

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: September 30, 1990

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a disallowed well.
Use "APPLICATION FOR PERMIT—" for such proposals.

JAN 9 11 55 AM '91

RECEIVED

SUBMIT IN TRIPLICATE

JAN 15 '91

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other

DISPOSAL

O. C. D.

2. Name of Operator

Exxon Corporation Attn: Alex M. Correa

FAX: (915) 688-7532

3. Address and Telephone No.

P.O. Box 1600, Midland TX 79702 (915) 688-7532

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

660' FSL & 1980' FEL, SEC 31, T20S - R28E

5. Lease Designation and Serial No.

NM 01119

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

YATES "C" FEDERAL

8. Well Name and No.

YATES "C" FEDERAL #11

9. API Well No.

3001524377

10. Field and Pool, or Exploratory Area

AVALON DELAWARE

11. County or Parish, State

EDDY, NM

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

TYPE OF SUBMISSION

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment

☐ Recompletion

☐ Plugging Back

☐ Casing Repair

☐ Altering Casing

☒ Other

XX ADD PERFS - FRAC - RETURN TO INJECTION

(Note: Report results of multiple completion or well completion or Recompletion Report and Log form.)

☐ Change of Plans

☐ New Construction

☐ Non-Routine Fracturing

☐ Water Shut-Off

☐ Conversion to Injection

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

ADD ADDITIONAL PERFS IN THE LOWER BRUSHY CANYON, FRAC AND RETURN WELL TO INJECTION. PROCEDURE ATTACHED.

Submitted to
State Approval
by State

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

Alex M Correa

Administrative Specialist

1 - 4 - 91

Signed

Title

Date

(This space for Federal or State office use)

Approved by

Title

Date

Conditions of approval, if any:

* Verbal given to A.M. Correa to proceed w/operation as outlined. SJS 1/9/91

Title 18 U.S.C. Section 1001, makes 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.

*See Instruction on Reverse Side

FIELD: Avalon

BACKGROUND: Well will currently accept limited fluid at permitted pressure. Field is in a critical water disposal situation.

OBJECTIVE: Perf and frac zone lower in the Delaware to increase injectivity.

FORMATION CHARACTERISTICS

Formation	BHP (psi)	Anticipated Max. Surf. Pres.	Workover Fluid*	H2S (ppm)
Delaware	~2,800 (est)	<1000 psi	12+ ppg mud	4,000

BOP SPECIFICATIONS

Class: III

H2S service equip. req.: NO

Variances: Yes

PIPE PERFORMANCE

	Burst (w/1.1sf)	Drift	Capacity (bbl/ft)	Depth Set (feet)
Tubing: 2-7/8"/6.5#/J55 (PC)	6,600 psi	2.347"	.00579	3,905'
Workstr: 3-1/2"/9.3#/J55	6,354 psi	2.867"	.00870	
Prod. Csg: 5-1/2"/14 #/K55	3,881 psi	4.887"	.0244	surf - 4990'

Capacity of 2-7/8" tbg./csg annulus: .0164 bbl/ft

Capacity of 3-1/2" tbg./csg annulus: .0125 bbl/ft

DO NOT START THIS WORKOVER UNTIL PERMIT IS OBTAINED!

PROCEDURE:

1. Test rig anchors per Ops Bulletin #52 and send charts to Rosemarie Whitlock in Midland.
2. Before MIRU well service unit, check SITP and the pressure on the casing annulus. Report annular pressures found to the Exxon supervisor and discuss appropriate and safe blow down procedures. Attempt to bleed annulus pressures to zero. For annular pressures that will not bleed to zero, first review with field superintendent then inform the subsurface engineer. Document all pressure activity on morning report.
3. MIRU slickline unit and class II lubricator/ wireline BOP assembly.

Test per company guidelines.

4. RIH with blanking plug and set in 1.875" profile (check field office files for profile type) in on-off tool above packer at 3,905'. Ensure well is dead, then rig down slick- line, nipple down injection tree and nipple up Class III BOP. Test per company guidelines.
5. Release from on-off tool and circulate hole with kill mud. Use acid soluble polymer/calcium carbonate mud (CaCO₃).
Note: Calculate mud weight based on:

SITP + Hydrostatic head of injection fluid at midperf (4536') +300 psi overbalance.

"Jay" back onto on-off tool.
6. RU slickline and Class II lubricator/wireline BOP. Test per company guidelines. RIH and retrieve blanking plug from on-off tool profile. RDMO slickline.
7. Ensure well is dead, then unset packer. POH with tubing and BHA
KEEP HOLE FULL OF MUD WHEN PULLING PIPE!
8. Send packer and on-off tool to be redressed. MIRU wireline and class II lubricator/wireline BOP assembly and test per company guidelines.
9. Perforate as follows:

Perforate:

Service Company* BLKWR
 Gun Type* RHSC RETRIEVABLE HOLLOW STEEL CARRIER
 Gun Size 4 (inches)
 Correlation log type Armadillo GR-CCL dated 7-1-83
 Zero pnt KB = 12' above G.L.
 Press Diff n/a (psi) when shot underbalanced
 Phasing 120
 Location 660' FSL; 1980' FEL; Sec 31; T20S; R28E
 Corrected collars 4138(?); 4152; 4236; 4564; 4604+
 Correlation Tie in point GR spikes @ 4208; 4294; 4415; 4642; 4678

top of Interval	Bottom of Interval	Spacing	Shots per ft	Total
<u>4300</u>	<u>4360</u>	<u>4</u>	<u>1</u>	<u>16</u>
<u>4470</u>	<u>4622</u>	<u>4</u>	<u>1</u>	<u>39</u>
<u>4700</u>	<u>4792</u>	<u>4</u>	<u>1</u>	<u>24</u>

(if spacing = 5 and shots/ft = 2, then every 5 ft shoot 2 holes)

RD wireline.

10. RIH with a 5-1/2" PPI assembly w/ 10' packer element spacing on workstring. Use 20 joints of tubing w/ turned down collars at top

of string. Hydrotest to 5000 psi while RIH.

11. Nipple up annular BOP and test per company guidelines.

12. Break down perfs with 15% HCl as follows:

Stimulate:

Service Co* DOWEL DOWELL-SCHLUM
 Type Fluid* HCL 15 15% HYDROCHLORIC ACID
 Total job Vol _____ (Gals)
 Total Acid Vol 3300 (Gals)
 Max Rate _____ (BPM)
 Max press _____ (PSI)
 Type Diverter* OTHER OTHER
 Upper Depth 4300 (ft)
 Lower Depth 4792 (ft)
 temp Pkr Depth _____ (ft)
 Flush Vol _____ (bbls)

Additives:

Function*	amt	Brand name
<u>INHI</u> ACID INHIBITOR	<u>1 GPT</u>	<u>A250 or equivalent.</u>
<u>NEA</u> NON EMULSIFIER	<u>1 GPT</u>	<u>W-54 or equivalent.</u>

Procedure:

- a) Spot, stake down, and pressure test equipment to 5,000 psi.
- b) Perform PPI procedure on each perf from bottom to top (up to two perfs per setting). After perfs are broken down (max 5000 psi), pump at maximum rate without exceeding 1,000 psi surface treating pressure. Treat with 1.0 bbl acid per perf.
- c) After all perfs are broken down, fish fluid plug and spot control valve.

13. Unset packers and POH with workstring & PPI assembly.

14. RIH with 5-1/2" treating packer (w/ minimum 5000 psi differential pressure rating) and seat nipple on 3-1/2"/9.3# work string. Hydrotest while RIH to 6000 psi. Set packer at 4,200'.

15. SION to allow temperature to stabilize.

16. MIRU Dowell/Schlumberger and tagging company to frac and tag well. Run a before-frac base temp log the morning of the frac.

FRAC COMPOSITION - Dowell YF135 (Crosslinked low-residue guar) System.

PROPPANT:

161,000 lb. of 12/20 mesh Brady Sand (if 12/20 not available
 use 16/30 mesh)

Fracture:

Depth(ft): Top 4300 Bottom 4792
 Rate(bpm): max 40 average _____
 Press(psi): max _____ average _____
 Service Co*: DOWEL DOWELL-SCHLUM

Frac Composition:

Function*	amt	Brand name
<u>KCL</u> KCL	<u>167 PPT</u>	<u>2% KCl</u>
<u>GELL</u> GELLING AGENT	<u>7.9 GPT</u>	<u>J-877 liq slurry gel</u>
<u>XLIN</u> CROSS LINKER	<u>1.2 PPT</u>	<u>L-10 Borate Xlink</u>
<u>PH</u> PH CONTROL AGENT	<u>0.3 GPT</u>	<u>U-28</u>
<u>BACT</u> BACTERIACIDE	<u>0.25 GPT</u>	<u>M76</u>
<u>SURF</u> SURFACTANT	<u>2.0 GPT</u>	<u>TFA-380B</u>
<u>BREA</u> BREAKER	<u>3.0 PPT</u>	<u>J-218</u>
<u>BREA</u> BREAKER	<u>1.5 GPT</u>	<u>J-318 Breaker aid.</u>

breaker and breaker aid as required for 4-6 hour break @ 110 deg.

Design:

Stage	Fluid (ppg)	Cum Fluid Vol(gal)	Dirty Vol(bbls)	Cum Dirty Vol(bbls)	Prop(1b)	Cum Prop(1b)	Prop Size
Pad	35000	35000	833.3	833.3	0	0	---
1.0	4500	39500	112.0	945.4	4500	4500	12/20 *
2.0	7000	46500	181.9	1127.2	14000	18500	12/20 *
3.0	9000	55500	243.6	1370.8	27000	45500	12/20 *
4.0	12000	67500	337.8	1708.7	48000	93500	12/20 *
5.0	13500	81000	394.7	2103.4	67500	161000	12/20 *
Flush	1512	82512	36.0	2139.4			

FRAC PROCEDURE:

* Use 16/30 if 12/20 not available

- Install a 10,000 psi frac valve on the 3-1/2" tubing.
- Install relief valve on 5-1/2" annulus that is set to vent at 1,000 psi. Route relief line to pit and stake down.
- Test treating lines to 5,000 psi with water. Set treating relief valve at 5,000 psi (expected treating pressure is <3,000 psi). Route relief line to pit and stake down.
- Frac well according to the above schedule. Pump at 40 BPM. Do not exceed 5,000 psi surface pressure. Hold 500 psi on annulus and monitor.
- Displace frac with approximately 36 bbls of clean slick 3% KCl water to just clear packer. Switch from frac to flush as quickly as possible.

DO NOT OVERDISPLACE!

- f. Run 1, 3, and 6 hour shut-in after-frac gamma ray and temperature logs.
17. RD Dowell. SION with frac valve to let frac heal.
18. Next morning, begin flowing/swabbing back load. Swab load for 4-5 days, or until notified by engineering.
19. POH with treating packer and 3-1/2" work string. BE SURE TO KEEP HOLE FULL OF KILL MUD WHEN PULLING PIPE.
20. RIH with redressed packer assembly and on-off tool (with blanking plug in place) on 2-7/8" plastic-coated tubing. Space out and set packer at 3,900' +/-.
21. Unjap from on-off tool and displace hole with approximately 5 bbl fresh water followed by the following packer fluid. COLLECT MUD into clean tanks and return to mud co. for credit.

Packer fluid:

2% KCl with 10 gal/100 bbl Corexit 7672 or equivalent bactericide and 20 gal/100 bbl Corexit 7720 corrosion inhibitor.

Approximately 64 bbl of packer fluid will be required.

22. Space out, jay back onto on-off tool, nipple down BOP's, and nipple up injection tree.
23. Backflow 60 - 100 bbl (if well will flow) to clean up new perfs.
24. RWTI. Report rates and injection pressures daily until further notice.

Perforate:

Service Company* BLKWRGun Type* RHSC RETRIEVABLE HOLLOW STEEL CARRIERGun Size 4 (inches)Correlation log type Armadillo GR-CCL dated 7-1-83Zero pnt KB = 12' above G.L.Press Diff n/a (psi) when shot underbalancedPhasing 120Location 660' FSL; 1980' FEL; Sec 31; T20S; R28ECorrected collars 4138(?); 4152; 4236; 4564; 4604+Correlation Tie in point GR spikes @ 4208; 4294; 4415; 4642; 4678

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