

TRETOLITE

ATTACHMENT NO. 4

Chemicals and Services

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WATER ANALYSIS REPORT

Company : PHILLIPS
Address :
Lease : LUKE FEDERAL
Well : #2
Sample Pt. : WELLHEAD

Date : 02/28/92
Date Sampled : 02/27/92
Analysis No. : 213

ANALYSIS	mg/L	* meq/L
1. pH	5.8	
2. H2S	5 PPM	
3. Specific Gravity	1.195	
4. Total Dissolved Solids	120562.2	
5. Suspended Solids	NR	
6. Dissolved Oxygen	NR	
7. Dissolved CO2	140 PPM	
8. Oil In Water	NR	
9. Phenolphthalein Alkalinity (CaCO3)		
10. Methyl Orange Alkalinity (CaCO3)	50.0	
11. Bicarbonate	HCO3 61.0	HCO3 1.0
12. Chloride	Cl 76891.0	Cl 2169.0
13. Sulfate	SO4 350.0	SO4 7.3
14. Calcium	Ca 31879.6	Ca 1590.8
15. Magnesium	Mg 2392.1	Mg 196.8
16. Sodium (calculated)	Na 8958.9	Na 389.7
17. Iron	Fe 29.5	
18. Barium	Ba 0.0	
19. Strontium	Sr 0.0	
20. Total Hardness (CaCO3)	89460.4	

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt	X meq/L	= mg/L
1591 *Ca <----- *HCO3	Ca(HCO3)2	81.0	1.0	81
----- /----->	CaSO4	68.1	7.3	496
197 *Mg -----> *SO4	CaCl2	55.5	1582.5	87814
----- <----- /	Mg(HCO3)2	73.2		
390 *Na -----> *Cl	MgSO4	60.2		
----- +----- +	MgCl2	47.6	196.8	9369
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	389.7	22773
BaSO4 2.4 mg/L				

REMARKS: TEMPERATURE 86 DEGREES F
----- S. HOLLINGER / MLAB / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON