submitted in lieu of Form 3160-5

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Sundry Notices and Reports on Wells

98 MAY 20 PM 1:53

070 FARMINGTON, NM

1. Type of Well
GAS

5. Lease Number
SF-078578-A

6. If Indian, All. or Tribe Name

7. Unit Agreement Name

2. Name of Operator
BURLINGTON RESOURCES OIL & GAS COMPANY

8. Well Name & Number
Howell K #2R

3. Address & Phone No. of Operator
PO Box 4289, Farmington, NM 87499 (505) 326-9700

9. API Well No.
30-045-20130

4. Location of Well, Footage, Sec., T, R, M
880' FSL, 800' FWL, Sec.22, T-30-N, R-8-W, NMPM

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	Type of Action		
_X_ Notice of Intent	___ Abandonment	___ Change of Plans	
	___ Recompletion	___ New Construction	
___ Subsequent Report	___ Plugging Back	___ Non-Routine Fracturing	
	___ Casing Repair	___ Water Shut off	
___ Final Abandonment	___ Altering Casing	___ Conversion to Injection	
	_X_ Other - Post-Frac/CO_2 Restimulation		

13. Describe Proposed or Completed Operations

It is intended to workover the subject well by performing a post-frac slug test and restimulation according to the attached procedure and wellbore diagram.

RECEIVED
JUN 1 1998
OIL CON. DIV.
DIST. 3

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

Signed [signature] (SC6) Title Regulatory Administrator Date 5/19/98

VKH

(This space for Federal or State Office use)
APPROVED BY /S/ Duane W. Spencer Title _____ Date MAY 27 1998
CONDITION OF APPROVAL, if any:

NMOCD

Howell K #2R
Lewis Shale Post-Frac/CO_2 Restimulation Procedure
M 22 30N 08W
San Juan County, NM
Latitude: 36 Deg., 47.53 Min
Longitude: 107 Deg., 40.13 Min.

Summary:
The subject well is a 1997 Menefee and Lewis payadd in 7" casing and a 4-1/2" liner section. This well was originally drilled in 1967 and was completed in the Point Lookout and Cliffhouse interval. The Point Lookout interval was perforated and stimulated w/ approximately 60,000 lbs. total sand and 61,200 gal. total slickwater. The Massive Cliffhouse interval was perforated and stimulated w/ approximately 60,000 lbs. total sand and 61,200 gal. total slickwater and placed on production. The subject well was recompleted during 1996 in the Menefee and Lewis interval in two (2) stages. The Menefee interval was perforated with 26 holes and fracture stimulated with 110,000 lbs. total sand and 51,604 gal. 25# cross-link gel. The Lewis interval was completed with the Upper Cliffhouse. The Upper Cliffhouse was perforated with 2 spf. The Lewis was perforated with 1 spf. The interval was fracture stimulated in one (1) stage with 200,000 lbs. total sand and 106,653 gal. 25# cross-link gel.

Purpose of Workover:
In the first quarter of 1998, the Basin Opportunity Shale Team performed a spinner flowmeter survey on the subject wellbore and had less than 5% of total gas production in the Lewis interval. A post-frac slug test will be performed on the Howell K #2R to reveal the effective fracture half-length. The well will then be stimulated with approximately 60 tons of liquid CO_2 , cleaned up and placed back on production.

- Comply to all NMOCD, BLM and BR regulations. Conduct daily safety meetings for all personnel on location.
- Inspect location and wellhead and install rig anchors prior to rig move.
- Construct blow pit.
- **ANY FLUIDS ADDED TO THE LEWIS SHALE INTERVAL WILL INVALIDATE DATA NEEDED. IF FLUIDS ARE REQUIRED, CONTACT STEVE CAMPBELL OR HANS DUBE TO DISCUSS ALTERNATIVES.**
- **DURING CO_2 STIMULATION, ONLY AUTHORIZED PERSONNEL ARE ALLOWED ON LOCATION. ONLY CO_2 EXPERIENCED AND APPROVED DOWELL PERSONNEL AND PUMP EQUIPMENT ARE ALLOWED ON LOCATION.**

1. MOL, hold safety meeting and RU completion rig. Insure all safety equipment is strategically located and functioning properly. NU relief lines to blow pit. Set one (1) 400 BBL frac tank and fill w/ 2% KCL. Blow well down and kill well with 2% KCL water, but with a minimal amount of fluid to kill Pt. Lookout, Menefee and Cliffhouse production as necessary. ND wellhead and NU 7-1/16" 3M BOP, stripping head and blooie line. Operationally test BOP.

2. TOOH w/ 156 jts. 2-3/8" Mesa Verde tubing set at +/- 4859' and stand back.

3. RU wireline. RIH and wireline set RBP @ +/- 3820'. Dump 10' of sand on RBP w/ dump bailer.

4. RU and TIH with pressure gauge, perforated pup joint, bridge plug, pressure gauge, pup joint, perforated pup joint, packer, seating nipple (slug test assembly) and 2-3/8" 4.7# J-55 workstring and set pkr/bridge plug combination (slug test assembly). The following table lists pkr/bridge plug (slug test assembly) settings and perforation interval that N_2 will be injected. Tie into GR log prior to setting pkr/bridge plug assembly. RU **5000** psi packoff w/ pump-in tee.

Pkr Depth	BP Depth	Perf interval
3710'	**3770'**	**3713'-3732'**
3640'	**3700'**	**3649'-3693'**
3430'	**3490'**	**3435'-3474'**
3360'	**3420'**	**3408'-3414'**

(see attached "Cased-Hole Test Configuration" assembly)

Howell K #2R
Lewis Shale Post-Frac/CO_2 Restimulation Procedure
M 22 30N 08W
San Juan County, NM
Latitude: 36 Deg., 47.53 Min
Longitude: 107 Deg., 40.13 Min.

5. RU stimulation company to inject N_2 down frac valve. Hold pre-job safety meeting. Pressure test surface lines to **3000** psi. Inject N_2 @ 1000-2000 scf/min @ **1250**** psi down 2-3/8" 4.7# J-55 workstring. Shut-in and observe fall-off on surface read out gauge in wireline truck for approximately 2 hrs. RD stimulation company and RD frac valve.

****NOTE: DO NOT EXCEED FRAC GRADIENT OF .62 PSI/FT ON ANY INTERVAL TESTED. PUMP RATE MAY VARY, BUT MAINTAIN CONSTANT PRESSURE.**

6. Follow same procedure listed in step #5 on each pkr/bridge plug setting (slug test assembly). Unseat pkr/bridge plug combination (slug test assembly) on each setting depth listed in table and move uphole at new depth and reset pkr.

7. Unseat pkr/bridge plug combination (slug test assembly). TOOH w/ 109 jts. 2-3/8" 4.7# J-55 workstring and pkr/bridge plug combination (slug test assembly). Lay down slug test assembly and stand back 2-3/8" 4.7# J-55 workstring.

8. Pick-up 4-1/2" fullbore pkr and 122 jts 2-3/8" 4.7# J-55 workstring and TIH. Set fullbore pkr @ +/- 3800' and pressure test RBP to **3000** psi. Release 4-1/2" fullbore pkr and TOOH w/ 122 jts. 2-3/8" 4.7# J-55 workstring and 4-1/2" fullbore pkr and stand back. TIH w/ 4-1/2" fullbore pkr, 2 jts. 2-3/8" 4.7# J-55 workstring, 2-3/8" EUE 8rd X 3-1/2" 8rd changeover swage and 88 jts. 3-1/2" 9.3# N-80 frac string. Set pkr @ +/- 2790'.

9. RU stimulation company to pump liquid CO_2 and RU frac valve. Follow pre-job safety schedule provided by Dowell (see attached safety check list).

NOTE: **HAVE PRE JOB SAFETY MEETING WITH ALL PERSONNEL ON LOCATION. USE CO_2 APPROVED PUMPING EQUIPMENT ONLY**. Review contingency plans for possible job malfunctions with all personnel.

10. Pressure test all surface lines to **5000** psi. Pump 60 tons of liquid CO_2 @ 6BPM. Maximum surface treating pressure is **3500** psi. Pump liquid CO_2 until vessel is empty. **DO NOT FLUSH WITH FLUID. JOB IS OVER WHEN CO_2 IS PUMPED**. Listed below in the table is the friction encountered at surface.

Frac gradient @ 3570' (.62 psi/ft)	**2215 psi**
Perf friction (128 - .375" holes)	**.4 psi**
780' – 4-1/2" 10.5# csg.	**12 psi**
62' – 2-3/8" 4.7# frac string	**27 psi**
2728' – 3-1/2" 9.3# frac string	**164 psi**
TOTAL FRICTION ENCOUNTERED AT SURFACE	**2420 psi**

11. Record ISIP, 5, 10, and 15 minute pressures. Shut-in frac valve. RD stimulation company. Leave well shut-in for 24 hrs. Install flowback line above frac valve and install dual choke manifold on flowback line. Open well to pit in accordance to flowback schedule listed in the table below. **Do not shut well in during flowback**. When schedule dictates a larger choke size, open ball valve upstream of adjustable choke and open adjustable choke on manifold to pre-determined size listed in table and begin flowing through adjustable choke. Close ball valve upstream of positive flow bean and change out flowbean to next larger size in table. Open ball valve upstream

of positive flow bean and begin flowing. Close ball valve upstream of adjustable choke and close adjustable choke.

8/64" choke from	**Shut-in psi to 300 psi**
10/64" choke from	**300 psi to 150 psi**
12/64" choke from	**150 psi till well dies**

NOTE: FLOWBACK TIME MAY VARY FROM 1-5 DAYS. ALLOW WELL TO CLEAN-UP AND UNLOAD ANY FORMATION FLUID AND CO_2. CONTACT STEVE CAMPBELL OR HANS DUBE TO DISCUSS PROPER FLOWBACK PERIOD. PLEASE DO NOT KILL WELL WITH ANY FLUID.

12. Flow well through casing valve and blow well through blooie line to pit. Strip 88 jts. 3-1/2" 9.3# N-80 frac string and lay down. Close pipe rams on 2-3/8" 4.7# J-55. Change out elevators and slips to accommodate 2-3/8" 4.7# J-55 workstring. Strip 2 jts. 2-3/8" J-55 workstring and 4-1/2" fullbore pkr. Lay down pkr and stand back 2-3/8" 4.7# J-55 workstring. Obtain a minimum 3 hour stabilized Lewis only gauge prior to retrieving RBP.

13. TIH w/ retrieving head and approximately 123 jts. 2-3/8" 4.7# J-55 workstring and CO to RBP @ 3820'. Release RBP and TOOH w/ RBP and lay down.

14. TIH w/ 156 jts. 2-3/8" J-55 tbg and seating nipple. Land tbg. @ 4859', SN @ 4826'.

15. If tbg. choke was set, RU slickline unit and RIH to retrieve tbg. choke set @ 4826'. If tbg. choke was not set, proceed to step #16.

16. ND BOP's, NU single tubing hanger wellhead. Obtain final pitot up tubing. If well will not flow on it's own, make swab run to seating nipple. If swab run is not necessary, RD and MOL.

Approve: _____ 5/15/98
Team Leader

Approve: _____ 5/15/98
Drilling Superintendent

Recommend: Steve Campbell
Production Engineer

VENDORS:

Slug Test Assembly:	Schlumberger	325-5006
N_2 Slug testing:	Dowell	325-5096
CO_2 Stimulation:	Dowell	325-5096

Steve Campbell	Home 325-8218	Office 326-9546	Pager 564-1902
Hans Dube	Home 564-9401	Office 326-9555	
Glen Christiansen	Home 327-5089	Office 326-9733	

Howell K #2R
Pertinent Data Sheet

Location: 800' FSL, 800' FEL, Unit M, Section 22, T30N, R08W. San Juan County, New Mexico

Latitude: 36° - 47.53' **Longitude:** 107° - 40.13'

Field: Blanco Mesa Verde **Elevation:** 5833' GL, 5844' KB **TD:** 5045' **PBTD:** 5015'

Spud Date: 09/02/67 **Completed:** 11/22/67 **DP No:** 47973A

Initial Potential: 945 MCF/D

Casing/Liner Record:

Hole Size	Casing Size	Weight & Grade	Depth Set	Cement	Top/Cement
13-3/4"	9-5/8"	32.3# H-40	193'	160 sx	Circ. Cmt.
8-3/4"	7"	20# J-55	2859'	205 sx	960' (TS)
6-1/4"	4-1/2" liner	10.5# J-55	2778'-5045'	265 sx	2778' (LT)

Tubing Record:

Tubing Size	Weight & Grade	Depth Set	Number of jts.
2-3/8"	4.7#	4859'	156

Formation Tops:

Ojo Alamo	1560'	Menefee	4460'
Fruitland	2305'	Point Lookout	4852'
Pictured Cliffs	2630'		
Cliffhouse	4370'		

Logging Record: Temp. survey, GR, IND, SG

Stimulation: 11/22/67 - Perf Pt. Lookout from 4868'-4892' w/ 24 spz. Frac'd w/ 60,000# sand and 61,200 gal. Slickwater. Perf Cliffhouse from 4384'-4454' w/ 24 spz. Frac'd w/ 60,000# sand and 61,200 gal. Slickwater. 09/96 - Perf Menefee from 4522'-4789' w/ 1 spf. Frac'd w/ 113,000# sand and 57,750 gal. 25# x-link gel. Perf Lewis from 3408'-3732' w/ 1 spf. Frac'd w/ 195,000# sand and 102,480 gal.25# x-link gel.

Workover History: 05/97 – Menefee and Lewis payadd.

Pipeline: EPNG

Howell K #2R

Unit M, Section 22, T30N, R08W
San Juan County, NM

Proposed Schematic