

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

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

WELL API NO.

30 015 00724

5. Indicate Type of Lease

STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name

EMPIRE ABO UNIT I

8. Well Number 16

9. OGRID Number

873

10. Pool name or Wildcat

EMPIRE ABO

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)

1. Type of Well: ☒ Well ☐ Gas Well ☐ Other

2. Name of Operator

APACHE CORPORATION

3. Address of Operator

303 VETERANS AIRPARK LN, STE 3000; MIDLAND, TX 79705

4. Well Location

Unit Letter A : 330 feet from the E line and 990 feet from the N line

Section 02 Township 18S Range 27E NMPM County EDDY

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

3618' GR

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 ☐DOWNHOLE COMMINGLE ☐

OTHER: adding ABO perms

☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐COMMENCE DRILLING OPNS. ☐ P AND A ☐CASING/CEMENT JOB ☐

OTHER

☐

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.

Apache Corporation plans to preform work on the Empire Abo Unit I #16 as per the attached procedure.

* Correction!

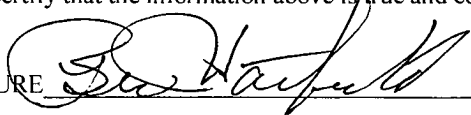
Spud Date:

08/01/1959

Rig Release Date:

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

SIGNATURE



TITLE Sr. Staff Regulatory Tech

DATE 01/11/2012

Type or print name Bev Hatfield

E-mail address: beverly.hatfield@apachecorp.com

PHONE: 432-818-1906

For State Use Only

APPROVED BY:



TITLE

Dist B Spewse

DATE

02/20/2012

Conditions of Approval (if any):



COMPLETION PROCEDURE

AFE Number: PA-11-4534

Empire Abo Unit I-16

990' FNL & 330' FEL

Sec 2, T18S, R27E

API: 30-015-00724

Empire Abo Unit

Eddy County, New Mexico

KB: 3628' GL: 3618' (KB 10' above GL)

8-5/8" 28 lb/ft K-55 casing set @ 1102'

5-1/2" 17 lb/ft K-55 casing set @ 5920'

TD: 5920'; PBTD: 5,845'

Perforations at 5,773'-5,872'; 5,444'-5,786'

Casing: 5-1/2", 17# K-55

ID = 4.892"

Drift = 4.767"

Capacity = 0.0232 BBL/ft

Burst = 5320 psi; 80% = 4256 psi

Tubing: 3-1/2", 9.2#, N-80, 8rd, EUE

Capacity = 0.00870 BBL/ft

Burst = 10,160 psi; 80% = 8128 psi

Collapse 10,530 psi; 80% = 8424 psi

Yield 207,220 lbs; 80% = 165,776 lbs

Frac Abo Shale formation

1. MIRU pulling unit. Kill well as necessary. Unseat pump. POOH w/ rods and pump. ND wellhead. NU BOP's. Unset TAC POOH w/ production tubing. Unload 3-1/2" 9.2 lb/ft N-80 tbg to be used for workstring.
2. RIH w/ 4-3/4" bit, bit sub, and 5-1/2" casing scraper to 5,600'. Clean out wellbore as necessary. POOH.
3. MIRU wireline. NU lubricator. RIH and set CIBP @ 5,580'. Spot 35' feet of cement on top of CIBP. *Open perms @ 5,444'-46'; 5,479'-82'; 5,504'-12'*

STAGE I

4. RIH w/ 3-3/8" csg gun or available equivalent perforator and perforate the Abo Shale from 5,444'-46'; 5,480'-82'; 5,512'-14' w/ 4 JSPF 90 degree phasing (24 holes, 6 net ft). (Charge specs: Connex 0.5" diameter BH). **Correlate WELEX radioactivity log date 9/3/1959.** POOH w/ perforator and RD wireline.
5. RIH w/ SN + Baker Hughes R-3 double grip PKR or equivalent on 3-1/2" WS. Spot 200 gallons of 15% acid across perforations. POOH and set PKR just above new perms \pm 5, 390'. Acidize new perms from 5,444'-5,514' w/ 1500 gallons 15% NEFE acid, dropping 1000# stages of rock salt. Adjust rock salt for maximum diversion. Max treating pressure = 4000 psi.
6. RU swab equipment to recover load and clean well up. RD swab equipment. ND BOP's. NU frac tree.

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7. Prepare necessary clean 500 bbl frac tanks with water. Have service company test frac water for quality. Prepare necessary tanks for flowback. Spot tanks, sand support, etc. Prep for frac treatment.
 8. MIRU Service Company. NU treesaver. NU and test surface lines to 8,500 psi. Max pressure to be **8,000 psi at surface**, set pressure alarms and pop-offs accordingly.
 9. Load hole and establish rate and pressure. Frac the Abo Shale perfs down the 3-1/2" WS w/ 38 klbs 100 mesh and 150 klbs 30/70 resin coated proppant as provided by Service Company. Flush w/ 48 bbls slick water to top perf with 200 gallons acid tailing flush. SD. Shut-in well for min. 2 hours.

STAGE II

Target Rate: 40 BPM

Max Pressure: 8000 psi

10. RDMO Frac Company. ND frac valve and tree. NU BOP's. Kill well as necessary. Release PKR and POOH w/ WS.
11. MIRU WL. NU lubricator. RIH w/ 5-1/2" CBP and set ~ 5,420'. Test casing to 3,400 psi. POOH w/ WL and setting tool.
12. RIH w/ 3-3/8" csg gun or available equivalent perforator and perforate the Abo Shale from 5,290'-92'; 5,340'-42'; 5,392'-94' w/ w/ 4 JSPF 90 degree phasing (24 holes, 6 net ft). (Charge specs: Connex 0.5" diameter BH). **Correlate WELEX radioactivity log date 9/3/1959.**
13. POOH w/ perforator and RDMO wireline. *WL on standby to run gauge ring if necessary.
14. RIH w/ SN + Baker Hughes R-3 double grip PKR or equivalent on 3-1/2" WS. Spot 200 gal 15% NEFE HCL across perforations. Set PKR just above new perfs ± 5,240'. Test casing to 500 psi.
15. Load hole and break down Stage II perfs. Establish rate and pressure. Frac the Abo Shale perfs down the 3-1/2" tubing w/ 38 klbs 100 mesh and 150 klbs 30/70 resin coated proppant as provided by Service Company. Flush w/ 47 bbls slick water to top perf. SD. RDMO Service Company. Shut-in well for minimum 2 hours.

Target Rate: 40 BPM

Max Pressure: 8000 psi

16. Open well and flow back well. Recover as much load as possible.
17. ND frac valve and tree. NU BOP's. Kill well as necessary. Release PKR and POOH w/ WS.
18. RIH w/ 4-3/4" bit, bit sub, and drill out plug at 5,420' and continue to PBTD. Check for sand fill. Circulate hole clean. POOH.
19. If zone appears productive, run production equipment as directed by Apache Representative. RTP.
If unproductive, prepare well to be PA'd.
20. RDMOPU. Turn well to tester and obtain well tests. Have chemical representative test fluids and put well on the appropriate chemical maintenance program.

GL=3618'
KB=3628'
Spud: 8/1/59

Apache Corporation – Empire Abo Unit #I-16

Wellbore Diagram – Proposed

Date : 11/9/2011

API: 30-015-00724



Surface Location

R. Taylor

990' FNL & 330' FEL, Unit
Sec 2, T18S, R27E, Eddy County, NM

Surface Casing

8-5/8" 28# K-55 @ 1102' w/ 300 sx to surface

TOC @ 960'

12/68: Perf @ 3,500'
Sqz'd w/ 600 sxs

TAC @ TBD'
SN @ TBD'

TBD: Perf Abo @ 5290'-5292'; 5340'-5342'; 5392'-5394' w/ 4 JSPF
Frac'd w/ 5890 bbl slickwater, 188k# 100 mesh & 20/40 RC snd

TBD: Perf Abo @ 5444'-5446'; 5480'-5482'; 5512'-5514' w/ 4 JSPF
Frac'd w/ 5890 bbl slickwater, 188k# 100 mesh & 20/40 RC snd

CIBP set @ 5,580' w/ 35' cmt

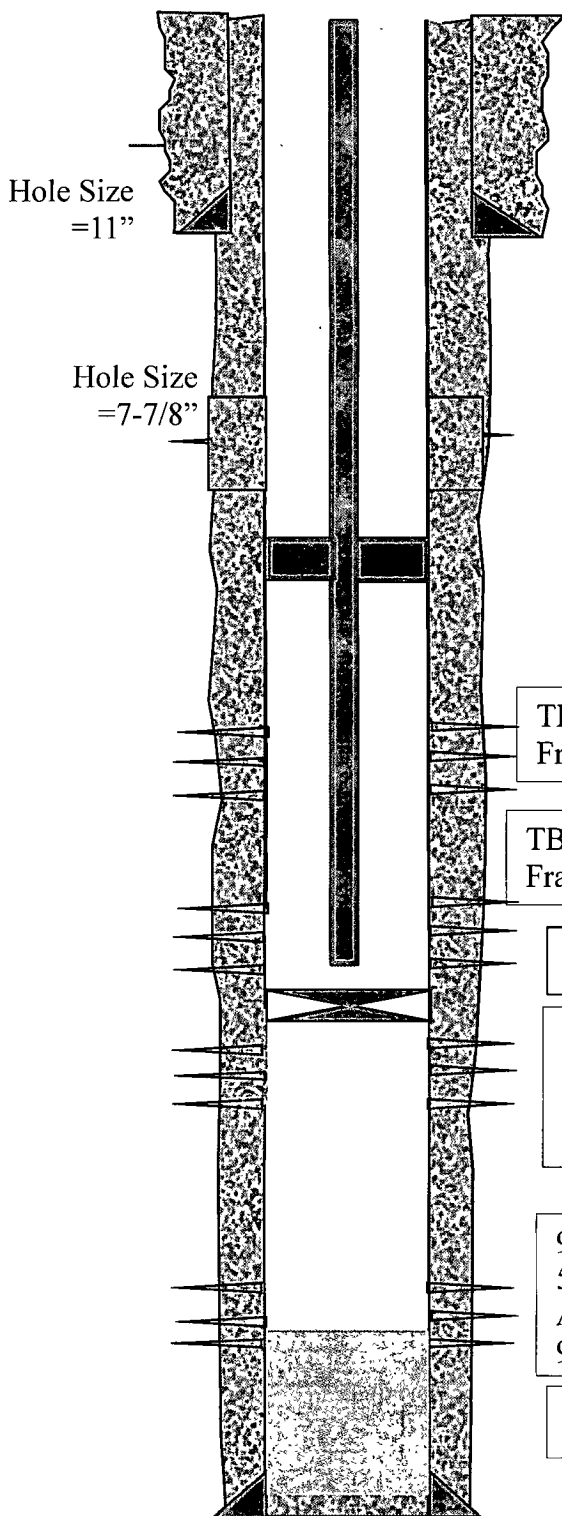
8/03: Perf Abo @ 5444'-46'; 5479'-82'; 5504'-12'; 5589'-91';
5606'-42'; 5657'-66'; 5698'-5734'; 5772'-86' w/ 2 JSPF
Acidize w/ 5700 gal 15% HCL

9/59: Perf Abo @ 5,773'-95'; 5,810'-18'; 5,831'-34'; 5,843'-52';
5,863'-72' w/ 2 JSPF
Acidized w/ 2000 gal 15% LSTNE
9/72: Acidized w/ 1000 gal D.A.D acid

8/03: Fill tagged @ 5845'

Production Casing

5-1/2" 17# K-55 @ 5920' w/ 300 sxs
TOC @ 2635'



PBTD = 5845'
TD = 5920'