STATE OF NEW MEXICO
DEPARTMENT OF ENERGY AND MINERALS
OIL CONSERVATION DIVISION

RECEIVED
OCT 29 1985
OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION OF CHAVEROO OPERATING COMPANY, FOR SALT WATER DISPOSAL, LEA COUNTY, NEW MEXICO.

CASE: 8761

A P P L I C A T I O N

Comes now Chaveroo Operating Company, by and through its attorneys, Kellahin & Kellahin, and applies to the New Mexico Oil Conservation Division for authority to dispose of produced salt water into the Vacuum Grayburg-San Andres Pool in the perforated intervals from 4804 feet to 5212 feet in its State G-36 Well #1, located in Unit L, 1980 feet from the South line and 660 feet from the East line of Section 36, T17S, R35E, NMPM, Lea County, and in support thereof would show:

1. Applicant is the operator of its well located in Unit L of Section 36, T17S, R35E, Lea County, New Mexico.

2. Applicant seeks to convert the subject well to a salt water disposal well in the Vacuum Grayburg-San Andres Pool through perforations at 4804 feet to 5212 feet.

3. Applicant is preparing Division Form C-108 and will submit that application separately from this application.

4. Wherefore, Applicant requests that this application be set for hearing and that after notice and hearing the application be granted.

Kellahin & Kellahin

By _____
W. Thomas Kellahin
P. O. Box 2265
Santa Fe, New Mexico 87501

(505) 982-4285

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

RECEIVED
NOV 5 1985
OIL CONSERVATION DIVISION

Case 8761

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☑ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no

II. Operator: CHAVEROO OPERATING CO. INC.

Address: 4800 San Felipe, Suite 624, Houston, TEXAS 77056

Contact party: William Graham Phone: 713-621-2875

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: DARRELL McBRIDE Title OPERATIONS ENGINEER

Signature: Darrell McBride Date: 10/22/85

* 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

CHAVEROO OPERATING CO. INC.
OPERATOR LEASE

STATE G-36 WELL #1 1980 NORTH / SOUTH 660 EAST / WEST 36 — 17S — 35E
WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE

Schematic

SEE EXHIBIT 'A'

Tabular Data

Surface Casing

Size 13 " Cemented with 150 sx.

TOC 220 feet determined by STEEL TAPE

Hole size 15"

Intermediate Casing

Size 5½ " Cemented with 425 sx.

TOC 4879 feet determined by STEEL TAPE & WIRELINE

Hole size 6 3/4

~~LINEAR~~ ~~Long~~ string

Size 4 " Cemented with 50 sx.

TOC 4872-5218 feet determined by STEEL TAPE

Hole size 4 3/4

Total depth 5218

Injection interval PERFORATED

4804 feet to 5212 feet
(perforated or open-hole, indicate which)

Tubing size 2 3/8 lined with _____ set in a
(material)

_____ packer at 4780 feet
(brand and model)

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation GRAYBURG SAN ANDRES

2. Name of Field or Pool (if applicable) VACUUM EAST

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

If no, for what purpose was the well originally drilled? OIL & GAS PRODUCTION

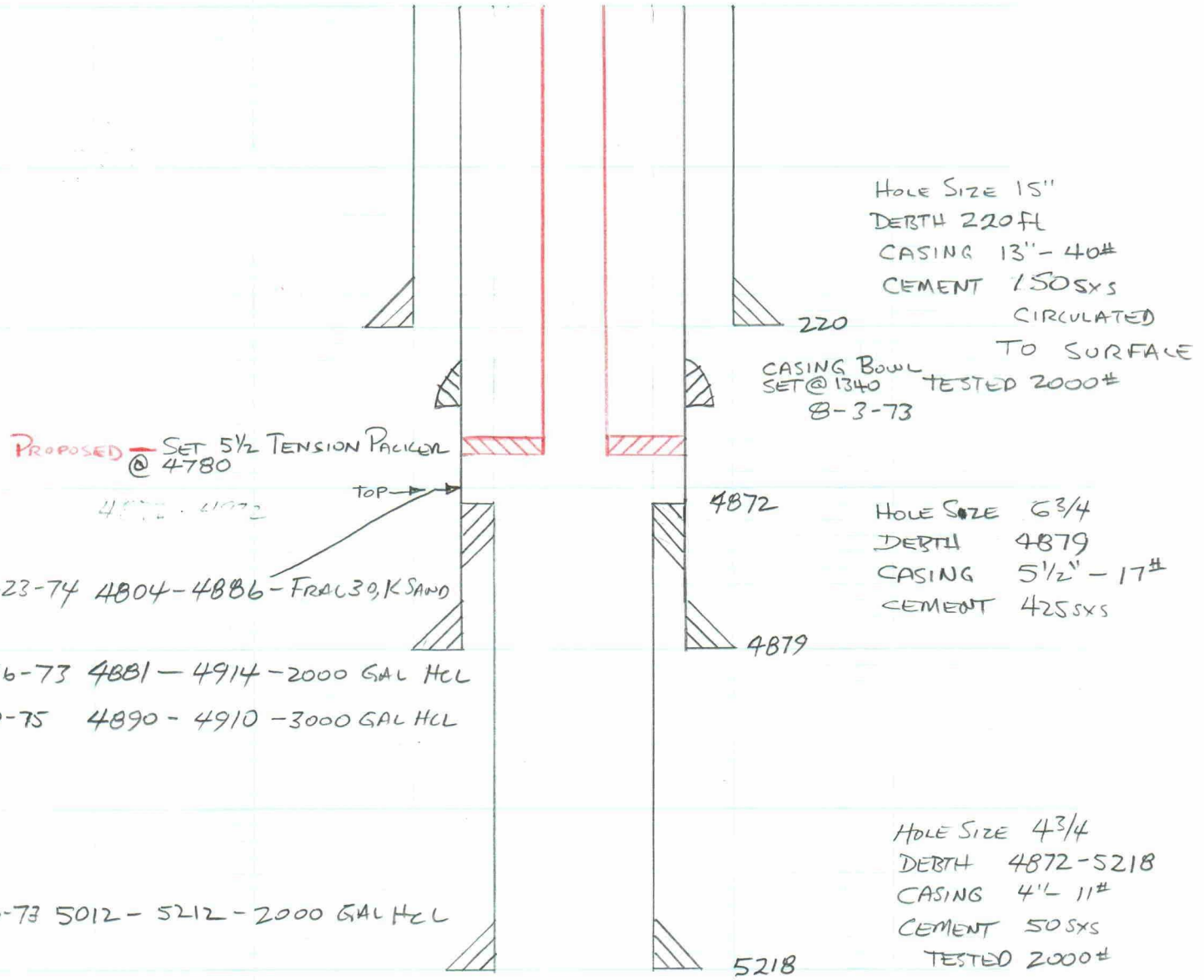
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) NO

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. QUEEN 3000', GRAYBURG SAN ANDRES, LOWER SAN ANDRES 4000 - 5000 ft ~~GLORIETTA~~ GLORIETTA 6500, ~~BONE~~ BONE SPRINGS 8500, UPPER ABO 8850, DETRITAL AND LOWER ABO 9000

Proposed Disposal Well

Exhibit A State G-36 well #1

Legal Sec 36 T 17S R 35E



VISCO Water Analysis

Prepared for CHAVEROO
HOBBS, N.M.

DON BAMERT
NALCO Chemical Company
4-Nov-85

Well Number : GILES LEE
Water Source : HOME

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	41.03	1.78	as NaCl	
Calcium	Ca++	560.00	28.00	as CaCO3	1,400.00
Magnesium	Mg++	18.23	1.50	as CaCO3	75.00
Barium	Ba++			as CaCO3	
Total Cations		619.25	31.28		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	728.40	20.54	as NaCl	1,200.00
Sulfate	SO4=	473.20	9.84	as Na2SO4	700.00
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	54.90	0.90	as CaCO3	45.00
Total Anions		1,256.50	31.28		

Total Solids 1,875.75

Total Iron,Fe as Fe
Acid to Phen,CO2 as CaCO3

SCALING INDICES

Temp	CaCO3	CaSO4	BaSO4
50 F	+0.07	-23.84	
77 F	+0.33		
95 F	+0.51	-54.21	
122 F	+0.79	-45.45	
149 F	+1.09		
176 F	+1.40	-52.04	
203 F	+1.73		

Positive values indicate scaling is likely.
Scaling Indices calculated using ASTM standard practices.

OTHER PROPERTIES

pH 7.50
Specific Gravity 1.00
Turbidity

VISCO ater Analysis

Prepared for CHAVEROO
HOBBS, N.M.

DON BAMERT
NALCO Chemical Company
4-Nov-85

Well Number : R. D. LEE / HOME
Water Source :

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+			as NaCl	
Calcium	Ca++	480.00	24.00	as CaCO3	1,200.00
Magnesium	Mg++	194.40	16.00	as CaCO3	800.00
Barium	Ba++			as CaCO3	
Total Cations		674.40	40.00		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	637.35	17.97	as NaCl	1,050.00
Sulfate	SO4=	507.00	10.55	as Na2SO4	750.00
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	36.60	0.60	as CaCO3	30.00
Total Anions		1,180.95	29.12		

Total Solids 1,855.35

Total Iron,Fe as Fe
Acid to Phen,CO2 as CaCO3

SCALING INDICES

Temp	CaCO3	CaSO4	BaSO4
50 F	-0.31	-20.97	
77 F	-0.05		
95 F	+0.12	-40.42	
122 F	+0.41	-34.57	
149 F	+0.72		
176 F	+1.04	-28.66	
203 F	+1.38		

Positive values indicate scaling is likely.
Scaling Indices calculated using ASTM standard practices.

OTHER PROPERTIES

pH	7.40
Specific Gravity	1.00
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	70.00

Analysis

Prepared for CHAVEROO
HOBBS, N.M.

DON BAMERT
NALCO Chemical Company
4-Nov-85

Well Number : R.D. LEE
Water Source : IRRIGATION WELL

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	70.81	3.08	as NaCl	
Calcium	Ca++	840.00	42.00	as CaCO3	2,100.00
Magnesium	Mg++	24.30	2.00	as CaCO3	100.00
Barium	Ba++			as CaCO3	
Total Cations		935.11	47.08		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	1,092.60	30.81	as NaCl	1,800.00
Sulfate	SO4=	743.60	15.47	as Na2SO4	1,100.00
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	48.80	0.80	as CaCO3	40.00
Total Anions		1,885.00	47.08		

Total Solids 2,820.11

Total Iron,Fe as Fe
Acid to Phen,CO2 as CaCO3

SCALING INDICES

Temp	CaCO3	CaSO4	BaSO4
50 F	+0.08	-8.50	
77 F	+0.34		
95 F	+0.53	-16.74	
122 F	+0.82	-14.29	
149 F	+1.14		
176 F	+1.47	+16.17	
203 F	+1.83		

Positive values indicate scaling is likely.
Scaling Indices calculated using ASTM standard practices.

OTHER PROPERTIES

pH	7.50
Specific Gravity	1.00
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	
Temperature F	70.00

VII. Data on proposed operation:

1. Proposed average volume of fluids - 300 bbls/day
   " maximum " " " - 500 bbls/day
   " average rate of injection - 1/2 bbl/min.
   " maximum " " " - same

2. Closed system

3. Average and maximum injection pressure - 900 lbs.

4. Analysis of injection fluid - to be supplied

5. See chemical analysis attached.

}i
Would you like to :
}i
{_ 1. Enter new set of vAva
2. LiyTBcurrent data
ii~r:r{_ 3. Edit cRf

Please position paper at top of a page.
Please press the <RETURN> key to continue >

787-2644

WATER ANALYSIS
LSA#2

VISCO Water Analysis

Prepared for CHAVEROO LSA#2
BUCKEYE

DON BAMERT
NALCO Chemical Company
5-Oct-85

Well Number : BUCKEYE ABO AB
Water Source : WELLHEAD

DISSOLVED SOLIDS

Cations		mg/l	meq/l		mg/l
Sodium	Na+	38,435.74	1,671.12	as NaCl	
Calcium	Ca++	27,200.00	1,360.00	as CaCO3	68,000.00
Magnesium	Mg++	21,627.00	1,779.90	as CaCO3	89,000.00
Barium	Ba++			as CaCO3	
Total Cations		87,262.74	4,811.02		

Anions		mg/l	meq/l		mg/l
Chloride	Cl-	169,960.00	4,792.87	as NaCl	280,000.00
Sulfate	SO4=	757.12	15.75	as Na2SO4	1,120.00
Carbonate	CO3=			as CaCO3	
Bicarb.	HCO3-	146.40	2.40	as CaCO3	120.00
Total Anions		170,863.52	4,811.02		

Total Solids	258,126.26		
Total Iron,Fe	1.20	as Fe	1.20
Acid to Phen,CO2	343.20	as CaCO3	780.00

SCALING INDICES

Temp	CaCO3	CaSO4	BaSO4
50 F	-203.66	+13.53	
77 F	-222.52		
95 F	-231.83	+13.49	
122 F	-240.92	+12.41	
149 F	-244.14		
176 F	-241.50	+13.23	
203 F	-233.00		

Positive values indicate scaling is likely.
Scaling Indices calculated using ASTM standard practices.

OTHER PROPERTIES

pH	6.00

Specific Gravity	1.23
Turbidity	
Oxygen, as O2 ppm	
Sulfide as H2Sppm	1.50
Temperature F	80.00

VISCO Squeeze Recommendation

Prepared for CHEVEROO
BUCKEYE

DON BAMERT
NALCO Chemical Company
5-Oct-85

Well Number : BUCKEYE ABO AB
Water Source : WELLHEAD

Squeeze Type	:	Standard Squeeze
Scale Inhibitor	:	VISCO 953
Inhibitor Volume	:	336
Diluent Volume (bbls.)	:	97
Overflush Volume (bbls.)	:	520
Tubing Displacement (bbls.)	:	58
Annular Displacement (bbls.)	:	192

PROCEDURE
==========
Mix 336 gallons of VISCO 953 in 97 bbls. of Produced Water
Pump this mixture downhole.
Follow immediatly with 520 bbls of produced water flush
and 58 bbls. produced water if squeezing down the tubing
or 192 bbls. produced water if squeezing down the annulus.
Leave well shut-in 24 hours before returning to production.

DEPTH OF PRODUCING FORMATION PENETRATION
==========
WITH VARYING OVERFLUSH VOLUMES
==========

RADIAL PENETRATION (ft.)	OVERFLUSH VOLUME (bbls)
1	5
3	37
5	98
7	187
9	305

This additional volume must be added to the tubing or annular volume
to achieve a given radial chemical penetration.

KELLAHIN and KELLAHIN
Attorneys at Law
El Patio - 117 North Guadalupe
Post Office Box 2265
Santa Fe, New Mexico 87504-2265

Jason Kellahin
W. Thomas Kellahin
Karen Aubrey

Telephone 982-4285
Area Code 505

October 28, 1985

RECEIVED

OCT 29 1985

OIL CONSERVATION DIVISION

Case 8761

Mr. Richard L. Stamets
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504

Re: Chaveroo Operating Co.
Salt Water Disposal
State G-36 Well #1
Unit L, Section 36, T17S, R35E
Lea County, New Mexico

Dear Mr. Stamets:

On behalf of Chaveroo Operating Company, please set the enclosed application for hearing at the next available examiner's docket now set for Thursday, November 21, 1985.

Very truly yours,

W. Thomas Kellahin

WTK:ca
Enc.

cc: Darrell McBride
Box 6069
Hobbs, New Mexico 88241

William Graham
G&P Exploration, Inc.
4800 San Felipe
Suite 620
Houston, Texas 77056

1948-A

LIBURTON DIVISION LABORATORY
HALLIBURTON COMPANY
LOVINGTON, NEW MEXICO

Case 8761

LABORATORY WATER ANALYSIS No. W73-584

To Jack Pharis Date 9-17-73

Submitted by Date Rec.

Well No. St. G "36" #1 Depth Formation San Andres

County Field Source

	9-16-73	9-17-73	
Resistivity	0.133 @ 74° F.	0.117 @ 74° F.	
Specific Gravity	1.051	1.058	
pH	7.0	7.0	
Calcium (Ca)	5,500	6,600	*MPL
Magnesium (Mg)	1,200	840	
Chlorides (Cl)	48,000	54,000	
Sulfates (SO_4)	1,990	2,590	
Bicarbonates (HCO_3)	1,060	1,075	
Soluble Iron (Fe)	Light	Light	

Remarks: WATER SAMPLE OF INJECTION WELL

*Milligrams per liter

Respectfully submitted,

Analyst. Brewer

cc:

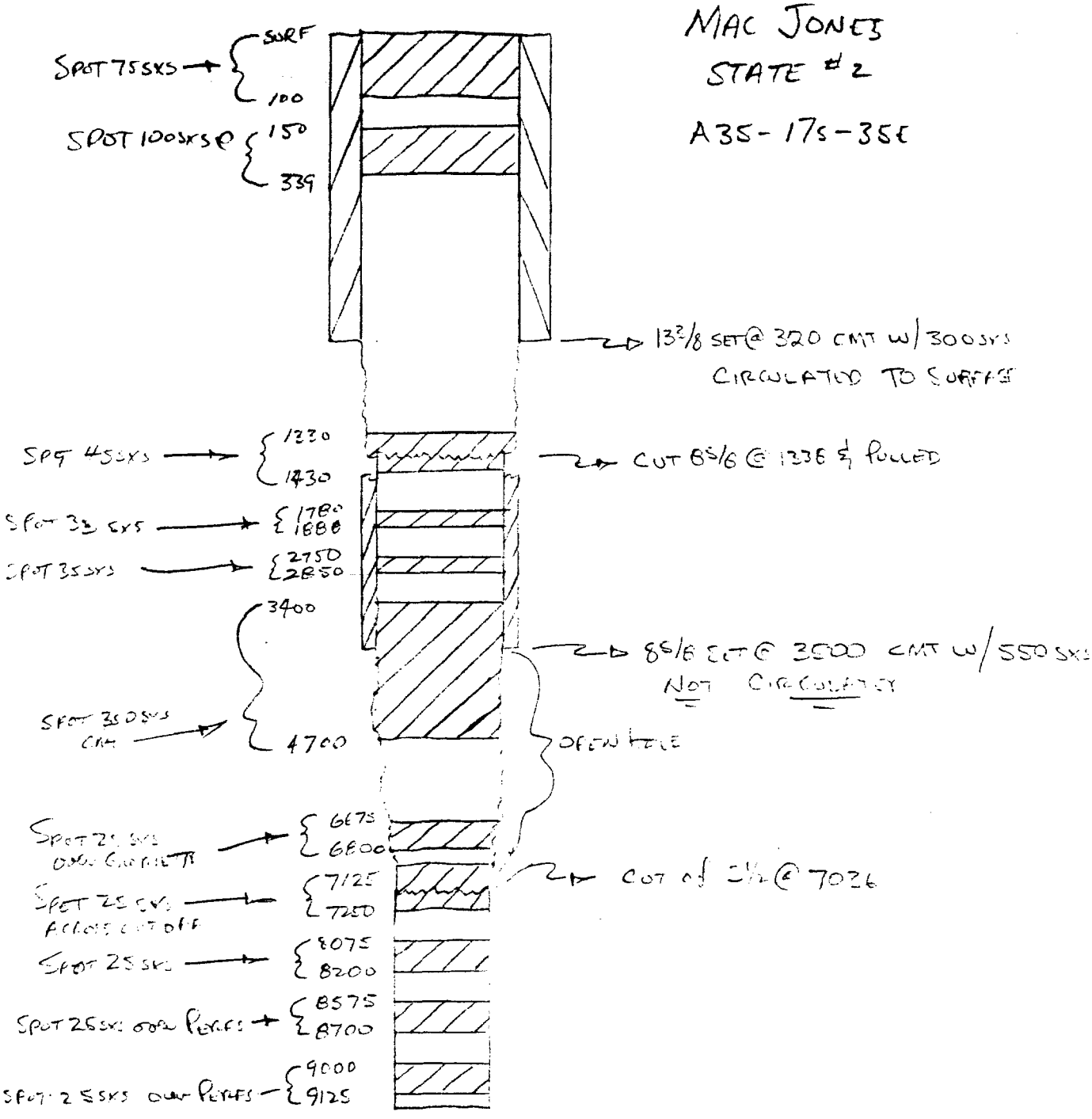
HALLIBURTON COMPANY

By W. L. Brewer
CHEMIST

NOTICE

MAC JONES
STATE #2

A35-17S-35E



TEXAS PACIFIC

STATE AB #1

E36-17S-35E