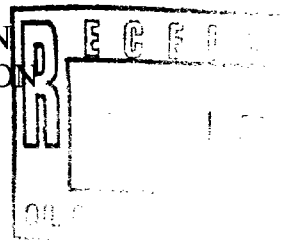
BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY, MINERALS AND NATURAL RESOURCES

IN THE MATTER OF THE APPLICATION OF STEVENS OPERATING CORPORATION FOR SALT WATER DISPOSAL, CHAVES COUNTY, NEW MEXICO.



CASE NO. 10199

APPLICATION

COMES NOW STEVENS OPERATING CORPORATION, by and through its undersigned attorneys, hereby makes application for authority to dispose of produced salt water into the Fusselman formation, Undesignated Diablo-Fusselman Pool, and in support thereof states:

1. Applicant is the operator of the Hanland Well No. 1 located 1980 feet from the South line and 2310 feet from the West line (Unit N) of Section 16, Township 10 South, Range 27 East, N.M.P.M., Chaves County, New Mexico.

2. Applicant seeks authority to dispose of produced salt water into the Fusselman formation, Undesignated Diablo-Fusselman Pool, in the perforated intervals from 6904 feet to 6944 feet in said Hanland Well No. 1.

3. Approval of this application is in the best interest of conservation, the prevention of waste and the protection of correlative rights.

WHEREFORE, Stevens Operating Corporation requests that this application be set for hearing before a Division Examiner of the Oil Conservation Division on January 10, 1991, and that after notice and hearing as required by law, the Division enter its order approving this application.

Respectfully submitted,

CAMPBELL & BLACK, P.A.

By: _____

WILLIAM F. CARR
Post Office Box 2208
Santa Fe, New Mexico 87504
Telephone: (505) 988-4421

ATTORNEYS FOR STEVENS OPERATING CORPORATION

STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

Hanlad State #1
Unit K, Section 16, Township 16 South,
Range 27 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.

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

III. WELL DATA

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

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

(2) Each casing string used with 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.

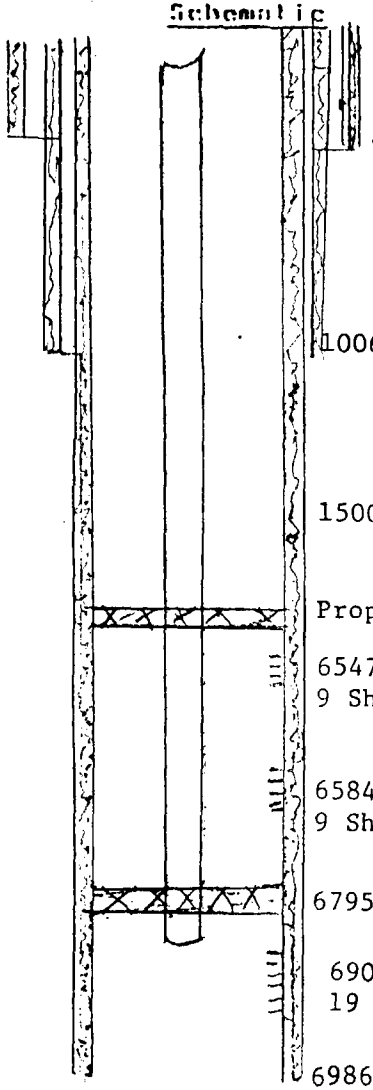
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

SIDE 1

Stevens Operating Corporation	Hanlad			
OPERATOR	LEASE			
1	1980 FSL 2310 FWL	16	10S	27E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 16" " Cemented with 2 1/2 yds. Ready Mix

TOC Surface feet determined by Circulating

Hole size 20"

Intermediate Casing

Size 10 3/4" " Cemented with 800 sx.+1"-225 sx cm

TOC Surface feet determined by Circulating

Hole size 14 3/4

Long string 1st Stage - 420 sxs TOC 5500'
2nd Stage

Size 5 1/2 " Cemented with 1700 sx.TOC 1500'

TOC 1500' feet determined by Temp. Survey

Hole size 7 7/8

Total depth 6986'

Injection interval

6904' feet to 6944' feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8" lined with Corrosion Inhibitor (material) set in a 5 1/2" Baker Lockset nickel plated (brand and model) packer at 6795' feet (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Fusselman

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

3. Is this a new well drilled for injection? [ ] Yes [X] No

   If no, for what purpose was the well originally drilled? Oil production in Fusselman (Wildcat)

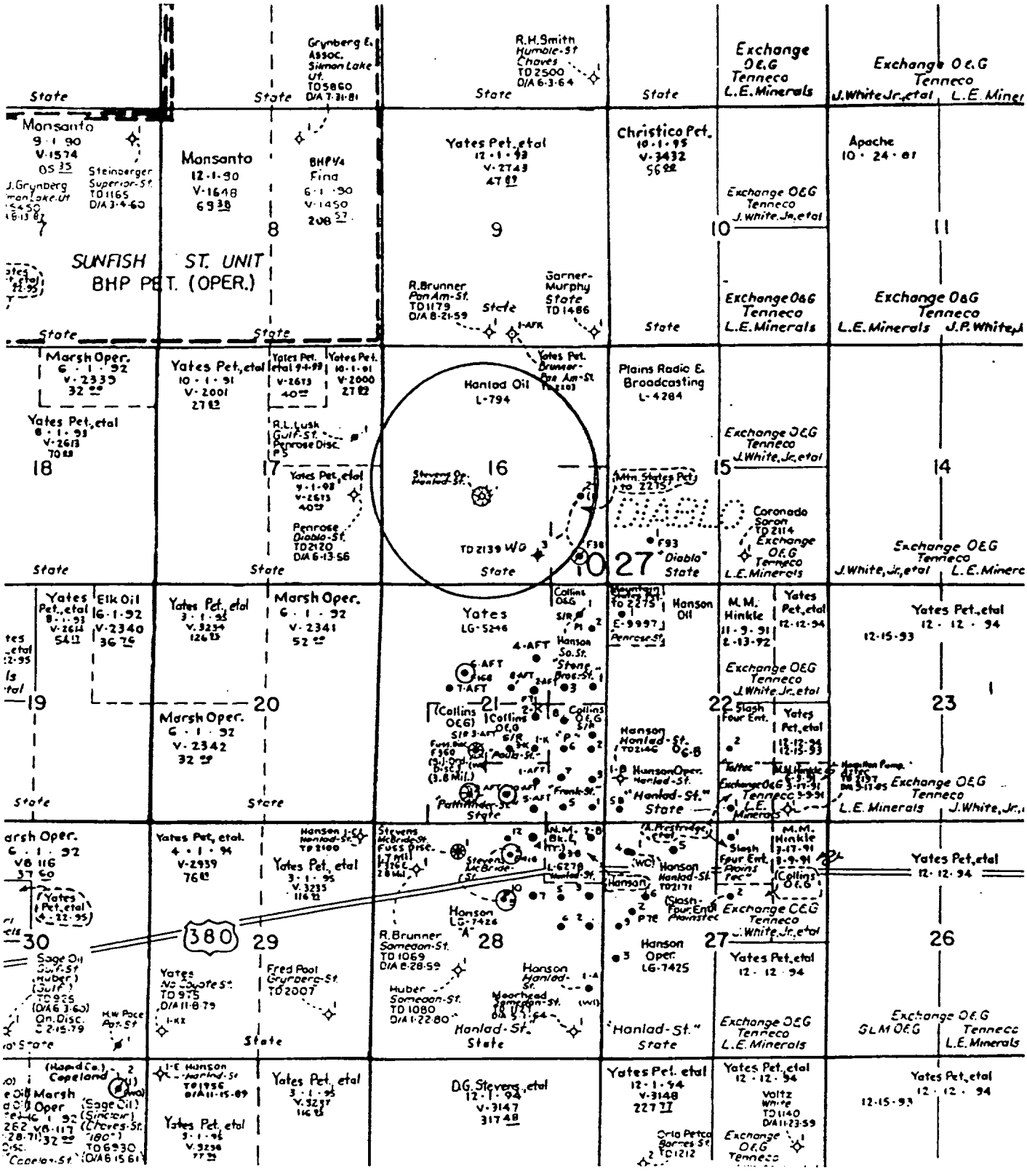
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

   6547 - 6567 Penn. Pkr set @ 6795'

   6584 - 6600 Penn.

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. San Andres Slaughter ± 2000', Udesignated Penn ± 6300', Fusselman ± 6600'

C-108 PARAGRAPH V



⊙ = Wells drilled to Fusselman

Stevens Operating Corp.
NMOCD Case 10199
Exhibit 1

C-108 PARAGRAPH VI

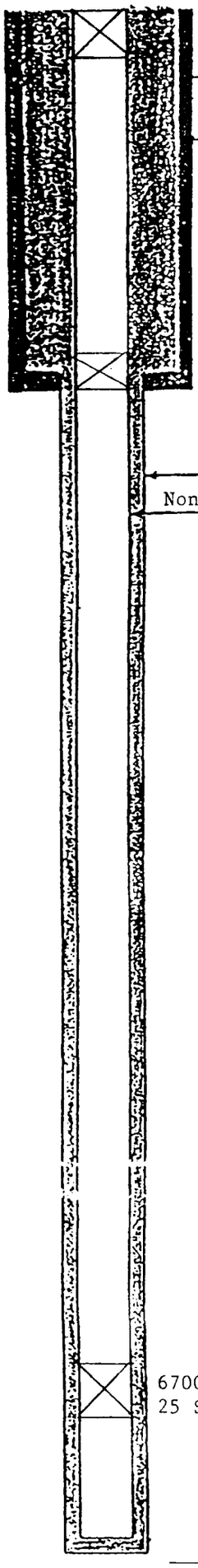
WELL BORE SKETCH

OPERATOR/LEASE/WELL Mountain States Petroleum/#1 Hanson(Honolulu #1 State)

LOCATION Section 16, Township 10 South, Range 27 East, 660'FEL &660' FSL

FIELD/POOL Wildcat 1 / Dry Hole

PLUG BACK DEPTH 2138' KB 3861' ELEVATION



0' - 16' 5 Sxs Cement

Hole Size 11"

SURFACE CASING:
Size 8 5/8" Weight 24# Grade J
Set at 2218" with 1350 Sacks Cement
Circulate Sacks to Surface
Remarks: 0- 16' Sxs Cement
16'-2138' 9.8# per gallon mud
2138'-2218' 25 sxs cement
2218'-6700' mud
6700'-6780' 25 Sxs Cement
6780'-7215' mud

Perfs
2062'-2122'
San Andres

2138'-2218'
25 Sxs Cement plug

Hole Size 7 7/8"

None/Dryhole

PRODUCTION CASING:
Size Weight Grade
Set at with Sacks Cement
Cement Top: Calculated Temperature Survey
Remarks:

TUBING:
Size Weight Grade
Number of Joints Set at
Packer Set at
Bottom Arrangement:

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

6700' - 6780'
25 Sxs Cement

7215' T.D.

C-108 PARAGRAPH VII

1. Proposed average daily rate: 1000 BOPD
   Proposed maximum daily rate: 2880 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 (Fusselman) formation water is the same as the produced formation water 1 1/2 miles south. The Fusselman, Devonian and Montoya formation water characteristics are substantially the same in Chaves, Roosevelt and northern Lea Counties.

CHEMLINK

WATER ANALYSIS REPORT

Lab ID No. : 121290K Analysis Date: December 10, 1990

Company : Stevens Operating
Field :
Lease/Unit : McBride
Well ID. : No. 1
Sample Loc.: Free-Water Knock-Out

Sampled By : Permian Treating Chemic
Sample Date: *10-December-1990
Salesperson: David Naylon
Formation :
Location : Roswell, N. M.

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
Calcium as Ca++	1,609	80	Hydroxyl as OH-	0	0
Magnesium as Mg++	502	41	Carbonate as CO3=	0	0
Sodium as Na+ (Calc)	15,771	686	Bicarbonate as HCO3-	1,022	17
Barium as Ba++	Not Determined		Sulfate as SO4=	1,400	29
Oil Content	1,032		Chloride as Cl-	26,994	761

Total Dissolved Solids, Calculated: 47,298 mg/L.

Calculated Resistivity: 0.194 ohm-meters
mg/L. Hydrogen Sulfide: 30
mg/L. Carbon Dioxide: 100
mg/L. Dissolved Oxygen: Not Determined

pH: 6.100
Specific Gravity 60/60 F.: 1.032
Saturation Index @ 80 F.: -0.423
@ 140 F.: +0.477

Total Hardness: 6,080 mg/L. as CaCO3
Total Iron: 14.00 mg/L. as Fe++

Calcium Sulfate Scaling Potential
Not Present

Estimated Temperature of Calcium Carbonate Instability is 106 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	MG/L	MEQ/L
Ca(HCO3)2	1,358	16.8
CaSO4	1,985	29.2
CaCl2	1,917	34.5
Mg(HCO3)2	0	0.0
MgSO4	0	0.0
MgCl2	1,961	41.2
NaHCO3	0	0.0
Na2SO4	0	0.0
NaCl	40,085	685.7

Analyst 07:10 PM

C-108 PARAGRAPH VIII

Attached CNL-FDC, DLL, MFSL shows injection zone lithology to be very porous, highly permeable Fusselman and Montoya Dolomite 218' thick @ 6768' to 6986'. No known underground sources of drinking water overlie the injection well on the basis of local rancher knowledge, however, one mile east an abandoned fresh water windmill well is drilled 98' deep in the Yates Formation. The well originally had a water level 55' from the surface with chlorides @ 145 PPM and a specific conductivity of 155.0. The well was abandoned by the rancher when it dried up. The rancher is currently pumping water to the tank from five miles distance.

NMOCD Form C108
Par. VIII

Schlumberger

SIMULTANEOUS
COMPENSATED NEUTRON-LITHO-DENSITY

COMPANY STEVENS OPERATING CORPORATION
WELL HANLAD STATE NO. 1
FIELD DIABLO
COUNTY CHAVES STATE NEW MEXICO
1980' FSL & 2310' FWL
Other Services: DLL/MSFL/GR LDT/CNL LSS
API SERIAL NO. - SECT. 16 TWP. 10-S RANGE 27-E
Permanent Datum GL Elev. 3880.0 F Elev.: K.B. 3901.0 F
Log Measured From KB 12.0 F above Perm. Datum D.F. 3900.0 F
Drilling Measured From KB G.L. 3889.0 F

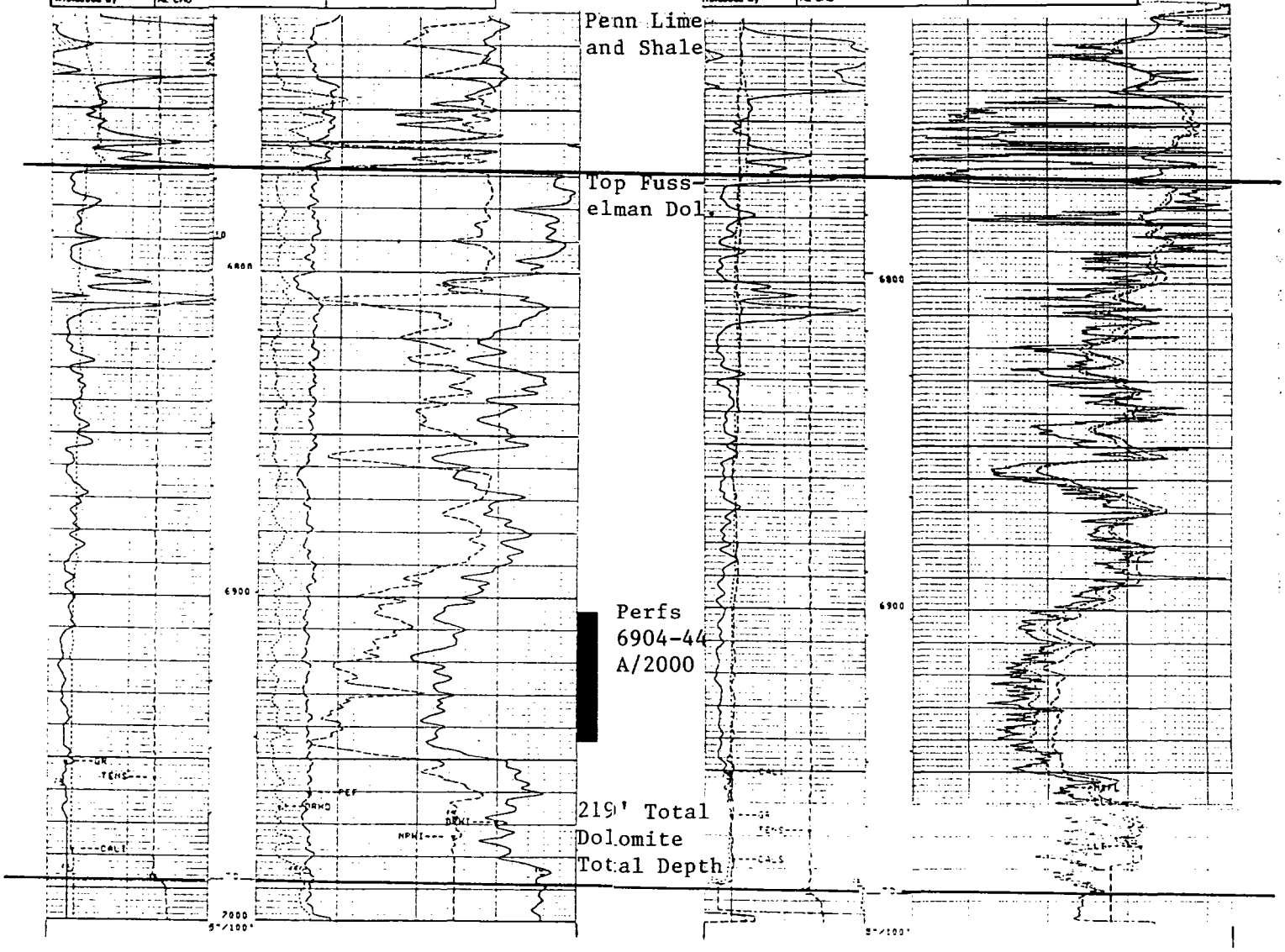
Date	06-SEP-1990
Run No.	ONE
Depth Driller	6986.0 F
Depth Logger (Schl.)	6988.0 F
Btm. Log Interval	6985.0 F
Top Log Interval	7000.0 F
Casing-Driller	10 3/4 @ 1006.0 F
Casing-Logger	1006.0 F
BH Size	9 1/2
Type Fluid in Hole	SALT-GEL-STARCH
Dens. / Visc.	10.20 LB/G / 42.0 S
pH / Fld. Loss	8.0 / 9.0 C3
Source of Sample	MUD PIT
Rm @ Meas. Temp.	.047 @ 84.0 DEGF
Rmf @ Meas. Temp.	.047 @ 84.0 DEGF
Rmc @ Meas. Temp.	@
Source: Rmf / Rmc	MEAS / N/A
Rm @ BHT	.032 @ 126. DEGF
Time Circulation Ended	1300 HOURS SEPT. 5
Time Logger on Bottom	SEE LOG
Max. Rec. Temp.	126. DEGF
Equip. Location	8382 HOBBS, NM
Recorded By	ANDREW G. JERGE
Witnessed By	AL CHO

Schlumberger

SIMULTANEOUS
DUAL LATEROLOG MICRO-SFL

COMPANY STEVENS OPERATING CORPORATION
WELL HANLAD STATE NO. 1
FIELD DIABLO
COUNTY CHAVES STATE NEW MEXICO
1980' FSL & 2310' FWL
Other Services: DLL/MSFL/GR LDT/CNL LSS
API SERIAL NO. - SECT. 16 TWP. 10-S RANGE 27-E
Permanent Datum GL Elev. 3880.0 F Elev.: K.B. 3901.0 F
Log Measured From KB 12.0 F above Perm. Datum D.F. 3900.0 F
Drilling Measured From KB G.L. 3889.0 F

Date	06-SEP-1990
Run No.	ONE
Depth Driller	6986.0 F
Depth Logger (Schl.)	6988.0 F
Btm. Log Interval	6986.0 F
Top Log Interval	1006.0 F
Casing-Driller	10 3/4 @ 1006.0 F
Casing-Logger	1006.0 F
BH Size	9 1/2
Type Fluid in Hole	SALT-GEL-STARCH
Dens. / Visc.	10.20 LB/G / 42.0 S
pH / Fld. Loss	8.0 / 9.0 C3
Source of Sample	MUD PIT
Rm @ Meas. Temp.	.047 @ 84.0 DEGF
Rmf @ Meas. Temp.	.047 @ 84.0 DEGF
Rmc @ Meas. Temp.	@
Source: Rmf / Rmc	MEAS / N/A
Rm @ BHT	.032 @ 126. DEGF
Time Circulation Ended	1300 HOURS SEPT. 5
Time Logger on Bottom	SEE LOG
Max. Rec. Temp.	126. DEGF
Equip. Location	8382 HOBBS, NM
Recorded By	ANDREW G. JERGE
Witnessed By	AL CHO



C-108 PARAGRAPH IX

The stimulation program on the injection zone was 2500 gallons 15% acid.

PARAGRAPH X

Logs and tests on file OCD.

PARAGRAPH XI

One abandoned stock water well is located approximately one mile east in the NE/4SW/4 of Section 15. The well is approximately 98' deep and is in the Yates Formation. The well was abandoned by the rancher due to minimal flow. Fresh water is currently being pumped to the tank from five miles distance by the rancher.

PARAGRAPH XII

Applicant has examined available geologic and engineering data and while a fault (Diablo Dike) may exist in Section 9, 3/4 mile north, such fault is believed sealed by basaltic intrusion in tertiary age. A similar fault to the north (Railroad Mountain Dike) has an oil field on both sides with no apparent effect on accumulation (Acme San Andres).