

OCD-HOBBS
HOBBS OCD

DEC 19 2011

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

1a Type of work- ☒ DRILL ☐ REENTER		5 Lease Serial No. NMLC-060199B
1b Type of Well ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6 If Indian, Allottee or Tribe Name
2. Name of Operator Mack Energy Corporation		7 If Unit or CA Agreement, Name and No
3a Address P.O. Box 960 Artesia, NM 88211-0960		8. Lease Name and Well No. <38762> Brook Federal #6
3b. Phone No. (include area code) (575)748-1288		9 API Well No. 30-025-40387
4 Location of Well (Report location clearly and in accordance with any State requirements*) At surface 1800 FNL & 600 FEL Unit # At proposed prod. zone 2310 FNL & 990 FEL		10 Field and Pool, or Exploratory Maljamar-Yeso West <44500>
14 Distance in miles and direction from nearest town or post office* 3 miles SW of Maljamar, NM		11 Sec., T R M or Bk. and Survey or Area Sec. 30 T17S R32E
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg. unit line, if any) 330 ft		12 County or Parish Lea
16 No. of acres in lease 80 ac		13 State NM
17 Spacing Unit dedicated to this well 40 ac		
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 450 ft		20 BLM/BIA Bond No. on file NMB000286
19 Proposed Depth 7,083' MD 7,000' TVD		
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 3922' GR		22 Approximate date work will start* 01/30-2012
		23 Estimated duration 15 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form

- | | |
|---|--|
| 1 Well plat certified by a registered surveyor | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2 A Drilling Plan | 5 Operator certification |
| 3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office) | 6 Such other site specific information and/or plans as may be required by the authorized officer |

25 Signature <i>Jerry W. Sherrell</i>	Name (Printed/ Typed) Jerry W. Sherrell	Date 11/30/11
Title Production Clerk		
Approved by (Signature) <i>James A. Ames</i>	Name (Printed/ Typed)	Date
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	DEC 11 4 2011

Application approval does not warrantor certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

*(Instructions on page 2)

Ka 12/20/11

Roswell Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

State of New Mexico

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION

Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-40387	Pool Code 44500	Pool Name Maljamar Yeso West
Property Code 38762	Property Name BROOK FEDERAL	Well Number 6
OGRID No. 013837	Operator Name MACK ENERGY CORPORATION	Elevation 3922'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	17-S	32-E		1800	NORTH	600	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	30	17-S	32-E		2310	NORTH	990	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

GEODETIC COORDINATES
NAD 27 NME
SURFACE LOCATION
Y=658017.1 N
X=664283.7 E

BOTTOM HOLE LOCATION
Y=657505.8 N
X=663896.6 E

SECTION 30
SECTION 29

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jerry W. Sherrell 5/27/11
Signature Date

Jerry W. Sherrell
Printed Name

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct in the best of my belief.

NOVEMBER 19 2010
Date Surveyed

Ronald J. Eidson
Signature & Seal of Professional Surveyor

3239
Professional Surveyor

Certificate No. 12641
RONALD J. EIDSON 3239

DRILLING PROGRAM

1. Geologic Name of Surface Formation

Quaternary

2. Estimated Tops of Important Geologic Markers:

Rustler	710'
Top Salt	770'
Base Salt	1895'
Yates	1995'
Seven Rivers	2375'
Queen	2998'
San Andres	3760'
Glorieta	5275'
Blaine	5800'
Tubb	6850'

3. Estimated Depths of Anticipated Fresh Water, Oil and Gas:

Water Sand	150'	Fresh Water
Yates	1995'	Oil/Gas
San Andres	3760'	Oil/Gas
Blaine	5800'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 8 5/8" casing to 700' and circulating cement back to surface will protect the surface fresh water sand. Salt section and zones above producing interval will be protected by the 5 1/2" production casing set 7,100', sufficient cement will be pumped to circulate back to surface.

4. Casing Program:

Hole Size	Interval	OD Casing	Wt, Grade, Jt, cond, collapse/burst/tension
12 1/2"	0-765'	8 5/8"	24#, J-55, ST&C, New, 4.004/5.9/7.86
7 7/8"	0-7100'	5 1/2"	17#, L-80, LT&C, New, 1.704/2.714/2.58

5. Cement Program:

8 5/8" Surface Casing: Lead 350 sx, 35:65:0 Class C + 2.0% CaCl₂ + .13#/ sk Cello Flake + 3#/sk LCM-1 + 2.5% Sodium Metasilicate + 6% MPA 5, yield 1.78, excess 100%, Tail 200sx Class C 1% CaCl₂ 1.34 yield.

5 1/2" Production Casing: Lead 525sx Class H + 2.55% bwow R-3 + 3#/ sk LMC-1 + .005 GPS FP-6L + 4% Bwow Sodium Metasilicate, yield 2.15, excess 35%, Tail 525sx H 50:50:0 POZ Class H + 2% Sodium Chloride + 3#/sk LCM-1 + .2% FL-52 + 1% FL-62 + .05% ASA-301 + .005 gps FP-6L + .2% Sodium Metasilicate, yield 1.20.

6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (3000 psi WP) minimum preventer. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top of 4 1/2" drill pipe rams on bottom. The 11" BOP will be nipped up on the 8 5/8" surface casing and tested by a 3rd party to 2000 psi used continuously until TD is reached. All BOP's and accessory equipment will be tested to 2000 psi before drilling out of intermediate casing. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment (Exhibit #10) will include a Kelly cock and floor safety valve and choke lines and choke manifold (Exhibit #11) with a minimum 3000 psi WP rating

7. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of brine and cut brine mud system. The applicable depths and properties of this system are as follows:

DEPTH	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-700' <i>705</i>	Fresh Water	8.5	28	N.C.
<i>700</i> '-TD'	Brine	10	30	N.C.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

8. Auxiliary Well Control and Monitoring Equipment:

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

9. Logging, Testing and Coring Program: *See COA*

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log from T.D. to 8 5/8 casing shoe.
- B. Drill Stem test is not anticipated.
- C. No conventional coring is anticipated.
- D. Further testing procedures will be determined at TD.

10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3,000 psig. Low levels of Hydrogen sulfide have been monitors in producing wells in the area, so H2S may be present while drilling of the well; a plan is attached to the Drilling program. No major loss of circulation zones has been reported in offsetting wells.

11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is June 20, 2011. Once commenced, the drilling operation should be finished in approximately 30 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.

**Attachment to Exhibit #10
NOTES REGARDING THE BLOWOUT PREVENTERS
Brooks Federal #6
Lea County, New Mexico**

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

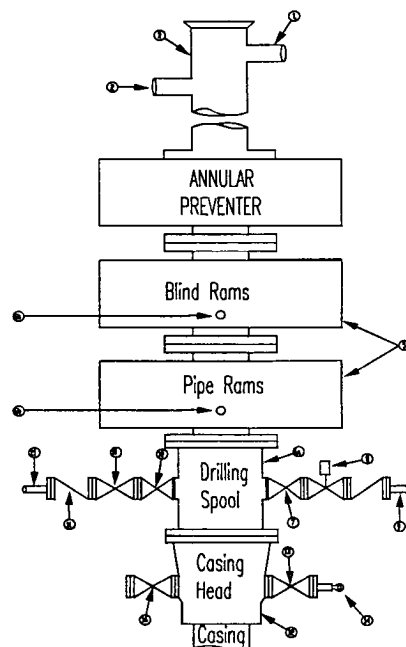
Mack Energy Corporation
Minimum Blowout Preventer Requirements
3000 psi Working Pressure
13 3/8 inch- 3 MWP
11 Inch - 3 MWP
EXHIBIT #10

Stack Requirements

NO.	Items	Min I D	Min Nominal
1	Flowline		2"
2	Fill up line		2"
3	Drilling nipple		
4	Annular preventer		
5	Two single or one dual hydraulically operated rams		
6a	Drilling spool with 2" min. kill line and 3" min choke line outlets		2" Choke
6b	2" min. kill line and 3" min. choke line outlets in ram (Alternate to 6a above)		
7	Valve Gate Plug	3 1/8	
8	Gate valve-power operated	3 1/8	
9	Line to choke manifold		3"
10	Valve Gate Plug	2 1/16	
11	Check valve	2 1/16	
12	Casing head		
13	Valve Gate Plug	1 13/16	
14	Pressure gauge with needle valve		
15	Kill line to rig mud pump manifold		2"

OPTIONAL

16	Flanged Valve	1 13/16	
----	---------------	---------	--



CONTRACTOR'S OPTION TO FURNISH.

1. All equipment and connections above bradenhead or casinghead Working pressure of preventers to be 2000 psi minimum.
2. Automatic accumulator (80 gallons, minimum) capable of closing BOP in 30 seconds or less and, holding them closed against full rated working pressure.
3. BOP controls, to be located near drillers' position.
4. Kelly equipped with Kelly cock.
5. Inside blowout preventer or its equivalent on derrick floor at all times with proper threads to fit pipe being used.
6. Kelly saver-sub equipped with rubber casing protector at all times.
7. Plug type blowout preventer tester.
8. Extra set pipe rams to fit drill pipe in use on location at all times.
9. Type RX ring gaskets in place of Type R.

MEC TO FURNISH:

1. Bradenhead or casing head and side valves.
2. Wear bushing If required.

10

ME

GENERAL NOTES:

1. Deviations from this drawing may be made only with the express permission of MEC's Drilling Manager.
2. All connections, valves, fittings, piping, etc., subject to well or pump pressure must be flanged (suitable clamp connections acceptable) and have minimum working pressure equal to rated working pressure of preventers up through choke valves must be full opening and suitable for high pressure mud service
3. Controls to be of standard design and each marked, showing opening and closing position
4. Chokes will be positioned so as not to hamper or delay changing of choke beans.

Replaceable parts for adjustable choke, or bean sizes, retainers, and choke wrenches to be conveniently located for immediate use.

5. All valves to be equipped with hand-wheels or handles ready for immediate use.
6. Choke lines must be suitably anchored.
7. Handwheels and extensions to be connected and ready for use
8. Valves adjacent to drilling spool to be kept open. Use outside valves except for emergency.
9. All seamless steel control piping (2000 psi working pressure) to have flexible joints to avoid stress. Hoses will be permitted.
10. Casinghead connections shall not be used except in case of emergency.
11. Does not use kill line for routine fill up operations

Mack Energy Corporation

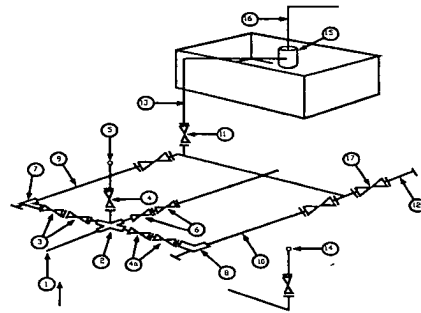
Exhibit #11

MINIMUM CHOKE MANIFOLD

3,000, 5,000, and 10,000 PSI Working Pressure

3M will be used

3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

* Location of separator optional

Below Substructure

Minimum requirements

No.		3,000 MWP			5,000 MWP			10,000 MWP		
		I.D.	Nominal	Rating	I.D.	Nominal	Rating	I.D.	Nominal	Rating
1	Line from drilling Spool		3"	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"			3,000			5,000			
2	Cross 3" x 3" x 3" x 2"									10,000
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
4	Valve Gate Plug	1 13/16		3,000	1 13/16		5,000	1 13/16		10,000
4a	Valves (1)	2 1/16		3,000	2 1/16		5,000	2 1/16		10,000
5	Pressure Gauge			3,000			5,000			10,000
6	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		10,000
8	Adjustable Choke	1"		3,000	1"		5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		3"	10,000
10	Line		2"	3,000		2"	5,000		2"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
12	Line		3"	1,000		3"	1,000		3"	2,000
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000			5,000			10,000
15	Gas Separator		2' x 5'			2' x 5'			2' x 5'	
16	Line		4"	1,000		4"	1,000		4"	2,000
17	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000

(1) Only one required in Class 3M

(2) Gate valves only shall be used for Class 10 M

(3) Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

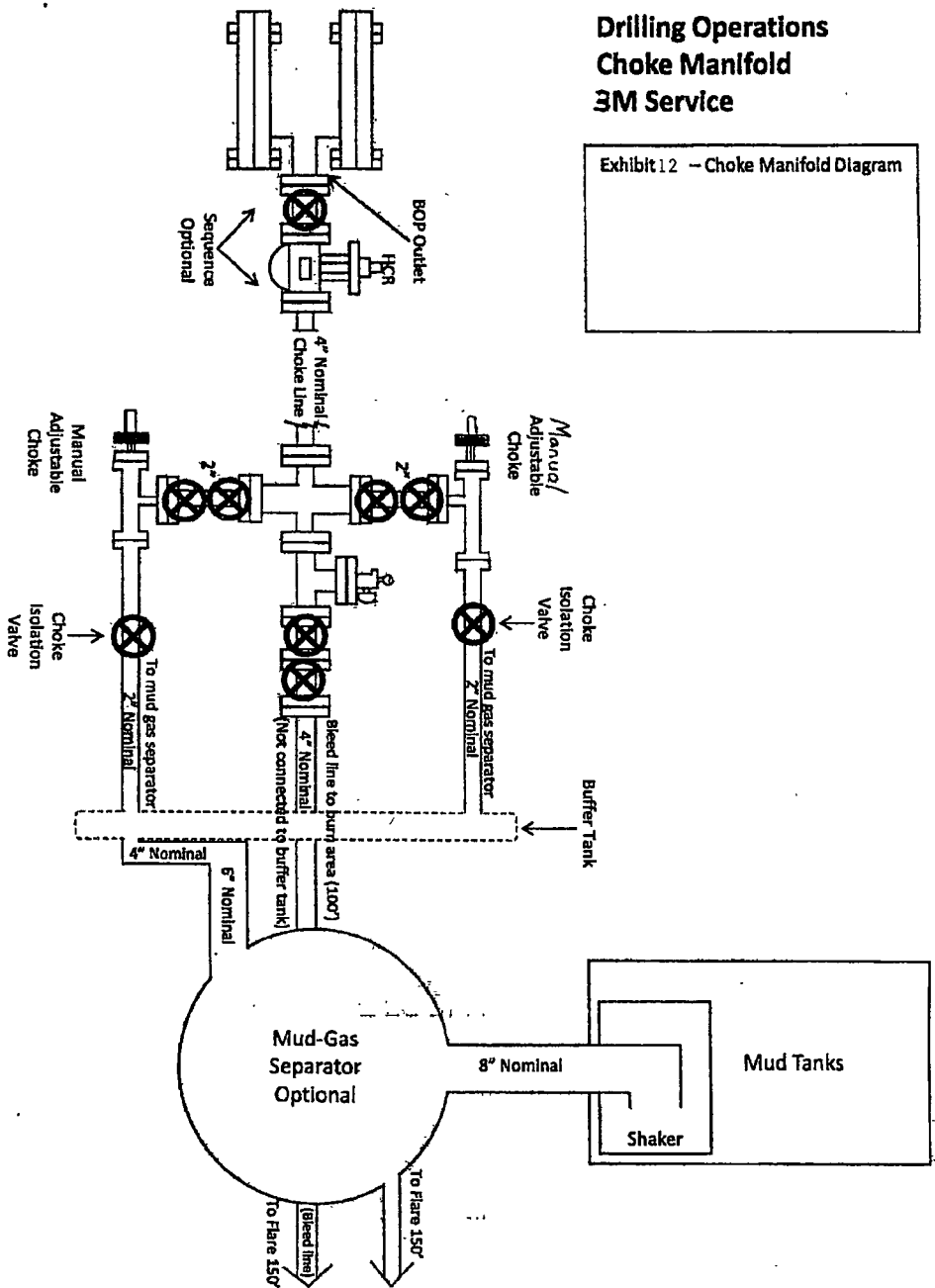
EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored
- Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- Line from drilling spool to choke manifold should be as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees

Mack Energy Corporation
MANIFOLD SCHEMATIC
Exhibit #12

**Drilling Operations
Choke Manifold
3M Service**

Exhibit 12 -- Choke Manifold Diagram





Mack Energy

Lea County
Brook Federal
#6
OH

HOBBS OGD

DEC 19 2011

RECEIVED

Plan: Plan #2

Pathfinder X & Y Report

30 November, 2011

PATHFINDER®

A Schlumberger Company



Pathfinder

Pathfinder X & Y Report



Company: Mack Energy
Project: Lea County
Site: Brook Federal
Well: #6
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #6
KB = 19' @ 3941.0usft (Original Well Elev)
KB = 19' @ 3941.0usft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000 1 Single User Db

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

Site	Brook Federal
Site Position:	
From:	Map
Position Uncertainty:	0.0 usft
Northings:	6,591,840 000 usft
Eastings:	664,867 000 usft
Slot Radius:	13-3/16 "
Latitude:	49° 5' 40 971 N
Longitude:	103° 38' 42 805 W
Grid Convergence:	0.52 °

Well	#6
Well Position	+N/-S +E/-W
Position Uncertainty	0.0 usft 0.0 usft 0.0 usft
Northings:	658,017,100 usft
Eastings:	664,293 700 usft
Wellhead Elevation:	usft
Latitude:	32° 48' 28.209 N
Longitude:	103° 47' 54 984 W
Ground Level:	3,922.0 usft

Wellbore	OH
Magnetics	
Model Name	IGRF200510
Sample Date	11/29/2011
Declination	(°) 7.67
Dip Angle	(°) 60.70
Field Strength	(nT) 48,931

Design	Plan #2
Audit Notes:	
Version:	Phase: PLAN
Vertical Section:	
Depth From (TVD)	+N/-S (usft) 0.0
+E/-W (usft)	0.0
Tie On Depth:	0.0
Direction	(°) 217.42

Survey Tool Program		Date	11/30/2011
From (usft)	To (usft)	Survey (Wellbore)	
0.0	7,082.9	Plan #2 (OH)	
Tool Name		Description	
MWD		MWD - Standard	



Pathfinder

Pathfinder X & Y Report



Company: Mack Energy
Project: Lea County
Site: Brook Federal
Well: #6
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #6
KB = 19' @ 3941.0usft (Original Well Elev)
KB = 19' @ 3941.0usft (Original Well Elev)
Grnd
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.0	0.00	0.00	0.0	-3.941 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
100.0	0.00	0.00	100.0	-3.841 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
200.0	0.00	0.00	200.0	-3.741.0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
300.0	0.00	0.00	300.0	-3.641 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
400.0	0.00	0.00	400.0	-3.541 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
500.0	0.00	0.00	500.0	-3.441 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
600.0	0.00	0.00	600.0	-3.341 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
700.0	0.00	0.00	700.0	-3.241.0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
800.0	0.00	0.00	800.0	-3.141.0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
900.0	0.00	0.00	900.0	-3.041.0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,000.0	0.00	0.00	1,000.0	-2.941 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,100.0	0.00	0.00	1,100.0	-2.841 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,200.0	0.00	0.00	1,200.0	-2.741 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,300.0	0.00	0.00	1,300.0	-2.641 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,400.0	0.00	0.00	1,400.0	-2.541 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,500.0	0.00	0.00	1,500.0	-2.441 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,600.0	0.00	0.00	1,600.0	-2.341 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,700.0	0.00	0.00	1,700.0	-2.241 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,800.0	0.00	0.00	1,800.0	-2.141 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
1,900.0	0.00	0.00	1,900.0	-2.041 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
2,000.0	0.00	0.00	2,000.0	-1.941.0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
2,100.0	0.00	0.00	2,100.0	-1.841 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
2,200.0	0.00	0.00	2,200.0	-1.741 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
2,225.0	0.00	0.00	2,225.0	-1.716 0	0.0	0.0	0.0	0.00	658,017.10	664,293.70
2,300.0	1.50	217.42	2,300.0	-1.641 0	-0.8	-0.6	1.0	2.00	658,016.32	664,293.10
2,400.0	3.50	217.42	2,399.9	-1.541 1	-4.2	-3.2	5.3	2.00	658,012.86	664,290.45
2,500.0	5.50	217.42	2,499.6	-1.441 4	-10.5	-8.0	13.2	2.00	658,006.63	664,285.69



Pathfinder

Pathfinder X & Y Report

PATHFINDER
A Schlumberger Company

Company: Mack Energy
Project: Lea County
Site: Brook Federal
Well: #6
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #6
KB = 19' @ 3941 Ousft (Original Well Elev)
KB = 19' @ 3941 Ousft (Original Well Elev)
Grid
Minimum Curvature
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	7.50	217.42	2,598.9	-1,342.1	-19.5	-14.9	24.5	2.00	657,997.64	664,278.81
2,700.0	9.50	217.42	2,697.8	-1,243.2	-31.2	-23.9	39.3	2.00	657,985.90	664,269.82
2,800.0	11.50	217.42	2,796.1	-1,144.9	-45.7	-34.9	57.5	2.00	657,971.43	664,258.75
2,900.0	13.50	217.42	2,893.8	-1,047.2	-62.9	-48.1	79.2	2.00	657,954.24	664,245.60
3,000.0	15.50	217.42	2,990.6	-950.4	-82.7	-63.3	104.2	2.00	657,934.35	664,230.39
3,100.0	17.50	217.42	3,086.5	-854.5	-105.3	-80.6	132.6	2.00	657,911.80	664,213.13
3,139.4	18.29	217.42	3,124.0	-817.0	-114.9	-87.9	144.7	2.00	657,902.17	664,205.76
3,200.0	18.29	217.42	3,181.5	-759.5	-130.0	-99.5	163.7	0.00	657,887.08	664,194.21
3,300.0	18.29	217.42	3,276.4	-664.6	-154.9	-118.6	195.1	0.00	657,862.16	664,175.14
3,400.0	18.29	217.42	3,371.4	-569.6	-179.9	-137.6	226.5	0.00	657,837.24	664,156.08
3,500.0	18.29	217.42	3,466.3	-474.7	-204.8	-156.7	257.9	0.00	657,812.31	664,137.01
3,600.0	18.29	217.42	3,561.3	-379.7	-229.7	-175.8	289.2	0.00	657,787.39	664,117.94
3,700.0	18.29	217.42	3,656.2	-284.8	-254.6	-194.8	320.6	0.00	657,762.47	664,098.87
3,800.0	18.29	217.42	3,751.2	-189.8	-279.6	-213.9	352.0	0.00	657,737.55	664,079.80
3,900.0	18.29	217.42	3,846.1	-94.9	-304.5	-233.0	383.4	0.00	657,712.63	664,060.73
4,000.0	18.29	217.42	3,941.1	0.1	-329.4	-252.0	414.8	0.00	657,687.70	664,041.66
4,100.0	18.29	217.42	4,036.0	95.0	-354.3	-271.1	446.1	0.00	657,662.78	664,022.59
4,168.4	18.29	217.42	4,101.0	160.0	-371.4	-284.2	467.6	0.00	657,645.73	664,009.54
4,200.0	17.66	217.42	4,131.0	190.0	-379.1	-290.1	477.4	2.00	657,637.99	664,003.62
4,300.0	15.66	217.42	4,226.8	285.8	-401.9	-307.5	506.0	2.00	657,615.23	663,986.20
4,400.0	13.66	217.42	4,323.6	382.6	-422.0	-322.9	531.3	2.00	657,595.13	663,970.82
4,500.0	11.66	217.42	4,421.1	480.1	-439.4	-336.2	553.2	2.00	657,577.73	663,957.51
4,600.0	9.66	217.42	4,519.4	578.4	-454.1	-347.4	571.7	2.00	657,563.04	663,946.27
4,700.0	7.66	217.42	4,618.3	677.3	-466.0	-356.6	586.8	2.00	657,551.09	663,937.12
4,800.0	5.66	217.42	4,717.6	776.6	-475.2	-363.6	598.4	2.00	657,541.88	663,930.08
4,900.0	3.66	217.42	4,817.2	876.2	-481.7	-368.6	606.5	2.00	657,535.43	663,925.15
5,000.0	1.66	217.42	4,917.1	976.1	-485.3	-371.4	611.1	2.00	657,531.75	663,922.33



Pathfinder
Pathfinder X & Y Report



Company: Mack Energy
Project: Lea County
Site: Brook Federal
Well: #6
Wellbore: OH
Design: Plan #2

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #6
KB = 19' @ 3941.0ustf (Original Well Elev)
KB = 19' @ 3941.0ustf (Original Well Elev)
Grid
Minimum Curvature
EDM 5000 1 Single User Db

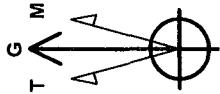
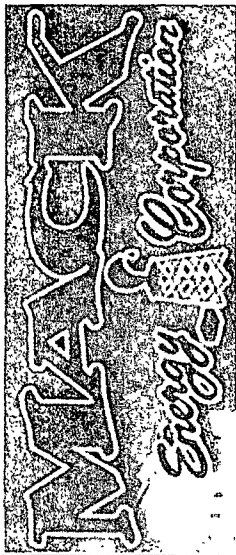
Planned Survey

MD (ustf)	Inc (°)	Azi (azimuth) (°)	TVD (ustf)	TVDS (ustf)	N/S (ustf)	E/W (ustf)	V. Sec (ustf)	DLeg (°/100ustf)	Northing (ustf)	Easting (ustf)
5,082.9	0.00	0.00	5,000.0	1,059.0	-486.3	-372.1	612.3	2.00	657,530.80	663,921.60
5,100.0	0.00	0.00	5,017.1	1,076.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,200.0	0.00	0.00	5,117.1	1,176.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,300.0	0.00	0.00	5,217.1	1,276.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,400.0	0.00	0.00	5,317.1	1,376.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,500.0	0.00	0.00	5,417.1	1,476.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,600.0	0.00	0.00	5,517.1	1,576.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,700.0	0.00	0.00	5,617.1	1,676.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,800.0	0.00	0.00	5,717.1	1,776.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
5,900.0	0.00	0.00	5,817.1	1,876.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,000.0	0.00	0.00	5,917.1	1,976.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,100.0	0.00	0.00	6,017.1	2,076.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,200.0	0.00	0.00	6,117.1	2,176.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,300.0	0.00	0.00	6,217.1	2,276.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,400.0	0.00	0.00	6,317.1	2,376.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,500.0	0.00	0.00	6,417.1	2,476.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,600.0	0.00	0.00	6,517.1	2,576.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,700.0	0.00	0.00	6,617.1	2,676.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,800.0	0.00	0.00	6,717.1	2,776.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
6,900.0	0.00	0.00	6,817.1	2,876.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
7,000.0	0.00	0.00	6,917.1	2,976.1	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60
7,082.9	0.00	0.00	7,000.0	3,059.0	-486.3	-372.1	612.3	0.00	657,530.80	663,921.60

Checked By: _____

Approved By: _____

Date: _____



Azimuths to Grid North
 True North: -0.29°
 Magnetic North: 7.38°
 Magnetic Field
 Strength: 48930.7 nT
 Dip Angle: 60.70°
 Date: 11/29/2011
 Model: IGRF200510

PATHFINDER®

A Schlumberger Company

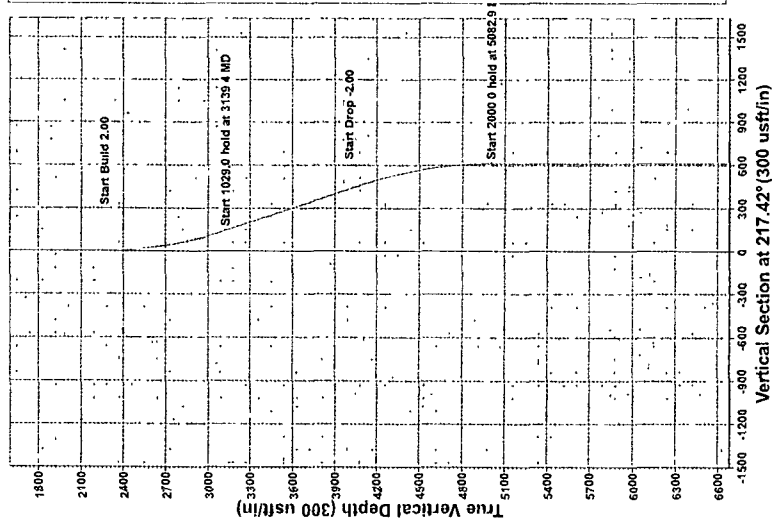
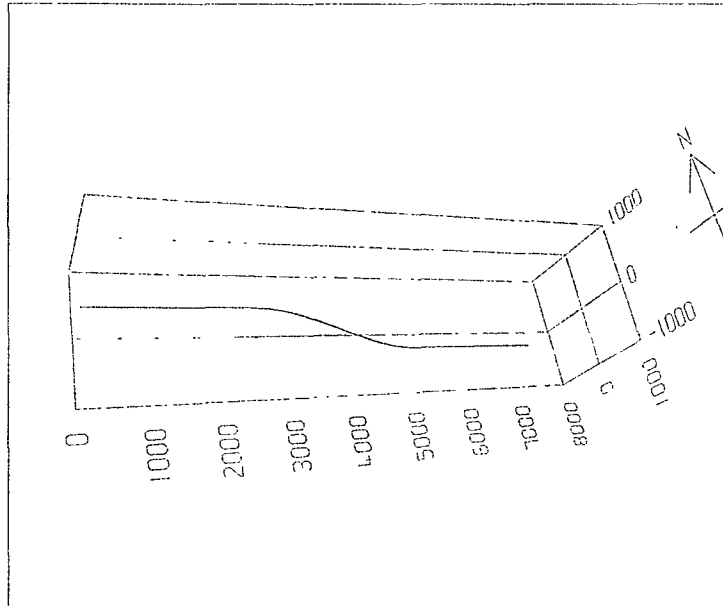
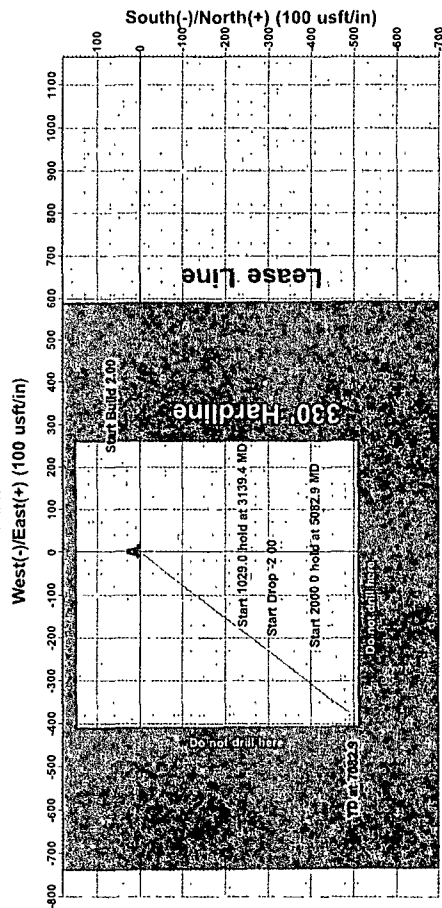
Project: Lea County
Site: Brook Federal
Well: #6
Wellbore: OH
Plan: Plan #2 (#6/OH)

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 #6					
Ground Elevation: 3922.0					
RKB Elevation: KB = 19' @ 344.0 uft (Original Well Elev)					
Rig Name Original Well Elev					
+N/S	+E/W	North	East	Latitude	Longitude
0.0	0.0	654017.100	664293.700	32° 48' 28.209 N	103° 47' 54.984 W

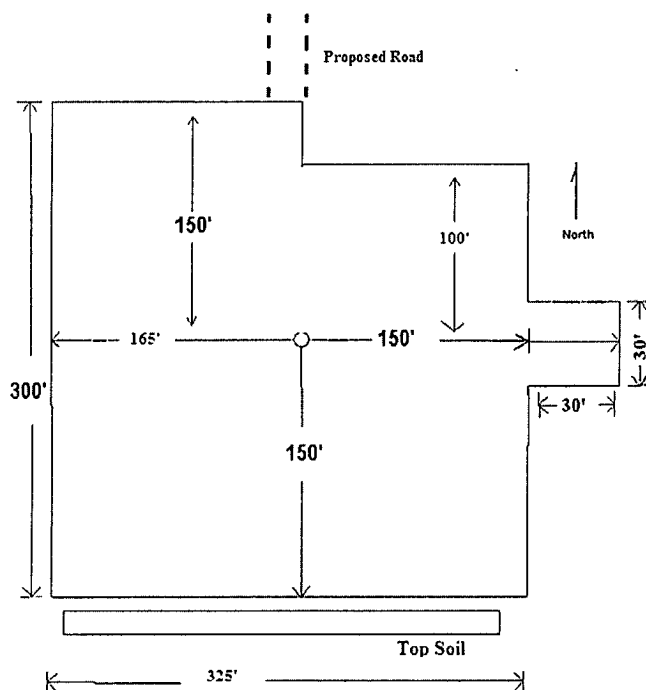
WELLBORE TARGET DETAILS					
Name	TVD	+N/S	+E/W	North	East
PBHL (Brook Fed 6)	7000.0	-486.3	-372.1	657550.800	663921.600

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
2	225.4	18.29	217.42	3139.4	-114.9	-57.9	2.00	217.42	144.7
3	3139.4	18.29	217.42	4101.0	-371.4	-284.2	0.00	0.00	467.6
4	4168.4	18.29	217.42	4101.0	-371.4	-284.2	0.00	0.00	467.6
5	5082.9	0.00	0.00	5000.0	-486.3	-372.1	2.00	186.00	612.3
6	7082.9	0.00	0.00	7000.0	-486.3	-372.1	0.00	0.00	612.3



8. Well Site Layout:

- A. The well site and elevation plat for the proposed well is shown in Exhibit #1. It was staked by John West Engineering, Hobbs, NM.
- B. The drill pad layout, with elevations staked by John West Engineering, is shown in Exhibit #14. Dimensions of the pad are shown. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- C. Diagram below shows the proposed orientation of the location. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.



Exhibit# 14