

ALPHA TWENTY-ONE PRODUCTION COMPANY

POST OFFICE BOX 1206
JAL, NEW MEXICO 88252

505/395-3056

December 7, 1984

Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87501

RE: Gregory "A" Federal No. 3 660' FNL & 660' FWL, Sec. 33, T-25-S, R-37-E, Lea County, New Mexico DEC 26 1984

Care 8462

Gentlemen:

Enclosed for your review and approval find our Application for Authorization to Dispose Produced Water into a Zone Non-Productive of Oil and Gas for the above captioned well.

The proposed salt water disposal well is currently temporarily abanoned. Records show that the well was originally drilled to 4000', but plugged back to 3240' with 275 sacks of cement. The well was then produced in the Queen formation through open-hole from 3085' to 3240' as an oil well in the Langlie Mattix pool.

Alpha Twenty-One Production Company proposed to re-enter the well and drill out the cement to the original TD of 4000'. We would then log, set a liner from 2900' to 4000', cement, perforate, and acidize with 1000 gallons. Attached please find an injection well data sheet showing the well after re-entry operations are complete and ready for disposal.

The produced water for disposal will come from our El Paso Tom Federal lease, Sec. 33, T-25-S, R-37-E, Lea County, New Mexico. The average rate should be 23 BW/hour with a maximum rate of 549 BWPD. We can expect the average volume to be 300 BWPD with a maximum volume of 500 BWPD. The system will be closed using a production packer. The average injection rate anticipated will be 800 psi with a maximum rate of 1200 psi. The non-productive zone for disposal will be the San Andres, but since there are no producing San Andres well within a two-mile radius, chemical analysis could not be obtained for the San Andres formation, however chemical analysis for the produced water to be disposed is attached.

Geological information indicates that the San Andres formation is a dolomite approximately 1300 feet thick at a depth of 3700'. Information also indicates that the fresh water in the area is sparsly located and not plentiful and is usually found in the Red Bed formation. After checking with the New Mexico State Engineer's office and upon a visual inspection, the only fresh water well found within a one-mile radius is owned by Clyde Cooper. This water well is located in the NE, NE, SW, NE of Section 33 and is currently nonproducing, henceforth, no chemical analysis of the fresh water could be obtained.

After a thorough search of the records at the New Mexico Oil Conservation District office in Hobbs, no record of logs for the captioned well could be found on file, but, as stated before, the well will be logged prior to perforating and a copy of the logs will be made available for public record.

All available geological and engineering data has been examined and no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water has been found.

Attached for your review and records, please find the following:

- 1.) A map that identifies all wells and leases within two miles of the proposed injection well. A one-half mile radius circle has been drawn around the proposed injection well (the area of review).
- 2.) A tabulation of data on all wells of public record within the area of review which penetrate the disposal zone.
- 3.) Chemical analysis of produced water to be disposed.
- 4.) A data sheet and schematic of the proposed disposal well.
- 5.) A copy of the legal advertisement publication.
- 6.) Copies of the return receipts on certified mailings offered as proof of notification to offset operators and surface owner.

If any further information is required for the administrative approval of this Application for Authorization to Dispose Produced Water, please contact me. Thank you for your consideration and cooperation in this matter.

Respectfully yours,

Michael D. Or.ey,

Drilling Superintendent

MDO/tic Enclosures cc: Oil Conservation Division P.O. Box 1980 Hobbs, NM 88240 Bureau of Land Management Carlsbad Resource Area P.O. Box 1778 Carlsbad, NM 88240

Alpha Twenty-One Production Co. 200 W. Illinois Street, Suite 200 Midland, TX 79701 ATTN: Mr. Tom Phipps

Surface Owner:

Mrs. Nadine Owen 909 W. Taos Hobbs, NM 88240

Offset Operators:

Arco Oil & Gas Company P.O. Box 1710 Hobbs, NM 88240

- ✓El Paso Natural Gas Co. 1800 Wilco Building Midland, TX 79701
- ✓Gulf Oil Corporation P.O. Box 670 Hobbs, NM 88240
- ✓ Sun Exploration & Prod. Co. P.O. Box 1861 Midland, TX 79702

Lewis B. Burleson, Inc. P.O. Box 2479
Midland, TX 79702

- ✓Greathouse & Lovelady Oil & Gas, Inc.
 P.O. Drawer 2666
 Midland, TX 79701
- Doyle Hartman P.O. Box 10426 Midland, TX 79702
- / Union Texas Petroleum Corp.
 1300 Wilco Building
 Midland, TX 79701

STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 8/501 FORM C-108 Revised 7-1-81

Pais 5/62 APPLICATION FOR AUTHORIZATION TO INJECT X Disposal Secondary Recovery Pressure Maintenance Application qualifies for administrative approval? X yes Operator: ALPHA TWENTY-ONE PRODUCTION COMPANY 88252 Jal. New Mexico P.O. Box 1206 505-395-3056 Phone: Contact party: __Michael D. Oney 111. 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. Is this an expansion of an existing project? yes XIno If yes, give the Division order number authorizing the project 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. 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: Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.). 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 inject on interval. Describe the proposed stimulation program, if any. IX. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) 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. 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. Certif: cation I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief. Title Drilling Superintnedent Hichael D. Oney Name: Signature: Date: * If the information required under Sections VI, VIIID 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.

111. 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.

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:
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 - (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.
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STATE OF NEW MEXICO ENERGY AND MINERALS DEPARTMENT

DIL CONSERVATION DIVISION

POST OFFICE BOX 2088 STATE LAND OFFICE BUILDING SANTA FE, NEW MEXICO 87501 FORM C-108 Revised 7-1-81

Case 8462 APPLICATION FOR AUTHORIZATION TO INJECT X Disposal ☐ Secondary Recovery Pressure Maintenance Application qualifies for administrative approval? Operator: ALPHA TWENTY-ONE PRODUCTION COMPANY 88252 P.O. Box 1206 Jal, New Mexico 505-395-3056 Contact party: Michael D. Phone: Oney Well data: Complete the data required on the reverse side of this form for each well III. proposed for injection. Additional sheets may be attached if necessary. Is this an expansion of an existing project? yes If yes, give the Division order number authorizing the project 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. 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: Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; 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.). 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. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) 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. 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. Title Drilling Superintnedent Tichael D. Oney Name: Signature: Date: * If the information required under Sections VI, VIII $oldsymbol{eta}$ 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.

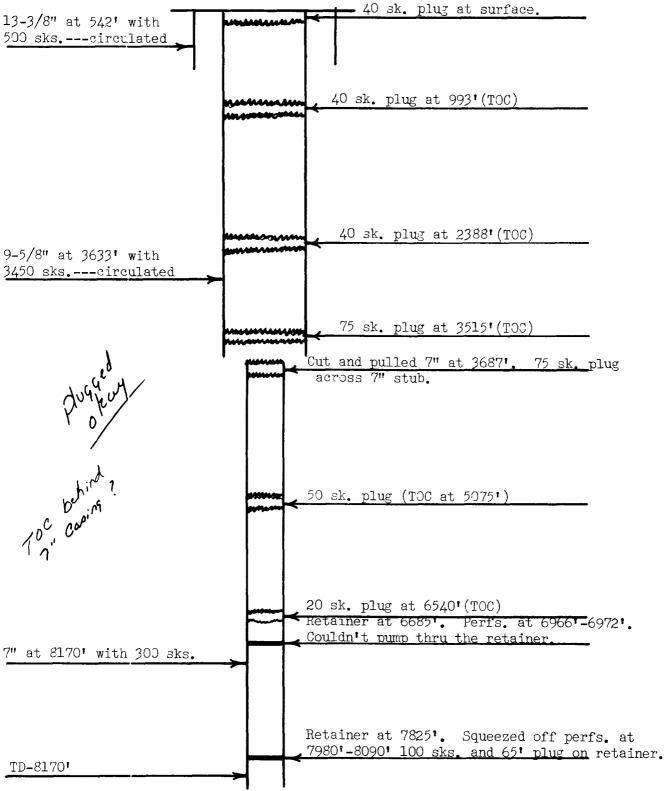
LL NO.	660' FNL-660'FWL FOOTAGE LOCATION ty, New Maxico	33 SECTION	T25 South TOWNSHIP	37 East RANGE
Schei	mati <u>c</u>	To	bular Data	•
· ·		Surface Casing	bolat vata	
		Size 9-5/8 "	Cemented wit	th 300 sx
		TOC Surface		
	9-5/8"	Hole size 12-1		
_		Intermediate Casing		
		Size	Cemented wit	th 1 5∩ s
		TOC 1839		
		Hole size 8-3/4		
	≺ 7"	Long stringLiner		
		Size <u>4-1/2</u> "	Cemented wit	th 770 e
		TOC 2900		
311		Hole size6-1/8		
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Knickel (bra or describe ther Data Name of Name of Is this If no,	2-3/8" li l placed Baker AD-1 and and model) e any other casing-tub the injection formati Field or Pool (if app a new well drilled fo for what purpose was t	ned withplastic(mate:	t 3600 XX/ No ? Gas well List all such pe	feet
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GREGORY FEDERAL #4 SWD. Union Texas Petroleum Corp. Unit K 1980' FSL-1980' FWL Section 33-T25S-R37E Elevation: 3008' DF

13-3/8" at 539' --cement circulated 9-5/8" at 3886' --cement circulated 2-3/8" at 3900' with Baker AD-1 packer Perforations at 3990'-4682' 156' plug at 4860'-4910' 51 at 84601 cement circulated CIBP at 8275! with 35! cement TD-8461' PBTD-4860'

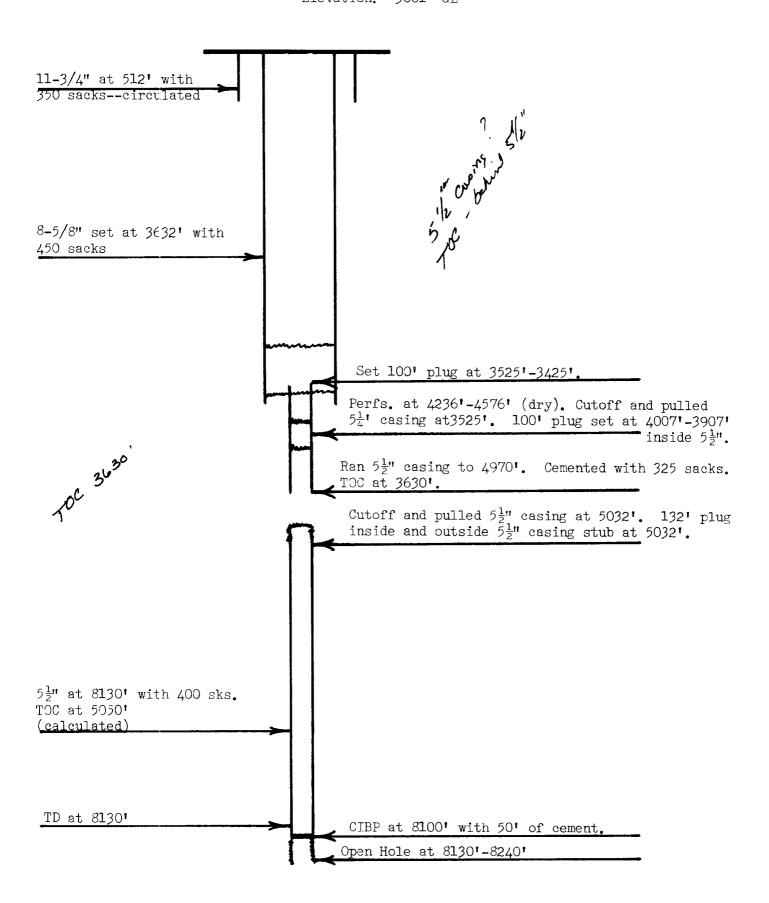
GREGORY FEDERAL #2-Y
El Paso Natural Gas Co.
Unit L 760' FNL-1650' FWL,
Section 33-T25S-R37E
Elevation: 3002' GL



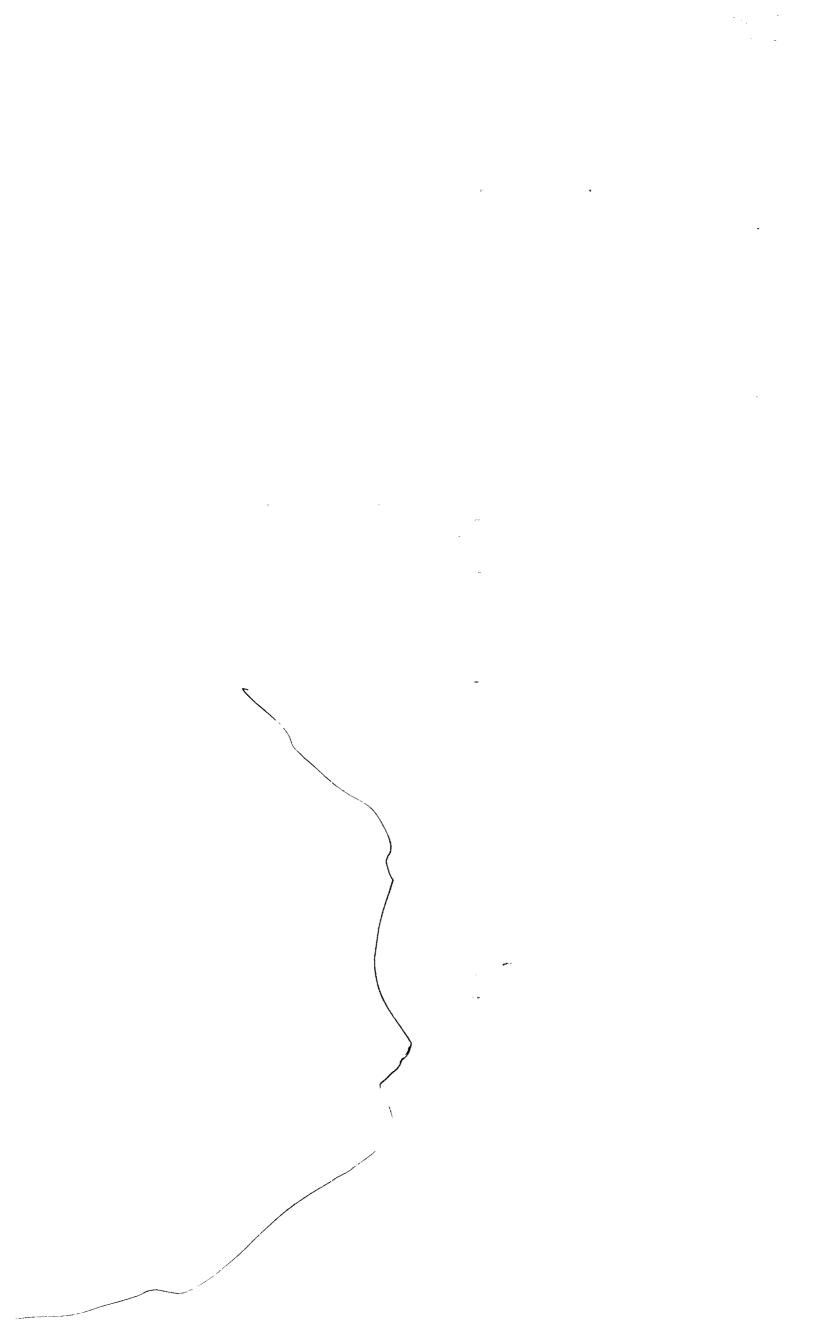


COOK # 3

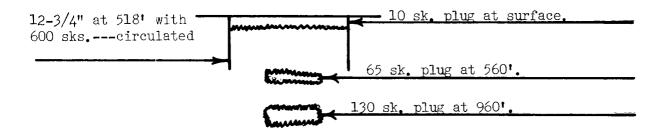
Iewis Burleson, Inc.
Unit 0 660' FSL-1905' FEL
Section 28-T25S-R37E
Elevation: 3001' GL

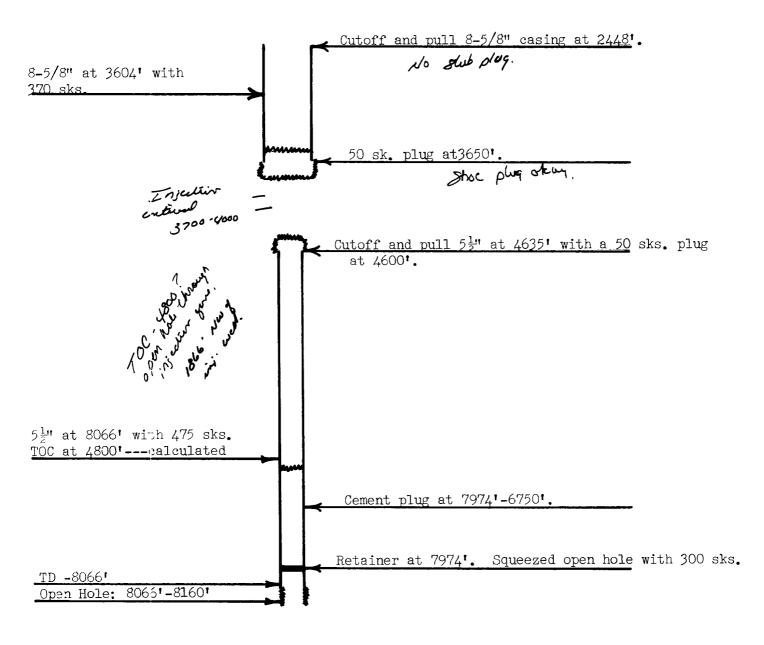


Well is presently temporarily abandoned.



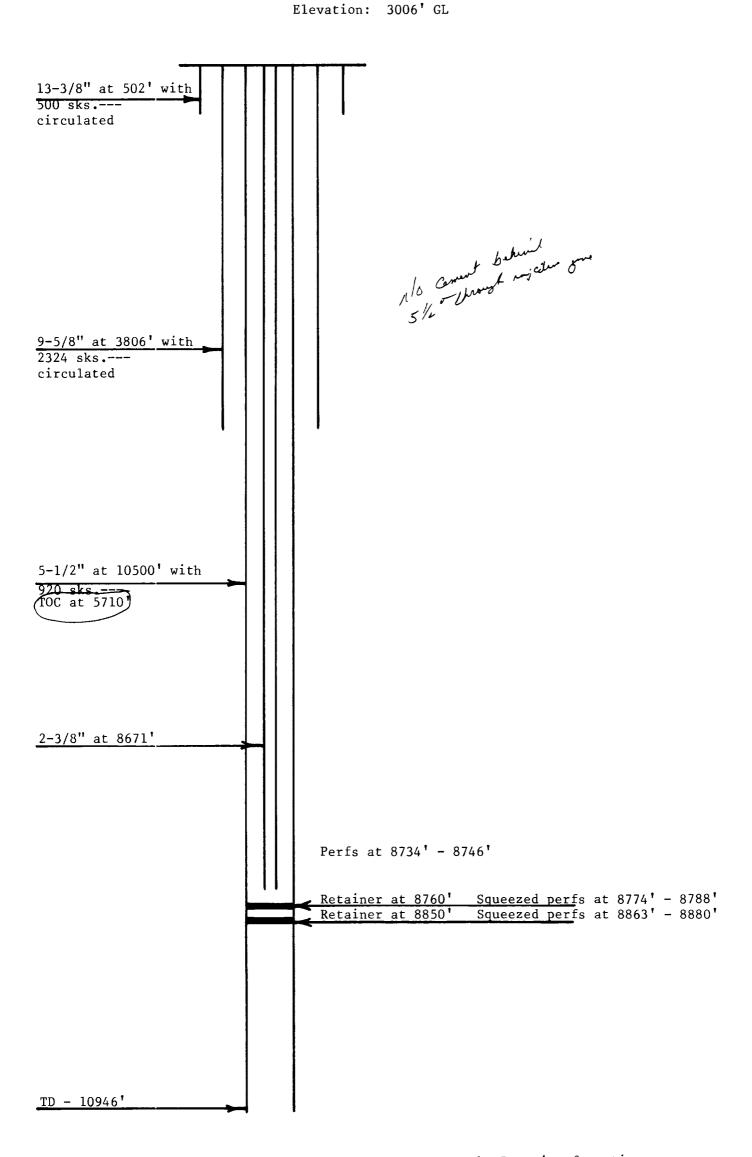
U.S. CROSBY #1 Greathouse and Lovelady Oil & Gas Co. Inc. Unit N 660' FSL-1980' FWL Section 28-T25S-R37E Elevation: 3007' GL



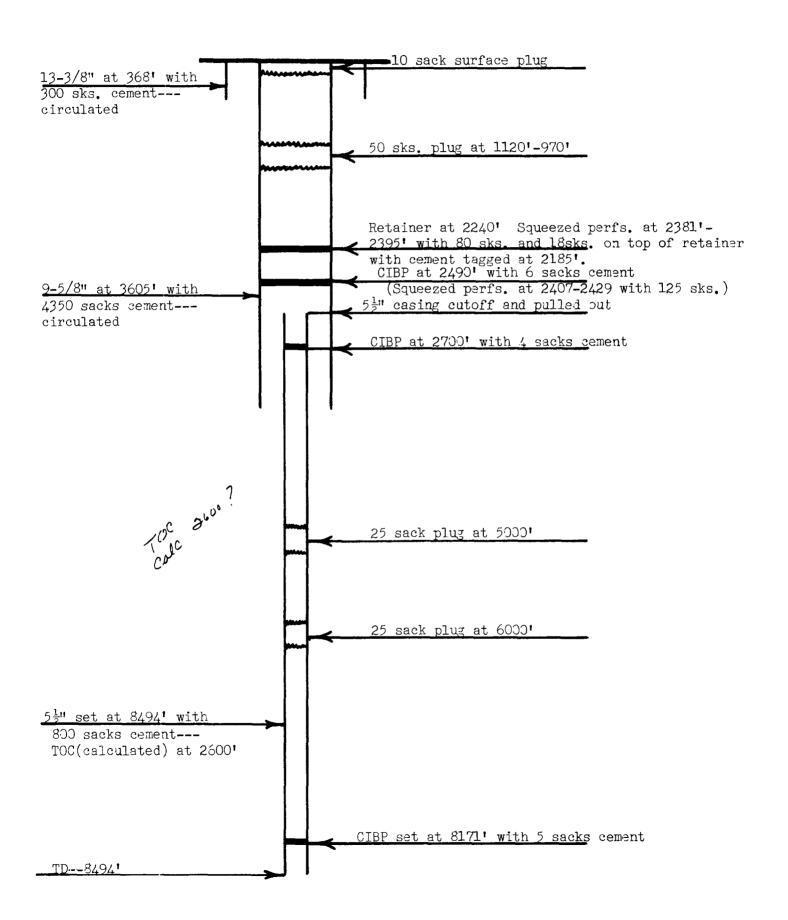


Union Texas Petroleum Corporation
Unit N 330' FSL-1980' FWL
Section 28-T25S-R37E



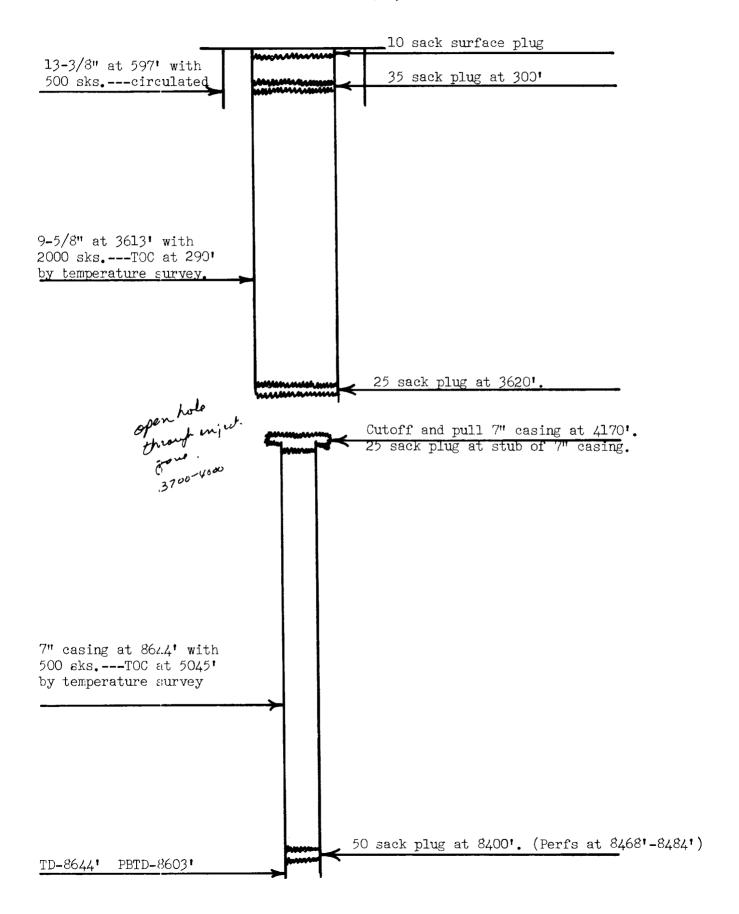


ARC FEDERAL #1
Arco Oil and Gas Company
Unit K 1980' FSL-1980' FWL
Section 28-T25S-R37E



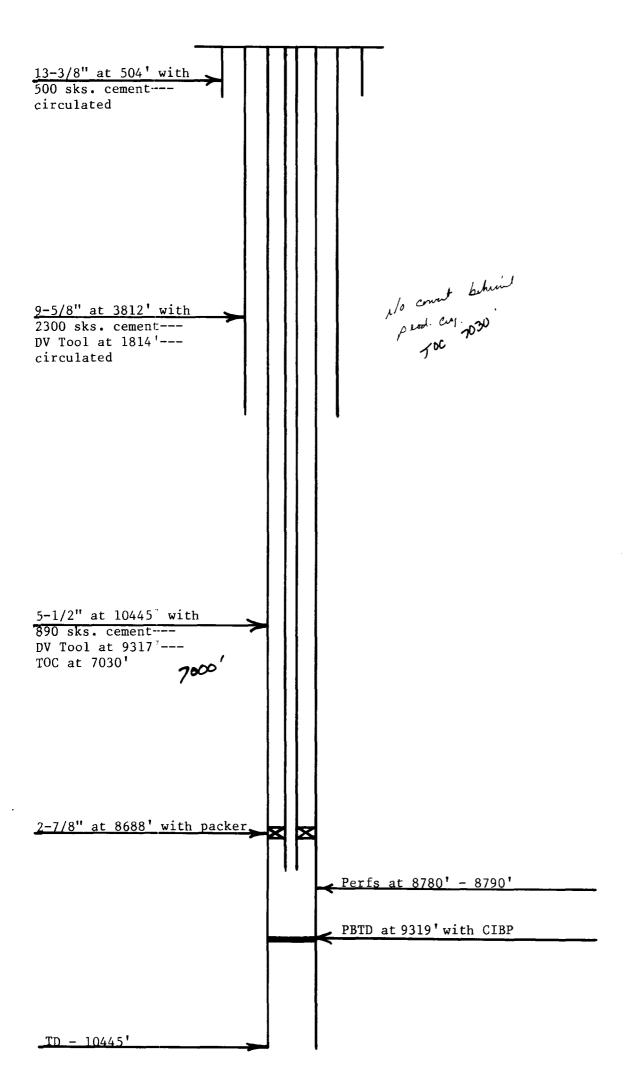
Well was originally drilled in 1954 to the Crosby Devonian formation. P and A 11-3-1977.

GUIMAN D #1
Texas Pacific Oil Company
Unit I 1830' FSL-660' FEL
Section 29-T25S-R37E
Elevation: 3011' GL





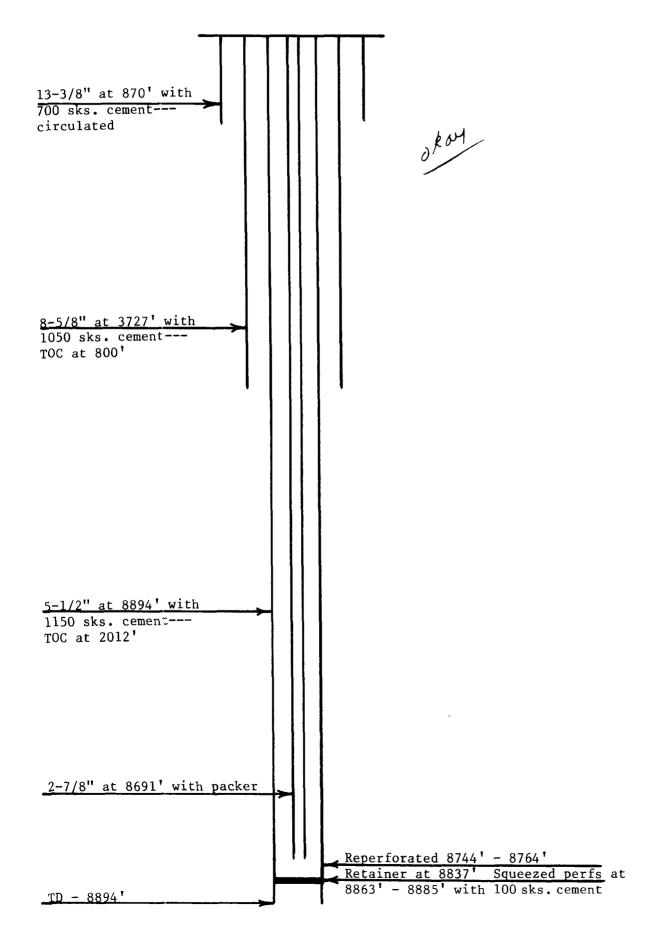
CROSBY DEEP #2 Union Texas Petroleum Corporation Unit G 1650' FNL-2310' FEL Section 33-T25S-R37E Elevation: 2998' GL



Well was originally drilled in 1972 to the Crosby Fusselman formation.

CROSBY DEEP #4

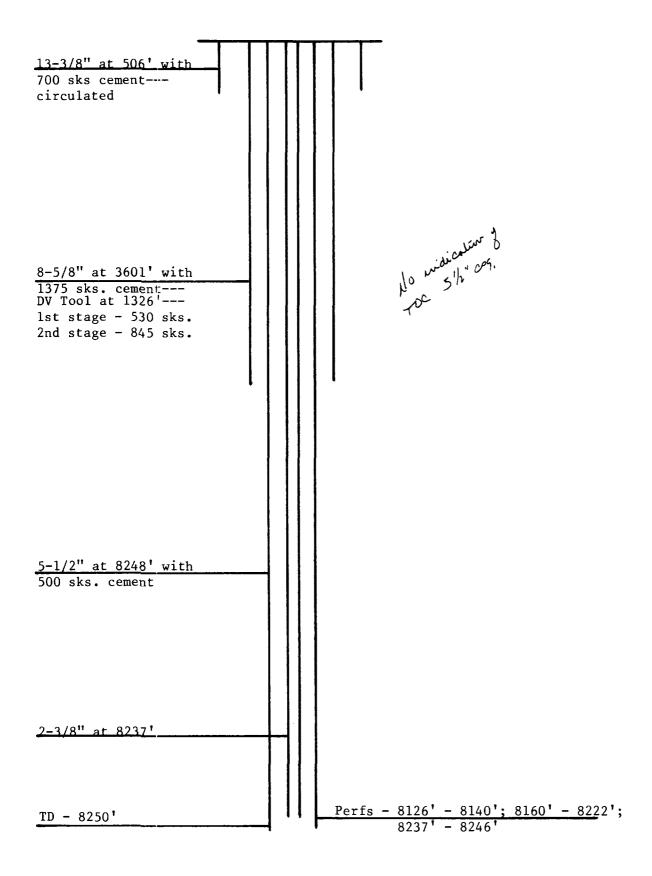
Union Texas Petroleum Corporation
Unit C 785' FNL-1980' FWL
Section 33-T25S-R37E
Elevation: 3006.8' GL



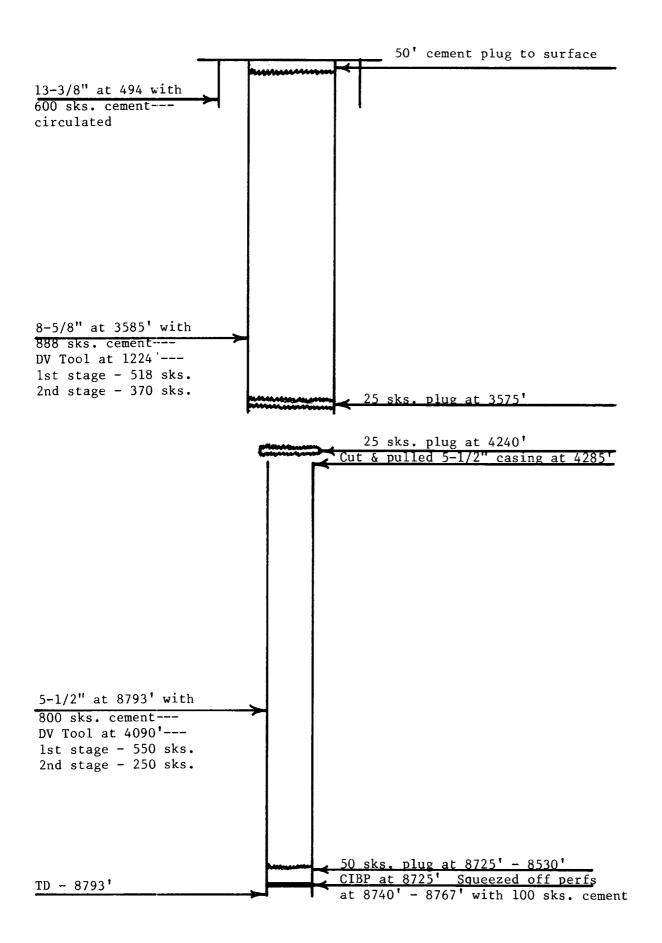
Well was originally drilled in 1978 to the Crosby Fusselman formation.

(3)

G.W. SHAHAN #2
Gulf Oil Corporation
Unit B 990' FNL-1650' FEL
Section 33-T25S-R37E
Elevation: 3003' GL



ARNOTT RAMSEY B #3
Gulf Oil Corporation
Unit A 660' FNL-660' FEL
Section 32-T25S-R37E



Well was originally drilled in 1956. Elevation - 3004' GL

+~ . ^ . ~



SHEET NUMBER COUNTY OR PARISH WATER, BBL DAY OIL, BBL DAY GAS, MMCF-DAY PRODUCED SUPPLY WATERFLOOD SALT WATER DISPOSA WATER ANALYSIS PATTERN (NUMBER BESIDE ION SYMBOL INDICATES me/l* SCALE UNIT) SOLVED SOLIDS DISSOLVED GASES TIONS me. 1* Hydrogen Sulfide, H2S mg /1* mg/1* al Hardness Carbon Dioxide, CO2 cium, Ca ** Oxygen, Ox inestum, Mg. a (Total) Ferri PHYSICAL PROPERTIES 10.0 ium, Ba · · ium, Naticalc.) pΗ Eh (Redox Potential) IONS Specific Gravity oride Cl Turbidity, JTU Units Total Dissolved Solids (calc.) iate, SO . Stability Index @ bonate CO 646.6 arbonate, HCO; mg/l^* CaSO 4 Solubility @ Proxyl, OH fide, 5 mg/l Max. CaSO4 Possible (calc.) mg/l* Max. BaSO 4 Possible (calc.) _mg/[* Residual Hydrocarbons _ppm(Vol/Vo PENDLO SOLIDS (QUALITATIVE) *NOTE: me/l and mg/l are commonly Sulfide [] Iron Oxide 🔲 Calcium Carbonate Acid Insoluble used interchangeably for epm and ppm MARKS AND RECOMMENDATIONS: respectively. Where epm and ppm are used, corrections should be made for specific gravity. elativity law iron count HOME PHONE ENGINEER DIST. NO. ADDRESS OFFICE PHONE BROWN

DISTRIBUTION

CUSTOMER

BTC ENGINEER OR BTC LAB

AREA OR

DISTRICT OFFICE

ME TREATING CHEMICALS NE INDUSTRIES, INC.

SCALING TEMPENCIES OF WATERS

COMPANY: ALPHA IWENTY-ONE SAMPLE POINT: WELL #1

LUCATION: EL PASU TON FED

HAIE: 5/7/84

WATER AMALISIS (M6/L):

SOPTUO:	4386.1
HALCIUM:	640.0
ลกัดพะระบบ:	1023.6
CHEORIOE:	Y500.0
OLFAIL:	1425.0
RICARBUMATE:	646.6
THUM:	10.6
BAKIUM:	0.

FH:

5.5

THRIC STRENGTH = 0.3854

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

	CALCLIE	6YFSUM	ANHYDRITE	BARITE
HEMF.	THREX	INDEX	INDEX	X3UNI
69	-1,40	-0.55	-0.81	-41.53
80	-1.35	-0.58	-0.73	-41.66
190	-1.22	-0.59	-0.65	-41.28
170	~1.06	-0.59	-0.56	-41.89
140	-0.88	-0.58	-0.47	-41.99
160	-0.67	-0.57	-0.37	-42.07
189	-0.43	-0.55	-0.26	-42.14
200	-0.16	-0.53	-0.14	-42.20
220	0.15	-0.51	-0.01	-42.23
240	0.49	-0.48	0.13	-42.22
260	0.86	-0.46	0.28	-42.16



NL Treating Chemicals/NL Industries, Inc. P. O. Box 4305 Houston, Texas 77210

		······································						SHEET NUM	1BER
Alp.	ha- Tw	enty	One					5-11°	-84
LO					1	R PARISH		STATE	
ASE OR JNIT	····		WELLIS) NAME O	R NO.	WATER SO	OURCE (FORM	ATION	N.A	<u>n.</u>
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PTH. FT.	внт, ғ	SAMPLESO	URCE	TEMP, F	WATER, B	BL/DAY O	IL, BBL/DAY	GAS, MMCF	7/DAY
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5-7-8	(4	X PRODU	JCED	SUPPLY		WATERFL	_000	SALT WA	TER DISPOSA
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_ Ca**	 	 	++++	++++	+++	+++	+ + + + + + + + + + + + + + + + + + + +	++++	нсо3
Mg**	++++	 	++++	++++	+-+-+-	+++-	+	++++	SO4 =
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LYZED		und	3/25/84	DISTRIBUTION	CUSTON	ER GINEER OR	AREA OR BTC LAB	DISTRICT C	OFFICE S SUPERVISOR

NE TREATING CHEMICALS AL INDUSTRIES, INC.

SCALING FEMDENCIES OF WATERS

COMPANY: ALPHA TWENTY-ONE SAMPLE PUINT: WELL #2
.OCATION: EL PASO TON FEU

JATE: 5/7/84

JAIER AMALISIS (M6/L):

: 00100	3956.0
ALCIUM:	320.0
MAGNESIUM:	634.4
HEURIDE:	7800.0
ULFAIL:	625.0
AICARBUMATE:	298.1
RON:	5.8
HARIUM:	0.

'H: 5.5

IDNIE STRENGTH = 0.2800

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

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100	-1./4	-1.13	-1.18	-41.6/
120	-1.59	-1.13	-1.10	-41.78
140	-1.42	-1.12	-1.00	-41.8/
150	-1.22	-1.10	-0.90	-41.45
180	-0.YY	-1.08	-0.79	-42.01
76 u	-0.24	-1.06	-0.66	-42.06
220	-0.46	-1.03	-0.53	-42.08
249	-0.15	-1.00	-0.39	-42.07
261	0.20	-0.96	0.23	-42.00



NL Treating Chemicals /NL Industries, Inc. P. O. Box 4305 Houston, Texas 77210

							SHEET NUMBER
41PHA - TWENT,	Y ONE	c'					5-11-84
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ANAY LYCOUR	7	BAJE /	DISTRIBUTION	CUSTOMER		AREA OR	DISTRICT OFFICE
Cre	m	7/25/84	1		EER OR BTC	_	BTC SALES SUPERVISO

ME INEATING CHEMICALS ME INDUSTRIES, INC.

SCALING TENDENCIES OF DATERS

COMPACE: BLPHA SIMENTY-UNE SAMPLE PUINT: WELL #3 COMPACTON: EL PASU TOM FED

DATE: 5///84

JATER ANALISIS (MG/L):

851.0
240.0
390.4
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262.5
225.7
13.3
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10N10 SIRENGIH = 0.1062

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	PALCITE INDEX	6YPSUM Index	ANHYDRITE INDEX	BARITE INDEX
60	-1.41	-1.25	-1.50	-41.08
80	-1.29	-1.29	-1.44	-41.22
100	-1.17	-1.31	-1.56	-41.34
120	-1.04	-1.31	-1.28	-41,44
140	-0.89	-1.51	-1.18	-41.52
160	-0.73	-1.29	-1.08	-41.58
180	-0.54	-1.26	-0.46	-41.62
200	-0.35	-1.25	-0.84	-47.65
220	-0.13	-1.20	-0.70	d6.1F=
240	0.11	-1.17	-0.55	-41.63
260	0.37	-1.13	-0.40	-41.57

UNICHEM

INTERNATIONAL

601 NORTH LEECH

P.O.BOX1499

HOBBS. NEW MEXICO 88240

TPANY: ALPHA TWENTY-ONE
TE 3-14-83
ELD, LEASE&WELL: EL PASO TOM FEDERAL #4
TPLING POINT: WELLHEAD
TE SAMFLED: 3-9-83

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FATE INDEX	NC	-1.0 UNLIKELY		





ALPHA TWENTY-ONE PRODUCTION COMPANY

POST OFFICE BOX 1206 JAL. NEW MEXICO 88252

505/395-3056

December 7, 1984

Arco Oil & Gas Company P.O. Box 1710 Hobbs, NM 88240

RE: Gregory "A" Federal No. 3 660' FNL & 660' FWL, Sec. 33, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

As offset operator or surface owner please find enclosed, as required, a copy of Application to Dispose Produced Water into a Formation Non-Productive of Oil and Gas. We plan to dispose produced water from our El Paso Tom Federal lease into the San Andres formation through the above proposed salt water disposal well which is adjacent to our El Paso Tom Federal lease.

If you desire further information, please contact the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87501.

Respectfully,

Michael D. Oney,

Drilling Superintendent

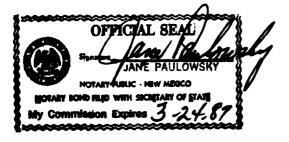
MDO/tic Enclosure

CC: Mrs. Nadine Owen, 909 W. Taos, Hobbs, NM 88240 Lewis B. Burleson, P.O. Box 2479, Midland, TX 79702 El Paso Natural Gas Company, 1800 Wilco Building, Midland, TX 79701 Greathouse & Lovelady Oil & Gas, Inc., P.O. Drawer 2666, Midland, TX 79701 Gulf Oil Corporation, P.O. Box 670, Hobbs, NM 88240 Doyle Hartman, P.O. Box 10426, Midland, TX 79702 Sun Exploration & Production Company, P.O. Box 1861, Midland, TX 79702 Union Texas Petroleum Corporation, 1300 Wilco Building, Midland, TX 79701

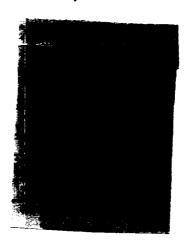
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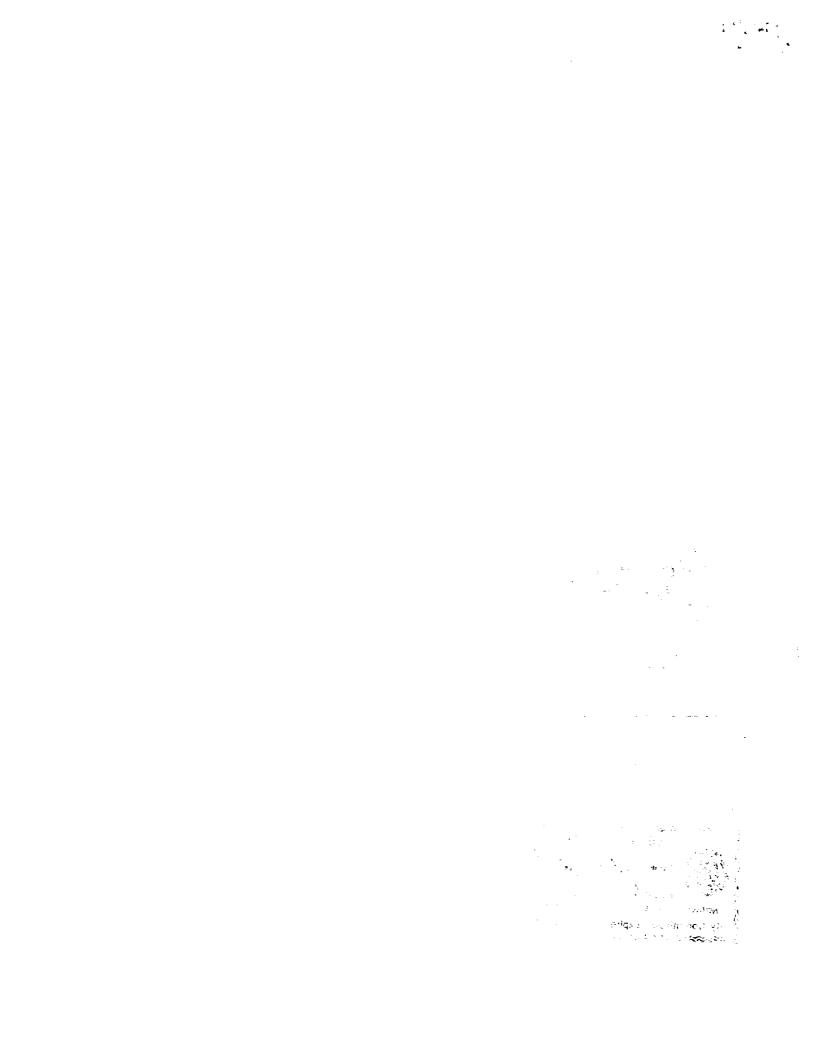
State of New Mexico,
County of Lea.
1,
Robert L. Summers
of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping attached hereto was published once a week in the regular and entire issue of said-paper, and not in a supplement thereof for a period
of
One weeks.
Beginning with the issue dated
December 9 19 84
and ending with the issue dated
December 9 19 84
Colar & Summer
Publisher.
Sworn and subscribed to before
me fis day of
Notary Public.
My Commission expires
3-24, 1987

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.



Did not skew some in supposer, and anadounce





6. Signature - Agent

7. Date of Delivery

8. Addressee's Address (ONL Fif requested and fee paid)

	SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested.
	1. Show to whom, date and address of delivery.
	2. Restricted Delivery.
f	3. Article Addressed to:
1	Mrs. Nadine Owen
: [909 W. Taos
١	Hobbs, NM 88240
	10 3 C
t	4. Type of Service:
	Registered Insured P 130192 104 Express Mail
	Always obtain signature of addresses or agent and DATE DELIVERED.
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9	6. Signature – Agent
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	SERDER: Complete ityme 1, 2, 3 and 4.			
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\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Gulf Oil Corporation P.O. Box 670			
4	Hobbs, NM 88240			
-	4. Type of Service: Article Number			
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orm 3811, July	Put your address in the "RETURN TO" space on the reverse side. Fallure to do this will prevent this card from being returned to you. The return recalm fee will provide you the name of the person delivered to and the date of gaute. For additional fees the following services are available. Consult postmaster for fees and check box (es) for service(s) requested.				
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S Form 3811, July 1983	SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested. 1. Show to whom, date and address of delivery. 2. Restricted Delivery.					
	Doyle Hartman P.O. Box 10426 Midland, TX 79	702				
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	Always obtain signature of addressee or agent and DATE DELIVERED.					
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DOMESTIC	6. Signature - Agent X Lence Evans					
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PS Form 3811,	SENDER: Complete terms 1, 2, 3 and 4. Put your address in the "PIRTURN TO" space on the reserve pide. Failure as do this will present this lead from being returned to you. The return resolvents will deprice the terms of the present delivered to the failure of the present delivered to the present delivered to the present delivered to the present delivered to the present delivery. For additional fees the following are present.
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STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION HOBBS DISTRICT OFFICE

TONEY ANAYA

December 28, 1984

POST OFFICE BOX 1980 HOBBS, NEW MEXICO 88240 (505) 393-6161

OIL CONSERVATION DIVISION								
P. O. BOX 2088 SANTA FE, NEW MEXICO 87501								
RE: Proposed: MC DHC NSL NSP SWD X WFX								
PMX								
Gentlemen:								
I have examined the application for the:								
Alpha Twenty-One Prod. Co. Sun Gregory A No. 3-D 33-25-37								
Operator Lease & Well No	o. Unit S-T-R							
and my recommendations are as follows:								
0.KJ.S.								
Yours very truly,								
Jerry Sells								
Jerry Sexton Supervisor, District l	C.:: 5 2 1935							
/mc								



ALPHA TWENTY-ONE PRODUCTION COMPANY

505/397 3056

December 7, 1984

Oil Conservation Division P.O. Box 2088 Santa Fe, NM 87501

RE: Gregory "A" Federal No. 3 660' FNL & 660' FWL, Sec. 33, T-25-S, R-37-E, Lea Courty, New Mexico DEC 26 1984

Gentlemen:

Enclosed for your review and approval find our Application for Authorization to Dispose Produced Water into a Zone Non-Productive of Oil and Gas for the above captioned well.

The proposed salt water disposal well is currently temporarily abanoned. Records show that the well was originally drilled to 4000', but plugged back to 3240' with 275 sacks of cement. The well was then produced in the Queen formation through open-hole from 3085' to 3240' as an oil well in the Langlie Mattix pool.

Alpha Twenty-One Production Company proposed to re-enter the well and drill out the cement to the original TD of 4000'. We would then log, set a liner from 2900' to 4000', cement, perforate, and acidize with 1000 gallons. Attached please find an injection well data sheet showing the well after re-entry operations are complete and ready for disposal.

The produced water for disposal will come from our El Paso Tom Federal lease, Sec. 33, T-25-S, R-37-E, Lea County, New Mexico. The average rate should be 23 BW/hour with a maximum rate of 549 BWPD. We can expect the average volume to be 300 BWPD with a maximum volume of 500 BWPD. The system will be closed using a production packer. The average injection rate anticipated will be 800 psi with a maximum rate of 1200 psi. The non-productive zone for disposal will be the San Andres, but since there are no producing San Andres well within a two-mile radius, chemical analysis could not be obtained for the San Andres formation, however chemical analysis for the produced water to be disposed is attached.

Geological information indicates that the San Andres formation is a dolomite approximately 1300 feet thick at a depth of 3700'. Information also indicates that the fresh water in the area is sparsly located and not plentiful and is usually found in the Red Bed formation. After checking with the New Mexico State Engineer's office and upon a visual inspection, the only fresh water well found within a one-mile radius is owned by Clyde Cooper. This water well is located in the NE, NE, SW, NE of Section 33 and is currently nonproducing, henceforth, no chemical analysis of the fresh water could be obtained.

After a thorough search of the records at the New Mexico Oil Conservation District office in Hobbs, no record of logs for the captioned well could be found on file, but, as stated before, the well will be logged prior to perforating and a copy of the logs will be made available for public record.

All available geological and engineering data has been examined and no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water has been found.

Attached for your review and records, please find the following:

- 1.) A map that identifies all wells and leases within two miles of the proposed injection well. A one-half mile radius circle has been drawn around the proposed injection well (the area of review).
- 2.) A tabulation of data on all wells of public record within the area of review which penetrate the disposal zone.
- 3.) Chemical analysis of produced water to be disposed.
- 4.) A data sheet and schematic of the proposed disposal well.
- 5.) A copy of the legal advertisement publication.
- 6.) Copies of the return receipts on certified mailings offered as proof of notification to offset operators and surface owner.

If any further information is required for the administrative approval of this Application for Authorization to Dispose Produced Water, please contact me. Thank you for your consideration and cooperation in this matter.

Respectfully yours,

Michael D. Oney,

Drilling Superintendent

MDO/tic Enclosures ec: Oil Conservation Division P.O. Box 1980 Hobbs, NM 88240 Bureau of Land Management Carlsbad Resource Area P.O. Box 1778 Carlsbad, NM 88240

Alpha Twenty-One Production Co. 200 W. Illinois Street, Suite 200 Midland, TX 79701 ATTN: Mr. Tom Phipps

Surface Owner:

Mrs. Nadine Owen 909 W. Taos Hobbs, NM 88240

Offset Operators:

Arco Oil & Gas Company P.O. Box 1710 Hobbs, NM 88240

El Paso Natural Gas Co. 1800 Wilco Building Midland, TX 79701

Gulf Oil Corporation P.O. Box 670 Hobbs, NM 88240

Sun Exploration & Prod. Co. P.O. Box 1861 Midland, TX 79702

Lewis B. Burleson, Inc. P.O. Box 2479 Midland, TX 79702

Greathouse & Lovelady Oil & Gas, Inc. P.O. Drawer 2666 Midland, TX 79701

Doyle Hartman
P.O. Box 10426
Midland, TX 79702

Union Texas Petroleum Corp. 1300 Wilco Building Midland, TX 79701 POST OFFICE BOY 2008
STATE LAND OFFICE GROUPS
BANTA FE NEW MEXICO 97501

I.	Purpose: Secondary Recovery Pressure Maintenance X Disposal Storage Application qualifies for administrative approval? X yes no
II.	Operator: ATTHA TWENTY-ONE PRODUCTION COMPANY
	Address: F.O. Box 1206 Jal, New Mexico 83252
	Contact party: Michael D. Oney Phone: 505-395-3056
II.	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.
17.	Is this an expansion of an existing project? yes no If yes, give the Division order number authorizing the project
٧.	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 whice 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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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.).
III.	Attach appropriate geological data on the injection zone including appropriate lithologically detail, reological 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.
х.	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.
XJ1.	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.
111.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
av.	Certification
	I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief. Name:
	Signature: Michael D. Date: 12-10-64

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:
 - tease 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.

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:
 - 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.

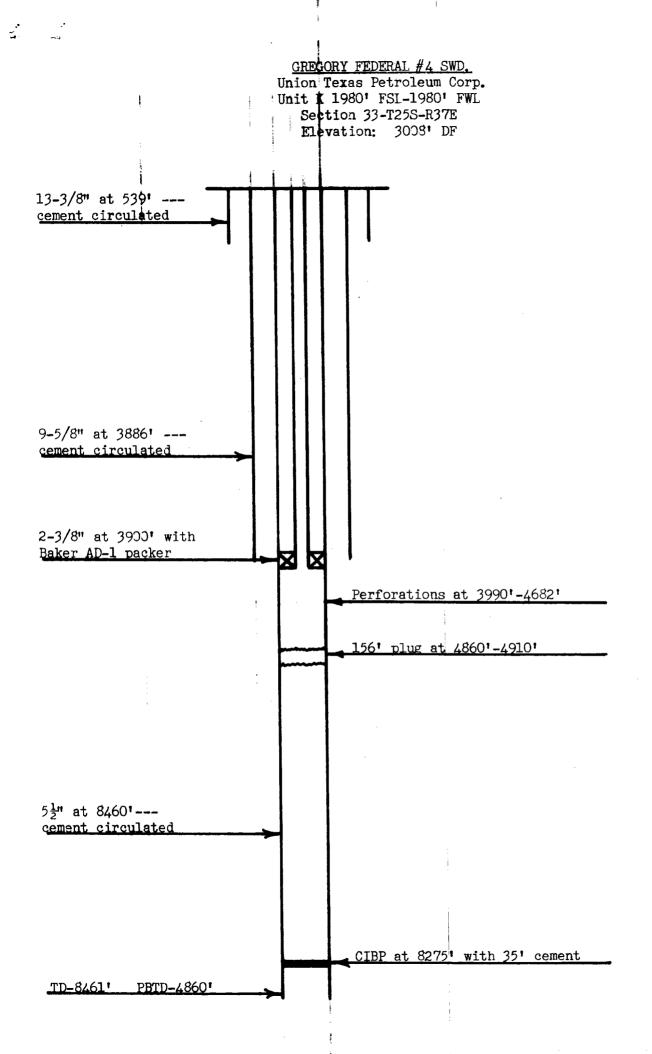
POST OFFICE EOX 2018 STATE LAND OFFICE BUX 2016 SANTA FE, NEW MEXICO 97501

APPLICATION FOR AUTHORIZATION TO INJECT

II.	Operator: ALPHA TWENTY-ONE PRODUCTION COMPANY
	Address: P.O. Box 1206 Jal, New Mexico 88252
	Contact party: Michael D. Oney Phone: 505-395-3056
1111.	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
٧.	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 whice 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:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and 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 lithological, 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 correcto the best of my knowledge and belief.
	Name: Michael D. Oney Title Drilling Superintnedent
	Signature: Michael D. Date: 12-10-84

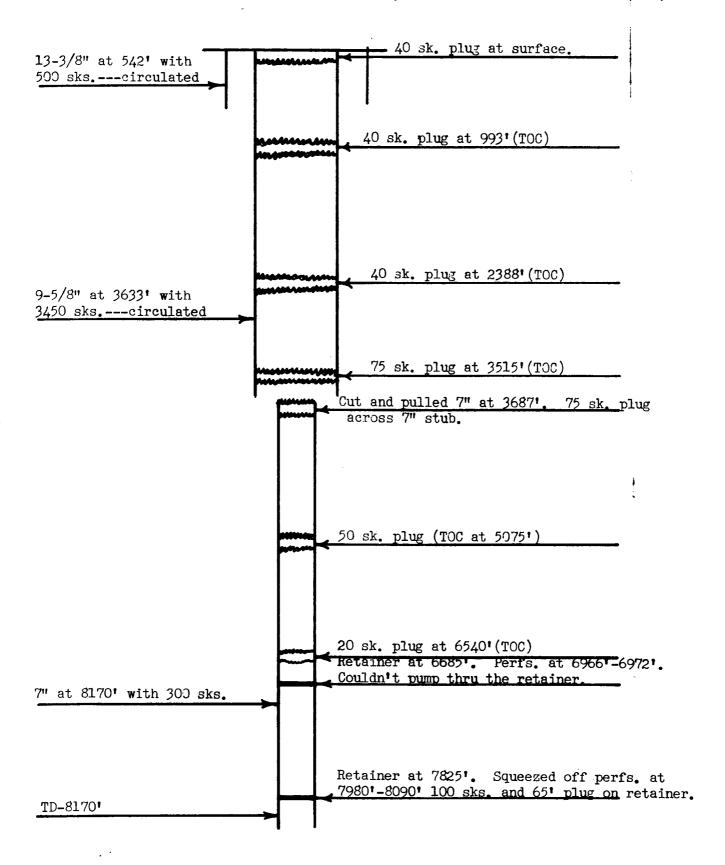
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WELL NO.	660' FNL-660'FWL	33 SECTION	T25 South	37 East RANGE
Lea Cou	nty, New Mexico			
Seh	ematic	Tabula	r Data	· •
- i :	+++	Surface Casing		
		Size 9-5/8 "	Cemented with	300s,
	9-5/8"	TOC Surface feet	·	
,	9-7/6	Hole size 12-1/4"		
-4		Intermediate Casing		
		Size	Cemented with	150 *
		TOC 1839 Feet	determined by	Calculated
	7"	Hole size 8-3/4"		
		Long string Liner		
		Size <u>4-1/2</u> "	Cemented with	<u>79</u>
		10C 2900 feet	determined by	Calculation
3/8"	411	Hole size 6-1/8"		
		Total depth 4000!		
	Liner Hanger	Injection interval		
		3700 feet to perforated or open-hole,	4000	_ feet
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Tubina sin	e 2-3/8" lined	luith mlastic		set in a
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Knicke (b	rand and model)	packer at	3600	feet
(or descri	be any other casing-tubing	seal).		
Other Date				
	f the injection formation			
•	f Field or Pool (if applic		<u></u>	
	s a new well drilled for i	_		
If no,	For what purpose was the	well originally drilled?	Gas Well	
	e well ever been perforate	ed in any other zone(s)? Li of cement or bridge plug(s)	st all such per	forated interva
4. Has th		or coment or orrade bind(s)		
4. Has th		•		
4. Has th	Open Hole 3085'-3240'	. 1		
and gi	Open Hole 3085!-3240!	ny overlying and/or underlyi	my oil or gos zo	ones (pools) in
and gi	Open Hole 3085'-3240' he depth to and name of arrea. Jalmat(Yates/Seven	ny overlying and/or underlying Rivers) 2450' Langl	my oil or gos zo	ones (pools) is



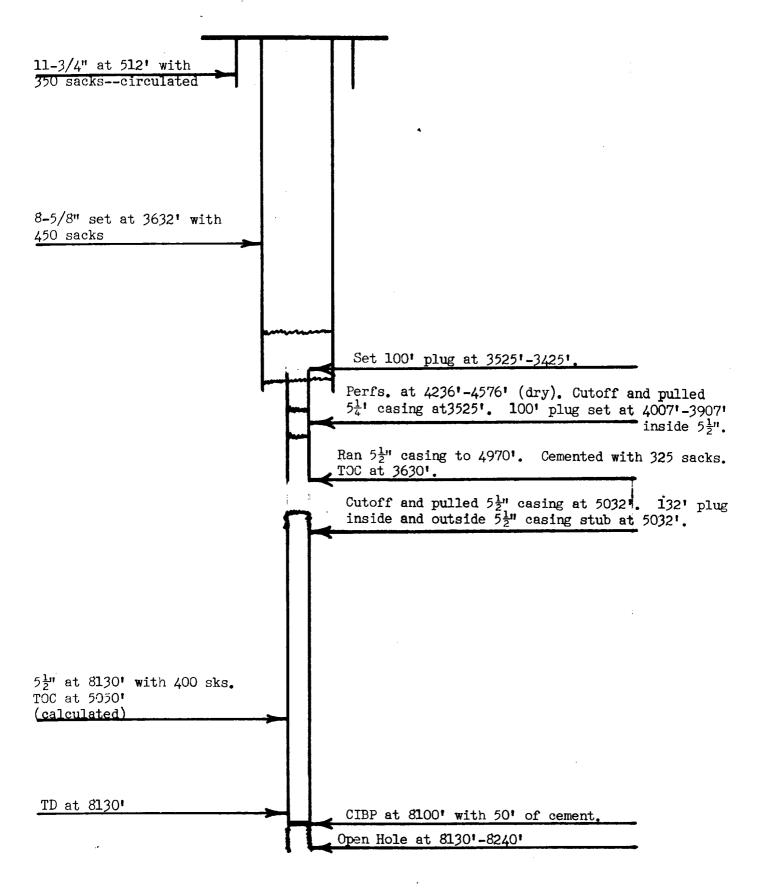
Drilled in 1957. Disposing into the San Andres formation.

GREGORY FEDERAL #2-Y
El Paso Natural Gas Co.
Unit L 760' FNL-1650' FWL
Section 33-T25S-R37E
Elevation: 3002' GL

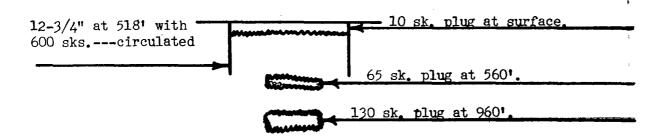


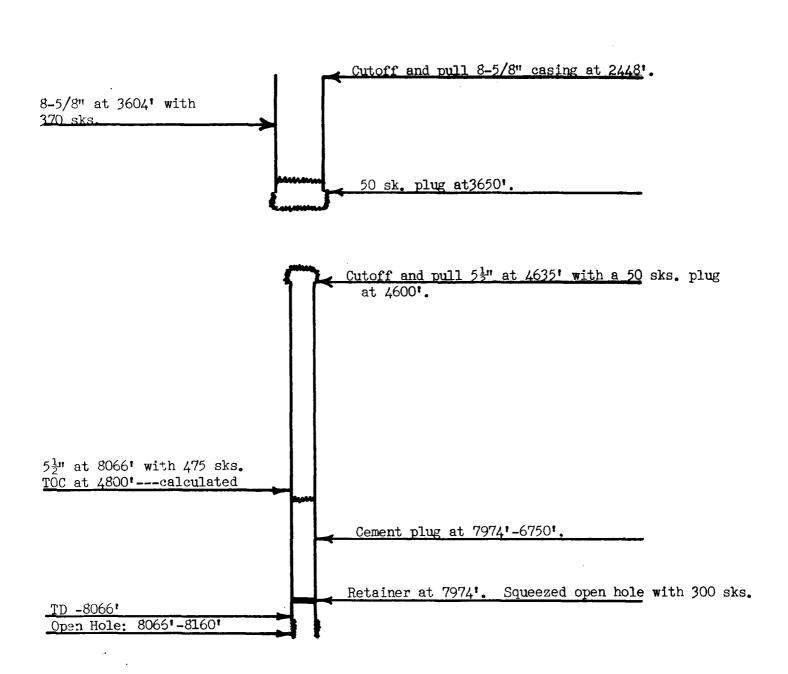
COOK # 3

Lewis Burleson, Inc.
Unit 0 660' FSL-1905' FEL
Section 28-T25S-R37E
Elevation: 3001' GL



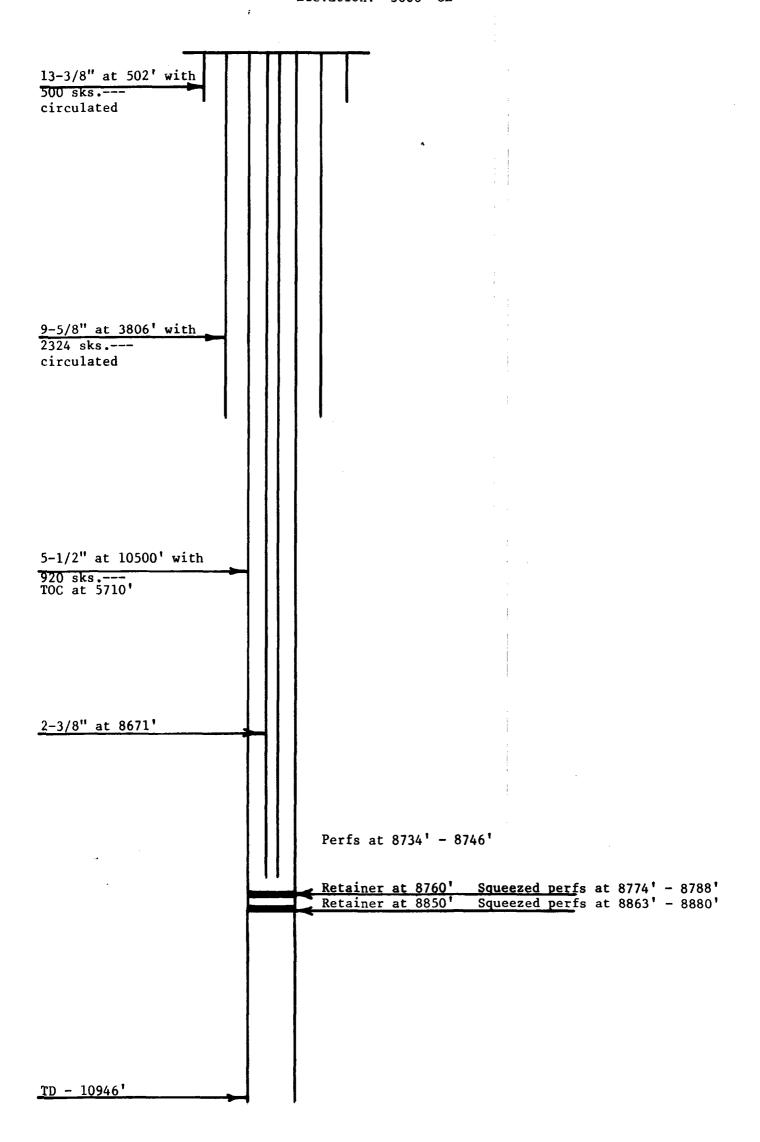
U.S. CROSBY #1 Greathouse and Lovelady Oil & Gas Co. Inc. Unit N 660' FSL-1980' FWL Section 28-T25S-R37E Elevation: 3007' GL



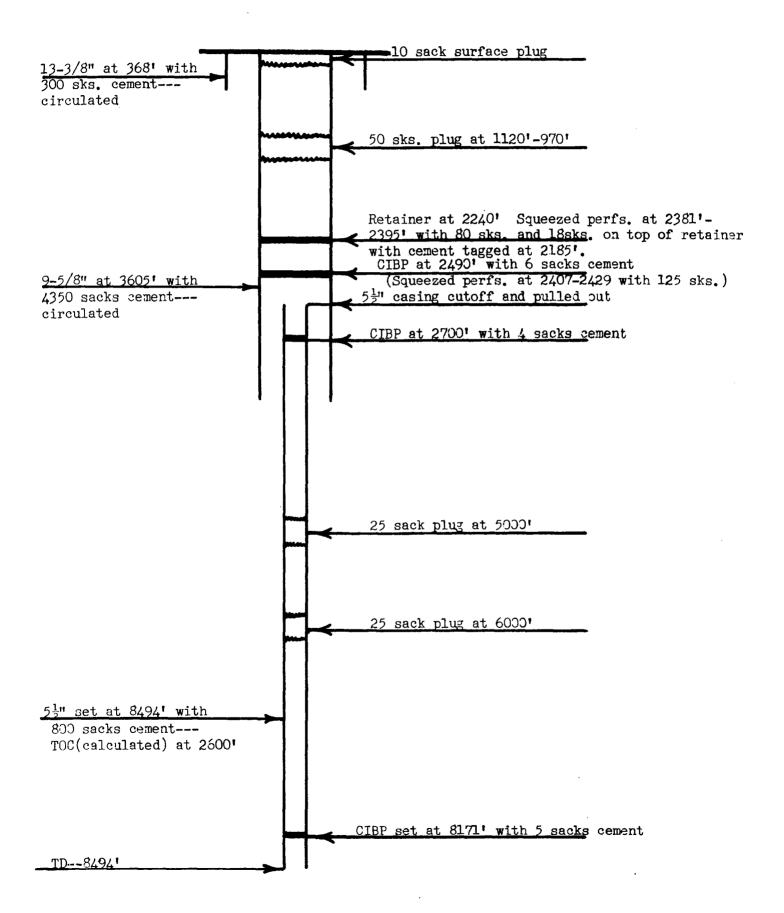


CROSBY DEEP #1 Union Texas Petroleum Corporation Unit N 330' FSL-1980' FWL Section 28-T25S-R37E

Elevation: 3006' GL

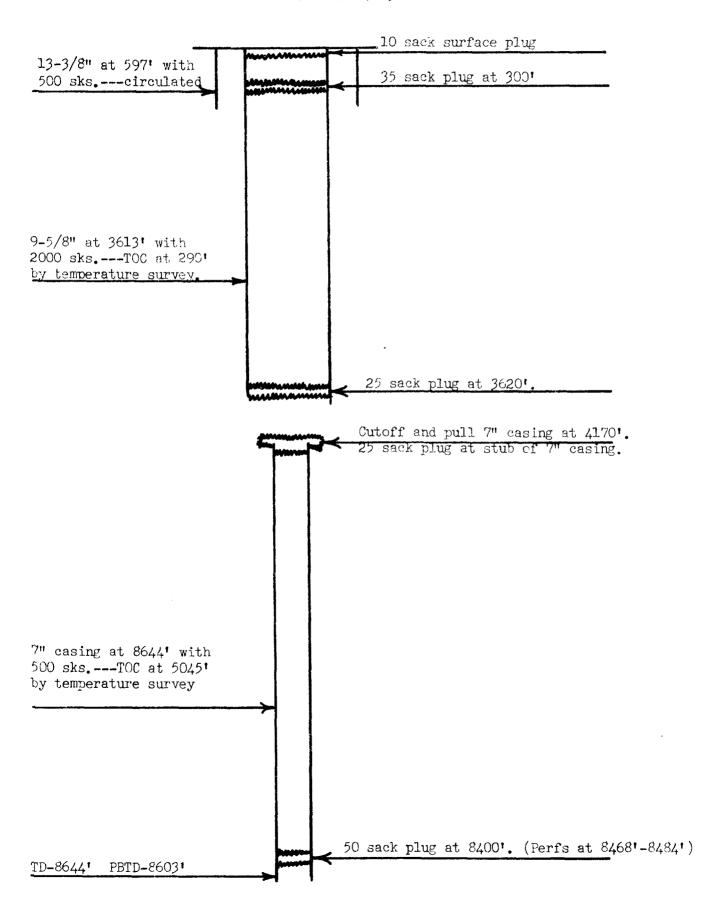


ARC FEDERAL #1
Arco Oil and Gas Company
Unit K 1980' FSL-1980' FWL
Section 28-T25S-R37E



Well was originally drilled in 1954 to the Crosby Devonian formation. P and A 11-3-1977.

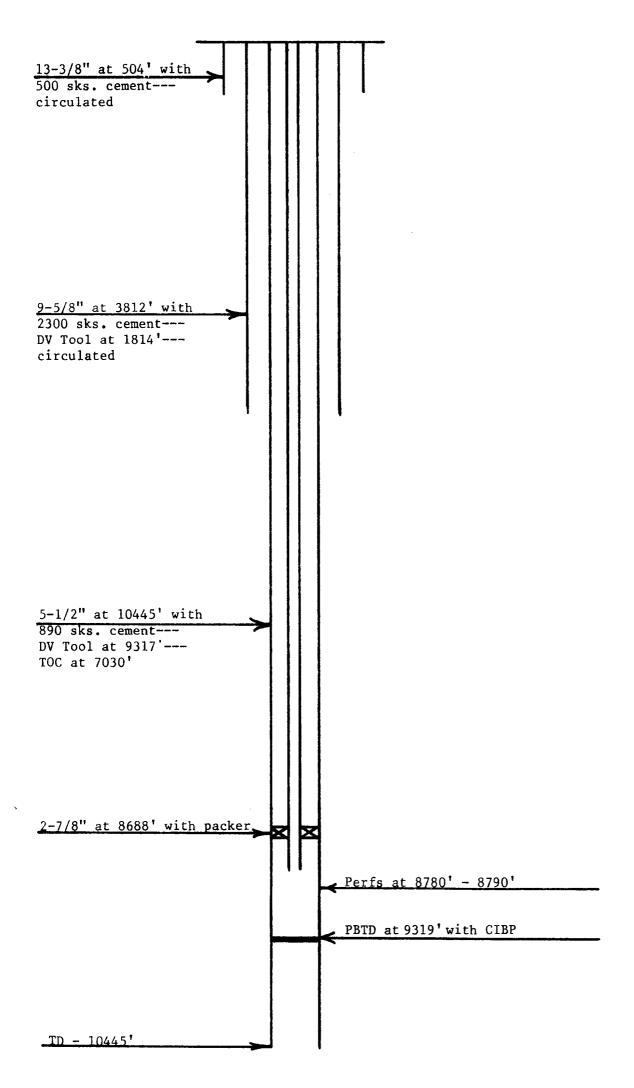
GUIMAN D #1
Texas Pacific Oil Company
Unit I 1830' FSL-660' FEL
Section 29-T25S-R37E
Elevation: 3011' GL



CROSBY DEEP #2

Union Texas Petroleum Corporation Unit G 1650' FNL-2310' FEL Section 33-T25S-R37E

Elevation: 2998' GL

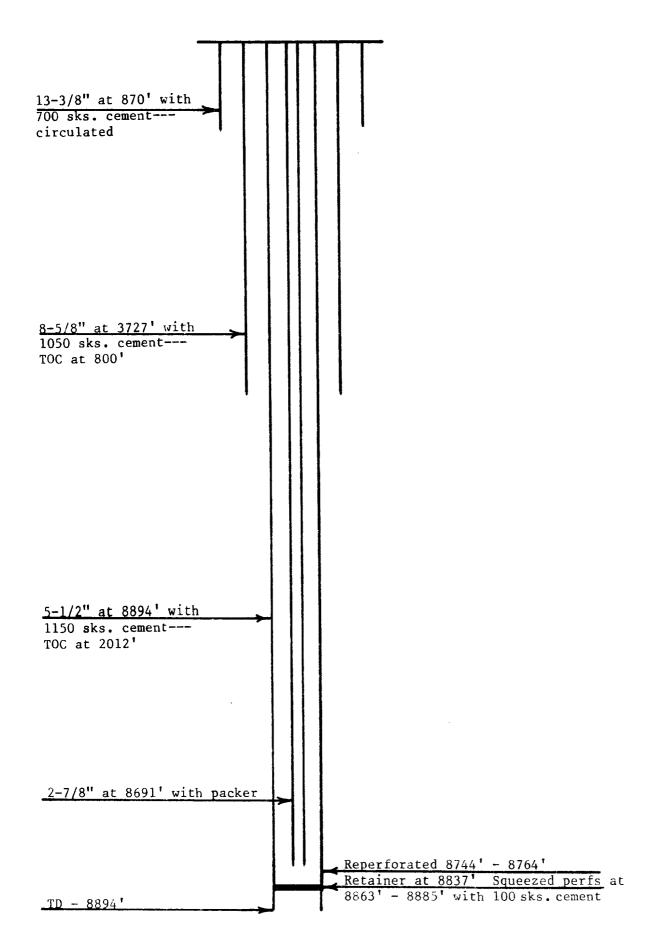


Well was originally drilled in 1972 to the Crosby Fusselman formation.

CROSBY DEEP #4

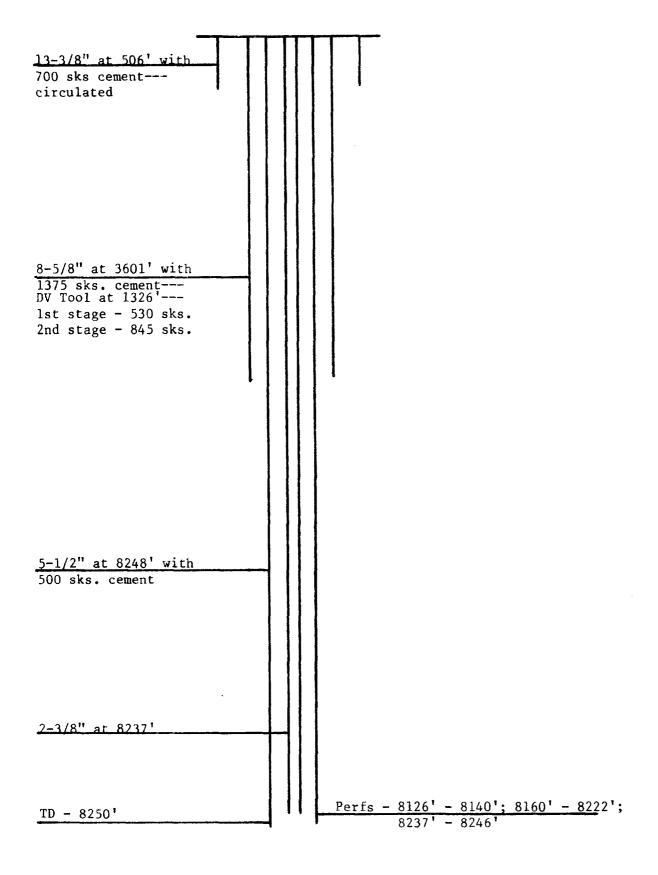
Union Texas Petroleum Corporation Unit C 785' FNL-1980' FWL Section 33-T25S-R37E

Elevation: 3006.8 GL

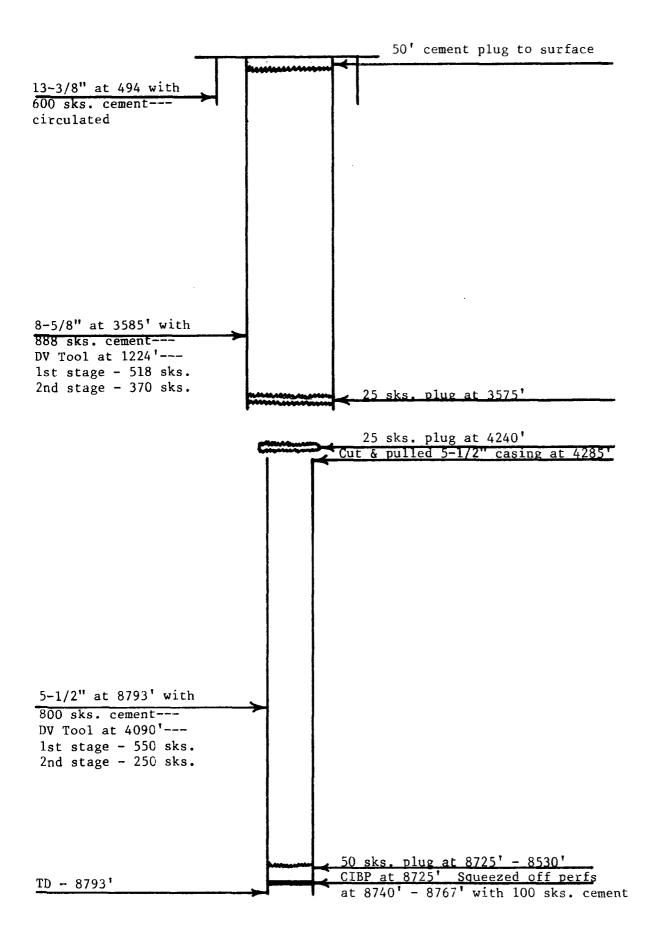


Well was originally drilled in 1978 to the Crosby Fusselman formation. PBTD at 8775'.

G.W. SHAHAN #2
Gulf Oil Corporation
Unit B 990' FNL-1650' FEL
Section 33-T25S-R37E
Elevation: 3003' GL



ARNOTT RAMSEY B #3 Gulf Oil Corporation Unit A 660' FNL-660' FEL Section 32-T25S-R37E



Well was originally drilled in 1956. Elevation - 3004' GL

NL Treating Chemicals/NL Industries, Inc P. O. Box 4305 Houston, Texas 77210

							SHEET NUMBER
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NE INFALING CHEMICALS NE INDUSTRIES, INC.

SCALING TEMBENCIES OF WATERS

SHO-YINSWI AHTJA : MARTHU.

CAMPLE POINT: WELL #1

JUDATE DE EL PASU FOM FED

IA1E: 77/84

MARK WAL (S15 (M6/L):

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UNIT STRENGTH = 0.3854

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	" F . 34	-0.58	-0.23	-41.66
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14,	.0.88	-0.58	-0.47	-41.99
100	-0.62	-0.57	-0.37	-42.07
1000	-0.43	-0.55	-0.25	-42.14
700	-0.16	-0.53	-0.14	-42.20
22%	0.15	-0.51	-0.01	-42.23
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260	0.86	-0.46	0.28	-42.16

ILLEGIBLE



					SHEET NUMBER
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ium, Ba					
ium, Na (calc.)	172.0	3950	CCO pH		5,5
1		/	Eh (Redox	Potential)	MV
IONS	210 0	70-	Specific G	•	
oride, Cl	$\frac{-3/9.7}{18.2}$	780 62	Turbidity,	JTU Units	13/116
fate, SO ₄	12.0	62	<u> Yotal Diss</u>	olved Salids (calc.)	136/9 mg 1
bonate, CO		7	Stability Ir	idex @F	
arbonate, HCO:			Cash Sale	۲۲ اهانهنانانان	mg/]*
froxyl, OH fide, Sm	2.1	. 4	CaSO 4 Soli	@ F	mg/
			Max. CaSO	Possible (calc.)	mg.1*
1	1 3 ***			Possible (calc.)	mg *
	<u> </u>	1		lydrocarbons	ppm(Vol
SPENDED SOLIDS (QUA	ALITATIVE)	; ;			
i Sulfide . Iren O	xide Calcium Car	honote [Acid Insoluble	*NOTE: ma/l	and mg/l are common
_ 1	ake		The madionic [ngeably for epm and p
MARKS AND RECOMME					Where epm and ppm
xtremely low	scaling condition	<i>ا</i> دی:			ions should be made
an iran coan	vt.			specific grav	ity.
ENGINEER	DIST. NO.	ADDRESS	······································	OFFICE PHONE	HOME PHONE
AND DROWN	821		·		
TASA2	DATE	DISTRIBUTION	CUSTOMER	AREA OR	DISTRICT OFFICE
	un /25/8	4	BTC ENGINEER O	R BTC LAB	BTC SALES SUPERV

NE TREATING CHEMICALS NE INDUSTRIES, INC.

SCALING FENDENCIES OF WATERS

COMPANY: ALPHA TWENTY-ONE SAMPLE FUINT: WELL #2

OCATION: EL PASO TOM FED

JATE: 5/7/84

JATER AMALTSIS (MG/L):

: mUluu:			3956.0				
ALCIUM:	4	ŧ,	320.0	9 - 1	110	1	Ť
1AGNESIUM:			634.4				
HLORIBE:		2	7800.0				
JULFAIE:			625.0				
ALCARBONATE	1	:	298.9				
(RUN:		1	5.8				
ARIUn:	1		0.				
	Ĩ						
	1						

5.5

TONIL STRENGTH = 0.2800

'H:

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

	CALCITE	MUERYA	ANHYBRITE	BARTTE
TEMP.	THREX	INDEX	INDEX	INDEX
	j		: :	_
φri	-1297	-1.08	-1.33	-41.42
89	-1.86	-1.11	-1.26	-41,55
109	-1.74	-1.13	-1.18	-41.6/
120	-1.59	-1.13	-1.10	-41.78
140	-1442	-1.12	-1.00	~41.8/
150	-1 22	-1.10 1011	1 1 7-0190	-41.95
180	-0 . 99	~1.08	-0179	-42.01
.700	-0.24	-1.06	O	-42.06
276	-0.46	-1.303	-0153	-42.08
240	-0.15	-1.00	-0:39	-42.07
269	0 20 1	-04962	- 1 -0123	-42.00
	! !	}	•	

ILLEGIBLE

DISTRICT OFFICE



P. O. Box 4305 Houston, Texas 77210 SHEET NUMBER N.mSE OR UNIT WELLISI NAME OR NO. TEMP, F WATER, BBL/DAY OIL, BBL DAY GAS, MMCF, DAY E SAMPLED PRODUCED SUPPLY WATERFLOOD 5-7-84 SALT WATER DISPO WATER ANALYSIS PATTERN (NUMBER BESIDE ION SYMBOL INDICATES me/I* SCALE UNIT) HCO3" SOLVED SOLEDS **DISSOLVED GASES** FIONS <u>mg/|*</u> Hydrogen Sulfide, H₂S · al Hardness Carbon Dioxide, CO2 cium, Co · · Oxygen, Oz nesium, Mg · · (Total) Fe 📑 PHYSICAL PROPERTIES . ium, Ba** ium, Na (calc.) рΗ Eh (Redox Potential) ONS Specific Gravity oride, Cl Turbidity, JTU Units Total Dissolved Solids (calc.) 3665 ma/1* ate, SO₄ Stability Index @_ bonate, CO3 arbonate, HCO3 _ roxyl, OH CaSO & Solubility @_ ide, Smg 1* mg 1* Max. CaSO₄ Possible (calc.) mg/1* Max. BaSO 4 Possible (calc.) Residual Hydrocarbons ppm(Vol/ SPENDED SOUIDS (QUALITATIVE) 🔻 Sulfide 🔲 Iron Oxide 🗌 Calcium Carbonate 🔲 🗓 Acid Insoluble [*NOTE: me/l and mg/l are common used interchangeably for epm and pp MARKS AND RECOMMENDATIONS: respectively. Where epm and ppm a o scaling passibilities used, corrections should be made f specific gravity. un coult getting high. DIST. NO. HOME PHONE ADDRESS OFFICE PHONE 82

DISTRIBUTION

CUSTOMER

NE TREATING CHEMICALS NE THOUSERIES, INC.

SUALING TENDENCIES OF WATERS

COMPACE: BEPHA JUENTY-UNE BAMPLE PUINT: WELL HS FLUCATION: EL PASU TOM FED

DATE: 5///84

WALER ANALISIS (MG/L):

į.	
inuluu:	851.0
JALCIUm:	240.0
MAGNESIUM:	390.4
THEORIDE:	2500.0
BULFAIE:	262.5
BICARBUNATE	₩ 11 22557° ·
IKUN:	13.3
KARIUN:	0.
	i P
	·
·H:	6.0
	:

TUNIC STRENGTH = 0.1062

INDEX VALUES GREATER THAN ZERO INDICATE SCALING CONDITIONS INDEX VALUES OF ZERO OR LESS INDICATE A STABLE WATER

TEMP.	PALCITE INDEX	6YPSUM INDEX	ANHYDRITE INDEX	BARITE IMOEX
	The security was go	ومانوا والمجاد الميها ومعدد الأفاف المراجات	राहरू अक्षांका जिल्लाका स्ट्रिक्ट अक्षांका जिल्लाका	11.00 H
60	-1341	-1.25	· · · · · · · · · · · · · · · · · · ·	-41.08
80	-1.29	-1.29	-1.44	-41.22
100	-1.17	-1.31	-1.36	-41.34
120	-1.04	-1.31	-1.28	-41,44
140	-0.89	-1.31	-1.18	-41.50
160	-0.73	-1.29	-1.08	-41.58
180	-0.54	-1.26	-0.46	-41.62
-269	-0.35	-1.23	-0.184	-41.65
220	-0.13	-1.20	-0-20	-41.60
240	0.11	-1.17 -1.13	-0.55	-41.63
260	0.37	-1.73	-0.40	-41.57
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	1 1	ŧ		

UNICHER INTERNATIONAL

601 NORTH LEECH

P.O.BOX1499

HOBBS. NEW MEXICO 88240

1PLING POINT: WELLHEAD TE SAMFLED : 3-9-83

CIFIC CRAVITY = 1 024 CAL DISSOLVED SOLIDS = 38525 = 6 98

		ME/L	MG/L
CATIONS			
COLUM INESTUM DIUM	(CA)+2 (MG)+2 (NA),CALC	25.3 196. 407.	507 2390 937E
ANIONS			
IAREONATE REOMATE PROXIDE PATE ORIDEE	(HCO3) - 1 (CO3) - 2 (OH) -1 (SO4) - 2 (CL) - 1	3 2 . 8 0 0 2 4 4 . 3 5 2 .	2001 0 0 11750 12497
DISSOLVED GASES			
REON DIOXIDE DROGEN SULFIDE FOEN	(CO2) (H2S) (O2)	NOT RUN NOT RUN NOT RUN	
PM(TOTAL) FIUM IGANESE	(FE) (EA)+2 (MN)	NOT RUN NOT RUN	. 7

SCALING INDEX TEMP

> 3 0 C 86F .35t LIKELY

-1.0 UNLIKELY

RECNI TANOES

ICIUM CARBONATE SCALING

FATE INDEX .CIUM SULFATE SCALING

ILLEGIBLE



ALPHA TWENTY-ONE PRODUCTION COMPANY

POST OFFICE BOX 1206

JAL. NEW MEXICO 88252

505/395-3056

December 7, 1984

Arco Oil & Gas Company P.O. Box 1710 Hobbs, NM 88240

RE: Gregory "A" Federal No. 3 660' FNL & 660' FWL, Sec. 33, T-25-S, R-37-E, Lea County, New Mexico

Gentlemen:

As offset operator or surface owner please find enclosed, as required, a copy of Application to Dispose Produced Water into a Formation Non-Productive of Oil and Gas. We plan to dispose produced water from our El Paso Tom Federal lease into the San Andres formation through the above proposed salt water disposal well which is adjacent to our El Paso Tom Federal lease.

If you desire further information, please contact the New Mexico Oil Conservation Division, P.O. Box 2088, Santa Fe, NM 87501.

Respectfully,

Michael D. Oney,

Drilling Superintendent

MDO/tic Enclosure

CC: Mrs. Nadine Owen, 909 W. Taos, Hobbs, NM 88240
Lewis B. Burleson, P.O. Box 2479, Midland, TX 79702
El Paso Natural Gas Company, 1800 Wilco Building, Midland, TX 79701
Greathouse & Lovelady Oil & Gas, Inc., P.O. Drawer 2666, Midland, TX 79701
Gulf Oil Corporation, P.O. Box 670, Hobbs, NM 88240
Doyle Hartman, P.O. Box 10426, Midland, TX 79702
Sun Exploration & Production Company, P.O. Box 1861, Midland, TX 79702
Union Texas Petroleum Corporation, 1300 Wilco Building, Midland, TX 79701

AFFIDAVIT OF PUBLICATION State of New Mexico, County of Lea. Robert L. Summers of the Hobbs Daily News-Sun, a daily newspaper published at Hobbs, New Mexico, do solemnly swear that the clipping at-tached hereto was published once a week in the regular and entire issue of said-paper, and not in a supplement thereof for a period of 0ne _ weeks. Beginning with the issue dated December 3 and ending with the issue dated December 9

Sworn and subscribed to before

Publisher.

My Commission expires

3-2-4, 19-87 (Seal)

This newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Laws of 1937, and payment of fees for said publication has been made.



W.

75 Form 3811, July 1983	SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side, Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are evaluable. Consult postmaster for fees and check boxfees for service(s) requested. 1. Show to whom, date and address of delivery. 2. Restricted Delivery.
The figure of the second secon	3. Article Addressed to: Mrs. Nadine Owen 909 W. Taos Hobbs, NM 88240 4. Type of Service: Plegistered I freured P N30192 104
DOMESTIC BETURN RECES	Analysis in income of ephromes of agent and DATE OF LIVERIED. 5. Signature - Adgresse X / / / / / / / / / / / / / / / / / /

7	SENDER: Complete item Put your address in the "RET	
Form 3811 July	reverse side, Fallure to do this being returned to you. The re you the name of the person didelivery. For additional fees to available. Consult postmaster for service(s) requested.	will prevent this card from turn receipt fee will provide slivered to and the date of he following services are
100	1. 🗆 Show to whom, date a	nd address of delivery.
3	2. Restricted Delivery.	
	3. Article Addressed to:	
	El Paso Natural G 1800 Wilco Buildi Midland, TX 797	ng
	4. Type of Service:	Article Number
	Registered Insured Certified COD Express Mail	P 713 192 111
	Always obtain signature of ac DATE DELIVERED.	dressee <u>or</u> agent and
DOMESTIC	5. Signatūre – Addressee	interson
	6. Signature - Agent X	OE .
257	7. Date of Delivery	190,3
ē	8. Addressee's Address (ONL	Nifrequested and fee paid)

SENDER: Complete ityms 1, 2, 3 and 4,
Put your address in the "RETURN TO" space on the reverse life. Falture to do this will present this burg from being returned to you. The return tracely fee will provide you the name of the purson differently to end the state of delivery. For additional fees the following services are validable. Consult programmer for fees and check box (sp.)
All principles without some and eastern of section.
3. Artitle Addressed to: Gulf Oil Corporation P.O. Box 670 Hobbs, NM 88240
4. Type of Service: Article Number Registered: Trisured Certified: COD P 713 192: 113
Always obtain algnature of addressee or agent and DATE OF LIVERED.
5. Signature Aggregate X 6. Signature Aggregate X O O 7. Date of Deliver

SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested. 1. Show to whom, date and address of delivery. 2. Restricted Delivery. 3. Article Addressed to: Registered Insured Consult postmaster Consu		
2. Restricted Delivery. 3. Article Addressed to: 2	8	SENDER: Complete items 1, 2, 3 and 4.
2. Restricted Delivery. 3. Article Addressed to: 2. C.	Form 3811, July	reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es)
2. Restricted Delivery. 3. Article Addressed to: 2. C.	198 3	1. Show to whom, date and address of delivery.
4. Type of Service: Article flustred Registered Insured Cortified COD Express Mail Always obtain signature of addressee on egapt and DATE DELIVERED. S. Signature — Addressee X Co. Signature — Agent X X X X X X X X X		2. Restricted Delivery.
4. Type of Service: Registered Insured COD Certified COD Express Mail Always obtain signature of addresser or eacht and DATE DELIVERED. Signature - Addressee COD Always obtain signature of addresser or eacht and DATE DELIVERED. Signature - Addressee COD Artich August COD Cod Cod Cod	,	3. Article Addressed to:
Registered Insured CoD Certified COD		2666 (100)
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DATE DELIVERED. 5. Signsture - Addresse X 6. Signeture - Agent X 7. Date of Delivery 8. Addressee's Address (ONLY if requested and fee paid)	-	Certified COD L
S. Signeture - Agent 7. Date of Delivery 8. Addressee's Address (ONLY if requested and fee paid)		Always obtain signature of addressee on equat and DATE DELIVERED.
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7. Date of Delivery 2 8. Addresse's Address (ONLY if requested and fee paid)	IESTIC	
Rec		8. Addressee's Address (ONLY if requested and fee paid)
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Form 3811, July 1983	SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are svailable. Consult postmaster for fees and check box(es) for service(s) requested. 1. Show to whom, date and address of delivery. 2. Restricted Delivery.	
	3. Article Addressed to:	-
	Mrs. Nadine Owen	
l	909 W. Taos Hobbs, NM 88240	-
		-
	4. Type of Service: Article Namber	1
	Registered Insured P 713 192 104	
	Always obtain signature of addresses or agent and DATE DELIVERED.	
Ø	5. Signature - Adgratice	
×	XIII Calle Cur	4
178	6. Signature - Agent	
CH	7. Date of Delivery	
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Ř	8. Addressee's Address (ONLY if requested and fee paid)	
77	,	
DOMESTIC RETURN RECEIPT		
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PC Enrm 3819 1111 1997	SENDER: Complete items 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will provent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for service(s) requested. 1. Show to whom, date and address of delivery. 2. Restricted Delivery.
	3. Article Addressed to
	El Paso Natural Gas Company 1800 Wilco Building Midland, TX 79701
1	4. Type of Service: Article Number
	☐ Registered ☐ Insured ☐ COD P 713 192 111 ☐ Express Mail
	Always obtain signature of addressee <u>or agent and DATE DELIVERED.</u>
DOSSESTION	S. Signature - Address v
1133	6. Signature - Agent
CHETHAN	7. Date of Delivery
2	8. Addressed's Address (ONLTM requested and fee paid)

	SENDER: Complete itums 1, 2, 3 and 4. Put your address in the "RETURN TO" space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional feet the following services are railable. Consult poetmaster for fees and check box(es) service(s) requested.
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	2. 2. Particend Delivery.
	3. Article Addressed to: Gulf Oil Corporation P.O. Box 670 Hobbs, NM 88240
ŀ	4. Type of Service: Article Number
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