

NEW MEXICO OIL CONSERVATION COMMISSION
APPLICATION TO DISPOSE OF SALT WATER BY INJECTION INTO A POROUS FORMATION

OPERATOR Continental Oil Company		JUL 31 1968 Box 460, Hobbs, New Mexico	
LEASE NAME Lockhart B-13A	WELL NO. 4	FIELD Terry-Blaine	COUNTY Lea
LOCATION UNIT LETTER <u>K</u> ; WELL IS LOCATED <u>1980</u> FEET FROM THE <u>South</u> LINE AND <u>1980</u> FEET FROM THE <u>West</u> LINE, SECTION <u>13</u> TOWNSHIP <u>21S</u> RANGE <u>37E</u> N.M.P.M.			

CASING AND TUBING DATA					
NAME OF STRING	SIZE	SETTING DEPTH	SACKS CEMENT	TOP OF CEMENT	TOP DETERMINED BY
SURFACE CASING	10 3/4" OD	256'	250	surface	circ.
INTERMEDIATE	7 5/8" OD	3149'	1045'	585'	Temp. Survey
LONG STRING	5 1/2" OD	6049'	520	3038'	Temp. Survey
TUBING	2 3/8" OD	4475'	NAME, MODEL AND DEPTH OF TUBING PACKER Baker Tension Model AD or equivalent @ 4475'		
NAME OF PROPOSED INJECTION FORMATION San Andres			TOP OF FORMATION 4108'		BOTTOM OF FORMATION 5305'
IS INJECTION THROUGH TUBING, CASING, OR ANNULUS?		PERFORATIONS OR OPEN HOLES?	PROPOSED INTERVAL(S) OF INJECTION		
Tubing		Perfs.	4510-70', 4610'-50', 4955-95', 5045-5125'		
IS THIS A NEW WELL DRILLED FOR DISPOSAL?	IF ANSWER IS NO, FOR WHAT PURPOSE WAS WELL ORIGINALLY DRILLED?		HAS WELL EVER BEEN PERFORATED IN ANY ZONE OTHER THAN THE PROPOSED INJECTION ZONE?		
No	Producing Oil Well		Yes		
LIST ALL SUCH PERFORATED INTERVALS AND SACKS OF CEMENT USED TO SEAL OFF OR SQUEEZE EACH					
Set C.I. Bridging Plug @ 5150' Capped w/1 sack cement					
DEPTH OF BOTTOM OF DEEPEST FRESH WATER ZONE IN THIS AREA		DEPTH OF BOTTOM OF NEXT HIGHER OIL OR GAS ZONE IN THIS AREA		DEPTH OF TOP OF NEXT LOWER OIL OR GAS ZONE IN THIS AREA	
200'		None		5679 T/Blaine	
ANTICIPATED DAILY INJECTION VOLUME (BBLS.)	MINIMUM	MAXIMUM	OPEN OR CLOSED TYPE SYSTEM	IS INJECTION TO BE BY GRAVITY OR PRESSURE?	APPROX. PRESSURE (PSI)
	250	525	closed	Gravity	0
ANSWER YES OR NO WHETHER THE FOLLOWING WATERS ARE MINERALIZED TO SUCH A DEGREE AS TO BE UNFIT FOR DOMESTIC, STOCK, IRRIGATION, OR OTHER GENERAL USE -			WATER TO BE DISPOSED OF	NATURAL WATER IN DISPOSAL ZONE	ARE WATER ANALYSES ATTACHED?
			Yes	Yes	Yes
NAME AND ADDRESS OF SURFACE OWNER (OR LESSEE, IF STATE OR FEDERAL LAND)					
Eva Mae Tousaint, Wayne C. Stephens, Frances Marion Stephens, Jr. & William O. Stephens, Box 115, Eunice, New Mexico					
LIST NAMES AND ADDRESSES OF ALL OPERATORS WITHIN ONE-HALF (1/2) MILE OF THIS INJECTION WELL					
Gulf Oil Corp. Drawer 1938, Roswell, New Mexico					
Western Oil Fields, Box 1147, Hobbs, New Mexico					
Mobil Oil Company, Box 1800, Hobbs, N.M.					
HAVE COPIES OF THIS APPLICATION BEEN SENT TO EACH OF THE FOLLOWING?		SURFACE OWNER		EACH OPERATOR WITHIN ONE-HALF MILE OF THIS WELL	
		Yes		Yes	
ARE THE FOLLOWING ITEMS ATTACHED TO THIS APPLICATION (SEE RULE 701-B)		PLAT OF AREA		ELECTRICAL LOG	
		Yes		Yes	
				DIAGRAMMATIC SKETCH OF WELL	
				Yes	

I hereby certify that the information above is true and complete to the best of my knowledge and belief.


 (Signature)

Assistant Division Manager

(Title)

7-23-68

(Date)

NOTE: Should waivers from the State Engineer, the surface owner, and all operators within one-half mile of the proposed injection well, not accompany this application, the New Mexico Oil Conservation Commission will hold the application for a period of 15 days from the date of receipt by the Commission's Santa Fe office. If at the end of the 15-day waiting period no protest has been received by the Santa Fe office, the application will be processed. If a protest is received, the application will be set for hearing, if the applicant so requests. SEE RULE 701.



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field _____

Lease Wantz-Hare #1Sampling Date 11/30/67Type of Sample Separators

WATER ANALYSIS

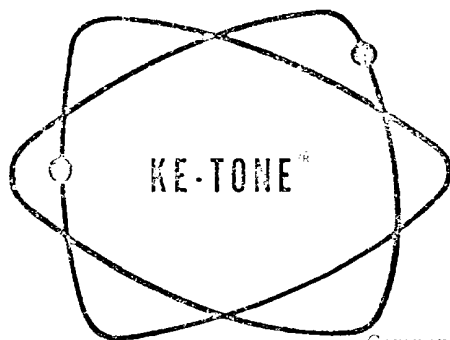
IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	471.06	9440
Magnesium (Mg++)	162.10	1971
Sodium (Na+) (calculated)	1586.01	36,462
Iron		82
Bicarbonate (HCO ₃ -)	1.10	67
Carbonate (CO ₃ -)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO ₄ -)	35.30	1700
Chloride (Cl-)	2182.68	77,400
6.1 ^{ph} c 68°F =		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	633.16	31,658
Carbonate Hardness as CaCO ₃ (temporary)	1.10	55
Non-Carbonate Hardness as CaCO ₃ (permanent)	532.06	31,603
Alkalinity as CaCO ₃	1.10	55
Specific Gravity c 68° F		

MOORE BUSINESS FORMS INC.

* mg/l = milligrams per Liter

* me/l = milliequivalents per Liter

Make Water Work



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil CompanyField Big Horn FieldLease Hawk B-3

Sampling Date

7/5/68

Type of Sample _____

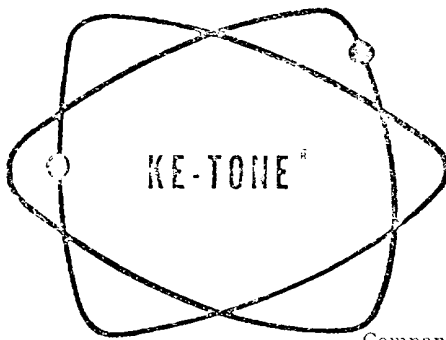
WATER ANALYSIS

IONIC FORM	me/l *	mg/l *
Calcium (Ca++)	369.26	7400
Magnesium (Mg++)	114.23	1389
Sodium (Na+) (cal.)	1532.74	35,238
Bicarbonate (HCO ₃ -)	1.80	109
Carbonate (CO ₃ --)	NOT	FOUND
Hydroxide (OH-)	NOT	FOUND
Sulphate (SO ₄ -)	29.15	1400
Chloride (Cl-)	1985.28	70,400
6.7 pH @ 68 ° F		
Dissolved Solids on Evap. at 103° - 105° C		
Hardness as Ca CO ₃	483.49	24,175
Carbonate Hardness, as CaCO ₃ (temporary)	1.80	90
Non-Carbonate Hardness as CaCO ₃ (permanent)	481.69	24,085
Alkalinity as CaCO ₃	1.80	90
Specific Gravity @ 68° F	1.080	

* mg/l = milligrams per Liter

* me/l = milliequivalents per Liter

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## UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil CompanyField Tulsa  
Lease B-15 No. 1Lease Hawk B-9Sampling Date 7/5/68

Type of Sample \_\_\_\_\_

## WATER ANALYSIS

| IONIC FORM                                              | me/l *  | mg/l *  |
|---------------------------------------------------------|---------|---------|
| Calcium (Ca <sup>++</sup> )                             | 542.91  | 10,880  |
| Magnesium (Mg <sup>++</sup> )                           | 254.20  | 3091    |
| Sodium (Na <sup>+</sup> ) (cal.)                        | 2587.99 | 59,498  |
| Bicarbonate (HCO <sub>3</sub> <sup>-</sup> )            | 3.80    | 231     |
| Carbonate (CO <sub>3</sub> <sup>-</sup> )               | NOT     | FOUND   |
| Hydroxide (OH <sup>-</sup> )                            | NOT     | FOUND   |
| Sulphate (SO <sub>4</sub> <sup>-</sup> )                | 25.50   | 1225    |
| Chloride (Cl <sup>-</sup> )                             | 3355.80 | 119,000 |
| 6.3 pH @ 68 ° F                                         |         |         |
| Dissolved Solids on Evap. at 103° - 105° C              |         |         |
| Hardness as Ca CO <sub>3</sub>                          | 797.11  | 39,853  |
| Carbonate Hardness, as CaCO <sub>3</sub> (temporary)    | 3.80    | 190     |
| Non-Carbonate Hardness as CaCO <sub>3</sub> (permanent) | 793.31  | 39,666  |
| Alkalinity as CaCO <sub>3</sub>                         | 3.80    | 190     |
| Specific Gravity @ 68° F                                | 1.125   |         |

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\* me/l = milliequivalents per Liter

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UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field Terry Blinberry

Lease Lockhart B-13 Sampling Date 11/30/67

Type of Sample Separators

WATER ANALYSIS

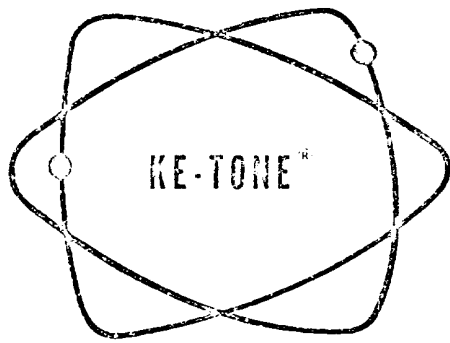
| IONIC FORM | me/l * | mg/l * |
|---|---------|---------|
| Calcium (Ca++) | 798.40 | 16,000 |
| Magnesium (Mg++) | 442.12 | 5376 |
| Sodium (Na+) (calculated) | 4360.58 | 100,250 |
| Iron (dissolved; iron) | | |
| Bicarbonate (HCO ₃) | 2.20 | 134 |
| Carbonate (CO ₃ -) | NOT | FOUND |
| Hydroxide (OH-) | NOT | FOUND |
| Sulphate (SO ₄ -) | 15.30 | 735 |
| Chloride (Cl -) | 5583.60 | 198,000 |
| 6.6h c 68 °F | | |
| Dissolved Solids on Evap. at 103° - 105° C | | |
| Hardness as Ca CO ₃ | 1240.52 | 62,026 |
| Carbonate Hardness as CaCO ₃ (temporary) | 2.20 | 110 |
| Non-Carbonate Hardness as CaCO ₃ (permanent) | 1238.32 | 61,916 |
| Alkalinity as CaCO ₃ | | |
| Specific Gravity c 68° F 1.210 | | |

MOORE BUSINESS FORMS INC.

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* me/l = milliequivalents per Liter

Makes Water Work



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 38240

Company Continental Oil CompanyField BlaineberryLease Lockhart Sampling Date 11/30/67Type of Sample Separators

WATER ANALYSIS

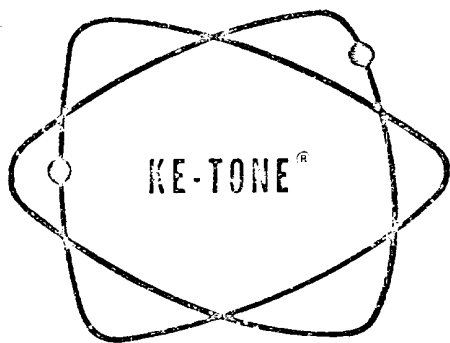
| IONIC FORM | me/l * | mg/l * |
|---|---------|---------|
| Calcium (Ca++) | 459.08 | 9200 |
| Magnesium (Mg++) | 257.90 | 3136 |
| Sodium (Na+) (calculated) | 2358.42 | 53,990 |
| Iron | | I.W. |
| Bicarbonate (HCO ₃) | 2.20 | 134 |
| Carbonate (CO ₃ -) | NOT | FOUND |
| Hydroxide (OH-) | NOT | FOUND |
| Sulphate (SO ₄ -) | 45.80 | 2200 |
| Chloride (Cl-) | 3017.40 | 107,900 |
| 6.7 ^{ph} c 68 °F | | |
| Dissolved Solids on Evap. at 103° - 105° C | | |
| Hardness as Ca CO ₃ | 716.98 | 35,849 |
| Carbonate Hardness as CaCO ₃ (temporary) | 2.20 | 110 |
| Non-Carbonate Hardness as CaCO ₃ (permanent) | 714.78 | 35,739 |
| Alkalinity as CaCO ₃ | 2.20 | 110 |
| Specific Gravity c 68° F I. W. | | |

MOORE BUSINESS FORMS, INC.

* mg/l = milligrams per Liter

* me/l = milliequivalents per Liter

Make Water Work



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company
 Field Drinkard
 Lease Lockhart B-11 Sampling Date 11/30/67
 Type of Sample Separators

WATER ANALYSIS

| IONIC FORM | me/l | mg/l |
|---|---------|---------|
| Calcium (Ca++) | 618.76 | 12,400 |
| Magnesium (Mg++) | 239.48 | 2912 |
| Sodium (Na+) (calculated) | 3286.13 | 75,548 |
| Iron | | 328 |
| Bicarbonate (HCO ₃ -) | 0.10 | 6 |
| Carbonate (CO ₃ -) | NOT | FOUND |
| Hydroxide (OH-) | NOT | FOUND |
| Sulphate (SO ₄ -) | 27.97 | 1500 |
| Chloride (Cl-) | 4117.20 | 146,000 |
| 5.7 ^{ph} c 68°F | | |
| Dissolved Solids on Evap. at 103° - 105° C | | |
| Hardness as Ca CO ₃ | 858.24 | 42,912 |
| Carbonate Hardness as CaCO ₃ (temporary) | .10 | 5 |
| Non-Carbonate Hardness as CaCO ₃ (permanent) | 858.14 | 42,907 |
| Alkalinity as CaCO ₃ | .10 | 5 |
| Specific Gravity c 68° F 1.155 | | |

MOORE BUSINESS FORMS INC.

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Makes Water Work



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil CompanyField ABOLease Lockhart B-11 #17Sampling Date 12/9/67

Type of Sample _____

WATER ANALYSIS

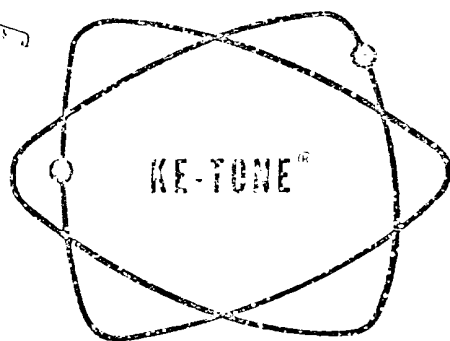
| IONIC FORM | me/l * | mg/l * |
|---|---------|---------|
| Calcium (Ca++) | 878.24 | 17,600 |
| Magnesium (Mg++) | 294.75 | 3584 |
| Sodium (Na+) (calculated) | 2523.68 | 58,019 |
| Bicarbonate (HCO ₃ -) | 1.00 | 61 |
| Carbonate (CO ₃ -) | NOT | FOUND |
| Hydroxide (OH-) | NOT | FOUND |
| Sulphate (SO ₄ -) | 29.67 | 1425 |
| Chloride (Cl-) | 3666.00 | 130,000 |
| 6.2 pH c 68 °F | | |
| Dissolved Solids on Evap. at 103° - 105° C | | |
| Hardness as CaCO ₃ | 1172.00 | 58,650 |
| Carbonate Hardness as CaCO ₃ (temporary) | 1.00 | 50 |
| Non-Carbonate Hardness as CaCO ₃ (permanent) | 1171.00 | 58,600 |
| Alkalinity as CaCO ₃ | 1.00 | 50 |
| Specific Gravity c 68° F | 1.140 | |

MOORE BUSINESS FORMS INC.

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Labos Water Works



UNITED CHEMICAL CORPORATION

OF NEW MEXICO

601 NORTH LEECH

P. O. BOX 1499

HOBBS, NEW MEXICO 88240

Company Continental Oil Company

Field Blinberry

Lease Lockhart B. 13 #6 Sampling Date 12/9/67

Type of Sample _____

WATER ANALYSIS

| IONIC FORM | me/l * | mg/l * |
|---|---------|---------|
| Calcium (Ca++) | 351.30 | 7040 |
| Magnesium (Mg++) | 224.76 | 2733 |
| Sodium (Na+) (calculated) | 2444.10 | 56,190 |
| Bicarbonate (HCO ₃ -) | 1.00 | 115 |
| Carbonate (CO ₃ -) | NOT | FOUND |
| Hydroxide (OH-) | NOT | FOUND |
| Sulphate (SO ₄ -) | 57.26 | 2750 |
| Chloride (Cl-) | 2961.00 | 105,000 |
| 6.7 pH c 68 °F | | |
| Dissolved Solids on Evap. at 103° - 105° C | | |
| Hardness as Ca CO ₃ | 576.96 | 28,803 |
| Carbonate Hardness as CaCO ₃ (temporary) | 1.00 | 95 |
| Non-Carbonate Hardness as CaCO ₃ (permanent) | 574.16 | 28,708 |
| Alkalinity as CaCO ₃ | 1.00 | 95 |
| Specific Gravity @ 68° F | 1.110 | |

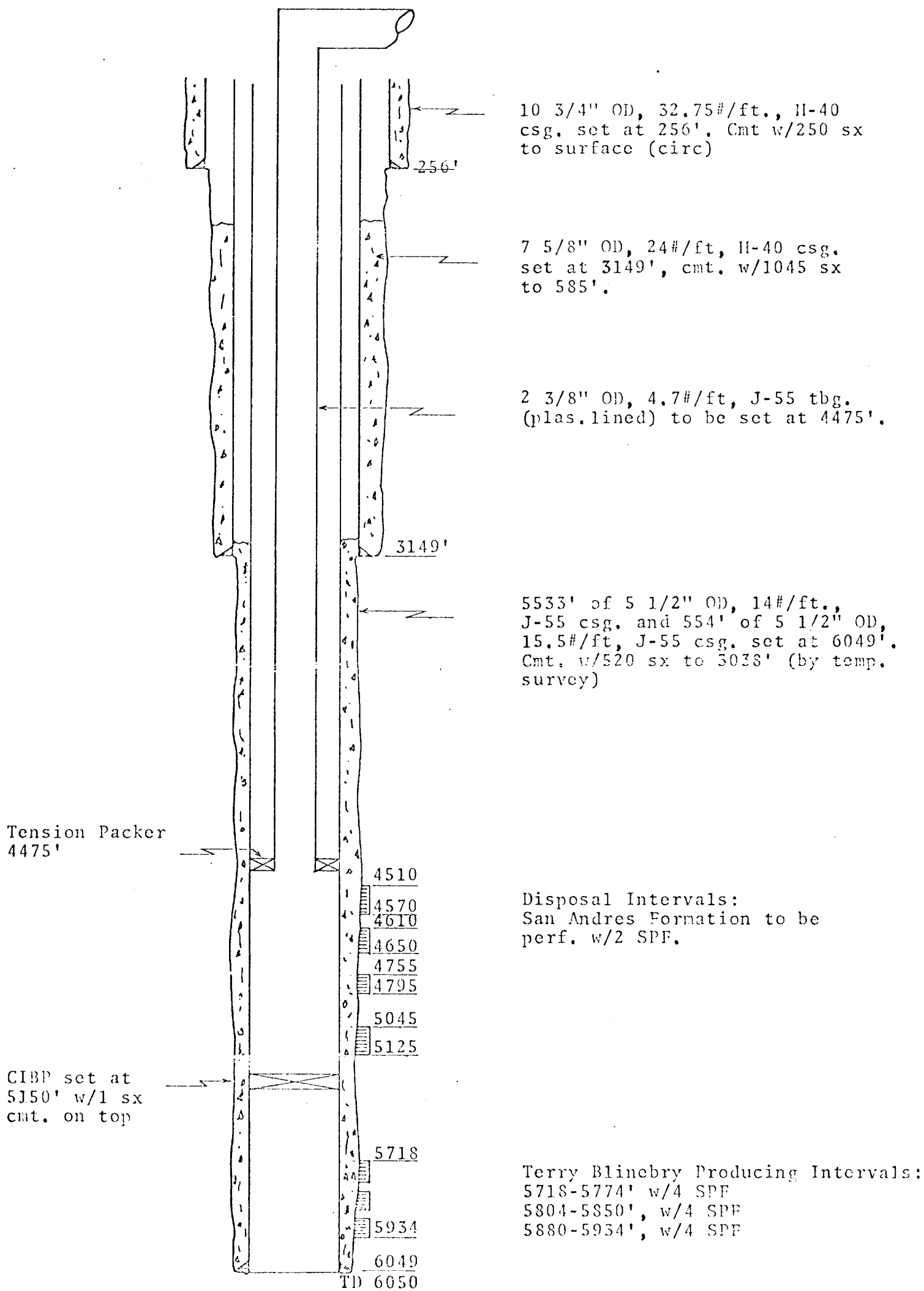
MOORE-BUSINESS FORMS, INC.

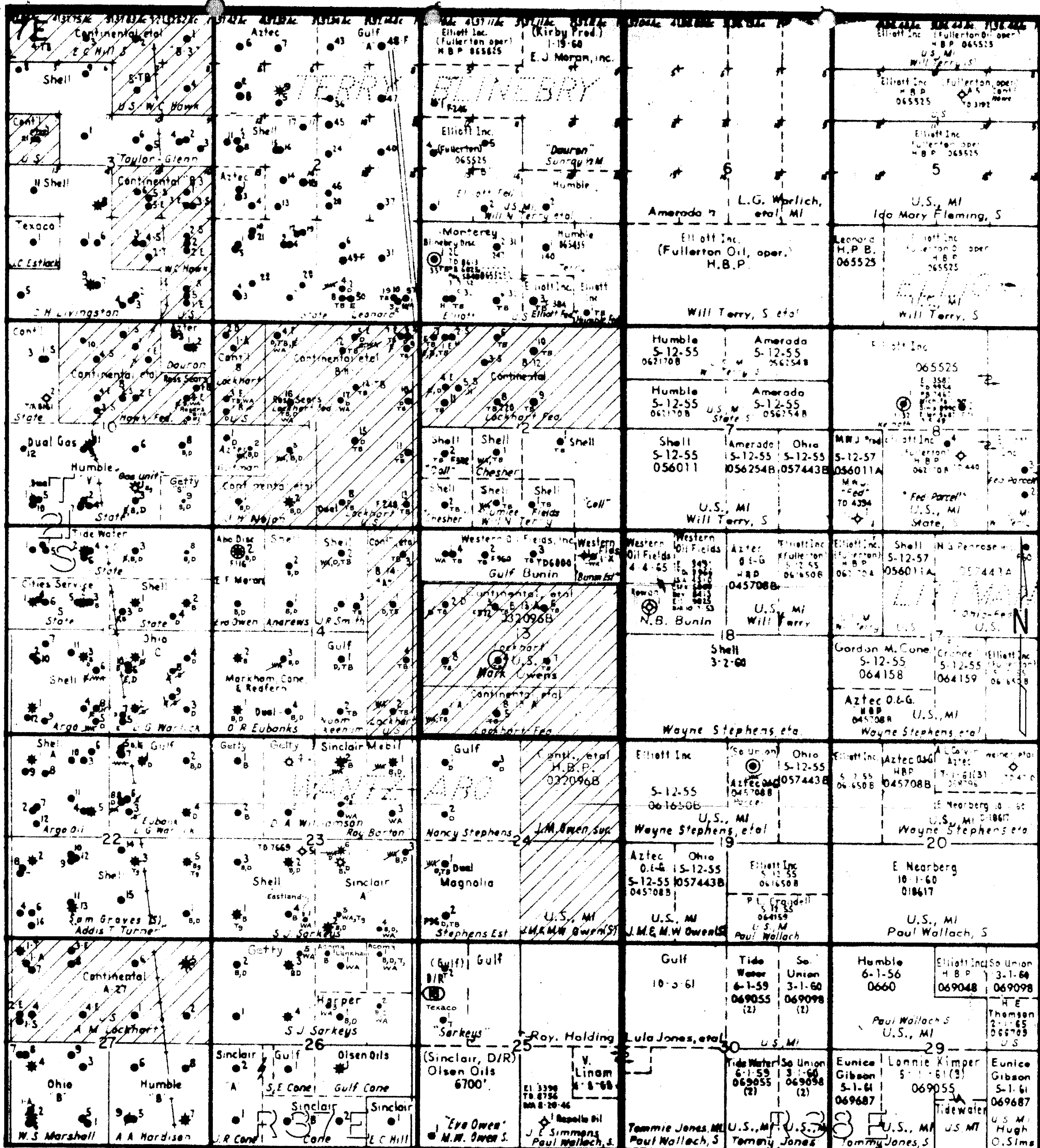
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~~~~~ Makes Water Work ~~~~~

Lockhart B-13 A No. 4  
 1980' FSL & FWL, Sec. 13, T-21S, R-37E  
 Elev. 3433' DF  
 13' above LF





# CONTINENTAL OIL COMPANY PRODUCTION DEPARTMENT—HOBBS DIVISION

## LOCATION PLAT

LEA COUNTY, NEW MEXICO

## LEGEND

- B - Blinebry
- Bg - Blinebry Gas
- D - Drinkard
- E - Brunson Ellenburger
- H - Hare
- TB - Terry Blinebry
- T - Tubb
- Tg - Tubb Gas
- WA - Wantz Abo
- SI or Plugged

SCALE IN FEET  
0 660 1320 1980 2640