

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

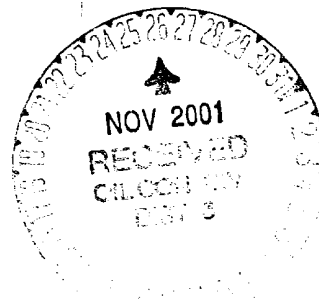
APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK DRILL <input checked="" type="checkbox"/> DEEPEN <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO. NMSF-078094	
b. TYPE OF WELL OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME N/A	
2. NAME OF OPERATOR MarkWest Resources, Inc.		7. UNIT AGREEMENT NAME N/A	
3. ADDRESS AND TELEPHONE NO. 155 Inverness Dr. W, Suite 200, Englewood, Co. 80112		8. FARM OR LEASE NAME, WELL NO. Fullerton Fed. 27-11	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface 1640' FSL & 1000' FEL		9. AP WELL NO. 30-045-30854	
At proposed prod. zone Same		10. FIELD AND POOL OR FIELD Basin Dakota	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE* 9 air miles SSE of Bloomfield		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA I 11-27n-11w NMPM	
15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 1,000'		12. COUNTY OR PARISH San Juan	
16. NO. OF ACRES IN LEASE 2,560		13. STATE NM	
17. NO. OF ACRES ASSIGNED TO THIS WELL 320		18. DISTANCE FROM PROPOSED* LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 1,014'	
19. PROPOSED DEPTH 6,420'		20. ROTARY OR CABLE TOOLS Rotary	
21. ELEVATIONS (Show whether DF, RT, GR, etc.) 6,003' ungraded		22. APPROX. DATE WORK WILL START* Nov. 15, 2001	

PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	K-55 8-5/8"	24	320 100'	~148 cu. ft. & to surface
7-7/8"	N-80 4-1/2"	11.6	6,420'	~2,046 cu. ft. & to surface

On sited with Bill Liese. Archaeology consultant: CASA

This permit is subject to the proposed
procedural review pursuant to 43 CFR 3105.3
and appeal pursuant to 43 CFR 3105.4.This permit is subject to the proposed
procedural review pursuant to 43 CFR 3105.3
and appeal pursuant to 43 CFR 3105.4.

cc: BLM, OCD (via BLM), Pippin, Stowe

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen direction, give pertinent data on subsurface conditions and measured and true vertical depths. Give blowout preventer program, if any.

23. SIGNED B. Stowe TITLE Consultant DATE 9-22-01
(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 11/19/01Application approval does not warrant or certify that 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:

APPROVED BY [Signature] DATE 11/19/01
*See Instructions on Reverse Side

DISTRICT I
1626 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 87605

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, NM 87605

Form C-102
Revised August 15, 2000

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-36854		*Pool Code 71599	*Pool Name BASIN DAKOTA
*Property Code 29227	*Property Name FULLERTON FEDERAL 27-11		*Well Number 1
*GRID No. 193195	*Operator Name MARKWEST RESOURCES, INC.		*Elevation 6003'

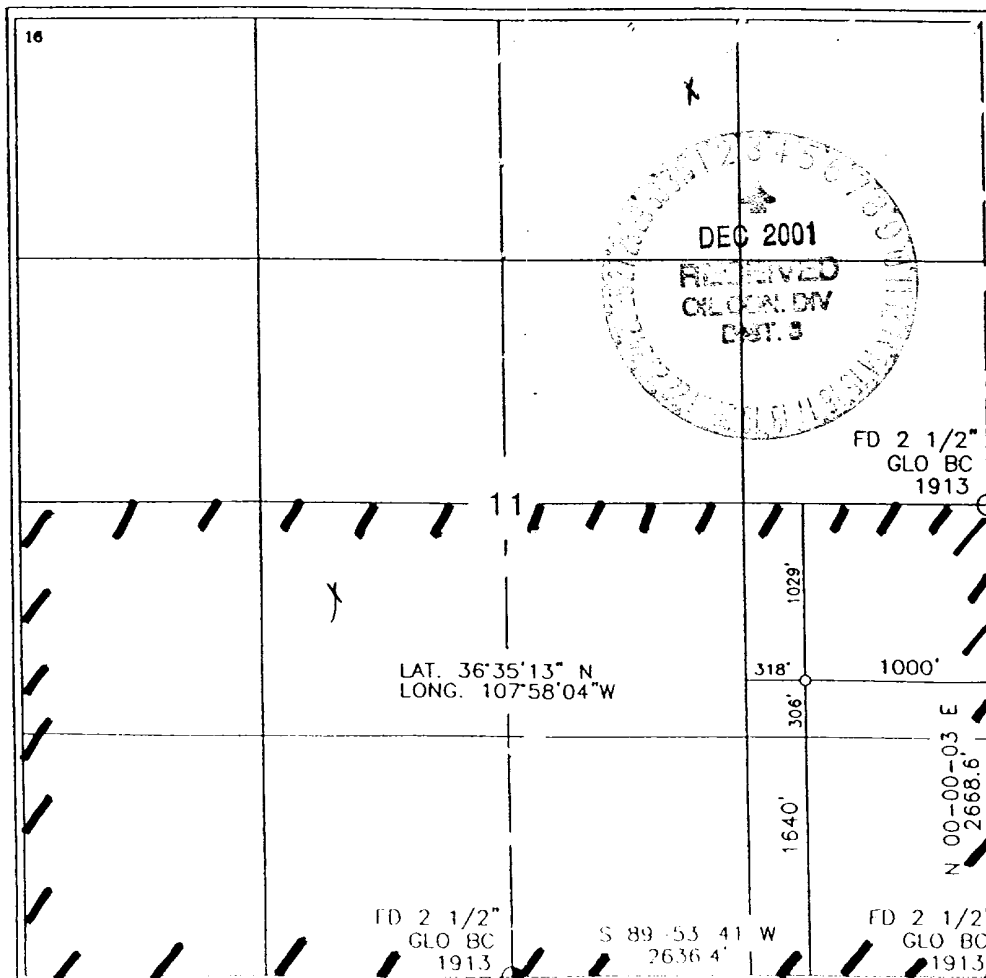
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	11	27-N	11-W		1640'	SOUTH	1000'	EAST	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			*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: *Brian Wood*

Printed Name

BRIAN WOOD

Title

CONSULTANT

NOVEMBER 30, 2001

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: 8-27-01

Signature and Seal of Professional Surveyor

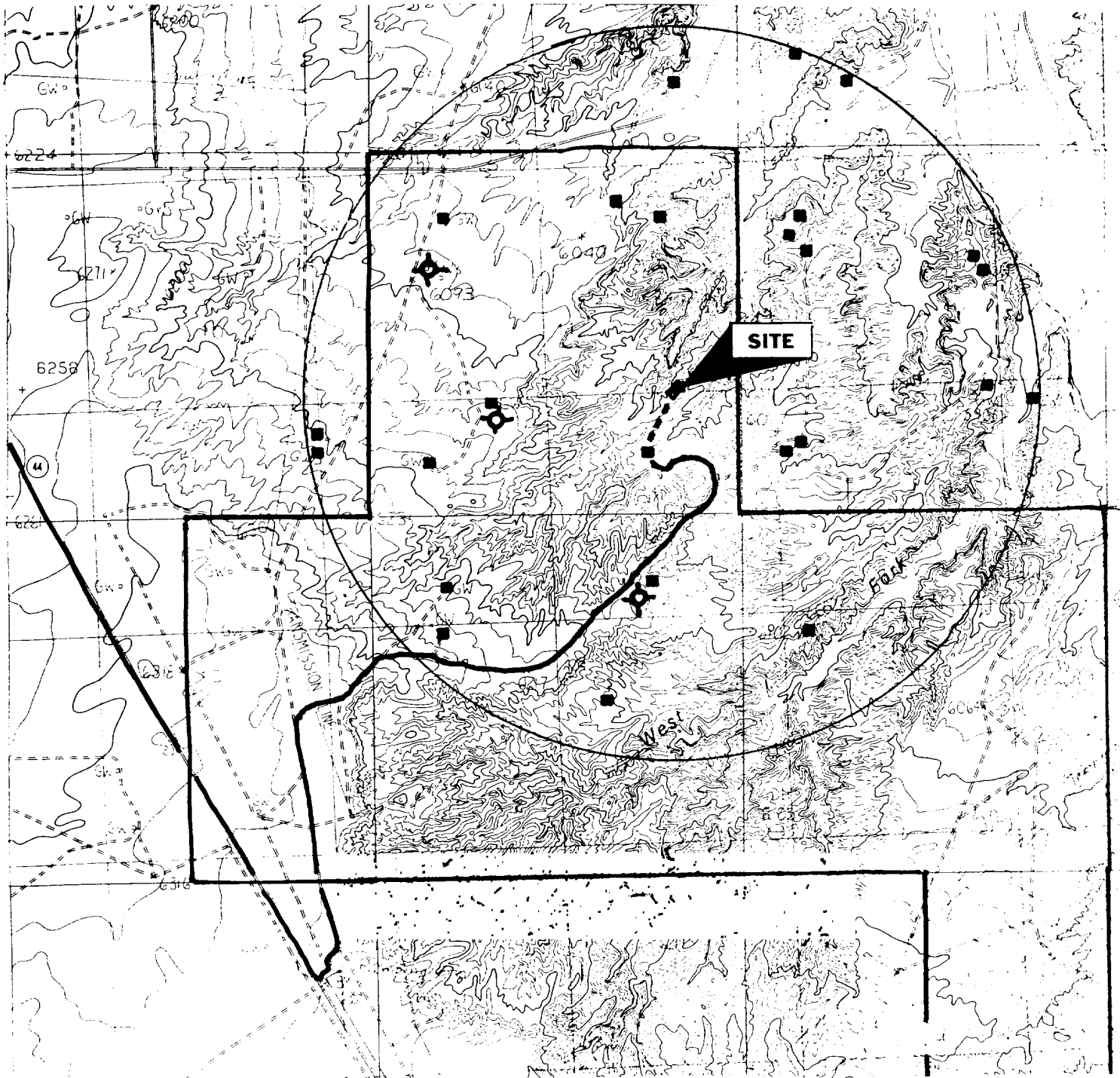
Ray A. [Signature]

8894

Certificate Number

MarkWest Resources, Inc.
 Fullerton Federal 27-11 11-1
 1640' FSL & 1000' FEL
 Sec. 11, T. 27 N., R. 11 W.
 San Juan County, New Mexico

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PROPOSED WELL: ◆
 EXISTING WELL: ■
 P & A WELL: ⊕

PROPOSED ROAD & GAS LINE: - - -
 EXISTING ROAD: ~~~~~
 LEASE: ┌

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>Subsea Elevation</u>
Nacimiento Fm	000'	12'	+6,003'
Ojo Alamo Ss	716'	728'	+5,287'
Kirtland Sh	817'	829'	+5,186'
Fruitland Coal	1,374'	1,386'	+4,629'
Pictured Cliffs Ss	1,797'	1,809'	+4,206'
Mesa Verde Ss	2,714'	2,726'	+3,289'
Point Lookout Ss	4,199'	4,211'	+1,804'
Gallup Ss	5,680'	5,692'	+323'
Dakota Ss	6,265'	6,277'	-262'
Total Depth (TD)*	6,420'	6,432'	-417'

* all elevations reflect the ungraded ground level of 6,003'

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.

3. PRESSURE CONTROL

Maximum expected pressure is $\approx 1,000$ 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 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>
12-1/4"	8-5/8"	24	K-55	New	ST&C	320 100 '
7-7/8"	4-1/2"	11.6	N-80	New	ST&C	6,420'

Surface casing will be cemented to the surface with ≈ 118 cu. ft. (≈ 100 sx) Class B + 1/4 lb/sk cello-flake + 2% CaCl_2 . Yield = 1.18 cu. ft./sk. Weight = 15.2 lb/gal. Volume = 100% excess. A guide shoe and insert float will be used. WOC = 12 hours. Surface casing will be tested to 1,500 psi for 30 minutes.

Production casing will be cemented to the surface. Volumes are calculated at 39% excess. If cement does not circulate to surface, then a temperature survey will be run to determine the actual cement top as needed. WOC = 12 hours. Test to 2,000 psi.

Lead cement will be $\approx 1,677$ cubic feet ($\approx 1,075$ sx) modified Super H cement at 61 #/sack and 22 #/sack blended silica light with 7 #/sack gilsonite + 1/4 #/sack Flocele. Mixed to weight of 13 #/gal for a yield of 1.56 cubic feet per sack. Mixed to weight of 8.5 #/gal with 75-600 SCF/bbl N2.

Tail cement will be ≈ 216 cubic feet (≈ 165 sx) 50/50 Class H Poz with 2% gel + 5 #/sack gilsonite + 1/4 #/sack Flocele + 0.4% Halad + 0.1% HR5. Yield = 1.31 cubic feet per sack. Weight = 13.5 #/gal. No N2.

Cap cement down annulus with ≈ 153 cubic feet (≈ 130 sx) Class B with 3% CaCl_2 .

Cementing equipment will include guide shoe, float collar and 23 centralizers. One centralizer each will be installed on the first three joints above the float, then one every second joint to 5,700' and one every fourth joint from 2,000' to surface.

5. MUD PROGRAM

<u>RANGE</u>	<u>MUD TYPE</u>	<u>WEIGHT</u>
0' - 160'	Fresh-Spud	8.4
160' - 4,800'	LSND	8.6
4,800' - TD	LSND	8.8

Lost circulation and absorption material will be on location.

6. CORING, TESTING, & LOGGING

No cores or DSTs are planned. Open hole logs will include GR, Neutron-Density, and Induction. The Neutron Density will be run from TD to 5,650'. The other logs will be run from TD to the base of the surface casing.

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Fullerton Federal 27-11 11-1
1640' FSL & 1000' FEL
Sec. 11, T. 27 N., R. 11 W.
San Juan County, New Mexico

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7. DOWNHOLE CONDITIONS

No abnormal pressures, temperatures, nor hydrogen sulfide are expected. Maximum pressure will be \approx 1,000 psi.

8. OTHER INFORMATION

The anticipated spud date is November 15, 2001. It is expected it will take about twelve days to drill and ten days to complete the well. Completion will start about one month after the spud and will include hydraulic fracturing.