

TRETOLITE[®]

Chemicals and Services

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WATER ANALYSIS REPORT

Company : YATES PETROLEUM
Address : ARTESIA, NEW MEXICO
Lease : ADELINE
Well : #2
Sample Pt. : WELLHEAD

Date : 02/19/93
Date Sampled : 02/17/93
Analysis No. : 030

ANALYSIS		mg/L		* meq/L
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1. pH	5.3			
2. H2S	0			
3. Specific Gravity	1.185			
4. Total Dissolved Solids		296600.5		
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	73.2	HCO3	1.2
12. Chloride	Cl	184458.0	Cl	5203.3
13. Sulfate	SO4	150.0	SO4	3.1
14. Calcium	Ca	24680.0	Ca	1231.5
15. Magnesium	Mg	4679.8	Mg	385.0
16. Sodium (calculated)	Na	82559.6	Na	3591.1
17. Iron	Fe	NR		
18. Barium	Ba	NR		
19. Strontium	Sr	NR		
20. Total Hardness (CaCO3)		80900.0		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter	Compound	Equiv wt X meq/L	=	mg/L
+-----+				
1232 *Ca <----- *HCO3	Ca(HCO3)2	81.0	1.2	97
----- /----->	CaSO4	68.1	3.1	213
385 *Mg -----> *SO4	CaCl2	55.5	1227.2	68098
----- <----- /	Mg(HCO3)2	73.2		
3591 *Na -----> *Cl	MgSO4	60.2		
+-----+	MgCl2	47.6	385.0	18328
Saturation Values Dist. Water 20 C	NaHCO3	84.0		
CaCO3 13 mg/L	Na2SO4	71.0		
CaSO4 * 2H2O 2090 mg/L	NaCl	58.4	3591.1	209864
BaSO4 2.4 mg/L				

REMARKS:

----- L. MALLET / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
STEVE TIGERT