

15-999

OCD Hobbs

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

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SECRETARY'S OFFICE  
HOBBS OCD

FEB 29 2016

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **JAL-20979**  
NM-01747, NM-03085, NM-053434

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.  
LEA UNIT (NMNM-70976B)

8. Lease Name and Well No.  
LEA UNIT 37H **(302802)**

9. API Well No.  
**30-025-43092**

10. Field and Pool, or Exploratory  
LEA; BONE SPRING **(37570)**

11. Sec., T. R. M. or Blk. and Survey or Area  
SHL: SECTION 24, T. 20 S., R. 34 E.  
BHL: SECTION 13, T. 20 S., R. 34 E.

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, L. P. **(240974)**

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

3b. Phone No. (include area code)  
432-221-6334 (Craig Sparkman)

4. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 2270 FSL & 1480 FEL Section 24 (First Take: 2310 FNL & 2210 FEL Sec. 24)  
At proposed prod. zone 330 FNL & 2210 FEL Section 13 (Last take)

NORTHODOX  
LOCATION

12. County or Parish  
LEA

13. State  
NM

14. Distance in miles and direction from nearest town or post office\*  
26 MILES SOUTHWEST OF HOBBS, NM

15. Distance from proposed\* 330'  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any)

16. No. of acres in lease  
BHL: 400 NM-053434  
SHL: 440 NM-01747

17. Spacing Unit dedicated to this well  
240

18. Distance from proposed location\* 1320' - #36 (2nd BSS)  
to nearest well, drilling, completed,  
applied for, on this lease, ft.

19. Proposed Depth  
TVD: 10,600'  
MD: 18,369'

20. BLM/BIA Bond No. on file  
NMB001014 & NMB001015

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3674' GL

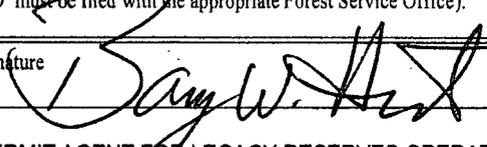
22. Approximate date work will start\*  
**ASAP**

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) BARRY W. HUNT Date 9/7/15

Title PERMIT AGENT FOR LEGACY RESERVES OPERATING, L. P.

Approved by (Signature)  /s/George MacDoneli Name (Printed/Typed) Date FEB 19 2016

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

**Ka**  
**03/01/16**

Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

MAR 01 2016

DRILLING PLAN  
 LEA UNIT 37H  
 LEGACY RESERVES OPERATING LP  
 SHL: Unit J, Section 24  
 BHL: Unit B, Section 13  
 T20S-R34E, Lea County, New Mexico

**HOBBS OCD**

FEB 29 2016

**RECEIVED**

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

1. **Location:** SHL: 2270' FSL & 1480' FEL, Sec.24, T20S-R34E (First Take: 2310 FNL & 2210 FEL)  
 BHL: 330' FNL & 2210' FEL, Sec. 13, T20S-R34E (Last Take)

2. **Elevations:** 3,674' GL

3. **Geological Name of Surface Formation:** Quaternary alluvium deposits

4. **Drilling Tools and Associated Equipment:** Rotary drilling rig using fluid as a means for removal of solid cuttings from the well.

5. **Proposed Drilling Depth:** 18,369' MD 10,600' TVD

6. **Estimated Tops of Geological Markers:**

Rustler	1,680'	Delaware	5,666'
Top Salt	1,720'	Bone Spring Lime	8,205'
Bottom Salt	3,150'	Avalon	8,760'
Top of Capitan Reef	3,150'	1 <sup>st</sup> . Bone Spring	9,501'
Capitan Reef Bottom	4,710'	2 <sup>nd</sup> Bone Spring	10,034'
San Andres	4,710'		

7. **Possible mineral bearing formations:**

Primary: Bone Spring (oil); Secondary: Delaware (oil), Avalon (oil), fresh water (~125')

8. **Proposed Mud System:**

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type Mud</u>
0' to 1800'	8.4-8.9	30-32	NC	Fresh water gel spud mud
1800' to 5400'	9.8-10	28-29	NC	Brine water
5400' to 10,600'	8.4-8.6	28-29	NC	Fresh water/brine, use hi-viscosity Weeps to clean hole
10,600' to 18,369'	8.9-9.1	28-29	18-20	Fresh water/brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. A Pason PVT system will be rigged up prior to spudding this well. A volume monitoring system that measures, calculates and displays readings from the mud system on the rig to alert the rig crew of impending

gas kicks and lost circulation. In order to effectively run open hole logs and casing, the mud viscosity and fluid loss properties may be adjusted.

9. **Proposed Drilling Plan:**

Set surface and intermediate casing and cement to surface. Drill 8-3/4" to ~10,600', Kick off and drill 8-3/4" hole to TD of ~18,369'. Set 5-1/2" casing from surface to TD (~ 18,369'). Cement 5-1/2" production casing back to surface.

10. **Casing Information:**

String	Hole size	Depth	Casing OD	Collar	Weight	Grade
Surface	17-1/2"	1800' MD	New 13-3/8"	STC	54.5#	J-55
Intermediate	12-1/4"	3901' MD	New 9-5/8"	LTC	40#	J-55
Intermediate	12-1/4"	5400' MD	New 9-5/8"	LTC	40#	HCK-55
Production	8-3/4"	18,369' MD	New 5-1/2"	BTC	20#	P-110

**5-1/2", P-110:**

Collapse Factor: 1.55  
 Burst Factor: 1.29  
 Tension Factor: 3.06

**9-5/8", HCK-55**

Collapse Factor: 1.28  
 Burst Factor: 2.03  
 Tension Factor: 3.33

**9-5/8, J-55**

Collapse Factor: 1.24  
 Burst Factor: 1.82  
 Tension Factor: 3.12

**13-3/8, J-55**

Collapse Factor: 3.08  
 Burst Factor: 3.54  
 Tension Factor: 5.66

11. **Cementing Information:**

**Surface Casing (75% excess on lead & 75% excess on tail to design for cement top at surface):**

**Lead:** 1100 sxs class C cement + 4% bwoc bentonite II + 2% bwoc Calcium Chloride + 0.25 lbs/sack Cello Flake + 0.005% bwoc Static Free + 0.005 gps FP-6L (13.50 ppg, 1.93 cfps, 9.71 gps wtr).

**Tail:** 200 sxs class C cement + 1.5% bwoc Calcium Chloride + 0.005 lbs/sack Static Free + 0.005 gps FP-6L (14.80 ppg, 1.34 cfps, 6.35 gps wtr).

**Intermediate Casing (80% excess on lead & 80% excess on tail to design for cement top at surface):**

**A DV tool and ECP will be used to cement the 9-5/8" casing if losses greater than 50% are encountered in the Capitan Reef. DV tool will be placed at approximately 3,950'.**

**No DV tool:**

**Lead:** 1300 sxs (35:65) poz (fly ash) class C cement + 4% bwoc bentonite II + 5% bwoc MPA-5 + 0.25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake + 0.005 lbs/sk Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwoc Sodium Chloride (12.5 ppg, 2.13 cf/sx, 8.81 gps wtr).

**Tail:** 300 sxs class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr).

**With DV Tool:**

Stage 1

Lead: 300 sxs (35:65) poz (fly ash) class C cement + 4% bwoc bentonite II + 5% bwoc MPA-5 + 0,25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake + 0.005 lbs/sk Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cf/sx, 8.81 gps wtr).

Tail: 300 sxs class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr).

Stage 2

Lead: 800 sxs (35:65) poz (fly ash) class C cement + 4% bwoc bentonite II + 5% bwoc MPA-5 + 0,25% bwoc FL-52 + 5 lbs/sack LCM-1 + 0.125 lbs/sk Cello Flake + 0.005 lbs/sk Static Free + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cf/sx, 8.81 gps wtr).

Tail: 200 sxs class C cement (14.80 ppg, 1.33 cfps, 6.35 gps wtr).

**Production Casing (80% excess on lead & 20% excess on tail to design for cement top at surface):**

Lead: 1600 sxs (50:50) poz (fly ash) class H cement + 10% bwoc bentonite II + 5% bwow sodium chloride + 5 pps LCM-1 + 0.005 lbs/sk Static Free + 0.005 gps FP-6L (11.90 ppg, 2.38 cf/sx, 13.22 gps wtr).

Tail: 1700 sxs Class H (15:61:11) poz (fly ash): class H cement: CSE-2 + 4% bwow sodium chloride + 3 pps LCM-1 + 0.6% bwoc FL-25 + 0.005 gps FP-6L + 0.005% bwoc Static Free (13.20 ppg, 1.62 cf/sx, 9.45 gps wtr).

**12. Pressure Control Eqpt/BOP:**

Legacy Reserves plans to use a 13-5/8" 5000-psi working pressure BOP system consisting of a double ram BOP with one ram being pipe and one ram being blind, a 5000-psi annular type preventer, a 5000-psi choke manifold and 80 gallon accumulator with floor, five remote operating stations and an auxiliary power system. A rotating head will be utilized as needed. 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.

**A 3M BOP will be used to drill from the surface casing shoe (~1800') to the intermediate casing shoe (~5400'). The BOP will be a 5M system, however the "A" section wellhead will be a 3M wellhead (see attached BOP Diagram).**

The BOP unit will be hydraulically operated. The BOP will be operated at least once per 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.

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

See  
COA

**13. Testing, Logging, and Coring Program:**

- A. Mud logging program: 2 man unit from approximately after setting intermediate casing.
- B. No open hole logs, DST's or cores are planned.

See  
COA

**14. Potential Hazards**

No abnormal pressures or temperatures are expected during 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 on the mud/gas separator so gas may be flared safely. All personnel will be familiar with all aspects of safe operations of equipment being used. Lost circulation may occur and a cement contingency plan is included in this plan along with mud materials to be kept on location at all times in order to combat lost circulation or unexpected kicks. Estimated BHP: 4664 psi, estimated BHT: 162°F.

15. **Road and Location**

Road and location construction will begin after BLM approval of the APD. Drilling is expected to take 30-35 days and an additional 10 days for the completion.

16. **Additional Requirements of Project:**

Completion: The targeted Bone Spring pay zone will be perforated and stimulated in multiple stages using acid and hydraulic fracturing treatments. Fresh water used in the drilling and completion of this well will be transferred from off-site via temporary flowlines and stored in frac tanks on the location.



**June 30, 2015**

RE: Legacy Reserves – Lea Unit  
Surface Agreement with S&S Inc. and Pearl Valley Limited Partnership

To whom it may concern:

This letter is to inform you that Legacy Reserves Operating LP is currently in the process of negotiating a Ranch Wide Surface Use Agreement with Pat Sims, on behalf of S&S Inc. and Pearl Valley Limited Partnership for the purposes of building well pad locations and other necessary oil and gas operations on land owned by S&S and Pearl Valley. Legacy anticipates this agreement will be completed in the near future.

The agreement will cover all of Section 24-20S-34E, among other lands held by Mr. Sims' two entities. If there are any questions for Pat Sims, he can be reached by phone or mail by using the following information:

- Phone – (575) 390-2642
- Address – PO Box 1046  
Eunice, NM 88231

If you have any questions in regards to the Surface Use Agreement with S&S Inc. and Pearl Valley Limited Partnership please call Clay Roberts, Landman, at Legacy Reserves. He can be reached at 432-689-5206

Sincerely,