

30-015-37497



Marbob

Eddy County

Daisy 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: Daisy State Corn
 Well: #1
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference: Well #1
 TVD Reference: WELL @ 3035.00ft (15' KB)
 MD Reference: WELL @ 3035.00ft (15' KB)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: Midland Database

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

Site	Daisy State Corn		
Site Position:		Northing:	393,116.700 ft
From: Map		Easting:	566,517.600 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 4' 50.201 N
		Longitude:	104° 7' 6.848 W
		Grid Convergence:	0.11 °

Well:	#1					
Well Position	+N/-S	0.00 ft	Northing:	393,116.700 ft	Latitude:	32° 4' 50.201 N
	+E/-W	0.00 ft	Easting:	566,517.600 ft	Longitude:	104° 7' 6.848 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	3,020.00ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/30/2009	7.99	60.01	48,646

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	269.91

Survey Tool Program	Date	12/30/2009		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	11,078.46	Plan #1 (OH)	MWD	MWD - Standard



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Planned Survey											
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0.00	0.00	0.00	0.00	-3,035.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
100.00	0.00	0.00	100.00	-2,935.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
200.00	0.00	0.00	200.00	-2,835.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
300.00	0.00	0.00	300.00	-2,735.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
400.00	0.00	0.00	400.00	-2,635.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
500.00	0.00	0.00	500.00	-2,535.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
600.00	0.00	0.00	600.00	-2,435.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
700.00	0.00	0.00	700.00	-2,335.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
800.00	0.00	0.00	800.00	-2,235.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
900.00	0.00	0.00	900.00	-2,135.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,000.00	0.00	0.00	1,000.00	-2,035.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,100.00	0.00	0.00	1,100.00	-1,935.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,200.00	0.00	0.00	1,200.00	-1,835.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,300.00	0.00	0.00	1,300.00	-1,735.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,400.00	0.00	0.00	1,400.00	-1,635.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,500.00	0.00	0.00	1,500.00	-1,535.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,600.00	0.00	0.00	1,600.00	-1,435.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,700.00	0.00	0.00	1,700.00	-1,335.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,800.00	0.00	0.00	1,800.00	-1,235.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
1,900.00	0.00	0.00	1,900.00	-1,135.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,000.00	0.00	0.00	2,000.00	-1,035.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,100.00	0.00	0.00	2,100.00	-935.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,200.00	0.00	0.00	2,200.00	-835.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,300.00	0.00	0.00	2,300.00	-735.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,400.00	0.00	0.00	2,400.00	-635.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,500.00	0.00	0.00	2,500.00	-535.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	
2,600.00	0.00	0.00	2,600.00	-435.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60	



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2,700.00	0.00	0.00	2,700.00	-335.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
2,800.00	0.00	0.00	2,800.00	-235.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
2,900.00	0.00	0.00	2,900.00	-135.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,000.00	0.00	0.00	3,000.00	-35.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,100.00	0.00	0.00	3,100.00	65.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,200.00	0.00	0.00	3,200.00	165.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,300.00	0.00	0.00	3,300.00	265.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,400.00	0.00	0.00	3,400.00	365.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,500.00	0.00	0.00	3,500.00	465.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,600.00	0.00	0.00	3,600.00	565.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,700.00	0.00	0.00	3,700.00	665.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,800.00	0.00	0.00	3,800.00	765.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
3,900.00	0.00	0.00	3,900.00	865.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,000.00	0.00	0.00	4,000.00	965.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,100.00	0.00	0.00	4,100.00	1,065.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,200.00	0.00	0.00	4,200.00	1,165.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,300.00	0.00	0.00	4,300.00	1,265.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,400.00	0.00	0.00	4,400.00	1,365.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,500.00	0.00	0.00	4,500.00	1,465.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,600.00	0.00	0.00	4,600.00	1,565.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,700.00	0.00	0.00	4,700.00	1,665.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,800.00	0.00	0.00	4,800.00	1,765.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
4,900.00	0.00	0.00	4,900.00	1,865.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,000.00	0.00	0.00	5,000.00	1,965.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,100.00	0.00	0.00	5,100.00	2,065.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,200.00	0.00	0.00	5,200.00	2,165.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,300.00	0.00	0.00	5,300.00	2,265.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60



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5,400.00	0.00	0.00	5,400.00	2,365.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,500.00	0.00	0.00	5,500.00	2,465.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,600.00	0.00	0.00	5,600.00	2,565.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,700.00	0.00	0.00	5,700.00	2,665.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,800.00	0.00	0.00	5,800.00	2,765.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
5,900.00	0.00	0.00	5,900.00	2,865.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
6,000.00	0.00	0.00	6,000.00	2,965.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
6,100.00	0.00	0.00	6,100.00	3,065.00	0.00	0.00	0.00	0.00	393,116.70	566,517.60
6,122.50	0.00	0.00	6,122.50	3,087.50	0.00	0.00	0.00	0.00	393,116.70	566,517.60
6,125.00	0.30	269.91	6,125.00	3,090.00	0.00	-0.01	0.01	12.00	393,116.70	566,517.59
6,150.00	3.30	269.91	6,149.98	3,114.98	0.00	-0.79	0.79	12.00	393,116.70	566,516.81
6,175.00	6.30	269.91	6,174.89	3,139.89	0.00	-2.88	2.88	12.00	393,116.70	566,514.72
6,200.00	9.30	269.91	6,199.66	3,164.66	-0.01	-6.28	6.28	12.00	393,116.69	566,511.32
6,225.00	12.30	269.91	6,224.21	3,189.21	-0.02	-10.96	10.96	12.00	393,116.68	566,506.64
6,250.00	15.30	269.91	6,248.49	3,213.49	-0.03	-16.92	16.92	12.00	393,116.67	566,500.68
6,275.00	18.30	269.91	6,272.42	3,237.42	-0.04	-24.15	24.15	12.00	393,116.66	566,493.45
6,300.00	21.30	269.91	6,295.94	3,260.94	-0.05	-32.61	32.61	12.00	393,116.65	566,484.99
6,325.00	24.30	269.91	6,318.98	3,283.98	-0.07	-42.30	42.30	12.00	393,116.63	566,475.30
6,350.00	27.30	269.91	6,341.49	3,306.49	-0.08	-53.18	53.18	12.00	393,116.62	566,464.42
6,375.00	30.30	269.91	6,363.40	3,328.40	-0.10	-65.22	65.22	12.00	393,116.60	566,452.38
6,400.00	33.30	269.91	6,384.64	3,349.64	-0.12	-78.39	78.39	12.00	393,116.58	566,439.21
6,425.00	36.30	269.91	6,405.17	3,370.17	-0.15	-92.66	92.66	12.00	393,116.55	566,424.94
6,450.00	39.30	269.91	6,424.92	3,389.92	-0.17	-107.98	107.98	12.00	393,116.53	566,409.62
6,475.00	42.30	269.91	6,443.84	3,408.84	-0.20	-124.31	124.31	12.00	393,116.50	566,393.29
6,500.00	45.30	269.91	6,461.89	3,426.89	-0.22	-141.61	141.61	12.00	393,116.48	566,375.99
6,525.00	48.30	269.91	6,479.00	3,444.00	-0.25	-159.83	159.83	12.00	393,116.45	566,357.77
6,550.00	51.30	269.91	6,495.14	3,460.14	-0.28	-178.92	178.92	12.00	393,116.42	566,338.68



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6,575.00	54.30	269.91	6,510.25	3,475.25	-0.31	-198.83	198.83	12.00	393,116.39	566,318.77
6,600.00	57.30	269.91	6,524.30	3,489.30	-0.34	-219.51	219.51	12.00	393,116.36	566,298.09
6,625.00	60.30	269.91	6,537.25	3,502.25	-0.38	-240.89	240.89	12.00	393,116.32	566,276.71
6,650.00	63.30	269.91	6,549.07	3,514.07	-0.41	-262.92	262.92	12.00	393,116.29	566,254.68
6,675.00	66.30	269.91	6,559.71	3,524.71	-0.45	-285.53	285.53	12.00	393,116.25	566,232.07
6,700.00	69.29	269.91	6,569.16	3,534.16	-0.48	-308.68	308.68	12.00	393,116.22	566,208.92
6,725.00	72.29	269.91	6,577.38	3,542.38	-0.52	-332.28	332.28	12.00	393,116.18	566,185.32
6,750.00	75.29	269.91	6,584.36	3,549.36	-0.56	-356.29	356.29	12.00	393,116.14	566,161.31
6,775.00	78.29	269.91	6,590.07	3,555.07	-0.60	-380.62	380.62	12.00	393,116.10	566,136.98
6,800.00	81.29	269.91	6,594.50	3,559.50	-0.64	-405.22	405.22	12.00	393,116.06	566,112.38
6,825.00	84.29	269.91	6,597.63	3,562.63	-0.68	-430.02	430.02	12.00	393,116.02	566,087.58
6,850.00	87.29	269.91	6,599.47	3,564.47	-0.71	-454.95	454.95	12.00	393,115.99	566,062.65
6,872.56	90.00	269.91	6,600.00	3,565.00	-0.75	-477.50	477.50	12.00	393,115.95	566,040.10
6,881.14	90.00	269.91	6,600.00	3,565.00	-0.76	-486.08	486.08	0.02	393,115.94	566,031.52
6,900.00	90.00	269.91	6,600.00	3,565.00	-0.79	-504.94	504.94	0.00	393,115.91	566,012.66
7,000.00	90.00	269.91	6,600.00	3,565.00	-0.95	-604.94	604.94	0.00	393,115.75	565,912.66
7,100.00	90.00	269.91	6,600.00	3,565.00	-1.10	-704.94	704.94	0.00	393,115.60	565,812.66
7,200.00	90.00	269.91	6,600.00	3,565.00	-1.25	-804.94	804.94	0.00	393,115.45	565,712.66
7,300.00	90.00	269.91	6,600.00	3,565.00	-1.41	-904.94	904.94	0.00	393,115.29	565,612.66
7,400.00	90.00	269.91	6,600.00	3,565.00	-1.56	-1,004.94	1,004.94	0.00	393,115.14	565,512.66
7,500.00	90.00	269.91	6,600.00	3,565.00	-1.71	-1,104.94	1,104.94	0.00	393,114.99	565,412.66
7,600.00	90.00	269.91	6,600.00	3,565.00	-1.87	-1,204.94	1,204.94	0.00	393,114.83	565,312.66
7,700.00	90.00	269.91	6,600.00	3,565.00	-2.02	-1,304.94	1,304.94	0.00	393,114.68	565,212.66
7,800.00	90.00	269.91	6,600.00	3,565.00	-2.17	-1,404.94	1,404.94	0.00	393,114.53	565,112.66
7,900.00	90.00	269.91	6,600.00	3,565.00	-2.33	-1,504.94	1,504.94	0.00	393,114.37	565,012.66
8,000.00	90.00	269.91	6,600.00	3,565.00	-2.48	-1,604.94	1,604.94	0.00	393,114.22	564,912.66
8,100.00	90.00	269.91	6,600.00	3,565.00	-2.63	-1,704.94	1,704.94	0.00	393,114.07	564,812.66



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8,200.00	90.00	269.91	6,600.00	3,565.00	-2.79	-1,804.94	1,804.94	0.00	393,113.91	564,712.66
8,300.00	90.00	269.91	6,600.00	3,565.00	-2.94	-1,904.94	1,904.94	0.00	393,113.76	564,612.66
8,400.00	90.00	269.91	6,600.00	3,565.00	-3.09	-2,004.94	2,004.94	0.00	393,113.61	564,512.66
8,500.00	90.00	269.91	6,600.00	3,565.00	-3.25	-2,104.94	2,104.94	0.00	393,113.45	564,412.66
8,600.00	90.00	269.91	6,600.00	3,565.00	-3.40	-2,204.94	2,204.94	0.00	393,113.30	564,312.66
8,700.00	90.00	269.91	6,600.00	3,565.00	-3.55	-2,304.94	2,304.94	0.00	393,113.15	564,212.66
8,800.00	90.00	269.91	6,600.00	3,565.00	-3.71	-2,404.94	2,404.94	0.00	393,112.99	564,112.66
8,900.00	90.00	269.91	6,600.00	3,565.00	-3.86	-2,504.94	2,504.94	0.00	393,112.84	564,012.66
9,000.00	90.00	269.91	6,600.00	3,565.00	-4.01	-2,604.94	2,604.94	0.00	393,112.69	563,912.66
9,100.00	90.00	269.91	6,600.00	3,565.00	-4.17	-2,704.94	2,704.94	0.00	393,112.53	563,812.66
9,200.00	90.00	269.91	6,600.00	3,565.00	-4.32	-2,804.94	2,804.94	0.00	393,112.38	563,712.66
9,300.00	90.00	269.91	6,600.00	3,565.00	-4.47	-2,904.94	2,904.94	0.00	393,112.23	563,612.66
9,400.00	90.00	269.91	6,600.00	3,565.00	-4.63	-3,004.94	3,004.94	0.00	393,112.07	563,512.66
9,500.00	90.00	269.91	6,600.00	3,565.00	-4.78	-3,104.94	3,104.94	0.00	393,111.92	563,412.66
9,600.00	90.00	269.91	6,600.00	3,565.00	-4.93	-3,204.94	3,204.94	0.00	393,111.77	563,312.66
9,700.00	90.00	269.91	6,600.00	3,565.00	-5.09	-3,304.94	3,304.94	0.00	393,111.61	563,212.66
9,800.00	90.00	269.91	6,600.00	3,565.00	-5.24	-3,404.94	3,404.94	0.00	393,111.46	563,112.66
9,900.00	90.00	269.91	6,600.00	3,565.00	-5.39	-3,504.94	3,504.94	0.00	393,111.31	563,012.66
10,000.00	90.00	269.91	6,600.00	3,565.00	-5.55	-3,604.94	3,604.94	0.00	393,111.15	562,912.66
10,100.00	90.00	269.91	6,600.00	3,565.00	-5.70	-3,704.94	3,704.94	0.00	393,111.00	562,812.66
10,200.00	90.00	269.91	6,600.00	3,565.00	-5.85	-3,804.94	3,804.94	0.00	393,110.85	562,712.66
10,300.00	90.00	269.91	6,600.00	3,565.00	-6.01	-3,904.94	3,904.94	0.00	393,110.69	562,612.66
10,400.00	90.00	269.91	6,600.00	3,565.00	-6.16	-4,004.94	4,004.94	0.00	393,110.54	562,512.66
10,500.00	90.00	269.91	6,600.00	3,565.00	-6.31	-4,104.94	4,104.94	0.00	393,110.39	562,412.66
10,600.00	90.00	269.91	6,600.00	3,565.00	-6.47	-4,204.94	4,204.94	0.00	393,110.23	562,312.66
10,700.00	90.00	269.91	6,600.00	3,565.00	-6.62	-4,304.94	4,304.94	0.00	393,110.08	562,212.66
10,800.00	90.00	269.91	6,600.00	3,565.00	-6.77	-4,404.94	4,404.94	0.00	393,109.93	562,112.66



Pathfinder Energy Services
Pathfinder X & Y Planning Report



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

Local Co-ordinate Reference: Well #1
TVD Reference: WELL @ 3035.00ft (15' KB)
MD Reference: WELL @ 3035.00ft (15' KB)
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	269.91	6,600.00	3,565.00	-6.93	-4,504.94	4,504.94	0.00	393,109.77	562,012.66
11,000.00	90.00	269.91	6,600.00	3,565.00	-7.08	-4,604.94	4,604.94	0.00	393,109.62	561,912.66
11,078.46	90.00	269.91	6,600.00	3,565.00	-7.20	-4,683.40	4,683.41	0.00	393,109.50	561,834.20

Targets

Target Name

- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
PBHL(daisy#1)	0.00	0.00	6,600.00	-7.20	-4,683.40	393,109.500	561,834.200	32° 4' 50.219 N	104° 8' 1.284 W
- plan hits target									
- Point									

Checked By: _____ Approved By: _____ Date: _____



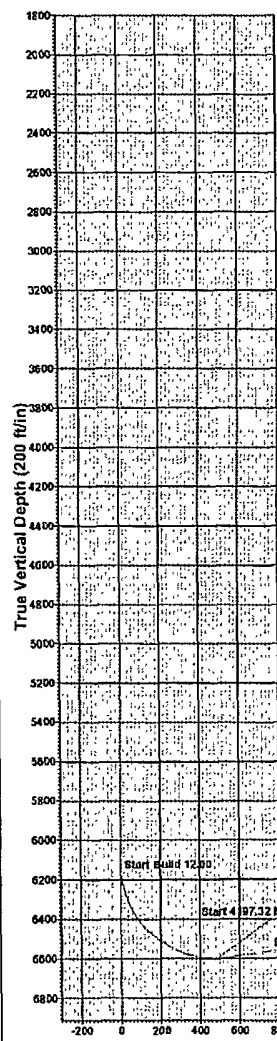
marbob
energy corporation
Artesia, N.M.

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



Azimuths to Grid North
True North: -0.11°
Magnetic North: 7.87°
Magnetic Field
Strength: 48646.4snT
Dir Angle: 68.04°

PATHFINDER



SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	D Leg	T Face	V Sec Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	8122.50	0.00	0.00	8122.50	0.00	0.00	0.00	0.00	
3	6872.56	90.00	269.91	6800.00	-0.75	-477.50	12.00	269.91	477.50
4	6881.14	90.00	269.91	6800.00	-0.76	-486.08	0.02	0.00	486.08
5	11078.46	90.00	269.91	6600.00	-7.20	-4683.40	0.00	0.00	4683.41 PBHL(daisy#1)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)					
Name	TVD	+N-S	+E-W	Northing	Easting
PBHL(daisy#1)	6600.00	-7.20	-4683.40	393109.500	561834.200
					Point

WELL DETAILS: #1						
Ground Elevation: 3020.00						
RKB Elevation: WELL @ 3035.00ft (15' KB)						
Rig Name: 15'KB						
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	393116.700	56517.600	32° 4' 50.201 N	104° 7' 6.848 W	

Vertical Section at 269.91° (200 ft/in)

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: Niala Bingham	Date: 15/12, December 30 2009
Checked: _____	Date: _____