

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTNMOCD  
ArtesiaFORM APPROVED  
OMB NO. 1004-0137  
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other: INJECTION		5. Lease Serial No. NMLC065478B
2. Name of Operator APACHE CORPORATION		6. If Indian, Allottee or Tribe Name
Contact: EMILY FOLLIS E-Mail: Emily.Follis@apachecorp.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 303 VETERANS AIRPARK LANE SUITE 1000 MIDLAND, TX 79705	3b. Phone No. (include area code) Ph: 432-818-1801	8. Well Name and No. EMPIRE ABO UNIT #048A
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 30 T17S R29E 2310FNL 990FEL		9. API Well No. 30-015-03195
		10. Field and Pool or Exploratory Area EMPIRE ABO
		11. County or Parish, State EDDY COUNTY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input checked="" type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompletable horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletable in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Apache would like to perform the following well work:

OBJECTIVE: Replace injection String, Squeeze casing leak

See attached procedures:

NM OIL CONSERVATION  
ARTESIA DISTRICT

APR 03 2018

RECEIVED

Accepted for record  
NMOCD25  
4/9/18

work already done

14. I hereby certify that the foregoing is true and correct. Electronic Submission #402218 verified by the BLM Well Information System For APACHE CORPORATION, sent to the Carlsbad Committed to AFMSS for processing by PRISCILLA PEREZ on 01/26/2018 ()	
Name (Printed/Typed) EMILY FOLLIS	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 01/25/2018
<b>THIS SPACE FOR FEDERAL OR STATE OFFICE USE</b>	
Approved By _____	Title _____ Date _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office _____
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.	

(Instructions on page 2)

**\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\***



AFE: 11-18-0077

Well name: Empire Abo Unit B-48  
API Number: 30-015-03195  
County, State: Eddy, NM  
Legals: SEC-30 TWP-17S RGE-29E

Depths: 6306 MD 6295 PBD  
Producing Interval: 6183-6277' (Abo)

CSG	OD	Wt/Ft	Cap (bbl/ft)	Top	Set @
Surface	8.625"	28#	0.0624	0'	753
Production	5.500"	15.5#	0.0238	0'	6306

Engineer:	David Cummings	432-818-1845 (o)	<a href="mailto:davidr.cummings@apachecorp.com">davidr.cummings@apachecorp.com</a>
Assistant Foreman:	David Pedroza	575-910-3283 (c)	<a href="mailto:david.pedroza@apachecorp.com">david.pedroza@apachecorp.com</a>
Production Foreman:	Javier Berdoza	575-441-5755 (c)	<a href="mailto:javier.berdoza@apachecorp.com">javier.berdoza@apachecorp.com</a>

**What's New:**

- 1) **Replace injection string. Order new 6,200' of 2-7/8" 6.5#, J-55, IPC (Permian Enterprises 1505) tubing.** Contact Apache Buyer Vicki Wright at 432-894-0433.
- 2) **Schedule 6,200' of 2-7/8" work string.** Contact David Hicks with TFH Company at 575-631-8517.
- 3) **Squeeze suspected hole in casing.** Field preference.
- 4) **Replace packer. Install new 2-7/8" x 5-1/2" AS-1X packer.** Match existing, field preference.
- 5) **Schedule wireline to identify TOC, caliper log 5-1/2" casing.** David Olivas with Renegade Services at 575-915-8580

**WELL HISTORY**

The well was drilled on 1/20/1962 with a TD of 6406' and PBD of 6295'. The well was perforated in the Abo at 6265'-6277' with 1,000 gallons of 20% HCl. In 5/1968 the well was perforated in the Abo at 6183'-88' and 6206'-13' w/ 2 JSPF and acidized with 1300 gallons of 28% HCl. In 10/30/1981 the production casing was perforated at 1608-1610' (which was identified to be TOC - verify) w/ 2 JSPF and squeezed with 400 sxs of Howco Lite and 200 sxs of class C cement (circulated to surface) to convert well from producer to water injection well. In 7/1982 the well was perforated in the Abo at 6226'-34' w/ 2 JSPF and acidized with 7500 gallons of 15% HCl. In 1/2018 the well failed a MIT (Mechanical Integrity Test). While pumping (1 bbl) down the injection string (tubing) and production casing annulus, pressure did not build and water was identified to be flowing from the production casing and surface casing annulus.

**WORKOVER SUMMARY:**

POOH w/ tubing and packer, RIH w/ wireline to identify TOC, run caliper log, perforate holes for cement. Pump cement and circulate to surface. Install new packer and injection string. Return to injection.

1/19/2018





AFE: 11-18-0077

#### PROCEDURE

1. MIRU WOR. PU on 2-7/8" 6.5 J-55 LTC IPC tubing and release packer. TOOH w/ tubing and packer while laying down. Send tubing to Permian Enterprises for inspection.
2. If a point of failure on the tubing is identified, denote joint# in talley or approximate depth of failure and location (pin, collar, etc) in Well View report.
3. MIRU hydraulic catwalk, reverse unit, and power swivel. Unload and talley WS. TIH to PBTD w/ bit, casing scraper, and WS while hydro-testing to 5000 psi. TOOH while standing back.
4. MIRU WL unit and RIH with gauge ring to 6,100'. POOH with gauge ring. RIH w/ CBL logging to 6100', POOH. RIH w/ caliper log to 6100', POOH w/ caliper log.
5. TOC was previously noted at +/-1620'. However, verify based on new CBL log.
6. Correlate w/ GR/CCL and set RBP (unless caliper log shows significant damage) via WL at bottom of hole +/- 6100 where the CBL shows a strong bond. POOH. RIH w/ bailer and spot 5'-10' of sand on RBP.
7. TIH w/ 2-7/8" x 5-1/2" tension set test packer and 2-7/8" WS and set 30' above CIBP. Pump down tubing and test to 500 psi to ensure CIBP is holding. Isolate leak as necessary. Note; previous squeezed perforations are at 1608'.
8. Position test packer above suspected leak, open surface casing valve, and pump fresh water down tubing in attempt to establish circulation. Note rate and pressures. After establishing rate, SI surface casing valve and continue pumping to determine what pressure to expect while squeezing.
9. TOOH with 2-7/8" WS and test PKR while standing in the derrick. Contact engineer with location of hole.
10. TIH w/ cement retainer and 2-7/8" WS. Set retainer +/-20' above top of casing leak.
11. Load and test casing to 300 psi, hold for 5 minutes.
12. MIRU cement crew. Pressure test all lines to 5,000 psi. Pump squeeze job. Perform walking squeeze (hesitations). Leave enough cement in tubing to spot cement on top of cement retainer.
13. Sting out of cement retainer and reverse circulate the hole clean. TOOH with 2-7/8" WS.
14. SDFN before proceeding with next step to give cement time to cure.
15. TIH with rock bit, drill collars, and 2-7/8" WS to cement retainer and cement. Start rotating. TOOH.
16. Continue drilling until there is no resistance pull up 50' above cement retainer and pump down the casing. Pressure up to 300 psi for 15 minutes to verify squeeze job was successful. If pressure does not hold, contact Engineer.

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**AFE: 11-18-0077**

17. TIH with skirted overshot to reverse circulate on top of RBP to remove sand and cement debris from RBP. Continue until clean returns are observed.
18. Latch RBP with overshot and POOH with RBP and 2-7/8" WS while laying down.
19. Unload, tally, clean, and inspect +/- 6,200' of 2-7/8" 6.5# J-55 LTC IPC tubing.
20. TIH w/ 2-7/8" x 5-1/2" packer, on/off tool, and 2-7/8" IPC tubing.

**NOTES:** Leave thread protectors until joint has been picked up in elevators. Removed thread protectors and re-inspect coating. Inspect all connections and replace joint if necessary. Use stabbing guide while making connections

21. Pump backside capacity full of packer fluid w/ corrosion inhibitor and oxygen scavenger.
22. Set top of packer at +/- 6,100' and land tubing with compression at packer. Top off backside with packer fluid.
23. ND BOP and NU tree. Test annulus to 500 psi and hold for 30 minutes. Record test. Bleed off pressure. Report results to engineer.
24. Schedule MIT with NMOCD. RDMO.

1/19/2018

GL=3633'  
KB=3643'  
Spud: 12/8/61

## Apache Corporation – Empire Abo Unit #B-48

### Wellbore Diagram - Current Status

Date : 8/3/2011

API: 30-015-03195

Surface Location R. Taylor



2310' FNL & 990' FEL, Unit  
Sec 30, T17S, R29E, Eddy County, NM

Hole Size  
=11"

Hole Size  
=7-7/8"

Surface Casing  
8-5/8" @ 753' w/ 225 sx to surface

7/82: Perf csg 1608'-1610' w/ 2 JSPF  
SQ'd 400 sx Howco Lite and 200 sx Cl C cmt  
Circ to surface

7/82 CTI

3/02: Baker lockset pkr @ 6055'

5/68: Perf Upper Abo @ 6183'-6188' & 6206'-6213' w/ 2 JSPF  
Acidized w/ 1300 gals 28% acid  
4/81: Acidize w/ 7500 gals 15% HCl  
7/82: Acidize w/ 7500 gals 15% LSTNE-FE

7/82: Perf Abo @ 6226'-6234' w/ 2 JSPF  
Acidize w/ 7500 gals 15% LSTNE-FE

12/61: Perf Abo 6265' - 6277'  
Acidize 6265'-6277' w/ 1000 gals 20% HCl

Production Casing  
5-1/2" 15.5# ST&C @ 6306' w/566 sxs

PBTD = 6295'  
TD = 6306'