

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

3-045-28222

5. LEASE DESIGNATION AND SERIAL NO.
SF079042

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
Northeast Blanco

8. FARM OR LEASE NAME
Northeast Blanco Unit

9. WELL NO.
461

10. FIELD AND POOL OR WILDCAT
Basin Fruitland Coal

11. SEC. T. R. M. OR BEK. AND SURVEY OR AREA
Surface Sec. 12, T30N, R8W
B.H. 1 Sec. 7, T30N, R7W

12. COUNTY OR PARISH
San Juan

13. STATE
NM

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

12. TYPE OF WORK
DRILL ☒ DEEPEN ☐ PLUG BACK ☐

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

2. NAME OF OPERATOR
Blackwood & Nichols Co., Ltd.

3. ADDRESS OF OPERATOR
P.O. Box 1237 Durango, Colorado 81302-1237

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface
1830' FSL - 830' FEL, Section 12, T30N, R8W

At proposed prod. zone
1376' FSL - 840' FEL, Section 7, T30N, R7W - ~~Sec. 7~~

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
17 1/2 miles NE of Blanco, New Mexico

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drilg. unit line, if any)
Bottom Hole: 480'

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. Bottom Hole: 640'

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6326' UGL

22. APPROX. DATE WORK WILL START*
September 15, 1990

23. PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH
12 1/4"	9 5/8"	36#	300'
8 3/4"	7"	23#	2935' TVD
6 1/4"	5 1/2"	17#	2835'-3235' TVD

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

259 cuft/circ to surface

1163 cuft/circ to surface

39 cuft/circ to liner top (Cement is optional)

Propose to spud in the San Jose formation. Drill a 12 1/4" vertical surface hole to TD of 300'. Run and cement surface casing with cement returns to surface. WOC 12 hours. Test to 1000 psi/30 mins. Drill a 8 3/4" directional hole from under surface at a build angle of approx. 5°/100' to approx. 47°. Hold that angle to a point which will allow a 5.0° drop angle per 100' back to vertical at 2935' TVD, set 7" casing at 2935' TVD, with a 1500' horizontal displacement. Fresh water mud will be used. No abnormal pressures or poisonous gases are anticipated. Run and cement intermediate casing with cement returns to surface. WOC 12 hours. Test to 1500 psi for 30 min. Drill a 6 1/4" vertical hole to a TVD of 3242' using air and water. A mud logging unit will be used while drilling this interval. Run the production liner. The production liner will be cemented if fracture stimulation is necessary.

Surface ownership is Bureau of Reclamation/New Mexico State Parks

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.

SIGNED: R. A. Williams TITLE: Administrative Manager DATE: 2/30/90

(This space for Federal or State office use)

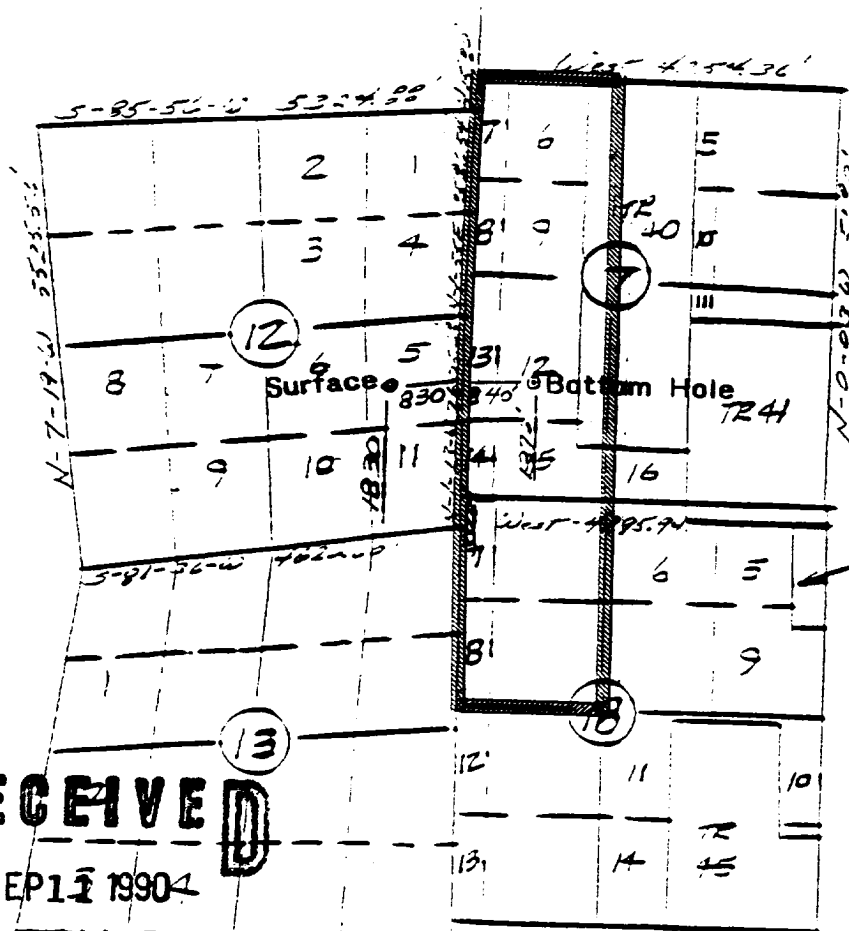
PERMIT NO. RECEIVED APPROVAL DATE SEP 05 1990

APPROVED BY SEP 11 1990 TITLE AREA MANAGER

Held C-104 OIL CON. DIV. NMOC DIST. 2 *See Instructions On Reverse Side

FOR DD + ASPE

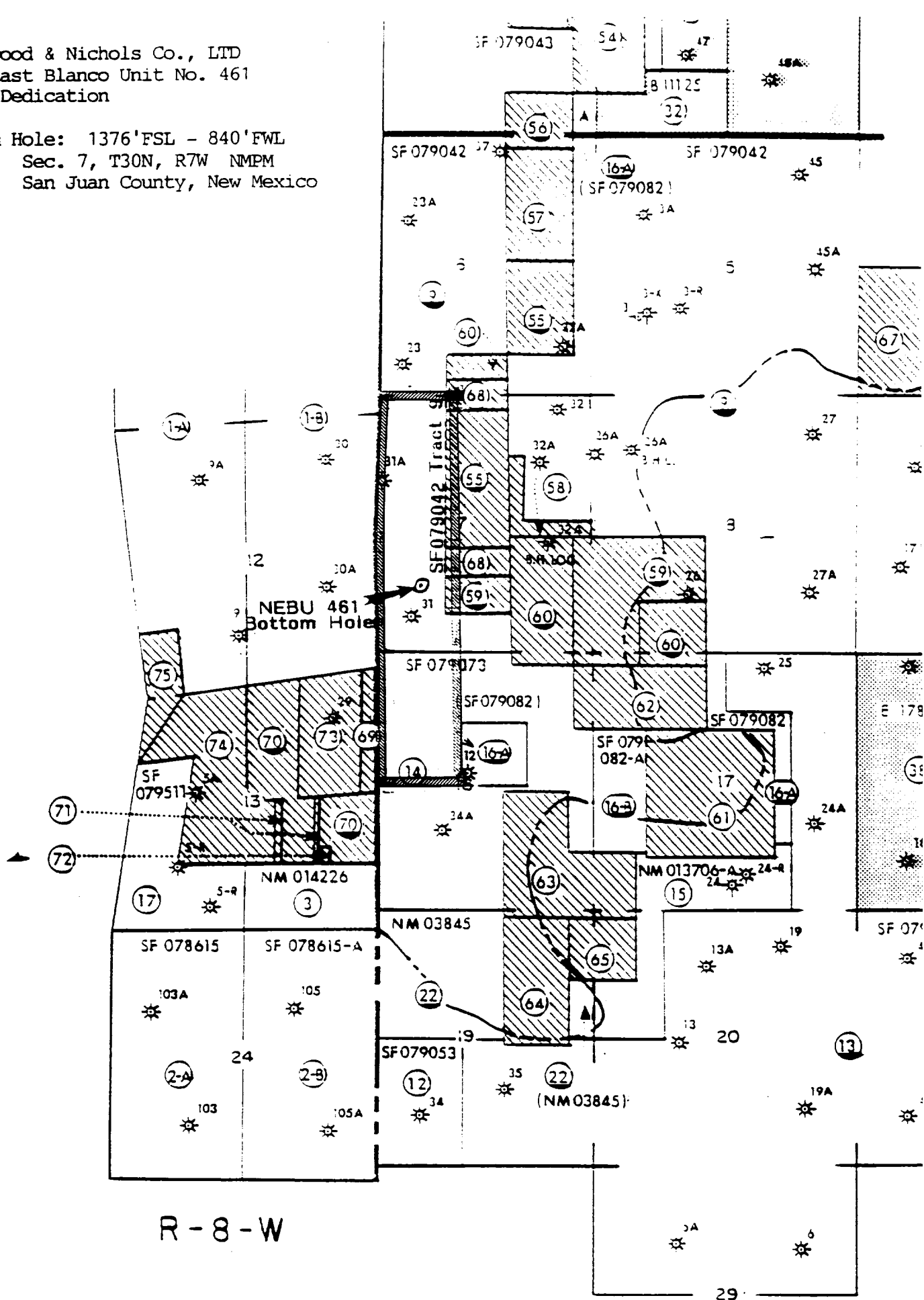
OIL CON. DIV.
DIST. 3



Blackwood & Nichols Co., LTD
Northeast Blanco Unit No. 461
Lease Dedication

Bottom Hole: 1376'FSL - 840'FWL
Sec. 7, T30N, R7W NMPM
San Juan County, New Mexico

T
30
N



Blackwood & Nichols Co., Ltd.
Northeast Blanco Unit No. 461
Surface: 1830' FSL - 830' FEL
Section 12, T30N, R8W
Bottom Hole: 1376' FSL - 840' FWL
Section 7, T30N, R7W
San Juan Co., New Mexico

Field: Basin Fruitland Coal

Elevation: 6326' UGL

Geology:

	MD	TVD
	-----	-----
Formation Tops: San Jose -	Surface	Surface
Ojo Alamo -	2548'	2038'
Kirtland -	2788'	2235'
Fruitland -	3538'	2935'
Intermediate TD -	3538'	2935'
Total Depth -	3936'	3242'

Logging Program: No logs will be run at Intermediate TD. A one man mud logging unit will be run from Intermediate TD to Total Depth.

Drilling:

Contractor:

Toolpusher:

Operator's Representative:

	MD	

Mud Program:	0 - 300'	Spud mud of lime and gel.
	300' - 2600'	Fresh water, Gel, PHPA polymer, Drispac with prehydrated 20 bbl. gel sweeps every 200' or as hole conditions dictate. Mud wt.: 8.6 - 9.0 ppg. Vis: 32-35 sec./qt. Water loss: 6-8 cc. PH: 9.0-9.5
	2600' - 3438'	Reduce water loss: 4-6cc., HPHT < 20cc. Increase viscosity with prehydrated gel slurry: 40-45 sec/qt.
	3438' - 3538'	Mud wt.: 9.0 - 9.5 ppg. as necessary to control well.
	3538' - 3936'	Water and air.

Materials:

Casing Program:

Hole Size	Depth-TVD	Depth-MD	Casing Size	Wt. & Grade
12 1/4"	300'	300'	9 5/8"	36# , K-55
8 3/4"	2935'	3538'	7"	23# , K-55
6 1/4"	2835'-3242'	3438'-3936'	5 1/2"	17# , N-80

Float Equipment:

- 9 5/8" surface casing - Texas Pattern Guide Shoe. Threadlock guide shoe and shoe joint.
- 7" intermediate casing- Cement Nose Guide Shoe. Self fill insert float valve run one joint above shoe.
 - Forty two (42) centralizers: Twenty eight (28) run, one each, every joint through the straight section of hole to top of Ojo Alamo. Nine (9) run, one each, every other joint from top of Kirtland to the top of vertical hole section at 2934' TVD; and five (5) run, one each, every joint above shoe.
 - Six (6) Turbolizers: run, one each, every joint across Ojo Alamo.
- 5 1/2" liner
 - Geyser guide shoe. Threadlock shoe. Right hand rotating, left hand set liner hanger with lead seal ring packoff.

Wellhead Equipment:

- 9 5/8"X 10" 3000 casing head with 7" automatic slips.
- 10" 3000 X 6" 3000 tubing head with a 2 7/8" EUE Tubing hanger.

Cement Program:

- 9 5/8" surface casing- 250 sacks(295 cuft) of Class B w/ 2% CaCl and 1/4# flocele per sack. 300 % excess to circulate to surface. WOC 12 hours. Pressure test to 1000 psi for 30 minutes prior to drilling surface shoe.
- 7" intermediate casing-615 sacks(1015 cuft) of 65/35 Class B Poz with 6% gel, 1/4# flocele per sack, and 0.6% fluid loss additive followed by 125 sacks(148 cuft) Class B with 1/4# flocele per sack. 200% excess to circulate to surface. WOC for 12 hours. Run temperature survey after 8 hours if cement does not circulate. Pressure test to 1500 psi/ 30 minutes prior to drilling shoe.

5 1/2" liner

-30 sacks(39 cuft) of Class B with 0.2% retarder, 1% CaCl, 1.3% fluid loss additive, and 6 1/4# gilsonite per sack. 100% excess to circulate to liner top. Note: cement is optional. Liner may not be cemented if hole conditions dictate.

Miscellaneous:

Operate pipe rams dailly and record in tour reports.

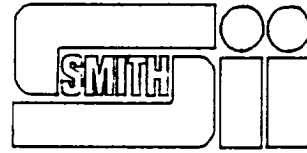
Operate Blind rams on each trip and record in tour reports.

7" casing rams are to be installed prior to running the production casing.

5 1/2" casing rams are to be installed prior to running the production liner.

23 JUL 1990 @ 16:35

BLACKWOOD AND NICHOLS
N/E BLANCO #461
SECTION 12-T30N-R8W
SAN JOUAN COUNTY NEW MEXICO

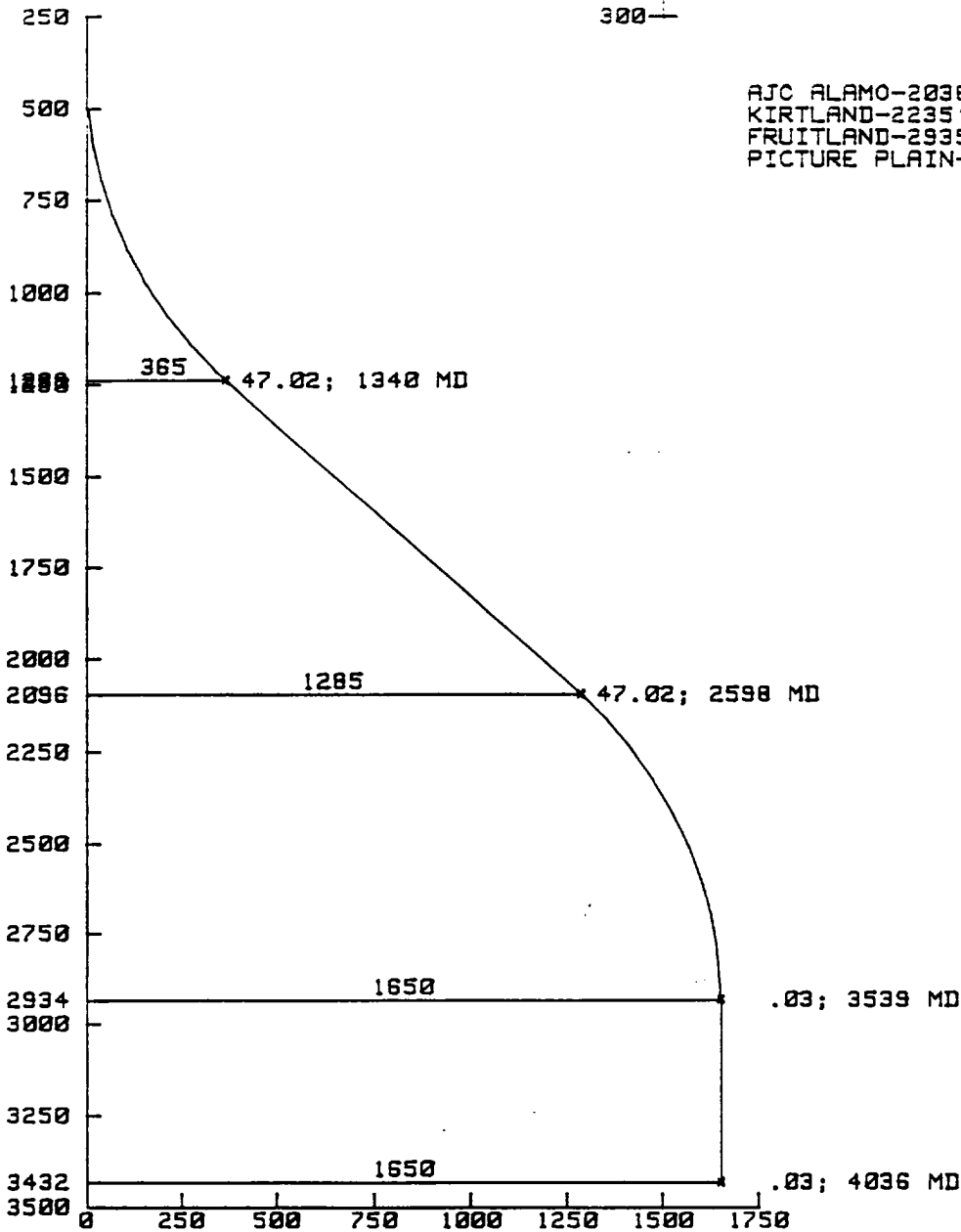
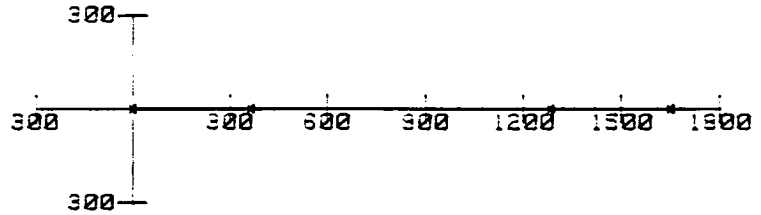


VERTICAL PLAN

SCALE: 250 FEET/DIVISION

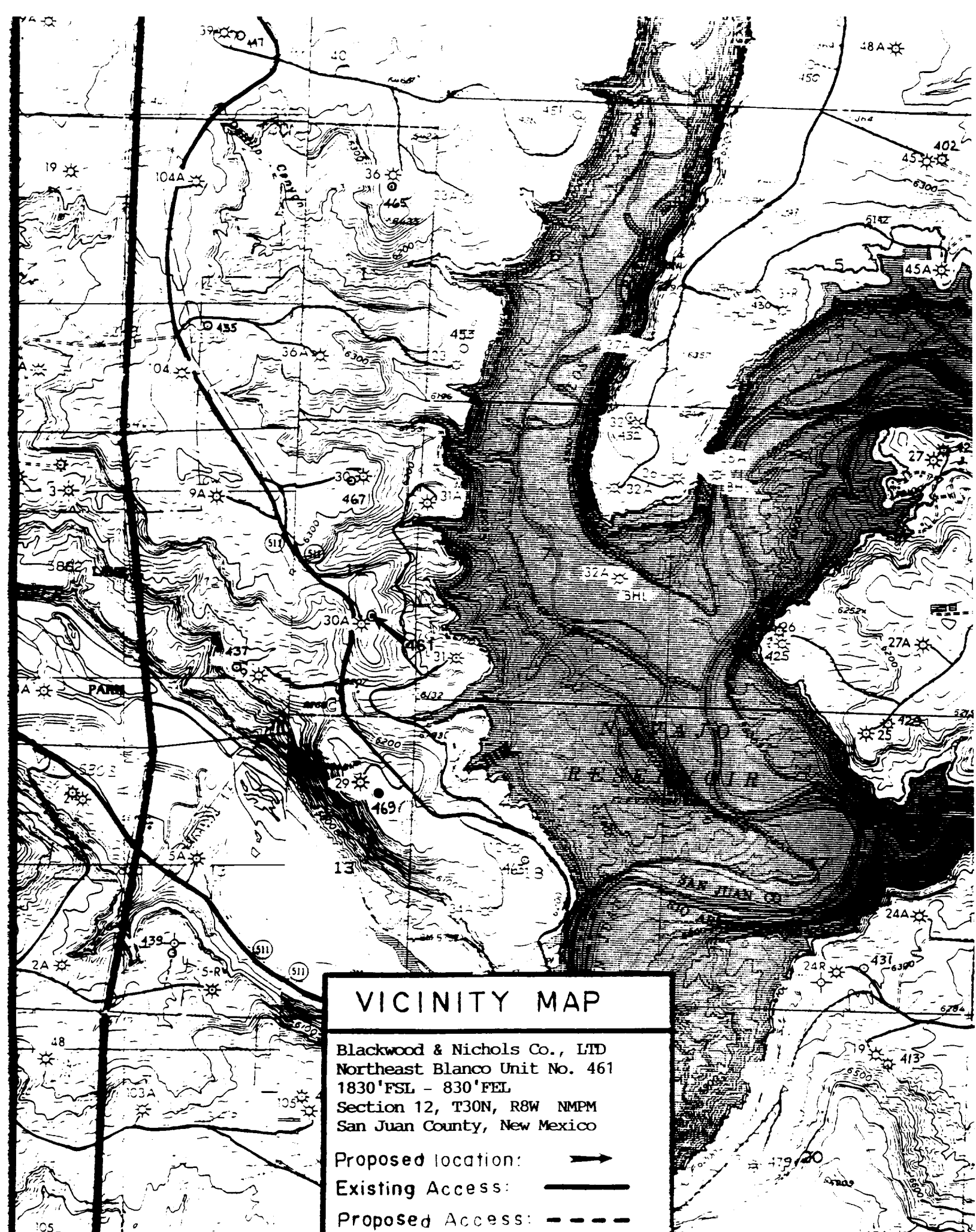
HORIZONTAL PLAN

SCALE: 300 FEET/DIVISION



AJC ALAMO-2038'TVD, 2548'MD
KIRTLAND-2235'TVD, 2788'MD
FRUITLAND-2935'TVD, 3538'MD
PICTURE PLAIN-3242'TVD, 3936'MD

VERTICAL SECTION PLANE: N 90.00 E



VICINITY MAP

Blackwood & Nichols Co., LTD
Northeast Blanco Unit No. 461
1830'FSL - 830'FEL
Section 12, T30N, R8W NMPM
San Juan County, New Mexico

Proposed location: 
Existing Access: 
Proposed Access: 