

Appendix M:
Re-Plugging of Langlie Mattix PSU-252

- C-103 Notice of Intent to Replace Bottomhole Cement Plug and Acidize (Sub. 4/26/2011, appd. 4/28/2011)
- C-103 Report on Replacement of Bottomhole Cement Plug, Acidize and MIT (Sub. 6/8/2011, appd. 6/10/2011)

Submit 3 Copies To Appropriate
District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
301 W. Grand Ave., Artesia, NM
8210
District III
1000 Rio Brazos Rd., Aztec, NM
87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
May 27, 2004

HOBBS OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
APR 28 2011

RECEIVED

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. / 30-025-10499
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <u>INJECTION</u> ✓		5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
2. Name of Operator <u>LEGACY RESERVES OPERATING LP</u> ✓		6. State Oil & Gas Lease No.
3. Address of Operator <u>P.O. BOX 10848</u> <u>MIDLAND, TX 79702</u>		7. Lease Name or Unit Agreement Name <u>LANGLIE MATTIX PENROSE SAND UNIT</u> ✓
4. Well Location Unit Letter <u>H</u> : <u>1650</u> feet from the <u>NORTH</u> line and <u>330</u> feet from the <u>EAST</u> line. Section <u>28</u> Township <u>T22S</u> Range <u>R37E</u> NMPM LEA County		8. Well Number <u>252</u> ✓
11. Elevation (Show whether DR, RKB, RT, GR, etc.) <u>3344' GL 3352' KB</u>		9. OGRID Number <u>240974</u> ✓
Pit or Below-grade Tank Application <input type="checkbox"/> or Closure <input type="checkbox"/>		
Pit type _____ Depth to Groundwater _____ Distance from nearest fresh water well _____ Distance from nearest surface water _____		

Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
OTHER: <u>Replace Bottomhole Cement Plug & Acidize</u> <input checked="" type="checkbox"/>		OTHER: <input type="checkbox"/>	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

See attached Procedure, WB Sketch & Recommendation Letter from Cambrian Management (Consultants)

Per Underground Injection Control Program Manual
11.6 C Packer shall be set within or less than 100
feet of the uppermost injection perfs or open hole.

I complete to the best of my knowledge and belief. I further certify that any
d according to NMOCD guidelines ☐, a general permit ☐ or an (attached)

SIGNATURE Kent Williams TITLE: Sr. Engineer DATE: 4/26/11

Type or print name Kent Williams E-mail address: _____ Telephone No. (432) 689-5200
For State Use Only

PROVED [Signature] TITLE State Engineer DATE 4-28-2011
Conditions of Approval (if any): Condition of Approval: Notify OCD Hobbs office 24 hours prior of running MIT Test & Chart

PROCEDURE TO DRILLOUT AND INSTALL NEW CEMENT PLUG IN OPENHOLE AND ACIDIZE

LMPSU # 252

Field: Langlie Mattix 7Rivers-Queen-Grayburg

Pool: Penrose Sand

Lea Co., NM

Date: 3/29/11

Engineer: Kent Williams

Company: Legacy Reserves Operating, LP

Purpose Of Procedure: Drillout prior plug set in the openhole, set new cement plug and acidize pay interval to increase water injectivity.

This procedure is a cooperative effort with Targa Midstream Services and the NMOCD to improve wellbore isolation and better protect the lower portion of the wellbore from potential communication of future planned acid gas injection in Targa's Eunice Gas Plant SWD #1 disposal well.

Procedure:

1. Flowback injection well until well dead. Lay 3" polyethylene flowline from wellhead to water injection station to accommodate flowback. Alternatively, tie-into nearby producer flowline if possible.
2. MIRU pulling unit. Install 3000# minimum working pressure BOP. Set 1, 500 bbl frac tank for flowback tank.
3. POH laying down w/ 2 3/8" Salta PVC lined tubing and 7" Johnson 101-S tension injection pkr.
Note: Will replace injection tubing and pkr.
4. RIH w/ 6 1/4" bit, 4-3 1/2" drill collars and 2 7/8" J-55 4.7# tbg workstring, RU reverse unit and power swivel. Drillout and cleanout plug in openhole from 3692' to 4066' (TD).
(Note: Run in hole with a bit on the btm of a "Bulldog" stroke tubing bailer if problems are encountered with circulating the old plug material out of the hole)
5. RU wireline. Run Gamma Ray/Caliper log from TD to 3350' (7" Casing Shoe).
6. RIH w/ 2 7/8" tbg to TD.
7. RU cementer. Spot estimated 85 sxs (18.0 bbls, 101 ft3) cement from TD to 3650' in openhole. Displace cement to 3650' in tbg with 21.2 bbls 2% KCL water. Calculations based on bringing cement up to 3650' and drilling out to 3700' to avoid a 2nd cement job.
Estimated Ave. Hole Size: 7.00" (drill bit size = 6 1/4")
8. POH and stand back tbg. Put 500# pressure on cmt plug. Shutin well overnight.
9. Lower tbg and tag top of cement.
If cement found above 3700' POH w/ tbg and prepare to drillout cmt.
If cement below 3700', may perform second cement spot job.
10. RIH w/ 6 1/4" bit, 4-3 1/2" drill collars and 2 7/8" tbg. DO cement to 3700'.
11. PU btm of tbg to 3650'.
12. RU acid company. Spot estimated 3000 gal (71.4 bbls) Acid System (90% -15% NEFE HCL and 10%-Xylene) from 3650' to 3350'. Exact acid volume to be calculated from new caliper log.
Displace acid to 3350' in tbg w/ 19.4 bbls 2% KCL wtr.
13. POH bit, DC's and tbg.

LMPSU #252

14. RIH w/ 7" treating pkr and 2 7/8" tbg. Hydrotest tbg in hole to 5000#. Set pkr at 3270' (-). Load annulus w/ 2% KCL wtr. Test pkr and csg to 500#.
15. RU acid company. Acidize Penrose Sand (Queen) open hole from 3350-3700' w/ 3,000 gal 15% NEFE CRA HCL (Linear, Pre-Gelled Acid) and 3,000 gal gelled brine and 3,000 # rock salt down 2 7/8" tubing at 8 BPM or 3500 # maximum pressure as follows. Load tbg with 2% KCL wtr and pump to establish pump-in rate prior to acidizing.

Acid Procedure:

Acid #1 1,000 gal (23.8 bbl) 15 % CRA (gelled acid)
Block #1 1,000 gal (23.8 bbl) Gelled Brine water w/ 1000 # rock salt @ 1 PPG
Acid #2 1,000 gal (23.8 bbl) 15 % CRA (gelled acid)
Block #2 2,000 gal (47.6 bbl) Gelled Brine water w/ 2000 # rock salt @ 1 PPG
Acid #3 1,000 gal (23.8 bbl) 15 % CRA
Flush 100 bbls 2% KCL wtr to dissolve rock salt. (33 bbls displace to TD + 67 bbls overflush). Shutin well for 60 minutes. Monitor ISIP, 5, 10 and 15 minute shut-in pressures.

16. Flowback to frac tank until dead.
17. POH w/ tbg and treating pkr. LD workstring.
18. RIH w/ new 7" injection pkr, on/off tool, 1.781" profile nipple, and new 2 3/8" IPC lined tbg. Set pkr at 3280' (-).
19. Circ tbg and annulus w/ 110+ bbls pkr fluid. Pressure test pkr and csg to 500#.
20. RD BOP. Flange up injection wellhead. RDMO pulling unit.
21. Return well to injection at prior 1800# injection wellhead pressure, or 500 BWIPD rate limit..

Misc Information:

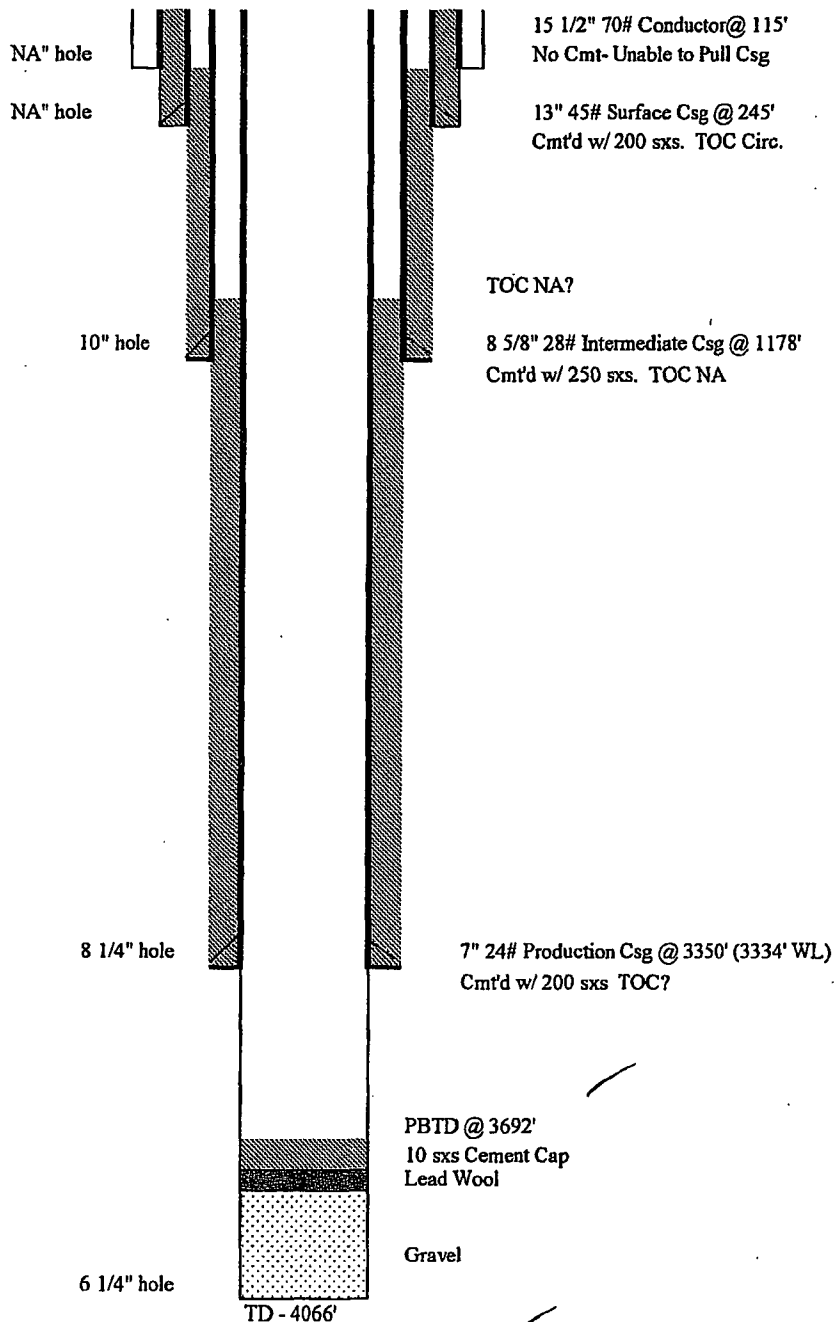
AFE Cost - \$ 153,00 AFE # - 411016
BWO - 137 BWIPD /1800#
AWO - 250 BWIPD/1800 # (Forecast)
KB- 8' AGL
Injection Rate and Pressure Limit: No limit per NMOCD

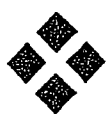
Volumes & Strengths -

Tubing: 2 7/8" 6.5# J-55 - 0.0058 bbl/ft, 2.441" ID, 2.347" Drift, Burst 7260#, Collapse 7680#
Casing: 7" 23# J-55 - 0.0393 bbl/ft, 6.366" ID, 6.241" Drift, Burst 4360#, Collapse 3270#
Annulus: 2 7/8" x 7" 23# - 0.0310 bbl/ft

WELLBORE SCHEMATIC

Well Name & No.:	Langlie Mattix Penrose Sand Unit # 252		
Field:	Langlie Mattix (7Rivers/Queen/Grayburg) - Penrose Sand		
Location:	1650' FNL x 330' FEL, Sec. 28, Unit Letter H, T-22-S, R-37-E		
County:	Lea	State:	NM API #: 30-025-10499
GR Elevation:	3344.0	Spud Date:	08/15/36
KB Correction:	8.0	Drl Compl. Date:	5/12/37-Cable Tool
KB Elevation	3352.0	Original Well Name:	A.L. Christmas "A" #2
		Original Operator:	Repollo Oil Co.





Cambrian
MANAGEMENT, LTD.

P.O. Box 272
Midland, Texas 79702
Off: 432-620-9181
Fax: 432-570-0102

State of New Mexico
Oil Conservation Division
District I
1625 N French Dr.
Hobbs, NM 88240

To Whom It May Concern:

The Langlie Mattix Penrose Sand Unit # 252 (LMPSU # 252) is being worked over in a cooperative effort with Targa Midstream Services and the NMOCD to improve wellbore isolation and better protect the lower portion of the wellbore from potential communication of future planned acid gas injection in Targa's Eunice Gas Plant SWD # 1 disposal well per Targa's OCD case (permit # R-12809-C) and the enclosed C-103. If you have any questions please contact Mr. Alan Means at 432-620-9181.

Sincerely,

Mr. Alan Means
Cambrian Management, Ltd
as Agent for Targa Midstream Services

Submit 3 Copies To Appropriate
District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., Artesia, NM
88210
District III
1000 Rio Brazos Rd., Aztec, NM
87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM
87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
May 27, 2004

RECEIVED
HOBBS
CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505
JUN 09 2011

WELL API NO. 30-025-10499
5. Indicate Type of Lease STATE <input type="checkbox"/> FEE <input checked="" type="checkbox"/>
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name LANGLIE MATTIX PENROSE SAND UNIT
8. Well Number 252
9. OGRID Number 240974
10. Pool name or Wildcat Langlie Mattix; 7 Rvrs-Qn-Grayburg

SUNDY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH
PROPOSALS.)

1. Type of Well: Oil Well ☐ Gas Well ☐ Other INJECTION

2. Name of Operator LEGACY RESERVES OPERATING LP

3. Address of Operator P.O. BOX 10848
MIDLAND, TX 79702

4. Well Location

Unit Letter H : 1650 feet from the NORTH line and 330 feet from the EAST line.
Section 28 Township T22S Range R37E NMPM LEA County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3344' GL 3352' KB

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type _____ Depth to Groundwater _____ Distance from nearest fresh water well _____ Distance from nearest surface
water _____

Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material _____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☒ Replace BH Cement Plug, Acidize & MIT

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including
estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore
diagram of proposed completion or recompletion.

See attached for completed operations.

06/03/11 – Notified Mark Whitaker for approval to run MIT chart. Pressure casing to 600#, held good.
Not whitessed by OCD. Chart attached.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any
pit or below-grade tank has been/will be constructed or closed according to NMOC guidelines ☐, a general permit ☐ or an (attached)
alternative OCD-approved plan ☐.

SIGNATURE Berry Johnson TITLE: Production Superintendent

DATE: 06/08/11

Type or print name Berry Johnson

E-mail address: _____

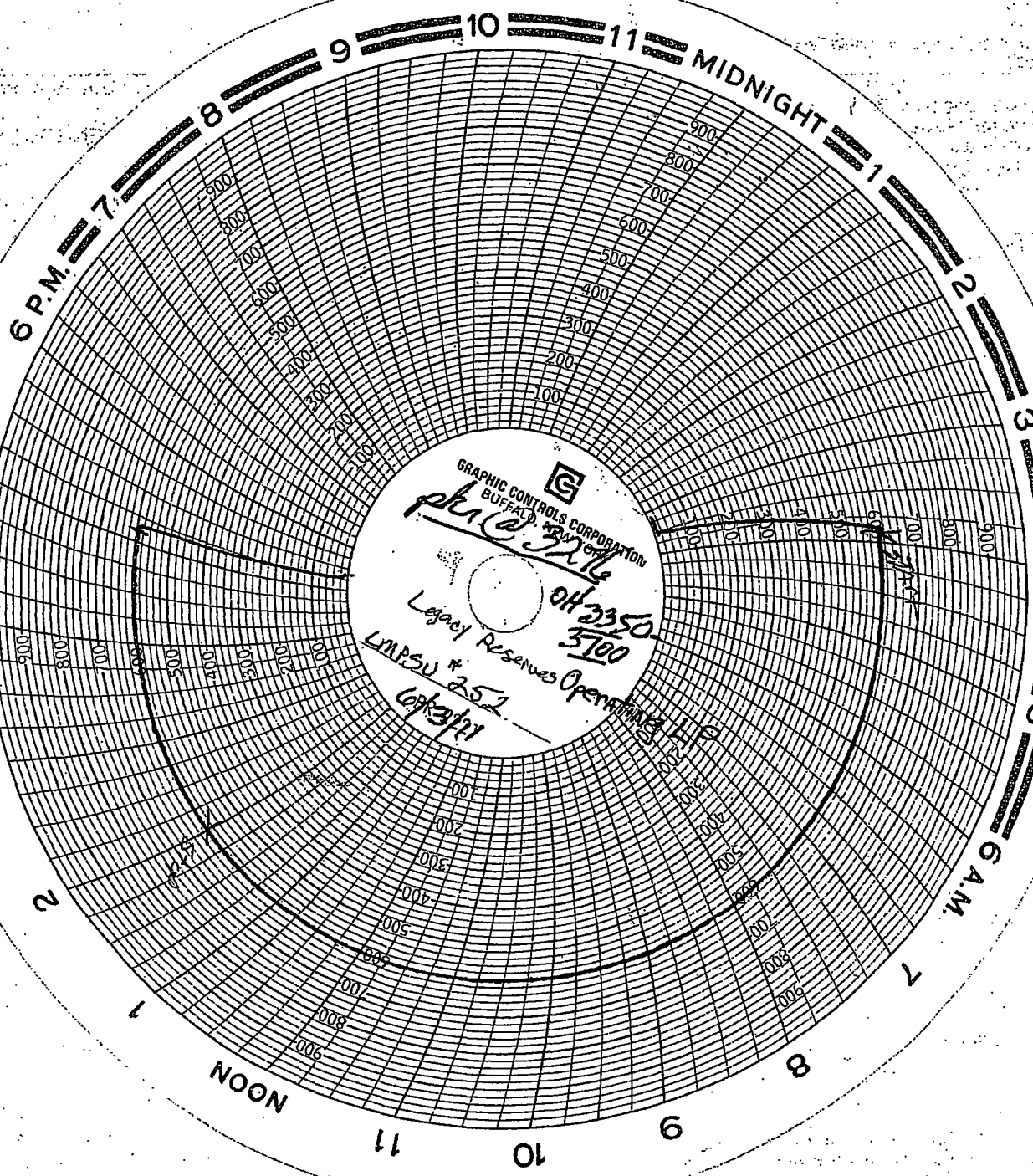
Telephone No. (432) 689-5200

State Use Only

APPROVED

BY: Cary Hill TITLE: DISTRICT 1 SUPERVISOR DATE: JUN 10 2011

Conditions of Approval (if any): _____



GRAPHIC CONTROLS CORPORATION
BUFFALO, N.Y.
phi @ 3216
OH 3350-3700
Legacy Reserves Operating H.P.
LMPSU # 252
6/13/71

STEVEN J Coy (Basic)

06-03-2011

Start 10:00am Stop 10:45am

Legacy Reserves
DAILY OPERATIONS REPORT

LMPSU # 252

Printed Jun 7, 2011 Page 1 of 2

LMPSU # 252

Lea Co., NM

BOLO ID: 300029.25.02

Zone: 1 Field: Langlie Mattix

AFE # 411016 - \$56,000.00

Drill out and Install new cement plug in open hole and acidize-- EXPENSE W/O(881)

May 18, 2011 Wednesday (Day 1)

MIRU Lucky Well service. Install 8 5/8 x 7" Larkin Tubing Head. While attempting to Release Johnson 101-S packer. Tubing parted at slip marks on top joint. RIH w/ overshot, latch onto parted tubing at 378'. Pull 2 joints, SDFN. Note. Tubing plugged, pulling wet string, shut down to wait on Envirovat.

Daily Cost: \$20,500

Cum. Cost: \$20,500

May 19, 2011 Thursday (Day 2)

Install Envirovat. POH laying down 2 3/8 Salta lined tubing, tubing is junk. Wellhead moving around on casing. Remove wellhead found casing threads striped. Shut in well. SDFN.

Daily Cost: \$11,000

Cum. Cost: \$31,500

May 20, 2011 Friday (Day 3)

RIH w/7" RBP, set at 368'. Circulate hole w/40 BBL 2% KCL. POH w/retrieving head. Cut off 7" casing w/bad threads. Weld on 7" Bell nipple. Install BOP. Test casing to 500#, no leak off. RIH w/retrieving head, Release RBP. POH. RIH w/ 6 1/4 bit, drill collars and tag fill at 3685'. Clean out to 3617'. Circulate hole clean, circulating out Gravel. Pull 6 1/4 bit into 7" casing. SDFW.

Daily Cost: \$13,300

Cum. Cost: \$44,800

May 23, 2011 Monday (Day 4)

Resume drilling out gravel plug from 3617' to 4088' w/6 1/4 bit. Circulate hole clean. POH. SDFN.

Daily Cost: \$10,670

Cum. Cost: \$55,470

May 24, 2011 Tuesday (Day 5)

Rig up Renegade wireline. RIH w/Caliper log tools. Tools set down at 3670'. POH. RIH w/weight bar. Tag at 3670', work weight bar through spot to 4078'. POH RIH w/Caliper to 4078'. Log from 4078' to 3600'. At 3600' caliper showing hole larger than it maximum 15". Shut down due to high winds.

Daily Cost: \$17,500

Cum. Cost: \$72,970

May 25, 2011 Wednesday (Day 6)

RIH w/2 7/8 workstring to 4078'. Rig up BJ Services. Pump 100 sx Class C w/0.5% BA-10A, 1% CD-32, 0.1% R-21 at 15.8#. POH w/workstring. Pressure up to 500# on cement plug. Shut down until Friday for cement.

Daily Cost: \$20,600

Cum. Cost: \$93,570

May 26, 2011 Thursday (Day 7)

Shut down for cement.

Daily Cost: \$7,100

Cum. Cost: \$100,670

May 27, 2011 Friday (Day 8)

RIH w/6 1/4 bit. Tag cement at 3694'. Drill hard cement to 3698'. Circulate hole clean. POH. Rig down reverse unit. RIH w/ 2 7/8 tubing to 3300'. Shut down for memorial day weekend.

Daily Cost: \$12,100

Cum. Cost: \$112,770

Legacy Reserves
DAILY OPERATIONS REPORT

LMPSU # 252

Printed Jun 7, 2011 Page 2 of 2

LMPSU # 252

Lea Co., NM

BOLO ID: 300029.25.02

Zone: 1 Field: Langlie Mattix

May 31, 2011 Tuesday (Day 9)

Finish RIH w/ 2 7/8 tubing to 3625'. Rig up Rising Star. Spot 3000 gal 15% NEFE HCL in open Hole, Note procedure called for 2000 gal Rising Stars Mistake. POH. RIH w/ 7" H-D packer to 3275', Reverse 15 BBL, set packer. Acidize w/ 3000 gal 15% NEFE CRA HCL and 3000# rock salt in 3000 gal gel brine at avg rate 5 BPM at avg 1725#. No show of blocking action from rock salt. ISIP 1640#, 5 min 1380#, 10 min 1330#, 15 min 1300#. Load to recover 378 BBL. Shut in well one hour, open pressure 950#. Flowed back 10 BBL. Release packer. POH laying down 2 7/8 work string.

SDFN. NOTE: on first stage block in tubing starting acid Rising Star had mechanical problems, flushed tubing w/2% KCL shut down, resolved problem. Finish acid/block job.

Daily Cost: \$31,200

Cum. Cost: \$143,970

Jun 1, 2011 Wednesday (Day 10)

RIH w/ 7" x 2 3/8 Nickel plated AS1X 10-K packer w/1.78 stanliss profile w/stainless T-2 on/off tool. Set packer at 3276 w/ 101 joints 2 3/8 IPC tubing. Release on/off tool, circulate 105 BBL 2% KCL packer fluid. Latch onto packer. Test casing to 500# for 30 min. good test. RDMO. SDFN.

Daily Cost: \$49,900

Cum. Cost: \$193,870

Jun 3, 2011 Friday (Day 11)

Set up to MIT w/OCD. Mark Whitaker called & could not witness, ok to run MIT Chart. Pressure Csg. to 600#, held good.----- Sent chart to Midland office to file w/OCD for approval to Return well to Injection.

Daily Cost:

Cum. Cost: \$193,870

WELLBORE SCHEMATIC

Well Name & No.:	Langlie Mattix Penrose Sand Unit # 252		
Field:	Langlie Mattix (7Rivers/Queen/Grayburg) - Penrose Sand		
Location:	1650' FNL x 330' FEL, Sec. 28, Unit Letter H, T-22-S, R-37-E		
County:	Lea	State:	NM API #: 30-025-10499
GR Elevation:	3344.0	Spud Date:	08/15/36
KB Correction:	8.0	Drl Compl. Date:	5/12/37-Cable Tool
KB Elevation	3352.0	Original Well Name:	A.L. Christmas "A" #2
		Original Operator:	Repollo Oil Co.

