



Permian Basin Asset
Odessa, Texas

WARREN UNIT 26
API #30-025-07842
Location: 660 FWL 660 FSL, U.L. N,
Sec. 27, T-20-S, R-38-E
WARREN Field
Lea County, New Mexico

The proposed well work consists of test mechanical integrity, cleanout and stimulates by perforation scouring with acid and sand.

Well Category One:

H2S: 0 ppm.
Well Rate:

HOBBS OCD

H2S ROE- ft.
100
ppm 0
500
ppm 0

JAN 30 2013

RECEIVED

BOPE Class One: Hydraulic BOP recommended per Projects Group.

PERFORATIONS

Set	Perforations (MD)	Frac Grad	SPF	Phase	Holes	Anticipated Reservoir Pressure	Anticipated Reservoir Temperature
1	5865-5890'	NA	1	0		NA	114°
2	5900-5909	NA	1	0		NA	114°
3	5940-5970	NA	1	0		NA	114°
4	5984-6000	NA	1	0		NA	114°
5	6040-6086	NA	1	0		NA	114°
6	6097-6109	NA	1	0		NA	114°
7	6144-6174	NA	1	0		NA	114°
8	6182-6202	NA	1	0		NA	114°
9	6230-6250	NA	1	0		NA	114°
10	6236-6268	NA	1	0		NA	114°

PROCEDURE

1. Review JSA and identify hazards with crew. Isolate hazardous energy. Record Shut in tubing pressure.

2. RU 5 K psi lubricator, test lubricator to 3000 psi. RU Slick line unit and RIH with gauge ring and weights to check for ID, ROH with w/ gauge ring and weights. Based on results from gauge ring. RIH w / blanking plug and set in profile nipple (1.875" XN) might be encountered). Pressure test plug/tubing to 1500 psi. If does not test prepare to order 2 3/8 J55, TK 99 tubing.
3. ND WH, , NU annular preventer, double ram hydraulic BOP with blind rams in bottom and 2 3/8" pipe rams in top - minimum 3000 psi equipment. Unlatch f/packer. Release on/off tool. Circulate with 10# brine. Latch on to packer and unset packer. Tag for fill. TOH with w/ 7" packer on 2 3/8 "tubing. Scan tubing while going out. LD red and green jts.

Note: If fill is encountered covering more than 10 % of perfs prepare to clean out following step 4. Otherwise go to Step # 5.

4. TIH w/ 6 1/8' bit 4 6 1/4" DC on 2 3/8" L80 work string. Clean out to PBSD (6324'). TOH w/ 6 1/8' bit 4 6 1/4" DC on 2 3/8" L80 work string.
5. RIH w/ 7" treating packer on 2 3/8" L80-WS .Hydro testing to 5000 # while going in. Set Packer @ 6020'. Load annulus to 500 psi and monitor during job. RU Petroplex, (**contact: Robert Denney 575 390 4510**) Test surface lines to 3500 psi. Install ball catcher.
6. Pump Acid job as follows:

NOTE: Acid not to be gelled until just prior to pumping the job to insure no bacteria in frac tanks.

Test Lines to 5,000 psi

- Establish rate on water then switch to acid.
- Pump 2,000 gal. 15% NEFE Hcl
- Pump 1,000 gal. Gelled Brine Water containing 1,000 lbs 100 mesh sand
- Drop 50 ea. 7/8 Ball Sealers in the last 100 gal. of gel
- Pump 2,000 gal. 15% NEFE Hcl
- Pump 1,000 gal. Gelled Brine Water containing 1,000 lbs 100 mesh sand
- Drop 50 ea. 7/8 Ball Sealers in the last 100 gal. of gel
- Pump 2,000 gal. 15% NEFE Hcl
- Pump 1,000 gal. Gelled Brine Water containing 1,000 lbs 100 mesh sand
- Drop 50 ea. 7/8 Ball Sealers in the last 100 gal of gel
- Pump 2,000 gal 15% NEFE Hcl
- Pump 1,000 gal. Gelled Brine Water containing 1,000 lbs 100 mesh sand
- Drop 50 ea 7/8 Ball Sealers in the last 100 gal. of gel
- Pump 2,000 gal.15% NEFE Hcl
- Flush to Bottom Perffs, allow balls to surge.
- Record ISIP, 5, 10, 15, Min PSI

Fluid summary:

Acid: 10,000 gal. 15% NEFE HCL

2 gal./m. I-8 Inhibitor

2 gal./m EP-3 Non Emulsifier

5 gal./m FEDX Iron Reducing Agent

4 gal./m FEBX Iron Reducing Agent Activator

Sand: 4,000 LBS 100 Mesh sand

Brine: 1 load 10# Brine Water mixed with 50# Petro gel

Diverter: 300 Ea. 1.3 SPG, 7/8" Ball Sealers

7. RD Petroplex, RU with Swab cup and start swabbing testing.
8. Load/ test annulus to 500 # during 30 minutes. If pressure does not hold, pull up to not shallower than 5765' and reset packer. Pressure test casing to 500 psig. If pressure holds continue to step # 9. Notify production engineer if pressure will not hold. Note: If packer setting depth is shallower than 5765', isolate casing leak, perform pump in test, and perform cement squeeze to repair casing.
9. TIH with injection packer with on/off tool on 2 $\frac{3}{8}$ ", 4.7#/ft, J-55 tubing IPC w/ TK-99. Hydrotest tubing below slips while TIH. Set injection packer at 5800' \pm . Note: Packer cannot be set more than 100' above top perf at 5865' as per regulatory requirements.
10. Load tbg / annulus. Release from on/off tool. Circulate packer fluid to surface. Latch to on/off tool. Notify NMOCD to witness mechanical integrity test. Pressure test casing to 500 psig for 30 minutes, recording test using circular chart.
11. ND BOP and NU injection WH. RDMO well service rig. Clean location. Connect surface lines
12. Turn well over to Operations. Place well on water injection. Report injection rate and injection pressure in morning report. Submit change of status report. Record volumes in Avocet.

Injection Profile Procedure: This procedure is included because although is rigless is needed for the assessment of the project. The injection profile will be performed 1 calendar month after well has been put back on Injection.

1. Conduct tailgate safety meeting to identify location hazards, review well information, review test objectives, and make necessary plans to maximize safety and test results.
2. Rig up Precision Pressure logging unit and conduct the pre-job wellhead radiation survey
3. RU 5000 psi lubricator with grease injector. Test lubricator to 4500 psi.
4. Install wireline blow out preventor and tool trap.
5. Install injection profile tool (**Top to Bottom:** Rope socket w/ fishing neck , Caliper, Collar locator, Scintillation Gamma Ray detector , Controlled ejector w/ Isotope , Temperature Tool.
6. **RIH w/ Injection profile tool. While GIH check for stable injection and pressure.**
7. **Run Injection Temperature and CCL logs from Packer depth (+/- 5800 to 6324')**
8. Run Gamma Ray and Collar Logs from 6,324 to 5800'. Correlate Gamma ray and CCL logs to supplied correlation log. Adjust depth measurement from Wireline Depth to Measured Depth.
9. Return Injection Profile logging string to T.D. at 6,324 and run Caliper Log from 6,324 to 5,800.
10. Place Injection Profile logging string above the zone of interest 5865 - 6268 and eject Slug #1. As the slug travels down hole with the flow, attempt 3 passes through the slug. Note the delta times from peak to peak.
11. Continue making timed passes until slug has dissipated. (According to Isotope decay rate)
12. **No flow checking.** Eject Slug #2 below the zone 5865 - 6268 and above T.D. at 6,324. Eject the slug as low as possible (6290). Wait 3 - 5 minutes for the slug to travel down to

the detector. Make a single pass through slug #2 to determine if there was slug ejected and if reaction was present.

13. Break down the areas of maximum loss from 5865 to 6268 in intervals depending of distance between ejector and detector. Eject slugs in those loss areas and record while keeping the tool stationary.
14. Place the Gamma Ray detector above the top perf (5865). Eject the slug and monitor slug going past detector. Keep monitoring for 5 minutes. If Gamma ray returns are observed, start raising the detector in intervals depending on distance between ejector and detector to follow up channel (behind casing).
15. Raise the tool to 5820' and shut off injection. Allow well to remain static for 1 hr.
16. Run shut in temperature log from 5825 to 6324.
17. Run a shut in temperature log from 5825 to 6324 2 hrs after well has been shut in.
18. POOH with logging tool string. RD equipment.
19. RD lubricator, return well to injecting and inform operations of success of end of the job.

Conditions of Approval

Warren Unit Blinebry Tubb WF 26

API 3002507842

January 29, 2013

Well with a Packer - Operations

- 1) Conduct a Mechanical Integrity Test of the tubing/casing annulus after a tubing, packer or casing seal is established. Repair that seal any time more than five barrels of packer fluid is replaced within 30 days.
- 2) The minimum test pressure should be 500 psig for 30 minutes or 300 psig for 60 minutes, with a minimum 200 psig differential between tubing and casing pressure (at test time) but no more than 70% of casing burst pressure as described by Onshore Order 2.III.B.1.h. (The tubing or reservoir pressure may need to be reduced). An alternate method for a BLM approved MIT is to have the fluid filled system open to atmospheric pressure and have a loss of less than five barrels in 30 days witnessed by a BLM authorized officer.
- 3) Document the pressure test on a one hour full rotation calibrated recorder chart registering within 25 to 85 per cent of its full range. Greater than 10% pressure leakoff will be viewed as a failed MIT. Less than 10% pressure leakoff will be evaluated site specifically and may restrict injection approval.
- 4) Make arrangements 24 hours before the test for BLM to witness. In Eddy County email Paul R. Swartz pswartz@blm.gov or phone 575-200-7902, if there is no response, 575-361-2822. In Lea County email Andy Cortez acortez@blm.gov, (phone 575-393-3612 or 575-631-5801). If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number. Note the contact, time, & date in your subsequent report.
- 5) Submit a subsequent Sundry Form 3160-5 relating the MIT activity. Include a copy of the recorded MIT pressure chart. List the name of the BLM witness, or the notified person and date of notification. NMOCD is to retain the original recorded MIT chart.
- 6) Use of tubing internal protection, tubing on/off equipment just above the packer, a profile nipple, and an in line tubing check valve below the packer or between the on/off tool and packer is a "Best Management Practice". The setting depths and descriptions of each are to be included in the subsequent sundry. List (by date) descriptions of daily activity of any previously unreported wellbore workover.
- 7) **Submit the original subsequent sundry with three copies to BLM Carlsbad.**
- 8) Compliance with a NMOCD Administrative Order is required, submit documentation of that authorization. Approved injection pressure compliance is required. If injection pressure exceeds the approved pressure you are required to reduce that pressure and notify the BLM within 24 hours.

- 9) When injection pressure is within 50 psig of the maximum pressure, install automation equipment that will prevent exceeding that maximum. Submit a subsequent report (Sundry Form 3160-5) describing the installed automation equipment within 30 days.
- 10) Unexplained significant variations of rate or pressure to be reported within 5 days of notice.
- 11) The casing/tubing annulus is required to be monitored for communication with injection fluid or loss of casing integrity. A BLM inspector may request verification of a full annular fluid level at any time.
- 12) A “Best Management Practice” is to maintain the annulus full of packer fluid at atmospheric pressure. Equipment that will display on site, continuous open to the air fluid level is necessary to achieve this goal.
- 13) Loss of packer fluid above five barrels per month indicates a developing problem. Notify BLM Carlsbad Field Office, Petroleum Engineering within 5 days.
- 14) A suggested format for monthly records documenting that the casing annulus is fluid filled is available from the BLM Carlsbad Field Office.
- 15) Gain of annular fluid requires notification within 24 hours. Cease injection and maintain a production casing pressure of 0psia. Notify the BLM’s authorized officer (“Paul R. Swartz” <pswartz@blm.gov>, cell phone 575-200-7902). If there is no response phone 575-361-2822.
- 16) Submit a (Sundry Form 3160-5) subsequent report (daily reports) describing all wellbore activity and Mechanical Integrity Test as per item 1) above. Include the date(s) of the well work, and the setting depths of installed equipment: internally corrosive protected tubing, tubing on/off equipment just above the packer, and an in line tubing check valve below the packer or between the on/off tool and packer. The setting depths and descriptions of each are to be included in the subsequent sundry. List daily descriptions of any previously unreported wellbore workover(s) and reason(s) the well annular fluid was replaced.

Access information for **use of Form 3160-5** “Sundry Notices and Reports on Wells”

NM Fed Regs & Forms - http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas.html

§ 43 CFR 3162.3-2 Subsequent Well Operations.

§ 43 CFR 3160.0-9 (c)(1) Information collection.

§ 3162.4-1 (c) Well records and reports.