

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 03-T23-R33E

North Thistle 3-34 State 4H

Wellbore #1

Plan: Permit Plan 4

Standard Planning Report - Geographic

02 August, 2018

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3619.70ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3619.70ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

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

Site	Sec 03-T23-R33E			
Site Position:		Northing:	488,963.77 usft	Latitude: 32.341907
From:	Map	Easting:	777,934.07 usft	Longitude: -103.567243
Position Uncertainty:	5.00 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.41 °

Well	North Thistle 3-34 State 4H			
Well Position	+N/-S	0.00 ft	Northing:	483,715.00 usft
	+E/-W	0.00 ft	Easting:	781,861.10 usft
Position Uncertainty		0.50 ft	Wellhead Elevation:	Ground Level: 3,572.00 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/2/2018	6.86	60.15	47,910.25121742

Design	Permit Plan 4			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	6.83

Plan Survey Tool Program	Date 8/2/2018			
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,889.79 Permit Plan 4 (Wellbore #1)	MWD+HDGM	
			OWSG MWD + HDGM	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,321.80	13.22	257.76	3,310.10	-32.19	-148.34	1.00	1.00	0.00	257.76	
7,907.79	13.22	257.76	7,774.60	-254.54	-1,173.11	0.00	0.00	0.00	0.00	
8,788.98	0.00	0.01	8,648.00	-276.00	-1,272.00	1.50	-1.50	0.00	180.00	VP - North Thistle Sta
9,095.02	0.00	0.01	8,954.04	-276.00	-1,272.00	0.00	0.00	0.00	0.01	
9,995.03	90.00	359.50	9,527.00	296.94	-1,277.00	10.00	10.00	0.00	359.50	PBHL - North Thistle
19,889.79	90.00	359.50	9,527.00	10,191.32	-1,363.30	0.00	0.00	0.00	0.00	PBHL - North Thistle

Planning Report - Geographic

Database: EDM r5000.141_Prod US
 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
 Site: Sec 03-T23-R33E
 Well: North Thistle 3-34 State 4H
 Wellbore: Wellbore #1
 Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 4H
 TVD Reference: RKB @ 3619.70ft
 MD Reference: RKB @ 3619.70ft
 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	483,715.00	781,861.10	32.327402	-103.554652
100.00	0.00	0.00	100.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
200.00	0.00	0.00	200.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
300.00	0.00	0.00	300.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
400.00	0.00	0.00	400.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
500.00	0.00	0.00	500.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
600.00	0.00	0.00	600.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
700.00	0.00	0.00	700.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
800.00	0.00	0.00	800.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
900.00	0.00	0.00	900.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,715.00	781,861.10	32.327402	-103.554652
2,100.00	1.00	257.76	2,099.99	-0.19	-0.85	483,714.82	781,860.24	32.327401	-103.554655
2,200.00	2.00	257.76	2,199.96	-0.74	-3.41	483,714.26	781,857.69	32.327400	-103.554663
2,300.00	3.00	257.76	2,299.86	-1.67	-7.67	483,713.34	781,853.42	32.327397	-103.554677
2,400.00	4.00	257.76	2,399.68	-2.96	-13.64	483,712.04	781,847.46	32.327394	-103.554696
2,500.00	5.00	257.76	2,499.37	-4.62	-21.31	483,710.38	781,839.79	32.327390	-103.554721
2,600.00	6.00	257.76	2,598.90	-6.66	-30.67	483,708.35	781,830.42	32.327384	-103.554751
2,700.00	7.00	257.76	2,698.26	-9.06	-41.74	483,705.94	781,819.36	32.327378	-103.554787
2,800.00	8.00	257.76	2,797.40	-11.82	-54.49	483,703.18	781,806.61	32.327371	-103.554828
2,900.00	9.00	257.76	2,896.30	-14.96	-68.94	483,700.04	781,792.16	32.327362	-103.554875
3,000.00	10.00	257.76	2,994.93	-18.46	-85.07	483,696.54	781,776.03	32.327353	-103.554928
3,100.00	11.00	257.76	3,093.26	-22.32	-102.87	483,692.68	781,758.22	32.327343	-103.554985
3,200.00	12.00	257.76	3,191.25	-26.55	-122.36	483,688.45	781,738.74	32.327331	-103.555048
3,300.00	13.00	257.76	3,288.87	-31.14	-143.51	483,683.86	781,717.59	32.327319	-103.555117
3,321.80	13.22	257.76	3,310.10	-32.19	-148.34	483,682.81	781,712.76	32.327316	-103.555133
3,400.00	13.22	257.76	3,386.23	-35.98	-165.82	483,679.02	781,695.28	32.327306	-103.555189
3,500.00	13.22	257.76	3,483.59	-40.83	-188.16	483,674.17	781,672.94	32.327293	-103.555262
3,600.00	13.22	257.76	3,580.94	-45.68	-210.51	483,669.33	781,650.59	32.327281	-103.555334
3,700.00	13.22	257.76	3,678.29	-50.52	-232.85	483,664.48	781,628.25	32.327268	-103.555407
3,800.00	13.22	257.76	3,775.64	-55.37	-255.20	483,659.63	781,605.90	32.327255	-103.555479
3,900.00	13.22	257.76	3,872.99	-60.22	-277.54	483,654.78	781,583.55	32.327242	-103.555552
4,000.00	13.22	257.76	3,970.34	-65.07	-299.89	483,649.93	781,561.21	32.327229	-103.555624
4,100.00	13.22	257.76	4,067.69	-69.92	-322.23	483,645.08	781,538.86	32.327216	-103.555697
4,200.00	13.22	257.76	4,165.04	-74.77	-344.58	483,640.23	781,516.52	32.327203	-103.555769
4,300.00	13.22	257.76	4,262.39	-79.62	-366.93	483,635.39	781,494.17	32.327190	-103.555841
4,400.00	13.22	257.76	4,359.74	-84.46	-389.27	483,630.54	781,471.83	32.327178	-103.555914
4,500.00	13.22	257.76	4,457.09	-89.31	-411.62	483,625.69	781,449.48	32.327165	-103.555986
4,600.00	13.22	257.76	4,554.44	-94.16	-433.96	483,620.84	781,427.14	32.327152	-103.556059
4,700.00	13.22	257.76	4,651.79	-99.01	-456.31	483,615.99	781,404.79	32.327139	-103.556131
4,800.00	13.22	257.76	4,749.15	-103.86	-478.65	483,611.14	781,382.45	32.327126	-103.556204
4,900.00	13.22	257.76	4,846.50	-108.71	-501.00	483,606.29	781,360.10	32.327113	-103.556276
5,000.00	13.22	257.76	4,943.85	-113.56	-523.34	483,601.45	781,337.75	32.327100	-103.556349
5,100.00	13.22	257.76	5,041.20	-118.40	-545.69	483,596.60	781,315.41	32.327087	-103.556421
5,200.00	13.22	257.76	5,138.55	-123.25	-568.04	483,591.75	781,293.06	32.327074	-103.556493
5,300.00	13.22	257.76	5,235.90	-128.10	-590.38	483,586.90	781,270.72	32.327062	-103.556566

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Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3619.70ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.00	13.22	257.76	5,333.25	-132.95	-612.73	483,582.05	781,248.37	32.327049	-103.556638
5,500.00	13.22	257.76	5,430.60	-137.80	-635.07	483,577.20	781,226.03	32.327036	-103.556711
5,600.00	13.22	257.76	5,527.95	-142.65	-657.42	483,572.35	781,203.68	32.327023	-103.556783
5,700.00	13.22	257.76	5,625.30	-147.50	-679.76	483,567.51	781,181.34	32.327010	-103.556856
5,800.00	13.22	257.76	5,722.65	-152.34	-702.11	483,562.66	781,158.99	32.326997	-103.556928
5,900.00	13.22	257.76	5,820.00	-157.19	-724.45	483,557.81	781,136.64	32.326984	-103.557001
6,000.00	13.22	257.76	5,917.35	-162.04	-746.80	483,552.96	781,114.30	32.326971	-103.557073
6,100.00	13.22	257.76	6,014.70	-166.89	-769.15	483,548.11	781,091.95	32.326959	-103.557146
6,200.00	13.22	257.76	6,112.06	-171.74	-791.49	483,543.26	781,069.61	32.326946	-103.557218
6,300.00	13.22	257.76	6,209.41	-176.59	-813.84	483,538.41	781,047.26	32.326933	-103.557290
6,400.00	13.22	257.76	6,306.76	-181.44	-836.18	483,533.57	781,024.92	32.326920	-103.557363
6,500.00	13.22	257.76	6,404.11	-186.28	-858.53	483,528.72	781,002.57	32.326907	-103.557435
6,600.00	13.22	257.76	6,501.46	-191.13	-880.87	483,523.87	780,980.23	32.326894	-103.557508
6,700.00	13.22	257.76	6,598.81	-195.98	-903.22	483,519.02	780,957.88	32.326881	-103.557580
6,800.00	13.22	257.76	6,696.16	-200.83	-925.57	483,514.17	780,935.53	32.326868	-103.557653
6,900.00	13.22	257.76	6,793.51	-205.68	-947.91	483,509.32	780,913.19	32.326855	-103.557725
7,000.00	13.22	257.76	6,890.86	-210.53	-970.26	483,504.47	780,890.84	32.326843	-103.557798
7,100.00	13.22	257.76	6,988.21	-215.38	-992.60	483,499.63	780,868.50	32.326830	-103.557870
7,200.00	13.22	257.76	7,085.56	-220.22	-1,014.95	483,494.78	780,846.15	32.326817	-103.557942
7,300.00	13.22	257.76	7,182.91	-225.07	-1,037.29	483,489.93	780,823.81	32.326804	-103.558015
7,400.00	13.22	257.76	7,280.26	-229.92	-1,059.64	483,485.08	780,801.46	32.326791	-103.558087
7,500.00	13.22	257.76	7,377.62	-234.77	-1,081.98	483,480.23	780,779.12	32.326778	-103.558160
7,600.00	13.22	257.76	7,474.97	-239.62	-1,104.33	483,475.38	780,756.77	32.326765	-103.558232
7,700.00	13.22	257.76	7,572.32	-244.47	-1,126.68	483,470.53	780,734.42	32.326752	-103.558305
7,800.00	13.22	257.76	7,669.67	-249.32	-1,149.02	483,465.69	780,712.08	32.326740	-103.558377
7,900.00	13.22	257.76	7,767.02	-254.16	-1,171.37	483,460.84	780,689.73	32.326727	-103.558450
7,907.79	13.22	257.76	7,774.60	-254.54	-1,173.11	483,460.46	780,687.99	32.326726	-103.558455
8,000.00	11.83	257.76	7,864.61	-258.78	-1,192.65	483,456.22	780,668.45	32.326714	-103.558519
8,100.00	10.33	257.76	7,962.75	-262.86	-1,211.44	483,452.14	780,649.66	32.326704	-103.558580
8,200.00	8.83	257.76	8,061.35	-266.39	-1,227.71	483,448.61	780,633.39	32.326694	-103.558632
8,300.00	7.33	257.76	8,160.35	-269.37	-1,241.45	483,445.63	780,619.65	32.326686	-103.558677
8,400.00	5.83	257.76	8,259.69	-271.80	-1,252.66	483,443.20	780,608.44	32.326680	-103.558713
8,500.00	4.33	257.76	8,359.29	-273.68	-1,261.32	483,441.32	780,599.78	32.326675	-103.558741
8,600.00	2.83	257.76	8,459.09	-275.01	-1,267.43	483,439.99	780,593.67	32.326671	-103.558761
8,700.00	1.33	257.76	8,559.02	-275.78	-1,270.99	483,439.22	780,590.11	32.326669	-103.558773
8,788.98	0.00	0.01	8,648.00	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
8,800.00	0.00	0.00	8,659.02	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
8,900.00	0.00	0.00	8,759.02	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
9,000.00	0.00	0.00	8,859.02	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
9,095.02	0.00	0.00	8,954.04	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
KOP @ 9095' MD, 50' FSL, 2188' FEL									
9,100.00	0.50	359.50	8,959.02	-275.98	-1,272.00	483,439.02	780,589.10	32.326669	-103.558776
9,200.00	10.50	359.50	9,058.43	-266.41	-1,272.08	483,448.59	780,589.02	32.326695	-103.558776
9,300.00	20.50	359.50	9,154.67	-239.73	-1,272.32	483,475.28	780,588.78	32.326768	-103.558776
9,336.17	24.11	359.50	9,188.13	-226.00	-1,272.44	483,489.00	780,588.66	32.326806	-103.558776
First Take Point @ 9336' MD, 100' FSL, 2188' FEL									
9,400.00	30.50	359.50	9,244.82	-196.73	-1,272.69	483,518.27	780,588.41	32.326887	-103.558776
9,500.00	40.50	359.50	9,326.13	-138.74	-1,273.20	483,576.26	780,587.90	32.327046	-103.558777
9,600.00	50.50	359.50	9,396.13	-67.51	-1,273.82	483,647.49	780,587.28	32.327242	-103.558777
9,700.00	60.50	359.50	9,452.71	14.79	-1,274.54	483,729.79	780,586.56	32.327468	-103.558777
9,800.00	70.50	359.50	9,494.13	105.66	-1,275.33	483,820.66	780,585.77	32.327718	-103.558778
9,900.00	80.50	359.50	9,519.14	202.35	-1,276.17	483,917.35	780,584.93	32.327984	-103.558778
9,995.03	90.00	359.50	9,527.00	296.94	-1,277.00	484,011.94	780,584.10	32.328244	-103.558779
10,000.00	90.00	359.50	9,527.00	301.91	-1,277.04	484,016.91	780,584.06	32.328257	-103.558779

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3619.70ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3619.70ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,100.00	90.00	359.50	9,527.00	401.91	-1,277.91	484,116.91	780,583.19	32.328532	-103.558779
10,200.00	90.00	359.50	9,527.00	501.90	-1,278.79	484,216.90	780,582.31	32.328807	-103.558780
10,300.00	90.00	359.50	9,527.00	601.90	-1,279.66	484,316.90	780,581.44	32.329082	-103.558780
10,400.00	90.00	359.50	9,527.00	701.90	-1,280.53	484,416.90	780,580.57	32.329357	-103.558781
10,500.00	90.00	359.50	9,527.00	801.89	-1,281.40	484,516.89	780,579.70	32.329632	-103.558781
10,600.00	90.00	359.50	9,527.00	901.89	-1,282.27	484,616.89	780,578.83	32.329906	-103.558782
10,700.00	90.00	359.50	9,527.00	1,001.88	-1,283.15	484,716.88	780,577.95	32.330181	-103.558782
10,800.00	90.00	359.50	9,527.00	1,101.88	-1,284.02	484,816.88	780,577.08	32.330456	-103.558783
10,900.00	90.00	359.50	9,527.00	1,201.88	-1,284.89	484,916.88	780,576.21	32.330731	-103.558783
11,000.00	90.00	359.50	9,527.00	1,301.87	-1,285.76	485,016.87	780,575.34	32.331006	-103.558784
11,100.00	90.00	359.50	9,527.00	1,401.87	-1,286.64	485,116.87	780,574.46	32.331281	-103.558784
11,200.00	90.00	359.50	9,527.00	1,501.87	-1,287.51	485,216.86	780,573.59	32.331556	-103.558784
11,300.00	90.00	359.50	9,527.00	1,601.86	-1,288.38	485,316.86	780,572.72	32.331830	-103.558785
11,400.00	90.00	359.50	9,527.00	1,701.86	-1,289.25	485,416.86	780,571.85	32.332105	-103.558785
11,500.00	90.00	359.50	9,527.00	1,801.85	-1,290.12	485,516.85	780,570.98	32.332380	-103.558786
11,600.00	90.00	359.50	9,527.00	1,901.85	-1,291.00	485,616.85	780,570.10	32.332655	-103.558786
11,700.00	90.00	359.50	9,527.00	2,001.85	-1,291.87	485,716.84	780,569.23	32.332930	-103.558787
11,800.00	90.00	359.50	9,527.00	2,101.84	-1,292.74	485,816.84	780,568.36	32.333205	-103.558787
11,900.00	90.00	359.50	9,527.00	2,201.84	-1,293.61	485,916.84	780,567.49	32.333480	-103.558788
12,000.00	90.00	359.50	9,527.00	2,301.84	-1,294.49	486,016.83	780,566.61	32.333755	-103.558788
12,100.00	90.00	359.50	9,527.00	2,401.83	-1,295.36	486,116.83	780,565.74	32.334029	-103.558789
12,200.00	90.00	359.50	9,527.00	2,501.83	-1,296.23	486,216.82	780,564.87	32.334304	-103.558789
12,300.00	90.00	359.50	9,527.00	2,601.82	-1,297.10	486,316.82	780,564.00	32.334579	-103.558790
12,400.00	90.00	359.50	9,527.00	2,701.82	-1,297.97	486,416.82	780,563.13	32.334854	-103.558790
12,500.00	90.00	359.50	9,527.00	2,801.82	-1,298.85	486,516.81	780,562.25	32.335129	-103.558791
12,600.00	90.00	359.50	9,527.00	2,901.81	-1,299.72	486,616.81	780,561.38	32.335404	-103.558791
12,700.00	90.00	359.50	9,527.00	3,001.81	-1,300.59	486,716.80	780,560.51	32.335679	-103.558792
12,800.00	90.00	359.50	9,527.00	3,101.80	-1,301.46	486,816.80	780,559.64	32.335953	-103.558792
12,900.00	90.00	359.50	9,527.00	3,201.80	-1,302.34	486,916.80	780,558.76	32.336228	-103.558793
13,000.00	90.00	359.50	9,527.00	3,301.80	-1,303.21	487,016.79	780,557.89	32.336503	-103.558793
13,100.00	90.00	359.50	9,527.00	3,401.79	-1,304.08	487,116.79	780,557.02	32.336778	-103.558794
13,200.00	90.00	359.50	9,527.00	3,501.79	-1,304.95	487,216.78	780,556.15	32.337053	-103.558794
13,300.00	90.00	359.50	9,527.00	3,601.79	-1,305.82	487,316.78	780,555.28	32.337328	-103.558795
13,400.00	90.00	359.50	9,527.00	3,701.78	-1,306.70	487,416.78	780,554.40	32.337603	-103.558795
13,500.00	90.00	359.50	9,527.00	3,801.78	-1,307.57	487,516.77	780,553.53	32.337878	-103.558796
13,600.00	90.00	359.50	9,527.00	3,901.77	-1,308.44	487,616.77	780,552.66	32.338152	-103.558796
13,700.00	90.00	359.50	9,527.00	4,001.77	-1,309.31	487,716.76	780,551.79	32.338427	-103.558797
13,800.00	90.00	359.50	9,527.00	4,101.77	-1,310.19	487,816.76	780,550.91	32.338702	-103.558797
13,900.00	90.00	359.50	9,527.00	4,201.76	-1,311.06	487,916.76	780,550.04	32.338977	-103.558798
14,000.00	90.00	359.50	9,527.00	4,301.76	-1,311.93	488,016.75	780,549.17	32.339252	-103.558798
14,100.00	90.00	359.50	9,527.00	4,401.76	-1,312.80	488,116.75	780,548.30	32.339527	-103.558799
14,200.00	90.00	359.50	9,527.00	4,501.75	-1,313.67	488,216.74	780,547.43	32.339802	-103.558799
14,300.00	90.00	359.50	9,527.00	4,601.75	-1,314.55	488,316.74	780,546.55	32.340076	-103.558799
14,400.00	90.00	359.50	9,527.00	4,701.74	-1,315.42	488,416.74	780,545.68	32.340351	-103.558800
14,500.00	90.00	359.50	9,527.00	4,801.74	-1,316.29	488,516.73	780,544.81	32.340626	-103.558800
14,600.00	90.00	359.50	9,527.00	4,901.74	-1,317.16	488,616.73	780,543.94	32.340901	-103.558801
14,700.00	90.00	359.50	9,527.00	5,001.73	-1,318.04	488,716.72	780,543.06	32.341176	-103.558801
14,800.00	90.00	359.50	9,527.00	5,101.73	-1,318.91	488,816.72	780,542.19	32.341451	-103.558802
14,900.00	90.00	359.50	9,527.00	5,201.72	-1,319.78	488,916.72	780,541.32	32.341726	-103.558802
15,000.00	90.00	359.50	9,527.00	5,301.72	-1,320.65	489,016.71	780,540.45	32.342001	-103.558803
15,100.00	90.00	359.50	9,527.00	5,401.72	-1,321.52	489,116.71	780,539.58	32.342275	-103.558803
15,200.00	90.00	359.50	9,527.00	5,501.71	-1,322.40	489,216.70	780,538.70	32.342550	-103.558804
15,300.00	90.00	359.50	9,527.00	5,601.71	-1,323.27	489,316.70	780,537.83	32.342825	-103.558804
15,400.00	90.00	359.50	9,527.00	5,701.71	-1,324.14	489,416.70	780,536.96	32.343100	-103.558805
15,500.00	90.00	359.50	9,527.00	5,801.70	-1,325.01	489,516.69	780,536.09	32.343375	-103.558805

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3619.70ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3619.70ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,600.00	90.00	359.50	9,527.00	5,901.70	-1,325.89	489,616.69	780,535.21	32.343650	-103.558806
15,700.00	90.00	359.50	9,527.00	6,001.69	-1,326.76	489,716.68	780,534.34	32.343925	-103.558806
15,800.00	90.00	359.50	9,527.00	6,101.69	-1,327.63	489,816.68	780,533.47	32.344199	-103.558807
15,900.00	90.00	359.50	9,527.00	6,201.69	-1,328.50	489,916.68	780,532.60	32.344474	-103.558807
16,000.00	90.00	359.50	9,527.00	6,301.68	-1,329.37	490,016.67	780,531.73	32.344749	-103.558808
16,100.00	90.00	359.50	9,527.00	6,401.68	-1,330.25	490,116.67	780,530.85	32.345024	-103.558808
16,200.00	90.00	359.50	9,527.00	6,501.68	-1,331.12	490,216.66	780,529.98	32.345299	-103.558809
16,300.00	90.00	359.50	9,527.00	6,601.67	-1,331.99	490,316.66	780,529.11	32.345574	-103.558809
16,400.00	90.00	359.50	9,527.00	6,701.67	-1,332.86	490,416.66	780,528.24	32.345849	-103.558810
16,500.00	90.00	359.50	9,527.00	6,801.66	-1,333.74	490,516.65	780,527.36	32.346124	-103.558810
16,600.00	90.00	359.50	9,527.00	6,901.66	-1,334.61	490,616.65	780,526.49	32.346398	-103.558811
16,700.00	90.00	359.50	9,527.00	7,001.66	-1,335.48	490,716.64	780,525.62	32.346673	-103.558811
16,800.00	90.00	359.50	9,527.00	7,101.65	-1,336.35	490,816.64	780,524.75	32.346948	-103.558812
16,900.00	90.00	359.50	9,527.00	7,201.65	-1,337.22	490,916.64	780,523.88	32.347223	-103.558812
17,000.00	90.00	359.50	9,527.00	7,301.65	-1,338.10	491,016.63	780,523.00	32.347498	-103.558812
17,100.00	90.00	359.50	9,527.00	7,401.64	-1,338.97	491,116.63	780,522.13	32.347773	-103.558813
17,200.00	90.00	359.50	9,527.00	7,501.64	-1,339.84	491,216.62	780,521.26	32.348048	-103.558813
17,300.00	90.00	359.50	9,527.00	7,601.63	-1,340.71	491,316.62	780,520.39	32.348322	-103.558814
17,400.00	90.00	359.50	9,527.00	7,701.63	-1,341.59	491,416.62	780,519.51	32.348597	-103.558814
17,500.00	90.00	359.50	9,527.00	7,801.63	-1,342.46	491,516.61	780,518.64	32.348872	-103.558815
17,600.00	90.00	359.50	9,527.00	7,901.62	-1,343.33	491,616.61	780,517.77	32.349147	-103.558815
17,700.00	90.00	359.50	9,527.00	8,001.62	-1,344.20	491,716.60	780,516.90	32.349422	-103.558816
17,800.00	90.00	359.50	9,527.00	8,101.61	-1,345.07	491,816.60	780,516.03	32.349697	-103.558816
17,900.00	90.00	359.50	9,527.00	8,201.61	-1,345.95	491,916.60	780,515.15	32.349972	-103.558817
18,000.00	90.00	359.50	9,527.00	8,301.61	-1,346.82	492,016.59	780,514.28	32.350247	-103.558817
18,100.00	90.00	359.50	9,527.00	8,401.60	-1,347.69	492,116.59	780,513.41	32.350521	-103.558818
18,200.00	90.00	359.50	9,527.00	8,501.60	-1,348.56	492,216.58	780,512.54	32.350796	-103.558818
18,300.00	90.00	359.50	9,527.00	8,601.60	-1,349.44	492,316.58	780,511.66	32.351071	-103.558819
18,400.00	90.00	359.50	9,527.00	8,701.59	-1,350.31	492,416.58	780,510.79	32.351346	-103.558819
18,500.00	90.00	359.50	9,527.00	8,801.59	-1,351.18	492,516.57	780,509.92	32.351621	-103.558820
18,600.00	90.00	359.50	9,527.00	8,901.58	-1,352.05	492,616.57	780,509.05	32.351896	-103.558820
18,700.00	90.00	359.50	9,527.00	9,001.58	-1,352.93	492,716.56	780,508.18	32.352171	-103.558821
18,800.00	90.00	359.50	9,527.00	9,101.58	-1,353.80	492,816.56	780,507.30	32.352445	-103.558821
18,900.00	90.00	359.50	9,527.00	9,201.57	-1,354.67	492,916.56	780,506.43	32.352720	-103.558822
19,000.00	90.00	359.50	9,527.00	9,301.57	-1,355.54	493,016.55	780,505.56	32.352995	-103.558822
19,100.00	90.00	359.50	9,527.00	9,401.57	-1,356.41	493,116.55	780,504.69	32.353270	-103.558823
19,200.00	90.00	359.50	9,527.00	9,501.56	-1,357.29	493,216.54	780,503.81	32.353545	-103.558823
19,300.00	90.00	359.50	9,527.00	9,601.56	-1,358.16	493,316.54	780,502.94	32.353820	-103.558824
19,400.00	90.00	359.50	9,527.00	9,701.55	-1,359.03	493,416.54	780,502.07	32.354095	-103.558824
19,500.00	90.00	359.50	9,527.00	9,801.55	-1,359.90	493,516.53	780,501.20	32.354370	-103.558825
19,600.00	90.00	359.50	9,527.00	9,901.55	-1,360.78	493,616.53	780,500.33	32.354644	-103.558825
19,700.00	90.00	359.50	9,527.00	10,001.54	-1,361.65	493,716.52	780,499.45	32.354919	-103.558826
19,800.00	90.00	359.50	9,527.00	10,101.54	-1,362.52	493,816.52	780,498.58	32.355194	-103.558826
19,809.79	90.00	359.50	9,527.00	10,111.33	-1,362.61	493,826.31	780,498.50	32.355221	-103.558826
Last Take Point @ 19810' MD, 100' FNL, 2188' FEL									
19,889.79	90.00	359.50	9,527.00	10,191.32	-1,363.30	493,906.30	780,497.80	32.355441	-103.558826
PBHL; 20' FNL, 2188' FEL									

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 4H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3619.70ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3619.70ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 4		

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 - North Thistle 3-3	0.00	0.00	0.00	10,191.32	-1,363.30	493,906.30	780,497.80	32.355441	-103.558826
- plan misses target center by 9527.00ft at 19889.79ft MD (9527.00 TVD, 10191.32 N, -1363.30 E)									
- Point									
VP - North Thistle State	0.00	0.01	8,648.00	-276.00	-1,272.00	483,439.00	780,589.10	32.326669	-103.558776
- plan hits target center									
- Point									

Plan Annotations

Measured	Vertical	Local Coordinates		Comment
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
9,095.02	8,954.04	-276.00	-1,272.00	KOP @ 9095' MD, 50' FSL, 2188' FEL
9,336.17	9,188.13	-226.00	-1,272.44	First Take Point @ 9336' MD, 100' FSL, 2188' FEL
19,809.79	9,527.00	10,111.33	-1,362.61	Last Take Point @ 19810' MD, 100' FNL, 2188' FEL
19,889.79	9,527.00	10,191.32	-1,363.30	PBHL; 20' FNL, 2188' FEL