

Imperative Water Analysis Report



SYSTEM IDENTIFICATION

Company: Forty Acres Energy
Location: WEU Central Injection Facility
Sample Source: Pump Transfer
Account Rep: David Garcia

Sample ID#: W-21551

Sample Date: 02-24-2020
Report Date: 02-28-2020

WATER CHEMISTRY

CATIONS		ANIONS	
Calcium(as Ca)	2971	Chloride(as Cl)	43500
Magnesium(as Mg)	885.20	Sulfate(as SO ₄)	2029
Barium(as Ba)	0.478	Dissolved CO ₂ (as CO ₂)	390.00
Strontium(as Sr)	85.13	Bicarbonate(as HCO ₃)	939.40
Sodium(as Na)	23961	H ₂ S (as H ₂ S)	376.00
Potassium(as K)	833.80	Boron(as B)	19.40
Lithium(as Li)	5.07		
Iron(as Fe)	7.71		
Manganese(as Mn)	0.452		

PARAMETERS			
Temperature(°F)	90.00	Sample pH	6.77
Conductivity	102746	Sp.Gr.(g/mL)	1.050
Resistivity	9.73	T.D.S.	78633

SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (atm)	Calcite CaCO ₃		Anhydrite CaSO ₄		Gypsum CaSO ₄ *2H ₂ O		Barite BaSO ₄		Celestite SrSO ₄		Siderite FeCO ₃		Mackinawite FeS		CO ₂ (mpy)	pCO ₂ (atm)
70.00	1.000	5.99	0.246	0.627	-251.56	0.980	-10.35	9.04	0.264	1.03	1.87	18.85	0.322	318.54	0.794	0.0687	0.0992
130.00	10.000	8.23	0.252	0.779	-107.82	0.937	-29.39	2.41	0.174	0.961	-2.41	38.84	0.323	141.64	0.733	0.318	0.992
142.00	19.000	8.20	0.242	0.861	-60.58	0.969	-13.62	1.89	0.140	0.934	-4.11	41.88	0.311	120.36	0.719	0.359	1.88
154.00	28.000	8.10	0.232	0.970	-11.45	0.998	-1.03	1.49	0.0981	0.906	-6.00	44.62	0.299	101.82	0.703	0.430	2.78
166.00	37.000	7.93	0.220	1.11	37.03	1.02	8.82	1.19	0.0463	0.877	-8.09	46.97	0.285	85.76	0.687	0.485	3.67
178.00	46.000	7.68	0.209	1.30	82.94	1.04	16.30	0.945	-0.0174	0.846	-10.40	48.90	0.272	71.93	0.670	0.483	4.56
190.00	55.000	7.38	0.197	1.54	124.96	1.06	21.66	0.757	-0.0954	0.815	-12.95	50.38	0.258	60.10	0.653	0.261	5.46
202.00	64.000	7.03	0.185	1.85	162.37	1.07	25.18	0.609	-0.191	0.782	-15.75	51.32	0.244	49.97	0.634	0.231	6.35
214.00	73.000	6.55	0.175	2.21	195.60	1.06	22.56	0.484	-0.317	0.738	-19.92	51.20	0.234	40.15	0.606	0.289	7.24
226.00	82.000	6.13	0.162	2.71	224.33	1.06	22.58	0.392	-0.462	0.703	-23.44	51.14	0.220	33.07	0.585	0.358	8.13
238.00	91.000	5.68	0.150	3.35	248.58	1.06	21.07	0.318	-0.638	0.669	-27.30	50.64	0.207	27.15	0.564	0.437	9.03
250.00	100.000	5.23	0.139	4.18	268.83	1.05	18.04	0.258	-0.853	0.634	-31.56	49.77	0.194	22.23	0.541	0.509	9.92
		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels			

Saturation Ratios (xSAT) are the ratio of ion activity to solubility, e.g. {Ca}{CO₃}/K_{sp}. pCO₂ (atm) is the partial pressure of CO₂ in the gas phase.
Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

