

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
June 19, 2008

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO.
30 015 00676

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name
EMPIRE ABO UNIT H

8. Well Number 17

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 M : 330 feet from the S line and 990 feet from the W line
Section 36 Township 17S Range 27E NMPM County EDDY

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3641' 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 perfs

☒

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 H #17 as per the attached procedure.

Spud Date: 02/05/1960

Rig Release Date:

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

SIGNATURE Beverly Hatfield 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: D. J. Spewer

TITLE D. J. Spewer

DATE 02/05/2012

Conditions of Approval (if any):



COMPLETION PROCEDURE

AFE Number: PA-11-4533

Empire Abo Unit H-17

330' FSL & 990' FWL

Sec 36, T17S, R27E

API: 30-015-00676

Empire Abo Unit

Eddy County, New Mexico

KB: 3651' GL: 3641' (KB 10' above GL)

8-5/8" 24 lb/ft K-55 casing set @ 1102'

5-1/2" 9.5 lb/ft K-55 casing set @ 5797'

TD: 5797'; PBTD: 5,794'

Perforations at 5707'-84'; 5,650-70'; 5,507'-5670'

Casing: 5-1/2", 14# K-55

ID = 5.012"

Drift = 4.887"

Capacity = 0.0247 BBL/ft

Burst = 4270 psi; 80% = 3416 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-55 tbg to be used for workstring.
2. RIH w/ 4-3/4" bit, bit sub, and 5-1/2" casing scraper to 5,510'. Clean out wellbore as necessary. POOH.
3. MIRU wireline. NU lubricator. RIH and set CIBP @ 5,500'. Spot 2 sxs of cement on top of CIBP. Load casing and test CIBP and casing to 3,400 psi.

STAGE I

4. RIH w/ 3-3/8" csg gun or available equivalent perforator and perforate the Abo Shale from 5,330'-32'; 5,380'-82'; 5,430'-32' w/ 4 JSPF 90 degree phasing (24 holes, 6 net ft). (Charge specs: Connex 0.5" diameter BH). **Correlate to WELEX radioactivity log dated 2/22/1960.** 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 150 gallons of 15% acid across perforations. POOH and set PKR just above new perfs ± 5, 280'. Acidize new perfs from 5,330'-5,430' w/ 1000 gallons 15% NEFE acid, dropping 30 ball sealers. Max treating pressure = 8000 psi. Displace to bottom perf with 50 BBLS of flush
6. Release PKR. TIH and knock balls off perfs. TOH and reset PKR at 5,280'. RU swab equipment to recover load and clean well up. RD swab equipment.

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7. ND BOP's. NU frac tree.
 8. 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.
 9. 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.
 10. Load hole and establish rate and pressure. Frac the Abo Shale perms down the 3-1/2" tubing w/ 37.5 klbs 100 mesh and 155 klbs 30/70 resin coated proppant as provided by Service Company. Flush w/ 47 bbls slick water. SD. Shut-in well for minimum 2 hours. ND treesaver. RDMO Service Company.

Target Rate: 40 BPM

Max Pressure: 8,000 psi

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

GL=3641'
KB=3651'
Spud: 2/5/60

Apache Corporation – Empire Abo Unit #H-17

Wellbore Diagram – Proposed

Date : 11/9/2011

API: 30-015-00676

Surface Location

R. Taylor



330' FSL & 990' FWL, Unit
Sec 36, T17S, R27E, Eddy County, NM

Surface Casing

8-5/8" 24# K-55 @ 1102' w/ 450 sx to surface

4/75: HIC @ 1875'
Sqz'd w/ 375 sxs to surf

4/75: Perf @ 3190'
Sqz'd w/ 375 sxs to HIC @ 1875'

TAC @ TBD'
SN @ TBD'

TBD: Perf Abo @ 5330'-5332'; 5380'-5382'; 5430'-5432' w/ 4 JSPF
Frac'd w/ 5877 bbl slickwater/Viking 1500, 192.5# 100 mesh & 20/40
RC snd

CIBP set @ 5,500

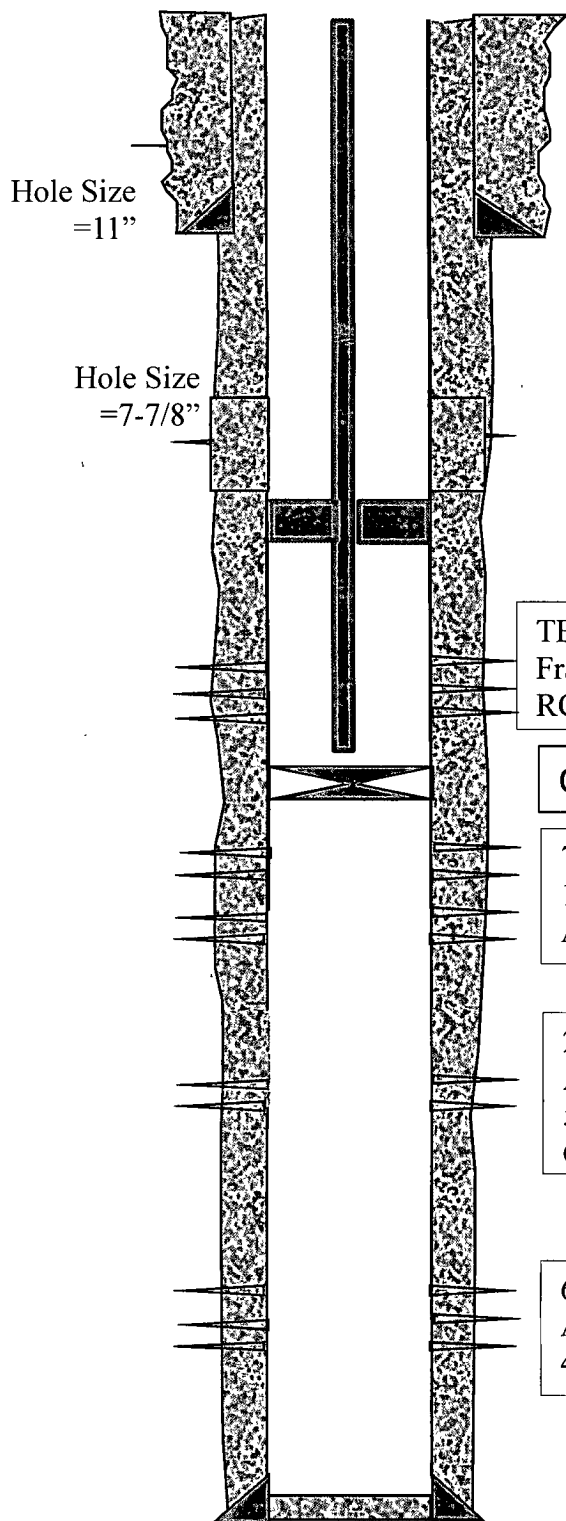
7/02: Perf Abo @ 5507'-16'; 5522'-26'; 5534'-48'; 5568'-5604'; 5616'-
18'; 5622'-26'; 5633'-40'; 5647'-70' w/ 2 JSPF
Acidize w/ 5000 gals 15% HCL-NEFE

2/60: Perf Abo @ 5650'-5670' w/ 2 JSPF
Acidized w/ 500 gal 15% reg acid
5/68: Acidized w/ 2000 gal 15% NEFE
6/70: Sqz'd w/ 100 sxs cement

6/70: Perf Abo @ 5707'-22'; 5736'-45'; 5775'-84' w/ 2 JSPF
Acidized w/ 3000 gal 15% LSTNE
4/75: Acidized w/ 2000 gal HCL-LSTNE

Production Casing

5-1/2" 14# K-55 @ 5797' w/300 sxs
TOC @ 2635'



PBTD = 5794'
TD = 5797'