



30-025-40307

Mack Energy

Lea County
Dash for Cash State
#4
OH

HOBBS OCD
OCT 05 2011
RECEIVED

Plan: Plan #1

Pathfinder X & Y Report

04 October, 2011

PATHFINDER

A Schlumberger Company



Pathfinder
Pathfinder X & Y Report



Company:	Mack Energy	Local Co-ordinate Reference:	Well #4
Project:	Lea County	TVD Reference:	KB = 17 @ 3979.0usft (Original Well Elev)
Site:	Dash for Cash State	MD Reference:	KB = 17 @ 3979.0usft (Original Well Elev)
Well:	#4	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	EDM 5000.1 Single User Db

Project	Lea 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	Dash for Cash State		
Site Position:		Northing:	646,551.900 usft
From:	Map	Easting:	760,229.900 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 46' 28.566 N
		Longitude:	103° 29' 12.069 W
		Grid Convergence:	0.46 °

Well	#4			
Well Position	+N/-S	0.0 usft	Northing:	645,880.400 usft
	+E/-W	0.0 usft	Easting:	761,501.700 usft
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft
			Latitude:	32° 46' 21.821 N
			Longitude:	103° 28' 57.237 W
			Ground Level:	3,962.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/4/2011	7.54	60.73	48,958

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	170.18

Survey Tool Program	Date	10/4/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	6,618.4	Plan #1 (OH)	MWD	MWD - Standard



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Local Co-ordinate Reference: Well #4
TVD Reference: KB = 17 @ 3979.0usft (Original Well Elev)
MD Reference: KB = 17 @ 3979.0usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-3,979.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
100.0	0.00	0.00	100.0	-3,879.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
200.0	0.00	0.00	200.0	-3,779.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
300.0	0.00	0.00	300.0	-3,679.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
400.0	0.00	0.00	400.0	-3,579.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
500.0	0.00	0.00	500.0	-3,479.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
600.0	0.00	0.00	600.0	-3,379.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
700.0	0.00	0.00	700.0	-3,279.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
800.0	0.00	0.00	800.0	-3,179.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
900.0	0.00	0.00	900.0	-3,079.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,000.0	0.00	0.00	1,000.0	-2,979.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,100.0	0.00	0.00	1,100.0	-2,879.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,200.0	0.00	0.00	1,200.0	-2,779.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,300.0	0.00	0.00	1,300.0	-2,679.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,400.0	0.00	0.00	1,400.0	-2,579.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,500.0	0.00	0.00	1,500.0	-2,479.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,600.0	0.00	0.00	1,600.0	-2,379.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,700.0	0.00	0.00	1,700.0	-2,279.0	0.0	0.0	0.0	0.00	645,880.40	761,501.70
1,750.0	5.00	170.18	1,749.9	-2,229.1	-2.1	0.4	2.2	10.00	645,878.25	761,502.07
1,800.0	10.00	170.18	1,799.5	-2,179.5	-8.6	1.5	8.7	10.00	645,871.82	761,503.19
1,900.0	10.00	170.18	1,898.0	-2,081.0	-25.7	4.4	26.1	0.00	645,854.71	761,506.15
2,000.0	10.00	170.18	1,996.5	-1,982.5	-42.8	7.4	43.4	0.00	645,837.60	761,509.11
2,100.0	10.00	170.18	2,094.9	-1,884.1	-59.9	10.4	60.8	0.00	645,820.49	761,512.07
2,200.0	10.00	170.18	2,193.4	-1,785.6	-77.0	13.3	78.2	0.00	645,803.37	761,515.03
2,300.0	10.00	170.18	2,291.9	-1,687.1	-94.1	16.3	95.5	0.00	645,786.26	761,518.00
2,400.0	10.00	170.18	2,390.4	-1,588.6	-111.3	19.3	112.9	0.00	645,769.15	761,520.96
2,500.0	10.00	170.18	2,488.9	-1,490.1	-128.4	22.2	130.3	0.00	645,752.04	761,523.92



Pathfinder
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PATHFINDER
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Company: Mack Energy
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Site: Dash for Cash State
Well: #4
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4
TVD Reference: KB = 17 @ 3979.0usft (Original Well Elev)
MD Reference: KB = 17 @ 3979.0usft (Original Well Elev)
North Reference: Gnd
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,600.0	10.00	170.18	2,587.3	-1,391.7	-145.5	25.2	147.6	0.00	645,734.92	761,526.88
2,700.0	10.00	170.18	2,685.8	-1,293.2	-162.6	28.1	165.0	0.00	645,717.81	761,529.84
2,800.0	10.00	170.18	2,784.3	-1,194.7	-179.7	31.1	182.4	0.00	645,700.70	761,532.81
2,900.0	10.00	170.18	2,882.8	-1,096.2	-196.8	34.1	199.7	0.00	645,683.59	761,535.77
2,955.6	10.00	170.18	2,937.5	-1,041.5	-206.3	35.7	209.4	0.00	645,674.08	761,537.41
3,000.0	5.56	170.18	2,981.5	-997.5	-212.2	36.7	215.4	10.00	645,668.15	761,538.44
3,050.0	0.56	170.18	3,031.4	-947.6	-214.9	37.2	218.1	10.00	645,665.53	761,538.90
3,055.6	0.00	0.00	3,037.0	-942.0	-214.9	37.2	218.1	10.00	645,665.50	761,538.90
3,100.0	0.00	0.00	3,081.4	-897.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,200.0	0.00	0.00	3,181.4	-797.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,300.0	0.00	0.00	3,281.4	-697.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,400.0	0.00	0.00	3,381.4	-597.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,500.0	0.00	0.00	3,481.4	-497.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,600.0	0.00	0.00	3,581.4	-397.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,700.0	0.00	0.00	3,681.4	-297.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,800.0	0.00	0.00	3,781.4	-197.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
3,900.0	0.00	0.00	3,881.4	-97.6	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,000.0	0.00	0.00	3,981.4	2.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,100.0	0.00	0.00	4,081.4	102.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,200.0	0.00	0.00	4,181.4	202.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,300.0	0.00	0.00	4,281.4	302.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,400.0	0.00	0.00	4,381.4	402.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,500.0	0.00	0.00	4,481.4	502.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,600.0	0.00	0.00	4,581.4	602.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,700.0	0.00	0.00	4,681.4	702.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,800.0	0.00	0.00	4,781.4	802.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
4,900.0	0.00	0.00	4,881.4	902.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90



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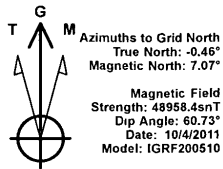
Company: Mack Energy
Project: Lea County
Site: Dash for Cash State
Well: #4
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #4
TVD Reference: KB = 17 @ 3979.0usft (Original Well Elev)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

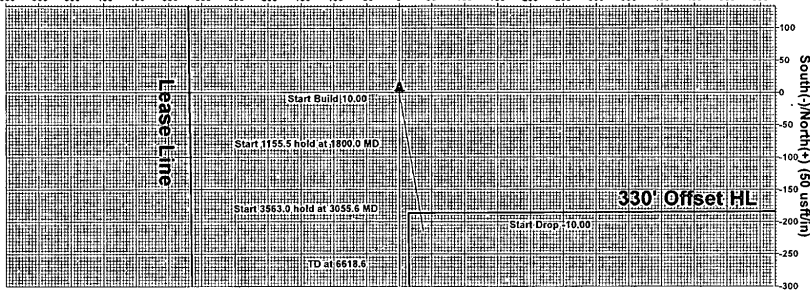
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
5,000.0	0.00	0.00	4,981.4	1,002.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,100.0	0.00	0.00	5,081.4	1,102.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,200.0	0.00	0.00	5,181.4	1,202.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,300.0	0.00	0.00	5,281.4	1,302.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,400.0	0.00	0.00	5,381.4	1,402.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,500.0	0.00	0.00	5,481.4	1,502.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,600.0	0.00	0.00	5,581.4	1,602.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,700.0	0.00	0.00	5,681.4	1,702.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,800.0	0.00	0.00	5,781.4	1,802.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
5,900.0	0.00	0.00	5,881.4	1,902.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,000.0	0.00	0.00	5,981.4	2,002.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,100.0	0.00	0.00	6,081.4	2,102.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,200.0	0.00	0.00	6,181.4	2,202.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,300.0	0.00	0.00	6,281.4	2,302.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,400.0	0.00	0.00	6,381.4	2,402.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,500.0	0.00	0.00	6,481.4	2,502.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,600.0	0.00	0.00	6,581.4	2,602.4	-214.9	37.2	218.1	0.00	645,665.50	761,538.90
6,618.6	0.00	0.00	6,600.0	2,621.0	-214.9	37.2	218.1	0.00	645,665.50	761,538.90

Checked By: _____ Approved By: _____ Date: _____



PATHFINDER

West(-)/East(+) (50 usft/in)



Project: Lea County
Site: Dash for Cash State
Well: #4
Wellbore: OH
Plan: Plan #1 (#4/OH)

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

WELL DETAILS: #4

Ground Elevation: 3962.0
RKB Elevation: KB = 17 @ 3979.0usft (Original Well Elev)
Rig Name: Original Well Elev

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	645880.400	761501.700	32° 46' 21.821 N	103° 28' 57.237 W	

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting
PBHL (#4H)	6600.0	-214.9	37.2	645665.500	761538.900

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Deg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1700.0	0.00	0.00	1700.0	0.0	0.0	0.00	0.00	0.0	
3	1800.0	10.00	170.18	1799.5	-8.6	1.5	10.00	170.18	8.7	
4	2955.6	10.00	170.18	2937.5	-206.3	35.7	0.00	0.00	209.4	
5	3055.6	0.00	0.00	3037.0	-214.9	37.2	10.00	180.00	218.1	
6	6618.6	0.00	0.00	6600.0	-214.9	37.2	0.00	0.00	218.1	PBHL (#4H)

Plan Plan #1 (#4/OH)

Created By: Sam Briffe Date: 9/04/2011
Checked: Date:

