



DownHole SAT®

FORMATION WATER CHEMISTRY INPUT

POG Resources
Schenk #2
Wellhead

Pro-Stim Chemicals
Ryan Uhland

Report Date: 02-06-2023 Sampled: 01-26-2023 at 1711
Sample #: 15627 Sample ID: WBaten

CATIONS

Calcium (as Ca)	2579
Magnesium (as Mg)	413.00
Barium (as Ba)	0.00
Strontium (as Sr)	0.00
Sodium (as Na)	9618
Potassium (as K)	0.00
Lithium (as Li)	0.00
Ammonia (as NH ₃)	0.00
Aluminum (as Al)	0.00
Iron (as Fe)	7.22
Manganese (as Mn)	0.272
Zinc (as Zn)	0.00
Lead (as Pb)	0.00

ANIONS

Chloride (as Cl)	19978
Sulfate (as SO ₄)	1124
Bromine (as Br)	0.00
Dissolved CO ₂ (as CO ₂)	74.00
Bicarbonate (as HCO ₃)	162.00
Carbonate (as CO ₃)	0.00
Oxalic acid (as C ₂ O ₄)	0.00
Silica (as SiO ₂)	0.00
Phosphate(as PO ₄)	0.00
H ₂ S (as H ₂ S)	0.00
Fluoride (as F)	0.00
Nitrate (as NO ₃)	0.00
Boron (as B)	0.00

PARAMETERS

Calculated T.D.S.	33727
Molar Conductivity	44497
Resistivity	22.47
Sp.Gr.(g/mL)	1.02
Pressure(psia)	14.70
pCO ₂ (psia)	0.00411
pH ₂ S(atm)	0.00
Temperature (°F)	70.00
pH	7.47

CORROSION RATE PREDICTION

CO ₂ - H ₂ S Rate(mpy)	0.00270
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COMMENTS All anions & cations are in mg/l

SGB Solutions
5918 S County Road 1273, Midland, TX 79706



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FORMATION WATER
DEPOSITION POTENTIAL INDICATORS

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SATURATION LEVEL

Calcite (CaCO ₃)	5.56
Aragonite (CaCO ₃)	5.22
Witherite (BaCO ₃)	0.00
Strontianite (SrCO ₃)	0.00
Calcium oxalate (CaC ₂ O ₄)	0.00
Magnesite (MgCO ₃)	0.726
Anhydrite (CaSO ₄)	0.411
Gypsum (CaSO ₄ *2H ₂ O)	0.679
Barite (BaSO ₄)	0.00
Celestite (SrSO ₄)	0.00
Fluorite (CaF ₂)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO ₂)	0.00
Brucite (Mg(OH) ₂)	< 0.001
Magnesium silicate	0.00
Iron hydroxide (Fe(OH) ₃)	843.46
Strengite (FePO ₄ *2H ₂ O)	0.00
Siderite (FeCO ₃)	22.79
Halite (NaCl)	0.00284
Thenardite (Na ₂ SO ₄)	< 0.001
Iron sulfide (FeS)	0.00

FREE ION MOMENTARY EXCESS (ppm)

Calcite (CaCO ₃)	0.634
Aragonite (CaCO ₃)	0.626
Witherite (BaCO ₃)	-48.93
Strontianite (SrCO ₃)	-15.79
Calcium oxalate (CaC ₂ O ₄)	-0.0662
Magnesite (MgCO ₃)	-0.246
Anhydrite (CaSO ₄)	-1018
Gypsum (CaSO ₄ *2H ₂ O)	-407.72
Barite (BaSO ₄)	-0.0908
Celestite (SrSO ₄)	-156.26
Fluorite (CaF ₂)	-14.85
Calcium phosphate	>-0.001
Hydroxyapatite	-921.32
Silica (SiO ₂)	-103.75
Brucite (Mg(OH) ₂)	0.0188
Magnesium silicate	-285.38
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	>-0.001
Siderite (FeCO ₃)	0.854
Halite (NaCl)	-500119
Thenardite (Na ₂ SO ₄)	-185523
Iron sulfide (FeS)	-0.0871

SIMPLE INDICES

Langelier	0.928
Ryznar	5.61
Puckorius	5.44
Larson-Skold Index	219.41
Stiff Davis Index	0.386
Oddo-Tomson	0.259

BOUND IONS

Calcium	2579
Barium	0.00
Carbonate	4.22
Phosphate	0.00
Sulfate	1124

TOTAL

FREE

2420
0.00
0.464
0.00
615.91

OPERATING CONDITIONS

Temperature (°F)	70.00
Time(mins)	3.00