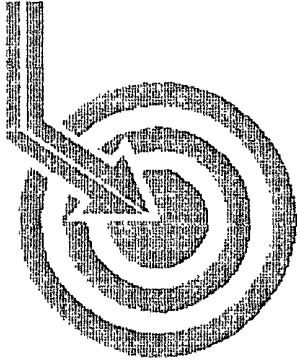


30.015.21066



Scientific Drilling

MARBOB ENERGY

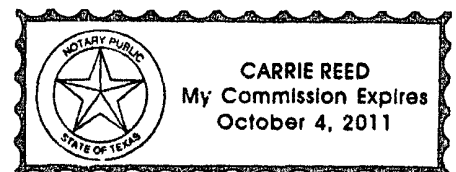
Field: North Seven Rivers Hill
Site: Eddy County, NM
Well: Noose Federal Com #5
Wellpath: VH - Job #32K0509173
Survey: 05/07/09

This survey is correct to the best of my knowledge
and is supported by actual field data.

.....Robert.....Company Representative

Notorized this date 8th of June, 2009.

Carrie Reed
Notary Signature
County of Midland
State of Texas





Scientific
Drilling

Scientific Drilling International Survey Report

Company: MARBOB ENERGY	Date: 05/18/2009	Time: 15:03:52	Page: 1
Field: North Seven Rivers Hill	Co-ordinate(NE) Reference:	Site: Eddy County, NM, Grid North	
Site: Eddy County, NM	Vertical (TVD) Reference:	SITE 0.0	
Well: Moose Federal Com #5	Section (VS) Reference:	Well (0.00N,0.00E,179.18Azi)	
Wellpath: VH - Job #32K0509173	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey: 05/07/09	Start Date: 05/07/2009
KSRG 0'-3302'	
Company: Scientific Drilling Internatio	Engineer: Guebara/Paredes
Tool: Keeper;Keeper Gyro	Tied-to: From Surface

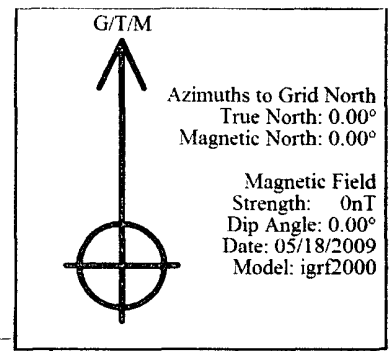
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0.00	0.00	359.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.25	204.59	100.00	0.20	-0.20	-0.09	0.25	0.22	204.59
200.00	0.26	62.84	200.00	0.29	-0.29	0.02	0.48	0.29	176.04
300.00	0.42	41.05	300.00	-0.08	0.09	0.46	0.20	0.47	79.38
400.00	0.53	9.52	399.99	-0.81	0.82	0.78	0.28	1.13	43.59
500.00	0.36	37.99	499.99	-1.51	1.52	1.05	0.27	1.85	34.58
600.00	0.28	34.28	599.99	-1.95	1.97	1.38	0.08	2.41	34.99
700.00	0.51	3.32	699.99	-2.60	2.62	1.54	0.31	3.04	30.53
800.00	0.39	358.83	799.98	-3.38	3.40	1.56	0.12	3.75	24.67
900.00	0.44	17.20	899.98	-4.09	4.11	1.67	0.14	4.44	22.11
1000.00	0.59	340.99	999.98	-4.94	4.96	1.62	0.35	5.22	18.03
1100.00	0.76	4.27	1099.97	-6.09	6.11	1.50	0.32	6.29	13.76
1200.00	0.79	348.46	1199.96	-7.43	7.45	1.41	0.22	7.58	10.71
1300.00	0.80	15.87	1299.95	-8.77	8.80	1.46	0.38	8.92	9.44
1400.00	0.78	4.25	1399.94	-10.12	10.15	1.70	0.16	10.29	9.53
1500.00	0.86	23.63	1499.93	-11.48	11.51	2.05	0.29	11.69	10.12
1600.00	0.89	21.19	1599.92	-12.89	12.92	2.64	0.05	13.19	11.53
1700.00	1.03	26.39	1699.91	-14.40	14.45	3.32	0.16	14.83	12.92
1800.00	0.85	19.71	1799.89	-15.90	15.96	3.97	0.21	16.44	13.96
1900.00	0.93	358.09	1899.88	-17.40	17.47	4.19	0.34	17.96	13.49
2000.00	1.16	8.85	1999.87	-19.21	19.28	4.32	0.30	19.76	12.62
2100.00	1.44	355.90	2099.84	-21.47	21.53	4.38	0.40	21.97	11.51
2200.00	1.33	348.50	2199.81	-23.86	23.92	4.06	0.21	24.26	9.64
2300.00	1.14	4.15	2299.79	-25.99	26.05	3.90	0.39	26.34	8.52
2400.00	0.85	351.37	2399.77	-27.72	27.78	3.86	0.36	28.04	7.92
2500.00	0.54	348.51	2499.77	-28.92	28.97	3.66	0.31	29.20	7.20
2600.00	0.53	354.94	2599.76	-29.84	29.89	3.52	0.06	30.10	6.72
2700.00	0.77	337.02	2699.75	-30.92	30.97	3.22	0.31	31.14	5.94
2800.00	0.80	322.53	2799.75	-32.11	32.15	2.53	0.20	32.25	4.51
2900.00	0.78	299.77	2899.74	-33.01	33.04	1.52	0.31	33.07	2.63
3000.00	1.10	301.13	2999.72	-33.87	33.87	0.11	0.32	33.87	0.18
3100.00	0.73	317.66	3099.71	-34.85	34.84	-1.15	0.45	34.86	358.12
3200.00	0.91	342.98	3199.70	-36.09	36.07	-1.81	0.40	36.11	357.13
3300.00	1.48	345.82	3299.68	-38.11	38.08	-2.36	0.57	38.15	356.46
3302.00	1.19	343.14	3301.68	-38.16	38.13	-2.37	14.83	38.20	356.45

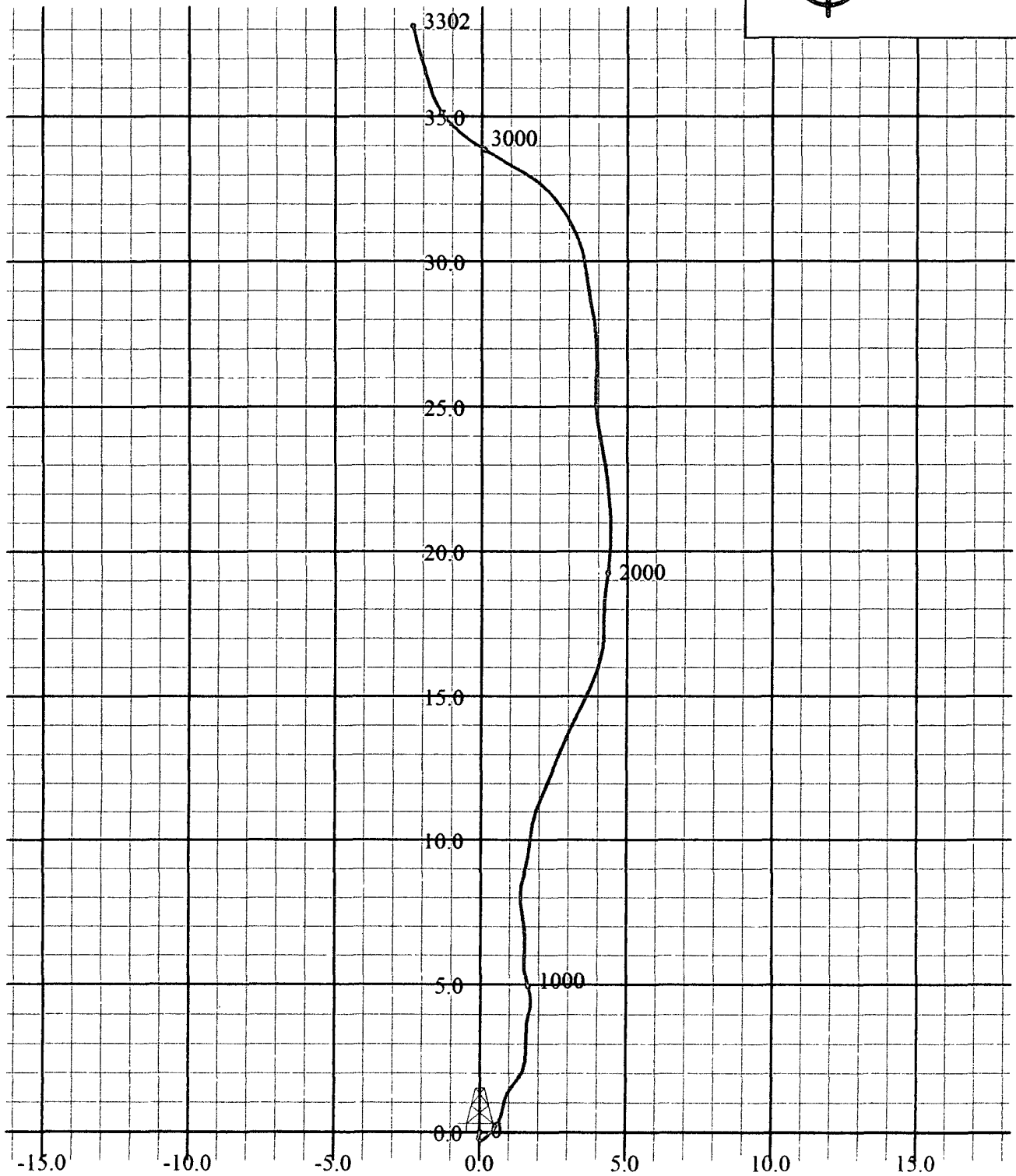


**Scientific
Drilling**

Field: North Seven Rivers Hill
Site: Eddy County, NM
Well: Moose Federal Com #5
Wellpath: VH - Job #32K0509173
Survey: 05/07/09



South(-)/North(+) [5ft/in]



West(-)/East(+) [5ft/in]



Marbob

**Eddy County
Noose Federal
Noose Fed #5
OH**

Survey: MWD#1

Pathfinder X & Y Survey Report

14 May, 2009

PATHFINDER

30-015, 21066



Pathfinder Energy Services

Pathfinder X & Y Survey Report

PATHFINDER

Company: Marbob
Project: Eddy County
Site: Moose Federal
Well: Moose Fed #5
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Moose Fed #5
TVD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
MD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project Eddy County

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site Moose Federal

Site Position: Northing: 585,835.300 ft Latitude: 32° 36' 37.799 N
From: Map Easting: 460,335.700 ft Longitude: 104° 27' 43.724 W
Position Uncertainty: 0.00 ft Slot Radius: " Grid Convergence: -0.07 °

Well Moose Fed #5

Well Position +N-S 0.00 ft Northing: 588,854.500 ft Latitude: 32° 37' 7.694 N
+E-W 0.00 ft Easting: 461,885.200 ft Longitude: 104° 27' 25.650 W
Position Uncertainty 0.00 ft Wellhead Elevation: ft Ground Level: 3,225.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	05/05/2009	8.26	60.46	48,993

Design OH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	180.00



Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Moose Federal
Well: Moose Fed #5
Wellbore: OH
Design: OH

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MD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey Program Date 05/14/2009

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	2,000.00	GYRO (OH)	CB-GYRO-MS	Camera based gyro multishot
2,076.00	5,385.00	MWD#1 (OH)	MWD	MWD - Standard

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,000.00	1.16	8.85	1,999.87	-1,239.13	19.28	4.32	-19.28	0.00	588,873.78	461,889.52
2,076.00	0.53	99.03	2,075.86	-1,163.14	19.98	4.78	-19.98	1.68	588,874.48	461,889.98
2,107.00	3.96	165.11	2,106.83	-1,132.17	18.93	5.20	-18.93	12.18	588,873.43	461,890.40
2,138.00	8.62	172.01	2,137.64	-1,101.36	15.59	5.80	-15.59	15.20	588,870.09	461,891.00
2,170.00	13.19	174.39	2,169.05	-1,069.95	9.58	6.49	-9.58	14.35	588,864.08	461,891.69
2,201.00	15.21	176.04	2,199.10	-1,039.90	2.00	7.12	-2.00	6.65	588,856.50	461,892.32
2,232.00	15.56	175.25	2,228.99	-1,010.01	-6.20	7.74	6.20	1.32	588,848.30	461,892.94
2,263.00	15.74	176.09	2,258.84	-980.16	-14.54	8.37	14.54	0.93	588,839.96	461,893.57
2,294.00	18.99	179.02	2,288.43	-950.57	-23.78	8.74	23.78	10.85	588,830.72	461,893.94
2,326.00	22.77	180.41	2,318.32	-920.68	-35.18	8.79	35.18	11.91	588,819.32	461,893.99
2,357.00	26.29	179.76	2,346.52	-892.48	-48.05	8.78	48.05	11.39	588,806.45	461,893.98
2,388.00	29.28	179.20	2,373.94	-865.06	-62.50	8.91	62.50	9.68	588,792.00	461,894.11
2,419.00	30.95	179.81	2,400.76	-838.24	-78.05	9.04	78.05	5.48	588,776.45	461,894.24
2,450.00	34.03	181.23	2,426.90	-812.10	-94.70	8.88	94.70	10.24	588,759.80	461,894.08
2,481.00	37.20	182.06	2,452.10	-786.90	-112.74	8.36	112.74	10.34	588,741.76	461,893.56
2,513.00	40.80	181.97	2,476.96	-762.04	-132.86	7.65	132.86	11.25	588,721.64	461,892.85
2,544.00	44.41	181.99	2,499.78	-739.22	-153.83	6.93	153.83	11.65	588,700.67	461,892.13
2,575.00	47.84	181.45	2,521.26	-717.74	-176.17	6.26	176.17	11.14	588,678.33	461,891.46
2,606.00	51.27	181.13	2,541.37	-697.63	-199.75	5.73	199.75	11.09	588,654.75	461,890.93
2,637.00	55.05	180.65	2,559.95	-679.05	-224.55	5.35	224.55	12.26	588,629.95	461,890.55
2,668.00	58.74	181.22	2,576.88	-662.12	-250.51	4.92	250.51	12.00	588,603.99	461,890.12



Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Noose Federal
Well: Noose Fed #5
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Noose Fed #5
TVD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
MD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
2,699.00	62.26	181.53	2,592.14	-646.86	-277.48	4.27	277.48	11.39	588,577.02	461,889.47	
2,730.00	65.77	181.60	2,605.72	-633.28	-305.33	3.51	305.33	11.32	588,549.17	461,888.71	
2,762.00	69.29	181.38	2,617.95	-621.05	-334.89	2.74	334.89	11.02	588,519.61	461,887.94	
2,793.00	72.55	180.87	2,628.08	-610.92	-364.17	2.17	364.17	10.63	588,490.33	461,887.37	
2,824.00	76.06	180.82	2,636.47	-602.53	-394.01	1.73	394.01	11.32	588,460.49	461,886.93	
2,855.00	79.67	180.31	2,642.98	-596.02	-424.31	1.43	424.31	11.76	588,430.19	461,886.63	
2,886.00	83.19	179.26	2,647.60	-591.40	-454.96	1.55	454.96	11.84	588,399.54	461,886.75	
2,917.00	86.79	179.02	2,650.31	-588.69	-485.83	2.01	485.83	11.64	588,368.67	461,887.21	
2,949.00	89.08	179.03	2,651.46	-587.54	-517.80	2.56	517.80	7.16	588,336.70	461,887.76	
2,980.00	89.43	178.93	2,651.87	-587.13	-548.80	3.11	548.80	1.17	588,305.70	461,888.31	
3,011.00	90.43	179.47	2,651.90	-587.10	-579.79	3.54	579.79	3.67	588,274.71	461,888.74	
3,042.00	90.40	179.68	2,651.68	-587.32	-610.79	3.77	610.79	0.68	588,243.71	461,888.97	
3,073.00	90.22	179.62	2,651.51	-587.49	-641.79	3.96	641.79	0.61	588,212.71	461,889.16	
3,104.00	90.13	179.55	2,651.42	-587.58	-672.79	4.18	672.79	0.37	588,181.71	461,889.38	
3,136.00	89.96	179.52	2,651.39	-587.61	-704.79	4.44	704.79	0.54	588,149.71	461,889.64	
3,167.00	90.31	180.59	2,651.32	-587.68	-735.79	4.41	735.79	3.63	588,118.71	461,889.61	
3,198.00	90.40	180.95	2,651.13	-587.87	-766.78	4.00	766.78	1.20	588,087.72	461,889.20	
3,229.00	90.40	180.78	2,650.91	-588.09	-797.78	3.53	797.78	0.55	588,056.72	461,888.73	
3,260.00	90.40	180.67	2,650.69	-588.31	-828.78	3.14	828.78	0.35	588,025.72	461,888.34	
3,292.00	90.31	180.71	2,650.49	-588.51	-860.77	2.75	860.77	0.31	587,993.73	461,887.95	
3,323.00	90.22	180.74	2,650.35	-588.65	-891.77	2.36	891.77	0.31	587,962.73	461,887.56	
3,354.00	90.22	180.57	2,650.23	-588.77	-922.77	2.00	922.77	0.55	587,931.73	461,887.20	
3,417.00	90.22	180.46	2,649.99	-589.01	-985.77	1.44	985.77	0.17	587,868.73	461,886.64	
3,479.00	90.13	180.50	2,649.80	-589.20	-1,047.76	0.92	1,047.76	0.16	587,806.74	461,886.12	
3,541.00	90.04	180.60	2,649.71	-589.29	-1,109.76	0.32	1,109.76	0.22	587,744.74	461,885.52	
3,634.00	90.31	180.81	2,649.43	-589.57	-1,202.75	-0.82	1,202.75	0.37	587,651.75	461,884.38	
3,728.00	90.13	180.20	2,649.06	-589.94	-1,296.75	-1.65	1,296.75	0.68	587,557.75	461,883.55	



Pathfinder Energy Services

Pathfinder X & Y Survey Report



Company: Marbob
Project: Eddy County
Site: Noose Federal
Well: Noose Fed #5
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Noose Fed #5
TVD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
MD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
3,821.00	89.96	180.04	2,648.99	-590.01	-1,389.75	-1.84	1,389.75	0.25	587,464.75	461,883.36
3,914.00	91.89	180.29	2,647.49	-591.51	-1,482.73	-2.11	1,482.73	2.09	587,371.77	461,883.09
3,977.00	90.66	179.63	2,646.09	-592.91	-1,545.71	-2.07	1,545.71	2.22	587,308.79	461,883.13
4,008.00	90.31	179.53	2,645.83	-593.17	-1,576.71	-1.84	1,576.71	1.17	587,277.79	461,883.36
4,071.00	89.25	179.23	2,646.07	-592.93	-1,639.71	-1.16	1,639.71	1.75	587,214.79	461,884.04
4,103.00	89.08	179.17	2,646.53	-592.47	-1,671.70	-0.71	1,671.70	0.56	587,182.80	461,884.49
4,167.00	88.81	178.74	2,647.71	-591.29	-1,735.68	0.46	1,735.68	0.79	587,118.82	461,885.66
4,230.00	89.52	178.58	2,648.63	-590.37	-1,798.65	1.93	1,798.65	1.16	587,055.85	461,887.13
4,293.00	89.25	178.69	2,649.31	-589.69	-1,861.63	3.43	1,861.63	0.46	586,992.87	461,888.63
4,356.00	89.69	179.38	2,649.89	-589.11	-1,924.62	4.49	1,924.62	1.30	586,929.88	461,889.69
4,388.00	90.04	179.37	2,649.96	-589.04	-1,956.62	4.84	1,956.62	1.09	586,897.88	461,890.04
4,450.00	90.31	179.09	2,649.78	-589.22	-2,018.61	5.67	2,018.61	0.63	586,835.89	461,890.87
4,514.00	90.92	179.59	2,649.09	-589.91	-2,082.60	6.41	2,082.60	1.23	586,771.90	461,891.61
4,577.00	90.48	180.51	2,648.32	-590.68	-2,145.60	6.35	2,145.60	1.62	586,708.90	461,891.55
4,641.00	88.72	180.78	2,648.77	-590.23	-2,209.59	5.63	2,209.59	2.78	586,644.91	461,890.83
4,672.00	88.11	180.82	2,649.62	-589.38	-2,240.58	5.20	2,240.58	1.97	586,613.92	461,890.40
4,736.00	88.37	180.92	2,651.59	-587.41	-2,304.54	4.23	2,304.54	0.44	586,549.96	461,889.43
4,768.00	88.55	180.83	2,652.45	-586.55	-2,336.52	3.74	2,336.52	0.63	586,517.98	461,888.94
4,799.00	88.64	181.00	2,653.21	-585.79	-2,367.51	3.25	2,367.51	0.62	586,486.99	461,888.45
4,831.00	88.46	180.84	2,654.02	-584.98	-2,399.49	2.73	2,399.49	0.75	586,455.01	461,887.93
4,894.00	89.96	180.57	2,654.89	-584.11	-2,462.48	1.96	2,462.48	2.42	586,392.02	461,887.16
4,926.00	89.34	180.33	2,655.08	-583.92	-2,494.48	1.71	2,494.48	2.08	586,360.02	461,886.91
4,957.00	88.99	180.27	2,655.53	-583.47	-2,525.48	1.54	2,525.48	1.15	586,329.02	461,886.74
4,988.00	88.72	180.16	2,656.15	-582.85	-2,556.47	1.43	2,556.47	0.94	586,298.03	461,886.63
5,052.00	89.16	180.46	2,657.34	-581.66	-2,620.46	1.08	2,620.46	0.83	586,234.04	461,886.28
5,083.00	88.90	180.24	2,657.86	-581.14	-2,651.45	0.89	2,651.45	1.10	586,203.05	461,886.09
5,115.00	89.08	180.18	2,658.43	-580.57	-2,683.45	0.78	2,683.45	0.59	586,171.05	461,885.98



Pathfinder Energy Services

Pathfinder X & Y Survey Report

PATHFINDER

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Local Co-ordinate Reference: Well Moose Fed #5
TVD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
MD Reference: WELL#1 @ 3239.00ft (Teaco #1 14' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,147.00	89.16	180.06	2,658.92	-580.08	-2,715.44	0.71	2,715.44	0.45	586,139.06	461,885.91
5,211.00	90.04	180.12	2,659.36	-579.64	-2,779.44	0.61	2,779.44	1.38	586,075.06	461,885.81
5,260.00	89.34	180.15	2,659.63	-579.37	-2,828.44	0.49	2,828.44	1.43	586,026.06	461,885.69
5,337.00	89.43	180.37	2,660.46	-578.54	-2,905.44	0.14	2,905.44	0.31	585,949.06	461,885.34
5,385.00	89.43	180.37	2,660.93	-578.07	-2,953.43	-0.17	2,953.43	0.00	585,901.07	461,885.03

Proj To Bit @ 5385'MD

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 (Moose #5)	0.00	0.00	2,650.00	-2,970.00	0.00	585,884.500	461,885.200	32° 36' 38.304 N	104° 27' 25.609 W
- survey misses by 19.85ft at 5385.00ft MD (2660.93 TVD, -2953.43 N, -0.17 E)									
- Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N-S (ft)	+E-W (ft)	Comment
5,385.00	2,660.93	-2,953.43	-0.17	Proj To Bit @ 5385'MD

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County
 Site: Moose Federal
 Well: Moose Fed #5
 Wellbore: OH
 Plan: Plan #2 (Moose Fed #5/OH)



Azimuths to Grid North
 True North: 0.07°
 Magnetic North: 8.33°
 Magnetic Field
 Strength: 48992.8snT
 Dip Angle: 60.46°
 Date: 05/05/2009
 Model: IGRF200510

PATHFINDER

West(-)/East(+) (100 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

WELL DETAILS: Moose Fed #5

Ground Elevation: 3225.00
 RKB Elevation: WELL#1 @ 3238.00R (Teaco #1 14' KB Correction)
 Rig Name: Teaco #1 14' KB Correction

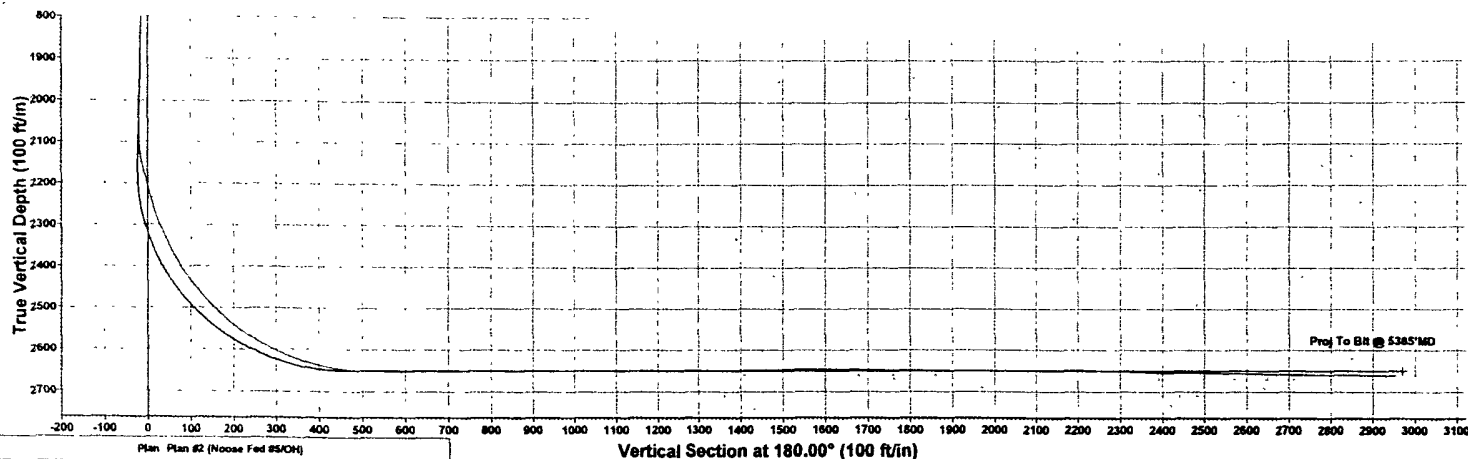
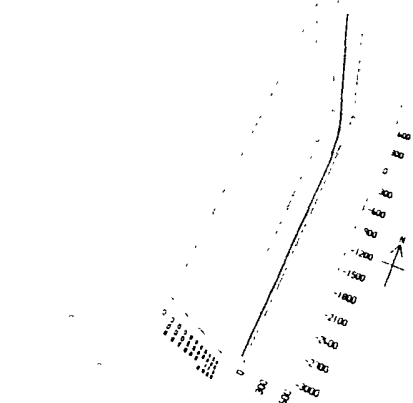
+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	58854.500	461885.200	32° 37' 7.894 N	104° 27' 25.850 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	2161.50	1.37	351.49	2161.32	23.03	4.22	0.00	0.00	-23.03	
2	2922.68	90.00	180.05	2650.00	-454.23	2.06	12.00	-171.44	454.23	
3	5438.45	90.00	180.05	2650.00	-2970.00	-0.13	0.00	0.00	2970.00	PBHL (Moose #5)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
PBHL (Moose #5)	2650.00	-2970.00	0.00	58854.500	461885.200	Point



330' Hardline

Proj To Bit @ 5385MD