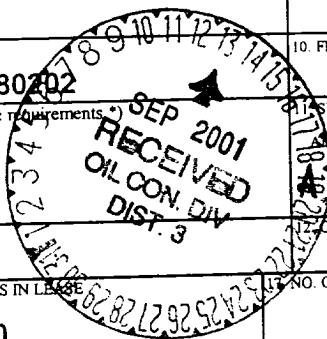


UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. <b>SF-078214</b>
1b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/> SINGLE ZONE <input checked="" type="checkbox"/> MULTIPLE ZONE <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME <b>NA</b>
2. NAME OF OPERATOR <b>Calpine Natural Gas</b>		7. UNIT AGREEMENT NAME <b>NA</b>
3. ADDRESS OF OPERATOR <b>1200 17th Street, Ste 770, Denver, Colorado 80202</b>		8. FARM OR LEASE NAME <b>Ruth 28872</b>
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At Surface <b>1175' FNL &amp; 995' FEL, NENE</b> At proposed Prod. Zor <b>SAME AS ABOVE</b>		9. WELL NO. <b>#1 API# 30-045-30774</b>
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* <b>Northeast of Farmington, New Mexico</b>		10. FIELD AND POOL OR WILDCAT <b>Basin Fruitland Coal Gas</b>
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPE OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) <b>NA</b>		11. SEC., T., R., M., OR BLK. <b>SEC 28-T30N-R13W</b>
16. NO. OF ACRES IN LEASE <b>1240</b>		12. COUNTY OR PARISH <b>San Juan</b>
17. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR ON THIS LEASE, FT. <b>NA - On an existing well pad.</b>		13. STATE <b>NM</b>
18. PROPOSED DEPTH <b>1,650</b>		14. NO. OF ACRES ASSIGNED TO THIS WELL <b>320</b>
21. ELEVATIONS (Show whether DF, RT, GR, etc.) <b>5717' GL</b>		20. ROTARY OR CABLE TOOLS <b>ROTARY</b>
22. APPROX. DATE WORK WILL START* <b>9/1/2001</b>		



23. PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	SIZE OF CASING	WEIGHT/FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8 3/4"	7"	23	330-220	85-60 sx.
6 1/4"	4 1/2"	10.5	1650	200 sx.

CALPINE NATURAL GAS WILL BE RESPONSIBLE FOR OPERATIONS UNDER THE TERMS AND CONDITIONS IN CONJUNCTION WITH THIS APPLICATION.

THE SUBJECT WELL WILL BE DRILLED TO TEST THE FRUITLAND COAL.

IF THE WELL PROVES TO BE NOT COMMERCIAL CEMENT PLUGS WILL BE SET AS DIRECTED BY O.S.C  
PRIOR APPROVAL WILL BE OBTAINED PRIOR TO ANY ABANDONMENT TAKING PLACE.

procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4.

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

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 <i>[Signature]</i> (This space for Federal or State office use)	TITLE <b>Production Mgr.</b>	DATE <b>8/3/2001</b>
PERMIT NO. 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 DATE <b>9/10/01</b>	
CONDITIONS OF APPROVAL, IF ANY: <b>/s/ Joel Farrett</b>	TITLE <b>SEP 10</b>	DATE

\*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.

RECEIVED

K

AUG. 13. 2001 5:22PM

CALPINE NATURAL GAS

NO. 660

P. 2

Form C-102

District I  
PO Box 1980, Hobbs, NM 88241-1980State of New Mexico  
Energy, Minerals & Natural Resources Dept.

Revised February 21, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

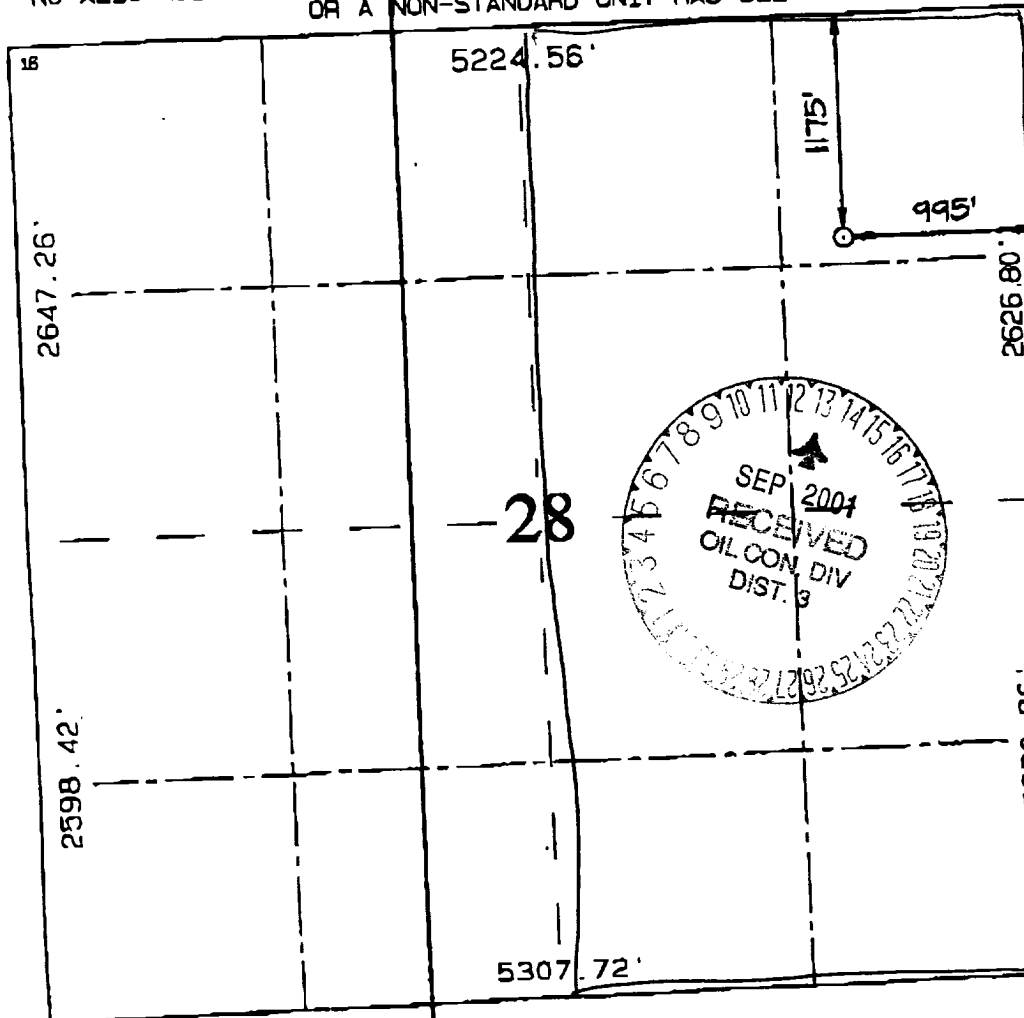
Fee Lease - 3 Copies

District II  
PO Drawer 00, Artesia, NM 88211-0719OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088District III  
1000 Rio Brazos Rd., Aztec, NM 87400District IV  
PO Box 2088, Santa Fe, NM 87504-2088☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number <b>30-045-30774</b>		*Pool Code <b>71629</b>		*Pool Name <b>BASIN FRUITLAND COAL</b>	
*Property Code <b>28892</b>		*Property Name <b>RUTH</b>		*Well Number <b>1</b>	
*GRID No. <b>194807</b>		*Operator Name <b>CALPINE NATURAL GAS COMPANY</b>		*Elevation <b>5717'</b>	
10 Surface Location					
U. or Sec. no. <b>A</b>	Section <b>28</b>	Township <b>30N</b>	Range <b>13W</b>	Lot 10 <b>1175</b>	Feet from line <b>995</b>
				North/South line <b>NORTH</b>	East/West line <b>EAST</b>
				County <b>SAN JUAN</b>	
11 Bottom Hole Location If Different From Surface					
U. or Sec. no.	Section	Township	Range	Lot 10	Feet from line
				North/South line	East/West line
				County	
*Dedicated Acreage		*Joint or 3rd/111		*Consolidation Code	
				*Order No.	

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



## 17 OPERATOR CERTIFICATION

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

Signature: *Hugo Cartaya*  
Printed Name: **Hugo Cartaya**  
Title: **Production Manager**  
Date: **8/13/01**

## 18 SURVEYOR CERTIFICATION

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

Date of Survey: **JUNE 28, 2001**  
Signature and Seal: *Neale C. Edwards*  
Seal: **NEALE C. EDWARDS**  
**NEW MEXICO**  
**0857**  
Certificate Number: **685**

FORM 3160-5  
(June 1990)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
Budget Bureau No. 1004-0135  
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reenter a different reservoir.  
Use "APPLICATION FOR PERMIT -" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well

Oil Gas  
☐ Well ☒ Well ☐ Other

2. Name of Operator

Calpine Natural Gas

3. Address and Telephone No.

720-359-9144

1200 17th Street, Suite 770, Denver, CO 80202

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1175' FNL & 995' FEL. NENE

Sec. 28-T30N-R13W

5. Lease Designation and Serial No.

SF-078214

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Ruth #1

9. API Well No.

10. Field and Pool, or Exploratory Area

Basin Fruitland Coal Gas

11. County or Parish, State

San Juan County, New Mexico

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

TYPE OF SUBMISSION

☐ Notice of Intent  
☐ Subsequent Report  
☐ Final Abandonment Notice

TYPE OF ACTION

☐ Abandonment  
☐ Recompletion  
☐ Plugging Back  
☐ Casing Repair  
☐ Altering Casing  
☐ Other  
☐ Change of Plans  
☐ New Construction  
☐ Non-Routine Fracturing  
☐ Water Shut-Off  
☐ Conversion to Injection  
☐ Dispose Water

(Note: Report results of multiple completion on Well  
Completion or Recompletion Report and Log form.)

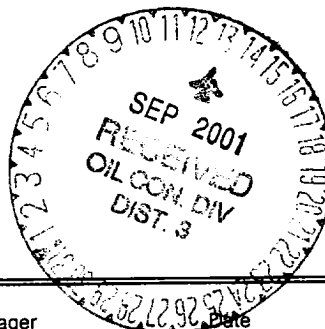
13. Describe Proposed or Completed Operations (Clearly state pertinent details, and give pertinent dates including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)

Request to modify APD submitted based on conversation with BLM representative.

Setting Depth	Cement
Surface Casing : 330'	85 Sx., 1.17 Yield, 100% excess
Production Casing : 1820'	Lead : 72 Sx., 2.06 Yield, 30% excess
	Tail : 82 Sx., 1.18 Yield, 30% excess

See Attached Cement Calculations

Tops: Kirtland	288'	Lewis	1767'
Fruitland	1291'	TD	1820'
Pictured Cliffs	1611'		



14. I hereby certify that the foregoing is true and correct

Signed Hugo Cartaya Hugo Cartaya

Title Production Manager

Date 08/20/01

(This space for Federal or State office use)

Approved by /s/ Joel Farrell

Title \_\_\_\_\_

Date \_\_\_\_\_

Conditions of approval, if any:

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.

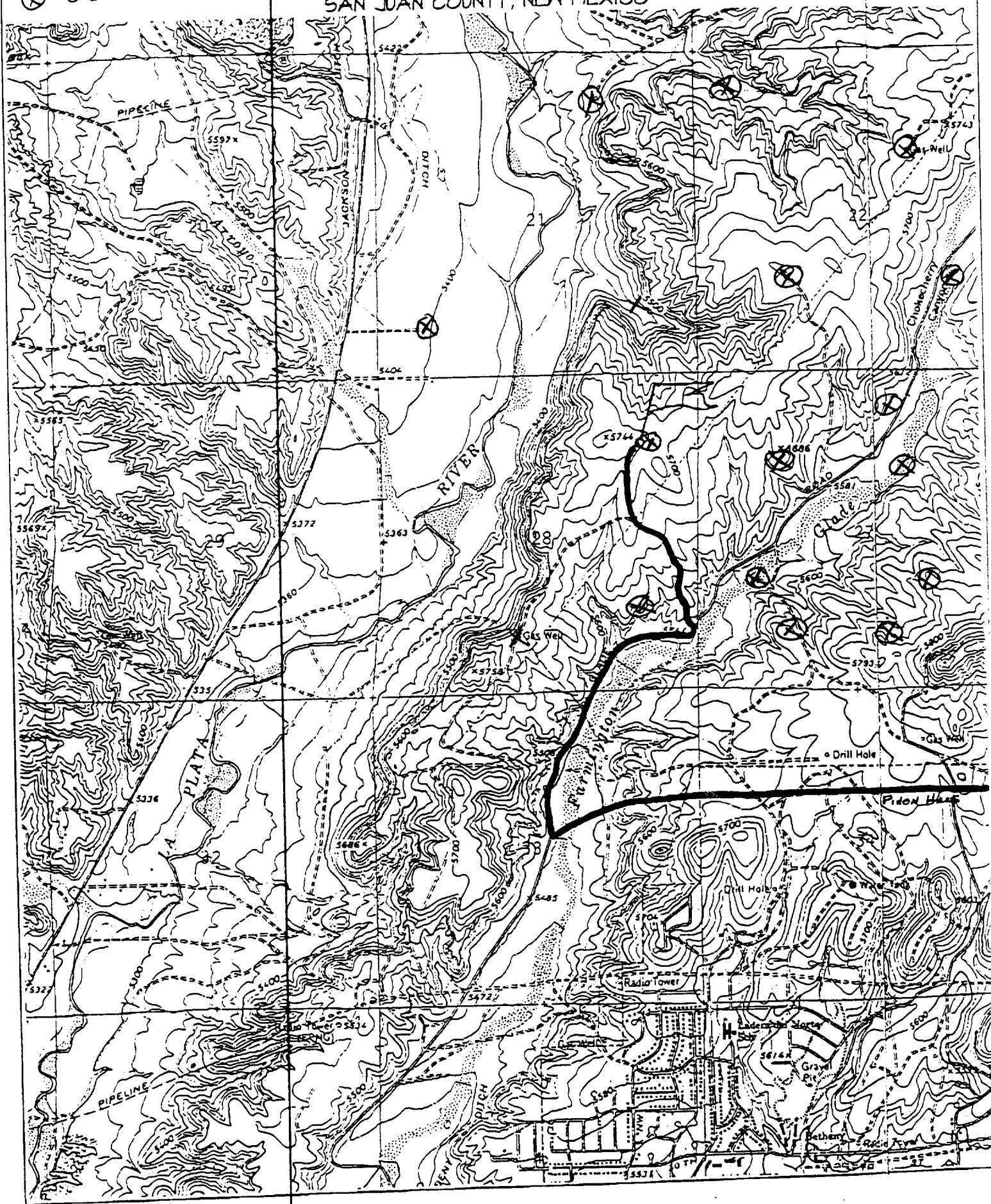
\*See Instructions on Reverse Side

NN000

# CALFIE NATURAL GAS COMPANY TUTH #1

PLAT # 1

⊗ GAS WELLS 1175' FNL & 995' FEL, SECTION 28, T30N, R13W, N.M.P.M.  
SAN JUAN COUNTY, NEW MEXICO



Calpine Natural Gas  
OPERATIONS PLAN  
Ruth #1

I. Location: 1175' FNL & 995' FEL                      Date: August 3, 2001  
              Sec 28 T30N R13W  
              San Juan County, NM

Field: Basin Fruitland Coal Gas                      Elev: GL 5717'  
Surface: Bruce Black  
Minerals: SF-078214

II. Geology: Surface formation \_ Kirkland

A. Formation Tops	Depths
Ojo Alamo	165'
Fruitland	1175'
Fruitland Coal	1360'
Pictured Cliffs	1490'
Total Depth	1650'

Estimated depths of anticipated water, oil, gas, and other mineral bearing formations which are expected to be encountered:

Water and gas - 1175'; gas - 1360'.

B. Logging Program: Induction/GR and density logs at TD.

C. No over pressured zones are expected in this well. No H<sub>2</sub>S zones will be penetrated in this well. Max. BHP = 500 psig.

III. Drilling

A. Contractor:

B. Mud Program:

The surface hole will be drilled with a fresh water mud.

The production hole will be drilled with a fresh water polymer mud. The weighting material will be drill solids or if conditions dictate, barite. The maximum mud weight expected is 8.5 ppg.

C. Minimum Blowout Control Specifications:

Double ram type or annular type 2000 psi working pressure BOP with a rotating head. See the attached exhibit for details on the BOP equipment. All ram type preventers and related equipment will be hydraulically tested at nipple-up and after any use under pressure to 1000 psi.

The blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. The BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi.

#### IV. Materials

##### A. Casing Program:

Hole Size	Depth	Casing Size	Wt. & Grade
8-3/4"	220'	7"	23# K-55
6-1/4"	1650'	4-1/2"	10.5# K-55

##### B. Float Equipment:

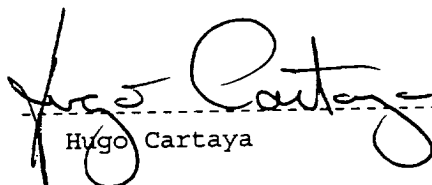
a) Surface Casing: 7" cement guide shoe and self fill insert float collar. Place float one joint above shoe. A total of five centralizers spaced evenly will be used.

b) Production Casing: 4-1/2" cement guide shoe and self fill insert float collar. Place float one joint above shoe. Five centralizers spaced every other joint above shoe and five turbolizers every other joint from the top of the well.

#### V. Cementing:

Surface casing: 7" - Use <sup>85</sup>~~60~~ sx (33 cu. ft.) of Cl "B" with 2% CaCl<sub>2</sub> (Yield = 1.17 cu. ft./sk; slurry weight = 15.6 PPG). 100% excess to circulate cement to surface. WOC 12 hours. Pressure test surface casing to 600 psi for 30 min.

Production Casing: 4-1/2" - Before cementing circulate hole with at least 1-1/2 hole volumes of mud. Precede cement with 30 bbls of fresh water. Lead with 130 sx (133 cu.ft) of Cl "B" with 2% metasilicate. (Yield = 2.06 cu.ft./sk; slurry weight = 12.5 PPG). Tail with 60 sx (36 cu.ft.) of Cl "B" with 2% CaCl<sub>2</sub> (Yield = 1.18 cu. ft./sk; slurry weight = 15.6 PPG) Total cement volume is 166 cu.ft. (100% excess to circulate cement to surface).

  
Hugo Cartaya

RUTH #1

CEMENT FOR SURFACE CASING

DIA. OF HOLE (IN.)	8.75 IN.
O.D. OF CASING (IN.)	7 IN.
TOTAL DEPTH (FT.)	330 FT.
CEMENT TOP (FT.)	0 FT.
YIELD	1.17 CU. FT. / SK.
% EXCESS	100 %

AREA OF HOLE	0.42 SQ. IN.
AREA OF CASING	0.27 SQ. IN.
AREA DIFFERENCE	0.15 SQ. IN.
CUBIC FEET OF CEMENT	(00 <del>49.81</del> CU. FT.)
SACKS OF CEMENT	84.80 SX

CEMENT FOR PRODUCTION CASING

DIA. OF HOLE (IN.)	6.25 IN.	6.25 IN.
O.D. OF CASING (IN.)	4.5 IN.	4.5 IN.
TOTAL DEPTH (FT.)	1100 FT.	1820 FT.
CEMENT TOP (FT.)	0 FT.	1100 FT.
YIELD	2.06 CU. FT. / SK.	1.18 CU. FT. / SK.
% EXCESS	30 %	30 %

AREA OF HOLE	0.21 SQ. IN.	0.21 SQ. IN.
AREA OF CASING	0.11 SQ. IN.	0.11 SQ. IN.
AREA DIFFERENCE	0.10 SQ. IN.	0.10 SQ. IN.
CUBIC FEET OF CEMENT	147 <del>142.87</del> CU. FT.	96 <del>73.88</del> CU. FT.
SACKS OF CEMENT	71.23 SX	81.39 SX