

NM OIL CONSERVATION
ARTESIA DISTRICT

MAY 25 2018

WCDSC Permian NM

RECEIVED

Eddy County (NAD 83 NM Eastern)

Sec 27-T19S-R29E

Turquoise PWU 27-9H

Wellbore #1

Design #1

30-015.44983

Anticollision Report

09 May, 2018

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:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method	MD Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,500.00 ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program		Date	5/9/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	13,852.19	Design #1 (Wellbore #1)	MWD+HDGM	OWSG MWD + HDGM	

Summary						
Site Name	Reference Measure	Offset Measure	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation	Warning
Offset Well - Wellbore - Design						
Sec 27-T19S-R29E						
Coral PWU 28-27 11H - Wellbore #1 - Prelim Plan 1						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
Parkway West Unit #20 (Active) - Wellbore #1 - Wellbore #1						Out of range
Parkway West Unit 10 - Original Hole - Original Hole						Out of range
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	2,511.27	2,505.70	544.86	522.80	24.693	CC, ES
Parkway West Unit SWD - Wellbore #1 - Wellbore #1	9,400.00	9,073.21	713.52	645.54	10.496	SF
Turquoise PWU 27-10H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-4H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-5H - Wellbore #1 - Wellbore #1	7,096.79	11,814.00	288.03	184.85	2.792	Alert, CC, ES, SF
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	0.00	0.00	213.12			
Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore	6,800.00	6,790.83	404.36	356.48	8.445	SF
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	0.00	0.00	213.12			
Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1	6,800.00	6,790.79	406.66	354.04	7.729	SF
Turquoise PWU 27-3H - Wellbore #1 - Wellbore #1						Out of range
Turquoise PWU 27-61H - Wellbore #1 - Design #1	2,500.00	2,503.00	30.00	12.50	1.714	Minor Risk, CC, ES
Turquoise PWU 27-61H - Wellbore #1 - Design #1	2,600.00	2,603.01	30.84	12.62	1.693	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
Sec 28-T19S-R29E						
Coral PWU 28-3H - Wellbore #1 - Wellbore #1						Out of range
Coral PWU 28-4H - Wellbore #1 - Wellbore #1	8,031.88	12,256.14	931.71	809.86	7.646	CC, 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
Turquoise PWU 27 10H - Original Hole - Actuals						Out of range
Turquoise PWU 27 10H - Original Hole - P3v1						Out of range
Turquoise PWU 27 10H - Original Hole - Plan 1						Out of range
Turquoise PWU 27 10H - Original Hole - PTL						Out of range
Turquoise PWU 27 10H - Original Hole - T&D						Out of range

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

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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:	Design #1	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				
0.00	0.00	0.00	0.00	0.50	10.00	153.82	-511.09	251.21	569.56							
100.00	100.00	99.45	99.43	0.52	10.00	153.67	-509.76	252.24	568.81	558.30	10.52	54.084				
200.00	200.00	208.47	208.30	0.70	10.01	153.15	-505.24	255.74	566.54	555.84	10.70	52.940				
300.00	300.00	311.74	311.31	0.98	10.03	152.51	-499.31	259.86	563.25	552.24	11.01	51.178				
400.00	400.00	407.74	407.07	1.30	10.06	151.90	-493.71	263.67	559.94	548.58	11.36	49.285				
500.00	500.00	502.12	501.24	1.64	10.11	151.29	-488.97	267.77	557.58	545.84	11.74	47.474				
600.00	600.00	599.07	598.00	1.98	10.17	150.68	-484.90	272.31	556.17	544.02	12.15	45.778				
700.00	700.00	698.36	697.12	2.33	10.24	150.09	-480.98	276.71	554.93	542.36	12.57	44.143				
800.00	800.00	796.24	794.84	2.68	10.33	149.53	-477.51	280.92	554.03	541.02	13.01	42.594				
900.00	900.00	895.81	894.27	3.04	10.42	148.99	-474.37	285.09	553.46	540.00	13.46	41.125				
1,000.00	1,000.00	996.79	995.12	3.39	10.53	148.47	-471.17	289.06	552.79	538.87	13.92	39.703				
1,100.00	1,100.00	1,096.40	1,094.62	3.75	10.66	147.97	-468.01	292.75	552.04	537.64	14.40	38.339				
1,200.00	1,200.00	1,195.04	1,193.15	4.10	10.79	147.49	-465.07	296.44	551.51	536.63	14.89	37.051				
1,300.00	1,300.00	1,294.69	1,292.69	4.46	10.93	147.01	-462.31	300.14	551.20	535.81	15.38	35.831				
1,400.00	1,400.00	1,394.89	1,392.80	4.81	11.08	146.56	-459.70	303.55	550.88	534.99	15.89	34.663				
1,500.00	1,500.00	1,495.35	1,493.18	5.17	11.24	146.16	-457.25	306.59	550.53	534.11	16.41	33.546				
1,600.00	1,600.00	1,595.92	1,593.69	5.53	11.41	145.80	-454.97	309.17	550.08	533.14	16.94	32.475				
1,700.00	1,700.00	1,697.20	1,694.92	5.88	11.59	145.49	-452.79	311.29	549.49	532.01	17.48	31.444				
1,800.00	1,800.00	1,798.54	1,796.23	6.24	11.78	145.22	-450.59	312.99	548.65	530.63	18.02	30.447				
1,900.00	1,900.00	1,899.90	1,897.56	6.60	11.98	144.97	-448.38	314.25	547.58	529.01	18.57	29.483				
2,000.00	2,000.00	1,997.87	1,995.50	6.96	12.17	144.77	-446.50	315.30	546.62	527.49	19.13	28.581				
2,100.00	2,100.00	2,096.31	2,093.93	7.31	12.37	144.60	-444.98	316.28	545.94	526.25	19.69	27.732				
2,200.00	2,200.00	2,195.02	2,192.63	7.67	12.58	144.45	-443.83	317.22	545.54	525.29	20.25	26.935				
2,300.00	2,300.00	2,294.75	2,292.34	8.03	12.80	144.31	-442.84	318.13	545.27	524.44	20.83	26.178				
2,400.00	2,400.00	2,394.47	2,392.06	8.39	13.03	144.17	-441.92	319.04	545.05	523.64	21.41	25.457				
2,500.00	2,500.00	2,494.38	2,491.96	8.74	13.25	144.04	-441.06	319.93	544.87	522.87	22.00	24.769				
2,511.27	2,511.27	2,505.70	2,503.28	8.78	13.28	160.19	-440.96	320.03	544.86	522.80	22.07	24.693 CC, ES				
2,600.00	2,599.99	2,594.80	2,592.37	9.10	13.49	160.10	-440.18	320.77	545.48	522.89	22.59	24.144				
2,700.00	2,699.96	2,695.20	2,692.76	9.46	13.73	160.07	-439.25	321.54	547.65	524.46	23.19	23.614				
2,800.00	2,799.86	2,795.55	2,793.11	9.82	13.98	160.09	-438.28	322.25	551.38	527.59	23.79	23.172				
2,900.00	2,899.68	2,895.84	2,893.39	10.17	14.23	160.17	-437.26	322.89	556.68	532.28	24.40	22.812				
3,000.00	2,999.39	2,996.05	2,993.59	10.53	14.49	160.31	-436.19	323.47	563.23	538.22	25.01	22.516				
3,100.00	3,099.10	3,096.28	3,093.82	10.89	14.75	160.47	-435.09	323.96	569.83	544.20	25.63	22.233				
3,200.00	3,198.81	3,196.54	3,194.07	11.25	15.01	160.63	-434.00	324.29	576.35	550.10	26.25	21.958				
3,300.00	3,298.51	3,296.81	3,294.33	11.61	15.27	160.81	-432.92	324.44	582.79	555.92	26.87	21.689				
3,400.00	3,398.22	3,397.08	3,394.60	11.97	15.54	161.00	-431.87	324.42	589.16	561.66	27.50	21.427				
3,500.00	3,497.93	3,497.33	3,494.84	12.33	15.81	161.19	-430.80	324.27	595.44	567.32	28.13	21.171				
3,600.00	3,597.63	3,597.58	3,595.09	12.69	16.09	161.38	-429.65	324.12	601.66	572.90	28.76	20.922				
3,700.00	3,697.34	3,698.49	3,695.99	13.05	16.37	161.55	-428.33	323.98	607.76	578.37	29.40	20.675				
3,800.00	3,797.05	3,799.55	3,797.03	13.41	16.65	161.70	-426.72	323.89	613.66	583.63	30.04	20.430				
3,900.00	3,896.75	3,899.06	3,896.53	13.78	16.93	161.84	-425.02	323.82	619.49	588.81	30.68	20.193				
4,000.00	3,996.46	3,998.58	3,996.04	14.14	17.22	161.98	-423.42	323.72	625.38	594.06	31.32	19.965				
4,100.00	4,096.17	4,100.73	4,098.17	14.50	17.51	162.12	-421.63	323.54	631.11	599.13	31.98	19.736				
4,200.00	4,195.88	4,202.93	4,200.34	14.87	17.81	162.25	-419.46	323.22	636.46	603.83	32.63	19.503				
4,300.00	4,295.58	4,302.11	4,299.50	15.23	18.11	162.35	-417.12	323.10	641.73	608.44	33.29	19.278				
4,400.00	4,395.29	4,402.43	4,399.78	15.60	18.41	162.42	-414.55	323.32	647.02	613.07	33.95	19.060				
4,500.00	4,495.00	4,505.07	4,502.38	15.96	18.72	162.45	-411.46	323.70	652.02	617.40	34.62	18.836				
4,600.00	4,594.70	4,606.01	4,603.26	16.33	19.03	162.44	-407.92	324.15	656.64	621.36	35.28	18.611				
4,700.00	4,694.41	4,704.05	4,701.23	16.69	19.33	162.44	-404.54	324.75	661.41	625.46	35.95	18.401				
4,800.00	4,794.12	4,803.90	4,801.03	17.06	19.64	162.42	-401.27	325.49	666.40	629.78	36.61	18.201				

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Reference Wellbore	Wellbore #1	Database:	EDM r5000.141_Prod US
Reference Design:	Design #1	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		
4,900.00	4,893.82	4,906.22	4,903.29	17.42	19.96	162.42	-397.75	326.02	671.13	633.84	37.29	17.997		
5,000.00	4,993.53	5,007.05	5,004.05	17.79	20.27	162.43	-394.08	326.32	675.56	637.59	37.97	17.794		
5,100.00	5,093.24	5,106.68	5,103.61	18.16	20.59	162.42	-390.36	326.74	679.99	641.35	38.64	17.598		
5,200.00	5,192.94	5,207.22	5,204.07	18.52	20.90	162.40	-386.59	327.19	684.41	645.10	39.32	17.408		
5,300.00	5,292.65	5,308.27	5,305.06	18.89	21.22	162.44	-382.98	327.10	688.69	648.69	40.00	17.219		
5,400.00	5,392.36	5,405.68	5,402.42	19.26	21.53	162.50	-379.74	326.79	693.04	652.38	40.67	17.043		
5,500.00	5,492.07	5,502.84	5,499.54	19.63	21.84	162.55	-376.81	326.71	697.79	656.46	41.33	16.881		
5,600.00	5,591.77	5,603.42	5,600.07	19.99	22.16	162.61	-373.94	326.75	702.74	660.72	42.02	16.726		
5,700.00	5,691.48	5,708.59	5,705.19	20.36	22.50	162.65	-370.45	326.70	707.25	664.54	42.71	16.559		
5,800.00	5,791.19	5,809.17	5,805.69	20.73	22.83	162.68	-366.63	326.50	711.29	667.90	43.40	16.391		
5,900.00	5,890.89	5,909.57	5,906.03	21.10	23.15	162.73	-362.91	326.05	715.26	671.18	44.08	16.227		
6,000.00	5,990.60	6,009.98	6,006.36	21.46	23.48	162.80	-359.29	325.32	719.17	674.40	44.76	16.066		
6,100.00	6,090.31	6,108.19	6,104.52	21.83	23.79	162.88	-355.91	324.50	723.14	677.70	45.44	15.913		
6,200.00	6,190.01	6,204.23	6,200.50	22.20	24.10	162.99	-353.12	323.63	727.53	681.42	46.11	15.777		
6,300.00	6,289.72	6,302.09	6,298.33	22.57	24.42	163.10	-350.62	322.91	732.32	685.52	46.79	15.650		
6,400.00	6,389.43	6,400.79	6,397.00	22.94	24.74	163.19	-348.19	322.53	737.36	689.89	47.47	15.532		
6,500.00	6,489.13	6,501.83	6,498.01	23.30	25.07	163.30	-345.68	321.96	742.30	694.14	48.16	15.412		
6,600.00	6,588.84	6,599.14	6,595.30	23.67	25.39	163.41	-343.47	321.36	747.40	698.56	48.84	15.303		
6,700.00	6,688.55	6,696.49	6,692.62	24.04	25.71	163.53	-341.60	320.86	752.84	703.32	49.52	15.203		
6,800.00	6,788.26	6,793.98	6,790.10	24.41	26.03	163.64	-339.97	320.54	758.60	708.40	50.20	15.112		
6,900.00	6,887.96	6,891.35	6,887.46	24.78	26.35	163.75	-338.58	320.41	764.67	713.79	50.88	15.029		
7,000.00	6,987.67	6,988.49	6,984.59	25.15	26.67	163.86	-337.47	320.47	771.08	719.53	51.56	14.956		
7,100.00	7,087.38	7,086.69	7,082.79	25.51	27.00	163.96	-336.60	320.69	777.81	725.57	52.24	14.889		
7,200.00	7,187.08	7,186.60	7,182.69	25.88	27.33	164.08	-335.84	320.83	784.59	731.66	52.93	14.822		
7,300.00	7,286.79	7,285.13	7,281.23	26.25	27.66	164.20	-335.14	320.90	791.40	737.78	53.62	14.759		
7,400.00	7,386.50	7,382.06	7,378.15	26.62	27.98	164.29	-334.53	321.41	798.50	744.21	54.30	14.706		
7,500.00	7,486.20	7,484.24	7,480.32	26.99	28.31	164.35	-333.80	322.45	805.80	750.80	55.00	14.650		
7,600.00	7,585.91	7,591.90	7,587.96	27.36	28.67	164.37	-331.98	323.61	812.30	756.57	55.73	14.575		
7,700.00	7,685.62	7,698.09	7,694.10	27.73	29.03	164.35	-329.08	324.72	817.90	761.44	56.46	14.487		
7,800.00	7,785.33	7,803.75	7,799.70	28.10	29.39	164.31	-325.38	325.68	822.78	765.60	57.18	14.390		
7,900.00	7,885.03	7,899.59	7,895.47	28.47	29.72	164.28	-321.96	326.39	827.51	769.64	57.86	14.301		
8,000.00	7,984.82	7,997.60	7,993.43	28.83	30.05	164.26	-318.97	327.09	831.47	772.91	58.56	14.199		
8,100.00	8,084.75	8,092.94	8,088.74	29.19	30.38	164.20	-316.44	327.81	833.28	774.04	59.24	14.067		
8,200.00	8,184.74	8,190.36	8,186.12	29.55	30.71	147.94	-314.27	328.71	833.03	773.10	59.92	13.901		
8,300.00	8,284.74	8,291.10	8,286.83	29.90	31.06	147.76	-311.80	330.22	831.74	771.12	60.62	13.719		
8,400.00	8,384.74	8,387.26	8,382.95	30.25	31.38	147.60	-309.71	331.56	830.65	769.34	61.30	13.549		
8,500.00	8,484.74	8,483.85	8,479.53	30.60	31.71	147.52	-308.51	332.26	829.98	768.00	61.98	13.390		
8,600.00	8,584.60	8,575.97	8,571.65	30.94	32.01	58.16	-308.30	332.63	828.07	765.46	62.62	13.225		
8,700.00	8,682.48	8,675.08	8,670.76	31.26	32.32	60.21	-308.69	332.75	818.12	754.86	63.26	12.933		
8,800.00	8,775.42	8,766.89	8,762.57	31.54	32.60	63.96	-309.28	332.48	800.42	736.56	63.85	12.535		
8,900.00	8,860.61	8,856.80	8,852.47	31.79	32.88	69.43	-309.84	331.73	777.06	712.60	64.46	12.055		
9,000.00	8,935.44	8,927.86	8,923.53	32.01	33.10	75.47	-310.32	330.79	751.56	686.54	65.02	11.559		
9,100.00	8,997.66	8,986.21	8,981.87	32.45	33.28	81.39	-310.97	330.02	728.47	662.85	65.63	11.100		
9,200.00	9,045.36	9,030.59	9,026.24	33.03	33.42	86.18	-311.62	329.43	712.11	645.78	66.32	10.737		
9,296.46	9,076.26	9,058.90	9,054.54	33.76	33.51	88.94	-312.11	329.06	706.30	639.20	67.10	10.526		
9,300.00	9,077.10	9,059.65	9,055.29	33.79	33.51	89.00	-312.12	329.05	706.31	639.18	67.13	10.522		
9,400.00	9,091.91	9,073.21	9,068.85	34.73	33.55	89.36	-312.37	328.87	713.52	645.54	67.98	10.496 SF		
9,500.00	9,093.68	9,073.70	9,069.33	35.84	33.55	88.92	-312.38	328.86	734.17	665.38	68.78	10.674		
9,600.00	9,094.70	9,073.41	9,069.04	37.13	33.55	88.90	-312.38	328.87	767.38	697.86	69.52	11.038		
9,700.00	9,095.71	9,073.11	9,068.75	38.59	33.55	88.87	-312.37	328.87	811.63	741.48	70.15	11.570		
9,800.00	9,096.72	9,072.82	9,068.45	40.21	33.55	88.85	-312.36	328.88	865.23	794.57	70.66	12.245		

CC - Min centre to 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:	Design #1	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)				
9,900.00	9,097.73	9,072.52	9,068.16	41.96	33.55	88.82	-312.36	328.88	926.55	855.51	71.04	13.042		
10,000.00	9,098.74	9,072.22	9,067.86	43.82	33.55	88.80	-312.35	328.88	994.17	922.84	71.33	13.938		
10,100.00	9,099.78	9,071.92	9,067.55	45.79	33.55	88.77	-312.35	328.89	1,066.89	995.35	71.53	14.914		
10,200.00	9,100.77	9,071.61	9,067.25	47.85	33.55	88.75	-312.34	328.89	1,143.73	1,072.05	71.68	15.956		
10,300.00	9,101.78	9,071.31	9,066.94	49.99	33.55	88.72	-312.34	328.90	1,223.93	1,152.14	71.78	17.051		
10,400.00	9,102.79	9,071.00	9,066.63	52.20	33.55	88.70	-312.33	328.90	1,306.85	1,235.00	71.85	18.189		
10,500.00	9,103.81	9,070.68	9,066.32	54.47	33.55	88.67	-312.33	328.90	1,392.03	1,320.13	71.90	19.362		
10,600.00	9,104.82	9,070.37	9,066.01	56.80	33.54	88.65	-312.32	328.91	1,479.06	1,407.13	71.92	20.564		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well 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:	Design #1	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			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			
5,700.00	5,691.48	11,814.00	7,066.47	20.36	155.11	85.54	423.02	176.42	1,426.18	1,371.31	54.87	25.992				
5,800.00	5,791.19	11,814.00	7,066.47	20.73	155.11	85.54	423.02	176.42	1,328.40	1,272.70	55.69	23.852				
5,900.00	5,890.89	11,814.00	7,066.47	21.10	155.11	85.54	423.02	176.42	1,230.97	1,174.32	56.64	21.731				
6,000.00	5,990.60	11,814.00	7,066.47	21.46	155.11	85.54	423.02	176.42	1,133.98	1,076.23	57.76	19.633				
6,100.00	6,090.31	11,814.00	7,066.47	21.83	155.11	85.54	423.02	176.42	1,037.57	978.49	59.08	17.561				
6,200.00	6,190.01	11,814.00	7,066.47	22.20	155.11	85.54	423.02	176.42	941.91	881.23	60.69	15.521				
6,300.00	6,289.72	11,814.00	7,066.47	22.57	155.11	85.54	423.02	176.42	847.26	784.59	62.67	13.519				
6,400.00	6,389.43	11,814.00	7,066.47	22.94	155.11	85.54	423.02	176.42	753.98	688.81	65.17	11.569				
6,500.00	6,489.13	11,814.00	7,066.47	23.30	155.11	85.54	423.02	176.42	662.67	594.28	68.39	9.690				
6,600.00	6,588.84	11,814.00	7,066.47	23.67	155.11	85.54	423.02	176.42	574.25	501.64	72.61	7.909				
6,700.00	6,688.55	11,814.00	7,066.47	24.04	155.11	85.54	423.02	176.42	490.31	412.12	78.19	6.271				
6,800.00	6,788.26	11,814.00	7,066.47	24.41	155.11	85.54	423.02	176.42	413.58	328.15	85.43	4.841	Alert			
6,900.00	6,887.96	11,814.00	7,066.47	24.78	155.11	85.54	423.02	176.42	348.84	254.81	94.03	3.710	Alert			
7,000.00	6,987.67	11,814.00	7,066.47	25.15	155.11	85.54	423.02	176.42	303.86	202.26	101.60	2.991	Alert			
7,096.79	7,084.18	11,814.00	7,066.47	25.50	155.11	85.54	423.02	176.42	288.03	184.85	103.18	2.792	Alert, CC, ES, SF			
7,100.00	7,087.38	11,814.00	7,066.47	25.51	155.11	85.54	423.02	176.42	288.05	184.96	103.09	2.794	Alert			
7,200.00	7,187.08	11,814.00	7,066.47	25.88	155.11	85.54	423.02	176.42	305.96	209.95	96.02	3.187	Alert			
7,300.00	7,286.79	11,814.00	7,066.47	26.25	155.11	85.54	423.02	176.42	352.50	267.44	85.05	4.144	Alert			
7,400.00	7,386.50	11,814.00	7,066.47	26.62	155.11	85.54	423.02	176.42	418.21	342.94	75.27	5.556				
7,500.00	7,486.20	11,814.00	7,066.47	26.99	155.11	85.54	423.02	176.42	495.52	427.36	68.15	7.271				
7,600.00	7,585.91	11,814.00	7,066.47	27.36	155.11	85.54	423.02	176.42	579.81	516.45	63.36	9.151				
7,700.00	7,685.62	11,814.00	7,066.47	27.73	155.11	85.54	423.02	176.42	668.45	608.25	60.20	11.104				
7,800.00	7,785.33	11,814.00	7,066.47	28.10	155.11	85.54	423.02	176.42	759.91	701.78	58.13	13.072				
7,900.00	7,885.03	11,814.00	7,066.47	28.47	155.11	85.54	423.02	176.42	853.29	796.50	56.78	15.027				
8,000.00	7,984.82	11,814.00	7,066.47	28.83	155.11	89.87	423.02	176.42	948.04	892.08	55.96	16.941				
8,100.00	8,084.75	11,814.00	7,066.47	29.19	155.11	94.84	423.02	176.42	1,043.77	988.25	55.52	18.799				
8,200.00	8,184.74	11,814.00	7,066.47	29.55	155.11	83.82	423.02	176.42	1,140.18	1,084.86	55.32	20.610				
8,300.00	8,284.74	11,814.00	7,066.47	29.90	155.11	83.82	423.02	176.42	1,237.12	1,181.87	55.25	22.391				
8,400.00	8,384.74	11,814.00	7,066.47	30.25	155.11	83.82	423.02	176.42	1,334.51	1,279.27	55.25	24.155				
8,500.00	8,484.74	11,814.00	7,066.47	30.60	155.11	83.82	423.02	176.42	1,432.26	1,376.97	55.29	25.902				

CC - Min centre to 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Pilot Wellbore - Pilot Wellbore														Offset Site Error:
Survey Program: 100-MWD+GRF														Offset Well Error:
Reference		Offset		Semi Major Axis		Highside Footface (ft)	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	128.58	-132.81	166.46	213.12					
100.00	100.00	89.96	89.96	0.52	0.51	128.59	-133.03	166.70	213.28	212.25	1.03	206.963		
200.00	200.00	189.75	189.75	0.70	0.68	128.58	-133.49	167.36	214.08	212.71	1.37	155.844		
300.00	300.00	289.10	289.09	0.98	0.95	128.45	-133.72	168.39	215.04	213.11	1.93	111.192		
400.00	400.00	389.20	389.18	1.30	1.27	128.23	-133.75	169.79	216.16	213.58	2.57	83.997		
500.00	500.00	488.72	488.69	1.64	1.61	127.97	-133.71	171.30	217.32	214.08	3.24	67.001		
600.00	600.00	589.15	589.11	1.98	1.95	127.69	-133.61	172.93	218.55	214.61	3.93	55.572		
700.00	700.00	688.58	688.52	2.33	2.30	127.39	-133.42	174.58	219.74	215.11	4.63	47.490		
800.00	800.00	788.27	788.19	2.68	2.65	127.07	-133.29	176.47	221.18	215.85	5.33	41.510		
900.00	900.00	887.98	887.88	3.04	3.00	126.69	-133.07	178.58	222.74	216.70	6.03	36.920		
1,000.00	1,000.00	987.49	987.36	3.39	3.36	126.26	-132.75	180.95	224.46	217.72	6.74	33.306		
1,100.00	1,100.00	1,085.12	1,084.94	3.75	3.71	125.71	-132.32	184.06	226.78	219.34	7.44	30.478		
1,200.00	1,200.00	1,183.83	1,183.57	4.10	4.06	125.05	-132.01	188.18	230.00	221.85	8.15	28.228		
1,300.00	1,300.00	1,285.64	1,285.29	4.46	4.43	124.38	-131.62	192.36	233.16	224.29	8.87	26.290		
1,400.00	1,400.00	1,386.60	1,386.19	4.81	4.79	123.62	-131.07	195.67	235.57	225.99	9.59	24.573		
1,500.00	1,500.00	1,487.74	1,487.29	5.17	5.16	123.35	-130.59	198.45	237.60	227.29	10.31	23.056		
1,600.00	1,600.00	1,589.01	1,588.54	5.53	5.52	122.96	-130.07	200.61	239.10	228.08	11.02	21.690		
1,700.00	1,700.00	1,689.66	1,689.18	5.88	5.88	122.64	-129.54	202.25	240.19	228.45	11.74	20.459		
1,800.00	1,800.00	1,789.57	1,789.07	6.24	6.24	122.35	-129.05	203.72	241.17	228.71	12.45	19.365		
1,900.00	1,900.00	1,891.05	1,890.54	6.60	6.60	122.12	-128.61	204.88	241.90	228.73	13.17	18.364		
2,000.00	2,000.00	1,991.43	1,990.92	6.96	6.96	121.95	-128.18	205.50	242.20	228.31	13.89	17.442		
2,100.00	2,100.00	2,091.70	2,091.18	7.31	7.31	121.79	-127.70	206.02	242.38	227.78	14.60	16.603		
2,200.00	2,200.00	2,191.75	2,191.24	7.67	7.66	121.67	-127.31	206.39	242.50	227.19	15.31	15.839		
2,300.00	2,300.00	2,291.93	2,291.42	8.03	8.02	121.54	-126.88	206.74	242.57	226.55	16.02	15.140		
2,400.00	2,400.00	2,392.11	2,391.60	8.39	8.37	121.41	-126.41	207.03	242.57	225.84	16.73	14.497		
2,500.00	2,500.00	2,492.12	2,491.60	8.74	8.72	121.29	-125.96	207.25	242.52	225.08	17.44	13.905		
2,503.25	2,503.25	2,495.37	2,494.85	8.76	8.73	137.44	-125.94	207.26	242.52	225.06	17.46	13.887		
2,600.00	2,599.99	2,592.67	2,592.15	9.10	9.07	137.44	-125.39	207.43	243.02	224.87	18.15	13.389		
2,700.00	2,699.96	2,692.91	2,692.38	9.46	9.42	137.73	-124.78	207.41	244.63	225.77	18.85	12.975		
2,800.00	2,799.86	2,793.21	2,792.68	9.82	9.76	138.32	-124.28	207.19	247.42	227.86	19.55	12.654		
2,900.00	2,899.68	2,893.84	2,893.31	10.17	10.10	139.19	-123.79	206.69	251.32	231.08	20.25	12.413		
3,000.00	2,999.39	2,993.49	2,992.96	10.53	10.43	140.27	-123.29	206.00	256.23	235.29	20.94	12.237		
3,100.00	3,099.10	3,093.22	3,092.68	10.89	10.78	141.38	-122.98	205.25	261.36	239.73	21.63	12.084		
3,200.00	3,198.81	3,193.80	3,193.26	11.25	11.10	142.61	-122.79	204.21	266.45	244.13	22.32	11.937		
3,300.00	3,298.51	3,292.60	3,292.05	11.61	11.43	143.61	-122.73	203.08	271.62	248.61	23.01	11.804		
3,400.00	3,398.22	3,407.87	3,391.58	11.97	11.81	144.69	-122.87	202.08	277.13	253.37	23.75	11.666		
3,500.00	3,497.93	3,491.84	3,491.29	12.33	12.09	145.74	-123.05	201.09	282.75	258.36	24.40	11.591		
3,600.00	3,597.63	3,591.82	3,591.26	12.69	12.43	146.74	-123.16	200.10	288.43	263.34	25.09	11.495		
3,700.00	3,697.34	3,691.87	3,691.31	13.05	12.77	147.68	-123.12	199.08	294.08	268.29	25.79	11.403		
3,800.00	3,797.05	3,791.88	3,791.11	13.41	13.11	148.57	-122.95	198.09	299.73	273.24	26.49	11.315		
3,900.00	3,896.75	3,891.37	3,890.80	13.78	13.45	149.39	-122.67	197.20	305.45	278.26	27.19	11.234		
4,000.00	3,996.46	3,991.17	3,990.59	14.14	13.79	150.19	-122.43	196.28	311.23	283.34	27.89	11.158		
4,100.00	4,096.17	4,091.00	4,090.42	14.50	14.14	150.95	-122.14	195.36	317.05	288.45	28.60	11.087		
4,200.00	4,195.88	4,191.25	4,190.67	14.87	14.48	151.67	-121.70	194.48	322.83	293.52	29.30	11.017		
4,300.00	4,295.58	4,291.41	4,290.82	15.23	14.83	152.28	-120.81	193.64	328.51	298.49	30.01	10.945		
4,400.00	4,395.29	4,390.92	4,390.32	15.60	15.18	152.70	-119.27	193.86	334.19	303.47	30.73	10.877		
4,500.00	4,495.00	4,489.67	4,489.05	15.96	15.53	153.02	-117.53	194.39	340.09	308.66	31.44	10.819		
4,600.00	4,594.70	4,593.74	4,593.08	16.33	15.90	153.30	-115.23	194.89	345.64	313.47	32.16	10.746		
4,700.00	4,694.41	4,696.02	4,695.32	16.69	16.27	153.49	-111.86	194.99	350.12	317.24	32.89	10.646		
4,800.00	4,794.12	4,800.46	4,799.65	17.06	16.64	153.59	-107.32	194.81	353.66	320.05	33.61	10.522		
4,900.00	4,893.82	4,901.34	4,900.40	17.42	16.99	153.63	-102.15	194.33	356.42	322.10	34.33	10.383		

CC - Min centre to 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:	Design #1	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-HGRF														Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Footcandle (ft)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,000.00	4,993.53	5,000.68	4,999.62	17.79	17.34	153.75	-97.33	193.51	359.15	324.10	35.04	10.248			
5,100.00	5,093.24	5,100.69	5,099.52	18.16	17.70	153.94	-92.83	192.40	361.94	326.18	35.76	10.121			
5,200.00	5,192.94	5,200.57	5,199.30	18.52	18.05	154.15	-88.50	191.12	364.75	328.27	36.48	10.000			
5,300.00	5,292.65	5,297.08	5,295.73	18.89	18.39	154.42	-84.90	189.91	368.04	330.88	37.18	9.898			
5,400.00	5,392.36	5,399.12	5,397.71	19.26	18.76	154.72	-81.37	188.65	371.54	333.64	37.90	9.802			
5,500.00	5,492.07	5,499.05	5,497.55	19.63	19.11	154.99	-77.56	187.33	374.74	336.12	38.62	9.703			
5,600.00	5,591.77	5,599.79	5,598.21	19.99	19.47	155.23	-73.56	186.04	377.85	338.51	39.34	9.605			
5,700.00	5,691.48	5,702.17	5,700.48	20.36	19.83	155.48	-69.16	184.43	380.53	340.47	40.06	9.499			
5,800.00	5,791.19	5,803.38	5,801.56	20.73	20.19	155.77	-64.70	182.23	382.74	341.96	40.78	9.388			
5,900.00	5,890.89	5,904.37	5,902.42	21.10	20.55	156.12	-60.27	179.54	384.66	343.17	41.49	9.271			
6,000.00	5,990.60	6,006.05	6,003.95	21.48	20.92	156.48	-55.59	176.54	386.24	344.03	42.21	9.151			
6,100.00	6,090.31	6,107.19	6,104.92	21.83	21.28	156.85	-50.88	173.27	387.47	344.55	42.92	9.027			
6,200.00	6,190.01	6,209.40	6,206.92	22.20	21.64	157.35	-45.92	169.00	388.27	344.63	43.64	8.897			
6,300.00	6,289.72	6,309.30	6,306.61	22.57	22.00	157.92	-41.45	164.16	388.83	344.48	44.35	8.767			
6,400.00	6,389.43	6,405.18	6,402.32	22.94	22.34	158.46	-37.50	159.94	389.98	344.92	45.06	8.654			
6,500.00	6,489.13	6,501.44	6,498.45	23.30	22.69	158.99	-34.26	156.25	392.10	346.33	45.77	8.566			
6,600.00	6,588.84	6,597.43	6,594.35	23.67	23.03	159.55	-31.89	152.93	395.21	348.74	46.48	8.504			
6,700.00	6,688.55	6,693.23	6,690.10	24.04	23.37	160.06	-30.15	150.39	399.37	352.20	47.17	8.466			
6,800.00	6,788.26	6,790.83	6,787.68	24.41	23.71	160.49	-28.69	148.72	404.36	356.48	47.88	8.445 SF			
6,900.00	6,887.96	6,884.21	6,881.04	24.78	24.04	160.91	-28.12	147.55	410.36	361.80	48.55	8.451			
7,000.00	6,987.67	6,980.91	6,977.74	25.15	24.37	161.36	-28.64	146.90	417.66	368.42	49.24	8.483			
7,100.00	7,087.38	7,080.53	7,077.36	25.51	24.70	161.76	-29.29	146.67	425.32	375.38	49.93	8.518			
7,200.00	7,187.08	7,175.83	7,172.66	25.88	25.03	162.13	-30.16	146.65	433.35	382.74	50.60	8.564			
7,300.00	7,286.79	7,273.66	7,270.47	26.25	25.36	162.44	-31.56	147.52	442.31	391.02	51.29	8.624			
7,400.00	7,386.50	7,368.43	7,363.19	26.62	25.67	162.72	-33.83	148.95	452.46	400.53	51.93	8.713			
7,500.00	7,486.20	7,467.72	7,464.44	26.99	26.01	163.04	-36.55	150.46	462.83	410.19	52.65	8.792			
7,600.00	7,585.91	7,569.10	7,565.79	27.36	26.36	163.33	-38.92	151.77	472.81	419.45	53.36	8.861			
7,700.00	7,685.62	7,670.57	7,667.22	27.73	26.70	163.62	-40.93	152.88	482.40	428.32	54.08	8.921			
7,800.00	7,785.33	7,772.11	7,768.75	28.10	27.05	163.89	-42.57	153.79	491.58	436.79	54.78	8.972			
7,900.00	7,885.03	7,873.73	7,870.36	28.47	27.39	164.15	-43.85	154.49	500.37	444.87	55.51	9.015			
8,000.00	7,984.82	7,975.52	7,972.14	28.83	27.74	164.38	-44.77	155.00	507.58	451.38	56.22	9.029			
8,100.00	8,084.75	8,077.51	8,074.13	29.19	28.09	164.52	-45.32	155.31	511.86	454.93	56.93	8.991			
8,200.00	8,184.74	8,179.61	8,176.23	29.55	28.43	164.41	-45.51	155.41	513.21	455.57	57.64	8.903			
8,300.00	8,284.74	8,180.00	8,176.62	29.90	28.44	164.41	-45.51	155.41	522.79	465.84	58.95	9.180			
8,400.00	8,384.74	8,180.00	8,176.62	30.25	28.44	164.41	-45.51	155.41	550.68	495.77	54.90	10.031			
8,500.00	8,484.74	8,180.00	8,176.62	30.60	28.44	164.41	-45.51	155.41	594.27	542.16	52.10	11.405			
8,600.00	8,584.60	8,180.00	8,176.62	30.94	28.44	55.09	-45.51	155.41	648.87	599.78	49.09	13.217			
8,700.00	8,682.48	8,180.00	8,176.62	31.26	28.44	49.55	-45.51	155.41	706.24	660.15	46.08	15.325			
8,800.00	8,775.42	8,180.00	8,176.62	31.54	28.44	44.40	-45.51	155.41	763.83	720.51	43.32	17.633			
8,900.00	8,860.61	8,180.00	8,176.62	31.79	28.44	39.85	-45.51	155.41	820.04	779.05	40.98	20.010			
9,000.00	8,935.44	8,180.00	8,176.62	32.01	28.44	35.96	-45.51	155.41	873.57	834.34	39.23	22.268			
9,100.00	8,997.66	8,180.00	8,176.62	32.45	28.44	32.72	-45.51	155.41	923.42	885.23	38.18	24.184			
9,200.00	9,045.36	8,180.00	8,176.62	33.03	28.44	30.07	-45.51	155.41	968.73	930.82	37.91	25.552			
9,300.00	9,077.10	8,180.00	8,176.62	33.79	28.44	27.94	-45.51	155.41	1,008.84	970.42	38.41	26.262			
9,400.00	9,091.91	8,180.00	8,176.62	34.73	28.44	26.28	-45.51	155.41	1,043.18	1,003.56	39.62	26.329			
9,500.00	9,093.88	8,180.00	8,176.62	35.84	28.44	25.86	-45.51	155.41	1,075.02	1,033.67	41.35	26.000			
9,600.00	9,094.70	8,180.00	8,176.62	37.13	28.44	25.86	-45.51	155.41	1,114.34	1,071.08	43.26	25.762			
9,700.00	9,095.71	8,180.00	8,176.62	38.59	28.44	25.86	-45.51	155.41	1,160.96	1,115.77	45.19	25.692			
9,800.00	9,096.72	8,180.00	8,176.62	40.21	28.44	25.86	-45.51	155.41	1,214.04	1,167.00	47.04	25.806			
9,900.00	9,097.73	8,180.00	8,176.62	41.96	28.44	25.86	-45.51	155.41	1,272.78	1,224.01	48.77	26.098			
10,000.00	9,098.74	8,180.00	8,176.62	43.82	28.44	25.86	-45.51	155.41	1,336.43	1,286.10	50.34	26.549			

CC - Min centre to 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:	Design #1	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-IGRE															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)							
10,100.00	9,099.76	8,180.00	8,178.82	45.79	28.44	25.86	-45.51	155.41	1,404.33	1,352.58	51.74	27.141					
10,200.00	9,100.77	8,180.00	8,178.82	47.85	28.44	25.86	-45.51	155.41	1,475.88	1,422.89	52.99	27.853					

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:	Design #1	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-HGRF														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	128.58	-132.81	166.46	213.12						
100.00	100.00	89.96	89.96	0.52	0.52	128.59	-133.03	166.70	213.28	212.24	1.04	205.931			
200.00	200.00	189.75	189.75	0.70	0.73	128.58	-133.49	167.36	214.08	212.66	1.43	149.924			
300.00	300.00	289.10	289.09	0.98	1.07	128.45	-133.72	168.39	215.04	212.98	2.05	104.689			
400.00	400.00	389.20	389.18	1.30	1.46	128.23	-133.75	169.79	216.16	213.40	2.76	78.334			
500.00	500.00	488.72	488.69	1.64	1.85	127.97	-133.71	171.30	217.32	213.83	3.49	62.211			
600.00	600.00	589.15	589.11	1.98	2.26	127.69	-133.61	172.93	218.55	214.30	4.25	51.474			
700.00	700.00	688.58	688.52	2.33	2.67	127.39	-133.42	174.58	219.74	214.74	5.00	43.920			
800.00	800.00	788.27	788.19	2.68	3.10	127.07	-133.29	176.47	221.18	215.40	5.77	38.316			
900.00	900.00	887.98	887.88	3.04	3.53	126.69	-133.07	178.58	222.74	216.19	6.55	34.007			
1,000.00	1,000.00	987.49	987.36	3.39	3.97	126.26	-132.75	180.95	224.46	217.13	7.33	30.617			
1,100.00	1,100.00	1,085.12	1,084.94	3.75	4.40	125.71	-132.32	184.06	226.78	218.67	8.11	27.969			
1,200.00	1,200.00	1,183.83	1,183.57	4.10	4.85	125.05	-132.01	188.18	230.00	221.10	8.89	25.857			
1,300.00	1,300.00	1,285.64	1,285.29	4.46	5.31	124.38	-131.62	192.36	233.16	223.46	9.70	24.038			
1,400.00	1,400.00	1,386.60	1,386.19	4.81	5.77	123.82	-131.07	195.67	235.57	225.07	10.50	22.434			
1,500.00	1,500.00	1,487.74	1,487.29	5.17	6.23	123.35	-130.59	198.45	237.60	226.29	11.30	21.020			
1,600.00	1,600.00	1,589.01	1,588.54	5.53	6.69	122.96	-130.07	200.61	239.10	227.00	12.11	19.752			
1,700.00	1,700.00	1,689.66	1,689.18	5.88	7.13	122.64	-129.54	202.25	240.19	227.30	12.89	18.633			
1,800.00	1,800.00	1,789.57	1,789.07	6.24	7.53	122.35	-129.05	203.72	241.17	227.51	13.66	17.657			
1,900.00	1,900.00	1,891.05	1,890.54	6.60	7.94	122.12	-128.61	204.88	241.90	227.47	14.43	16.762			
2,000.00	2,000.00	1,991.43	1,990.82	6.96	8.35	121.95	-128.18	205.50	242.20	227.00	15.20	15.932			
2,100.00	2,100.00	2,091.70	2,091.18	7.31	8.76	121.79	-127.70	208.02	242.38	226.41	15.97	15.176			
2,200.00	2,200.00	2,191.75	2,191.24	7.67	9.16	121.67	-127.31	208.39	242.50	225.78	16.74	14.485			
2,300.00	2,300.00	2,291.93	2,291.42	8.03	9.57	121.54	-126.88	208.74	242.57	225.06	17.51	13.851			
2,400.00	2,400.00	2,392.11	2,391.60	8.39	9.98	121.41	-126.41	207.03	242.57	224.28	18.28	13.267			
2,500.00	2,500.00	2,492.12	2,491.60	8.74	10.39	121.29	-125.96	207.25	242.52	223.47	19.06	12.727			
2,503.25	2,503.25	2,495.37	2,494.85	8.76	10.41	137.44	-125.94	207.26	242.52	223.44	19.08	12.711			
2,600.00	2,599.99	2,592.67	2,592.15	9.10	10.80	137.44	-125.39	207.43	243.02	223.19	19.83	12.256			
2,700.00	2,699.96	2,692.81	2,692.38	9.46	11.22	137.73	-124.78	207.41	244.63	224.03	20.60	11.876			
2,800.00	2,799.86	2,793.21	2,792.68	9.82	11.63	138.32	-124.28	207.19	247.42	226.05	21.37	11.579			
2,900.00	2,899.68	2,893.84	2,893.31	10.17	12.04	139.19	-123.79	206.68	251.32	229.19	22.14	11.352			
3,000.00	2,999.39	2,993.49	2,992.96	10.53	12.45	140.27	-123.29	206.00	256.23	233.32	22.90	11.187			
3,100.00	3,099.10	3,093.22	3,092.68	10.89	12.87	141.38	-122.98	205.25	261.36	237.89	23.67	11.041			
3,200.00	3,198.81	3,193.80	3,193.26	11.25	13.28	142.51	-122.79	204.21	266.45	242.01	24.44	10.901			
3,300.00	3,298.51	3,292.60	3,292.05	11.61	13.69	143.61	-122.73	203.08	271.62	246.41	25.21	10.774			
3,400.00	3,398.22	3,407.87	3,391.58	11.97	14.17	144.69	-122.87	202.08	277.13	251.08	26.05	10.640			
3,500.00	3,497.93	3,491.84	3,491.29	12.33	14.52	145.74	-123.05	201.09	282.75	256.00	26.75	10.570			
3,600.00	3,597.63	3,591.82	3,591.26	12.69	14.93	146.74	-123.15	200.10	288.43	260.91	27.52	10.480			
3,700.00	3,697.34	3,691.87	3,691.31	13.05	15.34	147.68	-123.12	199.08	294.08	265.78	28.30	10.393			
3,800.00	3,797.05	3,791.68	3,791.11	13.41	15.76	148.57	-122.95	198.09	299.73	270.66	29.07	10.311			
3,900.00	3,896.75	3,891.37	3,890.80	13.78	16.17	149.39	-122.67	197.20	305.45	275.61	29.84	10.235			
4,000.00	3,996.46	3,991.17	3,990.59	14.14	16.59	150.19	-122.43	196.28	311.23	280.61	30.62	10.165			
4,100.00	4,096.17	4,091.00	4,090.42	14.50	17.00	150.95	-122.14	195.36	317.05	285.65	31.39	10.100			
4,200.00	4,195.88	4,191.25	4,190.67	14.87	17.42	151.67	-121.70	194.48	322.83	290.66	32.17	10.036			
4,300.00	4,295.58	4,291.41	4,290.82	15.23	17.83	152.28	-120.81	193.84	328.51	295.66	32.94	9.971			
4,400.00	4,395.29	4,390.92	4,390.32	15.60	18.25	152.70	-119.27	193.86	334.19	300.48	33.72	9.912			
4,500.00	4,495.00	4,489.67	4,489.05	15.96	18.67	153.02	-117.53	194.39	340.09	305.61	34.48	9.863			
4,600.00	4,594.70	4,593.74	4,593.08	16.33	19.12	153.30	-115.23	194.89	345.84	310.37	35.27	9.799			
4,700.00	4,694.41	4,696.02	4,695.32	16.69	19.56	153.49	-111.88	194.99	350.12	314.07	36.05	9.712			
4,800.00	4,794.12	4,800.46	4,799.65	17.06	20.00	153.59	-107.32	194.81	353.66	316.83	36.83	9.602			
4,900.00	4,893.82	4,899.78	4,898.86	17.42	20.42	153.65	-102.46	194.41	356.64	319.03	37.61	9.483			

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well 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:	Design #1	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-HGRF														Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (ft)	Offset Wellbore Centre (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
5,000.00	4,993.53	4,999.11	4,998.08	17.79	20.84	153.77	-97.98	193.85	359.80	321.41	38.39	9.373			
5,100.00	5,093.24	5,099.42	5,097.31	18.16	21.27	153.95	-93.87	193.13	363.13	323.86	39.16	9.272			
5,200.00	5,192.94	5,197.71	5,196.52	18.52	21.69	154.18	-90.15	192.26	366.63	326.69	39.94	9.179			
5,300.00	5,292.65	5,296.98	5,295.73	18.89	22.12	154.46	-86.80	191.22	370.32	329.61	40.72	9.095			
5,400.00	5,392.36	5,399.12	5,397.80	19.26	22.56	154.77	-83.26	189.95	373.83	332.32	41.51	9.007			
5,500.00	5,492.07	5,499.04	5,497.64	19.63	22.99	155.03	-79.45	188.64	377.03	334.74	42.29	8.915			
5,600.00	5,591.77	5,599.80	5,598.30	19.99	23.42	155.27	-75.45	187.34	380.13	337.05	43.08	8.824			
5,700.00	5,691.48	5,702.19	5,700.59	20.36	23.87	155.51	-71.05	185.74	382.82	338.94	43.87	8.726			
5,800.00	5,791.19	5,803.40	5,801.68	20.73	24.30	155.81	-66.59	183.53	385.03	340.38	44.67	8.620			
5,900.00	5,890.89	5,904.40	5,902.54	21.10	24.74	156.15	-62.16	180.85	386.96	341.50	45.46	8.512			
6,000.00	5,990.60	6,006.09	6,004.08	21.48	25.18	156.51	-57.48	177.84	388.53	342.28	46.26	8.400			
6,100.00	6,090.31	6,107.23	6,105.05	21.83	25.61	156.88	-52.57	174.58	389.77	342.71	47.05	8.284			
6,200.00	6,190.01	6,209.45	6,207.07	22.20	26.05	157.37	-47.81	170.30	390.58	342.71	47.85	8.162			
6,300.00	6,289.72	6,309.36	6,306.76	22.57	26.48	157.94	-43.34	165.47	391.13	342.48	48.65	8.040			
6,400.00	6,389.43	6,405.22	6,402.44	22.94	26.89	158.47	-39.40	161.25	392.28	342.83	49.45	7.933			
6,500.00	6,489.13	6,501.45	6,498.55	23.30	27.30	159.00	-36.15	157.55	394.40	344.15	50.25	7.849			
6,600.00	6,588.84	6,597.42	6,594.43	23.67	27.71	159.56	-33.78	154.24	397.51	346.48	51.04	7.769			
6,700.00	6,688.55	6,693.20	6,690.16	24.04	28.13	160.07	-32.05	151.70	401.67	349.85	51.82	7.751			
6,800.00	6,788.26	6,790.79	6,787.73	24.41	28.55	160.49	-30.58	150.03	406.66	354.04	52.62	7.729 SF			
6,900.00	6,887.96	6,884.13	6,881.06	24.78	28.94	160.91	-30.01	148.88	412.66	359.29	53.37	7.732			
7,000.00	6,987.67	6,980.81	6,977.74	25.15	29.35	161.38	-30.53	148.21	419.96	365.83	54.13	7.759			
7,100.00	7,087.38	7,080.43	7,077.35	25.51	29.76	161.78	-31.18	147.98	427.62	372.71	54.90	7.788			
7,200.00	7,187.08	7,175.72	7,172.63	25.88	30.15	162.13	-32.05	147.95	435.64	380.00	55.65	7.829			
7,300.00	7,286.79	7,273.63	7,270.43	26.25	30.55	162.43	-33.45	148.83	444.81	388.21	56.40	7.883			
7,400.00	7,386.50	7,352.31	7,349.14	26.62	30.76	162.51	-34.95	151.27	455.35	398.53	56.82	8.013			
7,500.00	7,486.20	7,431.52	7,427.81	26.99	30.84	162.05	-37.83	159.83	471.52	414.50	57.02	8.269			
7,600.00	7,585.91	7,512.67	7,507.20	27.36	30.85	160.71	-38.76	178.31	491.30	434.20	57.10	8.604			
7,700.00	7,685.62	7,585.75	7,576.06	27.73	30.87	158.39	-34.94	200.31	514.58	457.64	56.94	9.037			
7,800.00	7,785.33	7,642.00	7,626.62	28.10	30.90	156.16	-31.46	224.68	545.16	488.88	56.28	9.687			
7,900.00	7,885.03	7,696.14	7,673.30	28.47	30.94	153.85	-28.41	251.91	582.96	527.56	55.40	10.522			
8,000.00	7,984.82	7,749.93	7,717.74	28.83	31.00	151.80	-25.58	282.08	626.35	571.91	54.44	11.506			
8,100.00	8,084.75	7,801.00	7,758.05	29.19	31.09	149.88	-22.95	313.29	673.81	620.45	53.36	12.628			
8,200.00	8,184.74	7,833.00	7,781.93	29.55	31.16	132.69	-21.54	334.54	725.87	674.20	51.67	14.048			
8,300.00	8,284.74	7,864.00	7,803.85	29.90	31.24	131.24	-20.52	356.62	783.70	733.67	50.02	15.687			
8,400.00	8,384.74	7,882.34	7,815.75	30.25	31.30	130.39	-20.07	370.40	847.21	799.10	48.11	17.608			
8,500.00	8,484.74	7,908.04	7,831.79	30.60	31.40	129.22	-19.60	390.47	915.62	868.97	46.65	19.629			
8,600.00	8,584.60	7,940.72	7,851.15	30.94	31.54	34.45	-18.92	416.79	985.60	940.09	45.52	21.653			
8,700.00	8,682.48	7,981.07	7,873.72	31.26	31.74	29.03	-17.37	450.19	1,048.59	1,004.09	44.50	23.566			
8,800.00	8,775.42	8,021.00	7,894.17	31.54	31.97	25.27	-14.92	484.39	1,102.94	1,059.58	43.36	25.439			
8,900.00	8,860.61	8,021.00	7,894.17	31.79	31.97	23.16	-14.92	484.39	1,148.60	1,107.48	41.12	27.933			
9,000.00	8,935.44	8,065.75	7,922.73	32.01	32.52	21.02	-10.31	542.30	1,182.68	1,142.07	40.60	29.129			
9,100.00	8,997.66	8,125.66	7,937.93	32.45	32.88	19.85	-7.34	579.08	1,208.46	1,168.98	39.48	30.556			
9,200.00	9,045.36	8,170.00	7,952.60	33.03	33.23	19.18	-3.93	620.77	1,218.90	1,180.32	38.58	31.594			
9,300.00	9,077.10	8,213.07	7,964.83	33.79	33.71	19.00	-0.58	661.93	1,219.53	1,181.67	37.86	32.213			
9,400.00	9,091.91	8,265.00	7,977.64	34.73	34.34	19.33	2.91	712.13	1,207.91	1,170.34	37.57	32.149			
9,500.00	9,093.68	8,296.00	7,984.11	35.84	34.75	19.55	4.52	742.40	1,188.52	1,151.32	37.20	31.946			
9,600.00	9,094.70	8,359.00	7,993.88	37.13	35.66	19.59	7.35	804.56	1,173.25	1,135.69	37.56	31.237			
9,700.00	9,095.71	8,391.00	7,997.09	38.59	36.16	19.58	8.75	836.37	1,162.37	1,124.69	37.68	30.850			
9,800.00	9,096.72	8,446.26	8,000.76	40.21	37.09	19.55	10.91	891.46	1,155.86	1,117.57	38.29	30.184			
9,900.00	9,097.73	8,526.94	8,003.34	41.96	38.51	19.47	13.68	972.05	1,152.68	1,113.42	39.28	29.362			
10,000.00	9,098.74	8,639.31	8,008.93	43.82	40.67	19.23	20.15	1,084.17	1,148.88	1,108.35	40.50	28.384			

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

Anticollision Report

Company:	WGDSC 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-1H - Wellbore #1 - Wellbore #1													Offset Site Error:
Survey Program: 100-NSG-GYC Drop 7392-MWD-IGRE													Offset Well Error:
Reference		Offset		Semi Major Axis		Distance		Between		Minimum		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toeface (ft)	Offset Wellbore Centre (ft)	Between Centres (ft)	Between Ellipses (ft)	Separation (ft)	Separation Factor		
10,100.00	9,099.76	8,741.79	8,010.43	45.79	42.79	18.99	26.71	1,186.38	1,144.87	1,102.94	41.74	27.427	
10,200.00	9,100.77	8,835.67	8,013.80	47.85	44.84	18.76	32.72	1,280.02	1,140.54	1,097.58	42.96	28.549	
10,300.00	9,101.78	8,921.76	8,015.33	49.99	46.81	18.49	39.29	1,365.84	1,137.33	1,093.22	44.11	25.788	
10,400.00	9,102.79	9,024.41	8,015.97	52.20	49.23	18.06	48.58	1,468.06	1,135.04	1,089.71	45.33	25.042	
10,500.00	9,103.81	9,133.91	8,017.09	54.47	51.89	17.52	60.49	1,576.91	1,131.84	1,085.32	46.52	24.330	
10,600.00	9,104.82	9,231.87	8,018.40	56.80	54.34	17.02	71.40	1,674.25	1,128.38	1,080.73	47.64	23.688	
10,700.00	9,105.83	9,335.51	8,019.44	59.17	56.99	16.42	84.22	1,777.08	1,124.94	1,076.24	48.70	23.099	
10,800.00	9,106.84	9,445.44	8,021.15	61.59	59.86	15.74	98.82	1,886.03	1,120.85	1,071.11	49.74	22.536	
10,900.00	9,107.86	9,544.58	8,022.84	64.04	62.49	15.11	112.46	1,984.20	1,116.82	1,065.96	50.66	22.040	
11,000.00	9,108.87	9,651.27	8,025.89	66.52	65.38	14.54	124.99	2,090.11	1,111.93	1,060.19	51.74	21.490	
11,100.00	9,109.88	9,750.63	8,029.78	69.04	68.09	14.19	133.15	2,189.05	1,107.21	1,054.21	52.99	20.893	
11,200.00	9,110.89	9,844.51	8,033.51	71.58	70.70	13.88	140.68	2,282.55	1,102.52	1,048.32	54.20	20.340	
11,300.00	9,111.90	9,934.52	8,036.39	74.15	73.22	13.63	148.44	2,372.33	1,098.98	1,043.52	55.46	19.815	
11,400.00	9,112.92	10,041.44	8,039.82	76.73	76.24	13.35	153.22	2,478.98	1,095.49	1,038.63	56.87	19.265	
11,500.00	9,113.93	10,147.83	8,044.06	79.34	79.27	13.05	160.32	2,585.05	1,091.19	1,032.94	58.24	18.735	
11,600.00	9,114.94	10,239.17	8,047.66	81.96	81.89	12.79	166.56	2,676.11	1,086.93	1,027.46	59.47	18.277	
11,700.00	9,115.95	10,328.09	8,050.03	84.60	84.46	12.50	172.99	2,764.76	1,083.84	1,023.22	60.62	17.880	
11,800.00	9,116.97	10,424.30	8,051.57	87.26	87.24	12.09	181.51	2,850.58	1,081.47	1,019.81	61.66	17.539	
11,900.00	9,117.98	10,527.05	8,053.10	89.92	90.22	11.82	191.37	2,962.84	1,079.14	1,016.48	62.66	17.223	
12,000.00	9,118.99	10,630.96	8,054.76	92.60	93.24	11.05	202.88	3,066.09	1,076.47	1,012.97	63.51	16.951	
12,100.00	9,120.00	10,731.26	8,056.46	95.29	96.17	10.46	214.91	3,165.66	1,073.84	1,009.40	64.24	16.712	
12,200.00	9,121.01	10,825.56	8,058.14	97.99	98.93	9.97	224.90	3,259.41	1,071.10	1,006.04	65.06	16.463	
12,300.00	9,122.03	10,918.91	8,059.43	100.70	101.69	9.53	233.70	3,352.34	1,069.22	1,003.27	65.94	16.214	
12,400.00	9,123.04	11,016.62	8,060.70	103.42	104.58	9.19	240.87	3,449.77	1,067.82	1,000.82	67.00	15.938	
12,500.00	9,124.05	11,112.68	8,062.14	106.15	107.44	8.97	245.56	3,545.70	1,066.65	998.42	68.24	15.632	
12,600.00	9,125.06	11,207.76	8,063.24	108.88	110.28	8.78	249.61	3,640.70	1,065.94	996.43	69.50	15.336	
12,700.00	9,126.08	11,316.20	8,064.44	111.62	113.62	8.52	255.13	3,748.98	1,065.17	994.38	70.80	15.045	
12,800.00	9,127.09	11,413.36	8,065.64	114.37	116.43	8.20	261.78	3,845.90	1,064.03	992.17	71.86	14.808	
12,900.00	9,128.10	11,524.10	8,067.23	117.12	119.75	7.76	270.88	3,956.27	1,062.56	989.69	72.88	14.580	
13,000.00	9,129.11	11,630.58	8,069.57	119.88	122.95	7.32	279.68	4,062.33	1,060.34	986.50	73.85	14.359	
13,100.00	9,130.13	11,742.85	8,072.94	122.64	126.32	6.84	289.38	4,174.15	1,057.38	982.55	74.82	14.131	
13,200.00	9,131.14	11,839.49	8,076.84	125.41	129.23	6.42	298.04	4,270.32	1,053.40	977.67	75.73	13.910	
13,300.00	9,132.15	11,923.60	8,078.93	128.18	131.76	6.03	305.82	4,354.04	1,050.86	974.40	76.56	13.727	
13,400.00	9,133.16	12,022.66	8,080.48	130.95	134.74	5.55	316.33	4,452.63	1,049.48	972.05	77.43	13.554	
13,500.00	9,134.17	12,149.29	8,084.01	133.73	138.56	4.87	328.71	4,578.49	1,046.84	968.51	78.34	13.364	
13,600.00	9,135.19	12,279.63	8,091.48	136.52	142.48	4.09	344.09	4,707.70	1,041.20	962.00	79.20	13.146	
13,700.00	9,136.20	12,345.00	8,095.92	139.30	144.44	3.68	352.25	4,772.41	1,035.03	955.04	80.00	12.938	
13,737.89	9,136.58	12,345.00	8,095.92	140.35	144.44	3.68	352.25	4,772.41	1,034.35	954.11	80.23	12.892	
13,800.00	9,137.21	12,345.00	8,095.92	142.09	144.44	3.68	352.25	4,772.41	1,036.22	955.66	80.56	12.863	
13,852.42	9,137.74	12,345.00	8,095.92	143.56	144.44	3.68	352.25	4,772.41	1,040.69	959.93	80.76	12.886	

CC - Min centre to 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Design #1														Offset Site Error:	5.00 ft
Survey Program: 0-MWD+HDGM														Offset Well Error:	0.50 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	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	3.00	-3.00	0.50	0.50	-179.85	-30.00	-0.08	30.00	28.96	1.04	28.962			
100.00	100.00	103.00	97.00	0.52	0.52	-179.85	-30.00	-0.08	30.00	28.60	1.40	21.354			
200.00	200.00	203.00	197.00	0.70	0.71	-179.85	-30.00	-0.08	30.00	28.02	1.98	15.188			
300.00	300.00	303.00	297.00	0.98	0.99	-179.85	-30.00	-0.08	30.00	27.38	2.62	11.455			
400.00	400.00	403.00	397.00	1.30	1.32	-179.85	-30.00	-0.08	30.00	26.71	3.29	9.110			
500.00	500.00	503.00	497.00	1.64	1.65	-179.85	-30.00	-0.08	30.00	26.02	3.98	7.534			
600.00	600.00	603.00	597.00	1.98	2.00	-179.85	-30.00	-0.08	30.00	25.32	4.68	6.411			
700.00	700.00	703.00	697.00	2.33	2.35	-179.85	-30.00	-0.08	30.00	24.62	5.38	5.574			
800.00	800.00	803.00	797.00	2.68	2.70	-179.85	-30.00	-0.08	30.00	23.91	6.09	4.928 Alert			
900.00	900.00	903.00	897.00	3.04	3.05	-179.85	-30.00	-0.08	30.00	23.20	6.80	4.414 Alert			
1,000.00	1,000.00	1,003.00	997.00	3.39	3.41	-179.85	-30.00	-0.08	30.00	22.49	7.51	3.997 Alert			
1,100.00	1,100.00	1,103.00	1,097.00	3.75	3.76	-179.85	-30.00	-0.08	30.00	21.78	8.22	3.651 Alert			
1,200.00	1,200.00	1,203.00	1,197.00	4.10	4.12	-179.85	-30.00	-0.08	30.00	21.07	8.93	3.360 Alert			
1,300.00	1,300.00	1,303.00	1,297.00	4.46	4.47	-179.85	-30.00	-0.08	30.00	20.36	9.64	3.111 Alert			
1,400.00	1,400.00	1,403.00	1,397.00	4.81	4.83	-179.85	-30.00	-0.08	30.00	19.64	10.36	2.897 Alert			
1,500.00	1,500.00	1,503.00	1,497.00	5.17	5.19	-179.85	-30.00	-0.08	30.00	18.93	11.07	2.710 Alert			
1,600.00	1,600.00	1,603.00	1,597.00	5.53	5.54	-179.85	-30.00	-0.08	30.00	18.22	11.78	2.548 Alert			
1,700.00	1,700.00	1,703.00	1,697.00	5.88	5.90	-179.85	-30.00	-0.08	30.00	17.50	12.50	2.400 Minor Risk			
1,800.00	1,800.00	1,803.00	1,797.00	6.24	6.26	-179.85	-30.00	-0.08	30.00	16.79	13.21	2.271 Minor Risk			
1,900.00	1,900.00	1,903.00	1,897.00	6.60	6.61	-179.85	-30.00	-0.08	30.00	16.07	13.93	2.154 Minor Risk			
2,000.00	2,000.00	2,003.00	1,997.00	6.96	6.97	-179.85	-30.00	-0.08	30.00	15.36	14.64	2.049 Minor Risk			
2,100.00	2,100.00	2,103.00	2,097.00	7.31	7.33	-179.85	-30.00	-0.08	30.00	14.64	15.36	1.953 Minor Risk			
2,200.00	2,200.00	2,203.00	2,197.00	7.67	7.69	-179.85	-30.00	-0.08	30.00	13.93	16.07	1.866 Minor Risk			
2,300.00	2,300.00	2,303.00	2,297.00	8.03	8.04	-179.85	-30.00	-0.08	30.00	13.21	16.79	1.787 Minor Risk			
2,400.00	2,400.00	2,403.00	2,397.00	8.39	8.40	-179.85	-30.00	-0.08	30.00	12.50	17.50	1.714 Minor Risk, CC, ES			
2,500.00	2,500.00	2,503.00	2,497.00	8.74	8.76	-179.85	-30.00	-0.08	30.00	12.62	18.22	1.693 Minor Risk, SF			
2,600.00	2,599.99	2,603.01	2,598.99	9.10	9.12	-164.14	-30.00	-0.08	30.84	14.43	18.94	1.762 Minor Risk			
2,700.00	2,699.96	2,703.04	2,698.96	9.46	9.48	-165.37	-30.00	-0.08	33.36	17.95	19.65	1.913 Minor Risk			
2,800.00	2,799.86	2,803.14	2,798.86	9.82	9.83	-167.04	-30.00	-0.08	37.60	23.20	20.37	2.139 Minor Risk			
2,900.00	2,899.68	2,903.32	2,898.68	10.17	10.19	-168.83	-30.00	-0.08	43.57	29.89	21.08	2.418 Minor Risk			
3,000.00	2,999.39	3,003.61	2,998.39	10.53	10.55	-170.46	-30.00	-0.08	50.97	36.73	21.80	2.685 Alert			
3,100.00	3,099.10	3,103.90	3,098.10	10.89	10.91	-171.70	-30.00	-0.08	58.53	43.59	22.52	2.936 Alert			
3,200.00	3,198.81	3,204.19	3,198.81	11.25	11.27	-172.66	-30.00	-0.08	66.11	50.47	23.23	3.172 Alert			
3,300.00	3,298.51	3,304.49	3,298.51	11.61	11.63	-173.42	-30.00	-0.08	73.70	57.38	23.95	3.395 Alert			
3,400.00	3,398.22	3,404.78	3,398.22	11.97	11.99	-174.04	-30.00	-0.08	81.31	64.29	24.63	3.610 Alert			
3,500.00	3,497.93	3,494.93	3,494.93	12.33	12.31	-174.55	-30.00	-0.08	88.92	72.11	25.31	3.849 Alert			
3,600.00	3,597.63	3,592.82	3,592.81	12.69	12.65	-174.76	-30.92	-0.27	97.42	81.91	25.97	4.154 Alert			
3,700.00	3,697.34	3,690.25	3,690.20	13.05	12.96	-174.51	-33.87	-0.87	107.88	93.68	26.62	4.520 Alert			
3,800.00	3,797.05	3,787.23	3,787.05	13.41	13.28	-173.93	-38.81	-1.89	120.30	107.43	27.25	4.942 Alert			
3,900.00	3,896.75	3,883.68	3,883.23	13.78	13.59	-173.14	-45.72	-3.30	134.68	123.15	27.88	5.417			
4,000.00	3,896.46	3,879.51	3,878.64	14.14	13.90	-172.24	-54.55	-5.11	151.03	140.85	28.49	5.944			
4,100.00	4,096.17	4,074.85	4,073.15	14.50	14.22	-171.29	-65.24	-7.30	169.34	160.37	29.12	6.507			
4,200.00	4,195.88	4,170.42	4,168.06	14.87	14.54	-170.33	-77.80	-9.88	189.49	180.25	29.80	7.049			
4,300.00	4,295.58	4,268.25	4,264.95	15.23	14.86	-169.51	-91.00	-12.59	210.05	200.16	30.48	7.568			
4,400.00	4,395.29	4,366.07	4,361.84	15.60	15.20	-168.84	-104.20	-15.29	230.64	220.10	31.16	8.064			
4,500.00	4,495.00	4,463.90	4,458.73	15.96	15.53	-168.28	-117.40	-18.00	251.28	240.06	31.84	8.539			
4,600.00	4,594.70	4,561.72	4,555.62	16.33	15.87	-167.80	-130.60	-20.70	271.90	260.02	32.53	8.994			
4,700.00	4,694.41	4,659.54	4,652.51	16.69	16.21	-167.39	-143.80	-23.41	292.55	280.00	33.22	9.430			
4,800.00	4,794.12	4,757.37	4,749.40	17.06	16.58	-167.03	-157.00	-26.12	313.22	299.99	33.90	9.848			
4,900.00	4,893.82	4,855.19	4,846.30	17.42	16.90	-166.72	-170.20	-28.82	333.90	319.99	34.59	10.250			
5,000.00	4,993.53	4,953.01	4,943.19	17.79	17.25	-166.44	-183.40	-31.53	354.58						

CC - Min centre to 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Design #1														Offset Site Error	5.00 ft
Survey Program: O-MWD+HDGM														Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Footface (ft)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,100.00	5,093.24	5,050.84	5,040.08	18.16	17.80	-168.20	-198.80	-34.24	375.27	339.99	35.29	10.835			
5,200.00	5,192.94	5,148.66	5,138.97	18.52	17.98	-165.98	-209.80	-36.94	395.97	359.99	35.98	11.005			
5,300.00	5,292.65	5,248.49	5,233.86	18.89	18.31	-165.78	-223.00	-39.65	416.67	380.00	36.67	11.382			
5,400.00	5,392.36	5,344.31	5,330.75	19.26	18.67	-165.80	-236.20	-42.35	437.38	400.01	37.37	11.704			
5,500.00	5,492.07	5,442.13	5,427.64	19.63	19.03	-165.44	-249.40	-45.06	458.09	420.03	38.07	12.034			
5,600.00	5,591.77	5,538.96	5,524.53	19.99	19.39	-165.29	-262.61	-47.77	478.81	440.04	38.76	12.352			
5,700.00	5,691.48	5,637.78	5,621.43	20.36	19.75	-165.15	-275.81	-50.47	499.52	460.06	39.46	12.659			
5,800.00	5,791.19	5,735.60	5,718.32	20.73	20.11	-165.03	-289.01	-53.18	520.24	480.08	40.16	12.954			
5,900.00	5,890.89	5,833.43	5,815.21	21.10	20.48	-164.91	-302.21	-55.89	540.97	500.10	40.86	13.239			
6,000.00	5,990.60	5,931.25	5,912.10	21.48	20.84	-164.80	-315.41	-58.59	561.69	520.13	41.56	13.515			
6,100.00	6,090.31	6,029.08	6,008.99	21.83	21.21	-164.70	-328.61	-61.30	582.41	540.15	42.26	13.781			
6,200.00	6,190.01	6,128.80	6,105.88	22.20	21.58	-164.61	-341.81	-64.00	603.14	560.18	42.97	14.038			
6,300.00	6,289.72	6,224.72	6,202.77	22.57	21.95	-164.52	-355.01	-66.71	623.87	580.20	43.67	14.288			
6,400.00	6,389.43	6,322.55	6,299.67	22.94	22.32	-164.44	-368.21	-69.42	644.60	600.23	44.37	14.527			
6,500.00	6,489.13	6,420.37	6,396.56	23.30	22.69	-164.37	-381.41	-72.12	665.33	620.25	45.08	14.760			
6,600.00	6,588.84	6,518.20	6,493.45	23.67	23.06	-164.30	-394.61	-74.83	686.06	640.28	45.78	14.985			
6,700.00	6,688.55	6,616.02	6,590.34	24.04	23.43	-164.23	-407.81	-77.54	706.80	660.31	46.49	15.203			
6,800.00	6,788.26	6,713.84	6,687.23	24.41	23.81	-164.16	-421.01	-80.24	727.53	680.33	47.20	15.415			
6,900.00	6,887.96	6,811.67	6,784.12	24.78	24.18	-164.10	-434.21	-82.95	748.27	700.36	47.90	15.621			
7,000.00	6,987.67	6,909.49	6,881.01	25.15	24.56	-164.05	-447.41	-85.65	769.00	720.39	48.61	15.820			
7,100.00	7,087.38	7,007.31	6,977.90	25.51	24.94	-163.99	-460.61	-88.36	789.74	740.42	49.32	16.013			
7,200.00	7,187.08	7,105.14	7,074.80	25.88	25.31	-163.94	-473.81	-91.07	810.47	760.45	50.03	16.201			
7,300.00	7,286.79	7,202.96	7,171.69	26.25	25.69	-163.89	-487.01	-93.77	831.21	780.48	50.74	16.383			
7,400.00	7,386.50	7,300.79	7,268.58	26.62	26.07	-163.85	-500.21	-96.48	851.95	800.50	51.45	16.560			
7,500.00	7,486.20	7,401.39	7,365.47	26.99	26.46	-163.80	-513.41	-99.19	872.69	820.52	52.17	16.729			
7,600.00	7,585.91	7,496.43	7,462.36	27.36	26.83	-163.76	-526.61	-101.89	893.43	840.56	52.87	16.900			
7,700.00	7,685.62	7,605.74	7,559.25	27.73	27.25	-163.72	-539.81	-104.60	914.17	860.55	53.62	17.050			
7,800.00	7,785.33	7,692.81	7,656.87	28.10	27.59	-163.68	-553.11	-107.32	934.90	880.61	54.29	17.219			
7,900.00	7,885.03	7,822.38	7,785.49	28.47	28.09	-163.66	-566.36	-110.45	955.94	898.67	55.27	17.258			
8,000.00	7,984.82	7,953.69	7,918.31	28.83	28.58	-163.73	-579.44	-112.72	968.51	912.30	56.21	17.229			
8,100.00	8,084.75	8,086.45	8,048.88	29.19	29.05	-163.77	-586.16	-114.10	977.22	920.12	57.10	17.114			
8,200.00	8,184.74	8,219.92	8,182.32	29.55	29.52	-179.94	-588.37	-114.55	980.01	922.08	57.93	16.916			
8,232.76	8,217.50	8,262.10	8,214.50	29.66	29.62	-179.94	-588.37	-114.55	980.01	921.85	58.16	16.850			
8,300.00	8,284.74	8,319.33	8,281.74	29.90	29.85	-179.94	-588.37	-114.55	980.01	921.38	58.63	16.715			
8,400.00	8,384.74	8,419.33	8,381.74	30.25	30.18	-179.94	-588.37	-114.55	980.01	920.68	59.33	16.519			
8,500.00	8,484.74	8,519.33	8,481.74	30.60	30.51	-179.94	-588.37	-114.55	980.01	919.99	60.03	16.327			
8,600.00	8,584.80	8,620.04	8,582.34	30.94	30.84	90.42	-588.35	-111.48	980.01	919.31	60.71	16.143			
8,700.00	8,682.48	8,721.37	8,681.68	31.28	31.16	90.46	-588.25	-92.17	980.02	918.66	61.36	15.971			
8,800.00	8,775.42	8,822.83	8,778.19	31.54	31.46	90.50	-588.05	-55.63	980.03	918.03	62.00	15.808			
8,900.00	8,868.61	8,924.37	8,862.84	31.79	31.70	90.52	-587.75	-2.96	980.03	917.40	62.63	15.648			
9,000.00	8,935.44	9,025.94	8,938.88	32.01	31.90	90.52	-587.38	64.19	980.03	916.69	63.34	15.474			
9,100.00	8,997.66	9,127.50	9,001.88	32.45	32.05	90.51	-586.95	143.67	980.03	915.82	64.21	15.283			
9,200.00	9,045.36	9,228.99	9,049.84	33.03	32.40	90.48	-586.45	232.96	980.02	914.66	65.36	14.994			
9,300.00	9,077.10	9,330.37	9,081.30	33.79	33.16	90.43	-585.92	329.19	980.02	913.14	66.88	14.653			
9,400.00	9,091.91	9,431.58	9,095.32	34.73	34.13	90.38	-585.37	429.30	980.01	911.23	68.78	14.249			
9,480.28	9,095.20	9,512.06	9,098.98	35.62	35.03	90.28	-584.93	509.76	980.00	909.44	70.57	13.888			
9,500.00	9,093.68	9,531.80	9,097.27	35.84	35.28	90.39	-584.82	529.49	980.01	908.98	71.03	13.797			
9,600.00	9,094.70	9,631.80	9,098.88	37.13	36.61	90.42	-584.27	629.47	980.02	908.37	73.64	13.308			
9,700.00	9,095.71	9,731.80	9,100.49	38.59	38.10	90.45	-583.71	729.46	980.02	903.43	76.80	12.795			
9,800.00	9,096.72	9,831.79	9,102.09	40.21	39.74	90.49	-583.16	829.44	980.03	900.18	79.85	12.273			
9,900.00	9,097.73	9,931.79	9,103.70	41.96	41.52	90.52	-582.61	929.43	980.03	898.66	83.37	11.755			

CC - Min centre to 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 27-T19S-R29E - Turquoise PWU 27-61H - Wellbore #1 - Design #1														Offset Site Error:	5.00 ft
Survey Program: O-MWD-HDGM														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	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
				(ft)	(ft)	(ft)		+N/S (ft)	+E/W (ft)						
10,000.00	9,098.74	10,031.79	9,105.30	43.82	43.41	90.56		-582.06	1,029.41	980.04	892.91	87.13	11.248		
10,100.00	9,099.76	10,131.79	9,108.91	45.79	45.40	90.59		-581.51	1,129.39	980.05	888.95	91.10	10.758		
10,200.00	9,100.77	10,231.79	9,108.51	47.85	47.49	90.63		-580.96	1,229.38	980.05	884.81	95.24	10.290		
10,300.00	9,101.78	10,331.79	9,110.12	49.99	49.65	90.66		-580.41	1,329.36	980.06	880.51	99.55	9.845		
10,400.00	9,102.79	10,431.78	9,111.73	52.20	51.88	90.70		-579.85	1,429.35	980.07	876.08	103.99	9.425		
10,500.00	9,103.81	10,531.78	9,113.33	54.47	54.17	90.73		-579.30	1,529.33	980.08	871.52	108.55	9.029		
10,600.00	9,104.82	10,631.78	9,114.94	56.80	56.51	90.77		-578.75	1,629.31	980.08	866.86	113.22	8.656		
10,700.00	9,105.83	10,731.78	9,116.54	59.17	58.90	90.80		-578.20	1,729.30	980.09	862.11	117.88	8.307		
10,800.00	9,106.84	10,831.78	9,118.15	61.59	61.33	90.84		-577.65	1,829.28	980.10	857.27	122.83	7.979		
10,900.00	9,107.86	10,931.78	9,119.75	64.04	63.80	90.87		-577.10	1,929.26	980.11	852.36	127.75	7.672		
11,000.00	9,108.87	11,031.77	9,121.36	66.52	66.30	90.91		-576.55	2,029.25	980.12	847.39	132.73	7.384		
11,100.00	9,109.88	11,131.77	9,122.96	69.04	68.83	90.94		-576.00	2,129.23	980.13	842.35	137.78	7.114		
11,200.00	9,110.89	11,231.77	9,124.57	71.58	71.38	90.98		-575.44	2,229.22	980.14	837.27	142.87	6.860		
11,300.00	9,111.90	11,331.77	9,126.18	74.15	73.96	91.01		-574.89	2,329.20	980.15	832.14	148.01	6.622		
11,400.00	9,112.92	11,431.77	9,127.78	76.73	76.55	91.04		-574.34	2,429.18	980.16	826.96	153.20	6.398		
11,500.00	9,113.93	11,531.77	9,129.39	79.34	79.17	91.08		-573.79	2,529.17	980.17	821.75	158.42	6.187		
11,600.00	9,114.94	11,631.76	9,130.99	81.96	81.80	91.11		-573.24	2,629.15	980.18	816.51	163.67	5.989		
11,700.00	9,115.95	11,731.76	9,132.60	84.60	84.45	91.15		-572.68	2,729.14	980.20	811.24	168.96	5.801		
11,800.00	9,116.97	11,831.76	9,134.20	87.26	87.11	91.18		-572.13	2,829.12	980.21	805.93	174.28	5.624		
11,900.00	9,117.98	11,931.76	9,135.81	89.92	89.79	91.22		-571.58	2,929.10	980.22	800.61	179.62	5.457		
12,000.00	9,118.99	12,031.76	9,137.41	92.80	92.47	91.25		-571.03	3,029.09	980.23	795.26	184.98	5.299		
12,100.00	9,120.00	12,131.75	9,139.02	95.29	95.17	91.29		-570.48	3,129.07	980.25	789.88	190.36	5.149		
12,200.00	9,121.01	12,231.75	9,140.63	97.99	97.88	91.32		-569.93	3,229.05	980.26	784.49	195.77	5.007		
12,300.00	9,122.03	12,331.75	9,142.23	100.70	100.59	91.36		-569.38	3,329.04	980.28	779.09	201.19	4.872 Alert		
12,400.00	9,123.04	12,431.75	9,143.84	103.42	103.32	91.39		-568.82	3,429.02	980.29	773.68	206.63	4.744 Alert		
12,500.00	9,124.05	12,531.75	9,145.44	106.15	106.05	91.43		-568.27	3,529.01	980.31	768.22	212.08	4.622 Alert		
12,600.00	9,125.06	12,631.75	9,147.05	108.88	108.78	91.46		-567.72	3,628.99	980.32	762.77	217.55	4.506 Alert		
12,700.00	9,126.08	12,731.74	9,148.65	111.62	111.53	91.50		-567.17	3,728.97	980.34	757.31	223.03	4.396 Alert		
12,800.00	9,127.09	12,831.74	9,150.26	114.37	114.28	91.53		-566.62	3,828.96	980.35	751.83	228.52	4.290 Alert		
12,900.00	9,128.10	12,931.74	9,151.87	117.12	117.04	91.56		-566.07	3,928.94	980.37	746.34	234.03	4.189 Alert		
13,000.00	9,129.11	13,031.74	9,153.47	119.88	119.80	91.60		-565.52	4,028.92	980.39	740.84	239.54	4.093 Alert		
13,100.00	9,130.13	13,131.74	9,155.08	122.64	122.56	91.63		-564.96	4,128.91	980.40	735.34	245.07	4.001 Alert		
13,200.00	9,131.14	13,231.74	9,156.68	125.41	125.34	91.67		-564.41	4,228.89	980.42	729.82	250.60	3.912 Alert		
13,300.00	9,132.15	13,331.73	9,158.29	128.18	128.11	91.70		-563.86	4,328.88	980.44	724.30	256.14	3.828 Alert		
13,400.00	9,133.16	13,431.73	9,159.89	130.95	130.89	91.74		-563.31	4,428.86	980.46	718.76	261.69	3.747 Alert		
13,500.00	9,134.17	13,531.73	9,161.50	133.73	133.67	91.77		-562.76	4,528.84	980.48	713.23	267.25	3.669 Alert		
13,600.00	9,135.19	13,631.73	9,163.10	136.52	136.46	91.81		-562.21	4,628.83	980.49	707.68	272.81	3.594 Alert		
13,700.00	9,136.20	13,731.73	9,164.71	139.30	139.25	91.84		-561.65	4,728.81	980.51	702.13	278.38	3.522 Alert		
13,800.00	9,137.21	13,831.72	9,166.32	142.09	142.04	91.88		-561.10	4,828.80	980.53	696.57	283.96	3.453 Alert		
13,852.42	9,137.74	13,884.14	9,167.16	143.56	143.51	91.89		-560.61	4,881.20	980.54	693.66	288.88	3.418 Alert		

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

Anticollision Report

Company:	WCDSC Permian NM	Local Co-ordinate Reference	Well 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:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Sec 28-T19S-R29E - Coral PWU 28-4H - Wellbore #1 - Wellbore #1													Offset Site Error:	6.00 ft
Survey Program: 200-NSG-GYC-Drop, 7387-MWD+IGRF													Offset Well Error:	0.50 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi-Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,900.00	6,987.96	12,162.65	7,958.97	25.28	90.88	-79.82	-79.82	292.48	-1,043.98	1,469.67	1,386.14	83.53	17.594	
7,000.00	6,987.67	12,172.08	7,959.08	25.84	91.03	-79.25	-79.25	301.90	-1,044.01	1,394.00	1,307.08	88.92	16.038	
7,100.00	7,087.38	12,181.36	7,959.15	26.00	91.19	-78.69	-78.69	311.19	-1,044.04	1,321.52	1,230.95	90.57	14.591	
7,200.00	7,187.08	12,190.51	7,959.23	26.36	91.36	-78.13	-78.13	320.34	-1,044.06	1,252.77	1,158.31	94.47	13.262	
7,300.00	7,286.79	12,199.53	7,959.30	26.72	91.52	-77.58	-77.58	329.36	-1,044.07	1,188.40	1,089.84	98.57	12.057	
7,400.00	7,386.50	12,208.43	7,959.37	27.09	91.68	-77.03	-77.03	338.25	-1,044.09	1,129.17	1,026.37	102.80	10.984	
7,500.00	7,486.20	12,217.19	7,959.43	27.45	91.84	-76.50	-76.50	347.02	-1,044.10	1,075.92	968.87	107.05	10.050	
7,600.00	7,585.91	12,225.84	7,959.49	27.81	92.00	-75.97	-75.97	355.66	-1,044.10	1,029.69	918.42	111.17	9.282	
7,700.00	7,685.62	12,234.36	7,959.54	28.18	92.15	-75.45	-75.45	364.18	-1,044.10	991.14	876.20	114.94	8.623	
7,800.00	7,785.33	12,242.77	7,959.58	28.54	92.31	-74.93	-74.93	372.59	-1,044.10	961.52	843.41	118.11	8.141	
7,900.00	7,885.03	12,248.78	7,959.62	28.90	92.42	-74.56	-74.56	378.60	-1,044.11	941.59	821.17	120.42	7.819	
8,000.00	7,984.82	12,254.70	7,959.66	29.26	92.52	-74.07	-74.07	384.52	-1,044.12	932.29	810.60	121.70	7.661	
8,031.88	8,016.66	12,256.14	7,959.66	29.38	92.55	-73.97	-73.97	385.96	-1,044.12	931.71	809.88	121.86	7.646	CC, ES, SF
8,100.00	8,084.75	12,258.47	7,959.68	29.62	92.59	-73.87	-73.87	388.29	-1,044.13	934.37	812.57	121.79	7.672	
8,200.00	8,184.74	12,260.05	7,959.69	29.97	92.62	-90.11	-90.11	389.87	-1,044.14	947.75	827.03	120.73	7.850	
8,300.00	8,284.74	12,260.63	7,959.69	30.32	92.63	-90.07	-90.07	390.46	-1,044.14	971.62	852.96	118.66	8.188	
8,400.00	8,384.74	12,261.22	7,959.70	30.66	92.64	-90.04	-90.04	391.04	-1,044.14	1,004.91	889.08	115.83	8.676	
8,500.00	8,484.74	12,261.82	7,959.70	31.01	92.65	-90.00	-90.00	391.84	-1,044.14	1,046.74	934.25	112.49	9.305	
8,600.00	8,584.60	12,262.42	7,959.71	31.34	92.66	-179.62	-179.62	392.24	-1,044.14	1,099.14	990.19	108.96	10.088	
8,700.00	8,682.48	12,263.05	7,959.71	31.65	92.67	-179.50	-179.50	392.87	-1,044.15	1,169.84	1,063.96	105.88	11.049	
8,800.00	8,775.42	12,263.67	7,959.71	31.94	92.69	-179.26	-179.26	393.50	-1,044.15	1,254.62	1,151.01	103.60	12.110	
8,900.00	8,860.61	12,264.28	7,959.72	32.18	92.70	-178.68	-178.68	394.10	-1,044.15	1,348.51	1,248.29	102.22	13.193	
9,000.00	8,935.44	12,271.55	7,959.72	32.40	92.83	-175.05	-175.05	394.28	-1,044.15	1,447.19	1,345.41	101.78	14.219	

CC - Min centre to 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:	Design #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to RKB @ 3373.00ft

Offset Depths are relative to Offset Datum

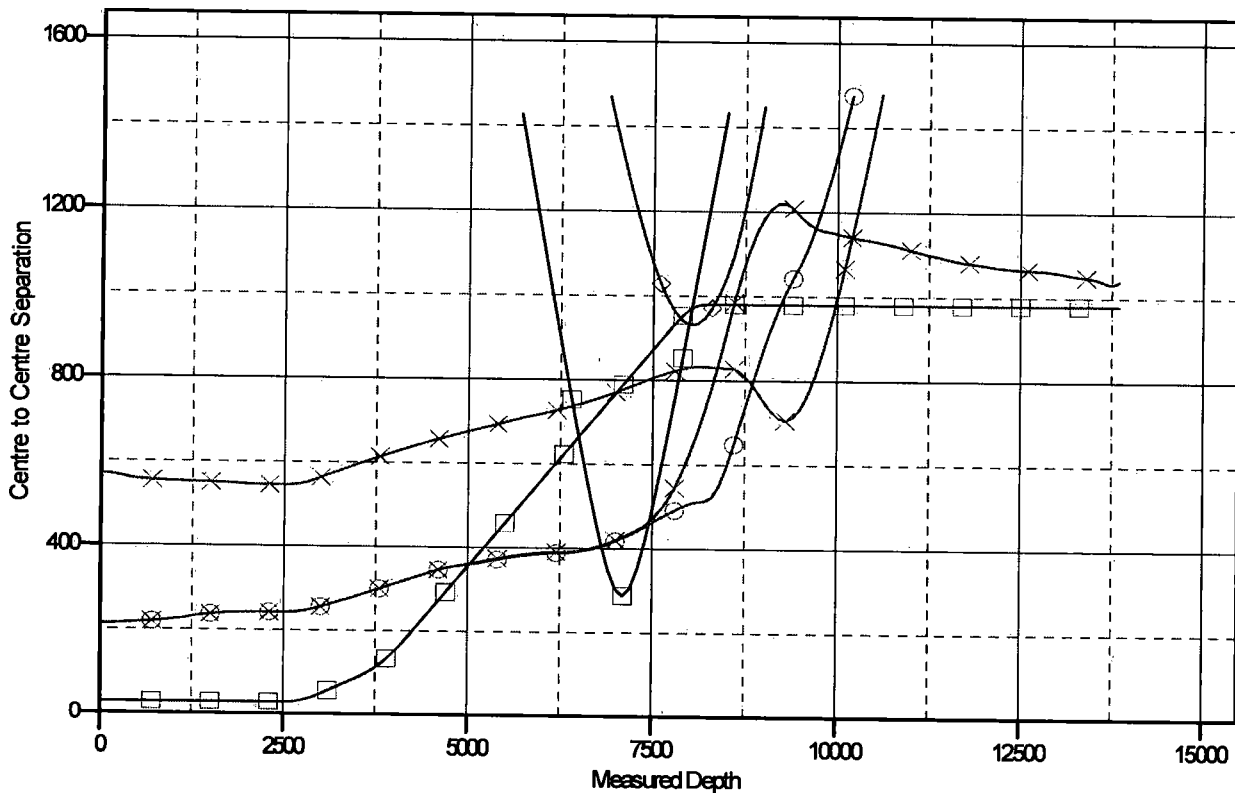
Central Meridian is -104.333334

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 West Unit 8WD, Wellbore #1, Wellbore #1 VO	Turquoise PWU 27-9H, Wellbore #1, Wellbore #1 VO	Turquoise PWU 27-1H, Wellbore #1, Wellbore #1 VO
Turquoise PWU 27-61H, Wellbore #1, Design #1 VO	Turquoise PWU 27-1H, Pilot Wellbore, Pilot Wellbore VO	Canal PWU 28-4H, Wellbore #1, Wellbore #1 VO

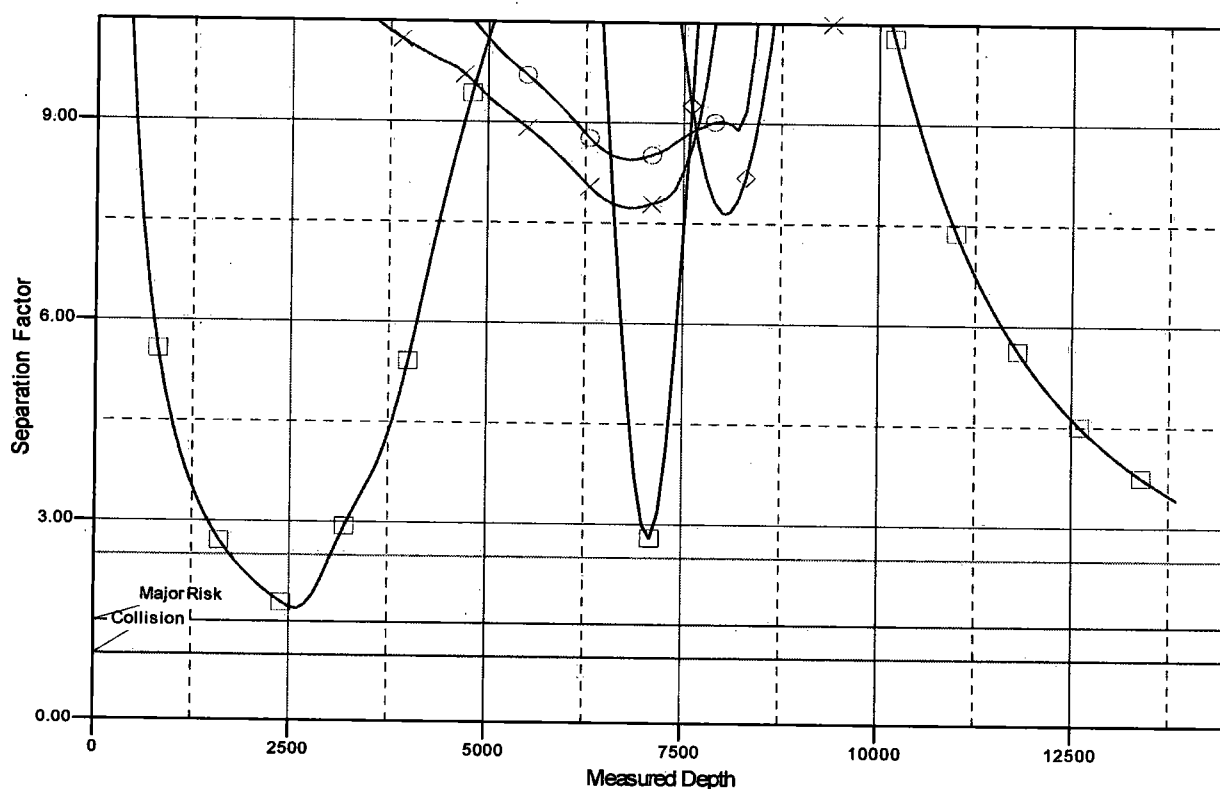
Anticollision Report

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:	Design #1	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

- Pathway West Unit 8 WD, Wellbore # 1, Wellbore #1 V0
- Turquoise PWU 27-9H, Wellbore #1, Design #1 V0
- Turquoise PWU 27-9H, Wellbore #1, Wellbore #1 V0
- Turquoise PWU 27-1H, Pilot Wellbore, Pilot Wellbore V0
- Turquoise PWU 27-1H, Wellbore #1, Wellbore #1 V0
- Corel PWU 28-0H, Wellbore #1, Wellbore #1 V0

WCDSC Permian NM

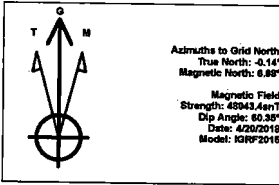
WELL DETAILS: Turquoise PWU 27-9H

RKB @ 3373.00ft
3343.80

Northing 595540.32 Easting 622175.82 Latitude 32.636915 Longitude -104.070723

SECTION DETAILS Design #1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	Begin Nudge
2938.75	4.39	343.84	2938.33	16.13	-4.67	1.00	-3.27	EOB
7902.76	4.39	343.84	7887.78	380.89	-110.34	0.00	-77.31	EOH
8195.28	0.00	0.00	8180.00	391.64	-113.45	1.50	-79.49	Drop to Vertical
8535.30	0.00	0.00	8520.04	381.84	-113.45	0.00	-79.49	KOP @ 8535' MD, 378' FNL, 50' FWL
8429.50	89.42	89.68	9092.97	394.77	453.70	10.00	485.84	Land Point
13852.42	89.42	89.68	9137.74	419.18	4876.32	0.00	4894.30	PBHL: 330' FNL, 230' FEL



devon

