DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.
5/6/15	5/22/15	WVJ	5/7/15	SWD	pWVJ1512755477

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -
1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☒ Application is One Which Requires Published Legal Notice

[D] ☒ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

CRAIG SPARKMAN	Craig Sparkman	OPERATIONS ENG.	4/9/15
Print or Type Name	Signature	Title	Date

csparkman@legacylp.com
e-mail Address

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance __X__ Disposal _____ Storage
Application qualifies for administrative approval? __X__ Yes _____ No

II. OPERATOR: LEGACY RESERVES OPERATING LP

ADDRESS: P.O. BOX 10848, MIDLAND, TX 79702

CONTACT PARTY: CRAIG SPARKMAN PHONE: 432/689-5200

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? _____ Yes __X__ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: CRAIG SPARKMAN TITLE: OPERATIONS ENGINEER

SIGNATURE: Craig Sparkman DATE: 4/9/15

E-MAIL ADDRESS: csparkman@legacylp.com

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used:

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;

(3) The formation name and depth with expected maximum injection rates and pressures; and,

(4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

LEGACY
RESERVES
Legacy Reserves Operating LP, P.O. Box 10848, Midland, Texas 79702

April 27, 2015

New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RE: Application for Authorization to Inject
Lea Unit #2
Lea (Devonian) Field
Lea County, New Mexico

Ladies and Gentlemen:

30-025-02428

Attached is the referenced application to convert Lea Unit #2 to water injection in the Devonian from 14,432'-14,501'. Attached are the following:

1) The "Application for Authorization to Inject" form C-108.
2) The "Injection Well Data Sheet".
3) Two maps showing the wells and leases within two miles of the proposed injection well and the half-mile radius around the proposed injection well, which defines the well's area of review. All wells within one-half mile of the proposed injection well are identified on the map.
4) A table of all wells within the half-mile radius area of review around the proposed injection well. Legacy Reserves Operating LP operates all wells within this half-mile radius. Two wells within this half-mile radius are plugged and abandoned, wells Lea Unit #1 and Lea Unit #1D; current wellbore diagrams of each of those wells are attached.
5) An affidavit of publication signed by the publisher that notice of the application was published in a newspaper of general circulation in Lea County, New Mexico. A copy of the newspaper notice is also included.
6) Current and proposed wellbore diagrams of the Lea Unit #2.
7) Geological data on the Lea Unit #2, including a log section.
8) Engineering data on the Lea Unit #2.

A notice of this application was published in the Hobbs News-Sun on April 14, 2015. A copy of this application was sent by certified mail to the surface owner, Kenneth Smith, Inc. on or before April 27, 2015. Legacy Reserves Operating LP operates all wells within the half-mile radius area of review; therefore, no offset operator to the Lea Unit was notified.

If there are any questions regarding this application or if any additional information is needed, please contact me at 432/689-5201 or by email at csparkman@legacylp.com. Thank you.

Sincerely,

Craig Sparkman

Craig Sparkman
Operations Engineer

CAS
Attachments
cc: NMOCD District Office – Hobbs
Kenneth Smith, Inc.

Side 1

INJECTION WELL DATA SHEET

OPERATOR: LEGACY RESERVES OPERATING LP

WELL NAME & NUMBER: LEA UNIT #2

WELL LOCATION: 1950' FNL, 1950' FWL | I | 2 | 20S | 34E

FOOTAGE LOCATION | UNIT LETTER | SECTION | TOWNSHIP | RANGE

WELLBORE SCHEMATIC

SEE THE ATTACHED CURRENT AND PROPOSED WELLBORE DIAGRAMS

WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 16" Casing Size: 13 3/8"

Cemented with: 600 sx. *or* _____ ft³

Top of Cement: SURFACE Method Determined: VISUAL

Intermediate Casing

Hole Size: 12 1/4" Casing Size: 9 5/8"

Cemented with: 3,000 sx. *or* _____ ft³

Top of Cement: 445' Method Determined: TEMP. SURVEY

Production Casing

Hole Size: INSIDE 7" CASING Casing Size: 5"

Cemented with: 900 sx. *or* _____ ft³

Top of Cement: DESIGNED TO BE SURFACE Method Determined: _____

Total Depth: 14,501'

Injection Interval

14,432' feet to 14,501'

(Perforated or Open Hole; indicate which)

Side 2

INJECTION WELL DATA SHEET

Tubing Size: 2 7/8", 6.5 #, N-80 Lining Material: INTERNALLY PLASTIC COATING

Type of Packer: ARROWSET IX

Packer Setting Depth: 14,400'

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? _____ Yes X No

   If no, for what purpose was the well originally drilled? PRODUCTION

2. Name of the Injection Formation: DEVONIAN

3. Name of Field or Pool (if applicable): LEA (DEVONIAN)

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. BONE SPRING 9590'-9620' CEMENTED WITH 250 SX, MORROW (PENN) 12,894' - 13,156' CEMENTED WITH 75 SX - BOTH OF THESE INTERVALS WILL BE ISOLATED BY A 5" CEMENTED LINER INSIDE 7" CASING.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: BONE SPRING +/- 9600', MORROW (PENNSYLVANIAN) +/- 12,900'

LEGACY RESERVES

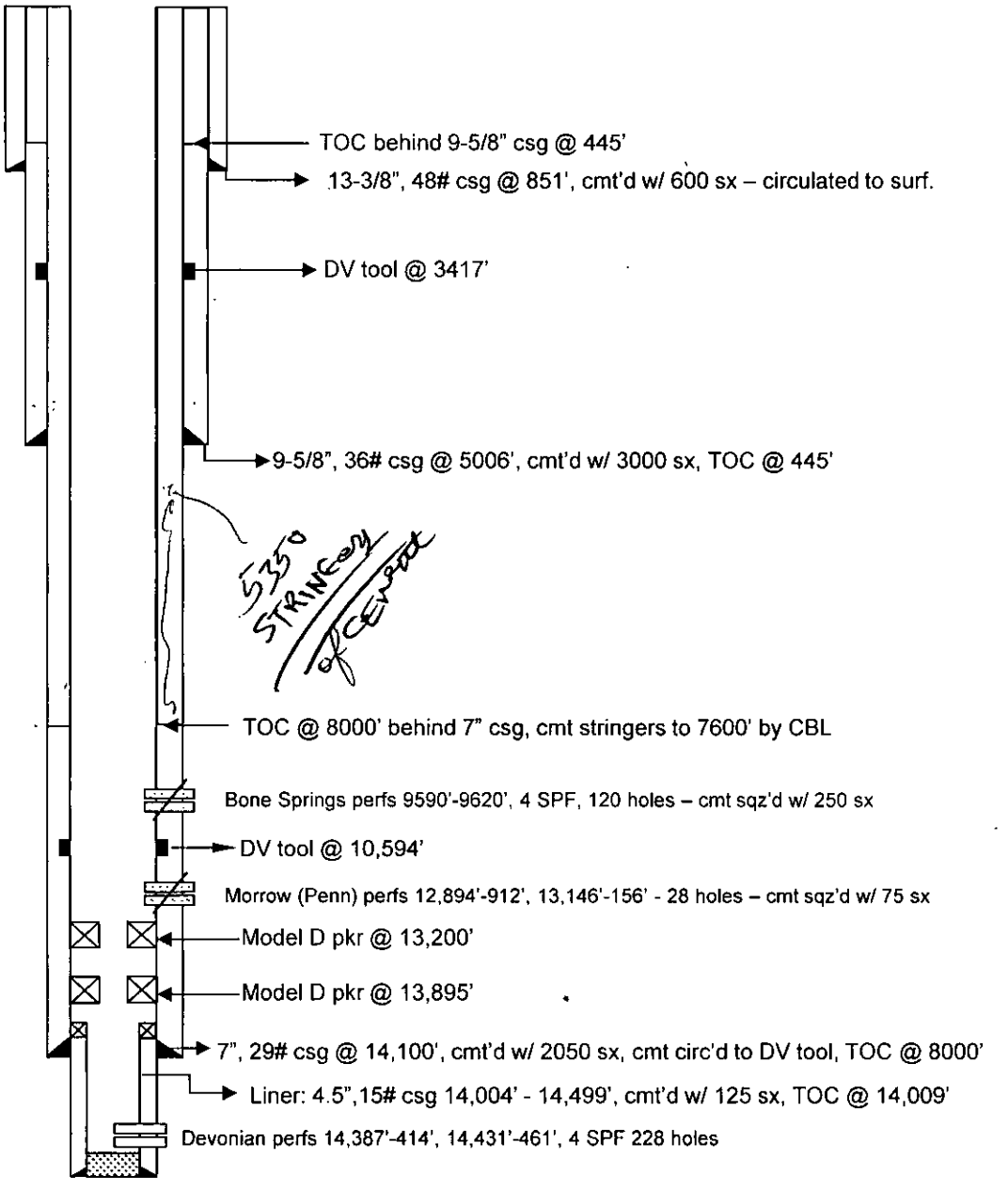
Lea Unit #2

LOCATION: Sec 12, T20S, R34E

Current Wellbore Diagram

FIELD:	LEA	GL:	3667'	DATE:	4/24/2015
LEASE:	LEA UNIT	KB:	3688'	BY:	CAS
COUNTY:	LEA	SPUD DATE:	9/15/60		
STATE:	NEW MEXICO	API No:	30-025-02428		

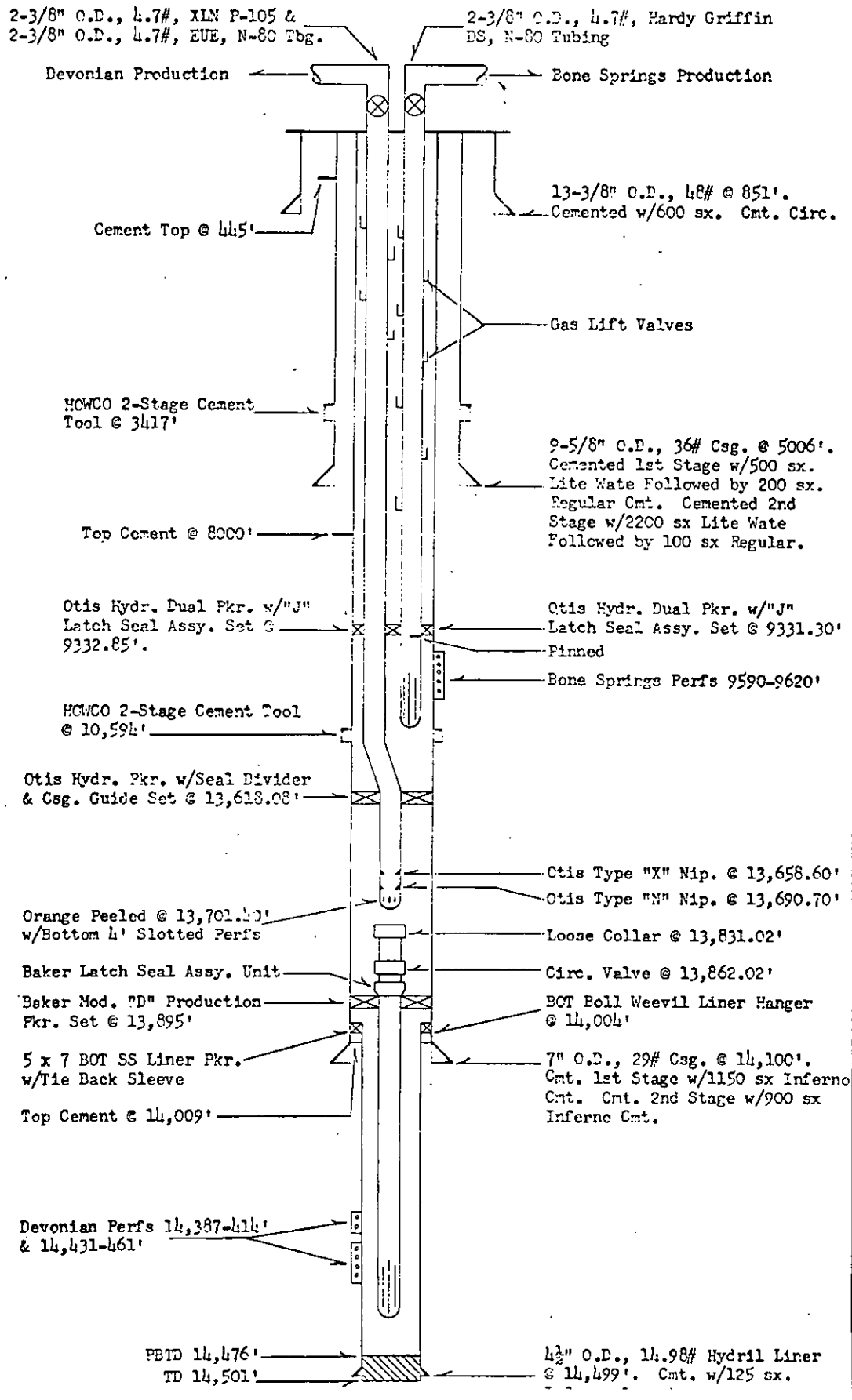
LOCATION: 1950' FNL & 1950' FWL, SEC. 12, T20S, R34E



PBTD: 14,476'

TD: 14,501'

MARATHON OIL COMPANY
"Diagrammatic Sketch of Mechanical Equipment Used in Dual Completion"
Lea Unit, Well No. 2
Unit F, Sec. 12, T-20-S, R-34-E
Lea County, New Mexico
Revised 6-15-64



LEGACY RESERVES

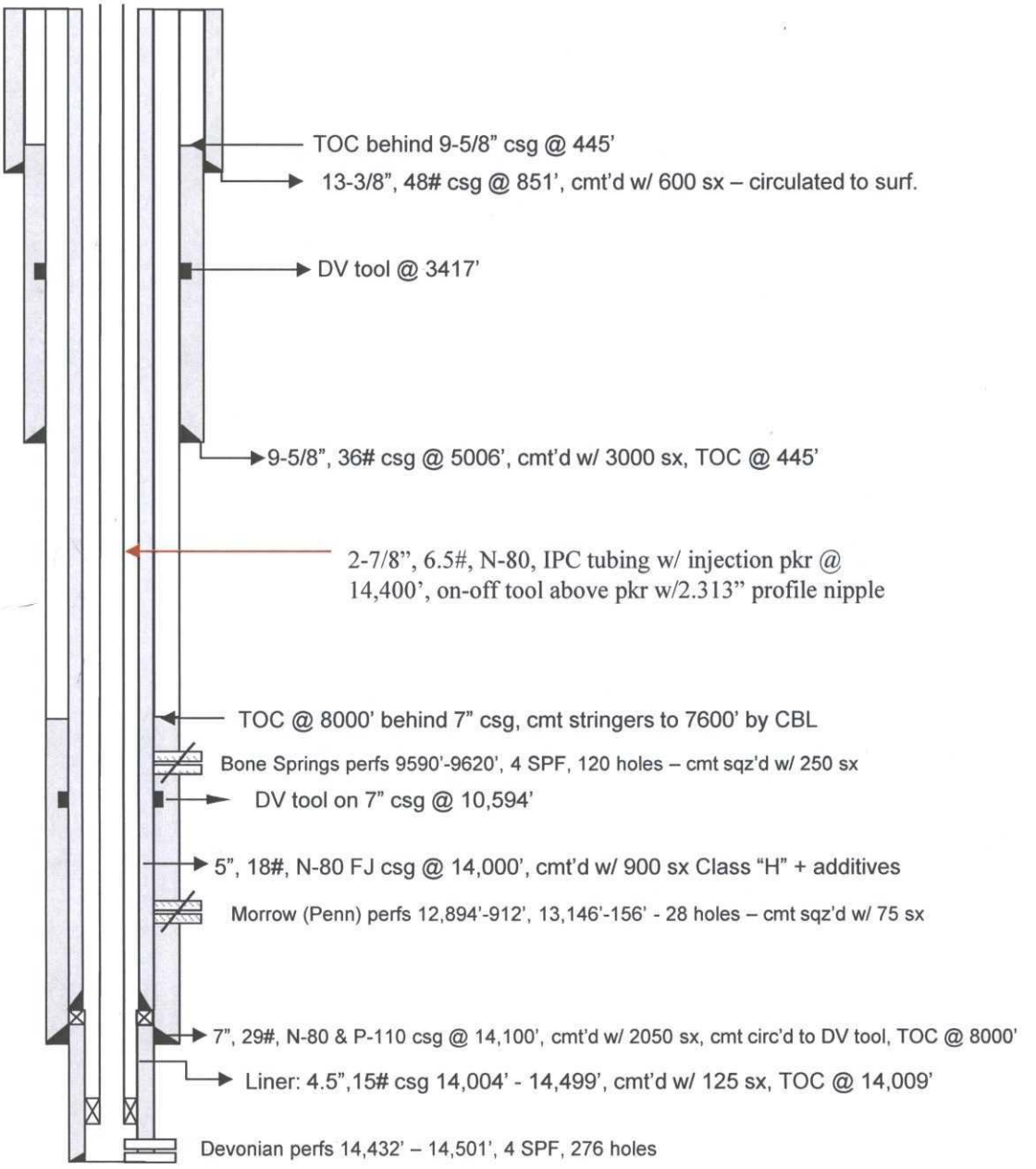
Lea Unit #2

LOCATION: Sec 12, T20S, R34E

Proposed Wellbore Diagram

FIELD:	LEA	GL:	3667'	DATE:	4/24/2015
LEASE:	LEA UNIT	KB:	3688'	BY:	CAS
COUNTY:	LEA	SPUD DATE:	9/15/60		
STATE:	NEW MEXICO	API No:	30-025-02428		

LOCATION: 1950' FNL & 1950' FWL, SEC. 12, T20S, R34E



PBTD: 14,501'

TD: 14,501'

GEOLOGICAL DESCRIPTION

DEVONIAN FORMATION

LEA UNIT #2

Rock type: Dolomite

Thickness: At least 69' in Lea Unit #2

Depth: 14,432'-14,501'

Porosity: 8 to 15%

Permeability: Highly variable from 1 to 500 md; higher in secondary porosity, vuggy or fractured intervals

Reservoir description: Anticline bounded by high-angle faults, secondary porosity development is common, rock can be vuggy and fractured, underlying water aquifer is common and usually actively recharging

Advantages for water injection:

1) Injection interval deep below the surface, allowing for generally low surface water injection pressures because of the great hydrostatic fluid column.

2) A water aquifer is present; therefore, water injection or water disposal will simply supplement the natural recharge of the underlying aquifer.

3) More than 9,000' below the Capitan Reef, the deepest potential source of brackish water that might be economically used as a source of drinking water or as a source of water for hydraulic fracturing. There are no faults that could potentially transmit injection water into any underground sources of drinking water.

4) Highly porous and permeable allowing for a high volume of water injection capacity without approaching or exceeding fracture pressure. An acid stimulation using up to 100 gallons per foot of perforated injection interval is planned prior to initiating water injection.

5) Lea Unit #2 was the last Devonian producer until ~~July~~ May 2014, when it reached its economic producing limit of 5 BOPD, 10 MCFPD and 1,135 BWPD (99.6% water cut).

6) There are no known active fresh water wells within one mile of the Lea Unit #2.

Planned maximum injection rate: 10,000 barrels of water per day (BWPD)

Planned maximum injection pressure: 3,000 pounds per square inch (psi)

WELEX

RADIOACTIVITY LOG

(22)

COMPANY THE OHIO OIL COMPANY
WELL LEA UNIT # 2
FIELD UNDESIGNATED (LEA DEV.)
County LEA
State NEW MEXICO
File

COMPANY THE OHIO OIL COMPANY

WELL LEA UNIT # 2

FIELD ~~UNDESIGNATED~~ (LEA DEVONIAN)

COUNTY LEA STATE NEW MEXICO

Location
1980' FNL 1980' FWL
SEC. 12 TWP. 20-S
RGE. 34-E

Sec. Twp. Rge.

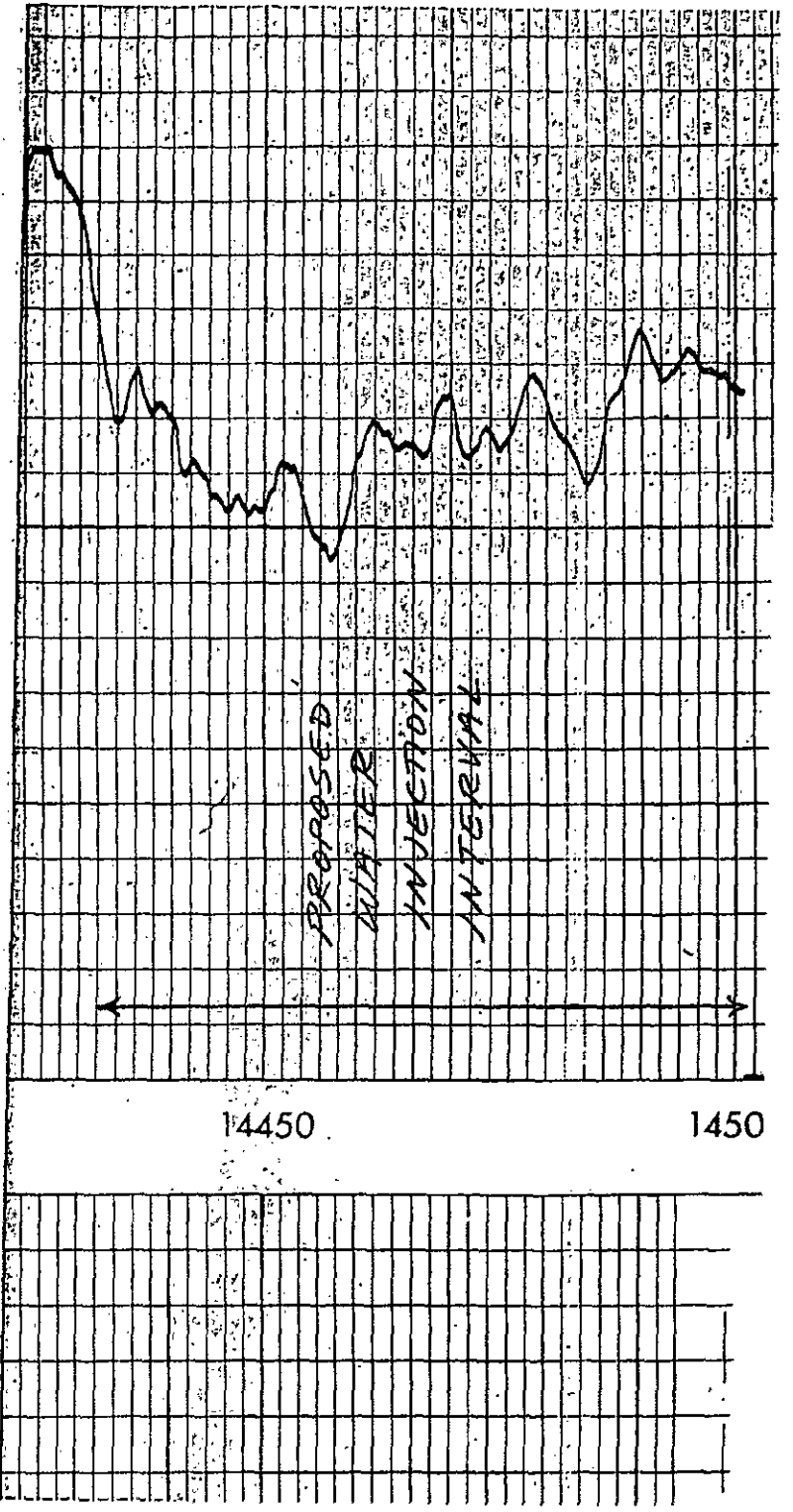
Other Logs
IND-ELEC
CONT-CAL
FORXO

Permanent Datum KB 13.3' ABOVE BRADENHEAD FLANGE Elev. 3666.85
Log Measured From KELLY BUSHING
Drilling Measured From KELLY BUSHING

Elevation
KB. 3686.5
DF. 3685
GL. 3668

Type Log	GAMMA	N.GAMMA	1-TAS ✓
Run No.	- 1 -	- 1 -	2-LHS
Date	1-22-61	1-22-61	1-Roswell
Total Depth Driller	14,501	14,501	(Hobbs Prod. + Engg retained their copies)
Present Depth Driller	14,501	14,501	
Total Depth Welex	14,499	14,499	
Survey Begins	14,499	14,499	
Survey Ends	0	14,000	
Mud Data	DRISCOSE, CAUSTIC, GEL SPERSENE		
Type Fluid in Hole	MUD	MUD	
Salinity PPM Cl	2550	2550	
Weight lb./gal.	9.1	9.1	
Fluid Level	FULL	FULL	
Max. Hole Temp.	208	208	
Recorded By	G.E.AYRES		
Witnessed By	MR. McLEAN		

BORE HOLE RECORD	CASING RECORD



ENGINEERING DATA

LEA UNIT #2

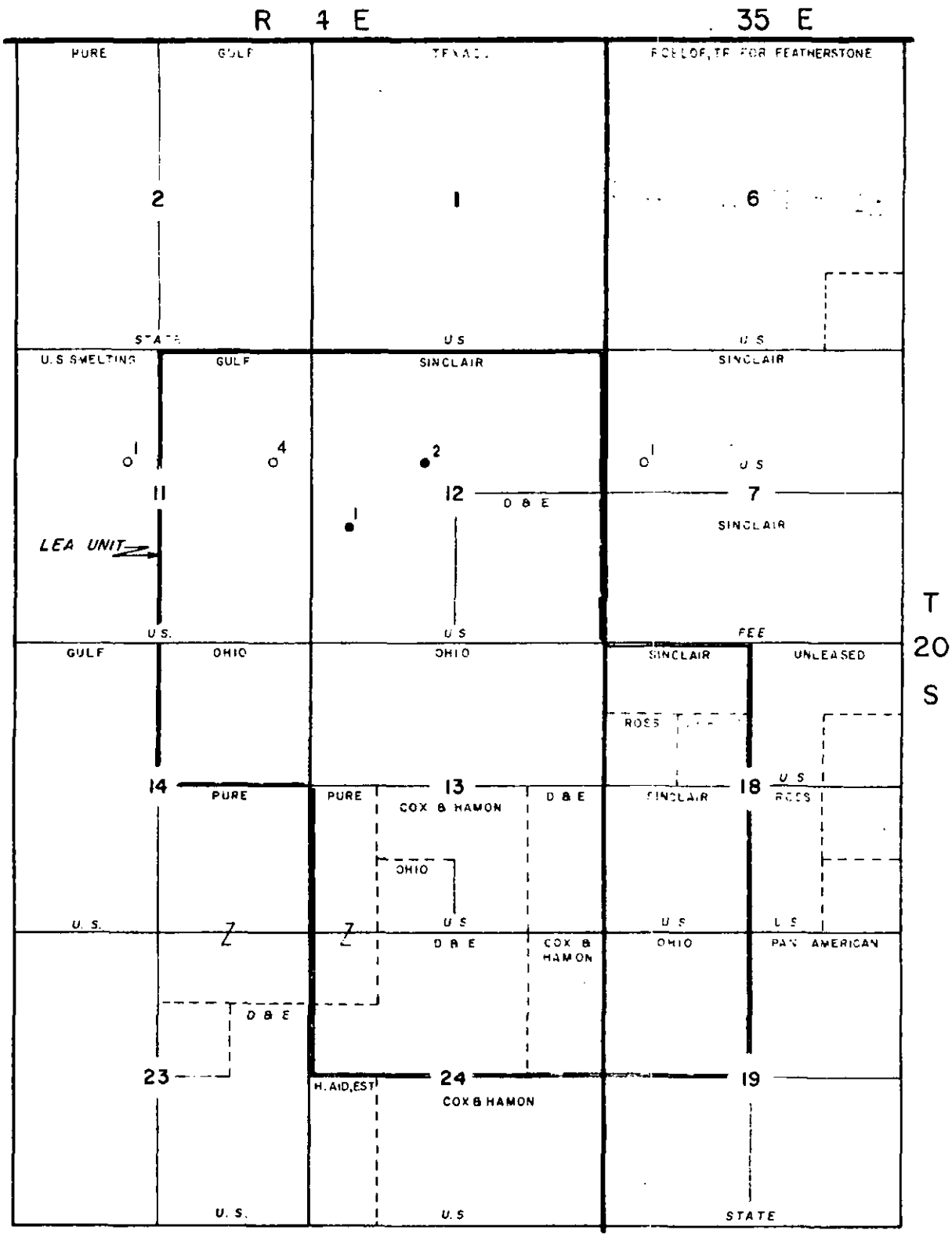
Planned maximum injection rate: 10,000 barrels of water per day (BWPD)

Planned average injection rate: 5,000 barrels of water per day (BWPD)

Planned maximum injection pressure: 3,000 pounds per square inch (psi)

Injection will be within an entirely closed system.

Produced water compatibility: The Bone Springs and Morrow (Pennsylvanian) produced waters are compatible with the waters of the Devonian; all of these waters are currently commingled at the surface without any compatibility issues.



THE OHIO OIL COMPANY

"Plat of Lea Unit Area"

Scale: 1" = 2500' July 15, 1960

Lea County, New Mexico

Rev. 1-30-61

Form 3160-5
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs OCD
JUL 29 2013
RECEIVED

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

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.

***SUBMIT IN TRIPLICATE** – Other instructions on page 2.*

1. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM-053434
	6. If Indian, Allottee or Tribe Name
	7. If Unit of CA/Agreement, Name and/or No. NM70976A
	8. Well Name and No. LEA UNIT #2
2. Name of Operator: LEGACY RESERVES OPERATING LP	9. API Well No. 30-025-02428
3a. Address: PO BOX 10848 MIDLAND, TX 79702 / 3b. Phone No. *(include area code)*: 432-689-5200	10. Field and Pool or Exploratory Area: LEA; DEVONIAN
4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*: 1980' FNL & 1980' FWL, UNIT LETTER F, SEC 12, T20S, R34E	11. County or Parish, State: LEA CO., NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other Lay down production eqmt, Test casing & TA well
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 recompletion 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.)

WE PLAN TO LAY DOWN THE PRODUCTION EQUIPMENT, RUN VARIOUS LOGS TO EVALUATE THE WELL BORE, AND TEMPORARILY ABANDON THE WELL PENDING EVALUATION FOR SALT WATER DISPOSAL SERVICE. SEE THE ATTACHED PROCEDURE. AN APPLICATION TO CONVERT THE WELL TO SALT WATER DISPOSAL WILL BE SUBMITTED TO THE NMOCD UNDERGROUND INJECTION CONTROL GROUP AFTER EVALUATION OF THE LOGS AND WELL BORE CONDITION.

This Well is economic. It is producing in Paying Quantities despite water Content.

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*: BLAIN LEWIS	Title: SENIOR ENGINEER
Signature: Blain Lewis	Date: 07/12/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

~~Approved by~~ Jerry Blakley	Title	Date
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	DENIED

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)

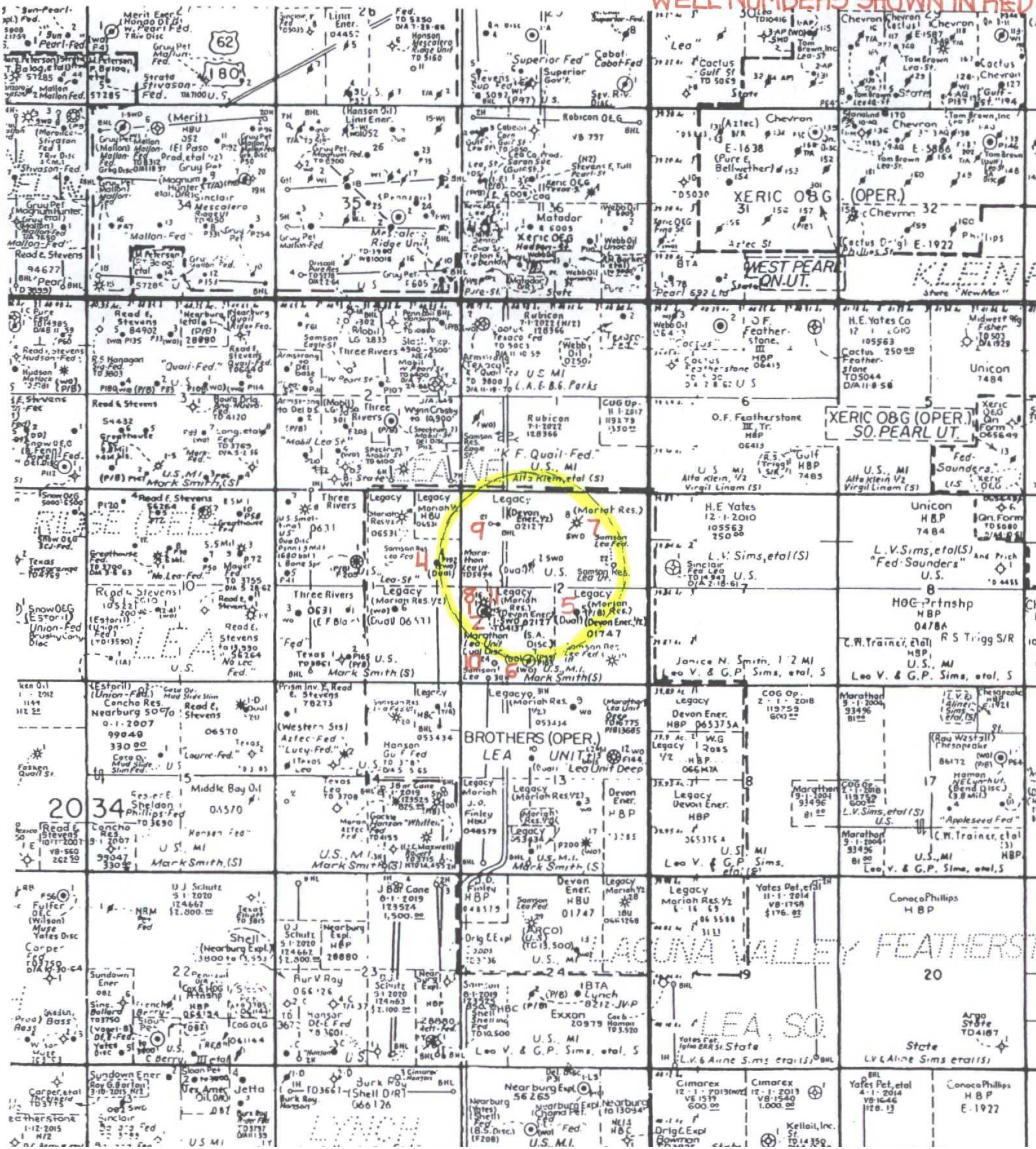
JUL 30 2013

SCALE: APPROX.
1" = 3700'

ONE - HALF MILE RADIUS AROUND LEA UNIT #2
1980' FNL, 1980' FWL, SEC. 12, T20S, R34E
LEA COUNTY, NEW MEXICO

ALL WELLS WITHIN AREA OF REVIEW ARE ON THE LEA UNIT AND OPERATED BY LEGACY RESERVES OPERATING LP

WELL NUMBERS SHOWN IN RED



ENLARGED VIEW OF ONE-HALF MILE RADIUS AREA OF REVIEW

MAP NUMBERS OF WELLS WITHIN ONE-HALF MILE RADIUS ARE SHOWN IN RED

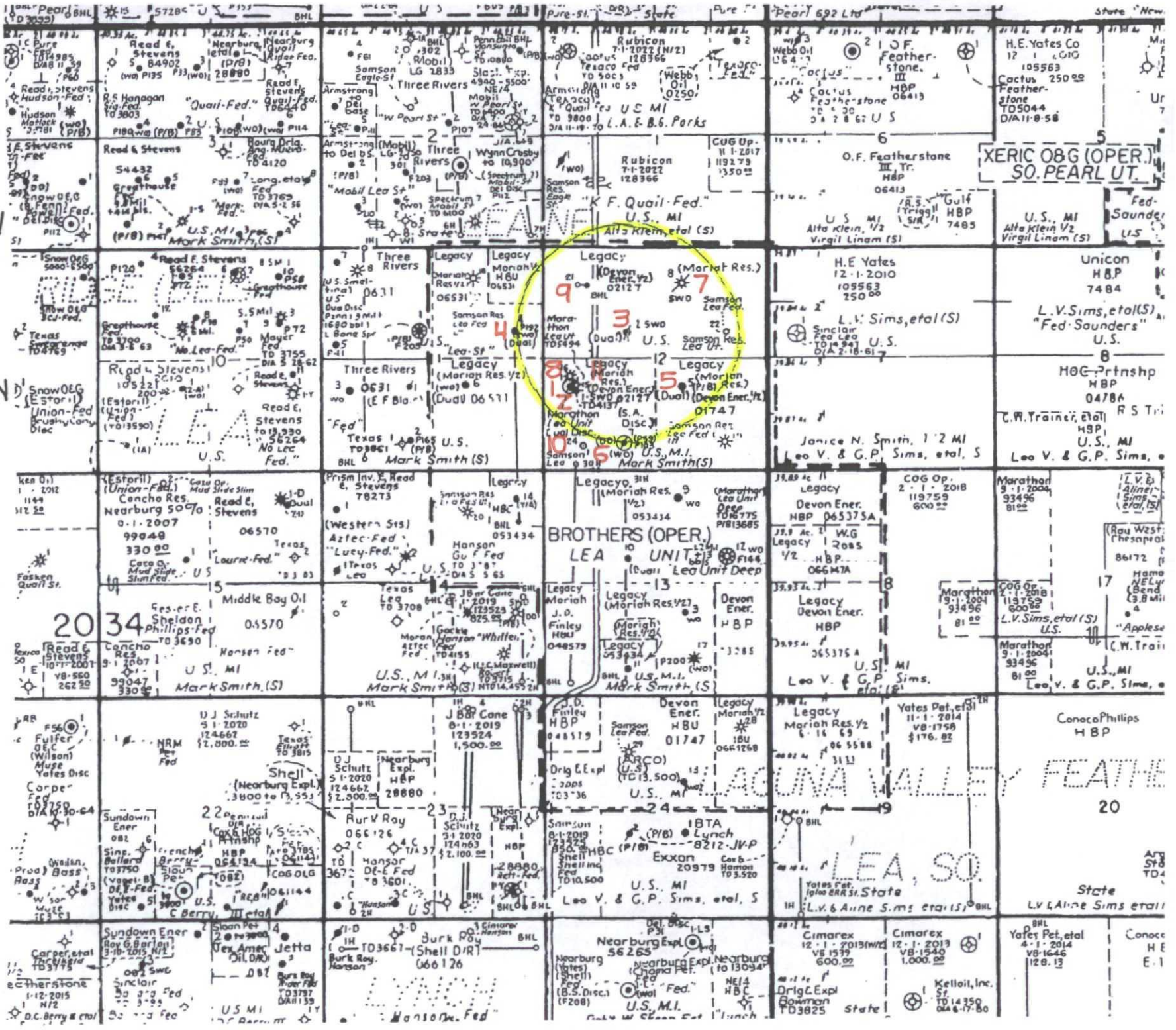


TABLE OF WELLS WITHIN A HALF-MILE RADIUS AREA OF REVIEW AROUND LEA UNIT #2
LEA COUNTY, NEW MEXICO

Map No.	Operator	Lease	Well No.	Type Completion	API Number	Location (Sec., Twp, Range)	Spud Date	TD	Status
	Legacy Reserves Operating LP	Lea Unit	2	Oil	42-025-02428	12, 20S, 34E	Sep-60	14,501'	Shut in
1	Legacy Reserves Operating LP	Lea Unit	1	Oil	42-025-02427	12, 20S, 34E	Dec-59	14,735'	P&A 11/15/77
2	Legacy Reserves Operating LP	Lea Unit	1D	Injection	42-025-12789	12, 20S, 34E	Nov-63	4137'	P&A 11/18/77
3	Legacy Reserves Operating LP	Lea Unit	2	Oil	42-025-02428	12, 20S, 34E	Sep-60	14,501'	Shut in
4	Legacy Reserves Operating LP	Lea Unit	4H	Oil	42-025-02424	11, 20S, 34E	Dec-60	14,492'	Active producing
5	Legacy Reserves Operating LP	Lea Unit	5	Oil	42-025-02429	12, 20S, 34E	Feb-61	14,476'	Active producing
6	Legacy Reserves Operating LP	Lea Federal Unit	7	Oil	42-025-02430	12, 20S, 34E	Sep-61	13,569'	Active producing
7	Legacy Reserves Operating LP	Lea Unit	8D	Injection	42-025-02431	12, 20S, 34E	Dec-61	14,693'	Active injection
8	Legacy Reserves Operating LP	Lea Unit	16	Oil	42-025-32033	12, 20S, 34E	Aug-93	13,302'	Active producing
9	Legacy Reserves Operating LP	Lea Federal Unit	21	Oil	42-025-37525	12, 20S, 34E	Jan-07	11,153'	Active producing
10	Legacy Reserves Operating LP	Lea Federal Unit	24	Oil	42-025-38212	12, 20S, 34E	Feb-07	11,125'	Active producing
11	Legacy Reserves Operating LP	Lea Unit	2D	Injection	42-025-28528	12, 20S, 34E	Dec-83	4611'	Active injection

30

30

2 PA
8 ACT.

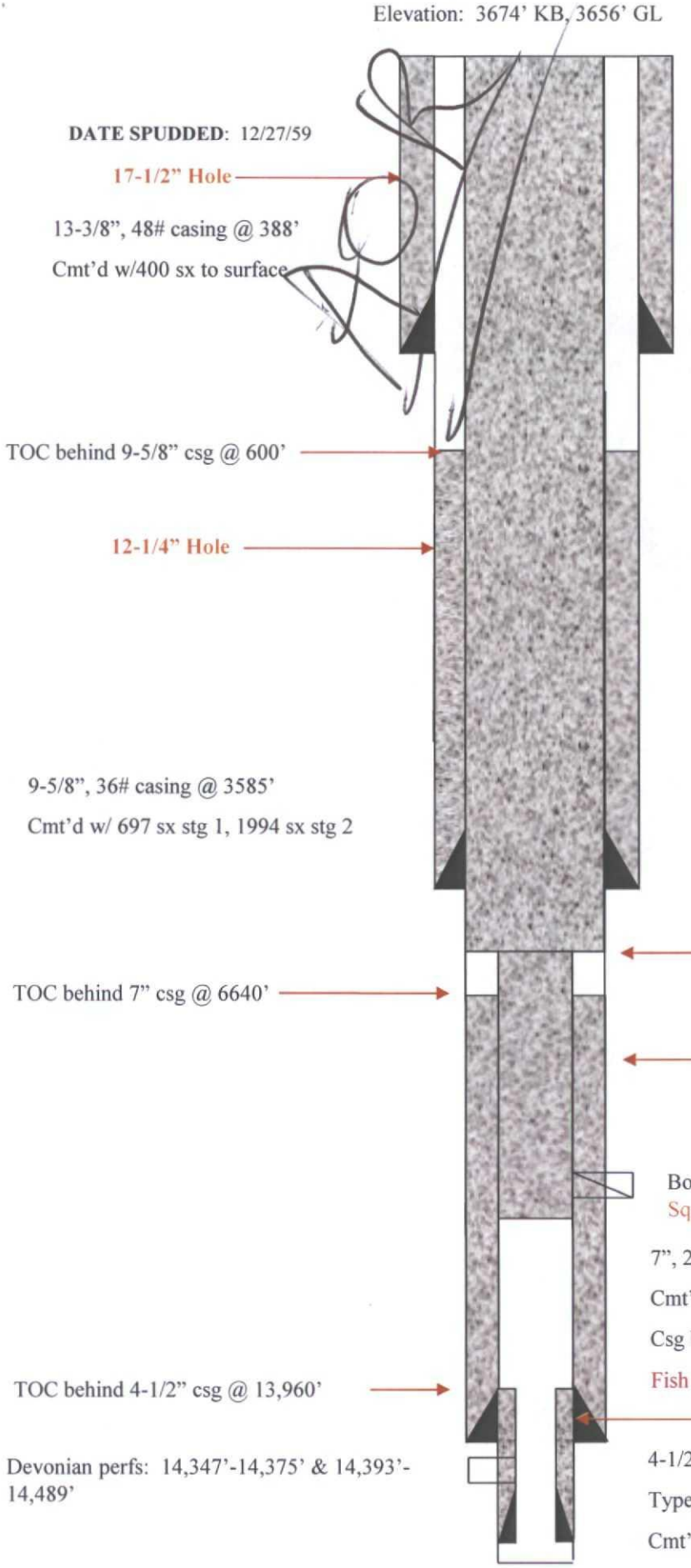
Legacy Reserves Operating LP

Lea Unit #1 current wellbore diagram

1980' FSL, 660' FWL, Sec. 12, T20S, R34EE

Lea Co, NM; NM-02127-B

API #42-025-02427



11/1/77: P&A Well – RIH to 1700' pump 2800 sx class C,
RIH to 1685' pump 1000 sx class C.
Tag cmt @ 1664', pump 400 sx class C, tag @ 1244'
Pump 400 sx class C, circ to surface.
Fill top of hole w/ ready-mix cmt (tbg displacement)
Btm of cement unknown, but likely at or below former Bone Springs perfs that had previously been cement squeezed – cement could be down to Devonian

Elevation: 3666' KB, 3656' GL

Legacy Reserves Operating LP

Lea Unit #1D current wellbore diagram

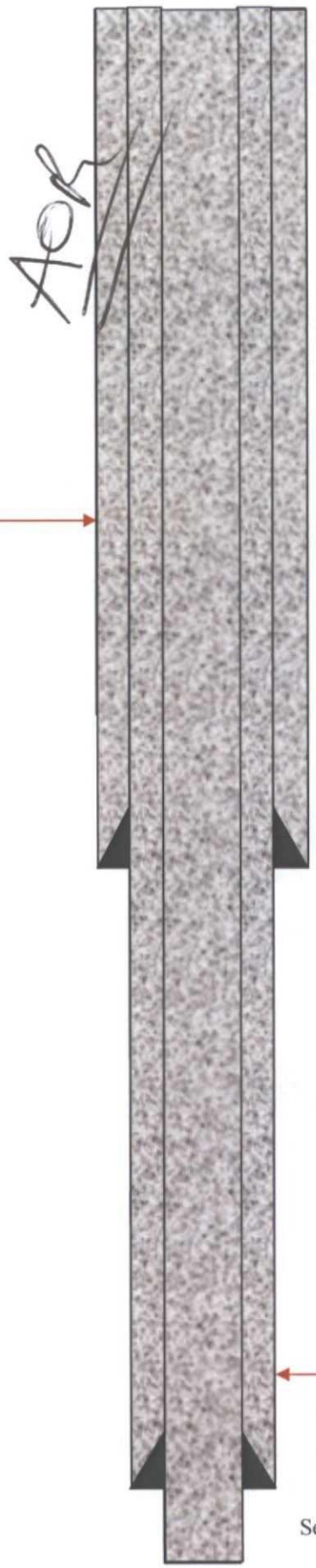
1905' FSL, 810' FWL, Sec. 12, T20S, R34E

Lea Co, NM; NM-02127-B

API #42-025-12789

DATE SPUDDED: 11/18/63

7/18/77: P&A well – Cmt w/ 375 sx class H w/ .3% CFR-2; tag cmt @ 903'. Pump 150 sx class C w/ 3% CaCL2, circ to surface.



12-1/4" Hole

8-5/8", 24#, J-55 casing @ 1357'

Cmt'd w/600 sx, circ to surface

TUBING RECORD:

ROD STRING RECORD:

PUMP RECORD:

PUMPING UNIT:

7-7/8" Hole

5-1/2", 15.5# J-55 casing @ 3891'

Cmt'd w/800 sx, circ to surface

Seven Rivers OH Completion 3891'-4137'

TD: 4137'

OCD Permitting

Section : 12-20S-34E

Type: Normal

Total Acres: 640

County: Lea (25)

D (D) Federal [1] Federal [2] (25) 40	C (C) Federal [1] Federal [2] (25) 40	B (B) Federal [1] Federal [2] (25) 40	A (A) Federal [1] Federal [2] (25) 40
E (E) Federal [1] Federal [2] (25) 40	F (F) Federal [1] Federal [2] (25) 40	G (G) Federal [1] Federal [2] (25) 40	H (H) Federal [1] Federal [2] (25) 40
L (L) Fee [1] Federal [2] (25) 40	K (K) Fee [1] Federal [2] (25) 40	J (J) Fee [1] Federal [2] (25) 40	I (I) Fee [1] Federal [2] (25) 40
M (M) Fee [1] Federal [2] (25) 40	N (N) Fee [1] Federal [2] (25) 40	O (O) Fee [1] Federal [2] (25) 40	P (P) Fee [1] Federal [2] (25) 40

Note [1] = Surface Owner Rights

Note [2] = Sub-Surface Mineral Rights

Land Restrictions

No land restrictions found for this section.

Return to Search

EXTRA NOTES

(2886 psi)

See R-1826-A

1220 South St. Francis Drive | Santa Fe, NM 87505 | P: (505) 476-3200 | F: (505) 476-3220

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MAY 9 - 2013
DOWNTOWN STA 79701 TX MIDLAND
USPS
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Sent To: COG Operating LLC
Street, Apt. No., or PO Box No.: 600 W. Illinois Ave
City, State, ZIP+4: Midland, TX 79701

PS Form 3800, August 2006 — See Reverse for Instructions

7014 2120 0001 7481 6710

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4/22/15
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NOTICE - Application to INJECT

Sent To: KENNETH Smith Inc. (Wayne Smith)
Street & Apt. No., or PO Box No.: 267 Smith Ranch Road
City, State, ZIP+4: Hobbs, NM 88240

PS Form 3800, July 2015 — See Reverse for Instructions

Affidavit of Publication

STATE OF NEW MEXICO
COUNTY OF LEA

I, Daniel Russell, Publisher of the Hobbs News-Sun, a newspaper published at Hobbs, New Mexico, solemnly swear that the clipping attached hereto was published in the regular and entire issue of said newspaper, and not a supplement thereof for a period of 1 issue(s).

Beginning with the issue dated
April 14, 2015
and ending with the issue dated
April 14, 2015.

Daniel Russell
Publisher

Sworn and subscribed to before me this
14th day of April 2015.

Gussie Black
Business Manager

My commission expires
January 29, 2019
(Seal).

OFFICIAL SEAL
GUSSIE BLACK
Notary Public
State of New Mexico
My Commission Expires 1-29-19

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937 and payment of fees for said

LEGAL NOTICE
April 14, 2015

NOTICE OF APPLICATION FOR FLUID INJECTION WELL PERMIT

APPLICANT: Legacy Reserves Operating LP
P.O. Box 10848
Midland, Texas 79702

CONTACT: Craig Sparkman (432/689-5200)

Legacy Reserves Operating LP is applying to the New Mexico Oil Conservation Division for a permit to inject fluid into a formation which is productive of oil and gas. Injection will be into the underlying salt water aquifer in the lower section of the Devonian formation, a formation that previously produced in the area but is not currently on production.

The applicant proposes to inject fluid into the Devonian formation in the Lea Unit lease, well number 2. The proposed salt water disposal well is located 1980' FNL, 1980' FWL, Section 12, Township 20 South, Range 34 East, approximately 20 miles west of Hobbs, New Mexico in the Lea (Devonian) Field, Lea County. Fluid will be injected into strata in the subsurface depth interval from 14,432' to 14,501'. The proposed maximum permitted water injection rate is 10,000 barrels of water per day (BWPD) at a maximum pressure of 3,000 pounds per square inch (psi).

LEGAL AUTHORITY: Statewide Rules and Regulations of the New Mexico Oil conservation Division.

Requests for a public hearing from persons who can show they are adversely affected, or requests for further information concerning any aspect of the application should be submitted in writing, within fifteen days of publication, to the New Mexico Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505.
#29942

67110811 00154802

LEGACY RESERVES OPERATING LP
PO BOX 10848
MIDLAND, TX 79702

Jones, William V, EMNRD

From: Jones, William V, EMNRD
Sent: Wednesday, May 06, 2015 11:52 AM
To: 'csparkman@legacylp.com'
Cc: Goetze, Phillip, EMNRD; Kautz, Paul, EMNRD; 'Joe Galluzzi (jgalluzz@blm.gov)'; Wade, Gabriel, EMNRD
Subject: SWD Application from Legacy Reserves Operating, LP: Lea Unit Well No. 2 30-025-02428 F-12-20S-34E

Hello Craig,
Thanks for the SWD application,
We received it yesterday and I have done a quick look over, mainly just to ensure proper notice.
We are not logging applications in until we check over and ensure that the "notice" has all been done.

Would you please send?
a. The certified mailer receipt (with date of mailing) for the package mailed to Kenneth Smith, Inc.
(I am sure you notified him, but we are required to collect the mailers or the date/certified mailer number)

b. COG Operating LLC has the Section 1 to the north and the AOR circle slightly reaches Section 1.
To be thorough, would you send by certified mail, a copy of the application to COG, and send me a copy of it?

This area is all U.S.A lands, but should be all leased – and seems to be the last well that produced from the Devonian.

Also, there is a form we like to see on the front of each "administrative" application.
It is the first unnumbered form at this link: Would you please fill out, scan and email it back?
http://www.emnrd.state.nm.us/OCD/documents/admnapp.pdf

Nearby:
I noticed there is an existing SWD (permit SWD-189 in 1977) operated by Legacy, into the Seven Rivers/Reef at 4030 to 4250 feet located in Unit letter B of this Section 12 (30-025-02431)
That well is taking approximately 1000 barrels of water per day. The OCD geologists are trying to locate these existing Reef (or top of Reef) disposal wells that were permitted early on and ASAP, get them replaced with deeper disposal wells. We can work through the hearing process, but the best way is for operators to do this voluntarily as they get the deeper wells permitted for disposal. Would you please pass this on to your management?

Hope you have a nice day,
Will Jones

William V. Jones, P.E., District IV Supervisor
Oil Conservation Division http://www.emnrd.state.nm.us/ocd/
1220 South St. Francis Drive, Santa Fe, NM 87505
P: 505.476.3477 C: 505.419.1995

Jones, William V, EMNRD

From: Craig Sparkman <csparkman@legacylp.com>
Sent: Monday, June 15, 2015 2:36 PM
To: Jones, William V, EMNRD
Cc: Goetze, Phillip, EMNRD; efernand@blm.gov; Kautz, Paul, EMNRD; Brown, Maxey G, EMNRD; McMillan, Michael, EMNRD; Sanchez, Daniel J., EMNRD
Subject: RE: SWD Application from Legacy Reserves Operating, LP: Lea Unit Well No. 2 30-025-02428 F-12-20S-34E Devonian Perforations: 14432 to 14501 feet

Hi Will Et al.,
Sorry for the delayed response. I meant to get back to you much sooner on this. Here are my answers for the questions/request mentioned in the below email correspondence:

a. We have provided justification to the BLM for conversion of this well to salt water disposal based on the fact that the production rate of 5 BOPD, 10 MCFPD, and 1,135 BWPD cannot justify the monthly operating cost of $10,400 which includes the electric power cost, the rental cost of the electric submersible pump equipment, and the associated costs to handle the and dispose of the produced water.
b. We have not yet received any feedback from the BLM concerning this issue. I do not think we feel that the 7" is eaten up. The 5" Liner was designed more or less for insurance to isolate the injection interval (Devonian) from the existing perforations in the Bone Spring from 9590'-9620' and in the Morrow (Penn) from 12,894'-13,156'. Pulling and replacing the 7" casing would probably be seen as last-resort from Legacy's view point just b/c of the heightened risk that comes into play when you start cutting pipe. The latest CBL (dated 7/22/13) that we have on the Lea Unit #2 indicates that we have cement stringers up to +/-5,300'. Not sure we would be very successful at squeezing cement, but I think we would be much more in favor of trying this option as opposed to pulling casing.
c. Yes. We plan to squeeze the upper set of Devonian perforations and open up the bottom down to 14,501'.
d. There are no fresh water wells within a 1 mile radius of this location.
e. We will work to get you all a representative water analysis as soon as possible from each formation we plan to dispose of the produced water. The only two formations currently producing at Lea Unit is the Morrow (Penn – which is mainly gas), and the Bone Spring.
f. I will work to get a hard copy of the most recent CBL/GR in the mail to Paul.

Please let me know if you have any further questions.

Thanks,

CRAIG SPARKMAN
OPERATIONS ENGINEER
direct 432-221-6334 | *mobile* 432-413-7811 | *fax* 432-686-8318

LEGACY RESERVES LP
303 West Wall St., Suite 1800
Midland, Texas 79701

From: Jones, William V, EMNRD [mailto:WilliamV.Jones@state.nm.us]
Sent: Friday, May 08, 2015 3:56 PM
To: Craig Sparkman
Cc: Goetze, Phillip, EMNRD; efernand@blm.gov; Kautz, Paul, EMNRD; Brown, Maxey G, EMNRD; McMillan, Michael, EMNRD; Sanchez, Daniel J., EMNRD

Subject: SWD Application from Legacy Reserves Operating, LP: Lea Unit Well No. 2 30-025-02428 F-12-20S-34E Devonian Perforations: 14432 to 14501 feet

Hello Craig,
I just looked over this deep Devonian SWD application for approval – we still must wait until 15 days after the last notice. In the meantime, I came up with some questions/requests – hopefully easy to answer.

a. The last page in the OCD well file shows the BLM has denied the TA request, stating the Devonian was still economic to produce. Our records show it has not reported production since 5/2014, so almost a year being shut-in. Since this is a federal wellbore.... Will the BLM approve the use of this well for SWD purposes? It seems like they would – but since our file has this "denial" in it, I must ask you about your communication with the BLM.
b. I must ask about the proposed 5" liner? This would provide internal protection, but there would then be a stranded 3000 feet of open exterior annulus from 8000 to 5000 feet – and extending from there up to the bradenhead. We don't like installing interior cemented pipe and leaving communication behind the outer casing – which would be harder to remedy at plugging time for this well. The OCD rules are built around preventing communication between formations. So I would recommend you first attempt to squeeze the 7" to place cement as well as possible from 8000 up to 5000 prior to running internal casing. And then you may not need the liner? The OCD only requires 500 psi for 30 minutes on MIT tests for SWD wells. If you suspect the 7" is eaten up by corrosion above 8000 feet, then it could be pulled and replaced with newer 7" from surface to 8000 feet or so – and that cemented at least up into the intermediate pipe? Again, since this is a BLM well, what do they say?
c. Your "Before" and "After" diagram indicates you would squeeze the upper Devonian perforations and open up the Devonian down to 14501 feet? Is this true?
d. Are there any Fresh Water wells within 1 mile of this location? If so, please grab a water sample and send the analysis in. This provides background data for the future.
e. Would you also please send water analysis for the various formations that will be flowing into this well and a statement about compatibility with insitu Devonian waters?
f. The OCD has only one Gamma Ray log on this well. Please send copies of the other logs in your file for this well, including the CBL on the 7" to Paul Kautz in Hobbs – OCD office. We still only accept "continuous TIF" format (no page breaks) – but you can put the logs on a thumb drive. Or ask Paul how he likes to see them.

This looks like a lot of stuff, but not trying to discourage you.
Thanks for the application.

Regards,

William V. Jones, P.E., District IV Supervisor
Oil Conservation Division http://www.emnrd.state.nm.us/ocd/

1220 South St. Francis Drive, Santa Fe, NM 87505
P: 505.476.3477 C: 505.419.1995

Jones, William V, EMNRD

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Sent: Friday, May 08, 2015 2:56 PM
To: Craig Sparkman
Cc: Goetze, Phillip, EMNRD; 'efernand@blm.gov'; Kautz, Paul, EMNRD; Brown, Maxey G, EMNRD; McMillan, Michael, EMNRD; Sanchez, Daniel J., EMNRD
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Thanks for the application.

Regards,

C-108 Review Checklist:

Received 5/6/15 Add. Request: 5/6/15 Reply Date: 6/[illegible]/15 Suspended: ______ [Ver 14]

PERMIT TYPE: WFX / PMX / SWD Number: ~~[illegible]~~ Permit Date 1560 Legacy Permits/Orders: —

Well No. [illegible] Well Name(s): LEA UNIT SWD #2

API : 30-025-02428 Spud Date: 9/15/60 New or Old: (*UIC Class II Primacy 03/07/1982*)

Footages 1980 FNL / FWL ~~Lot~~ or Unit F Sec 12 Tsp 20S Rge 34E County LEA

General Location: ______ Pool: ______ Pool No.: ______

BLM 100K Map: ______ Operator: Legacy Reserves Operating LP OGRID: 240974 Contact: CRAIG SPARKMAN

COMPLIANCE RULE 5.9: Total Wells: 1527 Inactive: 97 Fincl Assur: ✓ Compl. Order? — IS 5.9 OK? ✓ Date: ~~[illegible]~~ 7/2/15

WELL FILE REVIEWED ○ Current Status: SI SINCE 5/14

WELL DIAGRAMS: NEW: Proposed ○ or **RE-ENTER:** Before Conv. ✓ After Conv. ○ Logs in Imaging: Need LOGS (CBL/EAS ETC)

SQZ UPPER DEV SQZ 7"

Planned Rehab Work to Well: Run 5 1/2" / Run TUBG / DISPOSE

Well Construction Details	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Stage Tool	Cement Sx or Cf	Cement Top and Determination Method
Planned __ or Existing ✓ Surface	13 3/8	851		600	CIRC
Planned __ or Existing ✓ Interm/Prod	9 5/8	~~[illegible]~~ / 5006	3417	3068 / 2300	445'
Planned __ or Existing __ Interm/Prod	~~[illegible]~~				
Planned __ or Existing ✓ Prod/Liner	7	14,100	10594	~~450~~/900 2090	8000' CBL
Planned __ or Existing ✓ Liner	4 1/2	14004-14499	/	125 SX	TOP of Liner
Planned or Existing OH / PERF	Run 5 1/2"	To Liner Top	Inj Length		

Injection Lithostratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops
Adjacent Unit: Litho. Struc. Por.	[redacted]	MISS	✓
Confining Unit: Litho. Struc. Por.	14317	DEV	✓
Proposed Inj Interval TOP:	14432	"	
Proposed Inj Interval BOTTOM:	14501	"	
Confining Unit: Litho. Struc. Por.			
Adjacent Unit: Litho. Struc. Por.	[redacted]		

Completion/Operation Details:

Drilled TD 14501 PBTD 14476

NEW TD ______ NEW PBTD 14501

NEW Open Hole ○ or NEW Perfs ✓

Tubing Size 2 7/8 in. Inter Coated? ✓

Proposed Packer Depth 14400' ft

Min. Packer Depth ______ (100-ft limit)

Proposed Max. Surface Press. ______ psi

Admin. Inj. Press. 2886 (0.2 psi per ft)

AOR: Hydrologic and Geologic Information

~~POTASH: R-111-P~~ ○ Noticed? ______ BLM Sec Ord ○ ~~WIPP~~ ○ Noticed? ______ SALT/SALADO T: 1863 B: 3435 ~~CLIFF HOUSE~~

FRESH WATER: Aquifer ______ Max Depth ______ HYDRO AFFIRM STATEMENT By Qualified Person ○

NMOSE Basin: ______ CAPITAN REEF: thru ✓ adj ○ NA ○ No. Wells within 1-Mile Radius? ______ FW Analysis ○

Disposal Fluid: Formation Source(s) BS/ETC Analysis? ______ On Lease ○ Operator Only ○ or Commercial ○

Disposal Int: Inject Rate (Avg/Max BWPD): ______ Protectable Waters? No Source: ______ System: Closed ○ or Open ○

HC Potential: Producing Interval? Depleted Formerly Producing? ✓ Method: Logs/DST/P&A/Other ______ 2-Mile Radius Pool Map ○

AOR Wells: 1/2-M Radius Map? ✓ Well List? ✓ Total No. Wells Penetrating Interval: BS Horizontals? yes

Penetrating Wells: No. Active Wells 8 Num Repairs? 0 on which well(s)? ______ Diagrams? ______

Penetrating Wells: No. P&A Wells 2 Num Repairs? 0 on which well(s)? ______ Diagrams? ✓

NOTICE: Newspaper Date ______ Mineral Owner BLM Surface Owner BLM N. Date ______

RULE 26.7(A): Identified Tracts? ______ Affected Persons: ______ N. Date ______

Permit Conditions: Issues: Need P&A work Sundry or BLM approval to P&A/TA

Add Permit Cond: SQZ 8000' up to 5006' interm annulus Prior to 5 1/2"

Show Economics [illegible]

10 6 [illegible]