

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 <----- *HCO ₃	Ca(HCO ₃) ₂	81.0	1.0	81
----- /----->	CaSO ₄	68.1	1.0	71
275 *Mg -----> *SO ₄	CaCl ₂	55.5	816.3	45298
----- <----- /	Mg(HCO ₃) ₂	73.2		
3475 *Na -----> *Cl	MgSO ₄	60.2		
-----	MgCl ₂	47.6	274.7	13075
Saturation Values Dist. Water 20 C	NaHCO ₃	84.0		
CaCO ₃ 13 mg/L	Na ₂ SO ₄	71.0		
CaSO ₄ * 2H ₂ O 2090 mg/L	NaCl	58.4	3475.5	203105
BaSO ₄ 2.4 mg/L				

REMARKS:

----- A. MILLER / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
STEVE TIGERT