

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-078134 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 Crandell SRC 9. Well Number #1C	
4. Location of Well 1555' FSL, 1970' FEL Latitude 36° 52.9, Longitude 107° 55.3	10. Field, Pool, Wildcat Blanco MV/_Basin DK 11. Sec., Twn, Rge, Mer. (NMPM) J Sec. 19, T-31-N, R-10-W API # 30-045-30405	
14. Distance in Miles from Nearest Town 7.7 miles to int. Hwy 550 & Hwy 173 in Aztec, NM.	12. County San Juan	13. State NM
15. Distance from Proposed Location to Nearest Property or Lease Line 1555'	17. Acres Assigned to Well MV/DK: E/318.54	
16. Acres in Lease	18. Distance from Proposed Location to Nearest Well, Drig, Compl, or Applied for on this Lease 638.5'	
19. Proposed Depth 7310'	20. Rotary or Cable Tools Rotary	
21. Elevations (DF, FT, GR, Etc.) 5951' GR	22. Approx. Date Work will Start	
23. Proposed Casing and Cementing Program See Operations Plan attached	24. Authorized by: <u><i>Peggy Cale</i></u> Regulatory/Compliance Supervisor	
	Date <u>10-20-00</u>	

PERMIT NO. _____

APPROVAL DATE 1/12/01

APPROVED BY _____

TITLE _____

DATE 1/12/01

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.

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

DISTRICT II
P.O. Drawer DD, Artesian, 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- <u>30405</u>	² Pool Code 72319/171599	³ Pool Name Blanco Mesaverde/Basin Dakota
⁴ Property Code 18503	⁵ Property Name CRANDELL SRC	⁶ Well Number 1C
⁷ GRID No. 14538	⁸ Operator Name BURLINGTON RESOURCES OIL & GAS INC.	⁹ Elevation 5951

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
J	19	31-N	10-W		1555	SOUTH	1970	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 MV: E/318.54 DK: E/318.54		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

16	LOT 1	LOT 6	LOT 5
USA SF-078134			
LOT 2	LOT 7	LOT 8	LOT 9
FD 3 1/2" BLM 1966 B.C.			
LOT 3	LOT 12	LOT 11	LOT 10
USA SF-078134			
1970'			
LAT: 36°52.9' N. LONG: 107°55.3' W.			
LOT 13	LOT 14	LOT 15	LOT 16
FD 3 1/2" BLM 1966 B.C.			
S 89°57'31" W 2674.43' (M)			

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
10-20-00
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.

9-1-
Date of Survey
Signature and Title of Professional Surveyor
8894
Certificate Number



BURLINGTON RESOURCES OIL & GAS INC.
CRANDELL SRC 1C

SE/4 SEC.19, T-31-N, R-10-W, N.M.P.M.

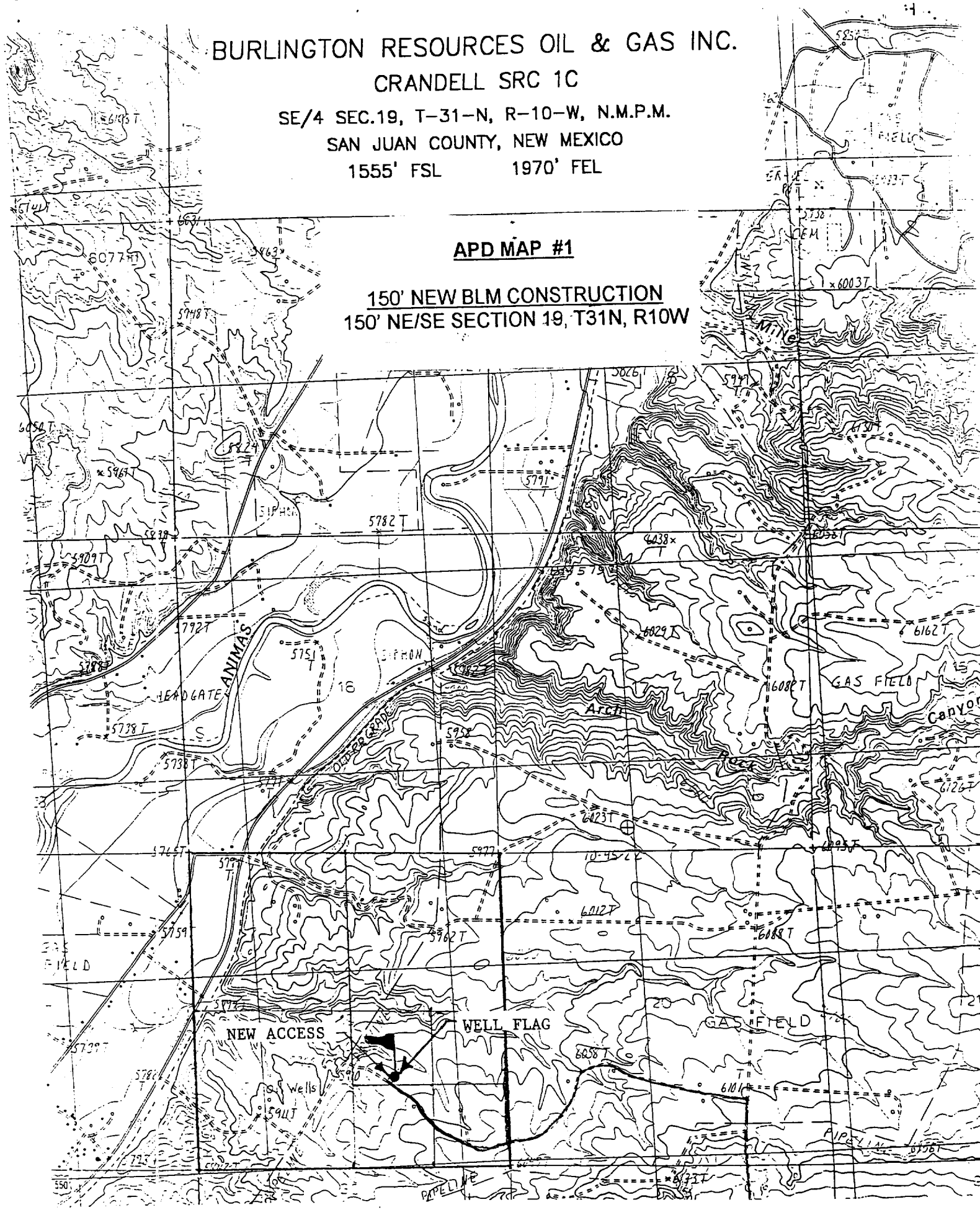
SAN JUAN COUNTY, NEW MEXICO

1555' FSL

1970' FEL

APD MAP #1

150' NEW BLM CONSTRUCTION
150' NE/SE SECTION 19, T31N, R10W



OPERATIONS PLAN

Well Name: Crandell SRC #1C
Location: 1555' FSL, 1970' FEL, Sec 19, T-31-N, R-10-W
San Juan County, NM
Latitude 36° 52.9, Longitude 107° 55.3
Formation: Blanco Mesa Verde/Basin Dakota
Elevation: 5951' GL

<u>Formation Tops:</u>	<u>Top</u>	<u>Bottom</u>	<u>Contents</u>
Surface	San Jose	1088'	
Ojo Alamo	1088'	1148'	aquifer
Kirtland	1148'	2043'	gas
Fruitland	2043'	2648'	gas
Pictured Cliffs	2648'	2784'	gas
Lewis	2784'	3373'	gas
Intermediate TD	2884'		
Mesa Verde	3373'	3718'	gas
Chacra	3718'	4273'	gas
Massive Cliff House	4273'	4458'	gas
Menefee	4458'	4893'	gas
Massive Point Lookout	4893'	5243'	gas
Mancos	5243'	6178'	gas
Gallup	6178'	6892'	gas
Greenhorn	6892'	6953'	gas
Graneros	6953'	7005'	gas
Dakota	7005'		gas
TD	7310'		

Logging Program:

Cased hole - Platform Express, DIL/GR, Density Neutron Porosity,
Bulk Density/Correction, Microlog, 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- 120'	Spud	8.4-9.0	40-50	no control
120- 2884'	LSND	8.4-9.0	30-60	no control
2784- 7310'	LSND	8.4-9.0	40-60	8-12

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' - 120'	9 5/8"	32.3#	WC-50
8 3/4"	0' - 2884'	7"	20.0#	J-55
6 1/4"	0' - 7310'	4 1/2"	10.5#	K-55

Tubing Program:

0' - 7310' 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 96 sx Class "B" cement with 1/4# flocele/sx and 3% calcium chloride (113 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/255 sx Class "G" w/3% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# flocele/sx. Tail w/90 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps flocele, 5 pps gilsonite (868 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 1943'. First stage: cement with 221 sx 50/50 Class "G" Poz w/2% calcium chloride, 2% gel, 1/4 pps flocele, 5 pps gilsonite. Second stage: 198 sx Class "G" w/3% sodium metasilicate, 2% calcium chloride, 10# gilsonite/sx and 1/2# flocele/sx (868 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 1148'. Two turbolating centralizers at the base of the Ojo Alamo at 1148'. 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 452 sx 50/50 Class "G" Poz with 2% gel, 0.25# flocele/sx, 5# gilsonite/sx, 0.2% retardant and 0.4% fluid loss additive (650 cu.ft.), 40% excess to cement 4 1/2" x 7" overlap). 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 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 and Mesa Verde formations will be completed and commingled.
- 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 east half of Section 19 is dedicated to the Mesaverde and Dakota in this well.
- This gas is dedicated.

John P. Hostford
Drilling Engineer

10/20/00
Date