

TRETOLITE

PETROLITE

16010 Barker's Point Lane • Houston, Texas 77079
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Reply to: P.O. Box 60180
Midland, TX 79711-0180

NOV 24, 1992

WATER ANALYSIS REPORT

Company : YATES PETROLEUM Date : 10-26-92
Address : ARTESIA, NEW MEXICO Date Sampled : 10-20-92
Lease : MEMOSA *Mimosa AHS Fed* Analysis No. : 2587
Well : #1 I-4-20-24, #4 N-4-20-24
Sample Pt. : SWD TANK

ANALYSIS		mg/L		* meq/L
1. pH	7.5			
2. H2S	290 PPM			
3. Specific Gravity	1.015			
4. Total Dissolved Solids		9105.8		
5. Suspended Solids				
6. Dissolved Oxygen				
7. Dissolved CO2				
8. Oil In Water				
9. Phenolphthalein Alkalinity (CaCO3)				
10. Methyl Orange Alkalinity (CaCO3)		839.0		
11. Bicarbonate	HCO3	1023.6	HCO3	16.8
12. Chloride	Cl	3828.6	Cl	108.0
13. Sulfate	SO4	1625.0	SO4	33.8
14. Calcium	Ca	1058.1	Ca	52.8
15. Magnesium	Mg	967.5	Mg	79.6
16. Sodium (calculated)	Na	602.7	Na	26.2
17. Iron	Fe	0.2		
18. Barium	Ba	0.0		
19. Strontium	Sr	0.0		
20. Total Hardness (CaCO3)		6626.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	= mg/L
53 *Ca <----- *HCO3	Ca(HCO3)2	81.0	16.8
80 *Mg <----- *SO4	CaSO4	68.1	33.8
26 *Na <----- *Cl	CaCl2	55.5	2.2
	Mg(HCO3)2	73.2	
	MgSO4	60.2	
	MgCl2	47.6	79.6
	NaHCO3	84.0	
	Na2SO4	71.0	
	NaCl	58.4	26.2
Saturation Values Dist. Water 20 C			
CaCO3 13 mg/L			
CaSO4 * 2H2O 2090 mg/L			
BaSO4 2.4 mg/L			

REMARKS: MALLETT - BENNETT - FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
SUE CRISS

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SCALE TENDENCY REPORT

Company	: YATES PETROLEUM	Date	: 10-26-92
Address	: ARTESIA, NEW MEXICO	Date Sampled	: 10-20-92
Lease	: MEMOSA	Analysis No.	: 2587
Well	:	Analyst	: SUE CRISS
Sample Pt.	: SWD TANK		

STABILITY INDEX CALCULATIONS (Stiff-Davis Method) CaCO₃ Scaling Tendency

S.I. = 1.5 at 80 deg. F or 27 deg. C
S.I. = 1.6 at 120 deg. F or 49 deg. C

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method) Calcium Sulfate

#

3 S = 2541 at 80 deg. F or 27 deg C
S = 2594 at 120 deg. F or 49 deg C

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Respectfully submitted,
SUE CRISS