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30-025-39814

Mack Energy

Lea County

Harrier State Com

#1H

OH

Plan: Plan #1

Pathfinder X & Y Planning Report

24 June, 2010

PATHFINDER



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (19' KB Correction)
Site:	Harrier State Com	MD Reference:	WELL @ 4355.00ft (19' KB Correction)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Project:	Lea 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:	Harrier State Com		
Site Position:		Northing:	742,992.100 ft
From:	Map	Easting:	679,007.000 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	33° 2' 28.246 N
		Longitude:	103° 44' 57.079 W
		Grid Convergence:	0.32 °

Well	#1H				
Well Position	+N/-S	0.00 ft	Northing:	742,992.100 ft	Latitude: 33° 2' 28.246 N
	+E/-W	0.00 ft	Easting:	679,007.000 ft	Longitude: 103° 44' 57.079 W
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level: 4,336.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	08/24/2010	7.81	60.95	49,194

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	269.70

Survey Tool Program	Date	06/24/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	13,510.00	Plan #1 (OH)	MWD	MWD - Standard



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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)
0.00	0.00	0.00	0.00	-4,355.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
100.00	0.00	0.00	100.00	-4,255.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
200.00	0.00	0.00	200.00	-4,155.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
300.00	0.00	0.00	300.00	-4,055.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
400.00	0.00	0.00	400.00	-3,955.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
500.00	0.00	0.00	500.00	-3,855.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
600.00	0.00	0.00	600.00	-3,755.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
700.00	0.00	0.00	700.00	-3,655.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
800.00	0.00	0.00	800.00	-3,555.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
900.00	0.00	0.00	900.00	-3,455.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,000.00	0.00	0.00	1,000.00	-3,355.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,100.00	0.00	0.00	1,100.00	-3,255.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,200.00	0.00	0.00	1,200.00	-3,155.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,300.00	0.00	0.00	1,300.00	-3,055.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,400.00	0.00	0.00	1,400.00	-2,955.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,500.00	0.00	0.00	1,500.00	-2,855.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,600.00	0.00	0.00	1,600.00	-2,755.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,700.00	0.00	0.00	1,700.00	-2,655.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,800.00	0.00	0.00	1,800.00	-2,555.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
1,900.00	0.00	0.00	1,900.00	-2,455.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,000.00	0.00	0.00	2,000.00	-2,355.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,100.00	0.00	0.00	2,100.00	-2,255.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,200.00	0.00	0.00	2,200.00	-2,155.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,300.00	0.00	0.00	2,300.00	-2,055.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,400.00	0.00	0.00	2,400.00	-1,955.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,500.00	0.00	0.00	2,500.00	-1,855.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
2,600.00	0.00	0.00	2,600.00	-1,755.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (19' KB Correction)
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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)	
2,700.00	0.00	0.00	2,700.00	-1,655.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
2,800.00	0.00	0.00	2,800.00	-1,555.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
2,900.00	0.00	0.00	2,900.00	-1,455.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,000.00	0.00	0.00	3,000.00	-1,355.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,100.00	0.00	0.00	3,100.00	-1,255.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,200.00	0.00	0.00	3,200.00	-1,155.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,300.00	0.00	0.00	3,300.00	-1,055.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,400.00	0.00	0.00	3,400.00	-955.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,500.00	0.00	0.00	3,500.00	-855.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,600.00	0.00	0.00	3,600.00	-755.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,700.00	0.00	0.00	3,700.00	-655.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,800.00	0.00	0.00	3,800.00	-555.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
3,900.00	0.00	0.00	3,900.00	-455.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,000.00	0.00	0.00	4,000.00	-355.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,100.00	0.00	0.00	4,100.00	-255.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,200.00	0.00	0.00	4,200.00	-155.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,300.00	0.00	0.00	4,300.00	-55.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,400.00	0.00	0.00	4,400.00	45.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,500.00	0.00	0.00	4,500.00	145.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,600.00	0.00	0.00	4,600.00	245.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,700.00	0.00	0.00	4,700.00	345.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,800.00	0.00	0.00	4,800.00	445.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
4,900.00	0.00	0.00	4,900.00	545.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
5,000.00	0.00	0.00	5,000.00	645.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
5,100.00	0.00	0.00	5,100.00	745.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
5,200.00	0.00	0.00	5,200.00	845.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	
5,300.00	0.00	0.00	5,300.00	945.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00	



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5,400.00	0.00	0.00	5,400.00	1,045.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
5,500.00	0.00	0.00	5,500.00	1,145.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
5,600.00	0.00	0.00	5,600.00	1,245.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
5,700.00	0.00	0.00	5,700.00	1,345.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
5,800.00	0.00	0.00	5,800.00	1,445.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
5,900.00	0.00	0.00	5,900.00	1,545.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,000.00	0.00	0.00	6,000.00	1,645.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,100.00	0.00	0.00	6,100.00	1,745.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,200.00	0.00	0.00	6,200.00	1,845.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,300.00	0.00	0.00	6,300.00	1,945.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,400.00	0.00	0.00	6,400.00	2,045.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,500.00	0.00	0.00	6,500.00	2,145.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,600.00	0.00	0.00	6,600.00	2,245.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,700.00	0.00	0.00	6,700.00	2,345.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,800.00	0.00	0.00	6,800.00	2,445.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
6,900.00	0.00	0.00	6,900.00	2,545.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,000.00	0.00	0.00	7,000.00	2,645.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,100.00	0.00	0.00	7,100.00	2,745.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,200.00	0.00	0.00	7,200.00	2,845.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,300.00	0.00	0.00	7,300.00	2,945.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,400.00	0.00	0.00	7,400.00	3,045.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,500.00	0.00	0.00	7,500.00	3,145.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,600.00	0.00	0.00	7,600.00	3,245.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,700.00	0.00	0.00	7,700.00	3,345.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,800.00	0.00	0.00	7,800.00	3,445.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
7,900.00	0.00	0.00	7,900.00	3,545.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
8,000.00	0.00	0.00	8,000.00	3,645.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00



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8,100.00	0.00	0.00	8,100.00	3,745.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
8,200.00	0.00	0.00	8,200.00	3,845.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
8,300.00	0.00	0.00	8,300.00	3,945.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
8,357.00	0.00	0.00	8,357.00	4,002.00	0.00	0.00	0.00	0.00	742,992.10	679,007.00
8,400.00	4.11	269.70	8,399.96	4,044.96	-0.01	-1.54	1.54	9.55	742,992.09	679,005.46
8,450.00	8.88	269.70	8,449.63	4,094.63	-0.04	-7.19	7.19	9.55	742,992.06	678,999.81
8,500.00	13.66	269.70	8,498.65	4,143.65	-0.09	-16.96	16.96	9.55	742,992.01	678,990.04
8,550.00	18.43	269.70	8,546.69	4,191.69	-0.16	-30.77	30.77	9.55	742,991.94	678,976.23
8,600.00	23.20	269.70	8,593.41	4,238.41	-0.25	-48.54	48.54	9.55	742,991.85	678,958.46
8,650.00	27.98	269.70	8,638.49	4,283.49	-0.37	-70.13	70.13	9.55	742,991.73	678,936.87
8,700.00	32.75	269.70	8,681.62	4,326.62	-0.50	-95.40	95.40	9.55	742,991.60	678,911.60
8,750.00	37.53	269.70	8,722.50	4,367.50	-0.65	-124.17	124.17	9.55	742,991.45	678,882.83
8,800.00	42.30	269.70	8,760.83	4,405.83	-0.82	-156.24	156.24	9.55	742,991.28	678,850.76
8,850.00	47.08	269.70	8,796.37	4,441.37	-1.00	-191.40	191.40	9.55	742,991.10	678,815.60
8,900.00	51.85	269.70	8,828.86	4,473.86	-1.20	-229.38	229.39	9.55	742,990.90	678,777.62
8,950.00	56.63	269.70	8,858.07	4,503.07	-1.41	-269.95	269.95	9.55	742,990.69	678,737.05
9,000.00	61.40	269.70	8,883.80	4,528.80	-1.64	-312.80	312.80	9.55	742,990.46	678,694.20
9,050.00	66.18	269.70	8,905.88	4,550.88	-1.87	-357.64	357.65	9.55	742,990.23	678,649.36
9,100.00	70.95	269.70	8,924.15	4,569.15	-2.12	-404.17	404.18	9.55	742,989.98	678,602.83
9,150.00	75.73	269.70	8,938.48	4,583.48	-2.37	-452.06	452.06	9.55	742,989.73	678,554.94
9,200.00	80.50	269.70	8,948.77	4,593.77	-2.62	-500.97	500.98	9.55	742,989.48	678,506.03
9,250.00	85.27	269.70	8,954.96	4,599.96	-2.88	-550.57	550.58	9.55	742,989.22	678,456.43
9,300.95	90.14	269.70	8,957.00	4,602.00	-3.15	-601.46	601.47	9.55	742,988.95	678,405.54
9,301.14	90.14	269.70	8,957.00	4,602.00	-3.15	-601.65	601.66	0.00	742,988.95	678,405.35
9,400.00	90.14	269.70	8,956.76	4,601.76	-3.67	-700.51	700.52	0.00	742,988.43	678,306.49
9,500.00	90.14	269.70	8,956.51	4,601.51	-4.19	-800.51	800.52	0.00	742,987.91	678,206.49
9,600.00	90.14	269.70	8,956.27	4,601.27	-4.72	-900.51	900.52	0.00	742,987.38	678,106.49



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Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (19' KB Correction)
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9,699.48	90.14	269.70	8,956.00	4,601.00	-5.24	-999.99	1,000.00	0.00	742,986.86	678,007.01
Tgt#1(Harrier #1)										
9,800.00	90.23	269.70	8,955.67	4,600.67	-5.76	-1,100.50	1,100.52	0.09	742,986.34	677,906.50
9,900.00	90.32	269.70	8,955.19	4,600.19	-6.29	-1,200.50	1,200.52	0.09	742,985.81	677,806.50
9,953.33	90.37	269.70	8,954.86	4,599.86	-6.57	-1,253.83	1,253.84	0.09	742,985.53	677,753.17
10,000.00	90.37	269.70	8,954.56	4,599.56	-6.81	-1,300.50	1,300.52	0.00	742,985.29	677,706.50
10,100.00	90.37	269.70	8,953.91	4,598.91	-7.33	-1,400.49	1,400.51	0.00	742,984.77	677,606.51
10,200.00	90.37	269.70	8,953.26	4,598.26	-7.86	-1,500.49	1,500.51	0.00	742,984.24	677,506.51
10,300.00	90.37	269.70	8,952.60	4,597.60	-8.38	-1,600.49	1,600.51	0.00	742,983.72	677,406.51
10,400.00	90.37	269.70	8,951.95	4,596.95	-8.90	-1,700.48	1,700.51	0.00	742,983.20	677,306.52
10,500.00	90.37	269.70	8,951.30	4,596.30	-9.43	-1,800.48	1,800.51	0.00	742,982.67	677,206.52
10,600.00	90.37	269.70	8,950.65	4,595.65	-9.95	-1,900.48	1,900.50	0.00	742,982.15	677,106.52
10,699.50	90.37	269.70	8,950.00	4,595.00	-10.47	-1,999.97	2,000.00	0.00	742,981.63	677,007.03
Tgt#2(Harrier #1)										
10,706.64	90.52	269.70	8,949.94	4,594.94	-10.51	-2,007.11	2,007.14	2.00	742,981.59	676,999.89
10,800.00	90.52	269.70	8,949.10	4,594.10	-11.00	-2,100.47	2,100.50	0.00	742,981.10	676,906.53
10,900.00	90.52	269.70	8,948.20	4,593.20	-11.52	-2,200.46	2,200.49	0.00	742,980.58	676,806.54
11,000.00	90.52	269.70	8,947.30	4,592.30	-12.05	-2,300.46	2,300.49	0.00	742,980.05	676,706.54
11,100.00	90.52	269.70	8,946.40	4,591.40	-12.57	-2,400.45	2,400.49	0.00	742,979.53	676,606.55
11,200.00	90.52	269.70	8,945.50	4,590.50	-13.09	-2,500.45	2,500.48	0.00	742,979.01	676,506.55
11,300.00	90.52	269.70	8,944.60	4,589.60	-13.62	-2,600.44	2,600.48	0.00	742,978.48	676,406.56
11,400.00	90.52	269.70	8,943.70	4,588.70	-14.14	-2,700.44	2,700.47	0.00	742,977.96	676,306.56
11,500.00	90.52	269.70	8,942.80	4,587.80	-14.66	-2,800.43	2,800.47	0.00	742,977.44	676,206.57
11,600.00	90.52	269.70	8,941.90	4,586.90	-15.19	-2,900.43	2,900.46	0.00	742,976.91	676,106.57
11,699.54	90.52	269.70	8,941.00	4,586.00	-15.71	-2,999.96	3,000.00	0.00	742,976.39	676,007.04
Tgt#3(Harrier #1)										
11,705.26	90.63	269.70	8,940.94	4,585.94	-15.74	-3,005.68	3,005.72	2.00	742,976.36	676,001.32



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (19' KB Correction)
Site:	Harrier State Com	MD Reference:	WELL @ 4355.00ft (19' KB Correction)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	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)
11,800.00	90.63	269.70	8,939.90	4,584.90	-16.23	-3,100.41	3,100.45	0.00	742,975.87	675,906.59
11,900.00	90.63	269.70	8,938.80	4,583.80	-16.76	-3,200.40	3,200.45	0.00	742,975.34	675,806.60
12,000.00	90.63	269.70	8,937.70	4,582.70	-17.28	-3,300.40	3,300.44	0.00	742,974.82	675,706.60
12,100.00	90.63	269.70	8,936.60	4,581.60	-17.80	-3,400.39	3,400.44	0.00	742,974.30	675,606.61
12,200.00	90.63	269.70	8,935.50	4,580.50	-18.33	-3,500.38	3,500.43	0.00	742,973.77	675,506.62
12,300.00	90.63	269.70	8,934.40	4,579.40	-18.85	-3,600.38	3,600.42	0.00	742,973.25	675,406.62
12,400.00	90.63	269.70	8,933.30	4,578.30	-19.38	-3,700.37	3,700.42	0.00	742,972.72	675,306.63
12,500.00	90.63	269.70	8,932.20	4,577.20	-19.90	-3,800.36	3,800.41	0.00	742,972.20	675,206.64
12,600.00	90.63	269.70	8,931.10	4,576.10	-20.42	-3,900.35	3,900.41	0.00	742,971.68	675,106.65
12,699.60	90.63	269.70	8,930.00	4,575.00	-20.94	-3,999.95	4,000.00	0.00	742,971.16	675,007.05
Tgt#4(Harrier #1)										
12,702.87	90.57	269.71	8,929.97	4,574.97	-20.96	-4,003.21	4,003.27	2.00	742,971.14	675,003.79
12,800.00	90.57	269.71	8,929.01	4,574.01	-21.46	-4,100.34	4,100.40	0.00	742,970.64	674,906.66
12,900.00	90.57	269.71	8,928.02	4,573.02	-21.97	-4,200.33	4,200.39	0.00	742,970.13	674,806.67
13,000.00	90.57	269.71	8,927.03	4,572.03	-22.48	-4,300.33	4,300.39	0.00	742,969.62	674,706.67
13,100.00	90.57	269.71	8,926.05	4,571.05	-23.00	-4,400.32	4,400.38	0.00	742,969.10	674,606.68
13,200.00	90.57	269.71	8,925.06	4,570.06	-23.51	-4,500.31	4,500.38	0.00	742,968.59	674,506.69
13,300.00	90.57	269.71	8,924.07	4,569.07	-24.02	-4,600.31	4,600.37	0.00	742,968.08	674,406.69
13,400.00	90.57	269.71	8,923.09	4,568.09	-24.54	-4,700.30	4,700.37	0.00	742,967.56	674,306.70
13,500.00	90.57	269.71	8,922.10	4,567.10	-25.05	-4,800.30	4,800.36	0.00	742,967.05	674,206.70
13,510.00	90.57	269.71	8,922.00	4,567.00	-25.10	-4,810.30	4,810.37	0.00	742,967.00	674,196.70
PBHL(Harrier#1)										



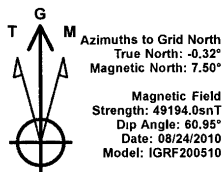
Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #1H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (19' KB Correction)
Site:	Harrier State Com	MD Reference:	WELL @ 4355.00ft (19' KB Correction)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss: target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Tgt#2(Harrier #1)	0.00	0.00	8,950.00	-10.47	-1,999.97	742,981.628	677,007.027	33° 2' 28.252 N	103° 45' 20.574 W
- plan hits target center									
- Point									
Tgt#1(Harrier #1)	0.00	0.00	8,956.00	-5.24	-999.99	742,986.864	678,007.014	33° 2' 28.249 N	103° 45' 8.827 W
- plan hits target center									
- Point									
Tgt#3(Harrier #1)	0.00	0.00	8,941.00	-15.71	-2,999.96	742,976.392	676,007.041	33° 2' 28.254 N	103° 45' 32.321 W
- plan hits target center									
- Point									
PBHL(Harrier#1)	0.00	0.00	8,922.00	-25.10	-4,810.30	742,967.000	674,196.700	33° 2' 28.259 N	103° 45' 53.588 W
- plan hits target center									
- Point									
Tgt#4(Harrier #1)	0.00	0.00	8,930.00	-20.94	-3,999.95	742,971.156	675,007.055	33° 2' 28.257 N	103° 45' 44.069 W
- plan hits target center									
- Point									

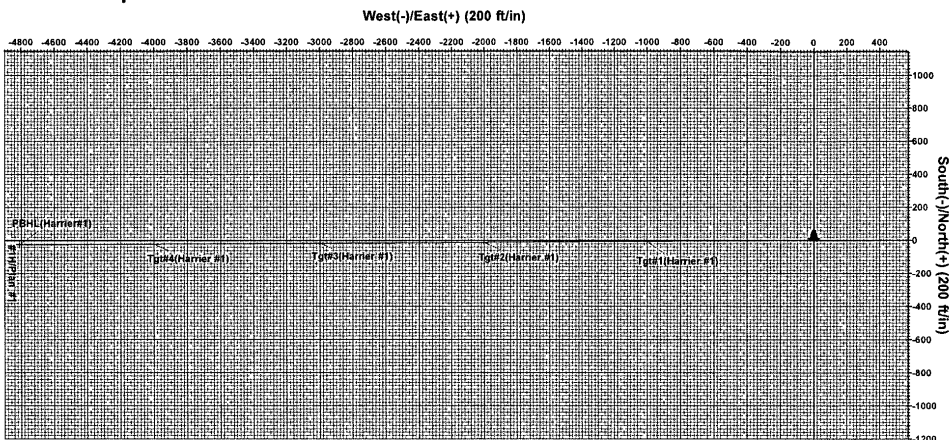
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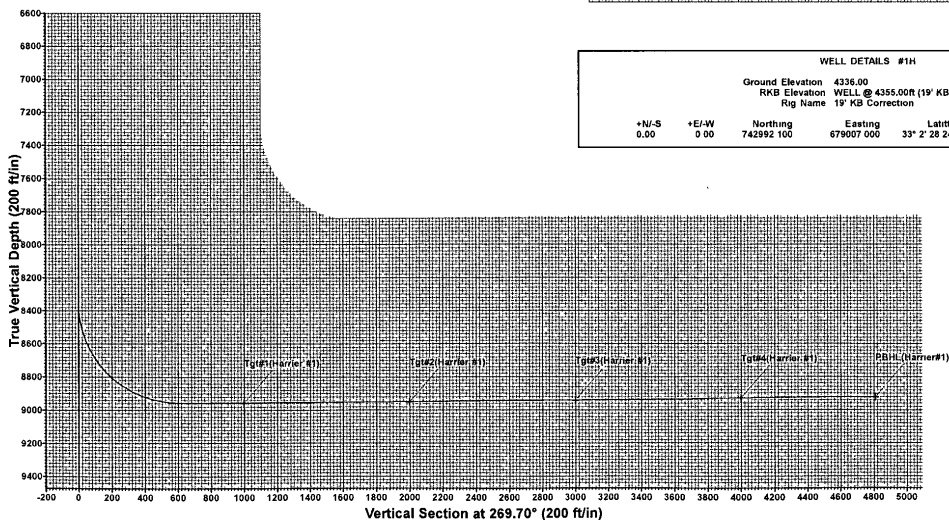
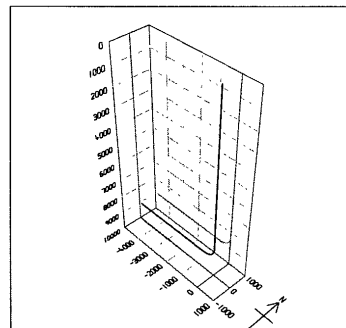
PATHFINDER

WELLBORE TARGET DETAILS				
Name	TVD	+N-S	+E-W	Shape
PBH(Harrier #1)	8922.00	-25.10	-4810.30	Point
Tgt#4(Harrier #1)	8930.00	-20.94	-3999.95	Point
Tgt#3(Harrier #1)	8941.00	-15.71	-2959.96	Point
Tgt#2(Harrier #1)	8950.00	-10.47	-1999.97	Point
Tgt#1(Harrier #1)	8956.00	-5.24	-999.99	Point

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	8357.00	0.00	0.00	8357.00	0.00	0.00	0.00	0.00	0.00		
3	9300.95	90.14	269.70	8957.00	-3.15	-601.46	9.55	269.70	801.47		
4	9301.14	90.14	269.70	8957.00	-3.15	-601.65	0.00	0.00	601.66		
5	9699.48	90.14	269.70	8956.00	-5.24	-999.99	0.00	0.00	1000.00	Tgt#1(Harrier #1)	
6	9983.33	90.37	269.70	8954.86	-6.57	-1253.83	0.09	0.00	1253.84		
7	10699.50	90.37	269.70	8950.00	-10.47	-1999.97	0.00	0.00	2000.00	Tgt#2(Harrier #1)	
8	10706.64	90.52	269.70	8949.94	-10.51	-2007.11	2.00	0.00	2007.14		
9	11699.54	90.52	269.70	8941.00	-15.71	-2999.96	0.00	0.00	3000.00	Tgt#3(Harrier #1)	
10	11705.26	90.63	269.70	8940.94	-15.74	-3005.68	2.00	0.00	3005.72		
11	12699.60	90.63	269.70	8930.00	-20.94	-3999.95	0.00	0.00	4000.00	Tgt#4(Harrier #1)	
12	12702.87	90.57	269.71	8929.97	-20.96	-4003.21	2.00	174.60	4003.27		
13	13510.00	90.57	269.71	8922.00	-25.10	-4810.30	0.00	0.00	4810.37	PBH(Harrier #1)	



WELL DETAILS #1H						
Ground Elevation 4336.00						
RKB Elevation WELL @ 4355.00R (19' KB Correction)						
Rig Name 19' KB Correction						
+N-S	+E-W	North	East	Latitude	Longitude	Slot
0.00	0.00	742392.100	679007.000	33° 2' 28.246 N	103° 44' 57.079 W	



PROJECT DETAILS: Lea 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 (R11H/01H)	
Created By: Nate Bingham	Date: 11/45, June 24 2010
Checked: _____	Date: _____