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1625 N. French Dr., Hobbs, NM 88240  
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811 S. First St., Artesia, NM 88210  
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**District III**  
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**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico

Form C-101  
Revised November 14, 2012

Energy Minerals and Natural Resources

Oil Conservation Division

AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

HOBBS OCD

AUG 01 2013

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address 2. CHEVRON U.S.A. INC. 3. 15 SMITH ROAD 4. MIDLAND, TEXAS 79705		2. OGRID Number 4323
		3. API Number 30-025-30568
4. Property Code 29907	5. Property Name B.F. HARRISON	6. Well No. 2

7. Surface Location

UL - Lot F	Section 9	Township 23S	Range 37E	Lot Idn	Feet from 1980	N/S Line NORTH	Feet From 1800	E/W Line WEST	County LEA
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\* Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
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9. Pool Information

Pool Name TEAGUE; TUBB, NORTH <i>Assoc.</i>	Pool Code 96315
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Additional Well Information

11. Work Type RECOMPLETE	12. Well Type OIL	13. Cable/Rotary	14. Lease Type S	15. Ground Level Elevation 3310' GL
16. Multiple	17. Proposed Depth 10,258'	18. Formation TUBB	19. Contractor	20. Spud Date
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
			NO CHANGE			

Casing/Cement Program: Additional Comments

*See closed loop statement on next page*

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

I further certify that I have complied with 19.15.14.9 (A) NMAC  and/or 19.15.14.9 (B) NMAC , if applicable.

Signature: *Denise Pinkerton*

Printed name: DENISE PINKERTON

Title: REGULATORY SPECIALIST

E-mail Address: [leakejd@chevron.com](mailto:leakejd@chevron.com)

Date: 07/17/2013

Phone: 432-687-7375

OIL CONSERVATION DIVISION

Approved By:

*[Signature]*  
Petroleum Engineer

Title:

Approved Date: *08/09/13*

Expiration Date: *08/09/15*

Conditions of Approval Attached

AUG 13 2013

DURING THE PROCEDURE WE PLAN TO USE THE CLOSED LOOP SYSTEM WITH A STEEL TANK AND HAUL TO THE REQUIRED DISPOSAL, PER THE OCD RULE 19.15.17.

# WELL DATA SHEET

FIELD: N. Teague  
 LOC: 1980' FNL & 1800' FWL  
 TOWNSHIP: 23S  
 RANGE: 37E  
 LOT: F

WELL NAME: B. F. Harrison "B" #2  
 SEC: 9  
 COUNTY: Lea  
 STATE: NM

FORMATION: Wolfcamp  
 CURRENT STATUS: SI  
 API NO: 30-025-30568  
 Chevno: IS7885  
 TYPE LEASE: Fee

## CURRENT

**Surface Casing**

13-3/8", 54.5#, K-55 Csg  
 Hole size: 17-1/2"  
 Set @ 1175' w/1400 sx cmt  
 Circ 300 sx cmt to surf

**Intermediate Casing**

9-5/8", 40#, S-80 & J-55 Csg  
 Hole size: 12-1/4"  
 Set @ 3750' w/1750 sx cmt  
 Did not circ cmt to surf  
 TOC @ 50 by TS

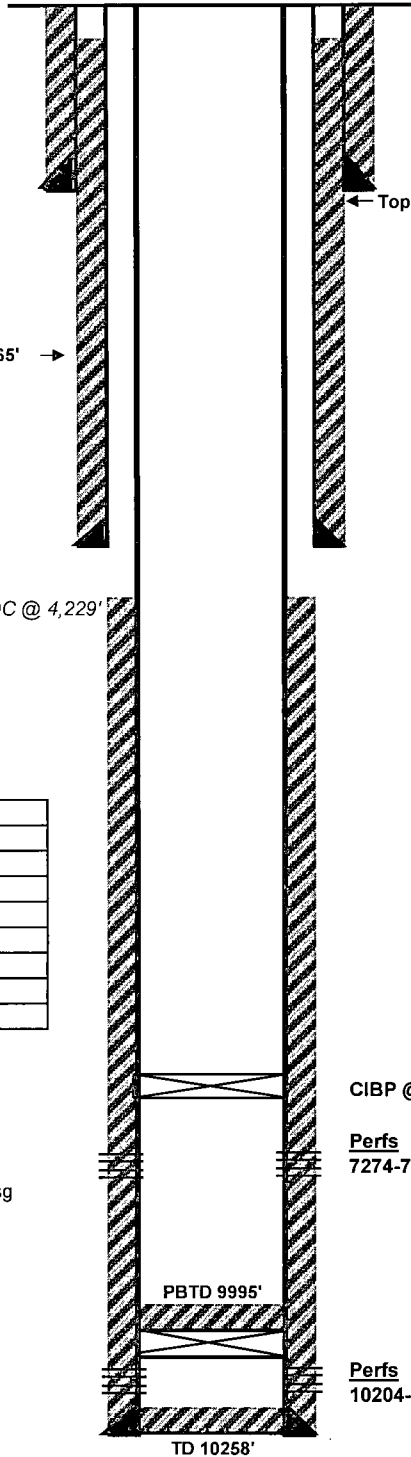
**Tubing Detail - 11/29/99**

2-7/8" landed @ 7400'

Log Formation Tops	
T- Salt	1200'
Yates	2672'
Seven Rivers	2876'
Queen	3372'
Grayburg	3666'
Drinkard	6312'
Devonian	7512'
Ellenburger	10,176'

**Production Casing**

7", 23# & 26#, L-80 & K-55 Csg  
 Hole size: 8-3/4"  
 Set @ 10258' w/1800 sx cmt  
 Did not circ cmt to surf  
 TOC @ 4229' by TS



Date Spud: 3/10/89  
 Date Completed: 4/25/89  
 Initial Formation: Ellenburger

**Initial Completion:**

4-9-89 Perf Ellenburger pay, 10,240'-42', 6 holes.  
 Perf w/1-16" gun; 10,204'-240'. (2 JSPF, 62 holes). TIH w/  
 1.25" Coil Tbg to 10,424'. Spot 2000 gals 20% NE, TOH w/  
 coiled tbg.

**Subsequent Work**

4-21-95 Acdz w/2100 gals 15% NE.  
 3-3-97 Perf Ellenburger w/4 JSPF, 10,186'-242', 120 deg  
 phasing, .38" holes, 45' net, 180 holes. Acdz w/3000 gals  
 20% NE & 115,000 Nitrogen in 3 stages. Tst, Ran tbg, RTP.  
 11-22-99 Set CIBP @ 10,303', top w/35' cmt. PBTD @ 9995'.  
 Perf Wolfcamp f/7274'-90', 7304'-28', 7352'-56', 7372'-92'.  
 Acdz w/5500 gals 15% NE. Tst, RTP.  
 11-3-03 Set CIBP @ 7200'. Request to TA is approved  
 until 11-13-08.

CIBP @ 7200', Well TA'd

<b>Perfs</b>	<b>Status</b>
7274-7392'	Wolfcamp - open

<b>Perfs</b>	<b>Status</b>
10204-10242'	Ellenburger - below CIBP

# WELL DATA SHEET

*Tubb*

FIELD: N. Teague  
 LOC: 1980' FNL & 1800' FWL  
 TOWNSHIP: 23S  
 RANGE: 37E  
 LOT: F

WELL NAME: B. F. Harrison "B" #2  
 SEC: 9  
 COUNTY: Lea  
 STATE: NM

FORMATION: ~~Wolfcamp~~  
 CURRENT STATUS: SI  
 API NO: 30-025-30568  
 Chevno: IS7885

TYPE LEASE: Fee

Date Spud: 3/10/89  
 Date Completed: 4/25/89  
 Initial Formation: Ellenburger

**Surface Casing**

13-3/8", 54.5#, K-55 Csg  
 Hole size: 17-1/2"  
 Set @ 1175' w/1400 sx cmt  
 Circ 300 sx cmt to surf

**Intermediate Casing**

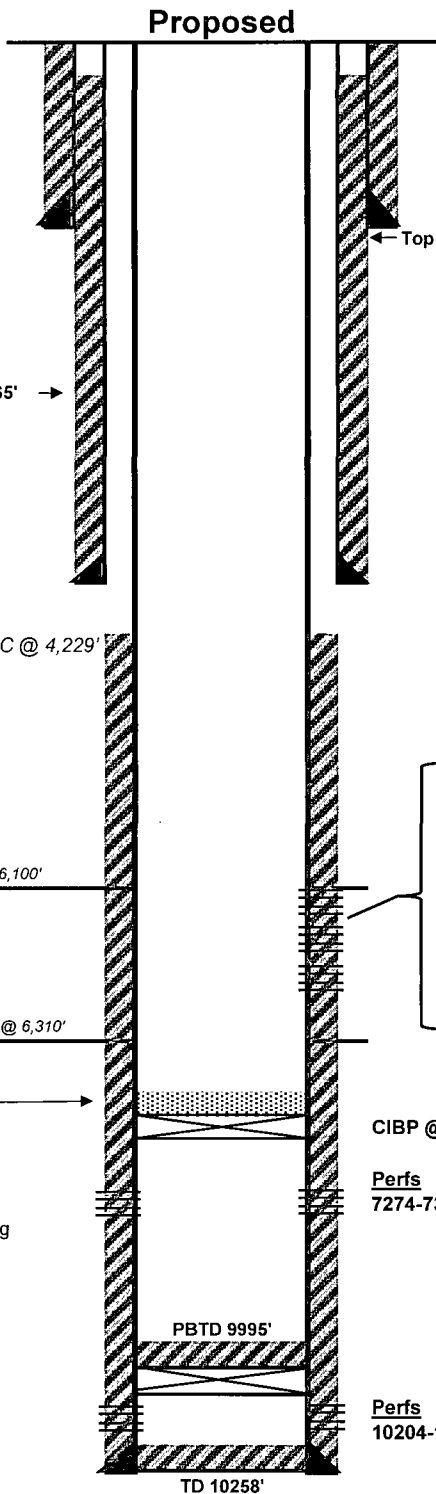
9-5/8", 40#, S-80 & J-55 Csg  
 Hole size: 12-1/4"  
 Set @ 3750' w/1750 sx cmt  
 Did not circ cmt to surf  
 TOC @ 50 by TS

**Tubing Detail - 11/29/99**

2-7/8" landed @ 7400'

**Production Casing**

7", 23# & 26#, L-80 & K-55 Csg  
 Hole size: 8-3/4"  
 Set @ 10258' w/1800 sx cmt  
 Did not circ cmt to surf  
 TOC @ 4229' by TS



**Initial Completion:**

4-9-89 Perf Ellenburger pay, 10,240'-42', 6 holes.  
 Perf w/1-16" gun; 10,204'-240'. (2 JSPF, 62 holes), TIH w/  
 1.25" Coil Tbg to 10,424'. Spot 2000 gals 20% NE, TOH w/  
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 Acdz w/5500 gals 15% NE. Tst, RTP.  
 11-3-03 Set CIBP @ 7200'. Request to TA is approved  
 until 11-13-08.

**Log For**

T- Salt
Yates
Seven Riv
Queen
Grayburg
Drinkard
Devonian
Ellenburger

Top	Bottom	Tubb	Proposed	
6,100	6,105	Tubb	Proposed	5
6,120	6,127	Tubb	Proposed	7
6,130	6,135	Tubb	Proposed	5
6,140	6,150	Tubb	Proposed	10
6,153	6,160	Tubb	Proposed	7
6,165	6,175	Tubb	Proposed	10
6,183	6,193	Tubb	Proposed	10
6,197	6,203	Tubb	Proposed	6
6,210	6,220	Tubb	Proposed	10
6,223	6,228	Tubb	Proposed	5
6,233	6,240	Tubb	Proposed	7
				82

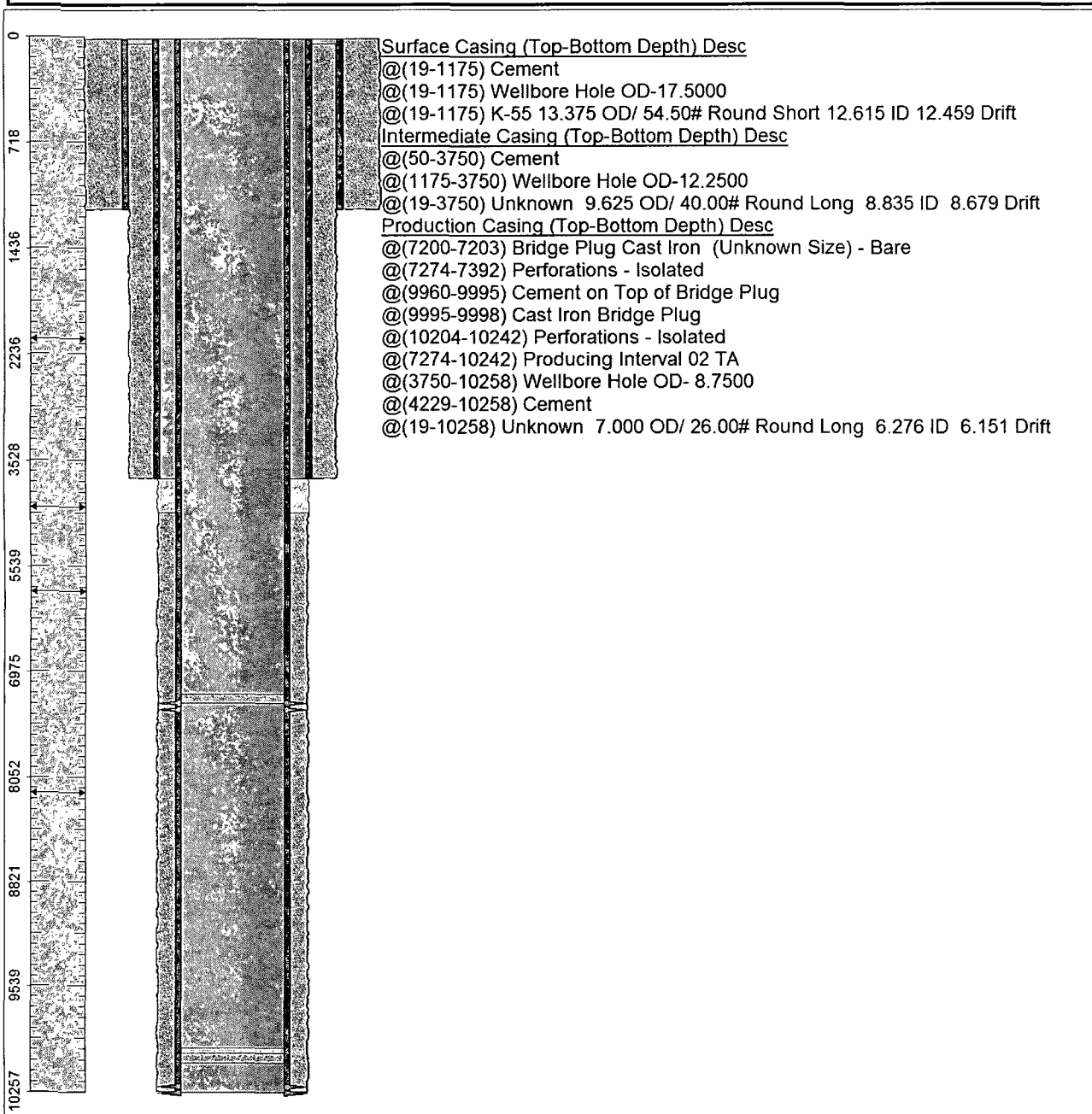
CIBP @ 7200', Well TA'd

**Perfs**                      **Status**  
 7274-7392'                  Wolfcamp - open

**Perfs**                      **Status**  
 10204-10242'                Ellenburger - below CIBP

## Chevron U.S.A. Inc. Wellbore Diagram : BFHARRISONB2WO

<b>Lease:</b> OEU EUNICE FMT		<b>Well No.:</b> HARRISON, B. F. -B- 2WO		<b>Field:</b> FLD-NM TEAGUE NORTH	
<b>Location:</b> 1980FNL1800FWL		<b>Sec.:</b> N/A		<b>Blk:</b>	
<b>County:</b> Lea		<b>St.:</b> New Mexico		<b>Refno:</b> IS7885	
<b>Section:</b> 9		<b>Township:</b> 023 S		<b>Range:</b> 037 E	
<b>Current Status:</b> ACTIVE				<b>Dead Man Anchors Test Date:</b> NONE	
<b>Directions:</b>					



<b>Ground Elevation (MSL)::</b> 3310.00	<b>Spud Date:</b> 03/10/1989	<b>Compl. Date:</b> 01/01/1970
<b>Well Depth Datum::</b> CSI0000N	<b>Elevation (MSL)::</b> 3329.00	<b>Correction Factor:</b> 19.00
<b>Last Updated by:</b> bqvh	<b>Date:</b> 10/10/2012	

**B.F. Harrison B #2**  
**North Teague, Tubb Reservoir**  
**T23S, R37E, Sec. 9**  
**N 32° 19' 13.548", W -103° 10' 12.036" (NAD27)**  
**Job: PB to Tubb Formation and Frac**

**6.10.2013**

**PREWORK:**

1. Utilize the rig move check list.
2. Check anchors and verify that pull test has been completed in the last 24 months.
3. Ensure location of & distance to power lines is in accordance with MCA SWP. Complete and electrical variance and electrical variance RUMS if necessary.
4. Ensure that location is of adequate build and construction.
5. Ensure that elevators and other lifting equipment are inspected. For wells to be worked on or drilled in an H<sub>2</sub>S field/area, include the anticipated maximum amount of H<sub>2</sub>S that an individual could be exposed to along with the ROE calculations for 100 ppm and 500 ppm.
6. Review JSA and hazards with rig crew. Visually inspect wellhead, casing and tubing valves. Decide whether tubing and casing valves can be used; replace as needed.
7. Scout location and mark off anything that might be hazardous to daily operations.

**Reminders:**

8. Caliper all lifting equipment at the beginning of each day or when sizes change. **Note in JSA and record on Elevator Change-out Log when and what items are callipered.**
9. When NU anything over an open wellhead (BOP, EPA, etc.) ensure the hole is covered to avoid dropping anything downhole.
10. Ensure well is secure/shut in with blind rams between job stages (nothing in well).
11. If pumping any cement, plugging back a well or changing producing intervals, always contact the OCD and give the details.
12. Hold safety meetings with all personnel on location prior to any major or abnormal operation.

**Procedure:**

**This procedure is meant to be followed. It is up to the WSM, Workover Engineer and Production Engineer to make decisions necessary to SAFELY do what is best for the well. In the extent that this procedure does not reflect actual operations, please contact WE, PE and Superintendent for MOC.**

**NOTE: Schedule Dickey Analytical to be present at Frac. 432-553-2526**

1. MIRU workover unit. Verify that well does not have pressure or flow. If well has pressure, note casing pressure on Wellview report. Bleed down well. Contact WE if well won't bleed down.
2. ND wellhead. NU BOP dressed with 2 7/8" pipe rams on top and blind rams on btm. NU EPA equipment & RU floor. PU 7" packer (Note: production csg has 23# L80 and 26# K55 mixed) along with a joint of 2 7/8" tubing and set below WH @ ~25'. Test BOP pipe rams to 250 psi/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
3. PU and GIH with 6 1/8" MT bit and 2 7/8" 6.5# EUE 8R L-80 work string to top of CIBP (7,200') in 7" casing. Establish reverse circulation and cautiously clean out wellbore to 7,200' using 8.6 PPG cut brine water. Circulate well clean. Stop drilling if bit torques up / drilling gets rough or if any metal is detected. POOH standing back work string and LD bit.
4. MIRU slickline. Dump bail a minimum of 35' of cmt on top of CIBP @ 7,200'. Allow time for cmt to cure. Tag and record top of cmt. **(35' of cmt is required by NMOCD)**
5. PU 7" RBP, one jt 2 7/8" tubing, and 7" packer on 2-7/8" WS from derrick and TIH. Set RBP @ 6,290'. Release from RBP, pull up & set packer above RBP. Test down tubing to RBP to 500/3500 psi. TOH

standing back WS and LD pkr. Dump 20' (5 – 6 100# sks) of sand from surface to settle onto RBP @ 6,290' (In 7" 23# casing, 4.52' of fill per 100# sk dry sand). Fill casing with 8.6 ppg cut brine.

6. MIRU electric line unit. **Establish radio silence and set up exclusion zone around e-line unit.** R/U lubricator and test to 1000 psi. GIH and conduct GR/CCL/CBL log from RBP up to 100' above top of cmt (~4,100'). Run log with 500 psi on casing. POOH. If bond does not appear to be good across proposed completion interval (~6,050' - 6,260'), discuss with Engineering before proceeding (Send electronic copy of log to WE). Cmt squeeze as necessary to obtain good cmt across completion interval. E-mail log to Malcolm Rowland (MRowland@chevron.com) and Warren Anderson ([Warren.Anderson@chevron.com](mailto:Warren.Anderson@chevron.com)) for confirming/picking new perfs.
7. GIH with 3 3/8" RHSC Gunslinger casing guns (0.42" EH & 47" penetration) (or equivalent non-Baker perf guns) and perforate 6,100'-6,105', 6,120'-6,127', 6,130'-6,135', 6,140'-6,150', 6,153'-6,160', 6,165'-6,175', 6,183'-6,193', 6,197'-6,203', 6,210'-6,220', 6,223'-6,228', 6,233'-6,240' with 4 JSPF at 120 degree phasing, using 25 gram premium charges. POOH. RD & release electric line unit. **Note: Reference Schlumberger GR/Sonic Log dated 4.8.1989 (attached).**
8. Contact sonic tool rep to be on site during job. *Verify that work string is clean, inspect for excessive rust.* PU and RIH with Sonic Hammer tool and 2 7/8" work string to ~6,245' or enough to cover the bottom of the perfs with a whole stand. Hydrotest tubing to 6,000 psi. Stand back tubing to top perforations. Install stripper head and stand pipe with sufficient treating line to move tools vertically ~ 65'. Take returns out BOP to half-pit w/gas buster.
9. MIRU Petroplex. Setup an exclusion zone around pressurized lines. Titrate acids and verify concentration (HCl ±1.5%) report results in daily work summary. **Note: If circulation is possible, pickle tubing in 1 run of 500 gals acid, prior to acidizing perfs. Pickle acid is to contain only 1/2 gal I-3 corrosion inhibitor and 1 gal EP-3 non emulsifier.** Treat all intervals from 6,095' to 6,245' with 20 bbls of 2% KCL brine water per interval (refer to Table A). Pump down Sonic Hammer tool at 5 BPM while reciprocating tool across intervals. Do not exceed 5,000 psi tubing pressure. Leave annulus open in circulation mode while treating intervals with 2% KCL brine.
10. Follow the KCL brine water wash with 3,000 gals 15% NEFE HCl\* of total acid for all intervals as in Table A. Spot 3 bbls of acid outside tubing, shut in casing, pump 1,000 gallons of acid @ 5 BPM over first treating interval from 6,095'-6,155', monitor casing pressure not exceeding 500 psi. Flush tubing with 2% KCL brine after every acidized interval, make a connection and continue with remaining interval. Refer to Table A.

\* Acid to contain:

1 GPT EP-3 Non Emulsifier  
 2 GPT I-3 Corrosion Inhibitor  
 5 GPT LCA Iron Control  
 20 GPT Petrosol, Mutual Solvent

**Table A: Intervals for acid.**

Interval	Depth	Interval (Ft.)	Acid Volume (gal)
1	6095' - 6155'	60	1,000
2	6155' - 6215'	60	1,000
3	6215' - 6245'	30	1,000
<b>Total</b>			<b>3,000</b>

11. Ensure Sonic Hammer is above open hole. Shut in well for 1 hr for the acid to spend. Monitor casing pressure to keep it below 500 psi. Bleed off excess pressure if necessary. Attempt to flow back. If acid does not flow back, drop Sonic Hammer circulating port opening ball, R/U swab equipment and attempt to swab back 100% of treatment and load volumes to flowback tank before shutting well in for the night.

Report recovered fluid volumes, pressures, and/or swabbing fluid levels. RD and release pump truck. POOH LD 2 7/8" tbg and Sonic Hammer tool.

12. MIUL & strap ~191 jts 3 1/2" 9.3# L80 8RD EUE tbg as frac string.
13. Shut in blind rams. Change out pipe rams and lifting equipment to 3 1/2". PU 7" packer (Note: production csg has 23# L80 and 26# K55 mixed) along with a joint of 3 1/2" tubing and set below WH @ ~25'. Test BOP pipe rams to 250 psi/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
14. PU and GIH w/ 7" Arrowset 1-X 10K pkr & T2 On-Off tool w/ frac hardened 2.25" "F" profile, blast joint, and 3 1/2" 9.3# L80 8RD EUE tbg as frac string. Hydrotest tubing to 8000 psi. Set pkr at approximately 6,000'.
15. Monitor to verify well is static. Install 10k frac valve and goat head (Record in WellView the number of turns to fully open / fully close frac valve). Hydrotest 3 1/2" connection of FV to tbg to 6000 psi. Pressure up 3 1/2" x 7" annulus to 500 psi to test csg and pkr. Establish injection rate down tubing and relay information to WE. Leave pressure on csg during frac job to observe for communication. Secure well.
16. RDMO pulling unit. Prep location for frac. Set and fill frac tanks with FW. Schedule Dickey Analytical to be present at Frac. 432-553-2526
17. MIRU Frac crew. **Set up exclusion zone around stimulation unit & surface treating lines.** Frac well down 3 1/2" tubing at **40 BPM** with 88,000 gals of Delta Frac 140-R, 176,000 lbs. 16/30 mesh premium white sand, and 30,000 lbs **resin-coated** 16/30 mesh CR1630 proppant. Observe a maximum surface treating pressure of **8000 psi**. Pump job per attached Halliburton frac design.  
  
Flush to 6,050' **Do not overflush** (Flush approx. 54 bbls w/ pkr depth @ 6000'). Shut well in. Record ISIP, 5, 10, and 15 minute SI tbg pressures. SWI. RD & Release Halliburton. **Leave well SI overnight.**
18. Flowback well starting 24 hours after the frac. Open up at 20 bph and work up to 50 bph over the first 6 hours. Flow down until the well dies putting flowback down the flowline if possible. Consult with the pumper and OS if flowback can be sent down the flowline.
19. MIRU workover unit.
20. Monitor well to verify it is static. ND FV, NU EPA equipment, and RU floor. Release packer and TOH LD 3 1/2" frac string, on-off tool, and pkr.
21. Shut in blind rams. Change out pipe rams and lifting equipment to 2 7/8". PU 7" packer (Note: production csg has 23# L80 and 26# K55 mixed) along with a joint of 2 7/8" tubing and set below WH @ ~25'. NU EPA equipment. Test BOP pipe rams to 250 psi/1000 psi. Note testing pressures on WellView report (Time log and safety/inspections). Release and LD packer.
22. PU and GIH with 6 1/8" MT bit on 2 7/8" work string and clean out to top of RBP @ 6,290'. Cleanout to 6,290' using 8.6 PPG cut brine water and air unit if necessary. POOH standing back 2 7/8" workstring and LD bit. PU & GIH with RBP retrieval tool, wash out sand above packer, latch & unset RBP at 6,290'. POOH LD 2 7/8" WS & RBP.
23. RIH with 2-7/8" *production tubing* hydrotesting to 6,000 psi. Set TAC per ALCR recommendation. ND BOP. NU WH. RIH with rods and pump per ALCR. Hang well on. RD and release workover unit.
24. Turn well over to production.



## FOAM / AIR CLEANOUT PROCEDURE

- This procedure is an addition to the original procedure.
  1. Install flowback manifold with two chokes. All components on flowback manifold must be rated to at least 5,000 psi. If possible, flowback manifold components should be hydrotested before delivery. Hardline pipes from 2" casing valve to manifold to half pit with gas buster. **Set up an exclusion zone around flowback line.**
  2. Install flowback tank downwind from rig.
  3. Position Air unit upwind from Rig next to water tanks. Have vacuum truck on standby to empty halfpit. (if needed)
  4. RIH with 6 1/8" MT bit, 4 (3-1/2") drill collars on 2-7/8" 6.5# L-80 WS.
  5. NU stripper head with **NO Outlets** (Check stripper cap for thread type - course threads preferred). **Stripper head to be stump tested to 1,000 psi before being delivered to rig.** Check chart or test at rig.
  6. RU foam air unit. Make quality foam on surface before going down hole with foam/air. Install flapper float at surface before beginning to pump. Break circulation with foam/air. Evacuate fluid from well.

**Pump high quality foam at all times. Do not pump dry air at any time. Fluid injection rates will generally be above 12 gallons per minute**

**Whenever there is pressure on the stripper head, have a dedicated person continuously monitor pressure at choke manifold and have a dedicated person at accumulator ready to close annular BOP in case stripper leaks. Do not allow pressure on stripper head to exceed 500 psi. If pressure cannot be controlled below 500 psi, stop pumping, close BOP and bleed off pressure.**

7. Clean out fill to 6,290' with low RPM's rotation and circulation, always keep pipe moving. Short trips can be beneficial to hole cleaning. Circulate well clean for at least 1 hour at the end of the day and pull up above the perforations before shut down for night. If the foam/air unit goes down, pull above the perforations.
8. When tripping out of hole, have special float bleed off tool available to relieve trapped pressure below float.

**Ensure that high quality, stiff foam is pumped while circulating the fill. Stiff foam is required to prevent segregation while circulating. Monitor flow and pressures carefully when cleaning out.**

**Before rigging up power swivel to rotate, carefully inspect Kelly hose to ensure that it is in good condition. Ensure that swivel packing is in good condition.**

**Continue on with original procedure for completion.**