

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

## APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

## 1a. TYPE OF WORK

DRILL ☒DEEPEN ☐PLUG BACK ☐

## b. TYPE OF WELL

OIL  
WELL ☐GAS  
WELL ☒

OTHER

SINGLE  
ZONE ☐MULTIPLE  
ZONE ☐

## 2. NAME OF OPERATOR

Northwest Pipeline Corporation

## 3. ADDRESS OF OPERATOR

P.O. Box 90 - Farmington, New Mexico 87401

## 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)\*

At surface

P 880' FSL &amp; 950' FEL

At proposed prod. zone

As above

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

NA

## 15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST  
PROPERTY OR LEASE LINE, FT.  
(Also to nearest drlg. unit line, if any)

880'

## 16. NO. OF ACRES IN LEASE

NA

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

E/ 320

18. DISTANCE FROM PROPOSED LOCATION\*  
TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

NA

## 19. PROPOSED DEPTH

6068'

## 20. ROTARY OR CABLE TOOLS

Rotary

## 21. ELEVATIONS (Show whether DF, RT, GR, etc.)

6768' GR

## 22. APPROX. DATE WORK WILL START\*

## 23.

## PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|--------------|----------------|-----------------|---------------|--------------------|
| 12 1/4"      | 9 5/8"         | 32.3#           | 200'          | 125 sks.           |
| 8 3/4"       | 7"             | 20#             | 4009'         | 150 sks.           |
| 6 1/4"       | 4 1/2"         | 10.5#           | 3859'-6058'   | 210 sks.           |

Selectively perforate and stimulate the Mesa Verde formation.

A BOP will be installed after the surface casing has been run and cemented.  
All subsequent operations will be conducted through the BOP.

The E/2 of Section 11 is dedicated to this well.

Gas is dedicated.

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

D.E. Richardson

TITLE

Drilling Engineer

DATE

11/8/77

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

APPROVED BY

TITLE

CONDITIONS OF APPROVAL, IF ANY:

DER/ch

\*See Instructions On Reverse Side

RECEIVED

NOV 21 1977

U. S. GEOLOGICAL SURVEY  
DURANGO, COLO.

NEW MEXICO OIL CONSERVATION COMMISSION  
WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102  
Supersedes C-128  
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

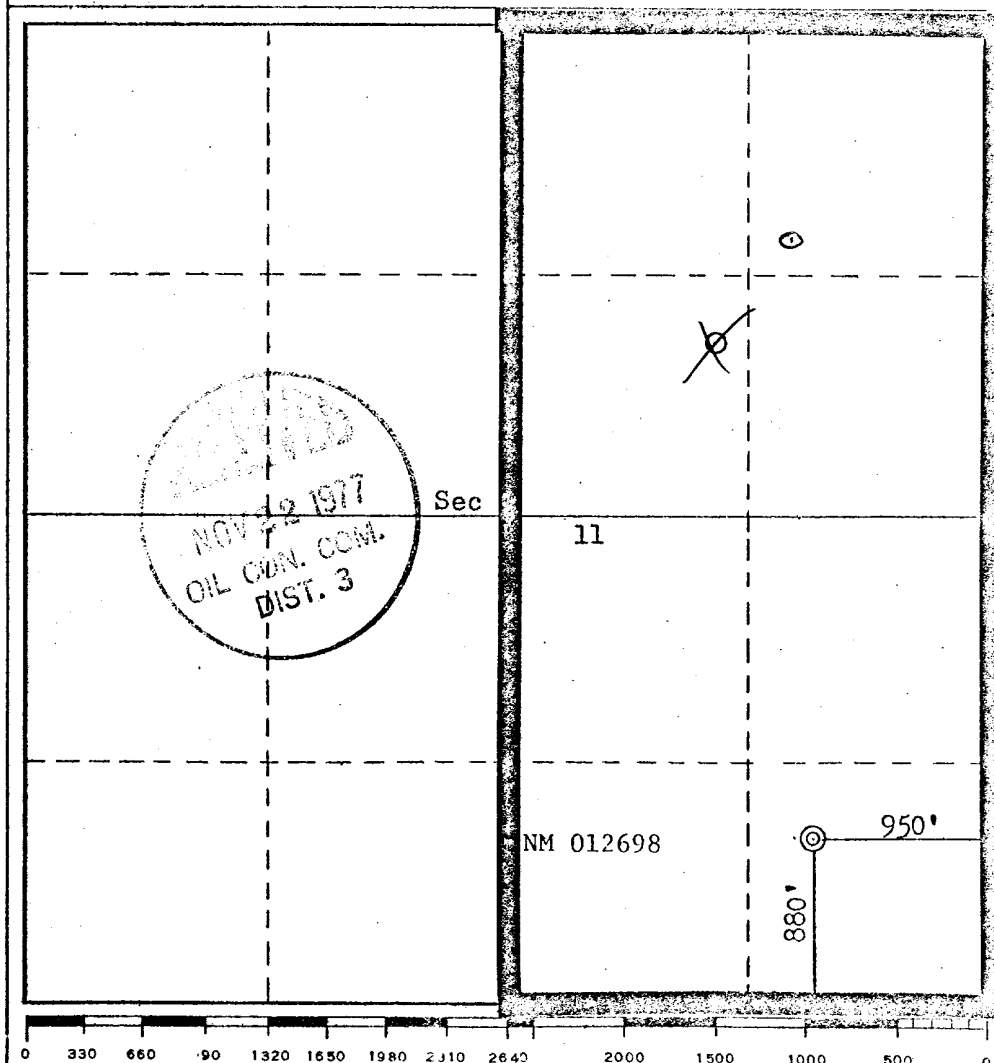
|  |  |                        |                                    |  |                        |
|--|--|------------------------|------------------------------------|--|------------------------|
| Operator<br><b>Northwest Pipeline Corporation</b>  |  |                        | Lease<br><b>San Juan 29-6 Unit</b> |  | Well No.<br><b>21A</b> |
| Unit Letter<br><b>P</b>  | Section<br><b>11</b>                     | Township<br><b>29N</b> | Range<br><b>6W</b>                 | County<br><b>Rio Arriba</b>            |                        |
| Actual Footage Location of Well:<br><b>880</b> feet from the <b>South</b> line and <b>950</b> feet from the <b>East</b> line |  |                        |                                    |  |                        |
| Ground Level Elev.<br><b>6768</b>  | Producing Formation<br><b>Mesa Verde</b> |                        | Pool<br><b>Blanco</b>              | Dedicated Acreage:<br><b>320</b> 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 interests 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 interests, has been approved by the Commission.



CERTIFICATION

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

Name  
**D.E. Richardson**  
Position  
**Drilling Engineer**  
Company  
**Northwest Pipeline Corp.**  
Date  
**November 8, 1977**

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 supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed  
**October 8, 1977**  
Registered Professional Engineer and/or Land Surveyor  
**Fred D. Kerr Jr.**

Certificate No.  
**3950**

# OPERATIONS PLAN

San Juan 29-6 #21A

I. LOCATION: SE/4 SE/4 SEC 11 T29N R6W

LEASE NUMBER: NM 012698

FIELD: Blanco Mesa Verde

ELEVATION: 6768 GR.

## II. GEOLOGY:

### A. Formation Tops:

|                  |      |                |      |
|------------------|------|----------------|------|
| Ojo Alamo:       | 3841 | Cliff House:   | 5493 |
| Kirtland:        | 2992 | Menefee:       | 5593 |
| Fruitland:       | 3381 | Point Lookout: | 5868 |
| Pictured Cliffs: | 3689 | Total Depth:   | 6068 |
| Lewis:           | 3809 |                |      |

B. Logging Program: Gamma Ray-Neutron at T.D.

C. Coring Program: None

D. Natural Gauges: Gauge at last connection above 5593, 5868 and at total depth. Gauge any noticeable increases in gas flow at depth other than those noted above.

## III. DRILLING:

A. Anticipated starting date and duration of activities:

B. BOP: Blind rams and pipe rams, 10', 900 series, double gate, rated at 3000 PSI.

### C. Mud Program:

a) Spud Mud: Water, lime and gel.

b) Surface to 3809

Viscosity: 32-38 sec/qt.

Weight: 8.8-9.2 #/gal.

Water Loss: 8-20 cc

Ph: 8.5-9.5

c) From 3809 to 4009

Viscosity: 36-45 sec/qt.

Weight: 8.5-9.5 #/gal.

Water Loss: 8-20 cc

Ph: 8.5-9.5

d) from 4009 to total depth with gas.

## IV. MATERIALS:

### A. Casing Program:

| Hole Size | Depth O.H. | Casing Size | Wt. & Grade | Depth Set |
|-----------|------------|-------------|-------------|-----------|
| 12 14/16" | 200'       | 9 5/8"      | 32.3# H-40  | 200'      |
| 8 3/4"    | 4009'      | 7"          | 20# K-55    | 4009'     |
| 6 1/4"    | 2059'      | 4 1/2"      | 10.5# K-55  | 3859-6068 |

### B. Float Equipment:

a) Surface casing 9 5/8" - B & W Regular Pattern Shoe.

b) Intermediate Casing 7" - Dowell guide shoe (Code #50101-070) and self fill insert float collar (Code #53003-070). Seven (7) centralizers (Code #56011-070) spaced every other joint above the shoe.

B. Float Equipment Continued

Place float collar one joint above shoe.

- c) Liner 4 1/2" - Larkin geyser shoe (Fig. 222) and Larkin flapper type float collar (Fig. 404). Brown liner hanger with neoprene pack off.

- C. Tubing Program: 5950', of 2 3/8", 4.7#, EUE, K-55 tubing with seating nipple on top of bottom joint. Expendable check valve on bottom.

- D. Well Head Equipment: Gray well head. Gray representative to set slips and make cut off.

V. CEMENTING:

- A. Surface Casing 9 5/8" - Use 125 sks. Class "B" with 1/4# gel flake per sack and 3% CaCl (100% excess to circulate). WOC 12 hours. Test surface casing to 600 PSI for 30 minutes.
- B. Intermediate Casing 7" - Use 100 sacks Class "B" 65/35 poz with 12% gel and 15.52 gal. water per sack. Tail in with 50 sacks Class "B" with 2% CaCl (65% excess to cover Ojo Alamo). WOC 12 hours. Run temp. survey after 8 hours. Test casing to 600 PSI.
- C. Production Liner 4 1/2" - Use 210 sacks Class "B" with 4% gel and 1/4 . . . ft. of fine Gilsonite per sack. Precede cmt. with 20 bbls. water mixed with 3 sks. gel (70% excess to circulate liner). Set liner pack off and reverse out excess cmt. Run 6 1/4" bit to top of liner and pressure test (test 12 hours after plug is down). Lay down DP and run 3 7/8" bit on 2 3/8" EUE tubing to clean out liner. Perforate 18 hours after plug is down.

NORTHWEST PIPELINE CORPORATION

MULTI - POINT SURFACE USE PLAN

for the San Juan 29-6 Unit

Well Number 21A

1. Existing Roads: See attached topographic map. All existing roads used, shall be maintained in a serviceable condition at all times during the drilling operation.
2. Planned Access Roads: See attached topographic map. Maximum grade is approximately 1%. The road surface will not exceed twenty feet in width. Upon completion of drilling operations the access road will be adequately drained to control runoff and soil erosion. Drainage facilities may include ditches, water bars, culverts or any other measure deemed necessary. All activities will be confined to the access road and drill pad..
3. Location of Existing Wells: See attached topographic map.
4. Location of Tank Batteries; Production Facilities; and Production, Gathering and Service Lines: See attached topographic map for locations of existing and proposed gas gathering lines.
5. Location and Type of Water Supply: Water needed for the drilling operation will be hauled from the San Juan 29-6 Unit Water Well located in the SW/4 28, T29N, R6W.
6. Source of Construction Materials: No additional materials will be needed.
7. Methods for Handling Waste Disposal: All garbage, debris, and trash will be buried at least three feet deep. A portable toilet will be supplied for human waste. After drilling operations have been completed the reserve pit will be fenced and the liquid portion will be allowed to evaporate before the location is cleaned up and leveled. The earthen pits will not be located on natural drainages and will be constructed in such a manner so that they will not leak. Any evaporator pit containing toxic liquids will be fenced.
8. Ancillary Facilities: There will be no camps or airstrips associated with the drilling of this well.
9. Well Site Layout: See attached location layout sheet. There will be a drainage ditch above the cut slope.
10. Plans for Restoration of the Surface: Upon completion of drilling, the location will be cleaned, and leveled so that no cut or fill banks will be steeper than 3:1.

All of the area disturbed in connection with the drill site will be seeded as close as possible for any above ground equipment while still allowing for access to the equipment. Seeding will be done within one year after drilling is completed and during the period from July 1 through September 15. Seeding will be done with seed Mixture #1.

All equipment above ground will be painted a non-glare, non-reflective, non-chalking color that simulates the natural color of the site. For this well code number 595-34127, Green.

11. Other Information: If, during operations, any historic or prehistoric ruin, monument or site, or any object of antiquity is discovered, then work will be suspended and the discovery will be reported to the District Manager of the BLM.

When drilling with gas, the line used to discharge and burn off the gas will be located so as not to damage vegetation in the area, and if necessary an earthen screen will be constructed to protect the vegetation. All liquids from the line will be contained at the site unless otherwise specified by the surface agency's representative.

The area covered by the location and proposed access road is gently sloped with scattered brush and some grasses.

12. Operator's Representative: D.E. Richardson, P.O. Box 90 - Farmington, New Mexico 87401. Phone: 327-5351 Extension #38.
13. Certification:

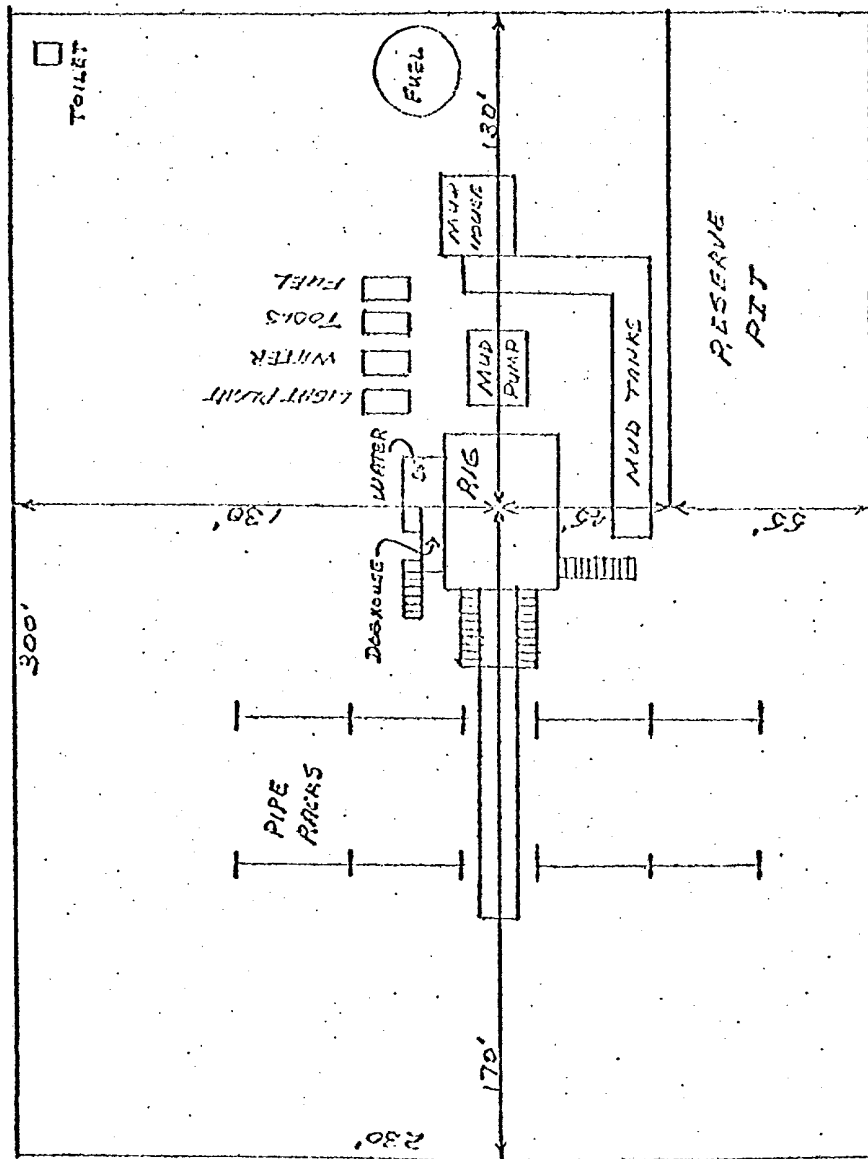
I hereby certify that I have inspected the proposed drillsite and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge true and correct; and, that the work associated with the operations proposed herein will be performed by Northwest Pipeline Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

11-18-77  
Date

D.E. Richardson  
D.E. Richardson  
Drilling Engineer

DER/ch

NORTHWEST PIPELINE CORP. In June 29-6 Unit No 21A.



DATE:

SCALE: 1cm = 20'





Vicinity Map for  
NORTHWEST PIPELINE CORP. #21A San Juan 29-6 Unit  
880'FSL 950'FEL Sec 11-T29N-R6W  
Rio Arriba County, New Mexico