

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

RECEIVED  
BLM

Sundry Notices and Reports on Wells

95 JUN -4 PM 1:27

1. Type of Well  
GAS

070 FARMINGTON, NM

2. Name of Operator  
MERIDIAN OIL

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

4. Location of Well, Footage, Sec., T, R, M  
990' FNL, 990' FEL, Sec.19, T-31-N, R-10-W, NMPM

5. Lease Number  
SF-078134  
6. If Indian, All. or  
Tribe Name  
7. Unit Agreement Name  
8. Well Name & Number  
Crandell SRC #1  
9. API Well No.  
30-045-10592  
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

<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment	<input type="checkbox"/> Change of Plans
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion	<input type="checkbox"/> New Construction
<input type="checkbox"/> Final Abandonment	<input type="checkbox"/> Plugging Back	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> Water Shut off
	<input type="checkbox"/> Altering Casing	<input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Other - Pay add and restimulation	

13. Describe Proposed or Completed Operations

It is intended to add pay and restimulate the Mesaverde formation of the subject well according to the attached procedure and wellbore diagram.

RECEIVED  
JUN 10 1996  
OIL CON. DIV.  
DIST. 3

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

Signed [Signature] (TJM5) Title Regulatory Administrator Date 6/3/96

(This space for Federal or State Office use)

APPROVED BY \_\_\_\_\_ Title \_\_\_\_\_ Date \_\_\_\_\_

CONDITION OF APPROVAL, if any:

APPROVED

JUN 04 1996

DISTRICT MANAGER

NMOCD

**Crandell #1 (Mesaverde)**  
**Mesaverde Restimulation & Payadd**  
**Section 19, T31N-R10W**  
**San Juan County, New Mexico**  
**Lat. 36.888321 Long 107.917679**  
**\* COMPLETION PROCEDURE (4/27/96) \***

**Basic Equipment Requirements:**

7 frac tanks & 1 rig tank, 60' of 3-1/2" fracstring, 5-1/2" fullbore stimulation packer, 3-1/2" CIBP & RBP, immediate flowback manifold, 4600' of 2-3/8" work string, and 800' of 1-1/4" drillpipe.

1. Hold safety meeting. MIRU. Comply with all MOI, BLM and NMOCD rules and regulations. Install 7 frac tanks and 1x400 bbl rig tank. Fill each frac tank with 3#'s of biocide and filtered (25 micron) 2% KCl water.
2. Obtain and record all wellhead pressures. ND WH, NU BOP. TOH w/ 1-1/2" tubing landed @ 5025'. Replace bad tubing as necessary.
3. PU a 5-1/2" 14# casing scraper on 2-3/8" tbg. TIH to @ 4520'. TOH.
4. PU a 3-1/2" 7.7# casing scraper on 2-3/8" tbg and 800' of 1-1/4" drillpipe. TIH to @ 5244'. TOH.
5. TIH w/ 3-1/2" RBP and set RBP at 4925'. Load hole w/ 2% Kcl water. TOH.
6. RU wireline. Run CBL/GR from 4925' to Surface.
7. TIH with a 5-1/2" packer and set packer @ 60'. Pressure test csg to 2500#. TOH.
8. TIH w/ retrieving head to RBP @ 4925'. Recover RBP and TOH.
9. Perforate using 2-1/8" Shogun w/ 14 gram shaped charges and 0.27" diameter holes, 1 SPF. Inspect guns to ensure all perforations fired. RD wireline.

**4918', 5076', 5083', 5110', 5117', 5130', 5143', 5153', 5166', 5171',  
5185', 5189', 5214'.**

**A total of 13 holes.**

10. TIH with 2 joints of 3-1/2" tbg and 5-1/2" packer. Set packer @ 60.
11. RU WSI flowback manifold w/ a 1/8" and 1/4" positive choke. RU Stimulation Company. Pressure test manifold and stimulation lines to 3500 psi.
12. Hold safety meeting. **Max allowable surface treating pressure is 2500 psi @ 30 Bbls/min.** Pressure test surface lines to 3500 psi. (1000 psi over maximum treating pressure but less than the working pressure of the lines.) Stimulate the Mesaverde interval @ +/- 30 BPM w/ 30# XL gel and 7000 SCF/M N2, with 20/40 Arizona and 20/40 resin coated. Hold and monitor 500 psi on backside. Drop 100 balls at the end of the 4 PPG stage and evaluate rates and pressures to potentially drop an additional 30 balls in the 5# stage. Flush w/ 2% KCL water and N2 to more accurately determine flush volume and help with sand fallout. Flush volume begins when sand concentration drops to 4-1/2 #/gal. Reduce rate during flush to determine if well will be on a vacuum. Under flush by 20 %. Shut in well immediately after completion and flowback within 1 minute on a 1/8" to 1/4" choke until well dies. Release Stimulation Crew to the house.

13. Flow back well immediately through 1/8" positive choke to reverse gravel pack. If well is not dead after 2 hours, slowly open well wide open until pressure falls to zero. Accurately record sand volume and gel/water coming back.
13. Bleed off pressure. Release packer, TOH.
14. PU 2-7/8" bit, 800' of 1-1/4" drillpipe, and 2-3/8" tbg and TIH Clean out to 5244'. When sand returns are acceptable, TOH.
15. TIH and set 3-1/2" CIBP @ +/- 4880'. Load hole w/ 2% KCL water. Pressure test csg and BP to 2500 psi for 15 minutes. Bleed off pressure.
16. TIH w/ 1-1/4" drillpipe and 2-3/8" workstring. Unload hole with air @ 4850'. Spot 600 Gallons of 15% inhibited HCL for underbalanced Menefee perforating. TOH.
17. RU lubricator for underbalanced perforating. Perforate top down using 2-1/8" Shoguns with 14 gram charges and 0.27" diameter holes. 1 SPF. Inspect guns to ensure all perforations fired. Record pressures if any. RD wireline.

4367', 4384', 4395', 4402', 4409', 4417', 4423', 4432', 4451', 4461', 4468',  
4476', 4504', 4434', 4440', 4558', 4582', 4617', 4633', 4640', 4657', 4667',  
4683', 4723', 4734', 4750', 4768', 4796', 4804', 4811', 4823', 4842'.

**Total: 32 holes**

18. TIH w/ 5-1-2" fullbore packer and 2 joints of 3-1/2" tbg. Set packer & hold 500 psi on backside. RU WSI flowback manifold. RU Simulation Company. Pressure test manifold and stimulation lines to 3500 psi.
19. Hold safety meeting. **Max allowable surface treating pressure is 2500 psi @ 40 Bbls/min.** Pressure test surface lines to 3500 psi. (1000 psi over maximum treating pressure but less than the working pressure of the lines.) Fracture stimulate the Menefee/Lower Cliffhouse interval @ +/- 40 BPM w/ 30# XL gel and 7000 SCF/M N2, 20/40 Arizona and 20/40 resin coated. Hold and monitor 500 psi on backside. Flush w/ 2% KCL water and N2 to more accurately determine flush volume and help with sand fallout. Flush volume begins when sand concentration drops to 4-1/2 #/gal. Reduce rate during flush to determine if well will be on a vacume. Under flush by 20 %. Shut in well immediately after completion and flowback within 1 minute on a 1/8" to 1/4" choke until well dies. Release Stimulation Crew to the house.
20. Flow back well immediately through 1/8" positive choke to reverse gravel pack. If well is not dead after 2 hours, slowly open well wide open until pressure falls to zero. Accurately record sand volume and gel/water coming back.
21. Bleed off pressure. Release packer and stand back. Check and inspect packer.
22. PU 2-7/8" bit, 1-1/4" drillpipe and 2-3/8" tbg and TIH. Clean out to 4880'. Obtain pitot gauge from Mesaverde after clean up. When sand returns are acceptable, DO CIBP @ 4880' and CO to 5244'.
23. When sand volumes are acceptable obtain pitot gauge and TOH.
24. TIH with one joint of 1-1/2" tubing w/ expendable check, an F-nipple, then the rest of the tubing. Land tubing at approximately 5200'.

25. ND BOP's, NU WH. Pump off expendable check. Run swap to FN. Obtain final pitot. RD and MOL. Return well to production.

Approval: \_\_\_\_\_  
Drilling Superintendent

Approval: Gerald P Ziedler 5-30-96  
Northwest Basin Team Leader

**Engineers -**

**Todd J. Mushovic**  
Office - (326-9584)  
Home - (324-0692)

**James A. Smith**  
Office - (326-9713)  
Home - (327-3061)  
Pager - (324-2420)

**Mary Ellen Lutey**  
Office - (599-4052)  
Home - (325-9387)  
Pager - (324-2671)

**Frac Consultants -**

**Mark Byars**  
Pager - (327-8470)  
Mobile - (320-0349)  
Home - (327-0096)

**Mike Martinez**  
Pager - (599-747)  
Mobile - (860-756)  
Home - (326-486)

**VENDORS:**

**CASED HOLE:**  
**STIMULATION:**  
**MANIFOLD:**

**SERVICE COMPANY**

Basin  
Halliburton  
WSI

**PHONE NUMBER**

327-5244  
325-3423  
327-3402

TJM

q:\area\ar45\1996proj\crandell\pro.doc

Pertinent Data Sheet

**CRANDELL #1**

**Location:** Unit A NE/4 NE/4, Section 19, T31N, R10W, 990' FNL, 990' FEL,  
Lat. 36.888321, Long. -107.917679 by TDG  
San Juan County, NM

**Field:** Blanco Mesaverde  
**KB:** 5989'

**Elevation:** 5977' GL  
5988' DF

**TD:** 5246'  
**PBTD:** 5244'

**Spud Date:** 03-05-51

**Completed:** 04-30-51

**Lease No.:** SF 078134

**DP No:** 10350

**Prop. No:** 0020240

**Meridian W.I.:** 25.000%  
**Meridian N.R.I.:** 21.125%

**Trust W.I.:** 75.000%  
**Trust N.R.I.:** 63.375%

**Initial Potential:** AOF:3360 mcf  
SICP: 712#

**Casing/Liner Record:**

<u>Hole Size</u>	<u>Csg. Size</u>	<u>Wt. &amp; Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>Top/Cement</u>
13 3/4"	10 3/4"	32.75# H-40	225'	175 sx	
9"	8 5/8"	32#	246'	105 sx	
7 7/8"	5 1/2"	14# J-55	4891'	250 sx	3691 (T.S.)
4 1/2"	3 1/2"	7.7# 10 RD	4524'-5244'	100 sx	Liner top

Float Collar @ 5244'.

**Tubing Record:**

<u>Hole Size</u>	<u>Wt. &amp; Grade</u>	<u>Depth Set</u>
1 1/2"	EUE 10 RT	5025'

**Formation Tops:**

Ojo Alamo:	1576'
Kirtland:	1656'
Fruitland:	2305'
Cliffhouse:	4184'
Menefee:	4484'
Point Lookout:	4955'

**Logging Record:** GR-Neutron, Induction, TS.

**Stimulation:** SOH with 750 quarts SNG from 4948'-5240'.  
Tested 4840'-4865' with 93 shots. Results were water and was squeezed off with 100 sx.

**Workover History:** 1969: Sidetracked @ 4637'. Cemented with 100 sx. TOC @ 4797'. Squeezed liner top with 200 sx. Tested casing to 3000#. Perf'd 4956'-4964', 4970'-4994', 5002'-5032', 5046'-5052' with 2SPF. Total of 136 shots. Frac'd with 84,000 gallons of water with 50,000# of 20-40 sand and 20,000# of 10-20 sand. AIR=45BPM, ATP=2500. Max. TP=2700. Dropped 20 balls.

# CRANDELL #1

AS OF 4/1/96  
BLANCO MESAVERDE

990' FNL, 990' FEL  
SEC 19, T31N, R10W, SAN JUAN COUNTY, NM

COMPLETED 4/30/51  
SIDETRACKED 1969  
ELEVATION 5977' GL

10-3/4" 32.7# H-40 CSG SET @ 225'  
CEMENT WITH 175 SX TOC UNKNOWN

8-5/8" 32# CSG SET @ 246'  
CEMENT WITH 105 SX TOC UNKNOWN

OJO ALAMO @ 1576'

KIRTLAND @ 1656'

FRUITLAND @ 2305'

1-1/2" TBG SET @ 5025'

TOC @ 3691' (TS)

CLIFF HOUSE @ 4184'

MENEFEE @ 4484'

SIDETRACK @ 4637'

SQUEEZE LINER TOP W/200 SX CMT

5-1/2" 14# J-55 CSG SET @ 4891'  
CEMENT WITH 250 SX

TESTED ORIGINAL WELL @ 4840-4865'  
THROUGH CASING. TESTED WATER.  
SQUEEZED W/100 SX CMT.

POINT LOOKOUT @ 4955'

PERF 4956'-5052'  
FRAC W/20,000# 10/20 SAND,  
50,000#20/40 SAND, AND  
84,000 GALS WATER

3-1/2" 7.7# LINER 4524'-5244'  
CMT W/100 SX  
TOC LINER TOP

TD 5246'  
PBTD 5244'