CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

Operator: Pogo Producing Co. Well: Riverbend Fed. No. 8

Contact: Terry Gant Title: Sr. Landman Phone: 915-682-6822
Richard L. Wright

DATE IN 1-17-96 RELEASE DATE 1-31-96 DATE OUT 2-9-96

Proposed Injection Application is for: ___ **WATERFLOOD** ___ Expansion ___ Initial

Original Order: R- _____ ___ Secondary Recovery ___ Pressure Maintenance

SENSITIVE AREAS X **SALT WATER DISPOSAL** ___ Commercial Well

___ WIPP ___ Capitan Reef

Data is complete for proposed well(s)? ___ Additional Data Req'd _____

AREA of REVIEW WELLS

1 Total # of AOR 0 # of Plugged Wells

YES Tabulation Complete ___ Schematics of P & A's

YES Cement Tops Adequate ___ AOR Repair Required

INJECTION FORMATION

Injection Formation(s) Bell Can./Upper Cherry Can. Compatible Analysis YES

Source of Water or Injectate Area production Delaware

PROOF of NOTICE

✓ Copy of Legal Notice ✓ Information Printed Correctly

✓ Correct Operators ✓ Copies of Certified Mail Receipts

NO Objection Received ___ Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL? YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

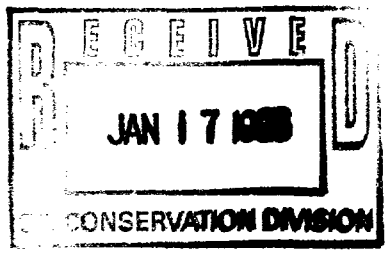
2nd Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

3rd Contact: ___ Telephoned ___ Letter _____ Date Nature of Discussion _____

SWD 1-31-96
619

POGO PRODUCING COMPANY

OVERNIGHT MAIL



January 11, 1996

New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David R. Catanach

Re: Cedar Canyon Prospect NM-615
Eddy County, New Mexico
Application for Administrative
Approval to Inject Saltwater
into the Riverbend Federal No. 8 Well
located 460' FNL & 330' FWL
Section 23, T-24-S, R-29-E, N.M.P.M.

Gentlemen:

Pogo hereby respectfully submits two (2) original Applications for Authorization to Inject (Form C-108) pertaining to the captioned well and requests that same be given Administrative Approval.

Pursuant thereto, please find enclosed the following:

(1) Copy of Notification Letter sent to all Offset Leasehold Operators within a one-half (1/2) mile radius of the proposed injection well and to the surface owner upon which such well is located, along with copies of proof of mailing; and

(2) Proof of Legal Publication.

If you should have any questions regarding the subject Application, please contact the undersigned.

Very truly yours,

POGO PRODUCING COMPANY

Terry Gant
Senior Landman

TG:lf/e:SWD.RiverBendFed#8
Enclosures

cc w/encl.: New Mexico Oil Conservation Division
District II Office
P. O. Drawer DD
Artesia, New Mexico 88210
Attention: Mr. Tim Gum

500 WEST ILLINOIS, SUITE 600 • POST OFFICE BOX 10340 • MIDLAND, TEXAS 79702-7340 • 915/ 682-6822 • FAX 915/682-9139

POGO PRODUCING COMPANY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

December 21, 1995

To: Offset Leasehold Operators and
Surface Owner
(See Attached List)

Re: Cedar Canyon Prospect NM-615
Eddy County, New Mexico
Application for Administrative
Approval to Inject Saltwater
into the Riverbend Federal #8 Well,
located 460' FNL & 330' FWL
Section 23, T-24-S, R-29-E

Gentlemen:

Pogo Producing Company has applied to the New Mexico Oil Conservation Division for Administrative Approval to inject saltwater into the captioned well.

A copy of the Form C-108 submitted by Pogo to the Division is enclosed.

If you object to and/or request that a hearing be held pertaining to this Application, you must notify the Division within fifteen (15) days from the date of Pogo's Application.

If you have any questions, please contact the undersigned or Mr. Richard L. Wright.

Very truly yours,

POGO PRODUCING COMPANY

Terry Gant
Senior Landman

TG:lf/e:SWD19in

Enclosure

cc: New Mexico Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
Attention: Mr. David R. Catanach

500 WEST ILLINOIS, SUITE 600 • POST OFFICE BOX 10340 • MIDLAND, TEXAS 79702-7340 • 915/682-6822 • FAX 915/682-9139

Attached to Notification Letter dated December 21, 1995
regarding Pogo's Application for Administrative Approval
to Inject Saltwater into the Riverbend Federal #8 Well

Bureau of Land Management
P. O. Box 27115
Santa Fe, New Mexico 87502-0115

Texaco Exploration & Production, Inc.
P.O. Box 2100
Denver, Colorado 80201
Attention: Mr. David L. Sleeper

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

Bureau of Land Management
P.O. Box 27115
Santa Fe, NM 87502-0115

4a. Article Number
Z 296 652 283

4b. Service Type
☐ Registered ☐ Insured
XX Certified ☐ COD
☐ Express Mail XX Return Receipt for Merchandise

7. Date of Delivery
JAN 8 1996

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

5. Signature (Addressee)

6. Signature (Agent)

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 DOMESTIC RETURN RECEIPT

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

SANTA FE, NM 87502 USPS

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, and 4a & b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

David Sleeper
Texaco E&P, Inc.
P.O. Box 2100
Denver, CO 80201

4a. Article Number
Z 296 652 284

4b. Service Type
☐ Registered ☐ Insured
XX Certified ☐ COD
☐ Express Mail XX Return Receipt for Merchandise

7. Date of Delivery
12-26-95

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

5. Signature (Addressee)

6. Signature (Agent)

PS Form 3811, December 1991 ☆U.S. GPO: 1993—352-714 DOMESTIC RETURN RECEIPT

Is your RETURN ADDRESS completed on the reverse side?

Thank you for using Return Receipt Service.

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: POGO PRODUCING COMPANY

Address: P. O. Box 10340, Midland, Texas 79702

Contact party: Richard L. Wright Phone: 915/682-6822

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: Bill F. Halepeska Title Agent, P.E.

Signature: Bill F. Halepeska Date: 12/13/95

* 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. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with the date, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

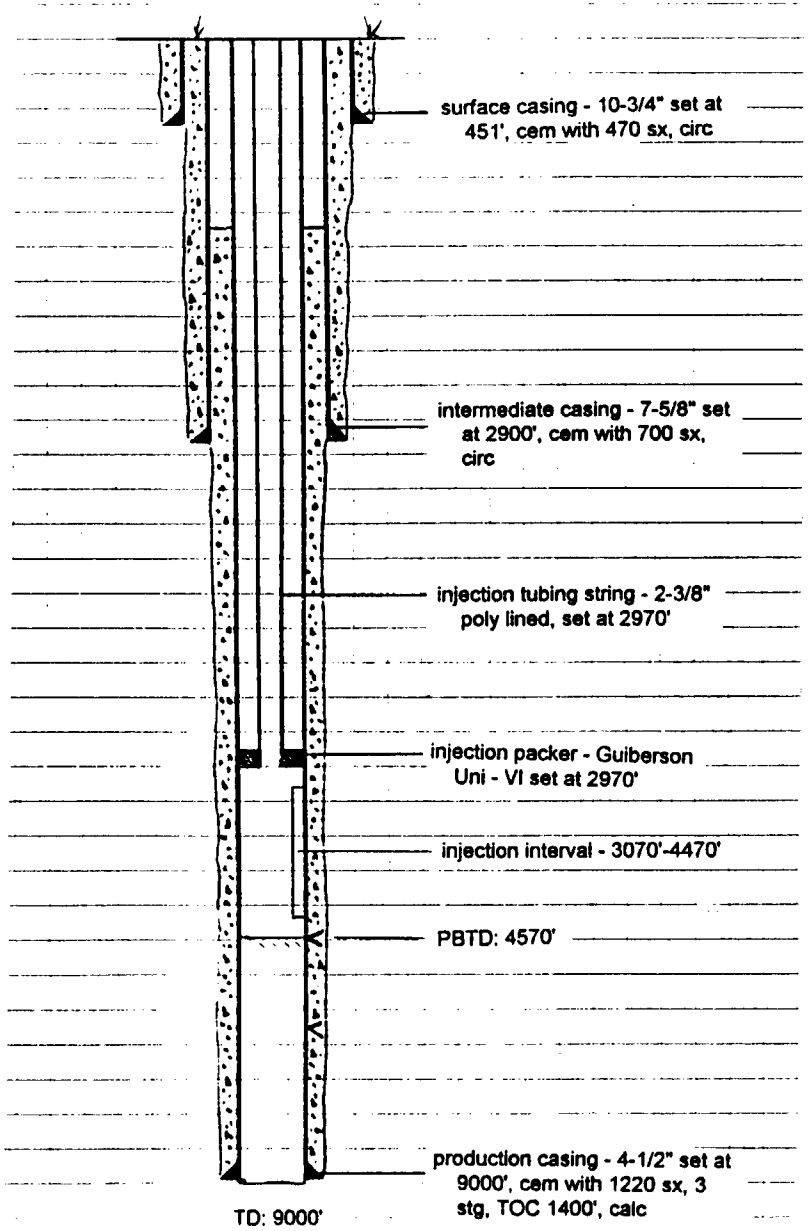
FORM C-108

ITEM 111-A

Pogo Producing Company
River Bend Federal No. 8

INJECTION WELL DATA SHEET

SCHEMATIC



TABULAR DATA

(1). LEASE: River Bend Federal WELL # 8

LOCATION: Sec. 23 TWP 24S Range 29E

County Eddy

Footage 460' FNL & 330' FWL

(2). CASING STRINGS:

Surface Casing

Size 10-3/4" Depth 451' Cemented w/ 470 sx.

TOC surf Determined by circulated cement

Hole size 14-3/4"

Intermediate Casing

Size 7-5/8" Depth 2900' Cemented w/ 700 sx.

TOC surf Determined by circulated cement

Hole size 9-7/8"

Long String

Size 4-1/2" Depth 9000' Cemented w/ 1220 sx.

TOC 1400' Determined by calculated, 3rd st

Hole size 6-3/4"

Injection interval, From 3070' to 4470' Ft.

(3). INJECTION TUBING STRING:

Size 2-3/8 in., ~~coated~~/lined with poly

Setting depth 2970 Ft.

(4) INJECTION PACKER:

Size 4-1/2 in.; Make/Model Guiberson Uni VI

Setting depth 2970 Ft.

FORM C-108

ITEM III-B

Pogo Producing Company
River Bend Federal No. 8

INJECTION WELL DATA

(1). Injection formation: Delaware (Bell Canyon and Up Cherry Canyon)

Field/Pool: Cedar Canyon Delaware

(2). Injection interval; from 3070 ft. to 4470 ft.

Perforated XX Open Hole _____

(3). Original purpose well drilled -- drilled for SWD

(4). Other perforated intervals; _____ Yes XX No

Squeezed with _____ sx., or isolated by _____

_____

(5). Oil or gas productive zone(s):

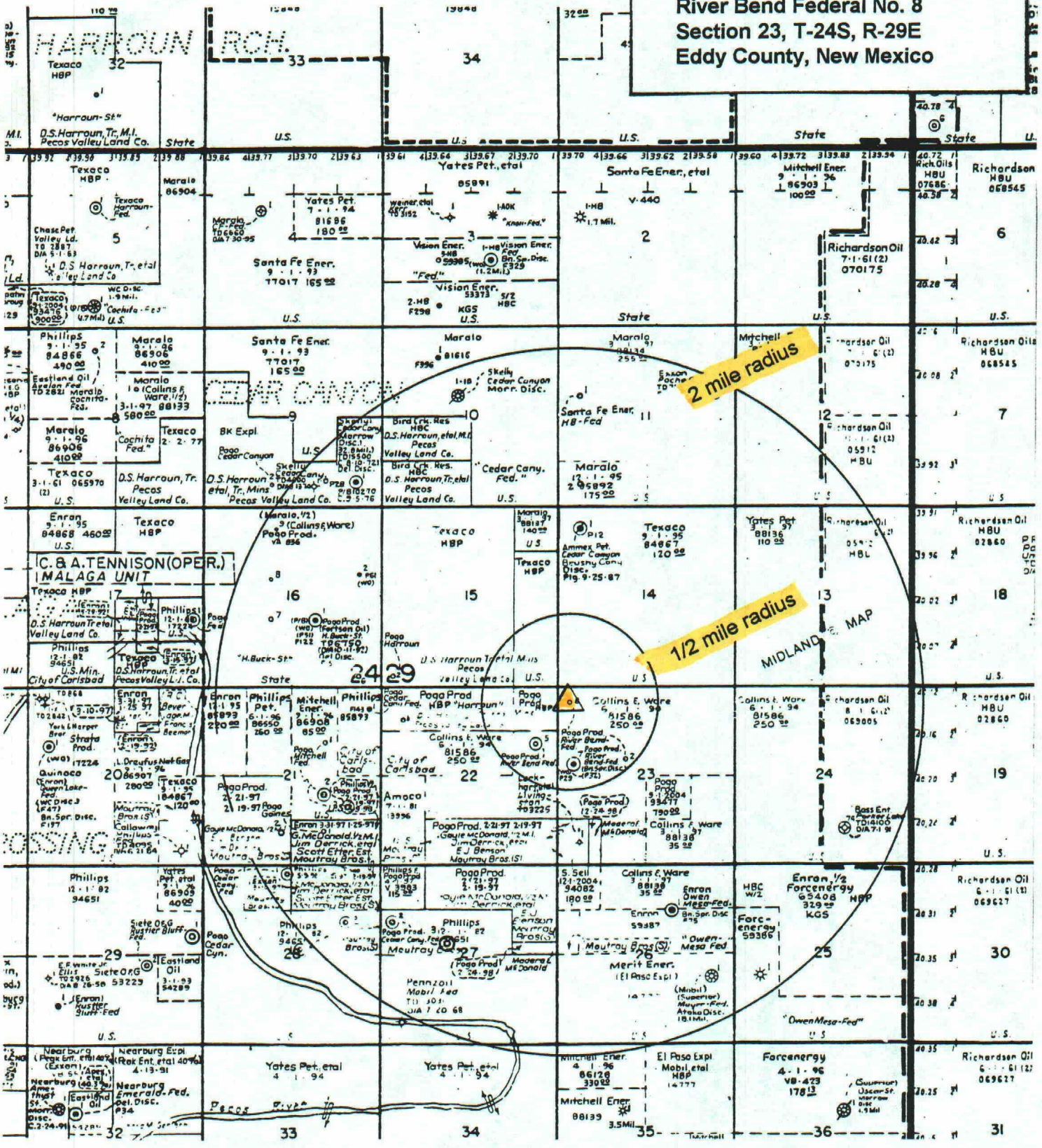
Next higher: none

Next lower: Cherry Canyon @ +/-5300'

FORM C-108
APPLICATION TO INJECT

LOCATION/AREA OF INTEREST MAP

POGO PRODUCING COMPANY
River Bend Federal No. 8
Section 23, T-24S, R-29E
Eddy County, New Mexico



FORM C-108

ITEM VI

Pogo Producing Company
River Bend Federal No. 8

WELL DATA - AREA OF REVIEW

(1). Location: 2280' FNL & 460' FWL, Sec 23, T-24S, R-29E, Eddy County

Operator: Pogo Producing Co. Lease: River Bend Federal Well # 7

Well type: Oil XX Gas ____ DSA ____ Total depth 9020 ft.

Date drilled: spud 5/31/94; completed 12/94

Completion Data: set 13-3/8" @ 465' w/560 sx, circ 80 sx; 8-5/8" @ 2934' w/1300 sx, circ 150 sx; 5-1/2" @ 9020' w/1800 sx, TOC 1494'; perf Bone Spring 8780'-8848' w/136 shots; A/2000 gal 7-1/2% HCl; F/60,000 gal GW + 234,060# 20/40 sd; IP 32 BOPD + 84 BW & 171 MCFG; set CIBP @ 8180'; perf Bone Spring 7814'-7922'; A/2500 gal 7-1/2% HCl/Pentol 100; F/10,000 pad & p-pad, 30,500 gal XLGW + 225,960# 20/40 sd; test for 65 BOPD +199 BW and 304 MCFG; set RBP @ 5600'; perf Ch. Cn. 5330'-54'; A/1000 gal 7-1/2% HCl/Pentol 100; F/8000 p-pad, 36,000 gal pad & 3000 gal XLGW + 27,760# 16/30 sd @ 25 BPM; CO to 8180' & DO CIBP; produce below pkr @ 7707'

Plugged _____ Date _____ (Schematic attached)

( ). Location: _____

Operator: _____ Lease: _____ Well # ___

Well Type ; Oil ____ Gas ____ DSA ____ Total Depth: _____ ft.

Date Drilled: _____

Completion Data: _____

Plugged _____ Date _____ (Schematic attached)

FORM C-108

ITEM VII

Pogo Producing Company
River Bend Fed. No. 8

OPERATIONAL DATA

(1). Average expected injection rate: 1000 BWPD; maximum anticipated rate: 3000 BWPD

(2). Closed system

(3). Estimated average injection pressure: 500 psi.
Estimated maximum pressure: 615 psi.

(4). Source of injection water: produced water from nearby Pogo operated wells

Analysis of waters attached. Exhibits I & II

(5). Analysis of injection zone water attached. Exhibit III
Data source: Herrandura Bend Delaware; Roswell Geological Society Symposium, 1988

FORM C-108

ITEM VIII

Pogo Producing Company

River Bend Fed. No. 8

GEOLOGICAL DATA

INJECTION ZONE

Lithological description: sandstone, fine-v. fine grained, lt tan-gray poorly consolidated-friable, cal. cementing

Geological name: Delaware (Bell Canyon & Up. Cherry Canyon)

Zone thickness: 1400 ft.; Depth: 3070 ft.

FRESH WATER SOURCES

Geological name: Recent shallow alluvium

Depth to bottom of zone: 200 ft.

ITEM IX

STIMULATION PROGRAM (Proposed)

ACIDIZE:

Volume: 1000 gal Type acid: 7-½% HCl/ Pentol 100

Rate: +/-5 BPM; Misc. ball sealers

FRACTURE:

Fluid volume: 54,600 gal.; Type: gelled water

Prop type: 16/30 sd Volume (#): 150,000

Rate: +/-25 BPM; Conductor: 4-½ in.

Misc.

FORM C-108

Pogo Producing Company
River Bend Fed. No. 8

ITEM X

LOGGING PROGRAM

Logging program included: CND & GR/DLL

Copy of CND log included in attachments

ITEM XI

FRESH WATER ANALYSIS

Fresh water well within 1 mile radius; _____ Yes XX No

Chemical analysis from well(s) located: see tabulation, Exhibit IV

Date sampled: _____

Chemical analysis from well(s) located: _____

Date sampled: _____

ITEM XII

HYDROLOGY

Engineering data and area well logs reveal no evidence that hydrologic connection might exist between the intended injection zone (Bell Canyon - Cherry Canyon) at 3070' and probable fresh water zone above 200 feet.

ITEM XIII

COMMERCIAL INTENT

Initially, only water from Pogo operated wells will be disposed of in the subject well. Eventually, Pogi could take water from other leases in the area operated by someone else, but in which Pogo has a working interest. Only piped water will be taken into the system.

EXHIBIT 1

FORM C-108
ITEM VII(4)

ANALYSIS - Bone Spring Produced Water

POGO PRODUCING COMPANY
River Bend Federal No. 8
Section 23, T-24S, R-29E
Eddy County, New Mexico

Endura Product

P.O. Box 3394 Midland, T

Phone (915) 684-4233 * Fax (9

WATER ANALYSIS

Date 12/11/95 Endura Rep **TERRY SOLANS**
Sampling Point/Date **WELL HEAD - 12/9/95**
Company **POGO PRODUCING** County **EDDY**
Field Lease **RIVERBEND FEDERAL** Well **#7**
H. BUCK STATE Well **#1**

DISSOLVED SOLIDS

CATIONS	mg/1	mg/1
Sodium, Na+ (Calc.)	81,949	85,169
Total Hardness as Ca++	5,120	3,960
Calcium, Ca++	4,600	3,040
Magnesium, Mg++	317	561
Barium, Ba++	0	0
Iron (Total) Fe+++	16	114

ANIONS		
Chlorides, Cl-	135,000	138,000
Sulfate, SO_4-	280	325
Carbonate, CO_3-	0	0
Bicarbonate, HCO_3-	659	854
Sulfide, S--	0	0
Total Dissolved Solids (Calc.)	222,821	228,063

OTHER PROPERTIES

pH*	6.360	6.440
Specific Gravity, 60°/60 F	1.123	1.123
TURBIDITY	300	175

SCALING INDICIES

TEMP, F	CA CO_3	$CASO_4*2H_2O$	CA SO_4	BA SO_4
80	0.8303	-0.8962	-1.1875	-29.3893
120	1.2618	-0.9091	-1.0200	-29.5634
160	1.9214	-0.9331	-0.8713	-29.7858

FORM C-108
ITEM VII(4)

ANALYSIS - Lower Delaware
Produced Water

POGO PRODUCING COMPANY
River Bend Federal No. 8
Section 23, T-24S, R-29E
Eddy County, New Mexico

EXHIBIT II

ucts Corporation
187 Houston, Texas 77226
675-3421 * Fax (713) 675-7646

ATER ANALYSIS

SOLANSKY Code W-2837
State TEXAS
County EDDY N.M.
e RIVER BEND FEDERAL Well 7

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na^+ (Calc.)	91,471	3,977
Total Hardness as Ca^{++}	32,000	0
Calcium, Ca^{++}	29,760	1,488
Magnesium, Mg^{++}	1,366	114
Barium, Ba^{++}	14	0
Iron (Total) Fe^{++*}	23	1
ANIONS		
Chlorides, Cl^-	198,000	5,577
Sulfate, $SO_4^=$	62	1
Carbonate, $CO_3^=$	0	0
Bicarbonate, HCO_3^-	98	2
Sulfide, $S^=$	0	0
Total Dissolved Solids (Calc.)	320,794	
OTHER PROPERTIES		
pH*	5.400	
Specific Gravity, 60°/60 F	1.210	
TURBIDITY	210	

Remarks **SAMPLE TAKEN ON 11/04/94**

SCALING INDICIES

TEMP, F	CA CO_3	$CASO_4*2H_2O$	CA SO_4	BA SO_4
80	1.2804	-0.4710	-0.8997	0.2597
120	1.9491	-0.4804	-0.7286	0.1547
160	2.9552	-0.4745	-0.5500	-0.0478

FORM C-108
ITEM VII(5)

ANALYSIS - Injection Zone
Produced Water

POGO PRODUCING COMPANY
River Bend Federal No. 8
Section 23, T-24S, R-29E
Eddy County, New Mexico

EXHIBIT III

SOCIETY SYMPOSIUM - 1988

Field Name: Herradura Bend Delaware (Oil)

Location: T.22-23S., R.27-28E.

County & State: Eddy County, New Mexico

Date: March 1988

Discovery Well: Orla Petco, Inc., No. 1 Pardue. 660' FNL, 1,900' FEL, Sec. 6, T.23S., R.28E. Compl. 8/23/77. T.D. 4,099'.

Exploration Method Leading to Discovery: Subsurface mapping.

Pay Zone: 2,466'-2,474': IPP 38 BOPD + 50 BW.
Formation Name: Delaware (Bell Canyon). **Depth & Datum Discovery Well:** 2,449' (+597').

Lithology Description: Sandstone.

Approximate average pay: 10 gross 10 net **Productive Area** 1,120 acres

Type Trap: Structural-stratigraphic. Production is from a porous sandstone that pinches out updip. There is some structural rollover on top of the pay zone that is probably caused by the deposition of the pay sand.

Reservoir Data:

23 % Porosity _____ Md Permeability _____ % Sw _____ % So

Oil: Grav. 41.5, GOR 100-1.

Gas:

Water: 60 Na+K 6,400 Ca 970 Mg 14000 Cl TR SO_4 - CO_2 or HCO_3 _____ Fe (PPM)

Specific Gravity 1.074 Resistivity .076 ohms @ 74 °F

Initial Field Pressure: _____ psi @ _____ datum Reservoir Temp. _____ °F

Type of Drive : Solution gas.

Normal Completion Practices: Open hole completion. Acidize with 1,500 to 3,000 gals. acid.

Type completion: Pumping. **Normal Well Spacing** 40 Acres

Deepest Horizon Penetrated & Depth: Bone Spring 5,600' (-2,554'). Exxon Corp. No. 1 New Mexico "OU" State, 1,673' FNL, 1,309' FWL, Sec. 36, T.22S., R.27E. T.D. 5,890'.
Other Producing Formations in Field: Cherry Canyon.

Production Data: Field designated 12/77. Production shown only through December 1986.

YEAR	TYPE	No. of wells @ yr. end: Prod.	No. of wells @ yr. end: S.I. or Abd.	PRODUCTION OIL IN BARRELS GAS IN MMCF: ANNUAL	PRODUCTION OIL IN BARRELS GAS IN MMCF: CUMULATIVE	YEAR	TYPE	No. of wells @ yr. end: Prod.	No. of wells @ yr. end: S.I. or Abd.	PRODUCTION OIL IN BARRELS GAS IN MMCF: ANNUAL	PRODUCTION OIL IN BARRELS GAS IN MMCF: CUMULATIVE
79	OIL	19		80,023	171,732	83	OIL	20	6	63,625	476,501
	GAS			4,529	5,904		GAS			3,3	21,777
80	OIL	20	1	72,098	243,830	84	OIL	27	6	54,511	531,012
	GAS			5,536	11,440		GAS			4,567	25,844
81	OIL	25	1	82,194	326,024	85	OIL	22	7	40,549	571,561
	GAS			3,137	14,577		GAS			3,777	29,58
82	OIL	21	5	86,852	412,876	86	OIL	21	9	49,736	621,297
	GAS			3,3	17,877		GAS			3,975	33,556

EXHIBIT IV

FORM C - 108
ITEM XI

ANALYSIS - Fresh Water Source

POGO PRODUCING COMPANY
River Bend Federal No. 8
SECTION 23, T-24S, R-29E
Eddy County, New Mexico

FRESH WATER SOURCES
WATER QUALITY INFORMATION

Supplied by State Engineers Office, State of New Mexico

USE	LOCATION	CHLORIDES	CONDUCTIVITY	DEPTH	DATE
stk	26.23S.31E	122	3455		12/79
stk	26.23S.31E	150			12/70
stk	26.23S.31E	134	3503		10/76
stk	04.24S.31E	246	3690		07/87
stk	04.24S.31E	310	3680		04/92
irr	11.24S.28E	1180	6240	200	03/92
irr	16.24S.28E	1039	7449	161	05/81
stk	30.24S.28E	490	3830	201	04/92
irr	07.24S.29E	2330	8540	160	03/92
irr	07.24S.29E	2150	8860	160	04/85

WESTERN ATLAS

Atlas Wireline Services

Compensated Z-DENSILOG
Compensated NEUTRON
GAMMA RAY X-Y CALIPER

FILE NO. 8219

API NO. 30-015-28398

COMPANY POGO PRODUCING COMPANY

WELL RIVER BEND FEDERAL NO.8

FIELD WILDCAT (BONE SPRING)

COUNTY EDDY STATE N.M.

LOCATION:
460'FNL & 330'FWL

SEC 23 TWP 24S RGE 29E

OTHER SERVICES
DLL/GR

PERMANENT DATUM GROUND LEVEL ELEVATION 2945 FT.
LOG MEASURED FROM KELLY BUSHING 12.5 FT. ABOVE PERMANENT DATUM
DRILL. MEAS. FROM KELLY BUSHING

ELEVATIONS
KB 2957.5'
DF 2956.5'
GL 2945.0'

DATE	3 DECEMBER		
RUN	ONE		
SERVICE ORDER	170969		
DEPTH DRILLER	9000'		
DEPTH LOGGER	9000'		
BOTTOM LOGGED INTERVAL	8997'		
TOP LOGGED INTERVAL	SURFACE		
CASING - DRILLER	7 5/8" @ 2900'		@
CASING LOGGER	2900'		
BIT SIZE	6 3/4"		
TYPE FLUID IN HOLE	CUT BRINE		
DENSITY / VISCOSITY	9 LB/G	29 S	
PH / FLUID LOSS	10	--	
SOURCE OF SAMPLE	CIRC. TANK		
RM AT MEAS. TEMP.	0.066 OHMM @ 65 DEG.F		@
RMF AT MEAS. TEMP.	0.066 OHMM @ 65 DEG.F		@
RMC AT MEAS. TEMP.	-- @ --		@
SOURCE OF RMF / RMC	MEASURED	--	
RM AT BHT	0.036 OHMM @ 125 DEG.F		@
TIME SINCE CIRCULATION	4 HOURS		
MAX. REC. TEMP. DEG. F	125 DEG.F		
EQUIP. NO. / LOCATION	HL 5433	HOBBS, NM	
RECORDED BY	K. PARKER		
WITNESSED BY	G. LAMB