(November 1983)
(Formerly 9-331C)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

(Other instructions on reverse side)

Budget Bureau No. 1004-0136
Expires August 31, 1985

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

30-045-28603

5. LEASE DESIGNATION AND SERIAL NO.: NOG 8702-1116

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Tribal

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL
OIL WELL ☒ GAS WELL ☐ OTHER — SINGLE ZONE ☐ MULTIPLE ZONE ☐

8. FARM OR LEASE NAME: Canal Creek 6K 13193

2. NAME OF OPERATOR: Chuska Energy Company 4449

9. WELL NO.: 1

3. ADDRESS OF OPERATOR: 3315 Bloomfield Highway, Farmington, NM 87401

10. FIELD AND POOL, OR WILDCAT: 96168 Wildcat Barker Creek

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)*
At Surface: 1750' FSL, 1940' FWL

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: K S6 T31N R19W

At proposed prod. zone: Same

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*

12. COUNTY OR PARISH: San Juan | 13. STATE: NM

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
	49,997	40
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	19. PROPOSED DEPTH	20. ROTARY OR CABLE TOOLS
	6,575' KB	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
5,009' GR/5,022' KB

22. APPROX. DATE WORK WILL START*
8-13-91

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4.

23. PROPOSED CASING AND CEMENTING PROGRAM

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS".

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12 1/4"	8 5/8"	24 lb	500'	371 sx 'B' + 2% CaCl
7 7/8"	5 1/2"	15.5 lb	6,575'	314 sx 'B', 65:35 Poz + 6% Gel

Refer to attached 10-Point Drilling Plan etc.

RECEIVED
SEP 24 1991
OIL CON. DIV.
DIST. 3

RECEIVED
BLM
91 SEP 12 AM 10:36
070 FARMINGTON, N.M.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED (Christopher S.W. Hill) TITLE Operations Engineer DATE 10 April, 1991

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED AS AMENDED
SEP 20 1991
/s/ Tom Dabbs
AREA MANAGER

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

*(See Instructions On Reverse Side)

Title 18 U.S.C. Section 1001, makes 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.

NMOCD

Submit to Appropriate
District Office
State Lease - 4 copies
Fee Lease - 3 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well
CHUSKA ENERGY, CO.	Canal Creek 6K	~~Canal Creek 6 K 1~~

Unit Letter	Section	Township	Range	County
K	6	31 N.	19 W. NMPM	San Juan

Actual Footage Location of Well:
1750 feet from the South line and 1940 feet from the West

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
5009'	Barker Creek	Wildcat	40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

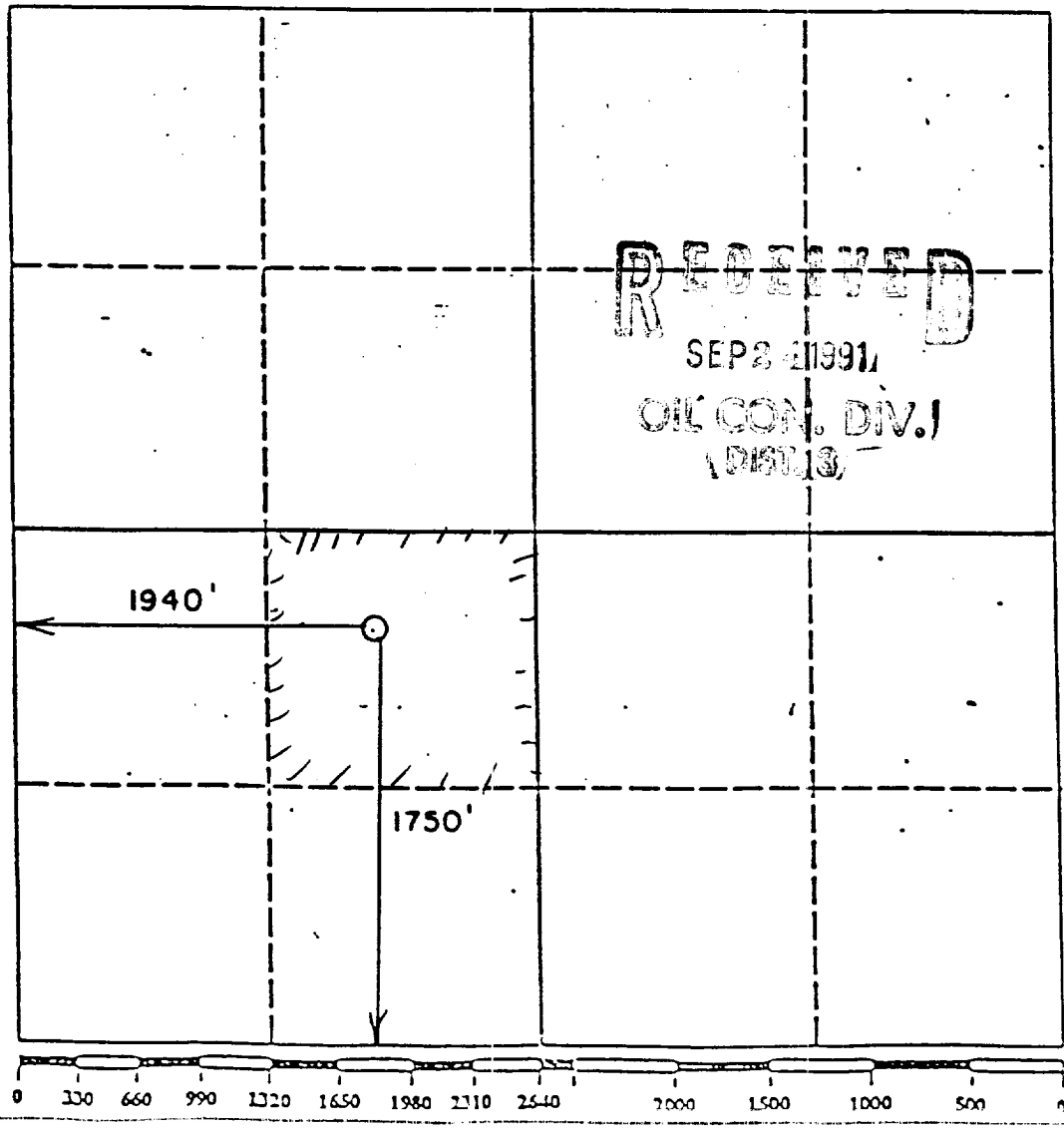
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature

Printed Name
C.S. WHEELER

Position
OPERATIONS ENGINEER

Company
CHUSKA ENERGY

Date
4-10-91

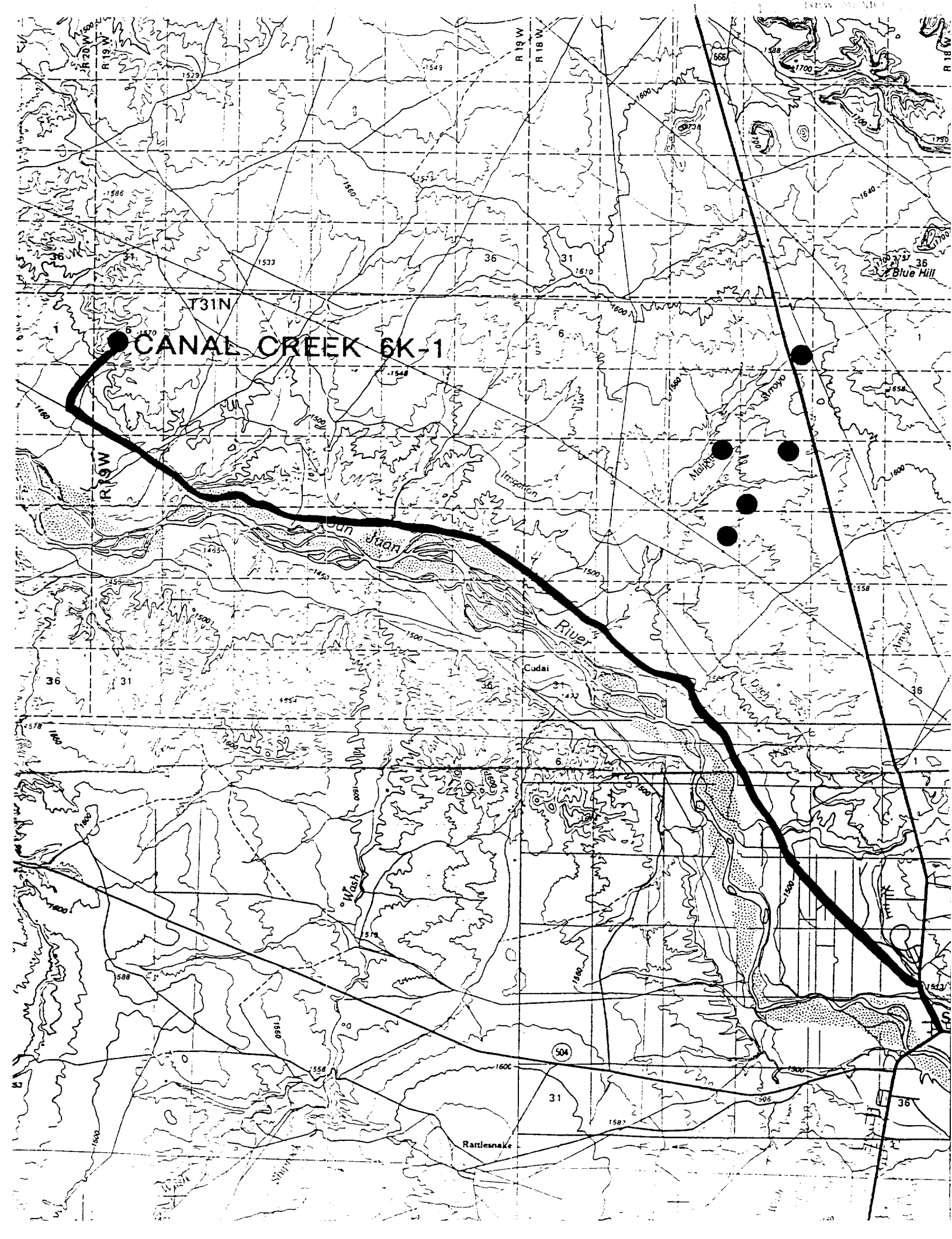
SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed
4 APRIL 91

Signature & Seal of Professional Surveyor
GERALD A. HUDDLESTON
NEW MEXICO
6844
REGISTERED LAND SURVEYOR

Certificate No.


CANAL CREEK 6K-1
T31N
R19W
R18W
R20W
San Juan River
Irrigation
Arroyo
Cudai
Wash
Rattlesnake
Blue Hill
504

CHUSKA ENERGY COMPANY

10 POINT DRILLING PLAN

Canal Creek 6K Well No. 1
Section 6, Township 31N, Range 19W
1750' FSL, 1940' FWL
San Juan County, New Mexico

1. SURFACE FORMATION

Geological name of surface formation: Mancos Shale

2. ELEVATION

Surface elevation is 5,009' GR/5,022' KB.

3. ESTIMATED FORMATION TOPS

Depth	Formation	Sub Sea Elevation	
Surface	Mancos Shale	+ 5,022'	
552'	Dakota/Burro Canyon	+ 4,470'	
2,889'	Navajo	+ 2,133'	
3,462'	DeChelly	+ 1,560'	
4,335'	Cedar Mesa	+ 687'	
5,197'	Hermosa	- 175'	
6,002'	Upper Ismay	- 980'	
6,100'	Lower Ismay	- 1,078'	
6,140'	Desert Creek	- 1,118'	
6,233'	Akah	- 1,261'	Primary Objective
6,475'	Barker Creek	- 1,453'	Secondary Objective
6,575'	Total Depth	- 1,553'	

4. PROPOSED CASING/CEMENTING PROGRAM

	Depth	Size	Weight	Grade	Coupling
Surface	500'	8 5/8"	24 lb	K-55	STC
Production:	6,575'	5 1/2"	15.5 lb	K-55	STC

Surface Cementing:

371 sx (427 ft^3) Class 'G' cement with 2% $CaCl_2$ and 1/4 lb/sk Celloflake. Weight = 15.8 ppg, yield = 1.15 ft^3/sk. Slurry volume calculated at 100% excess over annular volume.

Production Cementing:

First Stage

T.D. to 3,500' (stage collar @ ± 3,500'). Lead with 244 sx Class 'G' cement, 65:35 Pozmix, with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft^3/sk. Tail with 215 sx Class 'G' cement with 2% $CaCl_2$. Weight = 15.8 ppg, yield = 1.15 ft^3/sk. Total of 698 ft^3. Bring Class 'G' slurry to 500' above top of Upper Ismay. Cement volumes calculated at 30% excess in open hole. WOC 4 hours between stages.

Second Stage

3,500' to surface. Lead with 355 sx Class 'G' cement, 65:35 Pozmix with 6% gel and 1/4 lb/sk Celloflake. Weight = 12.7 ppg, yield = 1.85 ft/sk. Tail with 100 sx Class 'G' cement with 2% $CaCl_2$. Weight = 15.8 ppg, yield = 1.15 ft^3/sk. Total of 772 ft^3. Cement volumes calculated at 30% excess in open hole.

Note: Exact slurry volumes for the production string will be adjusted according to the caliper log which will be run prior to cementing. Special adjustments may be necessary if significant amounts of salt are drilled.

5. BLOWOUT PREVENTER (See attached schematics)

As abnormal pressure is not anticipated, a 2,000 psi BOP system would be sufficient for the drilling of this well. However, due to availability constraints, a 3,000 psi system will be used, as per the attached Exhibits "A" and "B". This will be a 10" x 900 Series double ram preventer, equipped with a set of pipe and blind rams.

An accumulator system, with a pressure capacity sufficient to operate the rams three complete cycles without rig power, will be required as part of the rig equipment.

6. PROPOSED MUD PROGRAM

Surface to 3,000'

Fresh water, gel, lime and native solids. Weight 8.3 - 8.7 ppg. Gel/lime sweeps as necessary for hole cleaning.

3,000' to T.D.

Low solids, non-dispersed polymer system. Weight 8.6 - 9.5 ppg. Gel/lime sweeps as hole conditions dictate for hole cleaning. Fluid loss to be maintained at 15 - 20 cc. Fluid loss to be further reduced to 15 cc or less prior to coring, logging or DSTs.

7. AUXILIARY EQUIPMENT

A. A kelly cock will be installed during drilling operations, with handle available on the rig floor.

B. Floor (stabbing) valves will be available, on the rig floor at all times, with necessary subs to fit all of the drilling assemblies.

C. Mud will be the circulating fluid. No abnormal formation pressures are expected.

8. WELL EVALUATION

Open hole electric logging program will consist of a minimum program of DLL-MSFL-SP-GR-Cal, FDC-CNL-GR-Lithodensity from T.D. to 4,500'.

Coring and/or drill stem testing will be as per the wellsite geologist's recommendations, based on shows. A mud logging unit will be utilized during drilling operations from at least 500' above the Upper Ismay.

9. ABNORMAL PRESSURES/GAS

Abnormal pressures are not anticipated. Monitoring of gas and hydrocarbon shows will be by wellsite mud logging unit. H_2S gas is not articipated, however regular checks will be made while drilling the well.

10. TIMING

The drilling and evaluation of this well is estimated to be 20 days. Anticipated spud date is 8-13-91.

DETAILED DRILLING PROGRAM

DATE: 10 April, 1991

WELL NAME: Canal Creek 6K WELL NO.: 1

LOCATION: Section 6, Township 31N, Range 19W
1750' FSL, 1940' FWL
San Juan County, New Mexico

ELEVATION: 5,009' GR/5,022' KB

TOTAL DEPTH: 6,575' KB

PROJECTED HORIZON: Primary target is Akah at 6,283'.
Secondary target is Barker Creek at 6,475'.

DRILLING, CASING AND CEMENTING PROGRAM

1. Move in and rig up rotary tools. Notify BLM of time of spud and intent to run surface casing.

2. Drill mouse hole and rat hole. Mix mud prior to spudding well.

3. Drill 12 1/4" hole to ± 500'. Use fresh water gel/lime spud mud for drilling surface hole. Well bore inclination is not to exceed 1° at 500'. Deviation surveys will be run at least at 250' and at casing point.

4. Run 8 5/8", 24 lb/ft, K-55, STC casing to T.D. Cement with 371 sx (427 ft^3) of Class 'G' cement with 2% $CaCl_2$ and 1/4 lb/sk Celloflake (sufficient slurry volume to circulate cement to surface).

5. W.O.C. a minimum of 4 hours prior to nippling up BOP stack and related equipment. See BOP schematics for details.

6. Ensure that plug has been down at least 8 hours prior to commencing pressure testing procedures. Pressure test BOP to 2,000 psig for 30 minutes. Pressure test manifold and all related equipment to 2,000 psig. Pressure test casing to 1,500 psig for 30 min.

7. Drill out surface casing with 7 7/8" bit. Drill 7 7/8" hole to T.D. Deviation surveys are to be taken every 500' or on a bit trip, whichever occurs first. Maximum allowable deviation will be 5° at T.D., with the maximum allowable rate of change to be 1°/100'.

8. Run open hole logs and evaluate. Coring and/or drill stem testing will be as per wellsite geologist's recommendation.