

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>14-20-603-2198A</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name <b>NAVAJO</b>	
2. Name of Operator <b>RICHARDSON OPERATING CO..</b>		7. If Unit or CA Agreement, Name and No. <b>N/A 32032</b>	
3a. Address <b>3100 LaPLATA HIGHWAY FARMINGTON, NM 87401</b>		8. Lease Name and Well No. <b>NV RACHELLE 23 #4</b>	
3b. Phone No. (include area code) <b>(505) 564-3100</b>		9. API Well No. <b>30-045- 31184</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface <b>435' FSL &amp; 2050' FEL</b> At proposed prod. zone <b>SAME</b>		10. Field and Pool, or Exploratory <b>W KUTZ PC</b>	
14. Distance in miles and direction from nearest town or post office* <b>3 AIR MILES SW OF FARMINGTON</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>0 23-29n-14w NMPM</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>435'</b>		12. County or Parish <b>SAN JUAN</b>	
16. No. of Acres in lease <b>600</b>		13. State <b>NM</b>	
17. Spacing Unit dedicated to this well <b>PC: 160 AC. (SE4)</b>			
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>1,282' (oil)</b>		20. BLM/BIA Bond No. on file <b>#158293308 (BLM - NATIONWIDE)</b>	
19. Proposed Depth <b>1,300'</b>			
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>5,505' GL</b>		22. Approximate date work will start* <b>UPON APPROVAL</b>	
23. Estimated duration <b>2 WEEKS</b>			
24. Attachments			

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:


- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification.   |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

## Comments

Notice of Staking filed as "Navajo 23 #4"

HOLD C104 FOR NSLDRILLING OPERATIONS AUTHORIZED ARE  
SUBJECT TO COMPLIANCE WITH ATTACHED  
"GENERAL REQUIREMENTS".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 (&amp;OCD), Richardson, Tribe

25. Signature 	Name (Printed/Typed) <b>BRIAN WOOD</b>	Date <b>8-16-02</b>
Title <b>CONSULTANT</b>	PHONE: <b>505 466-8120</b>	FAX: <b>505 466-9682</b>
Approved by (Signature) <b>/s/ David J. Mankiewicz</b>	Name (Printed/Typed)	Date <b>FEB 24 2003</b>
Title	Office	

Application approval does not warrant or certify the 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, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOC

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>30.045-31184</b>	Pool Code <b>79680</b>	Pool Name <b>WEST KUTZ PICTURED CLIFFS</b>
Property Code <b>32032</b>	Property Name <b>NV Nava jo 23</b>	Well Number <b>4</b>
OGRIID No. <b>019219</b>	Operator Name <b>RICHARDSON OPERATING COMPANY</b>	Elevation <b>5505'</b>

Surface Location

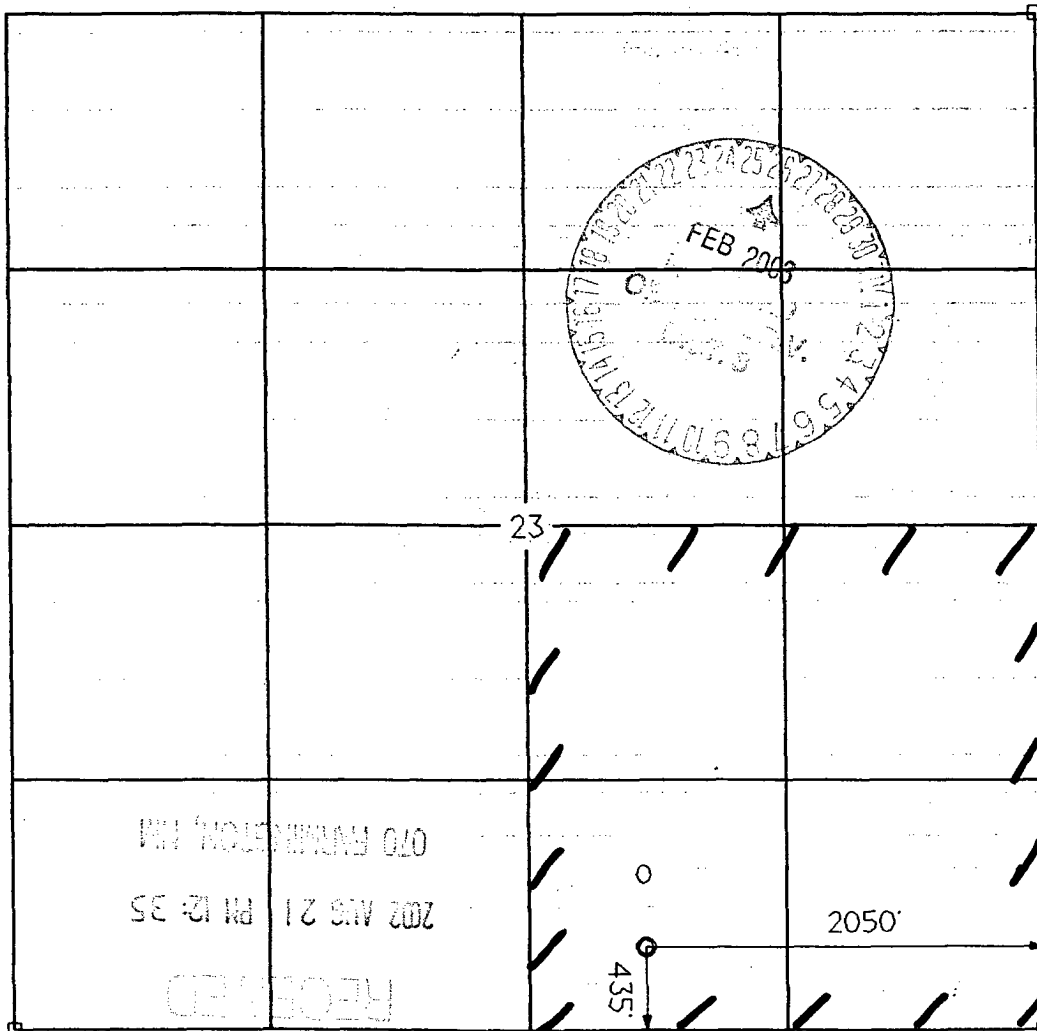
UL or Lot	Sec.	Twp.	Rge.	Lot Lth.	Feet from >	North/South	Feet from >	East/West	County
<b>0</b>	<b>23</b>	<b>29.N.</b>	<b>14.W.</b>		<b>.435'</b>	<b>SOUTH</b>	<b>2050.</b>	<b>EAST</b>	<b>SAN JUAN</b>

Bottom Hole Location if Different From Surface

UL or Lot	Sec.	Twp.	Rge.	Lot Lth.	Feet from >	North/South	Feet from >	East/West	County

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 *B. Wood*

Printed Name **BRIAN WOOD**

Title **CONSULTANT**

Date **AUG. 16, 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 **15 MAR 2002**

Signature *[Signature]*  
Professional Surveyor  
**6844**  
REGISTERED LAND SURVEYOR

Richardson Operating Co.  
NV Rachelle 23 #4  
435' FSL & 2050' FEL  
Sec. 23, T. 29 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 Shale	000'	5'	+5,505'
Fruitland Coal	955'	960'	+4,550'
Pictured Cliffs Ss	1,060'	1,065'	+4,445'
Total Depth (TD)*	1,300'	1,305'	+4,205'

\* all elevations reflect the ungraded ground level of 5,505'

### 2. NOTABLE ZONES

#### Gas Zones

Fruitland Coal  
Pictured Cliffs

#### Water Zones

Fruitland Coal

#### Coal Zones

Fruitland Coal

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.

Blind rams will be hydraulically activated and checked for operational readiness

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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  $\approx 440$  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	1,300'

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  $\approx 155$  cubic feet ( $\approx 75$  sacks) Class B with 2% metasilicate (yield = 2.06 cubic feet per sack, slurry weight = 12.5 pounds per gallon). Tail with  $\approx 95$  cubic feet ( $\approx 80$  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  $\approx 250$  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.