

OPERATIONS PLAN

San Juan 30-5 Unit #60

I. LOCATION: SE/4 NE/4 Sec. 5, T30N, R5W

LEASE NUMBER: SF 080066

FIELD: Blanco Mesa Verde

ELEVATION: 6470' GR

II. GEOLOGY:

A. Formation Tops:

Ojo Alamo:	2513'	Cliff House:	5385'
Kirtland:	2643'	Menefee:	5433'
Fruitland:	3088'	Point Lookout:	5667'
Pictured Cliffs:	3233'	Total Depth:	5867'
Lewis:	3604'		

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

C. Coring Program: None

D. Natural Gauges: Gauge at last connection above 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 3604.

Viscosity: 32-38 sec/qt.

Weight: 8.8-9.2 #/gal.

Water Loss: 8-20 cc

Ph: 8.5-9.5

c) From 3604 to 3804

Viscosity: 36-45 sec/qt.

Weight: 8.5-9.5 #/gal.

Water Loss: 8-20 cc

Ph: 8.5-9.5

d) From 3804 to total depth with gas.

IV. MATERIALS:

A. Casing Program:

Hole Size	Depth O.H.	Casing Size	Wt. & Grade	Depth Set.
12 1/4"	200'	9 5/8"	32.3# H-40	200'
8 3/4"	3804'	7"	20# K-55	3804'
6 1/4"	5867'	4 1/2"	10.5# K-55	3654-5867

B. Float Equipment:

a) Surface casing 9 5/8" - B & W Reg. 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. Place float collar one joint above shoe.

B. Float Equipment con't.

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

C. Tubing Program: 5800' 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/sk. and 3% CaCl (100% excess to circ.) WOC 12 hrs. Test surface cst. to 600 PSI for 30 min.

B. Intermediate Casing 7" - Use 100 sks. Class "B" 65/35 poz with 12% gel and 15.52 gal. water/sk. Tail in with 50 sks. Class "B" with 2% CaCl (65% excess to cover Ojo Alamo). WOC 12 hours. Run temperature survey after 8 hours. Test csg. to 600 PSI.

D. Production Liner 4 1/2" - Use 210 sks. Class "B" with 4% gel and 1/4 cu. ft. of fine Gilsonite/sk. Precede cement with 20 bbls. water mixed with 3 sks. gel (70% excess to circulate liner). Set liner pack off & reverse out excess cement. Run 6 1/4" bit to top of liner & pressure test (test 12 hours after plug is down). Lay down DP & run 3 7/8" bit on 2 3/8" EUE tubing to clean out liner. Perforate 18 hrs. after plug is down.

NORTHWEST PIPELINE CORPORATION

MULTI-POINT SURFACE USE PLAN

for the San Juan 30-5 Unit

Well Number 60

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, Gray.

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: J.P. Slattery, P.O. Box 90 - Farmington, New Mexico, 87401. Phone: 327-5351, extension #62.
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.

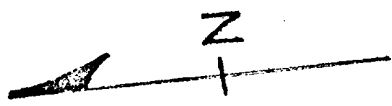
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Date

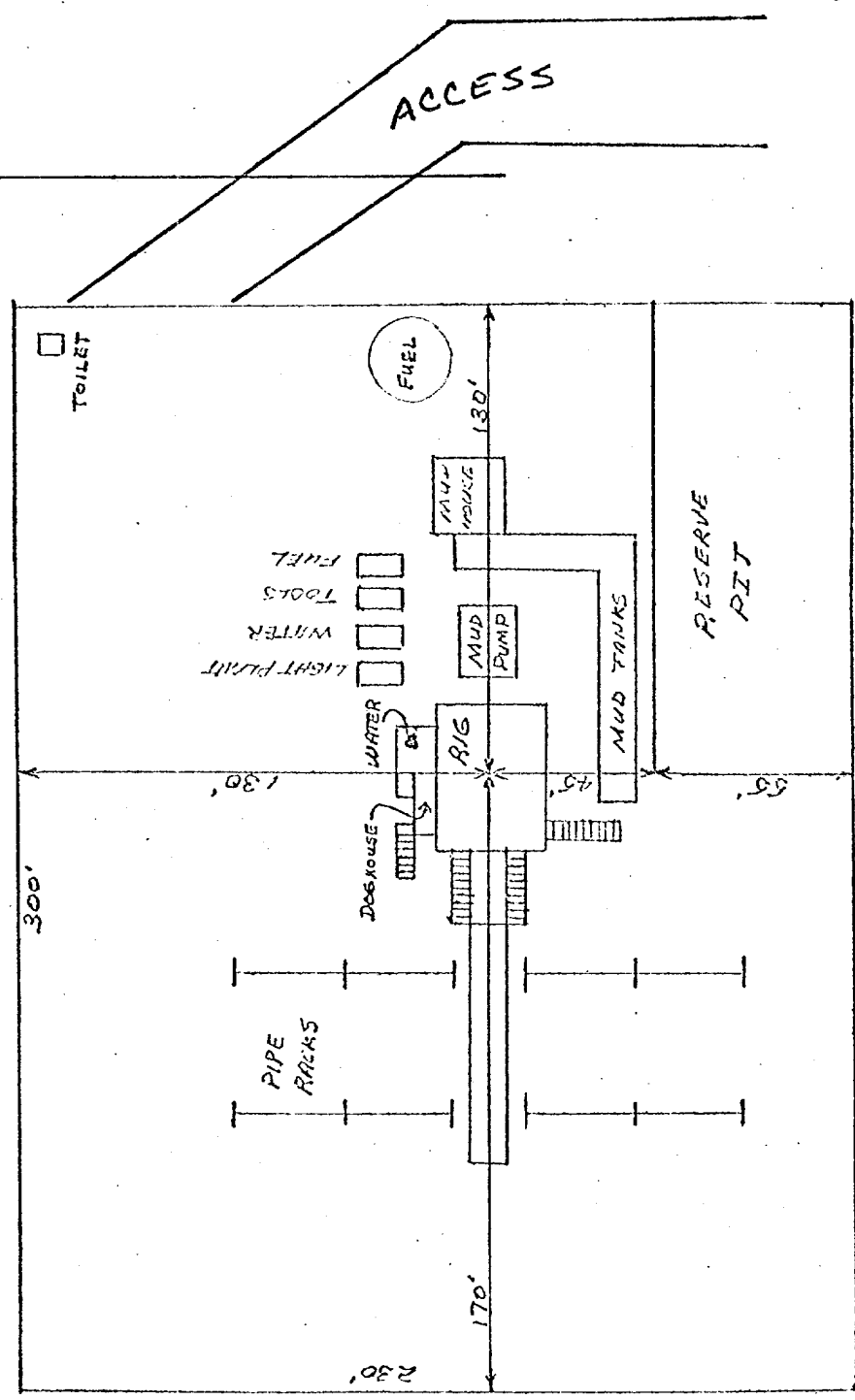
J.P. Slattery

J.P. Slattery
Drilling Engineer

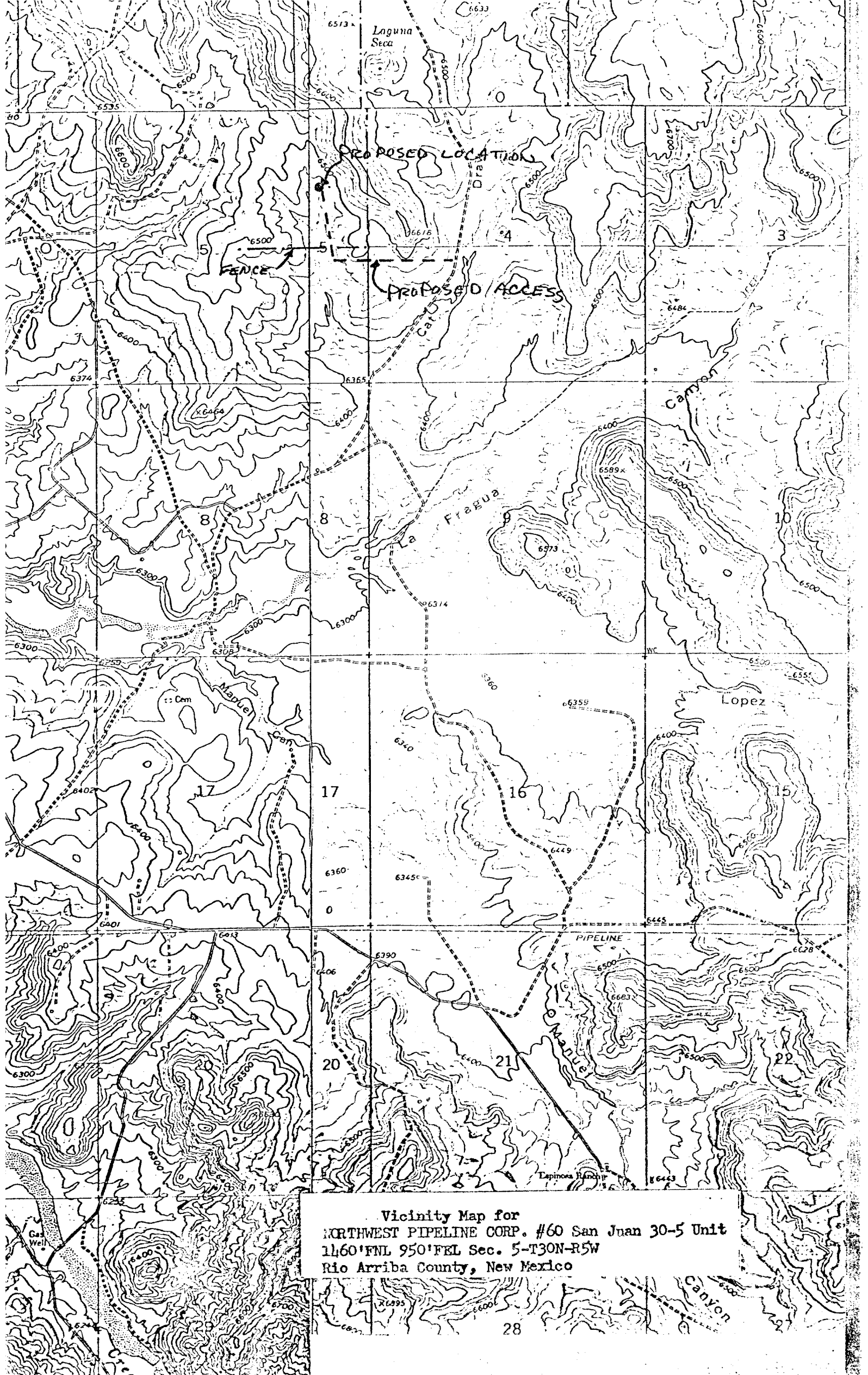
NORTHWEST Pipeline Corporation
 SAN JUAN 30-5 #60



WATER DIVERSION



104 = 20'
 8-10-77



Vicinity Map for
NORTHWEST PIPELINE CORP. #60 San Juan 30-5 Unit
1460'FNL 950'FEL Sec. 5-T30N-R5W
Rio Arriba County, New Mexico