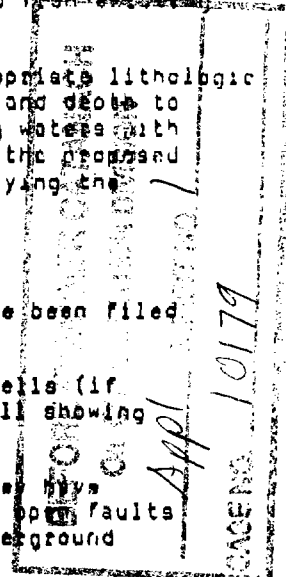


O'Brien "C" #9

Unit E, Section 1, Township 9 South,
Range 28 East, Chaves

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☒ no
- II. Operator: STEVENS OPERATING CORPORATION
Address: P. O. Box 2203, Roswell, New Mexico 88201
Contact party: Donald G. Stevens Phone: 622-7273
- III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- * VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
 2. Whether the system is open or closed;
 3. Proposed average and maximum injection pressure;
 4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
 5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- * VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)
- * XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification
- I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.
- Name: Donald G. Stevens Title: President
Signature: Donald G. Stevens Date: 1-2-91
- * 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.

STEVENS OPERATING CORPORATION

O'BRIEN "C"
LEASE

OPERATOR

9

Unit E 1870 FNL 80' FWL

Sec. 1

28E

WELL NO. UNITAGE LOCATION

SECTION

TOWNSHIP

RANGE

Schematic

Tubular Data

1030' TOC	<u>Surface Casing</u>		
	Size 8 5/8"	Cemented with	900 gx.
	TOC ^{Surface} 85' + 1" 4.5 yds. feet determined by Temperature Survey		
	Hole size 12 1/4"		
	<u>Intermediate Casing</u>		
	Size "	Cemented with	gx.
	TOC	feet determined by	
	Hole size		
	<u>Long string</u>		
	Size 5 1/2"	Cemented with	400 gx.
	TOC 5800 & 1030	feet determined by	Temperature Survey
	Hole size 7 7/8"		
	Total depth 7468'		
	Injection interval		
	7211 - 7245 feet to 7392 - 7405 feet		
	(perforated or open-hole, indicate which)		

Per 3300-3302, Squeeze
Cmt w/300 sxs, Drillout

5800' TOC
400 SXS CMT

7160' PROPOSED PKR
7211' - 7245'
7392' - 7405'

Tubing size 2 3/8" lined with _____ Corrosion Inhibitor _____ set in a
 (material)
5 1/2" Baker Lockset Nickel Plated packed at 7160 feet
 (brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Twin Lakes Devonian

2. Name of Field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☒ No

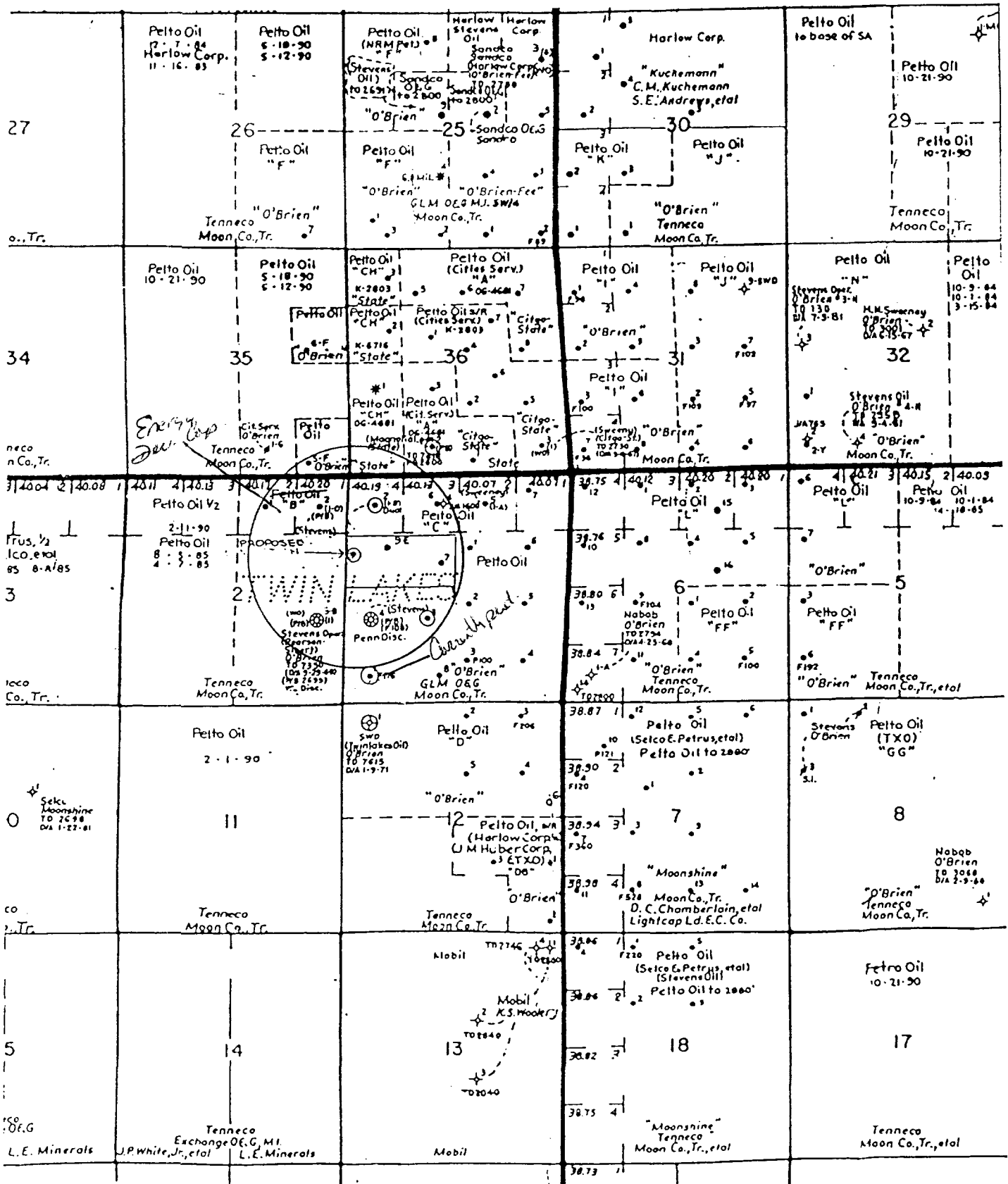
If no, for what purpose was the well originally drilled? Oil Production in Devonian

4. 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)

3300' - 3302' = Set CIBP @ 3380' W/ 300 SXS Cement Bond Log Showed TOC @ 1030'

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. San Andres 1900' ± Mississippian 6970' ± Devonian 7201' ±

C-108 PARAGRAPH V



⊙ = Wells drilled to Devonian

Note: All Pelto Oil Company leases are now owned by Energy Development Corporation.

Stevens Operating Corporation
NMOCD Case 10179
Exhibit 1

C-108 PARAGRAPH VI

Attached tabulation of all wells with schematic.

WELL BORE SKETCH

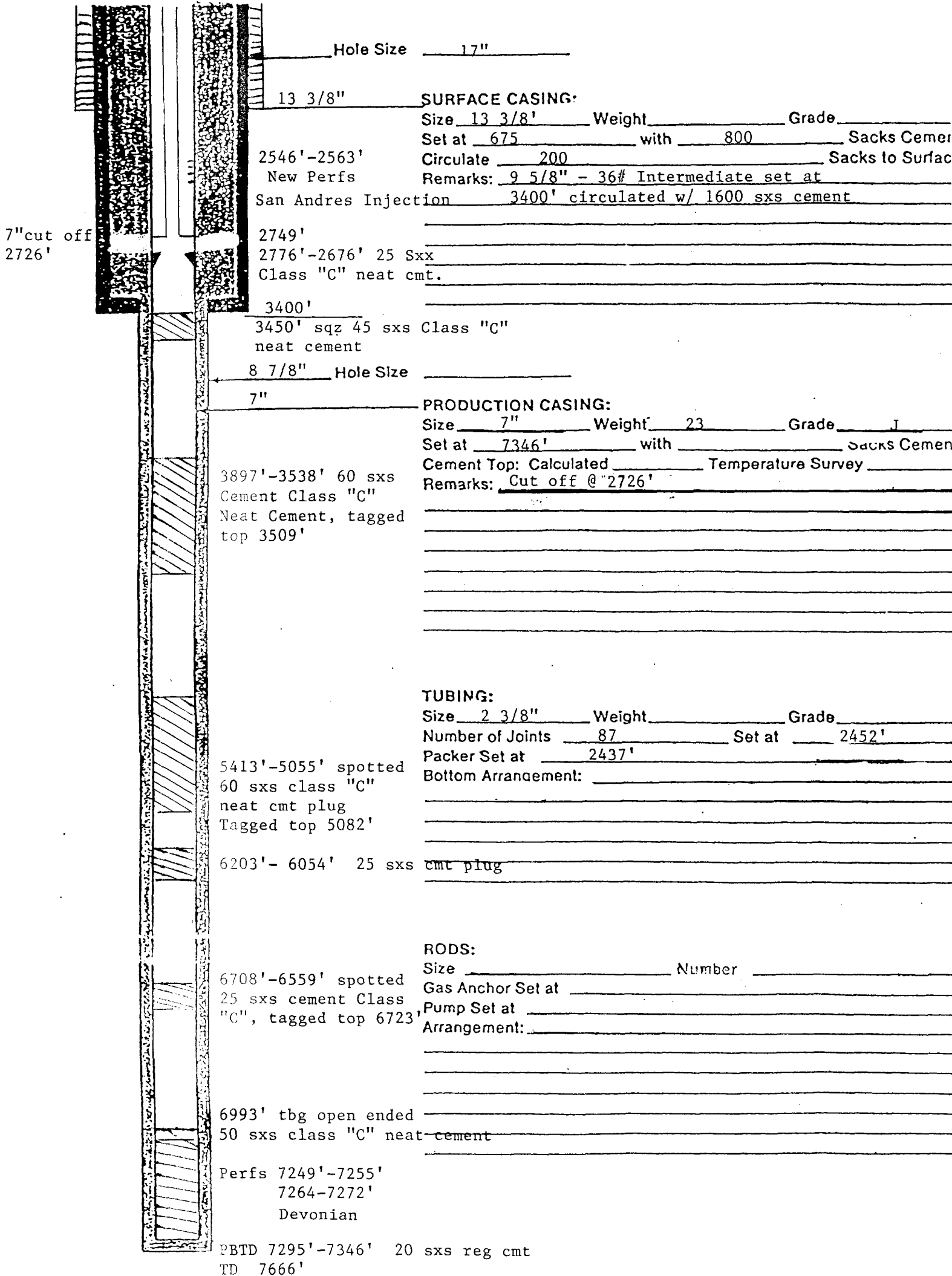
(Stevens Oper.

OPERATOR/LEASE/WELL Energy Development Corporation/O'Brien "C" #2 Corp. orig)

LOCATION Unit D, 660' FNL, 660' FWL, Section 1, Township 9 South, Range 28 East

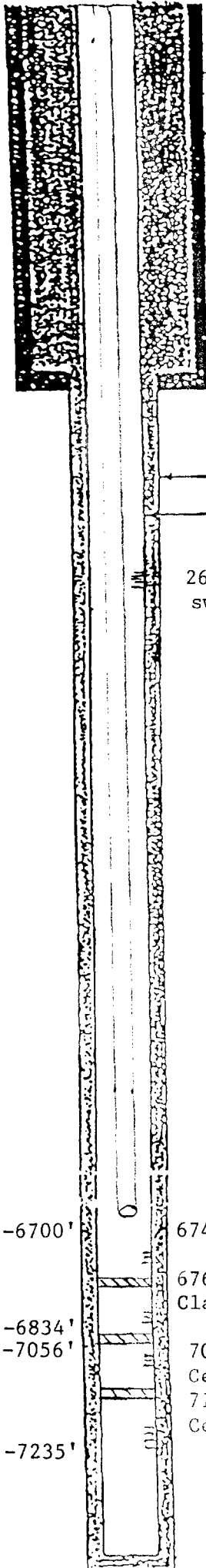
FIELD/POOL Twin Lakes / Devonian, San Andres

PLUG BACK DEPTH 2676' KB 3947' ELEVATION 3936 GL



WELL BORE SKETCH

OPERATOR/LEASE/WELL Stevens Operating Corporation/O'Brien "C" #4
LOCATION Unit L, Section 1, Township 9S, Range 28 East, 1980' FSL, 745' FWL
FIELD/POOL Twin Lakes / Devonian, Atoka, Pennsylvanian
PLUG BACK DEPTH _____ KB _____ ELEVATION 3938GL



Hole Size 12 1/2"

SURFACE CASING:

Size 8 5/8" Weight _____ Grade _____
Set at 1970' with 870 Sacks Cement
Circulate _____ Sacks to Surface
Remarks: _____

Hole Size 7 7/8"

PRODUCTION CASING:

Size 5 1/2" Weight _____ Grade _____
Set at 7235' with 700 Sacks Cement
Cement Top: Calculated _____ Temperature Survey _____
Remarks: San Andres, Squeeze w/150 sxs Class H
Cement. Atoka - Squeeze w/75 sxs Class H Cement

2690' Squeeze w/150
sxs Class "H" Cmt

TUBING:

Size 2 3/8" Weight 4.7# Grade _____
Number of Joints 205 Set at 6744'
Packer Set at _____
Bottom Arrangement: _____

RODS:

Size _____ Number _____
Gas Anchor Set at _____
Pump Set at _____
Arrangement: _____

Perf 6694'-6700'

6744' tbg open ended

Perf 6831'-6834'
Perf 7038'-7056'

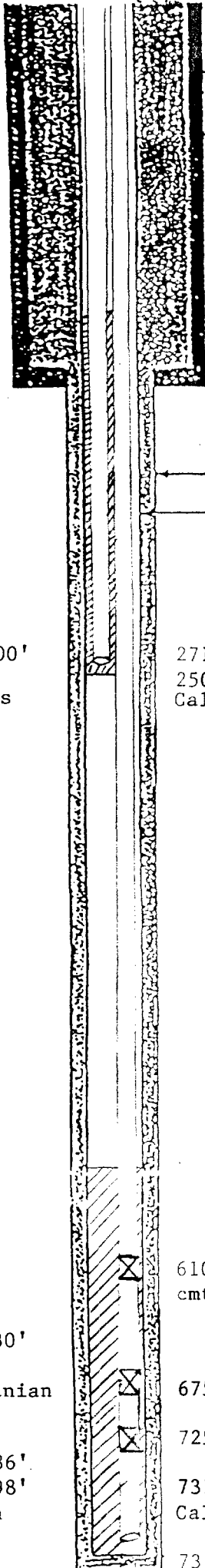
6760' Retainer, 75 sxs
Class "H" Cement

7000' CIBP W/bailer
Cement
7106' CIBP W/bailer
Cement

Perf 7199'-7235'

WELL BORE SKETCH

(Stevens Operating
OPERATOR/LEASE/WELL Energy Development Corporation/O'Brien "C" #3 (Corp. orig.)
LOCATION Unit K, 1980' ESL, 1980 FWL, Section 1, Township 9 South, Range 28 East
FIELD/POOL Twin Lakes / Devonian/San Andres
PLUG BACK DEPTH _____ KB _____ ELEVATION 3951 RT



2585'-2600'
Perf
San Andres

6720'-6730'
Perfs
Pennsylvanian

Perfs
7272'-7286'
7292'-7298'
Devonian

Hole Size 11"

SURFACE CASING:

Size 8 5/8" Weight 24# Grade _____
Set at 1957' with 700 Sacks Cement
Circulate to surface Sacks to Surface _____
Remarks: _____

8 5/8" 24# Csg set @ 1957'
700 sxs cmt circ.

Hole Size 7 7/8"

PRODUCTION CASING: #1

Size 2 7/8" Weight 6.5# Grade J 55
Set at 7315' with 400 Sacks Cement
Cement Top: Calculated 5800' Temperature Survey _____
Remarks: _____

2718' 2 7/8" Tbg Set
250 Sxs "H" Cmt
Calc top 1800'

Production Csg #2

~~WELLS~~

Size 2 7/8" Weight 6.5# Grade J 55
Number of Joints _____ Set at _____
Packer Set at _____
Bottom Arrangement: 250 sxs cement, calc top 1800'

RODS:

Size _____ Number _____
Gas Anchor Set at _____
Pump Set at _____
Arrangement: _____

6100' Squeeze 200sxs
cmt.

6750' CIBP

7250' CIBP

7315' 2 7/8" 400 sxs cement
Calc top 5800'

7316' 2 7/8" Tbg

WELL BORE SKETCH

OPERATOR/LEASE/WELL Stevens Operating Corporation/ O'Brien "B" #3
LOCATION Unit I, 1980' ESL, 660' FEL, Section 2, Township 9 South, Range 28 East
FIELD/POOL Twin Lakes / Mississippian
PLUG BACK DEPTH _____ KB _____ ELEVATION 3950 GR

Hole Size 17 1/2"

SURFACE CASING:
Size 11 3/4" Weight 42# Grade J
Set at 380' with 350 Sacks Cement
Circulate _____ Sacks to Surface
Remarks: _____

1800' TOC
750 SXS

2580'-2610'
San Andres Squeezed
W/25 SXS CMT
2758' Drill out

Hole Size 12 1/4"

Intermediate
PRODUCTION CASING:
Size 8 5/8" Weight _____ Grade J
Set at 2758' with 750 Sacks Cement
Cement Top: Calculated 1800' Temperature Survey _____
Remarks: _____

5000' TOC

~~TUBING~~ X Production Casing:
Size 4.5 Weight 11.6# Grade J
Set at Number of joints 7350' ~~Set at~~ 5000' w/500 SXS Cement
~~Packer Set at~~ Calculated top 5000', After Perf 6165', 6173'
Bottom Arrangement: Squeeze w/150 sxs Class C
Cement top 5000'

RODS:
Size _____ Number _____
Gas Anchor Set at _____
Pump Set at _____
Arrangement: _____

6165.5'-6173.5'
Squeeze Cmt W/150 sxs Class "C"
Drillout to 7138'
Reperf 7114-20 T/A
7114'-7162' PERFS
Mississippian Squeezed

7235' PBTB
7350' TD

C-108 PARAGRAPH VII

1. **Proposed average daily rate: 600 BOPD**
Proposed maximum daily rate: 1800 BOPD
2. **The system is closed with a gas blanket on all storage tanks**
3. **Proposed average injection pressure is 0**
Proposed maximum injection pressure is 750
4. **Analysis of injection water is attached**
5. **The disposal zone (Siluro-Devonian) formation water is the same as the produced formation water 1/2 mile south. The Fusselman, Devonian and Montoya formation water characteristics are substantially the same in Chaves, Roosevelt and northern Lea Counties.**

PERMIAN

Treating Chemicals, Inc.

P. O. BOX 815
TATUM, NM 88267
PHONE (505) 398-4111

WATER ANALYSIS REPORT

Company Stevens Operating Corporation Date Samples 12-4-90
Field _____ County _____
Lease O'Brien C State NM
Well #1 Formation _____
Type of Water Produced Water, B/D _____
Sampling Point Water Knockout Sampled By Nailon

DISSOLVED SOLIDS

CATIONS	mg/l		meq/l
Sodium, Na+(Calc)	<u>23046</u>	<u>÷ 23</u>	<u>1002</u>
Calcium, Ca++	<u>4600</u>	<u>÷ 20</u>	<u>230</u>
Magnesium, Mg++	<u>2551</u>	<u>÷ 12.2</u>	<u>209</u>
Barium, Ba++	_____	<u>÷ 68.7</u>	_____
Iron, Fe (Total	_____		_____
_____	_____		_____
_____	_____		_____

OTHER PROPERTIES

PH 6.4
Specific Gravity
1.07
H₂S Negative
Total Dissolved
Solids 81,956
Total Hardness
22,000

ANIONS

Chloride, Cl-	<u>50000</u>	<u>÷ 35.5</u>	<u>1408</u>
Sulfate, So ₄ =	<u>1125</u>	<u>÷ 48</u>	<u>23</u>
Carbonate, Co ₃ =	_____	<u>÷ 30</u>	_____
Bicarbonate, HCo ₃ -	<u>634</u>	<u>÷ 61</u>	<u>10</u>
_____	_____		_____

Remarks and Recommendations _____

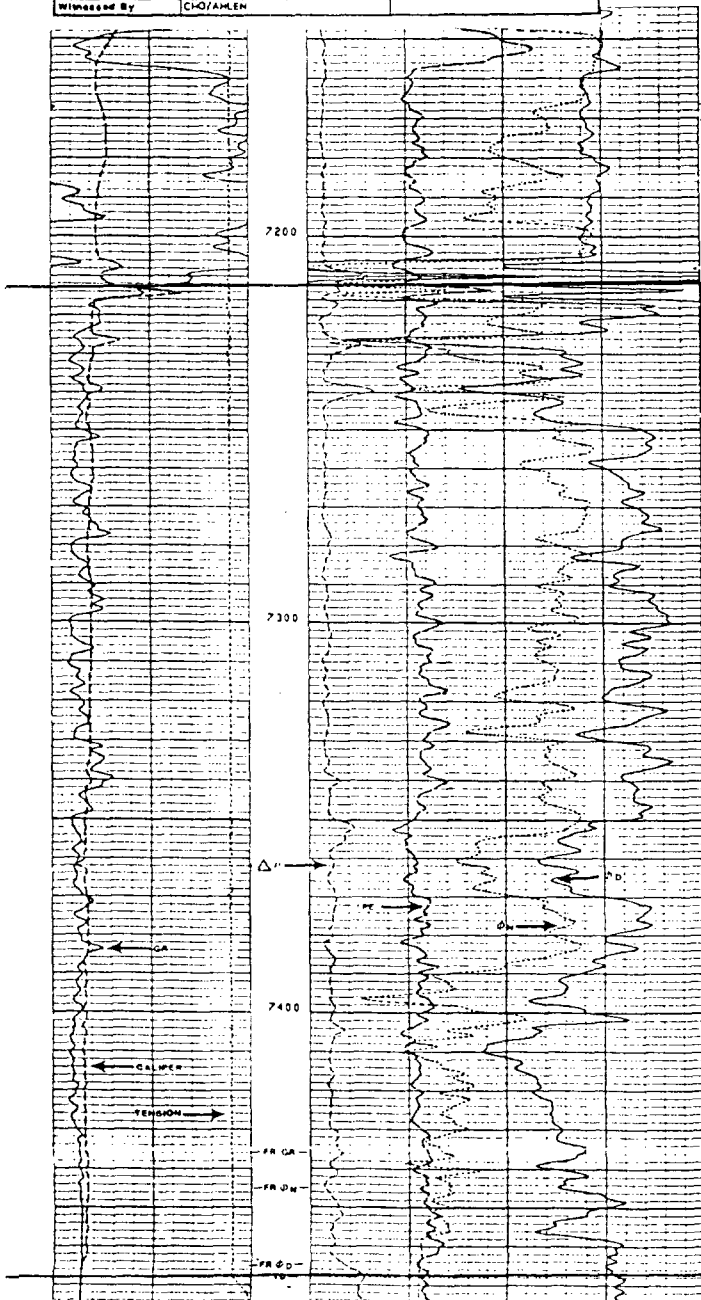
C-108 PARAGRAPH VIII

Attached CNL-FDC, DLL, MFSL shows injection zone lithology to be very porous, highly permeable Fusselman and Montoya Dolomite 289' thick @ 7211' to 7468'. No known underground sources of drinking water are nearby on the basis of long-term local rancher knowledge and recorded testimony in saltwater disposal exception Application hearing in 1969.

Schlumberger		SIMULTANEOUS COMPENSATED NEUTRON- LITHO-DENSITY	
COMPANY STEVENS OPERATING COMPANY			
WELL O'BRIEN "C" NO. 9			
FIELD TWIN LAKE DEVONIAN			
COUNTY CHAVES STATE NEW MEXICO			
1670' FNL & 80' FWL		Other Services: LOT/CHL DLI #40 CYBER LSS	
UNIT E			
APR SERIAL NO.	RECT.	TWP.	RANGE
***TIGHT HOLE**	1	9-S	28-E
Permanent Datum	Q.	Elev.	3834.4 F
Log Measured From	KB	9.0 F	above Perm. Datum
Drilling Measured From	KB		DL 3834.4 F
Date	22-JAN-1968		
Run No.	ONE		
Depth Driller	7458.0 F		
Depth Logger (Sohl.)	7458.0 F		
Stm. Log Interval	7458.0 F		
Top Log Interval	0.0 F		
Casing-Driller	8 5/8 @ 1000 F		
Casing-Logger	1006.0 F		
Bit Size	7 7/8"		
Type Fluid in Hole	SALT GEL		
Dens.	Visc.	10.00 LB/G 400 S	
pH	Flt. Loss	9.0 8.0 C3	
Source of Sample	PIT		
Rm @ Mass. Temp.	100 Ohm @ 82.0 DEGF		
Rmt @ Mass. Temp.	087 Ohm @ 82.0 DEGF		
Rms @ Mass. Temp.	158 Ohm @ 82.0 DEGF		
Source: Rmt Rms	PRESS PRESS		
Rm @ BMT	048 Ohm @ 123 DEGF		
Circulation Ended	22:00 1/21/68		
Logger on Bottom	SEE LOG		
Max. Res. Temp.	123 DEGF		
Equip. Location	8234 ROSWELL		
Recorded By	SULLIVAN		
Witnessed By	CHO/AMLEN		

NMOCD Form C108
Para. VIII

Schlumberger		SIMULTANEOUS COMPENSATED NEUTRON- LITHO-DENSITY	
COMPANY STEVENS OPERATING COMPANY			
WELL O'BRIEN "C" NO. 9			
FIELD TWIN LAKE DEVONIAN			
COUNTY CHAVES STATE NEW MEXICO			
1670' FNL & 80' FWL		Other Services: LOT/CHL DLI #40 CYBER LSS	
UNIT E			
APR SERIAL NO.	RECT.	TWP.	RANGE
***TIGHT HOLE**	1	9-S	28-E
Permanent Datum	Q.	Elev.	3834.4 F
Log Measured From	KB	9.0 F	above Perm. Datum
Drilling Measured From	KB		DL 3834.4 F
Date	22-JAN-1968		
Run No.	ONE		
Depth Driller	7458.0 F		
Depth Logger (Sohl.)	7458.0 F		
Stm. Log Interval	7458.0 F		
Top Log Interval	0.0 F		
Casing-Driller	8 5/8 @ 1000 F		
Casing-Logger	1006.0 F		
Bit Size	7 7/8"		
Type Fluid in Hole	SALT GEL		
Dens.	Visc.	10.00 LB/G 400 S	
pH	Flt. Loss	9.0 8.0 C3	
Source of Sample	PIT		
Rm @ Mass. Temp.	100 Ohm @ 82.0 DEGF		
Rmt @ Mass. Temp.	087 Ohm @ 82.0 DEGF		
Rms @ Mass. Temp.	158 Ohm @ 82.0 DEGF		
Source: Rmt Rms	PRESS PRESS		
Rm @ BMT	048 Ohm @ 123 DEGF		
Circulation Ended	22:00 1/21/68		
Logger on Bottom	SEE LOG		
Max. Res. Temp.	123 DEGF		
Equip. Location	8234 ROSWELL		
Recorded By	SULLIVAN		
Witnessed By	CHO/AMLEN		



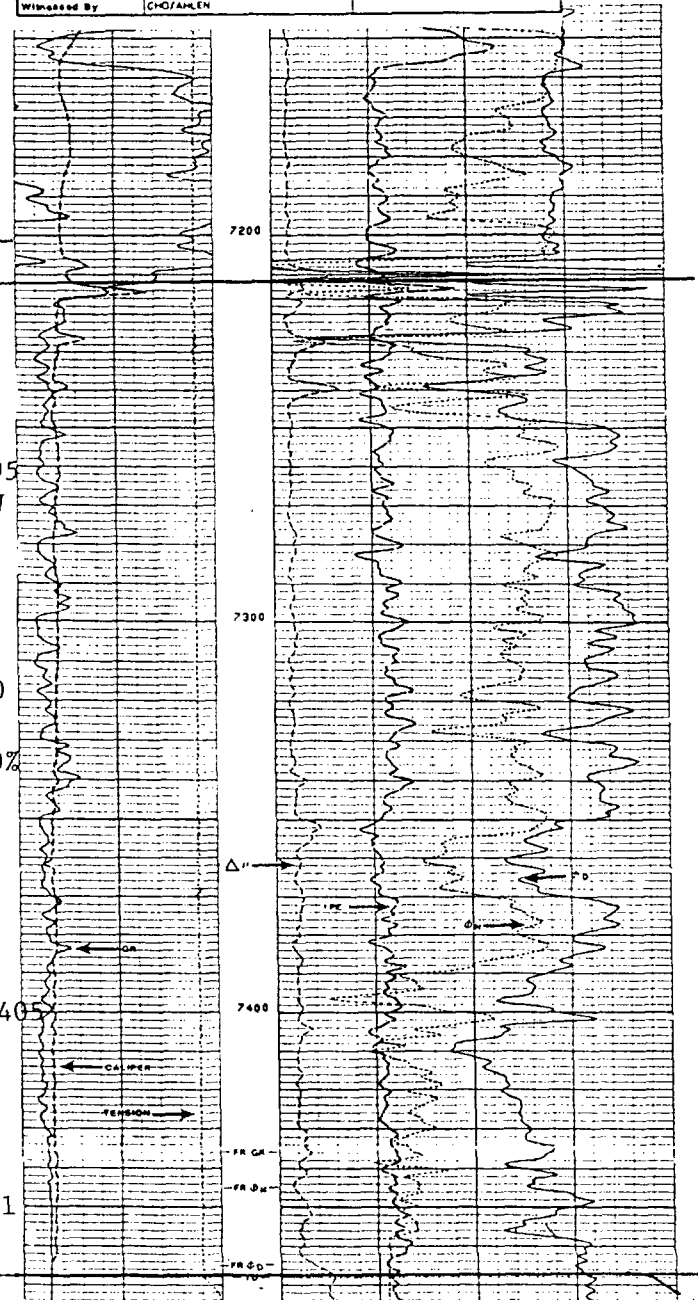
Mississippian Lime and Shale

Top Siluro-Devonian

Perfs
7211-45
A/5000
Gallons
Produced
1185 BO, 3995
MCF, 6583BW
T&A
New Perfs
7272-76,
7392-7405
Re/A all
perfs 5000
gallons
Pumped 100%
Saltwater

Perfs
7392-7405

289' Total
Dolomite



C-108 PARAGRAPH IX

The stimulation program on the injection zone was a total of 10,000 gallons 15% acid.

PARAGRAPH X

Logs and tests on file OCD.

PARAGRAPH XI

No fresh water wells are nearby.

PARAGRAPH XII

Applicant has examined available geologic and engineering data and believes there are no open faults within five miles. In any case, there are no nearby underground drinking water wells.