Form 3160-3
(August 1999)

* Mexico Oil Conservation Division, District I
1625 N. French Dr.
Hobbs, NM 88240

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM-90161

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA Agreement, Name and No.:

1a. Type of Work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Hawk B-1 #31

2. Name of Operator: APACHE CORPORATION, (Bonita Jones, Agent)

Send Approval to Agent:
P. O. Box 8309
Roswell, NM 88202-8309

9. API Well No.: 30-025- 35882

3a. Address: 2000 Post Oak Blvd., # 100, Houston, TX 77056-4400

3b. Phone No. *(include area code)*: (Bonita Jones) 505-624-9799

10. Field and Pool, or Exploratory: Penrose Skelly; Grayburg

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface 700' FSL, 1850' FWL, Unit N (SE¼SW¼)
At proposed prod. zone 700' FSL, 1850' FWL, Unit N (SE¼SW¼) N

11. Sec., T., R., M., or Blk. and Survey or Area: 9, T21S-R37E

14. Distance in miles and direction from nearest town or post office*: ±3.5 miles Northwest of Eunice, NM

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well
700'	880.00	40.00
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
138'	~~4,100'~~ 4450'	CO-1047
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3408'	ASAP	9 Days

24. Attachments

Capitan Controlled Water Basin

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.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
Bonita L. L. Jones	Bonita L. L. Jones	2-13-02

Title: Agent for Apache Corporation

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/S/ JOE G. LARA	/S/ JOE G. LARA	MAR 27 2002
Title FIELD MANAGER	**Office** CARLSBAD FIELD OFFICE	

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.
Conditions of approval, if any, are attached.

APPROVAL FOR 1 YEAR

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 reverse)

DECLARED WATER BASIN
CEMENT BEHIND THE 8⅝" CASING MUST BE CIRCULATED

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

OPERGRID NO. 873
PROPERTY NO. 24427
POOL CODE 50350
EFF. DATE 4-1-02
API NO. 30-025-35882

KZ
MP

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

NOTICE

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 30 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management Bureau Clearance Officer, (WO-630) MS 401 LS, 1849 C Street, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Interior Desk Officer (1004-0136), Washington, D.C. 20503.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.) requires us to inform you that:

This information is being collected to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases.

This information will be used to analyze and approve applications.

Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease.

EXHIBIT "A"
HAWK B-1 #31

DRILLING PROGRAM

I. The geological surface formation is recent Permian with quaternary alluvium and other surficial deposits.

II. Estimated Tops of Geological Markers:

FORMATION	DEPTH
Quaternary alluvials	Surface
Rustler	1280'
Yates	2600'
Grayburg	3800'
San Andres	4000'
TD	4200'

III. Estimated depths at which water, oil, gas, or other mineral-bearing formations are expected to be encountered:

SUBSTANCE	DEPTH
Oil	Grayburg at 3800'
	San Andres at 4000'
Gas	None anticipated
Fresh Water	None anticipated

All fresh water and prospectively valuable minerals (as described by BLM) encountered during drilling will be recorded by depth and adequately protected. All oil and gas shows within zones of correlative rights will be tested to determine commercial potential.

IV. A. Proposed Casing Program:

HOLE SIZE	CASING SIZE OD	CASING SIZE ID	GRADE	WEIGHT PER FOOT	DEPTH	SACKS CEMENT	ESTIMATED TOC - REMARKS
12 ¼"	8 5/8"	8.097	J55 STC	24#	400'	350	TOC - Surface Float Collar set @ 358'/ 9.00 PPG Water-based Mud; 83 Deg. F Est. Static Temp; 80 Deg. F Est. Circ. Temp.
7 7/8"	5 ½"	4.892	J55 STC	17#	4450'	760	TOC - Surface Float Collar set @ 4370'/ 9.00 PPG Water-based Mud; 108 Deg. F Est. Static Temp; 99 Deg. F Est. Circ. Temp.

B. Proposed Cement Program:

CASING	SLURRY	DISPLACEMENT
8 5/8"	350 sacks Class C Cement + 2% bwoc Calcium Chloride + 56.4% Fresh Water 269 Vol. Cu Ft 1.35 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Amount of Mix Water (gps) 6.36; Amount of Mix Fluid (gps) 6.36; Estimated Pumping Time – 70 BC (HH:MM)-2:20; Free Water (mls) @ 80 Deg. F @ 90 Deg. Angle: 0.00 Fluid Loss (cc/30 min) at 1000 psi and 80 deg. F: 850.0 Compressive Strength: 12 hrs @ 80 Deg. F (psi) 1600 24 hrs @ 80 Deg. F (psi) 2350 72 hrs @ 80 Deg. F (psi) 3000	22.9 bbls Fresh Water @ 8.33 ppg

8 5/8" Casing: Volume Calculations:

400 ft	x	0.4127 cf/ft	with	178% excess	=	459.0 cf
40 ft	x	0.3576 cf/ft	with	0% excess	=	14.3 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	473.3 cf
					=	84.3 bbls

B. Proposed Cement Program (Continued):

CASING	LEAD SLURRY	TAIL SLURRY	DISPLACEMENT
5 ½"	565 sacks (35:65) Poz (Fly Ash): Class C Cement + 5 lbs/sack Sodium Chloride + 0.003 gps FP-6L + 6% bwoc Bentonite + 99% Fresh Water; 1091 Vol. Cu Ft 1.93 Vol. Factor Slurry Weight (ppg) 12.7 Slurry Yield (cf/sack) 1.93 Amount of Mix Water (gps) 10.33; Amount of Mix Fluid (gps) 10.33; Estimated Pumping Time – 70 BC (HH:MM)-3:00; Free Water (mls) @ 98 Deg. F @ 90 Deg. Angle: 1.8; Fluid Loss (cc/30 min) at 1000 psi and 98 Deg. F: 950.0 Compressive Strength: 12 hrs @ 106 Deg. F (psi) 280 24 hrs @ 106 Deg. F (psi) 375 72 hrs @ 106 Deg. F (psi) 900	250 sacks Class C Cement + 3% bwow Potassium Chloride +0.2% bwoc CD-32 + 0.6% bwoc FL-62 + 0.2% bwoc Sodium Metasilicate + 56.6% Fresh Water 338 Vol. Cu Ft 1.35 Vol. Factor Slurry Weight (ppg) 14.8 Slurry Yield (cf/sack) 1.35 Amount of Mix Water (gps) 6.38; Amount of Mix Fluid(gps) 6.38; Estimated Pumping Time – 70 BC (HH:MM)-2:30; Free Water (mls) @ 98 Deg. F @ 90 Deg. Angle: 0.0; Fluid Loss (cc/30 min) at 1000 psi and 98 Deg. F: 300.0 Compressive Strength: 12 hrs @ 106 Deg. F (psi) 1200 24 hrs @ 106 Deg. F (psi) 1800 72 hrs @ 106 Deg. F (psi) 2300	100.2 bbls Fresh Water @ 8.33 ppg

5 ½" Casing: Volume Calculations:

400 ft	x	0.1926 cf/ft	with	0% excess	=	77.0 cf
3150 ft	x	0.1733 cf/ft	with	86% excess	=	1015.4 cf
700 ft	x	0.1733 cf/ft	with	174% excess	=	332.5 cf
80 ft	x	0.1336 cf/ft	with	0% excess	=	10.7 cf (inside pipe)
		TOTAL SLURRY VOLUME			=	1435.6 cf
					=	255 bbls

All slurries will be tested prior to loading to confirm thickening times and a lab report furnished to Apache. Fluid loss will be tested and reported on slurries with fluid loss additives. Lab test report will be furnished prior to pumping cement.

V. A. Proposed Mud Program

DEPTH	MUD PROPERTIES	REMARKS
0 – 400'	Weight: 8.6 – 9.2 ppg Viscosity: 32 – 40 sec/qt Plastic Viscosity: 2-10 cps Yield Point: 6-15 lbs/100' pH: 9-10 Filtrate: NC Solids: <4 % volume Chloride: <4,000 mg/L	Spud with Fresh Water AQUAGEL EZ-Mud, LCM, Lime. Add AQUAGEL and LIME to Fresh Water to build desired viscosity for hole cleaning, restricting system to steel pits. Additions of Fresh Water at the flowline will aid in controlling viscosity. HY-SEAL "sweeps" as needed for extra hole cleaning, seepage and severe losses. Should total circulation loss be encountered, add up to 20 ppb. LCM (BARO-SEAL = Maxiseal); (HY-SEAL = Drilling Paper); (PLUG-GIT = Cedar Fiber) and spot in loss zone. If returns cannot be established, then "dry-drill" to set surface casing.
400' – 3800'	Weight: 9.2 ppg Viscosity: 30 – 32 sec/qt Plastic Viscosity: 0-1 cps Yield Point: 0-1 lbs/100' pH: 9-10 Filtrate: NC Solids: <1 % volume Chloride: < 30K mg/L	Drill out from under the intermediate casing with Fresh Water. HY-SEAL should be added at 2 bags after every 100' drilled, if you have and drag or torque on connections. Begin adding 10# Brine 100' before drilling the salt section of the Rustler Formation for 9.7 + weight. LIME applications should be continued during this interval for a pH of 9.0-10.0, in addition, to flocculate solids and to minimize corrosion. Additions of CAUSTIC SODA may be needed to maintain pH at 9-10.
3800' – 4450'	Weight: 9.1 – 10.3 ppg Viscosity: 30 – 32 sec/qt Plastic Viscosity: 3-10 cps Yield Point: 4-6 lbs/100' pH: 9-10 Filtrate: 10-15 cm/30 min Solids: <2-4 % volume Chloride: < 170K mg/L	From 3800' to Total Depth, it is recommended the system be restricted to the steel pits, and, with Brine, mud up as follows: while circulating through the steel pits, add 3-4 #/bbl IMPERMX (starch) to lower fluid loss below 15 cc. If lost circulation is encountered, mix a viscous pit of mud and add 15 ppb LCM (Add 5#/bbl of the following: BARASEAL, HYSEAL & PLUG-GIT) and continue to drill. Sweep the hole with a viscous pill prior to coming out of the hole to log

VI. Proposed Control Equipment:

Will install on the 8 5/8" surface casing a 9" x 3000 psi WP Double Ram BOP and will test before drilling out of surface casing. **As expected pressures will not exceed 2000 psi, we request a waiver of the remote control requirement on the accumulator of the 3M BOP and a variance to run a 2M BOP, if available, and to test to 1500 psi using rig pumps.** See Exhibit "H" for BOP layout.

VII. Auxiliary Equipment:

9" x 3000 psi double BOP/blind & pipe ram **(2M BOP if available)**
41/2" x 3000 psi Kelly valve
9" x 3000 psi mud cross – H_2S detector on production hole
Gate-type safety valve 3" choke line from BOP to manifold
2" adjustable chokes – 3" blowdown line

VIII A. Testing Program: None planned

B. Logging Program: The following logs may be run:

CNL, LDT, GR, CAL, DLL, MSFL, NGT from TD-2400'
CNL, GR from TD-Surface

C. Coring Program: None planned

IX. 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. The estimated maximum bottom hole pressure is 1980 psi.