

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NMNM-016473</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name <b>N/A</b>	
2. Name of Operator <b>GALPINE NATURAL GAS L.P.</b>		7. If Unit or CA Agreement, Name and No. <b>N/A</b>	
3a. Address <b>7415 EAST MAIN STREET FARMINGTON, NM 87401</b>		8. Lease Name and Well No. <b>GIMLI #31 Gallegos Fed 26-12-31</b>	
3b. Phone No. (include area code) <b>(505) 327-4892</b>		9. API Well No. <b>30-045-31904</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>1850' FNL &amp; 810' FWL</b> At proposed prod. zone <b>SAME</b>		10. Field and Pool, or Exploratory <b>BASIN FRUITLAND COAL</b>	
14. Distance in miles and direction from nearest town or post office* <b>16 AIR MILES SOUTH OF FARMINGTON</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>E 31-26n-12w NMPM</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>810'</b>		12. County or Parish <b>SAN JUAN</b>	
16. No. of Acres in lease <b>476.48</b>		13. State <b>NM</b>	
17. Spacing Unit dedicated to this well <b>NORTH HALF (317.41 ACRES)</b>		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>3,498'</b>	
19. Proposed Depth <b>1,460'</b>		20. BLM/BIA Bond No. on file <b>BLM NMB000019 (STATE WIDE)</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>6,150' GL</b>		22. Approximate date work will start* <b>UPON APPROVAL</b>	
23. Estimated duration <b>2 WEEKS</b>		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.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification.   |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

Comments

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

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

cc:BIA, BLM (& OCD), Cartaya, NAPI, Thompson, Tribe

25. Signature 	Name (Printed/Typed) <b>BRIAN WOOD</b>	Date <b>9-22-03</b>
Title <b>CONSULTANT</b>	PHONE: 505 466-8120 FAX: 505 466-9682	
Approved by (Signature) 	Name (Printed/Typed) <b>APM</b>	Date <b>3-1-05</b>
Title <b>APM</b>	Office <b>FFO</b>	

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  
PO Box 1980, Hobbs, NM 88241-1980

District II  
PO Drawer 00, Artesia, NM 88211-0719

District III  
1000 Rio Brazos Rd., Aztec, NM 87410

District IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088  
Santa Fe, NM 87504-2088

Form C-102  
Revised February 21, 1994  
Instructions on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number <b>30-045-31904</b>		*Pool Code 71629	*Pool Name BASIN FRUITLAND COAL
*Property Code <b>300 772</b>	*Property Name <b>Gallegos Federal</b>		*Well Number <b>26-12-31</b>
*OGRID No. <b>19480</b>	*Operator Name CALPINE NATURAL GAS L.P.		*Elevation 6150'

<sup>10</sup> Surface Location

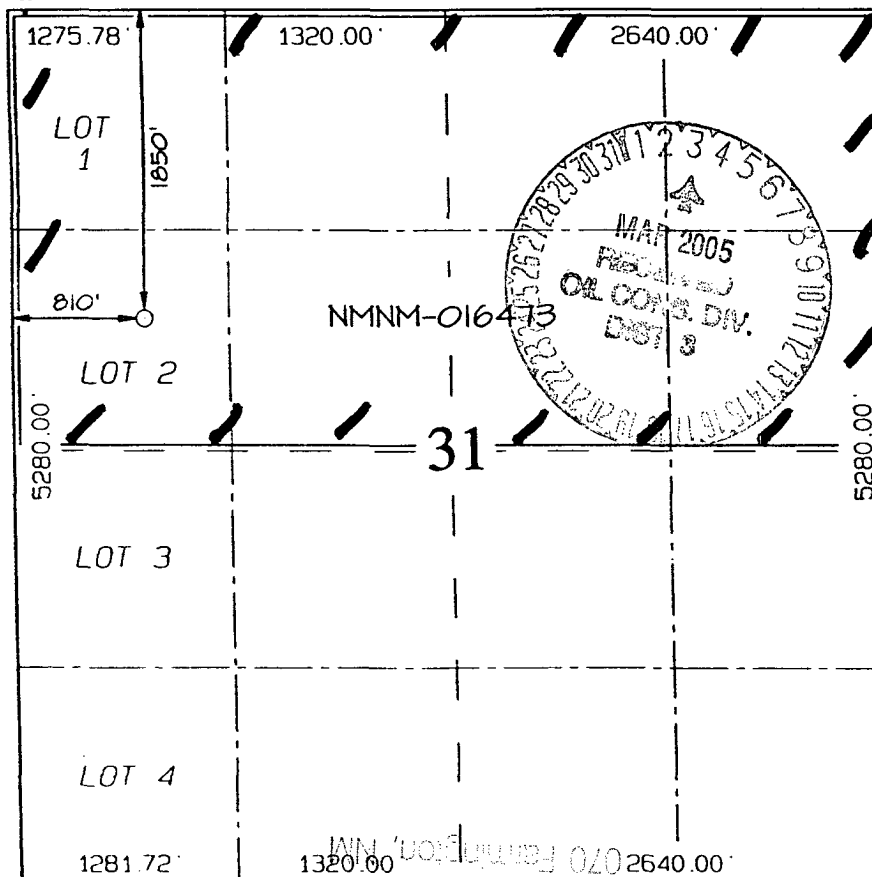
U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	31	26N	12W		1850	NORTH	810	WEST	SAN JUAN

<sup>11</sup> Bottom Hole Location If Different From Surface

U. or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

<sup>12</sup> Dedicated Acres 317.41 Acres - (N/2)	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
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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



<sup>17</sup> 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**

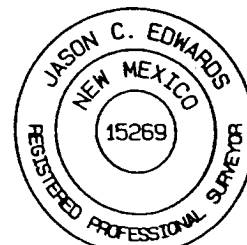
Date **SEPT. 22, 2003**

<sup>18</sup> 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: **AUGUST 4, 2003**

Signature and Seal of Professional Surveyor



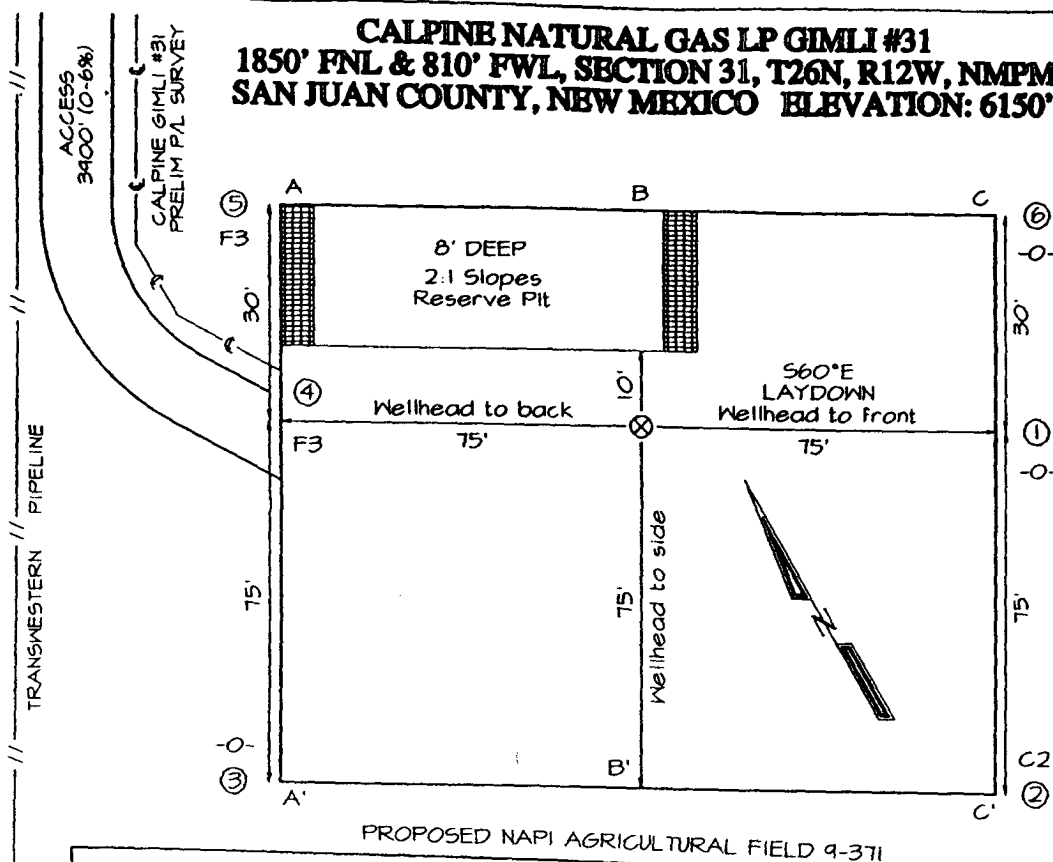
Jason C. Edwards  
Certificate Number 15269

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LATITUDE: 36°26'49"  
LONGITUDE: 108°09'29"  
DATUM: NAD1927

PLAT NOTE:

\*SURFACE OWNER\*  
Navajo Tribal Trust



A-A'						
6160'						
6150'						
6140'						

B-B'						
6160'						
6150'						
6140'						

C-C'						
6160'						
6150'						
6140'						

Note: Contractor should call One-Call for location of any marked or unmarked buried pipelines or cables on well pad and/or access road at least two (2) working days prior to construction

Calpine Natural Gas L. P.  
Gimli #31  
1850' FNL & 810' FWL  
Sec. 31, T. 26 N., R. 12 W.  
San Juan County, New Mexico

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## Drilling Program

### 1. ESTIMATED FORMATION TOPS

<u>Formation</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Nacimiento	000'	5'	+6,150'
Ojo Alamo Sandstone	50'	55'	+6,100'
Kirtland Shale	125'	130'	+6,025'
Top Fruitland	800'	805'	+5,350'
Lowest Fruitland Coal	1,125'	1,130'	+5,025'
Pictured Cliffs Sandstone	1,175'	1,180'	+4,975'
Total Depth (TD)*	1,460'	1,465'	+4,690'

\* all elevations reflect the ungraded ground level of 6,150'

### 2. NOTABLE ZONES

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland	Ojo Alamo	Fruitland
Pictured Cliffs	Fruitland	

Water zones will be protected with casing, cement, and weighted mud. Fresh water encountered during drilling will be recorded by depth, cased, and cemented. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

### 3. PRESSURE CONTROL

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.) Double ram or annular 2,000 psi system with a rotating head will be used. All ram

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preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1,000 psi.

Blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2,000 psi. Maximum expected pressure is  $\approx$ 585 psi.

#### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>GL Setting Depth</u>
8-3/4"	7"	20	K-55	New	120'
6-1/4"	4-1/2"	10.5	K-55	New	1,460'

Surface casing will be cemented to surface with  $\approx$ 59 cubic feet ( $\approx$ 50 sacks) Class B + 2% CaCl<sub>2</sub>. Volume is based on 100% excess, yield of 1.18 cubic feet per sack, and slurry weight of 15.6 pounds per gallon. W. O. C. = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will be cleaned of rock chips by circulating  $\geq$ 150% of hole volume with mud. Thirty barrels of fresh water will next be circulated. Lead with  $\approx$ 247 cubic feet ( $\approx$ 120 sacks) of Class B with 2% metasilicate (yield = 2.06 cubic feet per sack, slurry weight = 12.5 pounds per gallon). Tail with  $\approx$ 59 cubic feet ( $\approx$ 50 sacks) of Class B with 2% CaCl<sub>2</sub> (yield = 1.18 cubic feet per sack, slurry weight = 15.6 pounds per gallon). Total cement volume = 306 cubic feet @ 100% excess and circulating to surface.

Production casing will have 4-1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Five centralizers will be spaced on every other joint starting above the shoe. Five turbolizers will be placed on every other joint starting from the top of the well.

# Calpine Natural Gas Company

## Well Control Equipment Schematic for 2M Service

Date: July 11, 2001  
By: Paul Thompson

