



RECEIVED
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30-025-39869

Mack Energy

Lea County
Hawk State
#2H
OH

Plan: Plan #1

Pathfinder X & Y Planning Report

05 August, 2010

PATHFINDER



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (Original Well Elev)
Site:	Hawk State	MD Reference:	WELL @ 4355.00ft (Original Well Elev)
Well:	#2H	North Reference:	Grd
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:	Hawk State
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Site Position:		Northing:	721,234.600 ft	Latitude:	32° 58' 52.975 N
From:	Map	Easting:	678,802.100 ft	Longitude:	103° 45' 0.903 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.32 °

Well:	#2H
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Well Position	+N/-S	0.00 ft	Northing:	721,227.800 ft	Latitude:	32° 58' 52.980 N
	+E/-W	0.00 ft	Easting:	677,482.400 ft	Longitude:	103° 45' 16.396 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,336.00 ft

Wellbore:	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/05/2010	7.78	60.89	49,130

Design:	Plan #1
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Audit Notes:	
Version:	Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	359.69

Survey Tool Program	Date	08/05/2010
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From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	13,373.16	Plan #1 (OH)	MWD	MWD - Standard



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Planned Survey											
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0.00	0.00	0.00	0.00	-4,355.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
100.00	0.00	0.00	100.00	-4,255.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
200.00	0.00	0.00	200.00	-4,155.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
300.00	0.00	0.00	300.00	-4,055.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
400.00	0.00	0.00	400.00	-3,955.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
500.00	0.00	0.00	500.00	-3,855.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
600.00	0.00	0.00	600.00	-3,755.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
700.00	0.00	0.00	700.00	-3,655.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
800.00	0.00	0.00	800.00	-3,555.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
900.00	0.00	0.00	900.00	-3,455.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,000.00	0.00	0.00	1,000.00	-3,355.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,100.00	0.00	0.00	1,100.00	-3,255.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,200.00	0.00	0.00	1,200.00	-3,155.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,300.00	0.00	0.00	1,300.00	-3,055.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,400.00	0.00	0.00	1,400.00	-2,955.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,500.00	0.00	0.00	1,500.00	-2,855.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,600.00	0.00	0.00	1,600.00	-2,755.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,700.00	0.00	0.00	1,700.00	-2,655.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,800.00	0.00	0.00	1,800.00	-2,555.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
1,900.00	0.00	0.00	1,900.00	-2,455.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,000.00	0.00	0.00	2,000.00	-2,355.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,100.00	0.00	0.00	2,100.00	-2,255.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,200.00	0.00	0.00	2,200.00	-2,155.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,300.00	0.00	0.00	2,300.00	-2,055.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,400.00	0.00	0.00	2,400.00	-1,955.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,500.00	0.00	0.00	2,500.00	-1,855.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,600.00	0.00	0.00	2,600.00	-1,755.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	



Pathfinder
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2,700.00	0.00	0.00	2,700.00	-1,655.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,800.00	0.00	0.00	2,800.00	-1,555.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
2,900.00	0.00	0.00	2,900.00	-1,455.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,000.00	0.00	0.00	3,000.00	-1,355.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,100.00	0.00	0.00	3,100.00	-1,255.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,200.00	0.00	0.00	3,200.00	-1,155.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,300.00	0.00	0.00	3,300.00	-1,055.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,400.00	0.00	0.00	3,400.00	-955.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,500.00	0.00	0.00	3,500.00	-855.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,600.00	0.00	0.00	3,600.00	-755.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,700.00	0.00	0.00	3,700.00	-655.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,800.00	0.00	0.00	3,800.00	-555.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
3,900.00	0.00	0.00	3,900.00	-455.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,000.00	0.00	0.00	4,000.00	-355.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,100.00	0.00	0.00	4,100.00	-255.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,200.00	0.00	0.00	4,200.00	-155.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,300.00	0.00	0.00	4,300.00	-55.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,400.00	0.00	0.00	4,400.00	45.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,500.00	0.00	0.00	4,500.00	145.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,600.00	0.00	0.00	4,600.00	245.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,700.00	0.00	0.00	4,700.00	345.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,800.00	0.00	0.00	4,800.00	445.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
4,900.00	0.00	0.00	4,900.00	545.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,000.00	0.00	0.00	5,000.00	645.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,100.00	0.00	0.00	5,100.00	745.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,200.00	0.00	0.00	5,200.00	845.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,300.00	0.00	0.00	5,300.00	945.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	



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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)	
5,400.00	0.00	0.00	5,400.00	1,045.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,500.00	0.00	0.00	5,500.00	1,145.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,600.00	0.00	0.00	5,600.00	1,245.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,700.00	0.00	0.00	5,700.00	1,345.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,800.00	0.00	0.00	5,800.00	1,445.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
5,900.00	0.00	0.00	5,900.00	1,545.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,000.00	0.00	0.00	6,000.00	1,645.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,100.00	0.00	0.00	6,100.00	1,745.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,200.00	0.00	0.00	6,200.00	1,845.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,300.00	0.00	0.00	6,300.00	1,945.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,400.00	0.00	0.00	6,400.00	2,045.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,500.00	0.00	0.00	6,500.00	2,145.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,600.00	0.00	0.00	6,600.00	2,245.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,700.00	0.00	0.00	6,700.00	2,345.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,800.00	0.00	0.00	6,800.00	2,445.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
6,900.00	0.00	0.00	6,900.00	2,545.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,000.00	0.00	0.00	7,000.00	2,645.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,100.00	0.00	0.00	7,100.00	2,745.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,200.00	0.00	0.00	7,200.00	2,845.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,300.00	0.00	0.00	7,300.00	2,945.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,400.00	0.00	0.00	7,400.00	3,045.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,500.00	0.00	0.00	7,500.00	3,145.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,600.00	0.00	0.00	7,600.00	3,245.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,700.00	0.00	0.00	7,700.00	3,345.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,800.00	0.00	0.00	7,800.00	3,445.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
7,900.00	0.00	0.00	7,900.00	3,545.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
8,000.00	0.00	0.00	8,000.00	3,645.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	



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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	721,227.80	677,482.40	
8,200.00	0.00	0.00	8,200.00	3,845.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
8,300.00	0.00	0.00	8,300.00	3,945.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
8,408.00	0.00	0.00	8,408.00	4,053.00	0.00	0.00	0.00	0.00	721,227.80	677,482.40	
8,450.00	4.01	359.68	8,449.97	4,094.97	1.47	-0.01	1.47	9.55	721,229.27	677,482.39	
8,500.00	8.79	359.68	8,499.64	4,144.64	7.04	-0.04	7.04	9.55	721,234.84	677,482.36	
8,550.00	13.56	359.68	8,548.68	4,193.68	16.72	-0.09	16.73	9.55	721,244.52	677,482.31	
8,600.00	18.33	359.68	8,596.74	4,241.74	30.46	-0.17	30.46	9.55	721,258.26	677,482.23	
8,650.00	23.11	359.68	8,643.49	4,288.49	48.14	-0.27	48.15	9.55	721,275.94	677,482.13	
8,700.00	27.88	359.68	8,688.61	4,333.61	69.66	-0.39	69.66	9.55	721,297.46	677,482.01	
8,750.00	32.66	359.68	8,731.78	4,376.78	94.86	-0.53	94.86	9.55	721,322.66	677,481.87	
8,800.00	37.43	359.68	8,772.70	4,417.70	123.56	-0.69	123.56	9.55	721,351.36	677,481.71	
8,850.00	42.21	359.68	8,811.09	4,456.09	155.57	-0.87	155.57	9.55	721,383.37	677,481.53	
8,900.00	46.98	359.68	8,846.69	4,491.69	190.66	-1.06	190.67	9.55	721,418.46	677,481.34	
8,950.00	51.76	359.68	8,879.24	4,524.24	228.60	-1.28	228.60	9.55	721,456.40	677,481.12	
9,000.00	56.53	359.68	8,908.52	4,553.52	269.11	-1.50	269.12	9.55	721,496.91	677,480.90	
9,050.00	61.31	359.68	8,934.32	4,579.32	311.92	-1.74	311.93	9.55	721,539.72	677,480.66	
9,100.00	66.08	359.68	8,956.47	4,601.47	356.73	-1.99	356.73	9.55	721,584.53	677,480.41	
9,150.00	70.86	359.68	8,974.82	4,619.82	403.23	-2.25	403.23	9.55	721,631.03	677,480.15	
9,200.00	75.63	359.68	8,989.23	4,634.23	451.09	-2.52	451.09	9.55	721,678.89	677,479.88	
9,250.00	80.41	359.68	8,999.61	4,644.61	499.98	-2.79	499.99	9.55	721,727.78	677,479.61	
9,300.00	85.18	359.68	9,005.88	4,650.88	549.57	-3.07	549.58	9.55	721,777.37	677,479.33	
9,350.48	90.00	359.68	9,008.00	4,653.00	599.99	-3.35	600.00	9.55	721,827.79	677,479.05	
9,361.37	89.78	359.68	9,008.02	4,653.02	610.88	-3.41	610.89	2.00	721,838.68	677,478.99	
9,400.00	89.78	359.68	9,008.17	4,653.17	649.51	-3.63	649.52	0.00	721,877.31	677,478.77	
9,500.00	89.78	359.68	9,008.55	4,653.55	749.51	-4.19	749.52	0.00	721,977.31	677,478.21	
9,600.00	89.78	359.68	9,008.93	4,653.93	849.51	-4.74	849.52	0.00	722,077.31	677,477.66	



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9,700.00	89.78	359.68	9,009.31	4,654.31	949.50	-5.30	949.52	0.00	722,177.30	677,477.10	
9,750.48	89.78	359.68	9,009.50	4,654.50	999.98	-5.59	1,000.00	0.00	722,227.78	677,476.81	
9,751.35	89.80	359.68	9,009.50	4,654.50	1,000.85	-5.59	1,000.86	2.00	722,228.65	677,476.81	
9,800.00	89.80	359.68	9,009.67	4,654.67	1,049.50	-5.86	1,049.52	0.00	722,277.30	677,476.54	
9,900.00	89.80	359.68	9,010.02	4,655.02	1,149.50	-6.42	1,149.52	0.00	722,377.30	677,475.98	
10,000.00	89.80	359.68	9,010.37	4,655.37	1,249.50	-6.98	1,249.52	0.00	722,477.30	677,475.42	
10,100.00	89.80	359.68	9,010.72	4,655.72	1,349.50	-7.54	1,349.52	0.00	722,577.30	677,474.86	
10,200.00	89.80	359.68	9,011.07	4,656.07	1,449.49	-8.10	1,449.52	0.00	722,677.29	677,474.30	
10,300.00	89.80	359.68	9,011.42	4,656.42	1,549.49	-8.65	1,549.52	0.00	722,777.29	677,473.75	
10,400.00	89.80	359.68	9,011.77	4,656.77	1,649.49	-9.21	1,649.52	0.00	722,877.29	677,473.19	
10,500.00	89.80	359.68	9,012.12	4,657.12	1,749.49	-9.77	1,749.51	0.00	722,977.29	677,472.63	
10,600.00	89.80	359.68	9,012.47	4,657.47	1,849.49	-10.33	1,849.51	0.00	723,077.29	677,472.07	
10,700.00	89.80	359.68	9,012.82	4,657.82	1,949.48	-10.89	1,949.51	0.00	723,177.28	677,471.51	
10,750.49	89.80	359.68	9,013.00	4,658.00	1,999.97	-11.17	2,000.00	0.00	723,227.77	677,471.23	
10,751.92	89.83	359.68	9,013.00	4,658.00	2,001.40	-11.18	2,001.43	2.00	723,229.20	677,471.22	
10,800.00	89.83	359.68	9,013.15	4,658.15	2,049.48	-11.45	2,049.51	0.00	723,277.28	677,470.95	
10,900.00	89.83	359.68	9,013.45	4,658.45	2,149.48	-12.01	2,149.51	0.00	723,377.28	677,470.39	
11,000.00	89.83	359.68	9,013.75	4,658.75	2,249.48	-12.56	2,249.51	0.00	723,477.28	677,469.84	
11,100.00	89.83	359.68	9,014.05	4,659.05	2,349.48	-13.12	2,349.51	0.00	723,577.28	677,469.28	
11,200.00	89.83	359.68	9,014.35	4,659.35	2,449.47	-13.68	2,449.51	0.00	723,677.27	677,468.72	
11,300.00	89.83	359.68	9,014.65	4,659.65	2,549.47	-14.24	2,549.51	0.00	723,777.27	677,468.16	
11,400.00	89.83	359.68	9,014.95	4,659.95	2,649.47	-14.80	2,649.51	0.00	723,877.27	677,467.60	
11,500.00	89.83	359.68	9,015.25	4,660.25	2,749.47	-15.36	2,749.51	0.00	723,977.27	677,467.04	
11,600.00	89.83	359.68	9,015.55	4,660.55	2,849.46	-15.91	2,849.51	0.00	724,077.26	677,466.49	
11,700.00	89.83	359.68	9,015.85	4,660.85	2,949.46	-16.47	2,949.51	0.00	724,177.26	677,465.93	
11,750.49	89.83	359.68	9,016.00	4,661.00	2,999.95	-16.76	3,000.00	0.00	724,227.75	677,465.64	
11,754.80	89.91	359.68	9,016.01	4,661.01	3,004.26	-16.78	3,004.31	2.00	724,232.06	677,465.62	



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (Original Well Elev)
Site:	Hawk State	MD Reference:	WELL @ 4355.00ft (Original Well Elev)
Well:	#2H	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	89.91	359.68	9,016.08	4,661.08	3,049.46	-17.03	3,049.51	0.00	724,277.26	677,465.37	
11,900.00	89.91	359.68	9,016.23	4,661.23	3,149.46	-17.59	3,149.51	0.00	724,377.26	677,464.81	
12,000.00	89.91	359.68	9,016.38	4,661.38	3,249.46	-18.15	3,249.51	0.00	724,477.26	677,464.25	
12,100.00	89.91	359.68	9,016.53	4,661.53	3,349.46	-18.71	3,349.51	0.00	724,577.26	677,463.69	
12,200.00	89.91	359.68	9,016.68	4,661.68	3,449.45	-19.27	3,449.51	0.00	724,677.25	677,463.13	
12,300.00	89.91	359.68	9,016.83	4,661.83	3,549.45	-19.82	3,549.51	0.00	724,777.25	677,462.58	
12,400.00	89.91	359.68	9,016.98	4,661.98	3,649.45	-20.38	3,649.51	0.00	724,877.25	677,462.02	
12,500.00	89.91	359.68	9,017.13	4,662.13	3,749.45	-20.94	3,749.51	0.00	724,977.25	677,461.46	
12,600.00	89.91	359.68	9,017.27	4,662.27	3,849.45	-21.50	3,849.51	0.00	725,077.25	677,460.90	
12,700.00	89.91	359.68	9,017.42	4,662.42	3,949.45	-22.06	3,949.51	0.00	725,177.25	677,460.34	
12,750.49	89.91	359.68	9,017.50	4,662.50	3,999.94	-22.34	4,000.00	0.00	725,227.74	677,460.06	
12,753.26	89.95	359.72	9,017.50	4,662.50	4,002.71	-22.35	4,002.77	2.00	725,230.51	677,460.05	
12,800.00	89.95	359.72	9,017.54	4,662.54	4,049.44	-22.58	4,049.51	0.00	725,277.24	677,459.82	
12,900.00	89.95	359.72	9,017.62	4,662.62	4,149.44	-23.08	4,149.51	0.00	725,377.24	677,459.32	
13,000.00	89.95	359.72	9,017.70	4,662.70	4,249.44	-23.57	4,249.51	0.00	725,477.24	677,458.83	
13,100.00	89.95	359.72	9,017.78	4,662.78	4,349.44	-24.06	4,349.51	0.00	725,577.24	677,458.34	
13,200.00	89.95	359.72	9,017.86	4,662.86	4,449.44	-24.55	4,449.51	0.00	725,677.24	677,457.85	
13,300.00	89.95	359.72	9,017.94	4,662.94	4,549.44	-25.04	4,549.51	0.00	725,777.24	677,457.36	
13,373.16	89.95	359.72	9,018.00	4,663.00	4,622.60	-25.40	4,622.67	0.00	725,850.40	677,457.00	



Pathfinder
Pathfinder X & Y Planning Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #2H
Project:	Lea County	TVD Reference:	WELL @ 4355.00ft (Original Well Elev)
Site:	Hawk State	MD Reference:	WELL @ 4355.00ft (Original Well Elev)
Well:	#2H	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									
TGT2(H#2)	0.00	0.00	9,013.00	1,999.97	-11.17	723,227.769	677,471.230	32° 59' 12.770 N	103° 45' 16.398 W
- plan hits target center									
- Point									
TGT1(H#2)	0.00	0.00	9,009.50	999.98	-5.59	722,227.784	677,476.815	32° 59' 2.875 N	103° 45' 16.397 W
- plan hits target center									
- Point									
TGT3(H#2)	0.00	0.00	9,016.00	2,999.95	-16.76	724,227.753	677,465.645	32° 59' 22.665 N	103° 45' 16.399 W
- plan hits target center									
- Point									
PBHL(H#2)	0.00	0.00	9,018.00	4,622.60	-25.40	725,850.400	677,457.000	32° 59' 38.721 N	103° 45' 16.396 W
- plan hits target center									
- Point									
TGT4(H#2)	0.00	0.00	9,017.50	3,999.94	-22.34	725,227.738	677,460.060	32° 59' 32.559 N	103° 45' 16.400 W
- plan hits target center									
- Point									

Checked By: _____	Approved By: _____	Date: _____
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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

Project: Lea County
Site: Hawk State
Well: #2H
Wellbore: OH
Plan: Plan #1 (#2H/OH)



Azimuths to Grid North
True North: -0.31°
Magnetic North: 7.46°

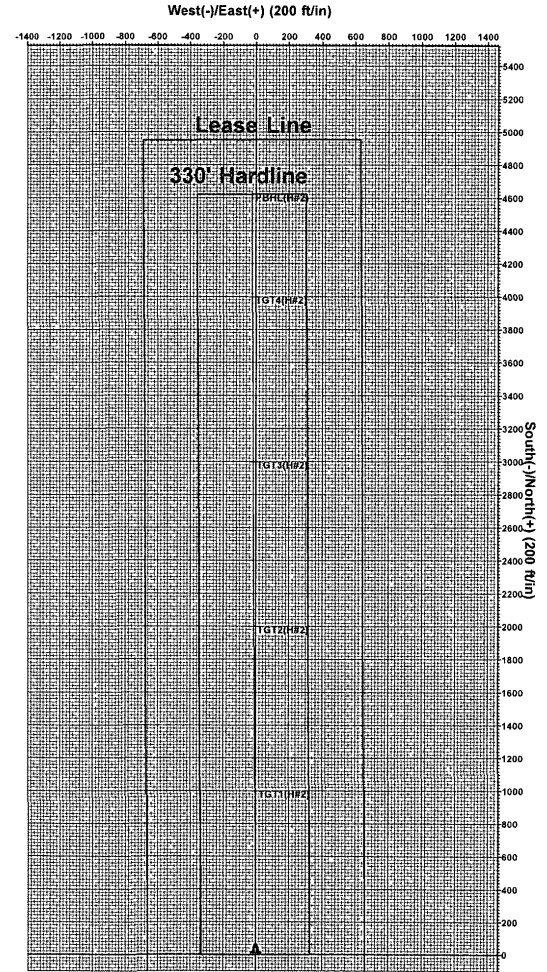
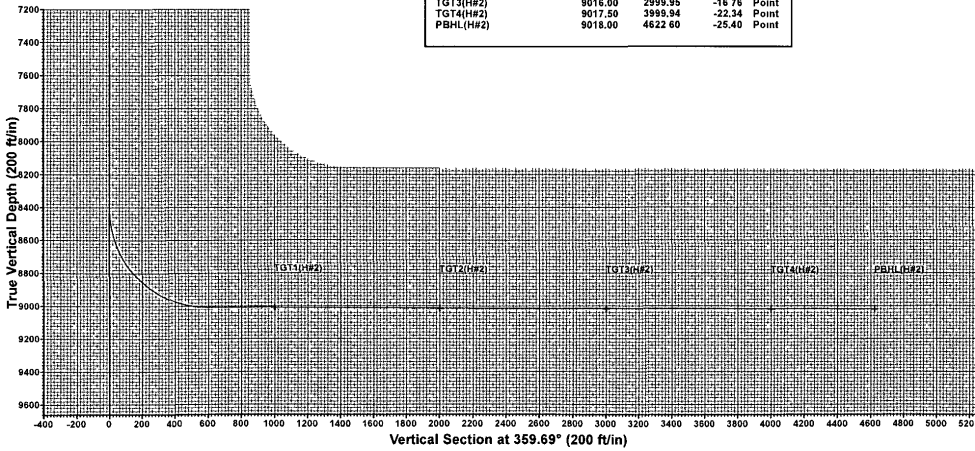
Magnetic Field
Strength: 49130.3snT
Dip Angle: 60.89°
Date: 12/05/2010
Model: IGRF200510

PATHFINDER

WELL DETAILS #2H						
Ground Elevation 4336.00						
RKB Elevation WELL @ 4355.00ft (Original Well Elev)						
Rig Name Original Well Elev						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	721227.800	677462.400	32° 58' 52.980 N	103° 45' 16.396 W	

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	8408.00	0.00	0.00	8408.00	0.00	0.00	0.00	0.00	0.00		
3	9350.48	90.00	359.68	9008.00	599.99	-3.35	9.55	359.88	600.00		
4	9361.37	89.78	359.68	9008.02	610.88	-3.41	2.00	180.00	610.89		
5	9750.48	89.78	359.68	9009.50	999.98	-5.59	0.00	0.00	1000.00	TGT1(H#2)	
6	9751.35	89.80	359.68	9009.50	1000.85	-5.59	2.00	0.00	1000.86		
7	10750.48	89.80	359.68	9013.00	1999.97	-11.17	0.00	0.00	2000.00	TGT2(H#2)	
8	10751.92	89.83	359.68	9013.00	2001.40	-11.18	2.00	0.00	2001.43		
9	11750.48	89.83	359.68	9016.00	2999.95	-16.76	0.00	0.00	3000.00	TGT3(H#2)	
10	11754.80	89.91	359.68	9016.01	3004.26	-16.78	2.00	0.00	3004.31		
11	12750.48	89.91	359.68	9017.50	3999.94	-22.34	0.00	0.00	4000.00	TGT4(H#2)	
12	12753.28	89.95	359.72	9017.50	4002.71	-22.35	2.00	44.04	4002.77		
13	13373.16	89.95	359.72	9018.00	4622.60	-25.40	0.00	0.00	4622.67	PBHL(H#2)	

WELLBORE TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape
TGT1(H#2)	9009.50	599.98	-5.59	Point
TGT2(H#2)	9013.00	1999.97	-11.17	Point
TGT3(H#2)	9016.00	2999.95	-16.76	Point
TGT4(H#2)	9017.50	3999.94	-22.34	Point
PBHL(H#2)	9018.00	4622.60	-25.40	Point



Plan #1 (#2H/OH)
Created By: Nate Bingham Date: 8/47, August 05 2010
Checked: _____ Date: _____