

30.06.37498



Marbob

Eddy County
All State Com
#1
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

30 December, 2009

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: All State Com
Well: #1
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1
TVD Reference: WELL @ 3006.00ft (Original Well Elev)
MD Reference: WELL @ 3006.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project	Eddy County	System Datum:	Mean Sea Level
Map System:	US State Plane 1927 (Exact solution)		
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	All State Com		
Site Position:		Northing:	370,623.900 ft
From:	Map	Easting:	572,481.000 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 1' 7.477 N
		Longitude:	104° 5' 58.100 W
		Grid Convergence:	0.12 "

Well	#1		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	12/30/2009	7.97
			Dip Angle
			59.95
			Field Strength
			48,611

Design	Plan #1		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			90.14

Survey Tool Program	Date	12/30/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,320.37	Plan #1 (OH)	MWD	MWD - Standard



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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0.00	0.00	0.00	-3,006.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
100.00	0.00	0.00	100.00	-2,906.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
200.00	0.00	0.00	200.00	-2,806.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
300.00	0.00	0.00	300.00	-2,706.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
400.00	0.00	0.00	400.00	-2,606.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
500.00	0.00	0.00	500.00	-2,506.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
600.00	0.00	0.00	600.00	-2,406.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
700.00	0.00	0.00	700.00	-2,306.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
800.00	0.00	0.00	800.00	-2,206.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
900.00	0.00	0.00	900.00	-2,106.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,000.00	0.00	0.00	1,000.00	-2,006.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,100.00	0.00	0.00	1,100.00	-1,906.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,200.00	0.00	0.00	1,200.00	-1,806.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,300.00	0.00	0.00	1,300.00	-1,706.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,400.00	0.00	0.00	1,400.00	-1,606.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,500.00	0.00	0.00	1,500.00	-1,506.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,600.00	0.00	0.00	1,600.00	-1,406.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,700.00	0.00	0.00	1,700.00	-1,306.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,800.00	0.00	0.00	1,800.00	-1,206.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
1,900.00	0.00	0.00	1,900.00	-1,106.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,000.00	0.00	0.00	2,000.00	-1,006.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,100.00	0.00	0.00	2,100.00	-906.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,200.00	0.00	0.00	2,200.00	-806.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,300.00	0.00	0.00	2,300.00	-706.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,400.00	0.00	0.00	2,400.00	-606.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,500.00	0.00	0.00	2,500.00	-506.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,600.00	0.00	0.00	2,600.00	-406.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00



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2,700.00	0.00	0.00	2,700.00	-306.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,800.00	0.00	0.00	2,800.00	-206.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
2,900.00	0.00	0.00	2,900.00	-106.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,000.00	0.00	0.00	3,000.00	-6.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,100.00	0.00	0.00	3,100.00	94.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,200.00	0.00	0.00	3,200.00	194.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,300.00	0.00	0.00	3,300.00	294.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,400.00	0.00	0.00	3,400.00	394.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,500.00	0.00	0.00	3,500.00	494.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,600.00	0.00	0.00	3,600.00	594.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,700.00	0.00	0.00	3,700.00	694.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,800.00	0.00	0.00	3,800.00	794.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
3,900.00	0.00	0.00	3,900.00	894.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,000.00	0.00	0.00	4,000.00	994.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,100.00	0.00	0.00	4,100.00	1,094.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,200.00	0.00	0.00	4,200.00	1,194.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,300.00	0.00	0.00	4,300.00	1,294.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,400.00	0.00	0.00	4,400.00	1,394.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,500.00	0.00	0.00	4,500.00	1,494.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,600.00	0.00	0.00	4,600.00	1,594.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,700.00	0.00	0.00	4,700.00	1,694.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,800.00	0.00	0.00	4,800.00	1,794.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
4,900.00	0.00	0.00	4,900.00	1,894.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
5,000.00	0.00	0.00	5,000.00	1,994.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
5,100.00	0.00	0.00	5,100.00	2,094.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
5,200.00	0.00	0.00	5,200.00	2,194.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00
5,300.00	0.00	0.00	5,300.00	2,294.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00



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5,400.00	0.00	0.00	5,400.00	2,394.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
5,500.00	0.00	0.00	5,500.00	2,494.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
5,600.00	0.00	0.00	5,600.00	2,594.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
5,700.00	0.00	0.00	5,700.00	2,694.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
5,800.00	0.00	0.00	5,800.00	2,794.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
5,900.00	0.00	0.00	5,900.00	2,894.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
6,000.00	0.00	0.00	6,000.00	2,994.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
6,100.00	0.00	0.00	6,100.00	3,094.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
6,200.00	0.00	0.00	6,200.00	3,194.00	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
6,222.50	0.00	0.00	6,222.50	3,216.50	0.00	0.00	0.00	0.00	370,623.90	572,481.00	
6,225.00	0.30	90.13	6,225.00	3,219.00	0.00	0.01	0.01	12.00	370,623.90	572,481.01	
6,250.00	3.30	90.13	6,249.98	3,243.98	0.00	0.79	0.79	12.00	370,623.90	572,481.79	
6,275.00	6.30	90.13	6,274.89	3,268.89	-0.01	2.88	2.88	12.00	370,623.89	572,483.88	
6,300.00	9.30	90.13	6,299.66	3,293.66	-0.01	6.28	6.28	12.00	370,623.89	572,487.28	
6,325.00	12.30	90.13	6,324.21	3,318.21	-0.02	10.96	10.96	12.00	370,623.88	572,491.96	
6,350.00	15.30	90.13	6,348.49	3,342.49	-0.04	16.92	16.92	12.00	370,623.86	572,497.92	
6,375.00	18.30	90.13	6,372.42	3,366.42	-0.05	24.15	24.15	12.00	370,623.85	572,505.15	
6,400.00	21.30	90.13	6,395.94	3,389.94	-0.07	32.61	32.61	12.00	370,623.83	572,513.61	
6,425.00	24.30	90.13	6,418.98	3,412.98	-0.10	42.30	42.30	12.00	370,623.80	572,523.30	
6,450.00	27.30	90.13	6,441.49	3,435.49	-0.12	53.18	53.18	12.00	370,623.78	572,534.18	
6,475.00	30.30	90.13	6,463.40	3,457.40	-0.15	65.22	65.22	12.00	370,623.75	572,546.22	
6,500.00	33.30	90.13	6,484.64	3,478.64	-0.18	78.39	78.39	12.00	370,623.72	572,559.39	
6,525.00	36.30	90.13	6,505.17	3,499.17	-0.21	92.66	92.66	12.00	370,623.69	572,573.66	
6,550.00	39.30	90.13	6,524.92	3,518.92	-0.24	107.98	107.98	12.00	370,623.66	572,588.98	
6,575.00	42.30	90.13	6,543.84	3,537.84	-0.28	124.31	124.31	12.00	370,623.62	572,605.31	
6,600.00	45.30	90.13	6,561.89	3,555.89	-0.32	141.61	141.61	12.00	370,623.58	572,622.61	
6,625.00	48.30	90.13	6,579.00	3,573.00	-0.36	159.83	159.83	12.00	370,623.54	572,640.83	



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6,650.00	51.30	90.13	6,595.14	3,589.14	-0.41	178.92	178.92	12.00	370,623.49	572,659.92
6,675.00	54.30	90.13	6,610.25	3,604.25	-0.45	198.83	198.83	12.00	370,623.45	572,679.83
6,700.00	57.30	90.13	6,624.30	3,618.30	-0.50	219.51	219.51	12.00	370,623.40	572,700.51
6,725.00	60.30	90.13	6,637.25	3,631.25	-0.55	240.89	240.89	12.00	370,623.35	572,721.89
6,750.00	63.30	90.13	6,649.07	3,643.07	-0.60	262.91	262.92	12.00	370,623.30	572,743.91
6,775.00	66.30	90.13	6,659.71	3,653.71	-0.65	285.53	285.53	12.00	370,623.25	572,766.53
6,800.00	69.29	90.13	6,669.16	3,663.16	-0.70	308.68	308.68	12.00	370,623.20	572,789.68
6,825.00	72.29	90.13	6,677.38	3,671.38	-0.75	332.28	332.28	12.00	370,623.15	572,813.28
6,850.00	75.29	90.13	6,684.36	3,678.36	-0.81	356.28	356.29	12.00	370,623.09	572,837.28
6,875.00	78.29	90.13	6,690.07	3,684.07	-0.86	380.62	380.62	12.00	370,623.04	572,861.62
6,900.00	81.29	90.13	6,694.50	3,688.50	-0.92	405.22	405.22	12.00	370,622.98	572,886.22
6,925.00	84.29	90.13	6,697.63	3,691.63	-0.98	430.02	430.02	12.00	370,622.92	572,911.02
6,950.00	87.29	90.13	6,699.47	3,693.47	-1.03	454.95	454.95	12.00	370,622.87	572,935.95
6,972.56	90.00	90.13	6,700.00	3,694.00	-1.08	477.50	477.50	12.00	370,622.82	572,958.50
6,972.85	90.00	90.14	6,700.00	3,694.00	-1.08	477.80	477.80	2.00	370,622.82	572,958.80
7,000.00	90.00	90.14	6,700.00	3,694.00	-1.15	504.94	504.94	0.00	370,622.75	572,985.94
7,100.00	90.00	90.14	6,700.00	3,694.00	-1.39	604.94	604.94	0.00	370,622.51	573,085.94
7,200.00	90.00	90.14	6,700.00	3,694.00	-1.62	704.94	704.94	0.00	370,622.28	573,185.94
7,300.00	90.00	90.14	6,700.00	3,694.00	-1.86	804.94	804.94	0.00	370,622.04	573,285.94
7,400.00	90.00	90.14	6,700.00	3,694.00	-2.10	904.94	904.94	0.00	370,621.80	573,385.94
7,500.00	90.00	90.14	6,700.00	3,694.00	-2.33	1,004.94	1,004.94	0.00	370,621.57	573,485.94
7,600.00	90.00	90.14	6,700.00	3,694.00	-2.57	1,104.94	1,104.94	0.00	370,621.33	573,585.94
7,700.00	90.00	90.14	6,700.00	3,694.00	-2.81	1,204.94	1,204.94	0.00	370,621.09	573,685.94
7,800.00	90.00	90.14	6,700.00	3,694.00	-3.05	1,304.94	1,304.94	0.00	370,620.85	573,785.94
7,900.00	90.00	90.14	6,700.00	3,694.00	-3.28	1,404.94	1,404.94	0.00	370,620.62	573,885.94
8,000.00	90.00	90.14	6,700.00	3,694.00	-3.52	1,504.94	1,504.94	0.00	370,620.38	573,985.94
8,100.00	90.00	90.14	6,700.00	3,694.00	-3.76	1,604.94	1,604.94	0.00	370,620.14	574,085.94



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8,200.00	90.00	90.14	6,700.00	3,694.00	-4.00	1,704.94	1,704.94	0.00	370,619.90	574,185.94
8,300.00	90.00	90.14	6,700.00	3,694.00	-4.23	1,804.94	1,804.94	0.00	370,619.67	574,285.94
8,400.00	90.00	90.14	6,700.00	3,694.00	-4.47	1,904.94	1,904.94	0.00	370,619.43	574,385.94
8,500.00	90.00	90.14	6,700.00	3,694.00	-4.71	2,004.94	2,004.94	0.00	370,619.19	574,485.94
8,600.00	90.00	90.14	6,700.00	3,694.00	-4.95	2,104.94	2,104.94	0.00	370,618.95	574,585.94
8,700.00	90.00	90.14	6,700.00	3,694.00	-5.18	2,204.94	2,204.94	0.00	370,618.72	574,685.94
8,800.00	90.00	90.14	6,700.00	3,694.00	-5.42	2,304.94	2,304.94	0.00	370,618.48	574,785.94
8,900.00	90.00	90.14	6,700.00	3,694.00	-5.66	2,404.94	2,404.94	0.00	370,618.24	574,885.94
9,000.00	90.00	90.14	6,700.00	3,694.00	-5.89	2,504.94	2,504.94	0.00	370,618.01	574,985.94
9,100.00	90.00	90.14	6,700.00	3,694.00	-6.13	2,604.94	2,604.94	0.00	370,617.77	575,085.94
9,200.00	90.00	90.14	6,700.00	3,694.00	-6.37	2,704.94	2,704.94	0.00	370,617.53	575,185.94
9,300.00	90.00	90.14	6,700.00	3,694.00	-6.61	2,804.94	2,804.94	0.00	370,617.29	575,285.94
9,400.00	90.00	90.14	6,700.00	3,694.00	-6.84	2,904.94	2,904.94	0.00	370,617.06	575,385.94
9,500.00	90.00	90.14	6,700.00	3,694.00	-7.08	3,004.94	3,004.94	0.00	370,616.82	575,485.94
9,600.00	90.00	90.14	6,700.00	3,694.00	-7.32	3,104.94	3,104.94	0.00	370,616.58	575,585.94
9,700.00	90.00	90.14	6,700.00	3,694.00	-7.56	3,204.94	3,204.94	0.00	370,616.34	575,685.94
9,800.00	90.00	90.14	6,700.00	3,694.00	-7.79	3,304.94	3,304.94	0.00	370,616.11	575,785.94
9,900.00	90.00	90.14	6,700.00	3,694.00	-8.03	3,404.94	3,404.94	0.00	370,615.87	575,885.94
10,000.00	90.00	90.14	6,700.00	3,694.00	-8.27	3,504.94	3,504.94	0.00	370,615.63	575,985.94
10,100.00	90.00	90.14	6,700.00	3,694.00	-8.50	3,604.93	3,604.94	0.00	370,615.40	576,085.93
10,200.00	90.00	90.14	6,700.00	3,694.00	-8.74	3,704.93	3,704.94	0.00	370,615.16	576,185.93
10,300.00	90.00	90.14	6,700.00	3,694.00	-8.98	3,804.93	3,804.94	0.00	370,614.92	576,285.93
10,400.00	90.00	90.14	6,700.00	3,694.00	-9.22	3,904.93	3,904.94	0.00	370,614.68	576,385.93
10,500.00	90.00	90.14	6,700.00	3,694.00	-9.45	4,004.93	4,004.94	0.00	370,614.45	576,485.93
10,600.00	90.00	90.14	6,700.00	3,694.00	-9.69	4,104.93	4,104.94	0.00	370,614.21	576,585.93
10,700.00	90.00	90.14	6,700.00	3,694.00	-9.93	4,204.93	4,204.94	0.00	370,613.97	576,685.93
10,800.00	90.00	90.14	6,700.00	3,694.00	-10.17	4,304.93	4,304.94	0.00	370,613.73	576,785.93



Pathfinder Energy Services
Pathfinder X & Y Planning Report



Company: Marbob
Project: Eddy County
Site: All State Com
Well: #1
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1
TVD Reference: WELL @ 3006.00ft (Original Well Elev)
MD Reference: WELL @ 3006.00ft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,900.00	90.00	90.14	6,700.00	3,694.00	-10.40	4,404.93	4,404.94	0.00	370,613.50	576,885.93
11,000.00	90.00	90.14	6,700.00	3,694.00	-10.64	4,504.93	4,504.94	0.00	370,613.26	576,985.93
11,100.00	90.00	90.14	6,700.00	3,694.00	-10.88	4,604.93	4,604.94	0.00	370,613.02	577,085.93
11,200.00	90.00	90.14	6,700.00	3,694.00	-11.11	4,704.93	4,704.94	0.00	370,612.79	577,185.93
11,300.00	90.00	90.14	6,700.00	3,694.00	-11.35	4,804.93	4,804.94	0.00	370,612.55	577,285.93
11,320.37	90.00	90.14	6,700.00	3,694.00	-11.40	4,825.30	4,825.31	0.00	370,612.50	577,306.30

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL(ALLST#1)	0.00	0.00	6,700.00	-11.40	4,825.30	370,612.500	577,306.300	32° 1' 7.257 N	104° 5' 2.053 W
- plan hits target									
- Point									

Checked By: _____ Approved By: _____ Date: _____

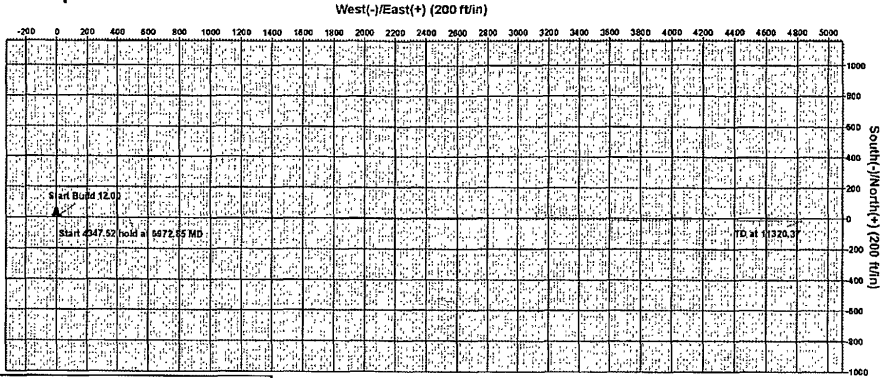
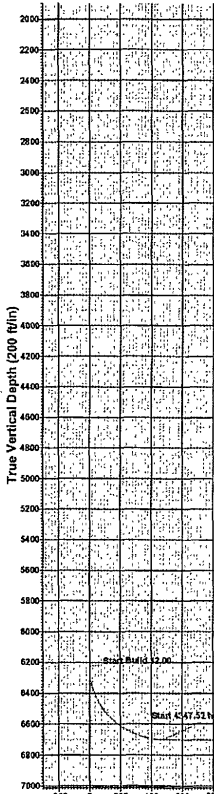


Project: Eddy County
Site: All State Com
Well: #1
Wellbore: OH
Plan: Plan #1 (#1/OH)



Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.85°
Magnetic Field
Strength: 48511.4 nT
Dip Angle: 59.95°
Date: 12/30/2009
Model: IGRF200510

PATHFINDER



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8222.50	0.00	0.00	8222.50	0.00	0.00	0.00	0.00	0.00	
3	8972.58	90.00	90.13	8700.00	-1.08	477.50	12.00	90.13	477.50	
4	8972.85	90.00	90.14	8700.00	-1.08	477.80	2.00	90.00	477.80	
5	11320.37	90.00	90.14	8700.00	-1.40	4825.30	0.00	0.00	4825.31	PBHL(ALLSTW1)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL(ALLSTW1)	8700.00	-1.40	4825.30	370812.500	577286.300

WELL DETAILS: #1						
Ground Elevation: 2981.00						
RKB Elevation: WELL @ 3036.00ft (Original Well Elev)						
Rig Name: Original Well Elev						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Stat
0.00	0.00	370813.900	572481.000	32° 1' 7.477" N	104° 5' 58.100" W	

PROJECT DETAILS: Eddy County
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Plan: Plan #1 (#1/OH)			
Created By	Nate Bligham	Date	10/02, January 08 2010
Checked		Date	