

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

JUN 2002

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

b. TYPE OF WELL

OIL  
WELL ☐

GAR  
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 1454' FSL & 1755' FEL NWSE

At proposed prod. zone Same

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

8 air miles NW of Farmington

15. DISTANCE FROM PROPOSED\*

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

1,454'

16. NO. OF ACRES IN LEASE

1,840

17. NO. OF ACRES ASSIGNED  
TO THIS WELL

160

18. DISTANCE FROM PROPOSED LOCATION\*

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

3,398'

19. PROPOSED DEPTH

1,200'

20. ROTARY OR CABLE TOOLS

Rotary

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

5,552' ungraded

22. APPROX. DATE WORK WILL START\*

Apr. 30, 2002

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	1,200'	≈225 cu. ft. & to surface

This action is subject to technical and  
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".

Archaeology report (2001-28n #1 dated 3-22-02) prepared by LaPlata.

On sited with Bill Liess

APD/ROW

This APD is also serving as a BLM road right-of-way application to amend NMNM-99904. The 30' x 811.4' long road right-of-way will cross 0.56 acres in the NENE 30-30n-14w (Stations 2+68.42 to 10+79.82).

cc: BLM, OCD (via BLM), Van Blaricom

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

*David J. Mankiewicz*

TITLE

Consultant (505) 466-8120

DATE

4-3-02

(This space for Federal or State office use)

*David J. Mankiewicz*

PERMIT NO.

APPROVAL DATE

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

*David J. Mankiewicz*

TITLE

DATE

\*See Instructions On Reverse Side

NMOCD

State of New Mexico  
Energy, Minerals & Mining Resources Department  
OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Form C - 102

☐ AMENDED REPORT

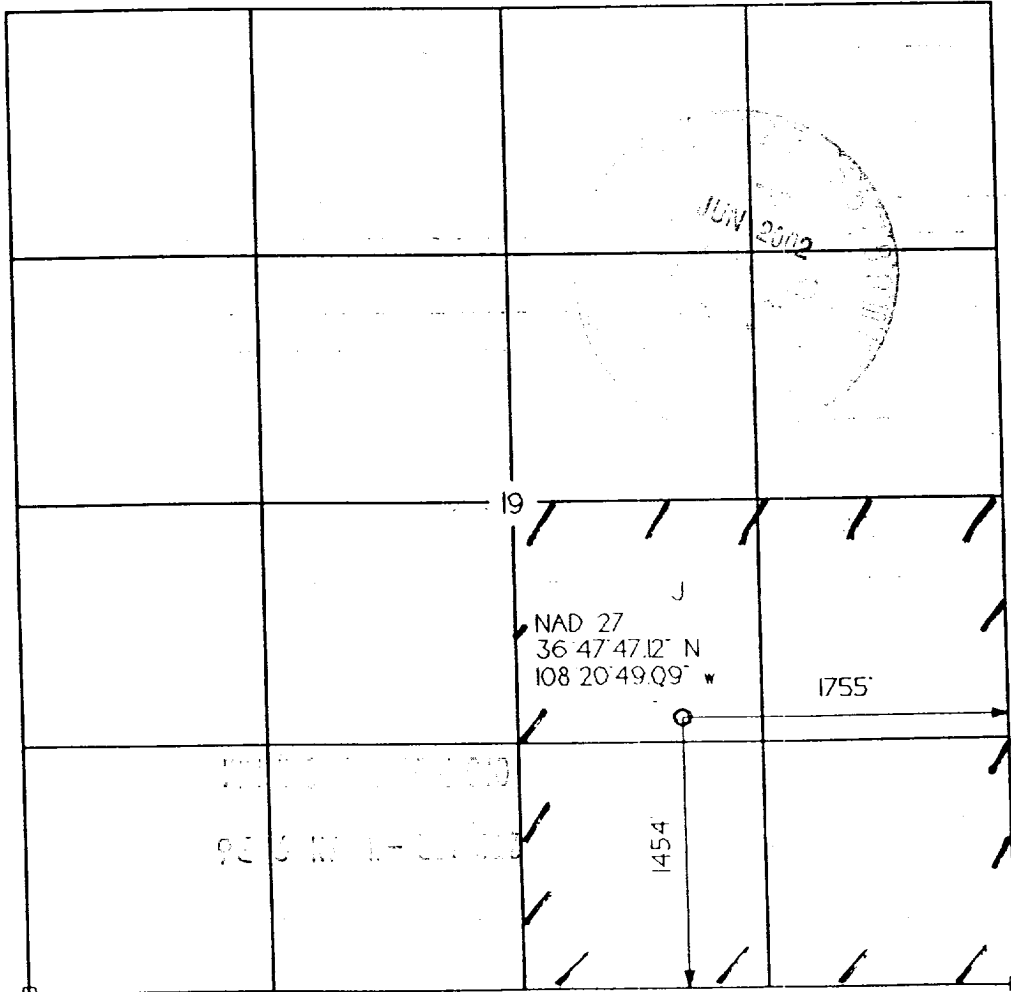
WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number <b>30-045-31063</b>	Pool Code 86620	Pool Name <b>TWIN MOUNDS PIC. CLF.</b>
Property Code <b>29832</b>	Property Name WF FEDERAL 19	Well Number 4
OGRID No. <b>019219</b>	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5552'

Surface Location									County
UL or Lot J	Sec. 19	Twp. 30 N.	Rge. 14 W.	Lot Lth.	Feet from >	North/South SOUTH	Feet from >	East/West EAST	SAN JUAN

Bottom Hole Location If Different From Surface									County
UL or Lot	Sec.	Twp.	Rge.	Lot Lth.	Feet from >	North/South	Feet from >	East/West	
Dedication	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



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

Signature *Brian Wood*

Printed Name **BRIAN WOOD**

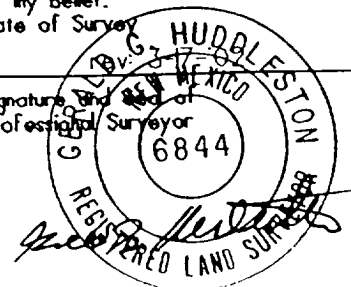
Title **CONSULTANT**

Date **APR. 3, 2002**

**SURVEYOR CERTIFICATION**

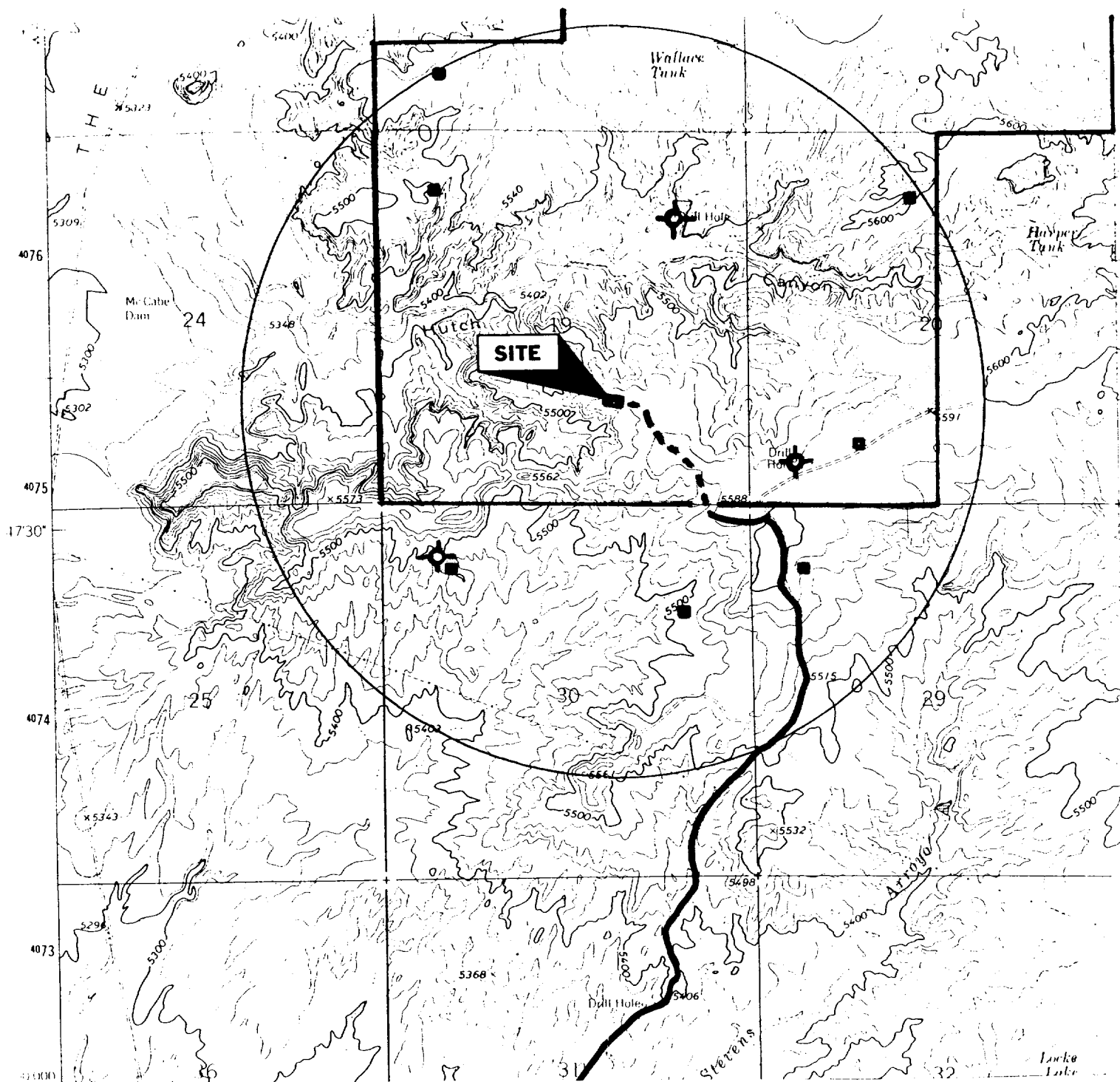
I hereby certify that the well location on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.  
Date of Survey

Signature and Seal of Professional Surveyor



Richardson Operating Co.  
 WF Federal 19 #4  
 1454' FSL & 1755' FEL  
 Sec. 19, T. 30 N., R. 14 W.  
 San Juan County, New Mexico

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PROPOSED WELL: ■ PROPOSED ROAD & PIPELINES: - - -  
 EXISTING WELL: ● EXISTING ROAD: ~~~~~  
 P & A WELL: ⊕ LEASE: ┌

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

Richardson Operating Co.  
WF Federal 19 #4  
1454' FSL & 1755' FEL  
Sec. 19, T. 30 N., R. 14 W.  
San Juan County, New Mexico

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## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Kirtland Sh	000'	5'	+5,552'
Fruitland Fm	652'	657'	+4,900'
Pictured Cliffs Ss	1,052'	1,057'	+4,500'
Total Depth (TD)*	1,200'	1,205'	+4,352'

\* all elevations reflect the ungraded ground level of 5,552'

### 2. NOTABLE ZONES

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland Fm	Fruitland Fm	Fruitland Fm
Pictured Cliffs		

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  $\approx$ 480 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	1,200'

Surface casing will be cemented to surface with  $\approx$ 36 cu. ft. ( $\approx$ 30 sacks) 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. W.O.C. = 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  $\approx$ 140 cubic feet ( $\approx$ 68 sacks) Class B with 2% metasilicate (yield = 2.06 cubic feet per sack, slurry weight = 12.5 pounds per gallon). Tail with  $\approx$ 85 cubic feet ( $\approx$ 72 sacks) of Class B with 2%  $\text{CaCl}_2$  (yield = 1.18 cubic feet per sack, slurry weight = 15.6 pounds per gallon). Total cement volume is  $\approx$ 225 cubic feet 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.