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Form 3160-3  
(September 2001)

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FORM APPROVED  
OMB No. 1004-0136  
Expires January 31, 2004

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

070 Farmington, NM

APPLICATION FOR PERMIT TO DRILL OR REENTER

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|--|
| 5. Lease Serial No.<br>NMNM-89026  |
| 6. If Indian, Allottee or Tribe Name<br>N/A  |
| 7. If Unit or CA Agreement, Name and No.<br>N/A 32544                              |
| 8. Lease Name and Well No.<br>WF Federal 6 #3                                      |
| 9. API Well No.<br>30-045- 31725   |
| 10. Field and Pool, or Exploratory<br>Basin Fruitland Coal/<br>Twin Mounds PC Ext. |
| 11. Sec., T., R., M., or Blk. and Survey or Area<br>06-T29N-R14W, NMPM             |
| 12. County or Parish<br>San Juan   |
| 13. State<br>NM  |

|  |  |   |
|--|--|---|
| 1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER   |  |   |
| 1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone |  |   |
| 2. Name of Operator<br>Richardson Operating Company  |  |   |
| 3a. Address<br>3100 La Plata Highway, Farm., NM  | 3b. Phone No. (include area code)<br>505/564-3100      |   |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At surface 1025 FNL & 765 FWL<br>At proposed prod. zone Same   |  |   |
| 14. Distance in miles and direction from nearest town or post office*<br>1 Mile North of Kirtland, New Mexico  |  |   |
| 15. Distance from proposed*<br>location to nearest<br>property or lease line, ft.<br>(Also to nearest drig. unit line, if any)   | 16. No. of Acres in lease<br>552.80                    | 17. Spacing Unit dedicated to this well<br>NW/4-PC W/2-FC<br>156.2 312.95 |
| 18. Distance from proposed location*<br>to nearest well, drilling, completed,<br>applied for, on this lease, ft.   | 19. Proposed Depth<br>850'                             | 20. BLM/BIA Bond No. on file<br>#158293308 BLM Nationwide                 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.)<br>5326 GL   | 22. Approximate date work will start*<br>Upon Approval | 23. Estimated duration<br>2 Weeks   |
| 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. |

|                             |                                      |                     |
|-----------------------------|--------------------------------------|---------------------|
| 25. Signature<br>           | Name (Printed/Typed)<br>Paul Lehrman | Date<br>6/13/03     |
| Title<br>Landman            |                                      |                     |
| Approved by (Signature)<br> | Name (Printed/Typed)<br>Jim Lovato   | Date<br>JUN 30 2003 |
| Title<br>Office             |                                      |                     |

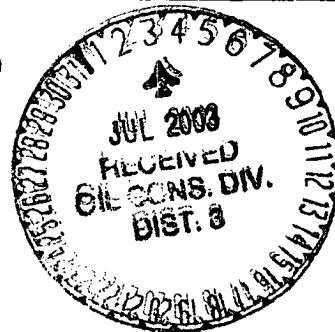
Application approval does not warrant or certify the the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

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.

\*(Instructions on reverse)

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".



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

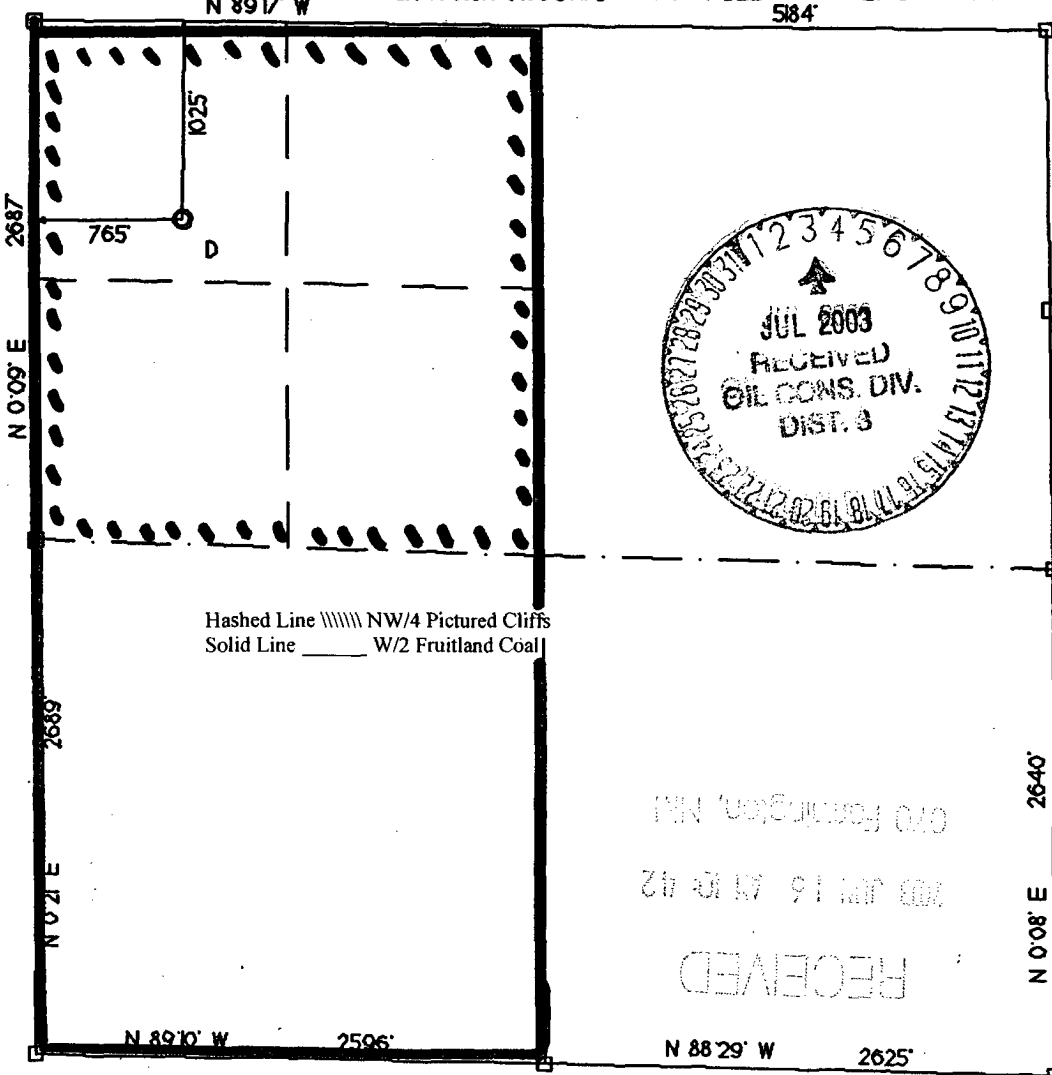
|                                   |  |  |
|-----------------------------------|--|--|
| APA Number<br>30-045 <b>31725</b> | Pool Code<br><b>71629/86620</b>                      | Pool Name<br><b>Basin Fruitland Coal / Twin Mounds PC EXT.</b> |
| Property Code<br><b>32544</b>     | Property Name<br><b>WF FEDERAL 6</b>                 | Well Number<br><b>3</b>  |
| OGRID No.<br><b>019219</b>        | Operator Name<br><b>RICHARDSON OPERATING COMPANY</b> | Elevation<br><b>5326'</b>                                      |

| Surface Location |      |       |       |         |           |             |           |           |          |
|------------------|------|-------|-------|---------|-----------|-------------|-----------|-----------|----------|
| U. or Lot        | Sec. | Twp.  | Rge.  | Lot Id. | Feet from | North/South | Feet from | East/West | County   |
| D                | 6    | 29 N. | 14 W. |         | 1025'     | NORTH       | 765'      | WEST      | SAN JUAN |

| Bottom Hole Location if Different From Surface |      |      |      |         |           |             |           |           |        |
|--|------|------|------|---------|-----------|-------------|-----------|-----------|--------|
| U. or Lot                                      | Sec. | Twp. | Rge. | Lot Id. | Feet from | North/South | Feet from | East/West | County |
|  |      |      |      |         |           |             |           |           |        |

|   |         |               |           |
|---|---------|---------------|-----------|
| Dedication<br><b>156.2 PC</b><br><b>312.95 PC</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><br>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.<br>Signature <i>Paul Lehman</i>   |  |
| Printed Name<br><b>PAUL LEHRMAN</b>  |  |
| Title<br><b>LANDMAN</b>  |  |
| Date<br><b>6/13/03</b>   |  |
| <b>SURVEYOR CERTIFICATION</b><br>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.<br>Date of Survey<br><b>7-15-03</b> |  |
| Signature and Seal of Registered Professional Surveyor<br><i>George Huddleston</i><br><b>GEORGE HUDDLESTON</b><br><b>6844</b><br><b>REGISTERED LAND SURVEYOR</b>   |  |

**Richardson Operating Company**  
**WF Federal 6 #3**  
**1025' FNL & 765' FWL**  
**Section 6, T29N, R14W, NMPM**  
**San Juan County, New Mexico**

**DRILLING PROGRAM**

**1. ESTIMATED FORMATION TOPS:**

| <u>Formation</u>   | <u>GL Depth</u> | <u>KB Depth</u> | <u>Subsea Elevation</u> |
|--------------------|-----------------|-----------------|-------------------------|
| Kirtland Sh        | 000'            | 5'              | +5,321'                 |
| Fruitland Fm       | 400'            | 405'            | +4,921'                 |
| Pictured Cliffs Ss | 651'            | 656'            | +4,670'                 |
| Total Depth (TD)*  | 850'            | 855'            | +4,471'                 |

\*All elevations reflect the ungraded ground level of 5,326'

**2. NOTABLE ZONES:**

| <u>Gas Zones</u>       | <u>Water Zones</u>  | <u>Coal Zones</u>   |
|------------------------|---------------------|---------------------|
| Fruitland Fm (400')    | Fruitland Fm (400') | Fruitland Fm (400') |
| Pictured Cliffs (651') |                     |                     |

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 representatives recommendations.

**3. PRESSURE CONTROL:**

The drilling contract has not yet been awarded, thus the exact BOP model to be used is unknown. (A typical 2,000 psi model has been attached to the end of the drilling program.) 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 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 floor safety valve and choke manifold rated to 2000 psi. Maximum expected pressure is 520 psi.

**Drilling Program**  
**Richardson Operating Company**

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**4. CASING AND CEMENTING PROGRAM:**

| <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"          | 17                    | J-55         | New        | 120'                    |
| 6 1/4"           | 4 1/2"      | 10.5                  | J-55         | New        | 850'                    |

Surface casing will be cemented to surface with  $\approx 36$  cu.ft. ( $\approx 30$  sx) Class B + 2% CaCl. 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 drilling fluid to surface. Thirty barrels of fresh water will then be circulated. Lead with  $\approx 90$  cu.ft. ( $\approx 45$  sx) Class B with 2% metasilicate (yield = 2.06 cu.ft./sk, slurry weight = 12.5 ppg). Tail in with  $\approx 70$  cu.ft. ( $\approx 60$  sx) Class B with 2% CaCl (yield = 1.18 cu.ft./sk, weight = 15.6 ppg). Total cement volume is  $\approx 160$  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. Four centralizers will be spaced every other joint starting above the shoe. Four turbolizers will be placed every other joint starting from the top of the well.

**5. MUD PROGRAM:**

Surface casing hole will be drilled with fresh water. Production casing hole will be drilled with a fresh water polymer mud. Weighting material will be drill solids or, if needed, barite. Maximum expected mud weight will be 8.7 ppg. Sufficient material to maintain mud properties, control lost circulation, and contain a blowout will be available at the well while drilling.

**6. CORING, TESTING, & LOGGING:**

No cores or DSTs are planned. A cased hole CNL/GR will be run from TD to surface.

**7. DOWNHOLE CONDITIONS:**

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum pressure will be approximately  $\approx 520$  psi.

**8. OTHER INFORMATION:**

The anticipated spud date is August 1, 2003. It should take 5 days to drill and 1 week to complete the well.