

Form 3160-3
(March 2012)

BLM-CARLSBAD FIELD OFFICE
AMENDED

FOR CHANGE OF SURFACE LOCATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

5. Lease Serial No.
NMNM06531A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.
NM70976X LEA UNIT BONE SPRING

8. Lease Name and Well No.
LEA UNIT #30H

9. API Well No.

10. Field and Pool, or Exploratory
LEA; BONE SPRING

11. Sec., T. R. M. or Bld. and Survey or Area

SEC 12, T20S-R34E

12. County or Parish
LEA

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

2. Name of Operator LEGACY RESERVES OPERATING LP

3a. Address P.O. BOX 10848
MIDLAND, TX 79702

3b. Phone No. (include area code)
432-689-5200

4. Location of Well (Report location clearly and in accordance with any State requirements *)

At surface UL: M 170' FSL & 785' FWL, SEC 12

At proposed prod. zone UL: M 330' FSL & 660' FWL, SEC 13

14. Distance in miles and direction from nearest town or post office*
23 MILES W-SW HOBBS

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)

SHL: 170'
BHL: 660'

16. No. of acres in lease
520

17. Spacing Unit dedicated to this well
160 ACRES

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

SHL: ~700'
BHL: ~1400'

19. Proposed Depth
11,130' PH, 15,800' MD
10,946' TVD

20. BLM/BIA Bond No. on file
NMB000394

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3650' GL

22. Approximate date work will start*
07/01/2012

23. Estimated duration
45 DAYS

24. Attachments

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

1. Well plat certified by a registered surveyor.

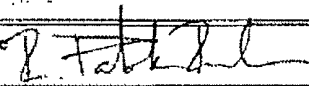
2. A Drilling Plan.

3. A Surface Use Plan (if the location is on National Forest System Lands, the
SUPO must be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see
Item 20 above).

5. Operator certification.

6. Such other site specific information and/or plans as may be required by the
BLM.

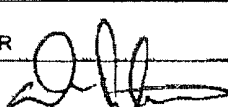
25. Signature 

Name (Printed/Typed)
D. PATRICK DARDEN, P.E.

Date
06/08/2012

Title

SENIOR ENGINEER

Approved by (Signature) 

Name (Printed/Typed)

Date

Title

FIELD MANAGER

Office

CARLSBAD FIELD OFFICE

Application approval does not warrant or 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.

(Continued on page 2)

*(Instructions on page 2)
Capitan Controlled Water Basin

Witness Surface &
Intermediate Casing

KZ 07/25/12

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

JUL 26 2012

APPLICATION TO DRILL

LEA UNIT #30H

LEGACY RESERVES OPERATING, L.P.

SHL: Unit M, Section 12

T20S-R34E, Lea County New Mexico

(REVISED 6/07/12 – Surface Location Change)

To satisfy requirements of Onshore Oil and Gas Order No. 1, Legacy Reserves Operating, L.P. submits the following for your consideration:

1. **Location:** SHL: 170' FSL & 785' FWL, Sec 12, T20S-R34E
BHL: 330' FSL & 660' FWL, Sec 13, T20S-R34E
2. **Elevations:** 3,650' GL
3,674' KB
3. **Geological Name of Surface Formation:** Quaternary Alluvium Deposits
4. **Drilling Tools and Associated Eqpt:** Rotary Drilling Rig using fluid as a means for removal of solid cuttings from the well.
5. **Proposed Drilling Depth:** 15,800' MD 10,946' TVD
6. **Estimated Tops of Geological Markers:**

Rustler	1,600'	Queen	4,620'
Top Salt	1,960'	Delaware	5,150'
Bottom Salt	3,400'	Bone Spring	8,150'
Yates	3,450'	Wolfcamp	11,000'
Seven Rivers/Capitan	3,650'		
7. **Possible mineral bearing formation:**

Bone Spring	Oil.	Delaware	Oil.	Fresh Water	~125'
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8. **Proposed Mud System:**

Depth	Mud Wt.	Visc	Fluid Loss	Type Mud
0' to 1750'	8.4-8.6	30-32	May lose circ	FW gel spud mud
1750' to 5500'	10.0-10.2	28-29	May lose circ	Brine Water
5500' to 11,130'	8.4-9.4	28-29	NC	FW & brine, use hi-vis sweeps to clean hole
10,415' to 15,800'	9	28-29	NC	Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run OH logs and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

APPLICATION TO DRILL

LEA UNIT #30H

LEGACY RESERVES OPERATING, L.P.

SHL: Unit M, Section 12

T20S-R34E, Lea County New Mexico

(REVISED 7/12/12 - Surf & Intrmd Csg Change)

9. Proposed Drilling Plan:

Set surface and intermediate casing and cement to surface. Drill pilot hole to ~11,130' and log well. PB pilot hole to ~10,425 w/715 sxs class H cmt + 0.2% R-3 (16.5 ppg, 1.05 cfps, 4.25 gps wtr - 30% excess), set whipstock & drill 8-3/4" hole to TD of 15,800' MD. Set 5-1/2" casing from surface to TD (15,800' MD): Cement 5-1/2" production casing back up into intermediate casing to ~4,000'. *See COA*

10. Casing Information:

String	Hole size	Depth	Casing OD	Collar	Weight	Grade
Surface	17-1/2"	0' to 1,750' MD	New 13-3/8"	STC	54.5#	J-55
Int.	12-1/4"	0' to 4,000' MD	New 9-5/8"	LTC	40#	J-55
Int.	12-1/4"	4,000' to 5,500' MD	New 9-5/8"	LTC	40#	HCK-55
Prod	8-3/4"	0' to 15,800' MD	New 5-1/2"	LTC	17#	P-110

5-1/2", P-110:

Collapse Factor: 1.125

Burst Factor: 1.125

Tension Factor: 1.60

11. Cementing Information:

Surface Casing (100% excess on lead & 100% excess on tail):

Lead: 1115 sxs class C cmt + 4% bentonite + 0.25 pps cello flakes + 0.005 gps FP-6L + 2% calcium chloride (13.50 ppg, 1.75 cfps, 9.16 gps wtr).

Tail: 400 sxs class C cmt + 0.005 gps FP-6L + 0.5% calcium chloride (14.80 ppg, 1.33 cfps, 6.33 gps wtr).

Intermediate Casing (50% excess on lead & 20% excess on tail):

Lead: 800 sxs (50:50) poz (fly ash) class C cmt + 10% bentonite + 5% sodium chloride + 0.25 pps cello flakes + 0.1% FL-52A + 0.005 gps FP-6L (11.90 ppg, 2.37 cf/sx, 13.52 gps wtr).

Tail: 325 sxs class C cmt + 0.2% R-3 + 0.005 gps FP-6L (14.80 ppg, 1.33 cfps, 6.31 gps wtr).

Production Casing (25% excess on lead & 25% excess on tail):

See COA
Lead: 760 sxs (50:50) poz (fly ash) class H cmt + 6% bentonite + 5% sodium chloride + 5 pps LCM-1 + 0.7% sodium metasilicate + 0.5% R-21 + 0.45% FL-52A + 0.005 gps FP-6L (11.90 ppg, 2.31 cf/sx, 12.60 gps wtr).

Tail: 1450 sxs (15:61:11) poz (fly ash) class C cmt CSE-2 + 4% sodium chloride + 3 pps LCM-1 + 0.6% FL-25 + 0.6 FL-52A + 0.2% sodium metasilicate + 0.15% R-21 + 0.005 gps FP-6L (13.20 ppg, 1.63 cf/sx, 7.98 gps wtr).

APPLICATION TO DRILL
LEA UNIT #30H
LEGACY RESERVES OPERATING, L.P.
SHL: Unit M, Section 12
T20S-R34E, Lea County New Mexico
(REVISED 6/07/12 – Surface Location Change)

12. Pressure Control Eqpt/BOP:

Test BOP/BOPF per Onshore Order #2

Legacy plans on using a 13-5/8" 5000 psi working pressure BOP system consisting of one set of blind rams and one set of pipe rams and a 5000 psi annular type preventer. A choke manifold and 80 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head as needed. A keily cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. A mud gas separator will be available for use if needed.

BOP unit will be hydraulically operated. BOP will be nipped up and operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the 13-5/8" casing through the running of production casing, the well will be equipped with a 5000 psi BOP system.

The BOPs will be tested by an independent service company to 250 psi low and 5000 psi high. The Hydril will be tested to 250 psi low and 2500 psi high.

13. Testing, Logging, and Coring Program:

- see COF*
- A. Mud logging program: 2 man unit from top of Delaware to TD.
 - B. Logging is planned from TD of pilot hole up to top of Delaware.
 - C. No DST's or cores are planned.

14. Potential Hazards

No abnormal pressures or temperatures are expected in the drilling of this well. If H2S is encountered the operator will comply with provisions of Onshore Order 6. Since there will be an H2S Safety package on location, attached is an "H2S Drilling Operations Plan". Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operations of equipment being used. No lost circulation is expected to occur but to be prepared for any sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. Estimated BHP: 4800 psi, estimated BHT: 130°F.

15. Road and Location

Road and location construction will begin after BLM approval of APD. Anticipated spud date is middle to late June 2012. Drilling expected to take 35-40 days and an additional 7 days for the completion.

16. Additional Requirements of Project:

Completion: The targeted Bone Spring pay zone will be perforated and stimulated by means of acid and hydraulic fracturing in multiple stages. Fresh water used in the completion of this well will be stored in an already existing fresh water frac pond on the lease.



LEA UNIT #30H

LOCATION: See Below for SHL & PBHL.

Proposed Wellbore Configuration

FIELD: Lea (Bone Spring)

COUNTY: Lea

STATE: New Mexico

GL: 3650'

KB:

SPUD DATE: 7/??/12

LATEST UPDATE: 06/08/2012

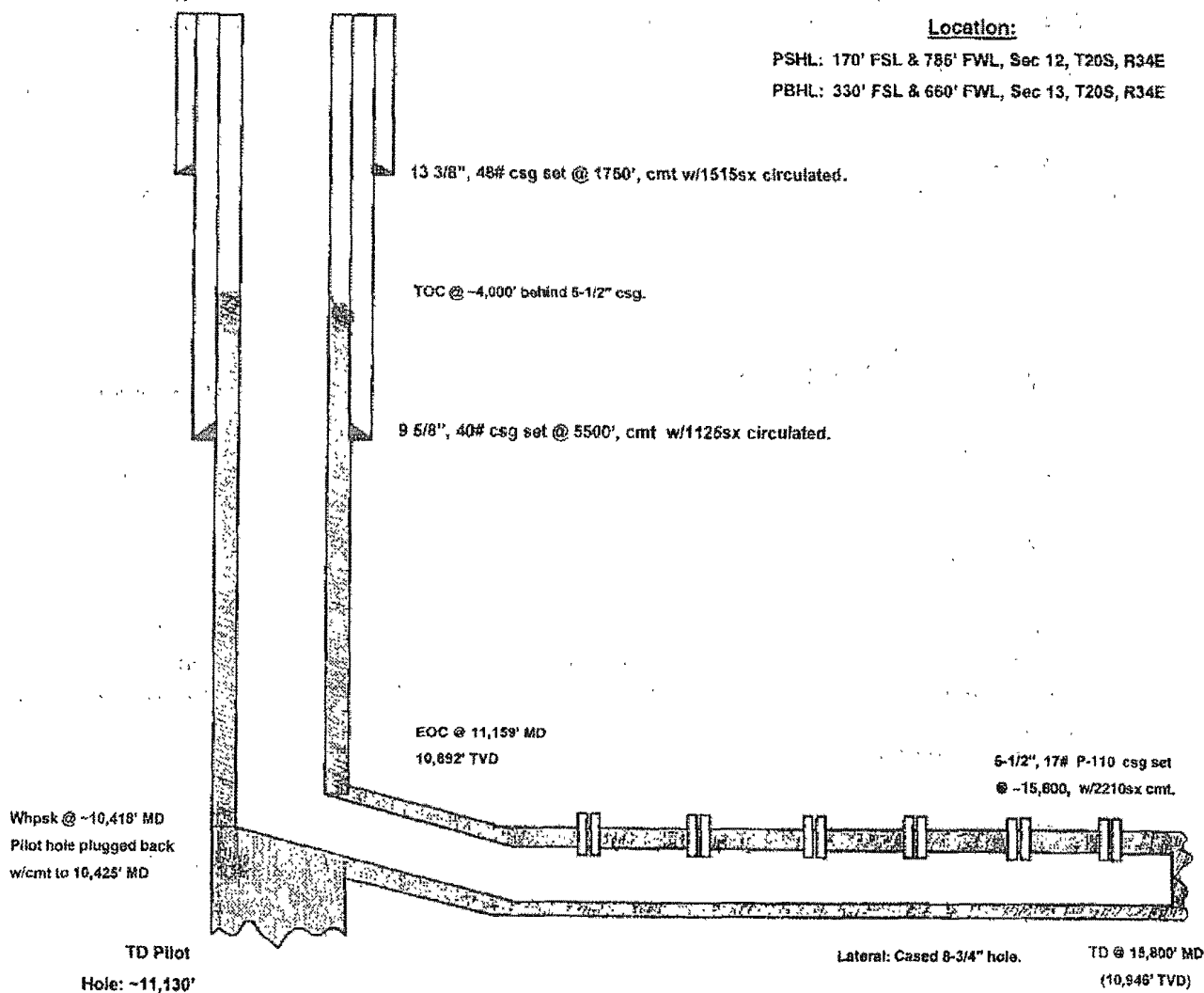
BY: DP Darden

API No: 30-025-?????

Location:

PSHL: 170' FSL & 785' FWL, Sec 12, T20S, R34E

PBHL: 330' FSL & 660' FWL, Sec 13, T20S, R34E





Legacy Reserves Operating LP

Lea County, NM (NAD27 NME)

Lea Unit #30H

OH

Plan #2 - 8-3/4" Hole

Standard Planning Report

07 June, 2012



Scientific Drilling



Scientific Drilling International, Inc.
Planning Report



Database: EDM 5000.1 Single User Db
Company: Legacy Reserves Operating LP
Project: Lea County, NM (NAD27 NME)
Site: Lea Unit #30H
Well: Lea Unit #30H
Wellbore: OH
Design: Plan #2 - 8-3/4" Hole

Local Co-ordinate Reference: Well Lea Unit #30H
TVD Reference: RF @ 3675.00usft
MD Reference: RF @ 3675.00usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD27 NME)		
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	Lea Unit #30H		
Site Position:	Northings:	575,930.20 usft	Latitude: 32° 34' 50.525 N
From: Map	Easting:	750,749.40 usft	Longitude: 103° 31' 9.444 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16"	Grid Convergence: 0.44°

Well	Lea Unit #30H		
Well Position	+N/-S	0.00 usft	Northings: 575,930.20 usft
	+E/-W	0.00 usft	Easting: 750,749.40 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	Ground Level: 3,651.00 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	06/07/12	7.47	60.50	48,737

Design: Plan #2 - 8-3/4" Hole

Audit Notes:

Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	180.95

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,415.00	0.00	0.00	10,415.00	0.00	0.00	0.00	0.00	0.00	0.00	
11,159.49	89.34	180.95	10,892.43	-471.89	-7.84	12.00	12.00	-24.05	180.95	
15,799.85	89.34	180.95	10,946.00	-5,111.30	-84.90	0.00	0.00	0.00	0.00	0.00 PBHL-Lea Unit #30H



Scientific Drilling International, Inc.
Planning Report



Database: EDM 5000 1 Single User Db
Company: Legacy Reserves Operating LP
Project: Lea County, NM (NAD27 NME)
Site: Lea Unit #30H
Well: Lea Unit #30H
Wellbore: OH
Design: Plan #2 - 8-3/4" Hole

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Well: Lea Unit #30H
RF @ 3675.00usft
RF @ 3675.00usft
Grid
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100 ft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10,415.00	0.00	0.00	10,415.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP @ 10415' MD & Start DLS 12.00°/100'									
10,500.00	10.20	180.95	10,499.55	-7.55	-0.13	7.55	12.00	12.00	0.00
10,600.00	22.20	180.95	10,595.41	-35.39	-0.59	35.39	12.00	12.00	0.00
10,700.00	34.20	180.95	10,683.38	-82.55	-1.37	82.56	12.00	12.00	0.00
10,800.00	46.20	180.95	10,759.62	-146.97	-2.44	146.99	12.00	12.00	0.00
10,900.00	58.20	180.95	10,820.79	-225.83	-3.75	225.86	12.00	12.00	0.00
11,000.00	70.20	180.95	10,864.24	-315.69	-5.24	315.73	12.00	12.00	0.00
11,100.00	82.20	180.95	10,888.05	-412.61	-6.85	412.67	12.00	12.00	0.00
11,129.87	85.78	180.95	10,891.17	-442.31	-7.35	442.37	12.00	12.00	0.00
Formation 2									
11,159.49	89.34	180.95	10,892.43	-471.89	-7.84	471.95	12.00	12.00	0.00
Land hold 89.34°									
11,187.61	89.34	180.95	10,892.76	-500.00	-8.31	500.07	0.00	0.00	0.00
FP-Lea Unit #30H									
11,200.00	89.34	180.95	10,892.90	-512.39	-8.51	512.46	0.00	0.00	0.00
11,300.00	89.34	180.95	10,894.06	-612.37	-10.17	612.46	0.00	0.00	0.00
11,400.00	89.34	180.95	10,895.21	-712.35	-11.83	712.45	0.00	0.00	0.00
11,500.00	89.34	180.95	10,896.36	-812.33	-13.49	812.44	0.00	0.00	0.00
11,600.00	89.34	180.95	10,897.52	-912.31	-15.15	912.44	0.00	0.00	0.00
11,700.00	89.34	180.95	10,898.67	-1,012.29	-16.81	1,012.43	0.00	0.00	0.00
11,800.00	89.34	180.95	10,899.83	-1,112.27	-18.48	1,112.42	0.00	0.00	0.00
11,900.00	89.34	180.95	10,900.98	-1,212.25	-20.14	1,212.42	0.00	0.00	0.00
12,000.00	89.34	180.95	10,902.14	-1,312.23	-21.80	1,312.41	0.00	0.00	0.00
12,100.00	89.34	180.95	10,903.29	-1,412.21	-23.46	1,412.40	0.00	0.00	0.00
12,200.00	89.34	180.95	10,904.44	-1,512.19	-25.12	1,512.40	0.00	0.00	0.00
12,300.00	89.34	180.95	10,905.60	-1,612.17	-26.78	1,612.39	0.00	0.00	0.00
12,400.00	89.34	180.95	10,906.75	-1,712.15	-28.44	1,712.38	0.00	0.00	0.00
12,500.00	89.34	180.95	10,907.91	-1,812.13	-30.10	1,812.38	0.00	0.00	0.00
12,600.00	89.34	180.95	10,909.06	-1,912.11	-31.76	1,912.37	0.00	0.00	0.00
12,700.00	89.34	180.95	10,910.22	-2,012.08	-33.42	2,012.36	0.00	0.00	0.00
12,800.00	89.34	180.95	10,911.37	-2,112.06	-35.08	2,112.36	0.00	0.00	0.00
12,900.00	89.34	180.95	10,912.53	-2,212.04	-36.74	2,212.35	0.00	0.00	0.00
13,000.00	89.34	180.95	10,913.68	-2,312.02	-38.40	2,312.34	0.00	0.00	0.00
13,100.00	89.34	180.95	10,914.83	-2,412.00	-40.06	2,412.34	0.00	0.00	0.00
13,200.00	89.34	180.95	10,915.99	-2,511.98	-41.72	2,512.33	0.00	0.00	0.00
13,300.00	89.34	180.95	10,917.14	-2,611.96	-43.39	2,612.32	0.00	0.00	0.00
13,400.00	89.34	180.95	10,918.30	-2,711.94	-45.05	2,712.32	0.00	0.00	0.00
13,500.00	89.34	180.95	10,919.45	-2,811.92	-46.71	2,812.31	0.00	0.00	0.00
13,600.00	89.34	180.95	10,920.61	-2,911.90	-48.37	2,912.30	0.00	0.00	0.00
13,700.00	89.34	180.95	10,921.76	-3,011.88	-50.03	3,012.30	0.00	0.00	0.00
13,800.00	89.34	180.95	10,922.91	-3,111.86	-51.69	3,112.29	0.00	0.00	0.00
13,900.00	89.34	180.95	10,924.07	-3,211.84	-53.35	3,212.28	0.00	0.00	0.00
14,000.00	89.34	180.95	10,925.22	-3,311.82	-55.01	3,312.28	0.00	0.00	0.00
14,100.00	89.34	180.95	10,926.38	-3,411.80	-56.67	3,412.27	0.00	0.00	0.00
14,200.00	89.34	180.95	10,927.53	-3,511.78	-58.33	3,512.26	0.00	0.00	0.00
14,300.00	89.34	180.95	10,928.69	-3,611.76	-59.99	3,612.26	0.00	0.00	0.00
14,400.00	89.34	180.95	10,929.84	-3,711.74	-61.65	3,712.25	0.00	0.00	0.00
14,500.00	89.34	180.95	10,931.00	-3,811.72	-63.31	3,812.24	0.00	0.00	0.00
14,600.00	89.34	180.95	10,932.15	-3,911.70	-64.97	3,912.24	0.00	0.00	0.00
14,700.00	89.34	180.95	10,933.30	-4,011.68	-66.63	4,012.23	0.00	0.00	0.00
14,800.00	89.34	180.95	10,934.46	-4,111.66	-68.30	4,112.22	0.00	0.00	0.00
14,900.00	89.34	180.95	10,935.61	-4,211.63	-69.96	4,212.22	0.00	0.00	0.00



Scientific Drilling International, Inc.

Planning Report



Database: EDM 5000.1 Single User Db
Company: Legacy Reserves Operating LP
Project: Lea County, NM (NAD27 NME)
Site: Lea Unit #30H
Well: Lea Unit #30H
Wellbore: OH
Design: Plan #2 - 8-3/4" Hole

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method:

Well Lea Unit #30H

RF @ 3675.00usft

RF @ 3675.00usft

Grid

Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,000.00	89.34	180.95	10,936.77	-4,311.61	-71.62	4,312.21	0.00	0.00	0.00
15,100.00	89.34	180.95	10,937.92	-4,411.59	-73.28	4,412.20	0.00	0.00	0.00
15,200.00	89.34	180.95	10,939.08	-4,511.57	-74.94	4,512.20	0.00	0.00	0.00
15,300.00	89.34	180.95	10,940.23	-4,611.55	-76.60	4,612.19	0.00	0.00	0.00
15,400.00	89.34	180.95	10,941.38	-4,711.53	-78.26	4,712.18	0.00	0.00	0.00
15,500.00	89.34	180.95	10,942.54	-4,811.51	-79.92	4,812.18	0.00	0.00	0.00
15,600.00	89.34	180.95	10,943.69	-4,911.49	-81.58	4,912.17	0.00	0.00	0.00
15,700.00	89.34	180.95	10,944.85	-5,011.47	-83.24	5,012.16	0.00	0.00	0.00
15,799.85	89.34	180.95	10,946.00	-5,111.30	-84.90	5,112.01	0.00	0.00	0.00

PBHL-Lea Unit #30H

Design Targets

Target Name

- hit/miss target

- Shape

Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
0.00	0.00	10,892.76	-500.00	-8.31	575,430.20	750,741.09	32° 34' 45.578 N	103° 31' 9.585 W
FP-Lea Unit #30H								
- plan hits target center								
- Point								
0.00	0.00	10,946.00	-5,111.30	-84.90	570,818.90	750,664.50	32° 33' 59.956 N	103° 31' 10.892 W
PBHL-Lea Unit #30H								
- plan hits target center								
- Point								

Formations

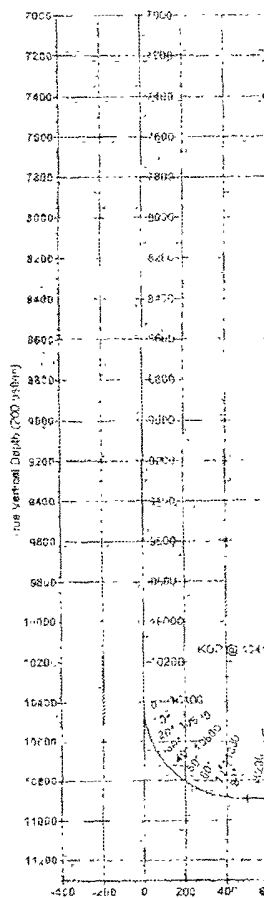
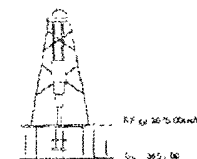
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11,129.87	10,891.17	Formation 2		0.67	181.10

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates	Comment
10,415.00	10,415.00	+N/-S (usft) 0.00	KOP @ 10415' MD & Start DLS 12.00°/100'
11,159.49	10,892.43	+E/-W (usft) -471.89	Land hold 89.34°

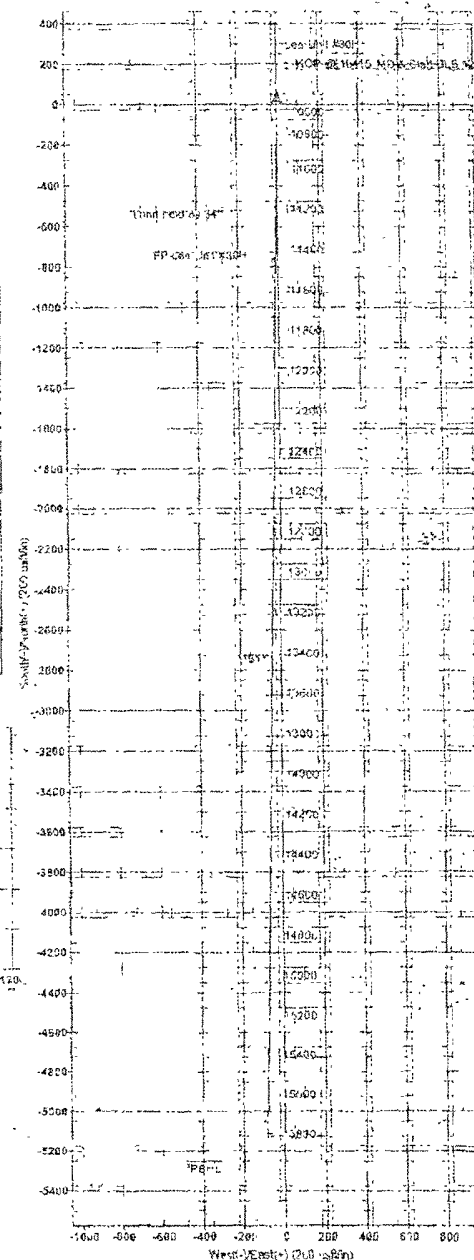
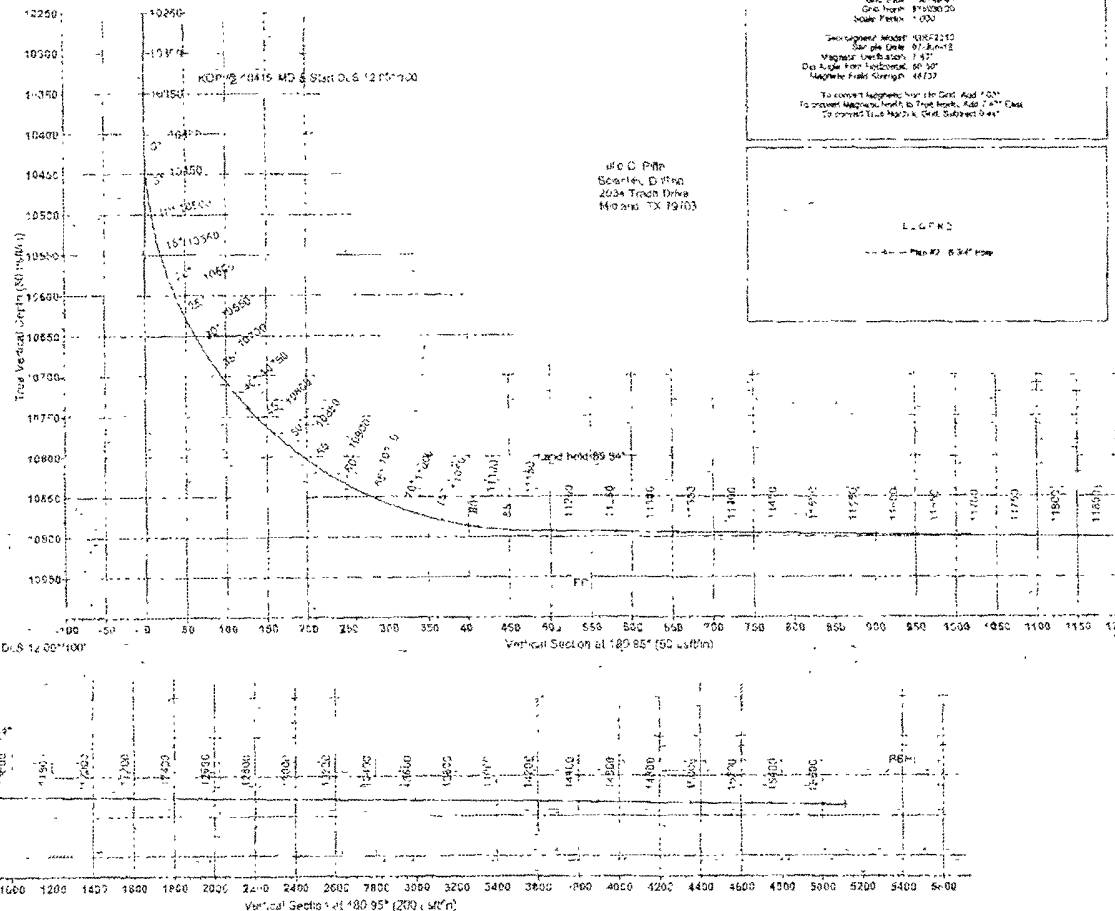


Lea Unit #30H
Lea County, NM (NAD27 NME)
Northing (Y) 575930.20
Easting (X) 750749.40
Plan #2 - 8-3/4" Hole



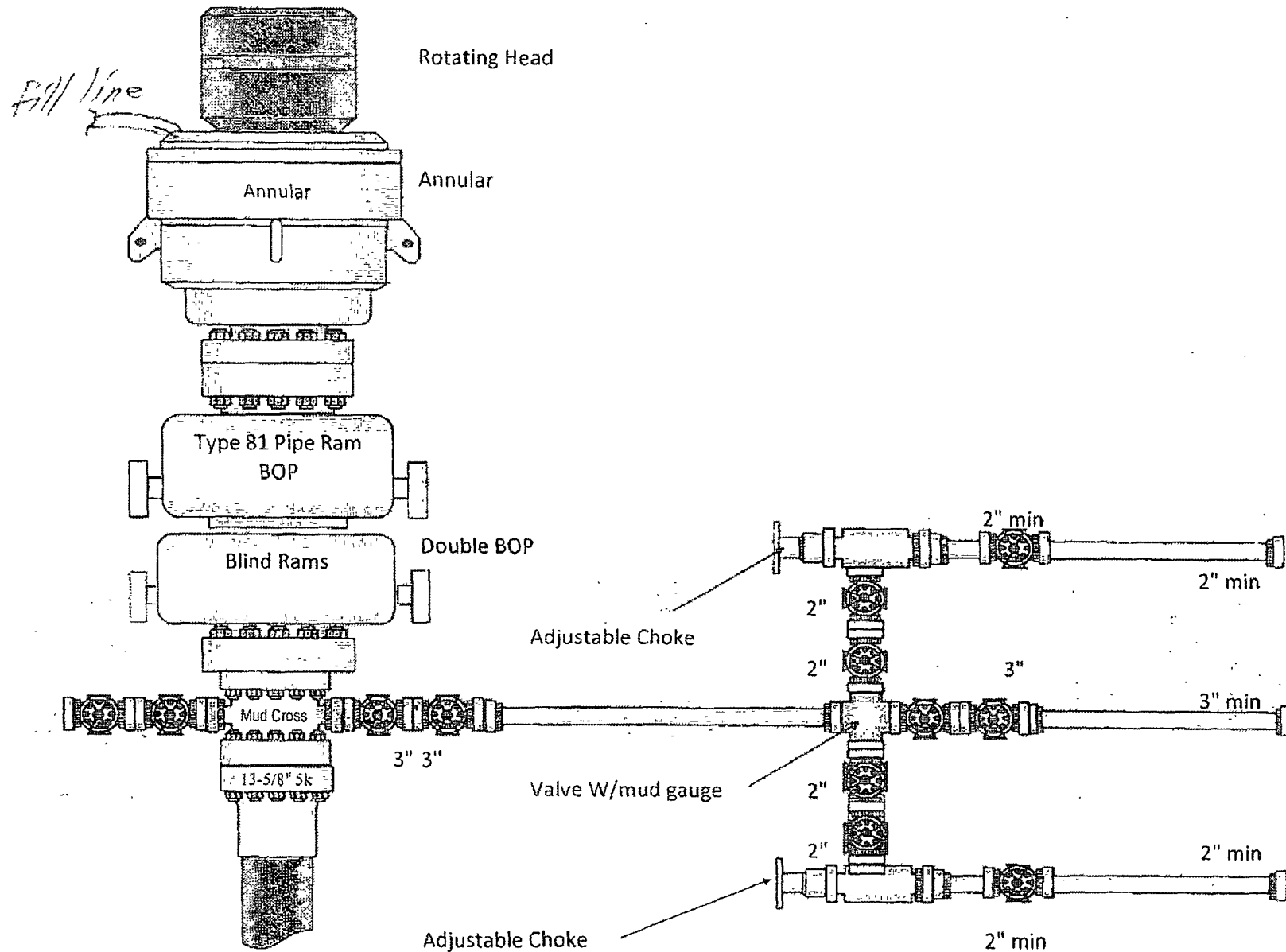
WELL DETAILS									
Lea Unit #30H									
Well ID	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Well Name	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Well Type	Oil	Gas	Water	Steam	Geothermal	Geothermal	Geothermal	Geothermal	Geothermal
Well Status	Active	Active	Active	Active	Active	Active	Active	Active	Active
Well Depth	10000	10000	10000	10000	10000	10000	10000	10000	10000
Well Diameter	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"
Well Completion	Open	Open	Open	Open	Open	Open	Open	Open	Open
Well Production	Oil	Gas	Water	Steam	Geothermal	Geothermal	Geothermal	Geothermal	Geothermal
Well Location	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Well Coordinates	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20
Well Elevation	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40
Well Orientation	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°
Well Completion Date	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20
Well Completion By	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Well Completion Notes	Lea	30H	30H	30H	30H	30H	30H	30H	30H

PROJECT DETAILS									
Lea County (NAD27 NME)									
Section	1	1	1	1	1	1	1	1	1
Section Name	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Section Type	Oil	Gas	Water	Steam	Geothermal	Geothermal	Geothermal	Geothermal	Geothermal
Section Status	Active	Active	Active	Active	Active	Active	Active	Active	Active
Section Depth	10000	10000	10000	10000	10000	10000	10000	10000	10000
Section Diameter	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"	8-3/4"
Section Completion	Open	Open	Open	Open	Open	Open	Open	Open	Open
Section Production	Oil	Gas	Water	Steam	Geothermal	Geothermal	Geothermal	Geothermal	Geothermal
Section Location	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Section Coordinates	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20	575930.20
Section Elevation	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40	750749.40
Section Orientation	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°	180.95°
Section Completion Date	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20	10/1/20
Section Completion By	Lea	30H	30H	30H	30H	30H	30H	30H	30H
Section Completion Notes	Lea	30H	30H	30H	30H	30H	30H	30H	30H

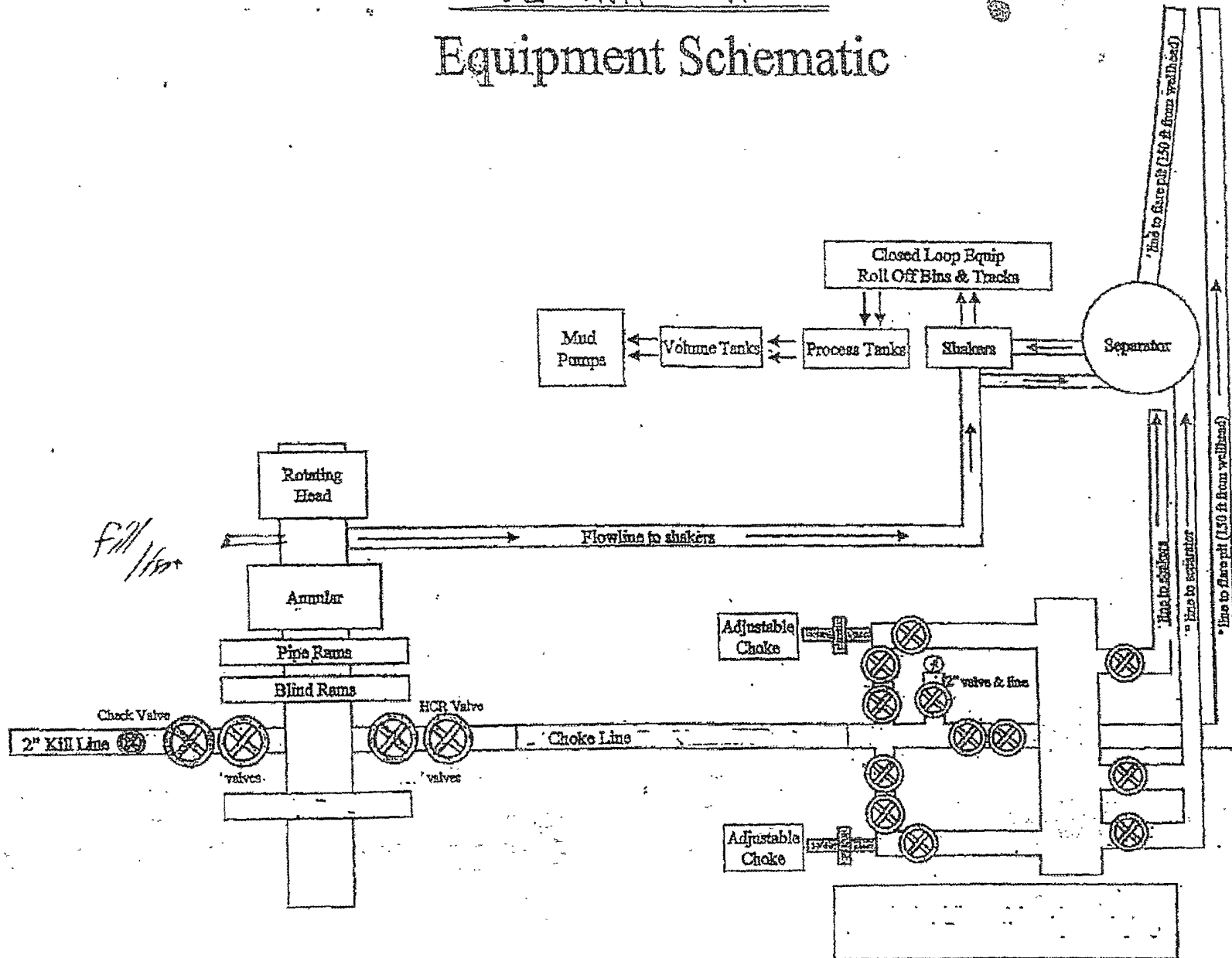


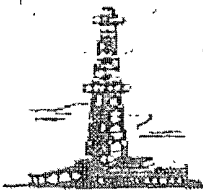
BOP and Choke Manifold Diagrams

Lea Unit #30H



LEA UNIT #304
Equipment Schematic





WESTERN DRILLING, INC.



RIG #6 Inventory

CLASSIFICATION:

National 100-M Modified by National Oilwell
to 1,600 HP Input

DRILLING DEPTH:

17,000'

POWER SYSTEM:

Three (3) Caterpillar D379 engines each with
National Torque converters driving a Three (3)
engine inline compound

RIG GENERATORS:

Two (2) Caterpillar D3412 engines with 500 KW AC
generators.

DRAWWORKS:

National 100M Modified by National Oilwell
to 1,600 HP Input with 1-3/8" Lebus grooving
Three (3) Engine Inline Compound
Single Pump Drive (3) Caterpillar 379, 550 HP w/
National/Oilworks C245 Torque Converter
Parmac 60RC hydromatic

MAST:

Lee C. Moore 142' x 21' base, 920,000# Rating

DRILL LINE:

1-3/8" drilling line

SUBSTRUCTURE:

Lee C. Moore Type 21'-9" high substructure, 18'-3" rotary
beam clearance to ground level, 24' kelly drive bushing
height, 1,000,000# rotary capacity with 500,000#
setback capacity.

MUD PUMPS:

Two (2) Continental Emsco D-1650 pumps
One (1) Compound Driven, One (1) Driven by 398
rated at 800 HP

ROTARY:

Hacker 27-1/2"

TRAVELING BLOCK:

National 500 Ton Block
BJ 5500 - 500 Ton Hook

SWIVEL:

National N-1324 (500 Ton)

DRILL PIPE:

15,000', 5" Drill pipe, 25.60 E & G, 4-1/2" IF

DRILL COLLARS:

Eighteen (18) - 8" Drill Collars
Twenty-four (24) - 6 1/2" Drill Collars

KELLY:

5-1/4" x 40' Hex

ANNULAR PREVENTER:

Cameron "D" Annular - 5,000# Rating

RAM PREVENTERS:

Cameron "U" Double 13-5/8 5,000#

ACCUMULATOR SYSTEM:

Koomey six (6) station, 80 gallon capacity
with dual air pumps and one (1) electric pump
Cameron Station

MUD TANK SYSTEM:

Four (4) tank 1,600 barrel total - BBL Pre-mix
pit, Vortex Fluid System Shale Shaker

MUD MIXING PUMPS:

Two (2) 5" x 6" centrifugal pumps, each driven
by 60 HP electric motors

AUXILIARY EQUIPMENT:

One (1) Tool Pusher Quarters
Two (2) 500 BBL Water Tanks
One (1) Automatic Driller
Two (2) Air Hoists
One (1) Drilling Recorder

Western Drilling Rig # 6

