

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

5. Lease Serial No.

NMSF-078094

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.

FULLERTON FED. #142

9. API Well No.

30-045- 31144

10. Field and Pool, or Exploratory

BASIN FRUITLAND COAL

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

F 14-27n-11w NMPM

12. County or Parish

SAN JUAN

13. State

NM

1a. Type of Work: ☒ DRILL

☐ REENTER

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

1910' FNL & 1715' FWL

At proposed prod. zone

SAME

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

9 AIR MILES S OF BLOOMFIELD

15. Distance from proposed*

location to nearest
property or lease line, ft.
(Also to nearest drig. unit line, if any)

2,566'

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.

770'

19. Proposed Depth

2,100'

20. BLM/BIA Bond No. on file

KA6084 (BLM - NATIONWIDE)

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

6,227' GL

22. Approximate date work will start*

NOVEMBER 28, 2002

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.

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

**On site inspection with Roger Herrera.
Archaeology report CASA 02-026 filed 5-5-02.**

INfill to FF 14 #32

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), Pippin, Stowe

25. Signature

Brian Wood

Name (Printed/Typed)

BRIAN WOOD

Date

7-5-02

Title

CONSULTANT

PHONE: 505 466-8120

FAX: 505 466-9682

Approved by (Signature)

David J. [Signature]

Name (Printed/Typed)

Date

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.

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 30-045-31144		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code 27395	*Property Name FULLERTON FEDERAL		*Well Number 142
*OGRID No. 193195	*Operator Name MARKWEST RESOURCES, INC.		*Elevation 6227'

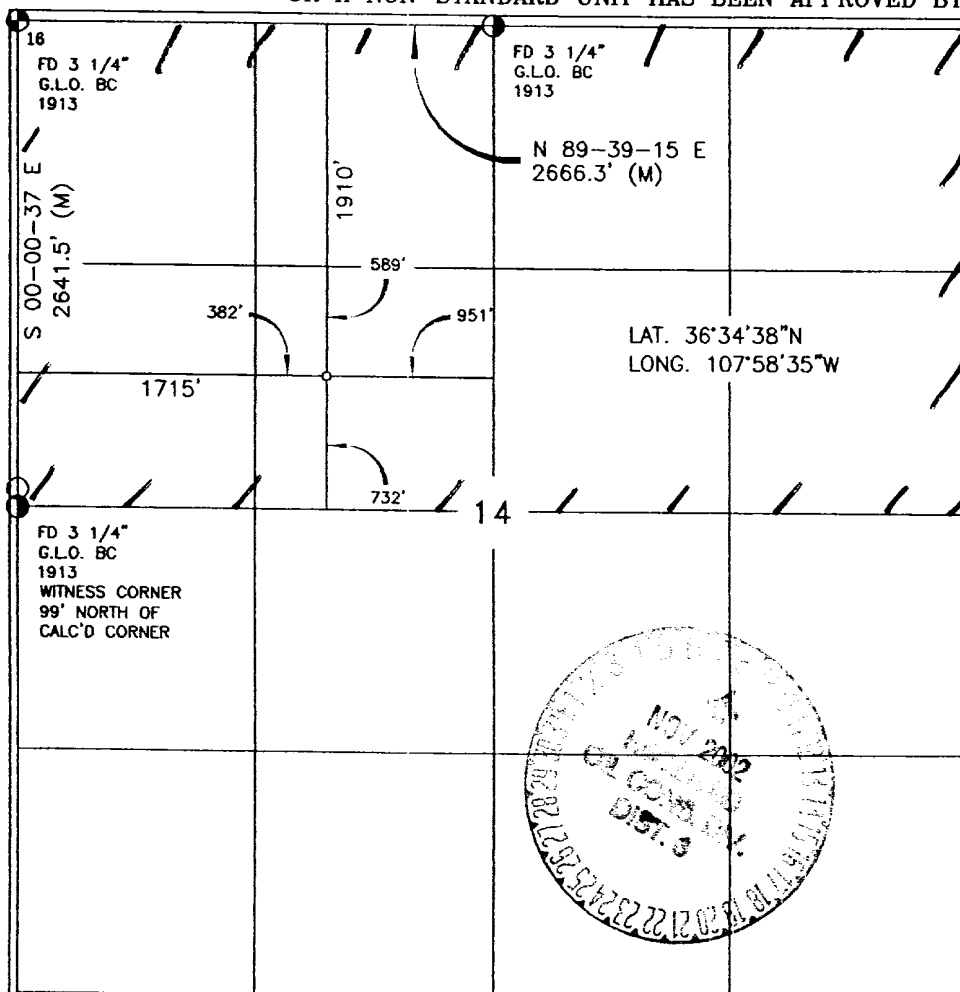
¹⁰ Surface Location

UL or lot no. F	Section 14	Township 27-N	Range 11-W	Lot Idn	Feet from the 1910'	North/South line NORTH	Feet from the 1715'	East/West line WEST	County SAN JUAN
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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
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.

Signature

Printed Name

Title

Date

BRIAN WOOD

CONSULTANT

JULY 5, 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.

Date of Survey

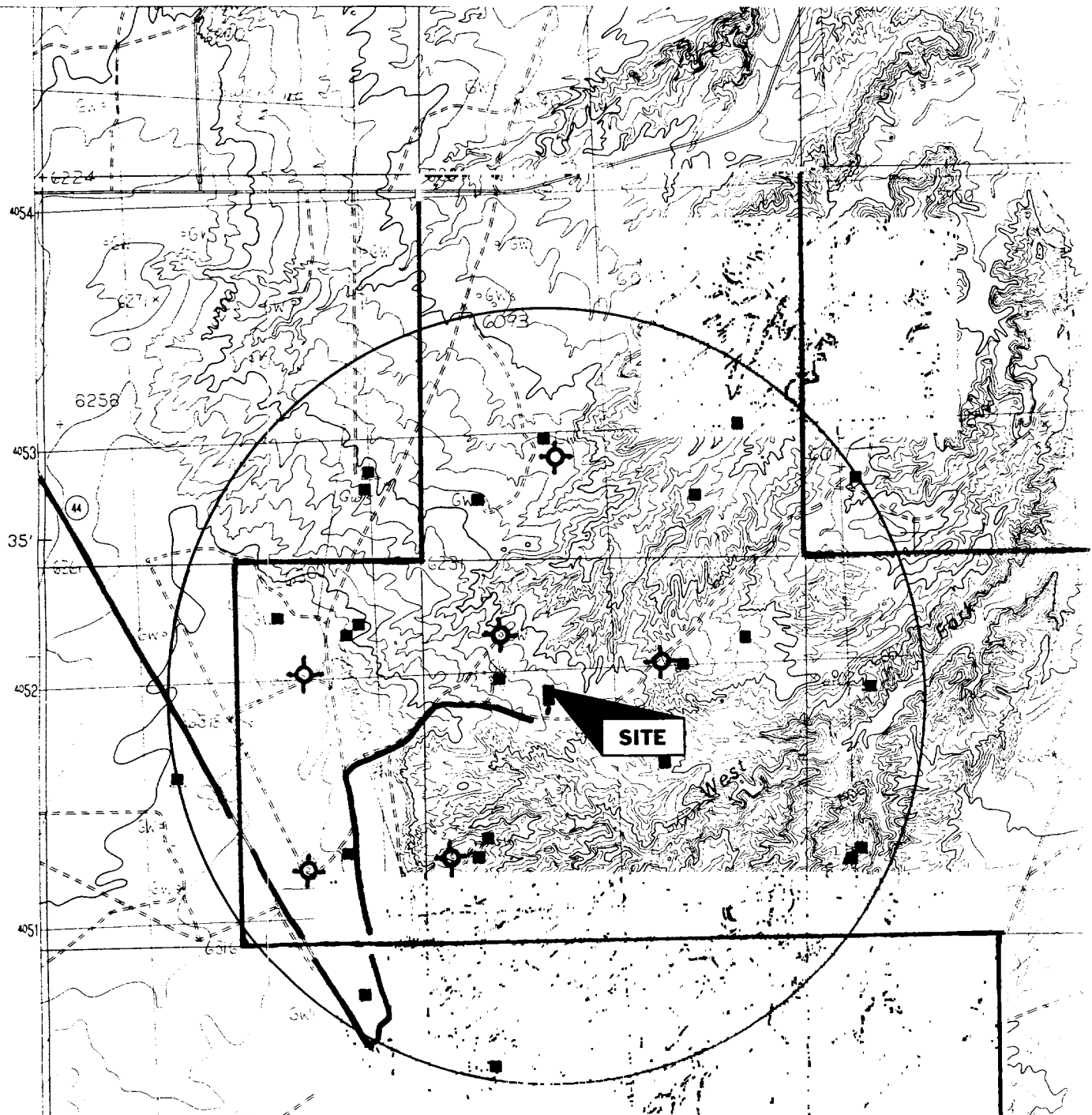
Signature and Seal of Professional Surveyor

Certificate Number

8894

MarkWest Resources, Inc.
 Fullerton Federal 142
 1910' FNL & 1715' FWL
 Sec. 14, T. 27 N., R. 11 W.
 San Juan County, New Mexico

PAGE 11



PROPOSED WELL: ■ PROPOSED ROAD & GAS LINE: !
 EXISTING WELL: ■ EXISTING ROAD: ~
 P & A WELL: ⊕ LEASE: L

PERMITS WEST INC.
 PROVIDING PERMITS for LAND USERS

Drilling Program

1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Nacimiento Fm	000'	5'	+6,227'
Ojo Alamo Ss	921'	926'	+5,306'
Kirtland Sh	1,020'	1,025'	+5,207'
Fruitland Coal	1,666'	1,671'	+4,561'
Pictured Cliffs Ss	1,977'	1,982'	+4,250'
Total Depth (TD)*	2,100'	2,105'	+4,127'

* all elevations reflect the ungraded ground level of 6,227'

2. NOTABLE ZONES

<u>Gas or Oil Zones</u>	<u>Water Zones</u>	<u>Coal Zone</u>
Fruitland	Nacimiento	Fruitland
Pictured Cliffs	Ojo Alamo	
	Kirtland	
	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.

3. PRESSURE CONTROL

Maximum expected pressure is \approx 200 psi. The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 8" double ram 2,000 psi model is on PAGE 3.

BOP equipment and all accessories will meet or exceed BLM requirements in 43 CFR Part 3160 for a 2000 psi system. A 2000 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" screw connections. 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, 2000 psi choke manifold with 2" adjustable choke with screw connections, and pressure gauge. BOPs will be tested every 24 hours. Tests will be recorded on IADC 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>
11"	8-5/8"	24	K-55	New	ST & C	160'
6-1/4"	4-1/2"	10.5	K-55	New	ST & C	2,100'

Surface casing will be cemented to the surface with ≈118 cubic feet (≈100 sacks) Class B + 1/4 lb/sack cello-flake + 2% CaCl₂. Yield = 1.18 cubic feet per sack. Weight = 15.6 pounds per gallon. Volume = 100% excess. A guide shoe and insert float will be used with 3 centralizers. W. O. C. =12 hours. Surface casing will be tested to 500 psi for 30 minutes.

Production casing will be cemented to the surface. Total cement = 367 cubic feet. Volumes are calculated at 70% 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 3,800 psi.

Lead cement = 290 cubic feet (≈141 sacks) Class B cement with 2% SM, 3 pounds per sack gilsonite + 1/4 pound per sack cello-flake. Yield = 2.06 cubic feet per sack. Weight = 12.5 pounds per gallon.

Tail cement = 77 cubic feet (≈50 sacks) Class B + 4% gel + 1/4#/sack cello-flake + 2% CaCl₂. Yield = 1.55 cubic feet per sack. Weight = 14.5 #/gallon.

Cementing equipment will include guide shoe, float collar and 10 centralizers (one each on the first five joints above the float and then five at 160' intervals starting at ≈960').

5. MUD PROGRAM

<u>RANGE</u>	<u>MUD TYPE</u>	<u>WEIGHT</u>
0' - 160'	Fresh-Spud	8.4
160' - TD	LSND	8.6

Lost circulation and absorption material will be on location.

6. CORING, TESTING, & LOGGING

No cores or drill stem tests are planned. Open hole logs will include GR, Neutron-Density, and Induction. The Neutron Density will be run from TD to ≈1,000'. The other logs will be run from TD to the base of the surface casing shoe.

7. DOWN HOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum pressure will be ≈200 psi.

8. OTHER INFORMATION

The anticipated spud date is November 28, 2002. It is expected it will take ≈6 days to drill and ≈8 days to complete the well. Completion will start about one month after the spud and will include hydraulic fracturing.