			OCD Artesi	а			
Forn 3160 - 3 (April 2004)				α		APPROVED No. 1004-0137	
(April 2004)	UNITED ST	ATES			. Expires	March 31, 2007	·
	DEPARTMENT OF 1	THE INTERIO			5. Lease Serial No. NMLC-02939		TES
	BUREAU OF LAND				6. If Indian, Allote		TC3
	APPLICATION FOR PERMIT		OR REENTER		-	, 	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
la. Type of work:		REENTER			7. If Unit or CA Ag	reement, Nam	e and No.
lb. Type of Well:	Gas Well Gas Well Other		Single Zone Mul	ltiple Zone	8. Lease Name and LEE FEDER	Well No. AL #73 (308720>
2. Name of Operat	or APACHE CORPORATION		< \$13	? >	9. API Well No. 30-015-	+///	3
3a. Address 303 MID	VETERANS AIRPARK LN #3000 LAND, TX 79705		No. (include area code) -818-1167		10. Field and Pool, or CEDAR LAK		296831>
	(Report location clearly and in accordance	k			11. Sec., T. R. M. or		·····-
At surface At proposed pro-	1570' FSL & 465' FEL				SEC: 20 T1	75 R31E	
	and direction from nearest town or post offi	ice*			12. County or Parish		3. State
	AST OF LOCO HILLS, NM				EDDY		NM
 Distance from pro- location to neares property or lease 	st line, ft.		of acres in lease		ng Unit dedicated to this	well	
(Also to nearest c	drig. unit line, if any)		5 ACRES		O ACRES		<u></u>
 Distance from pro to nearest well, dr applied for, on this 	rilling, completed.	650	osed Depth 10'		BIA Bond No. on file (-CO-1463 / NMB000)736	
	w whether DF, KDB, RT, GL etc.)		oximate date work will s		23. Estimated duration	on	
^{3746'} - GI	<u> </u>	AS	Soon As Ar	proved	~10 DAYS		
			ttachments				
The following, comple	eted in accordance with the requirements of	Onshore Oil and O	Gas Order No.1, shall be	attached to the	is form:		
1. Well plat certified	by a registered surveyor.		4. Bond to cover	the operatio	ns unless covered by an	n existing bon	d on file (see
2. A Drilling Plan.			Item 20 above	, ·			
3. A Surface Use Pla SUPO shall be file	an (if the location is on National Forest S ed with the appropriate Forest Service Offic	System Lands, the ce).		te specific inf	ormation and/or plans a	is may be requ	ired by the
25. Signature	V - P 10	Na	me (Printed/Typed)			Date	-11-
îitle	Sorina & Floro		SORINA L. FLOI	RES		12/2	<u>112</u>
	OF DRILLING SERVICES						
Approved by (Signatur		Na	me (Printed/Typed)	s/ Don P	otoroon	Date	- 8 2013
itle E16	/s/ Don Peterson	Of	lice			<u> </u> FEB	- 8 2013
					CARLSBAD FIELD		
onduct operations the	does not warrant or certify that the applica ereon. al, if any, are attached.	int holds legal or e	quitable title to those rig	ghts in the sub	•	••	
Conditions of approve		e it a crime for an	y person knowingly and er within its jurisdiction.	willfully to n			MOYEARS
itle 18 U.S.C. Section	1 1001 and Title 43 U.S.C. Section 1212, make ous or fraudulent statements or representati	ions as to any matt					
itle 18 U.S.C. Section tates any false, fictiti	ous or fraudulent statements or representati	ions as to any matt					
itle 18 U.S.C. Section	ous or fraudulent statements or representati	ions as to any matt	<u></u>		Approval Su	bject to Ge	eneral Requirement
itle 18 U.S.C. Section tates any false, fictifi- (Instructions on pag	ous or fraudulent statements or representati	ions as to any matt			Approval Sul & Spec	bject to Ge ial Stipula	eneral Requireme tions Attached
itle 18 U.S.C. Section tates any false, fictifi (Instructions on pag	ous or fraudulent statements or representative 2)	REC	CEIVED 3 1 2 2013		Approval Sul & Spec	bject to Ge ial Stipula	eneral Requirementions Attached

ы.

13-290



600

3765.9

3755.1

12641

Eldson

Garxý

R TWINING TWSC W.O.: 12.11.0608

Vumber

AF/DSR

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE 620 E. GREENE STREET CARLSBAD, NM 88220

OPERATOR CERTIFICATION

I HEARBY CERTIFY THAT I, OR SOMEONE UNDER MY DIRECT SUPERVISION, HAVE INSPECTED THE DRILL SITE AND ACCESS ROUTE PROPOSED HEREIN; THAT I AM FAMILIAR WITH THE CONDITIONS WHICH CURRENTLY EXIST; THAT I HAVE FULL KNOWLEDGE OF STATE AND FEDERAL laws applicable to this operation; that the statements made in the APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this	day of			
Well: LEE F	EDERAL #73			
Operator Name:	APACHE CORPORATION			
Signature:	Printed Name: BARRY GREEN			
Title: Drilling Engineer	Date: 12/26/2012			
Email (optional):	barry.green@apachecorp.com			
Street or Box:	303 Veterans Airpark Ln., Ste. 3000			
City, State, Zip Code:	Midland, TX 79705			
Telephone:	432-818-1059			
Field Representative (if not above signatory):				
Address (if different from above):				
Telephone (if different from above):				
Email (optional):				

Agents not directly employed by the operator must submit a letter from the operator authorizing that the agent to act or file this application on their behalf.

DRILLING PLAN: BLM COMPLIANCE

(Supplement to BLM 3160-3)

APACHE CORPORATION (OGRID: 873) LEE FEDERAL #73

Lease #: NMLC-029395B Projected TD: 6500' GL: 3746' 1570' FSL & 465' FEL UL: I Sec: 20 T17S R31E EDDY COUNTY, NM

1. GEOLOGIC NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits

2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Quaternary Aeolian	Surface	Queen	2387′ (Oil)
Rustler	265'	Grayburg	2734' (Oil)
Salt Top	496'	San Andres	3114' (Oil)
Salt Bottom	1319'	Glorieta	4636'
Yates	1474'	Yeso	4756' (Oil)
Seven Rivers	1768' (Oil)	TD	6500'

Depth to Ground Water: 91'

All fresh water & prospectively valuable minerals, as described by BLM, encountered during drilling, will be recorded by depth and adequately protected. All oil & gas shows within zones of correlative rights will be tested to determine commercial potential. The surface fresh water sands will be protected by setting 13-3/8" csg @ 300' & circ cmt back to surface. All intervals will be isolated by setting 5-1/2" csg to TD & circ cmt above the base of 8-5/8" csg.

3. CASING PROGRAM: All casing is new & API approved

HOLE SIZE	DEPTH	OD CSG	WEIGHT	COLLAR	GRADE	COLLAPSE	BURST	TENSION
17-1/2″	0'-300'345	13-3/8"	48#	STC	H-40	1.125	1.0	1.8
11″	0'-3500'	8-5/8″	32#	STC	J-55	1.125	1.0	1.8
7-7/8″	0'-6500'	5-1/2"	17#	LTC	J-55	1.125	1.0	1.8

4. CEMENT PROGRAM:

A. <u>13-3/8" Surface (100% excess cmt to surf)</u>:

Lead: 370 sx Class C w/ 1% CaCl2 + 0.25% R38 (14.8 wt, 1.34 yld) Comp Strengths : **12 hr** – 813 psi **24 hr** – 1205 psi

B. <u>8-5/8" Intermediate (100% excess cmt to surface):</u>

Lead: 800 sx (35:65) Poz C w/ 6% Bentonite + 5% Salt + 0.25% R38 (12.4wt, 2.1 yld) Compressive Strengths: **12 hr** - 589 psi **24 hr** - 947 psi

<u>Tail:</u> 210 sx Class C w/0.25% R38 (14.8 wt, 1.34 yld) Compressive Strengths: **12 hr** – 813 psi **24 hr** – 1205 psi

C. <u>5-1/2" Production (TOC ~ 500' from surface / 30% excess cmt):</u>

Lead: 330 sx (35:65) Poz C w/ 5% Salt + 0.25% R38 + 6% Bentonite (12.4 wt, 2.1 yld) Compressive Strengths: **12 hr** – 589 psi **24 hr** – 947 psi

<u>Tail:</u> 540 sx (50:50) Poz C w/ 5% Salt + 0.25% R38 + 2% Bentonite (14.2 wt, 1.28 yld) Compressive Strengths: **12 hr** – 1379 psi **24 psi** – 2332 psi

**** The above cmt volumes could be revised pending caliper measurement from open hole logs.** For Surface csg: If cmt does not circ to surface, the appropriate BLM office shall be notified, TOC shall be determined by running a temperature log, operator will propose a remediation method & request BLM approval.

*** Known water flow in the area. If water flow is encountered, Apache may 2-stage Intermediate csg. A DVT may be used in the 8-5/8" Intermediate csg. An ECP may be placed below DVT. TD of the 11" hole at +/- 3500'. Assuming DVT set at +/- 1800', the following cmt will be used: Cmt 1st Stage w/ +/- 670 sx Cl C (14.8#, 1.33 yld) Cmt 2nd Stage w/ +/- 800sx Cl C (14.8#, 1.33 yld)

If DVT is set at a different depth, cmt volumes will be adjusted accordingly.

5. PROPOSED CONTROL EQUIPMENT

"EXHIBIT 3" shows an 11" 3M psi WP BOP consisting of an annular bag type preventer, middle blind rams, bottom pipe rams. The BOP will be nippled up on the 13-3/8" surface csg and tested to 70% of casing burst. After intermediate casing is set & cemented an 11" 3M spool & BOP will be installed on the 8 5/8" casing & utilized continuously until TD is reached. The BOP will be tested at 2000 psi (maximum surface pressure is not expected to exceed 2M psi). BHP is calculated to be approximately 2860 psi. *All BOP's and associated equipment will be tested as per BLM *Drilling Operations Order #2*. The BOP will be operated and checked each 24 hr period & the blind rams will be operated & checked when the drill pipe is out of the hole. Functional tests will be documented on the daily driller's log. *"EXHIBIT 3"* also shows a 3M psi choke manifold with a 3" blow down line. Full opening stabbing valve & Kelly cock will be on derrick floor in case of need. No abnormal pressures or temperatures are expected in this well. No nearby wells have encountered any well control problems.

6. PROPOSED MUD CIRCULATION SYSTEM: (Closed Loop System)

INTERVAL	MW (ppg)	VISC (sec/qt)	FLUID LOSS (cc)	MUD TYPE	
0'-300 345	8.4	29	NC .	Fresh Water	
200' to 3500'	9.8 - 10.0	29	NC	Brine	
3500' - 6500'	8.9 - 9.0	29	NC	Cut Brine	

** Visual mud monitoring equipment shall be in place to detect volume changes. A mud test shall be performed every 24 hrs after mudding up to determine, as applicable: density, visc, gel strength, filtration, and pH. The necessary mud products for weight addition & fluid loss control will be on location at all times. In order to run open hole logs & casing, the above mud properties may have to be altered to meet these needs.

7. AUXILIARY WELL CONTROL EQUIPMENT / MONITORING EQUIPMENT:

11" x 3000 psi Double BOP/Blind & pipe ram (3M BOP/BOPE to be used as 2M system) 4-1/2" x 3000 psi Kelly valve

11" x 3000 psi mud cross – H2S detector on production hole

Gate-type safety valve 3" choke line from BOP to manifold

2" adjustable chokes – 3" blow down line

Fill up line as per Onshore Order 2

8. LOGGING, CORING & TESTING PROGRAM: See COTA

- A. OH logs: Dual Laterolog, MSFL, CNL, Litho-Density, Gamma Ray, Caliper & Sonic from TD back to 8-5/8" csg shoe.
- B. Run CNL, Gamma Ray from 8-5/8" csg shoe back to surface.
- C. No cores, DST's or mud logger are planned at this time.
- **D.** Additional testing will be initiated subsequent to setting the 5-1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows & drill stem tests.

9. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered, however, the proposed mud program will be modified to increase the mud-weight. There is known presence of H_2S in this area. If H_2S is encountered the operator will comply with the provisions of *Onshore Oil & Gas Order No. 6.* All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated <u>BHP: 2860 psi</u> and estimated <u>BHT: 115°.</u>

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

Road and location construction will begin after BLM has approved APD. Anticipated spud date will be as soon after BLM approval and as soon as rig will be available. Move in operations and drilling is expected to take approx <u>10 days</u>. If production casing is run then an additional <u>90 days</u> will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

11. OTHER FACETS OF OPERATION:

After running csg, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Cedar Lake; Glorieta-Yeso formation will be perforated and stimulated in order to establish production. The well will be swab tested & potentialed as an oil well.







HYDROGEN SULFIDE (H2S) DRILLING OPERATIONS PLAN

Hydrogen Sulfide Training:

<u>All regularly assigned personnel, contracted or employed by Apache Corporation</u> will receive training from qualified instructor(s) in the following areas prior to commencing drilling possible hydrogen sulfide bearing formations in this well:

- The hazards and characteristics of hydrogen sulfide (H₂S)
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of H₂S detectors, alarms, warning systems, briefing area, evacuation procedures & prevailing winds.
- The proper techniques for first aid and rescue procedures.

Supervisory personnel will be trained in the following areas:

- The effects of H₂S on metal components. If high tensile tubulars are to be utilized, personnel will be trained in their special maintenance requirements.
- Corrective action & shut-in procedures when drilling or reworking a well & blowout prevention / well control procedures.
- The contents and requirements of the H₂S Drilling Operations Plan

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500') and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received proper training.

H₂S SAFETY EQUIPMENT AND SYSTEMS:

Well Control Equipment that will be available & installed if H₂S is encountered:

- Flare Line with electronic igniter or continuous pilot.
- Choke manifold with a minimum of one remote choke.
- Blind rams & pipe rams to accommodate all pipe sizes with properly sized closing unit.
- Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head & flare gun with flares

Protective Equipment for Essential Personnel:

• Mark II Survive-air 30 minute units located in dog house & at briefing areas, as indicated on wellsite diagram.

H2S Dection and Monitoring Equipment:

- Two portable H₂S monitors positioned on location for best coverage & response. These units have warning lights & audible sirens when H₂S levels of 20 ppm are reached.
- One portable H₂S monitor positioned near flare line.

H2S Visual Warning Systems:

- Wind direction indicators are shown on wellsite diagram.
- Caution / Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. *"EXHIBIT 7"*

Mud Program:

- The Mud Program has been designed to minimize the volume of H₂S circulated to the surface. Proper mud weights, safe drilling practices & the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.
- A mud-gas separator and H₂S gas buster will be utilized as needed.

Metallurgy:

- All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold & lines, & valves will be suitable for H₂S service.
- All elastomers used for packing & seals shall be H₂S trim.

Communication:

• Cellular telephone and 2-way radio communications in company vehicles, rig floor and mud logging trailer.

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operators and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the :
 - \circ Detection of H₂S, and
 - o Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Common Chemical Specific Threshold Hazardous Lethal Formula Gravity Name Limit Limit Concentration Hydrogen 1.189 Air = 110 ppm 100 ppm/hr mag 006 H₂S Sulfide Sulfur Dioxide SO_2 2.21 Air = I 2 ppm N/A 1000 ppm

Characteristics of H₂S and SO₂

Contacting Authorities

Apache Corporation personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Apache's response must be in coordination with the State of New Mexico's *"Hazardous Materials Emergency Response Plan" (HMER).*

WELL CONTROL EMERGENCY RESPONSE PLAN

I. <u>GENERAL PHILOSOPHY</u>

Our objective is to ensure that during an emergency, a predetermined procedure is followed so that prompt decisions can be made based on accurate information.

The best way to handle and emergency is with an experienced organization set up for the sole purpose of solving the problem. The *Well Control Emergency Response Team* was organized to handle dangerous & expensive well control problems. The *Team* is structured such that each individual can contribute the most from his area of expertise. Key decision-makers are determined prior to an emergency to avoid confusion about who is in charge.

If the well is flowing uncontrolled at the surface or subsurface, *The Emergency Response Team* will be mobilized. The *Team* is customized for the people currently on the Apache staff. Staff changes may require a change in the plan.

II. EMERGENCY PROCEDURE ON DRILLING OR COMPLETION OPERATIONS

A. In the event of an emergency the *Drilling Foreman or Tool-Pusher* will immediately contact only one of the following starting with the first name listed:

Name	Office	Mobile	Home
Danny Laman – Drlg Superintendent	432-818-1022	432-634-0288	432-520-3528
Barry Green – Drilling Engineer	432-818-1059	214-923-2528	
Bobby Smith – Drilling Manager	432-818-1020	432-556-7701	
Jeff Burt – EH&S Coordinator		432-631-9081	

**This one phone call will free the Drilling Foreman to devote his full time to securing the safety of personnel &. equipment. This call will initiate the process to mobilize the Well Control Emergency Response Team. Apache maintains an Emergency Telephone Conference Room in the Houston office. This room is available for us by the Permian Region. The room has 50 separate telephone lines.

- **B.** The Apache employee contacted by the Drilling Foreman will begin contacting the rest of the *Team*. If **Danny Laman** is out of contact, **Terry West** will be notified.
- **C.** If a member of the *Emergency Response Team* is away from the job, he must be available for call back. Telephone numbers should be left with secretaries or a key decision-maker.
- **D.** Apache's reporting procedure for spills or releases of oil or hazardous materials will be implemented when spills or releases have occurred or are probable.

SHERIFF DEPARTMENT	
Eddy County	575-887-7551
Lea County	575-396-3611
FIRE DEPARTMENT	911
Artesia	575-746-5050
Carlsbad	575-885-2111
Eunice	575-394-2111
Hobbs	575-397-9308
Jal	575-395-2221
Lovington	575-396-2359
HOSPITALS	911
	575-746-5050
Artesia Medical Emergency	5/5 / 40 5050
Carlsbad Medical Emergency	575-885-2111
Carlsbad Medical Emergency	575-885-2111
Carlsbad Medical Emergency Eunice Medical Emergency	575-885-2111 575-394-2112
Carlsbad Medical Emergency Eunice Medical Emergency Hobbs Medical Emergency	575-885-2111 575-394-2112 575-397-9308
Carlsbad Medical Emergency Eunice Medical Emergency Hobbs Medical Emergency Jal Medical Emergency	575-885-2111 575-394-2112 575-397-9308 575-395-2221
Carlsbad Medical Emergency Eunice Medical Emergency Hobbs Medical Emergency Jal Medical Emergency Lovington Medical Emergency	575-885-2111 575-394-2112 575-397-9308 575-395-2221

EMERGENCY RESPONSE NUMBERS:

EXHIBIT #7





PECOS DISTRICT CONDITIONS OF APPROVAL

	OPERATOR'S NAME:	APACHE CORPORATION	
	LEASE NO.:	LC029395B	
	WELL NAME & NO.:	73-LEE FEDERAL	
SU	URFACE HOLE FOOTAGE:	1570' FSL & 465' FEL	
I	BOTTOM HOLE FOOTAGE		
	LOCATION:	Section 20, T. 17 S., R 31 E., NMPM	
	COUNTY:	Eddy County, New Mexico	

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

General	l Provisions

Permit Expiration

] Archaeology, Paleontology, and Historical Sites

Noxious Weeds

Special Requirements

Lesser Prairie-Chicken Timing Stipulations

Ground-level Abandoned Well Marker

Construction

Notification

Topsoil

Closed Loop System

Federal Mineral Material Pits

Well Pads

Roads

Road Section Diagram

🔀 Drilling

H₂S Requirements-Onshore Order #6

Logging Requirements

Waste Material and Fluids

Production (Post Drilling)

Well Structures & Facilities

Pipelines

Interim Reclamation

Final Abandonment & Reclamation