

WCDSC Permian NM

Lea County (NAD83 New Mexico East)

Sec 03-T23-R33E

North Thistle 3-34 State 2H

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 2H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3620.60ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3620.60ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 2H	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 2H			
Well Position	+N-S	0.00 ft	Northing:	483,599.10 usft
	+E-W	0.00 ft	Easting:	778,981.00 usft
Position Uncertainty		0.50 ft	Wellhead Elevation:	Ground Level: 3,595.60 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/2/2018	6.86	60.15	47,908.94610207

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	358.42

Plan Survey Tool Program	Date	8/2/2018		
Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,780.51 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	
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,270.01	3.38	225.20	4,269.86	-5.60	-5.64	1.25	1.25	0.00	225.20	
8,441.51	3.38	225.20	8,434.12	-178.64	-179.92	0.00	0.00	0.00	0.00	
8,666.52	0.00	0.00	8,659.00	-183.31	-184.62	1.50	-1.50	0.00	180.00	
8,972.56	0.00	0.00	8,965.04	-183.31	-184.62	0.00	0.00	0.00	0.00	
9,872.56	90.00	359.45	9,538.00	389.63	-190.10	10.00	10.00	0.00	359.45	PBHL - North Thistle
19,780.51	90.00	359.45	9,538.00	10,297.12	-284.90	0.00	0.00	0.00	0.00	PBHL - North Thistle

Planning Report - Geographic

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Company: WCDSC Permian NM
Project: Lea County (NAD83 New Mexico East)
Site: Sec 03-T23-R33E
Well: North Thistle 3-34 State 2H
Wellbore: Wellbore #1
Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 2H
TVD Reference: RKB @ 3620.60ft
MD Reference: RKB @ 3620.60ft
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	483,599.10	778,981.00	32.327141	-103.563978
100.00	0.00	0.00	100.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
200.00	0.00	0.00	200.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
300.00	0.00	0.00	300.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
400.00	0.00	0.00	400.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
500.00	0.00	0.00	500.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
600.00	0.00	0.00	600.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
700.00	0.00	0.00	700.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
800.00	0.00	0.00	800.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
900.00	0.00	0.00	900.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,000.00	0.00	0.00	1,000.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,100.00	0.00	0.00	1,100.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,200.00	0.00	0.00	1,200.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,300.00	0.00	0.00	1,300.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,400.00	0.00	0.00	1,400.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,500.00	0.00	0.00	1,500.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,600.00	0.00	0.00	1,600.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,700.00	0.00	0.00	1,700.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,800.00	0.00	0.00	1,800.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
1,900.00	0.00	0.00	1,900.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,000.00	0.00	0.00	2,000.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,100.00	0.00	0.00	2,100.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,200.00	0.00	0.00	2,200.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,300.00	0.00	0.00	2,300.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,400.00	0.00	0.00	2,400.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,500.00	0.00	0.00	2,500.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,600.00	0.00	0.00	2,600.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,700.00	0.00	0.00	2,700.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,800.00	0.00	0.00	2,800.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
2,900.00	0.00	0.00	2,900.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,000.00	0.00	0.00	3,000.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,100.00	0.00	0.00	3,100.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,200.00	0.00	0.00	3,200.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,300.00	0.00	0.00	3,300.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,400.00	0.00	0.00	3,400.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,500.00	0.00	0.00	3,500.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,600.00	0.00	0.00	3,600.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,700.00	0.00	0.00	3,700.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,800.00	0.00	0.00	3,800.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
3,900.00	0.00	0.00	3,900.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
4,000.00	0.00	0.00	4,000.00	0.00	0.00	483,599.10	778,981.00	32.327141	-103.563978
4,100.00	1.25	225.20	4,099.99	-0.77	-0.77	483,598.33	778,980.22	32.327138	-103.563980
4,200.00	2.50	225.20	4,199.94	-3.07	-3.10	483,596.03	778,977.90	32.327132	-103.563988
4,270.01	3.38	225.20	4,269.86	-5.60	-5.64	483,593.50	778,975.36	32.327125	-103.563996
4,300.00	3.38	225.20	4,299.79	-6.85	-6.89	483,592.26	778,974.10	32.327122	-103.564000
4,400.00	3.38	225.20	4,399.62	-10.99	-11.07	483,588.11	778,969.92	32.327111	-103.564014
4,500.00	3.38	225.20	4,499.45	-15.14	-15.25	483,583.96	778,965.75	32.327099	-103.564028
4,600.00	3.38	225.20	4,599.27	-19.29	-19.43	483,579.81	778,961.57	32.327088	-103.564041
4,700.00	3.38	225.20	4,699.10	-23.44	-23.61	483,575.66	778,957.39	32.327077	-103.564055
4,800.00	3.38	225.20	4,798.92	-27.59	-27.78	483,571.51	778,953.21	32.327065	-103.564068
4,900.00	3.38	225.20	4,898.75	-31.73	-31.96	483,567.37	778,949.04	32.327054	-103.564082
5,000.00	3.38	225.20	4,998.58	-35.88	-36.14	483,563.22	778,944.86	32.327043	-103.564096
5,100.00	3.38	225.20	5,098.40	-40.03	-40.32	483,559.07	778,940.68	32.327031	-103.564109
5,200.00	3.38	225.20	5,198.23	-44.18	-44.49	483,554.92	778,936.50	32.327020	-103.564123
5,300.00	3.38	225.20	5,298.06	-48.33	-48.67	483,550.77	778,932.32	32.327009	-103.564137

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Well:	North Thistle 3-34 State 2H	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	3.38	225.20	5,397.88	-52.47	-52.85	483,546.63	778,928.15	32.326997	-103.564150
5,500.00	3.38	225.20	5,497.71	-56.62	-57.03	483,542.48	778,923.97	32.326986	-103.564164
5,600.00	3.38	225.20	5,597.54	-60.77	-61.21	483,538.33	778,919.79	32.326975	-103.564177
5,700.00	3.38	225.20	5,697.36	-64.92	-65.38	483,534.18	778,915.61	32.326963	-103.564191
5,800.00	3.38	225.20	5,797.19	-69.07	-69.56	483,530.03	778,911.44	32.326952	-103.564205
5,900.00	3.38	225.20	5,897.02	-73.22	-73.74	483,525.89	778,907.26	32.326941	-103.564218
6,000.00	3.38	225.20	5,996.84	-77.36	-77.92	483,521.74	778,903.08	32.326929	-103.564232
6,100.00	3.38	225.20	6,096.67	-81.51	-82.09	483,517.59	778,898.90	32.326918	-103.564246
6,200.00	3.38	225.20	6,196.50	-85.66	-86.27	483,513.44	778,894.72	32.326907	-103.564259
6,300.00	3.38	225.20	6,296.32	-89.81	-90.45	483,509.29	778,890.55	32.326895	-103.564273
6,400.00	3.38	225.20	6,396.15	-93.96	-94.63	483,505.15	778,886.37	32.326884	-103.564286
6,500.00	3.38	225.20	6,495.98	-98.10	-98.81	483,501.00	778,882.19	32.326873	-103.564300
6,600.00	3.38	225.20	6,595.80	-102.25	-102.98	483,496.85	778,878.01	32.326862	-103.564314
6,700.00	3.38	225.20	6,695.63	-106.40	-107.16	483,492.70	778,873.84	32.326850	-103.564327
6,800.00	3.38	225.20	6,795.46	-110.55	-111.34	483,488.55	778,869.66	32.326839	-103.564341
6,900.00	3.38	225.20	6,895.28	-114.70	-115.52	483,484.41	778,865.48	32.326828	-103.564354
7,000.00	3.38	225.20	6,995.11	-118.84	-119.70	483,480.26	778,861.30	32.326816	-103.564368
7,100.00	3.38	225.20	7,094.94	-122.99	-123.87	483,476.11	778,857.12	32.326805	-103.564382
7,200.00	3.38	225.20	7,194.76	-127.14	-128.05	483,471.96	778,852.95	32.326794	-103.564395
7,300.00	3.38	225.20	7,294.59	-131.29	-132.23	483,467.81	778,848.77	32.326782	-103.564409
7,400.00	3.38	225.20	7,394.41	-135.44	-136.41	483,463.66	778,844.59	32.326771	-103.564423
7,500.00	3.38	225.20	7,494.24	-139.58	-140.58	483,459.52	778,840.41	32.326760	-103.564436
7,600.00	3.38	225.20	7,594.07	-143.73	-144.76	483,455.37	778,836.24	32.326748	-103.564450
7,700.00	3.38	225.20	7,693.89	-147.88	-148.94	483,451.22	778,832.06	32.326737	-103.564463
7,800.00	3.38	225.20	7,793.72	-152.03	-153.12	483,447.07	778,827.88	32.326726	-103.564477
7,900.00	3.38	225.20	7,893.55	-156.18	-157.30	483,442.92	778,823.70	32.326714	-103.564491
8,000.00	3.38	225.20	7,993.37	-160.32	-161.47	483,438.78	778,819.52	32.326703	-103.564504
8,100.00	3.38	225.20	8,093.20	-164.47	-165.65	483,434.63	778,815.35	32.326692	-103.564518
8,200.00	3.38	225.20	8,193.03	-168.62	-169.83	483,430.48	778,811.17	32.326680	-103.564532
8,300.00	3.38	225.20	8,292.85	-172.77	-174.01	483,426.33	778,806.99	32.326669	-103.564545
8,400.00	3.38	225.20	8,392.68	-176.92	-178.18	483,422.18	778,802.81	32.326658	-103.564559
8,441.51	3.38	225.20	8,434.12	-178.64	-179.92	483,420.46	778,801.08	32.326653	-103.564564
8,500.00	2.50	225.20	8,492.53	-180.75	-182.04	483,418.35	778,798.95	32.326647	-103.564571
8,600.00	1.00	225.20	8,592.48	-182.90	-184.21	483,416.20	778,796.79	32.326641	-103.564578
8,666.52	0.00	0.00	8,659.00	-183.31	-184.62	483,415.79	778,796.38	32.326640	-103.564580
8,700.00	0.00	0.00	8,692.48	-183.31	-184.62	483,415.79	778,796.38	32.326640	-103.564580
8,800.00	0.00	0.00	8,792.48	-183.31	-184.62	483,415.79	778,796.38	32.326640	-103.564580
8,900.00	0.00	0.00	8,892.48	-183.31	-184.62	483,415.79	778,796.38	32.326640	-103.564580
8,972.56	0.00	0.00	8,965.04	-183.31	-184.62	483,415.79	778,796.38	32.326640	-103.564580
KOP @ 8973' MD, 50' FSL, 1304' FWL									
9,000.00	2.74	359.45	8,992.47	-182.65	-184.63	483,416.45	778,796.37	32.326642	-103.564580
9,100.00	12.74	359.45	9,091.43	-169.19	-184.76	483,429.91	778,796.24	32.326679	-103.564580
9,200.00	22.74	359.45	9,186.55	-138.76	-185.05	483,460.34	778,795.95	32.326763	-103.564580
9,219.30	24.67	359.45	9,204.22	-131.00	-185.12	483,468.10	778,795.88	32.326784	-103.564580
First Take Point @ 9219' MD, 100' FSL, 1304' FWL									
9,300.00	32.74	359.45	9,274.94	-92.27	-185.49	483,506.83	778,795.51	32.326891	-103.564580
9,400.00	42.74	359.45	9,353.92	-31.13	-186.08	483,567.97	778,794.92	32.327059	-103.564581
9,500.00	52.74	359.45	9,421.08	42.78	-186.78	483,641.88	778,794.21	32.327262	-103.564582
9,600.00	62.74	359.45	9,474.38	127.24	-187.59	483,726.34	778,793.41	32.327494	-103.564582
9,700.00	72.74	359.45	9,512.21	219.67	-188.48	483,818.77	778,792.52	32.327748	-103.564583
9,800.00	82.74	359.45	9,533.41	317.26	-189.41	483,916.36	778,791.59	32.328016	-103.564584
9,872.56	90.00	359.45	9,538.00	389.63	-190.10	483,988.73	778,790.90	32.328215	-103.564584
9,900.00	90.00	359.45	9,538.00	417.06	-190.36	484,016.16	778,790.63	32.328291	-103.564584
10,000.00	90.00	359.45	9,538.00	517.06	-191.32	484,116.16	778,789.68	32.328566	-103.564585

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 Company: WCDSC Permian NM
 Project: Lea County (NAD83 New Mexico East)
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 Well: North Thistle 3-34 State 2H
 Wellbore: Wellbore #1
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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	359.45	9,538.00	617.05	-192.28	484,216.15	778,788.72	32.328840	-103.564586
10,200.00	90.00	359.45	9,538.00	717.05	-193.23	484,316.15	778,787.76	32.329115	-103.564587
10,300.00	90.00	359.45	9,538.00	817.04	-194.19	484,416.14	778,786.81	32.329390	-103.564588
10,400.00	90.00	359.45	9,538.00	917.04	-195.15	484,516.14	778,785.85	32.329665	-103.564588
10,500.00	90.00	359.45	9,538.00	1,017.03	-196.11	484,616.13	778,784.89	32.329940	-103.564589
10,600.00	90.00	359.45	9,538.00	1,117.03	-197.06	484,716.13	778,783.94	32.330215	-103.564590
10,700.00	90.00	359.45	9,538.00	1,217.02	-198.02	484,816.12	778,782.98	32.330490	-103.564591
10,800.00	90.00	359.45	9,538.00	1,317.02	-198.98	484,916.12	778,782.02	32.330764	-103.564591
10,900.00	90.00	359.45	9,538.00	1,417.01	-199.93	485,016.11	778,781.07	32.331039	-103.564592
11,000.00	90.00	359.45	9,538.00	1,517.01	-200.89	485,116.11	778,780.11	32.331314	-103.564593
11,100.00	90.00	359.45	9,538.00	1,617.01	-201.85	485,216.10	778,779.15	32.331589	-103.564594
11,200.00	90.00	359.45	9,538.00	1,717.00	-202.80	485,316.10	778,778.19	32.331864	-103.564595
11,300.00	90.00	359.45	9,538.00	1,817.00	-203.76	485,416.09	778,777.24	32.332139	-103.564595
11,400.00	90.00	359.45	9,538.00	1,916.99	-204.72	485,516.09	778,776.28	32.332414	-103.564596
11,500.00	90.00	359.45	9,538.00	2,016.99	-205.67	485,616.08	778,775.32	32.332689	-103.564597
11,600.00	90.00	359.45	9,538.00	2,116.98	-206.63	485,716.08	778,774.37	32.332963	-103.564598
11,700.00	90.00	359.45	9,538.00	2,216.98	-207.59	485,816.07	778,773.41	32.333238	-103.564598
11,800.00	90.00	359.45	9,538.00	2,316.97	-208.54	485,916.07	778,772.45	32.333513	-103.564599
11,900.00	90.00	359.45	9,538.00	2,416.97	-209.50	486,016.06	778,771.50	32.333788	-103.564600
12,000.00	90.00	359.45	9,538.00	2,516.96	-210.46	486,116.06	778,770.54	32.334063	-103.564601
12,100.00	90.00	359.45	9,538.00	2,616.96	-211.41	486,216.06	778,769.58	32.334338	-103.564601
12,200.00	90.00	359.45	9,538.00	2,716.96	-212.37	486,316.05	778,768.63	32.334613	-103.564602
12,300.00	90.00	359.45	9,538.00	2,816.95	-213.33	486,416.05	778,767.67	32.334887	-103.564603
12,400.00	90.00	359.45	9,538.00	2,916.95	-214.28	486,516.04	778,766.71	32.335162	-103.564604
12,500.00	90.00	359.45	9,538.00	3,016.94	-215.24	486,616.04	778,765.76	32.335437	-103.564605
12,600.00	90.00	359.45	9,538.00	3,116.94	-216.20	486,716.03	778,764.80	32.335712	-103.564605
12,700.00	90.00	359.45	9,538.00	3,216.93	-217.15	486,816.03	778,763.84	32.335987	-103.564606
12,800.00	90.00	359.45	9,538.00	3,316.93	-218.11	486,916.02	778,762.89	32.336262	-103.564607
12,900.00	90.00	359.45	9,538.00	3,416.92	-219.07	487,016.02	778,761.93	32.336537	-103.564608
13,000.00	90.00	359.45	9,538.00	3,516.92	-220.03	487,116.01	778,760.97	32.336812	-103.564608
13,100.00	90.00	359.45	9,538.00	3,616.91	-220.98	487,216.01	778,760.02	32.337086	-103.564609
13,200.00	90.00	359.45	9,538.00	3,716.91	-221.94	487,316.00	778,759.06	32.337361	-103.564610
13,300.00	90.00	359.45	9,538.00	3,816.90	-222.90	487,416.00	778,758.10	32.337636	-103.564611
13,400.00	90.00	359.45	9,538.00	3,916.90	-223.85	487,515.99	778,757.15	32.337911	-103.564612
13,500.00	90.00	359.45	9,538.00	4,016.90	-224.81	487,615.99	778,756.19	32.338186	-103.564612
13,600.00	90.00	359.45	9,538.00	4,116.89	-225.77	487,715.98	778,755.23	32.338461	-103.564613
13,700.00	90.00	359.45	9,538.00	4,216.89	-226.72	487,815.98	778,754.28	32.338736	-103.564614
13,800.00	90.00	359.45	9,538.00	4,316.88	-227.68	487,915.97	778,753.32	32.339010	-103.564615
13,900.00	90.00	359.45	9,538.00	4,416.88	-228.64	488,015.97	778,752.36	32.339285	-103.564615
14,000.00	90.00	359.45	9,538.00	4,516.87	-229.59	488,115.96	778,751.40	32.339560	-103.564616
14,100.00	90.00	359.45	9,538.00	4,616.87	-230.55	488,215.96	778,750.45	32.339835	-103.564617
14,200.00	90.00	359.45	9,538.00	4,716.86	-231.51	488,315.96	778,749.49	32.340110	-103.564618
14,300.00	90.00	359.45	9,538.00	4,816.86	-232.46	488,415.95	778,748.53	32.340385	-103.564619
14,400.00	90.00	359.45	9,538.00	4,916.85	-233.42	488,515.95	778,747.58	32.340660	-103.564619
14,500.00	90.00	359.45	9,538.00	5,016.85	-234.38	488,615.94	778,746.62	32.340935	-103.564620
14,600.00	90.00	359.45	9,538.00	5,116.85	-235.33	488,715.94	778,745.66	32.341209	-103.564621
14,700.00	90.00	359.45	9,538.00	5,216.84	-236.29	488,815.93	778,744.71	32.341484	-103.564622
14,800.00	90.00	359.45	9,538.00	5,316.84	-237.25	488,915.93	778,743.75	32.341759	-103.564622
14,900.00	90.00	359.45	9,538.00	5,416.83	-238.20	489,015.92	778,742.79	32.342034	-103.564623
15,000.00	90.00	359.45	9,538.00	5,516.83	-239.16	489,115.92	778,741.84	32.342309	-103.564624
15,100.00	90.00	359.45	9,538.00	5,616.82	-240.12	489,215.91	778,740.88	32.342584	-103.564625
15,200.00	90.00	359.45	9,538.00	5,716.82	-241.07	489,315.91	778,739.92	32.342859	-103.564625
15,300.00	90.00	359.45	9,538.00	5,816.81	-242.03	489,415.90	778,738.97	32.343133	-103.564626
15,400.00	90.00	359.45	9,538.00	5,916.81	-242.99	489,515.90	778,738.01	32.343408	-103.564627
15,500.00	90.00	359.45	9,538.00	6,016.80	-243.94	489,615.89	778,737.05	32.343683	-103.564628

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 2H
 Wellbore: Wellbore #1
 Design: Permit Plan 4

Local Co-ordinate Reference: Well North Thistle 3-34 State 2H
 TVD Reference: RKB @ 3620.60ft
 MD Reference: RKB @ 3620.60ft
 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	359.45	9,538.00	6,116.80	-244.90	489,715.89	778,736.10	32.343958	-103.564629
15,700.00	90.00	359.45	9,538.00	6,216.80	-245.86	489,815.88	778,735.14	32.344233	-103.564629
15,800.00	90.00	359.45	9,538.00	6,316.79	-246.82	489,915.88	778,734.18	32.344508	-103.564630
15,900.00	90.00	359.45	9,538.00	6,416.79	-247.77	490,015.87	778,733.23	32.344783	-103.564631
16,000.00	90.00	359.45	9,538.00	6,516.78	-248.73	490,115.87	778,732.27	32.345058	-103.564632
16,100.00	90.00	359.45	9,538.00	6,616.78	-249.69	490,215.86	778,731.31	32.345332	-103.564632
16,200.00	90.00	359.45	9,538.00	6,716.77	-250.64	490,315.86	778,730.36	32.345607	-103.564633
16,300.00	90.00	359.45	9,538.00	6,816.77	-251.60	490,415.85	778,729.40	32.345882	-103.564634
16,400.00	90.00	359.45	9,538.00	6,916.76	-252.56	490,515.85	778,728.44	32.346157	-103.564635
16,500.00	90.00	359.45	9,538.00	7,016.76	-253.51	490,615.85	778,727.49	32.346432	-103.564636
16,600.00	90.00	359.45	9,538.00	7,116.75	-254.47	490,715.84	778,726.53	32.346707	-103.564636
16,700.00	90.00	359.45	9,538.00	7,216.75	-255.43	490,815.84	778,725.57	32.346982	-103.564637
16,800.00	90.00	359.45	9,538.00	7,316.74	-256.38	490,915.83	778,724.61	32.347256	-103.564638
16,900.00	90.00	359.45	9,538.00	7,416.74	-257.34	491,015.83	778,723.66	32.347531	-103.564639
17,000.00	90.00	359.45	9,538.00	7,516.74	-258.30	491,115.82	778,722.70	32.347806	-103.564639
17,100.00	90.00	359.45	9,538.00	7,616.73	-259.25	491,215.82	778,721.74	32.348081	-103.564640
17,200.00	90.00	359.45	9,538.00	7,716.73	-260.21	491,315.81	778,720.79	32.348356	-103.564641
17,300.00	90.00	359.45	9,538.00	7,816.72	-261.17	491,415.81	778,719.83	32.348631	-103.564642
17,400.00	90.00	359.45	9,538.00	7,916.72	-262.12	491,515.80	778,718.87	32.348906	-103.564642
17,500.00	90.00	359.45	9,538.00	8,016.71	-263.08	491,615.80	778,717.92	32.349180	-103.564643
17,600.00	90.00	359.45	9,538.00	8,116.71	-264.04	491,715.79	778,716.96	32.349455	-103.564644
17,700.00	90.00	359.45	9,538.00	8,216.70	-264.99	491,815.79	778,716.00	32.349730	-103.564645
17,800.00	90.00	359.45	9,538.00	8,316.70	-265.95	491,915.78	778,715.05	32.350005	-103.564646
17,900.00	90.00	359.45	9,538.00	8,416.69	-266.91	492,015.78	778,714.09	32.350280	-103.564646
18,000.00	90.00	359.45	9,538.00	8,516.69	-267.86	492,115.77	778,713.13	32.350555	-103.564647
18,100.00	90.00	359.45	9,538.00	8,616.69	-268.82	492,215.77	778,712.18	32.350830	-103.564648
18,200.00	90.00	359.45	9,538.00	8,716.68	-269.78	492,315.76	778,711.22	32.351105	-103.564649
18,300.00	90.00	359.45	9,538.00	8,816.68	-270.74	492,415.76	778,710.26	32.351379	-103.564649
18,400.00	90.00	359.45	9,538.00	8,916.67	-271.69	492,515.75	778,709.31	32.351654	-103.564650
18,500.00	90.00	359.45	9,538.00	9,016.67	-272.65	492,615.75	778,708.35	32.351929	-103.564651
18,600.00	90.00	359.45	9,538.00	9,116.66	-273.61	492,715.74	778,707.39	32.352204	-103.564652
18,700.00	90.00	359.45	9,538.00	9,216.66	-274.56	492,815.74	778,706.44	32.352479	-103.564653
18,800.00	90.00	359.45	9,538.00	9,316.65	-275.52	492,915.74	778,705.48	32.352754	-103.564653
18,900.00	90.00	359.45	9,538.00	9,416.65	-276.48	493,015.73	778,704.52	32.353029	-103.564654
19,000.00	90.00	359.45	9,538.00	9,516.64	-277.43	493,115.73	778,703.57	32.353303	-103.564655
19,100.00	90.00	359.45	9,538.00	9,616.64	-278.39	493,215.72	778,702.61	32.353578	-103.564656
19,200.00	90.00	359.45	9,538.00	9,716.63	-279.35	493,315.72	778,701.65	32.353853	-103.564656
19,300.00	90.00	359.45	9,538.00	9,816.63	-280.30	493,415.71	778,700.69	32.354128	-103.564657
19,400.00	90.00	359.45	9,538.00	9,916.63	-281.26	493,515.71	778,699.74	32.354403	-103.564658
19,500.00	90.00	359.45	9,538.00	10,016.62	-282.22	493,615.70	778,698.78	32.354678	-103.564659
19,600.00	90.00	359.45	9,538.00	10,116.62	-283.17	493,715.70	778,697.82	32.354953	-103.564660
19,700.00	90.00	359.45	9,538.00	10,216.61	-284.13	493,815.69	778,696.87	32.355228	-103.564660
19,700.51	90.00	359.45	9,538.00	10,217.12	-284.14	493,816.20	778,696.86	32.355229	-103.564660
Last Take Point @ 19701' MD, 100' FNL, 1284' FWL									
19,780.51	90.00	359.45	9,538.00	10,297.12	-284.90	493,896.20	778,696.10	32.355449	-103.564661
PBHL; 20' FNL, 1284' FWL									

Planning Report - Geographic

Database:	EDM r5000.141_Prod US	Local Co-ordinate Reference:	Well North Thistle 3-34 State 2H
Company:	WCDSC Permian NM	TVD Reference:	RKB @ 3620.60ft
Project:	Lea County (NAD83 New Mexico East)	MD Reference:	RKB @ 3620.60ft
Site:	Sec 03-T23-R33E	North Reference:	Grid
Well:	North Thistle 3-34 State 2H	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	10,297.12	-284.90	493,896.20	778,696.10	32.355449	-103.564661
- plan misses target center by 9538.00ft at 19780.51ft MD (9538.00 TVD, 10297.12 N, -284.90 E)									
- Point									
VP - North Thistle 3-34	0.00	0.00	8,659.00	-183.31	-205.00	483,415.79	778,776.00	32.326641	-103.564646
- plan misses target center by 20.38ft at 8666.52ft MD (8659.00 TVD, -183.31 N, -184.62 E)									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,972.56	8,965.04	-183.31	-184.62	KOP @ 8973' MD, 50' FSL, 1304' FWL
9,219.30	9,204.22	-131.00	-185.12	First Take Point @ 9219' MD, 100' FSL, 1304' FWL
19,700.51	9,538.00	10,217.12	-284.14	Last Take Point @ 19701' MD, 100' FNL, 1284' FWL
19,780.51	9,538.00	10,297.12	-284.90	PBHL; 20' FNL, 1284' FWL