

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

| | |
|---|---|
| 1a. Type of Work DRILL | 5. Lease Number NM-010468 Unit Reporting Number |
| 1b. Type of Well GAS | 6. Indian, All. or Tribe |
| 2. Operator BURLINGTON RESOURCES Oil & Gas Company | 7. Unit Agreement Name |
| 3. Address & Phone No. of Operator PO Box 4289, Farmington, NM 87499 (505) 326-9700 | 8. Farm or Lease Name Howell J 9. Well Number 5 |
| 4. Location of Well 540' FNL, 735' FWL Latitude 36° 49.8, Longitude 107° 39.1 | 10. Field, Pool, Wildcat Basin Dakota 11. Sec., Twn, Rge, Mer. (NMPM) D Sec. 11, T-30-N, R-8-W API # 30-045-30067 |
| 14. Distance in Miles from Nearest Town 10 miles from Navajo Dam Post Office | 12. County San Juan 13. State NM |
| 15. Distance from Proposed Location to Nearest Property or Lease Line 540' | 17. Acres Assigned to Well 320 N/2 |
| 16. Acres in Lease | |
| 18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 75' | |
| 19. Proposed Depth 7820' | 20. Rotary or Cable Tools Rotary |
| 21. Elevations (DF, FT, GR, Etc.) 6210' GR | 22. Approx. Date Work will Start |
| 23. Proposed Casing and Cementing Program See Operations Plan attached | DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS" |
| 24. Authorized by: <u><i>Perry Cole</i></u> Regulatory/Compliance Administrator | <u>12-1-99</u> Date |

PERMIT NO. _____

APPROVAL DATE _____

APPROVED BY /s/ Charlie Beecham

TITLE _____

DATE FEB 23 2000

Archaeological Report to be submitted

Threatened and Endangered Species Report to be submitted

NOTE: This format is issued in lieu of U.S. BLM Form 3160-3

Title 18 U.S.C. Section 1001, makes 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 presentations as to any matter within its jurisdiction.

HOLD COPY FOR NSL

NMOC

District I
PO Box 1980, Hobbs, NM 88241-1980

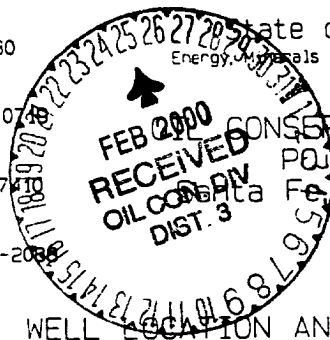
District II
PO Drawer 00, Artesia, NM 88211-0048

District III
1000 Rio Brazos Rd., Aztec, NM 87418

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

State of New Mexico
Energy, Minerals & Natural Resources Department

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



PO Box 2088
Santa Fe, NM 87504-2088
FEB 2 10
C/O DIST. 3, NM

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | | |
|-----------------------------------|--|---------------------------|----------------------------------|
| API Number 30-045 30067 | | Pool Code 71599 | Pool Name Basin Dakota |
| Property Code 7129 | Property Name HOWELL J | | Well Number 5 |
| GRID No. 14538 | Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY | | Elevation 6210' |

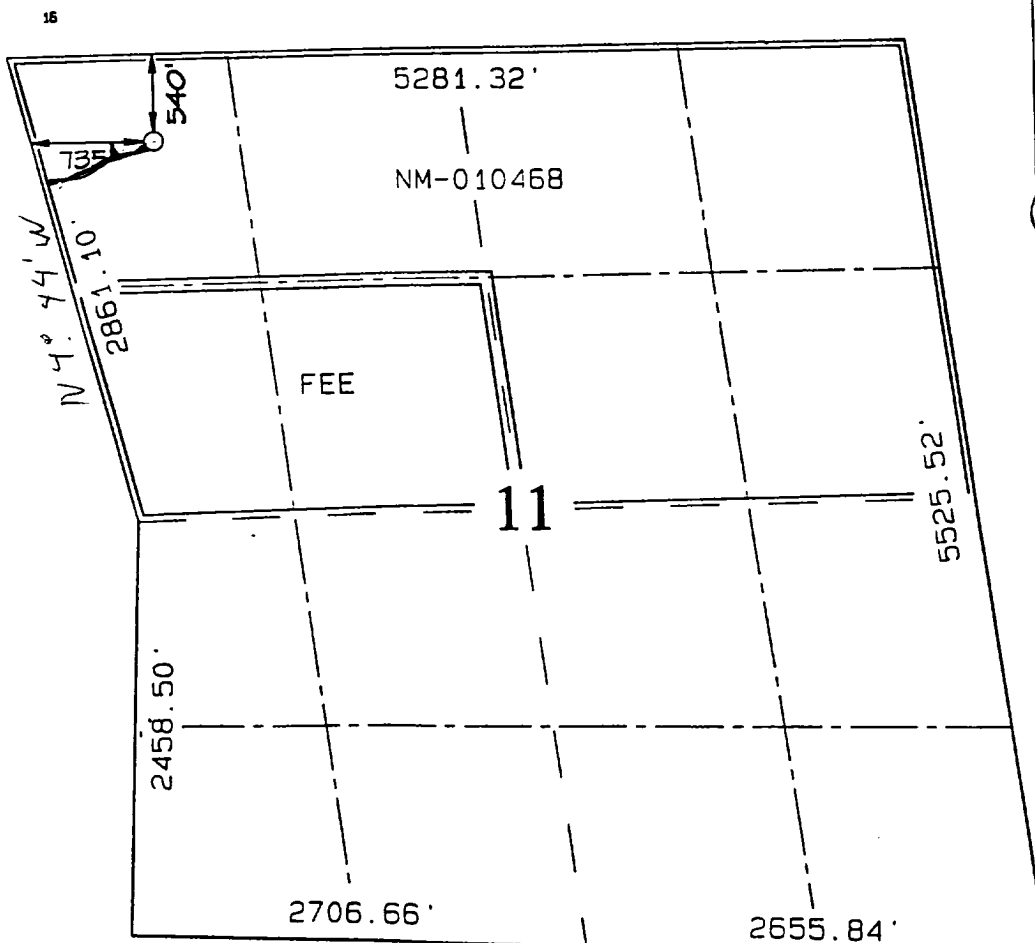
10 Surface Location

| UL or lot no. | Section | Township | Range | Lot 1/4 | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| D | 11 | 30N | 8W | | 540 | NORTH | 735 | WEST | SAN JUAN |

11 Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot 1/4 | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------------------------|---------|-----------------|-------|--------------------|---------------|------------------|---------------|----------------|--------|
| | | | | | | | | | |
| Dedicated Acres N/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

Peggy Cole
Signature

Peggy Cole
Printed Name
Regulatory Administrator
Title

12-1-99
Date

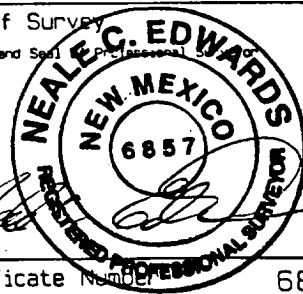
18 SURVEYOR CERTIFICATION

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.

OCTOBER 15, 1999

Date of Survey

Signature and Seal



Certificate Number **6857**

OPERATIONS PLAN

Well Name: Howell J #5
Location: 540' FNL, 735' FWL, Sec 11, T-30-N, R-8-W
San Juan County, NM
Latitude 36° 49.8, Longitude 107° 39.1
Formation: Basin Dakota
Elevation: 6210' GL

| <u>Formation Tops:</u> | <u>Top</u> | <u>Bottom</u> | <u>Contents</u> |
|------------------------|------------|---------------|-----------------|
| Surface | San Jose | 1923' | |
| Ojo Alamo | 1923' | 2109' | aquifer |
| Kirtland | 2109' | 2842' | gas |
| Fruitland | 2842' | 3202' | gas |
| Pictured Cliffs | 3202' | 3362' | gas |
| Lewis | 3362' | 3468' | gas |
| Intermediate TD | 3462' | | |
| Mesa Verde | 3468' | 4185' | gas |
| Chacra | 4185' | 4959' | gas |
| Massive Cliff House | 4959' | 5005' | gas |
| Menefee | 5005' | 5346' | gas |
| Massive Point Lookout | 5346' | 5705' | gas |
| Mancos | 5705' | 6628' | gas |
| Gallup | 6628' | 7364' | gas |
| Greenhorn | 7364' | 7422' | gas |
| Graneros | 7422' | 7505' | gas |
| Dakota | 7505' | | gas |
| TD (4 1/2" liner) | 7820' | | |

Logging Program:

Open hole - IEL-GR, CNL-CDL, ML
Cased hole - CBL-CCL-GR - TD to surface
Cores - none

Mud Program:

| <u>Interval</u> | <u>Type</u> | <u>Weight</u> | <u>Vis.</u> | <u>Fluid Loss</u> |
|-----------------|-------------|---------------|-------------|-------------------|
| 0- 200' | Spud | 8.4-9.0 | 40-50 | no control |
| 200- 3462' | LSND | 8.4-9.0 | 30-60 | no control |
| 3462- 7820' | Gas | n/a | n/a | n/a |

Pit levels will be visually monitored to detect gain or loss of fluid control.

Casing Program (as listed, the equivalent, or better):

| <u>Hole Size</u> | <u>Depth Interval</u> | <u>Csg. Size</u> | <u>Wt.</u> | <u>Grade</u> |
|------------------|-----------------------|------------------|------------|--------------|
| 12 1/4" | 0' - 200' | 9 5/8" | 32.3# | WC-50 |
| 8 3/4" | 0' - 3462' | 7" | 20.0# | J-55 |
| 6 1/4" | 3362' - 7820' | 4 1/2" | 10.5# | K-55 |

Tubing Program:

0' - 7820' 2 3/8" 4.7# J-55

BOP Specifications, Wellhead and Tests:

Surface to Intermediate TD -

11" 2000 psi minimum double gate BOP stack (Reference Figure #1).
After nipple-up prior to drilling out surface casing, rams and casing will be tested to 600 psi for 30 minutes.

Intermediate TD to Total Depth -

11" 2000 psi minimum double gate BOP stack (Reference Figure #1).
After nipple-up prior to drilling out intermediate casing, rams and casing will be tested to 1500 psi for 30 minutes.

Surface to Total Depth -

2" nominal, 2000 psi minimum choke manifold (Reference Figure #3).

Completion Operations -

7 1/16" 2000 psi double gate BOP stack (Reference Figure #2).
After nipple-up prior to completion, pipe rams, casing and liner top will be tested to 2000 psi for 15 minutes.

Wellhead -

9 5/8" x 7" x 2 3/8" x 3000 psi tree assembly.

General -

- Pipe rams will be actuated once each day and blind rams will be actuated once each trip to test proper functioning.
- An upper kelly cock valve with handle available and drill string valves to fit each drill string will be available on the rig floors at all times.
- BOP pit level drill will be conducted weekly for each drilling crew.
- All BOP tests and drills will be recorded in daily drilling reports.
- Blind and pipe rams will be equipped with extension hand wheels.

Cementing:

9 5/8" surface casing - cement with 159 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (188 cu.ft. of slurry, 200% excess to circulate to surface). WOC 8 hrs. Test casing to 600 psi for 30 minutes.

Saw tooth guide shoe on bottom. Bowspring centralizers will be run in accordance with Onshore Order #2.

7" intermediate casing -

Lead w/314 sx Class "B" w/3% sodium metasilicate, 7# gilsonite/sx and 1/2# flocele/sx. Tail w/90 sx 50/50 Class "B" Poz w/2% calcium chloride, 2% gel (1041 cu.ft. of slurry, 100% excess to circulate to surface.) WOC minimum of 8 hours before drilling out intermediate casing. If cement does not circulate to surface, a CBL will be run during completion operations to determine TOC. Test casing to 1500 psi for 30 minutes.

7" intermediate casing alternative two stage: Stage collar at 2742'. First stage: cement with w/153 sx Class "B" 50/50 poz w/2% gel, 2% calcium chloride, 0.5 pps Cellophane. Second stage: 283 sx Class "B" with 3% sodium metasilicate, 1/2 pps Cellophane, 10 pps Gilsonte (1041 cu.ft., 100% excess to circulate to surface).

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. Bowspring centralizers spaced every other joint off bottom, to the base of the Ojo Alamo at 2752'. Two turbolating centralizers at the base of the Ojo Alamo at 2752'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

4 1/2" Production Liner -

Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Lead with 504 sx 50/50 Class "H" Poz with 2% gel, 0.25# flocele/sx, 5# gilsonite/sx, 0.2% retardant and 0.4% fluid loss additive (641 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

Cement float shoe on bottom with float collar spaced on top of shoe joint.

Note: To facilitate higher hydraulic stimulation completion work, no liner hanger will be used. In its place, a long string of 4 1/2" casing will be run and cemented with a minimum of 100' of cement overlap between the 4 1/2" x 7" casing strings. After completion of the well, a 4 1/2" retrievable bridge plug will be set below the top of cement in the 4 1/2" x 7" overlap. The 4 1/2" casing will then be backed off above the top of cement in the 4 1/2" x 7" overlap and laid down. The 4 1/2" bridge plug will then be retrieved and the production tubing will be run to produce the well.

- If hole conditions permit, an adequate water spacer will be pumped ahead of each cement job to prevent cement/ mud contamination or cement hydration.

Special Drilling Operations (Gas/Mist Drilling):

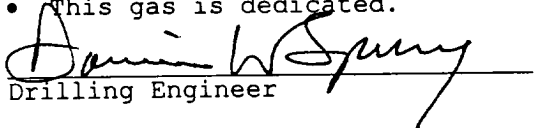
The following equipment will be operational while gas/mist drilling:

- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- Deduster equipment will be utilized.
- The rotating head will be properly lubricated and maintained.
- A float valve will be utilized above the bit.
- Mud circulating equipment, water, and mud materials will be sufficient to maintain control of the well.

Additional Information:

- The Dakota formation will be completed.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

| | |
|-----------------|----------|
| Fruitland Coal | 300 psi |
| Pictured Cliffs | 600 psi |
| Mesa Verde | 700 psi |
| Dakota | 2500 psi |
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered.
- The north half of Section 11 is dedicated to the Dakota in this well.
- This gas is dedicated.


Drilling Engineer

12/3/99
Date

BURLINGTON RESOURCES OIL & GAS COMPANY HOWELL J #5

540' FNL & 735' FWL, SECTION II, T30N, R8W, N.M.P.M.
SAN JUAN COUNTY, NEW MEXICO

APD MAP #1

NO NEW CONSTRUCTION
NWNW SECTION II, T30N, R8W.

