

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

RECEIVED

5. Lease Serial No.

NMSF-078213

6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA Agreement, Name and No.

N/A

8. Lease Name and Well No.

LAZ COLINAS #200

9. API Well No.

30-045- 31297

10. Field and Pool, or Exploratory
BASIN DAKOTA

11. Sec., T., R., M., or Bk. and Survey or Area

E 26-30n-13w NMPM

12. County or Parish

SAN JUAN

13. State

NM

1a. Type of Work: ☒ DRILL

☐ REENTER

070 Farmington, NM

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

☒ Single Zone ☐ Multiple Zone

2. Name of Operator

MARKWEST RESOURCES, INC.

3a. Address **155 INVERNESS DR., SUITE 200
ENGLEWOOD, CO. 80112**

3b. Phone No. (include area code)
(303) 290-8700

4. Location of Well (Report location clearly and in accordance with any State requirements. *)

At surface

1990' FNL & 429' FWL

At proposed prod. zone

SAME

14. Distance in miles and direction from nearest town or post office*

3 AIR MILES NORTH OF FARMINGTON POST OFFICE

15. Distance from proposed*
location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)

795'

16. No. of Acres in lease

2,480

17. Spacing Unit dedicated to this well

320 ACRES (W2)

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft.

**Completed: 1,578'
Applied for: 21'**

19. Proposed Depth

6,550'

20. BLM/BIA Bond No. on file

KA6084 (BLM - NATIONWIDE)

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

5,742' GL

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

22. Approximate date work will start*

MARCH 15, 2003

23. Estimated duration

10 DAYS TO DRILL

24. Attachments

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

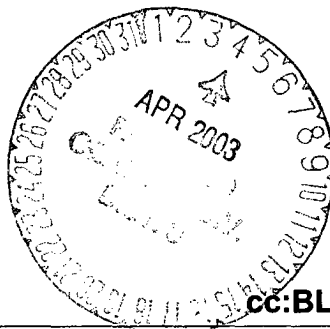
1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).

4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

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

Comments

HOLD C184 FOR **NSL**



cc:BLM (&OCD), City, Pippin, Stowe

25. Signature

B. Wood

Name (Printed/Typed)

BRIAN WOOD

Date

12-17-02

Title

CONSULTANT

PHONE: 505 466-8120

FAX: 505 466-9682

Approved by (Signature)

/s/ David J. Mankiewicz

Name (Printed/Typed)

Date

APR - 2 2003

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.

NMOCD

DISTRICT I
1825 N. French Dr., Hobbs, N.M. 88240

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 15, 2000

DISTRICT II
811 South First, Artesia, N.M. 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-31297	² Pool Code 71599	³ Pool Name BASIN DAKOTA
⁴ Property Code 29790	⁵ Property Name Federal A	⁶ Well Number 200
⁷ GRID No. 193195	⁸ Operator Name MARKWEST RESOURCES, INC.	⁹ Elevation 5742'

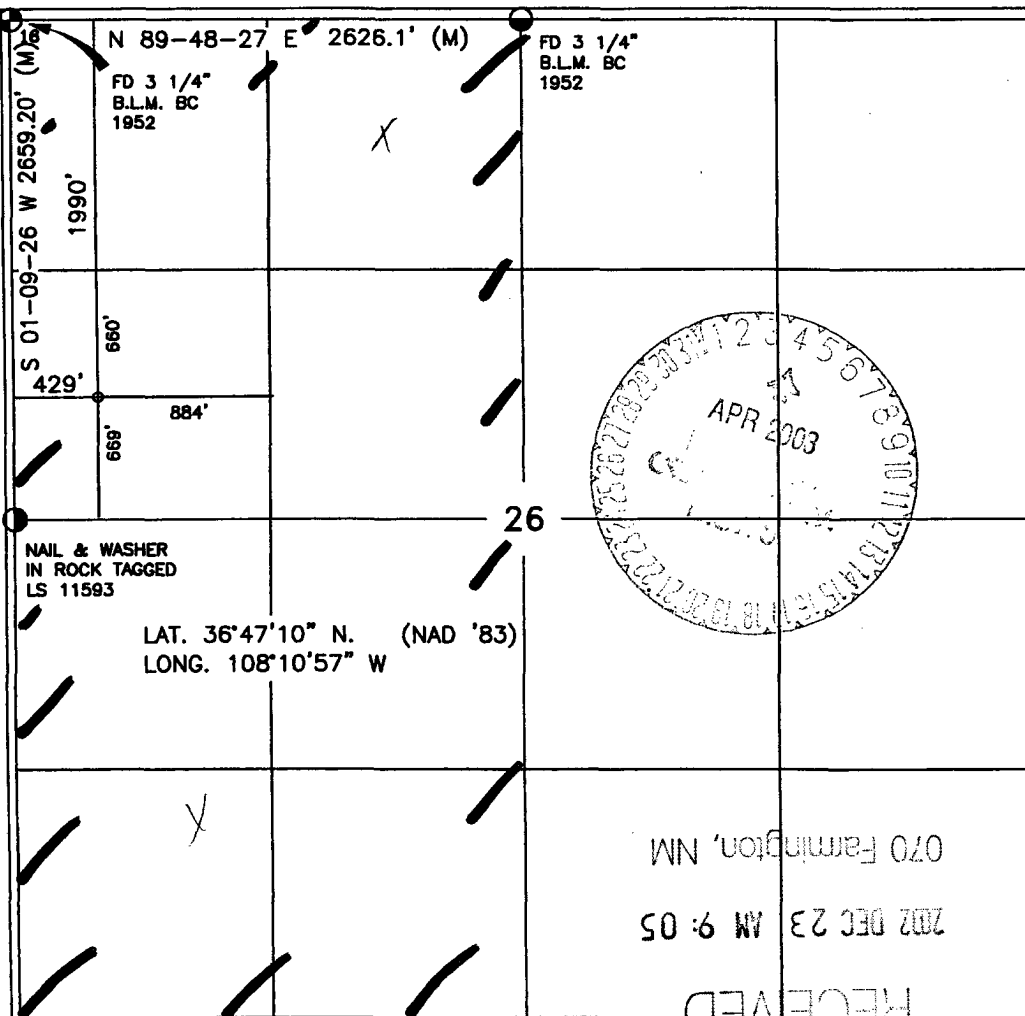
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	26	30-N	13-W		1990	NORTH	429	WEST	SAN JUAN

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
¹² Dedicated Acres 320					¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ Order No.

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



17 OPERATOR CERTIFICATION

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

Brian Wood
Signature

Printed Name **BRIAN WOOD**

Title **CONSULTANT**

Date **DEC. 17, 2002**

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown 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.

David A. Johnson
Date of Survey
Signature and Seal of Professional Surveyor:
14827
REGISTERED PROFESSIONAL SURVEYOR
Certificate Number

MarkWest Resources, Inc.
Las Colinas #200
1990' FNL & 429' FWL
Sec. 26, T. 30 N., R. 13 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>
Ojo Alamo Ss	000'	12'	+5,742'
Kirtland Sh	305'	317'	+5,437'
Fruitland Coal	1,519'	1,531'	+4,223'
Pictured Cliffs Ss	1,747'	1,759'	+3,995'
Point Lookout Ss	4,142'	4,154'	+1,600'
Gallup Ss	5,472'	5,486'	+270'
Greenhorn	6,205'	6,217'	-463'
Dakota	6,309'	6,321'	-567'
Total Depth (TD)*	6,550'	6,562'	-808'

* all elevations reflect the ungraded ground level of 5,742'

2. NOTABLE ZONES

Gas & Oil Zones

Fruitland
Pictured Cliffs
Gallup
Dakota

Water Zones

Ojo Alamo
Kirtland
Fruitland
Point Lookout
Dakota

Coal Zone

Fruitland

Water zones will be protected with casing, cement, and weighted mud. Fresh water found while drilling will be recorded. Oil or gas shows will be tested for commercial potential based on the geologist's recommendations.

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3. PRESSURE CONTROL

Maximum expected pressure is $\approx 1,500$ psi. The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 11" 3,000 psi model is on PAGE 3.

BOP equipment and all accessories will meet or exceed BLM requirements in 43 CFR Part 3160 for a 3,000 psi system. A 3,000 psi double ram hydraulic BOP will be used. Accumulator system capacity will be sufficient to close all BOPE with a 50% safety factor. Fill, kill, and choke manifold lines will be 2". Accessories will include upper and lower Kelly cocks with handles, stabbing valve to fit drill pipe on floor at all times, string float at bit, 3,000 psi choke manifold with 2" adjustable and 2" positive chokes, and pressure gauge. BOPs will be tested every 24 hours. Surface casing will be tested to 500 psi for 30 minutes. Tests will be recorded on I. A. D. C. log.

4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>Connection</u>	<u>GL Setting Depth</u>
12-1/4"	8-5/8"	24	K-55	New	ST & C	400'
6-1/4"	4-1/2"	11.6	N-80	New	ST & C	6,550'

Surface casing will be cemented to the surface with ≈ 330 cubic feet (≈ 280 sacks) Class B + 1/4 lb/sk cello-flake + 2% CaCl_2 . Yield = 1.18 cubic feet per sack. Weight = 15.2 pounds per gallon. Volume = 100% excess. W. O. C. = 12 hours. Surface casing will be tested to 500 psi for 30 minutes.

An 8-5/8" notched regular pattern guide shoe with 3 centralizers will be used on surface casing. Centralizers will be placed at 120' intervals, starting with the bottom joint. Will Baker Lock the collar to the pin or ring on the bottom joint. Will Baker Lock the shoe on the bottom. Will run a centralizer with a lock on the bottom joint and a centralizer on the second joint.

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Production casing will be cemented to the surface. If cement does not circulate to the surface, then a temperature survey will be run to determine the actual top and a top job run. A 4-1/2" cement nose guide shoe with a self fill insert float will be run. Will place the float one joint above the shoe. Five centralizers will be spaced every other joint, starting with the float collar. Centralizers will be placed at 120' intervals from 960' to the surface. Total centralizers = 10 regular.

Lead with 1,584 cubic feet (1,100 sacks) Class Super H 50/50 Poz cement with 2% gel + 0.2% Veraset (thixotropic additive) + 0.1% Diacel LWL (low fluid loss) + 1.5% Zone Sealant 2000 (foamer). Mix at 13 pounds per gallon for a yield of 1.44 cubic feet per sack. Mixed to 9 pounds per gallon with 464 SCF/barrel N2. 48 hour strength = 900 psi.

Tail with 238 cubic feet (165 sacks) 50/50 Class H Poz with 2% gel + 0.2% Veraset (thixotropic additive) + 0.1% Diacel LWL (low fluid loss). Mixed to 13 pounds per gallon with a yield of 1.44 cubic feet per sack. No N2.

Cap down annulus with 153 cubic feet (130 sacks) Class B with 2% CaCl₂ + 0.15% Veraset (thixotropic additive). No N2=. W. O. C. = 12 hours. Pressure test to 2,000 psi.

5. MUD PROGRAM

<u>Range</u>	<u>Mud Type</u>	<u>Weight</u>
0' - 400'	Fresh-Spud	8.4
400' - TD	LSND	8.6

A native fresh water based mud system will initially be used. It will be followed by a low solids, non-dispersed gel system to condition the hole for logs. Lost circulation, weighting, and absorption material will be on location.