

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 SF-078578 Unit Reporting Number
1b. Type of Well GAS —	6. If 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 K 9. Well Number #4B
4. Location of Well 1450' FNL, 2445' FEL 1440' 2160' <i>SH</i> Latitude 36° 48.9'N, Longitude 107° 41.9'W	10. Field, Pool, Wildcat Blanco Mesaverde 11. Sec., Twn, Rge, Mer. (NMPM) Sec. 17, T-30-N, R-8-W API # 30-045-30551
14. Distance in Miles from Nearest Town 23 miles from Aztec P.O.	12. County San Juan 13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1450'	17. Acres Assigned to Well 320 N/2
16. Acres in Lease	
18. Distance from Proposed Location to Nearest Well, Dril, Compl, or Applied for on this Lease 2000'	
19. Proposed Depth 5200' —	20. Rotary or Cable Tools Rotary
21. Elevations (DF, FT, GR, Etc.) 5863' GR 5915' <i>SH</i>	22. Approx. Date Work will Start
23. Proposed Casing and Cementing Program See Operations Plan attached	
24. Authorized by: <i>Peggy Cole</i> Regulatory/Compliance Supervisor	Date <i>12-8-00</i>

PERMIT NO. _____ APPROVAL DATE _____
APPROVED BY _____ TITLE _____ DATE _____

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.

12/20/00

submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Sundry Notices and Reports on Wells

1. Type of Well
GAS

2. Name of Operator

**BURLINGTON
RESOURCES**

OIL & GAS COMPANY

3. Address & Phone No. of Operator

PO Box 4289, Farmington, NM 87499 (505) 326-9700

4. Location of Well, Footage, Sec., T, R, M

1940' FNL, 2150' FEL, Sec. 17, T-30-N, R-8-W, NMPM

5. Lease Number

SF-078578

6. If Indian, All. or
Tribe Name

7. Unit Agreement Name

8. Well Name & Number

Howell K #4B

9. API Well No.

30-045-30551

10. Field and Pool

Blanco Mesaverde

11. County and State

San Juan Co, NM

12. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OTHER DATA

Type of Submission

☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment

Type of Action

☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other -
☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut off
☐ Conversion to Injection

13. Describe Proposed or Completed Operations

The location of the subject well has been moved from 1450' FNL, 2445' FEL to 1940' FNL, 2150' FEL. Attached is the revised C-102 plat.



14. I hereby certify that the foregoing is true and correct.

Signed _____ Title Regulatory Supervisor Date 5/22/01

(This space for Federal or State Office use)

APPROVED BY /s/ Joel Farrell Title _____ Date AUG 2

CONDITION OF APPROVAL, if any:

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 representations as to any matter within its jurisdiction.

NMOOD

DISTRICT I
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410

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

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

P.O. 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

¹ API Number 30-045- 30551	² Pool Code 72319	³ Pool Name Blanco Mesaverde
⁴ Property Code 7130	⁵ Property Name HOWELL K	⁶ Well Number 4B
⁷ GRID No. 14538	⁸ Operator Name BURLINGTON RESOURCES OIL & GAS INC.	⁹ Elevation 5915'

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
G	17	30-N	8-W		1940	NORTH	2150	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
¹² Dedicated Acres N/320			¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ 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

<div><p>16</p></div>	<div><p>17</p><p>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>Signature _____ Peggy Cole Printed Name _____ Regulatory Supervisor Title _____ Date _____</p></div>
<div><p>17</p><p>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>4-19-94 Date of Survey _____ Signature and Seal of Professional Surveyor: _____ 8894 Certificate Number</p></div>	<div><p>18</p><p>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>4-19-94 Date of Survey _____ Signature and Seal of Professional Surveyor: _____ 8894 Certificate Number</p></div>

HOWELL K #4B

NE/4 SEC.17, T-30-N, R-8-W, N.M.P.M.

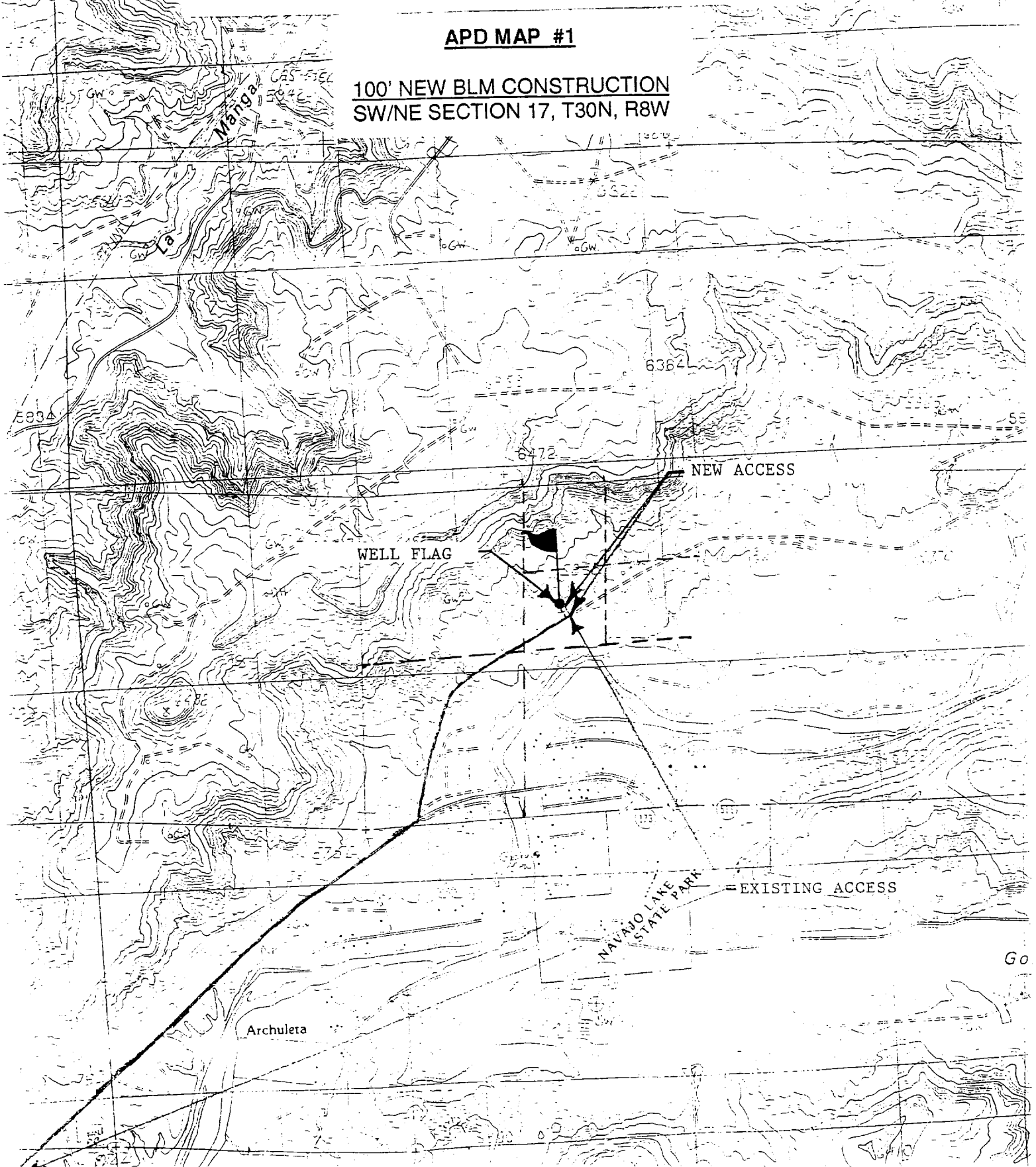
SAN JUAN COUNTY, NEW MEXICO

1940' FNL

2150' FEL

APD MAP #1

100' NEW BLM CONSTRUCTION
SW/NE SECTION 17, T30N, R8W



OPERATIONS PLAN

Well Name: Howell K #4B
Surface Location: 1450' FNL, 2445' FEL, Section 17, T-30-N, R-8-W
San Juan County, New Mexico
Latitude 36° 48.9'N, Longitude 107° 41.9'W

Formation: Blanco Mesaverde
Elevation: 5863'GR

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1450'	aquifer
Ojo Alamo	1450'	1610'	aquifer
Kirtland	1610'	2146'	gas
Fruitland	2146'	2651'	gas
Pictured Cliffs	2651'	2757'	gas
Lewis	2757'	3320'	gas
Intermediate TD	3007'		
Mesa Verde	3320'	3660'	gas
Chacra	3660'	4360'	gas
Massive Cliff House	4360'	4460'	gas
Menefee	4460'	4800'	gas
Point Lookout	4800'		gas
Total Depth	5200'		

Logging Program:

Cased hole logging - Gamma Ray, Cement bond from surface to TD
Open hole logging - none
Mud Logs/Coring/DST - none

Mud Program:

<u>Interval- MD</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- 3007'	LSND	8.4-9.0	30-60	no control
3007- 5200'	Air/Mist	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>Measured Depth</u>	<u>Csg Size</u>	<u>Weight</u>	<u>Grade</u>
12 1/4"	0' - 200'	9 5/8"	32.3#	H-40
8 3/4"	0' - 3007'	7"	20.0#	J-55
6 1/4"	2907' - 5200'	4 1/2"	10.5#	J-55

Tubing Program: 0' -5200' 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.

BOP Specifications, Wellhead and Tests (cont'd):**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 2000 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 drill crew.
- All BOP tests & 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/306 sx 50/50 Class "G"/Trinity Light with 2.5% sodium metasilicate, 2% calcium chloride, 10 pps Gilsonite, 0.5 pps Flocele. Tail with 90 sx Class "G" 50/50 poz w/2% gel, 2% calcium chloride, 5 pps Gilsonite, 0.1% antifoam and 0.25 pps Flocele (905 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 to determine TOC. Test casing to 1500 psi for 30 minutes.

See Attached Alternative Intermediate Lead Slurry.

7" intermediate casing alternative two stage: Stage collar at 2046'. First stage: cement w/226 sx 50/50 Class "G" poz w/2% gel, 2% calcium chloride, 5 pps Gilsonite, 0.1% antifoam and 0.25 pps Flocele. Second stage: w/239 sx 50/50 Class "G"/Trinity Light with 2.5% sodium metasilicate, 2% calcium chloride, 10 pps Gilsonite, 0.5 pps Flocele (905 cu.ft. of slurry, 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 1610'. Two turbolating centralizers at the base of the Ojo Alamo at 1610'. 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 circulate liner top. Pump 229 sx Class "G" 50/50 poz w/4.5% gel, 0.25 pps Flocele, 5 pps Gilsonite, 0.25% fluid loss, 0.1% retardant (330 cu.ft., 50% excess to circulate liner). WOC a minimum of 18 hrs prior to completing.

Note: If open hole logs are run, cement volumes will be based on 25% excess over caliper volumes.

Cement nose guide shoe on bottom with float collar spaced on top of shoe joint. The liner hanger will have a rubber packoff.

- 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 (Air/Mist Drilling):


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

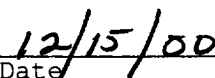
- An anchored blooie line will be utilized to discharge all cuttings and circulating medium to the blow pit a minimum of 100' from the wellhead.
- The blooie line will be equipped with an automatic igniter or pilot light.
- Compressors will be located a minimum of 100' from the wellhead in the opposite direction from the blooie line.
- Engines will have spark arresters or water cooled exhaust.
- 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 Mesa Verde formation will be completed.
- No abnormal temperatures or hazards are anticipated.
- Anticipated pore pressures are as follows:

Fruitland Coal	150 psi
Pictured Cliffs	260 psi
Mesa Verde	375 psi
- Sufficient LCM will be added to the mud system to maintain well control, if lost circulation is encountered below the top of the Pictured Cliffs.
- The north half of Section 17 is dedicated to the Mesa Verde.
- This gas is dedicated.


Drilling Engineer


Date