

FRESH WATER ANALYSIS

Fresh Water - T105-R37E-1a Co, NM Permian Treating Chemicals

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Devon Energy
Lease : CW Trainer
Well No. : Fresh Water Well
Salesman :

Sample Loc. :
Date Analyzed: 01-January-1996
Date Sampled :

ANALYSIS

1. pH 8.090
2. Specific Gravity 60/60 F. 1.003
3. CaCO₃ Saturation Index 140 F. +1.606

Dissolved Gases

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

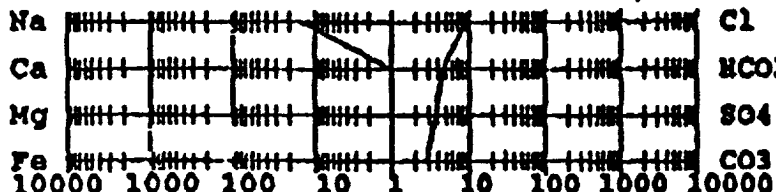
Cations

- | | | | | |
|----------------------------------|--------------|---|--------|-------|
| 7. Calcium (Ca ⁺⁺) | 10 | / | 20.1 = | 0.50 |
| 8. Magnesium (Mg ⁺⁺) | 6 | / | 12.2 = | 0.49 |
| 9. Sodium (Na ⁺) | 348 | / | 23.0 = | 15.13 |
| 10. Barium (Ba ⁺⁺) | Below 10 (6) | | | |
- (Calculated)

Anions

- | | | | | |
|--|------------|---|--------|------|
| 11. Hydroxyl (OH ⁻) | 0 | / | 17.0 = | 0.00 |
| 12. Carbonate (CO ₃ ²⁻) | 77 | / | 30.0 = | 2.57 |
| 13. Bicarbonate (HCO ₃ ⁻) | 259 | / | 61.1 = | 4.24 |
| 14. Sulfate (SO ₄ ²⁻) | 165 | / | 48.8 = | 3.38 |
| 15. Chloride (Cl ⁻) | 300 | / | 35.5 = | 8.45 |
| 16. Total Dissolved Solids | 1,088 | | | |
| 17. Total Iron (Fe) | 50 | / | 18.2 = | 0.05 |
| 18. Total Hardness as CaCO ₃ | 50 | | | |
| 19. Resistivity @ 75 F. (Calculated) | 2.963 /cm. | | | |

LOGARITHMIC WATER PATTERN



Calcium Sulfate Solubility Profile



PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT. X	*mg/L = mg/L.	
Ca(HCO ₃) ₂	81.04	0.50	40
CaSO ₄	68.07	0.00	0
CaCl ₂	55.50	0.00	0
Mg(HCO ₃) ₂	73.17	0.49	36
MgSO ₄	60.19	0.00	0
MgCl ₂	47.62	0.00	0
NaHCO ₃	84.00	3.25	273
NaSO ₄	71.03	3.38	240
NaCl	58.46	8.45	494

*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 in solution.