

DIVISION

## APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage  
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Amoco Production Company  
Address: P.O. Box 800, Denver CO 80201  
Contact party: Brooke Bell Phone: (303) 830-5341
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☒ no  
If yes, give the Division order number authorizing the project \_\_\_\_\_.
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Brooke S. Bell Title: Sr. Petroleum Engineer  
Signature: Brooke S. Bell Date: 9/14/90

- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal.

Florance SWD No. 2

III. A. See Injection Well Data Sheet

- B.1. Names of injection formations are Morrison, Bluff, and Entrada.

(No field or pool name for these formations.)

2. The injection intervals of 7500' - 8400' will be selected from logs run to total depth. Intervals will be perforated with 4 spf.
3. This well will be drilled for the purpose of water disposal.
4. No remedial cement work is anticipated.
5. The Dakota formation, top 7236', is the next higher formation known to produce gas in this area; there is no known lower oil or gas producing formation.

VI. There is one well within the area of review in which the TD may have penetrated the top of the Morrison by 25 feet. The well is the Florance No. 114. The well has since been plugged back to the Fruitland with a PBTD of 2848 feet. Find attached a copy of Amoco's Scout Ticket information on the subject well. This well does not require remedial action to isolate the proposed injection horizons in the area.

- VII. 1. Rate of disposal will be determined by a step rate injection test. The primary use of the facility will be for disposal of produced water from area Fruitland coal development wells. The amount of water to be injected will depend on this development.
2. The proposed injection system will be designed as a closed system.
3. Maximum injection pressure will be determined by a step rate injection test. Average injection pressure will be kept below this maximum pressure.

Florance SWD No. 2

4. Disposal water will be produced from area Fruitland coal wells. Below are water analyses representative of the water which will be disposed of in the subject well.

	Na	Ca	Mg	K	Cl	HCO3	SO4	CO3	TDS
Florance D-1	6350	20	47	-	2609	11578	0	528	21150
Florance K-3	6430	80	15	10	1560	14700	0	0	22800
Riddle B-1	7121	52	53	-	1705	16378	0	0	25300
Schwerdtfeger 1	7484	32	44	-	994	18544	0	0	27100

Compatibility - Attached is a copy of the results of an Amoco scaling tendency program which supports the source water is compatible with the injection zone water.

5. Attached are analyses of water samples from the Blackwood Nichols NEBU # 501, NW 1/4, Section 20, T30N, R7W, Rio Arriba County, New Mexico.

VIII. The closest overlying aquifers are the Ojo Alamo, Animas, San Jose, and Nacimiento. The Ojo Alamo should be encountered in this well from 1750' to 1927'. There are no known aquifers below the Entrada.

The proposed injection zones are the sandy and porous portions of the Morrison, Bluff, and Entrada formations. At the proposed Florance SWD No. 2 location the zones could be described as follows:

Morrison - light gray to gray, fine grained to medium grained, well rounded and slightly calcareous sandstones. Individual sandstone bodies are expected to be 10 to 50' thick, separated by shales and siltstones. Some sandstones may be slightly arkosic, but generally are quartzitic with some friable sands. Overall depth is estimated at 7508' with overlying unit being Burro Canyon and the underlying unit being type Bluff member. A possible thickness of 400' sand is anticipated.

Bluff - light red to pink to gray, fine grained to medium grained sandstones. Clean, slightly friable, sorted. Individual sandstones are expected to be 10' to 20' thick, separated by shales and siltstones. Overall depth of zone is estimated at 7908' with approximately 300' of porous sandstone. Rests on top of Todilto.

Florance SWD No.2

Entrada - gray to white, hard, fine to medium grained sandstone. Well sorted and well rounded. Depth of zone is estimated at 8350' with the upper 250' being porous sandstone. Rests on Chinle.

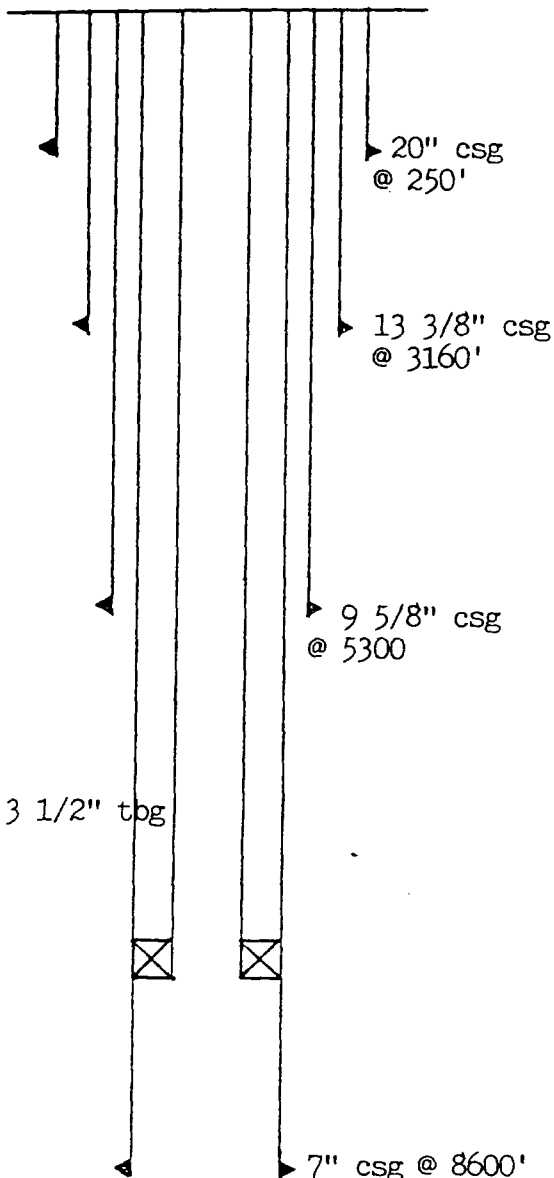
- IX. Stimulation will consist of perforating selected porous intervals in the Morrison, Bluff, and Entrada. These intervals will be stimulated using a sand water frac treatment. Details of the design will be based on the logs.
- X. Test information and logs will be provided to the District NMOCD office as available.
- XI. A search of records at the State Engineers Office shows no fresh water wells permitted within a one-mile radius of the proposed location. In addition, a field search of the surrounding area revealed no fresh water wells.
- XII. I hereby certify that I have examined available geologic and engineering data and can find no evidence of connection between the disposal zone and underground drinking water sources.
- 9/14/90  
Date
- Brooke S. Bell  
Brooke S. Bell  
Sr. Petroleum Engineer
- XIII. Proof of notice is attached. Copies of the executed receipts for certified mail will be forwarded once they are returned to Amoco from the postal service. Find attached a copy of the Public Notice published in the local newspaper.

## INJECTION WELL DATA SHEET

Amoco Production Company

Florance SWD

Operator 2	955' FNL X 1600' FWL	Lease 11	30N	9W
Well No. San Juan County, New Mexico	Footage Location	Section	Township	Range

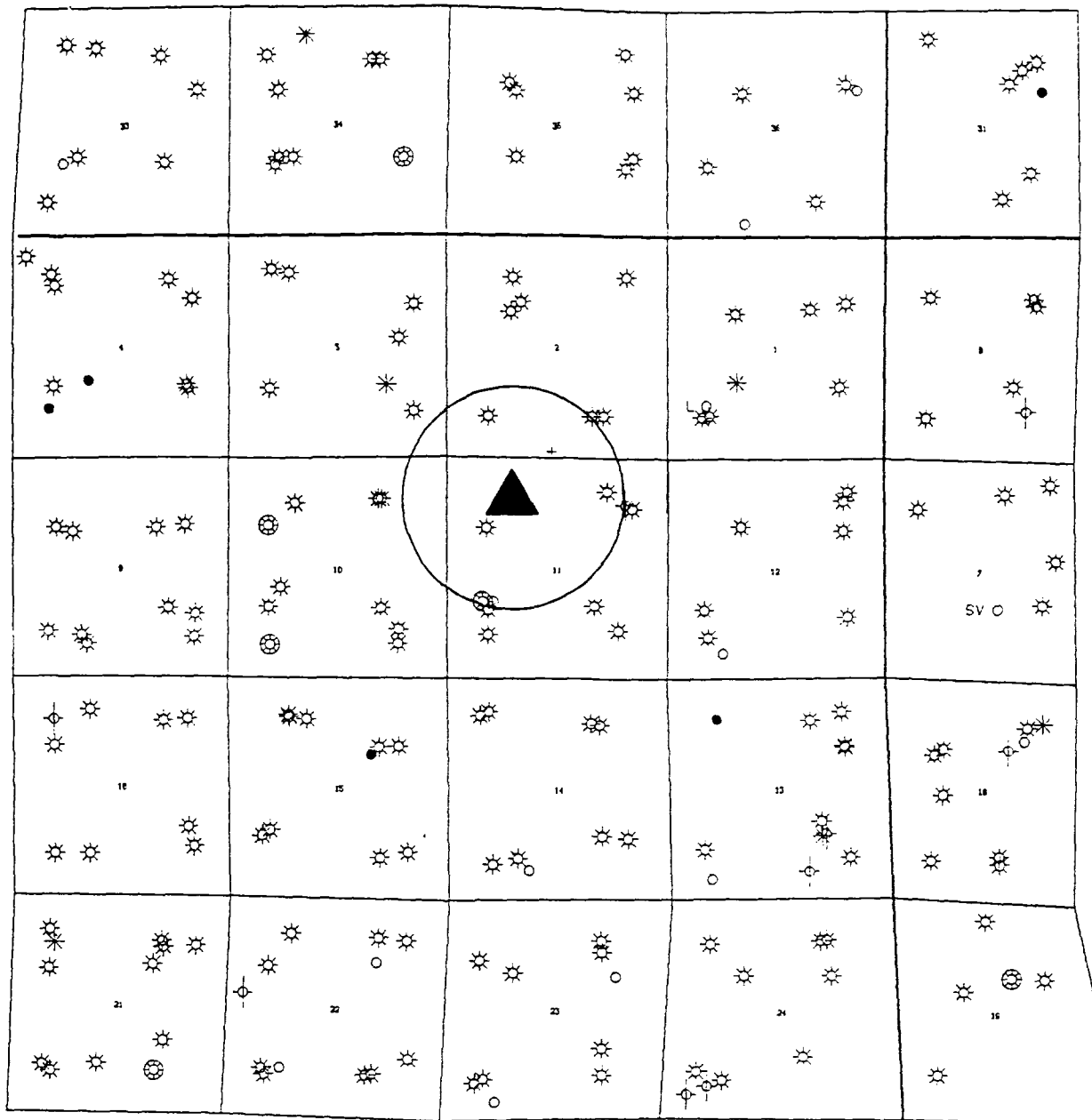
SchematicTabular DataSurface CasingSize 20 " Cemented with 500 sx.TOC surface feet determined by circulationHole size 26"Intermediate CasingSize 13 3/8 " Cemented with 1700 sx.TOC surface feet determined by circulationHole size 17 1/2"Long String Intermediate CasingSize 9 5/8 " Cemented with 1400 sx.TOC 2800 feet determined by bond logHole size 12 1/4"Total depth 5300Injection interval  
(will perforate selected intervals)7500 feet to 8400 feetLiner Long StringSize 7 " Cemented with 700 sx.TOC 5000 feet determined by bond logHole size 8 1/2"Total depth 8600'

Tubing size 3 1/2" lined with plastic set in a  
 Baker Inverted Lok-Set (material)  
 (brand and model) packer at 7450 (approx) feet  
 (or describe any other casing-tubing seal).

Other Data

- Name of the injection formation Morrison, Bluff, and Entrada
- Name of Field or Pool (if applicable) NA
- Is this a new well drilled for injection? ☒ Yes ☐ No  
 If no, for what purpose was the well originally drilled? \_\_\_\_\_
- Has the well ever been perforated in any other zone(s)? List all such intervals and give plugging detail (sacks or cement or bridge plug(s) used). No
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. 2552' - Fruitland, 2850' - Pictured Cliffs, 4602' - Mesaverde, 7236' - Dakota.

R 9 W



T  
30  
N

AMOCO PRODUCTION COMPANY

Sec 11-T30N-R9W

San Juan County

New Mexico

Scale: 2640 Ft/Inch Sept 11, 1990

4. SCALE PREDICTIONS, MIXTURE NO. 1: 90.0 PERCENT FRUITLAND  
5.0 PERCENT ENTRADA  
5.0 PERCENT MORRISON

ATTACHMENT VII  
CALCULATED COMPOSITION OF MIXTURE NO. 1 IN MG/L:

(HA)= 4810. (CL)= 2123.  
(CA)= 135. (SD4)= 192.  
(HG)= 31. (HCO3)= 9697.  
(HA)= 0. (CO3)= 0.  
(SR)= 0. FH= 6.3

MOLAL IONIC STRENGTH= 0.229  
SPECIFIC GRAVITY= 1.012

SCALING TENDENCIES(MG/L):

TEMP(F)	P(FSI)	CO2(FSI)	CASO4	EASO4	SRSO4	CACO3
80.	4000.0	0.000	-4515.	0.	-335.	292.
110.	4000.0	0.000	-3342.	-1.	-354.	301.
140.	4000.0	0.000	-2544.	-1.	-297.	309.
170.	4000.0	0.000	-1964.	-1.	-141.	316.
200.	4000.0	0.000	-1521.	-1.	-82.	321.

SCALE INDEX = ANALYZED CONCENTRATION - EQUILIBRIUM SOLUBILITY

A POSITIVE SCALE INDEX INDICATES SCALE PRECIPITATION CAN OCCUR WITH  
THE MAGNITUDE OF THE SCALE INDEX INDICATING THE MAXIMUM AMOUNT WHICH  
COULD PRECIPITATE. A NEGATIVE SCALE INDEX INDICATES THE WATER IS  
UNSATURATED AND NO SCALE PRECIPITATION WILL OCCUR.

75 SUITE STREET

PO BOX 2605

DURANGO, CO 81302

(303) 247-4220

CDS ID #: 1119

ATTN: LL CLARK

PO BOX 1237

DURANGO, CO 81302

(303) 247-0728

DATE SAMPLED: 8/1/88

WELL NAME: NEBU UNIT 501

LOCATION:

FORMATION: ENTRADA WATER

SAMPLED FROM:

WELL ON/OFF:

ATTACHMENT VII 5.

CONSTITUENT	ppm	ppm
Sodium Na +	4760	207.1
Potassium K +	169	4.3
Calcium Ca ++	1310	65.4
Magnesium Mg ++	29.4	2.4
Iron Total Fe++ & Fe+++	164	8.0

Item 2A  
SWD-339

POSITIVE SUB-TOTAL 6432.4 287.9779

Chloride Cl -	8280	233.5
Carbonate CO3 =	0	0.0
Bicarbonate HCO3-	152	2.5
Hydroxide OH -	0	0.0
Sulfate SO4 =	2100	43.7

NEGATIVE SUB-TOTAL 10532 279.70920


Total Dissolved Solids 19000 ppm.

pH 5.07 units

Specific Gravity 1.01 @ 73 F.

Resistivity 45 ohm-cm

APPROVED BY:



DR. JOE BOWDEN, DIRECTOR

This Laboratory report may not be published or used for advertising or in connection with advertising of any kind without prior written permission from CDS Laboratories.

Results are based on analysis made at the time samples are received at the laboratory.



75 SUITE STREET  
PO BOX 2605  
DURANGO, CO 81302  
(303) 247-4220

ATTEN: J. L. CLARK  
PO BOX 1237  
DURANGO, CO 81302  
(303) 247-0728

DATE SAMPLED: 8/17/88  
WELL NAME: NEBU UNIT 501  
LOCATION:  
FORMATION: MORRISON PERFS.  
SAMPLED FROM:  
WELL DN/DIT:

CDS ID #: 1120

CONSTITUENT		ppm	epa
Sodium	Na +	10600	461.1
Potassium	K +	1810	46.3
Calcium	Ca ++	685	34.2
Magnesium	Mg ++	65.9	5.4
Iron Total	Fe++ & Fe+++	230	12.4

Item 3A  
SWD-339


POSITIVE SUB-TOTAL 13390.9 557.3565

Chloride	Cl -	18200	513.2
Carbonate	CO3 =	0	0.0
Bicarbonate	HCO3-	537	8.8
Hydroxide	OH -	0	0.0
Sulfate	SO4 =	1750	36.4

NEGATIVE SUB-TOTAL 20487 558.47643

Total Dissolved Solids 35100 ppm  
pH 6.71 units  
Specific Gravity 1.023 @ 73 F.  
Resistivity 24 ohm-cm

APPROVED BY:

  
DR. JOE BOWDEN, DIRECTOR

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Results are based on analysis made at the time samples are received at the laboratory.

Gorbachev if he were Soviet leader.

During the question-and-answer session at Moscow State, Reagan also said he believes "Germany has rejoined the civilized world" and will not repeat Nazi atrocities.

Reagan, in the Soviet Union at Gorbachev's invitation, said, "We should be teaching our students the languages of each others' countries so that we can really cement the friendship."

"If young people like you, in the world, could get to know each other, there would never be another war," he said in the conference room of the university's mammoth administration building.

### Thatcher proposes code

PRAGUE, Czechoslovakia (AP) — In a speech to Parliament today, British Prime Minister Margaret Thatcher proposed that a 35-nation summit this fall adopt a universal code of rights for Europe and North America.

She also urged that the 12-nation European Community offer full membership to Czechoslovakia and Eastern Europe's other new democracies as soon as they have introduced Western-style economics.

Mrs. Thatcher also apologized for the 1938 Munich Treaty, in which Britain endorsed Adolf Hitler's division of this Central European nation.

"We failed you in 1938, when a disastrous policy of appeasement allowed Hitler to extinguish your independence," she said.

### M&Ms yanked

HONG KONG (AP) — Authorities ordered all packets of M&Ms candy withdrawn from Hong Kong stores today after an anonymous letter claimed one bag of the candy had been poisoned to punish the U.S. manufacturer for co-sponsoring the Asian Games in Beijing.

The letter, delivered to several newspapers late Monday, says one packet of M&Ms had been laced with sodium cyanide, a deadly poison.

The letter condemns Mars, Inc. of Hackettstown, N.J., which makes M&Ms, for sponsoring the games, which open in Beijing on Saturday.

It criticizes China's Communist leaders for their bloody crackdown on a movement for democracy in China in June 1989. Hundreds of unarmed civilians were killed then when the military cleared central Beijing of protesters.

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#### Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-326-9200 Attn: Buddy Shaw, intends to drill the Riddle SWD No. 1 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Riddle SWD No. 1 will be located in the SE/4SE 1/4 of Section 16, Township 30 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8410' and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within 15 days of the date of the last publication of this notice. Legal No. 26478 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

#### Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-326-9200, Attn: Buddy Shaw, intends to drill the Florence SWD No. 2 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Florence SWD No. 2 will be located in the NE 1/4NW/4 of Section 11, Township 30 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8600' and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within 15 days of the date of last publication of this notice.

Legal No. 26476 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

#### LEGAL NOTICE

Meridian Oil Inc. on behalf of Southland Royalty Company, hereby gives notice to the public that under the provisions of the Natural Gas Policy Act of 1978 (NGPA) it is filing applications for "New Onshore Production and High Cost-Coal Seam Gas" determinations (Section 103 and 107) for the following well(s) located in San Juan County, New Mexico:

Grenier #101, NE/4 of SW/4 of Section 7, T-31N, R-11W, East Com #105, NE

(continued on next column)

101

#### Legal

##### Notice

Notice is hereby given that Amoco Production Company, 200 Amoco Court, Farmington, New Mexico 87401, 505-327-9200, Attn: Buddy Shaw, intends to drill the Pritchard SWD No. 1 for use as a water disposal well. Application will be filed with the New Mexico Oil Conservation Division.

Pritchard SWD No. 1 will be located in the NE 1/4NW/4 of Section 34, Township 31 North, Range 9 West, N.M.P.M. The well will be drilled to a total depth of 8620' and the injection zone will be in the Morrison, Bluff, and Entrada formations. Rate of disposal will be determined by a step-rate injection test.

Any persons, firm, association, or corporation, of the United States of America, deeming that the granting of the above application will impair or be detrimental to their water rights may protest in writing the proposal set forth in said application. The protest shall set forth in writing all protestant's reasons why the application should not be approved and must be filed with the Oil and Gas Conservation Division, P.O. Box 2088, Santa Fe, New Mexico 87501, within 15 days of the date of the last publication of this notice. Legal No. 26477 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

Legal No. 26477 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

##### LEGAL NOTICE

Meridian Oil Inc., hereby gives notice to the public that under the provisions of the Natural Gas Policy Act of 1978 (NGPA) it is filing an application for "New Onshore Production and High Cost-Coal Seam Gas" determinations (Section 103 and 107) for the following well(s) located in San Juan County, New Mexico:

Lewis Park #100, SW/4 of NE/4 of Section 13, T-31N, R-8W

Written comments by the public will be accepted by District Manager, Bureau of Land Management, 435 Montano Rd., Albuquerque, NM for a 15-day period beyond the date the BLM determines the application to be complete.

Legal No. 26438 published in the Farmington Daily Times, Farmington, New Mexico on Tuesday, September 18, 1990.

(continued on next column)



T. D. Autry  
Division Production Manager

**Amoco Production Company**

Southern Division  
1670 Broadway  
P.O. Box 800  
Denver, Colorado 80201  
303-830-4040

September 14, 1990

(See Attached Addressee List)

File: KJK-131-WF

Proposed Water Disposal Well  
Florance SWD No. 2

Dear Sir:

This is to advise you that Amoco Production Company is requesting approval from the Division Director of the New Mexico Oil Conservation Division to drill a water disposal well:

Florance SWD No. 2  
955' FNL x 1600' FWL  
Section 11, T30N, R9W  
San Juan County, New Mexico

Find attached a copy of the application that is being submitted. Please note that you have 15 days from the date this application is received to file any objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, NM 87501.

Very truly yours,

*T.D. Autry / KJK*

Attachment

Well Name: Florance SWD #2  
Location: NE 1/4 NW 1/4 - 11-T30N-R9W  
San Juan County, New Mexico

Parties to be Noticed:

<u>Land</u>	<u>Surface Owner</u>	<u>Working Interest</u>
<u>T30N-R9W</u>		
Sec 2: S 1/2	State of New Mexico	El Paso Production Company c/o Meridian Oil Inc. P. O. Box 4289 Farmington, NM 87499-4289  Total Minatome Corporation P. O. Box 4326 Houston, TX 77210-4326  Amoco Production Company P. O. Box 800 Denver, CO 80201
Sec 3: SE 1/4	U.S.A.	Conoco Inc. 3817 Northwest Expressway Oklahoma City, OK 73112-1400  Amoco Production Company
Sec 10: E 1/2	U.S.A.	El Paso Production Company
Sec 11: N 1/2, SW 1/4	U.S.A.	Amoco Production Company Conoco Inc.
Sec 11: SE 1/4	U.S.A.	El Paso Production Company



STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION  
AZTEC DISTRICT OFFICE

GARREY CARRUTHERS  
GOVERNOR

'90 OCT 5 AM 9 30

1000 THE AZTEC ROAD  
AZTEC, NEW MEXICO 87410  
(505) 334-0170

Date: 8-3-90

*Attn: W. Catnach*

Oil Conservation Division  
P.O. Box 2000  
Santa Fe, NM 87504-2000

Re: Proposed HC \_\_\_\_\_  
Proposed DHC \_\_\_\_\_  
Proposed NSL \_\_\_\_\_  
Proposed SWD X \_\_\_\_\_  
Proposed WFX \_\_\_\_\_  
Proposed PMX \_\_\_\_\_

Gentlemen: SWD

I have examined the application dated 7-24-90  
for the Quaco Production Co. Florence SWD #2  
Operator Lease & Well No.

C-11-300-9W and my recommendations are as follows:  
Unit, S-T-R

Approve

Recommend a Division approved cement bond log on  
any pipe except surface casing before an intermediate  
string is set in place.

Yours truly,

W. Catnach



OIL CONSERVATION DIVISION  
RECEIVED

'90 OCT 15 AM 9 01

Amoco Production Company

Southern Division  
1670 Broadway  
P.O. Box 800  
Denver, Colorado 80201  
303-830-4040

T. D. Autry  
Division Production Manager

October 10, 1990

New Mexico Oil Conservation Division  
P. O. Box 2088  
Santa Fe, NM 87504  
Attention: David Catanach

File: KJK-141-WF

New Mexico UIC Permit Applications  
Florance SWD No.1, Pritchard SWD No. 1, Riddle SWD No. 1  
T30N and T31N, R9W, San Juan County

You are in receipt of three underground injection control (UIC) permit applications for the subject wells. The applications outline Amoco's intent to complete the Morrison, Bluff and Entrada sandstones for the purpose of water disposal. As a result of a recent discussion with Tom Hawkins with Meridian Oil, Amoco offers the following information and in exchange Meridian will not object to the approval of the UIC permits.

Amoco intends to complete the Entrada, Bluff and Morrison sandstones that are at least 100 feet below the base of the Dakota Formation. The base of the Dakota Formation will be picked from open hole wireline logs. The pick for the base of the Dakota will be the stratigraphic equivalent to that identified by Meridian in their Pump Canyon SWD No. 1 located in Section 7, T30N, R9W. Meridian has submitted to the NMOCD a depth of 7388 feet for a ground level elevation of 5972 feet above sea level as the base of the Dakota or top of the Morrison. Amoco will review with Meridian the open hole logs and the chosen depth for the base of the Dakota prior to completing Morrison sandstones for the purpose of water disposal.

Meridian had no other objections to the approval of the pending UIC permit applications.

Please contact Brooke Bell in Denver at (303) 830-5341 should you have any questions.

*T.D. Autry /kjk*

cc: Meridian Oil  
3535 East 30th Street  
Farmington, NM 87499  
Attention: Tom Hawkins

## Facsimile Transmission

Addresser's Telecopier Phone 1-(505)827-5741		Date 10/16/90	Page 1 of 7
To: David Catanach	Company New Mexico Oil Conservation Division	Location Santa Fe New Mexico	Mail Code/Room
From: Brooke Bell	Company Amoco Production Co	Location Denver- Colorado	Mail Code/Room 2270
Initiated By	Department	Approved By	
Typed By	Ext.	Mail Code/Room	<input type="checkbox"/> Call Sender for Pickup of Originals <input type="checkbox"/> Call _____ for Pickup at Receiving Location

David,

Find attached copies of receipts for certified mail.

Brooke Bell

Copies of Receipts for Certified Mail, page 1  
 Distributed copies of UIC permit applications  
 for the Pritchard SWD No.1, Florance SWD No.2,  
 and the Riddle SWD No.1

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
 †(Extra charge)† †(Extra charge)†

3. Article Addressed to:  
 Oil Conservation Div  
 310 Old Santa Fe Trl  
 Santa Fe N.M.  
 9750

4. Article Number  
 2533 509 954

Type of Service:  
☒ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED**.

5. Signature - Addressee  
 X

6. Signature - Agent  
 X

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)  
 USPO 1990 FEB 11 NM

PS Form 3811, Mar. 1987

\* U.S.G.R.O. 1987-178-368

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
 Florance SWD No.2  
 Riddle SWD No.1

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
 Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
 †(Extra charge)† †(Extra charge)†

3. Article Addressed to:  
 Conoco Inc  
 3817 NW Expressway  
 Oklahoma City  
 73112-1400 OK

4. Article Number  
 2533 509 953

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED**.

5. Signature - Addressee  
 X

6. Signature - Agent  
 X

7. Date of Delivery  
 09-25-90

8. Addressee's Address (ONLY if requested and fee paid)  
 SHALE

PS Form 3811, Mar. 1987

\* U.S.G.R.O. 1987-178-368

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
 Florance SWD No.2  
 Riddle SWD No.1



# Receipts for Certified Mail, page 2

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
Oil Conservation Div.  
1000 Rio Brazos Rd  
Aztec NM  
87410

4. Article Number  
PS33 509 957

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☒ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X *[Signature]*

6. Signature - Agent  
X

7. Date of Delivery  
9/24/90

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-178-288

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
Florance SWD No.2  
Riddle SWD No.1

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
El Paso Prod. Co  
10 Meridian Oil Inc  
PO Box 4289  
Farmington NM  
87499

4. Article Number  
PS33 509 956

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☒ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X

6. Signature - Agent  
X *[Signature]*

7. Date of Delivery  
9-24-90

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-178-288

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
Florance SWD No.2  
Riddle SWD No.1

# Receipts for Certified Mail, page 3

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
*Bureau of Land Management  
1235 La Plata Hwy  
Farmingtown NY  
Bill Blackard 87491*

4. Article Number  
*1583 509 955*

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☒ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
*X D. Crow*

6. Signature - Agent  
*X*

7. Date of Delivery  
*9-24-90*

8. Addressee's Address (ONLY if requested and fee paid)  
*Same*

PS Form 3811, Mar. 1987 \* U.S.G.P.O. 1987-178-258 DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
Florance SWD No.2  
Riddle SWD No.1

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
*Bill Blackard 87491*

4. Article Number  
*1583 509 955*

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☒ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
*X [Signature]*

6. Signature - Agent  
*X*

7. Date of Delivery  
*9-24-90*

PS Form 3811, Mar. 1987

Riddle SWD No.1  
(Post Office damaged receipt)

Receipts for Certified  
Mail, page 4

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
UNION TEXAS PETROLEUM CORP.  
P.O. BOX 2120  
HOUSTON, TX. 77252

4. Article Number  
P533509961

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X

6. Signature - Agent  
X *B. Pritchard*

7. Date of Delivery  
SEP 25 1990

8. Addressee's Address (ONLY if requested and fee paid)  
HO

PS Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-178-208

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
Note: Anderson  
Pritchard Oil Co.  
became  
Union Texas Petroleum  
Corp.

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
ORYX ENERGY CO.  
P.O. BOX 2080  
DALLAS, TX. 75221

4. Article Number  
P533509962

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X

6. Signature - Agent  
X *B. Smith*

7. Date of Delivery  
SEP 25 1990

8. Addressee's Address (ONLY if requested and fee paid)

PS Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-178-208

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1  
Note: Texas Pacific  
Oil Company  
became Sun Co Inc.  
then ORYX

Receipts for Certified  
Mail, page 5

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
DEWEY SEXTON  
COUNTY ROAD 2930  
AZTEC, NM 87410

4. Article Number  
P533 509 963

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X

6. Signature - Agent  
X *Mr. Sexton*

7. Date of Delivery

8. Addressee's Address (ONLY if requested and fee paid)  
24  
1990  
U.S.F.S.

PS Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-179-266

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1

● **SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.  
Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to:  
TOM BOLACK  
3901 N. BLOOMFIELD HWY.  
FARMINGTON, NM 87401

4. Article Number  
P533 509 960

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature - Addressee  
X *Tom Sullivan*

6. Signature - Agent  
X *7/8*

7. Date of Delivery  
9-24-90

8. Addressee's Address (ONLY if requested and fee paid)  
FE

Form 3811, Mar. 1987

\* U.S.G.P.O. 1987-179-266

DOMESTIC RETURN RECEIPT

Pritchard SWD No.1

Receipts for Certified  
Mail, page 6

**SENDER:** Complete Items 1 and 2 when additional services are desired, and complete Items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery  
↑(Extra charge)↑

3. Article Addressed to: <i>Total Minatome Corp.</i> <i>P.O. Box 4326</i> <i>Houston TX</i> <i>77210-4326</i>	4. Article Number <i>7533 509 964</i> Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail Always obtain signature of addressee or agent and <b>DATE DELIVERED</b> .
5. Signature — Addressee <input checked="" type="checkbox"/>	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent <input checked="" type="checkbox"/> <i>[Signature]</i>	
7. Date of Delivery <i>SEP 25 1990</i>	

PS Form 3811, Mar. 1987 \* U.S.G.P.O. 1987-175-264 DOMESTIC RETURN RECEIPT

} Florence SWD No. 2  
Riddle SWD No. 1

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE  
(Other instructions on re-  
verse side)

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—" for such proposals.)

1. OIL WELL <input type="checkbox"/> GAS WELL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	2. NAME OF OPERATOR Tenneco Oil Company	3. ADDRESS OF OPERATOR P. O. Box 3249, Englewood, CO 80155	4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface 1850' FSL, 860' FWL	5. UNIT AGREEMENT	6. FARM OR LEASE NAME Florance	7. WELL NO. 114	8. FIELD AND POOL, OR WILDCAT Blanco PC/Basin DK	9. SEC., T., R., M., OR B.L. AND SURVEY OF AREA Sec. 11, T30N R9W	10. COUNTY OR PARISH San Juan	11. STATE NM
14. PERMIT NO.	15. ELEVATIONS (Show whether DF, RT, GR, etc.) 6063' GL									

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/>
FRACTURE TREAT <input type="checkbox"/>	MULTIPLE COMPLETE <input type="checkbox"/>
SHOOT OR ACIDIZE <input type="checkbox"/>	ABANDON* <input type="checkbox"/>
REPAIR WELL <input type="checkbox"/>	CHANGE PLANE <input type="checkbox"/>
(Other) <input type="checkbox"/>	

SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/>
FRACTURE TREATMENT <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
SHOOTING OR ACIDIZING <input type="checkbox"/>	ABANDONMENT* <input type="checkbox"/>
(Other) <input type="checkbox"/>	

(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.) \*

9/5/85 MIRUSU. Kill PC & DK. NDWH. NUBOP. PU 4-1/2" retainer & GIH. Set retainer @ 7107'. Press tst tbg to 2000 psi. Estab inj rate = 2 BPM & 1600 psi. Sqz'd DK perfs fr 7246-7466', w/70 sxs Class B cmt. Sting out & dmp 5 sxs on retainer.

9/6/85 Spot balance plug across Gallup from 6429'-6300' w/10sxs 12 cu. ft. Class B. Lay down 54 jts. Spot plug across Mesaverde from 4949' to 4418' w/10 sxs 12 cu. ft. Class B. Rig up wireline. Set cmt retainer at 2848'. Pressure test back side to 600 psi. Sqz PC perfs from 2855' to 2903' w/50 sxs 60 cu. ft. Class B. Final pressure 1200 psi. Change out tbghead. Press. test to 3000 psi. Perforate Fruitland coal 2/4" casing gun as follows: 2820' to 2838', 1 JSPF; 2811-15', 2800'-06', 2760'-66', 2748'-55', 2710'-16', 2702'-06', 2692'-98', 2 JSPF total 57' 96 holes.

9/7/85 Catch gas sample. FTCU.

9/9/85 RIH w/2-3/8" tbg and landed at 2703'. NDBOP. NUWH. Rigged up to swab. Final fluid level was at 1800 ft. NDWH. NUBOP. POOH w/2-3/8" tbg. SDON.

9/10/85 RIH w/fullbore pkr on 2-3/8" tbg and set @ 2589'. Loaded BS w/1% KCL wtr and PT to 1500 psi. Held o.k. Established rate into formation w/KCL wtr. Acidized down tbg w/2000 gal 15% weighted HCL and 144 ball sealers. Good ball action. Did not ball off. Released pkr and RIH past perfs. Blew hole dry w/N2 and POOH w/tbg and pkr. Frac'd down csg w/70 Quality foam 102,000 gal foam and 90,000# sand.

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

SIGNED John McKinnis  
(This space for Federal or State office use)

TITLE Senior Regulatory Analyst

DATE 9/13/85

ACCEPTED FOR RECORD

APPROVED BY  
CONDITIONS OF APPROVAL, IF ANY:

TITLE

DATE OCT 1 1985

FARMINGTON RESOURCE AREA

BY Smm

\*See Instructions on Reverse Side  
NMOCC

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE\*

(See other in-  
structions on  
reverse side)Form  
Budget

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG \*

1a. TYPE OF WELL:		OIL WELL <input type="checkbox"/>	GAS WELL <input checked="" type="checkbox"/>	DRY <input type="checkbox"/>	Other _____		
b. TYPE OF COMPLETION:		NEW WELL <input checked="" type="checkbox"/>	WORK OVER <input type="checkbox"/>	DEEP-EN <input type="checkbox"/>	PLUG BACK <input type="checkbox"/>	DIFF. RESVR. <input type="checkbox"/>	Other _____
2. NAME OF OPERATOR Tenneco Oil Company							
3. ADDRESS OF OPERATOR P.O. Box 3249, Englewood, Colorado 80155							
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements) At surface 1850' FSL, 860' FWL, Unit 1 At top prod. interval reported below At total depth							
14. PERMIT NO. _____ DATE ISSUED _____ FARMINGTON, N. M.							
5. LEASE DESIGNATION SF-073326		6. IF INDIAN, ALLOTTEE		7. UNIT AGREEMENT NAME		8. FARM OR LEASE NAME Florance	
9. WELL NO. 114		10. FIELD AND POOL, OR WILDCAT Danco Pictured Cliffs		11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA Sec. 11; T30N; R9W		12. COUNTY OR PARISH San Juan	
13. STATE New Mexico		15. DATE SPUDDED 3/2/80		16. DATE T.D. REACHED 3/12/80		17. DATE COMPL. (Ready to prod.) 4/8/80	
18. ELEVATIONS (OF, REB, RT, GR, ETC.)* 6063' GL		19. ELEV. CASINGHEAD		20. TOTAL DEPTH, MD & TVD 7525		21. PLUG, BACK T.D., MD & TVD 7512	
22. IF MULTIPLE COMPL., HOW MANY* 2		23. INTERVALS DRILLED BY ROTARY TOOLS 0-TD		CABLE TOOLS no		24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME 2855-2903 (Pictured Cliffs)	
25. WAS DIRECTIONAL SURVEY MADE yes		26. TYPE ELECTRIC AND OTHER LOGS RUN TDT, GR/IND, CDN, CPL		OIL COMPLETION DIVISION		27. WAS WELL CORED no	
28. CASING RECORD (Report all strings set in well)							
CASING SIZE		WEIGHT, LB./FT.		DEPTH SET (MD)		HOLE SIZE	
9 5/8"		36#		216'		12 1/4"	
7"		23#		3500'		8 3/4"	
4 1/2"		10.5, 11.6#		7523'		6 1/4"	
CEMENTING RECORD		AMOUNT PULLED		29. LINER RECORD		30. TUBING RECORD	
150, TOC: surface				SIZE		DEPTH SET (MD)	
764, TOC: surface				SIZE		DEPTH SET (MD)	
450, TOC: surface				SIZE		DEPTH SET (MD)	
31. PERFORATION RECORD (Interval, size and number)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.		33. PRODUCTION		34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)	
2855-58 2901-03		DEPTH INTERVAL (MD)		DATE FIRST PRODUCTION		vented	
2864-66 2 SPF (40 holes)		AMOUNT AND KIND OF MATERIAL USED		PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)		shut-in	
2869-74		2855-2903 700 gal 15% HCL 60 balls		flowing			
2888-96		20000 gal PAD, 30000#		DATE OF TEST			
		10/20 sand		HOURS TESTED			
				CHOKE SIZE			
				PROD'N. FOR TEST PERIOD			
				OIL—BBL.			
				GAS—MCF.			
				WATER—BBL.			
				GAS-OIL RATIO			
				FLOW. TUBING PRESS.			
				CASING PRESSURE			
				CALCULATED 24-HOUR RATE			
				OIL—BBL.			
				GAS—MCF.			
				WATER—BBL.			
				OIL GRAVITY-API (CORR.)			
				38			
				297			
				AOF=754'			
				35. LIST OF ATTACHMENTS			
				two copies of electric logs furnished by Dresser Atlas, Schlumberger			
				36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records			
				SIGNED _____			
				Asst. Div., Admin. Manager			
				DATE 10/30/80			

\* (See Instructions and Spaces for Additional Data on Reverse Side)