

TRETOLITE DIVISION

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WATER ANALYSIS REPORT

Reply to:
P.O. Box FF
Artesia, NM
88211-7531

Company : YATES PETROLEUM
Address : ARTESIA
Lease : BRANNIGAN "ANF"
Well : #2
Sample Pt. : WELLHEAD
Date : 12/19/94
Date Sampled : 12/19/94
Analysis No. : 978

ANALYSIS		mg/L		* meq/L
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1. pH	6.6			
2. H2S	250			
3. Specific Gravity	1.020			
4. Total Dissolved Solids		18119.5		
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	878.0	HCO3	14.4
12. Chloride	Cl	8946.0	Cl	252.4
13. Sulfate	SO4	1500.0	SO4	31.2
14. Calcium	Ca	1400.0	Ca	69.9
15. Magnesium	Mg	-169.1	Mg	-13.9
16. Sodium (calculated)	Na	5564.4	Na	242.0
17. Iron	Fe	0.3		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		2800.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter		Compound	Equiv wt	X meq/L	= mg/L
+-----+					
70 *Ca <----- *HCO3	14	Ca(HCO3)2	81.0	14.4	1166
/----->		CaSO4	68.1	31.2	2126
-14 *Mg -----> *SO4	31	CaCl2	55.5	24.2	1345
<-----/		Mg(HCO3)2	73.2		
242 *Na -----> *Cl	252	MgSO4	60.2		
+-----+	+-----+	MgCl2	47.6		
Saturation Values Dist. Water 20 C		NaHCO3	84.0		
CaCO3	13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O	2090 mg/L	NaCl	58.4	228.1	13332
BaSO4	2.4 mg/L				

REMARKS: 0.0%

Petrolite Oilfield Chemicals Group

Respectfully submitted,
A. MILLER