

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
BLM

Sundry Notices and Reports on Wells

99 JUN 17 PM 11:45

UIC FARMINGTON, NM

Lease Number
SF-080675
If Indian, All. or
Tribe Name

7. Unit Agreement Name

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) 326-9900

RECEIVED
JUL 12 1999
OIL CON. DIV.
DIST. 3

San Juan 27-4 Unit
Well Name & Number
San Juan 27-4 U #57
9. API Well No.
30-039-20383
10. Field and Pool
BS Mesa Gallup EXT
Basin Dakota
11. County and State
Rio Arriba Co, NM

4. Location of Well, Footage, Sec., T, R, M
990' FSL, 850' FWL, Sec.28, T-27-N, R-4-W, NMMPM

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

13. Describe Proposed or Completed Operations

It is intended to add the Gallup formation to the existing Dakota formation of the subject well according to the attached procedure and wellbore diagram. The Gallup will be tested for approximately six months. After testing, the well will be commingled. A down-hole commingle application will be made.

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

Signed Wayne Townsend (BGOpps) Title Regulatory Administrator Date 6/16/99
no

(This space for Federal or State Office use)
APPROVED BY WAYNE TOWNSEND Title Reg. Date 7-1-99
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.

District I
O Box 1980, Hobbs, NM 88241-1980
District II
O Drawer DD, Artesia, NM 88211-0719
District III
000 Rio Brazos Rd., Aztec, NM 87410
District IV
O Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals & Natural Resources Department

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

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

99 JUN 17 PM 4:22

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-039-20383	72920/71599	BS Mesa Gallup/Basin Dakota
Property Code	Property Name	Well Number
7452	San Juan 27-4 Unit	57
OGRID No.	Operator Name	Elevation
14538	Burlington Resources Oil & Gas Company	7207 GR

¹⁰ Surface Location


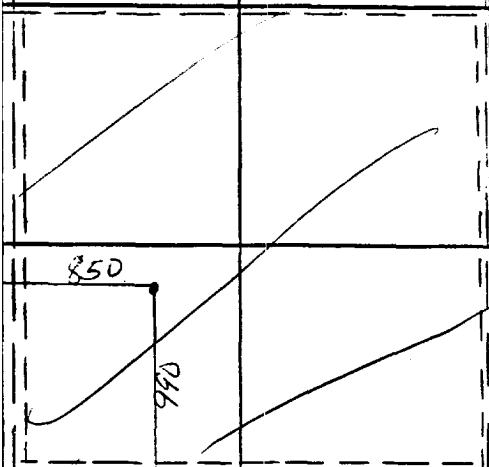
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	28	27N	4W		990	South	850	West	RA

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

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
Gai = 180 DK/W/320			

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

¹⁶	Original plat from David O. Vilven 8-20-68	¹⁷ OPERATOR CERTIFICATION
		<i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Signature Peggy Bradfield Printed Name Regulatory Administrator Title 6-19-99 Date
		¹⁸ SURVEYOR CERTIFICATION
		<i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i> Date of Survey Signature and Seal of Professional Surveyer: Certificate Number

San Juan 27-4 Unit #57
Mancos (Gallup) Recompletion Procedure
Unit M, Section 28, T27N, R04W
Lat: 36°- 32.37948'/Long: 107°- 15.6894'

Summary:

This well is currently completed in the Dakota. It is intended to recomplete the Mancos interval, including several pre-frac slug and stress tests, production test the Mancos only for 6 months, run production logs and pressure build-up tests, and eventually commingle the Mancos/Dakota production. The Mancos will be sand fracture stimulated in two stages using a total of 200,000 lbs 20/40 Tempered LC sand in a 25# Delta Frac gel system.

Shale Data Gathering:

In 1998 an intense logging and sidewall coring program was completed in nine "shale data wells". No diagnostic tests were performed on the Mancos Shale intervals in the "shale data wells" due to working interest problems. As a result these tests will be performed on offset Dakota stand alone producers. Additional time will be spent to gather necessary data needed to quantify the significance of the Mancos Shale interval in the Federal Units. A pre-frac nitrogen slug test will be performed on each of the two stages to evaluate reservoir potential throughout the Mancos interval. Nitrogen stress testing will follow the pre-frac slug testing on each stage. Each test will be followed by a 25# Delta Frac gel stimulation using approximately 100,000 lbs 20/40 Tempered LC sand.

1. Inspect location and test rig anchors. Comply with all NMOCD, BLM, Forestry & BR rules and regulations. Dig flowback pit. Haul to location a new or inspected 8600', 2-3/8" 4.7# J-55 production string, 8200' 2-7/8" buttress frac string, and 400 bbl frac tanks.
2. MIRU. Fill 400 bbl tanks w/ 3# biocide/tank & 2% KCL water. Put one load of fresh water in each tank before adding 20% concentrated KCL water. Run fluid tests on water. Filter water based upon stimulation company water analysis. Record and report SI pressures on tubing, casing and bradenhead. Lay blowdown line. Blow well down and kill with 2% KCL water as necessary. ND WH and NU BOP, offset spool, and offset rams with flow tee and stripping head. Test operation of rams. NU blooie line and 2-7/8" relief line. Redress production wellhead as needed.
3. TOOH with 1-1/2" 2.9 lb/ft K-55 EUE Dakota production string set at 8448' and LD. Send string in to be inspected and salvaged, if possible. Visually inspect tubing. Note and report any scale in/on tubing.
4. PU and RIH with a 3-7/8" bit, 4-1/2" (11.6 lb/ft) casing scraper on the 2-3/8" 4.7# J-55 production string hauled to location. Clean out to PBTD (~8482') with air/mist. TOOH.
5. TIH with tubing set 4-1/2" CIBP on 2-3/8" 4.7# J-55 tubing. Set CIBP at 8200'. Release from CIBP and fill casing with ~ 130 bbls 2% KCL. TOOH.
6. RU wireline company. Run GR-CBL-CCL from 8200' to 200' above clean top of cement under 1000 psi. Evaluate CBL. Good cement bond must exist from 8200' to 6750' to continue with the procedure. ND wireline company.
7. TIH with 4-1/2" packer and 2 joints of 2-7/8", buttress frac string. Set packer for wellhead isolation. Pressure test CIBP and casing to 3800 psi. Bleed off pressure. Release packer and TOOH. LD packer and stand back 2-7/8" buttress joints.

8. TIH with open ended 2-3/8" 4.7# J-55 tubing. In stages, blow casing dry to 8050'. RU stimulation company. Spot 8 bbls 10% Acetic + 5% NH₄CL across Lower Mancos perf interval (7580-8000'). RD stimulation company. TOOH.
9. NU wireline. Correlate openhole Schlumberger Log (9/4/71) to GR-CBL-CCL. Perforate **(Top Down)** Lower Mancos interval as follows using select fire HSC guns loaded with Owens HSC-3125-306T 12 gram charges set at 1 SPF (Av. perf diameter - 0.30", Av. pen. -17.48" in concrete). **7580', 7595', 7610', 7625', 7640', 7655', 7670', 7685', 7700', 7715', 7730', 7770', 7786', 7801', 7817', 7865', 7880', 7895', 7910', 7925', 7940', 7955', 7970', 7985', 8000' (25 holes total)** ND wireline company.
10. TIH with 4-1/2" packer and 2-3/8" 4.7# J-55 tubing. Set packer at ~7400'.
11. RU stimulation company. Pressure test surface lines to 4800 psi. Breakdown Mancos perforations at 6-8 BPM with 25 bbls 10% Acetic + 5% NH₄CL. Drop 70 RCN 7/8" 1.3 specific gravity perf balls evenly spaced throughout job. Attempt to balloff to 3800 psi. Record breakdown pressure, ball action, and ISIP. RD stimulation company.
12. Bleed off pressure and release packer. Lower packer to 8100' to knock off perf balls. Blow well dry with air. Shut air down and obtain a pitot gauge if the well will flow on its own. Blow well again to ensure there is no fluid in the wellbore. Repeat flow and blow periods if the well is making more than 1 BPH water. **It is very important the wellbore be dry of any fluids for the following N₂ slug/stress tests.** TOOH. LD packer.
13. RU wireline company. RU and TIH with "Cased-Hole Test Assembly" on 2-3/8" 4.7# J-55 tubing. (See attached "Cased-Hole Test Configuration" assembly). Assembly consists of: pressure gauge, 10' perforated pup joint, bridge plug, packer, pressure gauge in carrier, XN seating nipple, and 2-3/8" 4.7# J-55 tubing. The following table lists pkr/bridge plug (slug test assembly) settings and perforation intervals that N₂ will be injected. Tie into OH log prior to setting slug test assembly. RU **5000** psi packoff w/pump-in tee.

Test #	Packer Depth	RBP Depth	Perf Interval (Zone)
1	7845'	8010'	7865', 7880', 7895', 7910', 7925', 7940', 7955', 7970', 7985', 8000'
2	7750'	7845'	7770', 7786', 7801', 7817'
3	7560'	7750'	7580', 7595', 7610', 7625', 7640', 7655', 7670', 7685', 7700', 7715', 7730'

14. Pressure test BP to **3800** psi with N₂ after each setting. BP will be set with on/off tool after each interval tested.

NOTE: THE STRESS TESTING WILL FOLLOW THE SLUG TESTING PRIOR TO MOVING THE TEST ASSEMBLY TO THE NEXT APPROPRIATE SETTING DEPTH. THE SETTING DEPTHS FOR THE STRESS TESTS ARE IDENTICAL TO THE SETTING DEPTHS FOR THE SLUG TESTS.

15. Attempt to establish a flow rate up the tubing. Measure rate for 30 min. If rate is greater than 50 MCFD, shut in well by seating the SRO gauge in the XN seating nipple and applying 400 psi differential pressure on top of the SRO gauge. Allow pressure to build up for approximately 2 hrs, then proceed to step # 17. If flow is less than 50 MCFD, proceed to step # 16. Leave annulus open at all times and monitor with Merla Tester.

16. RU stimulation company to inject N₂ down 2-3/8" 4.7# J-55 tubing. Pressure test surface lines to 4800 psi. **SLUG TEST** - Inject N₂ @ 1500 SCF/min at **2500 psi***. Injection time will be approximately 45 min per setting. Shut-in well by seating the SRO gauge in the XN seating nipple and applying 400 psi differential pressure on top of the SRO gauge, and observe fall-off on surface read out gauge in wireline truck for approximately 2 hrs. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY.** Leave annulus open at all times and monitor with Merla Tester.

***NOTE: DO NOT EXCEED FRAC GRADIENT OF 0.65 PSI/FT ON ANY INTERVAL TESTED. PUMP AT A CONSTANT RATE.**

17. **STRESS TEST** – Inject N₂ at 1500 scf/min at **3500 psi***, or until pressure exceeds frac gradient. Injection time will be approximately 15 min per setting. Observe pressure break in wireline truck and record results. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY. Only move test assembly after each slug and stress tests are completed.**

***NOTE: EXCEED FRAC GRADIENT OF AT LEAST 0.65 PSI/FT ON EACH INTERVAL TESTED. PUMP AT A CONSTANT RATE.**

18. Follow the same procedure listed in steps #15, #16, and #17 on slug test assembly setting. Unseat pkr/bridge plug combination on each setting depth listed in the table and move up hole at new depth and reset pkr and plug. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY. These tests may be pumped at night, using stimulation company's recommended safety precautions.**
19. Unseat slug test assembly. TOO. LD slug test assembly. RD wireline company.

LOWER MANCOS STIMULATION:

20. RU wireline. Run ProTechnics RTD tool on wireline and set top of tool at 7820'. This tool will remain in the hole throughout the stimulation. POOH. RD wireline company.
21. TIH with 4-1/2" packer on 2 jts 2-3/8" tbg and 2-7/8" N80 buttress frac string. Set packer at 7400'.
22. RU stimulation company. Pressure test surface lines to 8500 psi. **Maximum surface treating pressure is 7500 psi at 25 BPM. Estimated friction pressure is 6034 psi.** Perform pump-in test (mini-frac) with 8000 gals of pad volume. Begin injection at 20 BPM and hold until pressure stabilizes. Decrease rate and let pressure stabilize in the same manner at 15, 10, and 5 BPM. Shut down pumps and get an ISIP. Start up and finish pumping pad volume. Fracture stimulate the Lower Mancos with 100,000 lbs 20/40 Tempered LC sand in 25# Delta Frac at **25 BPM. Increase rate as pressure allows.** Tag sand with 3 radioactive isotopes.
23. Record ISIP, 5, 10 and 15 minute shut-in pressures. Shut-in frac valve. RD stimulation company. Install flowback line above frac valve. Flow back to pit. TOO.
24. After well cleans up and pressures allow, RU wireline and RIH and wireline retrieve RTD tool @ 7820'. POOH.

25. TIH with 4-1/2" CIBP and packer on 2-3/8" 4.7# J-55 tubing. Set CIBP at 7410'. Release from CIBP and PUH with packer. Set packer just above CIBP and pressure test to 3800 psi. Bleed off pressure. Release packer. Blow hole dry of any fluid.

Pre-Frac Slug/Stress Testing – 2nd Stage

26. RU stimulation company. Spot 10 bbls 10% Acetic + 5% NH₄CL across Upper Mancos perf interval (6835-7365') at 7400'. RD stimulation company. TOOH.
27. NU wireline. Correlate openhole Schlumberger Log (9/4/71) to GR-CBL-CCL. Perforate Upper Mancos interval as follows using select fire HSC guns loaded with Owens HSC-3125-306T 12 gram charges set at **1 SPF** (Av. perf diameter - 0.30", Av. pen. -17.48" in concrete). **6835', 6850', 6865', 6880', 6895', 6975', 6990', 7005', 7020', 7035', 7075', 7090', 7105', 7120', 7135', 7150', 7165', 7180', 7245', 7265', 7285', 7305', 7325', 7345', 7365' (25 holes total)** ND wireline company.
28. TIH with 4-1/2" packer and 2-3/8" 4.7# J-55 tubing. Set packer at ~ 6700' or in good cement.
29. RU stimulation company. Pressure test surface lines to 4800 psi. Breakdown Mancos perforations at 6-8 BPM with 25 bbls 10% Acetic + 5% NH₄CL. Drop 50 RCN 7/8" 1.3 specific gravity perf balls evenly spaced throughout job. Attempt to balloff to 3800 psi. Record breakdown pressure, ball action, and ISIP. RD stimulation company.
30. Bleed off pressure and release packer. Lower packer to 7400' to knock off perf balls. Blow well dry with air. Shut air down and obtain a pitot gauge if the well will flow on its own. Blow well again to ensure there is no fluid in the wellbore. Repeat flow and blow periods if the well is making more than 1 BPH water. **It is very important the wellbore be dry of any fluids for the following N₂ slug/stress tests.** TOOH. LD packer.
31. RU wireline company. RU and TIH with "Cased-Hole Test Assembly" on 2-3/8" 4.7# J-55 tubing. (See attached "Cased-Hole Test Configuration" assembly). Assembly consists of: pressure gauge, 10' perforated pup joint, bridge plug, packer, pressure gauge in carrier, XN seating nipple, and 2-3/8" 4.7# J-55 tubing. The following table lists pkr/bridge plug (slug test assembly) settings and perforation intervals that N₂ will be injected. Tie into OH log prior to setting slug test assembly. RU **5000** psi packoff w/pump-in tee.

Test #	Packer Depth	RBP Depth	Perf Interval (Zone)
4	7200'	7400'	7245', 7265', 7285', 7305', 7325', 7345', 7365'
5	7050'	7200'	7075', 7090', 7105', 7120', 7135', 7150', 7165', 7180'
6	6800'	7050'	6835', 6850', 6865', 6880', 6895', 6975', 6990', 7005', 7020', 7035'

32. Pressure test BP to **3800** psi with N₂ after each setting. BP will be set with on/off tool after each interval tested.

NOTE: THE STRESS TESTING WILL FOLLOW THE SLUG TESTING PRIOR TO MOVING THE TEST ASSEMBLY TO THE NEXT APPROPRIATE SETTING DEPTH. THE SETTING DEPTHS FOR THE STRESS TESTS ARE IDENTICAL TO THE SETTING DEPTHS FOR THE SLUG TESTS.

33. Attempt to establish a flow rate up the tubing. Measure rate for 30 min. If rate is greater than 50 MCFD, shut in well by seating the SRO gauge in the XN seating nipple and applying 400 psi differential pressure on top of the SRO gauge. Allow pressure to build up for approximately 2 hrs, then proceed to step # 35. If flow is less than 50 MCFD, proceed to step # 34. Leave annulus open at all times and monitor with Merla Tester.
34. RU stimulation company to inject N₂ down 2-3/8" 4.7# J-55 tubing. Pressure test surface lines to 4800 psi. **SLUG TEST** - Inject N₂ @ 1500 SCF/min at 2500 psi*. Injection time will be approximately 45 min per setting. Shut-in well by seating the SRO gauge in the XN seating nipple and applying 400 psi differential pressure on top of the SRO gauge, and observe fall-off on surface read out gauge in wireline truck for approximately 2 hrs. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY.** Leave annulus open at all times and monitor with Merla Tester.

***NOTE: DO NOT EXCEED FRAC GRADIENT OF 0.65 PSI/FT ON ANY INTERVAL TESTED. PUMP AT A CONSTANT RATE.**

35. **STRESS TEST** – Inject N₂ at 1500 scf/min at 3500 psi*, or until pressure exceeds frac gradient. Injection time will be approximately 15 min per setting. Observe pressure break in wireline truck and record results. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY. Only move test assembly after each slug and stress tests are completed.**

***NOTE: EXCEED FRAC GRADIENT OF AT LEAST 0.65 PSI/FT ON EACH INTERVAL TESTED. PUMP AT A CONSTANT RATE.**

36. Follow the same procedure listed in steps #33, #34, and #35 on each slug test assembly setting. Unseat pkr/bridge plug combination on each setting depth listed in the table and move up hole at new depth and reset pkr and plug. Flowback N₂ to pit before next test. **DO NOT KILL WELL WITH WATER TO MOVE THE TEST ASSEMBLY. These tests may be pumped at night, using stimulation company's recommended safety precautions.**

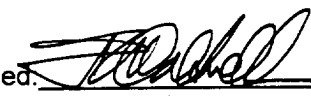
UPPER MANCOS STIMULATION:

37. RU wireline. Run ProTechnics RTD tool on wireline and set top of tool at 7190'. This tool will remain in the hole throughout the stimulation. POOH. RD wireline company.
38. TIH with 4-1/2" packer on 2-7/8" N80 buttress frac string. Set packer at 6700' or in good cement.
39. RU stimulation company. Pressure test surface lines to 8500 psi. **Maximum surface treating pressure is 7500 psi at 25 BPM. Estimated friction pressure is 5731 psi.** Perform pump-in test (mini-frac) with 8000 gals of pad volume. Begin injection at 20 BPM and hold until pressure stabilizes. Decrease rate and let pressure stabilize in the same manner at 15, 10, and 5 BPM. Shut down pumps and get an ISIP. Start up and finish pumping pad volume. Fracture stimulate the Lower Mancos with 100,000 lbs 20/40 Tempered LC sand in 25# Delta Frac at 25 BPM. **Increase rate as pressure allows.** Tag sand with 3 radioactive isotopes.
40. Record ISIP, 5, 10 and 15 minute shut-in pressures. Shut-in frac valve. RD stimulation company. Install flowback line above frac valve. Flow back to pit. TOOH.

41. After well cleans up and pressures allow, RU wireline and RIH and wireline retrieve RTD tool @ 7820'. POOH.
42. TIH with 3-7/8" bit on 2-3/8" 4.7# J-55 tubing and clean out to 7410'. Alternate between blow and natural flow stages until water rates are less than 3 BPH. **Take a Lower Mancos pitot gauge.** Drill out CIBP at 7410'. Use a 10-12 BPH mist rate while drilling CIBP.
43. Continue to clean out well to 8200'. Alternate between blow and natural flow stages until water rates are less than 3 BPH. Take a total Mancos pitot gauge. TOOH.
44. TIH with an expendable check, one 2-3/8" joint, standard SN and remaining 2-3/8" tubing. Broach tubing while running in hole. CO with air/mist to PBTD again, if necessary. **Obtain final Mancos pitot gauge.** Land tubing at 8000'. ND BOP. NU WH. Pump off expendable check. RDMO. Contact Production Operations for well tie-in.
45. RU Pro-Technics. Run After-Frac log across Mancos (6835-8000'). RD Pro-Technics
46. CIBP above the Dakota perms will remain for 6-9 months for accurate testing of the Mancos zone. After this period, post frac injection tests will be performed on the Mancos and production logs will be run. Finally the well will be placed on commingled production.

Recommended: 
Production Engineer 6-3-99

Approved:  6/3/99
Drilling Superintendent

Approved:  6/12/99
Team Leader

VENDORS:

Wireline (Slug, Stress & Perf):	Schlumberger	325-5006
Stimulation:	Halliburton	325-3575
Flowback Service:	D.C. Production Service	1-800-551-3406
Pre-Frac Analysis:	S.A. Holditch & Associates	(412)-787-5403

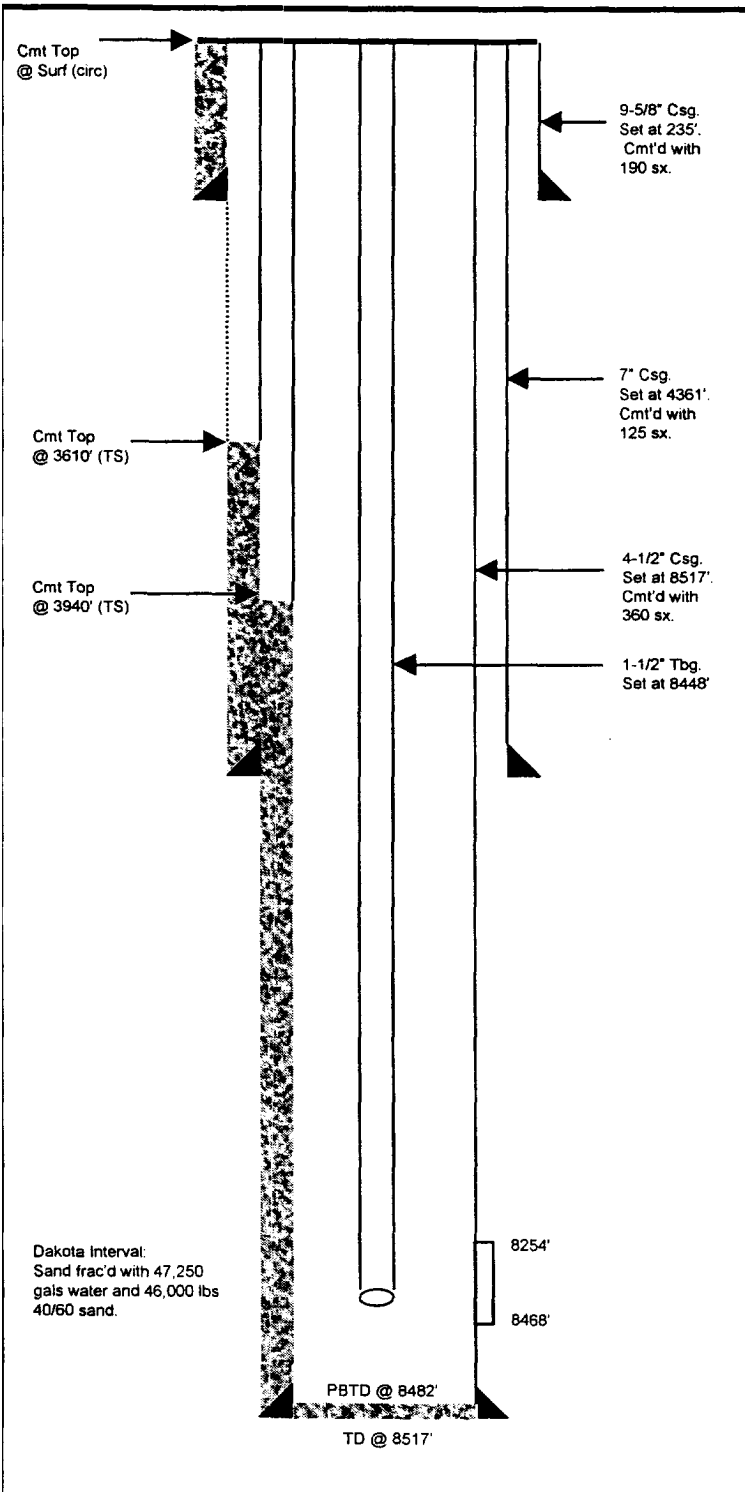
Contact:

Bobby Goodwin	326-9713 (work)	599-0992 (home)	564-7096 (pager)
Neale Roberts	326-9856 (work)		

San Juan 27-4 Unit #57

Unit M, Section 28, T27N, R4W
Lat: 36°- 32.37948' / Long: 107°-15.6894'
Rio Arriba County, NM

Current Schematic



Proposed Schematic

