

District I  
1625 N French Dr , Hobbs, NM 88240  
District II  
1301 W Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S St Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Form C-10  
June 16, 2001

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit to appropriate District Office

☐ AMENDED REPORT

**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN,  
PLUGBACK, OR ADD A ZONE**

|                                                                                                                                |                                          |                                           |
|--------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------|
| <sup>1</sup> Operator Name and Address<br>Manana Gas Company<br>c/o Walsh Engineering<br>7415 E Main St., Farmington, NM 87402 |                                          | <sup>2</sup> OGRID Number<br>13931        |
|                                                                                                                                |                                          | <sup>3</sup> API Number<br>30 - 045-34934 |
| <sup>3</sup> Property Code                                                                                                     | <sup>5</sup> Property Name<br>Barbara K. | <sup>6</sup> Well No<br>1                 |
| <sup>9</sup> Proposed Pool 1<br>Basin Fruitland Coal (71629)                                                                   |                                          | <sup>10</sup> Proposed Pool 2             |

**7 Surface Location**

|                   |              |                 |              |         |                       |                           |                      |                        |                    |
|-------------------|--------------|-----------------|--------------|---------|-----------------------|---------------------------|----------------------|------------------------|--------------------|
| UL or lot no<br>I | Section<br>5 | Township<br>30N | Range<br>11W | Lot Idn | Feet from the<br>2081 | North/South line<br>South | Feet from the<br>128 | East/West line<br>East | County<br>San Juan |
|-------------------|--------------|-----------------|--------------|---------|-----------------------|---------------------------|----------------------|------------------------|--------------------|

**8 Proposed Bottom Hole Location If Different From Surface**

|                   |              |                 |              |         |                       |                           |                      |                        |                    |
|-------------------|--------------|-----------------|--------------|---------|-----------------------|---------------------------|----------------------|------------------------|--------------------|
| UL or lot no<br>L | Section<br>4 | Township<br>30N | Range<br>11W | Lot Idn | Feet from the<br>1980 | North/South line<br>South | Feet from the<br>660 | East/West line<br>West | County<br>San Juan |
|-------------------|--------------|-----------------|--------------|---------|-----------------------|---------------------------|----------------------|------------------------|--------------------|

**Additional Well Information**

|                                   |                                                      |                                            |                                    |                                              |
|-----------------------------------|------------------------------------------------------|--------------------------------------------|------------------------------------|----------------------------------------------|
| <sup>11</sup> Work Type Code<br>N | <sup>12</sup> Well Type Code<br>G                    | <sup>13</sup> Cable/Rotary<br>R            | <sup>14</sup> Lease Type Code<br>P | <sup>15</sup> Ground Level Elevation<br>5771 |
| <sup>16</sup> Multiple<br>Y       | <sup>17</sup> Proposed Depth<br>2695' TVD & 2897' MD | <sup>18</sup> Formation<br>Pictured Cliffs | <sup>19</sup> Contractor           | <sup>20</sup> Spud Date                      |

**21 Proposed Casing and Cement Program**

|           |             |                    |               |                  |               |
|-----------|-------------|--------------------|---------------|------------------|---------------|
| Hole Size | Casing Size | Casing weight/foot | Setting Depth | Sacks of Cement  | Estimated TOC |
| 8-3/4"    | 7"          | 20#, J             | 150'          | 40 (47 cu.ft.)   | Surface       |
| 6-1/4"    | 4-1/2"      | 10.5#, J           | 2897'         | 290 (597 cu.ft.) |               |
|           |             |                    |               | 100 (118 cu.ft.) | Surface       |
|           |             |                    |               |                  |               |
|           |             |                    |               |                  |               |

<sup>22</sup> Describe the proposed program. If this application is to DEEPEN or PLUG BACK, give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Manana Gas Company proposes to drill a directional well outside the boundary of the Aztec National Monument to a legal bottom hole location in the SW/4 of Section 4, T30N, R11W and test the Fruitland Coal formation. A 8-3/4" surface hole will be drilled to approximately 150' 7", 20# casing will be run and cemented to surface with approximately 40 sx (47 cu.ft.) of Type 5 cement with 2% CaCl2 and 1/4#/sk celloflake. A 2000# double ram BOP will be installed and tested to 1000 psi. A 6-1/4" hole will be drilled with directional tools and a fresh water - polymer mud system to approximately 2897' (2694' TVD). 4-1/2", 10 5#, casing will be run to TD and cemented to surface with approximately 290 sx (597 cu.ft.) of Type 5 cement with 2% SMS and 1/4 #/sk celloflake, followed by 100 sx (118 cu ft.) of Type 5 cement with 1/4 #/sk celloflake. Surveys will be run continuously from the kick-off point at 200' to TD. A cased hole neutron and GR/CCL log will be run. The west half (320 acres) of Section 4, T30N, R11W is dedicated to this well.

Formation tops (TVD) Ojo Alamo - 785', Kirtland - 940', Fruitland - 1935', Fruitland Coal - 2055', Pictured Cliffs - 2419'.

Hold C-104  
for Directional Survey  
and "As Drilled" plat  
**NOTIFY AZTEC OCD 24 HRS.  
PRIOR TO CASING & CEMENT**

A COMPLETE C-144 MUST BE SUBMITTED TO AND APPROVED BY THE NMOC FOR: A PIT, CLOSED LOOP SYSTEM, BELOW GRADE TANK, OR PROPOSED ALTERNATIVE METHOD, PURSUANT TO NMOC PART 19.15.17, PRIOR TO THE USE OR CONSTRUCTION OF THE ABOVE APPLICATIONS.

**OIL CONSERVATION DIVISION**

<sup>23</sup> I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature

*Paul C. Thompson*

Approved by:

*[Signature]*

Printed name:

Paul C. Thompson, P.E.

Title:

DEPUTY OIL & GAS INSPECTOR, DIST. 4

Title

Agent/Engineer

Approval Date:

APR 07 2009

Expiration Date:

APR 07 2011

E-mail Address:

paul@walsheng.net

Date:

4/1/09

Phone:

(505) 327-4892

Conditions of Approval Attached ☐

Wellbore must enter top of Basin FC at a standard location or an admin order for NSL must be obtained.

By

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State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe. NM 87505

Form C-102  
Revised October 12, 2005

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|                                         |                                                  |                                                |
|-----------------------------------------|--------------------------------------------------|------------------------------------------------|
| <sup>1</sup> API Number<br>30.045-34934 | <sup>2</sup> Pool Code<br>71629                  | <sup>3</sup> Pool Name<br>BASIN FRONTLAND COAL |
| <sup>4</sup> Property Code<br>37651     | <sup>5</sup> Property Name<br>BARBARA K          | <sup>6</sup> Well Number<br>#1                 |
| <sup>7</sup> GRID No.<br>13931          | <sup>8</sup> Operator Name<br>MANANA GAS COMPANY | <sup>9</sup> Elevation<br>5771'                |

<sup>10</sup> Surface Location

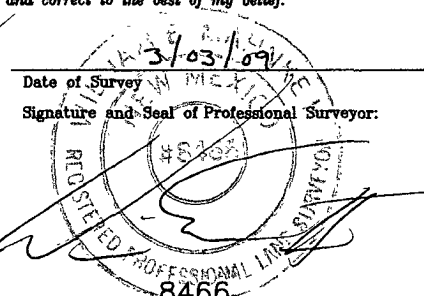
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County   |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| I             | 5       | 30-N     | 11-W  |         | 2081'         | SOUTH            | 128'          | EAST           | SAN JUAN |

<sup>11</sup> 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   |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| L             | 4       | 30-N     | 11-W  |         | 1980'         | SOUTH            | 660'          | WEST           | SAN JUAN |

|                                                          |                                    |                                  |                         |
|----------------------------------------------------------|------------------------------------|----------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres<br>319.65<br>w/2 = 159.825 | <sup>13</sup> Joint or Infill<br>Y | <sup>14</sup> Consolidation Code | <sup>15</sup> Order No. |
|----------------------------------------------------------|------------------------------------|----------------------------------|-------------------------|

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | FD BLM 31/4<br>BRASS CAP 1985 | 17 OPERATOR CERTIFICATION<br><p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><u>Paul C. Thompson</u><br/>Signature Date<br/><u>Paul C. Thompson</u><br/>Printed Name</p> |
| 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | FD BLM 31/4<br>BRASS CAP 1989 | 18 SURVEYOR CERTIFICATION<br><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>3/03/09</u><br/>Signature and Seal of Professional Surveyor:<br/><br/>Certificate Number <u>8466</u></p>                                                                                                                                                                       |
| <p>MANANA GAS COMPANY<br/>BARBARA K #1<br/>LAT. 36.84089 N<br/>LONG. 108.00465 W<br/>NAD 83</p> <p>MANANA GAS COMPANY<br/>BARBARA K #1<br/>BOTTOM HOLE</p> <p>660'</p> <p>2081'</p> <p>1980'</p> <p>N0°29'47"E 2631.56'(M)<br/>N0°33'E 39.90 Chains (R)</p> <p>N88°52'W 39.72 Chains (R)<br/>S88°54'52"E 5222.04'(M)</p> <p>N89°39'W 40.03 Chains (R)<br/>N89°11'13"W 2640.76'(M)</p> <p>S88°40'W 38.78 Chains (R)<br/>S89°07'47"W 2558.29'(M)</p> <p>SW/4 SEC 5<br/>FD 2 1/2"<br/>ALUM CAP<br/>2008 PLS 8894</p> <p>1/4 COR<br/>SINGLE<br/>PROPORTION</p> <p>FD BLM 31/4<br/>BRASS CAP<br/>1989</p> <p>SE/4 SEC 4<br/>FD 1 1/4"<br/>REBAR</p> |                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



**Scientific Drilling**  
Rocky Mountain Operations

Project: San Juan County, NM  
Site: Barbara K #1  
Well: Barbara K #1  
Wellbore: OH  
Design: Plan #1

**Walsh Engineering**

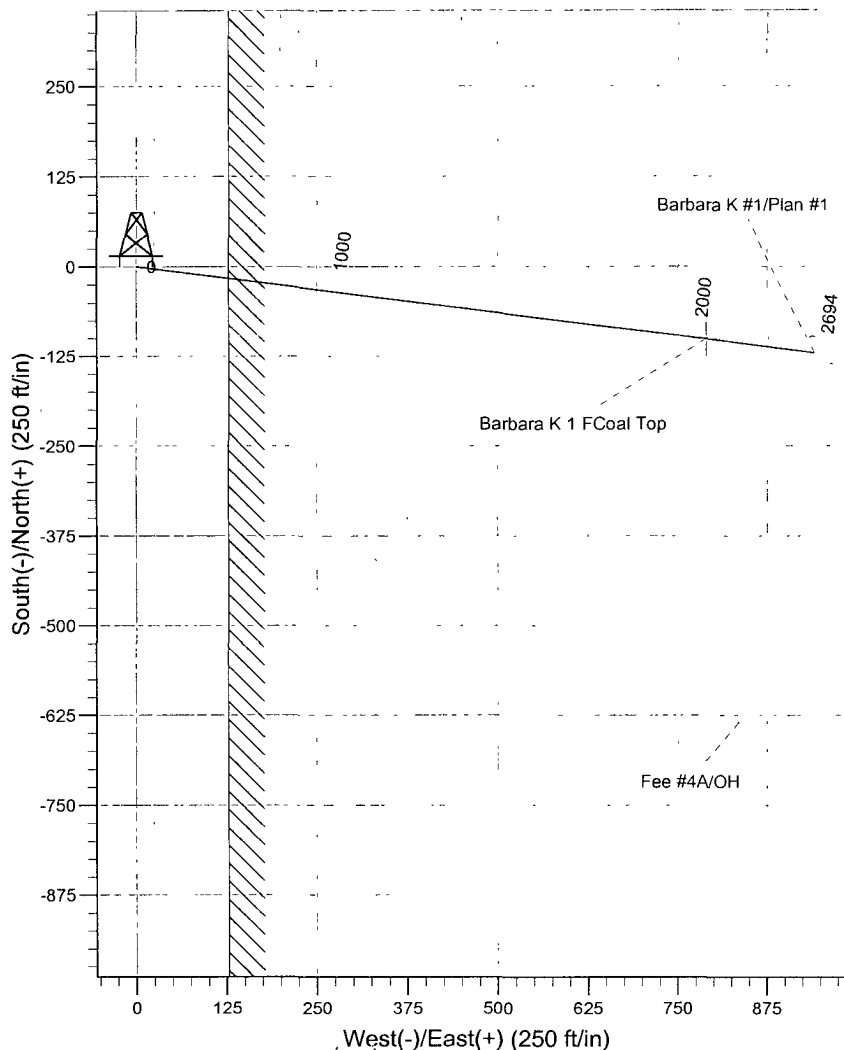
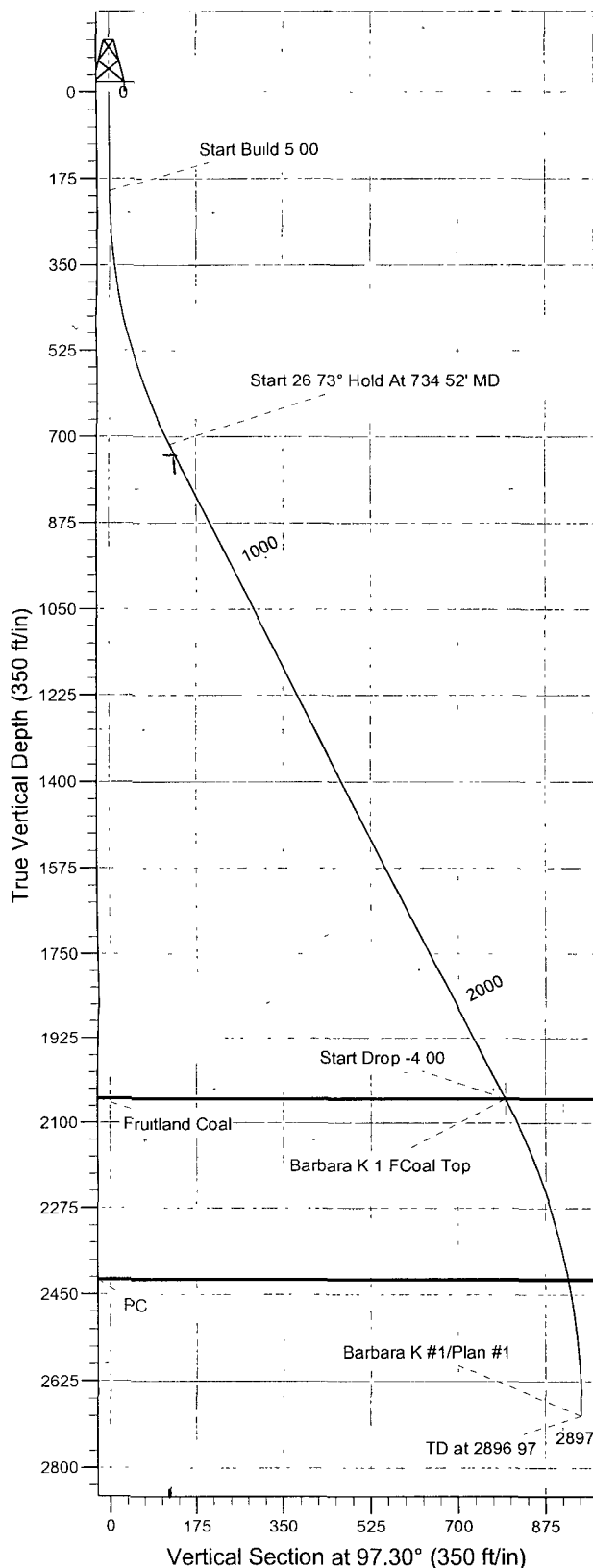


Azimuths to True North  
Magnetic North: 10.26°

Magnetic Field  
Strength: 51010.5nT  
Dip Angle: 63.57°  
Date: 3/31/2009  
Model: IGRF200510

### WELL DETAILS: Barbara K #1

Ground Level: GL 5771' @ 5771.00ft (Ground Level)  
+N/-S 0.00    +E/-W 0.00    Northing 2125455.85    Easting 2672967.09    Latitude 36° 50' 27.204 N    Longitude 108° 0' 16.740 W



### FORMATION TOP DETAILS

| TVDPath | MDPath  | Formation      |
|---------|---------|----------------|
| 2050.00 | 2228.82 | Fruitland Coal |
| 2420.00 | 2621.08 | PC             |

Plan: Plan #1 (Barbara K #1/OH)

Created By: Rex Hall    Date: 2009-03-31

PROJECT DETAILS    San Juan County, NM

Geodetic System    US State Plane 1983  
Datum    North American Datum 1983  
Ellipsoid    GRS 1980  
Zone    New Mexico Western Zone  
System Datum    Mean Sea Level  
Local North    True

### SECTION DETAILS

| Sec | MD      | Inc   | Azi   | TVD     | +N/-S   | +E/-W  | DLeg | TFace  | VSec   | Target                |
|-----|---------|-------|-------|---------|---------|--------|------|--------|--------|-----------------------|
| 1   | 0.00    | 0.00  | 0.00  | 0.00    | 0.00    | 0.00   | 0.00 | 0.00   | 0.00   |                       |
| 2   | 200.00  | 0.00  | 0.00  | 200.00  | 0.00    | 0.00   | 0.00 | 0.00   | 0.00   |                       |
| 3   | 734.52  | 26.73 | 97.30 | 715.35  | -15.56  | 121.43 | 5.00 | 97.30  | 122.42 |                       |
| 4   | 2228.82 | 26.73 | 97.30 | 2050.00 | -101.00 | 788.00 | 0.00 | 0.00   | 794.45 | Barbara K 1 FCoal Top |
| 5   | 2896.97 | 0.00  | 97.30 | 2694.19 | -120.45 | 939.79 | 4.00 | 180.00 | 947.47 |                       |