

WESTERN DIVISION

PBNM

Norwalk_Section 34

Thistle Unit 132H

Wellbore #1

Plan: Design #1

Standard Planning Report

05 October, 2016

HOBBS OCD

DEC 05 2016

RECEIVED

Devon Energy
Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 132H
Company:	WESTERN DIVISION	TVD Reference:	KB @ 3667.90ft
Project:	PBNM	MD Reference:	KB @ 3667.90ft
Site:	Norwalk_Section 34	North Reference:	Grid
Well:	Thistle Unit 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project		PBNM	
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Norwalk_Section 34				
Site Position:		Northing:	0.00 usft	Latitude:	0.000000
From:	None	Easting:	0.00 usft	Longitude:	0.000000
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.00

Well	Thistle Unit 132H					
Well Position	+N/-S	457,182.25 ft	Northing:	457,181.33 usft	Latitude:	32.25448
	+E/-W	780,986.80 ft	Easting:	780,985.24 usft	Longitude:	-103.55810
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,642.90

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/5/2016	6.93	60.08	48,103

Design	Design #1			
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	358.32

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	
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,733.33	4.00	225.00	3,732.90	-13.16	-13.16	0.75	0.75	0.00	225.00	
6,733.33	4.00	225.00	6,725.59	-161.13	-161.13	0.00	0.00	0.00	0.00	
7,266.67	0.00	0.00	7,258.49	-174.29	-174.29	0.75	-0.75	0.00	180.00	
9,492.22	0.00	0.00	9,484.04	-174.29	-174.29	0.00	0.00	0.00	0.00	
10,390.65	89.84	359.63	10,057.00	397.08	-177.99	10.00	10.00	-0.04	359.63	
17,692.64	89.84	359.63	10,077.00	7,698.90	-225.27	0.00	0.00	0.00	0.00	Thistle Unit 132H_BH

Devon Energy

Planning Report

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Company:	WESTERN DIVISION	TVD Reference:	KB @ 3667.90ft
Project:	PBNM	MD Reference:	KB @ 3667.90ft
Site:	Norwalk_Section 34	North Reference:	Grid
Well:	Thistle Unit 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.75	225.00	3,300.00	-0.46	-0.46	-0.45	0.75	0.75	0.00
3,400.00	1.50	225.00	3,399.98	-1.85	-1.85	-1.80	0.75	0.75	0.00
3,500.00	2.25	225.00	3,499.92	-4.16	-4.16	-4.04	0.75	0.75	0.00
3,600.00	3.00	225.00	3,599.82	-7.40	-7.40	-7.18	0.75	0.75	0.00
3,700.00	3.75	225.00	3,699.64	-11.57	-11.57	-11.22	0.75	0.75	0.00
3,733.33	4.00	225.00	3,732.90	-13.16	-13.16	-12.77	0.75	0.75	0.00
3,800.00	4.00	225.00	3,799.40	-16.45	-16.45	-15.96	0.00	0.00	0.00
3,900.00	4.00	225.00	3,899.16	-21.38	-21.38	-20.75	0.00	0.00	0.00
4,000.00	4.00	225.00	3,998.92	-26.31	-26.31	-25.53	0.00	0.00	0.00
4,100.00	4.00	225.00	4,098.67	-31.24	-31.24	-30.32	0.00	0.00	0.00
4,200.00	4.00	225.00	4,198.43	-36.18	-36.18	-35.10	0.00	0.00	0.00
4,300.00	4.00	225.00	4,298.19	-41.11	-41.11	-39.89	0.00	0.00	0.00
4,400.00	4.00	225.00	4,397.94	-46.04	-46.04	-44.68	0.00	0.00	0.00
4,500.00	4.00	225.00	4,497.70	-50.97	-50.97	-49.46	0.00	0.00	0.00
4,600.00	4.00	225.00	4,597.46	-55.91	-55.91	-54.25	0.00	0.00	0.00
4,700.00	4.00	225.00	4,697.21	-60.84	-60.84	-59.03	0.00	0.00	0.00
4,800.00	4.00	225.00	4,796.97	-65.77	-65.77	-63.82	0.00	0.00	0.00
4,900.00	4.00	225.00	4,896.73	-70.70	-70.70	-68.61	0.00	0.00	0.00
5,000.00	4.00	225.00	4,996.48	-75.64	-75.64	-73.39	0.00	0.00	0.00
5,100.00	4.00	225.00	5,096.24	-80.57	-80.57	-78.18	0.00	0.00	0.00
5,200.00	4.00	225.00	5,195.99	-85.50	-85.50	-82.97	0.00	0.00	0.00

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Project:	PBNM	MD Reference:	KB @ 3667.90ft
Site:	Norwalk_Section 34	North Reference:	Grid
Well:	Thistle Unit 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	4.00	225.00	5,295.75	-90.43	-90.43	-87.75	0.00	0.00	0.00
5,400.00	4.00	225.00	5,395.51	-95.37	-95.37	-92.54	0.00	0.00	0.00
5,500.00	4.00	225.00	5,495.26	-100.30	-100.30	-97.32	0.00	0.00	0.00
5,600.00	4.00	225.00	5,595.02	-105.23	-105.23	-102.11	0.00	0.00	0.00
5,700.00	4.00	225.00	5,694.78	-110.17	-110.17	-106.90	0.00	0.00	0.00
5,800.00	4.00	225.00	5,794.53	-115.10	-115.10	-111.68	0.00	0.00	0.00
5,900.00	4.00	225.00	5,894.29	-120.03	-120.03	-116.47	0.00	0.00	0.00
6,000.00	4.00	225.00	5,994.05	-124.96	-124.96	-121.25	0.00	0.00	0.00
6,100.00	4.00	225.00	6,093.80	-129.90	-129.90	-126.04	0.00	0.00	0.00
6,200.00	4.00	225.00	6,193.56	-134.83	-134.83	-130.83	0.00	0.00	0.00
6,300.00	4.00	225.00	6,293.31	-139.76	-139.76	-135.61	0.00	0.00	0.00
6,400.00	4.00	225.00	6,393.07	-144.69	-144.69	-140.40	0.00	0.00	0.00
6,500.00	4.00	225.00	6,492.83	-149.63	-149.63	-145.19	0.00	0.00	0.00
6,600.00	4.00	225.00	6,592.58	-154.56	-154.56	-149.97	0.00	0.00	0.00
6,700.00	4.00	225.00	6,692.34	-159.49	-159.49	-154.76	0.00	0.00	0.00
6,733.33	4.00	225.00	6,725.59	-161.13	-161.13	-156.35	0.00	0.00	0.00
6,800.00	3.50	225.00	6,792.12	-164.22	-164.22	-159.34	0.75	-0.75	0.00
6,900.00	2.75	225.00	6,891.97	-168.07	-168.07	-163.08	0.75	-0.75	0.00
7,000.00	2.00	225.00	6,991.88	-171.00	-171.00	-165.93	0.75	-0.75	0.00
7,100.00	1.25	225.00	7,091.84	-173.01	-173.01	-167.87	0.75	-0.75	0.00
7,200.00	0.50	225.00	7,191.83	-174.09	-174.09	-168.92	0.75	-0.75	0.00
7,266.67	0.00	0.00	7,258.49	-174.29	-174.29	-169.12	0.75	-0.75	0.00
7,300.00	0.00	0.00	7,291.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,400.00	0.00	0.00	7,391.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,500.00	0.00	0.00	7,491.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,600.00	0.00	0.00	7,591.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,700.00	0.00	0.00	7,691.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,800.00	0.00	0.00	7,791.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
7,900.00	0.00	0.00	7,891.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,000.00	0.00	0.00	7,991.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,100.00	0.00	0.00	8,091.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,200.00	0.00	0.00	8,191.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,300.00	0.00	0.00	8,291.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,400.00	0.00	0.00	8,391.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,500.00	0.00	0.00	8,491.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,600.00	0.00	0.00	8,591.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,700.00	0.00	0.00	8,691.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,800.00	0.00	0.00	8,791.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
8,900.00	0.00	0.00	8,891.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,000.00	0.00	0.00	8,991.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,100.00	0.00	0.00	9,091.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,200.00	0.00	0.00	9,191.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,300.00	0.00	0.00	9,291.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,400.00	0.00	0.00	9,391.83	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,492.22	0.00	0.00	9,484.04	-174.29	-174.29	-169.12	0.00	0.00	0.00
9,500.00	0.78	359.63	9,491.83	-174.24	-174.29	-169.07	10.00	10.00	0.00
9,550.00	5.78	359.63	9,541.73	-171.38	-174.31	-166.21	10.00	10.00	0.00
9,600.00	10.78	359.63	9,591.19	-164.19	-174.36	-159.02	10.00	10.00	0.00
9,650.00	15.78	359.63	9,639.84	-152.71	-174.43	-147.54	10.00	10.00	0.00
9,700.00	20.78	359.63	9,687.30	-137.03	-174.53	-131.87	10.00	10.00	0.00
9,750.00	25.78	359.63	9,733.22	-117.28	-174.66	-112.12	10.00	10.00	0.00
9,800.00	30.78	359.63	9,777.24	-93.60	-174.82	-88.44	10.00	10.00	0.00
9,850.00	35.78	359.63	9,819.02	-66.17	-174.99	-61.02	10.00	10.00	0.00
9,900.00	40.78	359.63	9,858.26	-35.21	-175.19	-30.07	10.00	10.00	0.00

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Well:	Thistle Unit 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,950.00	45.78	359.63	9,894.65	-0.94	-175.42	4.19	10.00	10.00	0.00
10,000.00	50.78	359.63	9,927.92	36.36	-175.66	41.49	10.00	10.00	0.00
10,050.00	55.78	359.63	9,957.80	76.43	-175.92	81.54	10.00	10.00	0.00
10,100.00	60.78	359.63	9,984.09	118.94	-176.19	124.05	10.00	10.00	0.00
10,150.00	65.78	359.63	10,006.56	163.59	-176.48	168.68	10.00	10.00	0.00
10,200.00	70.78	359.63	10,025.06	210.02	-176.78	215.10	10.00	10.00	0.00
10,250.00	75.78	359.63	10,039.44	257.89	-177.09	262.96	10.00	10.00	0.00
10,300.00	80.78	359.63	10,049.60	306.83	-177.41	311.89	10.00	10.00	0.00
10,350.00	85.78	359.63	10,055.45	356.47	-177.73	361.52	10.00	10.00	0.00
10,390.65	89.84	359.63	10,057.00	397.08	-177.99	402.12	10.00	10.00	0.00
10,400.00	89.84	359.63	10,057.03	406.43	-178.05	411.47	0.00	0.00	0.00
10,500.00	89.84	359.63	10,057.30	506.43	-178.70	511.44	0.00	0.00	0.00
10,600.00	89.84	359.63	10,057.58	606.43	-179.35	611.41	0.00	0.00	0.00
10,700.00	89.84	359.63	10,057.85	706.43	-180.00	711.39	0.00	0.00	0.00
10,800.00	89.84	359.63	10,058.12	806.42	-180.64	811.36	0.00	0.00	0.00
10,900.00	89.84	359.63	10,058.40	906.42	-181.29	911.33	0.00	0.00	0.00
11,000.00	89.84	359.63	10,058.67	1,006.42	-181.94	1,011.31	0.00	0.00	0.00
11,100.00	89.84	359.63	10,058.94	1,106.42	-182.59	1,111.28	0.00	0.00	0.00
11,200.00	89.84	359.63	10,059.22	1,206.41	-183.23	1,211.26	0.00	0.00	0.00
11,300.00	89.84	359.63	10,059.49	1,306.41	-183.88	1,311.23	0.00	0.00	0.00
11,400.00	89.84	359.63	10,059.77	1,406.41	-184.53	1,411.20	0.00	0.00	0.00
11,500.00	89.84	359.63	10,060.04	1,506.41	-185.18	1,511.18	0.00	0.00	0.00
11,600.00	89.84	359.63	10,060.31	1,606.40	-185.82	1,611.15	0.00	0.00	0.00
11,700.00	89.84	359.63	10,060.59	1,706.40	-186.47	1,711.12	0.00	0.00	0.00
11,800.00	89.84	359.63	10,060.86	1,806.40	-187.12	1,811.10	0.00	0.00	0.00
11,900.00	89.84	359.63	10,061.14	1,906.40	-187.77	1,911.07	0.00	0.00	0.00
12,000.00	89.84	359.63	10,061.41	2,006.39	-188.41	2,011.05	0.00	0.00	0.00
12,100.00	89.84	359.63	10,061.68	2,106.39	-189.06	2,111.02	0.00	0.00	0.00
12,200.00	89.84	359.63	10,061.96	2,206.39	-189.71	2,210.99	0.00	0.00	0.00
12,300.00	89.84	359.63	10,062.23	2,306.39	-190.35	2,310.97	0.00	0.00	0.00
12,400.00	89.84	359.63	10,062.50	2,406.38	-191.00	2,410.94	0.00	0.00	0.00
12,500.00	89.84	359.63	10,062.78	2,506.38	-191.65	2,510.91	0.00	0.00	0.00
12,600.00	89.84	359.63	10,063.05	2,606.38	-192.30	2,610.89	0.00	0.00	0.00
12,700.00	89.84	359.63	10,063.33	2,706.38	-192.94	2,710.86	0.00	0.00	0.00
12,800.00	89.84	359.63	10,063.60	2,806.37	-193.59	2,810.84	0.00	0.00	0.00
12,900.00	89.84	359.63	10,063.87	2,906.37	-194.24	2,910.81	0.00	0.00	0.00
13,000.00	89.84	359.63	10,064.15	3,006.37	-194.89	3,010.78	0.00	0.00	0.00
13,100.00	89.84	359.63	10,064.42	3,106.37	-195.53	3,110.76	0.00	0.00	0.00
13,200.00	89.84	359.63	10,064.70	3,206.36	-196.18	3,210.73	0.00	0.00	0.00
13,300.00	89.84	359.63	10,064.97	3,306.36	-196.83	3,310.70	0.00	0.00	0.00
13,400.00	89.84	359.63	10,065.24	3,406.36	-197.48	3,410.68	0.00	0.00	0.00
13,500.00	89.84	359.63	10,065.52	3,506.36	-198.12	3,510.65	0.00	0.00	0.00
13,600.00	89.84	359.63	10,065.79	3,606.35	-198.77	3,610.62	0.00	0.00	0.00
13,700.00	89.84	359.63	10,066.07	3,706.35	-199.42	3,710.60	0.00	0.00	0.00
13,800.00	89.84	359.63	10,066.34	3,806.35	-200.07	3,810.57	0.00	0.00	0.00
13,900.00	89.84	359.63	10,066.61	3,906.35	-200.71	3,910.55	0.00	0.00	0.00
14,000.00	89.84	359.63	10,066.89	4,006.34	-201.36	4,010.52	0.00	0.00	0.00
14,100.00	89.84	359.63	10,067.16	4,106.34	-202.01	4,110.49	0.00	0.00	0.00
14,200.00	89.84	359.63	10,067.43	4,206.34	-202.66	4,210.47	0.00	0.00	0.00
14,300.00	89.84	359.63	10,067.71	4,306.34	-203.30	4,310.44	0.00	0.00	0.00
14,400.00	89.84	359.63	10,067.98	4,406.33	-203.95	4,410.41	0.00	0.00	0.00
14,500.00	89.84	359.63	10,068.26	4,506.33	-204.60	4,510.39	0.00	0.00	0.00
14,600.00	89.84	359.63	10,068.53	4,606.33	-205.25	4,610.36	0.00	0.00	0.00
14,700.00	89.84	359.63	10,068.80	4,706.33	-205.89	4,710.34	0.00	0.00	0.00

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 132H
Company:	WESTERN DIVISION	TVD Reference:	KB @ 3667.90ft
Project:	PBNM	MD Reference:	KB @ 3667.90ft
Site:	Norwalk_Section 34	North Reference:	Grid
Well:	Thistle Unit 132H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,800.00	89.84	359.63	10,069.08	4,806.32	-206.54	4,810.31	0.00	0.00	0.00
14,900.00	89.84	359.63	10,069.35	4,906.32	-207.19	4,910.28	0.00	0.00	0.00
15,000.00	89.84	359.63	10,069.63	5,006.32	-207.84	5,010.26	0.00	0.00	0.00
15,100.00	89.84	359.63	10,069.90	5,106.32	-208.48	5,110.23	0.00	0.00	0.00
15,200.00	89.84	359.63	10,070.17	5,206.31	-209.13	5,210.20	0.00	0.00	0.00
15,300.00	89.84	359.63	10,070.45	5,306.31	-209.78	5,310.18	0.00	0.00	0.00
15,400.00	89.84	359.63	10,070.72	5,406.31	-210.43	5,410.15	0.00	0.00	0.00
15,500.00	89.84	359.63	10,071.00	5,506.31	-211.07	5,510.12	0.00	0.00	0.00
15,600.00	89.84	359.63	10,071.27	5,606.30	-211.72	5,610.10	0.00	0.00	0.00
15,700.00	89.84	359.63	10,071.54	5,706.30	-212.37	5,710.07	0.00	0.00	0.00
15,800.00	89.84	359.63	10,071.82	5,806.30	-213.02	5,810.05	0.00	0.00	0.00
15,900.00	89.84	359.63	10,072.09	5,906.30	-213.66	5,910.02	0.00	0.00	0.00
16,000.00	89.84	359.63	10,072.36	6,006.29	-214.31	6,009.99	0.00	0.00	0.00
16,100.00	89.84	359.63	10,072.64	6,106.29	-214.96	6,109.97	0.00	0.00	0.00
16,200.00	89.84	359.63	10,072.91	6,206.29	-215.61	6,209.94	0.00	0.00	0.00
16,300.00	89.84	359.63	10,073.19	6,306.29	-216.25	6,309.91	0.00	0.00	0.00
16,400.00	89.84	359.63	10,073.46	6,406.28	-216.90	6,409.89	0.00	0.00	0.00
16,500.00	89.84	359.63	10,073.73	6,506.28	-217.55	6,509.86	0.00	0.00	0.00
16,600.00	89.84	359.63	10,074.01	6,606.28	-218.20	6,609.84	0.00	0.00	0.00
16,700.00	89.84	359.63	10,074.28	6,706.28	-218.84	6,709.81	0.00	0.00	0.00
16,800.00	89.84	359.63	10,074.56	6,806.27	-219.49	6,809.78	0.00	0.00	0.00
16,900.00	89.84	359.63	10,074.83	6,906.27	-220.14	6,909.76	0.00	0.00	0.00
17,000.00	89.84	359.63	10,075.10	7,006.27	-220.78	7,009.73	0.00	0.00	0.00
17,100.00	89.84	359.63	10,075.38	7,106.27	-221.43	7,109.70	0.00	0.00	0.00
17,200.00	89.84	359.63	10,075.65	7,206.26	-222.08	7,209.68	0.00	0.00	0.00
17,300.00	89.84	359.63	10,075.92	7,306.26	-222.73	7,309.65	0.00	0.00	0.00
17,400.00	89.84	359.63	10,076.20	7,406.26	-223.37	7,409.62	0.00	0.00	0.00
17,500.00	89.84	359.63	10,076.47	7,506.26	-224.02	7,509.60	0.00	0.00	0.00
17,600.00	89.84	359.63	10,076.75	7,606.26	-224.67	7,609.57	0.00	0.00	0.00
17,692.64	89.84	359.63	10,077.00	7,698.90	-225.27	7,702.19	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Thistle Unit 132H_BHL	0.00	0.00	10,077.00	7,698.90	-225.27	464,880.22	780,759.97	32.275654	-103.558657
- plan hits target center									
- Point									