

Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Coastal Oil & Gas
 Lease : Sawyer
 Well No. : Marr #3 NE/SE Sec 33-T9S-R37E
 Salesman : Lea Co, NM

Sample Loc. :
 Date Analyzed: 04-January-1996
 Date Sampled :

ANALYSIS

1. pH 5.840
 2. Specific Gravity 60/60 F. 1.155
 3. CaCO₃ Saturation Index 80 F. +0.978
 140 F. +2.738

Dissolved Gases

4. Hydrogen Sulfide Present
 5. Carbon Dioxide Not Determined
 6. Dissolved Oxygen Not Determined

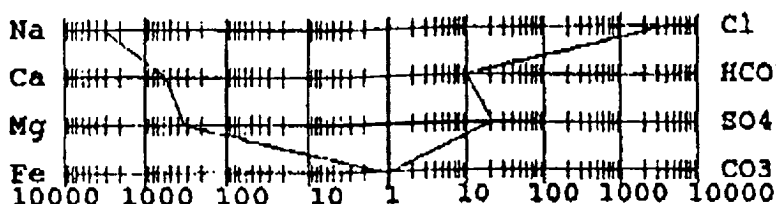
Cations

- | | | | | |
|----------------------------------|----------------|---|--------|----------|
| 7. Calcium (Ca ⁺⁺) | 11,022 | / | 20.1 = | 548.36 |
| 8. Magnesium (Mg ⁺⁺) | 3,890 | / | 12.2 = | 318.85 |
| 9. Sodium (Na ⁺) | 71,489 | / | 23.0 = | 3,108.22 |
| 10. Barium (Ba ⁺⁺) | Not Determined | | | |

Anions

- | | | | | |
|--|------------|---|--------|----------|
| 11. Hydroxyl (OH ⁻) | 0 | / | 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ²⁻) | 0 | / | 30.0 = | 0.00 |
| 13. Bicarbonate (HCO ₃ ⁻) | 596 | / | 61.1 = | 9.75 |
| 14. Sulfate (SO ₄ ²⁻) | 1,050 | / | 48.8 = | 21.52 |
| 15. Chloride (Cl ⁻) | 139,968 | / | 35.5 = | 3,942.76 |
| 16. Total Dissolved Solids | 228,015 | | | |
| 17. Total Iron (Fe) | 1 | / | 18.2 = | 0.05 |
| 18. Total Hardness As CaCO ₃ | 43,539 | | | |
| 19. Resistivity @ 75 F. (Calculated) | 0.001 /cm. | | | |

LOGARITHMIC WATER PATTERN



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION			
COMPOUND	EQ. WT. X	*meq/L =	mg/L.
Ca(HCO ₃) ₂	81.04	9.75	791
CaSO ₄	68.07	21.52	1,465
CaCl ₂	55.50	517.09	28,698
Mg(HCO ₃) ₂	73.17	0.00	0
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	318.85	15,184
NaHCO ₃	84.00	0.00	0
NaSO ₄	71.03	0.00	0
NaCl	58.46	3,106.82	181,625

*Milli Equivalents per Liter

This water is somewhat corrosive due to the pH observed on analysis.
 The corrosivity is increased by the content of mineral salts, and the presence of H₂S in solution.