STATE OF NEW MEXICO
ENERGY and MINERALS
DEPARTMENT
This form is not to be used for reporting packer leakage tests in Southeast New Mexico

# OIL CONSERVATION DIVISION



# NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST

Operator MERIDIAN OIL INC. Lease SAN JUAN 27-5 UNIT Well No. 29

Location of Well: Unit M Sect. 13 Twp. 027N Rge. 005W County RIO ARRIBA

| | NAME OF RESERVOIR OR POOL | TYPE OF PROD. (Oil or Gas) | METHOD OF PROD. (Flow or Art. Lift) | PROD. MEDIUM (Tbg. or Csg.) |
|---|---|---|---|---|
| Upper Completion | PICTURED CLIFFS | GAS | FLOW | TUBING |
| Lower Completion | MESAVERDE | GAS | FLOW | TUBING |

PRE-FLOW SHUT-IN PRESSURE DATA

| | Hour, date shut-in | Length of time shut-in | SI press. psig | Stabilized? (Yes or No) |
|---|---|---|---|---|
| Upper Completion | 5-7-96 | 84 days | 401 | |
| Lower Completion | 5-7-96 | 62 days | 576 | |

FLOW TEST NO. 1

Commenced at (hour,date)* 7-9-96 Zone producing (Upper or Lower)

| TIME (hour,date) | LAPSED TIME SINCE* | PRESSURE Upper Completion | PRESSURE Lower Completion | PROD. ZONE TEMP | REMARKS |
|---|---|---|---|---|---|
| 7-9 | 62 days | 401 | 576 | | |
| 7-10 | 63 days | 401 | 435 | | |
| 7-11 | 84 days | 401 | 384 | | |
| | | | | | |
| | | | | | |
| | | | | | |

Production rate during test

Oil: _____ BOPD based on _____ Bbls. in _____ Hours. _____ Grav. _____ GOR _____

Gas: _____ MCFPD; Tested thru (Orifice or Meter): _____

MID-TEST SHUT-IN PRESSURE DATA

| | Hour, date shut-in | Length of time shut-in | SI press. psig | Stabilized? (Yes or No) |
|---|---|---|---|---|
| Upper Completion | | | | |
| Lower Completion | | | | |

(Continue on reverse side)

# NORTHWEST NEW MEXICO PACKER-LEAKAGE TEST



FLOW TEST NO. 2

| Commenced at (hour,date)** | | | | Zone producing (Upper or Lower): | |
|---|---|---|---|---|---|
| TIME (hour,date) | LAPSED TIME SINCE** | PRESSURE Upper Completion | PRESSURE Lower Completion | PROD. ZONE TEMP. | REMARKS |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Production rate during test

Oil: _____ BOPD based on _____ Bbls. in _____ Hours. _____ Grav. _____ GOR _____

Gas: _____ MCFPD; Tested thru (Orifice or Meter):

Remarks: _____

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

Approved JUL 30 1996 19____ Operator MERIDIAN OIL, INC.

New Mexico Oil Conservation Division By DOLORES DIAZ

By Johnny Robinson Title OPERATION ASSISTANT

Title Deputy Oil & Gas Inspector Date 7-26-96

## NORTHWEST NEW MEXICO PACKER LEAKAGE TEST INSTRUCTIONS

1. A packer leakage test shall be commenced on each multiply completed well within seven days after actual completion of the well, and annually thereafter as prescribed by the order authorizing the multiple completion. Such tests shall also be commenced on all multiple completions within seven days following recompletion and/or chemical or fracture treatment, and whenever remedial work has been done on a well during which the packer or the tubing have been disturbed. Tests shall also be taken at any time that communication is suspected or when requested by the Division.
2. At least 72 hours prior to the commencement of any packer leakage test, the operator shall notify the Division in writing of the exact time the test is to be commenced. Offset operators shall also be so notified.
3. The packer leakage test shall commence when both zones of the dual completion are shut-in for pressure stabilization. both zones shall remain shut-in until the well-head pressure in each has stabilized, provided however, that they need not remain shut-in more than seven days.
4. For flow Test No. 1, one zone of the dual completion shall be produced at the normal rate of production while the other zone remains shut-in. Such test shall be continued for seven days if the case of a gas well and for 24 hours in the case of an oil well. Note: if, on an initial packer leakage test, a gas well is being flowed to the atmosphere due to the lack of a pipeline connection the flow period shall be three hours.
5. Following completion of flow Test No. 1, the well shall again be shut-in, in accordance with Paragraph 3 above.
6. Flow Test No. 2 shall be conducted even though no leak was indicated during flow Test No. 1. Procedure for Flow Test No. 2 is the same as for Flow Test No. 1 except that the previously produced zone shall remain shut-in while the zone which was previously shut-in is produced.
7. Pressures for gas-zone tests must be measured on each zone with a deadweight pressure gauge at time intervals as follows: 3 hours tests: immediately prior to the beginning of each flow-period, at fifteen minute intervals during the first hour thereof, and at hourly intervals thereafter, including one pressure measurement immediately prior to the flow period, at least one time during each flow period (at approximately the midway point) and immediately prior to the conclusion of each flow period. Other pressures may be taken as desired, or may be requested on wells which have previously shown questionable test data.

24-hour oil zone tests: all pressures, throughout the entire test, shall be continuously measured and recorded with recording pressure gauges the accuracy of which must be checked at least twice, once at the beginning and once at the end of each test, with a deadweight pressure gauge. If a well is a gas-oil or an oil-gas dual completion, the recording gauge shall be required on the oil zone only, with deadweight pressures as required above being taken on the gas zone.
8. The results of the above described tests shall be filed in triplicate within 15 days after completion of the test. Tests shall be filed with the Aztec District Office of the New Mexico Oil Conservation Division of Northwest New Mexico Packer Leakage Test form Revised 10/01/78 with all deadweight pressures indicated thereon as well as the flowing temperatures (gas zones only) and gravity and GOR (oil zones only).

State of New Mexico
Energy, Minerals and Natural Resources Department
**Oil Conservation Division**

## Sundry Notices and Reports on Wells

1. **Type of Well**
GAS

**API # (assigned by OCD)**
30-039-60067

5. **Lease Number**
Fee

6. **State Oil&Gas Lease #**

2. **Name of Operator**
BURLINGTON RESOURCES OIL & GAS COMPANY

7. **Lease Name/Unit Name**
San Juan 27-5 Unit

8. **Well No.**
29

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

9. **Pool Name or Wildcat**
Tapacito Pict.Cliffs/
Blanco Mesaverde

4. **Location of Well, Footage, Sec., T, R, M**
990'FSL, 990'FWL, Sec.13, T-27-N, R-5-W, NMPM, Rio Arriba County

10. **Elevation:**

| 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 - Pay add and commingle | |

**13. Describe Proposed or Completed Operations**

It is intended to add the Cliff House and Lewis to this existing Pictured Cliffs/ Mesaverde dual well according to the attached procedure and wellbore diagram. After the workover the well will be commingled. A down-hole commingle order will be applied for.

RECEIVED
JAN 0 2 1997
OIL CON. DIV.
DIST. 3

SIGNATURE Peggy Bradfield (LLL8) Regulatory Administrator December 31, 1996

**(This space for State Use)**

**Approved by** ORIGINAL SIGNED BY ERNIE BUSCH **Title** DEPUTY OIL & GAS INSPECTOR, DIST. #3 **Date** JAN - 3 1997

# San Juan 27-5 Unit #29
## Mesaverde Pay Add
Unit M, Section 13, T-27-N, R-5-W, Rio Arriba County, New Mexico
Lat. 36-34-7, Long. 107-18-52

Inspect location and install and/or test rig anchors. **This job will require 3 total frac tanks.** Comply with all BLM, NMOCD, Forestry, and BR rules and regulations. **BE SAFE.**

***All vendors/service companies on location will be responsible for protection of the environment. Any questions call Lori Lantz at 599-4024.***

1. MIRU. Hold Safety Meeting. Place fire and safety equipment in easily accessible locations. Obtain and record all wellhead pressures. NU relief line to flare pit.

2. Blow down tubing. If tubing will not blow down, kill well with 2% KCl water. ND WH, NU BOP. NU blooie line to flare pit.

3. TOOH with 108 jts (3514') of 1-1/4" 2.4# J-55 tubing. Visually inspect, tally, and lay down.

4. Release Baker Model EGJ packer by picking up. TOOH with 181 jts (5671') of 2-3/8" 4.7# J-55 tubing. Visually inspect, tally, and stand back tubing. Replace any bad joints.

5. PU 4-3/4" bit and 5-1/2" 15.5# casing scraper on 2-3/8" workstring. Rabbit and tally on TIH to PBTD of 5756'. **Obtain flow gauge and record as Pictured Cliffs / Point Lookout.** TOOH and LD bit and scraper.

6. TIH w/ 7-5/8" 26.4# RBP on 2-3/8" tubing and set at 3550'. Pull above Pictured Cliffs perfs. **Obtain flow gauge and record as Pictured Cliffs.** TIH and retrieve RPB. TIH and and reset RBP at 5260'. Dump 2 sacks sand on RBP.

7. Run GR-CBL-CCL from 5260' to liner top at 3577' with 0 psi surface pressure. Run repeat section. Top of good cement must be above 4335' to continue. Evaluate CBL and send copy to production and drilling.

**Cliffhouse Stimulation:**

8. RIH w/ 3-1/8" Select Fire Perforating gun loaded 2 spf w/ 10 or 12 gram charges (0.31" diameter holes) and perforate the following depths:

   **5082' 5096' 5111' 5116' 5120' 5123' 5150' 5155' 5159' 5171'**
   **5182' 5185' 5200' 5202' 5205' 5210' 5217' 5220'**
   **(36 total holes)**

# San Juan 27-5 Unit #29
## Mesaverde Pay Add
Unit M, Section 13, T-27-N, R-5-W, Rio Arriba County, New Mexico
Lat. 36-34-7, Long. 107-18-52

9. RD electric line unit. PU 5-1/2" packer on 2-7/8" N-80 buttress frac string. TIH and set packer at appoximately 5230'. Load hole w/ 2% KCl and pressure test RBP to 3800 psi (80% of internal yield of 4810 psi). Pull up and reset packer at approximately 4932'.

10. RU stimulation company. **Hold Safety Meeting.** Pressure test surface treating lines to 4800 psi. **Maximum static pressure is 3800 psi.** Pump 1500 gals of 15% HCl acid at 10-15 bpm. Drop a total of 54 7/8" diameter (1.3 sg) RCN ball sealers spaced evenly throughout the job. Record injection rates and pressures throughout the job. RD stimulation company.

11. Release packer. TIH w/ 5-1/2" packer on frac string and knock balls off perforations. Pull up and reset packer at approximately 4932'.

12. RU stimulation company. Pressure test surface treating lines to 8800 psi. **Maximum treating pressure for various rates is listed below.** Fracture stimulate the Cliffhouse interval w/ 54,000# 20/40 sand in 70Q Nitrogen foam (20 lb linear based foam) at approximately 20 bpm according to the attached procedure. SI for ISIP.

| **Rate** | **Max Pressure** |
|---|---|
| 0 bpm | 3800 psi |
| 10 bpm | 5000 psi |
| 20 bpm | 7800 psi |

12. RDMO stimulation company. Flow back well immediately using a dual choke manifold. When pressures allow, release packer. TOOH w/ packer and 2-7/8" frac string.

13. RU electric line unit. RIH w/ 5-1/2" RBP and set at 4920'. Dump 2 sks sand on RBP.

**Lewis Stimulation:**

14. RIH w/ 3-1/8" Select Fire Perforating gun loaded 2 spf w/ 10 or 12 gram (0.31" diameter holes) and perforate the following depths:

**4385' 4390' 4420' 4440' 4469' 4475' 4507' 4562' 4577' 4582'**
**4625' 4634' 4666' 4695' 4710' 4746' 4803' 4838' 4863' 4880'**
**(40 total holes)**

# San Juan 27-5 Unit #29

## Mesaverde Pay Add

Unit M, Section 13, T-27-N, R-5-W, Rio Arriba County, New Mexico
Lat. 36-34-7, Long. 107-18-52

15. RD electric line unit. PU 5-1/2" packer on 2-7/8" N-80 buttress frac string. TIH and set packer at appoximately 4890'. Load hole w/ 2% KCl and pressure test RBP to 3800 psi (80% of internal yield of 4810 psi). Pull up and reset packer at approximately 4235'.

16. RU stimulation company. **Hold Safety Meeting.** Pressure test surface treating lines to 4800 psi. **Maximum static pressure is 3800 psi.** Pump 1500 gals of 15% HCl acid at 10-15 bpm. Drop a total of 60 7/8" diameter (1.3 sg) RCN ball sealers spaced evenly throughout the job. Record injection rates and pressures throughout the job. RD stimulation company.

17. Release packer. TIH w/ 5-1/2" packer on frac string and knock balls off perforations. Pull up and reset packer at approximately 4235'.

18. RU stimulation company. Pressure test surface treating lines to 8200 psi. **Maximum treating pressure for various rates is listed below.** Fracture stimulate the Lewis interval w/ 85,000# 20/40 sand in 70Q nitrogen foam (20 lb linear based foam) at approximately 20 bpm according to the attached procedure. Tag pad with Antimony, 1 & 2 ppg sand stages with Iridium, and 3 ppg stage with Scandium-46. SI for ISIP.

| **Rate** | **Max Pressure** |
|---|---|
| 0 bpm | 3800 psi |
| 10 bpm | 4800 psi |
| 20 bpm | 7200 psi |

26. RDMO stimulation company. Flow back well immediately using a dual choke manifold. When pressures allow, release packer. TOOH and LD packer and 2-7/8" frac string.

27. TIH w/ 2-3/8" workstring and clean out to the RBP set at 4920' with air until sand and water production is minimal (run retrieving head on last clean out run). **Obtain flow gauge and record as Pictured Cliffs / Lewis.** Latch onto RBP and TOOH.

28. TIH w/ 2-3/8" workstring and clean out to the RBP set at 5260' with air until sand and water production is minimal (run retrieving head on last clean out run). **Obtain flow gauge and record as Pictured Cliffs / Lewis / Cliffhouse.** Latch onto RBP and TOOH.

29. RU Wireline Unit. Run Mulitple Isotope After-Frac Gamma Ray log over Lewis interval. Run Perforation Efficiency Log from top of Pictured Cliffs

# San Juan 27-5 Unit #29
## Mesaverde Pay Add
Unit M, Section 13, T-27-N, R-5-W, Rio Arriba County, New Mexico
Lat. 36-34-7, Long. 107-18-52

through bottom of Point Lookout. RD Wireline Unit. Send Logs to Production Engineering and Drilling.

30. Rabbit and TIH with 2-3/8" 4.7# J-55 tubing with expendable check and seating nipple one joint off bottom and cleanout to PBTD of 5756' with air. Land tubing at approximately 5740'. ND BOP. NU WH. Pump off check and obtain final flow gauge. **Record flow gauge as Pictured Cliffs / Lewis / Mesaverde.** Contact Production Operations for well tie-in. RDMO.

Approved: Amber Morehead for AL
Regional Team Leader
12/26/96

Approved: _____
Drilling Superintendent

# San Juan 27-5 Unit #29
# Unit M, Sec 13, T-27-N, R-5-W

| | | | |
|---|---|---|---|
| Location: | 990' FSL, 990 FWL<br>Rio Arriba County, NM | Latitude:<br>Longitude: | 36-34-7<br>107-18-52 |
| Current Field: | Blanco MV/Tapacitos PC | Logs Run: | ES, GRN, Ind, ML, TS |
| Spud: | 3/21/58 | Completed: | 6/ 5/58 |
| Elev GL: | 6592' | Elev KB: | 6602' |
| TD: | 5812' | PBTD: | 5756' |

CASING RECORD:

| Hole Size | Casing Size | Weight | Grade | Depth Set | Cmt Vol | Cmt Top |
|---|---|---|---|---|---|---|
| 15" | 10-3/4" | 32.75# | Armco SW | 173' | 200 sks | Surf (Circ) |
| 9-7/8" | 7-5/8" | 26.4# | J-55 | 3624' | 150 sks | 2750' (TS) |

LINER RECORD:

| Hole Size | Casing Size | Weight | Grade | Depth Set | Cmt Vol | Cmt Top |
|---|---|---|---|---|---|---|
| 6-3/4" | 5-1/2" | 15.5# | J-55 | 3577-5808' | 300 sks | 3577' (TS) |

TUBING RECORD:

| Tubing Size | Weight | Grade | Depth Set | Joints | Other | Depth |
|---|---|---|---|---|---|---|
| 2-3/8" | 4.7# | EUE | 5671' | 181 | | |
| 1-1/4" | 2.4# | J-55 | 3514' | 108 | | |
| | | | | | Baker EGJ Pkr | 3638' |

FORMATION TOPS:

| | | | | | |
|---|---|---|---|---|---|
| Ojo Alamo | 2844' | Pictured Cliffs | 3433' | Pt Lookout | 5575' |
| Kirtland | 2973' | Cliffhouse | 5179' | Gallup | — |
| Fruitland | 3171' | Menefee | 5223' | Dakota | — |

Completions:

Mesaverde - PL
Perfs: 5550-62, 5578-5600, 564-36, 5648-74, 5686-5710, 5730-50 (1 spf)
Frac: 54,600 gal water and 60,000# sand + balls.
SIWHP: 1105 psi AOF: 3731 mcfd

Pictured Cliffs
Perfs: 3456-74, 3488-3510 (2 spf)
Frac: 35,280 gal water and 35,000# sand + balls
SIWHP: 1013 psi AOF: 1718 mcfd

Cementing Information

10-3/4" Casing cemented w/ 200 sks regular cement, 2% CaCl, and 1/4# Flocele /sk.
7-5/8" Casing cemented w/ 50 sks regular cement, 50 sks Pozmix, 1/4# Flocele /sk, 2% gel followed by 50 sks Neat w/ 2% CaCl2.
5-1/2" Casing cemented w/ 125 sks regular cement, 125 sks Pozmix, 6% gel, 1/8# Flocele /sk followed by 50 sks Neat.

Workover History:

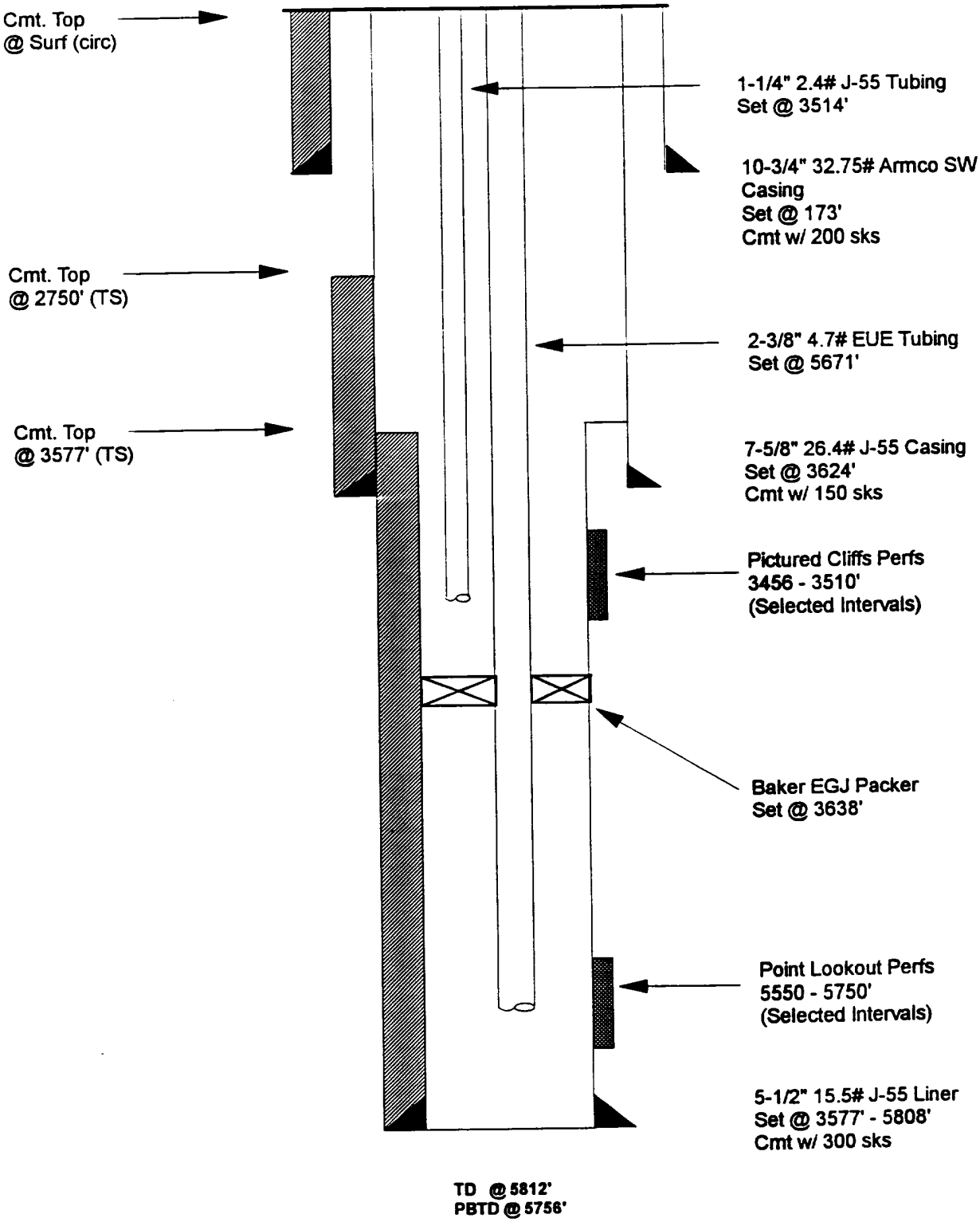
N/A

LLL:rjp 10/14/96

# SAN JUAN 27-5 UNIT #29

**Unit M, Section 13, T-27-N, R-5-W**
**Lat. 36-34-7, Long. 107-18-52**

## CURRENT WELLBORE SCHEMATIC




**TD @ 5812'**
**PBTD @ 5756'**