OCD-ARTESIA

Form 3160-3 FORM APPROVED (April 2004) OMB No 1004-0137 Expires March 31, 2007 UNITED STATES Lease Serial No. DEPARTMENT OF THE INTERIOR NMLC-029435B BUREAU OF LAND MANAGEMENT 6. If Indian, Allotee or Tribe Name APPLICATION FOR PERMIT TO DRILL OR REENTER 7 If Unit or CA Agreement, Name and No. **V** DRILL la. Type of work: REENTER 8. Lease Name and Well No. ✓ Oil Well Gas Well Other ✓ Single Zone lb. Type of Well: Multiple Zone NFE FEDERAL #27H <308724> Name of Operator 9. API Well No. APACHE CORPORATION 8137 30-015 3b. Phone No. (include area code) 3a. Address 303 VETERANS AIRPARK LN #3000 10. Field and Pool, or Exploratory MIDLAND, TX 79705 CEDAR LAKE; GLORIETA-YESO 432-818-1167 11 Sec., T. R. M. or Blk. and Survey or Area Location of Well (Report location clearly and in accordance with any State requirements*) 2063' FNL & 220' FWL At surface UL: E SEC: 8 T17S R31E At proposed prod zone 2063' FNL & 330' FEL 12. County or Parish 13. State 14. Distance in miles and direction from nearest town or post office* APPROX 6.6 MILES NORTHEAST OF LOCO HILLS, NM **EDDY** NM Distance from proposed' 17. Spacing Unit dedicated to this well 16. No. of acres in lease 15. location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) **1885 ACRES** 160 ACRES 20. BLM/BIA Bond No. on file 19. Proposed Depth 18. Distance from proposed location* to nearest well, drilling, completed, TVD ~ 5960' ~175 BLM - CO - 1463 NATIONWIDE applied for, on this lease, ft. MD ~ 10368' 22 Approximate date work will start* 23 Estimated duration Elevations (Show whether DF, KDB, RT, GL, etc.) 3727' ~ 25 DAYS AS SOON AS APPROVE 24. Attachments The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form: 1. Well plat certified by a registered surveyor. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 2. A Drilling Plan. 3. A Surface Use Plan (If the location is on National Forest System Lands, the Operator certification SUPO shall be filed with the appropriate Forest Service Office) Such other site specific information and/or plans as may be required by the authorized officer. 25. Signature Name (Printed/Typed) SORINA L FLORES Title SUPV OF DRILLING SERVICES Tentos A. Amos Approved by (Signature) Name (Printed/Type Tancs A. Amos Date JUL 1 0 2012 Title Office CARLSBAD FIELD OFFICE FIELD MANAGER Application approval 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. APPROVAL FOR TWO YEARS Conditions of approval, if any, are attached 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)

Roswell Controlled Water Basin

JUL 1 2 2012

NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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 24 day of APRIL, 2012
Well: NFE FEDERAL 27H
Operator Name: APACHE CORPORATION
Signature: Printed Name: TERRY WEST
Title: <u>Drilling Engineer</u> Date: 4-24-12
Email (optional): terry.west@apachecorp.com
Street or Box: 303 Veterans Airpark Ln., Ste. 3000
City, State, Zip Code: Midland, TX 79705
Telephone: 432-818-1114
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.

DISTRICT I
1625 N French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax. (575) 748-9720
DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

1220 S St. Francis Dr , Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

DISTRICT IV

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

□ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-015	PI Number	470	96	Pool Code	C	edar L	Pool Name	nrieta-	Yeso_
Property C	ode				Property Nam NFE FEDER	e			ell Number
30873	14 1				27H				
OGRID 1	No.		·		Operator Nam	е]	Elevation
873	3			APAC	CHE CORPO	DRATION			3727'
					Surface Locati	ion			
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	8	17-S	31-E		2063	NORTH	220	WEST	EDDY

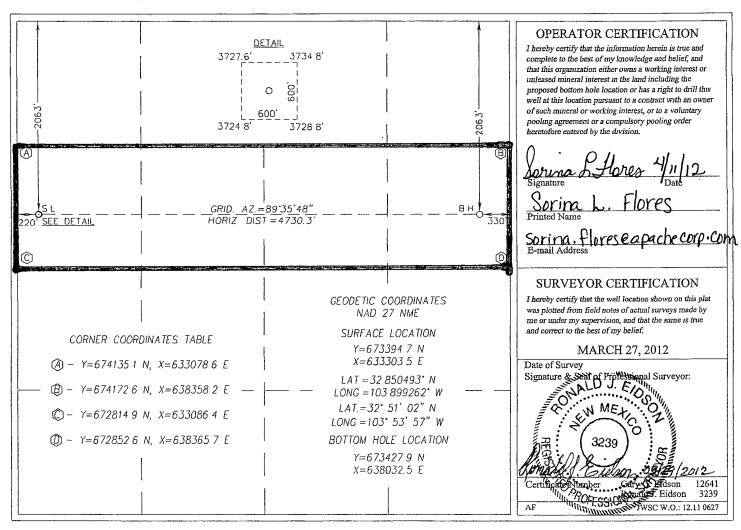
UL or lot No. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County 8 17-S 31-E 2063 NORTH 330 **EAST EDDY**

Bottom Hole Location If Different From Surface

Deducated Acres Joint or Infill Consolidation Code Order No.

10368 7/10

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



DRILLING PLAN: BLM COMPLIANCE (Supplement to BLM 3160-3)

APACHE CORPORATION (OGRID: 873) NFE FEDERAL #27H

Lease #: NMLC-029435B Projected TVD: ~5960' MD: ~10368' GL: 3727' SHL: 2063' FNL & 220' FWL UL: E BHL: 2063' FNL & 330' FEL UL: H

SEC: 8 T17S R31E EDDY COUNTY, NM

1. GEOLOGIC NAME OF SURFACE FORMATION: Eolian/Piedmond Alluvial Deposits

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

Quaternary Aeolian	Surf	Queen 2412'	
Rustler	421'	Grayburg 2819'	
Salt Top	502′	San Andres 3136' (O	il)
Salt Bottom	1346′	Glorieta 4611'	
Yates	1522'	Yeso (Paddock) 4675' (O	il)
Seven Rivers	1799'	TD TVD ~59	60' MD ~10368'

Avg Depth to Ground Water: ~91'

Fresh water & prospectively valuable minerals, as described by BLM, encountered during drilling, will be recorded by depth & adequately protected. All oil & gas shows within zones of correlative rights will be tested to determine commercial potential. Surface fresh water sands will be protected by setting 13-3/8" csg @ 450' & circ cmt back to surface. Hydrocarbon zones will be protected by setting 9-5/8" csg @ $^{\sim}$ 3500', if water flow is encountered, then 7" @ $^{\sim}$ 5415'; and a 4-1/2" liner from the 7" csg though the KOP @ $^{\sim}$ 5415'; the curve & on to TD @ $^{\sim}$ 10368' MD.

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

STRING	HOLE SIZE	DEPTH	OD CSG	WEIGHT	COLLAR	GRADE	COLLAPSE	BURST	TENSION
Surface	17-1/2"	0' – 450'	13-3/8"	48#	STC	H-40	1.125	1.0	1.8
Intermediate *	12-1/4"	0′-3500′	9-5/8"	36#	STC	J-55	1.125	1.21	1.8
Production	8-3/4"	0'-5415'	7"	26#	LTC	J-55	1.125	1.21	1.8
Production Liner	6-1/8"	4315' 10369'	4.5"	11.6#	LTC	L-80	1.125	1.21	1.8

^{*}Contingency: 9-5/8" string will only be ran if water flows are encountered.

4. CEMENT PROGRAM:

A. Surface (TOC - Surface) **100% excess cmt to surf** Cmt with:

<u>Lead</u>: 170 sx Class H 50/50 w/10% Gel + 0.5# Star Seal + 0.25% De-foamer + 3% Salt (11.9 wt, 2.31 yld)

Compressive Strengths: 12 hr - 589 psi 24 hr - 947 psi

<u>Tail:</u> 250 sx Class C w/ 0.25% De-foamer (14.8 wt, 1.33 yld) *Compressive Strengths:* **12** hr – 813 psi **24** hr – 1205 psi

B. Intermediate (TOC - Surface) **50% excess cmt to surf**. Cmt with:

Lead: 550 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% De-foamer (11.9 wt, 2.24 yld)

Compressive Strengths: 12 hr - 540 psi 24 hr - 866 psi

Tail: 380 sx Class C w/ 0.25% De-foamer (14.8 wt, 1.34 yld)

Compressive Strengths: 12 hr - 813 psi 24 hr - 1205 psi

-(May use a DVT & modify cmt program for a 2 stage job, if strong water flow is encountered) Not approved for DV Toul

C. Production (TOC: ~500' from surface) **35% excess cmt** Cmt with:

<u>Lead</u>: 270 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% Defoamer (11.9 wt, 2.24 yld)

Compressive Strengths: 12 hr - 540 psi 24 hr - 866 psi

<u>Tail:</u> 460 sx Class C w/1% CaCL + 0.25% De-foamer (14.8 wt, 1.34 yld)

Compressive Strengths: **12 hr** – 813 psi **24 psi** – 1205 psi

*Contingency: If 9-5/8" string is not ran, the following cmt program will be used for the Production string & will bring cmt to surface using 35% excess:

<u>Lead</u>: 1239 sx Class H 50/50 w/10% Gel + 2# Star Seal + 0.25% Defoamer (11.9 wt, 2.24 yld) Compressive Strengths: **12** hr - 540 psi **24** hr - 866 psi

<u>Tail:</u> 201 sx Class C w/1% CaCL + 0.25% De-foamer (14.8 wt, 1.34 yld) Compressive Strengths: **12 hr** – 813 psi **24 psi** – 1205 psi

D. Apache proposes to run a multiple packer system on the 4-1/2" production liner which will tie back into the 7" string (No cmt will be used).

5. PROPOSED CONTROL EQUIPMENT

"EXHIBIT 3" shows a 13-5/8" 3M psi WP BOP consisting of at least annular bag type preventer. This BOP will be nippled up on the 13-3/8" surface csg head & tested to 70% of casing burst. After the 9-5/8" intermediate csg is set & cemented (or after the 7" string, if the 9-5/8" casing isn't ran), either a 13-5/8" or an 11" 3M BOP consisting of an annular bag type preventer, middle blind rams and bottom pipe rams will be installed in place of the original BOP & 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 2376 psi. *All BOP's & associated equipment will be tested as per BLM Drilling Operations Order #2. The BOP will be operated & checked each 24 hr period & 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 of temperatures are expected in this well. No nearby wells have encountered any problems.

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

INTERVAL	MW (ppg)	VISC (sec/qt)	FLUID LOSS (cc)	MUD TYPE
0' -450'	8.6 - 8.8	28 – 30	NC	FW
450' to 3500'	9.8 – 10.0	28 – 34	NC	Brine
3500' - 5415'	8.6 - 9.1	28 – 36	NC	FW/Brine
5415' – 10369'	8.6 - 9.1	28 – 40	15 - NC	FW/Brine

^{*} Contingency: If 9-5/8" string is not run, these mud properties will be continued to the next casing seat instead of those indicated on the next line..

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 COA

- **A.** OH logs: Dual Laterolog, MSFL, CNL, Litho-Density, Gamma Ray, Caliper & Sonic from TD back to last 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.

^{**} 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. The top of cement shall be determined by either a temperature survey or by tagging, as directed by the BLM for the specific set of circumstances. Cement will then be brought to surface via either 1" or ready mix operations, as specified by the BLM at that time.

^{**} The necessary mud products for weight addition and 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.

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 H₂S in this area. If H₂S is encountered the operator will comply with the provisions of *Onshore Oil & Gas Order No. 6*. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 2622 psi and estimated BHT: 115°.

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 Santa Fe and BLM approval and as soon as rig will be available. Move in operations and drilling is expected to take ~ 10 days. If production casing is run then an additional 90 days 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.



Apache Corporation

Eddy County, NM NFE Federal 27H Job # 1210329

Wellbore #1

Plan: Plan#2 041812

Standard Survey Report

18 April, 2012





Survey Report



Company: Apache Corporation Project: Eddy County, NM Site: NFE Federal 27H Well: Job # 1210329 Wellbore: Wellbore #1

Local Co-ordinate Reference: TVD Reference: MD Rèference:

North Reference: Survey Calculation Method: Database:

Well Job # 1210329

WELL @ 3740 00usft (Original Well Elev) WELL @ 3740 00usft (Original Well Elev)

Minimum Curvature GCR DB v5000

Project

Design:

Eddy County, NM

Plan#2 041812

Map System: Geo Datum:

US State Plane 1927 (Exact solution)

NAD 1927 (NADCON CONUS)

System Datum:

Mean Sea Level

Map Zone:

New Mexico East 3001

Site NFE Federal 27H

Site Position: From:

Northing:

673,394.70 usft

Latitude: Longitude:

32° 51' 1.7767 N 103° 53' 57 3434 W

Position Uncertainty:

Мар

Easting: Slot Radius: 633,303.50 usft 13-3/16 "

Grid Convergence:

0.24°

Well Position

Well

Job # 1210329 +N/-S

0.00 usft 0 00 usft

0.00 usft

Northing: Easting:

673,394.70 usft 633,303.50 usft Latitude: Longitude:

32° 51' 1.7767 N 103° 53' 57 3434 W

Position Uncertainty

+E/-W

0.00 usft

Wellhead Elevation:

13.00 usft

Ground Level:

3,727.00 usft

Wellbore Wellbore #1

Model Name

Plan#2 041812

Sample Date

Declination (°)

Dip Angle (°)

Field Strength (nT)

89.60

IGRF2010_14

04/17/12

0.00

7.68

60.69

48,871

Design **Audit Notes:**

Magnetics |

Version:

Phase:

PLAN

Tie On Depth:

0 00

0.00

Vertical Section:

Depth From (TVD) (usft)

+N/-S

(usft)

0.00

+E/-W (ustt)

Direction (°)

Survey Tool Program From

(usft)

0.00

To (usft) Date 04/18/12

Survey (Wellbore)

10,368 44 Plan#2 041812 (Wellbore #1)

Tool Name MWD

Description MWD - Standard

Planned Survey

	L								
Measured Depth (usft)	inclination (°)	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100uSft)	Turn Rate (°/100usft)
0.00	0 00	0 00	0.00	0.00	0 00	0.00	0.00	0.00	0 00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0 00	200.00	0.00	0.00	0.00	0.00	0 00	0.00
300 00	0 00	0.00	300.00	0 00	0.00	0.00	0 00	0.00	0.00
400.00	0.00	0.00	400.00	0 00	0.00	0.00	0.00	0.00	0.00
421.00	0.00	0.00	421.00	0.00	0 00	0.00	0.00	0.00	0.00
Rustler									
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0 00
502.00	0.00	0.00	502.00	0.00	0.00	0.00	0.00	0.00	0.00
T/Salt									



Survey Report



Company: Project:

Site: Well: Apache Corporation Eddy County, NM NFE Federal 27H Job # 1210329

Wellbore: Wellbore #1
Design: Plan#2 041812

Local Co-ordinate Reference:

TVD Reference:

MD Reference: North Reference:

Survey Calculation Method:

Database:

Well Job # 1210329

WELL @ 3740.00usft (Original Well Elev)
WELL @ 3740.00usft (Original Well Elev)

Grid

Minimum Curvature GCR DB v5000

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Raté	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
600 00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0 00	0 00	0.00	0.00	0.00	0 00
1,000.00	0 00	0.00	1,000.00	0 00	0 00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0 00	0.00	0.00	0.00	0 00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0 00	0 00	0.00
1,300 00	0.00	0.00	1,300.00	0.00	0 00	0.00	0.00	0.00	0.00
1,346 00	0.00	0.00	1,346.00	0.00	0 00	0.00	0.00	0.00	0 00
B/Salt	0.00	0.00	1,010.00	5.53	0.00	0.00	0.00	0.00	
1,400 00	0 00	0.00	1,400.00	0.00	0 00	0.00	0.00	0 00	0.00
1,500.00	0.00	0.00	1,500 00	0.00	0.00	0.00	0.00	0.00	0.00
1,522.00	0.00	0.00	1,522.00	0.00	0 00	0.00	0 00	0 00	0.00
Yates			•						
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700 00	0 00	0.00	0.00	0.00	0 00	0.00
1,799 00	0.00	0.00	1,799.00	0.00	0 00	0.00	0.00	0.00	0.00
Seven Rivers			.,						
1,800.00	0.00	0.00	1,800 00	0.00	0.00	0.00	0 00	0.00	0.00
1,900 00	0.00	0.00	1,900 00	0 00	0 00	0.00	0.00	0.00	0.00
2,000.00	0 00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0 00	0 00	0.00	0 00	0.00	0.00
2,200.00	0 00	0.00	2,200.00	0 00	0.00	0.00	0.00	0.00	0.00
2,300 00	0 00	0.00	2,300 00	0.00	0.00	0.00	0 00	0.00	0.00
2,400.00	0 00	0.00	2,400.00	0.00	0 00	0.00	0.00	0 00	0.00
2,412.00	0 00	0.00	2,412.00	0.00	0.00	0.00	0.00	0.00	0.00
Queen	0.00	0.00	2,112.00	3.00	0,00	0.00	3.55	3.33	0.00
2,500 00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0 00
2,600 00	0.00	0.00	2,600 00	0.00	0.00	0.00	0.00	0 00	0.00
2,700 00	0.00	0 00	2,700.00	0.00	0 00	0.00	0 00	0 00	0.00
2,800 00	0.00	0 00	2,800.00	0 00	0 00	0.00	0 00	0.00	0.00
2,819.00	0.00	0 00	2,819.00	0.00	0 00	0.00	0 00	0.00	0.00
Grayburg			,						
2,900.00	0.00	0 00	2,900 00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000 00	0.00	0.00	0.00	0.00	0 00	0.00
3,100.00	0.00	0 00	3,100.00	0.00	0.00	0.00	0.00	0.00	0 00
3,136.00	0.00	0 00	3,136.00	0 00	0 00	0.00	0.00	0.00	0.00
San Andres									
3,200 00	0 00	0.00	3,200.00	0.00	0.00	0.00	0.00	0 00	0.00
3,300.00	0 00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500 00	0 00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0 00	3,600 00	0 00	0.00	0.00	0.00	0.00	0.00



Survey Report



Company: Project: Site: Well:

Wellbore:

Apache Corporation Eddy County, NM NFE Federal 27H Job # 1210329 Wellbore #1 Local Co-ordinate Reference: TVD Reference: MD Reference:

North Reference: Survey Calculation Method: Well Job # 1210329

WELL @ 3740.00usft (Original Well Elev) WELL @ 3740.00usft (Original Well Elev)

Grid

Minimum Curvature

Design:	Plan#2 041812			Dătabase:	, ,		GCR DB v5000		
Planned Survey	· .								,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Measui Depti (usft	h Înçlination	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100ûsft)	Turn Rate (°/100usft)
3,80	00.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,90	00.00	0.00	3,900.00	0.00	0 00	0.00	0 00	0.00	0.00
4,00	00.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,10	00.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,20	0.00	0.00	4,200 00	0.00	0.00	0.00	0 00	0.00	0.00
4,30	00.00	0.00	4,300 00	0 00	0.00	0.00	0.00	0.00	0.00
4,40	0.00	0.00	4,400.00	0 00	0.00	0.00	0 00	0.00	0.00
4,50	0.00	0.00	4,500.00	0.00	0 00	0.00	0.00	0.00	0.00
4,60	00.00	0.00	4,600.00	0.00	0 00	0.00	0.00	0 00	0.00
4,61 Glorie	1.00 0.00 ta	0 00	4,611.00	0.00	0.00	0.00	0.00	0.00	0.00
4,67	75.00 0.00	0.00	4,675.00	0.00	0.00	0.00	0.00	0 00	0.00
Paddo	ock								
4,70	00.00	0.00	4,700 00	0.00	0.00	0.00	0.00	0 00	0.00
4,80	0.00	0.00	4,800.00	0 00	0.00	0.00	0.00	0.00	0.00
4,90	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0 00	0.00
5,00	0.00	0.00	5,000.00	0.00	0.00	0 00	0.00	0.00	0 00
5,10	00.00	0 00	5,100.00	0.00	0.00	0.00	0 00	0.00	0.00
•	64.00 0.00	0.00	5,164 00	0.00	0 00	0 00	0.00	0 00	0.00
	Blinebry								
	00.00	0.00	5,200.00	0.00	0.00	0 00	0.00	0.00	0.00
5,30	0.00	0.00	5,300.00	0.00	0.00	0 00	0.00	0.00	0.00
	0.00		5,400.00	0.00	0.00	0.00	0 00	0.00	0.00
	18.37 0.00	0.00	5,418 37	0.00	0.00	0.00	0.00	0.00	0.00
	Start Build 15.00								
•	00.00 12.24	89.60	5,499.38	0.06	8.69	8.69	15.00	15.00	0.00
•	17.44 19.36	89.60	5,545.00	0.15	21.60	21.60	15.00	15.00	0.00
	Blinebry 00.00 27.24	89.60	5,593.23	0.30	42.38	42.38	15.00	15.00	0 00
	00 00 42.24	89.60	5,675.17	0 70	99.20	99.21	15.00	15 00	0.00
	00.00 57 24	89 60	5,739.60	1.23	175.30	175.30	15 00	15.00	.0 00
	00 00 72 24	89 60	5,782.15	1.86	265 48	265.49	15 00	15.00	0 00
	00.00 87.24	89.60	5,799.90	2.55	363 60	363.61	15 00	15.00	0 00
•	04.37 87.90 Start 4364.07 hold at	89.60 6004.37 MD	5,800.08	2.58	367.97	367.97	15 00	15.00	0 00
		·	5,803.59	2.05	400 E0	460 54	0.00	0.00	0.00
	00.00 87.90			3.25	463.53	463 54	0.00	0.00	0.00
	0.00 87.90		5,807.25	3.96	563.46	563 47	0 00	0.00	0.00
	0.00 87.90		5,810.92	4.66	663 39	663 41	0.00	0.00	0.00
	00.00 87.90 00.00 87.90		5,814.58 5,818.25	5.36 6.06	763.32 863.25	763 34 863 27	0 00 0.00	0.00 0.00	0 00 0 00
	00.00 87.90		5,821.91	6.76	963.18	963.21	0 00	0 00	0 00
-	00.00 87.90		5,825 57	7.46	1,063.11	1,063.14	0.00	0.00	0.00
	00.00 87.90		5,829.24	8.17	1,163.04	1,163.07	0 00	0 00	0.00
	00.00 87.90		5,832.90	8.87	1,262.97	1,263.00	0.00	0.00	0.00
7,00	00.00 87.90	89 60	5,836 57	9.57	1,362 90	1,362 94	0.00	0.00	0 00



Survey Report



Company: Project: Site:

Wellbore:

Design:

Well:

Apache Corporation Eddy County, NM NFE Federal 27H Job # 1210329 Wellbore #1

Plan#2 041812

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Database:

Well Job # 1210329

WELL @ 3740.00usft (Original Well Elev)
WELL @ 3740.00usft (Original Well Elev)

Grid

Minimum Curvature GCR DB v5000

							_
ΡI	ап	ne	d	s	un	/61	v

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
						· · · · · · · · · · · · · · · · · · ·			
7,100.00	87.90	89.60	5,840.23	10.27	1,462.83	1,462 87	0.00	0.00	0 00
7,200.00	87.90	89.60	5,843.90	10.97	1,562.76	1,562.80	0.00	0.00	0.00
7,300.00	87.90	89.60	5,847.56	11 67	1,662.70	1,662.74	0.00	0.00	0 00
7,400.00	87.90	89.60	5,851.23	12.37	1,762 63	1,762.67	0.00	0.00	0.00
7,500.00	87.90	89 60	5,854.89	13.08	1,862 56	1,862.60	0 00	0 00	0.00
7,600.00	87.90	89.60	5,858.55	13.78	1,962.49	1,962.53	0.00	0 00	0.00
7,700.00	87.90	89.60	5,862 22	14.48	2,062.42	2,062 47	0.00	0.00	0.00
7,800.00	87.90	89.60	5,865.88	15.18	2,162.35	2,162.40	0.00	0 00	0 00
7,900.00	87.90	89 60	5,869.55	15.88	2,262.28	2,262.33	0.00	0.00	0.00
8,000.00	87.90	89.60	5,873.21	16.58	2,362 21	2,362.27	0.00	0.00	0.00
8,100.00	87.90	89.60	5,876.88	17.29	2,462.14	2,462.20	0.00	0.00	0.00
8,200.00	87.90	89.60	5,880 54	17.99	2,562.07	2,562.13	0.00	0.00	0.00
8,300.00	87.90	89.60	5,884.20	18.69	2,662.00	2,662.06	0.00	0.00	0.00
8,400.00	87.90	89.60	5,887.87	19 39	2,761.93	2,762.00	0.00	0.00	0 00
8,500.00	87.90	89.60	5,891.53	20 09	2,861.86	2,861.93	0.00	0.00	0.00
8,600.00	87 90	89.60	5,895.20	20.79	2,961 79	2,961.86	0 00	0.00	0.00
8,700.00	87 90	89.60	5,898.86	21.49	3,061 72	3,061.80	0.00	0.00	0.00
8,800.00	87.90	89 60	5,902.53	22.20	3,161 65	3,161.73	0.00	0.00	0 00
8,900.00	87.90	89.60	5,906.19	22.90	3,261.58	3,261.66	0.00	0 00	0.00
9,000.00	87.90	89.60	5,909.86	23 60	3,361.51	3,361 59	0.00	0.00	0.00
9,100.00	87.90	89.60	5,913.52	24.30	3,461.44	3,461.53	0.00	0.00	0 00
9,200.00	87.90	89.60	5,917.18	25 00	3,561.37	3,561.46	0.00	0.00	0.00
9,300.00	87.90	89.60	5,920.85	25.70	3,661 30	3,661.39	0 00	0 00	0.00
9,400.00	87.90	89.60	5,924.51	26.41	3,761.23	3,761.33	0.00	0.00	0.00
9,500.00	87.90	89.60	5,928.18	27.11	3,861.16	3,861.26	0.00	0.00	0.00
9,600.00	87.90	89 60	5,931.84	27 81	3,961.09	3,961.19	0.00	0.00	0.00
9,700 00	87.90	89 60	5,935.51	28.51	4,061.02	4,061.12	0.00	0.00	0.00
9,800.00	87.90	89.60	5,939.17	29 21	4,160.95	4,161 06	0.00	0 00	0 00
9,900.00	87.90	89.60	5,942.83	29 91	4,260.88	4,260 99	0.00	0 00	0.00
10,000.00	87 90	89.60	5,946.50	30 62	4,360.82	4,360.92	0.00	0.00	0.00
10,100.00	87.90	89 60	5,950.16	31.32	4,460 75	4,460.86	0.00	0.00	0.00
10,200 00	87.90	89.60	5,953 83	32.02	4,560 68	4,560.79	0.00	0.00	0.00
10,300 00	87.90	89.60	5,957.49	32.72	4,660 61	4,660.72	0.00	0.00	0.00
10,368.44	87.90 44	89.60	5,960.00	33 20	4,729.00	4,729.12	0.00	0 00	0.00



Survey Report



Well Job # 1210329 Company: Apache Corporation Local Co-ordinate Reference: WELL @ 3740.00usft (Original Well Elev) Project: Eddy County, NM TVD Reference: NFE Federal 27H WELL @ 3740.00usft (Original Well Elev) Site: MD Reference: Well: Job # 1210329 North Reference: Minimum Curvature Wellbore: Wellbore #1 Survey Calculation Method: GCR DB v5000 Plan#2 041812 Design: Database:

Design Targets					~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~				
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+É/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NFE Federal 27H - plan hits target ce - Point	0.00 enter	0.00	5,960.00	33.20	4,729.00	673,427.90	638,032.50	32° 51′ 1.9095 N	103° 53' 1.9073 W

Measured	Vertical		•		Dip	
Depth	Depth			Dip	Direction	
 (usft)	(usft)	Name	Lithology	(°)	(°)	
421 00	421.00	Rustler				
502.00	502 00	T/Salt				
1,346 00	1,346.00	B/Salt				
1,522.00	1,522.00	Yates	•			
1,799.00	1,799.00	Seven Rivers				
2,412.00	2,412.00	Queen				
2,819 00	2,819.00	Grayburg				
3,136.00	3,136.00	San Andres				
4,611.00	4,611.00	Glorieta				
4,675.00	4,675.00	Paddock				
5,164.00	5,164 00	Upper Blinebry				
5,547.44	5.545.00	Lower Blinebry				

Plan Annota	ntions				
	Measured	Vertical	Local Coor	dinates	
1	Depth	Depth	+N/-S	+E/-W	
	(usft)	(usft)	(usft)	(usft)	Comment
	5418	5418	0	0	KOP/Start Build 15 00
	6004	5800	3	368	Land/Start 4364.07 hold at 6004.37 MD
	10,368	5960	33	4729	TD at 10368.44 ·

Ch	ecked By:	Approved By:	Date:	

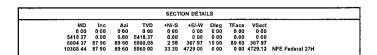


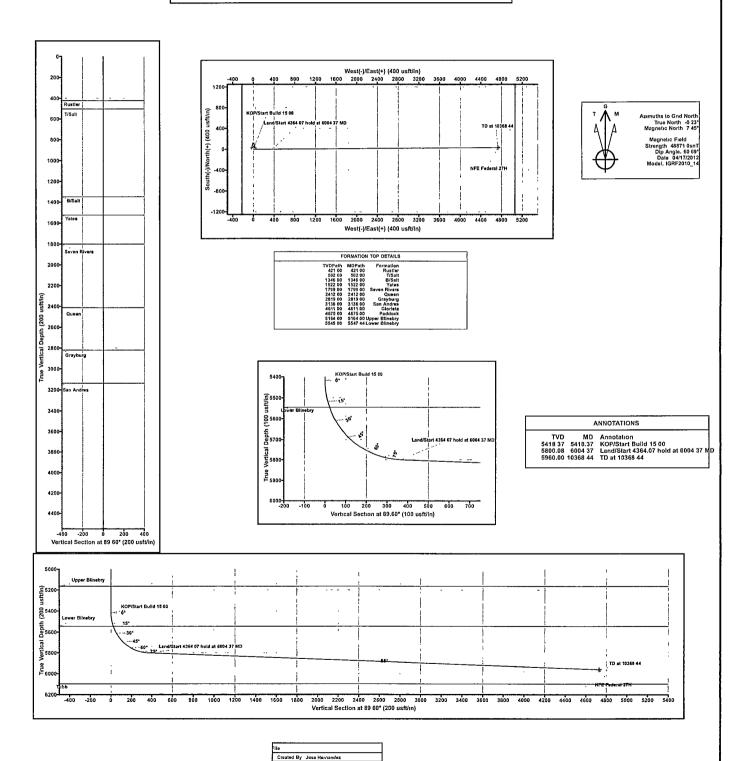
Apache Corporation

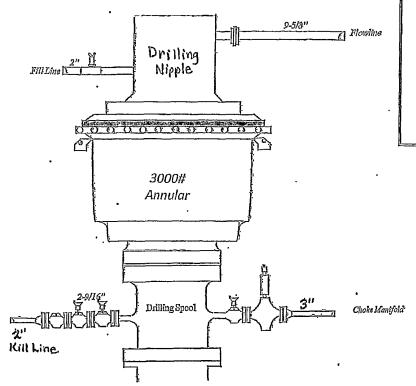
Project: Eddy County, NM Site: NFE Federal 27H Well: Job # 1210329 Wellbore: Wellbore #1 Plan: Plan#2 041812

WELL DETAILS: Job # 1210329

| Ground Level. 3727.00 | Northing Easting Latitude Longitude | 673394.70 | 633303.50 | 32° 51' 1.7767 N | 103° 53' 57.3434 W

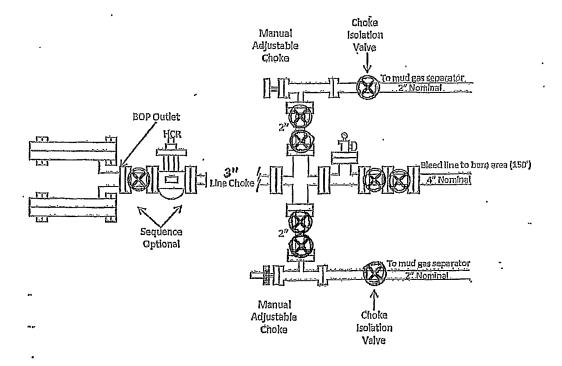


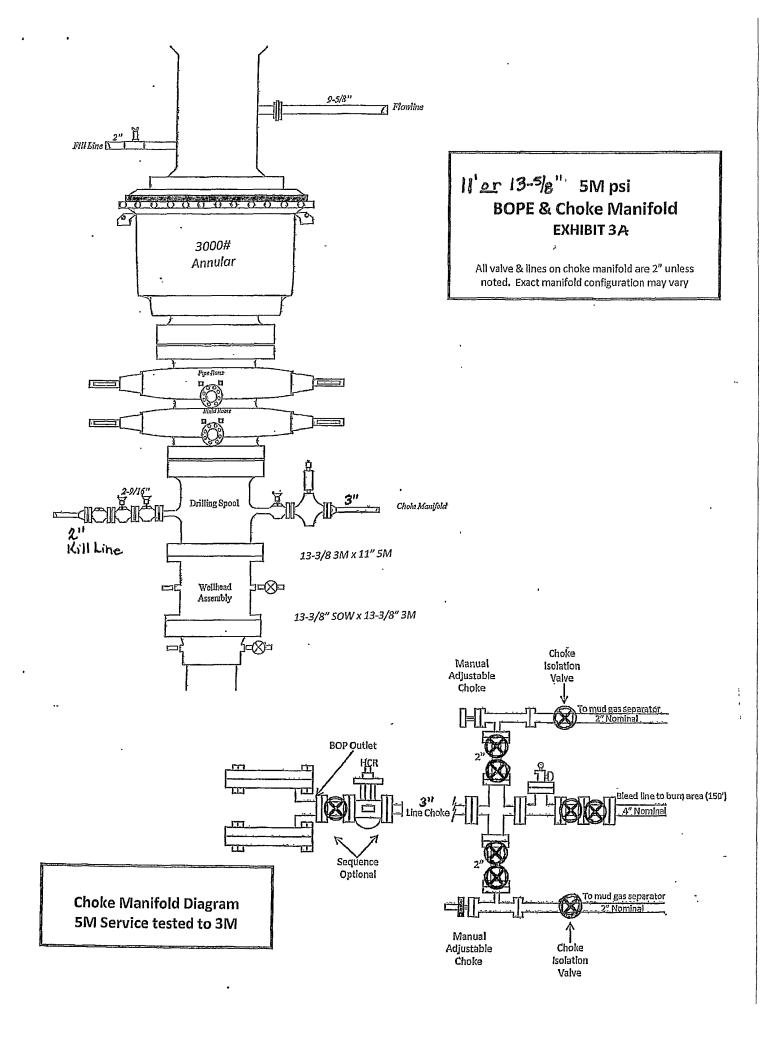


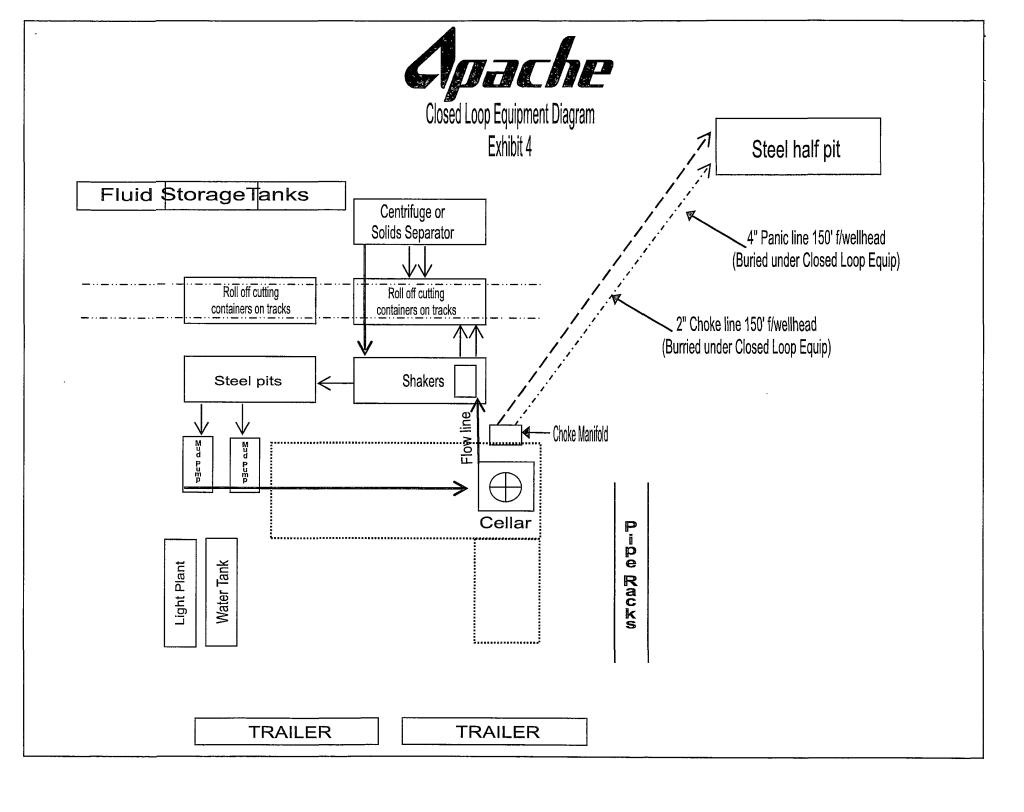


13-5/8" 3M psi BOPE & Choke Manifold Exhibit 3

All valve & lines on choke manifold are 2" unless noted. Exact manifold configuration may vary









DESIGN PLAN, OPERATING & MAINTENANCE PLAN, & CLOSURE PLAN FOR OCD FOR C-144

NFE FEDERAL #27H

DESIGN PLAN

Fluid & cuttings coming from drilling operations will pass over the Shale Shaker with the cuttings going to the Sundance Inc / CRI haul off bin and the cleaned fluid returning to the working steel pits.

Equipment includes:

- 2 500 bbl steel frac tanks (fresh water for drilling)
- 2 180 bbl steel working pits
- 3 75 bbl steel haul off bins
- 2 Pumps (6-1/2" x 10" PZ 10 or equivalent)
- 1 Shale shaker
- 1 Mud cleaner QMAX MudStripper

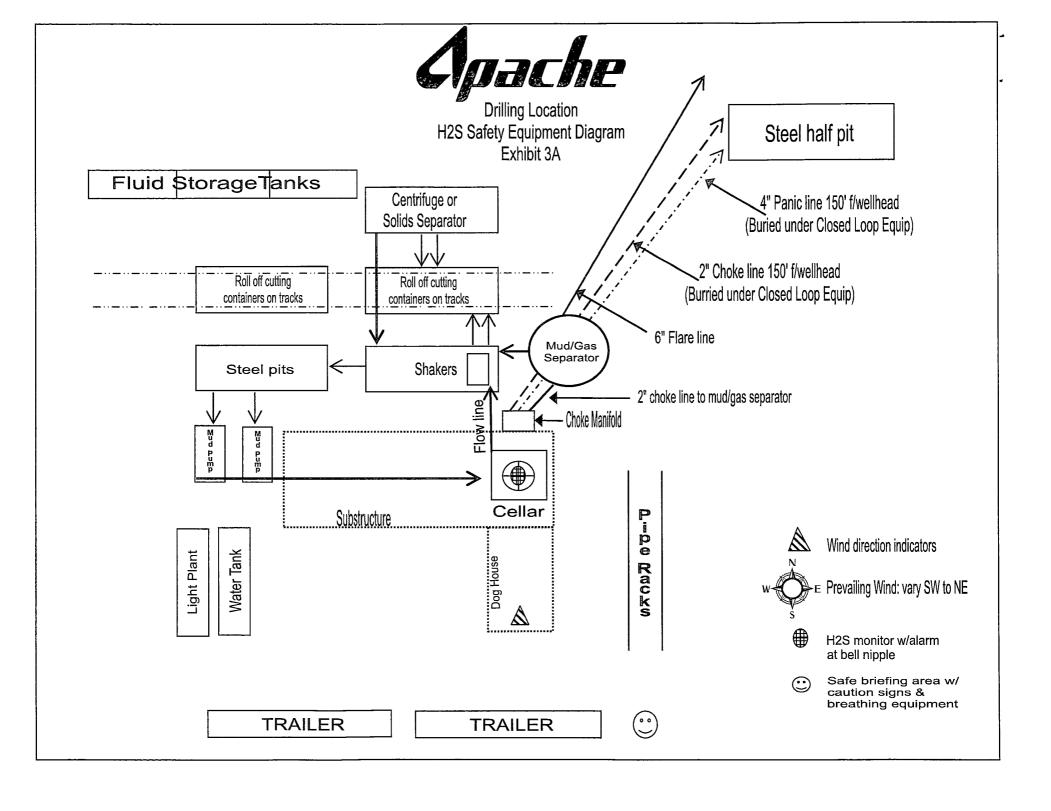
OPERATING AND MAINTENANCE PLAN

Inspection to occur every tour for proper operation of system and individual components. If any problems are found they will be repaired and/or corrected immediately.

CLOSURE PLAN

All haul bins containing cuttings will be removed from location and hauled to Sundance Incorporated (NM-01-0003) disposal site located 3 miles East of Eunice, NM on the Texas border / Controlled Recovery, Inc's (NM-01-0006) disposal site located near mile marker 66 on Highway 62/180.

Sorina L. Flores Supv. of Drilling Services



HYDROGEN SULFIDE (H2S) DRILLING OPERATIONS PLAN

Hydrogen Sulfide Training:

All regularly assigned personnel, contracted or employed by Apache Corporation 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.

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.
- ullet All elastomers used for packing & seals shall be H_2S 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 H₂S 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 :
 - o 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.

Characteristics of H₂S and SO₂

onanas.							
Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration		
Hydrogen Sulfide	H ₂ S	1.189 Air = I	10 ppm	100 ppm/hr	600 ppm		
Sulfur Dioxide	SO ₂	2.21 Air = I	2 ppm	N/A	1000 ppm		

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. GENERAL PHILOSOPHY

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
Terry West – Drilling Engineer	432-818-1114	432-664-7254	
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, **Bob Lange** 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.

EMERGENCY RESPONSE NUMBERS:

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
Artesia Medical Emergency	575-746-5050
Carlsbad Medical Emergency	575-885-2111
Eunice Medical Emergency	575-394-2112
Hobbs Medical Emergency	575-397-9308
Jal Medical Emergency	575-395-2221
Lovington Medical Emergency	575-396-2359
Lovington Medical Emergency AGENT NOTIFICATIONS	575-396-2359
	575-396-2359 575-393-3612

NFE FEDERAL #25H #26H #27H **EXHIBIT #6** Remove 70' 0 Deadman O Marker : 220' Pmpg Unit Raven Federal 25' wells #10H, #11H, #12H 0 40' Pmpg Unit Remove Remove 90' 90' ° 0 Pmpg Unit 4007 0 0 Flowline 400' Existing lease road

INTERIM RECLAMATION LAYOUT

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME: LEASE NO.: LC029435B

WELL NAME & NO.: 27H-NFE FEDERAL

SURFACE HOLE FOOTAGE: 2063'/N. & 0220'/W.

BOTTOM HOLE FOOTAGE 2063'/N. & 0330'/W.

LOCATION: Section 8, 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 Provisions
Permit Expiration
Archaeology, Paleontology, and Historical Sites
☐ Noxious Weeds
Special Requirements
Well Pad Construction and Soil Stockpile
Interim Reclamation Requirement
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
H ₂ S Requirements-Onshore Order #6
Logging Requirements
Waste Material and Fluids
☑ Production (Post Drilling)
Well Structures & Facilities
Pipelines
Interim Reclamation
⋈ Final Abandonment & Reclamation