

JUN 29 2015

Schwerdtfeger A3E

30-045-24583

XTO

County: San Juan

State: NM

#VALUE!

Date: May 13, 2015

Field: Schwerdtfeger

Location: Schwerdtfeger A3E

Formation:

Depth: 0

H & M Precision

Water Analysis Report

Sum +	mg/L	meq/L	Sum -	mg/L	meq/L
* Potassium	0.0	0.00	Sulfate	57.0	1.19 *
Sodium	594.1	25.84	Chloride	1,000.0	28.21
Calcium	35.7	1.78	Carbonate	0.0	0.00
Magnesium	15.0	1.23	Bicarbonate	530.0	8.69
Iron	10.0	0.54	Hydroxide	0.0	0.00
Barium	0.0	0.00	-	0.0	0.00
Strontium	0.0	0.00	-	0.0	0.00
CATIONS	654.8	29.39	ANIONS	1,587.0	38.09

Analysis
Balanced

System Parameters

Total Dissolved Solids @180C	2,242 mg/L
Sample Temperature, 'F	70 F
Sample pH, standard units	10.36 Units
Dissolved Oxygen	0.0 ppm
Carbon Dioxide	0.0 mg/L
Total Sulfide, (TS)	0.0 mg/L
Sulfide Ion, (S)	0 mg/L
Dissolved Hydrogen Sulfide, (TS-S)	0 mg/L
Specific Gravity	1.0017
Resistivity, measured	0 ohm/m^3
Ionic strength	0.036
Sulfate Reducing Bacteria	nd
Aerobic Bacteria	nd
Manganese Level	0 mg/L

Scaling Tendency

CACO3			CASO4			
Temp F	Stiff Davis Index	A index	Temp F	SOLUBILITY Actual	Calculated	S Index
32	2.48	31	50	1.19	26.13	-24.94
50	2.69	31	68	1.19	26.88	-25.69
68	2.89	31	86	1.19	27.60	-26.42
77	3.00	31	104	1.19	27.94	-26.76
86	3.10	31	122	1.19	27.92	-26.73
104	3.30	31	140	1.19	26.94	-25.75
122	3.50	31	158	1.19	25.93	-24.74
140	3.70	31	176	1.19	24.87	-23.68
158	3.89	31				
176	4.08	31				

BASO4 SCALE POSSIBLE

NO

Water Analysis Patern

NOTE: Stiff Davis Index

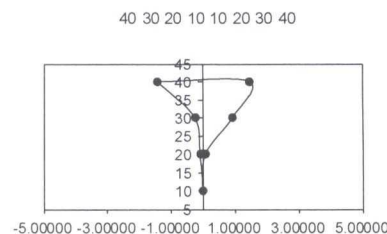
- indicates undersaturation. Scale formation negative.
- 0 indicates the water is at saturation point. Scale unlikely.
- + indicates supersaturation. A positive scaling condition exists.

NOTE: Skillman Method Calcium Sulfate 'S' Index

- indicates undersaturation. Scale formation negative.
- 0 indicates the water is at saturation point. Scale unlikely.
- + indicates supersaturation. A positive scaling condition exists.

NOTE: A Index; worst possible case. Assumes 100% precipitation.

- Units = pounds of scale produced / 1000 bbls. of water.
- A Index < 0 Scale formation negative.
- A Index > 0 Scale formation positive.

Approved: Zech Schaff
05/14/15

v4.01