

# TRETOLITE

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## WATER ANALYSIS REPORT

Company : SANTA FE ENERGY  
Address :  
Lease : SPRINKLE FEDERAL  
Well : #4  
Sample Pt. : TANK

Date : 2/18/94  
Date Sampled : 2/18/94  
Analysis No. : 101

| ANALYSIS                              | mg/L     | * meq/L   |
|---------------------------------------|----------|-----------|
| 1. pH                                 | 5.8      |           |
| 2. H2S                                | 0 PPM    |           |
| 3. Specific Gravity                   | 1.165    |           |
| 4. Total Dissolved Solids             | 259436.1 |           |
| 5. Suspended Solids                   | NR       |           |
| 6. Dissolved Oxygen                   | 0 PPM    |           |
| 7. Dissolved CO2                      | 60 PPM   |           |
| 8. Oil In Water                       | NR       |           |
| 9. Phenolphthalein Alkalinity (CaCO3) |          |           |
| 10. Methyl Orange Alkalinity (CaCO3)  |          |           |
| 11. Bicarbonate HCO3                  | 85.0     | HCO3 1.4  |
| 12. Chloride Cl                       | 161880.0 | Cl 4566.4 |
| 13. Sulfate SO4                       | 300.0    | SO4 6.2   |
| 14. Calcium Ca                        | 27040.0  | Ca 1349.3 |
| 15. Magnesium Mg                      | 4511.3   | Mg 371.2  |
| 16. Sodium (calculated) Na            | 65604.7  | Na 2853.6 |
| 17. Iron Fe                           | 15.0     |           |
| 18. Barium Ba                         | NR       |           |
| 19. Strontium Sr                      | NR       |           |
| 20. Total Hardness (CaCO3)            | 86100.0  |           |

## PROBABLE MINERAL COMPOSITION

| *milli equivalents per Liter       | Compound    | Equiv wt | X meq/L | = mg/L |
|------------------------------------|-------------|----------|---------|--------|
| 1349 *Ca <----- *HCO3              | Ca (HCO3) 2 | 81.0     | 1.4     | 113    |
| ----- /----->                      | CaSO4       | 68.1     | 6.2     | 425    |
| 371 *Mg -----> *SO4                | CaCl2       | 55.5     | 1341.7  | 74449  |
| ----- <----- /                     | Mg (HCO3) 2 | 73.2     |         |        |
| 2854 *Na -----> *Cl                | MgSO4       | 60.2     |         |        |
| -----                              | MgCl2       | 47.6     | 371.2   | 17669  |
| Saturation Values Dist. Water 20 C | NaHCO3      | 84.0     |         |        |
| CaCO3 13 mg/L                      | Na2SO4      | 71.0     |         |        |
| CaSO4 * 2H2O 2090 mg/L             | NaCl        | 58.4     | 2853.6  | 166766 |
| BaSO4 2.4 mg/L                     |             |          |         |        |

REMARKS: BACTERIA CULTURED  
----- R. HARDIN / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,  
STEVE TIGERT