

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

b. TYPE OF WELL

OIL  
WELL ☐

GAS  
WELL ☒

OTHER

SINGLE  
ZONE ☒

MULTIPLE  
ZONE ☐

2. NAME OF OPERATOR

Richardson Operating Co. (303) 830-8000

3. ADDRESS AND TELEPHONE NO.

1700 Lincoln St., Suite 1700, Denver, Co. 80203

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

At surface

1978' FNL & 1221' FWL

At proposed prod. zone

Same

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

1 air mile SW of Farmington

15. DISTANCE FROM PROPOSED\*

LOCATION TO NEAREST

PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

≈600'

16. NO. OF ACRES IN LEASE

1,784

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

NW 1/4 149.4  
100 A

18. DISTANCE FROM PROPOSED LOCATION\*

TO NEAREST WELL, DRILLING, COMPLETED,  
OR APPLIED FOR, ON THIS LEASE, FT.

1593'

19. PROPOSED DEPTH

975'

20. ROTARY OR CABLE TOOLS

Rotary

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

5,220' ungraded

22. APPROX. DATE WORK WILL START\*

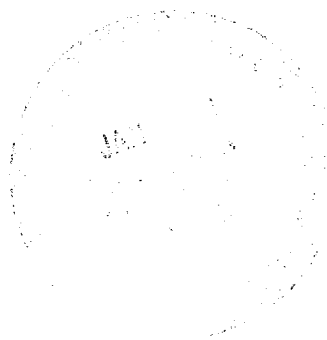
Sept. 1, 2001

23.

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8-3/4"	K-55 7"	20	120'	≈36 cu. ft. & to surface
6-1/4"	K-55 4-1/2"	10.5	975'	≈185 cu. ft. & to surface

2001 APR 10 PM 1:50



DRILLING OPERATIONS MUST BE IN ACCORDANCE WITH THE BLM'S  
GENERAL REGULATIONS

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

cc: BIA, BLM, Colby, OCD (via BLM), Tribe

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, 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

TITLE

Consultant (505) 466-8120

DATE

4-13-01

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

12/31/01

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.  
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY

TITLE

DATE

12/31/01

\*See Instructions On Reverse Side

NMOC

State of New Mexico  
Energy, Minerals & Mining Resources Department

Form C - 102

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

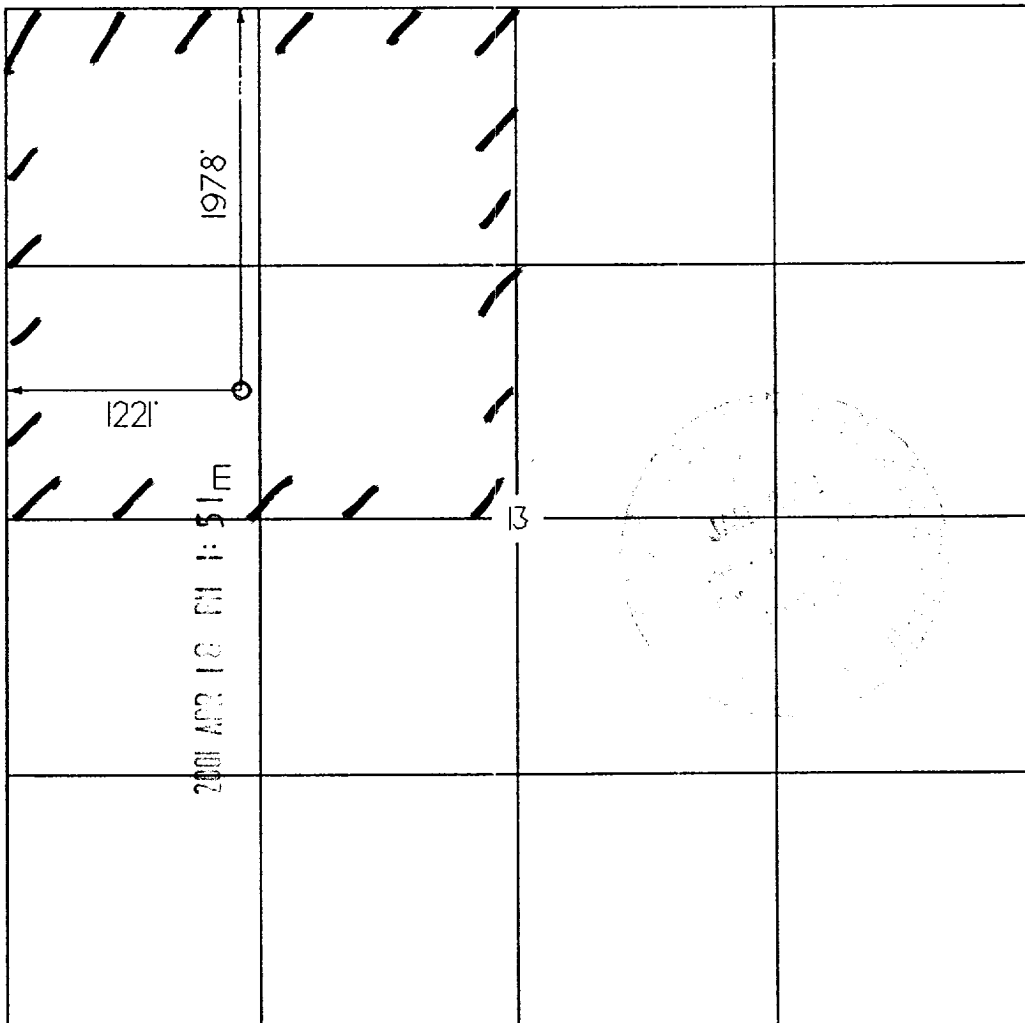
WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number <b>30-045-30653</b>	Pool Code <b>79680</b>	Pool Name <b>WEST KUTZ PC</b>
Property Code <b>29190</b>	Property Name <b>WF NAVAJO 13</b>	Well Number <b>2</b>
OGRD No. <b>019219</b>	Operator Name <b>RICHARDSON OPERATING COMPANY</b>	Elevation <b>5220'</b>

Surface Location									
UL or Lot <b>E</b>	Sec. <b>13</b>	Twp. <b>29 N.</b>	Rge. <b>14 W.</b>	Lot kdn.	Feet from > <b>1978</b>	North/South <b>NORTH</b>	Feet from > <b>1221</b>	East/West <b>WEST</b>	County <b>SAN JUAN</b>

Bottom Hole Location If Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot kdn.	Feet from >	North/South	Feet from >	East/West	County
Dedication <b>160</b>	Joint ?	Consolidation	Order No.						

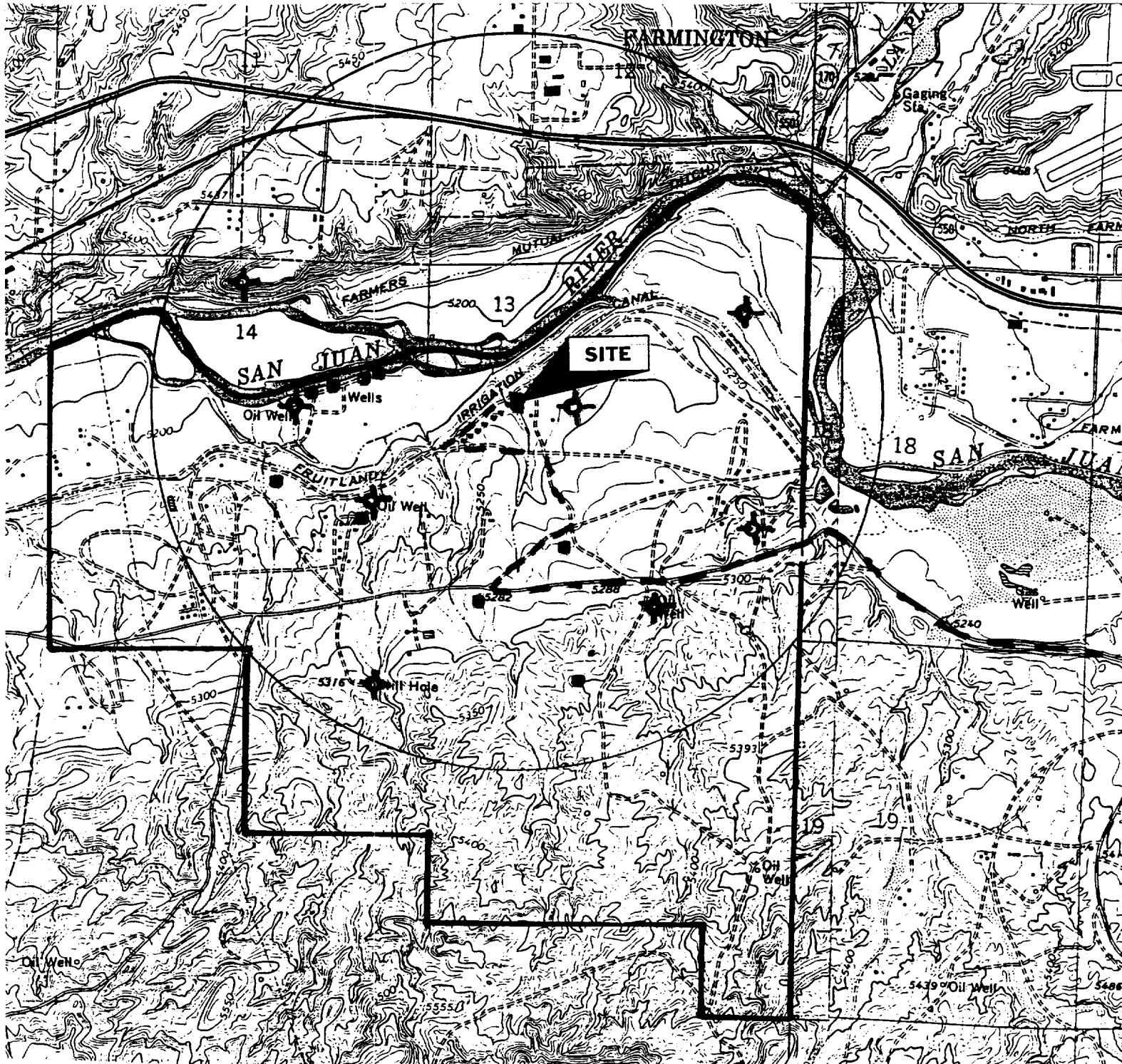
NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



<b>OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature <i>Brian Wood</i> Printed Name <b>BRIAN WOOD</b> Title <b>CONSULTANT</b> Date <b>APR. 13, 2001</b>	
<b>SURVEYOR CERTIFICATION</b> I hereby certify that the well location 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 belief. Date of Survey <b>30 OCTOBER 2000</b> Signature and Seal of Professional Surveyor <i>Gerardo Huddleston</i> Registered Land Surveyor <b>6844</b>	

Richardson Operating Co.  
 WF Navajo 13 #2  
 1978' FNL & 1221' FWL  
 Sec. 13, T. 29 N., R. 14 W.  
 San Juan County, New Mexico

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PROPOSED WELL: ■

PROPOSED PIPELINES: - - - -

EXISTING WELL: ●

EXISTING ROAD: — — —

P&A WELL: ⊕

LEASE: └

**PERMITS WEST** INC.  
 PROVIDING PERMITS for LAND USERS

Richardson Operating Co.  
WF Navajo 13 #2  
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## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Subsea Elevation</u>
Kirtland Shale	000'	5'	+5,220'
Fruitland Coal	670'	675'	+4,550'
Pictured Cliffs Ss	865'	870'	+4,355'
Total Depth (TD)*	975'	980'	+4,245'

\* all elevations reflect the ungraded ground level of 5,220'

### 2. NOTABLE ZONES

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland Coal (670')	Fruitland Coal (670')	Fruitland Coal (670')
Pictured Cliffs (865')		

Water zones will be protected with casing, cement, and weighted mud. Fresh water encountered during drilling will be recorded by depth, cased, and cemented. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

### 3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. (A typical 2,000 psi model is on PAGE 3.) Double ram or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1000 psi.

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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. BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi. Maximum expected pressure is  $\approx 415$  psi.

#### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O.D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>GL Setting Depth</u>
8-3/4"	7"	20	K-55	New	120'
6-1/4"	4-1/2"	10.5	K-55	New	975'

Surface casing will be cemented to surface with  $\approx 36$  cu. ft. ( $\approx 30$  sx) Class B + 2%  $\text{CaCl}_2$ . Volume is based on 100% excess, yield of 1.18 cu. ft./sk, and slurry weight of 15.6 PPG. WOC = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will first be cleaned of rock chips by circulating at least 150% of hole volume with mud to the surface. Thirty barrels of fresh water will next be circulated. Lead with  $\approx 115$  cu. ft. ( $\approx 56$  sx) of Class B with 2% metasilicate (yield = 2.06 cu. ft./sk, slurry weight = 12.5 PPG). Tail with  $\approx 70$  cu. ft. ( $\approx 60$  sx) of Class B with 2%  $\text{CaCl}_2$  (yield = 1.18 cu. ft./sk, slurry weight = 15.6 PPG). Total cement volume is  $\approx 185$  cu. ft. based on 75% excess and circulating to surface.

Production casing will have 4-1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Five centralizers will be spaced on every other joint starting above the shoe. Five turbolizers will be placed on every other joint starting from the top of the well.