

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no
- II. Operator: Devon Energy Corporation (Nevada)
Address: 20 North Broadway, Suite 1500, Oklahoma City, OK 73102
Contact party: E. L. Buttross, Jr. (Ernie) Phone: (405) 552-4509
- 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.
refer to Attachment III
- 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. refer to Attachment V
- * 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. refer to Attachment VI
- VII. Attach data on the proposed operation, including: refer to Attachment VII
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. refer to Attachment VIII
- IX. Describe the proposed stimulation program, if any. The perfs will be acidized with 15% HCl acid.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) This information is already on file with the OCD.
- * 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. There are no fresh water wells in this area.
- 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. refer to Attachment XII.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. refer to Attachment XIV.
- 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: E. L. Buttross, Jr.

Title District Engineer

Signature: E. L. Buttross Jr.

Date: 9-7-94

- * 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.

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 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.

CHECKLIST for ADMINISTRATIVE INJECTION APPLICATIONS

WFX
664

Operator: DEVON ENERGY CORP. Well: EAST SHERGART UNIT (4 WELLS)
Contact: F.L. BUTTROSS, JR. Title: DIST. ENG. Phone: 405-552-4509
DATE IN 9-22-94 RELEASE DATE 10-6-94 DATE OUT 11-4-94

Proposed Injection Application is for: ☒ WATERFLOOD ☒ Expansion ☐ Initial

Original Order: R-205943769 ☒ Secondary Recovery ☐ Pressure Maintenance

SENSITIVE AREAS

☐ SALT WATER DISPOSAL

☐ WIPP ☐ Capitan Reef ☐ Commercial Operation

Data is complete for proposed well(s)? YES Additional Data _____

AREA of REVIEW WELLS:

7 Total # of AOR 1 # of Plugged Wells

YES Tabulation Complete YES Schematics of P & A's

YES Cement Tops Adequate NO AOR Repair Required

INJECTION INFORMATION

Injection Formation(s) _____

Source of Water _____ Compatible _____

PROOF OF NOTICE

☒ Copy of Legal Notice ☒ Information Printed Correctly

☒ Correct Operators ☒ Copies of Certified Mail Receipts

☐ Objection Received ☐ Set to Hearing _____ Date

NOTES: _____

APPLICATION QUALIFIES FOR ADMINISTRATIVE APPROVAL YES

COMMUNICATION WITH CONTACT PERSON:

1st Contact: <input type="checkbox"/> Telephoned <u>fax</u> Letter <u>11-1-94</u> Date	Nature of Discussion <u>ADDITIONAL AOR INFO</u>
2nd Contact: <input type="checkbox"/> Telephoned <input type="checkbox"/> Letter _____ Date	Nature of Discussion _____
3rd Contact: <input type="checkbox"/> Telephoned <input type="checkbox"/> Letter _____ Date	Nature of Discussion _____

ATTACHMENT III (tabular)

WELL DATA

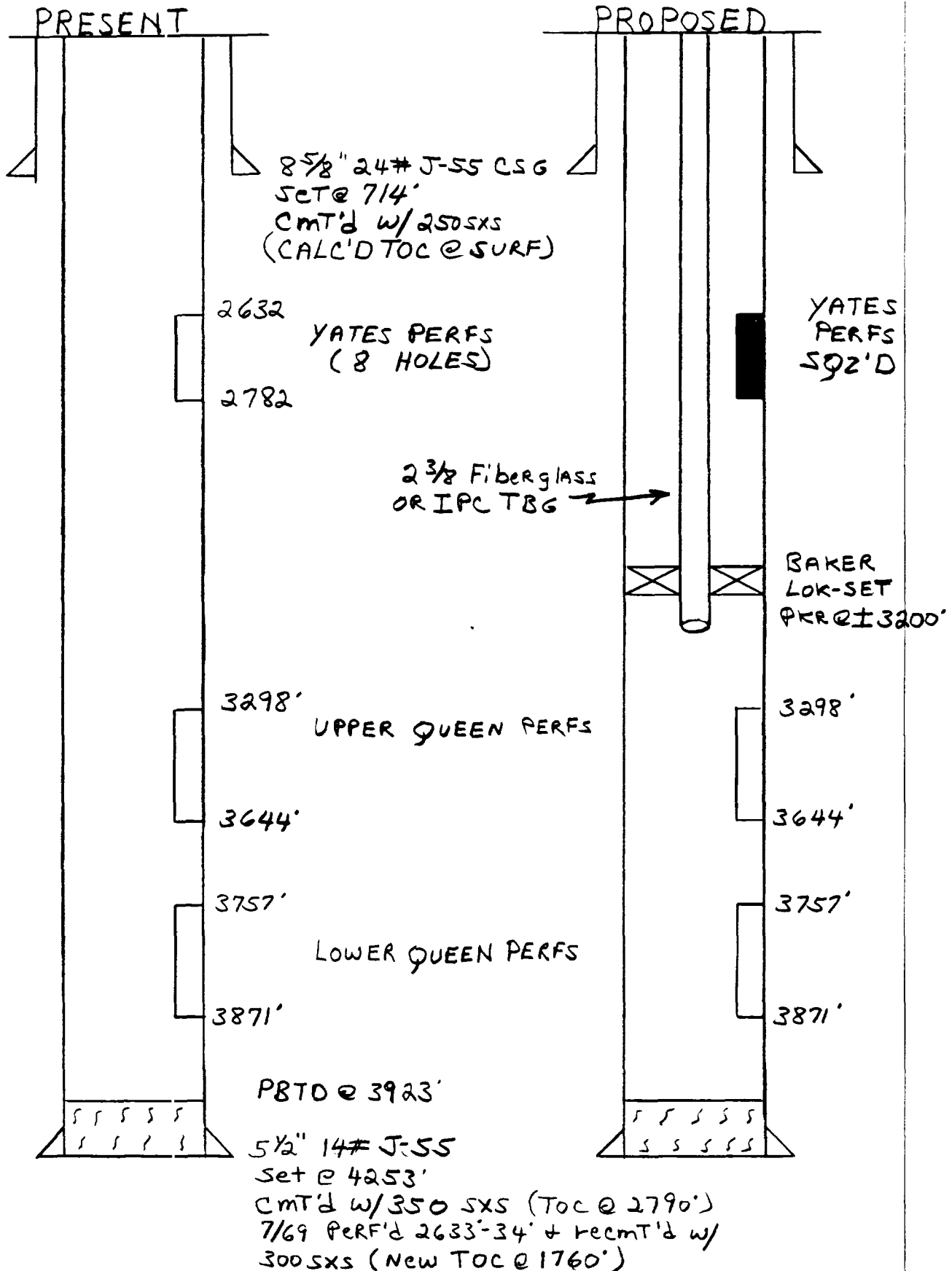
- A. (1) East Shugart Unit #2
990' FNL & 1650' FEL
Section 34-T1&S-R31E
Eddy County, NM
- (2) Please refer to the wellbore schematic labeled Attachment III-(schematic).
Cement was circulated back to surface on the surface string and the production string.
- (3) We will be using 2 3/8" fiberglass or internally coated tubing. The tubing will be set at 3200' (\pm).
- (4) We will use a 5 1/2" x 2 3/8" Loc-set packer (internally coated) set at 3200' (\pm).
- B. (1) The injection formations will be the Queen sands in the Shugart (Y-SR-Q-G) Field.
- (2) The injection interval will be selectively perforated. The proposed perforated intervals are as follows:
- | | |
|---------------------------|-------------------|
| 3298' - 3305' (17 holes) | |
| 3384' - 3404' (81 holes) | |
| 3410' - 3425' (65 holes) | |
| 3510' - 3534' (97 holes) | |
| 3632' - 3644' (49 holes) | Total perfs = 530 |
| 3757' - 3765' (33 holes) | |
| 3785' - 3791' (25 holes) | |
| 3806' - 3835' (121 holes) | |
| 3846' - 3851' (21 holes) | |
| 3866' - 3871' (21 holes) | |
- (3) This well was originally drilled as a Yates-Queen oil well.
- (4) Please refer to the wellbore schematic labeled Attachment III (schematic). The Yates perfs from 2632' - 2782' will be cement squeezed.
- (5) There are no lower oil or gas zones in the area of this well. The Yates is open above the proposed injection perfs from 2632'-2782' but these perfs will be cement squeezed prior to converting the well to injection.

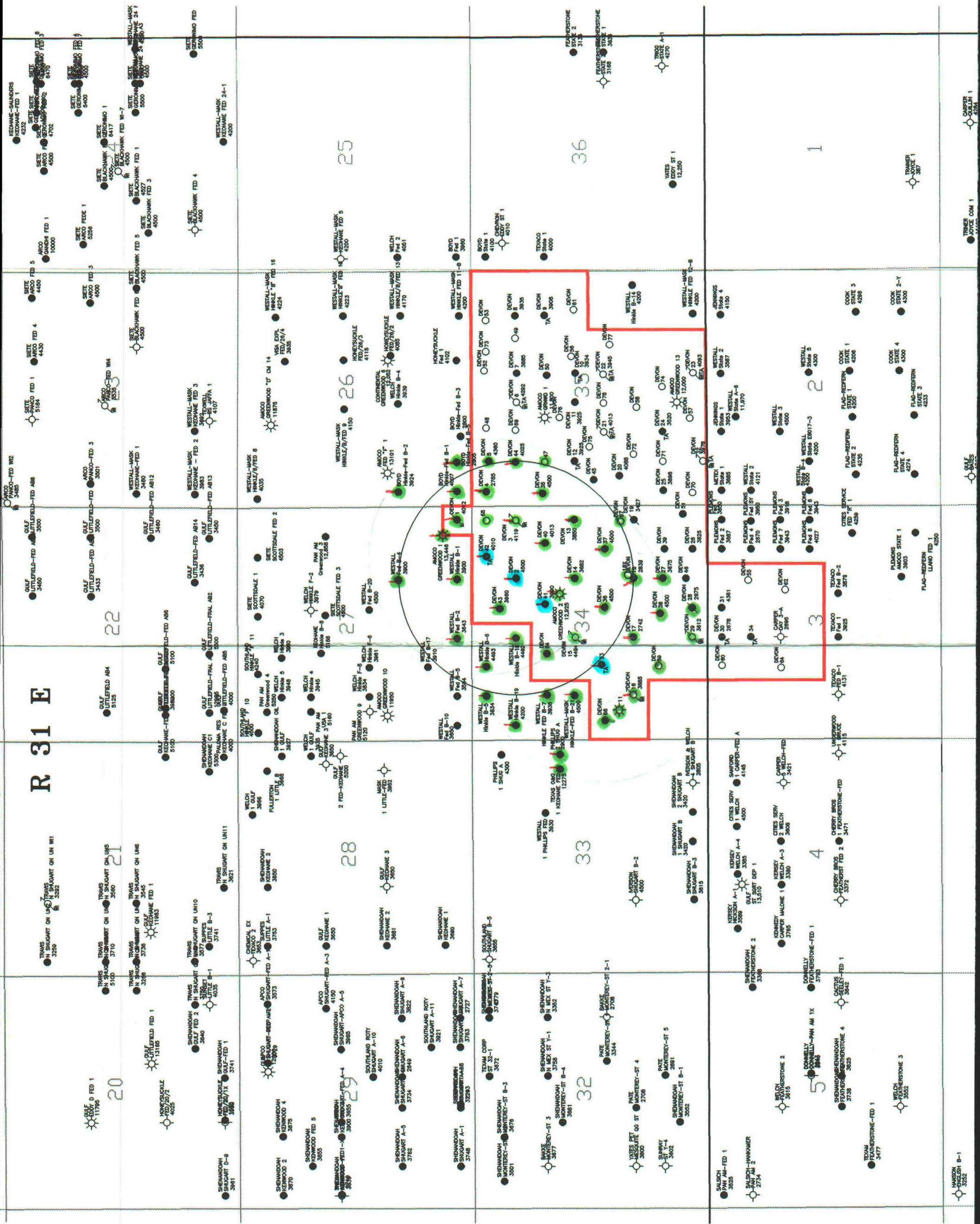
WELLBORE SCHEMATIC

EAST SHUGART UNIT #2

990' FNL + 1650' FEL, SEC 34-T18S-R31E

EDDY COUNTY, NM.





ATTACHMENT VI

WELL NAME	LOCATION	SPUD DATE	COMPLETION DATE	TYPE OF WELL	DEPTH/PBTD	COMPLETION RECORD
East Shugart Unit #1 (Devon)	330' FSL & 330' FEL Sec. 27-18S-31E	12/11/57	2/20/58	Oil	4010' TD 3801' PBTD	8 5/8" csg @ 915' (50 sx cmt) 7" csg @ 3968' (150 sx cmt) Perf'd 3764'-3754' (60 holes) Perf'd 2/3/61 3323'-3336' (4 holes/ft) Perf'd 5/10/62 2608'-2630', 2638'-2656', 2690'-2702', and 2715'-2726' Perf'd Queen 3303'-3307', 3520'-3533', 3635'-3638', 3646'-3655', 3797'-3802', 3806'-3813' w/2 JSPF.
			8/22/69	Converted to dual WIW	3850' New PBTD	Perf'd Queen 3820'-3834' w/2 JSPF. Squeezed Yates 2608'-2736' (350 sx CI C)
			3/3/94	Converted to single WIW		
East Shugart Unit #2 (Devon)	990' FNL & 1650' FEL Sec. 34-18S-31E	7/15/59	8/4/59	Oil	4500' TD 4246' PBTD	8 5/8" csg @ 714' (250 sx cmt) 5 1/2" csg @ 4246' (350 sx cmt) Perf'd 3765'-3871' Perf'd 10/61 3384'-3534' w/4/JSPF Plug at 3560' Perf'd Yates 8/5/69 2633'-2634' w/4 JSPF Cemented behind 5 1/2" csg w/200 sx Class C Squeezed perfs w/60 sx cmt. Perf'd Queen 3632'-3644' & 3298'-3306' w/2 JSPF Perf'd 2632', 2668', 2701', 2708', 2714', 2766', & 2782' w/1 .40" jet (8 holes) Perf'd 3300'-3882' (64 holes)
East Shugart Unit #3 (Devon)	990' FNL & 330' FEL Sec. 34-18S-31E	8/9/58	10/27/58	Oil	4117' TD	8 5/8" csg @ 910' (50 sx cmt) 7" csg @ 4117' (200 sx cmt) Perf'd 3880'-3890' (60 holes), 3822'-3832' (6 shots/ft) 3836'-3850' (6 shots/ft) Squeezed 3/11/64 2794' through 2 holes (75 sx cmt) Perf'd 2735', 2730', 2726', 2722', 2709', 2699', 2692', 2680', 2670', 2662', 2640', 2632' Perf'd 2804', 2807', 2813', 2818', 3324', 3330', Perf'd Queen 8/26/69 3538'-3545', 3650'-3652' and 3656'-3662' w/2 JSPF. Squeezed Yates 12/7/75 2632'-2818' (250 sx cmt) Perf'd 3324'-3844'
			5/24/66	Converted to WIW	CIBP @ 3480' New PBTD 3870'	

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East Shugart Unit #4 (Devon)	330' FNL & 330' FWL Sec. 35-18S-31E	6/21/57	8/57	Oil	2785 TD 2775' PBTD	8 5/8" csg @ 895' (50 sx cmt) 7" csg @ 2785' (100 sx cmt) Perf'd 2653'-2669' w/6 shots/ft, 2671'-2680' w/4 shots/ft, and 2711'-2719' w/4 shots/ft
East Shugart Unit #13 (Devon)	2310' FNL & 330' FEL Sec. 34-18S-31E	4/19/57	7/15/94	Oil	3855' TD	8" csg @ 190' (50 sx cmt) 5 1/2" csg @ 3850' (200 sx cmt) Perf'd 3832'-3854' 10 shots/ft Perf'd (10/5/69 - 10/7/69) 2740'-2741' w/4 JS PF Cmt'd 8 5/8" X 5 1/2" annulus w/ 400 sx Class C cmt. Squeezed perfs 2740'-2741' w/ 75 sx cmt. Perf'd Queen (10/7/69 - 10/13/69) 3335', 3339', 3399', 3408', 3412', 3418', 3427', and 3438' w/ one 1/2" JS PF (8 holes) Perf'd Yates (10/7/69 - 10/13/69) 2651', 2656', 2672', 2698', 2707', 2755', 2762', 2768', 2774', and 2782' w/one 1/2" JS PF. Perf'd Queen (11/22/91) 3812' - 3819' w/1 JS PF (8 holes). 3333', 36', 83', 93', 94', 98', 3405', 07', 10', 11', 15', 19', 26', 28', 67', 68', 70', 3528', 30', 34', 36', 53', 54', 57', 3638', 42', 45', 48', 50', 53', 91', 97', 3712', 13', 14', 67', 68', 69', and 70' w/1 JS PF (39 holes).
East Shugart Unit #14 (Devon)	2310 FNL & 1650' FEL Sec. 34-18S-31E	5/14/58	7/15/58	Oil	3682' TD	8 5/8" csg @ 898' (75 sx cmt) 5 1/2" csg @ 3676 (200 sx cmt) Perf'd 3520'-31', 3540'-46', and 3548' -52'.
East Shugart Unit #16 (Devon)	1650' FSL & 990' FWL Sec. 34-18S-31E	7/26/59	9/29/59	Oil	3857' TD 2900' PBTD	8" csg @ 862' (50 sx cmt) 5 1/2" csg @ 2900' (150 sx cmt) Perf'd 2777'-59', 2724'-16', 2712'-02', 2684'-68', and 2652'-34'.

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East Shugart Unit #18 (Devon)	1650' FSL & 1650' FEL Sec. 34-18S-31E	3/9/59	5/10/59	Oil	3905' TD 3905' PBTD	8 5/8" csg @ 911' (50 sx cmt) 7" csg @ 2655' (100 sx cmt) 4 1/2" csg @ 3550' (250 sx cmt) Perf'd Yates 2685', 94', 2709', 16', 38', 43', 2821', 40', and 47' (9 holes). Open hole 3550' - 3905'.
East Shugart Unit #35 (Devon)	1650' FNL & 330' FWL Sec. 35-18S-31E	6/14/93	8/12/93	Oil	4500' TD 4449' PBTD	8 5/8" csg @ 942' (480 sx cmt) 5 1/2" csg @ 4495' (985 sx cmt) Perf'd 3779'-3856' (53 perfs, 0.52")
East Shugart Unit #36 (Devon)	2310' FSL & 2310' FEL Sec. 34-18S-31E	5/31/93	8/4/93	Oil	4470' TD 4425' PBTD	8 5/8" csg @ 974' (480 sx cmt) 5 1/2" csg @ 4470' (805 sx cmt) Perf'd 3762'-3442' (1 shov/ft, 40 perfs), 3820'-24' and 3830'-3842' (32 perfs).
East Shugart Unit #37 (Devon)	2270' FSL & 840' FEL Sec. 34-18S-31E	6/28/93	8/19/93	Oil	4500' TD 4427' PBTD	8 5/8" csg @ 965' (480 sx cmt) 5 1/2" @ 4500' (1110 sx cmt) Perf'd 3765'-3844' (34 perfs)
East Shugart Unit #40 (Devon)	1650' FNL & 840' FEL Sec. 34-18S-31E	11/20/93	7/20/94	Oil	4013' TD 3883' PBTD	8 5/8" csg @ 973' (478 sx cmt) 5 1/2" csg @ 4009' (1113 sx cmt) Perf'd 2736'-52' (17 holes, 0.40 EHD), 3651'-70' (20 holes), 3766'-81' (8 holes, 0.52 EHD), 3822'-25' (14 holes, 0.52 EHD), 3840'-53' (14 holes, 0.52 EHD).
East Shugart Unit #41 (Devon)	1650' FNL & 2210' FEL Sec. 34-18S-31E	12/2/93	5/28/94	Oil	3990' TD 3936' PBTD	8 5/8" csg @ 973' (478 sx cmt) 5 1/2" csg @ 3989' (978 sx cmt) Perf'd 3760'-61', 3763'-65', 3816'-20', 3826'-35' (29 holes, 0.40" EHD) and 3634'-3650' (17 holes, 0.40" EHD).
East Shugart Unit #42 (Devon)	330' FNL & 1140' FEL Sec. 34-18S-31E	12/16/93	7/5/94 (SI)	Oil	4009' TD 3950' PBTD	8 5/8" csg @ 955' (478 sx cmt) 5 1/2" csg @ 4009' (889 sx cmt) Perf'd 3641'-3658' w/ 1 SPF, 3758'-64', 3802'-04, 3809'-12' w/2 SPF (0.52" EHD). NOTE: Waiting on approval to convert to W1W.

ATTACHMENT VI

<u>WELL NAME</u>	<u>LOCATION</u>	<u>SPUD DATE</u>	<u>COMPLETION DATE</u>	<u>TYPE OF WELL</u>	<u>DEPTH/PBTD</u>	<u>COMPLETION RECORD</u>
East Shugart Unit #43 (Devon)	630' FNL & 2310' FEL Sec. 34-18S-31E	1/2/94	3/25/94	Oil	3960' TD 3900' PBTD	8 5/8" csg @ 975' (478 sx cm) 5 1/2" csg @ 3959' (950 sx cm) Perf'd 3734'-39' (11 holes), 3780' (1 hole), 3784'91' (16 holes), 3797'-3801' (5 holes), and 2664'74' (11 holes) 0.40 EHD.
East Shugart Unit #44 (Devon)	990' FNL & 990' FWL Sec. 35-18S-31E	11/9/93	1/10/94	Oil	4025' TD 3958' PBTD	8 5/8" csg @ 956' (478 sx cm) 5 1/2" csg @ 4025' (916 sx cm) Perf'd 3842'-51' (19 holes), 3858'-70' (25 holes) and 3794'-3800' (7 holes).
Hinkle B Federal #1 (Westall)	330' FSL & 1650' FEL Sec. 27-18S-31E	12/27/72	3/20/73	Oil	3900' TD	8 5/8" csg @ 650' (290 sx cm) 5 1/2" csg @ 3900' (500 sx cm) Prod. Formation 3365' -3838'
Hinkle B Federal #2 (Westall)	330' FSL & 2310' FWL Sec. 27-18S-31E	3/20/74	3/28/74	Oil	3643' TD 3643' PBTD	8 5/8" csg @ 650' (390 sx cm) 4 1/2" csg @ 3643' (500 sx cm) Perf'd 2576'-2608' (5 holes), 2647'-68' (2 holes), 2668'-2706' (7 holes), and 2706' (1 hole)
Hinkle B Federal #4 (Westall)	1650' FSL & 1650' FEL Sec. 27-18S-31E	11/19/74	12/7/74	Oil	4000' TD	8 5/8" csg @ 667' (300 sx cm) 4 1/2" csg @ 4000' (300 sx cm)
Hinkle B Federal #6 (Westall)	330' FNL & 1650' FWL Sec. 34-18S-31E	1/8/76	1/20/76	Oil	4493' TD	8 5/8" csg @ 650' (300 sx cm) 4 1/2" csg @ 4481' (300 sx cm) Perf'd 3600'-62' (12 holes) and 3782'-3800' (10 holes)
Hinkle B Federal #18 (Westall)	990' FNL & 2310' FWL Sec. 34-18S-31E	10/13/82	11/9/82	Oil	4492' TD	8 5/8" csg @ 654' (400 sx cm) 4 1/2" csg @ 4492' (875 sx cm) Perf'd 3756'-64' (5 holes), 3766'-84' (10 holes) and 3786'-3804' (10 holes).
Greenwood Unit #1 (Amoco)	660' FSL & 660' FEL Sec. 27-18S-31E	6/3/56	2/10/57	Gas	13,446' TD	16" csg @ 358' (790 sx cm) 10 3/4" @ 4679' (1600 sx cm) 7 5/8" @ 11,915' (1000 sx cm)

ATTACHMENT VI

<u>WELL NAME</u>	<u>LOCATION</u>	<u>SPUD DATE</u>	<u>COMPLETION DATE</u>	<u>TYPE OF WELL</u>	<u>DEPTH/PBTD</u>	<u>COMPLETION RECORD</u>
Greenwood Unit #2 (Amoco)	1980' FNL & 1980' FEL Sec. 34-18S-31E	8/18/57	1/27/58	Gas	12,925' TD 11,495' PBTD	16" csg @ 770' (2000 sx cmt) 10 3/4" csg @ 6420' (1735 sx cmt) 7" csg @ 12,863' (770 sx cmt) Perf'd 10,912'-948' (4 SPF) and 11,125'-438' (4 SPF)
Hinkle-Fed. B-26 #1 (Tom Boyd Drilg.)	330' FSL & 330' FWL Sec. 26- 18S-31E	1/7/57	4/11/57	Oil	4007' TD	8 5/8" csg @ 840' (50 sx cmt) 7" csg @ 2716' (50 sx cmt)

ATTACHMENT VII

PROPOSED OPERATION

1. Plans are to inject 500 - 700 bbls of produced water per day.
2. The injection system will be a closed system.
3. The proposed injection pressure is 1250 psig. Maximum pressure will be 1500 psig.
4. The injection fluid will be reinjected produced water.
5. A sample of produced water from the East Shugart Unit battery was analyzed by Baker Performance Chemicals' lab. Please refer to Attachment VII-5 for a copy of the analysis.

ATTACHMENT VII

PROPOSED OPERATION

1. Plans are to inject 500 - 700 bbls of produced water per day.
2. The injection system will be a closed system.
3. The proposed injection pressure is 1250 psig. Maximum pressure will be 1500 psig.
4. The injection fluid will be reinjected produced water.
5. A sample of produced water from the East Shugart Unit battery was analyzed by Baker Performance Chemicals' lab. Please refer to Attachment VII-5 for a copy of the analysis.

ATTACHMENT VII-5

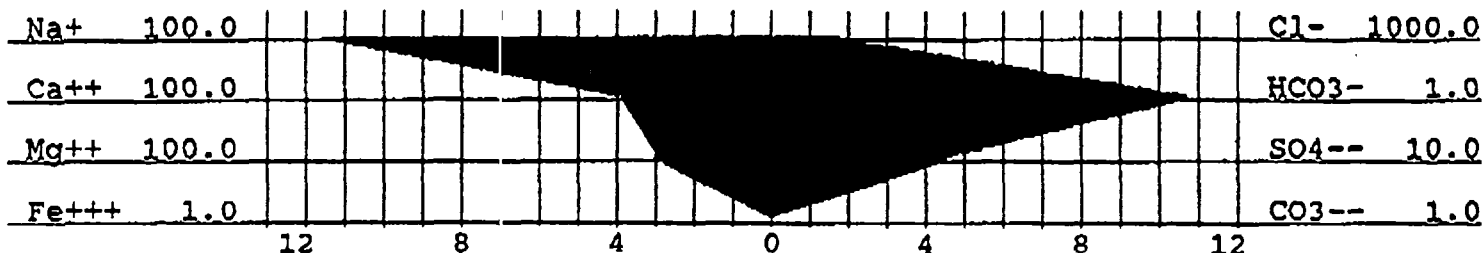
**BAKER PERFORMANCE
CHEMICALS**
A Division of Baker Performance Chemicals, Inc.

**WATER ANALYSIS
for
DEVON ENERGY**

Date of Analysis:	FEBRUARY 26, 1993	Analysis #:	2080
Company:	DEVON ENERGY	Company Address:	ARTESIA
State:	NEW MEXICO	Field:	N/D
Lease:	E.S.U.	Well #:	
Oil (bbl/day):	N/D	Water (bbl/day):	N/D
Type of Water:	PRODUCED	Temp., C:	20
Sample Source:	AHEAD OF FILTER	Date of Sampling:	FEBRUARY 26, 1993
Representative:	STEVE STROUD	Analysis By:	SUZANNE WILLIAMS

WATER ANALYSIS PATTERN

(number beside ion symbol indicates me/l scale unit)

**DISSOLVED SOLIDS**

CATIONS	me/l.	mg/l
Total Hardness :	700.00	
Calcium, (Ca++) :	400.00	8019.25
Magnesium, (Mg++) :	300.00	3645.42
Iron, (Fe+++)	0.01	0.10
Barium, (Ba++) :	N/D	N/D
Sodium, Na+(calc):	1188.81	27342.56
Manganese, (Mn++) :	0.00	0.00

ANIONS

Chloride, Cl-	:	1830.99	64997.87
Sulfate, SO4--	:	46.82	2250.00
Carbonate, CO3--	:	0.00	0.00
Bicarbonate, HCO3-	:	11.00	671.14
Hydroxyl, OH-	:	0.00	0.00
Sulfide, S--	:	0.00	0.00
TOTAL SOLIDS (quant.):			106926.30

DISSOLVED GASES

Hydrogen sulfide:	100.00	mg/l
Carbon dioxide :	118.80	mg/l
Oxygen :	0.30	mg/l

PHYSICAL PROPERTIES

pH :	6.25
Spec Grav. :	1.070
TDS (calc.) :	106937.34

SCALE STABILITIES

Temp., C	CaCO3	CaSO4	BaSO4
20.0	0.27	2525	0
30.0	0.45	2679	0
40.0	0.68	2919	0
Max entity, (calc.)	3293		0

RESIDUAL HYDROCARBONS: N/D

N/D = not determined

@20'C...CALCIUM SULFATE SCALING IS LIKELY.

@20'C...SLIGHTLY CORROSIVE, AND SLIGHT CARBONATE SCALING.

ATTACHMENT VIII

GEOLOGY AND LITHOLOGY

Injection zones are sand lenses within the Queen formation at an average depth of 3,600 feet. Specifically they are:

- Upper Queen 1 - 3298'-3306' (8')
- Upper Queen 2 - 3384'-3404' (20')
- Upper Queen 2 - 3410'-3426' (16')
- Upper Queen 3 - 3510'-3534' (24')
- Lower Queen 1 - 3632'-3644' (12')
- Lower Queen 2 - 3757'-3765' (8')
- Lower Queen 2 - 3785'-3791' (6')
- Lower Queen 3 & 4 - 3806'-3871' (65')

Fresh Water Zones

Base of near surface aquifer - 950 feet

No fresh water zones exist below the proposed injection intervals

ATTACHMENT XII

No evidence of fault communication between the shallow aquifers and the proposed injection zones has been encountered as the result of detailed studies of formations in the East Shugart Unit.

ATTACHMENT XIV

PROOF OF NOTICE

Devon Energy Corporation (Nevada) operates the East Shugart Unit in Section 34. Amoco, Westall and Tom Boyd Drilling operate wells within the area of review. Each of these operators were provided a copy of our application by certified mail. Proof of notice is enclosed. The Bureau of Land Management is the surface owner. They have been notified by BLM Sundry Notice.

PROOF OF PUBLICATION

Proof of publication from the Carlsbad Current-Argus is enclosed.

Is your RETURN ADDRESS completed on the reverse side?

AAI on ESU #'s 2, 41, & 42

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):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
AMOCO PRODUCTION CO.
P. O. Box 3092
Houston, TX 77253

4a. Article Number
Z 147 280 908

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

7. Date of Delivery
SEP 12 1994

5. Signature (Addressee)
C. K. K. K.

6. Signature (Agent)

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

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

Thank you for using Return Receipt Service.

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AAI on ESU #'s 2 & 42

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):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Tom Boyd Drilling
616 Mechem Drive
Ruidoso, NM 88345

4a. Article Number
Z 147 280 910

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

7. Date of Delivery
9-9-94

5. Signature (Addressee)
Phillip Boyd

6. Signature (Agent)

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

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

Thank you for using Return Receipt Service.

Is your RETURN ADDRESS completed on the reverse side?

AAI on ESU #'s 2, 41 & 42

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):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:
Ray Westall
P. O. Box 4
Loco Hills, NM 88255

4a. Article Number
Z 147 280 909

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

7. Date of Delivery
09-10-94

5. Signature (Addressee)

6. Signature (Agent)
Ray Westall

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

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

Thank you for using Return Receipt Service.

SENDER: AAI's on ESU #'s 2, 41, & 42

- 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 Fee will provide you the signature of the person delivered to and the date of delivery.

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:

US DEPT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
P. O. Box 1778
Carlsbad, NM 88221-1778

4a. Article Number

Z 147 280 911

4b. Service Type

- ☐ Registered ☐ Insured
☒ Certified ☐ COD
☐ Express Mail ☒ Return Receipt for Merchandise

7. Date of Delivery

5. Signature (Addressee)

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

6. Signature (Agent)

L. Selwa

Affidavit of Publication

Nº 16462

State of New Mexico,
County of Eddy, ss.

Amy McKay,
being first duly sworn, on oath says:

That she is Business Manager
of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the state wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

August 17, 19 94
_____, 19____
_____, 19____
_____, 19____
_____, 19____
_____, 19____

That the cost of publication is \$ 25.70,
and that payment thereof has been made and will
be assessed as court costs.

Amy McKay

Subscribed and sworn to before me this

23 day of August, 19 94
Edith L. Larm

My commission expires 01/18/98
Notary Public

August 17, 1994

Legal Advertisement

Notice is hereby given that Devon Energy Corporation (Nevada) is applying to the New Mexico Oil Conservation Division to convert the following well to an injection well for secondary recovery purposes:

East Shurgart Unit #2
990' FNL & 1650' FEL
Section 34-T18S-R31E
Eddy County, NM

The intended purpose of this well is to inject produced waters into the Queen Sand to enhance oil production through secondary recovery. Maximum injection rates of 500-700 bwpd and a maximum pressure of 1500 psig are expected.

Interested parties must file objections or requests for hearing within 15 days to the following commission:

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87501

E. L. Buttross, Jr.
District Engineer
Devon Energy Corporation
(Nevada)
20 North Broadway,
Suite 1500
Oklahoma City, OK
(405) 552-4509

LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE