DATE IN 9-16-04	SUSPENSE 10/4/04	ENGINEER JONES	LOGGED IN 9-16-04	TYPE SWD	APP NO. pSEM0426047156

ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

30-045-32258

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☒ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☑ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify L/15/30N/14W

[2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

Called 10/13/04 For Notice Evidence To The BLM

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Print or Type Name	Signature	Title	Date

e-mail Address

dugan production corp.

RECEIVED

SEP 16 2004

Oil Conservation Division
1220 S. Saint Francis Drive
Santa Fe, NM 87505

Mr. David Catanach
New Mexico Oil Conservation Division
Engineering Bureau
1220 South Saint Francis Street
Santa Fe, New Mexico 87505

September 14, 2004

--CERTIFIED MAIL, RETURN RECEIPT REQUESTED—
7002-2410-0001-0134-1402

Re: Application to Class 2, water disposal well, Big Field SWD #9 San Juan County, NM

Dear Mr. Catanach:

Enclosed, is Dugan Production Corp.'s application for disposal of produced water in the Big Field SWD #9. In fulfilling the requirements of application, the following materials are provided herein:

1. Form C-108, Application for Authorization to Inject.
2. Tabular and schematic data on proposed injection well.
3. Lease and surface owner maps that identify all wells and leases within 2-miles of proposed injection well with a one-half mile radius circle drawn around the proposed injection well.
4. Data sheet of wells within 2-miles of proposed injection well, highlighting those wells inside one-half mile radius around the injection well.
5. Operations plan for proposed injection well.
6. Water Analysis of produced water to be disposed in proposed injection well (Pictured Cliffs, Fruitland Coal, Gallup and Dakota).
7. Required geologic, stimulation, logging and test data and fresh water data from nearby wells.
8. Signed statement of geologic and engineering data.
9. Proof of notice in the form of notification letters sent to offsetting operators, signed receipt cards and a copy of the Affidavit of Publication and copy of publication as appeared in the Farmington Daily Times.

If you have questions or need additional information, please contact me.

Very Sincerely,

Kurt Fagrelius Kurt Fagrelius

Attachments

cc: Mr. Frank Chavez-New Mexico Oil Conservation Division, 1000 Rio Bravo Rd, Aztec, NM 87410
Ms. Anne Jones-Richardson Operating Co., 501 Airport Drive, Suite 119, Farmington, NM 87401
Mr. Jerry Sullivan-Calpine Natural Gas Company, 1200 17th. Street, Suite 770, Denver, CO 80202

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL
RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

FORM C-108
Revised June 10, 2003

APPLICATION FOR AUTHORIZATION TO INJECT

I. PURPOSE: ____ Secondary Recovery ____ Pressure Maintenance XX Disposal ____ Storage
Application qualifies for administrative approval? XX Yes ____ No

II. OPERATOR: Dugan Production Corp.

ADDRESS: 709 East Murray Drive, Farmington, New Mexico 87401

CONTACT PARTY: Kurt Fagrelius PHONE: (505) 325-1821

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 XX 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 geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources 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 sources 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: Kurt Fagrelius TITLE: Geologist

SIGNATURE: Kurt Fagrelius DATE: August 26, 2004

E-MAIL ADDRESS: kfagrelius@duganproduction.com

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

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate 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 its size, 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 the 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, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, 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.

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

General Information

Dugan Production Corp. is hereby, making application for administrative approval to dispose of produced water by underground injection. The proposed disposal site is the Big Field SWD #9 well, located 1960' FSL & 660' FWL, Sec. 15, Twn. 30N, Rng. 14W, San Juan Co., NM. Produced water will be injected into the Entrada Sandstone between 7174' and 7312'. The maximum injection pressure will be 1435 psi and the maximum injection rate will be 6,000 barrels of water daily.

Upon approval of this application, an injection test will be conducted. If adequate rates are not found, it may be necessary to stimulate the proposed injection zone or perforate additional zones in the well.

Any change to the plans contained herein, will be approved by the New Mexico Oil Conservation Division prior to implementation.

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

Part III. Well Data

A. Tabular Information

1. Name: Big Field SWD #9

   Location: 1960' FSL & 660' FWL
   Sec. 15, T30N, R14W
   San Juan Co., NM

2. Surface Casing: 8-5/8" 24#, J-55 set @ 445'. Cemented with 378-cu.ft. circulated to surface.
   Hole size – 12".

   Production Casing: 5-1/2" 17#, N-80 & 15.5# J-55 set @ 7,510'. Cemented in three stages with stage tools at 4,272' and 1575' using 889 cu.ft. in first stage, 895 cu.ft. in second stage and 660 cu.ft in third stage. Circulated 55- bls. cement to surface on third stage.
   Hole size – 7-7/8".

3. Injection Tubing: 2-7/8", EUE, 4.7#, plastic lined tubing.

4. Packer: Baker Model AD-1 tension packer, plastic lined, will be set at 7124' or 50' above the upper most perforation.

B. Additional Information

1. Injection Interval: Entrada Sandstone

2. The injection interval (Entrada Sandstone) will be perforated.

3. The well (Big Field SWD #9) was drilled for the purpose of injection.

4. Only the injection interval is to be perforated.

5. Fruitland Coal / Pictured Cliffs Sandstone – Approx. 1,350'. Gallup Sandstone – Approx. 5,100'. Dakota Sandstone – Approx. 5970'.

Side 1

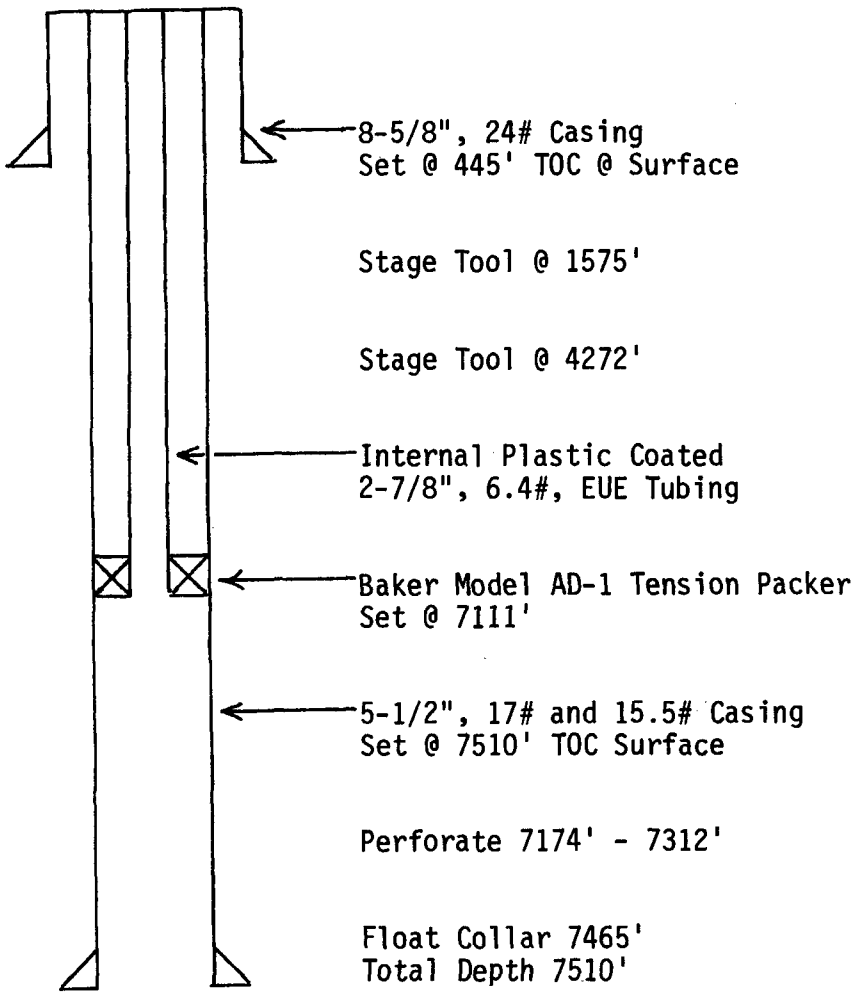
INJECTION WELL DATA SHEET

OPERATOR: Dugan Production Corp.

WELL NAME & NUMBER: Big Field SWD #9

WELL LOCATION:					
	1960' FSL and 660' FWL	L	15	30N	14W
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 12-1/4" Casing Size: 8-5/8"

Cemented with: 270 sx. *or* 378 ft³

Top of Cement: Surface Method Determined: Circulated

Intermediate Casing

Hole Size: _____ Casing Size: _____

Cemented with: _____ sx. *or* _____ ft³

Top of Cement: _____ Method Determined: _____

Production Casing

Hole Size: 7-7/8" Casing Size: 5-1/2"

Cemented with: 1175 sx. *or* 2,444 ft³

Top of Cement: Surface Method Determined: Circulated

Total Depth: 7510'

Injection Interval

Perforate 7174 feet to 7312

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 2-7/8" Lining Material: Plastic

Type of Packer: Baker model AD-1 set in tension (5-1/2")

Packer Setting Depth: 7111' (63' above injection interval).

Other Type of Tubing/Casing Seal (if applicable): _____

Additional Data

1. Is this a new well drilled for injection? XX Yes _____ No

   If no, for what purpose was the well originally drilled? _____

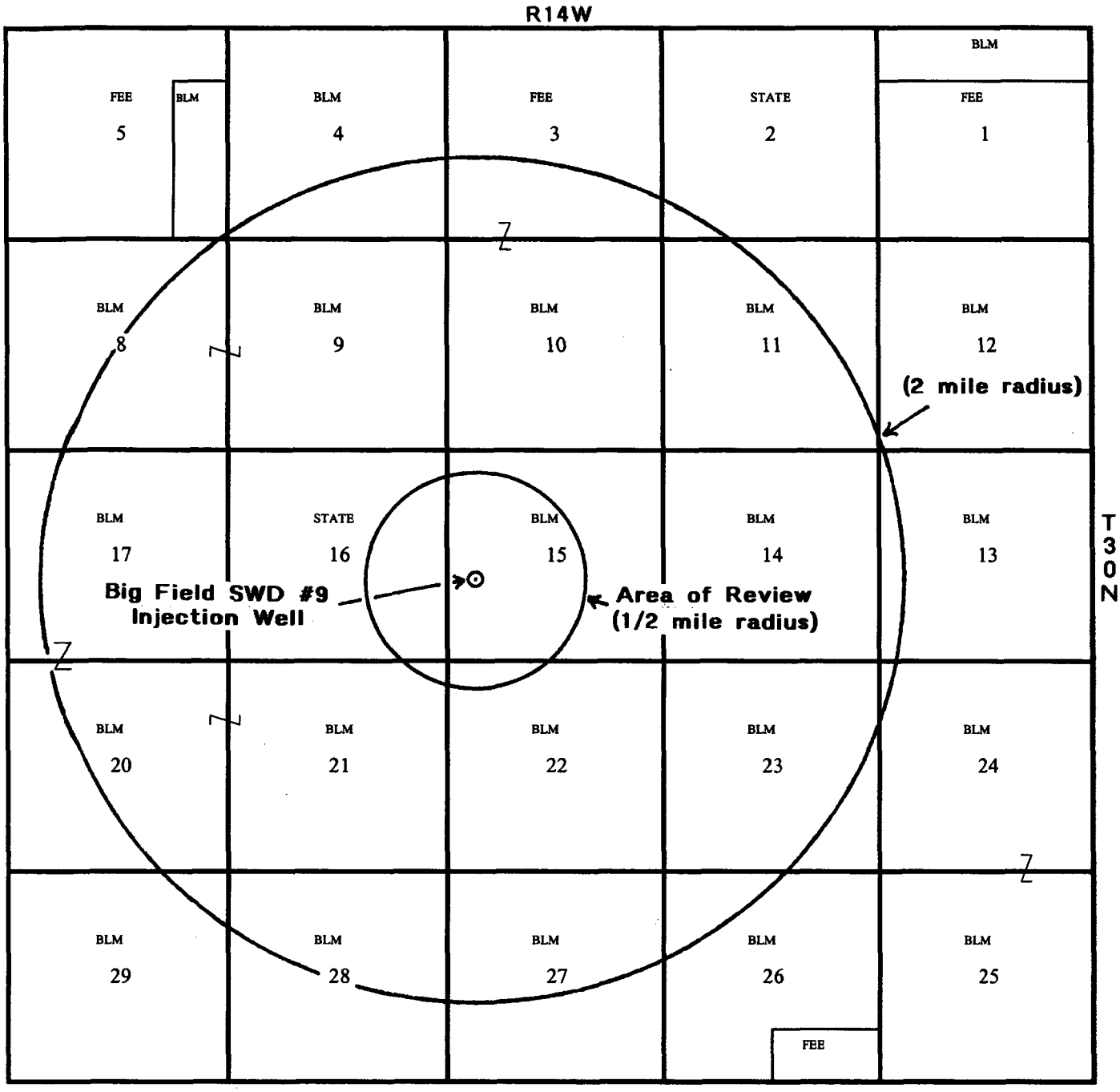
2. Name of the Injection Formation: Entrada Sandstone

3. Name of Field or Pool (if applicable): Not applicable

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. New well, never perforated in any other zone.

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Fruitland Coal / Pictured Cliffs Sandstone Approx. 900 - 1450', Gallup Sandstone Approx. 5110 - 5630 and Dakota Sandstone Approx. 5971 - 6210.

Part V. Surface Ownership Map



DUGAN PRODUCTION CORP.
P.O. BOX 420
FARMINGTON, NM 87499-0420
505-325-1821
505-327-4613(FAX)

DATE: September 20, 2004

TO: David Catanach

COMPANY: New Mexico Oil Conservation Division – Engineering Bureau

FAX NO (505) 476-3462

You should receive 3 page(s) including this cover sheet. If you did not receive all pages or are unable to read any pages, please contact:

FROM: Kurt Fagrelius TELEPHONE NO. (505) 325-1821

Dear Mr. Catanach:

On September 14, 2004 I sent you by certified mail an application for disposal of produced water in the Big Field SWD #9 operated by Dugan Production Corp (NWSW, Sec. 15, T30N, R14W). This morning, Jerry Sullivan with Calpine Natural Gas informed me that Calpine had sold all of their acreage offsetting this application to Pogo Producing Company.

This information was not available to me at the time the application was put together. However, today I sent Leslyn Wallace with Pogo Producing Company a copy of the application by certified mail

Enclosed, you will find a copy of my revised cover letter to the original application showing that Pogo Producing Company has been contacted by certified mail of the pending application. A copy of the Certified Mail Receipt is enclosed also.

If you have any questions or require additional information, please contact me.

Very Sincerely,

Kurt Fagrelius

dp dugan production corp.

Mr. David Catanach
New Mexico Oil Conservation Division
Engineering Bureau
1220 South Saint Francis Street
Santa Fe, New Mexico 87505

September 20, 2004

–CERTIFIED MAIL, RETURN RECEIPT REQUESTED–
7002-2410-0001-0134-1402

Re: Application to Class 2, water disposal well, Big Field SWD #9 San Juan County, NM

Dear Mr. Catanach:

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7. Required geologic, stimulation, logging and test data and fresh water data from nearby wells.
8. Signed statement of geologic and engineering data.
9. Proof of notice in the form of notification letters sent to offsetting operators, signed receipt cards and a copy of the Affidavit of Publication and copy of publication as appeared in the Farmington Daily Times.

If you have questions or need additional information, please contact me.

Very Sincerely,

Kurt Fagrelius

Attachments

cc: Mr. Frank Chavez-New Mexico Oil Conservation Division, 1000 Rio Bravo Rd, Aztec, NM 87410
Ms. Anne Jones-Richardson Operating Co., 501 Airport Drive, Suite 119, Farmington, NM 87401
Ms. Leslyn Wallace-Pogo Producing Company, P.O. Box 10340, Midland, TX 79702-7340

7002 2410 0001 0134 1493

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Postage	$
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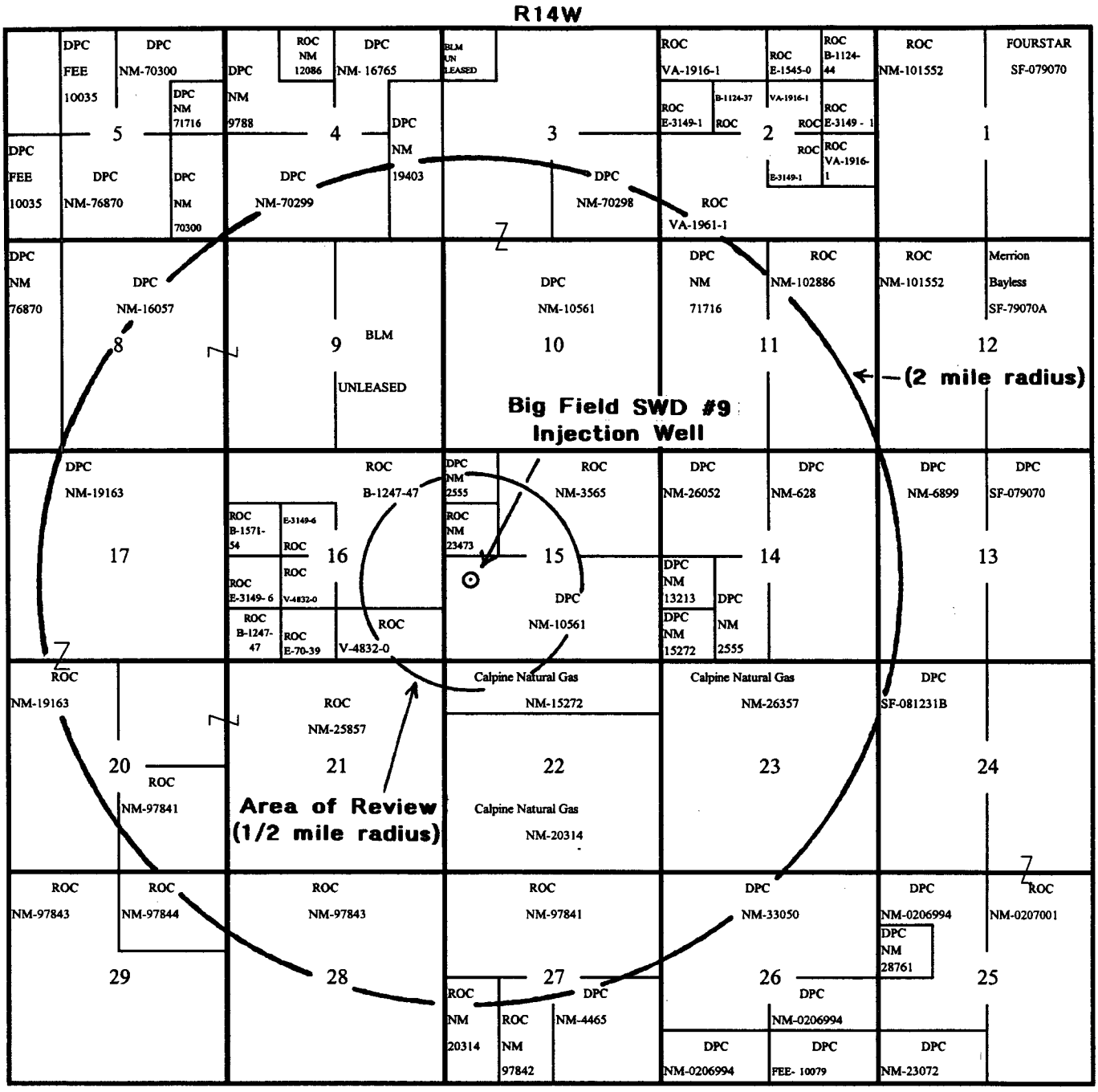
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: Poco Producing Company
Street, Apt. No.; or PO Box No.: P.O.Box 10340
City, State, ZIP+4: McAllen TX 79702-7340

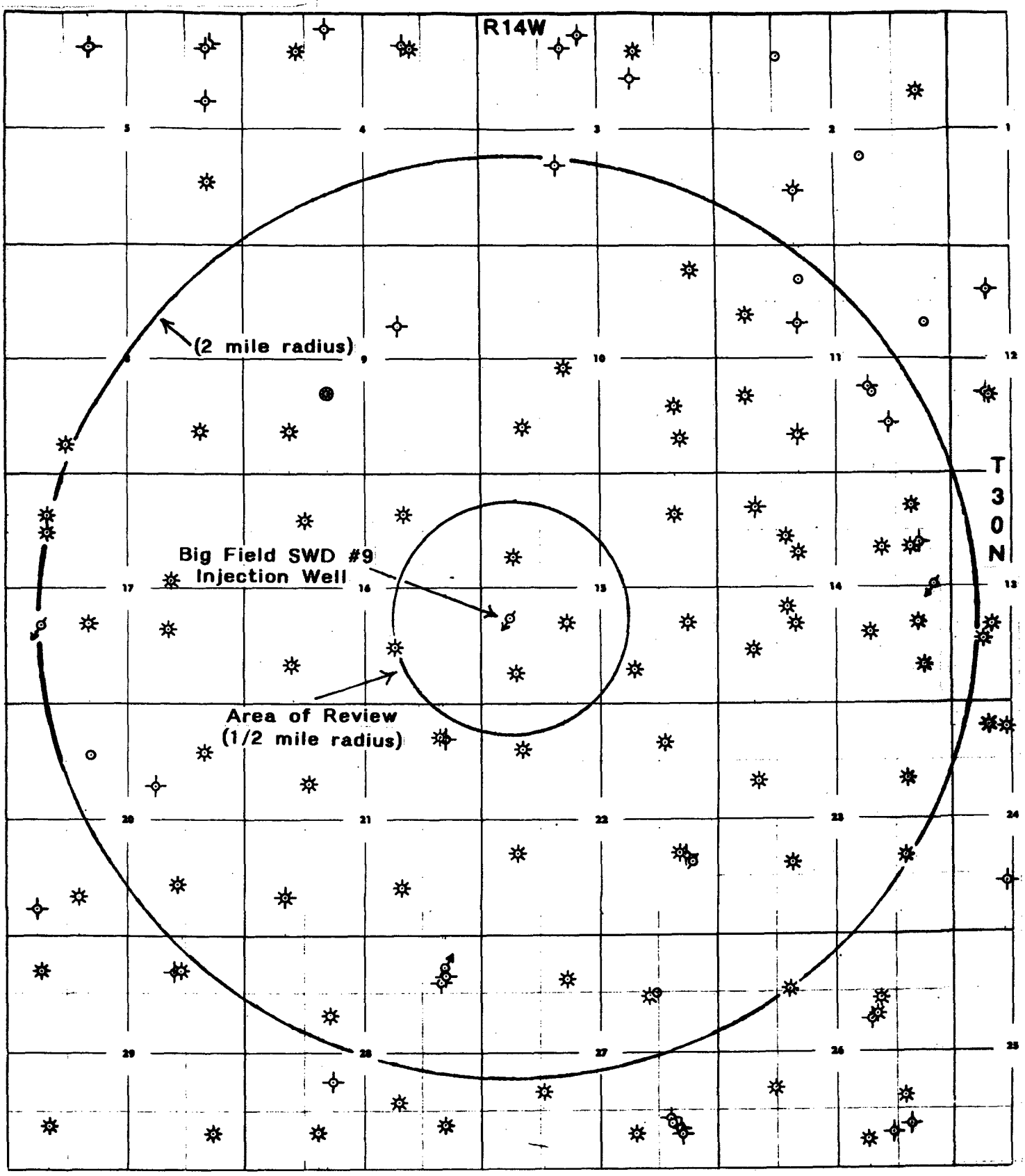
PS Form 3800, June 2002 See Reverse for Instructions

Part V. Lease Ownership Map



ROC - RICHARDSON OPERATING COMP.
DPC - DUGAN PRODUCTION CORP.

Part V. Well Map



Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
RICHARDSON OPERATING CO	WF STATE 2	2	HARPER HILL FT SND PC	02	30N	14W	C	875/N	1450/W	PE	
RICHARDSON OPERATING CO	WF STATE 2	2	BASIN FRUITLAND COAL	02	30N	14W	C	875/N	1450/W	PE	
RICHARDSON OPERATING CO	WF STATE 2	1	BASIN FRUITLAND COAL	02	30N	14W	H	1750/N	790/E	CO	1816
RICHARDSON OPERATING CO	WF STATE 2	1	HARPER HILL FT SND PC	02	30N	14W	H	1750/N	790/E	CO	1816
RICHARDSON OPERATING CO	WF STATE 2	4	BASIN FRUITLAND COAL	02	30N	14W	J	2060/S	2095/E	PE	
RICHARDSON OPERATING CO	WF STATE 2	4	HARPER HILL FT SND PC	02	30N	14W	J	2060/S	2095/E	PE	
RICHARDSON OPERATING CO	WF STATE 2	3	HARPER HILL FRT SAND PC	02	30N	14W	N	1237/S	1790/W	SP	
RICHARDSON OPERATING CO	WF STATE 2	3	BASIN FRUITLAND COAL	02	30N	14W	N	1237/S	1790/W	SP	
DUGAN PRODUCTION CORP	ATLANTIS	4	BASIN FRUITLAND COAL	03	30N	14W	B	850/N	1800/E	SI	1300
ALBERT C BRUCE JR	BRYAN-FED	1	VERDE GALLUP	03	30N	14W	C	520/N	2250/W	PA	5308
DUGAN PRODUCTION CORP	BIG FIELD	2	WC D3;FRUITLAND	03	30N	14W	C	790/N	1850/W	PA	1310
DUGAN PRODUCTION CORP	BIG FIELD	3	WC D3;PICTURED CLIFFS	03	30N	14W	G	1450/N	1850/E	PA	1320
DUGAN PRODUCTION CORP	BIG FIELD	4	WC D3;PICTURED CLIFFS	03	30N	14W	K	1850/S	1760/W	PA	1420
DUGAN PRODUCTION CORP	NICE	3	BASIN FRUITLAND COAL	04	30N	14W	B	830/N	1615/E	PA	1215
DUGAN PRODUCTION CORP	NICE	2	BASIN DAKOTA	04	30N	14W	B	830/N	1530/E	CO	6024
ALBERT C BRUCE JR	RICHARDSON	1	WC D3;GALLUP	04	30N	14W	C	370/N	1830/W	PA	5120
DUGAN PRODUCTION CORP	PHILS LAST JOB	1	SD	04	30N	14W	D	860/N	1170/W	SI	1100
ALBERT C BRUCE JR	FED-PIPKIN	1	WC D3;DAKOTA	05	30N	14W	A	790/N	790/E	PA	5900
ALBERT C BRUCE	FEDERAL PIPKIN A	1	WC D3;GALLUP	05	30N	14W	A	705/N	705/E	PA	5818
THOMAS A DUGAN	NORTON	1	WC D3;PICTURED CLIFFS	05	30N	14W	C	790/N	1850/W	PA	832
ALBERT C BRUCE JR	PIPKIN	2	VERDE GALLUP	05	30N	14W	H	1980/N	790/E	PA	5123
DUGAN PRODUCTION CORP	LISBON COM	1	BASIN DAKOTA	05	30N	14W	I	1450/S	790/E	CO	5953
DUGAN PRODUCTION CORP	HIGH DOLLAR COM	90	BASIN FRUITLAND COAL	08	30N	14W	N	675/S	1335/W	CO	1140
DUGAN PRODUCTION CORP	POLES PARADISE	91	BASIN FRUITLAND COAL	08	30N	14W	P	990/S	995/E	CO	1210
DUGAN PRODUCTION CORP	GIBRALTAR	1	UNDES FRUITLAND SAND	09	30N	14W	G	1850/N	1850/E	PA	1255
DUGAN PRODUCTION CORP	GIBRALTAR	1	BASIN FRUITLAND COAL	09	30N	14W	G	1850/N	1850/E	PA	1255
DUGAN PRODUCTION CORP	POLE'S PARADISE	2	WC; GREEK GALLUP	09	30N	14W	K	1850/S	1850/W	CO	6040
DUGAN PRODUCTION CORP	POLE'S PARADISE	2	BASIN DAKOTA	09	30N	14W	K	1850/S	1850/W	CO	6040

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
DUGAN PRODUCTION CORP	POLES PARADISE	90	BASIN FRUITLAND COAL	09	30N	14W	M	993/S	986/W	CO	1260
DUGAN PRODUCTION CORP	BIG FIELD	90	BASIN FRUITLAND COAL	10	30N	14W	A	555/N	570/E	CO	1910
DUGAN PRODUCTION CORP	BIG FIELD	5	EXT	10	30N	14W	I	1555/S	960/E	CO	1910
DUGAN PRODUCTION CORP	BIG FIELD	91	BASIN FRUITLAND COAL	10	30N	14W	K	2455/S	1880/W	PA	616
DUGAN PRODUCTION CORP	BIG FIELD	91Y	BASIN FRUITLAND COAL	10	30N	14W	K	2455/S	1905/W	CO	1884
DUGAN PRODUCTION CORP	BIG FIELD	7	HARPER HILL FT SND PC	10	30N	14W	M	1060/S	955/W	PE	
DUGAN PRODUCTION CORP	BIG FIELD	1	BASIN DAKOTA	10	30N	14W	P	790/S	790/E	CO	6680
DUGAN PRODUCTION CORP	LISBON	3	HARPER HILL FT SND PC	11	30N	14W		885/S	1875/W		
DUGAN PRODUCTION CORP	LISBON	90S	BASIN FRUITLAND COAL	11	30N	14W		750/N	1905/W		
DUGAN PRODUCTION CORP	LISBON	2	HARPER HILL FR SND PC	11	30N	14W	E	1590/N	660/W	CO	1920
DUGAN PRODUCTION CORP	BLAZER	1	WC D3;PICTURED CLIFFS	11	30N	14W	F	1800/N	1850/W	PA	1915
RICHARDSON OPERATING CO	WF FEDERAL 11	1	HARPER HIL PC	11	30N	14W	H	1740/N	670/E	PE	
RICHARDSON OPERATING CO	WF FEDERAL 11	1	BASIN FRUITLAND COAL	11	30N	14W	H	1740/N	670/E	PE	
RICHARDSON OPERATING CO	WF FEDERAL 11	4	HARPER HILL PC	11	30N	14W	I	1850/S	1865/E	PE	
RICHARDSON OPERATING CO	WF FEDERAL 11	4	BASIN FRUITLAND COAL	11	30N	14W	I	1850/S	1865/E	PE	
HUMBLE OIL & REFINING CO	N KIRTLAND UNIT	1	WC D3;MISS	11	30N	14W	J	1980/S	1980/E	PA	13016
DUGAN PRODUCTION CORP	LISBON	90	BASIN FRUITLAND COAL	11	30N	14W	L	1775/S	670/W	CO	1915
DUGAN PRODUCTION CORP	BLAZER	2	BASIN FRUITLAND COAL	11	30N	14W	O	1190/S	1500/E	PA	1895
ODESSA NATURAL CORP	LITTLE FEDERAL	5	WC D3;PICTURED CLIFFS	12	30N	14W	D	940/N	790/W	PA	1850
ODESSA NATURAL CORP	LITTLE FEDERAL	6	CONNOR FRUITLAND	12	30N	14W	L	1850/S	790/W	PA	1900
RICHARDSON OPER CO	WF FEDERAL 12	2	HARPER HIL PC	12	30N	14W	L	1815/S	828/W	SP	
RICHARDSON OPER CO	WF FEDERAL 12	2	BASIN FRUITLAND COAL	12	30N	14W	L	1815/S	828/W	SP	
DUGAN PRODUCTION CORP	PINON	1E	BASIN DAKOTA	13	30N	14W	L	1790/S	890/W	CO	6570
DUGAN PRODUCTION CORP	PINON COM	90	BASIN FRUITLAND COAL	13	30N	14W	L	1465/S	715/W	CO	1795
DUGAN PRODUCTION CORP	MOLLY PITCHER	5	HARPER HILL FT SND PC	14	30N	14W	A	755/N	940/E	SP	
DUGAN PRODUCTION CORP	MUCHO DEAL COM	90S	BASIN FRUITLAND COAL	14	30N	14W	D	755/N	850/W	PE	
DUGAN PRODUCTION CORP	MUCHO DEAL	1	BASIN DAKOTA	14	30N	14W	F	1850/N	1800/W	CO	6575
DUGAN PRODUCTION CORP	MUCHO DEAL	14	HARPER HILL FR SD PC	14	30N	14W	F	1450/N	1550/W	CO	1880

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
DUGAN PRODUCTION CORP	MOLLY PITCHER	90	BASIN FRUITLAND COAL	14	30N	14W	G	1725/N	1640/E	CO	1825
DUGAN PRODUCTION CORP	MOLLY PITCHER	1	BASIN DAKOTA	14	30N	14W	H	1650/N	990/E	CO	6652
DUGAN PRODUCTION CORP	MOLLY PITCHER	2	WC D3;FRUITLAND	14	30N	14W	H	1590/N	790/E	PA	1800
DUGAN PRODUCTION CORP	MOLLY PITCHER SWD	4	SWD MESAVERDE	14	30N	14W	H	2610/N	425/E	WD	4600
DUGAN PRODUCTION CORP	MOLLY PITCHER	1E	BASIN DAKOTA	14	30N	14W	I	1850/S	790/E	CO	6595
DUGAN PRODUCTION CORP	MOLLY PITCHER	3	HARPER HILL FR SND PC	14	30N	14W	J	1620/S	1895/E	CO	1780
DUGAN PRODUCTION CORP	MUCHO DEAL	1E	BASIN DAKOTA	14	30N	14W	K	1850/S	1800/W	CO	6570
DUGAN PRODUCTION CORP	MUCHO DEAL COM	90	BASIN FRUITLAND COAL	14	30N	14W	K	2255/S	1650/W	CO	1865
DUGAN PRODUCTION CORP	MUCHO DEAL COM	15	HARPER HILL FT SND PC	14	30N	14W	M	1230/S	830/W	PE	
DUGAN PRODUCTION CORP	MOLLY PITCHER	90S	BASIN FRUITLAND COAL	14	30N	14W	P	915/S	660/E	SP	
RICHARDSON OPERATING CO	WF FEDERAL 15	1	TWIN MOUNDS PC	15	30N	14W		815/N	790/E		
DUGAN PRODUCTION CORP	BIG FIELD SWD	9	WELL	15	30N	14W		1960/S	660/W		
DUGAN PRODUCTION CORP	BIG FIELD	92	BASIN FRUITLAND COAL	15	30N	14W		1850/S	1950/W		
DUGAN PRODUCTION CORP	BIG FIELD	92S	BASIN FRUITLAND COAL	15	30N	14W		790/S	1850/E		
RICHARDSON OPERATING CO	MS NONA	2	BASIN DAKOTA	15	30N	14W	A	920/N	970/E	ZA	6598
RICHARDSON OPERATING CO	MS NONA	2	BASIN FRUITLAND COAL	15	30N	14W	A	920/N	970/E	CO	6598
RICHARDSON OPERATING CO	MS NONA	2	HARPER HILL FRT SAND PC	15	30N	14W	A	920/N	970/E	CO	6598
RICHARDSON OPERATING CO	MS NONA	2	BASIN FRUITLAND COAL	15	30N	14W	A	920/N	970/E	CO	6598
RICHARDSON OPER CO	MR NONA 15	1	HARPER HILL PC	15	30N	14W	E	1935/N	710/W	CO	1620
DUGAN PRODUCTION CORP	BIG FIELD	6	HARPER HILL FR SND PC	15	30N	14W	I	1850/S	660/E	CO	1825
DUGAN PRODUCTION CORP	BIG FIELD	8	HARPER HILL FT SND PC	15	30N	14W	M	660/S	790/W	PE	
RICHARDSON OPERATING CO	WF STATE 16	2	BASIN FRUITLAND COAL	16	30N	14W	B	900/N	1745/E	CO	1420
RICHARDSON OPERATING CO	WF STATE 16	2	HARPER HILL FT SD PC EXT	16	30N	14W	B	900/N	1745/E	CO	1420
RICHARDSON OPERATING CO	WF STATE 16	4	EXT	16	30N	14W	C	1035/N	1330/W	CO	1410
RICHARDSON OPERATING CO	WF STATE 16	1	BASIN FRUITLAND COAL	16	30N	14W	M	930/S	1115/W	CO	1350
RICHARDSON OPERATING CO	WF STATE 16	1	HARPER HILL FT SAND PC	16	30N	14W	M	930/S	1115/W	CO	1350
RICHARDSON OPERATING CO	WF STATE 16	3	HARPER HILL FT SD PC EXT	16	30N	14W	O	1280/S	1970/E	CO	1400
DUGAN PRODUCTION CORP	TURKS TOAST	3	BASIN DAKOTA	17	30N	14W	D	950/N	910/W	CO	5956

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
DUGAN PRODUCTION CORP	TURKS TOAST	90S	BASIN FRUITLAND COAL	17	30N	14W	E	1335/N	935/W	CO	1190
DUGAN PRODUCTION CORP	TURKS TOAST	90S	HARPER HILL FR SND PC	17	30N	14W	E	1335/N	935/W	CO	1190
DUGAN PRODUCTION CORP	TURKS TOAST	91	BASIN FRUITLAND COAL	17	30N	14W	G	2500/N	1650/E	CO	1263
DUGAN PRODUCTION CORP	TURKS TOAST	91S	BASIN FRUITLAND COAL	17	30N	14W	J	1765/S	1700/E	CO	1315
DUGAN PRODUCTION CORP	TURKS TOAST	91S	HARPER HILL FR SND PC	17	30N	14W	J	1765/S	1700/E	CO	1315
DUGAN PRODUCTION CORP	TURK'S TOAST	90	BASIN FRUITLAND COAL	17	30N	14W	K	1850/S	1850/W	CO	1270
DUGAN PRODUCTION CORP	TURKS TOAST	4	BASIN DAKOTA	17	30N	14W	L	1850/S	790/W	ZA	6068
DUGAN PRODUCTION CORP	TURKS TOAST	4	BLANCO MESAVERDE	17	30N	14W	L	1850/S	790/W	WD	6068
RICHARDSON OPERATING CO	WF FEDERAL 20	2	TWIN MOUNDS PC	20	30N	14W	A	1086/N	866/E	CO	1325
RICHARDSON OPERATING CO	WF FEDERAL 20	2	BASIN FRUITLAND COAL	20	30N	14W	A	1086/N	866/E	CO	1325
RICHARDSON OPERATING CO	WF FEDERAL 20	4	BASIN FRUITLAND COAL	20	30N	14W	C	1175/N	1905/W	PE	
RICHARDSON OPERATING CO	WF FEDERAL 20	4	TWIN MOUNDS PC	20	30N	14W	C	1175/N	1905/W		
STONE DRILLING INC	SAN JUAN 30 14 UNIT	1	WC D3;GALLUP	20	30N	14W	G	1905/N	1990/E	PA	5360
BRITISH-AMER OIL PROD CO	GOV'T REILEY	1	WC D3;GALLUP	20	30N	14W	M	660/S	660/W	PA	5323
RICHARDSON OPERATING CO	WF FEDERAL 20	1	BASIN FRUITLAND COAL	20	30N	14W	N	915/S	1600/W	CO	1300
RICHARDSON OPERATING CO	WF FEDERAL 20	1	EXT	20	30N	14W	N	915/S	1600/W	CO	1300
RICHARDSON OPERATING CO	WF FEDERAL 20	3	TWIN MOUNDS PC EXT	20	30N	14W	O	1200/S	1515/E	CO	1305
RICHARDSON OPERATING CO	WF FEDERAL 20	3	BASIN FRUITLAND COAL	20	30N	14W	O	1200/S	1515/E	SP	1305
RICHARDSON OPERATING CO	WF FEDERAL 21	4	BASIN FRUITLAND COAL	21	30N	14W		1185/N	1425/E		
CALPINE NATURAL GAS CO LP	HOOVER	1	HARPER HILL FT SND PC	21	30N	14W	A	860/N	870/E	PA	6150
CALPINE NATURAL GAS LP	HOOVER	2	HARPER HILL FT SND PC	21	30N	14W	A	805/N	935/E	CO	1380
RICHARDSON OPERATING CO	WF FEDERAL 21	2	HARPER HILL FT SND PC	21	30N	14W	F	1915/N	1425/W	CO	1425
RICHARDSON OPERATING CO	WF FEDERAL 21	1	EXT	21	30N	14W	M	885/S	906/W	PA	1050
RICHARDSON OPERATING CO	WF FEDERAL 21	1	BASIN FRUITLAND COAL	21	30N	14W	M	885/S	906/W	PA	1050
RICHARDSON OPERATING CO	WF FEDERAL 21	1Y	EXT	21	30N	14W	M	885/S	856/W	CO	1250
RICHARDSON OPERATING CO	WF FEDERAL 21	1Y	BASIN FRUITLAND COAL	21	30N	14W	M	885/S	856/W	CO	1250
RICHARDSON OPERATING CO	WF FEDERAL 21	3	EXT	21	30N	14W	O	1100/S	1800/E	CO	1465
CALPINE NATURAL GAS LP	COOLIDGE COM	1	BASIN DAKOTA	22	30N	14W	A	950/N	1190/E	ZA	6190

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
CALPINE NATURAL GAS LP	COOLIDGE COM	1	BASIN FRUITLAND COAL	22	30N	14W	A	950/N	1190/E	CO	6190
CALPINE NATURAL GAS LP	COOLIDGE COM	1	HARPER HILL FT SD PC	22	30N	14W	A	950/N	1190/E	CO	6190
CALPINE NATURAL GAS LP	COOLIDGE	2	BASIN FRUITLAND COAL	22	30N	14W	D	1050/N	960/W	CO	1396
CALPINE NATURAL GAS LP	COOLIDGE	2	HARPER HILL FT SND PC	22	30N	14W	D	1050/N	960/W	CO	1396
CALPINE NATURAL GAS LP	ROOSEVELT	1	BASIN DAKOTA	22	30N	14W	I	1850/S	790/E	PA	6160
CALPINE NATURAL GAS LP	ROOSEVELT	3	HARPER HILL FT SND PC	22	30N	14W	I	1880/S	850/E	SP	1430
CALPINE NATURAL GAS LP	ROOSEVELT	3	BASIN FRUITLAND COAL	22	30N	14W	I	1880/S	850/E	CO	1430
CALPINE NATURAL GAS LP	ROOSEVELT SWD	1	SWD; MESAVERDE	22	30N	14W	I	1830/S	780/E	WD	4015
CALPINE NATURAL GAS LP	ROOSEVELT	2	BASIN FRUITLAND COAL	22	30N	14W	L	1890/S	825/W	CO	1301
CALPINE NATURAL GAS LP	ROOSEVELT	2	HARPER HILL FT SD PC	22	30N	14W	L	1890/S	825/W	CO	1301
CALPINE NATURAL GAS LP	MORTON	3	BASIN FRUITLAND COAL	23	30N	14W	E	1810/N	925/W	CO	1540
CALPINE NATURAL GAS LP	MORTON	3	HARPER HILL FR SND PC	23	30N	14W	E	1810/N	925/W	CO	1540
CALPINE NATURAL GAS CO	MORTON	1	BASIN DAKOTA	23	30N	14W	H	1750/N	1030/E	ZA	6385
CALPINE NATURAL GAS LP	MORTON	1	BASIN FRUITLAND COAL	23	30N	14W	H	1750/N	1030/E	CO	6385
CALPINE NATURAL GAS LP	MORTON	1	PC	23	30N	14W	H	1750/N	1030/E	CO	6385
CALPINE NATURAL GAS LP	MORTON	2	BASIN DAKOTA	23	30N	14W	I	1810/S	1100/E	ZA	6250
CALPINE NATURAL GAS LP	MORTON	2	BASIN FRUITLAND COAL	23	30N	14W	I	1810/S	1100/E	CO	6250
CALPINE NATURAL GAS LP	MORTON	2	HARPER HILL FT SD PC	23	30N	14W	I	1810/S	1100/E	CO	6250
CAPLINE NATURAL GAS LP	MORTON	4	HARPER HILL FT SD PC	23	30N	14W	K	1650/S	1695/W	CO	1540
CALPINE NATURAL GAS LP	MORTON	4	BASIN FRUITLAND COAL	23	30N	14W	K	1650/S	1695/W	CO	1540
DUGAN PRODUCTION CORP	PAN AMERICAN FED	1E	BASIN DAKOTA	24	30N	14W	D	500/N	800/W	CO	6510
DUGAN PRODUCTION CORP	FEDERAL	2	HARPER HILL FR SND PC	24	30N	14W	D	545/N	1215/W	CO	1755
HENRY S BIRDSEYE	USA CARPENTER 24	1	WC D3;PICTURED CLIFFS	24	30N	14W	M	1160/S	1180/W	PA	1422
DUGAN PRODUCTION CORP	JACOBS	3	HARPER HILL FR SND PC	26	30N	14W	C	1310/N	1654/W	CO	1425
DUGAN PRODUCTION CORP	JACOBS	2	BASIN DAKOTA	26	30N	14W	G	1800/N	1800/E	CO	6180
DUGAN PRODUCTION CORP	JACOBS	1	EXT	26	30N	14W	G	1850/N	1850/E	PA	1474
DUGAN PRODUCTION CORP	JACOBS COM	90	BASIN FRUITLAND COAL	26	30N	14W	G	1440/N	1675/E	CO	1425
DUGAN PRODUCTION CORP	HORACE SMITH	1R	BASIN DAKOTA	26	30N	14W	I	1640/S	1120/E	CO	6150

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
DUGAN PRODUCTION CORP	COM	90	BASIN FRUITLAND COAL	26	30N	14W	L	1850/S	1285/W	CO	1395
DUGAN PRODUCTION CORP	WINIFRED	1	EXT	26	30N	14W	O	790/S	1450/E	PA	1400
DUGAN PRODUCTION CORP	WINIFRED COM	90	BASIN FRUITLAND COAL	26	30N	14W	O	660/S	1980/E	CO	1315
DUGAN PRODUCTION CORP	HORACE SMITH	1	HARPERHILL FRT SAND PC	26	30N	14W	P	990/S	990/E	PA	6082
RICHARDSON OPERATING CO	WF FEDERAL 27	5	BASIN FRUITLAND COAL	27	30N	14W		1030/S	1025/E		
RICHARDSON OPERATING CO	WF FEDERAL 27	4	BASIN FRUITLAND COAL	27	30N	14W		133F/N	1330/E		
RICHARDSON OPERATING CO	WF FEDERAL 27	2	HARPER HILL PC	27	30N	14W	C	1021/N	1940/W	CO	1255
RICHARDSON OPERATING CO	WF FEDERAL 27	1	HARPER HILL FT SND PC	27	30N	14W	G	1350/N	1540/E	CO	1255
RICHARDSON OPERATING CO	WF FEDERAL 27	1	BASIN FRUITLAND COAL	27	30N	14W	G	1350/N	1540/E	SP	
RICHARDSON OPERATING CO	WF FEDERAL 27	3	BASIN FRUITLAND COAL	27	30N	14W	K	1775/S	1400/W	SP	
RICHARDSON OPERATING CO	WF FEDERAL 27	3	HARPER HILL FT SND PC	27	30N	14W	K	1775/S	1400/W	CO	1250
DUGAN PRODUCTION CORP	MAYRE	4R	HARPER HILL FR SND PC	27	30N	14W	O	790/S	1850/E	CO	1240
DUGAN PRODUCTION CORP	MAYRE	4	HARPER HILL FT SAND PC	27	30N	14W	P	790/S	800/E	PA	1240
JEROME P MCHUGH	MAYRE	3	WC D3;PICTURED CLIFFS	27	30N	14W	P	890/S	810/E	PA	1270
CELSIUS ENERGY CO	GREG	1	BASIN DAKOTA	27	30N	14W	P	1050/S	1060/E	PA	6100
MOUNTAIN FUEL SUPPLY CO	FRUITLAND	1	WC D3;MESAVERDE	28	30N	14W	A	890/N	790/E	PA	12448
RICHARDSON OPERATING CO	WF FEDERAL 28	1	TWIN MOUNDS FT SD PC	28	30N	14W	A	985/N	855/E	PA	1310
RICHARDSON OPERATING CO	WF FEDERAL 28	1	BASIN FRUITLAND COAL	28	30N	14W	A	985/N	855/E	PA	1310
MOUNTAIN FUEL SUPPLY CO	FRUITLAND	1	TWIN MOUNDS FRT SND PC	28	30N	14W	A	890/N	790/E	PA	12448
RICHARDSON OPERATING CO	WF FEDERAL 28	1R	BASIN FRUITLAND COAL	28	30N	14W	A	1067/S	791/E	CO	1271
RICHARDSON OPERATING CO	SALTY DOG SWD	3R	SWD; ENTRADA	28	30N	14W	A	850/N	770/E	WD	7167
RICHARDSON OPERATING CO	WF FEDERAL 28	1R	HARPER HILL FRT SND PC	28	30N	14W	A	1067/S	791/E	SP	
RICHARDSON OPER CO	WF FEDERAL 28	4	HARPER HILL PC	28	30N	14W	F	1811/N	1882/W	CO	1300
RICHARDSON OPERATING CO	WF FEDERAL 28	2	EXT	28	30N	14W	J	1525/S	1850/E	CO	1220
MALCO REFINERIES INC	STRAT TEST 28	1		28	30N	14W	K	1980/S	1980/W	PA	
RICHARDSON OPERATING CO	WF FEDERAL 28	3	BASIN FRUITLAND COAL	28	30N	14W	N	845/S	1652/W	CO	1273
RICHARDSON OPERATING CO	WF FEDERAL 28	3	HARPER HILL FRT SAND PC	28	30N	14W	N	845/S	1652/W	CO	1273
RICHARDSON OPERATING CO	WF FEDERAL 29	1	BASIN FRUITLAND COAL	29	30N	14W	B	790/N	1410/E	CO	1280

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Attachment VI. Tabulation of data on offset wells.

OPERATOR	WELL NAME	WELL NO	POOL	SEC	TWN	RGE	UL	FTAGE NS	FTAGE EW	STATUS	TD
WEXPRO CO	STEVENS	1	BASIN DAKOTA	29	30N	14W	B	790/N	1520/E	PA	6023
RICHARDSON OPERATING CO	WF FEDERAL 29	1	TWIN MDS FT SND PC EXT	29	30N	14W	B	790/N	1410/E	CO	1280
RICHARDSON OPERATING CO	WF FEDERAL 29	4	BASIN FRUITLAND COAL	29	30N	14W	D	775/N	735/W	SP	1205
RICHARDSON OPERATING CO	WF FEDERAL 29	4	TWIN MOUNDS PC	29	30N	14W	D	775/N	735/W	CO	1205
RICHARDSON OPERATING CO	WF FEDERAL 29	3	BASIN FRUITLAND COAL	29	30N	14W	M	1010/S	920/W	CO	1115
RICHARDSON OPERATING CO	WF FEDERAL 29	3	PC	29	30N	14W	M	1010/S	920/W	CO	1115
RICHARDSON OPERATING CO	WF FEDERAL 29	2	TWIN MOUNDS PC EXT	29	30N	14W	P	795/S	665/E	CO	1300

* Wells within 1/2-mile area of review are shaded. No wells within area of review penetrate the proposed injection zone.

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

Part VII. Operations Plan

1. Average Injection Rate: 5,000 bwpd with a maximum of 6,000 bwpd.

2. The system will be open.

3. Average Injection Pressure: 1200 psi and the maximum will be 1,435 psi.

3) The source of injected water will be produced water from Fruitland Coal/Pictured Cliffs wells and Gallup/Dakota wells within the immediate area (T30N, R14 and 15W). Attachment VII-4a. is an analysis of the Fruitland Coal water, Attachment VII-4b. is an analysis of the Pictured Cliffs water, Attachment VII-4c. is an analysis of the Gallup water and Attachment VII-4d. is an analysis of the Dakota water. The water to be injected is compatible with the water in the disposal zone.

4) Injection is for disposal purposes into a zone (Entrada Sandstone) that is not productive of oil or gas within one mile of the proposed injection well. There is an Entrada injection well 1-1/2 miles south of the subject well, however, an analysis of the disposal zone water is unavailable.

Attachment VII-4a.
(Fruitland Coal)

Key Energy Services
Water Analysis Result Form
708 S. Tucker, Farmington. NM. 87401
Office: (505) 325-4192
Fax: (505) 564-3524

UNLOCK YOUR POTENTIAL
Pressure Pumping Services

Operator:	Dugan Production	Sample Date:	September 1, 2004
		Analysis Date:	September 1, 2004
Well :	Pinon Com 90	District:	Farmington
Formation:	Fruitland Coal	Requested by:	Kurt Fagrelius
County:		Technician:	Ban Barela/Mike Brown
Depth:		Source:	Well

PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY: 1.000 AT 79 Degrees F.

pH:	7.0	MAGNESIUM:	7 ppm
RESISTIVITY:	0.95 ohm/meter	CALCIUM:	60 ppm
IRON:	0 ppm	BICARBONATES:	2074 ppm
H2S:	0 ppm	CHLORIDES:	3600 ppm
POTASSIUM:	7 ppm	SODIUM :	3035 ppm
SULFATES:	0.00 ppm	TDS:	8784 ppm

CaCO3 Scale Tendency = Remote
CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

Attachment VII-4b.
(Pictured Cliffs)

Key Energy Services
Water Analysis Result Form
708 S. Tucker, Farmington. NM. 87401
Office: (505) 325-4192
Fax: (505) 564-3524

UNLOCK YOUR POTENTIAL

Pressure Pumping Services

Operator:	Dugan Production	Sample Date:	September 1, 2004
		Analysis Date:	September 1, 2004
Well :	Mucho Deal #14	District:	Farmington
Formation:	Pictured Cliffs	Requested by:	Kurt Fagrelius
County:		Technician:	Ban Barela/Mike Brown
Depth:		Source:	Well

PHYSICAL AND CHEMICAL DETERMINATION

SPECIFIC GRAVITY: 1.000 AT 76 Degrees F.

pH:	8.0	MAGNESIUM:	0 ppm
RESISTIVITY:	1.03 ohm/meter	CALCIUM:	40 ppm
IRON:	0 ppm	BICARBONATES:	2318 ppm
H2S:	0 ppm	CHLORIDES:	3600 ppm
POTASSIUM:	4 ppm	SODIUM :	3160 ppm
SULFATES:	0.00 ppm	TDS:	9123 ppm

CaCO3 Scale Tendency = Remote
CaSO4 Scale Tendency = Remote

REMARKS:

Data contained in this document is based on the best information & most current test procedures and materials available. No liability is expressed or implied.

Attachment VII-4c.
(Gallup)

BJ SERVICES COMPANY

WATER ANALYSIS #FW01W172

FARMINGTON LAB

GENERAL INFORMATION			
OPERATOR:	DUGAN PRODUCTION	DEPTH:	
WELL:	PITTAM POND #5	DATE SAMPLED:	07/14/98
FIELD:	SEC35/T30N/R15W	DATE RECEIVED:	07/15/98
SUBMITTED BY:		COUNTY: SAN JUAN	STATE: NM
WORKED BY	:D. SHEPHERD	FORMATION:	GALLUP??
PHONE NUMBER:			

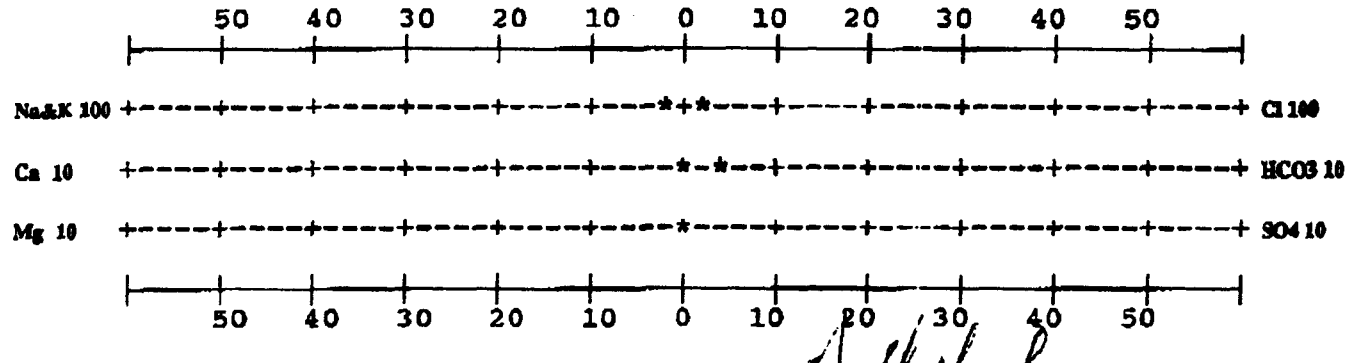
SAMPLE DESCRIPTION
SAMPLE FOR ANALYSIS

PHYSICAL AND CHEMICAL DETERMINATIONS			
SPECIFIC GRAVITY:	1.013 @ 78°F	PH:	7.11
RESISTIVITY (MEASURED):	0.510 ohmm @ 75°F		
IRON (FE++) :	25 ppm	SULFATE:	0 ppm
CALCIUM:	126 ppm	TOTAL HARDNESS	494 ppm
MAGNESIUM:	43 ppm	BICARBONATE:	2,457 ppm
CHLORIDE:	7,000 ppm	SODIUM CHLORIDE(Calc)	11,514 ppm
SODIUM+POTASS:	5,238 ppm	TOT. DISSOLVED SOLIDS:	15,188 ppm
H2S: NO TRACE		POTASSIUM CHLORIDE: 22 (PPM)	

REMARKS

Sample after approx 900 bbls. load water recovered (well fractured w/ city water)

STIFF TYPE PLOT (IN MEQ/L)



ANALYST D. Shepherd
D. SHEPHERD

Attachment VII-4d.
(Dakota)

The Western Company of North America

3250 South Side River Road
Farmington, New Mexico 87401
Phone (505)327-6222
Fax (505)327-5766

API WATER ANALYSIS

Company DUGAN Sample No. 8013944 Date Tested 1/24/94

Field _____ Legal Description _____ County or Parish _____ State _____

Lease or Unit [redacted] #15 Depth _____ Formation _____ Water, B/D _____

Type of Water (Produced, Supply, ect.) _____ Sampling Point _____ Sampled By _____

DISSOLVED SOLIDS

CATIONS	mg/l	me/l
Sodium, Na	12992	565
Calcium, Ca	280	14
Magnesium, Mg	194	16
Barium, Ba		

ANIONS	mg/l	me/l
Chloride, Cl	20611	581
Sulfate, SO_4		
Carbonate, CO_3		
Bicarbonate, HCO_3	1220	20
Hydroxide, OH		

Total Dissolved Solids (calc.) 35,298

Iron, Fe (total) 3 V
Sulfide, as H_2S _____

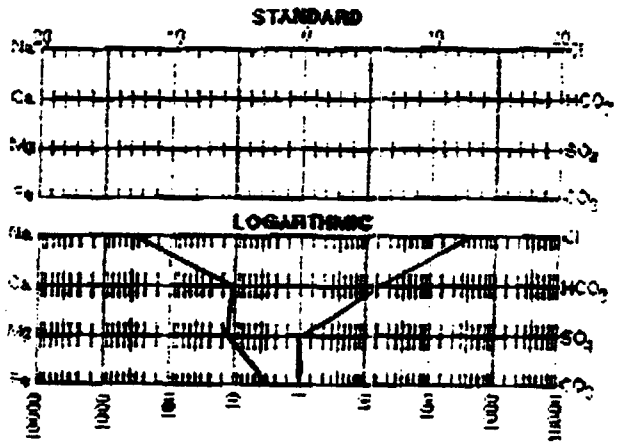
Remarks & Recommendations:

from swab sample

OTHER PROPERTIES

pH	6.65
Specific Gravity, 60/60 F	1.045
Resistivity (ohm-meters) @ F	0.21
Total Hardness	1500

WATER PATTERNS-me/l



Analyst: DC

Please refer any questions to:
Loren Diede-District Engineer
Thank you.

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

Part VIII. Geologic Data

The proposed injection interval is the Entrada Sandstone from approximately 7,174 – 7312 feet. The Ojo Alamo is a known source of stock water but has been eroded off of the surface in the area. There are no known drinking water sources below the Mesaverde interval. The formations tops in the well are as follows:

Kirtland Sh.	Surface	Greenhorn Ls.	5363
Fruitland Fmt.	910	Graneros Sh.	5922
Pictured Cliffs Ss.	1349	Dakota Ss.	5971
Lewis Sh.	1535	Morrison Fmt.	6210
Cliff House Ss.	2878	Bluff Ss.	6950
Menefee	3040	Summerville	7070
Point Lookout Ss.	3778	Todilto	7162
Mancos Sh.	4134	Entrada Ss.	7174
Gallup Ss.	5110	Chinle	7312
		Total Depth	**7513**

Part IX. Stimulation Program

Following injection rate tests, it may be necessary to stimulate the Entrada Ss. by acidizing or fracturing.

Part X. Logging and Test Data

All logs and test data for the injection well will be submitted to the New Mexico Oil Conservation Division in Aztec, NM.

Part XI. Fresh Water Samples

A records search of water wells located within one mile of the proposed disposal well was conducted. One water well was found to exist approximately 4,050 feet north of the disposal well. The well was located in section 15, T24N, R8W (NE/NW/NW/4) and was drilled by E.C. Barry on December 5, 1977 to a depth of 190'. No other information including water analysis is available on this well.

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

Part XII. Statement of Geologic and Engineering Data

I have examined all 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.

Kurt Fagrelius — Sept. 14, 2004

Kurt Fagrelius, Geologist — Date

Application for Authorization to Inject

Dugan Production Corp.

Big Field SWD #9

Part XIII. Proof of Notice

Attached are proof's of notice that this application has been sent by certified mail, to the surface owner of the land which the injection well is to be located on and all leasehold operators within one-half mile of the well location. Also, proof of publication is enclosed showing the legal advertisement which was published in the Farmington Daily Times.

AFFIDAVIT OF PUBLICATION

Ad No. 50430

STATE OF NEW MEXICO
County of San Juan:

CONNIE PRUITT, being duly sworn says: That she is the CLASSIFIED MANAGER of THE DAILY TIMES, a daily newspaper of general circulation published in English at Farmington, said county and state, and that the hereto attached Legal Notice was published in a regular and entire issue of the said DAILY TIMES, a daily newspaper duly qualified for the purpose within the meaning of Chapter 167 of the 1937 Session Laws of the State of New Mexico for publication and appeared in the Internet at The Daily Times web site on the following day(s):

Tuesday, September 7, 2004.

And the cost of the publication is $30.32

Connie Pruitt

ON 9-13-04 CONNIE PRUITT appeared before me, whom I know personally to be the person who signed the above document.

Ginny Beck

My Commission Expires April 2, 2008.

COPY OF PUBLICATION

918 Legals

NOTICE

DUGAN PRODUCTION Corp., P.O. Box 420, Farmington, NM, 87499, is making application for administrative approval to dispose of produced water by underground injection. Contact person is Kurt Fagrelius, phone 505-325-1821. The proposed disposal site is the Big Field SWD #9, located 1960' fsl & 660' fwl, Sec. 15, Twn. 30N, Rng. 14W, San Juan Co., NM. Water will be injected into the Entrada Sandstone between 7174' and 7312' below the surface. Maximum injection pressure is 1435 psi. Maximum injection rate is 6,000 barrels of water daily. Any interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, NM 87505 within 15 days.

Legal No. 50430 published in The Daily Times, Farmington, New Mexico on Tuesday, September 7, 2004.

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. David Catanach
New Mexico Oil Conservation
Division Engineering Bureau
1220 South Saint Francis St.
Santa Fe, New Mexico
87505

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☑ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☑ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7002 2410 0001 0134 1402

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1035

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Anne Jones
Richardson Operating
501 Airport Drive, Suite 119
Farmington, NM 87401

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7002 2410 0001 0134 1372

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1035

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Jerry Sullivan
Calpine Natural Gas Company
1200 17th Street, Suite 770
Denver, CO 80202

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7002 2410 0001 0134 1389

PS Form 3811, August 2001 Domestic Return Receipt 102595-02-M-1035

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Frank Chavez
New Mexico Oil Conservation
Division
1000 Rio Brazo Rd
Aztec, NM 87410

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☒ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

7002 - 2410 - 0001 - 0134 - 1419