

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK
DRILL ☒ DEEPEN ☐

b. TYPE OF WELL
OIL WELL ☐ GAS WELL ☒ OTHER ☐ SINGLE ZONE ☒ MULTIPLE ZONE ☐

2. NAME OF OPERATOR
MarkWest Resources, Inc. (303) 290-8700

3. ADDRESS AND TELEPHONE NO.
155 Inverness Dr. W, Suite 200, Englewood, Co. 80112

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)
At surface 1100' FSL & 1650' FWL
At proposed prod. zone 1025' 685' Same

5. LEASE DESIGNATION AND SERIAL NO.
NMSF-078094

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME, WELL NO.
Fullerton Fed. 27-11 #14

9. API WELL NO.
30-095-30825

10. FIELD AND POOL, OR WITHDRAWAL
Kutz PC West

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA
M 14-27n-11w NMPM

12. COUNTY OR PARISH 13. STATE
San Juan NM

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
10 air miles SSE of Bloomfield

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)
1025'

16. NO. OF ACRES IN LEASE
2,560

17. NO. OF ACRES ASSIGNED TO THIS WELL
5W/4 160

18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.
531'

19. PROPOSED DEPTH
2,150'

20. ROTARY OR CABLE TOOLS
Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.)
6,264' ungraded

22. APPROX. DATE WORK WILL START*
Oct. 15, 2001

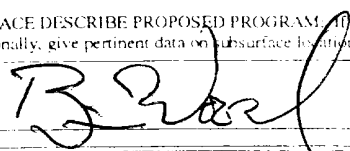
PROPOSED CASING AND CEMENTING PROGRAM				
SIZE OF HOLE	GRADE SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
12-1/4"	K-55 8-5/8"	24	160'	≈118 cu. ft. & to surface
7-7/8"	K-55 4-1/2"	10.5	2,150'	≈886 cu. ft. & to surface

Only other well in quarter-quarter is also a MarkWest well.

On sited with Bill Liese. Archaeology consultant: CASA

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 directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.  Consultant (505) 466-8120 9-4-01

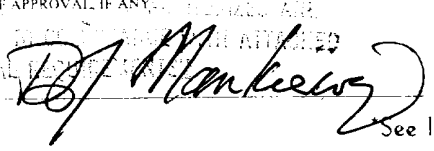
SIGNED _____ TITLE _____ DATE _____

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE 1/16/02

Application 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  TITLE AFM DATE 1/16/02

*SERIAL NUMBER _____

See Instructions On Reverse Side

NMOCD

DISTRICT I
1625 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

2001 SEP -5 PM 5:44

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-045-30825		*Pool Code 79680	*Pool Name KUTZ PICTURED CLIFFS WEST
*Property Code 29227	*Property Name FULLERTON FEDERAL 27-11		*Well Number 14
*OGRID No. 193195	*Operator Name MARKWEST RESOURCES, INC.		*Elevation 6264'

¹⁰ Surface Location

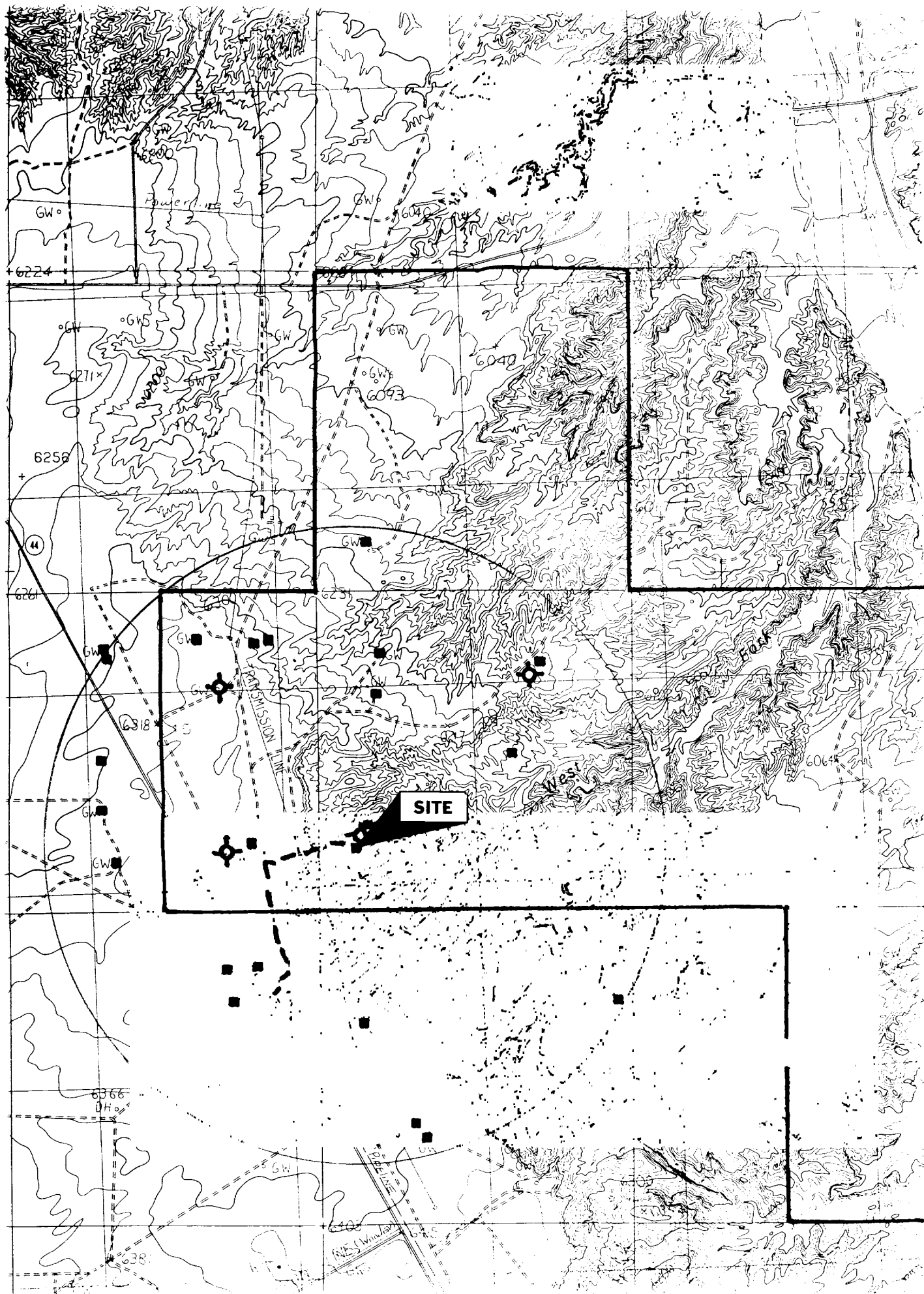
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	27-N	11-W		1025'	SOUTH	685'	WEST	SAN JUAN

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			*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

<p>16</p> <p>GLO BC 1913 W.C. N 00-01 E, 99'</p> <p>CALC'D SEC. CORNER</p> <p>00-00-01 E 2636.6'</p> <p>685'</p> <p>639'</p> <p>1025'</p> <p>LAT. 36°34'15" N LONG. 107°58'48" W</p> <p>GLO BC 1913 W.C. N 00-01 E 14.52'</p> <p>CALC'D SEC. CORNER</p> <p>N 89-52-01 E 5297.5'</p> <p>FD 2 1/2" GLO BC 1913</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><i>Brian Wood</i></p> <p>Signature</p> <p>Printed Name</p> <p>BRIAN WOOD</p> <p>Title</p> <p>CONSULTANT</p> <p>Date</p> <p>SEPTEMBER 5, 2001</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>7-10-2001</p> <p>Date of Survey</p> <p>Signature and Seal of Professional Surveyor:</p> <p>8894</p> <p>Certificate Number</p>
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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'	5'	+6,264'
Ojo Alamo Ss	915'	920'	+5,349'
Kirtland Sh	1,009'	1,014'	+5,255'
Fruitland Coal	1,507'	1,512'	+4,757'
Pictured Cliffs Ss	1,990'	1,995'	+4,274'
Total Depth (TD)*	2,150'	2,155'	+4,114'

* all elevations reflect the ungraded ground level of 6,264'

2. NOTABLE ZONES

<u>Gas & 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 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". 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, 3000# 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	160'
7-7/8"	4-1/2"	10.5	K-55	Used	ST&C	2,150'

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 1500 psi for 30 minutes.

Production casing will be cemented to the surface. Volumes are calculated at 80% 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 2000 psi.

Lead cement will be ≈ 318 sx Class B light cement (65% cement/35% POZ with 6% gel) with 5 #/sack gilsonite + 1/4 #/sack Flocele. Yield = 1.99 cu ft/sk. Weight = 12.4 #/gal.

Tail cement will be ≈ 184 sx 50/50 Class B POZ with 2% gel + 1/4#/sk Flocele + 0.5% Halad-9. Yield = 1.38 cu ft/sk. Weight = 13.5 #/gal. Total cement = 887 cu ft.

