

TRETOLITE®

Chemicals and Services

PETROLITE

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WATER ANALYSIS REPORT

Company : YATES PETROLEUM
Address : ARTESIA, NEW MEXICO
Lease : CHAMPLIN "UL"
Well : SWD
Sample Pt. : TANK

Date : 10/28/92
Date Sampled : 10/25/92
Analysis No. : 212

ANALYSIS	mg/L	* meq/L
1. pH	5.5	
2. H2S	10 PPM	
3. Specific Gravity	1.190	
4. Total Dissolved Solids	297145.3	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	NR	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)		
11. Bicarbonate	HCO3 1.2	HCO3 0.0
12. Chloride	Cl 187440.0	Cl 5287.4
13. Sulfate	SO4 175.0	SO4 3.6
14. Calcium	Ca 38160.0	Ca 1904.2
15. Magnesium	Mg 7287.6	Mg 599.6
16. Sodium (calculated)	Na 64081.5	Na 2787.4
17. Iron	Fe 0.0	
18. Barium	Ba 0.0	
19. Strontium	Sr 0.0	
20. Total Hardness (CaCO3)	125300.0	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
1904 *Ca <----- *HCO3	Ca(HCO3)2	81.0	0.0	2
----- /----->	CaSO4	68.1	3.6	248
600 *Mg -----> *SO4	CaCl2	55.5	1900.5	105460
----- <----- /	Mg(HCO3)2	73.2		
2787 *Na -----> *Cl	MgSO4	60.2		
-----	MgCl2	47.6	599.6	28542
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	2787.4	162894
BaSO4 2.4 mg/L				

REMARKS:

----- L. MALLET / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
STEVE TIGERT

PETROLITE

SCALE TENDENCY REPORT

Company	: YATES PETROLEUM	Date	: 10/28/92
Address	: ARTESIA, NEW MEXICO	Date Sampled	: 10/25/92
Lease	: CHAMPLIN "UL"	Analysis No.	: 212
Well	: SWD	Analyst	: STEVE TIGERT
Sample Pt.	: TANK		

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

S.I. =	-1.7	at	60 deg. F	or	16 deg. C
S.I. =	-1.7	at	80 deg. F	or	27 deg. C
S.I. =	-1.8	at	100 deg. F	or	38 deg. C
S.I. =	-1.8	at	120 deg. F	or	49 deg. C
S.I. =	-1.8	at	160 deg. F	or	71 deg. C

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

S =	275	at	60 deg. F	or	16 deg C
S =	306	at	80 deg. F	or	27 deg C
S =	324	at	100 deg. F	or	38 deg C
S =	332	at	120 deg. F	or	49 deg C
S =	331	at	160 deg. F	or	71 deg C

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Respectfully submitted,
STEVE TIGERT