

# TRETOLITE



16010 Barker's Point Lane • Houston, Texas 77079  
713 558-5200 • Fax 713 589-4737

Reply to: P.O. Box 60180  
Midland, TX 79711-0180

NOV 24, 1992

## WATER ANALYSIS REPORT

Company : YATES PETROLEUM  
Address : ARTESIA, NEW MEXICO  
Lease : MEMOSA Mimosa AHS Fed  
Well : #1 I-4-20-24, #4 N-4-20-24  
Sample Pt. : SWD TANK

Date : 10-26-92  
Date Sampled : 10-20-92  
Analysis No. : 2587

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)	839.0	HCO3 16.8
10. Methyl Orange Alkalinity (CaCO3)	1023.6	Cl 108.0
11. Bicarbonate	3828.6	SO4 33.8
12. Chloride	1625.0	Ca 52.8
13. Sulfate	1058.1	Mg 79.6
14. Calcium	967.5	Na 26.2
15. Magnesium	602.7	
16. Sodium (calculated)	0.2	
17. Iron	0.0	
18. Barium	0.0	
19. Strontium	0.0	
20. Total Hardness (CaCO3)	6626.0	

## PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	
53	*Ca <----- *HCO3
80	*Mg <----- *SO4
26	*Na <----- *Cl
	17
	34
	108

Saturation Values Dist. Water 20 C  
CaCO3 13 mg/L  
CaSO4 \* 2H2O 2090 mg/L  
BaSO4 2.4 mg/L

Compound	Eqv wt X meq/L	= mg/L
Ca(HCO3)2	81.0	16.8
CaSO4	68.1	33.8
CaCl2	55.5	2.2
Mg(HCO3)2	73.2	
MgSO4	60.2	79.6
MgCl2	47.6	
NaHCO3	84.0	
Na2SO4	71.0	26.2
NaCl	58.4	1532

REMARKS: MALLETT - BENNETT - FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
SUE CRISS

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## SCALE TENDENCY REPORT

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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

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

2

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

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
SUE CRISS