

submitted in lieu of Form 3160-5

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED

Sundry Notices and Reports on Wells

98 FEB 17 PM 2:42

070 FARMINGTON, NM

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

2090' FSL, 2295' FWL, Sec. 31, T-27-N, R-7-W, NMPM

5. Lease Number  
SF-080511

6. If Indian, All. or  
Tribe Name

7. Unit Agreement Name

8. Well Name & Number  
Harrington #6

9. API Well No.  
30-039-23871

10. Field and Pool  
Otero Chacra/  
Blanco Mesaverde

11. County and State  
Rio Arriba 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 - Commingle

☐ Change of Plans

☐ New Construction

☐ Non-Routine Fracturing

☐ Water Shut off

☐ Conversion to Injection

13. Describe Proposed or Completed Operations

It is intended to recomplete the subject well in the Chacra formation according to the attached procedure and wellbore diagram. The well will then be commingled. A down hole commingle order will be applied for.

RECEIVED  
FEB 24 1998

OIL CON. DIV.  
DIST. 3

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

Signed [Signature] (JLDOpps) Title Regulatory Administrator Date 2/12/98

(This space for Federal or State Office use)

APPROVED BY [Signature] Title Acting Team Lead Date 2/19/98

CONDITION OF APPROVAL, if any:

NMOC

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

District II  
PO Drawer 00, Artesia, NM 88211-0719

District III  
1000 Rio Brazos Rd., Aztec, NM 87410

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

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION  
PO Box 2088 BLM  
Santa Fe, NM 87504-2088

*Need NSL*

Form C-  
Revised February 21, 19  
Instructions on B.  
Submit to Appropriate District Off  
State Lease - 4 Cop.  
Fee Lease - 3 Cop.

98 FEB 17 PM 2:43 ☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number 30-039-23871	*Pool Code 82329/72319	*Pool Name Otero Chacra/Blanco Mesaverde
*Property Code 7094	*Property Name HARRINGTON	*Well Number 6
*GRID No. 14538	*Operator Name BURLINGTON RESOURCES OIL & GAS COMPANY	*Elevation 6001

10 Surface Location

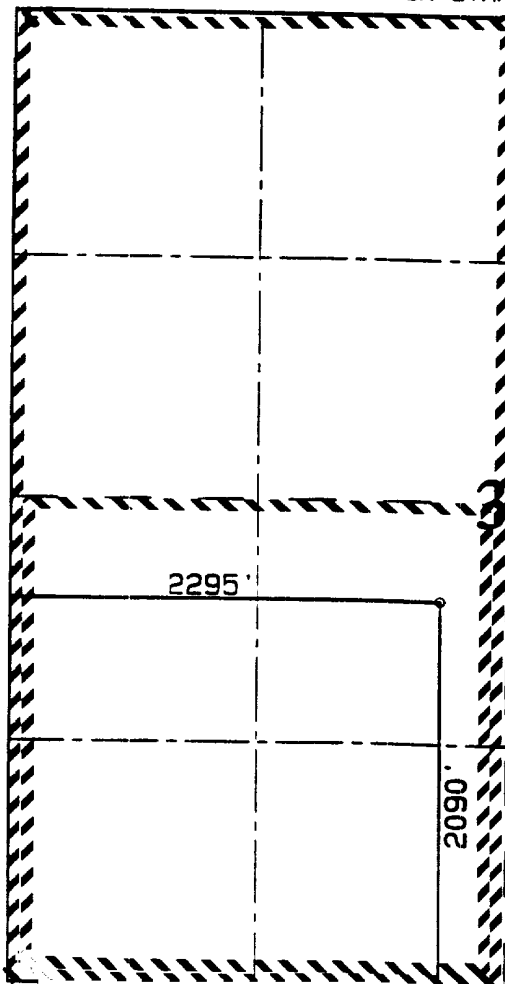
UL or lot no. K	Section 31	Township 27N	Range 7W	Lot Idn	Feet from the 2090	North/South line South	Feet from the 2295	East/West line West	County RIO ARriba
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11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
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12 Dedicated Acreage Cha- 161 MV-W/321.60	13 Joint or Infill	14 Consolidation Code	15 Order no.
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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



\*Not re-surveyed:  
Prepared from plat  
By: Fred B. Kerr Jr.  
Dated: August 9, 1985

RECEIVED  
FEB 24 1998  
OIL CON. DIV.  
DIST. 3

17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

*Peggy Bradfield*  
Signature

Peggy Bradfield  
Printed Name

Regulatory Administrator  
Title

2-12-98  
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 or under my supervision and that the same is true and correct to the best of my belief.

JANUARY 29, 1998  
Date of Survey

Signature and Seal of Professional Surveyor

NEALE C. EDWARDS  
NEW MEXICO  
6857  
Certificate Number

**Harrington #6**  
**Chacra Recompletion Procedure**  
**Unit K, Section 31, T27N, R7W**  
**Lat: 36° - 31.67448' / Long: 107° - 37.0404'**

***Recomplete the Chacra in this Mesaverde producer. The Chacra will be sand fracture stimulated in two stages with a total of 160,000 lbs 20/40 sand using a 70Q 25 lb linear gel for transport.***

1. Inspect location and test rig anchors, if necessary. Comply with all NMOCD, BLM, Forestry & BR rules and regulations. Dig flowback pit or set flowback tank. Haul to location 3 jts 2-7/8" buttress N-80 tubing, 2-7/8" X 3-1/2" N-80 crossover, 2300' of a 3-1/2" N-80 frac string and 3, 400 bbl frac tanks.
2. MIRU. Record and report SI pressures on tubing, casing and bradenhead. Fill frac tanks with 2% KCL. Lay blowdown line. Blow well down and kill with 2% KCL water as necessary. ND WH and NU BOP with flow tee and stripping head. Test operation of rams. NU blooie line and 2-7/8" relief line.
3. TOOH with Mesaverde production string set at  $\pm$  4792'. Visually inspect tubing, note and report any scale in/on tubing. Replace bad joints as necessary.
4. PU and RIH with a 3-7/8" bit, 4-1/2" (10.5 lb/ft) casing scraper on the 2-3/8" production string. Clean out to 4908' with air. TOOH.
5. RU wireline. RIH and set CIBP at 3400'. RD wireline.
6. Load hole with 2% KCL water. MIRU logging company. Run GR-CBL-CCL from PBTD to surface casing. Evaluate CBL. Top of good cement must be above 2500' to continue with procedure.
7. Be sure tanks have at least 480 bbls water for breakdown and first stage frac. Filter all water to 25 microns if brought from sources with known solids contamination. Filtration is not necessary for city water.

**LOWER CHACRA:**

8. PU and RIH with 4-1/2" packer on 2-3/8" tubing. Set packer at 2300'. Pressure test tubing string, exposed liner and CIBP to 3800 psi (80% burst). Pressure test annulus to 1000 psi. Release packer and lower to 3277'. Spot 200 gals 15% HCL acid across lower Chacra perf interval 3066-3276'. TOH slowly for 5 stands. TOOH.

All acid on this well to contain the following additives per 1000 gals.

2 gal	HAI-81M	Corrosion inhibitor
5 gal	FE-1A	Iron Control
5 gal	FE-2A	Iron Control
1 gal	SSO-21	Surfactant
1 gal	Cla Sta XP	Clay control

9. RU wireline services. RIH with 3-1/8" select fire carrier guns loaded with Owens 3125306P HSC 12 gm charges set at 1 SPF. (Av. perf diameter - 0.30", Av. pen. -17.48" in concrete). Perf the lower Chacra with **20 holes** from top down. RD wireline services.
- 3066', 3068', 3124', 3125', 3126', 3130', 3131', 3135', 3137', 3164', 3168', 3169', 3205', 3240', 3250', 3260', 3261', 3262', 3266', 3276'**
10. RIH with 4-1/2" packer and 2-3/8" tubing string. Set packer at 2860'.
11. RU stimulation company. Hold a tailgate safety meeting. Pressure test surface treating lines to 4800 psi. Breakdown Chacra with 1500 gals 15% HCL acid. Drop **40, 7/8" 1.3 sp gr RCN** perf balls. Evenly space throughout the job for diversion. Attempt to ball off to 3800 psi. Use same acid additives as in Step 8. RD stimulation company.
12. Release packer and lower to 3280' to knock off perf balls. TOOH.
13. PU and RIH with 4-1/2" packer, 3 jts 2-7/8" buttress N-80 frac string, 2-7/8" X 3-1/2" N-80 crossover and 3-1/2" N-80 frac string. Set packer just inside 4-1/2" liner at 2300'.
14. RU stimulation company. Hold tailgate safety meeting. Pressure test surface lines to 6000 psi. **Maximum surface treating pressure is 5000 psi.** Hold 500 psi on annulus and monitor during the job. Fracture stimulate Chacra down the 3-1/2" N-80 frac string with 15,000 gals of 70 quality foam using 25 lb linear gel as the base fluid and 80,000 lbs 20/40 Arizona sand. Pump at **35 BPM**. Monitor surface treating pressures, rate, foam quality and sand concentration with computer van. **Sand is to be tagged with 3 RA tracers.** Estimated treating pressure is 4800 psi. Estimated tubing friction is 2460 psi. Treat per the following schedule:

Stage	Downhole Foam Volume (gals)	Clean Gel Volume (gals)	N2 Volume (MSCF)	Sand Volume (lbs)
Pad	10,000	3,000	163.2	
1.0 ppg	10,000	3,136	159.8	10,000
2.0 ppg	10,000	3,272	156.5	20,000
3.0 ppg	10,000	3,408	153.2	30,000
4.0 ppg	5,000	1,772	74.9	20,000
Flush	1,250	443	18.73	0
<b>Totals</b>	<b>46,250</b>	<b>15,031</b>	<b>726.33</b>	<b>80,000</b>

Treat frac fluid w/ the following additives per 1000 gallons:

* 0.18 lb/M	BE-6	Biocide
* 6.25 gal/M	LGC-8	Gel
* 5.0 gal/M	AQF-2	Foamer
* 1.0 gal/M	SSO-21	Surfactant
* 0.5 lb/M	GBW-3	Breaker
* 0.5 lb/M	SP	Breaker

Shut well in after frac and record ISIP, 5, 10 and 15 shut-in pressure. RD stimulation company.

15. Flow well back after 30 minutes to 1 hour through a choke manifold at 20 BPH or less if sand is observed. After the well has cleaned up and pressures allow, release packer and TOOH.
16. PUH and RIH with 4-1/2" CIBP, packer and 2-3/8" tubing. Set CIBP at 3040'. Release packer from CIBP and PUH. Set the packer just above CIBP and pressure test to 3800 psi.

### UPPER CHACRA

17. Be sure tanks have at least 480 bbls water for breakdown and second stage frac. Filter all water to 25 microns if brought from sources with know solids contamination. Filtration is not necessary for city water.
18. Release the packer and spot 250 gals 15% HCL acid across upper Chacra perf interval 2683-2978'. TOH slowly for 6 stands. TOOH.

All acid on this well to contain the following additives per 1000 gals.

2 gal	HAI-81M	Corrosion inhibitor
5 gal	FE-1A	Iron Control
5 gal	FE-2A	Iron Control
1 gal	SSO-21	Surfactant
1 gal	Cla Sta XP	Clay control

19. RU wireline services. RIH with 3-1/8" select fire carrier guns loaded with Owen 3125306P HSC 12 gm charges set at 1 SPF. (Av. perf diameter - 0.30", Av. pen. -17.48" in concrete). Perf the upper Chacra with **20 holes** from top down. RD wireline services.

**2683', 2698', 2710', 2719', 2723', 2763', 2780', 2786', 2796', 2839', 2860', 2863', 2885', 2888', 2929', 2946', 2953', 2958', 2974', 2978'**

20. RIH with 4-1/2" packer and 2-3/8" tubing string. Set packer at 2500'.
21. RU stimulation company. Hold a tailgate safety meeting. Pressure test surface treating lines to 4800 psi. Breakdown upper Chacra with 1500 gals 15% HCL acid. Drop **40, 7/8"** 1.3 sp gr RCN perf balls. Evenly space throughout the job for diversion. Attempt to ball off to 3800 psi. Use same acid additives as in Step 18. RD stimulation company.
22. Release packer and lower to 2980' to knock off perf balls. TOOH.
23. PU and RIH with 4-1/2" packer, 3 jts 2-7/8" buttress N-80 frac string, 2-7/8" X 3-1/2" N-80 crossover and 3-1/2" N-80 frac string. Set packer just inside 4-1/2" liner at 2300'.
24. RU stimulation company. Hold tailgate safety meeting. Pressure test surface lines to 6000 psi. **Maximum surface treating pressure is 5000 psi.** Hold 500 psi on annulus, behind packer, and monitor during the job. Fracture stimulate Chacra down the 3-1/2" N-80 frac string with 15,000 gals of 70 quality foam using 25 lb linear gel as the base fluid and 80,000 lbs 20/40 Arizona sand. Pump at **35 BPM**. Monitor surface treating pressures, rate, foam quality and sand concentration with computer van. **Sand is to be tagged with 3 RA tracers.** Estimated treating pressure is 4500 psi. Estimated tubing friction pressure is 2200 psi. Treat per the following schedule:

Stage	Downhole Foam Volume (gals)	Clean Gel Volume (gals)	N2 Volume (MSCF)	Sand Volume (lbs)
Pad	10,000	3,000	148.3	
1.0 ppg	10,000	3,136	145.2	10,000
2.0 ppg	10,000	3,272	142.2	20,000
3.0 ppg	10,000	3,408	139.2	30,000
4.0 ppg	5,000	1,772	68.00	20,000
Flush	950	337	12.92	
<b>Totals</b>	<b>45,950</b>	<b>14,925</b>	<b>655.82</b>	<b>80,000</b>

Treat frac fluid w/the following additives per 1000 gallons:

* 0.18 lb/M	BE-6	Biocide
* 6.25 gal/M	LGC-8	Gel
* 5.0 gal/M	AQF-2	Foamer
* 1.0 gal/M	SSO-21	Surfactant
* 0.5 lb/M	GBW-3	Breaker
* 0.5 lb/M	SP	Breaker

Shut well in after frac and record ISIP, 5, 10 and 15 shut-in pressure. RD stimulation company.

25. Flow well back after 30 minutes to 1 hour through a choke manifold at 20 BPH or less if sand is observed. After the well has cleaned up and pressures allow, release packer and TOOH. LD 3-1/2" frac string, 3-1/2" X 2-7/8" N-80 crossover, 3 jts 2-7/8" N-80 buttress tubing and packer.
26. TIH with 3-7/8" bit on 2-3/8" tbg and CO with air/mist to CIBP at 3040'. **Take pitot gauges when possible.** When well is sufficiently clean, drill up CIBP at 3040'. Continue to clean out to CIBP separating Chacra and Mesaverde at 3400'. When well is sufficiently clean, run Chacra only 3 hour production test through separator using a back pressure of 200 psi. This is necessary for NMOCD commingling regulations. When test is complete, drill out CIBP at 3400' and continue cleanout to PBTD with air. TOOH.
27. RU Pro-Technics. Run After-Frac log from 3350-2900'. RD Pro-Technics.
28. RU Blue Jet. Run Perforation Efficiency log from 3280-2980'. RD Blue Jet.
29. Rabbit and TIH with an expendable check, one joint 2-3/8" tubing, standard seating nipple and remaining 2-3/8" tubing. Tag PBTD for sand fill up. If needed, circulate sand off bottom with air. Land tubing at 4817'. ND BOP. NU WH. Pump off expendable check. Contact Production Operations for well tie-in. RDMO.

Harrington #6  
1998 Discretionary Chacra Recompletion

Recommended: J. Dobson  
Production Engineer

Approved: PJB 1/22/98  
Drilling Superintendent

Approved: [Signature] 1/2/98  
Team Leader

VENDORS:

Fracturing:	Halliburton	324-3500	
RA Tag:	Pro-Technics	326-7133	
Jennifer Dobson	599-4026 (work)	564-3244 (home)	324-2461 (pager)

**Harrington #6**  
**Pertinent Data Sheet**  
**Lat: 36° -31.67448' Long: 107° -37.0404'**

**General Well Information:**

Location: 2090 FSL, 2295 FWL, Unit K, Section 31, T27N, R7W, Rio Arriba County, NM

Lease #: SF 080511  
Property #: 012590300

DP #: 34951A  
GWI/NRI: 100/85

Current Field: Blanco Mesaverde  
Spud: 10/9/85  
GL Elevation: 6001'  
TD: 4941'

Completed: 10/28/85  
KB Elevation: 6013'  
PBSD: 4908'

**Casing Record:**

Hole Size	Csg Size	Weight	Grade	Depth Set	Cmt Vol	Cmt Top
12-1/4"	9-5/8"	32.3 lb/ft	J-55	223'	275 sx	Surface (circ.)
8-3/4"	7"	20 lb/ft	J-55	2436'	300 sx	1000' (TS)
6-1/4"	4-1/2"	10.5 lb/ft	J-55	2279-4940'	343 sx.	2279' (circ.)

**Tubing Record:**

Tubing Size	Weight	Grade	Depth Set	Number of Jts
2-3/8	4.7 lb/ft	J-55	4758'	147
SN			4759'	1
2-3/8	4.7 lb/ft	J-55	4792'	1

**Logging Record:**

Gearhart Induction/Electrical Log (10/15/85) and Gearhart Compensated Density/Sidewall  
Neutron Log (10/15/85)

**Completion:**

Point Lookout (stage 1) was perforated at 4564', 4575', 4584', 4598', 4611', 4629', 4648', 4655', 4688', 4696', 4704', 4711', 4722', 4750', 4765', 4786', 4817' (17 holes) in 150 gals 7-1/2% HCL. Balled off perforations with 900 gals 15% HCL. Fracture stimulated with 71,000 lbs 20/40 sand and 110,128 gals water at 40 BPM and 2800 psi.

Point Lookout (stage 2) was perforated at 4459', 4462', 4465', 4468', 4471', 4474', 4477', 4482', 4485', 4488', 4499', 4502', 4518', 4522', 4526', 4530' (16 holes). Balled off perforations with 1000 gals 15% HCL. Fracture stimulated with 23,000 lbs 20/40 sand and 63,010 gals water at 36 BPM and 2200 psi.

**Workover History:**

None.

**Production History:**

Well is currently making 80 MCFD.

**Pipeline:** EPNG



# Harrington #6

Lat: 36° - 31.67448'/Long: 107° - 37.0404'  
Unit K, Section 31, T27N, R7W  
Rio Arriba County, NM

Current Schematic

Proposed Schematic

