

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.
NMNM02127B

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.
LEA UNIT 65H9. API Well No.
30-025-45210-00-X110. Field and Pool or Exploratory Area
LEA11. County or Parish, State
LEA COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

LEGACY RESERVES OPERATING LP

Contact: SHERRY MORROW

E-Mail: smorrow@legacyp.com

3a. Address

303 W WALL SUITE 1600
MIDLAND, TX 79702

3b. Phone No. (include area code)

Ph: 432-221-6339

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 12 T20S R34E SWSW 220FSL 785FWL
32.580963 N Lat, 103.519775 W Lon

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒
- Notice of Intent
-
- ☐
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|--|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other |
| ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | Change to Original A |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | PD |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Legacy Reserves respectfully requests to change the approved casing design for the wellbore. The decision has been made to cancel drilling a deep pilot hole, which was the primary driver behind the currently approved design. This newly proposed casing design will be a traditional 3-string, Bone-Spring wellbore design. This will maintain similar surface and intermediate strings as the currently approved APD reflects. The primary change is running a 5-1/2" production long string back to surface versus the currently approved 7" x 4-1/2" liner design. Attached you will find the revised Drilling Program, Wellbore Diagram and Directional Plan that reflect this proposed change.

Carlsbad Field Office
OCD Hobbs

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #444412 verified by the BLM Well Information System
For LEGACY RESERVES OPERATING LP, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 12/03/2018 (19PP0461SE)

Name (Printed/Typed) MATT DICKSON

Title DRILLING ENGINEER

Signature (Electronic Submission)

Date 11/16/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By LONG VO

Title PETROLEUM ENGINEER

Date 12/14/2018

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Hobbs

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)

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

K2

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Legacy Reserves Operating LP
LEASE NO.:	NMNM0006531A
WELL NAME & NO.:	Lea Unit 65H
SURFACE HOLE FOOTAGE:	220' FSL & 785' FWL
BOTTOM HOLE FOOTAGE:	2310' FNL & 430' FWL
LOCATION:	Section 12, T. 20 S., R 34 E., NMPM
COUNTY:	Lea County, New Mexico

COA

H2S	☒ Yes	☐ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☒ Conventional	☐ Multibowl	☐ Both
Other	☐ 4 String Area	☒ Capitan Reef	☐ WIPP

All previous COAs still apply

A. CASING

1. The 13-3/8 inch surface casing shall be set at approximately 1785 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of 8 hours or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

Option 1:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

Option 2:

Operator has proposed DV tool at depth of 3950', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

Option 3:

Operator has proposed DV tool at depth of 3950' and 1800', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with third stage cement job.

c. Third stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Capitan Reef.**

❖ **Special Capitan Reef requirements.** If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:

- Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.

- Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

LV12142018

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall

be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a

larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

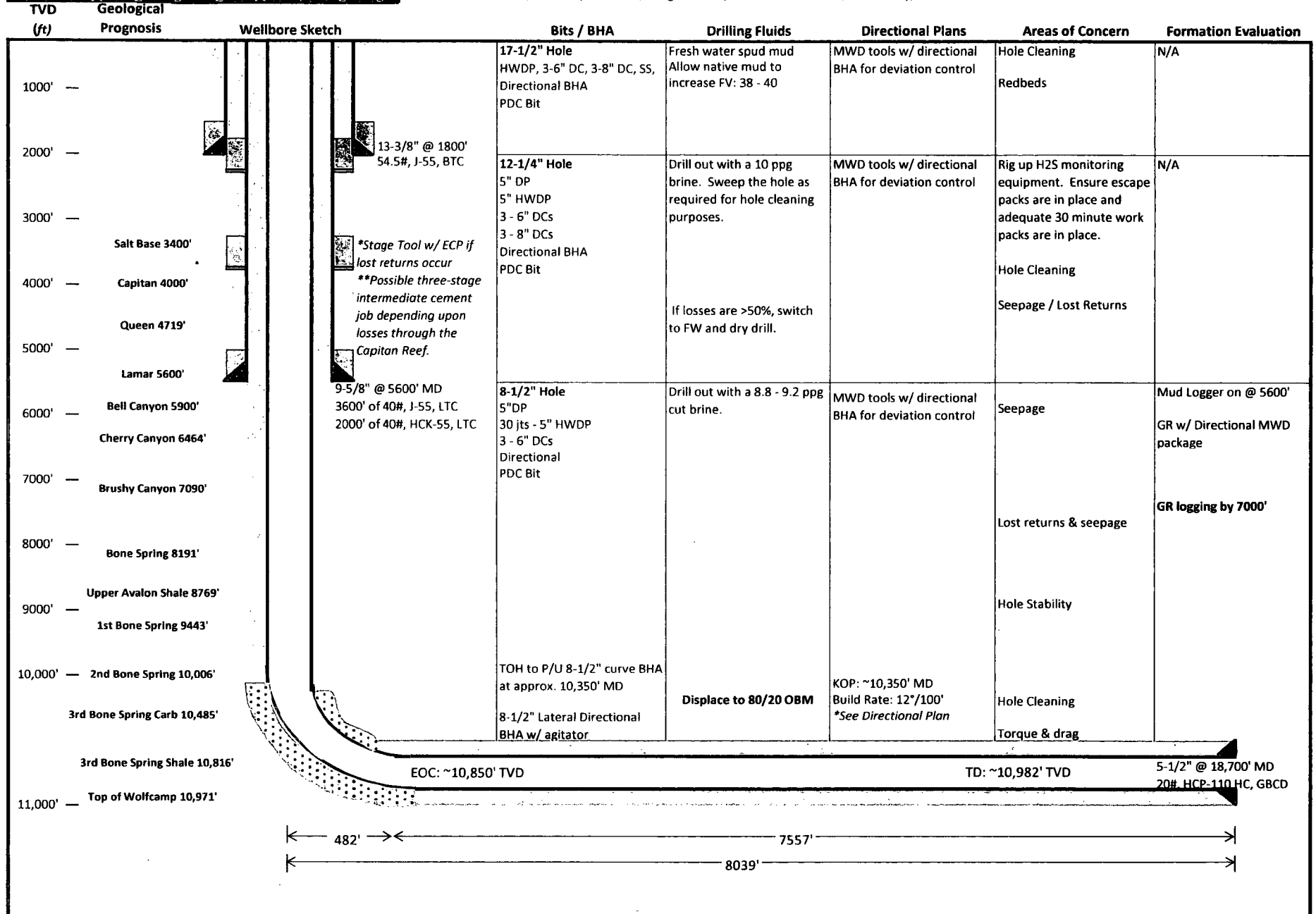
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.



Lea Unit #65H (3rd BSS)

API # 30-025-45210

Sec. 12, Township 20 South, Range 34 East, 220' FSL & 785' FWL, Lea County, New Mexico



1. **Proposed Mud System:**

Depth	Mud Wt.	Visc	Fluid Loss	Type Mud
0' to 1800'	8.4-8.9	30-32	NC	Fresh water gel spud mud
1800' to 5600'	9.8-10	28-29	NC	Brine water
5600' to 10,500'	8.4-8.6	28-29	NC	Fresh water/brine
10,500' to 18,700'	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

2. **Proposed Drilling Plan:**

Set surface and intermediate casing and cement to surface. Drill 8-1/2" to ~10,350', Kick off and drill 8-1/2" hole to TD of ~18,700'. Set 5-1/2" casing from surface to TD (~ 18,700'). Cement 5-1/2" production casing back to surface.

3. **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"	3600' MD	New 9-5/8"	LTC	40#	J-55
Intermediate	12-1/4"	5600' MD	New 9-5/8"	LTC	40#	HCK-55
Production	8-1/2"	18,700' MD	New 5-1/2"	BTC	20#	P-110

13-3/8", J-55:

Collapse Factor:	1.42
Burst Factor:	3.86
Tension Factor:	2.59

9-5/8", J-55

Collapse Factor:	1.25
Burst Factor:	1.41
Tension Factor:	1.6

9-5/8", HCK-55

Collapse Factor:	1.45
Burst Factor:	1.27
Tension Factor:	4.23

5-1/2", P-110

Collapse Factor:	1.94
Burst Factor:	1.25
Tension Factor:	1.6

4. **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

In the event that circulation is lost (> 50%) while drilling the 12-1/4" intermediate hole in the Capitan Reef at +/-4000', we will plan to install a DV tool and external casing packer within 200' of the top depth where lost circulation occurred and will pump a two-stage cement job with the potential to add an additional DV tool for a three-stage cement job. If there is no lost circulation a single stage cementing procedure will be followed. Legacy plans to cement to surface regardless of whether a single stage, 2-stage or 3-stage procedure is implemented.

No DV tool (80% excess on lead & 80% excess on tail to design for cement top at surface)

Lead: 1400 sx (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 defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

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

With (1) DV Tool (100% excess on lead & 100% excess on tail to design for cement top at surface)

Assuming DV tool set at 3950' but if the setting depth changes, cement volumes will be adjusted proportionately.

Stage 1

Lead: 400 sx (35:65) paz (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 defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

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

Stage 2

Lead: 1100 sx (35:65) paz (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 cfps, 8.81 gps wtr)

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

With (2) DV Tools (100% excess on lead & 100% excess on tail to design for cement top at surface)

Assuming one DV tool set at 3950' and one DV tool set at 1800' but if the setting depths change, cement volumes will be adjusted proportionately.

Stage 1

Lead: 400 sx (35:65) paz (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 defoamer + 0.005 gps FP-6L + 1.2% bwoc Sodium Metasilicate + 5% bwow Sodium Chloride (12.5 ppg, 2.13 cfps, 8.81 gps wtr)

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

Stage 2

Lead: 600 sx (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 cfps, 8.81 gps wtr)

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

Stage 3

Lead: 600 sx (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 cfps, 8.81 gps wtr)

Tail: 200 sx 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: 1500 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, 2.47 cf/sx, 13.85 gps wtr).

Tail: 1600 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 (12.60 ppg, 1.62 cf/sx, 8.62 gps wtr).

Legacy Reserves

Lea County, NM (NAD83)

Lea

Lea Unit #65H

Original Wellbore

Plan 2

Anticollision Summary Report

15 November, 2018



Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #65H
Project:	Lea County, NM (NAD83)	TVD Reference:	RKB @ 3672.0usft
Reference Site:	Lea	MD Reference:	RKB @ 3672.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Wellbore	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Reference	Plan 2
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD + Stations Interval 100.0usft
Depth Range:	Unlimited
Results Limited by:	Maximum centre distance of 30,000.0usft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Pedal Curve
Casing Method:	Not applied

Survey Tool Program	Date	11/15/2018
From (usft)	To (usft)	Survey (Wellbore)
0.0	18,704.2	Plan 1 (Original Wellbore)
		Tool Name
		MWD
		Description
		MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Lea						
Lea Unit #30H - Original Wellbore - Original Wellbore	0.0	3.0	52.5			
Lea Unit #30H - Original Wellbore - Original Wellbore	2,400.0	2,402.9	63.6	47.1	3.847	ES
Lea Unit #30H - Original Wellbore - Original Wellbore	15,800.0	15,665.5	253.8	71.5	1.392	Level 3, SF

Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #65H
Project:	Lea County, NM (NAD83)	TVD Reference:	RKB @ 3672.0usft
Reference Site:	Lea	MD Reference:	RKB @ 3672.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Wellbore	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 3672.0usft

Offset Depths are relative to Offset Datum

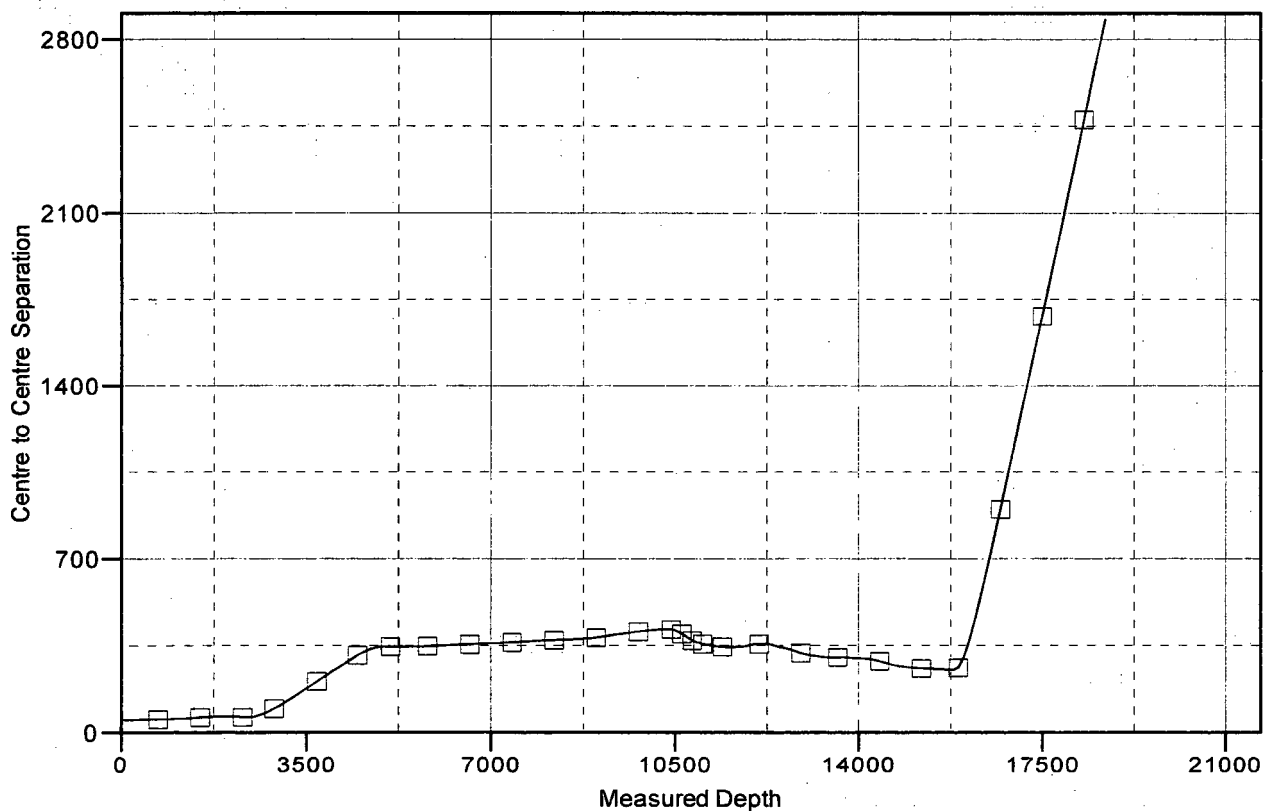
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Lea Unit #65H

Coordinate System is US State Plane 1983, New Mexico Eastern Zone

Grid Convergence at Surface is: 0.44°

Ladder Plot



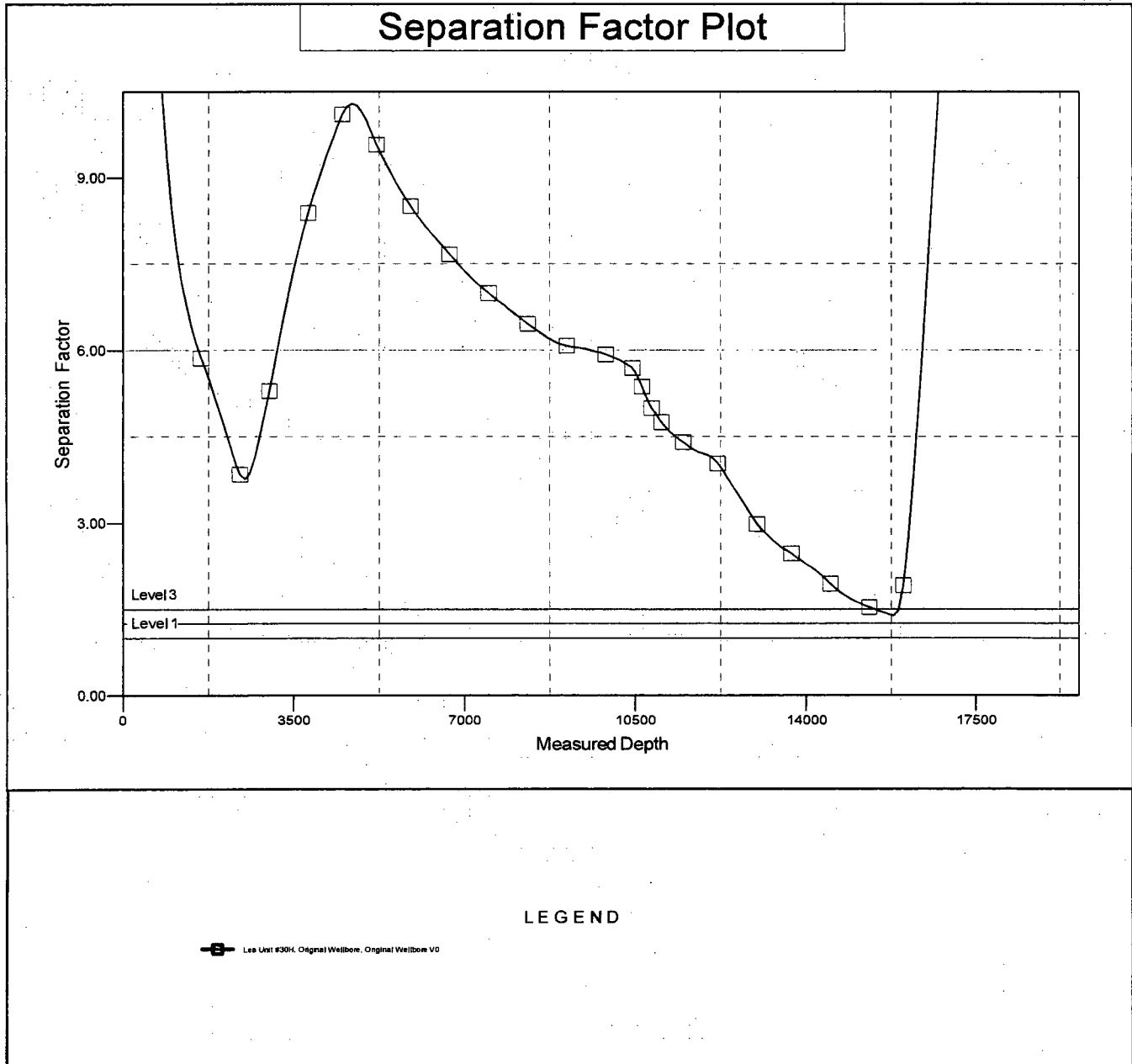
LEGEND

— Lea Unit #65H, Original Wellbore, Original Wellbore V0

Company:	Legacy Reserves	Local Co-ordinate Reference:	Well Lea Unit #65H
Project:	Lea County, NM (NAD83)	TVD Reference:	RKB @ 3672.0usft
Reference Site:	Lea	MD Reference:	RKB @ 3672.0usft
Site Error:	0.0 usft	North Reference:	Grid
Reference Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Original Wellbore	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan 2	Offset TVD Reference:	Reference Datum

Reference Depths are relative to RKB @ 3672.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Lea Unit #65H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.44°



Surface Casing

Size	Grade	#/ft	Collapse	Burst (Internal Yield)	Tensile	Coupling	Length	Dry Weight	Mud Weight
13.375"	J-55	54.5	1130 psi	2730 psi	514 kips	STC	1800'	98,100 lbs	8.5 ppg

Collapse: $DF_C = 1.25$

Base Assumptions

- Complete internal evacuation of the casing, utilizing a collapse force equivalent to the mud gradient (0.44 psi/ft) in which the casing will be ran.
- Cementing operations in which, utilizes a collapse force equivalent to the gradient of the planned cement slurry (0.77 psi/ft) and an internal force equivalent to the fresh water displacement fluid (0.433 psi/ft).

Collapse Calculations: Collapse Rating / Collapse Force

Complete Evacuation:

$$1,130\text{psi} / [(0.44\text{psi/ft})(1,800')] = \mathbf{1.42}$$

Cementing Operations:

$$1,130\text{psi} / [(0.77\text{psi/ft} - 0.433\text{psi/ft})(1800')] = \mathbf{1.86}$$

Burst: $DF_B = 1.25$

Base Assumption

- Casing pressure test as per Onshore Oil and Gas Order No. 2 (0.22 psi/ft or 1500 psi), utilizing an external force equivalent to the mud gradient (0.44 psi/ft) in which the casing will be ran.

Burst Calculations: Internal Yield Rating / Internal Force

Casing Pressure Test:

$$2,730\text{psi} / [(1500\text{psi}) - (0.44\text{psi/ft})(1,800')] = \mathbf{3.86}$$

Tensile: $DF_T = 1.6$

Base Assumption

- A downward force of 100,000 lb. overpull is applied at the base of the casing along with the weight and not considering the effects of buoyancy.

Tensile Calculations: Joint Strength / Axial Load

Overpull:

$$514\text{ kips} / (100,000\text{ lbs.} + 98,100\text{ lbs.}) = \mathbf{2.59}$$

Intermediate Casing

Size	Grade	#/ft	Collapse	Burst (Internal Yield)	Tensile	Coupling	Length	Dry Weight	Mud Weight
9.625"	J-55	40	2570 psi	3950 psi	520 kips	LTC	4000'	160,000 lb	10.0 ppg
9.625"	HCK-55	40	4230 psi	3950 psi	694 kips	LTC	1600'	64,000 lb	10.0 ppg

Collapse: $DF_C = 1.25$

Base Assumptions

- Complete internal evacuation of the casing, utilizing a collapse force equivalent to the mud gradient (0.52 psi/ft) in which the casing will be ran.
- Cementing operations in which, utilizes a collapse force equivalent to the gradient of the planned cement slurry (0.77 psi/ft) and an internal back-up force equivalent to the fresh water displacement fluid (0.433 psi/ft).

Collapse Calculations: Collapse Rating / Collapse Force

Complete Evacuation:

$$\text{J-55: } 2570\text{psi} / [(0.52\text{psi/ft})(4,000')] = \mathbf{1.25}$$

$$\text{HCK-55: } 4230\text{psi} / [(0.52\text{psi/ft})(5,600')] = \mathbf{1.45}$$

Cementing Operations:

$$\text{J-55: } 2570\text{psi} / [(0.77\text{psi/ft} - 0.433\text{psi/ft})(4000')] = \mathbf{1.91}$$

$$\text{HCK-55: } 4230\text{psi} / [(0.77\text{psi/ft} - 0.433\text{psi/ft})(5600')] = \mathbf{2.24}$$

Burst: $DF_B = 1.25$

Base Assumption

- Casing pressure test as per Onshore Oil and Gas Order No. 2 (0.22 psi/ft or 1500 psi), utilizing an internal force equivalent to the displacement fluid of 8.6 ppg and external force equivalent to 8.4 ppg.
- Gas kick at the casing shoe, in which a 0.7 psi/ft shoe test is assumed, and 0.2 psi/ft gas gradient is assumed.

Burst Calculations: Internal Yield Rating / Burst Force

Casing Pressure Test:

$$\text{J-55: } 3950\text{psi} / [(1500\text{psi} + 1789\text{psi}) - (1747\text{psi})] = \mathbf{2.56}$$

$$\text{HCK-55: } 3950\text{psi} / [(1500\text{psi} + 2504\text{psi}) - (2446\text{psi})] = \mathbf{2.54}$$

Gas Kick:

$$\text{J-55: } 3950\text{psi} / [(0.7\text{psi/ft})(5600') - (0.2\text{psi/ft})(5600')] = \mathbf{1.41}$$

$$\text{HCK-55: } 3950\text{psi} / [(0.7\text{psi/ft})(5600') - (0.2\text{psi/ft})(4000')] = \mathbf{1.27}$$

Tensile: $DF_T = 1.6$

Base Assumption

- A downward force of 100,000 lb. overpull is applied at the base of the casing along with the weight of the string and not considering the effects of buoyancy.

Tensile Calculations: Joint Strength / Axial Load

Overpull:

J-55: 520 kips / (100,000 lbs. + 224,00 lbs.) = **1.6**

HCK-55: 694 kips / (100,000 lbs. + 64,100 lbs.) = **4.23**

Production Casing

Size	Grade	#/ft	Collapse	Burst (Internal Yield)	Tensile	Coupling	Length	Dry Weight	Mud Weight
5.5"	P-110	20	11080 psi	12360 psi	641 kips	BTC	18,700'	375,000 lb	9.1 ppg

Collapse: $DF_C = 1.25$

Base Assumptions

- Cementing operations in which utilizes a collapse force equivalent to the gradient of the planned cement slurry (0.77 psi/ft) and an internal back-up force equivalent to the fresh water displacement fluid (0.433 psi/ft).
- Production operations in which the pipe is completely evacuated with an external force equivalent to the pore pressure gradient (0.52 psi/ft).

Collapse Calculations: Collapse Rating / Collapse Force

Cementing Operations:

$$11,080\text{psi} / [(0.66\text{psi/ft}-0.433\text{ psi/ft})(11,000'\text{TVD})] = \mathbf{4.43}$$

Production Operations:

$$11080\text{psi} / (11,000'\text{ TVD})(0.52\text{psi/ft}) = \mathbf{1.94}$$

Burst: $DF_B = 1.25$

Base Assumption

- Frac pressure utilizing an internal force of 9500 psi along with a frac fluid gradient equivalent to 0.468 psi/ft and an external force equal to the minimum fluid gradient (0.433 psi/ft) in which the casing will be ran.
- Production operations in which the casing is completely filled with a gas equivalent gradient of 0.2 psi/ft and an external force equivalent to pore pressure of 0.5 psi/ft.

Burst Calculations: Internal Yield Rating / Burst Force

Frac Pressure:

$$12,360\text{psi} / [(9500\text{ psi})+ (0.468 - 0.433\text{psi/ft})(11,000'\text{TVD})] = \mathbf{1.25}$$

Production Operations:

$$12,360\text{psi} / [(0.5\text{ psi/ft} - 0.2\text{ psi/ft})(11,000'\text{TVD})] = \mathbf{3.75}$$

Tensile: $DF_T = 1.6$

Base Assumption

- A downward force of 100,000 lb. overpull is applied at the base of the casing along with the weight of the string and considering the effects of buoyancy (factor =0.86).

Tensile Calculations: Joint Strength / Axial Load

Overpull:

$$641,000\text{ lbs} / [(100,000\text{ lbs.}) + (375,000\text{ lbs.})(0.86)] = \mathbf{1.6}$$

Legacy Reserves
Lea Unit #65H - Plan 1

Lea County, NM (NAD83)

Lea

Your Ref:

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (dega/100ft)
0	0	0	0	0	0	0	0
100	0	0	100	0	0	0	0
200	0	0	200	0	0	0	0
300	0	0	300	0	0	0	0
400	0	0	400	0	0	0	0
500	0	0	500	0	0	0	0
600	0	0	600	0	0	0	0
700	0	0	700	0	0	0	0
800	0	0	800	0	0	0	0
900	0	0	900	0	0	0	0
1000	0	0	1000	0	0	0	0
1100	0	0	1100	0	0	0	0
1200	0	0	1200	0	0	0	0
1300	0	0	1300	0	0	0	0
1400	0	0	1400	0	0	0	0
1500	0	0	1500	0	0	0	0
1600	0	0	1600	0	0	0	0
1700	0	0	1700	0	0	0	0
1800	0	0	1800	0	0	0	0
1900	0	0	1900	0	0	0	0
2000	0	0	2000	0	0	0	0
2100	1.5	270	2099.99	0	-1.31	0.05	1.5
2200	3	270	2199.91	0	-5.24	0.19	1.5
2300	4.5	270	2299.69	0	-11.78	0.43	1.5
2400	6	270	2399.27	0	-20.93	0.76	1.5
2500	7.5	270	2498.57	0	-32.68	1.19	1.5
2549.81	8.247	270	2547.91	0	-39.5	1.44	1.5
2600	8.247	270	2597.58	0	-46.7	1.7	0
2700	8.247	270	2696.55	0	-61.05	2.23	0
2800	8.247	270	2795.52	0	-75.39	2.75	0
2900	8.247	270	2894.48	0	-89.73	3.27	0
3000	8.247	270	2993.45	0	-104.08	3.8	0

3100	8.247	270	3092.41	0	-118.42	4.32	0
3200	8.247	270	3191.38	0	-132.77	4.84	0
3300	8.247	270	3290.35	0	-147.11	5.37	0
3400	8.247	270	3389.31	0	-161.46	5.89	0
3500	8.247	270	3488.28	0	-175.8	6.41	0
3600	8.247	270	3587.24	0	-190.15	6.94	0
3700	8.247	270	3686.21	0	-204.49	7.46	0
3800	8.247	270	3785.17	0	-218.83	7.98	0
3900	8.247	270	3884.14	0	-233.18	8.51	0
4000	8.247	270	3983.11	0	-247.52	9.03	0
4100	8.247	270	4082.07	0	-261.87	9.55	0
4200	8.247	270	4181.04	0	-276.21	10.08	0
4300	8.247	270	4280	0	-290.56	10.6	0
4400	8.247	270	4378.97	0	-304.9	11.12	0
4473.87	8.247	270	4452.07	0	-315.5	11.51	0
4500	7.855	270	4477.95	0	-319.16	11.64	1.5
4600	6.355	270	4577.18	0	-331.53	12.09	1.5
4700	4.855	270	4676.7	0	-341.29	12.45	1.5
4800	3.355	270	4776.44	0	-348.45	12.71	1.5
4900	1.855	270	4876.33	0	-353	12.88	1.5
5000	0.355	270	4976.31	0	-354.93	12.95	1.5
5023.68	0	0	4999.99	0	-355	12.95	1.5
5100	0	0	5076.31	0	-355	12.95	0
5200	0	0	5176.31	0	-355	12.95	0
5300	0	0	5276.31	0	-355	12.95	0
5400	0	0	5376.31	0	-355	12.95	0
5500	0	0	5476.31	0	-355	12.95	0
5600	0	0	5576.31	0	-355	12.95	0
5700	0	0	5676.31	0	-355	12.95	0
5800	0	0	5776.31	0	-355	12.95	0
5900	0	0	5876.31	0	-355	12.95	0
6000	0	0	5976.31	0	-355	12.95	0
6100	0	0	6076.31	0	-355	12.95	0
6200	0	0	6176.31	0	-355	12.95	0
6300	0	0	6276.31	0	-355	12.95	0
6400	0	0	6376.31	0	-355	12.95	0
6500	0	0	6476.31	0	-355	12.95	0
6600	0	0	6576.31	0	-355	12.95	0
6700	0	0	6676.31	0	-355	12.95	0
6800	0	0	6776.31	0	-355	12.95	0
6900	0	0	6876.31	0	-355	12.95	0
7000	0	0	6976.31	0	-355	12.95	0
7100	0	0	7076.31	0	-355	12.95	0
7200	0	0	7176.31	0	-355	12.95	0
7300	0	0	7276.31	0	-355	12.95	0
7400	0	0	7376.31	0	-355	12.95	0
7500	0	0	7476.31	0	-355	12.95	0

7600	0	0	7576.31	0	-355	12.95	0
7700	0	0	7676.31	0	-355	12.95	0
7800	0	0	7776.31	0	-355	12.95	0
7900	0	0	7876.31	0	-355	12.95	0
8000	0	0	7976.31	0	-355	12.95	0
8100	0	0	8076.31	0	-355	12.95	0
8200	0	0	8176.31	0	-355	12.95	0
8300	0	0	8276.31	0	-355	12.95	0
8400	0	0	8376.31	0	-355	12.95	0
8500	0	0	8476.31	0	-355	12.95	0
8600	0	0	8576.31	0	-355	12.95	0
8700	0	0	8676.31	0	-355	12.95	0
8800	0	0	8776.31	0	-355	12.95	0
8900	0	0	8876.31	0	-355	12.95	0
9000	0	0	8976.31	0	-355	12.95	0
9100	0	0	9076.31	0	-355	12.95	0
9200	0	0	9176.31	0	-355	12.95	0
9300	0	0	9276.31	0	-355	12.95	0
9400	0	0	9376.31	0	-355	12.95	0
9500	0	0	9476.31	0	-355	12.95	0
9600	0	0	9576.31	0	-355	12.95	0
9700	0	0	9676.31	0	-355	12.95	0
9800	0	0	9776.31	0	-355	12.95	0
9900	0	0	9876.31	0	-355	12.95	0
10000	0	0	9976.31	0	-355	12.95	0
10100	0	0	10076.31	0	-355	12.95	0
10200	0	0	10176.31	0	-355	12.95	0
10300	0	0	10276.31	0	-355	12.95	0
10396.29	0	0	10372.6	0	-355	12.95	0
10400	0.445	179.56	10376.31	-0.01	-355	12.96	12
10425	3.445	179.56	10401.29	-0.86	-354.99	13.81	12
10450	6.445	179.56	10426.2	-3.02	-354.98	15.96	12
10475	9.445	179.56	10450.95	-6.47	-354.95	19.42	12
10500	12.445	179.56	10475.5	-11.22	-354.91	24.16	12
10525	15.445	179.56	10499.76	-17.24	-354.87	30.18	12
10550	18.445	179.56	10523.67	-24.53	-354.81	37.45	12
10575	21.445	179.56	10547.17	-33.05	-354.75	45.97	12
10600	24.445	179.56	10570.18	-42.8	-354.67	55.71	12
10625	27.445	179.56	10592.66	-53.74	-354.59	66.63	12
10650	30.445	179.56	10614.54	-65.83	-354.49	78.72	12
10675	33.445	179.56	10635.75	-79.06	-354.39	91.93	12
10700	36.445	179.56	10656.24	-93.38	-354.28	106.24	12
10725	39.445	179.56	10675.95	-108.75	-354.16	121.59	12
10750	42.445	179.56	10694.83	-125.13	-354.04	137.96	12
10775	45.445	179.56	10712.83	-142.47	-353.91	155.29	12
10800	48.445	179.56	10729.9	-160.74	-353.76	173.54	12
10825	51.445	179.56	10745.98	-179.87	-353.62	192.65	12

10850	54.445	179.56	10761.05	-199.82	-353.46	212.58	12
10875	57.445	179.56	10775.04	-220.53	-353.31	233.27	12
10900	60.445	179.56	10787.94	-241.94	-353.14	254.67	12
10925	63.445	179.56	10799.7	-264	-352.97	276.7	12
10950	66.445	179.56	10810.28	-286.65	-352.8	299.33	12
10975	69.445	179.56	10819.67	-309.82	-352.62	322.47	12
11000	72.445	179.56	10827.83	-333.44	-352.44	346.08	12
11025	75.445	179.56	10834.74	-357.46	-352.25	370.08	12
11050	78.445	179.56	10840.39	-381.81	-352.07	394.4	12
11075	81.445	179.56	10844.75	-406.43	-351.88	418.99	12
11100	84.445	179.56	10847.82	-431.23	-351.69	443.78	12
11125	87.445	179.56	10849.59	-456.17	-351.5	468.69	12
11137.96	89	179.56	10849.99	-469.12	-351.4	481.62	12
11200	89	179.56	10851.07	-531.15	-350.92	543.6	0
11300	89	179.56	10852.82	-631.13	-350.15	643.48	0
11400	89	179.56	10854.57	-731.11	-349.38	743.37	0
11500	89	179.56	10856.31	-831.09	-348.62	843.26	0
11600	89	179.56	10858.06	-931.08	-347.85	943.15	0
11700	89	179.56	10859.8	-1031.06	-347.08	1043.03	0
11800	89	179.56	10861.55	-1131.04	-346.31	1142.92	0
11900	89	179.56	10863.29	-1231.02	-345.55	1242.81	0
12000	89	179.56	10865.04	-1331	-344.78	1342.69	0
12100	89	179.56	10866.78	-1430.99	-344.01	1442.58	0
12200	89	179.56	10868.53	-1530.97	-343.24	1542.47	0
12300	89	179.56	10870.27	-1630.95	-342.47	1642.36	0
12400	89	179.56	10872.02	-1730.93	-341.71	1742.24	0
12500	89	179.56	10873.76	-1830.91	-340.94	1842.13	0
12600	89	179.56	10875.51	-1930.89	-340.17	1942.02	0
12700	89	179.56	10877.25	-2030.88	-339.4	2041.91	0
12800	89	179.56	10879	-2130.86	-338.64	2141.79	0
12900	89	179.56	10880.74	-2230.84	-337.87	2241.68	0
13000	89	179.56	10882.49	-2330.82	-337.1	2341.57	0
13100	89	179.56	10884.23	-2430.8	-336.33	2441.45	0
13200	89	179.56	10885.98	-2530.79	-335.56	2541.34	0
13300	89	179.56	10887.72	-2630.77	-334.8	2641.23	0
13400	89	179.56	10889.47	-2730.75	-334.03	2741.12	0
13500	89	179.56	10891.22	-2830.73	-333.26	2841	0
13600	89	179.56	10892.96	-2930.71	-332.49	2940.89	0
13700	89	179.56	10894.71	-3030.69	-331.72	3040.78	0
13800	89	179.56	10896.45	-3130.68	-330.96	3140.67	0
13900	89	179.56	10898.2	-3230.66	-330.19	3240.55	0
14000	89	179.56	10899.94	-3330.64	-329.42	3340.44	0
14100	89	179.56	10901.69	-3430.62	-328.65	3440.33	0
14200	89	179.56	10903.43	-3530.6	-327.89	3540.21	0
14300	89	179.56	10905.18	-3630.59	-327.12	3640.1	0
14400	89	179.56	10906.92	-3730.57	-326.35	3739.99	0
14500	89	179.56	10908.67	-3830.55	-325.58	3839.88	0

14600	89	179.56	10910.41	-3930.53	-324.81	3939.76	0
14700	89	179.56	10912.16	-4030.51	-324.05	4039.65	0
14800	89	179.56	10913.9	-4130.49	-323.28	4139.54	0
14900	89	179.56	10915.65	-4230.48	-322.51	4239.43	0
15000	89	179.56	10917.39	-4330.46	-321.74	4339.31	0
15100	89	179.56	10919.14	-4430.44	-320.98	4439.2	0
15200	89	179.56	10920.88	-4530.42	-320.21	4539.09	0
15300	89	179.56	10922.63	-4630.4	-319.44	4638.97	0
15400	89	179.56	10924.38	-4730.39	-318.67	4738.86	0
15500	89	179.56	10926.12	-4830.37	-317.9	4838.75	0
15600	89	179.56	10927.87	-4930.35	-317.14	4938.64	0
15700	89	179.56	10929.61	-5030.33	-316.37	5038.52	0
15800	89	179.56	10931.36	-5130.31	-315.6	5138.41	0
15900	89	179.56	10933.1	-5230.29	-314.83	5238.3	0
16000	89	179.56	10934.85	-5330.28	-314.06	5338.19	0
16100	89	179.56	10936.59	-5430.26	-313.3	5438.07	0
16200	89	179.56	10938.34	-5530.24	-312.53	5537.96	0
16300	89	179.56	10940.08	-5630.22	-311.76	5637.85	0
16400	89	179.56	10941.83	-5730.2	-310.99	5737.73	0
16500	89	179.56	10943.57	-5830.19	-310.23	5837.62	0
16600	89	179.56	10945.32	-5930.17	-309.46	5937.51	0
16700	89	179.56	10947.06	-6030.15	-308.69	6037.4	0
16800	89	179.56	10948.81	-6130.13	-307.92	6137.28	0
16900	89	179.56	10950.55	-6230.11	-307.15	6237.17	0
17000	89	179.56	10952.3	-6330.09	-306.39	6337.06	0
17100	89	179.56	10954.04	-6430.08	-305.62	6436.95	0
17200	89	179.56	10955.79	-6530.06	-304.85	6536.83	0
17300	89	179.56	10957.53	-6630.04	-304.08	6636.72	0
17400	89	179.56	10959.28	-6730.02	-303.32	6736.61	0
17500	89	179.56	10961.03	-6830	-302.55	6836.49	0
17600	89	179.56	10962.77	-6929.99	-301.78	6936.38	0
17700	89	179.56	10964.52	-7029.97	-301.01	7036.27	0
17800	89	179.56	10966.26	-7129.95	-300.24	7136.16	0
17900	89	179.56	10968.01	-7229.93	-299.48	7236.04	0
18000	89	179.56	10969.75	-7329.91	-298.71	7335.93	0
18100	89	179.56	10971.5	-7429.89	-297.94	7435.82	0
18200	89	179.56	10973.24	-7529.88	-297.17	7535.71	0
18300	89	179.56	10974.99	-7629.86	-296.41	7635.59	0
18400	89	179.56	10976.73	-7729.84	-295.64	7735.48	0
18500	89	179.56	10978.48	-7829.82	-294.87	7835.37	0
18600	89	179.56	10980.22	-7929.8	-294.1	7935.25	0
18704.23	89	179.56	10981.98	-8034.02	-293.26	8039.37	0

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Slot and calculated along an Azimuth of 182.090° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.

Central meridian is -104.333°.

Grid Convergence at Surface is 0.438°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 18704.23ft., the Bottom Hole Displacement is 8039.37ft., in the Direction of 182.090° (Grid).

>

Legacy Reserves
Lea Unit #65H - Plan 1

Lea County, NM (NAD83)
Lea
Your Ref:

Measured Depth (ft)	Incl.	Azim.	Depth (ft)	Vertical Northings (ft)	Eastings (ft)	Vertical Section Rate (deg/100ft)	Dogleg	
0.00		0.000	0.000	0.00	0.00	0.00	0.00	0.00
100.00		0.000	0.000	100.00	0.00	0.00	0.00	0.00
200.00		0.000	0.000	200.00	0.00	0.00	0.00	0.00
300.00		0.000	0.000	300.00	0.00	0.00	0.00	0.00
400.00		0.000	0.000	400.00	0.00	0.00	0.00	0.00
500.00		0.000	0.000	500.00	0.00	0.00	0.00	0.00
600.00		0.000	0.000	600.00	0.00	0.00	0.00	0.00
700.00		0.000	0.000	700.00	0.00	0.00	0.00	0.00
800.00		0.000	0.000	800.00	0.00	0.00	0.00	0.00
900.00		0.000	0.000	900.00	0.00	0.00	0.00	0.00
1000.00		0.000	0.000	1000.00	0.00	0.00	0.00	0.00
1100.00		0.000	0.000	1100.00	0.00	0.00	0.00	0.00
1200.00		0.000	0.000	1200.00	0.00	0.00	0.00	0.00
1300.00		0.000	0.000	1300.00	0.00	0.00	0.00	0.00
1400.00		0.000	0.000	1400.00	0.00	0.00	0.00	0.00
1500.00		0.000	0.000	1500.00	0.00	0.00	0.00	0.00
1600.00		0.000	0.000	1600.00	0.00	0.00	0.00	0.00
1700.00		0.000	0.000	1700.00	0.00	0.00	0.00	0.00
1800.00		0.000	0.000	1800.00	0.00	0.00	0.00	0.00
1900.00		0.000	0.000	1900.00	0.00	0.00	0.00	0.00
2000.00		0.000	0.000	2000.00	0.00	0.00	0.00	0.00
2100.00		1.500	270.000	2099.99	0.00	-1.31	0.05	1.50
2200.00		3.000	270.000	2199.91	0.00	-5.24	0.19	1.50
2300.00		4.500	270.000	2299.69	0.00	-11.78	0.43	1.50
2400.00		6.000	270.000	2399.27	0.00	-20.93	0.76	1.50
2500.00		7.500	270.000	2498.57	0.00	-32.68	1.19	1.50
2549.81		8.247	270.000	2547.91	0.00	-39.50	1.44	1.50
2600.00		8.247	270.000	2597.58	0.00	-46.70	1.70	0.00
2700.00		8.247	270.000	2696.55	0.00	-61.05	2.23	0.00
2800.00		8.247	270.000	2795.52	0.00	-75.39	2.75	0.00
2900.00		8.247	270.000	2894.48	0.00	-89.73	3.27	0.00
3000.00		8.247	270.000	2993.45	0.00	-104.08	3.80	0.00
3100.00		8.247	270.000	3092.41	0.00	-118.42	4.32	0.00
3200.00		8.247	270.000	3191.38	0.00	-132.77	4.84	0.00
3300.00		8.247	270.000	3290.35	0.00	-147.11	5.37	0.00
3400.00		8.247	270.000	3389.31	0.00	-161.46	5.89	0.00
3500.00		8.247	270.000	3488.28	0.00	-175.80	6.41	0.00
3600.00		8.247	270.000	3587.24	0.00	-190.15	6.94	0.00
3700.00		8.247	270.000	3686.21	0.00	-204.49	7.46	0.00
3800.00		8.247	270.000	3785.17	0.00	-218.83	7.98	0.00
3900.00		8.247	270.000	3884.14	0.00	-233.18	8.51	0.00
4000.00		8.247	270.000	3983.11	0.00	-247.52	9.03	0.00
4100.00		8.247	270.000	4082.07	0.00	-261.87	9.55	0.00
4200.00		8.247	270.000	4181.04	0.00	-276.21	10.08	0.00
4300.00		8.247	270.000	4280.00	0.00	-290.56	10.60	0.00
4400.00		8.247	270.000	4378.97	0.00	-304.90	11.12	0.00
4473.87		8.247	270.000	4452.07	0.00	-315.50	11.51	0.00
4500.00		7.855	270.000	4477.95	0.00	-319.16	11.64	1.50
4600.00		6.355	270.000	4577.18	0.00	-331.53	12.09	1.50
4700.00		4.855	270.000	4676.70	0.00	-341.29	12.45	1.50
4800.00		3.355	270.000	4776.44	0.00	-348.45	12.71	1.50
4900.00		1.855	270.000	4876.33	0.00	-353.00	12.88	1.50
5000.00		0.355	270.000	4976.31	0.00	-354.93	12.95	1.50
5023.68		0.000	0.000	4999.99	0.00	-355.00	12.95	1.50
5100.00		0.000	0.000	5076.31	0.00	-355.00	12.95	0.00
5200.00		0.000	0.000	5176.31	0.00	-355.00	12.95	0.00
5300.00		0.000	0.000	5276.31	0.00	-355.00	12.95	0.00

5400.00	0.000	0.000	5376.31	0.00	-355.00	12.95	0.00
5500.00	0.000	0.000	5476.31	0.00	-355.00	12.95	0.00
5600.00	0.000	0.000	5576.31	0.00	-355.00	12.95	0.00
5700.00	0.000	0.000	5676.31	0.00	-355.00	12.95	0.00
5800.00	0.000	0.000	5776.31	0.00	-355.00	12.95	0.00
5900.00	0.000	0.000	5876.31	0.00	-355.00	12.95	0.00
6000.00	0.000	0.000	5976.31	0.00	-355.00	12.95	0.00
6100.00	0.000	0.000	6076.31	0.00	-355.00	12.95	0.00
6200.00	0.000	0.000	6176.31	0.00	-355.00	12.95	0.00
6300.00	0.000	0.000	6276.31	0.00	-355.00	12.95	0.00
6400.00	0.000	0.000	6376.31	0.00	-355.00	12.95	0.00
6500.00	0.000	0.000	6476.31	0.00	-355.00	12.95	0.00
6600.00	0.000	0.000	6576.31	0.00	-355.00	12.95	0.00
6700.00	0.000	0.000	6676.31	0.00	-355.00	12.95	0.00
6800.00	0.000	0.000	6776.31	0.00	-355.00	12.95	0.00
6900.00	0.000	0.000	6876.31	0.00	-355.00	12.95	0.00
7000.00	0.000	0.000	6976.31	0.00	-355.00	12.95	0.00
7100.00	0.000	0.000	7076.31	0.00	-355.00	12.95	0.00
7200.00	0.000	0.000	7176.31	0.00	-355.00	12.95	0.00
7300.00	0.000	0.000	7276.31	0.00	-355.00	12.95	0.00
7400.00	0.000	0.000	7376.31	0.00	-355.00	12.95	0.00
7500.00	0.000	0.000	7476.31	0.00	-355.00	12.95	0.00
7600.00	0.000	0.000	7576.31	0.00	-355.00	12.95	0.00
7700.00	0.000	0.000	7676.31	0.00	-355.00	12.95	0.00
7800.00	0.000	0.000	7776.31	0.00	-355.00	12.95	0.00
7900.00	0.000	0.000	7876.31	0.00	-355.00	12.95	0.00
8000.00	0.000	0.000	7976.31	0.00	-355.00	12.95	0.00
8100.00	0.000	0.000	8076.31	0.00	-355.00	12.95	0.00
8200.00	0.000	0.000	8176.31	0.00	-355.00	12.95	0.00
8300.00	0.000	0.000	8276.31	0.00	-355.00	12.95	0.00
8400.00	0.000	0.000	8376.31	0.00	-355.00	12.95	0.00
8500.00	0.000	0.000	8476.31	0.00	-355.00	12.95	0.00
8600.00	0.000	0.000	8576.31	0.00	-355.00	12.95	0.00
8700.00	0.000	0.000	8676.31	0.00	-355.00	12.95	0.00
8800.00	0.000	0.000	8776.31	0.00	-355.00	12.95	0.00
8900.00	0.000	0.000	8876.31	0.00	-355.00	12.95	0.00
9000.00	0.000	0.000	8976.31	0.00	-355.00	12.95	0.00
9100.00	0.000	0.000	9076.31	0.00	-355.00	12.95	0.00
9200.00	0.000	0.000	9176.31	0.00	-355.00	12.95	0.00
9300.00	0.000	0.000	9276.31	0.00	-355.00	12.95	0.00
9400.00	0.000	0.000	9376.31	0.00	-355.00	12.95	0.00
9500.00	0.000	0.000	9476.31	0.00	-355.00	12.95	0.00
9600.00	0.000	0.000	9576.31	0.00	-355.00	12.95	0.00
9700.00	0.000	0.000	9676.31	0.00	-355.00	12.95	0.00
9800.00	0.000	0.000	9776.31	0.00	-355.00	12.95	0.00
9900.00	0.000	0.000	9876.31	0.00	-355.00	12.95	0.00
10000.00	0.000	0.000	9976.31	0.00	-355.00	12.95	0.00
10100.00	0.000	0.000	10076.31	0.00	-355.00	12.95	0.00
10200.00	0.000	0.000	10176.31	0.00	-355.00	12.95	0.00
10300.00	0.000	0.000	10276.31	0.00	-355.00	12.95	0.00
10396.29	0.000	0.000	10372.60	0.00	-355.00	12.95	0.00
10400.00	0.445	179.560	10376.31	-0.01	-355.00	12.96	12.00
10425.00	3.445	179.560	10401.29	-0.86	-354.99	13.81	12.00
10450.00	6.445	179.560	10426.20	-3.02	-354.98	15.96	12.00
10475.00	9.445	179.560	10450.95	-6.47	-354.95	19.42	12.00
10500.00	12.445	179.560	10475.50	-11.22	-354.91	24.16	12.00
10525.00	15.445	179.560	10499.76	-17.24	-354.87	30.18	12.00
10550.00	18.445	179.560	10523.67	-24.53	-354.81	37.45	12.00
10575.00	21.445	179.560	10547.17	-33.05	-354.75	45.97	12.00
10600.00	24.445	179.560	10570.18	-42.80	-354.67	55.71	12.00
10625.00	27.445	179.560	10592.66	-53.74	-354.59	66.63	12.00
10650.00	30.445	179.560	10614.54	-65.83	-354.49	78.72	12.00
10675.00	33.445	179.560	10635.75	-79.06	-354.39	91.93	12.00
10700.00	36.445	179.560	10656.24	-93.38	-354.28	106.24	12.00
10725.00	39.445	179.560	10675.95	-108.75	-354.16	121.59	12.00
10750.00	42.445	179.560	10694.83	-125.13	-354.04	137.96	12.00
10775.00	45.445	179.560	10712.83	-142.47	-353.91	155.29	12.00
10800.00	48.445	179.560	10729.90	-160.74	-353.76	173.54	12.00
10825.00	51.445	179.560	10745.98	-179.87	-353.62	192.65	12.00
10850.00	54.445	179.560	10761.05	-199.82	-353.46	212.58	12.00
10875.00	57.445	179.560	10775.04	-220.53	-353.31	233.27	12.00
10900.00	60.445	179.560	10787.94	-241.94	-353.14	254.67	12.00
10925.00	63.445	179.560	10799.70	-264.00	-352.97	276.70	12.00
10950.00	66.445	179.560	10810.28	-286.65	-352.80	299.33	12.00

10975.00	69.445	179.560	10819.67	-309.82	-352.62	322.47	12.00
11000.00	72.445	179.560	10827.83	-333.44	-352.44	346.08	12.00
11025.00	75.445	179.560	10834.74	-357.46	-352.25	370.08	12.00
11050.00	78.445	179.560	10840.39	-381.81	-352.07	394.40	12.00
11075.00	81.445	179.560	10844.75	-406.43	-351.88	418.99	12.00
11100.00	84.445	179.560	10847.82	-431.23	-351.69	443.78	12.00
11125.00	87.445	179.560	10849.59	-456.17	-351.50	468.69	12.00
11137.96	89.000	179.560	10849.99	-469.12	-351.40	481.62	12.00
11200.00	89.000	179.560	10851.07	-531.15	-350.92	543.60	0.00
11300.00	89.000	179.560	10852.82	-631.13	-350.15	643.48	0.00
11400.00	89.000	179.560	10854.57	-731.11	-349.38	743.37	0.00
11500.00	89.000	179.560	10856.31	-831.09	-348.62	843.26	0.00
11600.00	89.000	179.560	10858.06	-931.08	-347.85	943.15	0.00
11700.00	89.000	179.560	10859.80	-1031.06	-347.08	1043.03	0.00
11800.00	89.000	179.560	10861.55	-1131.04	-346.31	1142.92	0.00
11900.00	89.000	179.560	10863.29	-1231.02	-345.55	1242.81	0.00
12000.00	89.000	179.560	10865.04	-1331.00	-344.78	1342.69	0.00
12100.00	89.000	179.560	10866.78	-1430.99	-344.01	1442.58	0.00
12200.00	89.000	179.560	10868.53	-1530.97	-343.24	1542.47	0.00
12300.00	89.000	179.560	10870.27	-1630.95	-342.47	1642.36	0.00
12400.00	89.000	179.560	10872.02	-1730.93	-341.71	1742.24	0.00
12500.00	89.000	179.560	10873.76	-1830.91	-340.94	1842.13	0.00
12600.00	89.000	179.560	10875.51	-1930.89	-340.17	1942.02	0.00
12700.00	89.000	179.560	10877.25	-2030.88	-339.40	2041.91	0.00
12800.00	89.000	179.560	10879.00	-2130.86	-338.64	2141.79	0.00
12900.00	89.000	179.560	10880.74	-2230.84	-337.87	2241.68	0.00
13000.00	89.000	179.560	10882.49	-2330.82	-337.10	2341.57	0.00
13100.00	89.000	179.560	10884.23	-2430.80	-336.33	2441.45	0.00
13200.00	89.000	179.560	10885.98	-2530.79	-335.56	2541.34	0.00
13300.00	89.000	179.560	10887.72	-2630.77	-334.80	2641.23	0.00
13400.00	89.000	179.560	10889.47	-2730.75	-334.03	2741.12	0.00
13500.00	89.000	179.560	10891.22	-2830.73	-333.26	2841.00	0.00
13600.00	89.000	179.560	10892.96	-2930.71	-332.49	2940.89	0.00
13700.00	89.000	179.560	10894.71	-3030.69	-331.72	3040.78	0.00
13800.00	89.000	179.560	10896.45	-3130.68	-330.96	3140.67	0.00
13900.00	89.000	179.560	10898.20	-3230.66	-330.19	3240.55	0.00
14000.00	89.000	179.560	10899.94	-3330.64	-329.42	3340.44	0.00
14100.00	89.000	179.560	10901.69	-3430.62	-328.65	3440.33	0.00
14200.00	89.000	179.560	10903.43	-3530.60	-327.89	3540.21	0.00
14300.00	89.000	179.560	10905.18	-3630.59	-327.12	3640.10	0.00
14400.00	89.000	179.560	10906.92	-3730.57	-326.35	3739.99	0.00
14500.00	89.000	179.560	10908.67	-3830.55	-325.58	3839.88	0.00
14600.00	89.000	179.560	10910.41	-3930.53	-324.81	3939.76	0.00
14700.00	89.000	179.560	10912.16	-4030.51	-324.05	4039.65	0.00
14800.00	89.000	179.560	10913.90	-4130.49	-323.28	4139.54	0.00
14900.00	89.000	179.560	10915.65	-4230.48	-322.51	4239.43	0.00
15000.00	89.000	179.560	10917.39	-4330.46	-321.74	4339.31	0.00
15100.00	89.000	179.560	10919.14	-4430.44	-320.98	4439.20	0.00
15200.00	89.000	179.560	10920.88	-4530.42	-320.21	4539.09	0.00
15300.00	89.000	179.560	10922.63	-4630.40	-319.44	4638.97	0.00
15400.00	89.000	179.560	10924.38	-4730.39	-318.67	4738.86	0.00
15500.00	89.000	179.560	10926.12	-4830.37	-317.90	4838.75	0.00
15600.00	89.000	179.560	10927.87	-4930.35	-317.14	4938.64	0.00
15700.00	89.000	179.560	10929.61	-5030.33	-316.37	5038.52	0.00
15800.00	89.000	179.560	10931.36	-5130.31	-315.60	5138.41	0.00
15900.00	89.000	179.560	10933.10	-5230.29	-314.83	5238.30	0.00
16000.00	89.000	179.560	10934.85	-5330.28	-314.06	5338.19	0.00
16100.00	89.000	179.560	10936.59	-5430.26	-313.30	5438.07	0.00
16200.00	89.000	179.560	10938.34	-5530.24	-312.53	5537.96	0.00
16300.00	89.000	179.560	10940.08	-5630.22	-311.76	5637.85	0.00
16400.00	89.000	179.560	10941.83	-5730.20	-310.99	5737.73	0.00
16500.00	89.000	179.560	10943.57	-5830.19	-310.23	5837.62	0.00
16600.00	89.000	179.560	10945.32	-5930.17	-309.46	5937.51	0.00
16700.00	89.000	179.560	10947.06	-6030.15	-308.69	6037.40	0.00
16800.00	89.000	179.560	10948.81	-6130.13	-307.92	6137.28	0.00
16900.00	89.000	179.560	10950.55	-6230.11	-307.15	6237.17	0.00
17000.00	89.000	179.560	10952.30	-6330.09	-306.39	6337.06	0.00
17100.00	89.000	179.560	10954.04	-6430.08	-305.62	6436.95	0.00
17200.00	89.000	179.560	10955.79	-6530.06	-304.85	6536.83	0.00
17300.00	89.000	179.560	10957.53	-6630.04	-304.08	6636.72	0.00
17400.00	89.000	179.560	10959.28	-6730.02	-303.32	6736.61	0.00
17500.00	89.000	179.560	10961.03	-6830.00	-302.55	6836.49	0.00
17600.00	89.000	179.560	10962.77	-6929.99	-301.78	6936.38	0.00
17700.00	89.000	179.560	10964.52	-7029.97	-301.01	7036.27	0.00

17800.00	89.000	179.560	10966.26	-7129.95	-300.24	7136.16	0.00
17900.00	89.000	179.560	10968.01	-7229.93	-299.48	7236.04	0.00
18000.00	89.000	179.560	10969.75	-7329.91	-298.71	7335.93	0.00
18100.00	89.000	179.560	10971.50	-7429.89	-297.94	7435.82	0.00
18200.00	89.000	179.560	10973.24	-7529.88	-297.17	7535.71	0.00
18300.00	89.000	179.560	10974.99	-7629.86	-296.41	7635.59	0.00
18400.00	89.000	179.560	10976.73	-7729.84	-295.64	7735.48	0.00
18500.00	89.000	179.560	10978.48	-7829.82	-294.87	7835.37	0.00
18600.00	89.000	179.560	10980.22	-7929.80	-294.10	7935.25	0.00
18704.23	89.000	179.560	10981.98	-8034.02	-293.26	8039.37	0.00

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

The Dogleg Severity is in Degrees per 100 feet.

Vertical Section is from Slot and calculated along an Azimuth of 182.090° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.

Central meridian is -104.333°.

Grid Convergence at Surface is 0.438°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 18704.23ft., the Bottom Hole Displacement is 8039.37ft., in the Direction of 182.090° (Grid).

Legacy Reserves

Lea County, NM (NAD83)

Lea

Lea Unit #65H

Original Wellbore

Plan: Plan 1

Standard Planning Report

15 November, 2018



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.0usft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.0usft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 1		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Lea				
Site Position:		Northing:	567,587.00 usft	Latitude:	32° 33' 27.391 N
From:	Map	Easting:	797,256.10 usft	Longitude:	103° 30' 9.733 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.45 °

Well	Lea Unit #65H					
Well Position	+N-S	8,455.8 usft	Northing:	576,042.85 usft	Latitude:	32° 34' 51.464 N
	+E-W	-5,325.9 usft	Easting:	791,930.17 usft	Longitude:	103° 31' 11.203 W
Position Uncertainty	0.0 usft		Wellhead Elevation:	3,681.0 usft	Ground Level:	3,654.0 usft

Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2000	2/12/2018	6.73	60.57	48,256.00000000

Design	Plan 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	182.09

Plan Survey Tool Program	Date	11/15/2018		
Depth From	Depth To	Survey (Wellbore)	Tool Name	Remarks
(usft)	(usft)			
1 0.0	18,704.2	Plan 1 (Original Wellbore)	MWD	
			MWD - Standard	

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N-S	+E-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,549.8	8.25	270.00	2,547.9	0.0	-39.5	1.50	1.50	0.00	270.00	
4,473.9	8.25	270.00	4,452.1	0.0	-315.5	0.00	0.00	0.00	0.00	
5,023.7	0.00	0.00	5,000.0	0.0	-355.0	1.50	-1.50	0.00	180.00	
10,396.3	0.00	0.00	10,372.6	0.0	-355.0	0.00	0.00	0.00	0.00	
11,138.0	89.00	179.56	10,850.0	-469.1	-351.4	12.00	12.00	0.00	179.56	
18,704.2	89.00	179.56	10,982.0	-8,034.0	-293.3	0.00	0.00	0.00	0.00	BHL-Lea 65H

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.0usft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.0usft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	1.50	270.00	2,100.0	0.0	-1.3	0.0	1.50	1.50	0.00
2,200.0	3.00	270.00	2,199.9	0.0	-5.2	0.2	1.50	1.50	0.00
2,300.0	4.50	270.00	2,299.7	0.0	-11.8	0.4	1.50	1.50	0.00
2,400.0	6.00	270.00	2,399.3	0.0	-20.9	0.8	1.50	1.50	0.00
2,500.0	7.50	270.00	2,498.6	0.0	-32.7	1.2	1.50	1.50	0.00
2,549.8	8.25	270.00	2,547.9	0.0	-39.5	1.4	1.50	1.50	0.00
2,600.0	8.25	270.00	2,597.6	0.0	-46.7	1.7	0.00	0.00	0.00
2,700.0	8.25	270.00	2,696.6	0.0	-61.0	2.2	0.00	0.00	0.00
2,800.0	8.25	270.00	2,795.5	0.0	-75.4	2.8	0.00	0.00	0.00
2,900.0	8.25	270.00	2,894.5	0.0	-89.7	3.3	0.00	0.00	0.00
3,000.0	8.25	270.00	2,993.4	0.0	-104.1	3.8	0.00	0.00	0.00
3,100.0	8.25	270.00	3,092.4	0.0	-118.4	4.3	0.00	0.00	0.00
3,200.0	8.25	270.00	3,191.4	0.0	-132.8	4.8	0.00	0.00	0.00
3,300.0	8.25	270.00	3,290.3	0.0	-147.1	5.4	0.00	0.00	0.00
3,400.0	8.25	270.00	3,389.3	0.0	-161.5	5.9	0.00	0.00	0.00
3,500.0	8.25	270.00	3,488.3	0.0	-175.8	6.4	0.00	0.00	0.00
3,600.0	8.25	270.00	3,587.2	0.0	-190.1	6.9	0.00	0.00	0.00
3,700.0	8.25	270.00	3,686.2	0.0	-204.5	7.5	0.00	0.00	0.00
3,800.0	8.25	270.00	3,785.2	0.0	-218.8	8.0	0.00	0.00	0.00
3,900.0	8.25	270.00	3,884.1	0.0	-233.2	8.5	0.00	0.00	0.00
4,000.0	8.25	270.00	3,983.1	0.0	-247.5	9.0	0.00	0.00	0.00
4,100.0	8.25	270.00	4,082.1	0.0	-261.9	9.6	0.00	0.00	0.00
4,200.0	8.25	270.00	4,181.0	0.0	-276.2	10.1	0.00	0.00	0.00
4,300.0	8.25	270.00	4,280.0	0.0	-290.6	10.6	0.00	0.00	0.00
4,400.0	8.25	270.00	4,379.0	0.0	-304.9	11.1	0.00	0.00	0.00
4,473.9	8.25	270.00	4,452.1	0.0	-315.5	11.5	0.00	0.00	0.00
4,500.0	7.86	270.00	4,477.9	0.0	-319.2	11.6	1.50	-1.50	0.00
4,600.0	6.36	270.00	4,577.2	0.0	-331.5	12.1	1.50	-1.50	0.00
4,700.0	4.86	270.00	4,676.7	0.0	-341.3	12.4	1.50	-1.50	0.00
4,800.0	3.36	270.00	4,776.4	0.0	-348.5	12.7	1.50	-1.50	0.00
4,900.0	1.86	270.00	4,876.3	0.0	-353.0	12.9	1.50	-1.50	0.00
5,000.0	0.36	270.00	4,976.3	0.0	-354.9	12.9	1.50	-1.50	0.00
5,023.7	0.00	0.00	5,000.0	0.0	-355.0	12.9	1.50	-1.50	0.00

Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD83)
Site: Lea
Well: Lea Unit #65H
Wellbore: Original Wellbore
Design: Plan 1

Local Co-ordinate Reference:
TVD Reference: RKB @ 3672.0usft
MD Reference: RKB @ 3672.0usft
North Reference: Grid
Survey Calculation Method: 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)
5,100.0	0.00	0.00	5,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,200.0	0.00	0.00	5,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,376.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,476.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,576.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,676.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,800.0	0.00	0.00	5,776.3	0.0	-355.0	12.9	0.00	0.00	0.00
5,900.0	0.00	0.00	5,876.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,976.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,100.0	0.00	0.00	6,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,200.0	0.00	0.00	6,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,300.0	0.00	0.00	6,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,400.0	0.00	0.00	6,376.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,500.0	0.00	0.00	6,476.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,600.0	0.00	0.00	6,576.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,700.0	0.00	0.00	6,676.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,800.0	0.00	0.00	6,776.3	0.0	-355.0	12.9	0.00	0.00	0.00
6,900.0	0.00	0.00	6,876.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,000.0	0.00	0.00	6,976.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,100.0	0.00	0.00	7,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,200.0	0.00	0.00	7,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,300.0	0.00	0.00	7,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,400.0	0.00	0.00	7,376.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,500.0	0.00	0.00	7,476.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,600.0	0.00	0.00	7,576.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,700.0	0.00	0.00	7,676.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,800.0	0.00	0.00	7,776.3	0.0	-355.0	12.9	0.00	0.00	0.00
7,900.0	0.00	0.00	7,876.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,000.0	0.00	0.00	7,976.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,100.0	0.00	0.00	8,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,200.0	0.00	0.00	8,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,300.0	0.00	0.00	8,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,400.0	0.00	0.00	8,376.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,500.0	0.00	0.00	8,476.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,600.0	0.00	0.00	8,576.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,700.0	0.00	0.00	8,676.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,800.0	0.00	0.00	8,776.3	0.0	-355.0	12.9	0.00	0.00	0.00
8,900.0	0.00	0.00	8,876.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,000.0	0.00	0.00	8,976.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,100.0	0.00	0.00	9,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,200.0	0.00	0.00	9,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,300.0	0.00	0.00	9,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,400.0	0.00	0.00	9,376.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,500.0	0.00	0.00	9,476.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,600.0	0.00	0.00	9,576.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,700.0	0.00	0.00	9,676.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,800.0	0.00	0.00	9,776.3	0.0	-355.0	12.9	0.00	0.00	0.00
9,900.0	0.00	0.00	9,876.3	0.0	-355.0	12.9	0.00	0.00	0.00
10,000.0	0.00	0.00	9,976.3	0.0	-355.0	12.9	0.00	0.00	0.00
10,100.0	0.00	0.00	10,076.3	0.0	-355.0	12.9	0.00	0.00	0.00
10,200.0	0.00	0.00	10,176.3	0.0	-355.0	12.9	0.00	0.00	0.00
10,300.0	0.00	0.00	10,276.3	0.0	-355.0	12.9	0.00	0.00	0.00
10,396.3	0.00	0.00	10,372.6	0.0	-355.0	12.9	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Lea Unit #65H
Company:	Legacy Reserves	TVD Reference:	RKB @ 3672.0usft
Project:	Lea County, NM (NAD83)	MD Reference:	RKB @ 3672.0usft
Site:	Lea	North Reference:	Grid
Well:	Lea Unit #65H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Plan 1		

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)	
10,400.0	0.45	179.56	10,376.3	0.0	-355.0	13.0	12.00	12.00	0.00	
10,425.0	3.45	179.56	10,401.3	-0.9	-355.0	13.8	12.00	12.00	0.00	
10,450.0	6.45	179.56	10,426.2	-3.0	-355.0	16.0	12.00	12.00	0.00	
10,475.0	9.45	179.56	10,451.0	-6.5	-354.9	19.4	12.00	12.00	0.00	
10,500.0	12.45	179.56	10,475.5	-11.2	-354.9	24.2	12.00	12.00	0.00	
10,525.0	15.45	179.56	10,499.8	-17.2	-354.9	30.2	12.00	12.00	0.00	
10,550.0	18.45	179.56	10,523.7	-24.5	-354.8	37.5	12.00	12.00	0.00	
10,575.0	21.45	179.56	10,547.2	-33.1	-354.7	46.0	12.00	12.00	0.00	
10,600.0	24.45	179.56	10,570.2	-42.8	-354.7	55.7	12.00	12.00	0.00	
10,625.0	27.45	179.56	10,592.7	-53.7	-354.6	66.6	12.00	12.00	0.00	
10,650.0	30.45	179.56	10,614.5	-65.8	-354.5	78.7	12.00	12.00	0.00	
10,675.0	33.45	179.56	10,635.7	-79.1	-354.4	91.9	12.00	12.00	0.00	
10,700.0	36.45	179.56	10,656.2	-93.4	-354.3	106.2	12.00	12.00	0.00	
10,725.0	39.45	179.56	10,676.0	-108.7	-354.2	121.6	12.00	12.00	0.00	
10,750.0	42.45	179.56	10,694.8	-125.1	-354.0	138.0	12.00	12.00	0.00	
10,775.0	45.45	179.56	10,712.8	-142.5	-353.9	155.3	12.00	12.00	0.00	
10,800.0	48.45	179.56	10,729.9	-160.7	-353.8	173.5	12.00	12.00	0.00	
10,825.0	51.45	179.56	10,746.0	-179.9	-353.6	192.7	12.00	12.00	0.00	
10,850.0	54.45	179.56	10,761.0	-199.8	-353.5	212.6	12.00	12.00	0.00	
10,875.0	57.45	179.56	10,775.0	-220.5	-353.3	233.3	12.00	12.00	0.00	
10,900.0	60.45	179.56	10,787.9	-241.9	-353.1	254.7	12.00	12.00	0.00	
10,925.0	63.45	179.56	10,799.7	-264.0	-353.0	276.7	12.00	12.00	0.00	
10,950.0	66.45	179.56	10,810.3	-286.6	-352.8	299.3	12.00	12.00	0.00	
10,975.0	69.45	179.56	10,819.7	-309.8	-352.6	322.5	12.00	12.00	0.00	
11,000.0	72.45	179.56	10,827.8	-333.4	-352.4	346.1	12.00	12.00	0.00	
11,025.0	75.45	179.56	10,834.7	-357.5	-352.3	370.1	12.00	12.00	0.00	
11,050.0	78.45	179.56	10,840.4	-381.8	-352.1	394.4	12.00	12.00	0.00	
11,075.0	81.45	179.56	10,844.8	-406.4	-351.9	419.0	12.00	12.00	0.00	
11,100.0	84.45	179.56	10,847.8	-431.2	-351.7	443.8	12.00	12.00	0.00	
11,125.0	87.45	179.56	10,849.6	-456.2	-351.5	468.7	12.00	12.00	0.00	
11,138.0	89.00	179.56	10,850.0	-469.1	-351.4	481.6	12.00	12.00	0.00	
11,200.0	89.00	179.56	10,851.1	-531.1	-350.9	543.6	0.00	0.00	0.00	
11,300.0	89.00	179.56	10,852.8	-631.1	-350.2	643.5	0.00	0.00	0.00	
11,400.0	89.00	179.56	10,854.6	-731.1	-349.4	743.4	0.00	0.00	0.00	
11,500.0	89.00	179.56	10,856.3	-831.1	-348.6	843.3	0.00	0.00	0.00	
11,600.0	89.00	179.56	10,858.1	-931.1	-347.8	943.1	0.00	0.00	0.00	
11,700.0	89.00	179.56	10,859.8	-1,031.1	-347.1	1,043.0	0.00	0.00	0.00	
11,800.0	89.00	179.56	10,861.5	-1,131.0	-346.3	1,142.9	0.00	0.00	0.00	
11,900.0	89.00	179.56	10,863.3	-1,231.0	-345.5	1,242.8	0.00	0.00	0.00	
12,000.0	89.00	179.56	10,865.0	-1,331.0	-344.8	1,342.7	0.00	0.00	0.00	
12,100.0	89.00	179.56	10,866.8	-1,431.0	-344.0	1,442.6	0.00	0.00	0.00	
12,200.0	89.00	179.56	10,868.5	-1,531.0	-343.2	1,542.5	0.00	0.00	0.00	
12,300.0	89.00	179.56	10,870.3	-1,630.9	-342.5	1,642.4	0.00	0.00	0.00	
12,400.0	89.00	179.56	10,872.0	-1,730.9	-341.7	1,742.2	0.00	0.00	0.00	
12,500.0	89.00	179.56	10,873.8	-1,830.9	-340.9	1,842.1	0.00	0.00	0.00	
12,600.0	89.00	179.56	10,875.5	-1,930.9	-340.2	1,942.0	0.00	0.00	0.00	
12,700.0	89.00	179.56	10,877.3	-2,030.9	-339.4	2,041.9	0.00	0.00	0.00	
12,800.0	89.00	179.56	10,879.0	-2,130.9	-338.6	2,141.8	0.00	0.00	0.00	
12,900.0	89.00	179.56	10,880.7	-2,230.8	-337.9	2,241.7	0.00	0.00	0.00	
13,000.0	89.00	179.56	10,882.5	-2,330.8	-337.1	2,341.6	0.00	0.00	0.00	
13,100.0	89.00	179.56	10,884.2	-2,430.8	-336.3	2,441.5	0.00	0.00	0.00	
13,200.0	89.00	179.56	10,886.0	-2,530.8	-335.6	2,541.3	0.00	0.00	0.00	
13,300.0	89.00	179.56	10,887.7	-2,630.8	-334.8	2,641.2	0.00	0.00	0.00	
13,400.0	89.00	179.56	10,889.5	-2,730.7	-334.0	2,741.1	0.00	0.00	0.00	

Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD83)
Site: Lea
Well: Lea Unit #65H
Wellbore: Original Wellbore
Design: Plan 1

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

Well Lea Unit #65H
 RKB @ 3672.0usft
 RKB @ 3672.0usft
 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)
13,500.0	89.00	179.56	10,891.2	-2,830.7	-333.3	2,841.0	0.00	0.00	0.00
13,600.0	89.00	179.56	10,893.0	-2,930.7	-332.5	2,940.9	0.00	0.00	0.00
13,700.0	89.00	179.56	10,894.7	-3,030.7	-331.7	3,040.8	0.00	0.00	0.00
13,800.0	89.00	179.56	10,896.5	-3,130.7	-331.0	3,140.7	0.00	0.00	0.00
13,900.0	89.00	179.56	10,898.2	-3,230.7	-330.2	3,240.6	0.00	0.00	0.00
14,000.0	89.00	179.56	10,899.9	-3,330.6	-329.4	3,340.4	0.00	0.00	0.00
14,100.0	89.00	179.56	10,901.7	-3,430.6	-328.7	3,440.3	0.00	0.00	0.00
14,200.0	89.00	179.56	10,903.4	-3,530.6	-327.9	3,540.2	0.00	0.00	0.00
14,300.0	89.00	179.56	10,905.2	-3,630.6	-327.1	3,640.1	0.00	0.00	0.00
14,400.0	89.00	179.56	10,906.9	-3,730.6	-326.4	3,740.0	0.00	0.00	0.00
14,500.0	89.00	179.56	10,908.7	-3,830.5	-325.6	3,839.9	0.00	0.00	0.00
14,600.0	89.00	179.56	10,910.4	-3,930.5	-324.8	3,939.8	0.00	0.00	0.00
14,700.0	89.00	179.56	10,912.2	-4,030.5	-324.0	4,039.7	0.00	0.00	0.00
14,800.0	89.00	179.56	10,913.9	-4,130.5	-323.3	4,139.5	0.00	0.00	0.00
14,900.0	89.00	179.56	10,915.6	-4,230.5	-322.5	4,239.4	0.00	0.00	0.00
15,000.0	89.00	179.56	10,917.4	-4,330.5	-321.7	4,339.3	0.00	0.00	0.00
15,100.0	89.00	179.56	10,919.1	-4,430.4	-321.0	4,439.2	0.00	0.00	0.00
15,200.0	89.00	179.56	10,920.9	-4,530.4	-320.2	4,539.1	0.00	0.00	0.00
15,300.0	89.00	179.56	10,922.6	-4,630.4	-319.4	4,639.0	0.00	0.00	0.00
15,400.0	89.00	179.56	10,924.4	-4,730.4	-318.7	4,738.9	0.00	0.00	0.00
15,500.0	89.00	179.56	10,926.1	-4,830.4	-317.9	4,838.7	0.00	0.00	0.00
15,600.0	89.00	179.56	10,927.9	-4,930.3	-317.1	4,938.6	0.00	0.00	0.00
15,700.0	89.00	179.56	10,929.6	-5,030.3	-316.4	5,038.5	0.00	0.00	0.00
15,800.0	89.00	179.56	10,931.4	-5,130.3	-315.6	5,138.4	0.00	0.00	0.00
15,900.0	89.00	179.56	10,933.1	-5,230.3	-314.8	5,238.3	0.00	0.00	0.00
16,000.0	89.00	179.56	10,934.8	-5,330.3	-314.1	5,338.2	0.00	0.00	0.00
16,100.0	89.00	179.56	10,936.6	-5,430.3	-313.3	5,438.1	0.00	0.00	0.00
16,200.0	89.00	179.56	10,938.3	-5,530.2	-312.5	5,538.0	0.00	0.00	0.00
16,300.0	89.00	179.56	10,940.1	-5,630.2	-311.8	5,637.8	0.00	0.00	0.00
16,400.0	89.00	179.56	10,941.8	-5,730.2	-311.0	5,737.7	0.00	0.00	0.00
16,500.0	89.00	179.56	10,943.6	-5,830.2	-310.2	5,837.6	0.00	0.00	0.00
16,600.0	89.00	179.56	10,945.3	-5,930.2	-309.5	5,937.5	0.00	0.00	0.00
16,700.0	89.00	179.56	10,947.1	-6,030.1	-308.7	6,037.4	0.00	0.00	0.00
16,800.0	89.00	179.56	10,948.8	-6,130.1	-307.9	6,137.3	0.00	0.00	0.00
16,900.0	89.00	179.56	10,950.6	-6,230.1	-307.2	6,237.2	0.00	0.00	0.00
17,000.0	89.00	179.56	10,952.3	-6,330.1	-306.4	6,337.1	0.00	0.00	0.00
17,100.0	89.00	179.56	10,954.0	-6,430.1	-305.6	6,436.9	0.00	0.00	0.00
17,200.0	89.00	179.56	10,955.8	-6,530.1	-304.9	6,536.8	0.00	0.00	0.00
17,300.0	89.00	179.56	10,957.5	-6,630.0	-304.1	6,636.7	0.00	0.00	0.00
17,400.0	89.00	179.56	10,959.3	-6,730.0	-303.3	6,736.6	0.00	0.00	0.00
17,500.0	89.00	179.56	10,961.0	-6,830.0	-302.5	6,836.5	0.00	0.00	0.00
17,600.0	89.00	179.56	10,962.8	-6,930.0	-301.8	6,936.4	0.00	0.00	0.00
17,700.0	89.00	179.56	10,964.5	-7,030.0	-301.0	7,036.3	0.00	0.00	0.00
17,800.0	89.00	179.56	10,966.3	-7,129.9	-300.2	7,136.2	0.00	0.00	0.00
17,900.0	89.00	179.56	10,968.0	-7,229.9	-299.5	7,236.0	0.00	0.00	0.00
18,000.0	89.00	179.56	10,969.8	-7,329.9	-298.7	7,335.9	0.00	0.00	0.00
18,100.0	89.00	179.56	10,971.5	-7,429.9	-297.9	7,435.8	0.00	0.00	0.00
18,200.0	89.00	179.56	10,973.2	-7,529.9	-297.2	7,535.7	0.00	0.00	0.00
18,300.0	89.00	179.56	10,975.0	-7,629.9	-296.4	7,635.6	0.00	0.00	0.00
18,400.0	89.00	179.56	10,976.7	-7,729.8	-295.6	7,735.5	0.00	0.00	0.00
18,500.0	89.00	179.56	10,978.5	-7,829.8	-294.9	7,835.4	0.00	0.00	0.00
18,600.0	89.00	179.56	10,980.2	-7,929.8	-294.1	7,935.3	0.00	0.00	0.00
18,704.2	89.00	179.56	10,982.0	-8,034.0	-293.3	8,039.4	0.00	0.00	0.00

Database: EDM 5000.1 Single User Db
Company: Legacy Reserves
Project: Lea County, NM (NAD83)
Site: Lea
Well: Lea Unit #65H
Wellbore: Original Wellbore
Design: Plan 1

Local Co-ordinate Reference: Well Lea Unit #65H
TVD Reference: RKB @ 3672.0usft
MD Reference: RKB @ 3672.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
FTP-Lea 65H	0.00	0.00	10,824.0	-323.1	-352.5	575,719.73	791,577.71	32° 34' 48.294 N	103° 31' 15.351 W
- plan misses target center by 0.4usft at 10989.0usft MD (10824.4 TVD, -323.0 N, -352.5 E)									
- Point									
BHL-Lea 65H	0.00	0.00	10,982.0	-8,034.0	-293.3	568,008.83	791,636.91	32° 33' 31.994 N	103° 31' 15.347 W
- plan hits target center									
- Point									



WELL DETAILS: Lea Unit #65H

RKB @ 3672.0usft Ground Level @ 3665.0 usft

+N-S	+E-W	Northing	Easting	Latitude	Longitude
0.0	0.0	576042.85	791930.17	32° 34' 51.464 N	103° 31' 11.203 W

MOTIVE

DRILLING TECHNOLOGIES

Project: Lea County, NM
Site: Lea
Well: Lea Unit #65H
Geodetic Datum: NAD 1983
Design: Plan 1



Azimuths to Grid North
True North: -0.44°
Magnetic North: 6.30°

Magnetic Field
Strength: 48256.0nT
Dip Angle: 60.57°
Date: 2/12/2018
Model: IGRF2000

DESIGN TARGET DETAILS

Name	TVD	+N-S	+E-W	Northing	Easting
FTP	10824.0	-323.1	-352.5	575719.73	791577.71
BHL	10982.0	-8034.0	-293.3	568008.83	791636.91

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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2549.8	8.25	270.00	2547.9	0.0	-39.5	1.50	270.00	1.4	
4	4473.9	8.25	270.00	4452.1	0.0	-315.5	0.00	0.00	11.5	
5	5023.7	0.00	0.00	5000.0	0.0	-355.0	1.50	180.00	12.9	
6	10396.3	0.00	0.00	10372.6	0.0	-355.0	0.00	0.00	12.9	
7	11138.0	89.00	179.56	10850.0	-469.1	-351.4	12.00	179.56	481.6	
8	18704.2	89.00	179.56	10982.0	-8034.0	-293.3	0.00	0.00	8039.4	BHL-Lea 65H

