646			
3,050.00	3,049.84	3,026.84	3,026.84	11.82	46.54	-149.98	-349.78	-423.28	556.58	498.22	9.537			
3,100.00	3,099.75	3,076.75	3,076.75	11.98	47.27	-150.12	-349.78	-423.28	559.16	499.91	9.437			
3,150.00	3,149.64	3,126.64	3,126.64	12.15	47.99	-150.28	-349.78	-423.28	562.11	501.97	9.347			
3,200.00	3,199.49	3,176.49	3,176.49	12.31	48.72	-150.46	-349.78	-423.28	565.45	504.42	9.266			
3,250.00	3,249.31	3,226.31	3,226.31	12.47	49.45	-150.65	-349.78	-423.28	569.15	507.24	9.192			
3,300.00	3,299.12	3,276.12	3,276.12	12.64	50.17	-150.87	-349.78	-423.28	572.96	510.15	9.123			
3,350.00	3,348.93	3,325.93	3,325.93	12.80	50.90	-151.08	-349.78	-423.28	576.77	513.07	9.055			
3,400.00	3,398.74	3,375.74	3,375.74	12.96	51.63	-151.29	-349.78	-423.28	580.59	516.00	8.989			
3,450.00	3,448.55	3,425.55	3,425.55	13.13	52.38	-151.49	-349.78	-423.28	584.42	518.94	8.925			
3,500.00	3,498.36	3,475.36	3,475.36	13.29	53.09	-151.69	-349.78	-423.28	588.26	521.88	8.863			
3,550.00	3,548.17	3,525.17	3,525.17	13.46	53.82	-151.89	-349.78	-423.28	592.10	524.83	8.802			
3,600.00	3,597.98	3,574.98	3,574.98	13.62	54.55	-152.09	-349.78	-423.28	595.95	527.79	8.743			
3,650.00	3,647.79	3,624.79	3,624.79	13.79	55.28	-152.28	-349.78	-423.28	599.81	530.75	8.685			
3,700.00	3,697.60	3,674.60	3,674.60	13.96	56.01	-152.48	-349.78	-423.28	603.67	533.72	8.629			
3,750.00	3,747.41	3,724.41	3,724.41	14.13	56.74	-152.67	-349.78	-423.28	607.54	536.69	8.574			
3,800.00	3,797.22	3,774.22	3,774.22	14.29	57.47	-152.85	-349.78	-423.28	611.42	539.67	8.521			
3,850.00	3,847.03	3,824.03	3,824.03	14.46	58.20	-153.04	-349.78	-423.28	615.31	542.65	8.469			
3,900.00	3,896.84	3,873.84	3,873.84	14.63	58.93	-153.22	-349.78	-423.28	619.20	545.64	8.418			
3,950.00	3,946.64	3,923.64	3,923.64	14.80	59.67	-153.40	-349.78	-423.28	623.09	548.64	8.369			
4,000.00	3,996.45	3,973.45	3,973.45	14.97	60.40	-153.58	-349.78	-423.28	627.00	551.64	8.321			
4,050.00	4,046.26	4,023.26	4,023.26	15.14	61.13	-153.76	-349.78	-423.28	630.90	554.65	8.273			
4,100.00	4,096.07	4,073.07	4,073.07	15.30	61.87	-153.93	-349.78	-423.28	634.82	557.66	8.227			
4,150.00	4,145.88	4,122.88	4,122.88	15.47	62.60	-154.10	-349.78	-423.28	638.74	560.68	8.182			
4,200.00	4,195.69	4,172.69	4,172.69	15.64	63.33	-154.27	-349.78	-423.28	642.66	563.70	8.138			
4,250.00	4,245.50	4,222.50	4,222.50	15.81	64.07	-154.44	-349.78	-423.28	646.60	566.73	8.096			
4,300.00	4,295.31	4,272.31	4,272.31	15.98	64.80	-154.60	-349.78	-423.28	650.53	569.76	8.054			
4,350.00	4,345.12	4,322.12	4,322.12	16.16	65.54	-154.77	-349.78	-423.28	654.47	572.79	8.013			
4,400.00	4,394.93	4,371.93	4,371.93	16.33	66.27	-154.93	-349.78	-423.28	658.42	575.84	7.973			
4,450.00	4,444.74	4,421.74	4,421.74	16.50	67.01	-155.09	-349.78	-423.28	662.37	578.88	7.933			
4,500.00	4,494.55	4,471.55	4,471.55	16.67	67.74	-155.25	-349.78	-423.28	666.33	581.93	7.895			
4,550.00	4,544.36	4,521.36	4,521.36	16.84	68.48	-155.40	-349.78	-423.28	670.29	584.99	7.858			
4,600.00	4,594.17	4,571.17	4,571.17	17.01	69.22	-155.56	-349.78	-423.28	674.26	588.05	7.821			
4,650.00	4,643.98	4,620.98	4,620.98	17.18	69.95	-155.71	-349.78	-423.28	678.23	591.11	7.785			
4,700.00	4,693.79	4,670.79	4,670.79	17.36	70.69	-155.86	-349.78	-423.28	682.21	594.18	7.750			
4,750.00	4,743.60	4,720.60	4,720.60	17.53	71.43	-156.01	-349.78	-423.28	686.19	597.25	7.715			
4,800.00	4,793.41	4,770.41	4,770.41	17.70	72.16	-156.16	-349.78	-423.28	690.18	600.33	7.682			
4,850.00	4,843.22	4,820.22	4,820.22	17.87	72.90	-156.30	-349.78	-423.28	694.17	603.41	7.649			
4,900.00	4,893.03	4,870.03	4,870.03	18.05	73.64	-156.44	-349.78	-423.28	698.16	606.50	7.616			
4,950.00	4,942.84	4,919.84	4,919.84	18.22	74.37	-156.59	-349.78	-423.28	702.16	609.59	7.585			
5,000.00	4,992.65	4,969.65	4,969.65	18.39	75.11	-156.73	-349.78	-423.28	706.17	612.68	7.554			
5,050.00	5,042.46	5,019.46	5,019.46	18.57	75.85	-156.87	-349.78	-423.28	710.17	615.78	7.523			
5,100.00	5,092.27	5,069.27	5,069.27	18.74	76.59	-157.00	-349.78	-423.28	714.19	618.88	7.493			

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 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)						
5,150.00	5,142.08	5,119.08	5,119.08	18.91	77.33	-157.14	-349.78	-423.28	718.20	621.98	96.22	7.464		
5,200.00	5,191.89	5,168.89	5,168.89	19.09	78.06	-157.27	-349.78	-423.28	722.22	625.09	97.13	7.435		
5,250.00	5,241.70	5,218.70	5,218.70	19.26	78.80	-157.41	-349.78	-423.28	726.25	628.20	98.04	7.407		
5,300.00	5,291.51	5,268.51	5,268.51	19.44	79.54	-157.54	-349.78	-423.28	730.27	631.32	98.96	7.380		
5,350.00	5,341.32	5,318.32	5,318.32	19.61	80.28	-157.67	-349.78	-423.28	734.30	634.44	99.87	7.353		
5,400.00	5,391.13	5,368.13	5,368.13	19.78	81.02	-157.80	-349.78	-423.28	738.34	637.56	100.78	7.326		
5,450.00	5,440.94	5,417.94	5,417.94	19.96	81.76	-157.92	-349.78	-423.28	742.38	640.68	101.70	7.300		
5,500.00	5,490.75	5,467.75	5,467.75	20.13	82.50	-158.05	-349.78	-423.28	746.42	643.81	102.61	7.274		
5,550.00	5,540.56	5,517.56	5,517.56	20.31	83.23	-158.17	-349.78	-423.28	750.47	646.94	103.52	7.249		
5,600.00	5,590.37	5,567.37	5,567.37	20.48	83.97	-158.30	-349.78	-423.28	754.51	650.08	104.44	7.225		
5,650.00	5,640.18	5,617.18	5,617.18	20.66	84.71	-158.42	-349.78	-423.28	758.57	653.22	105.35	7.200		
5,700.00	5,689.99	5,666.99	5,666.99	20.83	85.45	-158.54	-349.78	-423.28	762.62	656.36	106.26	7.177		
5,750.00	5,739.80	5,716.80	5,716.80	21.01	86.19	-158.66	-349.78	-423.28	766.68	659.50	107.18	7.153		
5,800.00	5,789.61	5,766.61	5,766.61	21.18	86.93	-158.77	-349.78	-423.28	770.75	662.65	108.09	7.130		
5,850.00	5,839.41	5,816.41	5,816.41	21.36	87.67	-158.89	-349.78	-423.28	774.81	665.80	109.01	7.108		
5,900.00	5,889.22	5,866.22	5,866.22	21.54	88.41	-159.01	-349.78	-423.28	778.88	668.96	109.92	7.086		
5,950.00	5,939.03	5,916.03	5,916.03	21.71	89.15	-159.12	-349.78	-423.28	782.95	672.11	110.84	7.064		
6,000.00	5,988.84	5,965.84	5,965.84	21.89	89.89	-159.23	-349.78	-423.28	787.03	675.27	111.75	7.042		
6,050.00	6,038.65	6,015.65	6,015.65	22.06	90.63	-159.35	-349.78	-423.28	791.11	678.43	112.67	7.021		
6,100.00	6,088.46	6,065.46	6,065.46	22.24	91.37	-159.46	-349.78	-423.28	795.19	681.60	113.59	7.001		
6,150.00	6,138.27	6,115.27	6,115.27	22.41	92.11	-159.57	-349.78	-423.28	799.27	684.77	114.50	6.980		
6,200.00	6,188.08	6,165.08	6,165.08	22.59	92.85	-159.67	-349.78	-423.28	803.36	687.94	115.42	6.960		
6,250.00	6,237.89	6,214.89	6,214.89	22.77	93.59	-159.78	-349.78	-423.28	807.45	691.11	116.34	6.941		
6,300.00	6,287.70	6,264.70	6,264.70	22.94	94.33	-159.89	-349.78	-423.28	811.54	694.29	117.25	6.921		
6,350.00	6,337.51	6,314.51	6,314.51	23.12	95.08	-159.99	-349.78	-423.28	815.63	697.47	118.17	6.902		
6,400.00	6,387.32	6,364.32	6,364.32	23.30	95.82	-160.10	-349.78	-423.28	819.73	700.65	119.09	6.884		
6,450.00	6,437.13	6,414.13	6,414.13	23.47	96.56	-160.20	-349.78	-423.28	823.83	703.83	120.00	6.865		
6,500.00	6,486.94	6,463.94	6,463.94	23.65	97.30	-160.30	-349.78	-423.28	827.94	707.02	120.92	6.847		
6,550.00	6,536.75	6,513.75	6,513.75	23.83	98.04	-160.40	-349.78	-423.28	832.04	710.20	121.84	6.829		
6,600.00	6,586.56	6,563.56	6,563.56	24.00	98.78	-160.50	-349.78	-423.28	836.15	713.40	122.76	6.812		
6,650.00	6,636.37	6,613.37	6,613.37	24.18	99.52	-160.60	-349.78	-423.28	840.26	716.59	123.67	6.794		
6,700.00	6,686.18	6,663.18	6,663.18	24.36	100.26	-160.70	-349.78	-423.28	844.38	719.78	124.59	6.777		
6,750.00	6,735.99	6,712.99	6,712.99	24.53	101.00	-160.80	-349.78	-423.28	848.49	722.98	125.51	6.760		
6,800.00	6,785.80	6,762.80	6,762.80	24.71	101.75	-160.89	-349.78	-423.28	852.61	726.18	126.43	6.744		
6,850.00	6,835.61	6,812.61	6,812.61	24.89	102.49	-160.99	-349.78	-423.28	856.73	729.38	127.35	6.728		
6,900.00	6,885.42	6,862.42	6,862.42	25.07	103.23	-161.08	-349.78	-423.28	860.85	732.59	128.26	6.712		
6,950.00	6,935.23	6,912.23	6,912.23	25.24	103.97	-161.18	-349.78	-423.28	864.98	735.80	129.18	6.696		
7,000.00	6,985.04	6,962.04	6,962.04	25.42	104.71	-161.27	-349.78	-423.28	869.11	739.00	130.10	6.680		
7,050.00	7,034.85	7,011.85	7,011.85	25.60	105.45	-161.36	-349.78	-423.28	873.24	742.21	131.02	6.665		
7,100.00	7,084.66	7,061.66	7,061.66	25.77	106.19	-161.45	-349.78	-423.28	877.37	745.43	131.94	6.650		
7,150.00	7,134.47	7,111.47	7,111.47	25.95	106.94	-161.54	-349.78	-423.28	881.50	748.64	132.86	6.635		
7,200.00	7,184.28	7,161.28	7,161.28	26.13	107.68	-161.63	-349.78	-423.28	885.64	751.86	133.78	6.620		
7,250.00	7,234.09	7,211.09	7,211.09	26.31	108.42	-161.72	-349.78	-423.28	889.78	755.08	134.70	6.606		
7,300.00	7,283.90	7,260.90	7,260.90	26.49	109.16	-161.81	-349.78	-423.28	893.92	758.30	135.62	6.592		
7,350.00	7,333.71	7,310.71	7,310.71	26.66	109.90	-161.89	-349.78	-423.28	898.06	761.52	136.54	6.577		
7,400.00	7,383.52	7,360.52	7,360.52	26.84	110.65	-161.98	-349.78	-423.28	902.20	764.75	137.46	6.564		
7,450.00	7,433.33	7,410.33	7,410.33	27.02	111.39	-162.07	-349.78	-423.28	906.35	767.97	138.38	6.550		
7,500.00	7,483.14	7,460.14	7,460.14	27.20	112.13	-162.15	-349.78	-423.28	910.50	771.20	139.30	6.536		
7,550.00	7,532.95	7,509.95	7,509.95	27.37	112.87	-162.23	-349.78	-423.28	914.65	774.43	140.22	6.523		
7,600.00	7,582.76	7,559.76	7,559.76	27.55	113.62	-162.32	-349.78	-423.28	918.80	777.67	141.14	6.510		
7,650.00	7,632.57	7,609.57	7,609.57	27.73	114.36	-162.40	-349.78	-423.28	922.96	780.90	142.06	6.497		
7,700.00	7,682.38	7,659.38	7,659.38	27.91	115.10	-162.48	-349.78	-423.28	927.11	784.14	142.98	6.484		

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Parkway West Unit 15 (Active) - Wellbore #1 - Wellbore #1													Offset Site Error:	5.00 ft
Survey Program: 10-INC-ONLY													Offset Well Error:	10.00 ft
Reference		Offset		Semi Major Axis		Highside Tooface (')	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)	
7,750.00	7,732.18	7,709.18	7,709.18	28.09	115.84	-162.56	-349.78	-423.28	931.27	787.37	143.90	6.472		
7,800.00	7,781.99	7,758.99	7,758.99	28.26	116.59	-162.64	-349.78	-423.28	935.43	790.61	144.82	6.459		
7,850.00	7,831.80	7,808.80	7,808.80	28.44	117.33	-162.72	-349.78	-423.28	939.59	793.85	145.74	6.447		
7,900.00	7,881.61	7,858.61	7,858.61	28.62	118.07	-162.80	-349.78	-423.28	943.75	797.10	146.66	6.435		
7,950.00	7,931.42	7,908.42	7,908.42	28.80	118.81	-162.88	-349.78	-423.28	947.92	800.34	147.58	6.423		
8,000.00	7,981.23	7,958.23	7,958.23	28.98	119.56	-162.95	-349.78	-423.28	952.09	803.59	148.50	6.411		
8,050.00	8,031.04	8,008.04	8,008.04	29.16	120.30	-163.03	-349.78	-423.28	956.26	806.84	149.42	6.400		
8,100.00	8,080.85	8,057.85	8,057.85	29.33	121.04	-163.11	-349.78	-423.28	960.43	810.08	150.34	6.388		
8,150.00	8,130.67	8,107.67	8,107.67	29.51	121.78	-163.19	-349.78	-423.28	964.57	813.31	151.26	6.377		
8,200.00	8,180.52	8,157.52	8,157.52	29.69	122.53	-163.27	-349.78	-423.28	968.74	816.06	152.18	6.362		
8,250.00	8,230.42	8,207.42	8,207.42	29.87	123.27	-163.34	-349.78	-423.28	972.91	818.19	153.10	6.344		
8,300.00	8,280.35	8,257.35	8,257.35	30.05	124.02	-163.39	-349.78	-423.28	977.07	819.69	154.03	6.322		
8,350.00	8,330.32	8,307.32	8,307.32	30.22	124.76	-163.43	-349.78	-423.28	981.22	820.57	154.95	6.296		
8,400.00	8,380.30	8,357.30	8,357.30	30.40	125.51	-163.45	-349.78	-423.28	985.37	820.81	155.87	6.266		
8,450.00	8,430.30	8,407.30	8,407.30	30.58	126.25	-163.46	-349.78	-423.28	989.52	820.44	156.79	6.233		
8,500.00	8,480.28	8,457.28	8,457.28	30.75	127.00	-163.46	-349.78	-423.28	993.67	820.40	157.71	6.202		
8,550.00	8,530.02	8,507.02	8,507.02	30.93	127.74	-163.40	-349.78	-423.28	997.82	824.21	158.64	6.190 SF		
8,600.00	8,579.14	8,556.14	8,556.14	31.11	128.47	-163.30	-349.78	-423.28	999.72	832.17	159.55	6.216		
8,650.00	8,627.27	8,604.27	8,604.27	31.29	129.19	-163.13	-349.78	-423.28	1,004.68	844.23	160.45	6.262		
8,700.00	8,674.24	8,651.24	8,651.24	31.47	129.89	-171.90	-349.78	-423.28	1,021.34	860.01	161.33	6.331		
8,750.00	8,720.43	8,697.43	8,697.43	31.65	130.58	176.11	-349.78	-423.28	1,040.43	878.24	162.19	6.415		
8,800.00	8,765.56	8,742.56	8,742.56	31.83	131.25	166.38	-349.78	-423.28	1,061.70	898.67	163.03	6.512		
8,850.00	8,809.28	8,786.28	8,786.28	32.01	131.91	158.45	-349.78	-423.28	1,085.02	921.18	163.84	6.623		
8,900.00	8,851.27	8,828.27	8,828.27	32.19	132.53	151.83	-349.78	-423.28	1,110.28	945.66	164.62	6.745		
8,950.00	8,891.20	8,868.20	8,868.20	32.37	133.13	146.11	-349.78	-423.28	1,137.37	972.01	165.36	6.878		
9,000.00	8,928.77	8,905.77	8,905.77	32.55	133.69	140.98	-349.78	-423.28	1,166.18	1,000.13	166.05	7.023		
9,050.00	8,963.68	8,940.68	8,940.68	32.73	134.21	136.21	-349.78	-423.28	1,196.63	1,029.93	166.70	7.178		
9,100.00	8,995.69	8,972.69	8,972.69	32.92	134.69	131.61	-349.78	-423.28	1,228.60	1,061.30	167.30	7.344		
9,150.00	9,024.54	9,001.54	9,001.54	33.11	135.12	127.02	-349.78	-423.28	1,261.97	1,094.14	167.83	7.519		
9,200.00	9,050.01	9,027.01	9,027.01	33.31	135.50	122.33	-349.78	-423.28	1,296.61	1,128.30	168.31	7.704		
9,250.00	9,071.92	9,048.92	9,048.92	33.53	135.83	117.46	-349.78	-423.28	1,332.36	1,163.63	168.73	7.896		
9,300.00	9,090.08	9,067.08	9,067.08	33.76	136.10	112.36	-349.78	-423.28	1,369.06	1,199.98	169.08	8.097		
9,350.00	9,104.37	9,081.37	9,081.37	34.01	136.31	107.01	-349.78	-423.28	1,406.50	1,237.13	169.37	8.304		
9,400.00	9,114.68	9,091.68	9,091.68	34.27	136.46	101.45	-349.78	-423.28	1,444.47	1,274.89	169.59	8.518		
9,450.00	9,120.93	9,097.93	9,097.93	34.54	136.56	95.77	-349.78	-423.28	1,482.74	1,313.00	169.74	8.735		

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Actuals													Offset Site Error: 5.00 ft
Survey Program: 154-MWD+IGRF													Offset Well Error: 0.00 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)			
0.00	0.00	0.00	0.00	5.02	5.00	-178.61	-1,390.01	-33.79	1,390.70				
50.00	50.00	21.07	21.07	5.03	5.00	-178.61	-1,390.01	-33.82	1,390.43	1,380.40	10.03	138.693	
100.00	100.00	68.96	68.96	5.03	5.00	-178.59	-1,390.08	-34.13	1,390.50	1,380.47	10.03	138.666	
150.00	150.00	116.85	116.84	5.03	5.00	-178.57	-1,390.20	-34.77	1,390.64	1,380.61	10.04	138.546	
200.00	200.00	165.88	165.86	5.05	5.01	-178.53	-1,390.39	-35.77	1,390.86	1,380.81	10.06	138.312	
250.00	250.00	217.36	217.33	5.07	5.02	-178.48	-1,390.55	-36.92	1,391.04	1,380.95	10.09	137.862	
300.00	300.00	292.41	292.37	5.10	5.05	-178.42	-1,390.07	-38.34	1,390.74	1,380.60	10.15	137.051	
350.00	350.00	330.43	330.37	5.13	5.07	-178.39	-1,389.66	-38.98	1,390.23	1,380.03	10.20	136.263	
384.92	384.92	356.98	356.92	5.15	5.09	-178.37	-1,389.56	-39.51	1,390.12	1,379.88	10.25	135.672 CC	
400.00	400.00	372.00	371.94	5.17	5.10	-178.36	-1,389.58	-39.84	1,390.15	1,379.88	10.27	135.374	
450.00	450.00	415.21	415.13	5.21	5.14	-178.32	-1,389.73	-40.83	1,390.35	1,380.00	10.35	134.375	
500.00	500.00	462.88	462.79	5.26	5.18	-178.27	-1,389.97	-41.94	1,390.63	1,380.20	10.44	133.216	
550.00	550.00	517.94	517.83	5.32	5.23	-178.22	-1,390.20	-43.17	1,390.88	1,380.33	10.55	131.837	
600.00	600.00	569.88	569.77	5.38	5.29	-178.18	-1,390.25	-44.19	1,390.95	1,380.28	10.67	130.368	
650.00	650.00	615.89	615.77	5.45	5.35	-178.15	-1,390.36	-44.99	1,391.11	1,380.31	10.79	128.900	
700.00	700.00	664.14	664.01	5.52	5.41	-178.12	-1,390.61	-45.71	1,391.39	1,380.46	10.93	127.331	
750.00	750.00	716.63	716.50	5.59	5.48	-178.09	-1,390.85	-46.36	1,391.63	1,380.55	11.08	125.617	
800.00	800.00	769.31	769.18	5.68	5.56	-178.07	-1,390.99	-46.88	1,391.78	1,380.54	11.24	123.828	
850.00	850.00	822.12	821.99	5.76	5.65	-178.05	-1,391.03	-47.31	1,391.83	1,380.42	11.41	121.976	
900.00	900.00	871.00	870.86	5.85	5.73	-178.04	-1,391.03	-47.60	1,391.85	1,380.26	11.58	120.155	
950.00	950.00	919.52	919.38	5.94	5.82	-178.03	-1,391.09	-47.80	1,391.91	1,380.15	11.76	118.318	
1,000.00	1,000.00	971.99	971.85	6.04	5.92	-178.02	-1,391.14	-48.02	1,391.96	1,380.00	11.96	116.387	
1,046.37	1,046.37	1,020.65	1,020.51	6.14	6.01	-178.01	-1,391.09	-48.32	1,391.93	1,379.78	12.15	114.578	
1,050.00	1,050.00	1,022.07	1,021.93	6.14	6.02	-178.01	-1,391.10	-48.32	1,391.94	1,379.78	12.16	114.487	
1,100.00	1,100.00	1,066.45	1,066.31	6.25	6.10	-178.00	-1,391.18	-48.50	1,392.04	1,379.69	12.35	112.713	
1,150.00	1,150.00	1,113.29	1,113.15	6.36	6.20	-178.00	-1,391.46	-48.53	1,392.33	1,379.78	12.55	110.917	
1,200.00	1,200.00	1,166.20	1,166.06	6.47	6.31	-178.00	-1,391.74	-48.50	1,392.60	1,379.83	12.77	109.028	
1,250.00	1,250.00	1,218.46	1,218.32	6.58	6.42	-178.00	-1,391.92	-48.50	1,392.77	1,379.77	13.00	107.142	
1,300.00	1,300.00	1,270.24	1,270.10	6.70	6.53	-178.00	-1,392.01	-48.70	1,392.87	1,379.64	13.23	105.267	
1,350.00	1,350.00	1,320.55	1,320.41	6.82	6.65	-177.98	-1,392.06	-49.00	1,392.92	1,379.46	13.47	103.425	
1,400.00	1,400.00	1,370.37	1,370.23	6.94	6.77	-177.98	-1,392.12	-49.16	1,392.98	1,379.28	13.71	101.611	
1,450.00	1,450.00	1,421.26	1,421.12	7.07	6.89	-177.97	-1,392.16	-49.26	1,393.03	1,379.08	13.96	99.807	
1,500.00	1,500.00	1,472.32	1,472.18	7.19	7.02	-177.96	-1,392.17	-49.48	1,393.05	1,378.84	14.21	98.026	
1,509.07	1,509.07	1,481.58	1,481.44	7.22	7.04	-177.96	-1,392.16	-49.53	1,393.04	1,378.79	14.26	97.706	
1,550.00	1,550.00	1,516.66	1,516.51	7.32	7.13	-177.95	-1,392.24	-49.80	1,393.14	1,378.69	14.45	96.395	
1,600.00	1,600.00	1,561.03	1,560.88	7.45	7.25	-177.93	-1,392.49	-50.30	1,393.44	1,378.74	14.70	94.807	
1,650.00	1,650.00	1,610.80	1,610.65	7.59	7.38	-177.90	-1,392.87	-50.98	1,393.85	1,378.89	14.96	93.164	
1,700.00	1,700.00	1,660.97	1,660.81	7.72	7.51	-177.88	-1,393.25	-51.67	1,394.25	1,379.02	15.23	91.548	
1,750.00	1,750.00	1,716.01	1,715.85	7.86	7.66	-177.85	-1,393.57	-52.32	1,394.57	1,379.05	15.52	89.883	
1,800.00	1,800.00	1,771.07	1,770.90	8.00	7.81	-177.83	-1,393.70	-52.75	1,394.70	1,378.89	15.80	88.246	
1,850.00	1,850.00	1,818.85	1,818.68	8.14	7.94	-177.82	-1,393.79	-53.15	1,394.81	1,378.73	16.08	86.757	
1,900.00	1,900.00	1,866.81	1,866.43	8.28	8.07	-177.80	-1,393.91	-53.62	1,394.95	1,378.60	16.35	85.306	
1,950.00	1,950.00	1,911.64	1,911.46	8.42	8.20	-177.78	-1,394.15	-54.02	1,395.24	1,378.62	16.62	83.939	
2,000.00	2,000.00	1,958.39	1,958.21	8.57	8.33	-177.77	-1,394.47	-54.38	1,395.70	1,378.80	16.90	82.589	
2,050.00	2,050.00	2,009.52	2,009.34	8.71	8.48	-177.75	-1,395.04	-54.79	1,396.17	1,378.98	17.19	81.212	
2,100.00	2,100.00	2,061.85	2,061.66	8.86	8.63	-177.73	-1,395.46	-55.25	1,396.60	1,379.10	17.49	79.849	
2,150.00	2,150.00	2,115.69	2,115.51	9.01	8.79	-177.71	-1,395.77	-55.70	1,396.90	1,379.10	17.80	78.492	
2,200.00	2,200.00	2,166.32	2,166.13	9.16	8.94	-177.70	-1,395.96	-56.10	1,397.10	1,379.01	18.10	77.206	
2,250.00	2,250.00	2,215.66	2,215.47	9.31	9.09	-177.68	-1,396.17	-56.48	1,397.32	1,378.93	18.39	75.969	
2,300.00	2,300.00	2,266.42	2,266.22	9.46	9.24	-177.67	-1,396.38	-56.85	1,397.55	1,378.85	18.70	74.747	
2,350.00	2,350.00	2,317.42	2,317.23	9.61	9.40	-177.66	-1,396.56	-57.19	1,397.74	1,378.73	19.00	73.551	
2,400.00	2,400.00	2,364.74	2,364.55	9.77	9.54	-177.64	-1,396.75	-57.47	1,397.95	1,378.65	19.30	72.432	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Actuals													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF													Offset Well Error:	0.00 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)				
2,450.00	2,450.00	2,411.87	2,411.67	9.92	9.68	-177.63	-1,397.04	-57.71	1,398.27	1,378.67	19.60	71.348		
2,500.00	2,500.00	2,463.35	2,463.15	10.07	9.84	-177.63	-1,397.39	-57.91	1,398.62	1,378.71	19.91	70.251		
2,550.00	2,550.00	2,515.16	2,514.96	10.23	10.00	-177.62	-1,397.68	-57.99	1,398.90	1,378.68	20.22	69.176		
2,600.00	2,600.00	2,568.47	2,568.27	10.39	10.16	-177.62	-1,397.88	-58.11	1,399.09	1,378.55	20.54	68.106		
2,650.00	2,650.00	2,619.42	2,619.22	10.54	10.32	-177.61	-1,397.97	-58.34	1,399.19	1,378.33	20.86	67.082		
2,700.00	2,700.00	2,666.96	2,666.76	10.70	10.47	-177.60	-1,398.09	-58.52	1,399.33	1,378.16	21.16	66.118		
2,750.00	2,750.00	2,717.14	2,716.94	10.86	10.62	162.40	-1,398.30	-58.65	1,399.56	1,378.08	21.48	65.158 ES		
2,800.00	2,800.00	2,771.47	2,771.27	11.02	10.79	162.41	-1,398.41	-58.75	1,400.00	1,378.19	21.81	64.195		
2,850.00	2,849.99	2,821.14	2,820.94	11.18	10.95	162.42	-1,398.41	-58.85	1,400.75	1,378.63	22.12	63.312		
2,900.00	2,899.98	2,868.58	2,868.38	11.34	11.10	162.44	-1,398.48	-59.00	1,402.00	1,379.56	22.43	62.492		
2,950.00	2,949.95	2,919.89	2,919.69	11.50	11.26	162.46	-1,398.61	-59.20	1,403.70	1,380.95	22.76	61.679		
3,000.00	2,999.91	2,973.06	2,972.85	11.66	11.43	162.49	-1,398.62	-59.33	1,405.73	1,382.64	23.09	60.884		
3,050.00	3,049.84	3,020.44	3,020.24	11.82	11.58	162.51	-1,398.62	-59.43	1,408.14	1,384.74	23.40	60.174		
3,100.00	3,099.75	3,067.33	3,067.12	11.98	11.73	162.54	-1,398.72	-59.58	1,411.08	1,387.37	23.71	59.506		
3,150.00	3,149.64	3,117.06	3,116.85	12.15	11.90	162.58	-1,398.86	-59.79	1,414.50	1,390.46	24.04	58.847		
3,200.00	3,199.49	3,167.13	3,166.92	12.31	12.06	162.63	-1,399.04	-60.00	1,418.33	1,393.96	24.36	58.218		
3,250.00	3,249.31	3,220.36	3,220.16	12.47	12.23	162.68	-1,399.14	-60.18	1,422.48	1,397.79	24.70	57.597		
3,300.00	3,299.12	3,272.14	3,271.94	12.64	12.40	162.74	-1,399.12	-60.28	1,426.63	1,401.61	25.03	57.001		
3,350.00	3,348.93	3,320.72	3,320.51	12.80	12.56	162.79	-1,399.11	-60.42	1,430.79	1,405.44	25.35	56.441		
3,400.00	3,398.74	3,369.62	3,369.42	12.96	12.72	162.85	-1,399.13	-60.52	1,434.99	1,409.31	25.67	55.891		
3,450.00	3,448.55	3,418.96	3,418.75	13.13	12.88	162.90	-1,399.19	-60.58	1,439.21	1,413.21	26.00	55.353		
3,500.00	3,498.36	3,468.34	3,468.13	13.29	13.04	162.95	-1,399.25	-60.61	1,443.45	1,417.12	26.33	54.827		
3,550.00	3,548.17	3,518.16	3,517.96	13.46	13.20	163.00	-1,399.33	-60.63	1,447.69	1,421.04	26.65	54.312		
3,600.00	3,597.98	3,568.00	3,567.80	13.62	13.36	163.06	-1,399.40	-60.65	1,451.94	1,424.95	26.98	53.808		
3,650.00	3,647.79	3,617.65	3,617.45	13.79	13.53	163.11	-1,399.47	-60.82	1,456.19	1,428.87	27.31	53.313		
3,700.00	3,697.60	3,667.13	3,666.92	13.96	13.69	163.18	-1,399.53	-61.20	1,460.44	1,432.80	27.64	52.829		
3,750.00	3,747.41	3,716.36	3,716.15	14.13	13.86	163.25	-1,399.60	-61.73	1,464.72	1,436.74	27.98	52.356		
3,800.00	3,797.22	3,765.75	3,765.54	14.29	14.02	163.32	-1,399.68	-62.39	1,469.01	1,440.70	28.31	51.893		
3,850.00	3,847.03	3,815.52	3,815.30	14.46	14.19	163.40	-1,399.75	-63.30	1,473.31	1,444.67	28.64	51.437		
3,900.00	3,896.84	3,866.72	3,866.48	14.63	14.38	163.50	-1,399.80	-64.55	1,477.61	1,448.62	28.98	50.982		
3,950.00	3,946.64	3,919.85	3,919.58	14.80	14.54	163.62	-1,399.72	-66.24	1,481.81	1,452.48	29.33	50.522		
4,000.00	3,996.45	3,974.38	3,974.07	14.97	14.72	163.75	-1,399.47	-68.31	1,485.89	1,456.21	29.68	50.059		
4,050.00	4,046.26	4,029.68	4,029.31	15.14	14.91	163.89	-1,399.01	-70.53	1,489.80	1,459.76	30.04	49.597		
4,100.00	4,096.07	4,084.17	4,083.78	15.30	15.09	164.02	-1,398.37	-72.63	1,493.54	1,463.15	30.39	49.145		
4,150.00	4,145.88	4,137.66	4,137.23	15.47	15.27	164.14	-1,397.60	-74.41	1,497.14	1,466.40	30.74	48.703 SF		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - P3v1													Offset Site Error: 5.00 ft
Survey Program: 154-MWD+IGRF, 8178-													Offset Well Error: 0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	5.02	5.00	-178.81	-1,390.01	-33.79	1,390.70				
50.00	50.00	21.07	21.07	5.03	5.00	-178.81	-1,390.01	-33.82	1,390.43	1,380.40	10.03	138.693	
100.00	100.00	68.96	68.96	5.03	5.00	-178.59	-1,390.08	-34.13	1,390.50	1,380.47	10.03	138.666	
150.00	150.00	116.85	116.84	5.03	5.00	-178.57	-1,390.20	-34.77	1,390.64	1,380.61	10.04	138.546	
200.00	200.00	165.88	165.86	5.05	5.01	-178.53	-1,390.39	-35.77	1,390.86	1,380.81	10.06	138.312	
250.00	250.00	217.36	217.33	5.07	5.02	-178.48	-1,390.55	-36.92	1,391.04	1,380.95	10.09	137.862	
300.00	300.00	292.41	292.37	5.10	5.05	-178.42	-1,390.07	-38.34	1,390.74	1,380.60	10.15	137.044	
350.00	350.00	330.43	330.37	5.13	5.07	-178.39	-1,389.66	-38.98	1,390.23	1,380.03	10.20	136.260	
384.92	384.92	356.98	356.92	5.15	5.09	-178.37	-1,389.56	-39.51	1,390.12	1,379.88	10.25	135.671 CC	
400.00	400.00	372.00	371.94	5.17	5.10	-178.36	-1,389.58	-39.84	1,390.15	1,379.88	10.27	135.374	
450.00	450.00	415.21	415.13	5.21	5.14	-178.32	-1,389.73	-40.83	1,390.35	1,380.00	10.35	134.375	
500.00	500.00	462.88	462.79	5.26	5.18	-178.27	-1,389.97	-41.94	1,390.63	1,380.20	10.44	133.216	
550.00	550.00	517.94	517.83	5.32	5.23	-178.22	-1,390.20	-43.17	1,390.88	1,380.33	10.55	131.837	
600.00	600.00	569.88	569.77	5.38	5.29	-178.18	-1,390.25	-44.19	1,390.95	1,380.28	10.67	130.368	
650.00	650.00	615.89	615.77	5.45	5.35	-178.15	-1,390.36	-44.99	1,391.11	1,380.31	10.79	128.900	
700.00	700.00	664.14	664.01	5.52	5.41	-178.12	-1,390.61	-45.71	1,391.39	1,380.46	10.93	127.331	
750.00	750.00	716.83	716.50	5.59	5.48	-178.09	-1,390.85	-46.36	1,391.63	1,380.55	11.08	125.617	
800.00	800.00	769.31	769.18	5.66	5.56	-178.07	-1,390.99	-46.88	1,391.78	1,380.54	11.24	123.828	
850.00	850.00	822.12	821.99	5.76	5.65	-178.05	-1,391.03	-47.31	1,391.83	1,380.42	11.41	121.976	
900.00	900.00	871.00	870.86	5.85	5.73	-178.04	-1,391.03	-47.60	1,391.85	1,380.26	11.58	120.155	
950.00	950.00	919.52	919.38	5.94	5.82	-178.03	-1,391.09	-47.80	1,391.91	1,380.15	11.76	118.318	
1,000.00	1,000.00	971.99	971.85	6.04	5.92	-178.02	-1,391.14	-48.02	1,391.96	1,380.00	11.96	116.386	
1,046.37	1,046.37	1,020.65	1,020.51	6.14	6.01	-178.01	-1,391.09	-48.32	1,391.93	1,379.78	12.15	114.578	
1,050.00	1,050.00	1,022.07	1,021.93	6.14	6.02	-178.01	-1,391.10	-48.32	1,391.94	1,379.78	12.16	114.487	
1,100.00	1,100.00	1,066.45	1,066.31	6.25	6.10	-178.00	-1,391.18	-48.50	1,392.04	1,379.69	12.35	112.713	
1,150.00	1,150.00	1,113.29	1,113.15	6.36	6.20	-178.00	-1,391.46	-48.53	1,392.33	1,379.78	12.55	110.917	
1,200.00	1,200.00	1,166.20	1,166.06	6.47	6.31	-178.00	-1,391.74	-48.50	1,392.60	1,379.83	12.77	109.028	
1,250.00	1,250.00	1,218.46	1,218.32	6.58	6.42	-178.00	-1,391.92	-48.50	1,392.77	1,379.77	13.00	107.142	
1,300.00	1,300.00	1,270.24	1,270.10	6.70	6.53	-178.00	-1,392.01	-48.70	1,392.87	1,379.64	13.23	105.267	
1,350.00	1,350.00	1,320.55	1,320.41	6.82	6.65	-177.98	-1,392.06	-49.00	1,392.92	1,379.46	13.47	103.424	
1,400.00	1,400.00	1,370.37	1,370.23	6.94	6.77	-177.98	-1,392.12	-49.16	1,392.98	1,379.27	13.71	101.611	
1,450.00	1,450.00	1,421.26	1,421.12	7.07	6.89	-177.97	-1,392.16	-49.26	1,393.03	1,379.08	13.96	99.806	
1,500.00	1,500.00	1,472.32	1,472.18	7.19	7.02	-177.96	-1,392.17	-49.48	1,393.05	1,378.84	14.21	98.026	
1,509.07	1,509.07	1,481.58	1,481.44	7.22	7.04	-177.96	-1,392.16	-49.53	1,393.04	1,378.79	14.26	97.706	
1,550.00	1,550.00	1,516.66	1,516.51	7.32	7.13	-177.95	-1,392.24	-49.80	1,393.14	1,378.69	14.45	96.395	
1,600.00	1,600.00	1,561.03	1,560.88	7.45	7.25	-177.93	-1,392.49	-50.30	1,393.44	1,378.74	14.70	94.807	
1,650.00	1,650.00	1,610.80	1,610.65	7.59	7.38	-177.90	-1,392.87	-50.98	1,393.85	1,378.89	14.96	93.164	
1,700.00	1,700.00	1,660.97	1,660.81	7.72	7.51	-177.88	-1,393.25	-51.67	1,394.25	1,379.02	15.23	91.548	
1,750.00	1,750.00	1,716.01	1,715.85	7.86	7.66	-177.85	-1,393.57	-52.32	1,394.57	1,379.05	15.52	89.883	
1,800.00	1,800.00	1,771.07	1,770.90	8.00	7.81	-177.83	-1,393.70	-52.75	1,394.70	1,378.89	15.80	88.246	
1,850.00	1,850.00	1,818.85	1,818.68	8.14	7.94	-177.82	-1,393.79	-53.15	1,394.81	1,378.73	16.08	86.757	
1,900.00	1,900.00	1,866.61	1,866.43	8.28	8.07	-177.80	-1,393.91	-53.62	1,394.95	1,378.60	16.35	85.306	
1,950.00	1,950.00	1,911.64	1,911.46	8.42	8.20	-177.78	-1,394.15	-54.02	1,395.24	1,378.62	16.62	83.939	
2,000.00	2,000.00	1,958.39	1,958.21	8.57	8.33	-177.77	-1,394.57	-54.38	1,395.70	1,378.80	16.90	82.590	
2,050.00	2,050.00	2,009.52	2,009.34	8.71	8.48	-177.75	-1,395.04	-54.79	1,396.17	1,378.98	17.19	81.212	
2,100.00	2,100.00	2,061.85	2,061.66	8.86	8.63	-177.73	-1,395.46	-55.25	1,396.60	1,379.10	17.49	79.849	
2,150.00	2,150.00	2,115.69	2,115.51	9.01	8.79	-177.71	-1,395.77	-55.70	1,396.90	1,379.10	17.80	78.492	
2,200.00	2,200.00	2,166.32	2,166.13	9.16	8.94	-177.70	-1,395.96	-56.10	1,397.10	1,379.01	18.10	77.206	
2,250.00	2,250.00	2,215.68	2,215.47	9.31	9.09	-177.68	-1,396.17	-56.48	1,397.32	1,378.93	18.39	75.969	
2,300.00	2,300.00	2,266.42	2,266.22	9.46	9.24	-177.67	-1,396.38	-56.85	1,397.55	1,378.85	18.70	74.747	
2,350.00	2,350.00	2,317.42	2,317.23	9.61	9.40	-177.66	-1,396.56	-57.19	1,397.74	1,378.73	19.00	73.551	
2,400.00	2,400.00	2,364.74	2,364.55	9.77	9.54	-177.64	-1,396.75	-57.47	1,397.95	1,378.65	19.30	72.432	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - P3v1													Offset Site Error:	5.00 ft
Survey Program: 154-MWD+IGRF, 8178-													Offset Well Error:	0.00 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)						
2,450.00	2,450.00	2,411.87	2,411.87	9.92	9.68	-177.63	-1,397.04	-57.71	1,398.27	1,378.67	19.60	71.348		
2,500.00	2,500.00	2,463.35	2,463.15	10.07	9.84	-177.63	-1,397.39	-57.91	1,398.62	1,378.71	19.91	70.251		
2,550.00	2,550.00	2,515.16	2,514.96	10.23	10.00	-177.62	-1,397.68	-57.99	1,398.90	1,378.68	20.22	69.176		
2,600.00	2,600.00	2,568.47	2,568.27	10.39	10.16	-177.62	-1,397.88	-58.11	1,399.09	1,378.55	20.54	68.106		
2,650.00	2,650.00	2,619.42	2,619.22	10.54	10.32	-177.61	-1,397.97	-58.34	1,399.19	1,378.33	20.86	67.082		
2,700.00	2,700.00	2,666.96	2,666.76	10.70	10.47	-177.60	-1,398.09	-58.52	1,399.33	1,378.16	21.16	66.118		
2,750.00	2,750.00	2,717.14	2,716.94	10.86	10.62	162.40	-1,398.30	-58.65	1,399.56	1,378.08	21.48	65.158 ES		
2,800.00	2,800.00	2,771.47	2,771.27	11.02	10.79	162.41	-1,398.41	-58.75	1,400.00	1,378.19	21.81	64.195		
2,850.00	2,849.99	2,821.14	2,820.94	11.18	10.95	162.42	-1,398.41	-58.85	1,400.75	1,378.63	22.12	63.312		
2,900.00	2,899.98	2,868.58	2,868.38	11.34	11.10	162.44	-1,398.48	-59.00	1,402.00	1,379.56	22.43	62.492		
2,950.00	2,949.95	2,919.89	2,919.69	11.50	11.26	162.46	-1,398.61	-59.20	1,403.70	1,380.95	22.76	61.679		
3,000.00	2,999.91	2,973.06	2,972.85	11.66	11.43	162.49	-1,398.62	-59.33	1,405.73	1,382.64	23.09	60.884		
3,050.00	3,049.84	3,020.44	3,020.24	11.82	11.58	162.51	-1,398.62	-59.43	1,408.14	1,384.74	23.40	60.174		
3,100.00	3,099.75	3,067.33	3,067.12	11.98	11.73	162.54	-1,398.72	-59.58	1,411.08	1,387.37	23.71	59.506		
3,150.00	3,149.64	3,117.06	3,116.85	12.15	11.90	162.58	-1,398.88	-59.79	1,414.50	1,390.46	24.04	58.847		
3,200.00	3,199.49	3,167.13	3,166.92	12.31	12.06	162.63	-1,399.04	-60.00	1,418.33	1,393.96	24.36	58.218		
3,250.00	3,249.31	3,220.36	3,220.16	12.47	12.23	162.68	-1,399.14	-60.18	1,422.48	1,397.79	24.70	57.597		
3,300.00	3,299.12	3,272.14	3,271.94	12.64	12.40	162.74	-1,399.12	-60.28	1,426.63	1,401.61	25.03	57.001		
3,350.00	3,348.93	3,320.72	3,320.51	12.80	12.56	162.79	-1,399.11	-60.42	1,430.79	1,405.44	25.35	56.441		
3,400.00	3,398.74	3,369.62	3,369.42	12.96	12.72	162.85	-1,399.13	-60.52	1,434.99	1,409.31	25.67	55.891		
3,450.00	3,448.55	3,418.96	3,418.75	13.13	12.88	162.90	-1,399.19	-60.58	1,438.21	1,413.21	26.00	55.353		
3,500.00	3,498.36	3,468.34	3,468.13	13.29	13.04	162.95	-1,399.25	-60.61	1,443.45	1,417.12	26.33	54.827		
3,550.00	3,548.17	3,518.16	3,517.96	13.46	13.20	163.00	-1,399.33	-60.63	1,447.69	1,421.04	26.65	54.312		
3,600.00	3,597.98	3,568.00	3,567.80	13.62	13.36	163.06	-1,399.40	-60.65	1,451.94	1,424.95	26.98	53.808		
3,650.00	3,647.79	3,617.65	3,617.45	13.79	13.53	163.11	-1,399.47	-60.82	1,456.19	1,428.87	27.31	53.313		
3,700.00	3,697.60	3,667.13	3,666.92	13.96	13.69	163.18	-1,399.53	-61.20	1,460.44	1,432.80	27.64	52.829		
3,750.00	3,747.41	3,716.36	3,716.15	14.13	13.86	163.25	-1,399.60	-61.73	1,464.72	1,436.74	27.98	52.356		
3,800.00	3,797.22	3,765.75	3,765.54	14.29	14.02	163.32	-1,399.68	-62.39	1,469.01	1,440.70	28.31	51.893		
3,850.00	3,847.03	3,815.52	3,815.30	14.46	14.19	163.40	-1,399.75	-63.30	1,473.31	1,444.67	28.64	51.437		
3,900.00	3,896.84	3,866.72	3,866.48	14.63	14.36	163.50	-1,399.80	-64.55	1,477.61	1,448.62	28.98	50.982		
3,950.00	3,946.64	3,919.85	3,919.58	14.80	14.54	163.62	-1,399.72	-66.24	1,481.81	1,452.48	29.33	50.522		
4,000.00	3,996.45	3,974.38	3,974.07	14.97	14.72	163.75	-1,399.47	-68.31	1,485.89	1,456.21	29.68	50.059		
4,050.00	4,046.26	4,029.66	4,029.31	15.14	14.91	163.89	-1,399.01	-70.53	1,489.80	1,459.76	30.04	49.597		
4,100.00	4,096.07	4,084.17	4,083.78	15.30	15.09	164.02	-1,398.37	-72.63	1,493.54	1,463.15	30.39	49.145		
4,150.00	4,145.88	4,137.66	4,137.23	15.47	15.27	164.14	-1,397.60	-74.41	1,497.14	1,466.40	30.74	48.704 SF		

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Plan 1													Offset Site Error:
Survey Program: 0-MWD(OWSG)													Offset Well Error:
Reference		Offset		Semi Major Axis		Highside Toothface (')	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	5.02	5.00	-178.61	-1,390.01	-33.79	1,390.70				
50.00	50.00	22.00	22.00	5.03	5.00	-178.61	-1,390.01	-33.79	1,390.42	1,380.39	10.03	138.693	
100.00	100.00	72.00	72.00	5.03	5.00	-178.61	-1,390.01	-33.79	1,390.42	1,380.39	10.03	138.660	
150.00	150.00	122.00	122.00	5.03	5.00	-178.61	-1,390.01	-33.79	1,390.42	1,380.38	10.04	138.503	
200.00	200.00	172.00	172.00	5.05	5.02	-178.61	-1,390.01	-33.79	1,390.42	1,380.36	10.06	138.160	
250.00	250.00	222.00	222.00	5.07	5.03	-178.61	-1,390.01	-33.79	1,390.42	1,380.32	10.10	137.645	
300.00	300.00	272.00	272.00	5.10	5.06	-178.61	-1,390.01	-33.79	1,390.42	1,380.27	10.15	136.965	
350.00	350.00	322.00	322.00	5.13	5.09	-178.61	-1,390.01	-33.79	1,390.42	1,380.20	10.21	136.127	
400.00	400.00	372.00	372.00	5.17	5.12	-178.61	-1,390.01	-33.79	1,390.42	1,380.13	10.29	135.140	
450.00	450.00	422.00	422.00	5.21	5.16	-178.61	-1,390.01	-33.79	1,390.42	1,380.04	10.38	134.013	
500.00	500.00	472.00	472.00	5.26	5.21	-178.61	-1,390.01	-33.79	1,390.42	1,379.95	10.47	132.759	
550.00	550.00	522.00	522.00	5.32	5.26	-178.61	-1,390.01	-33.79	1,390.42	1,379.84	10.58	131.388	
600.00	600.00	572.00	572.00	5.38	5.32	-178.61	-1,390.01	-33.79	1,390.42	1,379.72	10.70	129.913	
650.00	650.00	622.00	622.00	5.45	5.39	-178.61	-1,390.01	-33.79	1,390.42	1,379.59	10.83	128.346	
700.00	700.00	672.00	672.00	5.52	5.46	-178.61	-1,390.01	-33.79	1,390.42	1,379.44	10.97	126.698	
750.00	750.00	722.00	722.00	5.59	5.53	-178.61	-1,390.01	-33.79	1,390.42	1,379.29	11.12	124.983	
800.00	800.00	772.00	772.00	5.68	5.61	-178.61	-1,390.01	-33.79	1,390.42	1,379.13	11.28	123.210	
850.00	850.00	822.00	822.00	5.76	5.69	-178.61	-1,390.01	-33.79	1,390.42	1,378.97	11.45	121.393	
900.00	900.00	872.00	872.00	5.85	5.78	-178.61	-1,390.01	-33.79	1,390.42	1,378.79	11.63	119.539	
950.00	950.00	922.00	922.00	5.94	5.87	-178.61	-1,390.01	-33.79	1,390.42	1,378.60	11.82	117.660	
1,000.00	1,000.00	972.00	972.00	6.04	5.97	-178.61	-1,390.01	-33.79	1,390.42	1,378.41	12.01	115.763	
1,050.00	1,050.00	1,022.00	1,022.00	6.14	6.07	-178.61	-1,390.01	-33.79	1,390.42	1,378.21	12.21	113.857	
1,100.00	1,100.00	1,072.00	1,072.00	6.25	6.17	-178.61	-1,390.01	-33.79	1,390.42	1,378.00	12.42	111.948	
1,150.00	1,150.00	1,122.00	1,122.00	6.36	6.28	-178.61	-1,390.01	-33.79	1,390.42	1,377.78	12.64	110.044	
1,200.00	1,200.00	1,172.00	1,172.00	6.47	6.39	-178.61	-1,390.01	-33.79	1,390.42	1,377.56	12.86	108.150	
1,250.00	1,250.00	1,222.00	1,222.00	6.58	6.50	-178.61	-1,390.01	-33.79	1,390.42	1,377.34	13.08	106.270	
1,300.00	1,300.00	1,272.00	1,272.00	6.70	6.62	-178.61	-1,390.01	-33.79	1,390.42	1,377.10	13.32	104.409	
1,350.00	1,350.00	1,322.00	1,322.00	6.82	6.74	-178.61	-1,390.01	-33.79	1,390.42	1,376.86	13.56	102.571	
1,400.00	1,400.00	1,372.00	1,372.00	6.94	6.86	-178.61	-1,390.01	-33.79	1,390.42	1,376.62	13.80	100.759	
1,450.00	1,450.00	1,422.00	1,422.00	7.07	6.98	-178.61	-1,390.01	-33.79	1,390.42	1,376.37	14.05	98.975	
1,500.00	1,500.00	1,472.00	1,472.00	7.19	7.11	-178.61	-1,390.01	-33.79	1,390.42	1,376.12	14.30	97.221	
1,550.00	1,550.00	1,522.00	1,522.00	7.32	7.24	-178.61	-1,390.01	-33.79	1,390.42	1,375.86	14.56	95.499	
1,600.00	1,600.00	1,572.00	1,572.00	7.45	7.37	-178.61	-1,390.01	-33.79	1,390.42	1,375.60	14.82	93.811	
1,650.00	1,650.00	1,622.00	1,622.00	7.59	7.50	-178.61	-1,390.01	-33.79	1,390.42	1,375.33	15.09	92.157	
1,700.00	1,700.00	1,672.00	1,672.00	7.72	7.63	-178.61	-1,390.01	-33.79	1,390.42	1,375.06	15.36	90.539	
1,750.00	1,750.00	1,722.00	1,722.00	7.86	7.77	-178.61	-1,390.01	-33.79	1,390.42	1,374.79	15.63	88.956	
1,800.00	1,800.00	1,772.00	1,772.00	8.00	7.91	-178.61	-1,390.01	-33.79	1,390.42	1,374.51	15.91	87.408	
1,850.00	1,850.00	1,822.00	1,822.00	8.14	8.05	-178.61	-1,390.01	-33.79	1,390.42	1,374.23	16.19	85.897	
1,900.00	1,900.00	1,872.00	1,872.00	8.28	8.19	-178.61	-1,390.01	-33.79	1,390.42	1,373.95	16.47	84.421	
1,950.00	1,950.00	1,922.00	1,922.00	8.42	8.33	-178.61	-1,390.01	-33.79	1,390.42	1,373.66	16.76	82.981	
2,000.00	2,000.00	1,972.00	1,972.00	8.57	8.48	-178.61	-1,390.01	-33.79	1,390.42	1,373.37	17.04	81.576	
2,050.00	2,050.00	2,022.00	2,022.00	8.71	8.62	-178.61	-1,390.01	-33.79	1,390.42	1,373.08	17.34	80.206	
2,100.00	2,100.00	2,072.00	2,072.00	8.86	8.77	-178.61	-1,390.01	-33.79	1,390.42	1,372.79	17.63	78.870	
2,150.00	2,150.00	2,122.00	2,122.00	9.01	8.92	-178.61	-1,390.01	-33.79	1,390.42	1,372.49	17.93	77.567	
2,200.00	2,200.00	2,172.00	2,172.00	9.16	9.07	-178.61	-1,390.01	-33.79	1,390.42	1,372.20	18.22	76.298	
2,250.00	2,250.00	2,222.00	2,222.00	9.31	9.22	-178.61	-1,390.01	-33.79	1,390.42	1,371.90	18.52	75.060	
2,300.00	2,300.00	2,272.00	2,272.00	9.46	9.37	-178.61	-1,390.01	-33.79	1,390.42	1,371.59	18.83	73.855	
2,350.00	2,350.00	2,322.00	2,322.00	9.61	9.52	-178.61	-1,390.01	-33.79	1,390.42	1,371.29	19.13	72.680	
2,400.00	2,400.00	2,372.00	2,372.00	9.77	9.67	-178.61	-1,390.01	-33.79	1,390.42	1,370.98	19.44	71.535	
2,450.00	2,450.00	2,422.00	2,422.00	9.92	9.83	-178.61	-1,390.01	-33.79	1,390.42	1,370.67	19.74	70.419	
2,500.00	2,500.00	2,472.00	2,472.00	10.07	9.98	-178.61	-1,390.01	-33.79	1,390.42	1,370.36	20.05	69.331	
2,550.00	2,550.00	2,522.00	2,522.00	10.23	10.14	-178.61	-1,390.01	-33.79	1,390.42	1,370.05	20.37	68.272	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - Plan 1		Offset Site Error:	5.00 ft
Survey Program: 0-MWD(OWSG)													Offset Well Error:	0.00 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	2,600.00	2,572.00	2,572.00	10.39	10.29	-178.61	-1,390.01	-33.79	1,390.42	1,369.74	20.68	67.239		
2,650.00	2,650.00	2,622.00	2,622.00	10.54	10.45	-178.61	-1,390.01	-33.79	1,390.42	1,369.43	20.99	66.233		
2,700.00	2,700.00	2,672.00	2,672.00	10.70	10.61	-178.61	-1,390.01	-33.79	1,390.42	1,369.11	21.31	65.252 CC		
2,700.01	2,700.01	2,672.01	2,672.01	10.70	10.61	-178.61	-1,390.01	-33.79	1,390.42	1,369.11	21.31	65.251		
2,750.00	2,750.00	2,722.00	2,722.00	10.86	10.77	161.39	-1,390.01	-33.79	1,390.44	1,368.81	21.63	64.296 ES		
2,800.00	2,800.00	2,772.00	2,772.00	11.02	10.92	161.40	-1,390.01	-33.79	1,390.77	1,368.82	21.94	63.379		
2,850.00	2,849.99	2,821.99	2,821.99	11.18	11.08	161.40	-1,390.01	-33.79	1,391.51	1,369.25	22.26	62.505		
2,900.00	2,899.98	2,871.98	2,871.98	11.34	11.24	161.42	-1,390.01	-33.79	1,392.67	1,370.09	22.58	61.670		
2,950.00	2,949.95	2,921.95	2,921.95	11.50	11.40	161.43	-1,390.01	-33.79	1,394.24	1,371.34	22.90	60.874		
3,000.00	2,999.91	2,971.91	2,971.91	11.66	11.57	161.45	-1,390.01	-33.79	1,396.23	1,373.00	23.23	60.115		
3,050.00	3,049.84	3,021.84	3,021.84	11.82	11.73	161.48	-1,390.01	-33.79	1,398.63	1,375.08	23.55	59.392		
3,100.00	3,099.75	3,071.75	3,071.75	11.98	11.89	161.51	-1,390.01	-33.79	1,401.44	1,377.57	23.87	58.703		
3,150.00	3,149.64	3,121.64	3,121.64	12.15	12.05	161.54	-1,390.01	-33.79	1,404.66	1,380.47	24.20	58.049		
3,200.00	3,199.49	3,171.49	3,171.49	12.31	12.22	161.58	-1,390.01	-33.79	1,408.30	1,383.78	24.52	57.426		
3,250.00	3,249.31	3,221.31	3,221.31	12.47	12.38	161.63	-1,390.01	-33.79	1,412.34	1,387.49	24.85	56.834		
3,300.00	3,299.12	3,271.12	3,271.12	12.64	12.54	161.68	-1,390.01	-33.79	1,416.48	1,391.30	25.18	56.261		
3,350.00	3,348.93	3,320.93	3,320.93	12.80	12.71	161.74	-1,390.01	-33.79	1,420.62	1,395.11	25.50	55.700		
3,400.00	3,398.74	3,370.74	3,370.74	12.96	12.87	161.79	-1,390.01	-33.79	1,424.76	1,398.92	25.83	55.152		
3,450.00	3,448.55	3,420.55	3,420.55	13.13	13.03	161.85	-1,390.01	-33.79	1,428.90	1,402.74	26.16	54.616		
3,500.00	3,498.36	3,470.36	3,470.36	13.29	13.20	161.90	-1,390.01	-33.79	1,433.04	1,406.55	26.49	54.091		
3,550.00	3,548.17	3,520.17	3,520.17	13.46	13.37	161.95	-1,390.01	-33.79	1,437.19	1,410.36	26.82	53.578		
3,600.00	3,597.98	3,569.98	3,569.98	13.62	13.53	162.01	-1,390.01	-33.79	1,441.33	1,414.18	27.16	53.076		
3,650.00	3,647.79	3,619.79	3,619.79	13.79	13.70	162.06	-1,390.01	-33.79	1,445.48	1,417.99	27.49	52.585		
3,700.00	3,697.60	3,669.60	3,669.60	13.96	13.86	162.11	-1,390.01	-33.79	1,449.63	1,421.81	27.82	52.105		
3,750.00	3,747.41	3,719.41	3,719.41	14.13	14.03	162.17	-1,390.01	-33.79	1,453.78	1,425.62	28.16	51.634		
3,800.00	3,797.22	3,769.22	3,769.22	14.29	14.20	162.22	-1,390.01	-33.79	1,457.93	1,429.44	28.49	51.174		
3,850.00	3,847.03	3,819.03	3,819.03	14.46	14.36	162.27	-1,390.01	-33.79	1,462.08	1,433.25	28.82	50.723		
3,900.00	3,896.84	3,868.84	3,868.84	14.63	14.53	162.32	-1,390.01	-33.79	1,466.23	1,437.07	29.16	50.282		
3,950.00	3,946.64	3,918.64	3,918.64	14.80	14.70	162.38	-1,390.01	-33.79	1,470.39	1,440.89	29.50	49.850		
4,000.00	3,996.45	3,968.45	3,968.45	14.97	14.87	162.43	-1,390.01	-33.79	1,474.54	1,444.71	29.83	49.426		
4,050.00	4,046.26	4,018.26	4,018.26	15.14	15.04	162.48	-1,390.01	-33.79	1,478.70	1,448.53	30.17	49.011		
4,100.00	4,096.07	4,068.07	4,068.07	15.30	15.20	162.53	-1,390.01	-33.79	1,482.86	1,452.35	30.51	48.605		
4,150.00	4,145.88	4,117.88	4,117.88	15.47	15.37	162.58	-1,390.01	-33.79	1,487.01	1,456.17	30.85	48.207		
4,200.00	4,195.69	4,167.69	4,167.69	15.64	15.54	162.63	-1,390.01	-33.79	1,491.17	1,459.99	31.19	47.816		
4,250.00	4,245.50	4,217.50	4,217.50	15.81	15.71	162.68	-1,390.01	-33.79	1,495.33	1,463.81	31.52	47.434		
4,300.00	4,295.31	4,267.31	4,267.31	15.98	15.88	162.73	-1,390.01	-33.79	1,499.50	1,467.63	31.86	47.059 SF		

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - PTL													Offset Site Error: 5.00 ft
Survey Program: 154-MWD+IGRF, 8755-													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	5.02	5.00	-178.61	-1,390.01	-33.79	1,390.70				
50.00	50.00	21.07	21.07	5.03	5.00	-178.61	-1,390.01	-33.82	1,390.43	1,380.40	10.03	138.693	
100.00	100.00	68.96	68.96	5.03	5.00	-178.59	-1,390.08	-34.13	1,390.50	1,380.47	10.03	138.666	
150.00	150.00	116.85	116.84	5.03	5.00	-178.57	-1,390.20	-34.77	1,390.64	1,380.61	10.04	138.546	
200.00	200.00	165.88	165.86	5.05	5.01	-178.53	-1,390.39	-35.77	1,390.86	1,380.81	10.06	138.312	
250.00	250.00	217.36	217.33	5.07	5.02	-178.48	-1,390.55	-36.92	1,391.04	1,380.95	10.09	137.862	
300.00	300.00	292.41	292.37	5.10	5.05	-178.42	-1,390.07	-38.34	1,390.74	1,380.60	10.15	137.044	
350.00	350.00	330.43	330.37	5.13	5.07	-178.39	-1,389.66	-38.98	1,390.23	1,380.03	10.20	136.260	
384.92	384.92	356.88	356.92	5.15	5.09	-178.37	-1,389.56	-39.51	1,390.12	1,379.88	10.25	135.671	CC
400.00	400.00	372.00	371.94	5.17	5.10	-178.36	-1,389.58	-39.84	1,390.15	1,379.88	10.27	135.374	
450.00	450.00	415.21	415.13	5.21	5.14	-178.32	-1,389.73	-40.83	1,390.35	1,380.00	10.35	134.375	
500.00	500.00	462.88	462.79	5.26	5.18	-178.27	-1,389.97	-41.94	1,390.63	1,380.20	10.44	133.216	
550.00	550.00	517.94	517.83	5.32	5.23	-178.22	-1,390.20	-43.17	1,390.88	1,380.33	10.55	131.837	
600.00	600.00	569.88	569.77	5.38	5.29	-178.18	-1,390.25	-44.19	1,390.95	1,380.28	10.67	130.368	
650.00	650.00	615.89	615.77	5.45	5.35	-178.15	-1,390.36	-44.99	1,391.11	1,380.31	10.79	128.900	
700.00	700.00	664.14	664.01	5.52	5.41	-178.12	-1,390.61	-45.71	1,391.39	1,380.46	10.93	127.331	
750.00	750.00	716.63	716.50	5.59	5.48	-178.09	-1,390.85	-46.36	1,391.63	1,380.55	11.08	125.617	
800.00	800.00	769.31	769.18	5.68	5.56	-178.07	-1,390.99	-46.88	1,391.78	1,380.54	11.24	123.828	
850.00	850.00	822.12	821.99	5.76	5.65	-178.05	-1,391.03	-47.31	1,391.83	1,380.42	11.41	121.976	
900.00	900.00	871.00	870.86	5.85	5.73	-178.04	-1,391.03	-47.60	1,391.85	1,380.26	11.58	120.155	
950.00	950.00	919.52	919.38	5.94	5.82	-178.03	-1,391.09	-47.80	1,391.91	1,380.15	11.76	118.318	
1,000.00	1,000.00	971.99	971.85	6.04	5.92	-178.02	-1,391.14	-48.02	1,391.96	1,380.00	11.96	116.386	
1,048.37	1,046.37	1,020.65	1,020.51	6.14	6.01	-178.01	-1,391.09	-48.32	1,391.93	1,379.78	12.15	114.578	
1,050.00	1,050.00	1,022.07	1,021.93	6.14	6.02	-178.01	-1,391.10	-48.32	1,391.94	1,379.78	12.16	114.487	
1,100.00	1,100.00	1,068.45	1,068.31	6.25	6.10	-178.00	-1,391.18	-48.50	1,392.04	1,379.69	12.35	112.713	
1,150.00	1,150.00	1,113.29	1,113.15	6.36	6.20	-178.00	-1,391.46	-48.53	1,392.33	1,379.78	12.55	110.917	
1,200.00	1,200.00	1,166.20	1,166.06	6.47	6.31	-178.00	-1,391.74	-48.50	1,392.60	1,379.83	12.77	109.028	
1,250.00	1,250.00	1,218.46	1,218.32	6.58	6.42	-178.00	-1,391.92	-48.50	1,392.77	1,379.77	13.00	107.142	
1,300.00	1,300.00	1,270.24	1,270.10	6.70	6.53	-178.00	-1,392.01	-48.70	1,392.87	1,379.64	13.23	105.267	
1,350.00	1,350.00	1,320.55	1,320.41	6.82	6.65	-177.98	-1,392.06	-49.00	1,392.92	1,379.46	13.47	103.424	
1,400.00	1,400.00	1,370.37	1,370.23	6.94	6.77	-177.98	-1,392.12	-49.16	1,392.98	1,379.27	13.71	101.611	
1,450.00	1,450.00	1,421.26	1,421.12	7.07	6.89	-177.97	-1,392.16	-49.26	1,393.03	1,379.08	13.96	99.806	
1,500.00	1,500.00	1,472.32	1,472.18	7.19	7.02	-177.96	-1,392.17	-49.48	1,393.05	1,378.84	14.21	98.026	
1,509.07	1,509.07	1,481.58	1,481.44	7.22	7.04	-177.96	-1,392.16	-49.53	1,393.04	1,378.79	14.26	97.706	
1,550.00	1,550.00	1,516.66	1,516.51	7.32	7.13	-177.95	-1,392.24	-49.80	1,393.14	1,378.69	14.45	96.395	
1,600.00	1,600.00	1,561.03	1,560.88	7.45	7.25	-177.93	-1,392.49	-50.30	1,393.44	1,378.74	14.70	94.807	
1,650.00	1,650.00	1,610.80	1,610.65	7.59	7.38	-177.90	-1,392.87	-50.98	1,393.85	1,378.89	14.96	93.164	
1,700.00	1,700.00	1,660.97	1,660.81	7.72	7.51	-177.88	-1,393.25	-51.67	1,394.25	1,379.02	15.23	91.548	
1,750.00	1,750.00	1,718.01	1,715.85	7.88	7.66	-177.85	-1,393.57	-52.32	1,394.57	1,379.05	15.52	89.883	
1,800.00	1,800.00	1,771.07	1,770.90	8.00	7.81	-177.83	-1,393.70	-52.75	1,394.70	1,378.89	15.80	88.246	
1,850.00	1,850.00	1,818.85	1,818.68	8.14	7.94	-177.82	-1,393.79	-53.15	1,394.81	1,378.73	16.08	86.757	
1,900.00	1,900.00	1,866.61	1,866.43	8.28	8.07	-177.80	-1,393.91	-53.62	1,394.95	1,378.60	16.35	85.306	
1,950.00	1,950.00	1,911.64	1,911.46	8.42	8.20	-177.78	-1,394.15	-54.02	1,395.24	1,378.62	16.62	83.939	
2,000.00	2,000.00	1,958.39	1,958.21	8.57	8.33	-177.77	-1,394.57	-54.38	1,395.70	1,378.80	16.90	82.590	
2,050.00	2,050.00	2,009.52	2,009.34	8.71	8.48	-177.75	-1,395.04	-54.79	1,396.17	1,378.98	17.19	81.212	
2,100.00	2,100.00	2,061.85	2,061.66	8.86	8.63	-177.73	-1,395.46	-55.25	1,396.60	1,379.10	17.49	79.849	
2,150.00	2,150.00	2,115.69	2,115.51	9.01	8.79	-177.71	-1,395.77	-55.70	1,396.90	1,379.10	17.80	78.492	
2,200.00	2,200.00	2,166.32	2,166.13	9.16	8.94	-177.70	-1,395.98	-56.10	1,397.10	1,379.01	18.10	77.206	
2,250.00	2,250.00	2,215.68	2,215.47	9.31	9.09	-177.68	-1,396.17	-56.48	1,397.32	1,378.93	18.39	75.969	
2,300.00	2,300.00	2,266.42	2,266.22	9.46	9.24	-177.67	-1,396.38	-56.85	1,397.55	1,378.85	18.70	74.747	
2,350.00	2,350.00	2,317.42	2,317.23	9.61	9.40	-177.66	-1,396.56	-57.19	1,397.74	1,378.73	19.00	73.551	
2,400.00	2,400.00	2,364.74	2,364.55	9.77	9.54	-177.64	-1,396.75	-57.47	1,397.95	1,378.65	19.30	72.432	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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-T19S-R29E - Turquoise PWU 27 10H - Original Hole - PTL													Offset Site Error: 5.00 ft
Survey Program: 184-MWD+IGRF, 8755-													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
2,450.00	2,450.00	2,411.87	2,411.87	9.92	9.68	-177.63	-1,397.04	-57.71	1,398.27	1,378.67	19.60	71.348	
2,500.00	2,500.00	2,463.35	2,463.15	10.07	9.84	-177.63	-1,397.39	-57.91	1,398.62	1,378.71	19.91	70.251	
2,550.00	2,550.00	2,515.16	2,514.96	10.23	10.00	-177.62	-1,397.68	-57.99	1,398.90	1,378.68	20.22	69.176	
2,600.00	2,600.00	2,568.47	2,568.27	10.39	10.16	-177.62	-1,397.88	-58.11	1,399.09	1,378.55	20.54	68.106	
2,650.00	2,650.00	2,619.42	2,619.22	10.54	10.32	-177.61	-1,397.97	-58.34	1,399.19	1,378.33	20.86	67.082	
2,700.00	2,700.00	2,666.96	2,666.76	10.70	10.47	-177.60	-1,398.09	-58.52	1,399.33	1,378.16	21.16	66.118	
2,750.00	2,750.00	2,717.14	2,716.94	10.86	10.62	162.40	-1,398.30	-58.65	1,399.56	1,378.08	21.48	65.158 ES	
2,800.00	2,800.00	2,771.47	2,771.27	11.02	10.79	162.41	-1,398.41	-58.75	1,400.00	1,378.19	21.81	64.195	
2,850.00	2,849.99	2,821.14	2,820.94	11.18	10.95	162.42	-1,398.41	-58.85	1,400.75	1,378.63	22.12	63.312	
2,900.00	2,899.98	2,868.58	2,868.38	11.34	11.10	162.44	-1,398.48	-59.00	1,402.00	1,379.56	22.43	62.482	
2,950.00	2,949.95	2,919.89	2,919.69	11.50	11.26	162.46	-1,398.61	-59.20	1,403.70	1,380.95	22.76	61.679	
3,000.00	2,999.91	2,973.06	2,972.85	11.66	11.43	162.49	-1,398.62	-59.33	1,405.73	1,382.64	23.09	60.884	
3,050.00	3,049.84	3,020.44	3,020.24	11.82	11.58	162.51	-1,398.62	-59.43	1,408.14	1,384.74	23.40	60.174	
3,100.00	3,099.75	3,067.33	3,067.12	11.98	11.73	162.54	-1,398.72	-59.58	1,411.08	1,387.37	23.71	59.506	
3,150.00	3,149.64	3,117.06	3,116.85	12.15	11.90	162.58	-1,398.88	-59.79	1,414.50	1,390.46	24.04	58.847	
3,200.00	3,199.49	3,167.13	3,166.92	12.31	12.06	162.63	-1,399.04	-60.00	1,418.33	1,393.96	24.36	58.218	
3,250.00	3,249.31	3,220.36	3,220.16	12.47	12.23	162.68	-1,399.14	-60.18	1,422.48	1,397.79	24.70	57.597	
3,300.00	3,299.12	3,272.14	3,271.94	12.64	12.40	162.74	-1,399.12	-60.28	1,426.63	1,401.61	25.03	57.001	
3,350.00	3,348.93	3,320.72	3,320.51	12.80	12.56	162.79	-1,399.11	-60.42	1,430.79	1,405.44	25.35	56.441	
3,400.00	3,398.74	3,369.62	3,369.42	12.96	12.72	162.85	-1,399.13	-60.52	1,434.99	1,409.31	25.67	55.891	
3,450.00	3,448.55	3,418.96	3,418.75	13.13	12.88	162.90	-1,399.19	-60.58	1,439.21	1,413.21	26.00	55.353	
3,500.00	3,498.36	3,468.34	3,468.13	13.29	13.04	162.95	-1,399.25	-60.61	1,443.45	1,417.12	26.33	54.827	
3,550.00	3,548.17	3,518.16	3,517.96	13.46	13.20	163.00	-1,399.33	-60.63	1,447.69	1,421.04	26.65	54.312	
3,600.00	3,597.98	3,568.00	3,567.80	13.62	13.36	163.06	-1,399.40	-60.65	1,451.94	1,424.95	26.98	53.808	
3,650.00	3,647.79	3,617.65	3,617.45	13.79	13.53	163.11	-1,399.47	-60.82	1,456.19	1,428.87	27.31	53.313	
3,700.00	3,697.60	3,667.13	3,666.92	13.96	13.69	163.18	-1,399.53	-61.20	1,460.44	1,432.80	27.64	52.829	
3,750.00	3,747.41	3,716.36	3,716.15	14.13	13.86	163.25	-1,399.60	-61.73	1,464.72	1,436.74	27.98	52.356	
3,800.00	3,797.22	3,765.75	3,765.54	14.29	14.02	163.32	-1,399.68	-62.39	1,469.01	1,440.70	28.31	51.893	
3,850.00	3,847.03	3,815.52	3,815.30	14.46	14.19	163.40	-1,399.75	-63.30	1,473.31	1,444.67	28.64	51.437	
3,900.00	3,896.84	3,866.72	3,866.48	14.63	14.36	163.50	-1,399.80	-64.55	1,477.61	1,448.62	28.98	50.982	
3,950.00	3,946.64	3,919.85	3,919.58	14.80	14.54	163.62	-1,399.72	-66.24	1,481.81	1,452.48	29.33	50.522	
4,000.00	3,996.45	3,974.38	3,974.07	14.97	14.72	163.75	-1,399.47	-68.31	1,485.89	1,456.21	29.68	50.059	
4,050.00	4,046.26	4,029.66	4,029.31	15.14	14.91	163.89	-1,399.01	-70.53	1,489.80	1,459.76	30.04	49.597	
4,100.00	4,096.07	4,084.17	4,083.78	15.30	15.09	164.02	-1,398.37	-72.63	1,493.54	1,463.15	30.39	49.145	
4,150.00	4,145.88	4,137.66	4,137.23	15.47	15.27	164.14	-1,397.60	-74.41	1,497.14	1,466.40	30.74	48.704 SF	

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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

Survey Program: Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - T&D													Offset Site Error: 5.00 ft
Survey Program: Sec 28-T19S-R29E - Turquoise PWU 27 10H - Original Hole - T&D													Offset Well Error: 0.00 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)			
0.00	0.00	0.00	0.00	5.02	-178.61		-1,390.01	-33.79	1,390.70				
50.00	50.00	22.00	22.00	5.03	-178.61		-1,390.01	-33.79	1,390.42	1,380.39	10.03	138.694	
100.00	100.00	72.00	72.00	5.03	-178.61		-1,390.01	-33.79	1,390.42	1,380.39	10.03	138.673	
150.00	150.00	122.00	122.00	5.03	-178.61		-1,390.01	-33.79	1,390.42	1,380.38	10.03	138.566	
200.00	200.00	172.01	172.00	5.05	-178.61		-1,390.01	-33.79	1,390.42	1,380.37	10.05	138.371	
250.00	250.00	223.06	223.04	5.07	-178.60		-1,390.02	-33.88	1,390.43	1,380.37	10.07	138.092	
300.00	300.00	289.96	272.00	5.10	-178.61		-1,390.01	-33.79	1,390.42	1,380.32	10.10	137.726	
350.00	350.00	322.04	322.00	5.13	-178.61		-1,390.01	-33.79	1,390.42	1,380.29	10.13	137.280	
358.75	358.75	329.90	329.85	5.13	-178.60		-1,389.81	-33.95	1,390.22	1,380.09	10.13	137.175 CC	
400.00	400.00	362.56	362.51	5.17	-178.61		-1,389.83	-33.85	1,390.38	1,380.21	10.17	136.755	
450.00	450.00	422.31	422.25	5.21	-178.60		-1,390.04	-34.04	1,390.46	1,380.25	10.21	136.161	
500.00	500.00	475.05	474.98	5.26	-178.61		-1,389.99	-33.63	1,390.40	1,380.14	10.26	135.487	
505.67	505.67	477.76	477.67	5.27	-178.61		-1,390.01	-33.79	1,390.42	1,380.15	10.27	135.409	
550.00	550.00	523.61	523.51	5.32	-178.60		-1,390.07	-34.03	1,390.49	1,380.17	10.32	134.761	
600.00	600.00	572.11	572.00	5.38	-178.61		-1,390.01	-33.79	1,390.42	1,380.04	10.38	133.957	
650.00	650.00	622.29	622.18	5.45	-178.60		-1,390.01	-33.95	1,390.42	1,379.98	10.45	133.104	
700.00	700.00	672.12	672.00	5.52	-178.61		-1,390.01	-33.79	1,390.42	1,379.90	10.52	132.198	
750.00	750.00	725.29	725.16	5.59	-178.60		-1,390.04	-33.87	1,390.46	1,379.88	10.59	131.248	
800.00	800.00	772.13	772.00	5.68	-178.61		-1,390.01	-33.79	1,390.42	1,379.74	10.68	130.247	
850.00	850.00	831.86	822.00	5.76	-178.61		-1,390.01	-33.79	1,390.42	1,379.66	10.78	129.213	
900.00	900.00	872.14	872.00	5.85	-178.61		-1,390.01	-33.79	1,390.42	1,379.57	10.85	128.144	
950.00	950.00	922.14	922.00	5.94	-178.61		-1,390.01	-33.79	1,390.42	1,379.47	10.94	127.046	
1,000.00	1,000.00	972.38	972.24	6.04	-178.61		-1,390.03	-33.82	1,390.44	1,379.40	11.04	125.924	
1,050.00	1,050.00	1,022.14	1,022.00	6.14	-178.61		-1,390.01	-33.79	1,390.42	1,379.28	11.14	124.777	
1,081.36	1,081.36	1,053.50	1,053.36	6.21	-178.60		-1,389.99	-33.86	1,390.41	1,379.20	11.21	124.048	
1,100.00	1,100.00	1,071.80	1,071.66	6.25	-178.61		-1,390.00	-33.85	1,390.41	1,379.16	11.25	123.613	
1,150.00	1,150.00	1,122.14	1,122.00	6.36	-178.61		-1,390.01	-33.79	1,390.42	1,379.06	11.36	122.437	
1,200.00	1,200.00	1,175.65	1,175.51	6.47	-178.61		-1,390.05	-33.78	1,390.46	1,378.99	11.47	121.252	
1,224.88	1,224.88	1,203.51	1,203.37	6.52	-178.61		-1,389.95	-33.79	1,390.37	1,378.85	11.52	120.651	
1,250.00	1,250.00	1,222.14	1,222.00	6.58	-178.61		-1,390.01	-33.79	1,390.42	1,378.84	11.58	120.052	
1,300.00	1,300.00	1,274.06	1,273.92	6.70	-178.61		-1,390.02	-33.78	1,390.43	1,378.74	11.70	118.851	
1,320.34	1,320.34	1,295.47	1,295.33	6.75	-178.61		-1,389.98	-33.79	1,390.40	1,378.65	11.75	118.358	
1,350.00	1,350.00	1,322.14	1,322.00	6.82	-178.61		-1,390.01	-33.79	1,390.42	1,378.60	11.82	117.644	
1,400.00	1,400.00	1,381.86	1,372.00	6.94	-178.61		-1,390.01	-33.79	1,390.42	1,378.48	11.94	116.438	
1,450.00	1,450.00	1,422.14	1,422.00	7.07	-178.61		-1,390.01	-33.79	1,390.42	1,378.35	12.07	115.233	
1,500.00	1,500.00	1,473.05	1,472.91	7.19	-178.61		-1,390.01	-33.79	1,390.42	1,378.23	12.19	114.032	
1,509.28	1,509.28	1,482.51	1,482.36	7.22	-178.61		-1,390.00	-33.78	1,390.41	1,378.19	12.22	113.809	
1,550.00	1,550.00	1,522.13	1,521.99	7.32	-178.61		-1,390.01	-33.85	1,390.42	1,378.09	12.32	112.835	
1,600.00	1,600.00	1,572.15	1,572.00	7.45	-178.61		-1,390.01	-33.79	1,390.42	1,377.97	12.45	111.645	
1,650.00	1,650.00	1,623.42	1,623.27	7.59	-178.60		-1,390.10	-33.94	1,390.51	1,377.93	12.59	110.470	
1,700.00	1,700.00	1,672.16	1,672.00	7.72	-178.61		-1,390.01	-33.79	1,390.42	1,377.70	12.72	109.288	
1,750.00	1,750.00	1,723.95	1,723.78	7.86	-178.60		-1,390.09	-33.93	1,390.50	1,377.64	12.86	108.131	
1,800.00	1,800.00	1,772.17	1,772.00	8.00	-178.61		-1,390.01	-33.79	1,390.42	1,377.42	13.00	106.971	
1,850.00	1,850.00	1,822.66	1,822.50	8.14	-178.60		-1,390.02	-33.85	1,390.44	1,377.30	13.14	105.830	
1,900.00	1,900.00	1,872.17	1,872.00	8.28	-178.61		-1,390.01	-33.79	1,390.42	1,377.14	13.28	104.700	
1,950.00	1,950.00	1,923.16	1,922.99	8.42	-178.60		-1,390.03	-33.87	1,390.44	1,377.02	13.42	103.585	
2,000.00	2,000.00	1,972.18	1,972.00	8.57	-178.61		-1,390.01	-33.79	1,390.42	1,376.85	13.57	102.480	
2,050.00	2,050.00	2,027.61	2,027.43	8.71	-178.61		-1,390.05	-33.82	1,390.48	1,376.76	13.71	101.395	
2,075.15	2,075.15	2,057.14	2,056.96	8.79	-178.61		-1,389.90	-33.70	1,390.34	1,376.55	13.79	100.844	
2,100.00	2,100.00	2,072.18	2,072.00	8.86	-178.61		-1,390.01	-33.79	1,390.42	1,376.56	13.86	100.315	
2,150.00	2,150.00	2,139.81	2,122.00	9.01	-178.61		-1,390.01	-33.79	1,390.42	1,376.41	14.01	99.253	
2,200.00	2,200.00	2,172.19	2,172.00	9.16	-178.61		-1,390.01	-33.79	1,390.42	1,376.26	14.16	98.207	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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													Offset Site Error: 5.00 ft	
Survey Program:													Offset Well Error: 0.00 ft	
Reference		Offset		Semi Major Axis		Highside Tooface (')	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)	
2,250.00	2,250.00	2,224.92	2,224.73	9.31	-178.61	-1,390.01	-33.78	1,390.42	1,376.11	14.31	97.175			
2,259.85	2,259.85	2,235.36	2,235.17	9.34	-178.61	-1,389.98	-33.73	1,390.40	1,376.06	14.34	96.972			
2,300.00	2,300.00	2,272.24	2,272.05	9.46	-178.60	-1,390.06	-33.88	1,390.48	1,376.02	14.46	96.161			
2,350.00	2,350.00	2,325.81	2,325.62	9.61	-178.61	-1,389.99	-33.78	1,390.41	1,375.80	14.61	95.155			
2,356.89	2,356.89	2,333.19	2,333.00	9.63	-178.61	-1,389.98	-33.73	1,390.39	1,375.76	14.63	95.016			
2,400.00	2,400.00	2,372.46	2,372.27	9.77	-178.60	-1,390.04	-33.86	1,390.46	1,375.69	14.77	94.170			
2,450.00	2,450.00	2,425.02	2,424.83	9.92	-178.61	-1,389.99	-33.75	1,390.40	1,375.48	14.92	93.194			
2,451.19	2,451.19	2,426.27	2,426.08	9.92	-178.61	-1,389.99	-33.74	1,390.40	1,375.48	14.92	93.171			
2,500.00	2,500.00	2,473.35	2,473.15	10.07	-178.61	-1,390.09	-33.84	1,390.50	1,375.43	15.07	92.242			
2,550.00	2,550.00	2,522.20	2,522.00	10.23	-178.61	-1,390.01	-33.79	1,390.42	1,375.19	15.23	91.294			
2,600.00	2,600.00	2,573.68	2,573.48	10.39	-178.61	-1,390.06	-33.79	1,390.47	1,375.08	15.39	90.368			
2,650.00	2,650.00	2,622.20	2,622.00	10.54	-178.61	-1,390.01	-33.79	1,390.42	1,374.88	15.54	89.451			
2,700.00	2,700.00	2,672.63	2,672.42	10.70	-178.61	-1,390.02	-33.83	1,390.43	1,374.73	15.70	88.552			
2,714.50	2,714.50	2,705.30	2,686.50	10.75	161.39	-1,390.01	-33.79	1,390.42	1,374.68	15.75	88.294			
2,750.00	2,750.00	2,722.20	2,722.00	10.86	161.39	-1,390.01	-33.79	1,390.44	1,374.58	15.86	87.668 ES			
2,800.00	2,800.00	2,774.49	2,774.29	11.02	161.40	-1,390.04	-33.80	1,390.80	1,374.78	16.02	86.820			
2,850.00	2,849.99	2,822.19	2,821.99	11.18	161.40	-1,390.01	-33.79	1,391.51	1,375.33	16.18	86.009			
2,900.00	2,899.98	2,871.92	2,871.71	11.34	161.42	-1,390.01	-33.79	1,392.67	1,376.33	16.34	85.238			
2,950.00	2,949.95	2,922.15	2,921.95	11.50	161.43	-1,390.01	-33.79	1,394.24	1,377.74	16.50	84.504			
3,000.00	2,999.91	2,981.89	2,971.91	11.66	161.45	-1,390.01	-33.79	1,396.23	1,379.57	16.66	83.807			
3,050.00	3,049.84	3,022.05	3,021.84	11.82	161.48	-1,390.01	-33.79	1,398.63	1,381.80	16.82	83.145			
3,100.00	3,099.75	3,071.96	3,071.75	11.98	161.51	-1,390.01	-33.79	1,401.44	1,384.46	16.98	82.517			
3,150.00	3,149.64	3,122.05	3,121.84	12.15	161.54	-1,390.05	-33.83	1,404.70	1,387.56	17.15	81.927			
3,200.00	3,199.49	3,174.57	3,174.37	12.31	161.58	-1,389.99	-33.76	1,408.29	1,390.98	17.31	81.363			
3,250.00	3,249.31	3,222.00	3,221.80	12.47	161.63	-1,390.04	-33.83	1,412.38	1,394.91	17.47	80.837			
3,300.00	3,299.12	3,271.32	3,271.12	12.64	161.68	-1,390.01	-33.79	1,416.48	1,398.84	17.64	80.321			
3,350.00	3,348.93	3,321.13	3,320.93	12.80	161.74	-1,390.01	-33.79	1,420.62	1,402.82	17.80	79.814			
3,400.00	3,398.74	3,370.83	3,370.62	12.96	161.79	-1,390.01	-33.79	1,424.76	1,406.79	17.96	79.315			
3,450.00	3,448.55	3,420.75	3,420.55	13.13	161.85	-1,390.01	-33.79	1,428.90	1,410.77	18.13	78.822			
3,500.00	3,498.36	3,471.28	3,471.07	13.29	161.90	-1,390.01	-33.79	1,433.04	1,414.75	18.29	78.337			
3,550.00	3,548.17	3,520.47	3,520.26	13.46	161.95	-1,390.03	-33.79	1,437.20	1,418.75	18.46	77.860			
3,600.00	3,597.98	3,571.50	3,571.29	13.62	162.01	-1,390.00	-33.78	1,441.33	1,422.70	18.62	77.387			
3,650.00	3,647.79	3,620.41	3,620.20	13.79	162.06	-1,390.02	-33.79	1,445.49	1,426.70	18.79	76.924			
3,700.00	3,697.60	3,669.80	3,669.60	13.96	162.11	-1,390.01	-33.79	1,449.63	1,430.67	18.96	76.466			
3,750.00	3,747.41	3,720.09	3,719.88	14.13	162.17	-1,390.02	-33.87	1,453.79	1,434.87	19.13	76.015			
3,800.00	3,797.22	3,769.43	3,769.22	14.29	162.22	-1,390.01	-33.79	1,457.93	1,438.63	19.29	75.570			
3,850.00	3,847.03	3,820.07	3,819.85	14.46	162.28	-1,390.02	-33.91	1,462.10	1,442.64	19.46	75.132			
3,900.00	3,896.84	3,869.07	3,868.84	14.63	162.32	-1,390.01	-33.79	1,466.23	1,446.60	19.63	74.700			
3,950.00	3,946.64	3,919.86	3,919.62	14.80	162.38	-1,390.02	-33.97	1,470.40	1,450.61	19.80	74.274			
4,000.00	3,996.45	3,968.73	3,968.45	14.97	162.43	-1,390.01	-33.79	1,474.54	1,454.58	19.97	73.854			
4,050.00	4,046.26	4,017.54	4,017.25	15.14	162.49	-1,389.98	-34.03	1,478.68	1,458.55	20.13	73.441			
4,100.00	4,096.07	4,068.43	4,068.07	15.30	162.53	-1,390.01	-33.79	1,482.86	1,462.55	20.30	73.033			
4,150.00	4,145.88	4,113.45	4,113.07	15.47	162.58	-1,389.96	-33.98	1,486.98	1,466.51	20.47	72.633			
4,200.00	4,195.69	4,168.12	4,167.69	15.64	162.63	-1,390.01	-33.79	1,491.17	1,470.53	20.64	72.235			
4,250.00	4,245.50	4,209.50	4,209.06	15.81	162.67	-1,389.96	-33.90	1,495.31	1,474.50	20.81	71.850			
4,300.00	4,295.31	4,267.17	4,266.68	15.98	162.74	-1,389.82	-34.16	1,499.32	1,478.34	20.98	71.452 SF			

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 29-19S-29E - Onyx PWU 29 28 061H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 ft
Survey Program: 50-GYRO-NS-CT, 252-MWD+IFR1												Offset Well Error:	0.50 ft
Reference				Offset		Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,850.00	7,831.80	19,087.00	9,059.72	28.44	210.60	171.48	-361.62	6.97	1,485.40	1,336.49	148.91	9.975	
7,900.00	7,881.61	19,087.00	9,059.72	28.62	210.60	171.48	-361.62	6.97	1,445.39	1,293.47	151.92	9.514	
7,950.00	7,931.42	19,087.00	9,059.72	28.80	210.60	171.48	-361.62	6.97	1,406.03	1,250.93	155.10	9.065	
8,000.00	7,981.23	19,087.00	9,059.72	28.98	210.60	171.48	-361.62	6.97	1,367.35	1,208.91	158.44	8.630	
8,050.00	8,031.04	19,087.00	9,059.72	29.16	210.60	171.48	-361.62	6.97	1,329.44	1,167.49	161.95	8.209	
8,100.00	8,080.85	19,087.00	9,059.72	29.33	210.60	171.48	-361.62	6.97	1,292.34	1,126.71	165.63	7.803	
8,150.00	8,130.67	19,087.00	9,059.72	29.51	210.60	171.44	-361.62	6.97	1,256.12	1,086.65	169.48	7.412	
8,200.00	8,180.52	19,087.00	9,059.72	29.69	210.60	171.33	-361.62	6.97	1,220.53	1,047.07	173.46	7.036	
8,250.00	8,230.42	19,087.00	9,059.72	29.87	210.60	171.22	-361.62	6.97	1,185.50	1,007.95	177.55	6.677	
8,300.00	8,280.35	19,087.00	9,059.72	30.05	210.60	171.11	-361.62	6.97	1,151.10	969.34	181.76	6.333	
8,350.00	8,330.32	19,087.00	9,059.72	30.22	210.60	171.00	-361.62	6.97	1,117.39	931.32	186.07	6.005	
8,400.00	8,380.30	19,087.00	9,059.72	30.40	210.60	170.90	-361.62	6.97	1,084.45	893.98	190.47	5.694	
8,450.00	8,430.30	19,087.00	9,059.72	30.58	210.60	170.80	-361.62	6.97	1,052.34	857.40	194.94	5.398	
8,500.00	8,480.28	19,087.00	9,059.72	30.75	210.60	171.13	-361.62	6.97	1,021.95	822.43	199.52	5.122	
8,550.00	8,530.02	19,087.00	9,059.72	30.93	210.60	171.58	-361.62	6.97	996.54	792.18	204.37	4.876 Alert	
8,600.00	8,579.14	19,087.00	9,059.72	31.11	210.60	171.88	-361.62	6.97	976.97	767.64	209.33	4.667 Alert	
8,650.00	8,627.27	19,087.00	9,059.72	31.29	210.60	172.08	-361.62	6.97	963.75	749.53	214.22	4.499 Alert	
8,700.00	8,674.24	19,087.00	9,059.72	31.47	210.60	164.75	-361.62	6.97	956.54	737.73	218.82	4.371 Alert	
8,750.00	8,720.43	19,087.00	9,059.72	31.65	210.60	154.86	-361.62	6.97	953.02	730.20	222.81	4.277 Alert	
8,775.29	8,743.41	19,087.00	9,059.72	31.74	210.60	150.63	-361.62	6.97	952.57	728.00	224.57	4.242 Alert, CC	
8,800.00	8,765.56	19,087.00	9,059.72	31.83	210.60	146.94	-361.62	6.97	953.00	726.90	226.10	4.215 Alert, ES	
8,850.00	8,809.28	19,087.00	9,059.72	32.01	210.60	140.55	-361.62	6.97	956.48	727.88	228.60	4.184 Alert	
8,900.00	8,851.27	19,087.00	9,059.72	32.19	210.60	135.23	-361.62	6.97	963.42	733.12	230.30	4.183 Alert, SF	
8,950.00	8,891.20	19,087.00	9,059.72	32.37	210.60	130.62	-361.62	6.97	973.67	742.50	231.17	4.212 Alert	
9,000.00	8,928.77	19,087.00	9,059.72	32.55	210.60	126.45	-361.62	6.97	987.06	755.80	231.26	4.268 Alert	
9,050.00	8,963.68	19,087.00	9,059.72	32.73	210.60	122.52	-361.62	6.97	1,003.37	772.74	230.62	4.351 Alert	
9,100.00	8,995.69	19,087.00	9,059.72	32.92	210.60	118.72	-361.62	6.97	1,022.33	793.01	229.32	4.458 Alert	
9,150.00	9,024.54	19,087.00	9,059.72	33.11	210.60	114.97	-361.62	6.97	1,043.65	816.22	227.44	4.589 Alert	
9,200.00	9,050.01	19,087.00	9,059.72	33.31	210.60	111.20	-361.62	6.97	1,067.05	841.99	225.06	4.741 Alert	
9,250.00	9,071.92	19,087.00	9,059.72	33.53	210.60	107.41	-361.62	6.97	1,092.21	869.94	222.28	4.914 Alert	
9,300.00	9,090.08	19,087.00	9,059.72	33.76	210.60	103.60	-361.62	6.97	1,118.84	899.67	219.17	5.105	
9,350.00	9,104.37	19,087.00	9,059.72	34.01	210.60	99.79	-361.62	6.97	1,146.62	930.82	215.80	5.313	
9,400.00	9,114.68	19,087.00	9,059.72	34.27	210.60	96.01	-361.62	6.97	1,175.29	963.05	212.24	5.538	
9,450.00	9,120.93	19,087.00	9,059.72	34.54	210.60	92.32	-361.62	6.97	1,204.56	996.01	208.55	5.776	
9,500.00	9,123.06	19,087.00	9,059.72	34.83	210.60	88.76	-361.62	6.97	1,234.17	1,029.41	204.76	6.027	
9,550.00	9,123.06	19,087.00	9,059.72	35.15	210.60	88.70	-361.62	6.97	1,264.50	1,063.53	200.97	6.292	
9,600.00	9,123.06	19,087.00	9,059.72	35.47	210.60	88.70	-361.62	6.97	1,296.05	1,098.85	197.20	6.572	
9,650.00	9,123.06	19,087.00	9,059.72	35.84	210.60	88.70	-361.62	6.97	1,328.73	1,135.22	193.51	6.866	
9,700.00	9,123.06	19,087.00	9,059.72	36.21	210.60	88.70	-361.62	6.97	1,362.46	1,172.58	189.88	7.175	
9,750.00	9,123.06	19,087.00	9,059.72	36.63	210.60	88.70	-361.62	6.97	1,397.17	1,210.82	186.34	7.498	
9,800.00	9,123.06	19,087.00	9,059.72	37.05	210.60	88.70	-361.62	6.97	1,432.78	1,249.89	182.88	7.834	
9,850.00	9,123.06	19,087.00	9,059.72	37.51	210.60	88.70	-361.62	6.97	1,469.23	1,289.69	179.54	8.183	

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

Anticollision Report

Company: WCDSC Permian NM
 Project: Eddy County (NAD 83 NM Eastern)
 Reference Site: Sec 27-T19S-R29E
 Site Error: 5.00 ft
 Reference Well: Turquoise PWU 27-9H
 Well Error: 0.50 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
 TVD Reference: RKB @ 3373.00ft
 MD Reference: RKB @ 3373.00ft
 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 28-19S-29E - Onyx PWU 29-28 9H - Original Hole - Original Hole													Offset Site Error: 0.00 ft
Survey Program: 25-GYRO-NS-CT, 248-MWD+IFR1													Offset Well Error: 0.00 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)		Between Centres (ft)	Between Ellipses (ft)				Measured Depth (ft)	Vertical Depth (ft)
7,600.00	7,582.76	18,909.00	8,980.19	27.55	210.27	-73.26	597.46	44.61	1,453.21	1,353.31	99.90	14,546	
7,650.00	7,632.57	18,909.00	8,980.19	27.73	210.27	-73.26	597.46	44.61	1,403.57	1,303.37	100.20	14,008	
7,700.00	7,682.38	18,909.00	8,980.19	27.91	210.27	-73.26	597.46	44.61	1,353.95	1,253.44	100.51	13,471	
7,750.00	7,732.18	18,909.00	8,980.19	28.09	210.27	-73.26	597.46	44.61	1,304.36	1,203.52	100.83	12,936	
7,800.00	7,781.99	18,909.00	8,980.19	28.26	210.27	-73.26	597.46	44.61	1,254.80	1,153.62	101.18	12,402	
7,850.00	7,831.80	18,909.00	8,980.19	28.44	210.27	-73.26	597.46	44.61	1,205.27	1,103.73	101.55	11,869	
7,900.00	7,881.61	18,909.00	8,980.19	28.62	210.27	-73.26	597.46	44.61	1,155.79	1,053.85	101.95	11,337	
7,950.00	7,931.42	18,909.00	8,980.19	28.80	210.27	-73.26	597.46	44.61	1,106.36	1,003.99	102.37	10,807	
8,000.00	7,981.23	18,909.00	8,980.19	28.98	210.27	-73.26	597.46	44.61	1,056.98	954.15	102.83	10,279	
8,050.00	8,031.04	18,909.00	8,980.19	29.16	210.27	-73.26	597.46	44.61	1,007.66	904.33	103.33	9,752	
8,100.00	8,080.85	18,909.00	8,980.19	29.33	210.27	-73.26	597.46	44.61	958.41	854.53	103.88	9,226	
8,150.00	8,130.67	18,909.00	8,980.19	29.51	210.27	-72.13	597.46	44.61	909.24	804.75	104.49	8,702	
8,200.00	8,180.52	18,909.00	8,980.19	29.69	210.27	-68.57	597.46	44.61	860.20	754.99	105.21	8,176	
8,250.00	8,230.42	18,909.00	8,980.19	29.87	210.27	-65.38	597.46	44.61	811.33	705.24	106.10	7,647	
8,300.00	8,280.35	18,909.00	8,980.19	30.05	210.27	-62.53	597.46	44.61	762.67	655.49	107.19	7,115	
8,350.00	8,330.32	18,909.00	8,980.19	30.22	210.27	-59.99	597.46	44.61	714.28	605.75	108.53	6,581	
8,400.00	8,380.30	18,909.00	8,980.19	30.40	210.27	-57.75	597.46	44.61	666.21	556.01	110.20	6,045	
8,450.00	8,430.30	18,909.00	8,980.19	30.58	210.27	-55.77	597.46	44.61	618.56	506.25	112.30	5,508	
8,500.00	8,480.28	18,909.00	8,980.19	30.75	210.27	-63.04	597.46	44.61	571.25	456.48	114.77	4,977 Alert	
8,550.00	8,530.02	18,909.00	8,980.19	30.93	210.27	-77.06	597.46	44.61	523.82	406.92	116.91	4,481 Alert	
8,600.00	8,579.14	18,909.00	8,980.19	31.11	210.27	-91.39	597.46	44.61	476.58	358.17	118.40	4,025 Alert	
8,650.00	8,627.27	18,909.00	8,980.19	31.29	210.27	-104.09	597.46	44.61	430.00	311.06	118.93	3,615 Alert	
8,700.00	8,674.24	18,909.00	8,980.19	31.47	210.27	-115.97	597.46	44.61	385.00	266.73	118.27	3,255 Alert	
8,750.00	8,720.43	18,909.00	8,980.19	31.65	210.27	-126.30	597.46	44.61	343.72	226.93	118.79	2,943 Alert	
8,800.00	8,765.56	18,909.00	8,980.19	31.83	210.27	-134.28	597.46	44.61	308.13	194.13	114.00	2,703 Alert	
8,850.00	8,809.28	18,909.00	8,980.19	32.01	210.27	-140.36	597.46	44.61	280.74	171.68	109.06	2,574 Alert, SF	
8,900.00	8,851.27	18,909.00	8,980.19	32.19	210.27	-145.01	597.46	44.61	264.33	163.07	101.26	2,611 Alert, ES	
8,936.62	8,880.73	18,909.00	8,980.19	32.32	210.27	-147.72	597.46	44.61	260.62	166.74	93.87	2,776 Alert, CC	
8,950.00	8,891.20	18,909.00	8,980.19	32.37	210.27	-148.59	597.46	44.61	261.11	170.14	90.97	2,870 Alert	
9,000.00	8,928.77	18,909.00	8,980.19	32.55	210.27	-151.38	597.46	44.61	271.58	191.13	80.46	3,375 Alert	
9,050.00	8,963.68	18,909.00	8,980.19	32.73	210.27	-153.57	597.46	44.61	294.21	221.53	72.69	4,048 Alert	
9,100.00	8,995.69	18,909.00	8,980.19	32.92	210.27	-155.28	597.46	44.61	326.33	257.29	69.04	4,727 Alert	
9,150.00	9,024.54	18,909.00	8,980.19	33.11	210.27	-156.61	597.46	44.61	365.24	296.72	68.51	5,331	
9,200.00	9,050.01	18,909.00	8,980.19	33.31	210.27	-157.61	597.46	44.61	408.75	339.40	69.35	5,894	
9,250.00	9,071.82	18,909.00	8,980.19	33.53	210.27	-158.28	597.46	44.61	455.27	384.84	70.43	6,464	
9,300.00	9,090.08	18,909.00	8,980.19	33.76	210.27	-158.52	597.46	44.61	503.66	432.37	71.29	7,065	
9,350.00	9,104.37	18,909.00	8,980.19	34.01	210.27	-157.76	597.46	44.61	553.11	481.30	71.81	7,703	
9,400.00	9,114.68	18,909.00	8,980.19	34.27	210.27	-115.83	597.46	44.61	603.03	531.03	72.00	8,376	
9,450.00	9,120.93	18,909.00	8,980.19	34.54	210.27	16.16	597.46	44.61	652.98	581.06	71.91	9,080	
9,500.00	9,123.06	18,909.00	8,980.19	34.83	210.27	17.56	597.46	44.61	702.61	630.98	71.62	9,810	
9,550.00	9,123.06	18,909.00	8,980.19	35.15	210.27	17.57	597.46	44.61	752.01	680.72	71.28	10,549	
9,600.00	9,123.06	18,909.00	8,980.19	35.47	210.27	17.57	597.46	44.61	801.49	730.48	71.00	11,288	
9,650.00	9,123.06	18,909.00	8,980.19	35.84	210.27	17.57	597.46	44.61	851.02	780.26	70.77	12,026	
9,700.00	9,123.06	18,909.00	8,980.19	36.21	210.27	17.57	597.46	44.61	900.61	830.04	70.57	12,762	
9,750.00	9,123.06	18,909.00	8,980.19	36.63	210.27	17.57	597.46	44.61	950.24	879.85	70.40	13,498	
9,800.00	9,123.06	18,909.00	8,980.19	37.05	210.27	17.57	597.46	44.61	999.91	929.66	70.25	14,233	
9,850.00	9,123.06	18,909.00	8,980.19	37.51	210.27	17.57	597.46	44.61	1,049.61	979.48	70.13	14,967	
9,900.00	9,123.06	18,909.00	8,980.19	37.98	210.27	17.57	597.46	44.61	1,099.34	1,029.32	70.02	15,700	
9,950.00	9,123.06	18,909.00	8,980.19	38.49	210.27	17.57	597.46	44.61	1,149.09	1,079.16	69.93	16,433	
10,000.00	9,123.06	18,909.00	8,980.19	38.99	210.27	17.57	597.46	44.61	1,198.86	1,129.02	69.85	17,165	
10,050.00	9,123.06	18,909.00	8,980.19	39.54	210.27	17.57	597.46	44.61	1,248.65	1,178.88	69.77	17,896	
10,100.00	9,123.06	18,909.00	8,980.19	40.09	210.27	17.57	597.46	44.61	1,298.46	1,228.75	69.71	18,626	

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

Anticollision Report

Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 29-19S-29E - Onyx PWU 29-28 9H - Original Hole - Original Hole													Offset Site Error:	0.00 ft
Survey Program: 25-GYRO-NS-CT, 248-MWD+IFR1													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,150.00	9,123.06	18,909.00	8,980.19	40.87	210.27	17.57	597.46	44.61	1,348.28	1,278.63	69.68	19.356		
10,200.00	9,123.06	18,909.00	8,980.19	41.25	210.27	17.57	597.46	44.61	1,398.11	1,328.51	69.61	20.086		
10,250.00	9,123.06	18,909.00	8,980.19	41.87	210.27	17.57	597.46	44.61	1,447.96	1,378.40	69.56	20.815		
10,300.00	9,123.06	18,909.00	8,980.19	42.49	210.27	17.57	597.46	44.61	1,497.81	1,428.29	69.53	21.543		

Anticollision Report

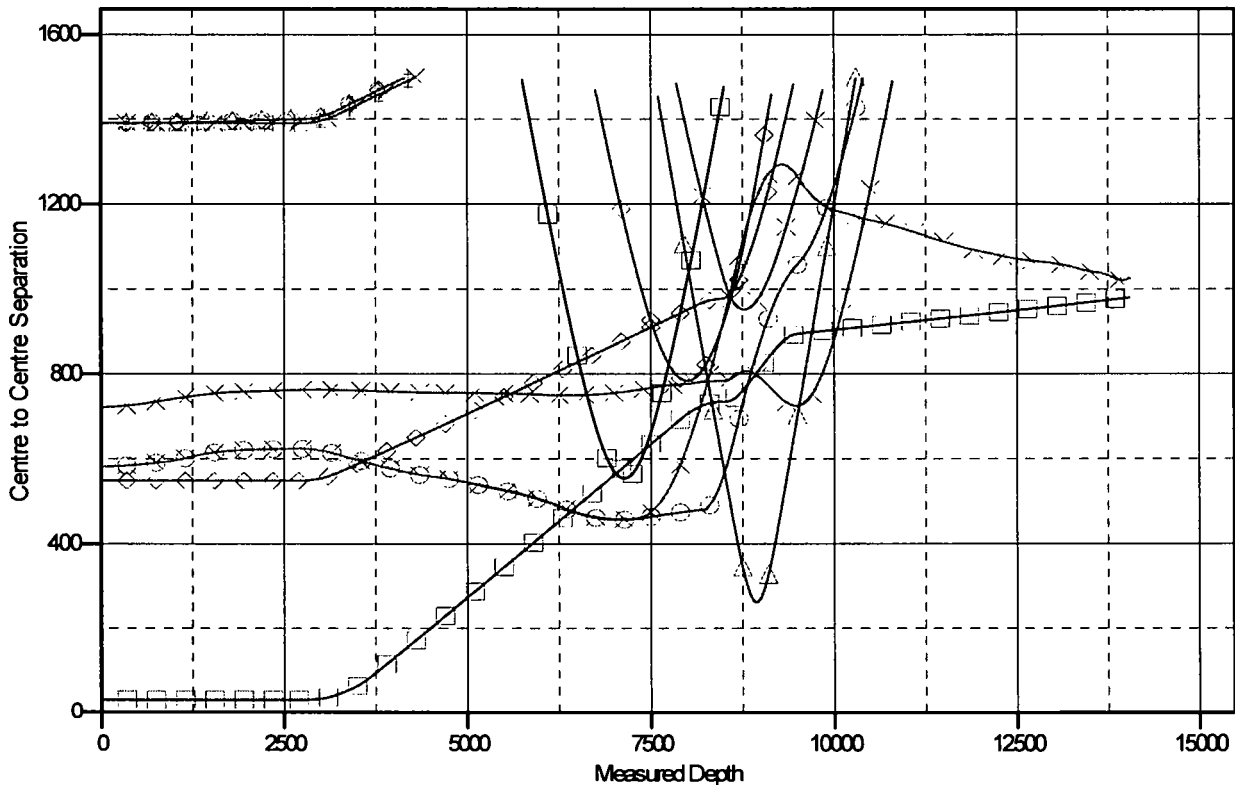
Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 @ 3373.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Turquoise PWU 27-9H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.14°

Ladder Plot



LEGEND

Parkway Well Unit 8WD, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-61H, Wellbore #1, Permit Plan 2 V0
 Turquoise PWU 27-1H, Pilot Wellbore, Pilot Wellbore V0
 Turquoise PWU 27-1H, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-2H, Wellbore #1, Wellbore #1 V0

Turquoise PWU 27-10H, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-10H, Original Hole, P.3v1 V0
 Turquoise PWU 27-1H, Original Hole, Plan 1 V0
 Turquoise PWU 27-10H, Original Hole, P.1L V0
 Turquoise PWU 27-10H, Original Hole, T&D V0

Turquoise PWU 27-10H, Original Hole, Actual V0
 Parkway Well Unit 15 (Active), Wellbore #1, Wellbore #1 V0
 Canal PWU 28-4H, Wellbore #1, Wellbore #1 V0
 Onyx PWU 29-28 051H, Wellbore #1, Wellbore #1 V0
 Onyx PWU 29-28 051H, Original Hole, Original Hole V0

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

Anticollision Report

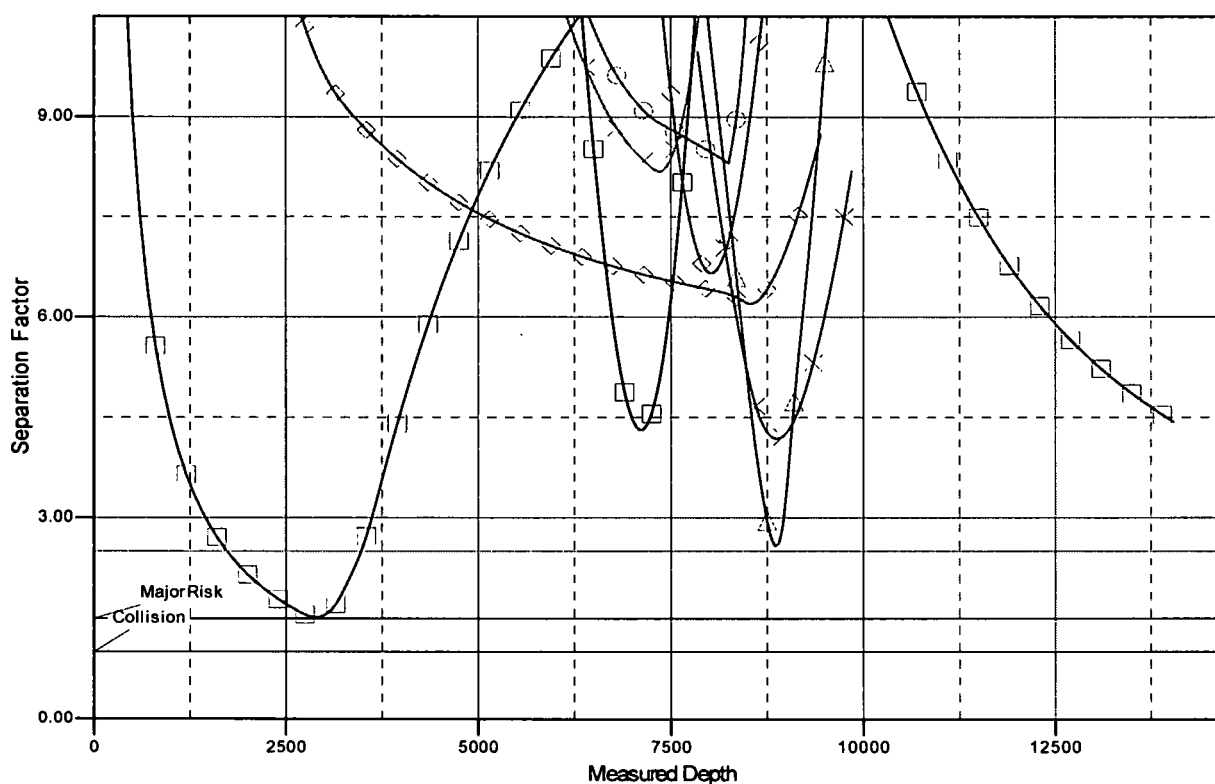
Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Reference Site: Sec 27-T19S-R29E
Site Error: 5.00 ft
Reference Well: Turquoise PWU 27-9H
Well Error: 0.50 ft
Reference Wellbore: Wellbore #1
Reference Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
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 @ 3373.00ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Turquoise PWU 27-9H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.14°

Separation Factor Plot



LEGEND

Parkway West Unit SWD, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-61H, Wellbore #1, Permit Plan 2 V0
 Turquoise PWU 27-1H, Pilot Wellbore, Pilot Wellbore V0
 Turquoise PWU 27-1H, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-6H, Wellbore #1, Wellbore #1 V0

Turquoise PWU 27-10H, Wellbore #1, Wellbore #1 V0
 Turquoise PWU 27-10H, Original Hole, P3v1 V0
 Turquoise PWU 27-10H, Original Hole, Plan 1 V0
 Turquoise PWU 27-10H, Original Hole, PTL V0
 Turquoise PWU 27-10H, Original Hole, TSD V0

Turquoise PWU 27-10H, Original Hole, Actual V0
 Parkway West Unit 15 (Active), Wellbore #1, Wellbore #1 V0
 Coal P WU 26-4H, Wellbore #1, Wellbore #1 V0
 Onyx PWU 26-28 061H, Wellbore #1, Wellbore #1 V0
 Onyx PWU 26-28 04, Original Hole, Original Hole V0

WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)

Sec 27-T19S-R29E

Turquoise PWU 27-9H

Wellbore #1

Plan: Permit Plan 3

Standard Planning Report - Geographic

24 July, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Turquoise PWU 27-9H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3373.00ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3373.00ft
Site:	Sec 27-T19S-R29E	North Reference:	Grid
Well:	Turquoise PWU 27-9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Project	Eddy County (NAD 83 NM Eastern)		
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 27-T19S-R29E		
Site Position:		Northing:	596,312.10 usft
From:	Map	Easting:	622,012.70 usft
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16 "
		Latitude:	32.639037
		Longitude:	-104.071247
		Grid Convergence:	0.14 °

Well	Turquoise PWU 27-9H		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.50 ft	Wellhead Elevation:	
		Latitude:	32.636312
		Longitude:	-104.072055
		Ground Level:	3,344.70 ft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	4/20/2018	7.13
			Dip Angle (°)
			60.35
			Field Strength (nT)
			48,042.86737823

Design	Permit Plan 3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction (°)
			83.10

Plan Survey Tool Program	Date 7/24/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name
1	0.00	14,047.55 Permit Plan 3 (Wellbore #1)	MWD+IFR1
			OWSG MWD + IFR1

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	
2,735.00	0.00	0.00	2,735.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,235.00	5.00	20.00	3,234.37	20.49	7.46	1.00	1.00	0.00	20.00	
8,135.00	5.00	20.00	8,115.72	421.80	153.52	0.00	0.00	0.00	0.00	
8,468.34	0.00	0.00	8,448.63	435.45	158.49	1.50	-1.50	0.00	180.00	
8,668.34	20.00	20.00	8,644.60	467.92	170.31	10.00	10.00	0.00	20.00	
9,500.87	90.00	89.91	9,123.06	632.37	739.04	10.00	8.41	8.40	71.03	PBHL - Turquoise 27-
14,047.55	90.00	89.91	9,123.06	639.53	5,285.72	0.00	0.00	0.00	0.00	PBHL - Turquoise 27-

Planning Report - Geographic

Database: EDM r5000.141_Prod US
Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Site: Sec 27-T19S-R29E
Well: Turquoise PWU 27-9H
Wellbore: Wellbore #1
Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

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	595,319.97	621,766.42	32.636312	-104.072055
100.00	0.00	0.00	100.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
200.00	0.00	0.00	200.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
300.00	0.00	0.00	300.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
400.00	0.00	0.00	400.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
500.00	0.00	0.00	500.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
600.00	0.00	0.00	600.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
700.00	0.00	0.00	700.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
800.00	0.00	0.00	800.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
900.00	0.00	0.00	900.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,000.00	0.00	0.00	1,000.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,100.00	0.00	0.00	1,100.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,200.00	0.00	0.00	1,200.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,300.00	0.00	0.00	1,300.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,400.00	0.00	0.00	1,400.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,500.00	0.00	0.00	1,500.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,600.00	0.00	0.00	1,600.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,700.00	0.00	0.00	1,700.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,800.00	0.00	0.00	1,800.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
1,900.00	0.00	0.00	1,900.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,000.00	0.00	0.00	2,000.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,100.00	0.00	0.00	2,100.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,200.00	0.00	0.00	2,200.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,300.00	0.00	0.00	2,300.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,400.00	0.00	0.00	2,400.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,500.00	0.00	0.00	2,500.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,600.00	0.00	0.00	2,600.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,700.00	0.00	0.00	2,700.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,735.00	0.00	0.00	2,735.00	0.00	0.00	595,319.97	621,766.42	32.636312	-104.072055
2,800.00	0.65	20.00	2,800.00	0.35	0.13	595,320.32	621,766.55	32.636313	-104.072055
2,900.00	1.65	20.00	2,899.98	2.23	0.81	595,322.21	621,767.24	32.636318	-104.072053
3,000.00	2.65	20.00	2,999.91	5.76	2.10	595,325.73	621,768.52	32.636328	-104.072048
3,100.00	3.65	20.00	3,099.75	10.92	3.97	595,330.89	621,770.40	32.636342	-104.072042
3,200.00	4.65	20.00	3,199.49	17.72	6.45	595,337.69	621,772.87	32.636360	-104.072034
3,235.00	5.00	20.00	3,234.37	20.49	7.46	595,340.46	621,773.88	32.636368	-104.072031
3,300.00	5.00	20.00	3,299.12	25.81	9.39	595,345.78	621,775.82	32.636383	-104.072025
3,400.00	5.00	20.00	3,398.74	34.00	12.38	595,353.97	621,778.80	32.636405	-104.072015
3,500.00	5.00	20.00	3,498.36	42.19	15.36	595,362.16	621,781.78	32.636428	-104.072005
3,600.00	5.00	20.00	3,597.98	50.38	18.34	595,370.35	621,784.76	32.636450	-104.071995
3,700.00	5.00	20.00	3,697.60	58.57	21.32	595,378.54	621,787.74	32.636473	-104.071986
3,800.00	5.00	20.00	3,797.22	66.76	24.30	595,386.73	621,790.72	32.636495	-104.071976
3,900.00	5.00	20.00	3,896.84	74.95	27.28	595,394.92	621,793.70	32.636518	-104.071966
4,000.00	5.00	20.00	3,996.45	83.14	30.26	595,403.11	621,796.68	32.636540	-104.071956
4,100.00	5.00	20.00	4,096.07	91.33	33.24	595,411.30	621,799.67	32.636563	-104.071947
4,200.00	5.00	20.00	4,195.69	99.52	36.22	595,419.49	621,802.65	32.636585	-104.071937
4,300.00	5.00	20.00	4,295.31	107.71	39.20	595,427.68	621,805.63	32.636608	-104.071927
4,400.00	5.00	20.00	4,394.93	115.90	42.18	595,435.87	621,808.61	32.636630	-104.071917
4,500.00	5.00	20.00	4,494.55	124.09	45.17	595,444.06	621,811.59	32.636653	-104.071908
4,600.00	5.00	20.00	4,594.17	132.28	48.15	595,452.25	621,814.57	32.636675	-104.071898
4,700.00	5.00	20.00	4,693.79	140.47	51.13	595,460.44	621,817.55	32.636698	-104.071888
4,800.00	5.00	20.00	4,793.41	148.66	54.11	595,468.63	621,820.53	32.636720	-104.071878
4,900.00	5.00	20.00	4,893.03	156.85	57.09	595,476.82	621,823.51	32.636743	-104.071869
5,000.00	5.00	20.00	4,992.65	165.04	60.07	595,485.01	621,826.49	32.636765	-104.071859
5,100.00	5.00	20.00	5,092.27	173.23	63.05	595,493.20	621,829.47	32.636788	-104.071849
5,200.00	5.00	20.00	5,191.89	181.42	66.03	595,501.39	621,832.46	32.636810	-104.071839

Planning Report - Geographic

Database: EDM r5000.141_Prod US
Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Site: Sec 27-T19S-R29E
Well: Turquoise PWU 27-9H
Wellbore: Wellbore #1
Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	5.00	20.00	5,291.51	189.61	69.01	595,509.58	621,835.44	32.636832	-104.071830
5,400.00	5.00	20.00	5,391.13	197.80	71.99	595,517.77	621,838.42	32.636855	-104.071820
5,500.00	5.00	20.00	5,490.75	205.99	74.97	595,525.96	621,841.40	32.636877	-104.071810
5,600.00	5.00	20.00	5,590.37	214.18	77.96	595,534.15	621,844.38	32.636900	-104.071800
5,700.00	5.00	20.00	5,689.99	222.37	80.94	595,542.34	621,847.36	32.636922	-104.071791
5,800.00	5.00	20.00	5,789.61	230.56	83.92	595,550.53	621,850.34	32.636945	-104.071781
5,900.00	5.00	20.00	5,889.22	238.75	86.90	595,558.72	621,853.32	32.636967	-104.071771
6,000.00	5.00	20.00	5,988.84	246.94	89.88	595,566.91	621,856.30	32.636990	-104.071761
6,100.00	5.00	20.00	6,088.46	255.13	92.86	595,575.10	621,859.28	32.637012	-104.071752
6,200.00	5.00	20.00	6,188.08	263.32	95.84	595,583.29	621,862.26	32.637035	-104.071742
6,300.00	5.00	20.00	6,287.70	271.51	98.82	595,591.48	621,865.25	32.637057	-104.071732
6,400.00	5.00	20.00	6,387.32	279.70	101.80	595,599.67	621,868.23	32.637080	-104.071722
6,500.00	5.00	20.00	6,486.94	287.89	104.78	595,607.86	621,871.21	32.637102	-104.071713
6,600.00	5.00	20.00	6,586.56	296.08	107.76	595,616.05	621,874.19	32.637125	-104.071703
6,700.00	5.00	20.00	6,686.18	304.27	110.75	595,624.24	621,877.17	32.637147	-104.071693
6,800.00	5.00	20.00	6,785.80	312.46	113.73	595,632.43	621,880.15	32.637170	-104.071683
6,900.00	5.00	20.00	6,885.42	320.65	116.71	595,640.62	621,883.13	32.637192	-104.071674
7,000.00	5.00	20.00	6,985.04	328.84	119.69	595,648.81	621,886.11	32.637215	-104.071664
7,100.00	5.00	20.00	7,084.66	337.03	122.67	595,657.00	621,889.09	32.637237	-104.071654
7,200.00	5.00	20.00	7,184.28	345.22	125.65	595,665.19	621,892.07	32.637260	-104.071644
7,300.00	5.00	20.00	7,283.90	353.41	128.63	595,673.38	621,895.05	32.637282	-104.071635
7,400.00	5.00	20.00	7,383.52	361.60	131.61	595,681.57	621,898.04	32.637305	-104.071625
7,500.00	5.00	20.00	7,483.14	369.79	134.59	595,689.76	621,901.02	32.637327	-104.071615
7,600.00	5.00	20.00	7,582.76	377.98	137.57	595,697.95	621,904.00	32.637350	-104.071605
7,700.00	5.00	20.00	7,682.38	386.17	140.55	595,706.14	621,906.98	32.637372	-104.071596
7,800.00	5.00	20.00	7,781.99	394.36	143.54	595,714.33	621,909.96	32.637395	-104.071586
7,900.00	5.00	20.00	7,881.61	402.55	146.52	595,722.52	621,912.94	32.637417	-104.071576
8,000.00	5.00	20.00	7,981.23	410.74	149.50	595,730.71	621,915.92	32.637440	-104.071566
8,100.00	5.00	20.00	8,080.85	418.93	152.48	595,738.90	621,918.90	32.637462	-104.071557
8,135.00	5.00	20.00	8,115.72	421.80	153.52	595,741.77	621,919.94	32.637470	-104.071553
8,200.00	4.03	20.00	8,180.52	426.60	155.27	595,746.57	621,921.69	32.637483	-104.071548
8,300.00	2.53	20.00	8,280.35	431.97	157.22	595,751.94	621,923.65	32.637498	-104.071541
8,400.00	1.03	20.00	8,380.30	434.88	158.28	595,754.85	621,924.71	32.637506	-104.071538
8,468.34	0.00	0.00	8,448.63	435.45	158.49	595,755.43	621,924.92	32.637508	-104.071537
8,500.00	3.17	20.00	8,480.28	436.28	158.79	595,756.25	621,925.22	32.637510	-104.071536
8,600.00	13.17	20.00	8,579.14	449.61	163.64	595,769.58	621,930.07	32.637546	-104.071520
8,668.34	20.00	20.00	8,644.60	467.92	170.31	595,787.90	621,936.73	32.637597	-104.071498
8,700.00	21.23	28.29	8,674.24	478.06	174.88	595,798.04	621,941.31	32.637625	-104.071483
8,800.00	27.17	48.15	8,765.56	509.32	200.54	595,829.29	621,966.96	32.637710	-104.071400
8,900.00	34.90	60.57	8,851.27	538.68	242.56	595,858.66	622,008.98	32.637791	-104.071263
9,000.00	43.47	68.77	8,928.77	565.26	299.68	595,885.24	622,066.10	32.637863	-104.071077
9,063.48	49.14	72.71	8,972.61	580.32	343.00	595,900.29	622,109.42	32.637905	-104.070936
First Take Point @ 9063' MD, 412' FNL, 100' FWL									
9,100.00	52.46	74.68	8,995.69	588.25	370.16	595,908.22	622,136.58	32.637926	-104.070848
9,200.00	61.68	79.30	9,050.01	606.95	451.85	595,926.92	622,218.28	32.637977	-104.070583
9,300.00	71.04	83.16	9,090.08	620.79	542.28	595,940.76	622,308.71	32.638014	-104.070289
9,400.00	80.46	86.62	9,114.68	629.35	638.70	595,949.32	622,405.12	32.638037	-104.069975
9,500.00	89.92	89.88	9,123.06	632.37	738.18	595,952.34	622,504.60	32.638045	-104.069652
9,500.87	90.00	89.91	9,123.06	632.37	739.05	595,952.34	622,505.47	32.638045	-104.069649
Land Point @ 9501' MD, 464' FNL, 496' FWL									
9,600.00	90.00	89.91	9,123.06	632.53	838.18	595,952.50	622,604.60	32.638045	-104.069327
9,700.00	90.00	89.91	9,123.06	632.68	938.18	595,952.66	622,704.60	32.638044	-104.069003
9,800.00	90.00	89.91	9,123.06	632.84	1,038.18	595,952.81	622,804.60	32.638044	-104.068678
9,900.00	90.00	89.91	9,123.06	633.00	1,138.17	595,952.97	622,904.60	32.638044	-104.068353

Planning Report - Geographic

Database: EDM r5000.141_Prod US
Company: WCDSC Permian NM
Project: Eddy County (NAD 83 NM Eastern)
Site: Sec 27-T19S-R29E
Well: Turquoise PWU 27-9H
Wellbore: Wellbore #1
Design: Permit Plan 3

Local Co-ordinate Reference: Well Turquoise PWU 27-9H
TVD Reference: RKB @ 3373.00ft
MD Reference: RKB @ 3373.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,000.00	90.00	89.91	9,123.06	633.16	1,238.17	595,953.13	623,004.60	32.638044	-104.068028
10,100.00	90.00	89.91	9,123.06	633.31	1,338.17	595,953.29	623,104.60	32.638043	-104.067703
10,200.00	90.00	89.91	9,123.06	633.47	1,438.17	595,953.44	623,204.60	32.638043	-104.067378
10,300.00	90.00	89.91	9,123.06	633.63	1,538.17	595,953.60	623,304.60	32.638043	-104.067053
10,400.00	90.00	89.91	9,123.06	633.79	1,638.17	595,953.76	623,404.59	32.638043	-104.066729
10,500.00	90.00	89.91	9,123.06	633.94	1,738.17	595,953.92	623,504.59	32.638042	-104.066404
10,600.00	90.00	89.91	9,123.06	634.10	1,838.17	595,954.07	623,604.59	32.638042	-104.066079
10,700.00	90.00	89.91	9,123.06	634.26	1,938.17	595,954.23	623,704.59	32.638042	-104.065754
10,800.00	90.00	89.91	9,123.06	634.42	2,038.17	595,954.39	623,804.59	32.638042	-104.065429
10,900.00	90.00	89.91	9,123.06	634.57	2,138.17	595,954.55	623,904.59	32.638041	-104.065104
11,000.00	90.00	89.91	9,123.06	634.73	2,238.17	595,954.70	624,004.59	32.638041	-104.064779
11,100.00	90.00	89.91	9,123.06	634.89	2,338.17	595,954.86	624,104.59	32.638041	-104.064455
11,200.00	90.00	89.91	9,123.06	635.05	2,438.17	595,955.02	624,204.59	32.638041	-104.064130
11,300.00	90.00	89.91	9,123.06	635.20	2,538.17	595,955.18	624,304.59	32.638040	-104.063805
11,400.00	90.00	89.91	9,123.06	635.36	2,638.17	595,955.33	624,404.59	32.638040	-104.063480
11,500.00	90.00	89.91	9,123.06	635.52	2,738.17	595,955.49	624,504.59	32.638040	-104.063155
11,600.00	90.00	89.91	9,123.06	635.68	2,838.17	595,955.65	624,604.59	32.638040	-104.062830
11,700.00	90.00	89.91	9,123.06	635.83	2,938.17	595,955.81	624,704.59	32.638039	-104.062505
11,800.00	90.00	89.91	9,123.06	635.99	3,038.17	595,955.96	624,804.59	32.638039	-104.062180
11,900.00	90.00	89.91	9,123.06	636.15	3,138.17	595,956.12	624,904.59	32.638039	-104.061856
12,000.00	90.00	89.91	9,123.06	636.31	3,238.17	595,956.28	625,004.59	32.638038	-104.061531
12,100.00	90.00	89.91	9,123.06	636.46	3,338.17	595,956.44	625,104.59	32.638038	-104.061206
12,200.00	90.00	89.91	9,123.06	636.62	3,438.17	595,956.59	625,204.59	32.638038	-104.060881
12,300.00	90.00	89.91	9,123.06	636.78	3,538.17	595,956.75	625,304.59	32.638038	-104.060556
12,400.00	90.00	89.91	9,123.06	636.94	3,638.17	595,956.91	625,404.59	32.638037	-104.060231
12,500.00	90.00	89.91	9,123.06	637.09	3,738.17	595,957.07	625,504.59	32.638037	-104.059906
12,600.00	90.00	89.91	9,123.06	637.25	3,838.17	595,957.22	625,604.59	32.638037	-104.059582
12,700.00	90.00	89.91	9,123.06	637.41	3,938.17	595,957.38	625,704.59	32.638037	-104.059257
12,800.00	90.00	89.91	9,123.06	637.57	4,038.17	595,957.54	625,804.59	32.638036	-104.058932
12,900.00	90.00	89.91	9,123.06	637.72	4,138.17	595,957.70	625,904.59	32.638036	-104.058607
13,000.00	90.00	89.91	9,123.06	637.88	4,238.17	595,957.85	626,004.59	32.638036	-104.058282
13,100.00	90.00	89.91	9,123.06	638.04	4,338.17	595,958.01	626,104.59	32.638035	-104.057957
13,200.00	90.00	89.91	9,123.06	638.20	4,438.17	595,958.17	626,204.59	32.638035	-104.057632
13,300.00	90.00	89.91	9,123.06	638.35	4,538.17	595,958.33	626,304.59	32.638035	-104.057308
13,400.00	90.00	89.91	9,123.06	638.51	4,638.17	595,958.48	626,404.59	32.638035	-104.056983
13,500.00	90.00	89.91	9,123.06	638.67	4,738.17	595,958.64	626,504.58	32.638034	-104.056658
13,600.00	90.00	89.91	9,123.06	638.83	4,838.17	595,958.80	626,604.58	32.638034	-104.056333
13,700.00	90.00	89.91	9,123.06	638.98	4,938.17	595,958.96	626,704.58	32.638034	-104.056008
13,800.00	90.00	89.91	9,123.06	639.14	5,038.17	595,959.11	626,804.58	32.638033	-104.055683
13,900.00	90.00	89.91	9,123.06	639.30	5,138.17	595,959.27	626,904.58	32.638033	-104.055358
14,000.00	90.00	89.91	9,123.06	639.46	5,238.17	595,959.43	627,004.58	32.638033	-104.055034
14,047.55	90.00	89.91	9,123.06	639.53	5,285.72	595,959.50	627,052.13	32.638033	-104.054879

PBHL; 330' FNL, 230' FEL - Last Take Point @ 14047' MD, 330' FNL, 230' FEL

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well Turquoise PWU 27-9H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3373.00ft
Project:	Eddy County (NAD 83 NM Eastern)	MD Reference:	RKB @ 3373.00ft
Site:	Sec 27-T19S-R29E	North Reference:	Grid
Well:	Turquoise PWU 27-9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 3		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
PBHL - Turquoise 27-9H	0.00	0.00	0.00	639.53	5,285.72	595,959.50	627,052.13	32.638033	-104.054879
- plan misses target center by 5324.27ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
VP - Turquoise 27-9H	0.00	0.00	8,180.00	611.99	-300.00	595,931.96	621,466.42	32.637996	-104.073025
- plan misses target center by 491.57ft at 8200.54ft MD (8181.06 TVD, 426.64 N, 155.28 E)									
- Point									

Plan Annotations					
Measured	Vertical	Local Coordinates			
Depth	Depth	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)	Comment	
9,063.48	8,972.61	580.32	343.00	First Take Point @ 9063' MD, 412' FNL, 100' FWL	
9,500.87	9,123.06	632.37	739.05	Land Point @ 9501' MD, 464' FNL, 496' FWL	
14,047.55	9,123.06	639.53	5,285.72	PBHL; 330' FNL, 230' FEL	
14,047.55	9,123.06	639.53	5,285.72	Last Take Point @ 14047' MD, 330' FNL, 230' FEL	