BTA OIL PRODUCERS
104 SOUTH PECOS
MIDLAND, TEXAS 79701-9988
AC 915-682-3753

July 9, 1986

Re: BTA - Buckeye, 8601 JV-P
Well No. 1-SWD
Case 8942

STATE OF NEW MEXICO
Energy & Minerals Department
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Attention: Mr. David Catanach

Mr. Catanach,

We are hereby enclosing an Amended list of Offset Operators on the above referenced Case 8942.

Sincerely,

Dorothy Houghton

DOROTHY HOUGHTON
For BTA Oil Producers

DH:ss

Enclosures

List of Offset Operators
and Surface Owners

BTA Oil Producers
Buckeye, 8601 JV-P
Lea County, New Mexico

Chevron U.S.A., Inc.
P. O. Box 1150
Midland, Texas 79702

Pioneer Production Corp.
P. O. Box 2542
Amarillo, Texas 79189

Arco Oil and Gas Company
P. O. Box 1610
Midland, Texas 79702

Sun Exploration and Production Co.
P. O. Box 1861
Midland, Texas 79702

Surface Owner:
Giles M. Lee
West Star Route, Box 478
Lovington, New Mexico 88260

I hereby certify the above were mailed copies of our application on June 4, 1986.

Dorothy Houghton
DOROTHY HOUGHTON

Chaveroo Operating Co., Inc.
P. O. Box 763
Hobbs, New Mexico 88241

I hereby certify the above was mailed a copy of our application on July 7, 1986.

Dorothy Houghton
DOROTHY HOUGHTON

srs

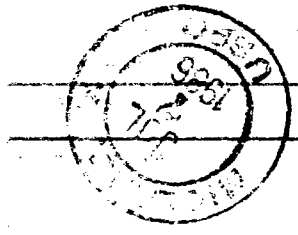
P 477 957 339

RECEIPT FOR CERTIFIED MAIL

Chaveroo Operating Co., Inc.

P. O. Box 763

Hobbs, NM 88241



PS Form 3800 June 1985

* U.S.G.P.O. 1985-480-794

BEFORE THE

OIL CONSERVATION DIVISION

NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS

RECEIVED

JUL 15 1986

OIL CONSERVATION DIVISION

IN THE MATTER OF THE APPLICATION
OF BTA OIL PRODUCERS FOR SALT WATER
DISPOSAL, LEA COUNTY, NEW MEXICO.

CASE No. 8942

ENTRY OF APPEARANCE

COMES NOW, CAMPBELL & BLACK, P.A., AND HEREBY ENTERS ITS APPEARANCE IN THE ABOVE-REFERENCED CAUSE FOR BTA OIL PRODUCERS.

RESPECTFULLY SUBMITTED,

CAMPBELL & BLACK, P.A.

BY _____

WILLIAM F. CARR
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87501
(505) 988-4421

ATTORNEYS FOR BTA OIL PRODUCERS

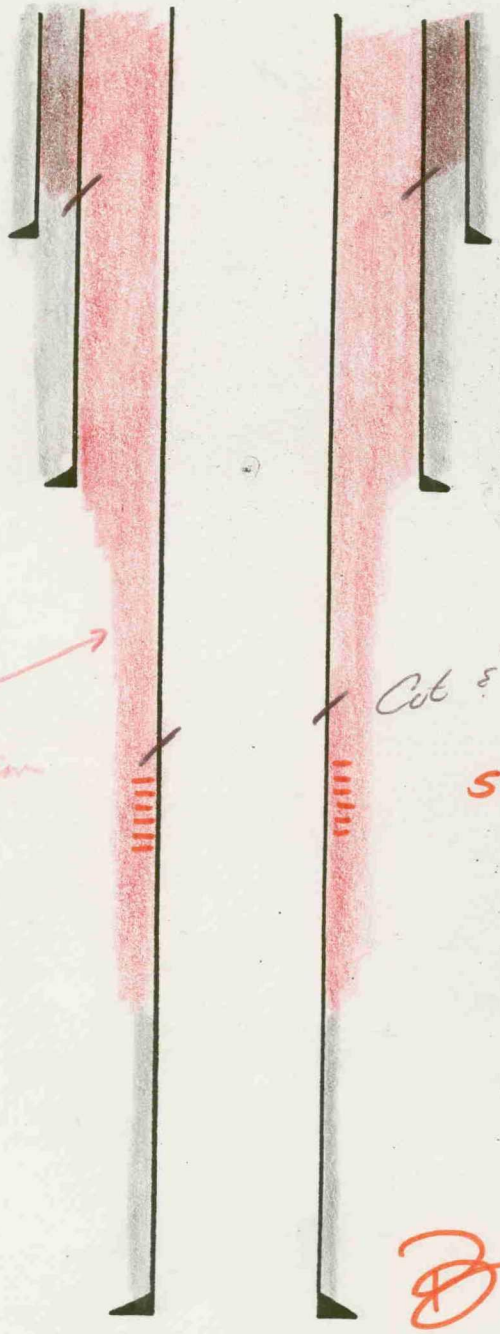
OIL CONSERVATION DIVISION

P. O. BOX 2088

SANTA FE, NEW MEXICO 87501

Case 8942

1a. Type of Work b. Type of Well: DRILL ☐ DEEPEN ☐ PLUG BACK ☐ OIL WELL ☐ GAS WELL ☐ OTHER SINGLE ZONE ☐ MULTIPLE ZONE ☐	7. Unit Agreement Name 8. Farm or Lease Name
2. Name of Operator: Lone Star.	9. Well No.
3. Address of Operator: Gulf State No. 1	10. Field and Pool, or Wildcat
4. Location of Well: UNIT LETTER ____ LOCATED ____ FEET FROM THE ____ LINE AND ____ FEET FROM THE ____ LINE OF SEC. ____ TWP. ____ RGE. ____ NMPM	



SIZE OF HOLE 12 1/4 SIZE OF CASING 10 3/4

WEIGHT PER FOOT 32 SETTING DEPTH 395

SACKS OF CEMENT 325 EST. TOP Circ.

Cut & pulled 75/+ at 1100 ft.

SIZE OF HOLE 8 5/8 SIZE OF CASING 7 5/8"

WEIGHT PER FOOT 26.4 SETTING DEPTH 3600

SACKS OF CEMENT 912 EST. TOP Circ.

Cut & pulled 4.5 at 5050' No. Stub plug.

5082- 5120 Injection Zone

SIZE OF HOLE 6 3/8 SIZE OF CASING 4.5

WEIGHT PER FOOT ____ SETTING DEPTH 9223

SACKS OF CEMENT 200 EST. TOP 8,000

By DRC 6-23-86

BTA OIL PRODUCERS
104 SOUTH PECOS
MIDLAND, TEXAS 79701-9988
AC 915-682-3753

PARTNERS
CARLTON BEAL
CARLTON BEAL, JR.
BARRY BEAL
SPENCER BEAL
KELLY BEAL

Case 8942

June 4, 1986

Re: BTA - Application for Salt Water Disposal
Buckeye, 8601 JV-P, Well No. 1-SWD
Vacuum, Grayburg-SA Field
Lea County, New Mexico

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
Oil Conservation Division
P. O. Box 2088
Santa Fe, New Mexico 87504-2088

Gentlemen:

Attached please find form C-108 with exhibits and supporting data covering BTA's application to convert the above referenced well to salt water disposal.

We will forward the proof of publication as soon as received from the Lovington Daily Leader.

Please advise if further information is necessary.

Sincerely,

Dorothy Houghton

DOROTHY HOUGHTON
For BTA Oil Producers

DH:ss

Attachments

BTA OIL PRODUCERS
104 SOUTH PECOS
MIDLAND, TEXAS 79701-9988
AC 915-682-3753

PARTNERS
CARLTON BEAL
CARLTON BEAL, JR.
BARRY BEAL
SPENCER BEAL
KELLY BEAL

June 4, 1986

Re: Legal Notice/SWD Application
BTA - Buckeye, 8601 JV-P
Lea County, New Mexico

Case 8942

LOVINGTON DAILY LEADER
P. O. Box 1717
Lovington, New Mexico 88260

Gentlemen:

Please publish the attached legal notice for one day.

After publication, please forward a copy of the published notice to the above address to my attention.

Sincerely,

Dorothy Houghton

DOROTHY HOUGHTON
For BTA Oil Producers

DH:ss

Attachment

NOTICE OF APPLICATION FOR SALT WATER DISPOSAL WELL PERMIT

BTA Oil Producers; 104 South Pecos; Midland, Texas 79701; 915/682-3753; Dorothy Houghton, Regulatory Supervisor; has applied to the State of New Mexico, Energy and Minerals Department, for a permit to dispose of produced salt water by well injection into a porous formation not productive of oil or gas.

The applicant proposes to dispose of produced salt water into the San Andres formation, 8601 JV-P Buckeye Lease, Well Number 1-D. The proposed disposal well is located 2,310' FNL and 990' FWL of Section 29, T-17-S, R-36-E, in the Vacuum, Grayburg, Field in Lea County. The waste water will be injected into strata in the subsurface depth interval from 5,082' to 5,120' with maximum injection rates of 1,000 Bbls/D at 750#.

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.

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

Case 8942

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: BTA OIL PRODUCERS
Address: 104 South Pecos Midland, Texas 79701
Contact party: DOROTHY HOUGHTON Phone: 915/682-3753

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: DOROTHY HOUGHTON Title Regulatory Supervisor

Signature: Dorothy Houghton Date: 6-4-86

* 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.

INJECTION WELL DATA SHEET

OPERATOR	LEASE			
BTA OIL PRODUCERS	Buckeye, 8601 JV-P			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1-SWD	2310' FNL & 990' FWL	29	17-S	36-E

Schematic

See Attached

Tabular Data

Surface Casing

Size 8-5/8" @ 437' " Cemented with 300 sx.

TOC Circ feet determined by _____

Hole size 11"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" @ 5159' " Cemented with 1175 sx.

TOC Circ. to surface feet determined by _____

Hole size 7-7/8"

Total depth 5168'

Injection interval Perf @

5082 feet to 5120 feet

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

Tubing size 2-3/8" OD lined with Fiberglass (material) set in a

Baker Loc-Set (brand and model) packer at 5000 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of Field or Pool (if applicable) Vacuum, Grayburg

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

If no, for what purpose was the well originally drilled? Production - Drld by Calatex as New Mexico State #1 - Spud: 11-26-83 P&A 2-22-84

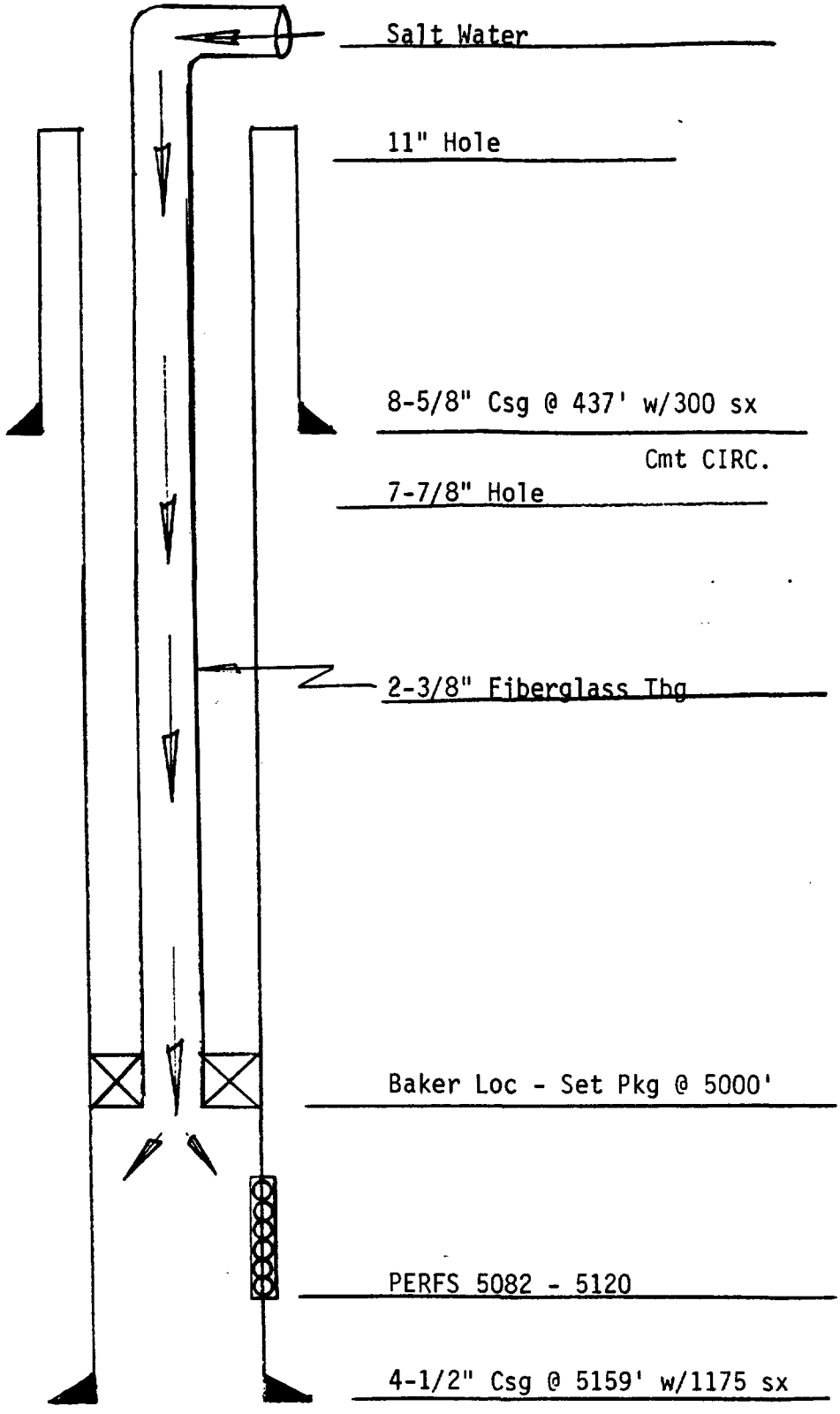
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No- See Above Perf's 1. 10 sx plug from 4910' - 5019' 2. 20 sx plug from 3000' - 3200' 3. 20 sx plug from 1850' - 2050' 4. 10 sx @ Surface

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. Abo Detrital 8800'- 9200'

BTA OIL PRODUCERS

Buckeye, 8601 JV-P

Well No. 1, SWD



BTA OIL PRODUCERS
Buckeye, 8601 JV-P
Well No. 1-SWD
Form C-108 Attachment Data Sheet
-E-, Sec. 29, T-17-S, R-36-E
Lea County, New Mexico

V. The attached map identifies all wells and leases within two miles of our proposed injection well. See Exhibit -A-.

VI. Exhibit -B- is a tabulation on all wells of public record within the area of review (1/2 mile). Also attached are Exhibits -C- 1 through 6, a schemetic of each of the six plugged wells within the area of review.

VII. 1. Estimated average maximum daily rate will be 1,000 barrels per day.
2. The system will be closed.
3. The proposed average maximum injection pressure will be 750 psi.
4. The source of produced water will be the Abo and San Andres formations.
5. Exhibit -D- 1 through 3 are water analyses of produced water from wells in the area.

VIII. Attached Exhibit -E- is a stratigraphic section of the "Permian San Andres" formation which we estimate to be a thickness of ±1,657' from the top of the San Andres to the base of the San Andres.

The source of drinking water in this area is the Ogallala Aquifer located from 50 feet to 250 feet.

IX. We propose to use 1,500 gal. of 15% HCl acid for a stimulation program.

X. Logs were previously furnished by Calatex Exploration on this well.

XI. We were not able to obtain chemical analysis of fresh water in this area.

XII. After examing available geologic and engineering data, I find no evidence of open faults in the "Permian San Andres" formation or any other hydrologic connection between the disposal zone and any underground source of drinking water.

MARVIN ZOLLER
Chief Geologist
For BTA Oil Producers

XIII. We are having a legal notice published in the Lovington Daily Leader and will forward a copy of proof of publication as soon as available. A copy of our application has been furnished by certified mail to the surface leasee, State of New Mexico, Commission of Public Lands, and to each leasehold operator within one-half mile of the well location. See Exhibit -F-.

Exhibit -A- BTA OIL PRODUCERS Buckeye, 8601 JV-P Well No. 1, SWD

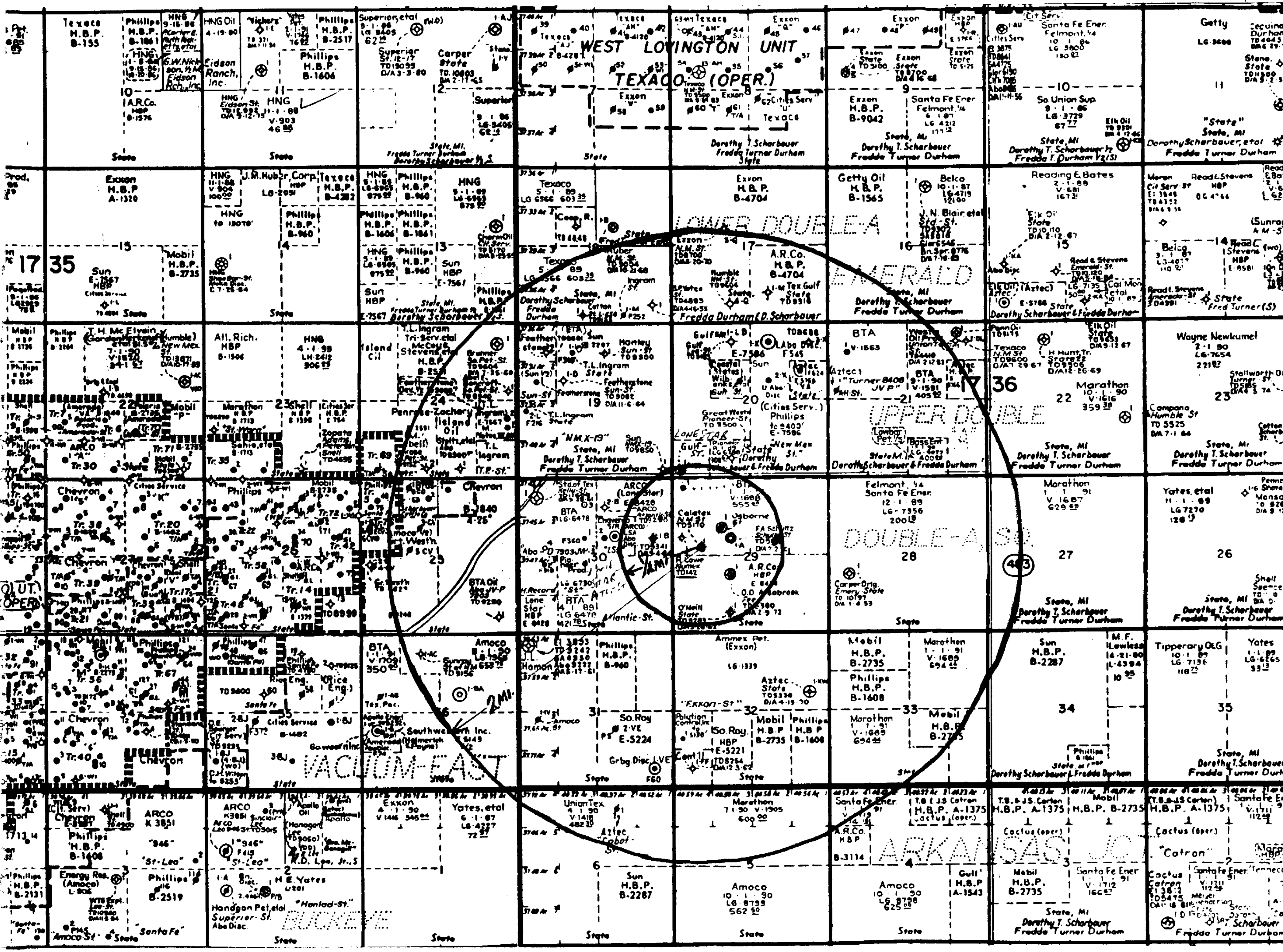


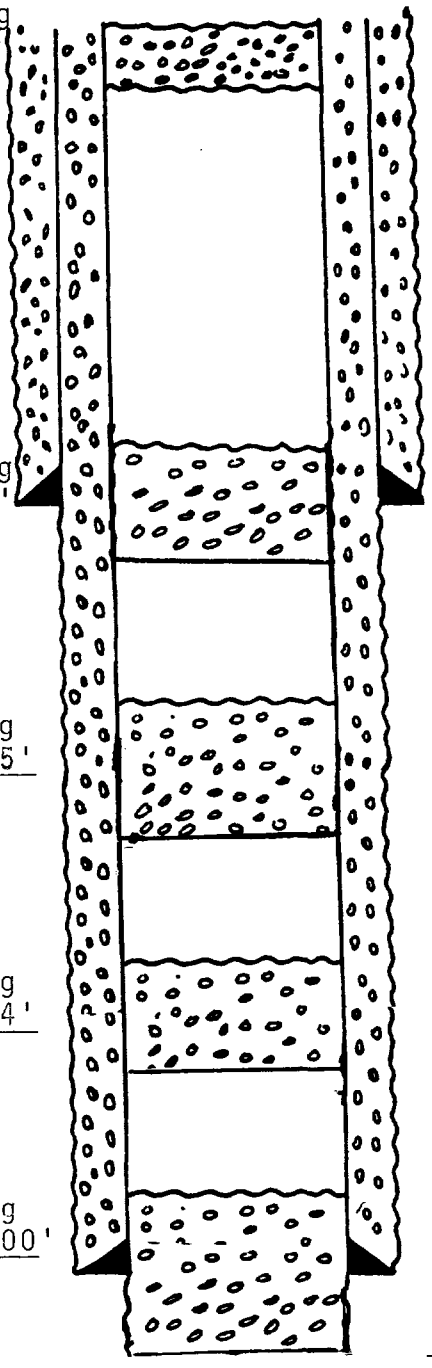
EXHIBIT -B-

BTA Oil Producers
Buckeye, 8601 JV-P
Well No. 1, SWD

Company Name Lease Name, Well #	Well Type	Construction	Spud Date Completion	Location	Depth	Record of Completion
Homer C. Osborne State #1 (Exhibit C-1)	Oil	8-5/8 @ 1995 4-1/2 @ 5067	4-29-80 2-16-81	Unt. Ltr. F, Sec. 29 T-17-S, R-36-E	5,152'	OH-5067-5152 IPP-15 BO + 6 BW; P&A 3-23-84
Frank A. Schultz Schultz State #1 (Exhibit C-2)	Dry	8-5/8 @ 380 4-1/2 @ 5160	5-30-76 7-9-76	Unt. Ltr. F, Sec. 29 T-17-S, R-36-E	5,160'	Perf 5082-5138 Swb. 19 BO P&A 7-9-76
O. D. Alsabrook Alsabrook #1 (Exhibit C-3)	Dry	4-1/2 @ 5297	11-26-71 2-9-72	Unt. Ltr. K, Sec. 29 T-17-S, R-36-E	5,300'	Perf. 5136-5203 Swb. 100% wtr. P&A 2-9-72
BTA Buckeye #1	Oil	13-3/8 @ 402 8-5/8 @ 4395 5-1/2 @ 9900	3-15-86	Unit. Ltr. D, Sec. 29 T-17-S, R-36-E	PB 5240 9,900'	Perf 5050-5163 IPP- (testing)
Joseph I. O'Neill State -K- #1 (Exhibit C-4)	Dry	13-3/8 @ 358 8-5/8 @ 3470	4-13-62 5-26-62	Unt. Ltr. N, Sec. 29 T-17-S, R-36-E	9,283'	2 DST's P&A 5-26-62
Lone Star Prod. Co. Atlantic State #1-B (Exhibit C-5)	Dry	10-3/4 @ 406 7-5/8 @ 3618	7-9-64 9-9-64	Unt. Ltr. H, Sec. 30 T-17-S, R-36-E	9,341'	Perf. 8705-9178 P&A 9-9-64
Lone Star Prod. Co. Gulf State #1 (Exhibit C-6)	Oil	10-3/4 @ 395 7-5/8 @ 3600 4-1/2 @ 9293	3-28-64 5-25-64	Unt. Ltr. M, Sec. 20 T-17-S, R-36-E	9,258' 9,322'	Perf. 9171-78; Flwd 123 BO; Perf. 8705-9083 P&A 7-25-68

E X H I B I T C-1

Homer C. Osborne
State #1
-F-, Sec. 29, T-17-S, R-36-E



10 sx plug
SURFACE

50 sx plug
@2055 - 1950'

8-5/8" @ 1995 w/ 1190 sx

35 sx plug
@3175' -3065'

Shot 4-1/2" @ 4020'

35 sx plug
@ 4070'-3964'

TOC calc @ 4503' ok

35 sx plug
@ 5130'-5000'

4-1/2" @ 5067' w/150 sx

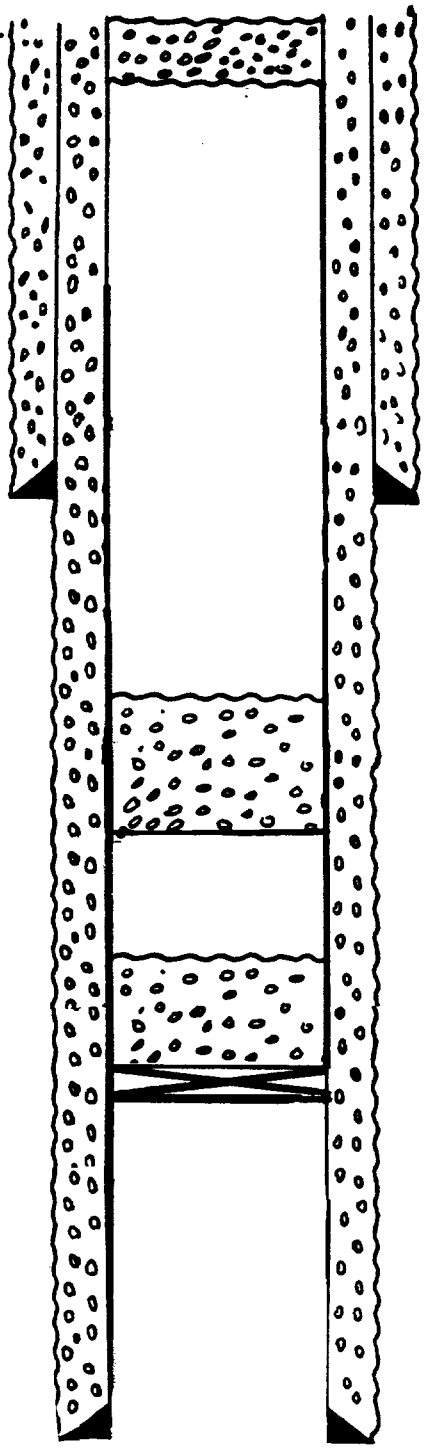
TD 5152'

Exhibit C-2

Frank A. Schultz

Schultz State #1

-F-, Sec. 29, T-17-S, R-36-E



3 sx plug

SURFACE

8-5/8" @ 380 w/250 sx

8 sx plug
1964' - 2064'

35 sx plug
3379' - 3344'
CIBP @ 3370'

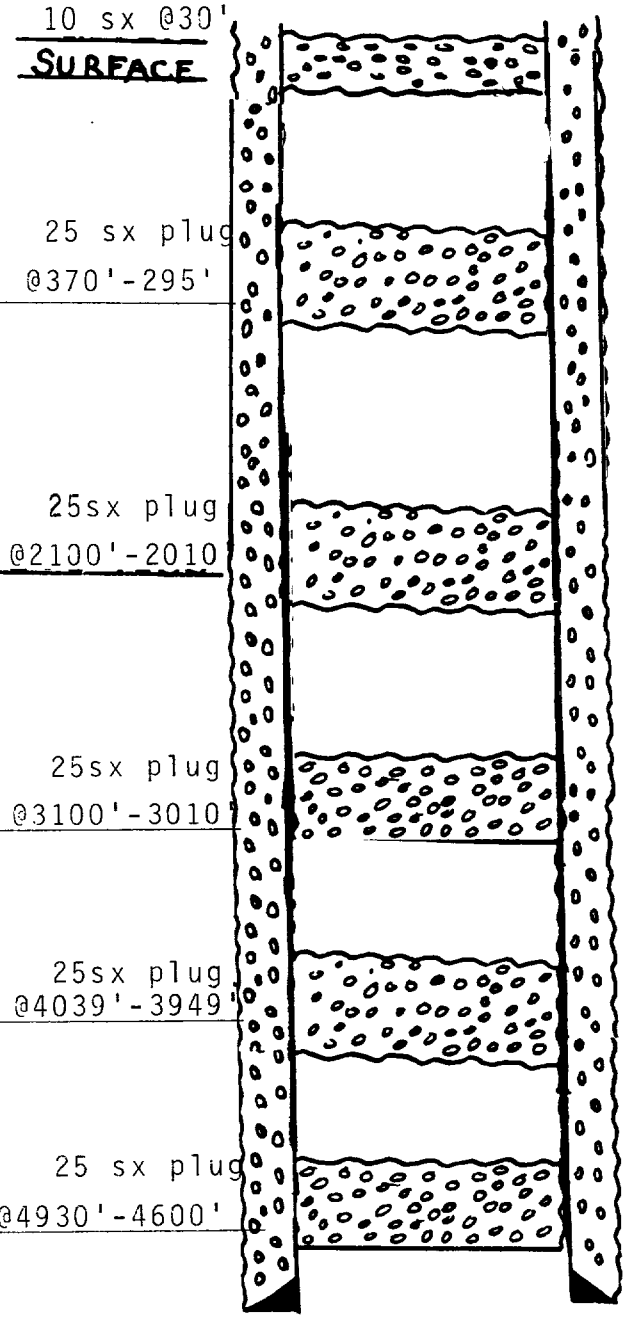
TOC @ 4072' calc

4-1/2" @ 5160' w/300 sx

TD 5160'

EXHIBIT C-3

O. D. ALSABROOK
Alsabrook #1
-K-, Sec. 29, 6-17-S, R-36-E



Left 1273' of 4-1/2" csg in hole.

Cut 4-1/2" csg @ 4024'

TOC @ 1524' calc

4-1/2" @ 5297'w/200 sx.

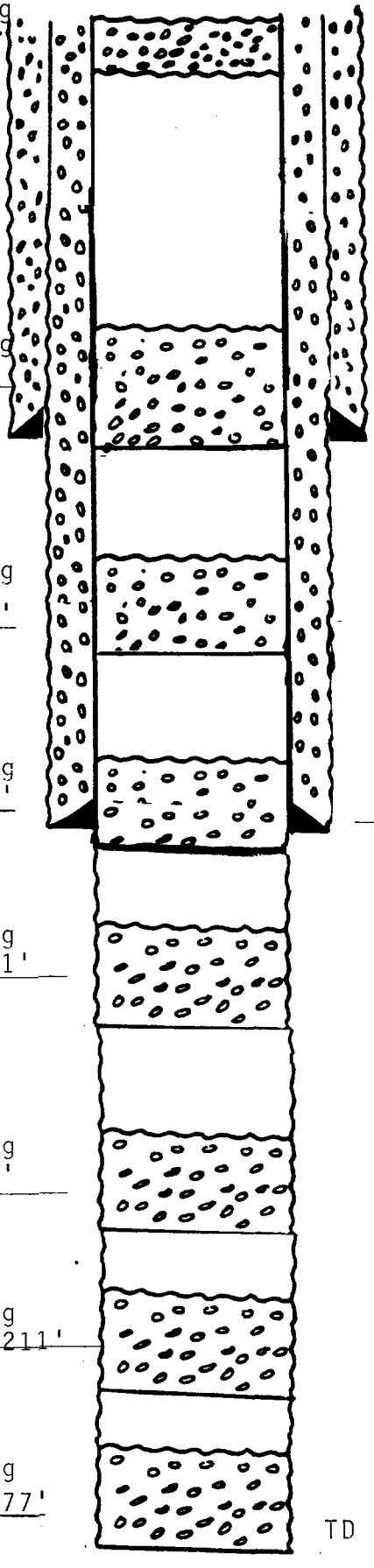
TD 5300'

EXHIBIT C-4

JOSEPH I. O'NEILL, JR.

State -K- #1

-N-, Sec. 29, T-17-S, R-36-E



20 sx plug

SURFACE

25 sx plug @370'

13-3/8" @ 358 w/400 sx

25 sx plug @1596'-1507'

Pulled 1587' of 8-5/8" csg - Left 1901' in hole.

25 sx plug @3500'-3416'

8-5/8" @ 3470' w/300 sx

25 sx plug @5000'-4911'

25 sx plug @6700'-6611'

25 sx plug @ 7300' - 7211'

30 sx plug @9283' - 9177'

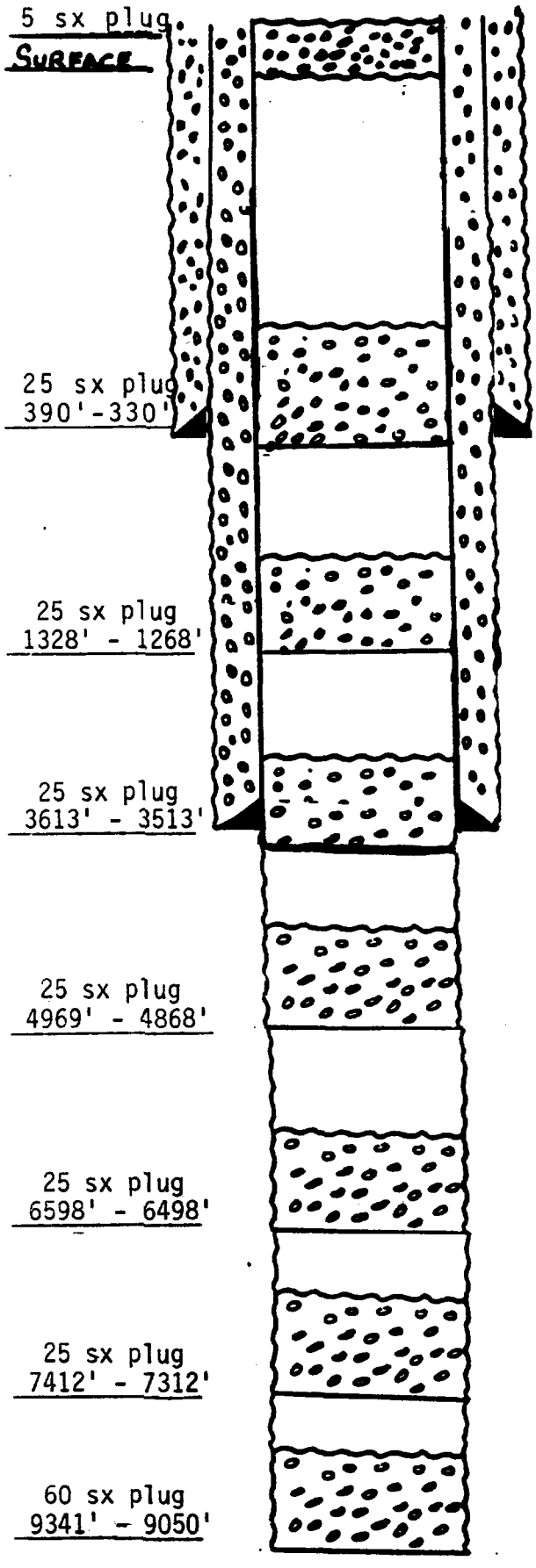
TD 9283'

Exhibit -C- 5

Lone Star Producing Company

Atlantic State -B- #1

-H-, Sec. 30, T-17-S, R-36-E



10-3/4" @ 406' w/350 sx

Cut 7-5/8" csg @ 1600' Pulled 50 jts

7-5/8" @ 3618' w/600sx

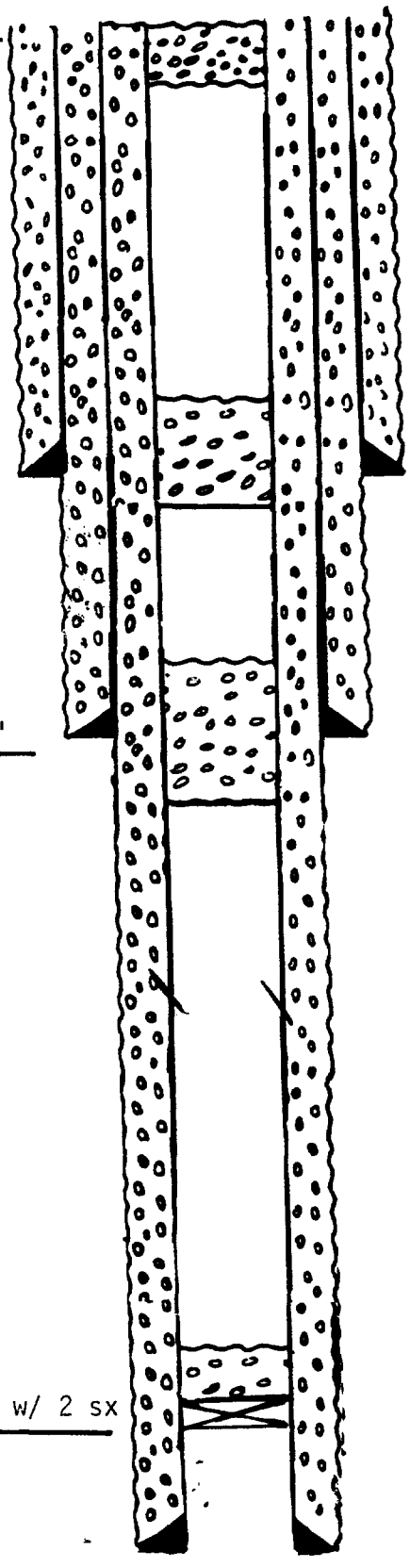
TD 9341'

Exhibit C-6

Lone Star Prod. Company

Gulf State #1

-M-, Sec. 20, T-17-S, R-36-E



15 sx plug
SURFACE

40 sx plug
@ 425' - 365'

35 sx plug
@ 3650' - 3550'

PBP @ 8650 w/ 2 sx

10-3/4" @ 395 w/325 sx
(Left in well.)

7-5/8" @ 3600' w/1112 sx
(7-5/8" 2500' - Left in well.)

Cut 4-1/2" @ 5050'
Left:
4243' of 4-1/2" csg in well

10C @ 8900 by T.S. Calc.

4-1/2" @ 9293 w/200 sx

TD 9322'

Exhibit D-1

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 1085221

TO: Mr. Steve Salmon
104 South Pecos, Midland, Texas

SAMPLE RECEIVED 10-15-85
RESULTS REPORTED 10-18-85

COMPANY BTA Oil Producers LEASE 8408 JV-P Turner #1

FIELD OR POOL ~~Wildcat~~ Lower Double-A- (Abo)

SECTION 21 ~~BLOCK~~ T-17-S ~~SURVEY~~ R-36-E COUNTY Lea STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Pit sample. 10-13-85

NO. 2 Recovered water - middle. 10-13-85

NO. 3 Recovered water - bottom. 10-13-85

NO. 4 Recovered water - sampler. 10-13-85

REMARKS: DST #1 - Lower Abo - 9,220' - 9,240'

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0734	1.0736	1.0745	1.0739
pH When Sampled				
pH When Received	8.83	8.17	7.86	7.84
Bicarbonate as HCO_3	183	415	451	439
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	5,250	5,350	6,400	6,350
Calcium as Ca	1,780	1,760	2,060	2,020
Magnesium as Mg	194	231	304	316
Sodium and/or Potassium	36,996	36,101	36,008	35,929
Sulfate as SO_4	6,114	6,063	5,962	5,760
Chloride as Cl	56,105	54,685	55,395	55,395
Iron as Fe	2.5	2.5	9.3	12.7
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	101,408	99,303	100,180	99,859
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.	0.095	0.097	0.096	0.096
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO_3	36	48	0	0

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks Sample from "top" - No water.

The above recovered waters appear to be pit water with no evidence of any influence from Abo formation water.

Form No. 3

By

cc: Permian Testers, Inc @ Odessa

Waylan C. Martin, M. A.

Exhibit D-2

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 386346

TO: Mr. Steve Salmon
104 South Pecos, Midland, Texas 79701

SAMPLE RECEIVED 3-31-86
RESULTS REPORTED 4-3-86

COMPANY BTA Oil Producers LEASE Turner #2
FIELD OR POOL ~~South Lovington~~ Lower Double-A (Abo)
SECTION 21 ~~BLOCK~~ T-17-S ~~SURVEY~~ R-36-E COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Pit sample, 3-29-86
NO. 2 Recovered water - top, 3-29-86
NO. 3 Recovered water-bottom, 3-29-86
NO. 4

REMARKS: DST #1 - Abo #2 (Lower) - 9,260' - 9,360'

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0099	1.0091	1.0202	
pH When Sampled				
pH When Received	7.98	7.64	6.82	
Bicarbonate as HCO_3	1,976	1,147	1,147	
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	2,900	2,000	7,200	
Calcium as Ca	1,060	700	2,200	
Magnesium as Mg	61	61	413	
Sodium and/or Potassium	1,530	1,882	6,211	
Sulfate as SO_4	2,551	2,304	2,441	
Chloride as Cl	1,385	1,953	12,215	
Iron as Fe	12.7	2.2	0.04	
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	8,563	8,046	24,628	
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	0.0	0.0	
Resistivity, ohms/m at 77° F.	0.940	0.900	0.320	
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks When we compare the above with our records in the area, we find the possibility that the bottom sample could involve as much as one-half Abo water. However, this is assuming that there is no other source of higher salts from waters that might have been lost in this interval. Also, we would expect the Abo to carry a substantial amount of hydrogen sulfide, therefore placing additional doubt on the probability of a significant amount of Abo being involved in the bottom sample.

Form No. 3

By _____

cc: Permian Testers, INc. @ Odessa

Waylan C. Martin, M. A.

Exhibit D-3

P. O. BOX 1468
MONAHANS, TEXAS 79756
PH 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 386276

TO: Mr. Steve Salmon
104 South Pecos, Midland, Texas

SAMPLE RECEIVED 3-25-86
RESULTS REPORTED 3-27-86

COMPANY BTA Oil Producers LEASE 8601-JVP Buckeye #1
FIELD OR POOL Vacuum, Grayburg-SA Unit Letter -D-
SECTION 29 ~~BLOCK~~ T-17-S ~~SURVEY~~ R-36-E COUNTY Lea STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Pit sample. 3-24-86
NO. 2 Recovered water - middle. 3-24-86
NO. 3 Recovered water- bottom. 3-24-86
NO. 4 Recovered water - sampler. 3-24-86

REMARKS: DST #1 - San Andres - 5,050' - 5,090'

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0088	1.0072	1.0091	1.0105
pH When Sampled				
pH When Received	10.34	6.98	6.77	6.96
Bicarbonate as HCO_3	49	927	1,159	927
Supersaturation as $CaCO_3$				
...ersaturation as $CaCO_3$				
T... ...ardness as $CaCO_3$	1,115	1,830	2,350	2,550
Calc...m as Ca	440	656	850	870
Magnesium as Mg	4	46	55	91
Sodium and/or Potassium	2,313	1,099	2,193	3,139
Sulfate as SO_4	1,027	1,280	1,453	1,493
Chloride as Cl	3,444	1,509	3,302	5,007
Iron as Fe	3.4	1	1.7	1.7
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	7,385	5,518	9,013	11,527
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	1,125	1,950	1,050
Resistivity, ohms/m at 77° F.	0.820	1.23	0.750	0.570
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO_3	108	0	0	0
Results Reported As Milligrams Per Liter				
Additional Determinations And Remarks	Sample from "top" - no water.			

In comparing the above with our records in the immediate area, we find some concern in identifying the origin of the waters recovered in that there is only a relatively mild difference between the pit water and our San Andres water. Also, pit water can readily pick up hydrogen sulfide; therefore, we cannot rely on the high sulfide content. However, we do find some weak indicators herein that indicate the probability that the last water recovered is predominantly San Andres.

Form No. 3

By _____

cc: Permian Testers, Inc. @ Odessa

Waylan C. Martin, M. A.