

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 03-T23-R33E

North Thistle 3-34 State 5H

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 5H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3596.80ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3596.80ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 5H	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 5H					
Well Position	+N-S	0.00 ft	Northing:	483,714.90 usft	Latitude:	32.327401
	+E-W	0.00 ft	Easting:	781,891.10 usft	Longitude:	-103.554555
Position Uncertainty		0.50 ft	Wellhead Elevation:		Ground Level:	3,571.10 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/2/2018	6.86	60.15	47,910.26747218

Design	Permit Plan 4			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	357.25

Plan Survey Tool Program	Date	8/2/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,730.33 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	
2,448.51	4.49	234.60	2,448.05	-10.16	-14.30	1.00	1.00	0.00	234.60	
8,318.73	4.49	234.60	8,300.30	-276.11	-388.47	0.00	0.00	0.00	0.00	
8,617.74	0.00	0.00	8,599.00	-282.89	-398.00	1.50	-1.50	0.00	180.00	VP - North Thistle 3-3
8,923.78	0.00	0.00	8,905.04	-282.89	-398.00	0.00	0.00	0.00	0.00	
9,823.78	90.00	359.50	9,478.00	290.05	-402.99	10.00	10.00	0.00	359.50	PBHL - North Thistle 3
19,730.33	90.00	359.50	9,478.00	10,196.22	-489.30	0.00	0.00	0.00	0.00	PBHL - North Thistle 3

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 Company: WCDSC Permian NM
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 Site: Sec 03-T23-R33E
 Well: North Thistle 3-34 State 5H
 Wellbore: Wellbore #1
 Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 5H
 TVD Reference: RKB @ 3596.80ft
 MD Reference: RKB @ 3596.80ft
 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	483,714.90	781,891.10	32.327401	-103.554555
100.00	0.00	0.00	100.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
200.00	0.00	0.00	200.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
300.00	0.00	0.00	300.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
400.00	0.00	0.00	400.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
500.00	0.00	0.00	500.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
600.00	0.00	0.00	600.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
700.00	0.00	0.00	700.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
800.00	0.00	0.00	800.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
900.00	0.00	0.00	900.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,714.90	781,891.10	32.327401	-103.554555
2,100.00	1.00	234.60	2,099.99	-0.51	-0.71	483,714.40	781,890.39	32.327400	-103.554557
2,200.00	2.00	234.60	2,199.96	-2.02	-2.84	483,712.88	781,888.25	32.327396	-103.554564
2,300.00	3.00	234.60	2,299.86	-4.55	-6.40	483,710.35	781,884.70	32.327389	-103.554575
2,400.00	4.00	234.60	2,399.68	-8.09	-11.38	483,706.81	781,879.72	32.327379	-103.554592
2,448.51	4.49	234.60	2,448.05	-10.16	-14.30	483,704.74	781,876.80	32.327373	-103.554601
2,500.00	4.49	234.60	2,499.38	-12.50	-17.58	483,702.40	781,873.51	32.327367	-103.554612
2,600.00	4.49	234.60	2,599.08	-17.03	-23.96	483,697.87	781,867.14	32.327355	-103.554633
2,700.00	4.49	234.60	2,698.77	-21.56	-30.33	483,693.34	781,860.77	32.327342	-103.554653
2,800.00	4.49	234.60	2,798.47	-26.09	-36.70	483,688.81	781,854.39	32.327330	-103.554674
2,900.00	4.49	234.60	2,898.16	-30.62	-43.08	483,684.28	781,848.02	32.327318	-103.554695
3,000.00	4.49	234.60	2,997.85	-35.15	-49.45	483,679.75	781,841.64	32.327305	-103.554716
3,100.00	4.49	234.60	3,097.55	-39.68	-55.83	483,675.22	781,835.27	32.327293	-103.554736
3,200.00	4.49	234.60	3,197.24	-44.21	-62.20	483,670.69	781,828.90	32.327281	-103.554757
3,300.00	4.49	234.60	3,296.93	-48.74	-68.57	483,666.16	781,822.52	32.327268	-103.554778
3,400.00	4.49	234.60	3,396.63	-53.27	-74.95	483,661.63	781,816.15	32.327256	-103.554799
3,500.00	4.49	234.60	3,496.32	-57.80	-81.32	483,657.10	781,809.78	32.327244	-103.554819
3,600.00	4.49	234.60	3,596.02	-62.33	-87.70	483,652.57	781,803.40	32.327231	-103.554840
3,700.00	4.49	234.60	3,695.71	-66.86	-94.07	483,648.04	781,797.03	32.327219	-103.554861
3,800.00	4.49	234.60	3,795.40	-71.39	-100.44	483,643.51	781,790.65	32.327207	-103.554881
3,900.00	4.49	234.60	3,895.10	-75.92	-106.82	483,638.98	781,784.28	32.327194	-103.554902
4,000.00	4.49	234.60	3,994.79	-80.45	-113.19	483,634.45	781,777.91	32.327182	-103.554923
4,100.00	4.49	234.60	4,094.48	-84.98	-119.57	483,629.92	781,771.53	32.327170	-103.554944
4,200.00	4.49	234.60	4,194.18	-89.52	-125.94	483,625.39	781,765.16	32.327158	-103.554964
4,300.00	4.49	234.60	4,293.87	-94.05	-132.31	483,620.86	781,758.78	32.327145	-103.554985
4,400.00	4.49	234.60	4,393.57	-98.58	-138.69	483,616.32	781,752.41	32.327133	-103.555006
4,500.00	4.49	234.60	4,493.26	-103.11	-145.06	483,611.79	781,746.04	32.327121	-103.555027
4,600.00	4.49	234.60	4,592.95	-107.64	-151.44	483,607.26	781,739.66	32.327108	-103.555047
4,700.00	4.49	234.60	4,692.65	-112.17	-157.81	483,602.73	781,733.29	32.327096	-103.555068
4,800.00	4.49	234.60	4,792.34	-116.70	-164.18	483,598.20	781,726.91	32.327084	-103.555089
4,900.00	4.49	234.60	4,892.04	-121.23	-170.56	483,593.67	781,720.54	32.327071	-103.555110
5,000.00	4.49	234.60	4,991.73	-125.76	-176.93	483,589.14	781,714.17	32.327059	-103.555130
5,100.00	4.49	234.60	5,091.42	-130.29	-183.31	483,584.61	781,707.79	32.327047	-103.555151
5,200.00	4.49	234.60	5,191.12	-134.82	-189.68	483,580.08	781,701.42	32.327034	-103.555172
5,300.00	4.49	234.60	5,290.81	-139.35	-196.05	483,575.55	781,695.04	32.327022	-103.555193

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Well:	North Thistle 3-34 State 5H	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	4.49	234.60	5,390.50	-143.88	-202.43	483,571.02	781,688.67	32.327010	-103.555213
5,500.00	4.49	234.60	5,490.20	-148.41	-208.80	483,566.49	781,682.30	32.326997	-103.555234
5,600.00	4.49	234.60	5,589.89	-152.94	-215.18	483,561.96	781,675.92	32.326985	-103.555255
5,700.00	4.49	234.60	5,689.59	-157.47	-221.55	483,557.43	781,669.55	32.326973	-103.555276
5,800.00	4.49	234.60	5,789.28	-162.00	-227.92	483,552.90	781,663.17	32.326960	-103.555296
5,900.00	4.49	234.60	5,888.97	-166.53	-234.30	483,548.37	781,656.80	32.326948	-103.555317
6,000.00	4.49	234.60	5,988.67	-171.06	-240.67	483,543.84	781,650.43	32.326936	-103.555338
6,100.00	4.49	234.60	6,088.36	-175.59	-247.05	483,539.31	781,644.05	32.326923	-103.555358
6,200.00	4.49	234.60	6,188.05	-180.12	-253.42	483,534.78	781,637.68	32.326911	-103.555379
6,300.00	4.49	234.60	6,287.75	-184.65	-259.79	483,530.25	781,631.31	32.326899	-103.555400
6,400.00	4.49	234.60	6,387.44	-189.18	-266.17	483,525.72	781,624.93	32.326886	-103.555421
6,500.00	4.49	234.60	6,487.14	-193.72	-272.54	483,521.19	781,618.56	32.326874	-103.555441
6,600.00	4.49	234.60	6,586.83	-198.25	-278.91	483,516.66	781,612.18	32.326862	-103.555462
6,700.00	4.49	234.60	6,686.52	-202.78	-285.29	483,512.12	781,605.81	32.326849	-103.555483
6,800.00	4.49	234.60	6,786.22	-207.31	-291.66	483,507.59	781,599.44	32.326837	-103.555504
6,900.00	4.49	234.60	6,885.91	-211.84	-298.04	483,503.06	781,593.06	32.326825	-103.555524
7,000.00	4.49	234.60	6,985.60	-216.37	-304.41	483,498.53	781,586.69	32.326812	-103.555545
7,100.00	4.49	234.60	7,085.30	-220.90	-310.78	483,494.00	781,580.31	32.326800	-103.555566
7,200.00	4.49	234.60	7,184.99	-225.43	-317.16	483,489.47	781,573.94	32.326788	-103.555587
7,300.00	4.49	234.60	7,284.69	-229.96	-323.53	483,484.94	781,567.57	32.326775	-103.555607
7,400.00	4.49	234.60	7,384.38	-234.49	-329.91	483,480.41	781,561.19	32.326763	-103.555628
7,500.00	4.49	234.60	7,484.07	-239.02	-336.28	483,475.88	781,554.82	32.326751	-103.555649
7,600.00	4.49	234.60	7,583.77	-243.55	-342.65	483,471.35	781,548.44	32.326738	-103.555670
7,700.00	4.49	234.60	7,683.46	-248.08	-349.03	483,466.82	781,542.07	32.326726	-103.555690
7,800.00	4.49	234.60	7,783.15	-252.61	-355.40	483,462.29	781,535.70	32.326714	-103.555711
7,900.00	4.49	234.60	7,882.85	-257.14	-361.78	483,457.76	781,529.32	32.326701	-103.555732
8,000.00	4.49	234.60	7,982.54	-261.67	-368.15	483,453.23	781,522.95	32.326689	-103.555753
8,100.00	4.49	234.60	8,082.24	-266.20	-374.52	483,448.70	781,516.57	32.326677	-103.555773
8,200.00	4.49	234.60	8,181.93	-270.73	-380.90	483,444.17	781,510.20	32.326665	-103.555794
8,300.00	4.49	234.60	8,281.62	-275.26	-387.27	483,439.64	781,503.83	32.326652	-103.555815
8,318.73	4.49	234.60	8,300.30	-276.11	-388.47	483,438.79	781,502.63	32.326650	-103.555819
8,400.00	3.27	234.60	8,381.38	-279.29	-392.94	483,435.61	781,498.16	32.326641	-103.555833
8,500.00	1.77	234.60	8,481.28	-281.84	-396.52	483,433.06	781,494.58	32.326634	-103.555845
8,600.00	0.27	234.60	8,581.26	-282.86	-397.97	483,432.04	781,493.13	32.326632	-103.555850
8,617.74	0.00	0.00	8,599.00	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
8,700.00	0.00	0.00	8,681.26	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
8,800.00	0.00	0.00	8,781.26	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
8,900.00	0.00	0.00	8,881.26	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
8,923.78	0.00	0.00	8,905.04	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
KOP @ 8924' MD, 50' FSL, 1284' FEL									
9,000.00	7.62	359.50	8,981.04	-277.83	-398.04	483,437.07	781,493.05	32.326645	-103.555850
9,100.00	17.62	359.50	9,078.50	-256.00	-398.23	483,458.90	781,492.86	32.326705	-103.555850
9,181.27	25.75	359.50	9,153.95	-226.00	-398.50	483,488.90	781,492.60	32.326788	-103.555850
First Take Point @ 9181' MD, 100' FSL, 1284' FEL									
9,200.00	27.62	359.50	9,170.68	-217.59	-398.57	483,497.31	781,492.53	32.326811	-103.555850
9,300.00	37.62	359.50	9,254.80	-163.75	-399.04	483,551.15	781,492.06	32.326959	-103.555850
9,400.00	47.62	359.50	9,328.29	-96.12	-399.63	483,618.78	781,491.47	32.327145	-103.555851
9,500.00	57.62	359.50	9,388.92	-16.76	-400.32	483,698.14	781,490.78	32.327363	-103.555851
9,600.00	67.62	359.50	9,434.85	71.92	-401.09	483,786.82	781,490.01	32.327607	-103.555851
9,700.00	77.62	359.50	9,464.68	167.23	-401.92	483,882.13	781,489.18	32.327869	-103.555852
9,800.00	87.62	359.50	9,477.51	266.27	-402.78	483,981.18	781,488.31	32.328141	-103.555852
9,823.78	90.00	359.50	9,478.00	290.05	-402.99	484,004.95	781,488.11	32.328206	-103.555852
9,900.00	90.00	359.50	9,478.00	366.26	-403.66	484,081.16	781,487.44	32.328416	-103.555853
10,000.00	90.00	359.50	9,478.00	466.26	-404.53	484,181.16	781,486.57	32.328691	-103.555853

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10,100.00	90.00	359.50	9,478.00	566.26	-405.40	484,281.16	781,485.70	32.328966	-103.555854
10,200.00	90.00	359.50	9,478.00	666.25	-406.27	484,381.15	781,484.83	32.329240	-103.555854
10,300.00	90.00	359.50	9,478.00	766.25	-407.14	484,481.15	781,483.96	32.329515	-103.555855
10,400.00	90.00	359.50	9,478.00	866.25	-408.01	484,581.14	781,483.09	32.329790	-103.555855
10,500.00	90.00	359.50	9,478.00	966.24	-408.88	484,681.14	781,482.22	32.330065	-103.555856
10,600.00	90.00	359.50	9,478.00	1,066.24	-409.75	484,781.14	781,481.34	32.330340	-103.555856
10,700.00	90.00	359.50	9,478.00	1,166.23	-410.63	484,881.13	781,480.47	32.330615	-103.555857
10,800.00	90.00	359.50	9,478.00	1,266.23	-411.50	484,981.13	781,479.60	32.330890	-103.555857
10,900.00	90.00	359.50	9,478.00	1,366.23	-412.37	485,081.12	781,478.73	32.331164	-103.555857
11,000.00	90.00	359.50	9,478.00	1,466.22	-413.24	485,181.12	781,477.86	32.331439	-103.555858
11,100.00	90.00	359.50	9,478.00	1,566.22	-414.11	485,281.12	781,476.99	32.331714	-103.555858
11,200.00	90.00	359.50	9,478.00	1,666.21	-414.98	485,381.11	781,476.12	32.331989	-103.555859
11,300.00	90.00	359.50	9,478.00	1,766.21	-415.85	485,481.11	781,475.25	32.332264	-103.555859
11,400.00	90.00	359.50	9,478.00	1,866.21	-416.72	485,581.10	781,474.37	32.332539	-103.555860
11,500.00	90.00	359.50	9,478.00	1,966.20	-417.60	485,681.10	781,473.50	32.332814	-103.555860
11,600.00	90.00	359.50	9,478.00	2,066.20	-418.47	485,781.10	781,472.63	32.333089	-103.555861
11,700.00	90.00	359.50	9,478.00	2,166.20	-419.34	485,881.09	781,471.76	32.333363	-103.555861
11,800.00	90.00	359.50	9,478.00	2,266.19	-420.21	485,981.09	781,470.89	32.333638	-103.555862
11,900.00	90.00	359.50	9,478.00	2,366.19	-421.08	486,081.08	781,470.02	32.333913	-103.555862
12,000.00	90.00	359.50	9,478.00	2,466.18	-421.95	486,181.08	781,469.15	32.334188	-103.555863
12,100.00	90.00	359.50	9,478.00	2,566.18	-422.82	486,281.08	781,468.28	32.334463	-103.555863
12,200.00	90.00	359.50	9,478.00	2,666.18	-423.69	486,381.07	781,467.40	32.334738	-103.555864
12,300.00	90.00	359.50	9,478.00	2,766.17	-424.57	486,481.07	781,466.53	32.335013	-103.555864
12,400.00	90.00	359.50	9,478.00	2,866.17	-425.44	486,581.06	781,465.66	32.335287	-103.555865
12,500.00	90.00	359.50	9,478.00	2,966.17	-426.31	486,681.06	781,464.79	32.335562	-103.555865
12,600.00	90.00	359.50	9,478.00	3,066.16	-427.18	486,781.06	781,463.92	32.335837	-103.555865
12,700.00	90.00	359.50	9,478.00	3,166.16	-428.05	486,881.05	781,463.05	32.336112	-103.555866
12,800.00	90.00	359.50	9,478.00	3,266.15	-428.92	486,981.05	781,462.18	32.336387	-103.555866
12,900.00	90.00	359.50	9,478.00	3,366.15	-429.79	487,081.04	781,461.31	32.336662	-103.555867
13,000.00	90.00	359.50	9,478.00	3,466.15	-430.66	487,181.04	781,460.43	32.336937	-103.555867
13,100.00	90.00	359.50	9,478.00	3,566.14	-431.54	487,281.04	781,459.56	32.337212	-103.555868
13,200.00	90.00	359.50	9,478.00	3,666.14	-432.41	487,381.03	781,458.69	32.337486	-103.555868
13,300.00	90.00	359.50	9,478.00	3,766.14	-433.28	487,481.03	781,457.82	32.337761	-103.555869
13,400.00	90.00	359.50	9,478.00	3,866.13	-434.15	487,581.02	781,456.95	32.338036	-103.555869
13,500.00	90.00	359.50	9,478.00	3,966.13	-435.02	487,681.02	781,456.08	32.338311	-103.555870
13,600.00	90.00	359.50	9,478.00	4,066.12	-435.89	487,781.02	781,455.21	32.338586	-103.555870
13,700.00	90.00	359.50	9,478.00	4,166.12	-436.76	487,881.01	781,454.34	32.338861	-103.555871
13,800.00	90.00	359.50	9,478.00	4,266.12	-437.63	487,981.01	781,453.46	32.339136	-103.555871
13,900.00	90.00	359.50	9,478.00	4,366.11	-438.51	488,081.00	781,452.59	32.339410	-103.555872
14,000.00	90.00	359.50	9,478.00	4,466.11	-439.38	488,181.00	781,451.72	32.339685	-103.555872
14,100.00	90.00	359.50	9,478.00	4,566.10	-440.25	488,281.00	781,450.85	32.339960	-103.555873
14,200.00	90.00	359.50	9,478.00	4,666.10	-441.12	488,380.99	781,449.98	32.340235	-103.555873
14,300.00	90.00	359.50	9,478.00	4,766.10	-441.99	488,480.99	781,449.11	32.340510	-103.555873
14,400.00	90.00	359.50	9,478.00	4,866.09	-442.86	488,580.98	781,448.24	32.340785	-103.555874
14,500.00	90.00	359.50	9,478.00	4,966.09	-443.73	488,680.98	781,447.37	32.341060	-103.555874
14,600.00	90.00	359.50	9,478.00	5,066.09	-444.60	488,780.98	781,446.49	32.341335	-103.555875
14,700.00	90.00	359.50	9,478.00	5,166.08	-445.48	488,880.97	781,445.62	32.341609	-103.555875
14,800.00	90.00	359.50	9,478.00	5,266.08	-446.35	488,980.97	781,444.75	32.341884	-103.555876
14,900.00	90.00	359.50	9,478.00	5,366.07	-447.22	489,080.96	781,443.88	32.342159	-103.555876
15,000.00	90.00	359.50	9,478.00	5,466.07	-448.09	489,180.96	781,443.01	32.342434	-103.555877
15,100.00	90.00	359.50	9,478.00	5,566.07	-448.96	489,280.96	781,442.14	32.342709	-103.555877
15,200.00	90.00	359.50	9,478.00	5,666.06	-449.83	489,380.95	781,441.27	32.342984	-103.555878
15,300.00	90.00	359.50	9,478.00	5,766.06	-450.70	489,480.95	781,440.40	32.343259	-103.555878
15,400.00	90.00	359.50	9,478.00	5,866.06	-451.57	489,580.94	781,439.52	32.343533	-103.555879
15,500.00	90.00	359.50	9,478.00	5,966.05	-452.44	489,680.94	781,438.65	32.343808	-103.555879

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 5H
 Wellbore: Wellbore #1
 Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 5H
 TVD Reference: RKB @ 3596.80ft
 MD Reference: RKB @ 3596.80ft
 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
15,600.00	90.00	359.50	9,478.00	6,066.05	-453.32	489,780.94	781,437.78	32.344083	-103.555880
15,700.00	90.00	359.50	9,478.00	6,166.04	-454.19	489,880.93	781,436.91	32.344358	-103.555880
15,800.00	90.00	359.50	9,478.00	6,266.04	-455.06	489,980.93	781,436.04	32.344633	-103.555881
15,900.00	90.00	359.50	9,478.00	6,366.04	-455.93	490,080.92	781,435.17	32.344908	-103.555881
16,000.00	90.00	359.50	9,478.00	6,466.03	-456.80	490,180.92	781,434.30	32.345183	-103.555881
16,100.00	90.00	359.50	9,478.00	6,566.03	-457.67	490,280.92	781,433.43	32.345458	-103.555882
16,200.00	90.00	359.50	9,478.00	6,666.03	-458.54	490,380.91	781,432.55	32.345732	-103.555882
16,300.00	90.00	359.50	9,478.00	6,766.02	-459.41	490,480.91	781,431.68	32.346007	-103.555883
16,400.00	90.00	359.50	9,478.00	6,866.02	-460.29	490,580.90	781,430.81	32.346282	-103.555883
16,500.00	90.00	359.50	9,478.00	6,966.01	-461.16	490,680.90	781,429.94	32.346557	-103.555884
16,600.00	90.00	359.50	9,478.00	7,066.01	-462.03	490,780.90	781,429.07	32.346832	-103.555884
16,700.00	90.00	359.50	9,478.00	7,166.01	-462.90	490,880.89	781,428.20	32.347107	-103.555885
16,800.00	90.00	359.50	9,478.00	7,266.00	-463.77	490,980.89	781,427.33	32.347382	-103.555885
16,900.00	90.00	359.50	9,478.00	7,366.00	-464.64	491,080.88	781,426.46	32.347656	-103.555886
17,000.00	90.00	359.50	9,478.00	7,465.99	-465.51	491,180.88	781,425.58	32.347931	-103.555886
17,100.00	90.00	359.50	9,478.00	7,565.99	-466.38	491,280.88	781,424.71	32.348206	-103.555887
17,200.00	90.00	359.50	9,478.00	7,665.99	-467.26	491,380.87	781,423.84	32.348481	-103.555887
17,300.00	90.00	359.50	9,478.00	7,765.98	-468.13	491,480.87	781,422.97	32.348756	-103.555888
17,400.00	90.00	359.50	9,478.00	7,865.98	-469.00	491,580.86	781,422.10	32.349031	-103.555888
17,500.00	90.00	359.50	9,478.00	7,965.98	-469.87	491,680.86	781,421.23	32.349306	-103.555889
17,600.00	90.00	359.50	9,478.00	8,065.97	-470.74	491,780.86	781,420.36	32.349581	-103.555889
17,700.00	90.00	359.50	9,478.00	8,165.97	-471.61	491,880.85	781,419.49	32.349855	-103.555889
17,800.00	90.00	359.50	9,478.00	8,265.96	-472.48	491,980.85	781,418.62	32.350130	-103.555890
17,900.00	90.00	359.50	9,478.00	8,365.96	-473.35	492,080.84	781,417.74	32.350405	-103.555890
18,000.00	90.00	359.50	9,478.00	8,465.96	-474.23	492,180.84	781,416.87	32.350680	-103.555891
18,100.00	90.00	359.50	9,478.00	8,565.95	-475.10	492,280.84	781,416.00	32.350955	-103.555891
18,200.00	90.00	359.50	9,478.00	8,665.95	-475.97	492,380.83	781,415.13	32.351230	-103.555892
18,300.00	90.00	359.50	9,478.00	8,765.95	-476.84	492,480.83	781,414.26	32.351505	-103.555892
18,400.00	90.00	359.50	9,478.00	8,865.94	-477.71	492,580.82	781,413.39	32.351779	-103.555893
18,500.00	90.00	359.50	9,478.00	8,965.94	-478.58	492,680.82	781,412.52	32.352054	-103.555893
18,600.00	90.00	359.50	9,478.00	9,065.93	-479.45	492,780.82	781,411.65	32.352329	-103.555894
18,700.00	90.00	359.50	9,478.00	9,165.93	-480.32	492,880.81	781,410.77	32.352604	-103.555894
18,800.00	90.00	359.50	9,478.00	9,265.93	-481.20	492,980.81	781,409.90	32.352879	-103.555895
18,900.00	90.00	359.50	9,478.00	9,365.92	-482.07	493,080.80	781,409.03	32.353154	-103.555895
19,000.00	90.00	359.50	9,478.00	9,465.92	-482.94	493,180.80	781,408.16	32.353429	-103.555896
19,100.00	90.00	359.50	9,478.00	9,565.92	-483.81	493,280.80	781,407.29	32.353704	-103.555896
19,200.00	90.00	359.50	9,478.00	9,665.91	-484.68	493,380.79	781,406.42	32.353978	-103.555896
19,300.00	90.00	359.50	9,478.00	9,765.91	-485.55	493,480.79	781,405.55	32.354253	-103.555897
19,400.00	90.00	359.50	9,478.00	9,865.90	-486.42	493,580.79	781,404.68	32.354528	-103.555897
19,500.00	90.00	359.50	9,478.00	9,965.90	-487.29	493,680.78	781,403.80	32.354803	-103.555898
19,600.00	90.00	359.50	9,478.00	10,065.90	-488.17	493,780.78	781,402.93	32.355078	-103.555898
19,650.33	90.00	359.50	9,478.00	10,116.22	-488.60	493,831.11	781,402.49	32.355216	-103.555899
Last Take Point @ 19650' MD, 80' FNL, 1284' FEL									
19,700.00	90.00	359.50	9,478.00	10,165.89	-489.04	493,880.77	781,402.06	32.355353	-103.555899
19,730.33	90.00	359.50	9,478.00	10,196.22	-489.30	493,911.10	781,401.80	32.355436	-103.555899
PBHL; 20' FNL, 1284' FEL									

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 5H
Wellbore: Wellbore #1
Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 5H
TVD Reference: RKB @ 3596.80ft
MD Reference: RKB @ 3596.80ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL - North Thistle 3-3	0.00	0.00	0.00	10,196.22	-489.30	493,911.10	781,401.80	32.355436	-103.555899
- plan misses target center by 9478.00ft at 19730.33ft MD (9478.00 TVD, 10196.22 N, -489.30 E)									
- Point									
VP - North Thistle 3-34 E	0.00	0.00	8,599.00	-282.89	-398.00	483,432.01	781,493.10	32.326631	-103.555850
- plan hits target center									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,923.78	8,905.04	-282.89	-398.00	KOP @ 8924' MD, 50' FSL, 1284' FEL
9,181.27	9,153.95	-226.00	-398.50	First Take Point @ 9181' MD, 100' FSL, 1284' FEL
19,650.33	9,478.00	10,116.22	-488.60	Last Take Point @ 19650' MD, 80' FNL, 1284' FEL
19,730.33	9,478.00	10,196.22	-489.30	PBHL; 20' FNL, 1284' FEL