

Case 11784

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE:  Secondary Recovery  Pressure Maintenance  Disposal  Storage  
Application qualifies for administrative approval?  Yes  No
- II. OPERATOR: LAYTON ENTERPRISES, INC.  
ADDRESS: 3103 79th St. LUBBOCK, TEXAS 79423  
CONTACT PARTY: Donald R. Layton PHONE: 806/745-4638
- III. WELL DATA: Complete the data required on the reverse side of this form for each well processed 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 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 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: Donald R. Layton TITLE: President  
SIGNATURE: *Donald R. Layton* DATE: 5-5-97
- \* 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 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, PO Box 2088, Santa Fe, NM 87504-2088 within 15 days.

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

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**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.



May 5, 1997

CERTIFIED MAIL

State of New Mexico  
Commissioner of Public Lands  
Oil, Gas, and Minerals Division  
310 Old Santa Fe Trail  
P. O. Box 1148  
Santa Fe, New Mexico 87504-1148

Devon Energy Corporation  
20 North Broadway, Suite 1500  
Oklahoma City, OK 73102-8260

Yates Petroleum Corp.  
105 South Fourth Street  
Artesia, New Mexico 88210

Discovery Operating, Inc.  
800 N. Marienfeld, Suite 100  
Midland, Texas 79701

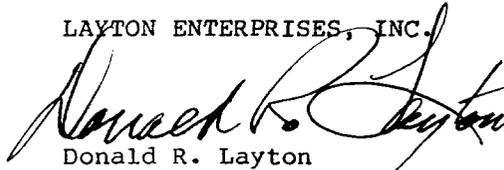
Re: Application for Injection  
Fox A State No. 5  
Allison Penn Field  
Lea County, New Mexico

Gentlemen:

In accordance with the rules of the Oil Conservation Division, attached is a copy of the subject application as notification to you as surface owner or offset leaseholder.

Very truly yours,

LAYTON ENTERPRISES, INC.

  
Donald R. Layton  
President

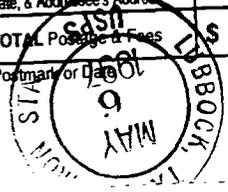
P 588 187 911

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
VATES PETROLEUM CORP.	
Street & Number	
105 S. 4TH ST	
Post Office, State, & ZIP Code	
ARTESIA, N.H. 88210	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	1.88
Postmark or Date	

PS Form 3800, April 1995



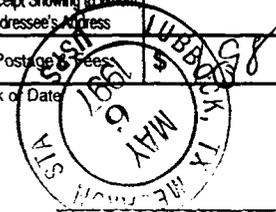
P 588 187 912

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
DEVON ENERGY CORP	
Street & Number	
20 N. BROADWAY, STE 1500	
Post Office, State, & ZIP Code	
OKLA. CITY, OK 73102-8260	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	1.88
Postmark or Date	

PS Form 3800, April 1995



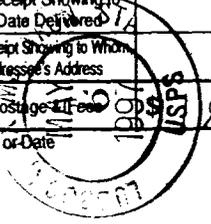
P 588 187 910

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
NEW MEXICO COMM. OF PUBLIC LANDS	
Street & Number	
PO BOX 1148 310 SANTA FE TRAIL	
Post Office, State, & ZIP Code	
SANTA FE, N.M 87504-1148	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	1.88
Postmark or Date	

PS Form 3800, April 1995



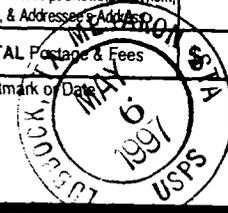
P 588 187 913

US Postal Service  
**Receipt for Certified Mail**

No Insurance Coverage Provided.  
Do not use for International Mail (See reverse)

Sent to	
DISCOVERY OPERATING INC	
Street & Number	
800 N. MARIENFELD, STE 10	
Post Office, State, & ZIP Code	
MIDLAND TX 79701	
Postage	\$ 78
Certified Fee	110
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to Whom & Date Delivered	
Return Receipt Showing to Whom, Date, & Addressee's Address	
TOTAL Postage & Fees	1.88
Postmark or Date	

PS Form 3800, April 1995



FORM C-108 - RESPONSE TO QUESTIONS - SIDE 1:

- VII. 1. 2000-2500 BWP/D est. initial rate  
1000-1500 BWP/D after stabilization
2. Closed System
3. Gravity Pressure
4. See Attached Analyses.

VIII. Geological Data

The Bough C Pennsylvania Zone occurs at a depth of 9650 (-5576) with a gross thickness of 25 to 30 feet. It is a stratigraphic trap consisting of a series of algal mounds or mats resting on a gently southwest dipping surface. The zone is comprised of a fine crystalline, tan and gray vuggy limestone carrying late Cisco fossils confirming that it is Pennsylvanian in age. The limited core data indicates net thickness of 10-15 ft., porosity 10-12% and permeability of 200 md. Estimates of original oil in place are 40-65%. The trap is controlled by up-dip porosity pinchout. Barren areas can occur within the field as a result of inter-mound locations.

The only known freshwater source in the area is a small well located in the SW SE  $\frac{1}{4}$  of Section 2 at a depth of approximately 200 feet, apparently Ogalalla.

- IX. 500 Gal 15% HCl acid wash on each zone
- X. Last production test August 1996  
0.2 BOPD - 15 BWP/D - 4 MCFD
- XI. See Attached Analysis.

TABULATION OF DATA ON ALL WELLS OF PUBLIC RECORD  
IN THE AREA OF REVIEW - PARAGRAPH VI OF C-108

LAYTON ENTERPRISES INC.  
FOX A STATE #1

UNIT F SEC 2, T9S, R36E

DRILLED JUNE 1961

CSG: 13 $\frac{3}{8}$ " @ 360 w/ 325 SX  
8 $\frac{5}{8}$ " @ 4245 w/ 2520 SX  
4 $\frac{1}{2}$ " @ 9725 w/ 500 SX

PERFS: 9651-63

PRODUCING

LAYTON ENTERPRISES, INC.  
FOX A STATE #2

UNIT H SEC 2, T9S, R36E

DRILLED MAY 1959

CSG: 13 $\frac{3}{8}$ " @ 360 w/ 400 SX  
8 $\frac{5}{8}$ " @ 4166 w/ 1700 SX  
5 $\frac{1}{2}$ " @ 9815 w/ 700 SX

PERFS: 9644-54

PRODUCING

LAYTON ENTERPRISES, INC.  
FOX A STATE #3

UNIT N SEC 2, T9S, R36E

DRILLED JULY 1954

CSG: 13 $\frac{3}{8}$ " @ 450 w/ 350 SX  
9 $\frac{5}{8}$ " @ 4200 w/ 3000 SX  
5 $\frac{1}{2}$ " @ 9809 w/ 600 SX

PERFS: 9675-89

PRODUCING

LAYTON ENTERPRISES, INC.  
FOX A STATE #4

UNIT B SEC 2, T9S, R36E

DRILLED AUGUST 1958

CSG: 13 $\frac{3}{8}$ " @ 358 w/ 400 SX  
8 $\frac{5}{8}$ " @ 4109 w/ 1700 SX

PBTD 5 $\frac{1}{2}$ " @ 5970 w/ 1000 SX

SHUT IN

COASTAL STATES PROD. UNIT D SEC 2, T9S, R36E  
LEA STATE #2 DRILLED NOVEMBER 1961  
CSG. 13 $\frac{3}{8}$ " @ 366 w/ 300 SX  
8 $\frac{5}{8}$ " @ 4140 w/ 1590 SX  
5 $\frac{1}{2}$ " @ 9784 w/ 600 SX  
CEMENT PLUGS: 25 SX @ 9750  
PERFS: 9758-62 25 SX @ 4012  
10 SX @ SURFACE  
P & A APRIL 1967

CACTUS DRILLING UNIT B SEC 2, T9S, R36E  
SUNRAY STATE A #1 DRILLED AUGUST 1958  
CSG: 13 $\frac{3}{8}$ " @ 358 w/ 700 SX  
8 $\frac{5}{8}$ " @ 4104 w/ 1700 SX  
5 $\frac{1}{2}$ " @ 9840 w/ 500 SX  
PERFS: 9668-78  
PULLED 6000' OF 5 $\frac{1}{2}$ "  
CEMENT PLUGS: 15 SX @ 9668  
25 SX @ 6050  
25 SX @ 4175  
P & A APRIL 1965 10 SX @ SURFACE

ADA OIL CO. UNIT M SEC 2, T9S, R36E  
ADAMS STATE #1 DRILLED MARCH 1955  
CSG: 13 $\frac{3}{8}$ " @ 357 w/ 350 SX  
8 $\frac{5}{8}$ " @ 4166 w/ 2000 SX  
5 $\frac{1}{2}$ " @ 9730 w/ 200 SX  
OPEN HOLE: 9730-60  
PULLED 4175' 5 $\frac{1}{2}$ "  
BRIDGE PLUG: 9700 w/ 50' CEMENT  
CEMENT PLUGS: 25 SX @ 4175  
10 SX @ SURFACE  
P & A OCTOBER 1962

MARATHON  
STATE E 6859 #1

UNIT O SEC 2 T9S R36E  
DRILLED JULY 1954  
CSG: 16" @ 384 w/ 710 SX  
10 $\frac{3}{4}$ " @ 4175 w/ 1900 SX  
7" @ 9730 w/ 900 SX  
PERFS: 9690-95  
PULLED 4750' OF 7"  
CEMENT PLUGS: 40 SX @ 9700  
20 SX @ 4750  
40 SX @ 4172  
10 SX @ SURFACE

P & A JANUARY 1967

GULF OIL CORP.  
CORDE FED. #1

UNIT N SEC 35 T8S R36E  
DRILLED DECEMBER 1959  
CSG: 13 $\frac{3}{8}$ " @ 394 w/ 450 SX  
8 $\frac{5}{8}$ " @ 4249 w/ 2400 SX  
5 $\frac{1}{2}$ " @ 9810 w/ 425 SX  
PERFS: 9714-30  
PULLED 3450' OF 5 $\frac{1}{2}$ "  
BRIDGE PLUG: 9682 w/ 25 SX  
CEMENT PLUGS: 30 SX @ 4248  
35 SX @ 3500  
50 SX @ SURF

P & A JANUARY 1968

SCHEMATIC OF P.A. WELLS IN AREA OF RAVINA

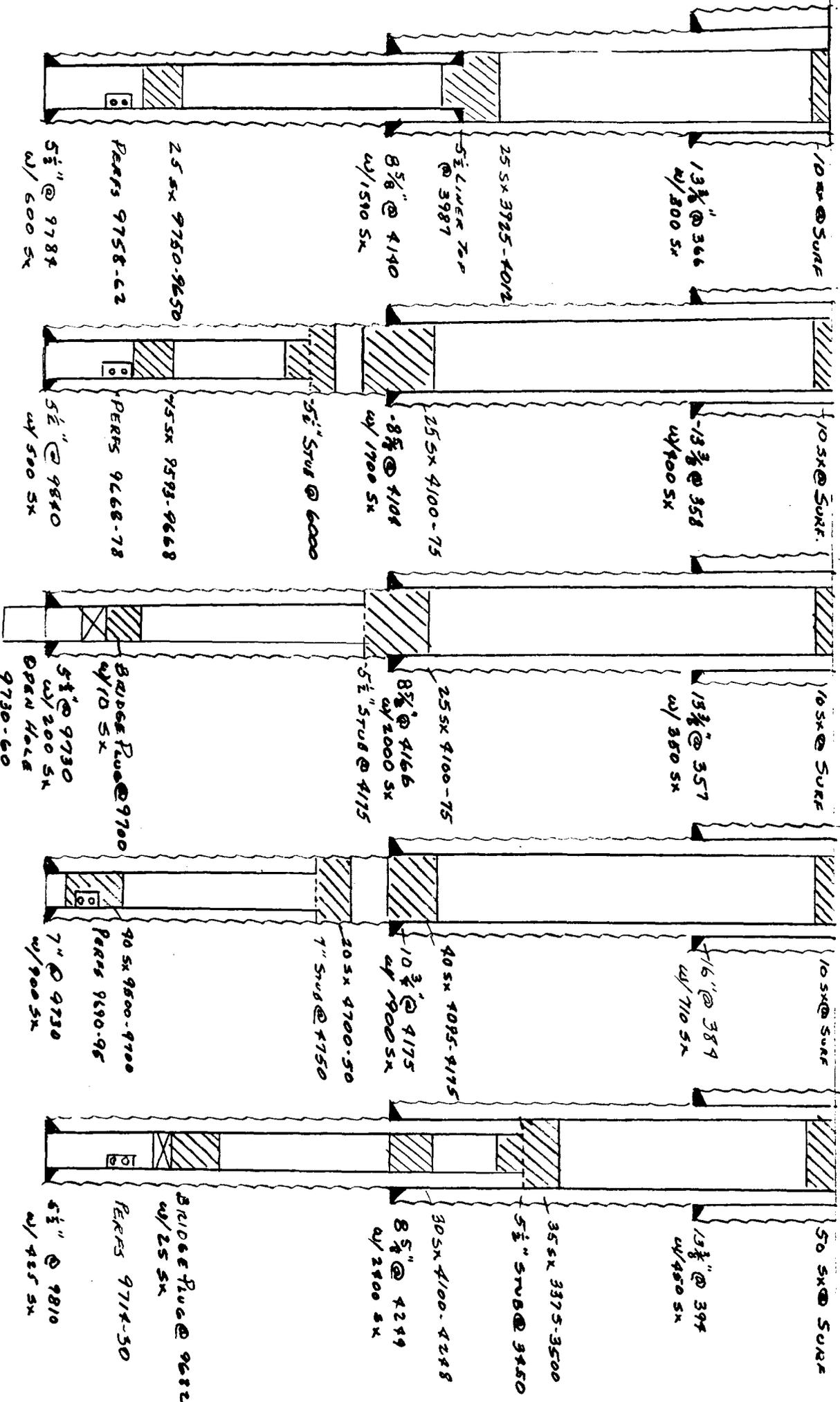
CONSTAL STATES  
LEO STATE #2  
UNIT D  
SEE 2, T 95, R 36E

CAETUS DRILLING  
SUNRAY STATE #1  
UNIT B  
SEE 2, T 95, R 36E

ADR OIL Co.  
ADAMS STATE #1  
UNIT M  
SEE 2, T 95, R 36E

MARATHON  
STATE E 6859 #1  
UNIT O  
SEE 2, T 95, R 36E

GULF OIL CORP  
GOODS FED #1  
UNIT N  
SEE 35, T 85, R 36E





# DUAL SPACED NEUTRON LOG

ONES HOLE

COMP. LAYTON ENTERPRISES, INC.  
 WELL FOX #1 STATE NO 5  
 FIELD ALLISON PENN  
 COUNTY LEA STATE IN  
 RPT NO 30-790-31343  
 LOCATION 2319 FAL, 2029 FAL  
 OTHER SERVICES PERMITS

SEC 2 TWP 9-N RGE 36-E  
 PERM DATUM: 1980' FROM N/L; 2070' FROM W/L  
 ELEV: 4058.6  
 LOG MEASURED FROM: 14.0 FT. ABOVE PERM DATUM  
 DRILLING MEASURED FROM: 0 FT. FROM G.L. 4055.6

DATE: 10/14/91  
 RUN NO: ONE  
 DEPTH-DRILLER: 12511  
 DEPTH-LOGGED: 12522  
 DEPTH-LINE: 12480  
 TOP LOG: 4500  
 TYPE FLUID IN HOLE: WATER  
 QUALITY: 100%  
 RESISTIVITY: IN  
 LEVEL: FULL  
 LOG REC TEMP: IN  
 OPERATING TIME: 4 HOURS  
 EQUIPMENT LOCATION: 3416 HOBBS, IN  
 RECORDED BY: HOBBS  
 WITNESSED BY: LAYTON  
 TIME-OUT WITH BENCH: 12502 @ 8:30 AM

LOGGING AND TESTING RECORD

NO.	IN	OUT	FROM	TO	TYPE	IN	OUT	FROM	TO
					LOG			4130	4130
					LOG			12511	12511

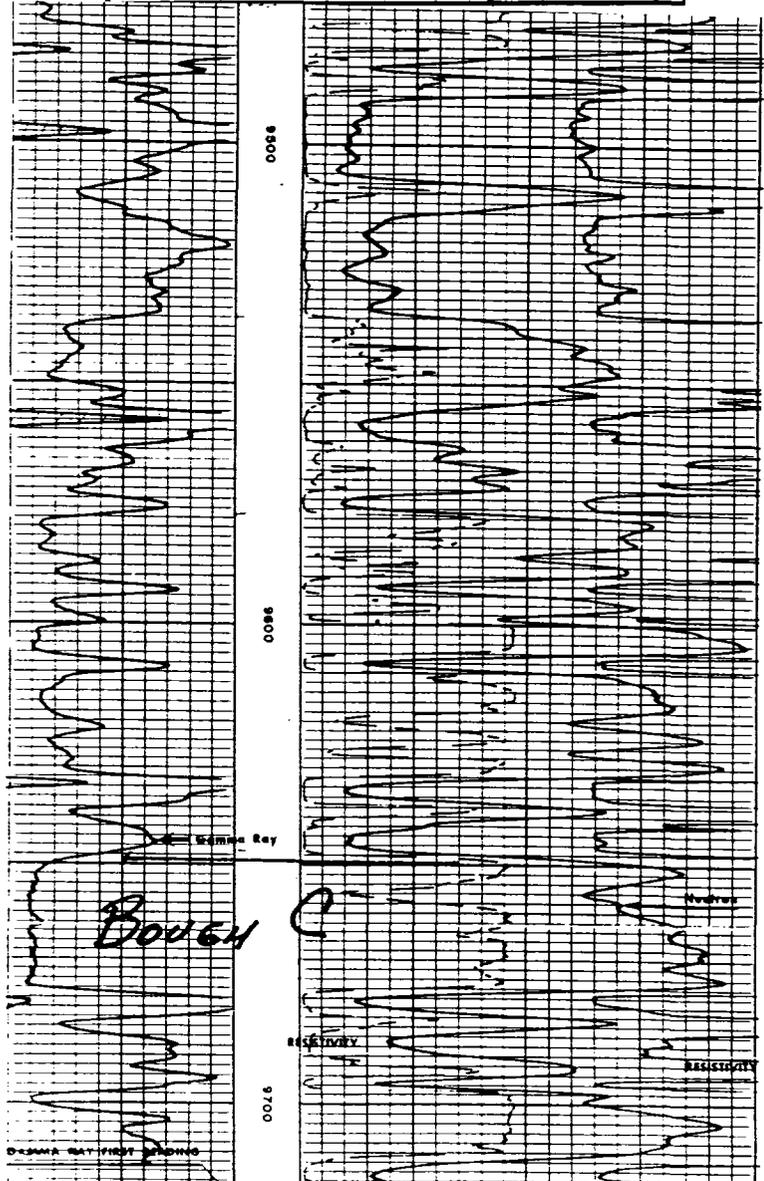
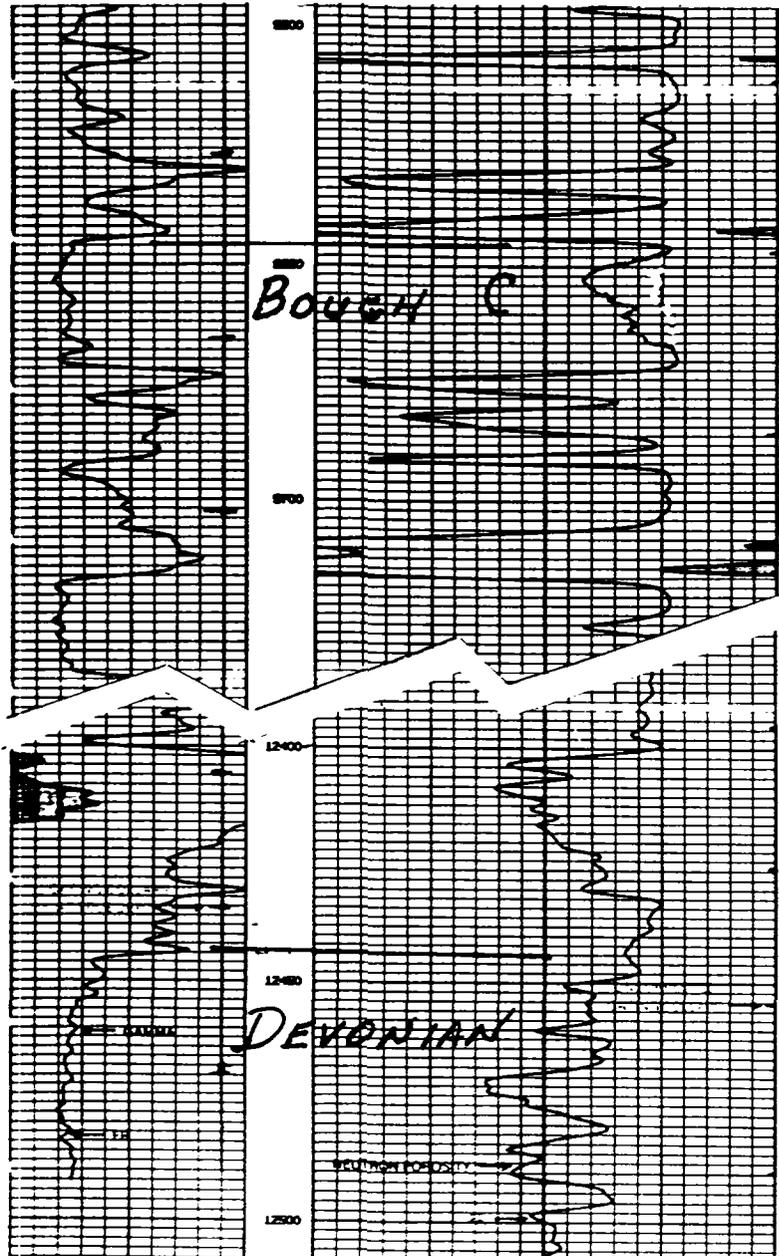
# SCHLUMBERGER WELL SURVEYING CORPORATION



## Log-log-Gamma Ray-Neutron

COMPANY COASTAL STATES GAS PRODUCING COMPANY  
 WELL LEA STATE I  
 FIELD ALLISON PENN  
 COUNTY LEA STATE NEW MEXICO  
 Location: 1980' FROM N/L; 2070' FROM W/L  
 Sec. 2 Twp. 9S Rge. 36E  
 Permanent Datum: GL; Elev.: 4058  
 Log Measured From: KB; 11 Ft. Above Perm. Datum  
 Drilling Measured From: KB; Elev.: K.B. 4069; D.F. 4058; G.L. 4058

Date: ONE  
 Run No.: 6-5-61  
 Depth - Driller: 9730  
 Depth - Schum.: 9723  
 Btm. Log. Interval: 9720  
 Top Log. Interval: 0  
 Casing - Driller: 8 5/8 @ 4245  
 Casing - Schum.: 4240  
 Bit Size: 7 7/8"  
 Type Fluid in Hole: SALT GEL  
 STARCH  
 Dens. Visc.: 9.8 - .45  
 pH Fluid Loss: 6 - 11 CC  
 Source of Sample: CIRCULATION  
 Rm @ Meas. Temp.: .098 @ 72 F  
 Rnc @ Meas. Temp.: .061 @ 73 F  
 Rnc @ Meas. Temp.: .185 @ 73 F  
 Source: Rnc - Rnc: M M  
 Rm @ B.M.T.: .052 @ 141 F  
 Time Since Circ.: 3 HOURS  
 Max. Rec. Temp.: 141 F  
 Equip. Location: 2527 HOBBS  
 Recorded By: SCHAEFFER  
 Witnessed By: CHRISTIE







# InterChem

(915) 550-7027 - 3803 Mankins - Odessa, Tx. 79763  
**WATER ANALYSIS REPORT**

## SAMPLE

Client Co. : Layton Enterprises  
 Lease : Fox A  
 Well No.: State #1 BOUGH C  
 Analysis:

Sample Loc. :  
 Date Sampled : 29-April-1991  
 Attention :  
 Chemical Co. : Pro-Kem, Inc.

## ANALYSIS

1. pH 5.700
2. Specific Gravity 60/60 F. 1.068
3. CaCO<sub>3</sub> Saturation Index @ 80 F. -1.033  
 @ 140 F. -0.108

### Dissolved Gasses

- |                     | MG/L           | EQ. WT. | *MEQ/L |
|---------------------|----------------|---------|--------|
| 4. Hydrogen Sulfide | Not Present    |         |        |
| 5. Carbon Dioxide   | Not Determined |         |        |
| 6. Dissolved Oxygen | Not Determined |         |        |

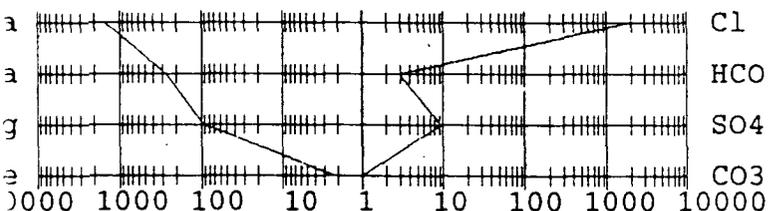
### Cations

7.	Calcium	(Ca <sup>++</sup> )	5,210	/	20.1	=	259.20
8.	Magnesium	(Mg <sup>++</sup> )	1,094	/	12.2	=	89.67
9.	Sodium	(Na <sup>+</sup> )	34,373	/	23.0	=	1,494.48
10.	Barium	(Ba <sup>++</sup> )	(Calculated) Not Determined				

### Anions

11.	Hydroxyl	(OH <sup>-</sup> )	0	/	17.0	=	0.00
12.	Carbonate	(CO <sub>3</sub> <sup>=</sup> )	0	/	30.0	=	0.00
13.	Bicarbonate	(HCO <sub>3</sub> <sup>=</sup> )	169	/	61.1	=	2.77
14.	Sulfate	(SO <sub>4</sub> <sup>=</sup> )	450	/	48.8	=	9.22
15.	Chloride	(Cl <sup>-</sup> )	64,985	/	35.5	=	1,830.56
16.	Total Dissolved Solids		106,281				
17.	Total Iron (Fe)		39	/	18.2	=	2.14
18.	Total Hardness As CaCO <sub>3</sub>		17,516				
19.	Resistivity @ 75 F. (Calculated)		0.083	/cm.			

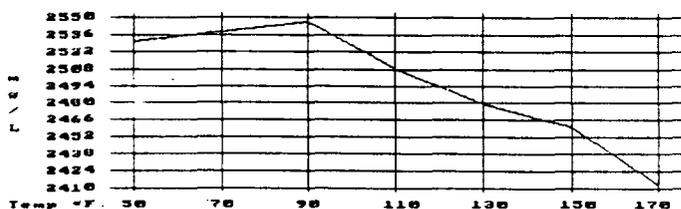
### LOGARITHMIC WATER PATTERN



### PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*meq/L	= mg/L.
Cl	Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04	2.77 224
HCO <sub>3</sub>	CaSO <sub>4</sub>	68.07	9.22 628
SO <sub>4</sub>	CaCl <sub>2</sub>	55.50	247.22 13,721
CO <sub>3</sub>	Mg(HCO <sub>3</sub> ) <sub>2</sub>	73.17	0.00 0
	MgSO <sub>4</sub>	60.19	0.00 0
	MgCl <sub>2</sub>	47.62	89.67 4,270
	NaHCO <sub>3</sub>	84.00	0.00 0
	NaSO <sub>4</sub>	71.03	0.00 0
	NaCl	58.46	1,493.67 87,320

### Calcium Sulfate Solubility Profile



\*Milli Equivalents per Liter

This water is somewhat corrosive due to the pH observed on analysis.  
 The corrosivity is increased by the content of mineral salts in solution.

**Oilfield Solutions, Inc.**  
**2814 S.C.R. 1257, Midland, Tx. 79706**

**WATER ANALYSIS REPORT**

**Company:** Layton Enterprises  
**Location:** Fox A State #6  
**Source:** Well Head  
**Date Sampled:** April 29, 1997

DEVONIAN

**Sampled By:**  
**Analysis Date:**  
**Salesman:**

**Chem Tech Services, Inc.**  
**May 5, 1997**  
**Dick Tubb**

ANALYSIS	mg/L	EQ. WT.	MEQ/L
1. pH	6.25		
2. Specific Gravity 60/60 f.	1.047		
3. Hydrogen Sulfide	0 PPM		
4. Carbon Dioxide	Not Determined		
5. Dissolved Oxygen	Not Determined		
6. Hydroxyl (OH <sup>-</sup> )	0 /	17.0 =	0.00
7. Carbonate (CO <sub>3</sub> <sup>=</sup> )	0 /	30.0 =	0.00
8. Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	626 /	61.1 =	8.59
9. Chloride (Cl <sup>-</sup> )	39,991 /	35.5 =	1,126.51
10. Sulfate (SO <sub>4</sub> <sup>=</sup> )	1,450 /	48.8 =	29.71
11. Calcium (CA <sup>++</sup> )	2,808 /	20.1 =	139.60
12. Magnesium (Mg <sup>++</sup> )	1,216 /	12.2 =	99.67
13. Sodium (Na <sup>+</sup> )	21,267 /	23.0 =	925.54
14. Barium (Ba <sup>++</sup> )	Not Determined		
15. Total Iron (Fe)	2.00		
16. Dissolved Solids	67,275		
17. Filterable Solids	0.00		
18. Total Solids	67,275		
19. Total Total Hardness As CaCO <sub>3</sub>	12,011		
20. Suspended Oil	0		
21. Volume Filtered (ml)	0		
22. Resistivity @ 75 F. (calculated)	0,117 /cm.		
23. CAC03 Saturation Index			
@80 F.	-0.4191		
@100 F.	-0.1081		
@120 F.	0.1809		
@140 F.	0.5109		
@160 F.	0.8509		
24. Calcium Sulfate solubility @ 90 F.	3,651 mg/L		

PROBABLE MINERAL COMPOSITION				
COMPOUND	EQ. WT.	X	MEQ/L	= mg/L
Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04		8.59	698
CaSO <sub>4</sub>	68.07		29.71	2,022
CaCl <sub>2</sub>	55.50		101.30	5,622
Mg(HCO <sub>3</sub> ) <sub>2</sub>	73.17		0.00	0
MgSO <sub>4</sub>	60.19		0.00	0
MgCl <sub>2</sub>	47.82		99.67	4,748
NaHCO <sub>3</sub>	84.00		0.00	0
NaSO <sub>4</sub>	71.03		0.00	0
NaCl	58.48		925.54	54,107

Chemist: \_\_\_\_\_

**Oilfield Solutions, Inc.**  
**2614 S.C.R. 1257, Midland, Tx. 79706**

**WATER ANALYSIS REPORT**

Company: Layton Enterprises  
 Location: Fox A State  
 Source: Fresh Water Well  
 Date Sampled: April 29, 1997

Sampled By: \_\_\_\_\_  
 Analysis Date: May 6, 1997  
 Salesman: Dick Tubbs

ANALYSIS	mg/L	EQ. WT.	MEQ/L
1. pH	8.83		
2. Specific Gravity 60/60 f.	1.004		
3. Hydrogen Sulfide	6 PPM		
4. Carbon Dioxide	Not Determined		
5. Dissolved Oxygen	Not Determined		
6. Hydroxyl (OH <sup>-</sup> )	0 /	17.0 =	0.00
7. Carbonate (CO <sub>3</sub> <sup>=</sup> )	0 /	30.0 =	0.00
8. Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )	269 /	61.1 =	4.40
9. Chloride (Cl <sup>-</sup> )	1,700 /	35.5 =	47.89
10. Sulfate (SO <sub>4</sub> <sup>=</sup> )	450 /	48.8 =	9.22
11. Calcium (Ca <sup>++</sup> )	180 /	20.1 =	8.96
12. Magnesium (Mg <sup>++</sup> )	12 /	12.2 =	0.98
13. Sodium (Na <sup>+</sup> )	1,186 /	23.0 =	51.57
14. Barium (Ba <sup>++</sup> )	Not Determined		
15. Total Iron (Fe)	0.00		
16. Dissolved Solids	3,787		
17. Filterable Solids	0.00		
18. Total Solids	3,787		
19. Total Total Hardness As CaCO <sub>3</sub>	500		
20. Suspended Oil	0		
21. Volume Filtered (ml)	0		
22. Resistivity @ 75 F. (calculated)	2,248 /cm.		

23. CaCO<sub>3</sub> Saturation Index

@ 80 F.	1.7276
@ 100 F.	1.9776
@ 120 F.	2.2376
@ 140 F.	2.4276
@ 160 F.	2.6376

24. Calcium Sulfate solubility @ 90 F.      2,030 mg/L

**PROBABLE MINERAL COMPOSITION**

COMPOUND	EQ. WT.	X	MEQ/L	= mg/L
Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04		4.40	357
CaSO <sub>4</sub>	68.07		4.58	310
CaCl <sub>2</sub>	55.50		0.00	0
Mg(HCO <sub>3</sub> ) <sub>2</sub>	73.17		0.00	0
MgSO <sub>4</sub>	60.19		0.98	69
MgCl <sub>2</sub>	47.62		0.00	0
NaHCO <sub>3</sub>	84.00		0.00	0
NaSO <sub>4</sub>	71.03		3.68	281
NaCl	58.46		47.89	2,800

Chemist: \_\_\_\_\_

INJECTION WELL DATA SHEET

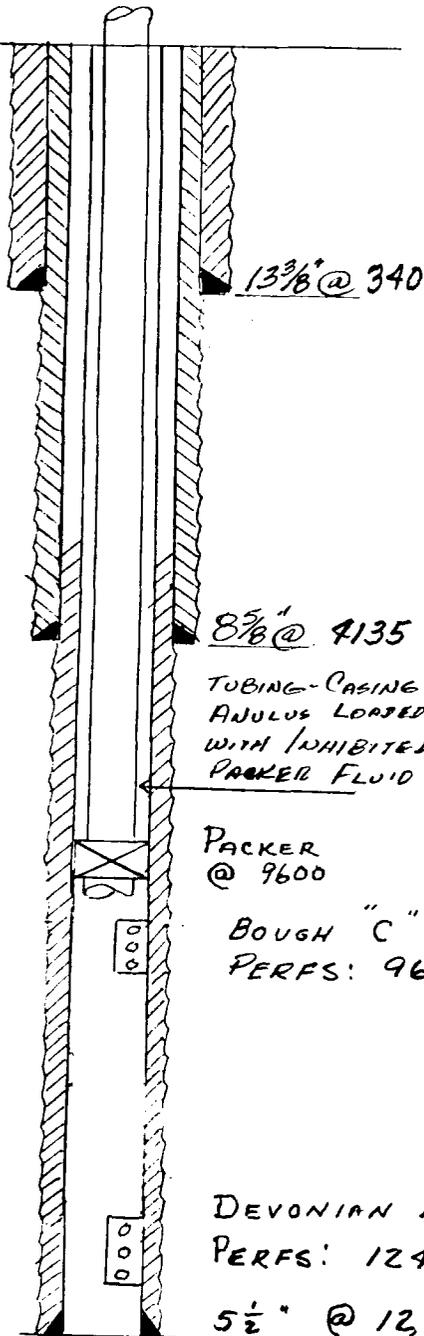
LAYTON ENTERPRISES, INC.

FOX "A" STATE

OPERATOR	LEASE			
5	2310' FNL	2070' FWL	2	95
WELL NO.	FOOTAGE LOCATION		SECTION	TOWNSHIP
				36E
LEA COUNTY, NEW MEXICO				

Schematic

Tabular Data



<u>Surface Casing</u>	
Size	<u>13 3/8</u> " Cemented with <u>350</u> sx.
TOC	<u>SURFACE</u> feet determined by <u>CIRCULATION</u>
Hole size	<u>17 1/2</u> "
<u>Intermediate Casing</u>	
Size	<u>8 5/8</u> " Cemented with <u>1700</u> sx.
TOC	<u>SURFACE</u> feet determined by <u>CIRCULATION</u>
Hole size	<u>11</u> "
<u>Long string</u>	
Size	<u>5 1/2</u> " Cemented with <u>2000</u> sx.
TOC	<u>4000</u> feet determined by <u>CALCULATION</u>
Hole size	<u>7 7/8</u> "
Total depth	<u>12,511</u>
<u>Injection interval</u>	
	<u>9648</u> feet to <u>9658</u> feet (perforated or open-hole, indicate which)

13 3/8" @ 340

8 5/8" @ 4135

TUBING-CASING ANULOS LOADED WITH INHIBITED PACKER FLUID

PACKER @ 9600

BOUGH "C" PENN ZONE  
PERFS: 9648-66

DEVONIAN ZONE  
PERFS: 12450-60, 70-78, 84-92

5 1/2" @ 12,511

Tubing size 2 7/8 lined with RICE ENGR. FIBERGLASS DUO-LINE set in a  
(material)  
BAKER LOK-SET (PLASTIC COATED) packer at 9600 feet  
(brand and model)  
(or describe any other casing-tubing seal).

Other Data

- Name of the injection formation BOUGH "C" (PENN)
- Name of Field or Pool (if applicable) ALLISON PENN
- Is this a new well drilled for injection?  Yes  No  
If no, for what purpose was the well originally drilled? OIL PRODUCTION
- Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)  
SAN ANDRES 7165-66, SQZ. 300 SX, 5300-01, SQZ 150 SX; BOUGH D 9765-76, SQZ 300 SX; MORROW 11,978-88, SQZ 100 SX.
- Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.  
8750 - ABO  
7800 - SAN ANDRES