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Form 3160-3  
(September 2001)

2004 APR -4 AM 6:31

FORM APPROVED  
OMB No. 1004-0136  
Expires January 31, 2004UNITED STATES  
DEPARTMENT OF THE INTERIOR 070 Farmington, NM  
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. NMNM 101552
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		6. If Indian, Allottee or Tribe Name N/A
2. Name of Operator Richardson Operating Company		7. If Unit or CA Agreement, Name and No. N/A
3a. Address 3100 La Plata Highway, Farm, NM 87401	3b. Phone No. (include area code) 564-3100	8. Lease Name and Well No. WF Federal 12 #1
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 980' FNL & 1420' FWL At proposed prod. zone Same		9. API Well No. 30-045- 32270
10. Field and Pool, or Exploratory Basin Fr. Coal/Harper Hill, PC		11. Sec., T., R., M., or Blk. and Survey or Area Sec. 12 - T30N-R14W, NMPM
14. Distance in miles and direction from nearest town or post office* 6.5 miles NW of Farmington, NM		12. County or Parish San Juan
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1420'		13. State NM
16. No. of Acres in lease 635.16		17. Spacing Unit dedicated to this well W/2- 314.80 Acres NW/4-154.80 Acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2485'		20. BLM/BIA Bond No. on file BLM Nationwide #158293308
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 5894 GL		22. Approximate date work will start* Upon approval
		23. Estimated duration 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:

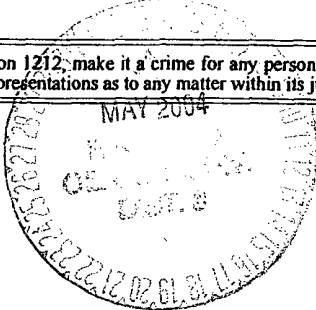
- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification.   |
| 3. A Surface Use Plan (if the location is on National Forest System 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 	Name (Printed/Typed) Paul Lehrman	Date 4-1-04
Title Landman		
Approved by (Signature) David J. Mankiewicz	Name (Printed/Typed)	Date APR 28 2004
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.

\*(Instructions on reverse)

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

NMOCD

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

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

Form C - 102

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045- <b>32270</b>	Pool Code 71629	Pool Name Basin Fruitland Coal
Property Code <b>28588</b>	Property Name WF Federal 12	Well Number 1
OGRID No. 19219	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5894

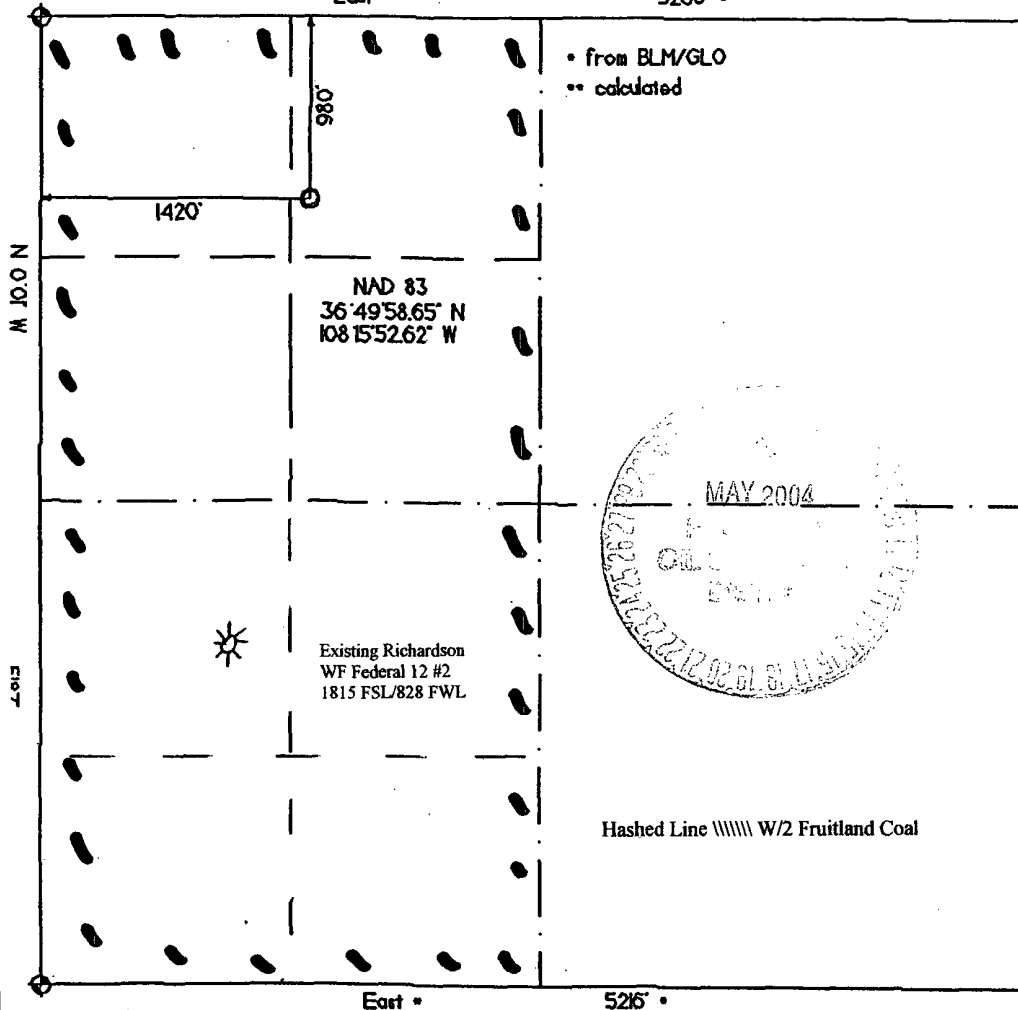
Surface Location									
UL or Lot C	Sec. 12	Twp. 30 N.	Rge. 14 W.	Lot Lk.	Feet from>	North/South NORTH	Feet from>	East/West WEST	County SAN JUAN

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

Dedication W/2-314.80	Joint ?	Consolidation	Order No.
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NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

East • 5238' •



OPERATOR CERTIFICATION

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

Signature

Printed Name

Paul Lehrman

Title

Landman

Date

4-1-04

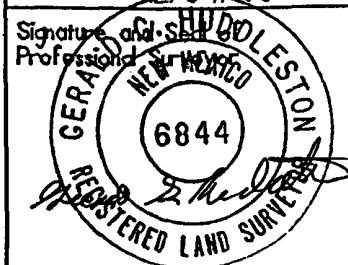
SURVEYOR CERTIFICATION

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

12/04/03

Signature and Seal of Professional Surveyor



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

Form C - 102

2004 APR -4 AM 6:31

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045-	Pool Code 78160	Pool Name Harper Hill Fruitland Sand PC (Gas)
Property Code	Property Name WF Federal 12	Well Number 1
OGRD No. 019219	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5894

Surface Location

UL or Lot	Sec.	Twp.	Rge.	Lot Id.	Feet from	North/South	Feet from	East/West	County
C	12	30 N.	14 W.		980'	NORTH	1420'	WEST	SAN JUAN

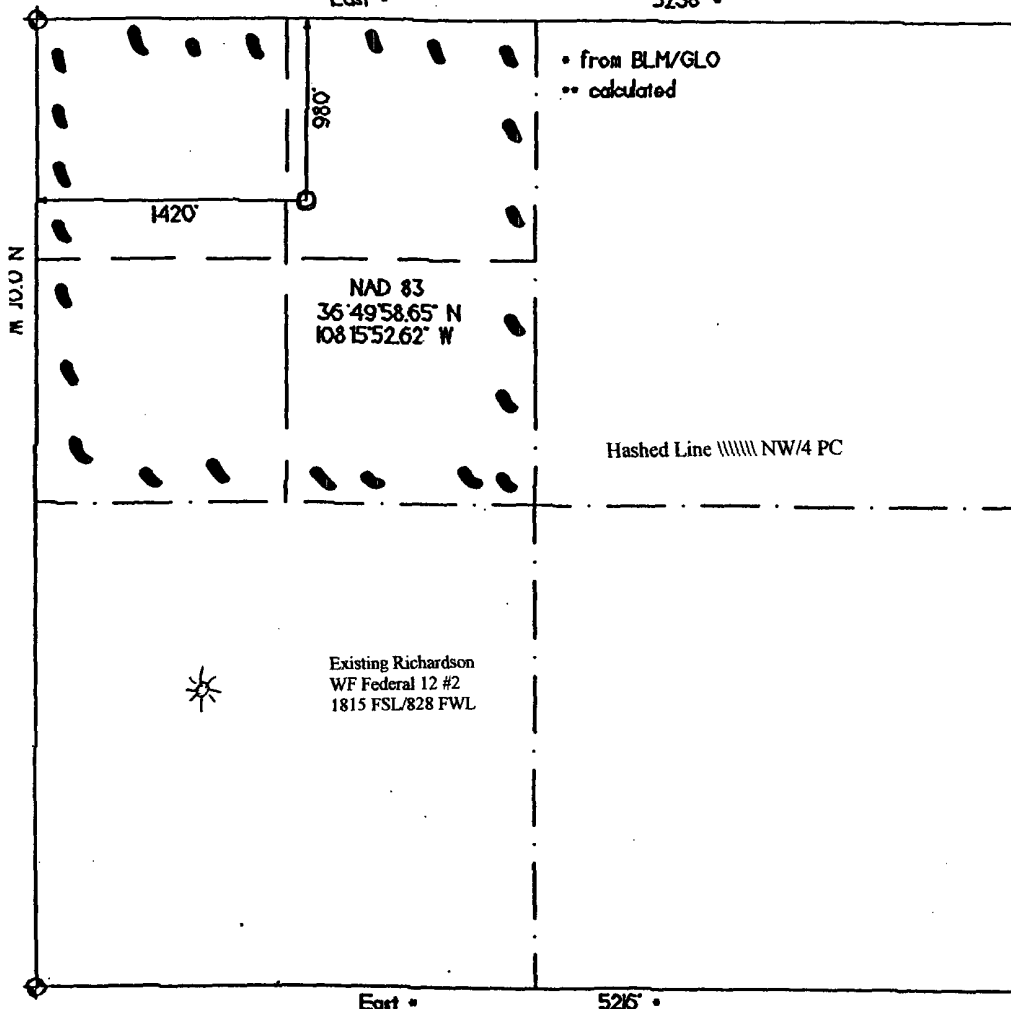
Bottom Hole Location if Different From Surface

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

Dedication NW-154.80	Joint ?	Consolidation	Order No.
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East • 5238' •



OPERATOR CERTIFICATION

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

Signature

Printed Name

Paul Lehrman

Title

Landman

Date

4-1-04

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

12/04/03

Signature and Seal of Professional



**Richardson Operating Company  
WF Federal 12 #1  
980' FNL & 1420' FWL  
Section 12, T30N, 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>
Ojo Alamo Ss	632'	005'	+5,262'
Kirtland Shale	807'	812'	+5,087'
Fruitland Fm	1232'	1237'	+4,662'
Basal Fruitland Coal	1657'	1662'	+4,237'
Pictured Cliffs Ss	1672'	1677'	+4,222'
Total Depth (TD)*	1850'	1855'	+4,044'

\*All elevations reflect the ungraded ground level of 5,894'

**2. NOTABLE ZONES:**

Gas Zones

Fruitland  
Pictured Cliffs

Water Zones

Fruitland Coal

Coal Zones

Fruitland Coal

Water zones will be protected with casing, cement, and water based mud. Fresh water encountered during drilling will be recorded by depth. Centralizers will be run through usable water zones to ensure that the casing is centralized through these zones. Number of centralizers will be based on API standards. A turbulizing centralizer will be run to ensure an adequate cement procedure just below the base of the lowest usable water zone. 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 less than 1000 psi.

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

Page Two

**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"	20	J-55	New	120'
6 1/4"	4 1/2"	10.5	J-55	New	1850'

Surface casing will be cemented to surface with  $\approx 36$  cu.ft. (<sup>31</sup>~~60~~ 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  $\approx 150$  cu.ft. ( $\approx 75$  sx) Class B with 2% metasilicate (yield = 2.06 cu.ft./sk, slurry weight = 12.5 ppg). Tail in with  $\approx 115$  cu.ft. ( $\approx 100$  sx) Class B with 2% CaCl (yield = 1.18 cu.ft./sk, weight = 15.6 ppg). Total cement volume is  $\approx 265$  cu.ft. based on 100% excess and circulating to surface.  
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Production casing will have 4 1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Six centralizers will be spaced every other joint starting above the shoe. Six 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 mud. 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.

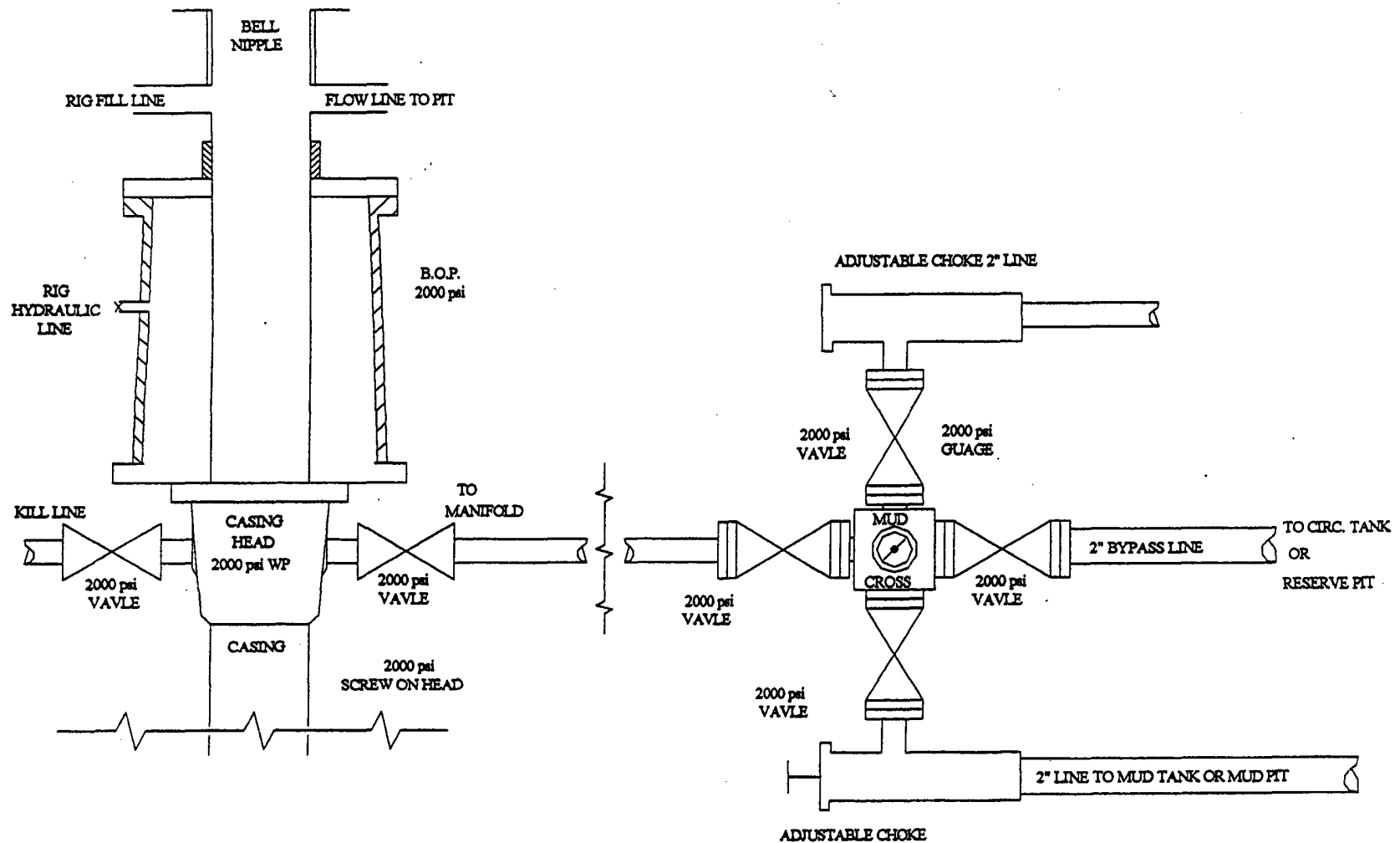
**6. CORING, TESTING, & LOGGING:**

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. Although no hydrogen sulfide is expected while drilling, if encountered appropriate safety measures will be instituted. After the well is in production, if hydrogen sulfide is encountered, appropriate safety measures will be instituted to ensure the safety of the public, Richardson employees, contractors, or anyone expected to work or recreate in the vicinity. This may include, but not be limited to, monitoring, flagging or other measures appropriate for the situation.

# BLOW OUT PREVENTER (B.O.P.)



\*\* 2000 psi Rubber hose will be used from Well Head to Manifold  
& from Well Head to Kill Line.

WF Federal 12 # 1  
well pad and section

