

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

1640' FNL, 1175' FWL, Sec. 10, T-30-N, R-10-W, NMPM

5. Lease Number

NM-03202

6. If Indian, All. or
Tribe Name

7. Unit Agreement Name

8. Well Name & Number

Sunray A #6

9. API Well No.

30-045-21046

10. Field and Pool

Blanco PC

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

☒ Notice of Intent

☐ Abandonment

☐ Change of Plans

☐ Subsequent Report

☐ Recompletion

☐ New Construction

☐ Final Abandonment

☐ Plugging Back

☐ Non-Routine Fracturing

☐ Casing Repair

☐ Water Shut off

☐ Altering Casing

☐ Conversion to Injection

☒ Other - Restimulation

13. Describe Proposed or Completed Operations

It is intended to restimulate the subject well according to the attached procedure and wellbore diagram.

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

Signed

Regulatory Administrator Date 7/22/99

trc

(This space for Federal or State Office use)

APPROVED BY AS/Duane W. Spencer

Title Team Lead, Permitting Date

JUL 26 1999

CONDITION OF APPROVAL, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NM000

Sunray A #6
Pictured Cliffs Slimhole Restimulation Procedure
E 10 30N 10W
San Juan County, N.M.
Latitude: 36 Deg, 49.74 Min
Longitude: 107 Deg, 52.51 Min
API # 300452104600

Summary:

The subject well is a 1973 Pictured Cliffs slimhole completion through 2 7/8" casing. The casing did not test when the initial attempt to restimulate this well was done. The casing leak will now be isolated and a free point will be run to determine if casing is free below the leak. If so, the casing will be backed off as deep as possible. New casing will be run and tied back in and a bond log will be run. If the BLM requires a squeeze job the procedure will be written at that time. The new casing will then be pressure tested to 3700 psi and the cased hole interval will be cleaned-out to PBTD at 3302' using air-mist and 1-1/4" drillstring. The Pictured Cliffs will be restimulated with 56,907 gal of 70Q N₂ foamed 30# linear guar gel and 175,000# 20/40 mesh sand. The well will then be cleaned-up and returned to production. This well will be completed as a Type "B" well.

- Comply to all NMOCD, BLM, and BR regulations. Conduct daily safety meetings for all personnel on location. Notify BR regulatory (Peggy Bradfield 326-9727) and the appropriate Regulatory Agency prior to pumping any cement job. If an unplanned cement job is required, **approval is required before the job can be pumped. If verbal approval is obtained, document the approval in Dims.** Allow adequate notice prior to the pump time for the Agency to witness the cementing operation.
- Inspect location and wellhead and install rig anchors prior to rig move.
- Construct blow pit.

Casing Repair

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. ND wellhead and NU 7-1/16" 3M BOP, stripping head, and blooie line. Test BOP.
2. PU and TIH with a 2-7/8" RBP and 1-1/4" tubing. Set RBP above top perf (3,214'). Release from BP. Spot 10' of sand on BP. TOOH.
3. PU 1 jt. 2-7/8" tubing and screw into casing. MIRU wireline specialties. Freepoint 2-7/8" casing.
4. PU 2-7/8" packer. TIH with 2-7/8" packer on 1-1/4" tubing. Set packer above bridge plug and test to 3700 psi. Release packer, TOOH, and set packer at lowest 100% freepoint in casing. Pressure test casing to 3700 psi below and above packer. If casing leak is below packer, RDMO. If leak is above packer continue with step 5. Release packer and TOOH.
5. RIH with stringshot. Back off casing at lowest joint 100% free. RDMO wireline specialties.
6. Circulate hole clean. TOOH and lay down old 2-7/8" casing.
7. PU and TIH with new 2-7/8" casing. Screw in to existing casing.
8. Pressure test casing to 3700 psi for 15 minutes. (If casing can not be screwed into or pressure tested to 3700 psi on first attempt contact Drilling Superintendent and Production Engineer to discuss procedure to run a Bowen casing patch.)
9. TIH with 1-1/4" tubing. Clean out to top of RBP. Latch on to 2-7/8" RBP and TOOH. Lay down RBP. TIH. CO to PBTD. TOOH and lay down 1-1/4" tubing.
10. RDMO.

RIGLESS PROCEDURE

11. Install 2 7/8 In. 6.5 # N-80 EUE 8rd sub and 5000 psi frac valve. Lay flowback line to pit.
12. Set two (2) 400 bbl frac tank(s) on location and fill with 720 bbl 2% KCl water. Treat tank with biocide prior to filling. Heat gel tank to 60-70 °F in winter.

Sunray A #6
Pictured Cliffs Slimhole Restimulation Procedure
 E 10 30N 10W
 San Juan County, N.M.
 Latitude: 36 Deg, 49.74 Min
 Longitude: 107 Deg, 52.51 Min
 API # 300452104600

13. RU stimulation company to frac down 2 7/8" casing. Hold pre-job safety meeting with all personnel on location. Pressure test surface lines to 4700 psi for 15 minutes. Breakdown perforations by bullheading 200 gals 15% inhibited acid ahead of fracture stimulation. Acid will contain the following additives:

- 1 gal/M HAI-81M (corrosion inhibitor)
- 1 gal/M SSO-21M (surfactant)

Fracture stimulate in 1.0 to 4 ppg stages at 35 BPM constant downhole rate with 56,907 gal of 70Q N₂ foamed 30# linear guar gel and 175,000# 20/40 mesh Arizona sand. **Maintain a bottom hole frac gradient of 0.65 psi/ft throughout job.** When sand is in hopper and the concentration begins to drop, call flush. **Maintain previous stage's slurry and N₂ rates. Quick flush to 100 ft. above top perforation with +/- 344 fluid gals.** Maximum treating pressure is 3700 psi. Monitor bottomhole treating pressure, surface treating pressure, downhole rate, foam quality, and sand concentration with computer van. Treat per the following schedule:

<u>Stage</u>	<u>Foam Volume (gal)</u>	<u>Clean Gel Volume (gal)</u>	<u>Sand Volume (lbs)</u>	<u>Type</u>
Pad	3,100	930	0	
1 ppg	2,000	627	2,000	20/40 Az
2 ppg	3,000	982	6,000	20/40 Az
3 ppg	25,200	8,594	75,600	20/40 Az
4 ppg	22,850	8,105	91,400	20/40 Az
Flush	(739)	(344 @ 55% N ₂)	0	
Totals	56,907	19,583	175,000	

Treat frac fluid with the following additives per 1000 gallons:

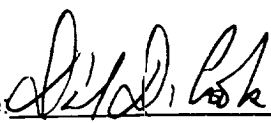
- 30# WG-19 (Gelling agent pre-mixed in full tank)
- 2.0 gal SSO-21M (Non-ionic surfactant pre-mixed in full tank)
- 0.5# GBW-3 (Enzyme breaker mixed on fly)
- 3.0 gal AQF-2 (Foamer mixed on fly)
- 0.18# BE-6 (Bactericide pre-mixed in full tank)
- 0.25 gal BA-20 (pH buffer mixed on fly)

14. Shut well in after frac and record ISIP. Empty remaining fluid in frac tanks to pit and RD stimulation company. Install flowback line above frac valve. Wait for 30 minutes to 1 hour before commencing flowback. Open well to pit in accordance to **flowback schedule enclosed in procedure**. If choke plugs off, shut well in and remove obstruction from choke and return to flowback schedule. **Do not replace with next larger choke size until schedule dictates.** Continue cleaning well up until fluid returns are negligible. **Take pitot gauges when possible.**

15. ND flowback line, frac valve, and isolation tool. NU production valve with flow tee. NU flowback line.

SWAB RIG CLEAN-UP

16. MIRU Silver Star. PU and RIH with 2 1/4" sand bailer. CO to PBTD at 3302'. Monitor gas and water returns. **Take pitot gauges when possible.**
17. Continue cleaning up after frac until sand returns are a trace and fluid recovery is less than 2 BPH. TOOH. **Take final pitot gauge.**
18. RD and release swabbing unit.

Approve:  7/24/99
Team Leader

Approve: _____
Drilling Superintendent

VENDORS:

Wireline:	Wireline Specialties	327-7141
Fishing Tools:	Baker	327-3266
Stimulation:	Halliburton	325-3575
Cement:	Cementers Inc.	632-3683

Isolation Tool, Frac Valve, & Flowback Line:	Dean Lingo	330-0144
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Scott Dobson	Office - 326-9813	Home - 564-3244	Pager - 326-8036
Marvin Webb	Office - 326-9892	Home - 326-3659	Pager - 564-1662

**Nitrogen Foam Stimulation Procedure
Burlington Resources**

General Information			Well Configuration			Formation & Stimulation Data		
Well Name:	Sunray A #6		Csg:	2 7/8", 6.5# J-55		Frac Gradient:	0.65 psi/ft	
Location:	E 10 T30N R10W		Tbg:	Packer @	ft	BH Temp:	100 deg. F	
Formation:	Pictured Cliffs		Capacity:		bb/ft Tbg	Antic. BH Treating:	2,103 psi	
Vendors				0.00579	bb/ft Csg	Antic. Surf. PSI:	3,000 psi	
Stimulation:	Halliburton		PBTD:	3,302 ft	Vol to: (gals)	Foam Quality:	70%	
Tagging:			T Perf:	3,214 ft	- 100' 757	Nitrogen GLR:	1,727 scf/bbl	
			B Perf:	3,256 ft	T Perf: 782	BH Foam Rate:	35 bpm	
Fluid:	70Q N2 Foamed 30# Linear Gel		Midpnt:	3,235 ft	B Perf: 792	Percent Pad:	6%	
Note:	Water is city water @ pH of 7.3 with 2% KCl (supplied by BR)		Perforations			Net Pay:	70 ft.	
			1 spf	0.31 " holes		lb prop/net ft pay:	2,500 lb/ft	
			56 holes	18.00 " penetration		Job Duration:	44.1 min	

**Stimulation Schedule
Constant Internal Phase Foam Frac**

Stage	BH Sand Conc. ppg	Sand Mesh	Stage Sand lbs	BH Rate bpm	BH Foam Qual.	Clean Foam Volume gallons	Clean Liquid Volume gallons	Stage Clean Rate bpm	Blender Sand Conc. ppg	Stage Slurry Volume gallons	Slurry Rate bpm	Nitrogen Rate scf/min	Stage Nitrogen mscf	Stage Time min
Pad			0	35	70%	3,100	930	10.5	0.00	930	10.5	18,129	38.2	2.1
2	1	20/40	2,000	35	70%	2,000	627	10.5	3.19	719	12.0	16,999	24.2	1.4
3	2	20/40	6,000	35	70%	3,000	982	10.5	6.11	1,256	13.4	15,964	35.6	2.2
4	3	20/40	75,600	35	70%	25,200	8,594	10.5	8.80	12,042	14.7	15,012	292.6	19.5
5	4	20/40	91,400	35	70%	22,850	8,105	10.5	11.28	12,273	15.9	14,134	259.8	18.4
Flush			0	35	55%	757	344	15.9	0.00	344	15.9	14,134	7.3	0.5
			Total lbs.	Avg. Rate	Avg. Qual.	Total Gallons	Total Gallons	Avg. Rate	Avg. SC	Total Gallons	Avg. Rate	Avg. N2 Rate	Total mscf	Total Time
			175,000	35	67%	56,907	19,583	11.4	7.34	27,563	13.7	15729	657.6	44.1

Schedule maintains constant bottom hole rate.

Volume & Additives				Equipment	
Water Volume:	19,583 treat +	1,958 excess =	21,541 gals.	Tanks:	2 x 400 bbl frac tanks (supply by BR)
Water Volume:	466 treat +	47 excess =	513 bbls.	Water:	513 bbls 2% KCL water (supply by BR)
Fluid Volume:	513 bbls needed for stimulation			Computer Van	
20/40 Arizona Sand:	175,000 lbs			Sand Master	
Nitrogen Volume:	657.6 mscf (w/o cooldown)			Blender	
Base Fluid:	30# linear guar gel in 2% KCl (BR), pre-mixed in tank			Fluid pumps as required	
Foamer:	3 gal/M (mix on fly)			Nitrogen pumps as required	
Breaker:	0.5#/M enzyme (mix on fly)			Quality Control Equipment	
Bactericide:	0.18#/M added to each tank prior to filling with water				
Acid:	200 gal 15% HCl with additives (see procedure)				
Radioactive Tagging					
None	None	None			

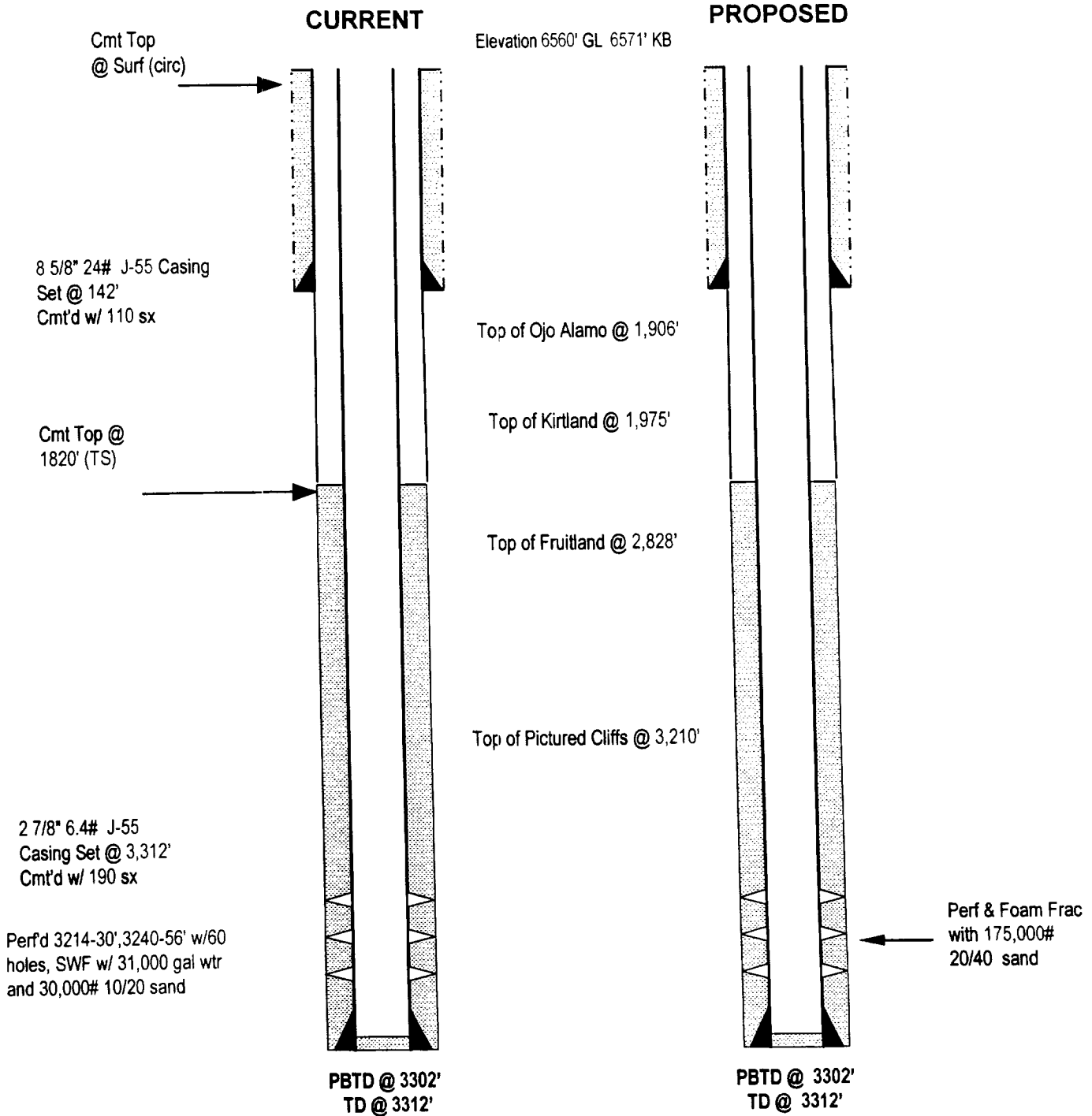
Comments & Special Instructions

MAXIMUM ALLOWABLE TREATING PRESSURE IS:	3,700 PSI
Hold safety meeting with everyone on location before pressure testing surface lines.	
Pressure test surface lines to 1000 psi over max allowable pressure but less than working pressure.	
Mileage - 45 miles one way	
RTS at 7 am on day #1	

Sunray A # 6

Section 10 E, T-30 -N R-10 -W
San Juan, New Mexico

Blanco Pictured Cliffs Field Wellbore Schematic



PICTURED CLIFFS
FLOW BACK TABLE

Well head	Choke
Pressure, psi	Size, x/64 in.
over 700	8
700	10
450	12
300	14
200	18
100	32

Well should be flowed back according to the above schedule.

Once the lower pressure is obtained, or if the well is blowing dry, the next larger choke size should be used.

Once the Well Head pressure drops below 100 psi, choke sizes should be gradually increased from 32 to 48.

Maximum Choke size to be used during flowback and sand bailer operation is 48/64". No larger choke should be used.