

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 NMSF-078204 Unit Reporting Number	
1b. Type of Well GAS	6. If Indian, All. or Tribe	
2. Operator <b>BURLINGTON RESOURCES</b> 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 Sunray D Well Number 2B	
4. Location of Well 1450' FSL, 1850' FEL  Latitude 36° 47.7, Longitude 107° 53.2	9. Field, Pool, Wildcat Blanco MV/Basin DK  10. Sec., Twn, Rge, Mer. (NMPM) Sec. 21, T-30-N, R-10-W API # 30-045-31107	
14. Distance in Miles from Nearest Town 7.3 Mls to Hwy 550 & Hwy 173 North of Aztec NM	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1450'	17. Acres Assigned to Well 326.44	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 1106'	
19. Proposed Depth 7630	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 6324 GR	22. Approx. Date Work will Start 1-4-02	
23. Proposed Casing and Cementing Program See Operations Plan attached	24. Authorized by: <u>[Signature]</u> Regulatory/Compliance Supervisor	

PERMIT NO. \_\_\_\_\_

APPROVAL DATE \_\_\_\_\_

APPROVED BY /s/ David J. Mankiewicz

TITLE \_\_\_\_\_

DATE JUL 22 2002

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.

SC

NMOC

1/2

DISTRICT I  
1825 N. French Dr., Hobbs, N.M. 88240

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

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

OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-045 <u>31107</u>	<sup>2</sup> Pool Code 72319/71599	<sup>3</sup> Pool Name Blanco MV/Basin DK
<sup>4</sup> Property Code 7566	<sup>5</sup> Property Name SUNRAY D	<sup>6</sup> Well Number 2B
<sup>7</sup> OGRID No. 14538	<sup>8</sup> Operator Name BURLINGTON RESOURCES OIL & GAS, INC.	Elevation 6324'

<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
J	21	30-N	10-W		1450	SOUTH	1850	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
<sup>12</sup> Dedicated Acres MV/DK-E/326.44			<sup>13</sup> Joint or Infill		<sup>14</sup> Consolidation Code		<sup>15</sup> 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

16	LOT 4	LOT 3	LOT 2	LOT 1
LOT 5	LOT 6	LOT 7	LOT 8	
LOT 12	LOT 11 LAT. 36°47'40.6" N LONG. 107°53'10.9" W. (N.A.D. 1927)	LOT 10	LOT 9	
LOT 13	LOT 14	LOT 15	LOT 16	

FD 3 1/2" BLM  
BC. 1967

FD 3 1/2" BLM  
BC. 1967

N 87-52-00 W FD 3 1/2" BLM  
2863.95' (M) BC. 1967

21

1178'

814'

518'

136'

1450'

1850'

2628.10' (M)

N 00-30-44 E

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 Supervisor

Title  
1-4-02

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.

DAVID A. JOHNSON  
Date of Survey  
Signature  
Seal of Professional Surveyor  
14827  
REGISTERED PROFESSIONAL SURVEYOR

Certificate Number

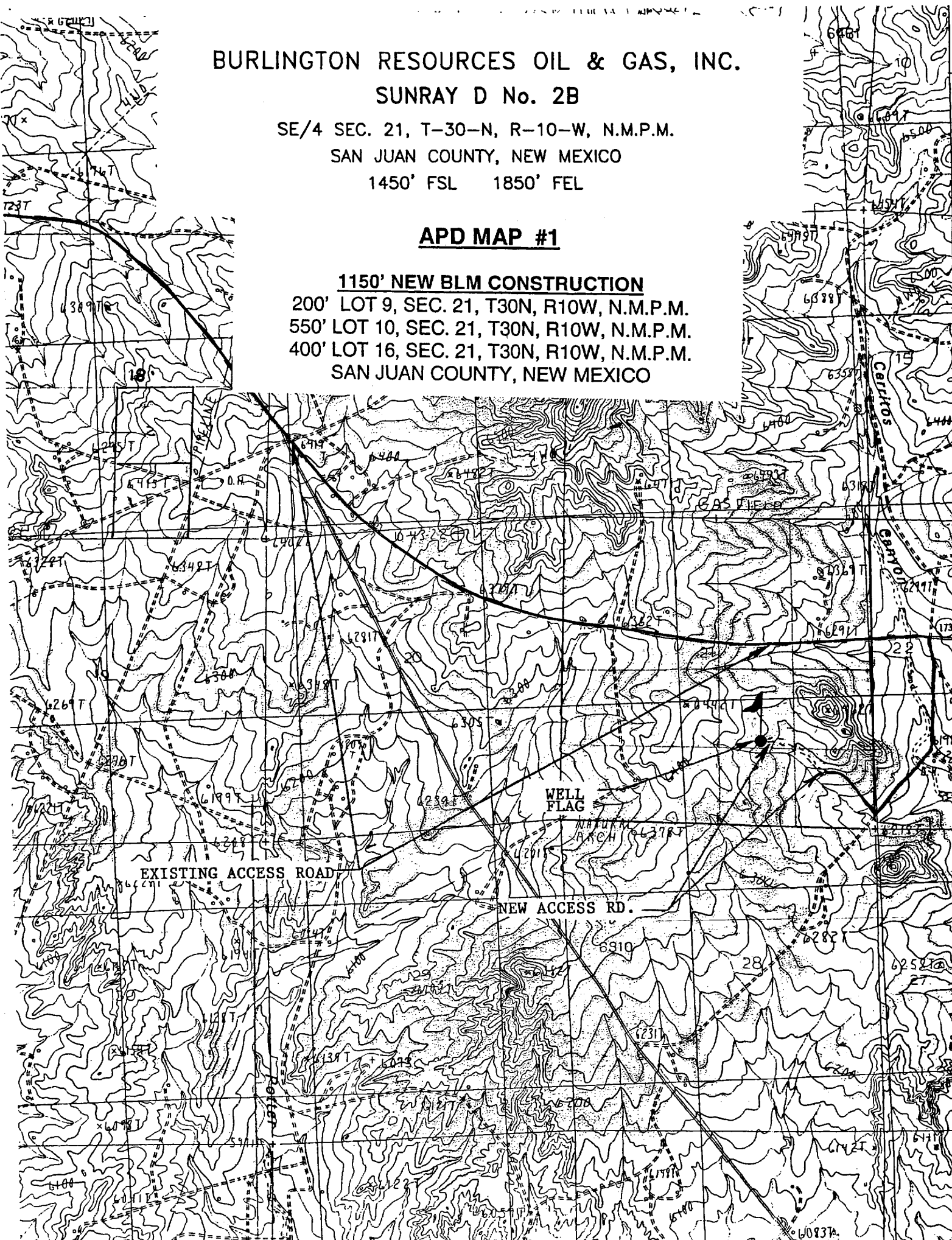
BURLINGTON RESOURCES OIL & GAS, INC.  
SUNRAY D No. 2B

SE/4 SEC. 21, T-30-N, R-10-W, N.M.P.M.  
SAN JUAN COUNTY, NEW MEXICO  
1450' FSL 1850' FEL

APD MAP #1

1150' NEW BLM CONSTRUCTION

200' LOT 9, SEC. 21, T30N, R10W, N.M.P.M.  
550' LOT 10, SEC. 21, T30N, R10W, N.M.P.M.  
400' LOT 16, SEC. 21, T30N, R10W, N.M.P.M.  
SAN JUAN COUNTY, NEW MEXICO



## OPERATIONS PLAN

**Well Name:** Sunray D 2B  
**Location:** 1450' FSL, 1850' FEL, Sec.21, T-30-N, R-10-W  
San Juan County, NM  
Latitude 36° 47.7'N, Longitude 107° 53.2'W  
**Formation:** Blanco MV/Basin Dakota  
**Elevation:** 6324'GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1607'	
Ojo Alamo	1607'	1696'	aquifer
Kirtland	1696'	2588'	gas
Fruitland	2588'	2886'	
Pictured Cliffs	2886'	3022'	gas
Lewis	3022'	3616'	gas
Intermediate TD	3122'		
Mesaverde	3616'	3865'	gas
Chacra	3865'	4536'	gas
Massive Cliff House	4536'	4691'	gas
Menefee	4691'	5171'	gas
Massive Point Lookout	5171'	5506'	gas
Mancos Shale	5506'	6411'	gas
Gallup	6411'	7140'	gas
Greenhorn	7140'	7196'	gas
Graneros	7196'	7250'	gas
Dakota	7250'	7592'	gas
Morrison	7592'		
TD	7630'		

### Logging Program:

Open hole logs - Platform Express: GR/AIT-TD to 3600'  
RhoB/Neutron-TD to minimum ops depth  
Cased hole logs - CBL/GR - TD to surface.  
Mudlogger- 7040' to TD.  
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- 3122'	LSND	8.4-9.0	30-60	no control
3122- 7630'	Air/N2	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#	H-40
8 3/4"	0' - 3122'	7"	20.0#	J-55
6 1/4"	3022' - 7630'	4 1/2"	10.5#	J-55

### Tubing Program:

0' - 7630'      2 3/8"      4.7#      J-55

### BOP Specifications, Wellhead and Tests:

#### Surface to Intermediate TD -

11" 3000 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" 3000 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, 3000 psi minimum choke manifold (Reference Figure #3).

**Completion Operations -**

7 1/16" 3000 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# celloflake/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/319 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 10# gilsonite/sx and 1/2# celloflake/sx, 2% Calcium Chloride. Tail w/90 sx 50/50 Class "G" Poz, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent, 2% Calcium Chloride (938 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.

**See attached alternative intermediate lead slurry.**

7" intermediate casing alternative two stage: Stage collar at 2488'. First stage: cement with 149 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps celloflake, 5 pps gilsonite, 0.1% antifoam agent. Second stage: 290 sx 50/50 Class G/TXI lightweight w/2.5% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# celloflake/sx (938 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 1696'. Two turbolating centralizers at the base of the Ojo Alamo at 1696'. Bowspring centralizers spaced every fourth joint from the base of the Ojo Alamo to the base of the surface casing.

## 4 1/2" Production Casing -

Cement to cover minimum of 100' of 4 1/2" x 7" overlap. Lead with 460 sx 50/50 Class "G" Poz with 5% gel, 0.25# celloflake/sx, 5# gilsonite/sx, 0.1% retardant and 0.25% fluid loss additive, 0.15% dispersant, 0.1% antifoam agent (662 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). WOC a minimum of 18 hrs prior to completing.

4 1/2" production casing alternative: Lead w/182 sx 9.5 PPG Litecrete Blend w/0.11% dispersant, 0.5% fluid loss. Tail w/174 sx Class G 50/50 poz w/5% gel, 0.25 pps celloflake, 5 pps gilsonite, 0.25% fluid loss, 0.15% dispersant, 0.1% retarder, 0.1% antifoam (709 cu.ft., 50% excess to cement 4 1/2" x 7" overlap).

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

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

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.