



ANNUAL REPORT OF PRESSURE MONITORING, FLUID INJECTION AND ENHANCED RECOVERY

Complete all blanks - add pages if needed. Copy to be retained for five (5) years after filing date.

OPERATOR: License # _____
Name: _____
Address 1: _____
Address 2: _____
City: _____ State: _____ Zip: _____ + _____
Contact Person: _____
Phone: (_____) _____
Lease Name: _____
Well Number: _____

API No.: _____
Permit No.: _____
Reporting Year: _____
(January 1 to December 31)
____ - ____ - ____ - ____ Sec. ____ Twp. ____ S. R. ____ E W
(a/a/a/a)
_____ feet from N / S Line of Section
_____ feet from E / W Line of Section
County: _____

I. Injection Fluid:

Type (Pick one): Fresh Water Treated Brine Untreated Brine Water/Brine
Source: Produced Water Other (Attach list)
Quality: Total Dissolved Solids: _____ mg/l Specific Gravity: _____ Additives: _____
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: _____ psi Injection Zone: _____
Maximum Authorized Injection Rate: _____ barrels per day
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: _____ (Include TA's)

III.	Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
	January	_____	_____	_____	_____	_____
	February	_____	_____	_____	_____	_____
	March	_____	_____	_____	_____	_____
	April	_____	_____	_____	_____	_____
	May	_____	_____	_____	_____	_____
	June	_____	_____	_____	_____	_____
	July	_____	_____	_____	_____	_____
	August	_____	_____	_____	_____	_____
	September	_____	_____	_____	_____	_____
	October	_____	_____	_____	_____	_____
	November	_____	_____	_____	_____	_____
	December	_____	_____	_____	_____	_____
	TOTAL	_____	_____	_____	_____	_____



Central Area Laboratory
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Upstream Chemicals

REPORT DATE: 3/6/2017

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER: GREAT PLAINS
DISTRICT: KANSAS
AREA/LEASE: SHULTE
SAMPLE POINT NAME: SHULTE #2 SWD
SITE TYPE: FACILITY
SAMPLE POINT DESCRIPTION: WATER TANK

ACCOUNT REP: GREG POLLNOW
SAMPLE ID: 201710002616
SAMPLE DATE: 2/23/2017
ANALYSIS DATE: 3/6/2017
ANALYST: BS

GREAT PLAINS, SHULTE, SHULTE #2 SWD

FIELD DATA			ANALYSIS OF SAMPLE							
			ANIONS:		mg/L	meq/L	CATIONS:		mg/L	meq/L
Initial Temperature (°F):	120		Chloride (Cl ⁻):	76300.0		2152.3	Sodium (Na ⁺):	44055.2	1917.1	
Final Temperature (°F):	48		Sulfate (SO ₄ ²⁻):	1759.0		36.6	Potassium (K ⁺):	192.8	4.9	
Initial Pressure (psi):	150		Borate (H ₃ BO ₃):	54.3		0.9	Magnesium (Mg ²⁺):	1116.6	91.9	
Final Pressure (psi):	15		Fluoride (F ⁻):	ND			Calcium (Ca ²⁺):	3692.3	184.2	
			Bromide (Br ⁻):	ND			Strontium (Sr ²⁺):	151.9	3.5	
pH:			Nitrite (NO ₂ ⁻):	ND			Barium (Ba ²⁺):	0.0	0.0	
pH at time of sampling:	7.2		Nitrate (NO ₃ ⁻):	ND			Iron (Fe ²⁺):	6.6	0.2	
			Phosphate (PO ₄ ³⁻):	0.0		0.0	Manganese (Mn ²⁺):	0.2	0.0	
			Silica (SiO ₂):	ND			Lead (Pb ²⁺):	ND		
							Zinc (Zn ²⁺):	6.8	0.2	
ALKALINITY BY TITRATION:			mg/L		meq/L					
Bicarbonate (HCO ₃ ⁻):	165.0	2.7								
Carbonate (CO ₃ ²⁻):	ND									
Hydroxide (OH ⁻):	ND									
			ORGANIC ACIDS:		mg/L		meq/L			
aqueous CO ₂ (ppm):	66.0		Formic Acid:	ND			Copper (Cu ²⁺):	ND		
aqueous H ₂ S (ppm):	60.0		Acetic Acid:	ND			Molybdenum (Mo ²⁺):	ND		
aqueous O ₂ (ppb):	ND		Propionic Acid:	ND			Nickel (Ni ²⁺):	ND		
			Butyric Acid:	ND			Tin (Sn ²⁺):	ND		
			Valeric Acid:	ND			Titanium (Ti ²⁺):	ND		
Calculated TDS (mg/L):	127446						Vanadium (V ²⁺):	ND		
Density/Specific Gravity (g/cm ³):	1.0816						Zirconium (Zr ²⁺):	ND		
Measured Specific Gravity	1.0850									
Conductivity (mmhos):	ND						Total Hardness:	14004	N/A	
Resistivity:	ND									
MCF/D:	No Data									
BOPD:	No Data									
BWPD:	No Data		Anion/Cation Ratio:			1.00				

SCALE PREDICTIONS BASED ON FIELD PROVIDED DATA; FUTHER MODELING MAY BE REQUIRED FOR VALIDATION OF SCALE PREDICTION RESULTS.

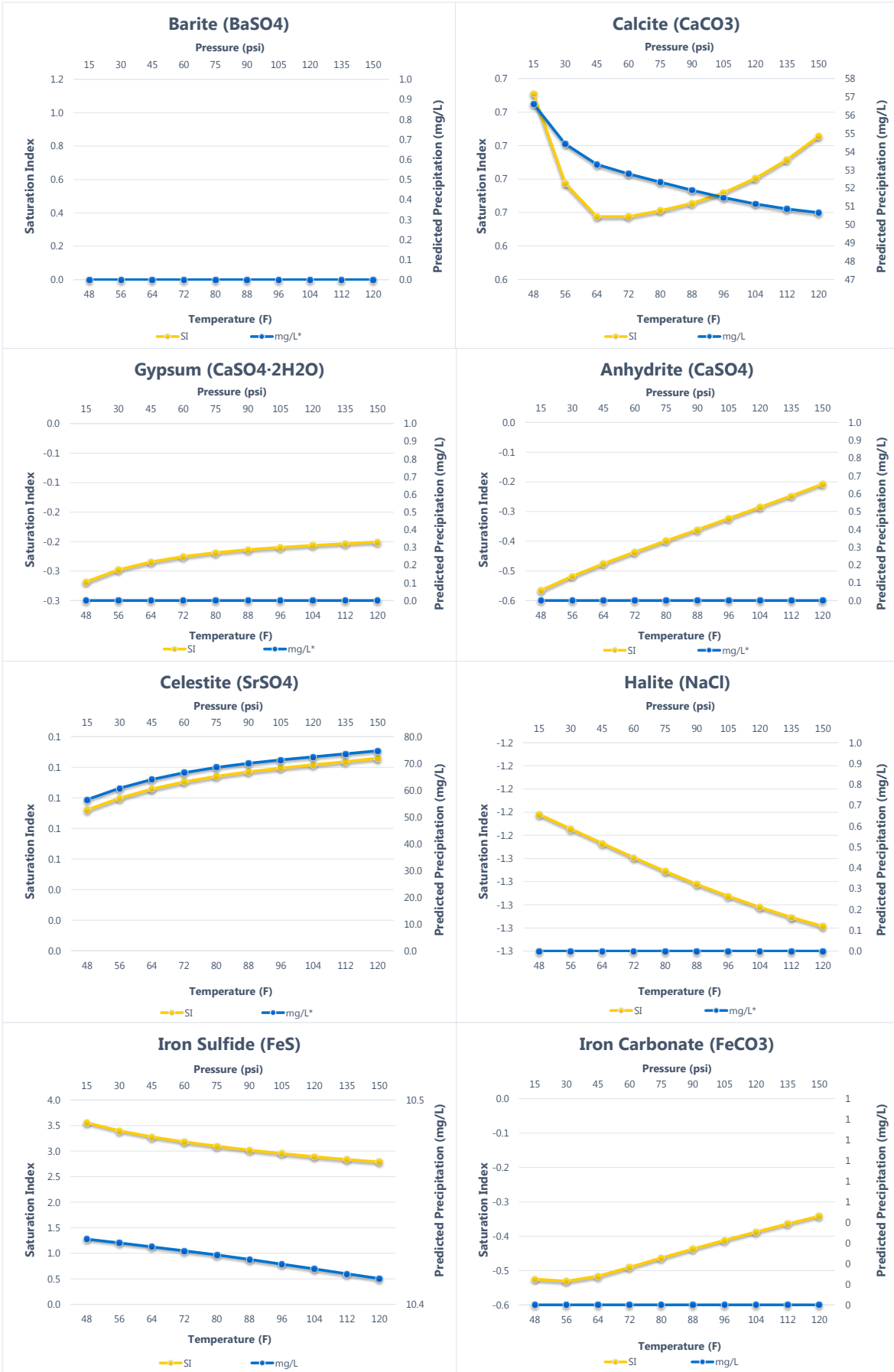
Conditions		Barite (BaSO ₄)		Calcite (CaCO ₃)		Gypsum (CaSO ₄ ·2H ₂ O)		Anhydrite (CaSO ₄)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
48°F	15 psi		0.000	0.69	19.816	-0.27	0.000	-0.57	0.000
56°F	30 psi		0.000	0.66	19.048	-0.25	0.000	-0.52	0.000
64°F	45 psi		0.000	0.65	18.657	-0.23	0.000	-0.48	0.000
72°F	60 psi		0.000	0.65	18.474	-0.23	0.000	-0.44	0.000
80°F	75 psi		0.000	0.65	18.317	-0.22	0.000	-0.40	0.000
88°F	90 psi		0.000	0.65	18.162	-0.21	0.000	-0.36	0.000
96°F	105 psi		0.000	0.66	18.020	-0.21	0.000	-0.32	0.000
104°F	120 psi		0.000	0.66	17.899	-0.21	0.000	-0.29	0.000
112°F	135 psi		0.000	0.67	17.802	-0.20	0.000	-0.25	0.000
120°F	150 psi		0.000	0.67	17.732	-0.20	0.000	-0.21	0.000

Conditions		Celestite (SrSO ₄)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO ₃)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
48°F	15 psi	0.09	19.786	-1.23	0.000	3.56	3.651	-0.53	0.000
56°F	30 psi	0.10	21.264	-1.24	0.000	3.40	3.651	-0.53	0.000
64°F	45 psi	0.11	22.408	-1.24	0.000	3.28	3.650	-0.52	0.000
72°F	60 psi	0.11	23.293	-1.25	0.000	3.18	3.649	-0.49	0.000
80°F	75 psi	0.11	23.980	-1.26	0.000	3.10	3.648	-0.46	0.000
88°F	90 psi	0.12	24.525	-1.26	0.000	3.02	3.648	-0.44	0.000
96°F	105 psi	0.12	24.975	-1.27	0.000	2.95	3.647	-0.41	0.000
104°F	120 psi	0.12	25.374	-1.27	0.000	2.89	3.646	-0.39	0.000
112°F	135 psi	0.12	25.757	-1.28	0.000	2.84	3.645	-0.36	0.000
120°F	150 psi	0.13	26.158	-1.28	0.000	2.79	3.644	-0.34	0.000

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 eight (8) scales.
 Note 3: Saturation Index predictions on this sheet use pH and alkalinity; %CO₂ is not included in the calculations.



Comments:



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