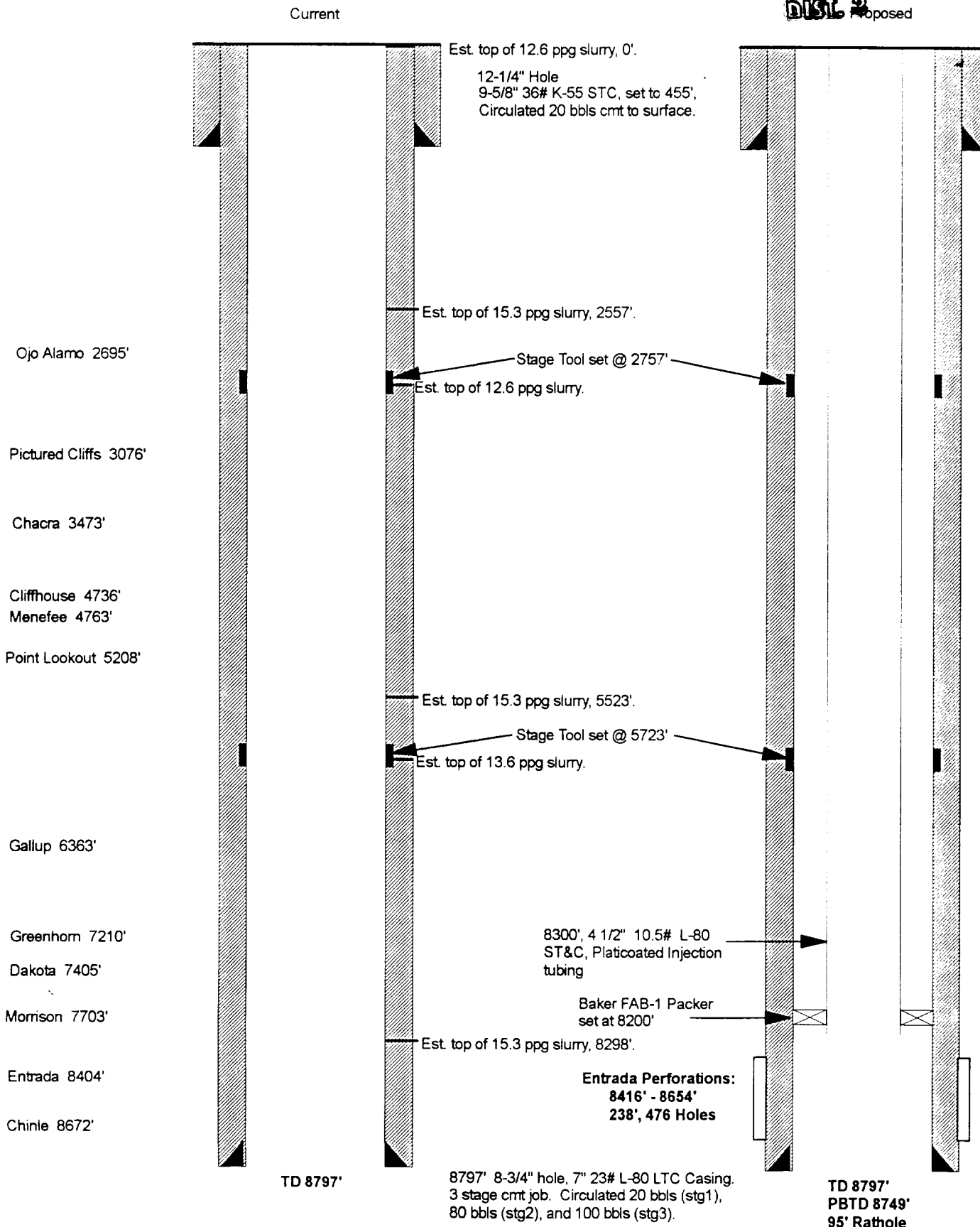


JILLISON FEDERAL SWD #1
Proposed Entrada Disposal Well
 Unit F, Sec 08, T24N - R03W
 Rio Arriba County, New Mexico

RECEIVED
 NOV 2 1994
OIL CON. DIV.
 DIST. 2 Proposed



Pertinent Data Sheet - Jillson Federal SWD #1

Location: 2305' FNL, 2415' FWL, Unit F, Section 08, T-24-N, R-03-W; Rio Arriba County, NM
Lat. 36 - 19 - 32, Long. 107 - 10 - 48

Field: SWD; Morrison, Bluff, Entrada

Elevation: 6906' GL

TD: 8797'

PBTD: 8749

Spud Date: 10/09/94

Completed: 11/06/94

DP#: 52083A (Entrada)

Prop. #: 071339102

GW: 100%

GRI: 100%

Casing Record:

<u>Hole Size</u>	<u>Casing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>	<u>Cement</u>	<u>Top/Cement</u>
12-1/4"	9-5/8"	36.0# K-55	455'	314 ft ³	Surface, Circ 20 bbls
8-3/4"	7"	23.0# L-80, LTC	8797'	4050 ft ³	**

** Three Stage, w/ DV tool @ 5723'.	Stage 1, 8797' - 5723'	1635 ft ³ , w/ 20 bbls cmt. circ.
	Stage 2, 5723' - 2757'	1384 ft ³ , w/ 80 bbls cmt. circ.
Three Stage, w/ DV tool @ 2757'.	Stage 3, 2757' - Surface	1031 ft ³ , w/ 100 bbls cmt. circ.

Tubing Record:

<u>Tubing Size</u>	<u>Weight & Grade</u>	<u>Depth Set</u>
4-1/2"	10.50# L-80	8200'

Formation Tops:

Ojo Alamo	2695'
Kirtland	2822'
Pictured Cliffs	3076'
Chacra	3473'
Cliffhouse	4736'
Menefee	4763'
Point Lookout	5208'
Mancos	5695'
Gallup	6363'
Greenhorn	7210'
Graneros	7268'
Dakota	7405'
Morrison	7703'
Todilto	8390'
Entrada	8404'
Chinle	8672'

Logging Record: Array Induction - GR, Neutron - Density, DiPole Sonic, CET, Caliper

JILLSON FEDERAL SWD #1
UNIT F SECTION 08, T24N, R03W
RIO ARriba COUNTY, NEW MEXICO
SWD Completion Procedure

ENTRADA COMPLETION

1. Comply with all NMOCd, BLM, EPA, and MOI rules & regulations. MOL and RU completion rig. NU 7-1/16" 1500 series BOP and stripping head. Test operation of rams. NU two 2-7/8" relief lines.
2. Place 10 clean 400 bbl tanks on location and fill with 2% KCL water. Filter all water to 1 micron nominal. Total water needed for step rate/frac is 2880 bbls.
3. TIH w/ 6-1/4" bit on 2-7/8" L-80 tbg work string & C.O. to PBTD 8749'. Roll hole w/ 2% KCL water. TOH. Run CET-CCL log from PBTD 8749' to surface pipe. Relog w/ 1000# pressure, if necessary. Evaluate CET for sqz operations across perforated intervals. Pressure test csg to 2500 psi for 30 min & record pressure data.
4. TIH w/ 2-3/8" tbg open ended to 4425' & unload hole w/ N2. TOH.
5. Perf Entrada w/ 2 SPF @ 8416' - 8564'. Total 476 holes. Perforate w/ 4" csg guns and Owens CML X1X # 316 19 gr which give a 0.45" hole w/ 20.05" penetration in Berea.
6. TIH w/ 7" pkr on 2-3/8" tbg & set @ 8400'. Swab at least 85 bbl water (chase fluid level) & take 4 one quart water samples. TOOH
7. RU stimulation company. Breakdown and attempt to balloff Entrada w/ 6500 gal. 15% HCL acid, 500, 7/8" 1.3 sp. gr. RCN ballsealers. Max. pressure = 1650 psi. Acid to contain 1 gal/1000 aqua flow, 5 gal/1000 XA-2L (Fe control), and 2 gal/1000 I17 (corrosion inhibitor) based on prejob testing. Run junk basket to recover ball sealers.
8. Prepare to run pre-frac Entrada step rate test. Max pressure is 2500 psi. Ensure that at least 2400 useable bbls of filtered 2% KCL water are available for test (2000 bbls max required for test). Begin step rate test at 0.5 BPM for 15 minutes. Increase rate to 1 BPM then 1 BPM increments, each at 15 mins. until four points above parting pressure are recorded. Save computer data so datum depth adjustments can be made.

Decision Point : Team 9 will decide whether to:

- A.) Proceed with the Entrada frac. (Inj. rate prior to parting pressure is <6 BPM) Go to step #9.
B.) Injection rate before parting pressure is >6 BPM. Go to Step 12

9. Heat frac fluid to 75 degrees F. Install 7" tree saver & frac Entrada with 220,000# 20/40 Ottawa sand in 108,000 gal 30# X-linked gel water @ 60 BPM. Bottom hole pressure to be monitored by computer van. All sand to be tagged w/ 0.40 mCi/1000# Ir-192 tracer. Anticipated surface pressure = 2350 psi. Max pressure = 3500 psi. Frac using the following schedule:

<u>STAGE</u>	<u>FLUID</u> <u>(GALS.)</u>	<u>SAND</u> <u>VOL.</u> <u>(lbs.)</u>
Pad	30,000	-----
1.0 ppg	10,000	10,000
2.0 ppg	12,000	24,000
3.0 ppg	20,000	60,000
3.5 ppg	36,000	126,000
Flush	<u>(13,335)</u>	-----
Totals	108,000	220,000#

JILLSON FEDERAL SWD #1 - COMPLETION PROCEDURE
Page 2

Treat frac fluid with the following additives per 1000 gallons:

- * 6.81 gal J-4L (Gel)
- * 3 gal Buffer5-L (Buffer)
- * 1 gal CL-30 (Borate X-linker)
- * 0.3 lb B-5 (Oxydizing Breaker) Test break times at 175°F
- * 1 lb Ultra Perm (Encap. Breaker)
- * 2% KCL

10. Remove tree saver. Shut well in for 6 hours to allow gel to break. Flow Entrada back slowly. TIH w/ 6-1/4" bit on 2-3/8" tbg & circ out sand to 8740'. TOH.
11. Prepare to run after-frac Entrada step rate test. Max pressure is 2500 psi. Ensure that at least 2400 bbls of filtered 2% KCL water are available for test. Preceed test w/ 3000 gal 15% HCL acid with same additives as step #7 (this is to insure all gel is broken). Begin step rate test at 0.5 BPM for 15 minutes. Increase rate in 1 BPM increments until four points above parting pressure are recorded. Save computer data so datum depth adjustments can be made.

TUBING & PACKER INSTALLATION

12. See the attached pkr assemble diagram. MI wireline truck. PU 7" 23# Baker "FAB-1" pkr w/ 4" bore, 20' pup jt. of 4-1/2" 10.5# tbg, "F" nipple (3.688), 20' pup jt. of 4-1/2" 10.5# tbg, seating nipple (3.688), & wireline L-80 re-entry guide. Set pkr @ 8200'.
13. PU Baker Model "KBH-22" Anchor tubing seal nipple, one joint 4-1/2" 10.5# tubing, "F" nipple (3.75), & 4-1/2" L-80 ST&C tbg. Land seal assembly in pkr @ 8200'.
14. Nipple down BOPs & nipple up wellhead.

Mechanical Integrity Test and Final Step Rate Test

15. Note pressures on tubing and annulus. Bleed off pressure on annulus.
16. Twenty hours prior to MIT, fill annulus with inhibitor fluid (record volume)
17. At time of test, note and record pressure on injection tubing and casing/tubing annulus.
18. Pressure up casing/tubing annulus to 2000 psi. Note time and pressure when pressure source is turned off.
19. Monitor pressure for 45 min., noting pressures every five (5) min. Fill out appropriate documentation, provided by the NMOCD representative.
20. A loss of 10% pressure in 45 minutes is considered a failure. If loss is slightly more than 15 psi, bleed off pressure and retest.
21. Prepare to run final step rate test. Notify BLM, & NMOCD to witness step rate test. Maximum pressure is 2500 psi. Ensure that at least 2800 bbls of filtered produced water are available for test. Run electronic gauge to 8350'. Begin step rate test at 0.5 BPM for 15 min. Increase rate in 1 BPM increments until four points above parting pressure are recorded. Shut well in for 36 hours. Save computer data so datum depth adjustments can be made. Provide 6 hard copies and one disk of pressure data.

JILLSON FEDERAL SWD #1 - COMPLETION PROCEDURE
Page 3

Approve: 
Drilling Superintendent

SUGGESTED VENDORS/CONTACTS:

Wireline logging/Perf:
Step Rate/Breakdown/Frac:
RadioActive Tagging:
Pressure Bomb:
Packer/Tools:
Rig/Supervisor:
Engineering:

Schlumberger
WCNA
Pro-Technics
Teffeller
Baker
Drake 22, Gary Clark 320-2147
Brian Ault 326-9871, H 326-6613

BPA