

Water Analysis Report by Baker Petrolite

ARCO PERMIAN
SWEET THING FEDERAL
WELL #UT 2
WELLHEAD

Account Manager
RON MATTHEWS

Summary		Analysis of Sample 108006 @ 75°F					
Sampling Date	3/1/00	Anions	<i>mg/l</i>	<i>meq/l</i>	Cations	<i>mg/l</i>	<i>meq/l</i>
Analysis Date	3/14/00	Chloride	1040	29.6	Sodium	622	27.0
Analyst	JOANNA RAGAN	Bicarbonate	80.0	1.31	Magnesium	6.00	0.49
		Carbonate	0.00	0.00	Calcium	47.0	2.35
TDS (mg/l or g/m ³)	1844.05	Sulfate	1.50	0.03	Strontium	3.50	0.08
Density (g/cm ³ or tonne/m ³)	1.001	Phosphate	N/A	N/A	Barium	1.00	0.01
Anion/Cation Ratio	1.00	Borate	N/A	N/A	Iron	7.50	0.27
		Silicate	N/A	N/A	Potassium	27.0	0.69
Carbon Dioxide	120 PPM	Hydrogen Sulfide		0 PPM	Aluminum	N/A	N/A
Oxygen					Chromium	N/A	N/A
					Copper	N/A	N/A
					Lead	N/A	N/A
		pH at time of sampling		6.40	Manganese	N/A	N/A
		pH at time of analysis			Nickel	N/A	N/A
		pH used in Calculations		6.40			

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000bbl										
Temp.	Gauge Press.	Calcite CaCO ₃		Gypsum CaSO ₄ · 2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄		CO ₂ Press.
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0.	-1.63		-3.77		-3.84		-3.16		-0.62		0.44
100	0.	-1.49		-3.76		-3.77		-3.13		-0.76		0.57
120	0.	-1.34		-3.75		-3.67		-3.10		-0.87		0.71
140	0.	-1.18		-3.72		-3.56		-3.05		-0.95		0.85

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO₂ pressure is actually the calculated CO₂ fugacity. It is usually nearly the same as the CO₂ partial pressure.

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