

TRETOLITE

Chemicals and Services

PETROLITE

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WATER ANALYSIS REPORT

Company : POGO PRODUCING
Address : MIDLAND, TEXAS
Lease : CALMON #5
Well : SWD
Sample Pt. : UNKNOWN

Date : 09/03/93
Date Sampled : 09/02/93
Analysis No. : 330

ANALYSIS		mg/L	* meq/L
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1.	pH	5.1	
2.	H ₂ S	0 PPM	
3.	Specific Gravity	1.165	
4.	Total Dissolved Solids	261670.1	
5.	Suspended Solids	NR	
6.	Dissolved Oxygen	NR	
7.	Dissolved CO ₂	NR	
8.	Oil In Water	NR	
9.	Phenolphthalein Alkalinity (CaCO ₃)		
10.	Methyl Orange Alkalinity (CaCO ₃)		
11.	Bicarbonate	HCO ₃ 61.0	HCO ₃ 1.0
12.	Chloride	Cl 161880.0	Cl 4566.4
13.	Sulfate	SO ₄ 50.0	SO ₄ 1.0
14.	Calcium	Ca 16400.0	Ca 818.4
15.	Magnesium	Mg 3338.4	Mg 274.7
16.	Sodium (calculated)	Na 79900.7	Na 3475.5
17.	Iron	Fe 40.0	
18.	Barium	Ba NR	
19.	Strontium	Sr NR	
20.	Total Hardness (CaCO ₃)	54700.0	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound Equiv wt X meq/L = mg/L			
+-----+				-----			
818	*Ca <-----	*HCO3	1	Ca(HCO3)2	81.0	1.0	81
-----	/----->		-----	CaSO4	68.1	1.0	71
275	*Mg ----->	*SO4	1	CaCl2	55.5	816.3	45298
-----	<-----/		-----	Mg(HCO3)2	73.2		
3475	*Na ----->	*Cl	4566	MgSO4	60.2		
+-----+			+-----+	MgCl2	47.6	274.7	13075
Saturation Values Dist. Water 20 C				NaHCO3	84.0		
CaCO3		13 mg/L		Na2SO4	71.0		
CaSO4 * 2H2O		2090 mg/L		NaCl	58.4	3475.5	203106
BaSO4		2.4 mg/L					

REMARKS:

----- A. MILLER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
STEVE TIGERT