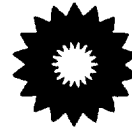


bp

Dec 13  
*[Signature]*



**Amoco Production Company**

A Part of the BP Amoco Group  
501 WestLake Park Blvd.  
Houston, TX 77079-3092

Phone: 281-366-2000

November 9, 2000

New Mexico Oil Conservation Division  
1000 Rio Brazos Road  
Aztec, NM 87410

Attention: Mr. Charlie Peerin

Step Rate Test Procedure  
Pritchard SWD Well No. 1  
Section 34C-T31N-R9W  
API#: 30004528351  
San Juan County, New Mexico



Amoco respectfully submits the attached step rate test procedure and supporting documents for the Pritchard SWD #1 for your review and approval. The results of this step rate test will be used to support a request to increase the maximum allowable surface injection pressure on this well. We would like to perform this step rate test as early in December as possible. Thank you for your prompt attention to this matter.

If you have any questions please contact Mike Kutas at (281) 366-5812.

Respectfully yours,

*[Signature of G. Mike Kutas]*

G. Mike Kutas  
Operations Engineer

**Attachments**

cc: UIC Environmental File  
Buddy Shaw-Farmington  
Greg Nelson-Farmington  
Daryl Erickson-Durango

DISTRICT I  
P.O. Box 1980, Hobbs, NM  
DISTRICT II  
P.O. Drawer DD, Artesia, NM 88210  
DISTRICT III  
000 Rio Brazos Rd., Aztec, NM

## OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, New Mexico 87504-2088

WELL API NO.	30-045-28351
5. Indicate Type of Lease	STATE <input type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No.	

**SUNDRY NOTICES AND REPORTS ON WELLS**  
DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A  
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"  
(FORM C-101) FOR SUCH PROPOSALS.)

Type of Well:	OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER Disposal
Name of Operator	Attention: Mary Corley
MOCO PRODUCTION COMPANY	

7. Lease Name or Unit Agreement Name  
Pritchard SWD

8. Well No.  
1

P.O. Box 3092 Houston TX 77253

9. Pool name or Wildcat  
Morrison Bluff Entrada

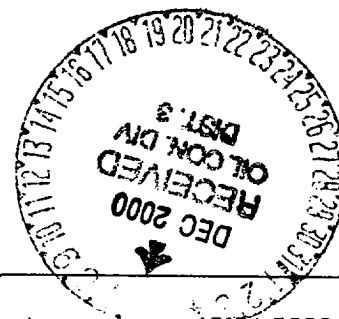
Well Location	Unit Letter C : 615' Feet From The NORTH Line and 1840' Feet From The WEST Line
Section	34 Township 31N Range 9W NMPM San Juan County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)

1. Check Appropriate Box to Indicate Nature of Notice Report or Other Data	
<b>NOTICE OF INTENTION TO:</b>	<b>SUBSEQUENT REPORT OF:</b>
PERFORM REMEDIAL WORK <input checked="" type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
WELL OR ALTER CASING <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>
OTHER: <input type="checkbox"/>	PLUG AND ABANDONMENT <input type="checkbox"/>
	CASING TEST AND CEMENT JOB <input type="checkbox"/>
	OTHER: <input type="checkbox"/>

2. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed operations)

Moco Production Company respectfully submits the attached step rate test procedure and supporting documents for the subject well for your review and approval. Results of this step rate test will be used to support a request to increase the maximum allowable surface injection pressure on this well. We would like to perform this step rate test as early in December as possible.



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

SIGNATURE <i>Mary Corley</i>	TITLE Sr. Regulatory Analyst	DATE 12-01-2000
TYPE OR PRINT NAME Mary Corley	TELEPHONE NO. 281-366-4491	

This space for State Use

ORIGINAL SIGNED BY CHARLES T. PIERSON

APPROVED BY \_\_\_\_\_ TITLE \_\_\_\_\_ DATE DEC - 6 2000

CONDITIONS OF APPROVAL, IF ANY:

## **Pritchard SWD #1 - Step Rate Test Entrada Formation**

### **Step Rate Test Procedure:**

Prior to performing the step rate test the building setting over the wellhead must be removed by a roustabout crew. Ensure that water storage tanks are completely full before initiating the step rate test. Water storage capacity on location is 2000 bbls, available capacity for test is 1000+ bbls. Must contact NMOCD prior to the step rate test so that they can have a representative witness the test.

1. Shut-in well for 24 hours prior to running step rate test.
2. Rig up wireline unit and lubricator. Trip in the hole with tandem pressure bombs capable of measuring pressure from 0 psig to 10,000 psig. Land bombs in 2.25" ID F seating nipple at approximately 8311' (KB=18'). Note the exact time the gauge was set in the seating nipple.
  - the gauge should allow water to pass by.
  - Program bombs to take readings every 5 seconds throughout the test.
3. Rig up pump trucks (if required provide second pump truck to span range of injection rates for step rate test). Tie suction to disposal tanks and discharge to tubing. Pressure test lines and connections. Monitor casing and bradenhead pressures during the test.



4. Perform step rate test as follows:

Step	Time	Injection Rate		Cum. Inj. Vol.
		(BPM)	(BWPD)	BW
1	20 minutes	0.40	576	8
2	20 minutes	0.80	1152	16
3	20 minutes	1.20	1728	24
4	20 minutes	1.60	2304	32
5	20 minutes	2.00	2880	40
6	20 minutes	2.40	3456	48
7	20 minutes	2.80	4032	56
8	20 minutes	3.20	4608	64
9	20 minutes	3.60	5184	72
10	20 minutes	4.00	5760	80
11	20 minutes	4.40	6336	88
12	20 minutes	4.80	6912	96
13	20 minutes	5.20	7448	104
14	20 minutes	5.60	8064	112
Total= 280 minutes or 4.7 hrs				Total = 842 bbls

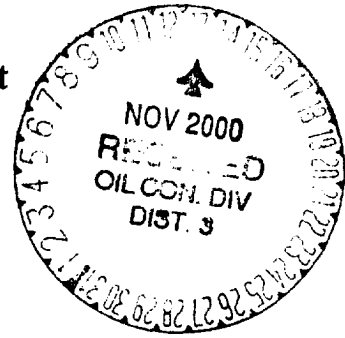
Note: 1. Well disposal rates = 700 to 1200 BWPD  
 2. E.E. Elliott SWD#1 5/5/00 results: frac@ 6000 bwpd and 1740 psi

- Continuously monitor surface injection pressure and rate in a digital format.  
Use a computer van or equivalent if necessary.
- The time step intervals are critical. Inconsistencies such as shorter or longer time steps are unacceptable.
- Once an injection rate has been established at or near the requested rate every effort must be made to keep the rate constant.

5. Shut down and record ISIP.
6. After performing the step rate test, trip out of the hole with pressure gauges.
7. Perform Mechanical Integrity Test following New Mexico Oil Conservation Division guidelines (if required).
8. Return well to injection. Send all test results to Mike Kutas in Houston immediately.



**Pritchard SWD #1 - Step Rate Test  
Entrada Formation**



**Step Rate Test Procedure:**

**Prior to performing the step rate test the building setting over the wellhead must be removed by a roustabout crew. Ensure that water storage tanks are completely full before initiating the step rate test. Water storage capacity on location is 2000 bbls, available capacity for test is 1000<sup>+</sup> bbls. Must contact NMOCD prior to the step rate test so that they can have a representative witness the test.**

1. Shut-in well for 24 hours prior to running step rate test.
2. Rig up wireline unit and lubricator. Trip in the hole with tandem pressure bombs capable of measuring pressure from 0 psig to 10,000 psig. Land bombs in 2.25" ID F seating nipple at approximately 8311' (KB=18'). Note the exact time the gauge was set in the seating nipple.
  - the gauge should allow water to pass by.
  - Program bombs to take readings every 5 seconds throughout the test.
3. Rig up pump trucks (if required provide second pump truck to span range of injection rates for step rate test). Tie suction to disposal tanks and discharge to tubing. Pressure test lines and connections. Monitor casing and bradenhead pressures during the test.

4. Perform step rate test as follows:

<u>Step</u>	<u>Time</u>	<u>Injection Rate</u>		<u>Cum. Inj. Vol.</u>
		(BPM)	(BWPD)	BW
1	20 minutes	0.40	576	8
2	20 minutes	0.80	1152	16
3	20 minutes	1.20	1728	24
4	20 minutes	1.60	2304	32
5	20 minutes	2.00	2880	40
6	20 minutes	2.40	3456	48
7	20 minutes	2.80	4032	56
8	20 minutes	3.20	4608	64
9	20 minutes	3.60	5184	72
10	20 minutes	4.00	5760	80
11	20 minutes	4.40	6336	88
12	20 minutes	4.80	6912	96
13	20 minutes	5.20	7448	104
14	20 minutes	5.60	8064	112
Total= 280 minutes or 4.7 hrs				Total = 842 bbls

Note: 1. Well disposal rates = 700 to 1200 BWPD  
2. E.E. Elliott SWD#1 5/5/00 results: frac@ 6000 bwpd and 1740 psi

- Continuously monitor surface injection pressure and rate in a digital format. Use a computer van or equivalent if necessary.
- The time step intervals are critical. Inconsistencies such as shorter or longer time steps are unacceptable.
- Once an injection rate has been established at or near the requested rate every effort must be made to keep the rate constant.

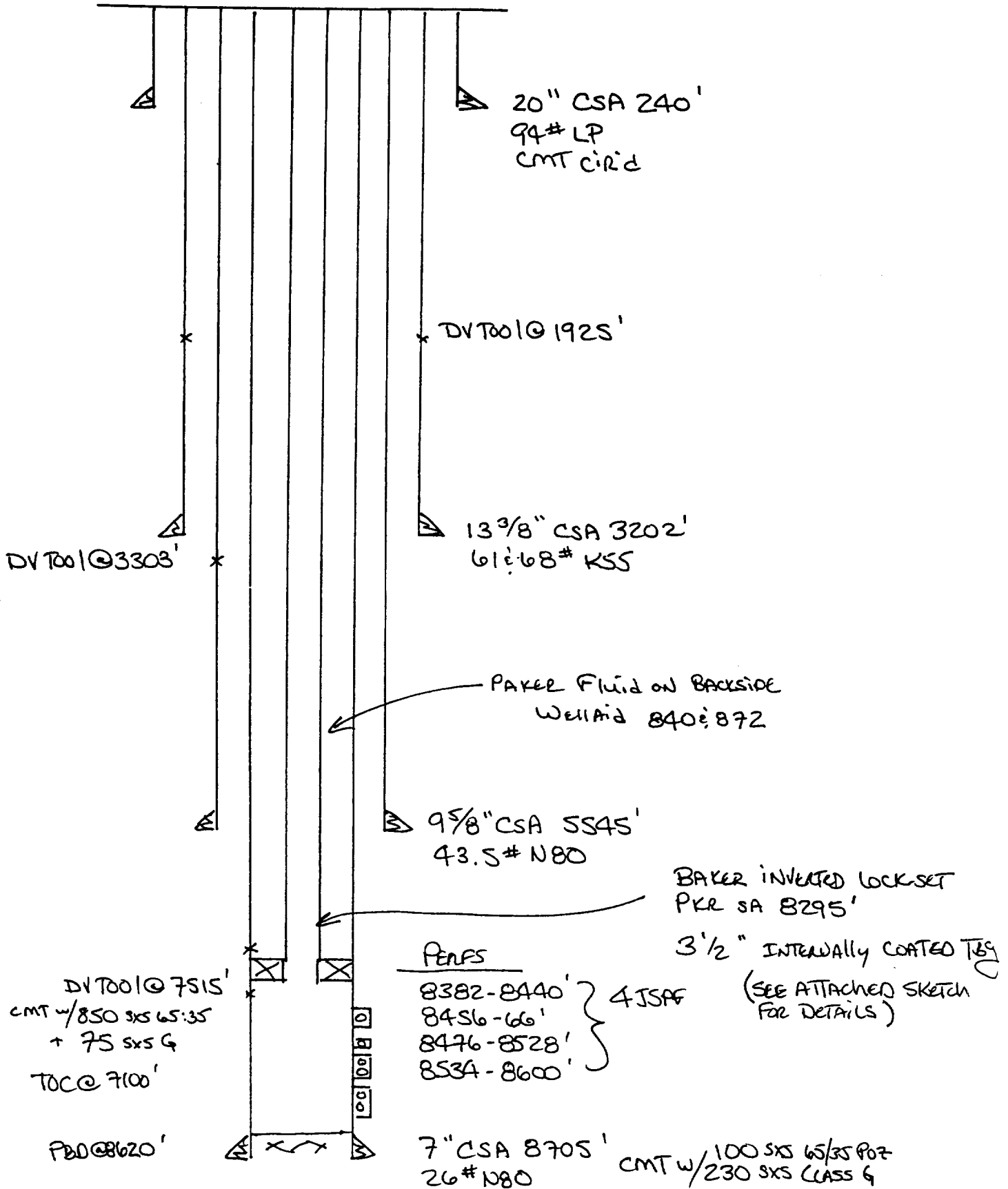
5. Shut down and record ISIP.
6. After performing the step rate test, trip out of the hole with pressure gauges.
7. Perform Mechanical Integrity Test following New Mexico Oil Conservation Division guidelines (if required).
8. Return well to injection. Send all test results to Mike Kutas in Houston immediately.

# Amoco Production Company

## ENGINEERING CHART

Sheet No \_\_\_\_\_ Of \_\_\_\_\_  
 File \_\_\_\_\_  
 Appn \_\_\_\_\_  
 Date 4-4-96  
 By GMK

SUBJECT PRITCHARD SWD - SECT 34-T31N-R9W  
ENTRADA FM



ARMCO PRODUCTION COMPANY  
**BAKER OIL TOOLS**

DATE 02-02-91 WELL NO. 1LEASE PRITCHARD SWD 373-72.336

RANDY DIROSSETTE

7" x 26" N-80

261 JOINTS 3 1/2 (COATED INT) 8240.31

18' BKB

PACKER HAS 44,000 #L

8258.31

2.75 F-NIPPLE

1.05

1 JOINT 3 1/2 (COATED INT)

33.22

8293.06

3 1/2 BOX x 2 7/8 PIN

.60

HEL W/ BLANK PROFILE

2.05

8295.13

4784 INVERTED LOK-SET (COATED INT) 6.15  
18" of elements

8311.33

10' x 2 7/8 SUB

10.05

2.25 F-NIPPLE

1.10

8322.53

10' x 2 7/8 SUB

10.10

2.25 R-NIPPLE

1.05

2 7/8 RE-ENTRY GUIDE

.55

8324

8382

8600