APPLICATION
TO
WATERFLOOD

SOUTH LUCKY LAKE QUEEN FIELD UNIT
Chaves County, New Mexico

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [XX] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [ ] yes [ ] no

II. Operator: Burk Royalty Co.

Address: P. O. Box BRC, Wichita Falls, TX 76307

Contact party: Fred M. Lynch Phone: 817/322-5421

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 [X] 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: Fred M. Lynch Title Petroleum Engineer

Signature: Fred M. Lynch Date: 2-4-86

* 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

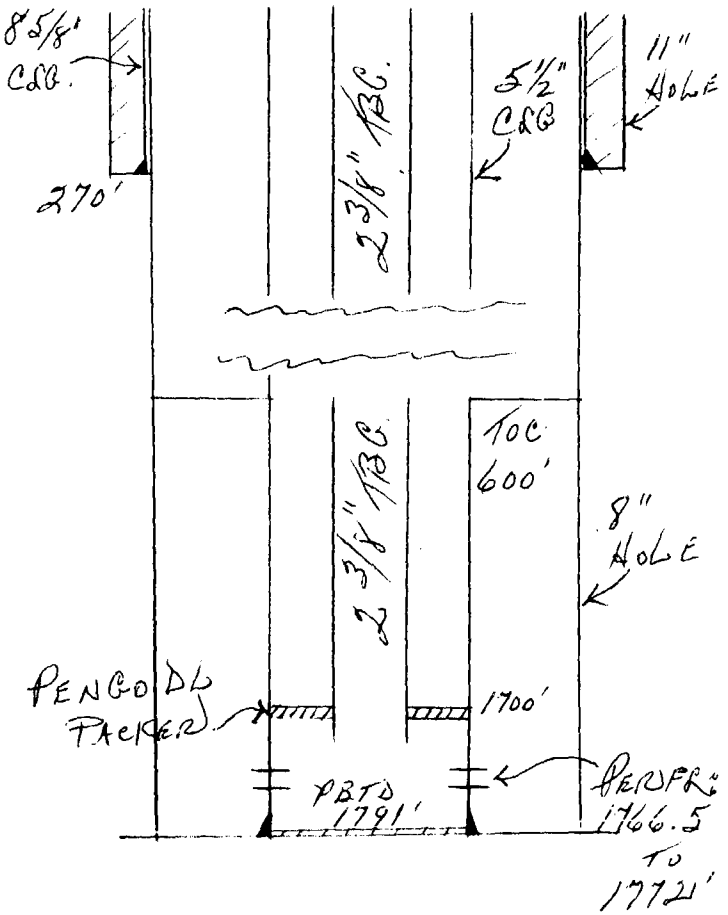
Dalport Oil Corp. (OPERATOR) | Jones-Federal (LEASE) | (Unit L)

1 (WELL NO.) | 2310' FSL & 330' FWL (FOOTAGE LOCATION) | 22 (SECTION) | 15S (TOWNSHIP) | 29E (RANGE)

South Lucky Lake Queen Unit Tract 2 Well No. 1

C-108 approved 8/3/86

Schematic



Tabular Data

Surface Casing to 270'

Size 8 5/8" - 20# " Cemented with 150 sx "C" sx.

TOC Surface feet determined by circulated

Hole size 11"

Intermediate Casing

Size _____" Cemented with _____sx.

TOC _____ feet determined by _____

Hole size _____

Long string to 1,794'

Size 5½" - 15.5# " Cemented with 275 sx.

TOC 600 feet determined by volume

Hole size 8"

Total depth 1,796' PBTD 1,791'

Injection interval Queen

1,766½ feet to 1,772 feet

(perforated ~~XXXXXXXXXXXX~~, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a

Pengo DL (brand and model) packer at 1,700'± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

   Oil production

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)

   No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

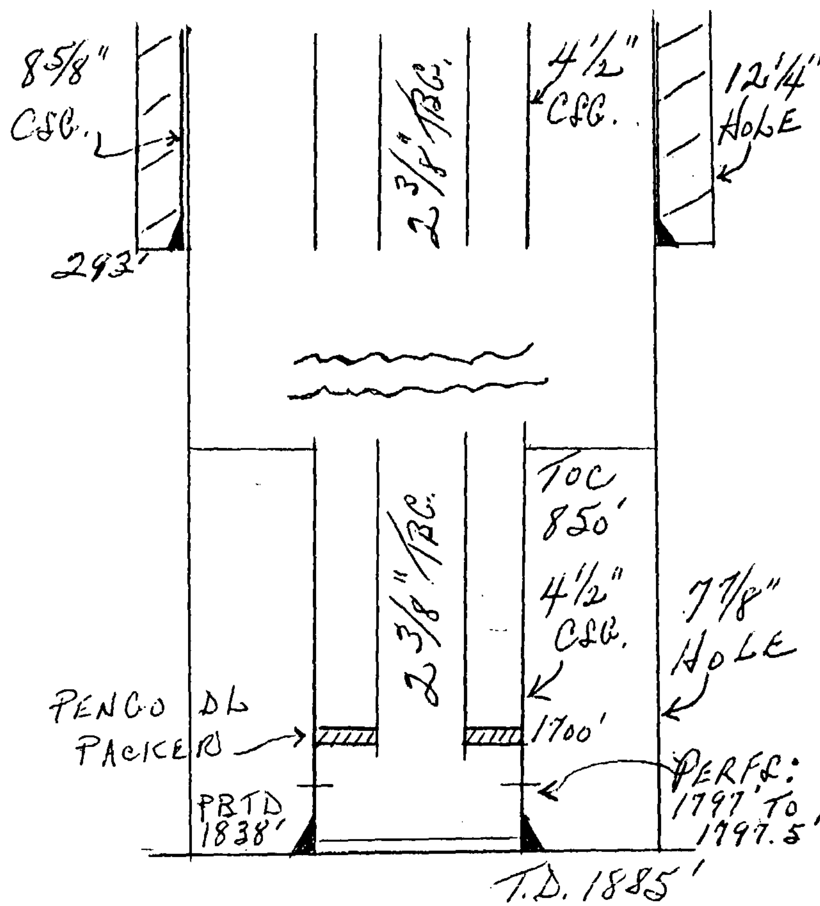
   None

INJECTION WELL DATA SHEET

Dalport Oil Corp.		Jones-Federal		
OPERATOR		LEASE		
4	990' FSL & 1477' FWL	22	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Lusky Lake Queen Unit Tract 2 Well No. 4 Unit N.

Schematic



Tabular Data

C-104 approved 8/8/86

Surface Casing 293'

Size 8 5/8" 20# Cemented with 150 sx.

TOC Surface feet determined by circulated

Hole size 12 1/4"

Intermediate Casing

Size ______ " Cemented with ______ sx.

TOC ______ feet determined by ______

Hole size ______

Long string to 1,885'

Size 4½" - 9½" " Cemented with 275 sx.

TOC 850 feet determined by volume

Hole size 7 7/8"

Total depth 1,885' PBTD 1,838'

Injection interval Queen

1,797 feet to 1,797.5 feet

(perforated ~~or open-hole~~, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a

Pengo DL (brand and model) packer at 1,700± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

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) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

INJECTION WELL DATA SHEET

SIDE 1

Yates Petroleum Corp. — OPERATOR

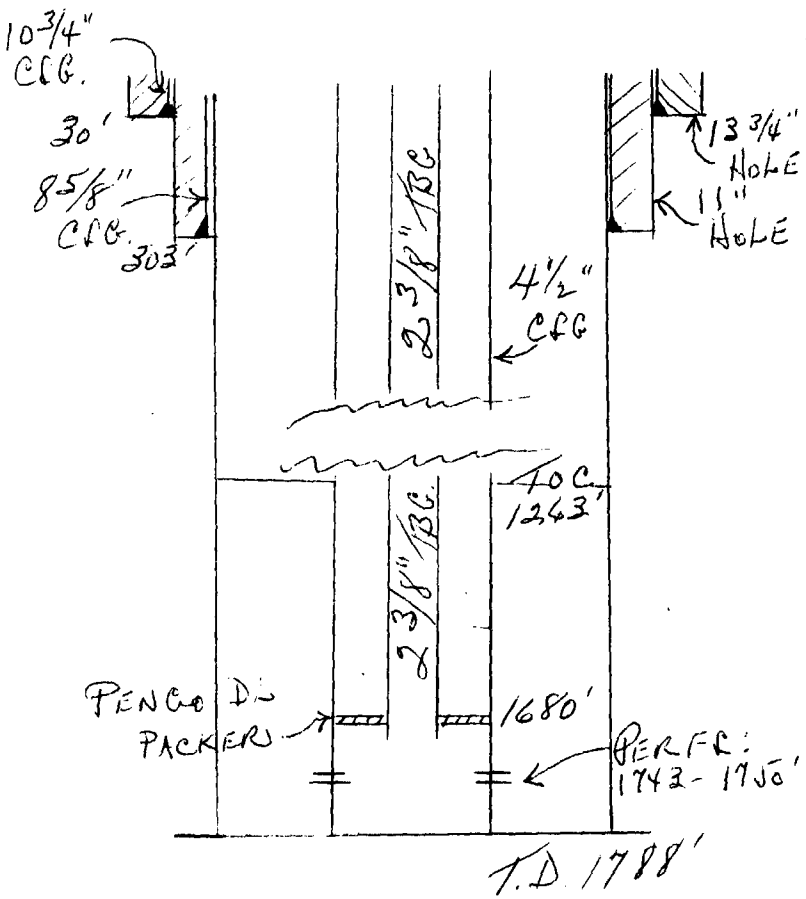
Federal "DH" — LEASE

1	1980' FNL & 330' FWL	27	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Empty Lake Queen Unit Tract 1 Well No. 1

C-104 approve 8/13/86

Schematic



Tabular Data

Surface Casing 30'

Size 10 3/4" 30# " Cemented with 25 sx.

TOC surface feet determined by circulated

Hole size 13 3/4"

Intermediate Casing 303'

Size 8 5/8" - 24# " Cemented with 50 sx.

TOC Surface feet determined by circulated

Hole size 11"

Long string 1,788'

Size 4½" - 10.5# " Cemented with 125 sx.

TOC 1263' feet determined by volume

Hole size 8"

Total depth 1,788'

Injection interval Queen

1,743 feet to 1,750 feet

(perforated ~~or open hole~~, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a

Baker Model D (brand and model) packer at 1,680'± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /7 Yes XX No

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

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) No

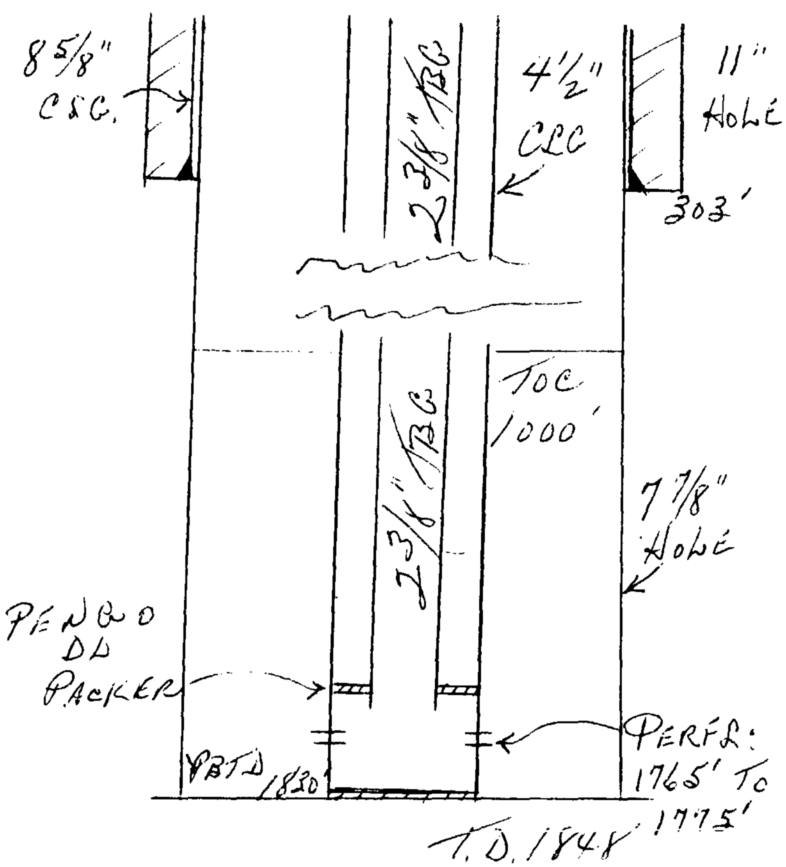
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

INJECTION WELL DATA SHEET

Read & Stevens		Harris State 16		
OPERATOR		LEASE		
1	660' FSL & 1980' FEL	16	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Lucky Lake Queen Unit Tract 7 well #1 (Unit O) C-104 approved 3/5/86

Schematic



Tabular Data

Surface Casing 303'

Size 8 5/8" - 24# " Cemented with 100 sx.

TOC Surface feet determined by circulated

Hole size 11"

Intermediate Casing

Size ________ " Cemented with ________ sx.

TOC ________ feet determined by ________

Hole size ________

Long string 1,848'

Size 4½" - 9.5# " Cemented with 100 sx.

TOC 1,000 feet determined by volume

Hole size 7 7/8"

Total depth 1,848' PBTD 1,830'

Injection interval Queen

Perf. 1,765 feet to 1,775 feet

(perforated orXXXXXXXXXe, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a Pengo DL (brand and model) packer at 1,680'± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

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) No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

INJECTION WELL DATA SHEET

SIDE 1

Dalport Oil Corp. — OPERATOR

Todhunter-Federal — LEASE

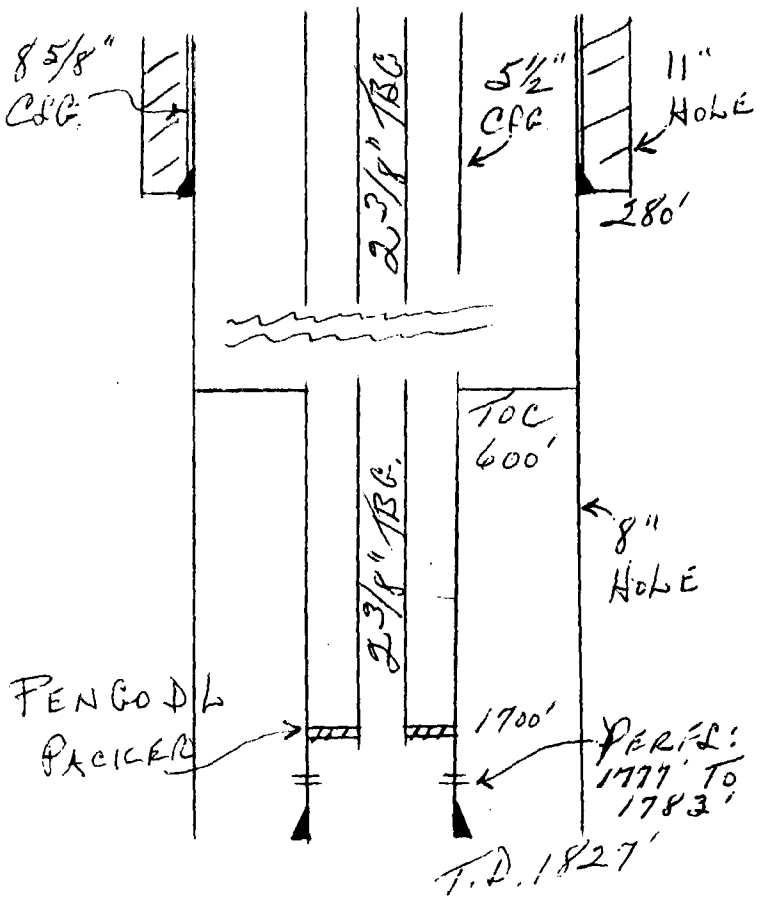
1	2,310' FNL & 1,650' FWL	22	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Lucky Lake Queen Unit Tract 3 (Well No. 1 (Unit F)

~~South Lucky Lake Queen Unit Tract 2~~ ~~Well No. 5~~

C-104 submitted 8/4/86

Schematic



Tabular Data

Surface Casing 280'

Size 8 5/8" - 20# " Cemented with 150 sx.

TOC Surface feet determined by circulated

Hole size 11"

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string 1,826'

Size 5½" - 14# " Cemented with 275 sx.

TOC 600' feet determined by volume

Hole size 8"

Total depth 1,827'

Injection interval Queen

1,777 feet to 1,783 feet

(perforated ~~xxxxxxxxxxxx~~ indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a Pengo DL (brand and model) packer at 1,700' ± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

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) No

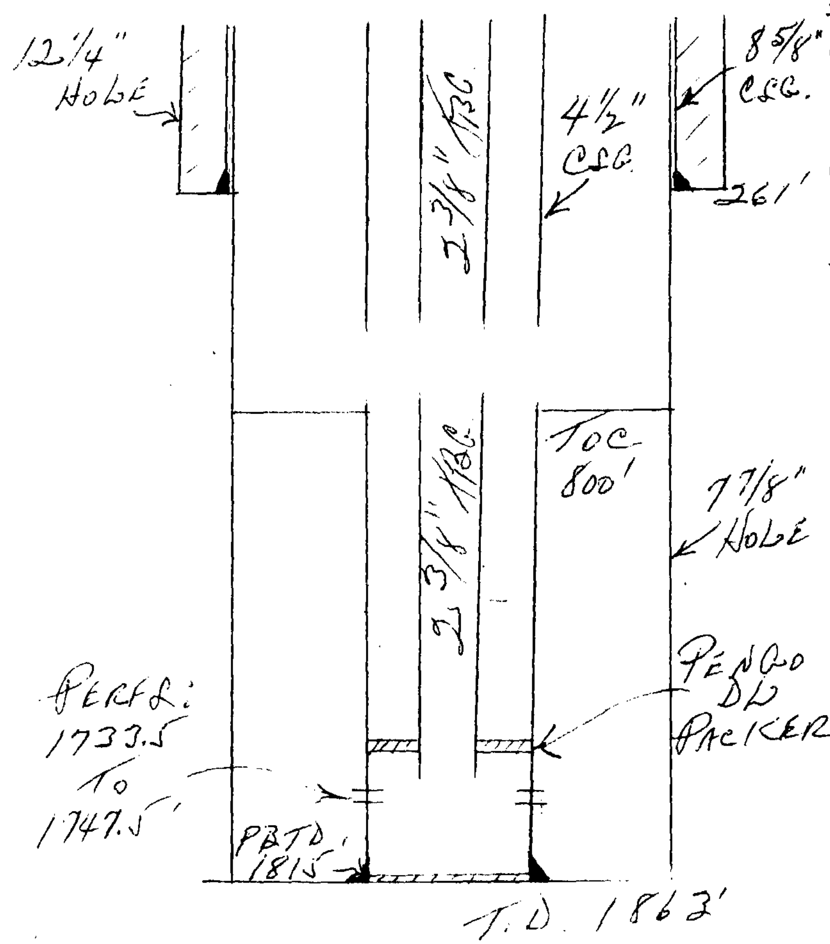
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. None

INJECTION WELL DATA SHEET

Bison Petroleum Corp.		Owen-Federal		
OPERATOR		LEASE		
1	660' FEL & 1980' FNL	21	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Lucky Lake Queen Unit Well No 1
Tract 4
(Unit H)
(Well File in Artesia)

Schematic



Tabular Data

Surface Casing 261'

Size 8 5/8" - 20# " Cemented with 300 sx.

TOC Surface feet determined by circulated

Hole size 12 1/4"

Intermediate Casing

Size ______ " Cemented with ______ sx.

TOC ______ feet determined by ______

Hole size ______

Long string 1,853'

Size 4½" - 9.5# " Cemented with 300 sx.

TOC 800 feet determined by volume

Hole size 7 7/8"

Total depth 1,863' PBTD 1,815'

Injection interval Queen

1,733½ feet to 1,747½ feet
(perforated XXXXXXXXXX, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a

Pengo DL (brand and model) packer at 1,650'± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

   Oil production

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)

   No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

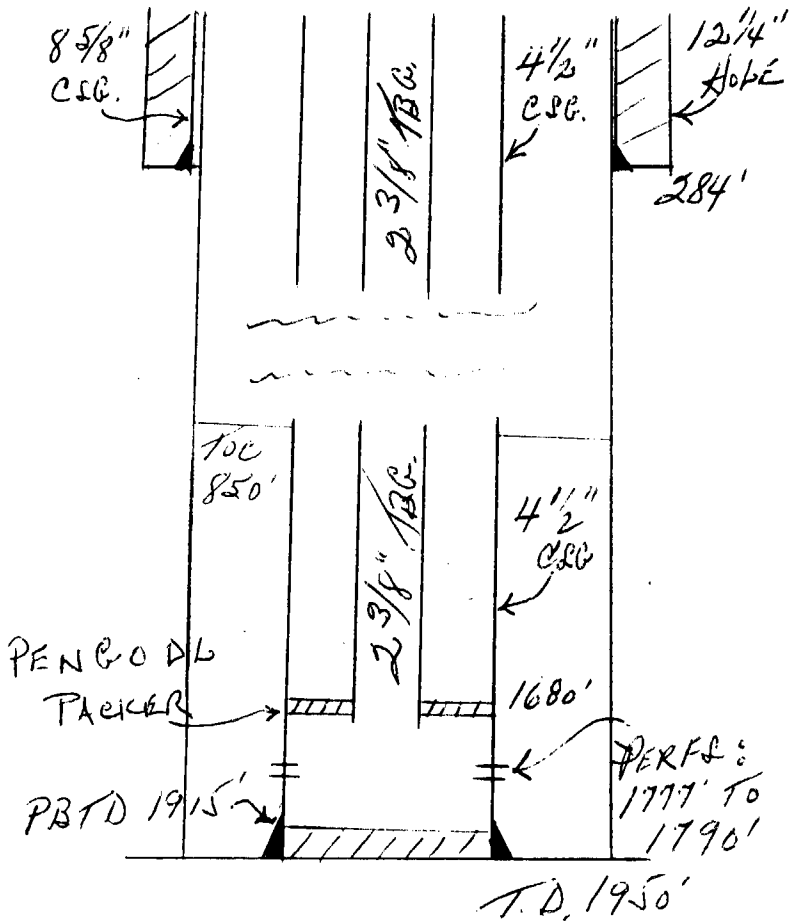
   None

INJECTION WELL DATA SHEET SIDE 1

Read & Stevens	South Lucky Lake Federal			
OPERATOR	LEASE			
1	330' FSL & 330' FWL	15	15S	29E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

South Lucky Lake Queen Unit Tract 5 Well No. 1 Unit M
C-108 approved 9/13/86

Schematic



Tabular Data

Surface Casing 284'

Size 8 5/8" - 24# " Cemented with 150 sx.

TOC Surface feet determined by circulated

Hole size 12 1/4"

Intermediate Casing

Size _____ " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string 1,950'

Size 4½" - 9.5# " Cemented with 400 sx.

TOC 850 feet determined by volume

Hole size 7 7/8"

Total depth 1,950' PBTD 1,915'

Injection interval Queen

1,777 feet to 1,790 feet

(perforated ~~XXXXXXXXXXXX~~, indicate which)

Tubing size 2 3/8" lined with fiberglass tubing (material) set in a

Pengo DL (brand and model) packer at 1,680' ± feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of Field or Pool (if applicable) South Lucky Lake

3. Is this a new well drilled for injection? /_/ Yes /X/ No

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

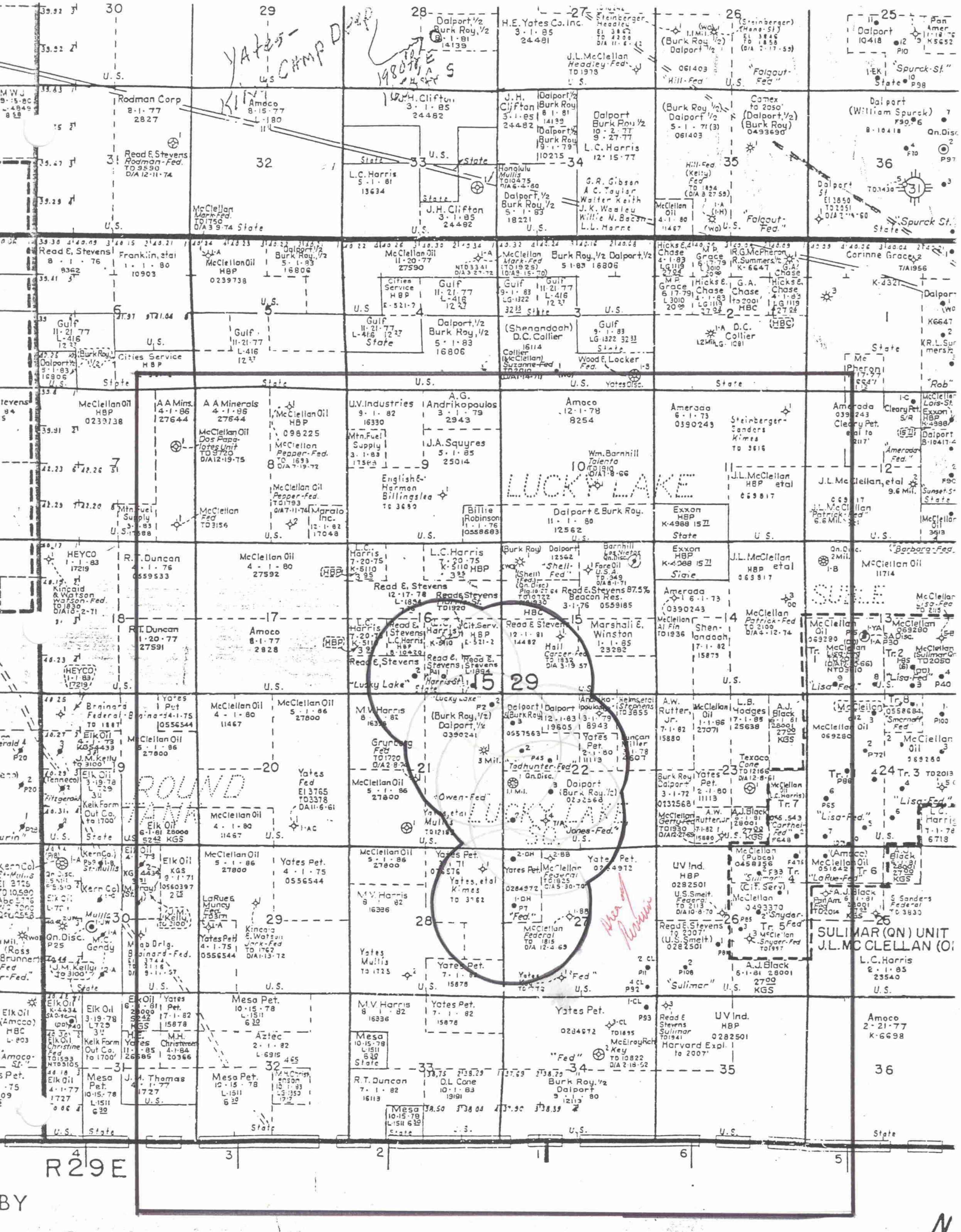
   Oil production

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)

   No

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

   None



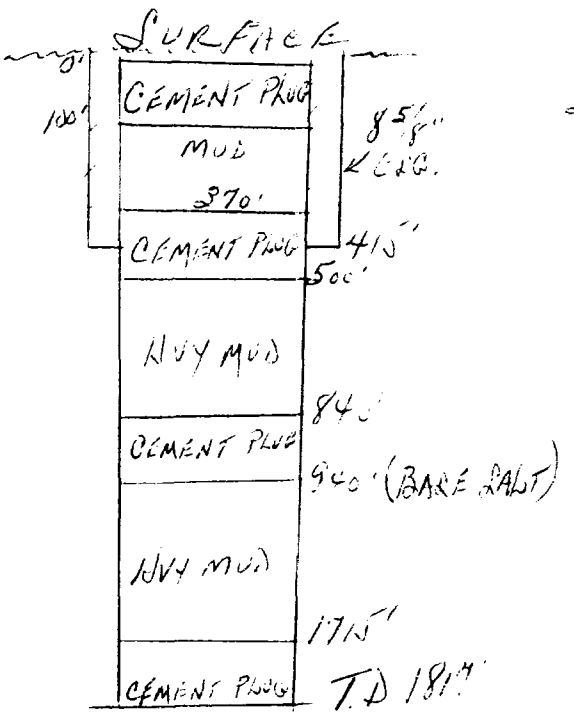
Rodman Corp
Amoco
Read & Stevens
McClellan Oil
Dalport, 1/2 Burk Roy, 1/2
J.H. Clifton
L.C. Harris
U.S.
State
LUCKY LAKE
Amerada
Exxon
HEYCO
R.T. Duncan
Gulf
Cities Service
A A Minerals
U.V. Industries
Andrikopoulos
Yates Pet.
M.V. Harris
Mesa Pet.
Elk Oil
UV Ind.
A.J. Black
SULIMAR (QN) UNIT
J.L. MC CLELLAN
R29E

TABULATION OF DATA
ALL WELLS WITHIN 1/2 MILE OF AN INJECTION WELL

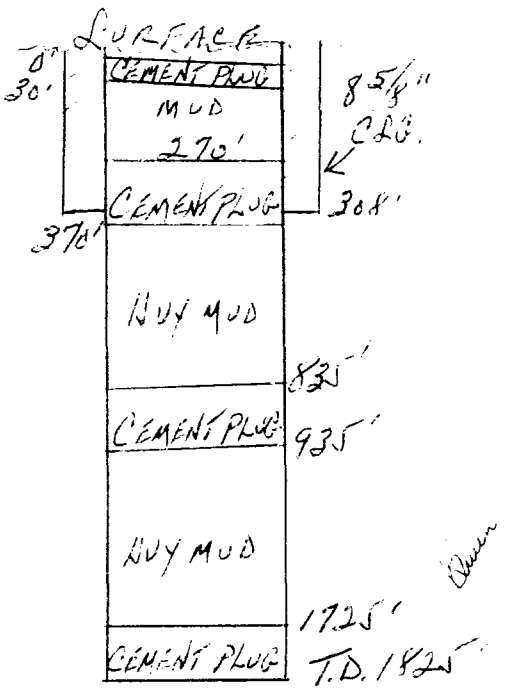
WELL NAME	SEC--LOC T15S R29E	DATE COMP	T.D.	PBTD	DPT SURF CSG & SX CMT	DPT SURF CSG & SX CMT	ZONE	THK	PERFS	FRAC ISDP #	POT OR RESULTS	CURRENT STATUS
READ & STEVENS #1 South Lucky Lake	15-M	1-29-82	1,950	1,915	284'/180	1950'/400	QUEEN	13"	1777-90	2150	1 BO 19 W	Oil
HALL #1 Carper-Fed	15-K	3-19-57	1,853	---	477'/125	1844'/50	QUEEN	--	---	---	40' SW	P&A
READ & STEVENS #1 Lucky Lake	16-P	2-15-76	1,825	1,800	280'/100	1825'/100	QUEEN	13"	1761-71	---	55 BO	Oil
READ & STEVENS #2 Lucky Lake	16-N	5-10-76	1,800	1,798	288'/100	1800'/100	QUEEN	14"	1738-48	1200	10 BO	Oil
READ & STEVENS #1 Harris-State "16"	16-O	5-1-75	1,848	1,830	303'/100	1848'/100	QUEEN	15"	1765-75	1200	41 BO	Oil
READ & STEVENS #2 Harris-State "16"	16-J	5-22-75	1,920	---	300'/100	1850'/100	QUEEN	12"	---	---	salt wtr.	P&A
DALPORT #1 Owen-Fed	21-H	12-23-72	1,863	1,815	261'/300	1853'/300	QUEEN	16"	1733-47	1300	3051 mcf	Gas
DALPORT #2 Owen-Fed	21-A	3-20-76	1,860	1,808	260'/175	1860'/275	QUEEN	14"	1762-69	1100	25 BO	Oil
MCCLELLAN #1 Harris-Fed	21-C	1-29-83	1,805	---	331'/200	1805'/150	QUEEN	12"	1726-35	---	85 MCF	Gas
GRYNBERG #1 Federal	21-K	2-8-74	1,730	---	276'/180	---	QUEEN	--	---	---	tite	P&A
DALPORT #1 Jones-Fed	22-L	3-30-72	1,796	1,791	270'/150	1794'/275	QUEEN	14"	1766-73	1300	1191 MCF 3 BO	Oil
DALPORT #2 Jones-Fed	22-M	4-16-76	1,870	1,818	256'/150	1869'/150	QUEEN	16"	1773-76	1100	38 BO	Oil
DALPORT #3 Jones-Fed	22-M	5-14-76	1,884	1,867	256'/150	1882'/275	QUEEN	14"	1804-16	1300	29 BO 17 BSW	Oil
DALPORT #4 Jones-Fed	22-N	10-25-76	1,885	1,838	293'/150	1885'/275	QUEEN	17"	1797-97.5	---	55 BWPD	TA
DALPORT #1 Todhunter-Fed	22-F	5-22-72	1,827	1,801	279'/150	1826'/275	QUEEN	14"	1777-83	1400	45 BO 45 BSW	Oil

DALPORT #2 Todhunter-Fed	22-E	7-13-75	1,875	1,831	255'/175	1872'/275	QUEEN	14"	1759-66	1300	18 BO 1 BW	Oil
DALPORT #3 Todhunter-Fed	22-D	9-19-75	1,875	1,833	275'/150	1875'/275	QUEEN	14"	1760-73	1300	60 BOPD	Oil
HELMS-MARTIN #1 Stephens	22-B	8-10-40	3,855	---	343'/50	---	QUEEN	---	---	---	SW	P&A
YATES #1 Fed "DH"	27-E	12-11-74	1,788	1,780	303'/50	1788'/125	QUEEN	15	1743-50	---	7 BO 12 BW	Oil
YATES #2 Fed "DH"	27-D	8-31-76	1,818	1,804	303'/150	1804'/150	QUEEN	15"	1760-70	---	32 BOPD	Oil
MCCLELLAN #1 BB Fed	27-F	12-4-69	1,817	---	327'/150	---	QUEEN	---	---	---	SW	P&A
MCCLELLAN #2 BB Fed	27-C	5-30-70	1,825	---	308'/50	---	QUEEN	15"	---	---	SW	P&A
YATES #1 Kimes	28-A	10-27-48	3,762	1,755	None	1766'/200	QUEEN	14"	1751-56	1100	gas - oil	P&A

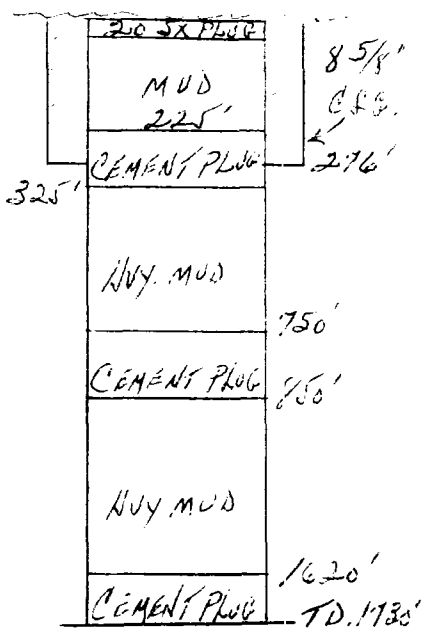
PLUGGED WELLS WITHIN AREA OF REVIEW



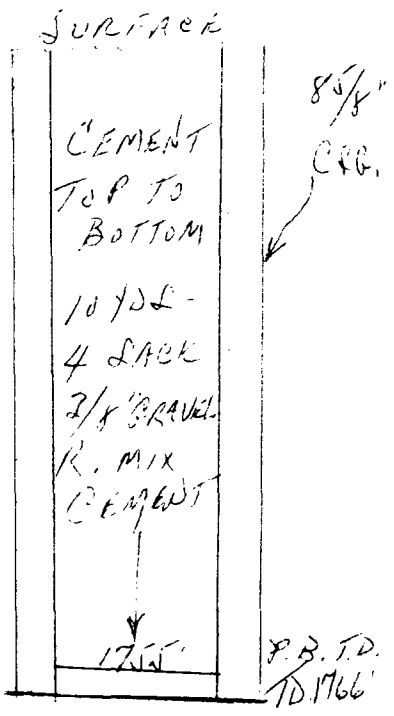
McCLELLAN-YATES "BB" FED No. 1
SEC 27 - T15S - R29E - CHAVES



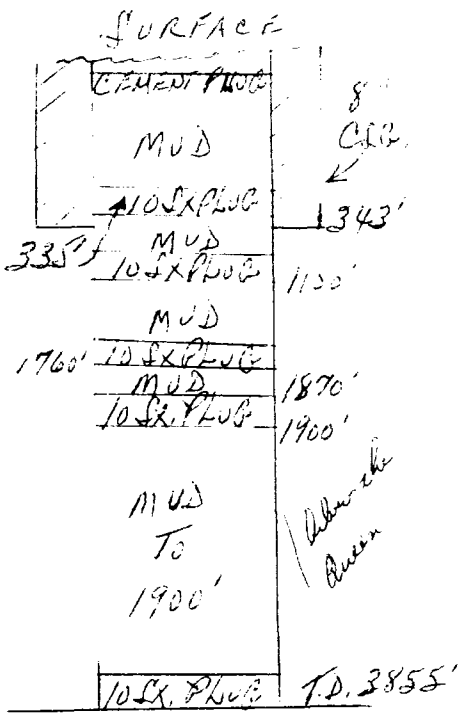
McCLELLAN-YATES "BB" FED No 2
SEC 27 - T-15S R-29E CHAVES



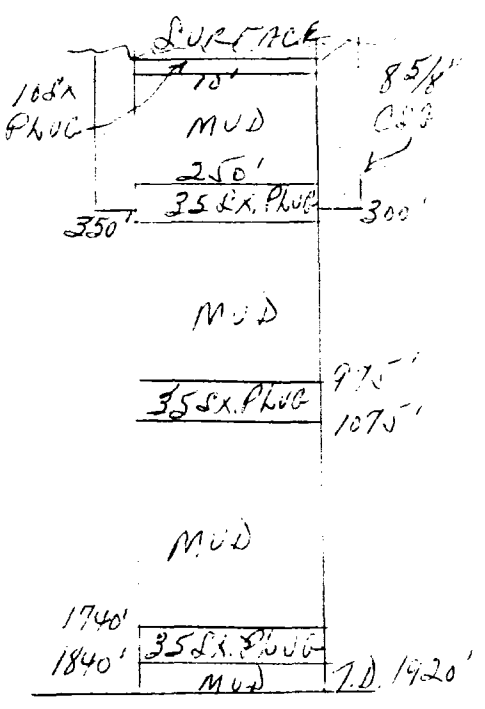
GRYNBERG FED "A" No. 1
SEC 21 - T-15-S R29E CHAVES



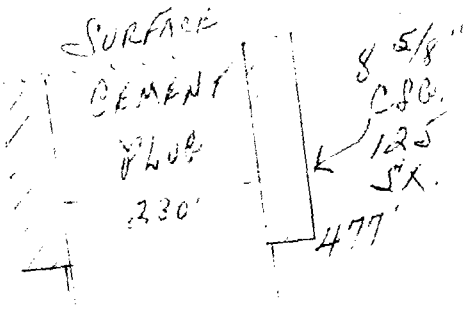
YATES-KIMES FED No. 1
SEC 28 - T15S - R29E



HELMS ETAL-STEPHENS No. 1
SEC 22 - T15S - R29E



R & L STEVENS-HARRIS "L" ST. No. 2
SEC. 16 - T-15-S R-29-E



4½" CSG
@ 1844'
50 SX →

1844' 10 SX PLUG T.D. 1855'

HH & W - CARPER FED No. 1
SEC 15 - T15S R29E

REMARKS

Burk Royalty Co. operates the Double "L" Queen Unit Waterflood which lies within a few miles of the Proposed South Lucky Lake Flood. Jack McClellan of Roswell, New Mexico operates the Sulimar Queen Waterflood which lies approximatley 3 miles east of the Proposed South Lucky Lake Flood. The Burk flood is operating at 900 PSIG well head pressure and McClellan's flood is operating at 1,000 PSIG well head pressure. These floods have experienced no problems with respect to water injection. No channeling or loss of water up or down the hole has occurred.

A step rate test, which was run on Tract 1 #11 Sulimar Queen injection well, indicates no reservoir parting until a pressure of 1340 PSIG is reached. This pressure concurs with the instantaneous shut-in frac pressures of the South Lucky Lake Field. This test is shown on the following page.

The following page is a summary of the injection data for the Double "L" Queen Unit for the month of January, 1986.

WWIS SERVICES INC. HOBBS,

(505) 393-0119 STEP RATE TEST NEW MEXICO

FIELD DATA SHEET

1/4/83

Type Test: ☐ Initial ☐ Annual ☒ Special — Test Date — Lease No. or Serial No.

Company: McClellan Oil Co. — Allottee

Field — Reservoir — Location — Unit

Completion Date — Total Depth: 2014 — Plug Back TD — Elevation — Farm or Lease Name: Sulimar Queen

Csg. Size: 5½ Wt.: 15# d — Set At — Perforations: From — To — Well No.: Tract 1 - Well #11

Tbg. Size: 2 3/8 Wt.: Cement d: Lined — Set At — Perforations: From 1970 To 1978 Midway 1974 — Sec.: K - 24 Twp - Blk: 15 Rge - Survey: 29

Type Completion (Describe): Water Injection Well — Packer Set At: 1943 — County or Parish: Chavez

Producing Thru — Reservoir Temp. F — Mean Ground Temp. F — Baro. Press. - P_a — State: New Mexico

CO. REPRESENTATIVE Paul Ragsdale

DATE Time of Reading	ELAP. TIME Hrs.	well information Rate BPD	Surf. Psig	B.H.P.	surf. psi.cor friction	remarks (Include liquid production data: Type - API Gravity - Amount)
11:30			875	1887		Shut In
12:00	0		875			1" Turbine Meter
12:15	15	80	900	1897		
12:15						
12:30	30	130	915	1928		
12:						
12:	45	182	940	1954		Change Gears
12:45						
1:00	1	230	965	1985		
1:00						
1:15	15	280	1002	2015		
1:15						
1:30	30	330	1040	2051		Change Gears
1:30						
1:45	45	385	1070	2086		
:45						
:00	2	440	1102	2121		
:00						
:15	15	485	1125	2147		
:15						
:30	30	545	1150	2167		
:30						
:45	45	592	1170	2186		38.4 Pump Truck
:45						
:00	3	650	1250	2192		

RECEIVED
JAN 11 1983
O. C. D.
ARTESIA, OFFICE

DAVIS SERVICES INC. HOBBS,

(505) 393-0119 STEP RATE TEST NEW MEXICO

FIELD DATA SHEET

PAGE 2

Test: ☐ Initial ☐ Amual ☐ Special Test Date Lease No. or Serial No.

Company Allottee

Field Reservoir Location Unit

Completion Date Total Depth Plug Back TO Elevation Farm or Lease Name

Csg. Size Wt. d Set At Perforations: From To Well No.

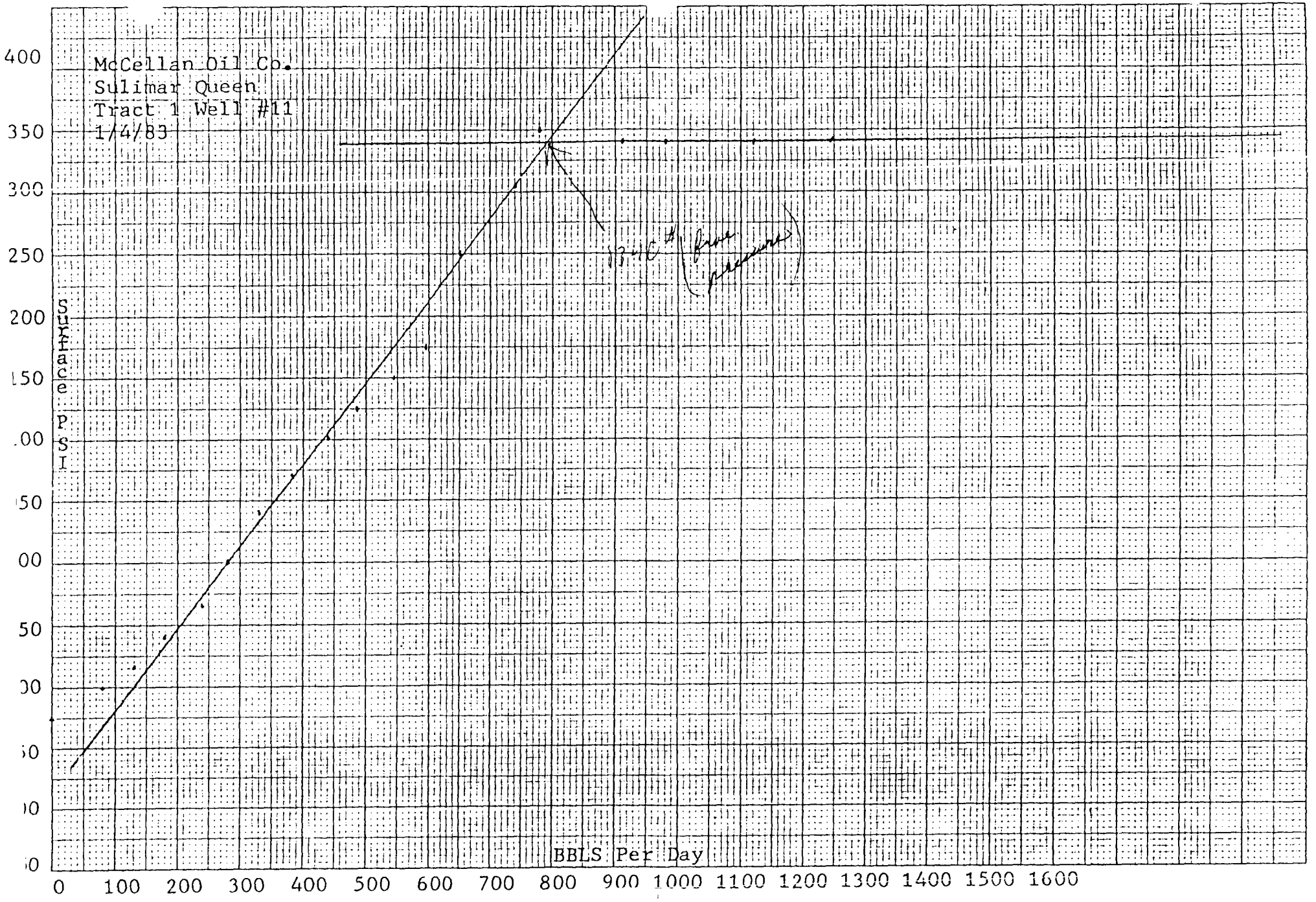
Tbg. Size Wt. d Set At Perforations: From To Sec. Twp - Blk Rge -

Type Completion (Describe) Packer Set At County or Parish

Producing Thru Reservoir Temp. F Mean Ground Temp. F Baro. Press. - P_a State

CO. REPRESENTATIVE

DATE	ELAP. TIME	well imformation			surf.	remarks
Time of Reading	Hrs.	Rate BPD	Surf. Psig	B.H.P.	psi.cor. friction	(Include liquid production data: Type - API Gravity - Amount)
3:00						
3:15	15	700	1305	2197		
3:15						
3:30	30	780	1350	2212		
3:30						
45	45	910	1340	2110		
3:45						
4:00	4	980	1340	2110		
4:00						
4:15	15	1120	1340	2110		
4:15						
4:30	30	1245	1340	2110		End Test


McCellan Oil Co.
Sulimar Queen
Tract 1 Well #11
1/4/83
Surface PSI
400
350
300
250
200
150
100
50
0
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600
BBLS Per Day

BURK ROYALTY COMPANY
WATER INJECTION REPORT

DATE: 1/31/86

DOUBLE "L" QUEEN

WELL NO	DAYS PROD	DAILY AVERAGE VOL. INJECTED BARRELS WATER	AVG MONTHLY PRESSURE PSIG	LAST MONTH VOLUME	LAST MONTH PSIG	INCREASE OR DECREASE VOLUME	INCREASE OR DECREASE PSIG	MONTHLY VOLUME INJECTED	CUMULATIVE BARRELS
107	31	312	395	299	400	13	5-	9,680	95,780
109	31	199	680	202	690	3-	10-	6,190	579,147
302	31	302	820	284	810	18	10	9,367	620,645
501	31	674	480	591	700	83	220-	20,923	977,269
502	31	61	905	51	900	10	5	1,896	178,655
701	31	50	500	36	380	14	120	1,574	104,017
901	30								104,164
1101	31	645	265	602	230	43	35	20,020	975,292
1201	31	100	900	95	900	5		3,129	296,750
1401	31	515	660	483	650	32	10	15,970	841,563
1501	31	589	485	545	350	44	135	18,270	901,570
1604	31	105	900	97	900	8		3,269	299,052
1609	27								4,435
1801	31	321	895	306	885	15	10	9,969	771,515
1804	31	221	895	210	890	11	5	6,876	507,590
1901	31	454	850	413	850	41		14,081	636,046
1903	31	438	655	429	650	9	5	13,580	835,540
2101	31	21	900	25	900	4-		675	121,231
2201	31	668	550	630	500	38	50	20,718	1,005,470
2303	31	142	820	130	810	12	10	4,418	368,340
2403	31	667	750	586	700	81	50	20,698	839,880
2404	31	202	825	192	820	10	5	6,268	415,092
		6,686	14,130	6,206	13,915	480	215	207,571	11,479,043

PROPOSED OPERATION

1. Average injection rate - 300 B/D. Maximum daily rate - 600 B/D.

2. Closed injection system.

3. Average injection pressure - 850 PSIG. Maximum injection pressure - 1100 PSIG.

4. Source water. Fresh water purchased from City of Carlsbad and produced Queen Sand Water. This same combination of water is being injected into the Double "L" Queen Flood with no problem of compatibility.

STIMULATION PROGRAM

The proposed injection wells will be cleaned out and acidized prior to injection.

REEF CHEMICAL COMPANY, INC.
P.O. BOX 529, SNYDER, TEXAS 79549

WATER ANALYSIS REPORT

18-FEB-1986

SAMPLE

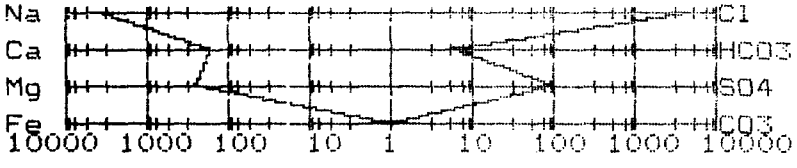
COMPANY : BURK ROYALTY CO
SOURCE :
NUMBER : 5323
LOCATION : PRODUCED
DATE SAMPLED : 04-FEB-1986
ATTENTION :

ANALYSIS

		MG/L	EQ. WT.	*MEQ
1.	PH	6.3		
2.	SPECIFIC GRAVITY	1.137		
3.	HYDROGEN SULFIDE	POSITIVE		
4.	CARBON DIOXIDE	NOT DETERMINED		
5.	DISSOLVED OXYGEN	NOT DETERMINED		
6.	HYDROXYL (OH)	0	/ 17.0 =	0
7.	CARBONATE (CO3)	0	/ 30.0 =	0
8.	BICARBONATE (HCO3)	354	/ 61.1 =	6
9.	CHLORIDES (CL)	133970	/ 35.5 =	3779
10.	SULFATES (SO4)	4500	/ 48.8 =	92
11.	CALCIUM (CA)	2867	/ 20.1 =	144
12.	MAGNESIUM (MG)	2892	/ 12.2 =	237
13.	SODIUM (NA)	80426	/ 23.0 =	3497
14.	BARIUM (BA)	NOT DETERMINED	/ 68.7 =	0
15.	TOTAL IRON (FE)	3	/ 18.2 =	0
19.	TOTAL HARDNESS (CACO3)	19100		
20.	RESISTIVITY (CALCULATED) .01 /CM			
16.	DISSOLVED SOLIDS	225029		
17.	FILTRABLE SOLIDS	0		
18.	TOTAL SOLIDS	225029		
21.	SUSPENDED OIL			
22.	VOLUME FILTERED (ML)			

LOGARITHMIC WATER PATTERN

*MEQ



* MILLIEQUIVALENTS
CALCULATED CALCIUM SULFATE SOLUBILITY
IN THIS BRINE IS 5763 MG/L

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ.WT.	X	*MEQ	= MG/L
CA(HCO3)2	81.04		6	470
CASO4	68.07		92	6277
CACL2	55.50		46	2574
MG(HCO3)	73.17		0	0
MGSO4	60.19		0	0
MGCL2	47.62		237	11288
NAHCO3	84.00		0	0
NASO4	71.03		0	0
NACL	58.46		3490	204050

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 67 DEGREES F.

Gary Nettleton
CHEMIST

REEF CHEMICAL COMPANY, INC.
P.O. BOX 529, SNYDER, TEXAS 79549

WATER ANALYSIS REPORT

21-FEB-1986

SAMPLE

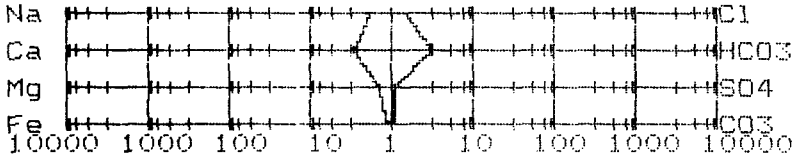
COMPANY : BURK ROYALTY
SOURCE :
NUMBER : 5324
LOCATION : FRESH
DATE SAMPLED : 04-FEB-1986
ATTENTION :

ANALYSIS

		MG/L	EQ. WT.	*MEQ
1.	PH	7.9		
2.	SPECIFIC GRAVITY	1.002		
3.	HYDROGEN SULFIDE	NEGATIVE		
4.	CARBON DIOXIDE	NOT DETERMINED		
5.	DISSOLVED OXYGEN	NOT DETERMINED		
6.	HYDROXYL (OH)	0	/ 17.0 =	0
7.	CARBONATE (CO3)	0	/ 30.0 =	0
8.	BICARBONATE (HCO3)	183	/ 61.1 =	3
9.	CHLORIDES (CL)	50	/ 35.5 =	1
10.	SULFATES (SO4)	45	/ 48.8 =	1
11.	CALCIUM (CA)	51	/ 20.1 =	3
12.	MAGNESIUM (MG)	14	/ 12.2 =	1
13.	SODIUM (NA)	38	/ 23.0 =	2
14.	BARIUM (BA)	NOT DETERMINED	/ 68.7 =	0
15.	TOTAL IRON (FE)	2	/ 18.2 =	0
19.	TOTAL HARDNESS (CACO3)	182		
20.	RESISTIVITY (CALCULATED)	2.374 /CM		
16.	DISSOLVED SOLIDS	381		
17.	FILTRABLE SOLIDS	0		
18.	TOTAL SOLIDS	381		
21.	SUSPENDED OIL			
22.	VOLUME FILTERED (ML)			

LOGARITHMIC WATER PATTERN

*MEQ



* MILLIEQUIVALENTS

CALCULATED CALCIUM SULFATE SOLUBILITY IN THIS BRINE IS 1814 MG/L

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ.WT.	X	*MEQ	= MG/L
CA(HCO3)2	81.04		3	207
CASO4	68.07		0	0
CACL2	55.50		0	0
MG(HCO3)	73.17		0	33
MGSO4	60.19		1	42
MGCL2	47.62		0	0
NAHCO3	84.00		0	0
NASO4	71.03		0	16
NACL	58.46		1	82

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 60 DEGREES F.

Gary Nettleton
CHEMIST

REEF CHEMICAL COMPANY, INC.
P.O. BOX 529, SNYDER, TEXAS 79549

WATER ANALYSIS REPORT

18-FEB-1986

SAMPLE

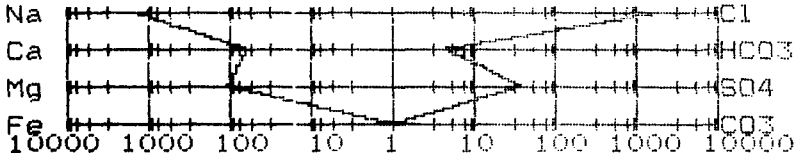
COMPANY : BURK ROYALTY CO
SOURCE :
NUMBER : 5325
LOCATION : 40% (P.)/60% F.
DATE SAMPLED : 04-FEB-1986
ATTENTION :

ANALYSIS

		MG/L		EQ. WT.		*MEQ
1.	PH	7.1				
2.	SPECIFIC GRAVITY	1.057				
3.	HYDROGEN SULFIDE	NEGATIVE				
4.	CARBON DIOXIDE	NOT DETERMINED				
5.	DISSOLVED OXYGEN	NOT DETERMINED				
6.	HYDROXY_ (OH)	0	/	17.0	=	0
7.	CARBONATE (CO3)	0	/	30.0	=	0
8.	BICARBONATE (HCO3)	269	/	61.1	=	4
9.	CHLORIDES (CL)	52988	/	35.5	=	1495
10.	SULFATES (SO4)	1800	/	48.8	=	37
11.	CALCIUM (CA)	1123	/	20.1	=	56
12.	MAGNESIUM (MG)	1191	/	12.2	=	98
13.	SODIUM (NA)	31801	/	23.0	=	1383
14.	BARIUM (BA)	NOT DETERMINED	/	68.7	=	0
15.	TOTAL IRON (FE)	3	/	18.2	=	0
19.	TOTAL HARDNESS (CACO3)	7700				
20.	RESISTIVITY (CALCULATED)	.107 /CM				
16.	DISSOLVED SOLIDS	89172				
17.	FILTRABLE SOLIDS	0				
18.	TOTAL SOLIDS	89172				
21.	SUSPENDED OIL					
22.	VOLUME FILTERED (ML)					

LOGARITHMIC WATER PATTERN

*MEQ



* MILLIEQUIVALENTS

CALCULATED CALCIUM SULFATE SOLUBILITY IN THIS BRINE IS 6179 MG/L

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ.WT.	X	*MEQ	= MG/L
CA(HCO3)2	81.04		4	357
CASO4	68.07		37	2511
CACL2	55.50		15	825
MG(HCO3)	73.17		0	0
MGSO4	60.19		0	0
MGCL2	47.62		98	4649
NAHCO3	84.00		0	0
NASO4	71.03		0	0
NACL	58.46		1380	80683

ESTIMATED TEMPERATURE OF CALCIUM CARBONATE INSTABILITY IS 88 DEGREES F.

CHEMIST Gary N Littleton

SOUTH LUCKY LAKE QUEEN UNIT

Chaves County, New Mexico

Working Interest Owners:

Yates Petroleum Corp.
207 S. 4th St.
Artesia, New Mexico 88210

Read & Stevens, Inc.
P. O. Box 1518
Roswell, New Mexico 88201

Bison Petroleum
5809 Southwestern #200
Amarillo, TX 79110-3607

Leasehold Operators:

McClellan Oil Corp.
P. O. Drawer 730
Roswell, New Mexico 88202

New Mexico Oil & Gas Co.
Attn: L. C. Harris
P. O. Box 1714
Roswell, New Mexico 88201

Armstrong Energy Corp.
P. O. Box 1973
Roswell, New Mexico 88201

Cities Service Oil Co.
500 W. Texas #700
Midland, TX 79702

BLM
P. O. Box 1379
Roswell, New Mexico 88201

Texas American Oil Corp.
300 W. Wall #400
Midland, TX 79701

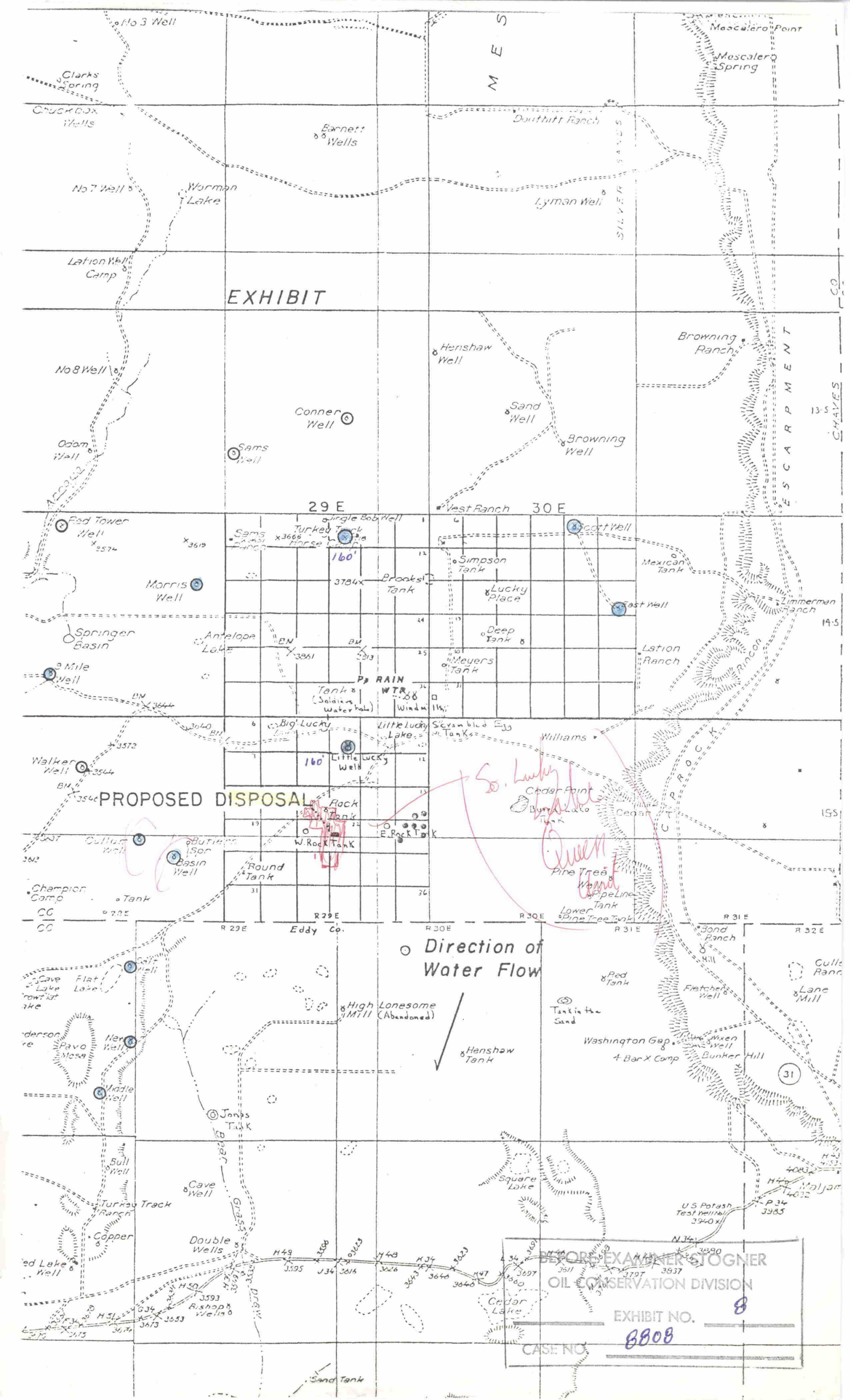
Surface Owner:

Bogle Farms
Dexter, New Mexico 88230

Application to inject water into 7 wells in the Scuth Lucky Lake Queen Unit were mailed to the above February 4, 1986.

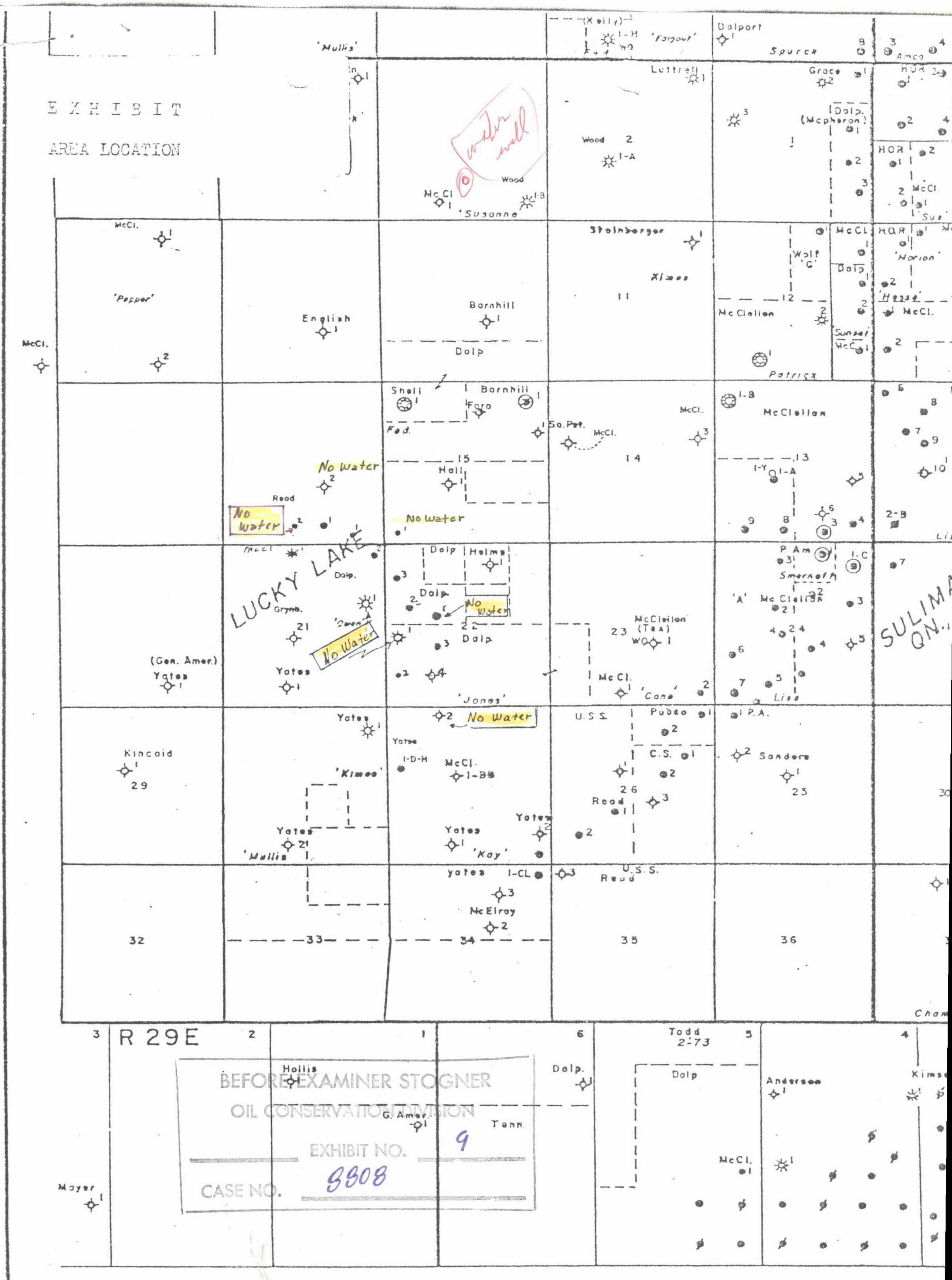
Fred M. Lynch

FRED M. LYNCH


No 3 Well
Clarks Spring
Chuck Box Wells
Barnett Wells
Mescalero Point
Mescalero Spring
Douthitt Ranch
No 7 Well
Warman Lake
Lyman Well
Lation Well Camp
EXHIBIT
No 8 Well
Henshaw Well
Browning Ranch
Conner Well
Sand Well
Browning Well
Odom Well
Sams Well
29 E
West Ranch
30 E
Red Tower Well
Jingle Bob Well
Scott Well
Sams Ranch
Turkey Track Ranch
Simpson Tank
Mexican Tank
Morris Well
Brooks Tank
Lucky Place
East Well
Zimmerman Ranch
Springer Basin
Antelope Lake
Deep Tank
Lation Ranch
Meyers Tank
Mile Well
PR RAIN WTR
Tank (Solid w/ Water hole)
Windmill
Big Lucky Lake
Little Lucky Lake
Stevenson Tank
Williams
Walker Well
Little Lucky Well
160'
PROPOSED DISPOSAL
Rock Tank
W. Rock Tank
E. Rock Tank
So. Lucky
Cedar Point
Cedar Lake
Gulf Well
Butler Spr
Basin Well
Round Tank
Pine Tree
Champion Camp
Tank
Pipeline Tank
Lower Pine Tree Tank
R 29 E
R 30 E
R 31 E
R 32 E
Eddy Co.
Direction of Water Flow
Salt Well
Cave Flat Lake
High Lonesome Mill (Abandoned)
Red Tank
Fletcher Well
Lane Mill
Tank in the Sand
Pavo Mesa
New Well
Washington Gap
Wixen Well
4 Bar X Camp
Bunker Hill
Middle Well
Jones Tank
Bull Well
Cave Well
Square Lake
Turkey Track Ranch
Copper
Double Wells
Grass
U S Potash Test well
Malyan
Cedar Lake
Bishop Wells
Sand Tank
BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 8
CASE NO. 8808

EXHIBIT

AREA LOCATION



BEFORE EXAMINER STOGNER
OIL CONSERVATION DIVISION
EXHIBIT NO. 9
CASE NO. 8808

CATION

OR EXT. NO.

THE WESTERN COMPANY

WATER ANALYSIS

ANALYSIS NO.

GENERAL INFORMATION

OPERATOR	DALPORT Oil Co.	DATE SAMPLED	2.5.86
WELL	~~R-252~~ Little Lucky WATER well	DATE RECEIVED	2/5/86
FIELD	?	SUBMITTED BY	
FORMATION	?	WORKED BY	R. Wallin
COUNTY	Eddy	SAMPLE DESCRIPTION:	H_2O ANALYSIS
STATE	N.M		
DEPTH	?		

PHYSICAL AND CHEMICAL DETERMINATIONS

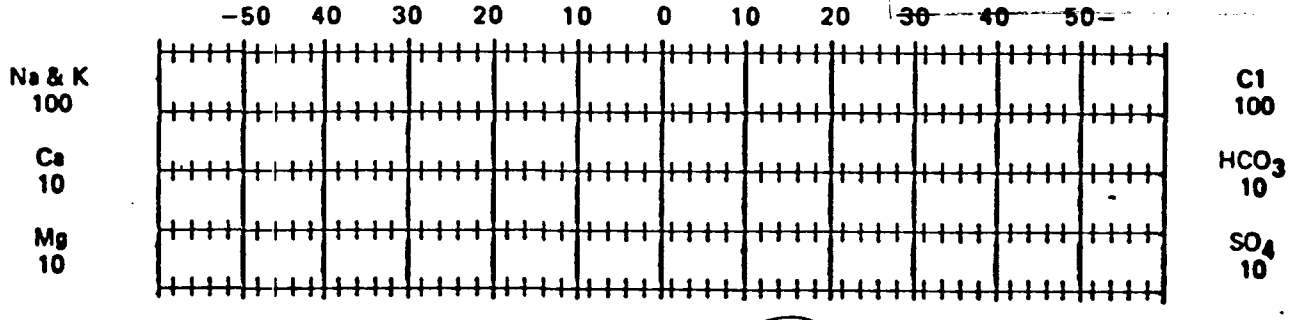
SPECIFIC GRAVITY	1.000 AT 74 °F		TOTAL DISSOLVED SOLIDS	— PPM
pH	6.7		RESISTIVITY	.70@74°F ~~PPM~~
IRON	NO TRACE FERRIC / NO TRACE FERROUS		SULFATE	1300 PPM
HYDROGEN SULFIDE	NONE		BICARBONATE 10cc .8	488 PPM
HARDNESS 1cc .8	800		CHLORIDE 5cc .1	400 PPM
CALCIUM 1cc .2	80		SODIUM CHLORIDE	658 PPM
MAGNESIUM 1cc .6	146 PPM		SODIUM	— PPM
SODIUM & POTASSIUM	— PPM		POTASSIUM	— PPM
PHOSPHATE	—		.0% KCl	

REMARKS: MAIL TO: R-252 N. HALDEMAN Rd
ARTESIA N.M. 88210

10

8308

r Stiff type plot (in meq./l.)



PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☒ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ **RESTRICTED DELIVERY** ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
BLM
P.O. Box 1379
Roswell, NM 88201

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☒ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P009310680

(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE ☐ Addressee ☐ Authorized agent

5. **DATE OF DELIVERY**
2-7-86

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S.MAIL

RETURN TO

Burk Royalty Co.
(Name of Sender)
P. O. Box BRC
Wichita Falls, Texas 76307
(Street or P.O. Box)

(City, State, and ZIP Code)

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☑ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ **RESTRICTED DELIVERY** ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Texas Amer. Oil Co.
300 W. Wall #400
Midland, Tx 79701

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P 009 310 681

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent
Jay Allison

5. **DATE OF DELIVERY**

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

RETURN TO

Burk Royalty Co.
(Name of Sender)
P. O. Box BRC
Wichita Falls, Texas 76307
(Street or P.O. Box)
Attn: Fred Lynch
(City, State, and ZIP Code)

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☑ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery .. ¢
2. ☐ **RESTRICTED DELIVERY** ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Armstrong Energy
P.O. Box 1973
Roswell, NM 88201

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P 009 310 678

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☑ Authorized agent

5. **DATE OF DELIVERY**
2-7-86

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

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(CONSULT POSTMASTER FOR FEES)

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   - ☑ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ **RESTRICTED DELIVERY** ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Bogle Farms
Dexter, NM 88230

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P 009 310 686

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

5. A Salas

DATE OF DELIVERY

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

02-07-86

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

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Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

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   - ☑ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ RESTRICTED DELIVERY ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. ARTICLE ADDRESSED TO:
Yates Petroleum
207 S. 4th St.
Artesia, NM 88210

4. TYPE OF SERVICE:
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER: P009310683

(Always obtain signature of addressee or agent)

I have received the article described above.
SIGNATURE ☐ Addressee ☐ Authorized agent

Jen Deardorff

5. DATE OF DELIVERY: 2-7-86

POSTMARK

6. ADDRESSEE'S ADDRESS *(Only if requested)*

7. UNABLE TO DELIVER BECAUSE:

7a. EMPLOYEE'S INITIALS

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS

Print your name, address, and ZIP Code in the space below.

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- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S.MAIL

RETURN TO

Burk Royalty Co.
(Name of Sender)
P. O. Box BRC
Wichita Falls, Texas 76307
(Street or P.O. Box)
attn: Fred Lynch
(City, State, and ZIP Code)

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

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   - ☑ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ RESTRICTED DELIVERY ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
New Mexico Oil & Gas
R.C. Harris
Box 1714
Roswell, NM 88201

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P009310676

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent
E Gorman

5. **DATE OF DELIVERY**
2-7-86

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS

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PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

U.S.MAIL

RETURN TO

Burk Royalty Co.
(Name of Sender)
P. O. Box BRC
Wichita Falls, Texas 76307
(Street or P.O. Box)
attn: Fred Lynch
(City, State, and ZIP Code)

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - [x] Show to whom and date delivered ..... ¢
   - [ ] Show to whom, date, and address of delivery.. ¢
2. [ ] RESTRICTED DELIVERY ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Read & Stevens
P.O. Box 1518
Roswell, NM 88201

4. **TYPE OF SERVICE:**
   - [ ] REGISTERED [ ] INSURED
   - [x] CERTIFIED [ ] COD
   - [ ] EXPRESS MAIL

ARTICLE NUMBER
P009310684

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE [x] Addressee [ ] Authorized agent

5. **DATE OF DELIVERY**
2-7-84

POSTMARK

6. **ADDRESSEE'S ADDRESS** (*Only if requested*)

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☒ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ RESTRICTED DELIVERY ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Bison Petroleum #200
5809 Southwestern
Amarillo TX 79110

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☒ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P609 310 685

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

5. **DATE OF DELIVERY**
9-6-85

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*
Elizabeth Jones

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

1. The following service is requested (check one).
   - ☒ Show to whom and date delivered ..... ¢
   - ☐ Show to whom, date, and address of delivery.. ¢
2. ☐ RESTRICTED DELIVERY ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
McClellan Air Corp.
Drawer 730
Roswell NM 88202

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☒ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P 009 310 675

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

Nancie Smith

5. **DATE OF DELIVERY**
1-7-86

POSTMARK

6. **ADDRESSEE'S ADDRESS** (*Only if requested*)

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

PS Form 3811, Dec. 1980

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

● **SENDER:** Complete items 1, 2, 3, and 4.
Add your address in the "RETURN TO" space on reverse.

(CONSULT POSTMASTER FOR FEES)

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   - ☐ Show to whom, date, and address of delivery .. ¢
2. ☐ **RESTRICTED DELIVERY** ¢
   (The restricted delivery fee is charged in addition to the return receipt fee.)

TOTAL $1.45

3. **ARTICLE ADDRESSED TO:**
Cities Serv. Oil Corp
500 W. Texas #700
Midland, TX 79702

4. **TYPE OF SERVICE:**
   - ☐ REGISTERED ☐ INSURED
   - ☑ CERTIFIED ☐ COD
   - ☐ EXPRESS MAIL

ARTICLE NUMBER
P 009 310 679

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐ Addressee ☐ Authorized agent

5. **DATE OF DELIVERY** 2-10-81

POSTMARK

6. **ADDRESSEE'S ADDRESS** *(Only if requested)*

7. **UNABLE TO DELIVER BECAUSE:**

7a. **EMPLOYEE'S INITIALS**

UNITED STATES POSTAL SERVICE
OFFICIAL BUSINESS

SENDER INSTRUCTIONS
Print your name, address, and ZIP Code in the space below.
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- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300

RETURN TO

8808

U.S.MAIL

Burk Royalty Co.
(Name of Sender)
P. O. Box BRC
Wichita Falls, Texas 76307
(Street or P.O. Box)
attn: Fred Lynch
(City, State, and ZIP Code)

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

CASE NO. 8840
Order No. R-8140-A

APPLICATION OF BURK ROYALTY COMPANY FOR A WATERFLOOD PROJECT, CHAVES COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on March 5, 1986, at Santa Fe, New Mexico, before Examiner Michael E. Stogner.

NOW, on this 14th day of November, 1986, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) The applicant, Burk Royalty Company, seeks authority to institute a waterflood project on its South Lucky Lake Queen Unit by the injection of water at a pressure in excess of 0.2 psi per foot of depth to the uppermost perforation in the Queen formation through seven existing wells, as described on Exhibit "A" attached hereto and made a part hereof, all located in Sections 15, 16, 21, 22 and 27, Township 15 South, Range 29 East, NMPM, South Lucky Lake-Queen Pool, Chaves County, New Mexico.

(3) The project area should consist of that area within the boundary of the South Lucky Lake Queen Unit Area, as described below, which was approved by Division Order No. R-8140 issued in Case No. 8808 and dated January 30, 1986:

TOWNSHIP 15 SOUTH, RANGE 29 EAST, NMPM
CHAVES COUNTY, NEW MEXICO

Section 15: SW/4 SW/4
Section 16: SE/4 SW/4, NW/4 SE/4, S/2 SE/4
Section 21: NW/4 NE/4, E/2 E/2
Section 22: W/2
Section 27: W/2 NW/4
Section 28: E/2 NE/4

(4) The wells in the project area are in an advanced state of depletion and should properly be classified as "stripper" wells.

(5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(6) The operator should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(7) Injection should be accomplished through plastic-lined tubing installed in a packer set approximately 100 feet above the uppermost perforation, or in the case of an open hole completion, approximately 100 feet above the casing shoe. The casing-tubing annulus in each injection well should be filled with an inert fluid and a surface pressure gauge or approved leak detection device should be attached to the annulus.

(8) The evidence presented at the time of the hearing is insufficient at this time to allow an injection pressure which exceeds 0.2 psi per foot of depth to the uppermost perforation in any of the proposed injection wells and the project injection wells or injection pressurization system should therefore be equipped with a pressure control device so as to limit injection pressure at the wellhead to no more than said 0.2 psi but the Division Director should have authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that an increase in pressure is warranted.

(9) Prior to commencing injection operations, the casing in the subject wells should be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(10) The operator should give advance notification to the supervisor of the Artesia district office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(11) The subject application should be approved and the project should be governed by the provisions of Rules 702 through 708 of the Division Rules and Regulations.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Burk Royalty Company, is hereby authorized to institute and operate a waterflood project in the South Lucky Lake Queen Unit Area (as described in Finding Paragraph No. (3) of this order) by the injection of water into the Queen formation through the seven existing wells, as described on Exhibit "A" attached hereto and made a part hereof, all located in Sections 15, 16, 21, 22, and 27, Township 15 South, Range 29 East, NMPM, South Lucky Lake-Queen Pool, Chaves County, New Mexico.

PROVIDED FURTHER THAT, prior to commencing injection operations, the casing in the subject wells shall be pressure-tested to assure the integrity of such casing in a manner that is satisfactory to the supervisor of the Division's district office at Artesia.

(2) Injection into each of said wells shall be through internally coated tubing installed in a packer set approximately 100 feet above the uppermost perforation; the casing-tubing annulus of each injection well shall be loaded with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.

(3) The operator shall notify the supervisor of the Artesia district office of the Division in advance of the date and time of the installation of injection equipment and of the mechanical integrity pressure test in order that the same may be witnessed.

(4) The operator shall immediately notify the supervisor of the Division's Artesia district office of the failure of the tubing or packer in any of said injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area and shall take such timely steps as may be necessary or required to correct such failure or leakage.

EXIBIT "A"
Case No. 8840
Order No. R-8140-A

SOUTH LUCKY LAKE QUEEN UNIT
WATERFLOOD PROJECT
INJECTION WELLS

Tract and Well Numbers	Locations
Tract 1-Well No. 1	1980' FNL - 330' FWL (Unit E) Sec. 27
Tract 2-Well No. 1	2310' FSL - 330' FWL (Unit L) Sec. 22
Tract 2-Well No. 4	990' FSL - 1477' FWL (Unit N) Sec. 22
Tract 3-Well No. 1	2310' FNL - 1650' FWL (Unit F) Sec. 22
Tract 4-Well No. 1	1980' FNL - 660' FEL (Unit H) Sec. 21
Tract 5-Well No. 1	330' FS & WL (Unit M) Sec. 15
Tract 7-Well No. 1	660' FSL - 1980' FEL (Unit O) Sec. 16.

All wells located in Township 15 South, Range 29 East, NMPM, Chaves County, New Mexico.