

WESTERN DIVISION

PBNM

Dzurisin

Thistle Unit 116H

Wellbore #1

Plan: Plan 1

Standard Planning Report

20 June, 2016

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 116H
Company:	WESTERN DIVISION	TVD Reference:	1 @ 3737.70ft
Project:	PBNM	MD Reference:	1 @ 3737.70ft
Site:	Dzurisin	North Reference:	Grid
Well:	Thistle Unit 116H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 1		

Project	PBNM		
Map System:	Flat Earth	System Datum:	Mean Sea Level
Geo Datum:	WGS 1984		
Map Zone:	No Conversions		

Site	Dzurisin		
Site Position:		Northing:	429,922.27 usft
From:	Map	Easting:	725,391.41 usft
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "
		Latitude:	0.000000
		Longitude:	0.000000
		Grid Convergence:	

Well	Thistle Unit 116H					
Well Position	+N/-S	42,589.53 ft	Northing:	472,511.71 usft	Latitude:	0.000000
	+E/-W	55,771.25 ft	Easting:	781,162.55 usft	Longitude:	0.000000
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	3,714.20 ft

Wellbore #1					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	6/20/2016	0.00	0.00	0

Design	Plan 1				
Audit Notes:					
Version:	Phase:	PROTOTYPE		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.00	0.00	0.00	176.34	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(ft)	(ft)	Rate	Rate	Rate	(°)	
(ft)			(ft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	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	
3,500.00	5.00	90.00	3,499.37	0.00	21.80	1.00	1.00	0.00	90.00	
8,400.00	5.00	90.00	8,380.72	0.00	448.87	0.00	0.00	0.00	0.00	
9,280.94	0.00	0.00	9,260.54	0.00	487.28	0.57	-0.57	0.00	180.00	
10,028.61	89.72	180.00	9,738.00	-475.13	487.27	12.00	12.00	0.00	180.00	Thistle Unit 116H BHL
10,037.00	89.72	180.00	9,738.04	-483.52	487.27	0.01	-0.01	0.00	179.94	
17,146.87	89.72	180.00	9,772.94	-7,593.31	487.09	0.00	0.00	0.00	0.00	
17,159.97	89.72	180.00	9,773.00	-7,606.41	487.09	0.01	0.01	-0.01	-50.14	Thistle Unit 116H BHL

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 116H
Company:	WESTERN DIVISION	TVD Reference:	1 @ 3737.70ft
Project:	PBNM	MD Reference:	1 @ 3737.70ft
Site:	Dzurisin	North Reference:	Grid
Well:	Thistle Unit 116H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 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	1.00	90.00	3,099.99	0.00	0.87	0.06	1.00	1.00	0.00
3,200.00	2.00	90.00	3,199.96	0.00	3.49	0.22	1.00	1.00	0.00
3,300.00	3.00	90.00	3,299.86	0.00	7.85	0.50	1.00	1.00	0.00
3,400.00	4.00	90.00	3,399.68	0.00	13.96	0.89	1.00	1.00	0.00
3,500.00	5.00	90.00	3,499.37	0.00	21.80	1.39	1.00	1.00	0.00
3,600.00	5.00	90.00	3,598.99	0.00	30.52	1.95	0.00	0.00	0.00
3,700.00	5.00	90.00	3,698.60	0.00	39.23	2.51	0.00	0.00	0.00
3,800.00	5.00	90.00	3,798.22	0.00	47.95	3.06	0.00	0.00	0.00
3,900.00	5.00	90.00	3,897.84	0.00	56.67	3.62	0.00	0.00	0.00
4,000.00	5.00	90.00	3,997.46	0.00	65.38	4.18	0.00	0.00	0.00
4,100.00	5.00	90.00	4,097.08	0.00	74.10	4.74	0.00	0.00	0.00
4,200.00	5.00	90.00	4,196.70	0.00	82.81	5.29	0.00	0.00	0.00
4,300.00	5.00	90.00	4,296.32	0.00	91.53	5.85	0.00	0.00	0.00
4,400.00	5.00	90.00	4,395.94	0.00	100.24	6.41	0.00	0.00	0.00
4,500.00	5.00	90.00	4,495.56	0.00	108.96	6.96	0.00	0.00	0.00
4,600.00	5.00	90.00	4,595.18	0.00	117.67	7.52	0.00	0.00	0.00
4,700.00	5.00	90.00	4,694.80	0.00	126.39	8.08	0.00	0.00	0.00
4,800.00	5.00	90.00	4,794.42	0.00	135.11	8.63	0.00	0.00	0.00
4,900.00	5.00	90.00	4,894.04	0.00	143.82	9.19	0.00	0.00	0.00
5,000.00	5.00	90.00	4,993.66	0.00	152.54	9.75	0.00	0.00	0.00
5,100.00	5.00	90.00	5,093.28	0.00	161.25	10.30	0.00	0.00	0.00
5,200.00	5.00	90.00	5,192.90	0.00	169.97	10.86	0.00	0.00	0.00
5,300.00	5.00	90.00	5,292.52	0.00	178.68	11.42	0.00	0.00	0.00

Devon Energy
Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 116H
Company:	WESTERN DIVISION	TVD Reference:	1 @ 3737.70ft
Project:	PBNM	MD Reference:	1 @ 3737.70ft
Site:	Dzurisin	North Reference:	Grid
Well:	Thistle Unit 116H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 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)	
5,400.00	5.00	90.00	5,392.14	0.00	187.40	11.98	0.00	0.00	0.00	
5,500.00	5.00	90.00	5,491.76	0.00	196.11	12.53	0.00	0.00	0.00	
5,600.00	5.00	90.00	5,591.37	0.00	204.83	13.09	0.00	0.00	0.00	
5,700.00	5.00	90.00	5,690.99	0.00	213.55	13.65	0.00	0.00	0.00	
5,800.00	5.00	90.00	5,790.61	0.00	222.26	14.20	0.00	0.00	0.00	
5,900.00	5.00	90.00	5,890.23	0.00	230.98	14.76	0.00	0.00	0.00	
6,000.00	5.00	90.00	5,989.85	0.00	239.69	15.32	0.00	0.00	0.00	
6,100.00	5.00	90.00	6,089.47	0.00	248.41	15.87	0.00	0.00	0.00	
6,200.00	5.00	90.00	6,189.09	0.00	257.12	16.43	0.00	0.00	0.00	
6,300.00	5.00	90.00	6,288.71	0.00	265.84	16.99	0.00	0.00	0.00	
6,400.00	5.00	90.00	6,388.33	0.00	274.55	17.55	0.00	0.00	0.00	
6,500.00	5.00	90.00	6,487.95	0.00	283.27	18.10	0.00	0.00	0.00	
6,600.00	5.00	90.00	6,587.57	0.00	291.99	18.66	0.00	0.00	0.00	
6,700.00	5.00	90.00	6,687.19	0.00	300.70	19.22	0.00	0.00	0.00	
6,800.00	5.00	90.00	6,786.81	0.00	309.42	19.77	0.00	0.00	0.00	
6,900.00	5.00	90.00	6,886.43	0.00	318.13	20.33	0.00	0.00	0.00	
7,000.00	5.00	90.00	6,986.05	0.00	326.85	20.89	0.00	0.00	0.00	
7,100.00	5.00	90.00	7,085.67	0.00	335.56	21.44	0.00	0.00	0.00	
7,200.00	5.00	90.00	7,185.29	0.00	344.28	22.00	0.00	0.00	0.00	
7,300.00	5.00	90.00	7,284.91	0.00	352.99	22.56	0.00	0.00	0.00	
7,400.00	5.00	90.00	7,384.53	0.00	361.71	23.12	0.00	0.00	0.00	
7,500.00	5.00	90.00	7,484.14	0.00	370.43	23.67	0.00	0.00	0.00	
7,600.00	5.00	90.00	7,583.76	0.00	379.14	24.23	0.00	0.00	0.00	
7,700.00	5.00	90.00	7,683.38	0.00	387.86	24.79	0.00	0.00	0.00	
7,800.00	5.00	90.00	7,783.00	0.00	396.57	25.34	0.00	0.00	0.00	
7,900.00	5.00	90.00	7,882.62	0.00	405.29	25.90	0.00	0.00	0.00	
8,000.00	5.00	90.00	7,982.24	0.00	414.00	26.46	0.00	0.00	0.00	
8,100.00	5.00	90.00	8,081.86	0.00	422.72	27.01	0.00	0.00	0.00	
8,200.00	5.00	90.00	8,181.48	0.00	431.43	27.57	0.00	0.00	0.00	
8,300.00	5.00	90.00	8,281.10	0.00	440.15	28.13	0.00	0.00	0.00	
8,400.00	5.00	90.00	8,380.72	0.00	448.87	28.69	0.00	0.00	0.00	
8,500.00	4.43	90.00	8,480.38	0.00	457.09	29.21	0.57	-0.57	0.00	
8,600.00	3.86	90.00	8,580.12	0.00	464.32	29.67	0.57	-0.57	0.00	
8,700.00	3.30	90.00	8,679.92	0.00	470.57	30.07	0.57	-0.57	0.00	
8,800.00	2.73	90.00	8,779.78	0.00	475.83	30.41	0.57	-0.57	0.00	
8,900.00	2.16	90.00	8,879.69	0.00	480.09	30.68	0.57	-0.57	0.00	
9,000.00	1.59	90.00	8,979.64	0.00	483.37	30.89	0.57	-0.57	0.00	
9,100.00	1.03	90.00	9,079.61	0.00	485.66	31.04	0.57	-0.57	0.00	
9,200.00	0.46	90.00	9,179.60	0.00	486.96	31.12	0.57	-0.57	0.00	
9,280.94	0.00	0.00	9,260.54	0.00	487.28	31.14	0.57	-0.57	0.00	
9,300.00	2.29	180.00	9,279.60	-0.38	487.28	31.52	12.00	12.00	0.00	
9,325.00	5.29	180.00	9,304.54	-2.03	487.28	33.17	12.00	12.00	0.00	
9,350.00	8.29	180.00	9,329.36	-4.99	487.28	36.12	12.00	12.00	0.00	
9,375.00	11.29	180.00	9,353.99	-9.23	487.28	40.36	12.00	12.00	0.00	
9,400.00	14.29	180.00	9,378.37	-14.77	487.28	45.88	12.00	12.00	0.00	
9,425.00	17.29	180.00	9,402.43	-21.57	487.28	52.66	12.00	12.00	0.00	
9,450.00	20.29	180.00	9,426.09	-29.62	487.28	60.70	12.00	12.00	0.00	
9,475.00	23.29	180.00	9,449.30	-38.90	487.28	69.96	12.00	12.00	0.00	
9,500.00	26.29	180.00	9,472.00	-49.38	487.28	80.42	12.00	12.00	0.00	
9,525.00	29.29	180.00	9,494.11	-61.03	487.28	92.05	12.00	12.00	0.00	
9,550.00	32.29	180.00	9,515.59	-73.82	487.28	104.81	12.00	12.00	0.00	
9,575.00	35.29	180.00	9,536.36	-87.73	487.28	118.69	12.00	12.00	0.00	
9,600.00	38.29	180.00	9,556.38	-102.70	487.28	133.63	12.00	12.00	0.00	
9,625.00	41.29	180.00	9,575.59	-118.69	487.28	149.59	12.00	12.00	0.00	

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 116H
Company:	WESTERN DIVISION	TVD Reference:	1 @ 3737.70ft
Project:	PBNM	MD Reference:	1 @ 3737.70ft
Site:	Dzurisin	North Reference:	Grid
Well:	Thistle Unit 116H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 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)	
9,650.00	44.29	180.00	9,593.93	-135.67	487.28	166.53	12.00	12.00	0.00	
9,675.00	47.29	180.00	9,611.37	-153.59	487.28	184.41	12.00	12.00	0.00	
9,700.00	50.29	180.00	9,627.84	-172.39	487.28	203.18	12.00	12.00	0.00	
9,725.00	53.29	180.00	9,643.30	-192.03	487.28	222.78	12.00	12.00	0.00	
9,750.00	56.29	180.00	9,657.71	-212.46	487.27	243.16	12.00	12.00	0.00	
9,775.00	59.29	180.00	9,671.04	-233.61	487.27	264.27	12.00	12.00	0.00	
9,800.00	62.29	180.00	9,683.24	-255.42	487.27	286.04	12.00	12.00	0.00	
9,825.00	65.29	180.00	9,694.28	-277.85	487.27	308.42	12.00	12.00	0.00	
9,850.00	68.29	180.00	9,704.13	-300.82	487.27	331.35	12.00	12.00	0.00	
9,875.00	71.29	180.00	9,712.77	-324.28	487.27	354.76	12.00	12.00	0.00	
9,900.00	74.29	180.00	9,720.17	-348.16	487.27	378.59	12.00	12.00	0.00	
9,925.00	77.29	180.00	9,726.30	-372.39	487.27	402.77	12.00	12.00	0.00	
9,950.00	80.29	180.00	9,731.16	-396.91	487.27	427.24	12.00	12.00	0.00	
9,975.00	83.29	180.00	9,734.73	-421.65	487.27	451.93	12.00	12.00	0.00	
10,000.00	86.29	180.00	9,737.01	-446.55	487.27	476.77	12.00	12.00	0.00	
10,025.00	89.29	180.00	9,737.97	-471.52	487.27	501.70	12.00	12.00	0.00	
10,028.61	89.72	180.00	9,738.00	-475.13	487.27	505.30	12.00	12.00	0.00	
10,037.00	89.72	180.00	9,738.04	-483.52	487.27	513.67	0.01	-0.01	0.00	
10,100.00	89.72	180.00	9,738.35	-546.52	487.27	576.55	0.00	0.00	0.00	
10,200.00	89.72	180.00	9,738.84	-646.52	487.26	676.34	0.00	0.00	0.00	
10,300.00	89.72	180.00	9,739.33	-746.52	487.26	776.13	0.00	0.00	0.00	
10,400.00	89.72	180.00	9,739.82	-846.52	487.26	875.93	0.00	0.00	0.00	
10,500.00	89.72	180.00	9,740.32	-946.52	487.26	975.72	0.00	0.00	0.00	
10,600.00	89.72	180.00	9,740.81	-1,046.52	487.25	1,075.52	0.00	0.00	0.00	
10,700.00	89.72	180.00	9,741.30	-1,146.52	487.25	1,175.31	0.00	0.00	0.00	
10,800.00	89.72	180.00	9,741.79	-1,246.52	487.25	1,275.11	0.00	0.00	0.00	
10,900.00	89.72	180.00	9,742.28	-1,346.51	487.25	1,374.90	0.00	0.00	0.00	
11,000.00	89.72	180.00	9,742.77	-1,446.51	487.24	1,474.69	0.00	0.00	0.00	
11,100.00	89.72	180.00	9,743.26	-1,546.51	487.24	1,574.49	0.00	0.00	0.00	
11,200.00	89.72	180.00	9,743.75	-1,646.51	487.24	1,674.28	0.00	0.00	0.00	
11,300.00	89.72	180.00	9,744.24	-1,746.51	487.24	1,774.08	0.00	0.00	0.00	
11,400.00	89.72	180.00	9,744.73	-1,846.51	487.23	1,873.87	0.00	0.00	0.00	
11,500.00	89.72	180.00	9,745.22	-1,946.51	487.23	1,973.66	0.00	0.00	0.00	
11,600.00	89.72	180.00	9,745.71	-2,046.51	487.23	2,073.46	0.00	0.00	0.00	
11,700.00	89.72	180.00	9,746.20	-2,146.50	487.23	2,173.25	0.00	0.00	0.00	
11,800.00	89.72	180.00	9,746.70	-2,246.50	487.22	2,273.05	0.00	0.00	0.00	
11,900.00	89.72	180.00	9,747.19	-2,346.50	487.22	2,372.84	0.00	0.00	0.00	
12,000.00	89.72	180.00	9,747.68	-2,446.50	487.22	2,472.64	0.00	0.00	0.00	
12,100.00	89.72	180.00	9,748.17	-2,546.50	487.22	2,572.43	0.00	0.00	0.00	
12,200.00	89.72	180.00	9,748.66	-2,646.50	487.21	2,672.22	0.00	0.00	0.00	
12,300.00	89.72	180.00	9,749.15	-2,746.50	487.21	2,772.02	0.00	0.00	0.00	
12,400.00	89.72	180.00	9,749.64	-2,846.50	487.21	2,871.81	0.00	0.00	0.00	
12,500.00	89.72	180.00	9,750.13	-2,946.49	487.21	2,971.61	0.00	0.00	0.00	
12,600.00	89.72	180.00	9,750.62	-3,046.49	487.20	3,071.40	0.00	0.00	0.00	
12,700.00	89.72	180.00	9,751.11	-3,146.49	487.20	3,171.20	0.00	0.00	0.00	
12,800.00	89.72	180.00	9,751.60	-3,246.49	487.20	3,270.99	0.00	0.00	0.00	
12,900.00	89.72	180.00	9,752.09	-3,346.49	487.20	3,370.78	0.00	0.00	0.00	
13,000.00	89.72	180.00	9,752.58	-3,446.49	487.19	3,470.58	0.00	0.00	0.00	
13,100.00	89.72	180.00	9,753.08	-3,546.49	487.19	3,570.37	0.00	0.00	0.00	
13,200.00	89.72	180.00	9,753.57	-3,646.49	487.19	3,670.17	0.00	0.00	0.00	
13,300.00	89.72	180.00	9,754.06	-3,746.48	487.19	3,769.96	0.00	0.00	0.00	
13,400.00	89.72	180.00	9,754.55	-3,846.48	487.18	3,869.76	0.00	0.00	0.00	
13,500.00	89.72	180.00	9,755.04	-3,946.48	487.18	3,969.55	0.00	0.00	0.00	
13,600.00	89.72	180.00	9,755.53	-4,046.48	487.18	4,069.34	0.00	0.00	0.00	

Devon Energy

Planning Report

Database:	EDM r5000 US Production	Local Co-ordinate Reference:	Well Thistle Unit 116H
Company:	WESTERN DIVISION	TVD Reference:	1 @ 3737.70ft
Project:	PBNM	MD Reference:	1 @ 3737.70ft
Site:	Dzurisin	North Reference:	Grid
Well:	Thistle Unit 116H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan 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)
13,700.00	89.72	180.00	9,756.02	-4,146.48	487.18	4,169.14	0.00	0.00	0.00
13,800.00	89.72	180.00	9,756.51	-4,246.48	487.17	4,268.93	0.00	0.00	0.00
13,900.00	89.72	180.00	9,757.00	-4,346.48	487.17	4,368.73	0.00	0.00	0.00
14,000.00	89.72	180.00	9,757.49	-4,446.48	487.17	4,468.52	0.00	0.00	0.00
14,100.00	89.72	180.00	9,757.98	-4,546.48	487.17	4,568.31	0.00	0.00	0.00
14,200.00	89.72	180.00	9,758.47	-4,646.47	487.16	4,668.11	0.00	0.00	0.00
14,300.00	89.72	180.00	9,758.96	-4,746.47	487.16	4,767.90	0.00	0.00	0.00
14,400.00	89.72	180.00	9,759.46	-4,846.47	487.16	4,867.70	0.00	0.00	0.00
14,500.00	89.72	180.00	9,759.95	-4,946.47	487.16	4,967.49	0.00	0.00	0.00
14,600.00	89.72	180.00	9,760.44	-5,046.47	487.15	5,067.29	0.00	0.00	0.00
14,700.00	89.72	180.00	9,760.93	-5,146.47	487.15	5,167.08	0.00	0.00	0.00
14,800.00	89.72	180.00	9,761.42	-5,246.47	487.15	5,266.87	0.00	0.00	0.00
14,900.00	89.72	180.00	9,761.91	-5,346.47	487.15	5,366.67	0.00	0.00	0.00
15,000.00	89.72	180.00	9,762.40	-5,446.46	487.14	5,466.46	0.00	0.00	0.00
15,100.00	89.72	180.00	9,762.89	-5,546.46	487.14	5,566.26	0.00	0.00	0.00
15,200.00	89.72	180.00	9,763.38	-5,646.46	487.14	5,666.05	0.00	0.00	0.00
15,300.00	89.72	180.00	9,763.87	-5,746.46	487.14	5,765.85	0.00	0.00	0.00
15,400.00	89.72	180.00	9,764.36	-5,846.46	487.13	5,865.64	0.00	0.00	0.00
15,500.00	89.72	180.00	9,764.85	-5,946.46	487.13	5,965.43	0.00	0.00	0.00
15,600.00	89.72	180.00	9,765.34	-6,046.46	487.13	6,065.23	0.00	0.00	0.00
15,700.00	89.72	180.00	9,765.84	-6,146.46	487.13	6,165.02	0.00	0.00	0.00
15,800.00	89.72	180.00	9,766.33	-6,246.45	487.12	6,264.82	0.00	0.00	0.00
15,900.00	89.72	180.00	9,766.82	-6,346.45	487.12	6,364.61	0.00	0.00	0.00
16,000.00	89.72	180.00	9,767.31	-6,446.45	487.12	6,464.41	0.00	0.00	0.00
16,100.00	89.72	180.00	9,767.80	-6,546.45	487.12	6,564.20	0.00	0.00	0.00
16,200.00	89.72	180.00	9,768.29	-6,646.45	487.11	6,663.99	0.00	0.00	0.00
16,300.00	89.72	180.00	9,768.78	-6,746.45	487.11	6,763.79	0.00	0.00	0.00
16,400.00	89.72	180.00	9,769.27	-6,846.45	487.11	6,863.58	0.00	0.00	0.00
16,500.00	89.72	180.00	9,769.76	-6,946.45	487.11	6,963.38	0.00	0.00	0.00
16,600.00	89.72	180.00	9,770.25	-7,046.45	487.10	7,063.17	0.00	0.00	0.00
16,700.00	89.72	180.00	9,770.74	-7,146.44	487.10	7,162.96	0.00	0.00	0.00
16,800.00	89.72	180.00	9,771.23	-7,246.44	487.10	7,262.76	0.00	0.00	0.00
16,900.00	89.72	180.00	9,771.72	-7,346.44	487.10	7,362.55	0.00	0.00	0.00
17,000.00	89.72	180.00	9,772.22	-7,446.44	487.09	7,462.35	0.00	0.00	0.00
17,100.00	89.72	180.00	9,772.71	-7,546.44	487.09	7,562.14	0.00	0.00	0.00
17,146.87	89.72	180.00	9,772.94	-7,593.31	487.09	7,608.92	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
Thistle Unit 116H BHL	0.00	0.00	9,773.00	-7,606.41	487.09	464,905.32	781,649.64	0.000000	0.000000
- hit/miss target									
- Shape									
Thistle Unit 116H BHL									
- plan misses target center by 13.09ft at 17146.87ft MD (9772.94 TVD, -7593.31 N, 487.09 E)									
- Point									