

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

RECEIVED

2003 APR 26 PM 12:03

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 665' FNL & 1175' FWL
At proposed prod. zone SAME

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

8 AIR MILES NORTH OF BLOOMFIELD

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

665'

16. No. of Acres in lease

2,560

17. Spacing Unit dedicated to this well

320 ACRES (N2)

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

373'

19. Proposed Depth

6,500'

20. BLM/BIA Bond No. on file

KA6084 (BLM - NATIONWIDE)

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

6,056' GL

22. Approximate date work will start*

MAY 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).

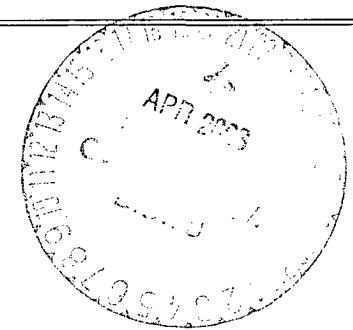
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the authorized officer.

Comments

Only other well in quarter-quarter is MarkWest's own Fullerton Federal #12.

DRILLING 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:BLM (&OCD), Bush, Pippin

25. Signature

Brian Wood

Name (Printed/Typed)

BRIAN WOOD

Date

3-25-03

Title

CONSULTANT

PHONE: 505 466-8120

FAX: 505 466-9682

Approved by (Signature)

David J. Mankiewicz

Name (Printed/Typed)

Date

APR 15 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.

BLM/OCD

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240

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

State of New Mexico
Energy, Minerals & Natural Resources Department

Form C-102
Revised August 15, 2000

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

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-31586		*Pool Code 71599	*Pool Name BASIN DAKOTA
*Property Code 27395	*Property Name FULLERTON FEDERAL		*Well Number 68
*OGRID No. 193195	*Operator Name MARKWEST RESOURCES, INC.		*Elevation 6056'

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
D	11	27-N	11-W		665'	NORTH	1175'	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
*Dedicated Acres 320		*Joint or Infill		*Consolidation Code		*Order No.			

NO ALLOWABLE * WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
ANGEL PEAK #1 OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION
1148' TO WELL HEAD

<p>16 FD 2 1/2" GLO BC 1913</p> <p>1175'</p> <p>665'</p> <p>150'</p> <p>N 89-50-55 E 2649.7' (M)</p> <p>LAT. 36°35'42"N LONG. 107°58'42"W</p> <p>* 1051' TO WELL HEAD</p> <p>DH MARKER FULLERTON FED. #6</p>		<p>17 OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature <u>Brian Wood</u></p> <p>Printed Name BRIAN WOOD</p> <p>Title CONSULTANT</p> <p>Date MAR. 25, 2003</p>	
<p>18 SURVEYOR CERTIFICATION</p> <p>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.</p> <p>Date of Survey <u>13-14-02</u></p> <p>Signature and Seal of Professional Surveyor: <u>DAVID L. JOHNSON</u></p> <p>Certificate Number <u>14827</u></p>		<p>19</p> <p>FD 2 1/2" GLO BC 1913</p> <p>RECEIVED</p> <p>2003 JUN 26 PM 12:04</p> <p>070 Farmington, NM</p> <p>APR 2003</p>	

MarkWest Resources, Inc.
Fullerton Federal 6-B
665' FNL & 1175' FWL
Sec. 11, T. 27 N., R. 11 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>
Nacimiento Fm	000'	12'	+6,056'
Ojo Alamo Ss	751'	763'	+5,305'
Kirtland Sh	855'	867'	+5,201'
Fruitland Coal	1,471'	1,487'	+4,585'
Pictured Cliffs Ss	1,826'	1,838'	+4,230'
Point Lookout Ss	4,197'	4,209'	+1,859'
Gallup Ss	5,383'	5,395'	+673'
Greenhorn	6,198'	6,210'	-142'
Dakota Ss	6,316'	6,328'	-260'
Total Depth (TD)*	6,500'	6,512'	-444'

* all elevations reflect the ungraded ground level of 6,056'

2. NOTABLE ZONES

Gas or Oil Zones

Fruitland
Pictured Cliffs
Gallup
Dakota

Water Zones

Nacimiento
Ojo Alamo
Kirtland
Fruitland

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 $\approx 1,200$ 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. 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	6,500'

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 = 15.6 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 and three centralizers will be used on the surface casing. Centralizers will be at 120' intervals starting with the bottom joint. Baker Lock the collar to the pin or the top of the shoe joint. Baker Lock the shoe on the bottom. Will run a centralizer with a lock ring on the bottom joint and a centralizer on the second joint.

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Production casing will be cemented to the surface. Volumes are calculated at >100% excess. If cement does not circulate to surface, then a temperature survey will be run to determine the actual cement top as needed. W. O. C. = 12 hours. Test to 2,000 psi.

Lead cement will be $\approx 1,584$ cubic feet ($\approx 1,100$ sacks) 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). Mixed @ 13 pounds per gallon for a yield of 1.44 cubic feet per sack. Mixed to 9 pounds per gallon with 50-464 SCF/bbl N2 (48 hour strength = 900 psi.) Tail with 238 cubic feet (165 sacks) 50/50 Class H Poz with 2% gel + 0.2% Veraset + 0.1% Diacel LWL (low fluid loss). Mixed to 13 pounds per gallon for a yield of 1.44 cubic feet per sack (no N2). Cap down annulus with 153 cubic feet (130 sacks) Class B with 2% CaCl_2 + 0.15% Veraset (no N2).

Production casing will be cemented with 4-1/2" cement nose guide shoe with a self-fill insert float. Will place float one joint above the shoe. Five centralizers will be spaced on every other joint, starting with the float collar. Centralizers will be placed at 120' intervals from 960' to the surface. Total centralizers = 10.

5. MUD PROGRAM

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

Lost circulation, weighting, and absorption material will be on location.