

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form U3C
June 2015
Form must be Typed
Form must be completed
on a per well basis

**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
12701 N. Santa Fe Ave, Suite 151
Oklahoma City, Oklahoma 73114

REPORT DATE: 2/10/2020

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER: US OIL
DISTRICT: KANSAS
AREA/LEASE: POWERS
SAMPLE POINT NAME: POWERS 12 SWD
SITE TYPE: WELL SITES
SAMPLE POINT DESCRIPTION: WATER LINE

ACCOUNT REP: BRETT BAHE
SAMPLE ID: 202010001243
SAMPLE DATE: 1/16/2020
ANALYSIS DATE: 2/10/2020
ANALYST: BS

US OIL, POWERS, POWERS 12 SWD

FIELD DATA		ANALYSIS OF SAMPLE											
		ANIONS:		mg/L		meq/L		CATIONS:		mg/L		meq/L	
Initial Temperature (°F):	120	Chloride (Cl ⁻):	17543.0	494.9	Sodium (Na ⁺):	9363.0	407.4						
Final Temperature (°F):	32	Sulfate (SO ₄ ²⁻):	1943.0	40.5	Potassium (K ⁺):	188.6	4.8						
Initial Pressure (psi):	100	Borate (H ₃ BO ₃):	110.2	1.8	Magnesium (Mg ²⁺):	486.6	40.0						
Final Pressure (psi):	15	Fluoride (F ⁻):	ND		Calcium (Ca ²⁺):	1655.0	82.6						
		Bromide (Br ⁻):	ND		Strontium (Sr ²⁺):	48.1	1.1						
pH:		Nitrite (NO ₂ ⁻):	ND		Barium (Ba ²⁺):	0.1	0.0						
pH at time of sampling:	6.5	Nitrate (NO ₃ ⁻):	ND		Iron (Fe ²⁺):	10.0	0.4						
		Phosphate (PO ₄ ³⁻):	5.5	0.2	Manganese (Mn ²⁺):	0.6	0.0						
		Silica (SiO ₂):	ND		Lead (Pb ²⁺):	ND							
					Zinc (Zn ²⁺):	0.0	0.0						
ALKALINITY BY TITRATION:		mg/L	meq/L	ORGANIC ACIDS:		mg/L	meq/L	Copper (Cu ²⁺):		ND		ND	
Bicarbonate (HCO ₃ ⁻):	244.0	4.0	Formic Acid:	ND	Molybdenum (Mo ²⁺):	ND	Chromium (Cr ³⁺):	ND					
Carbonate (CO ₃ ²⁻):	ND		Acetic Acid:	ND	Nickel (Ni ²⁺):	ND	Cobalt (Co ²⁺):	ND					
Hydroxide (OH ⁻):	ND		Propionic Acid:	ND	Tin (Sn ²⁺):	ND							
aqueous CO ₂ (ppm):	50.0		Butyric Acid:	ND	Titanium (Ti ²⁺):	ND							
aqueous H ₂ S (ppm):	5.0		Valeric Acid:	ND	Vanadium (V ²⁺):	ND							
aqueous O ₂ (ppb):	ND				Zirconium (Zr ²⁺):	ND							
Calculated TDS (mg/L):	31482				Lithium (Li):	ND							
Density/Specific Gravity (g/cm ³):	1.0196				Total Hardness:	6197	N/A						
Measured Specific Gravity:	ND												
Conductivity (mmhos):	ND												
Resistivity:	ND												
MCF/D:	No Data												
BOPD:	No Data												
BWPD:	No Data				Anion/Cation Ratio:	1.01	ND = Not Determined						

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)
32°F	15 psi	0.89	0.052	-0.29	0.000	-0.08	0.000	-0.48	0.000
42°F	24 psi	0.76	0.049	-0.27	0.000	-0.08	0.000	-0.45	0.000
52°F	34 psi	0.65	0.046	-0.23	0.000	-0.08	0.000	-0.42	0.000
61°F	43 psi	0.54	0.042	-0.18	0.000	-0.09	0.000	-0.39	0.000
71°F	53 psi	0.45	0.038	-0.11	0.000	-0.09	0.000	-0.36	0.000
81°F	62 psi	0.36	0.033	-0.04	0.000	-0.09	0.000	-0.32	0.000
91°F	72 psi	0.28	0.028	0.02	1.557	-0.09	0.000	-0.28	0.000
100°F	81 psi	0.20	0.022	0.09	5.961	-0.09	0.000	-0.24	0.000
110°F	91 psi	0.14	0.016	0.16	10.145	-0.08	0.000	-0.19	0.000
120°F	100 psi	0.08	0.010	0.23	14.109	-0.07	0.000	-0.14	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)
32°F	15 psi	0.09	6.227	-2.53	0.000	1.18	4.610	-0.98	0.000
42°F	24 psi	0.08	5.567	-2.55	0.000	1.08	4.434	-0.92	0.000
52°F	34 psi	0.07	5.034	-2.57	0.000	1.03	4.341	-0.84	0.000
61°F	43 psi	0.06	4.642	-2.59	0.000	1.01	4.299	-0.75	0.000
71°F	53 psi	0.06	4.404	-2.61	0.000	1.02	4.320	-0.65	0.000
81°F	62 psi	0.06	4.331	-2.62	0.000	1.04	4.369	-0.55	0.000
91°F	72 psi	0.06	4.428	-2.63	0.000	1.07	4.429	-0.45	0.000
100°F	81 psi	0.06	4.697	-2.64	0.000	1.10	4.493	-0.35	0.000
110°F	91 psi	0.07	5.135	-2.65	0.000	1.13	4.561	-0.26	0.000
120°F	100 psi	0.08	5.736	-2.66	0.000	1.17	4.629	-0.17	0.000

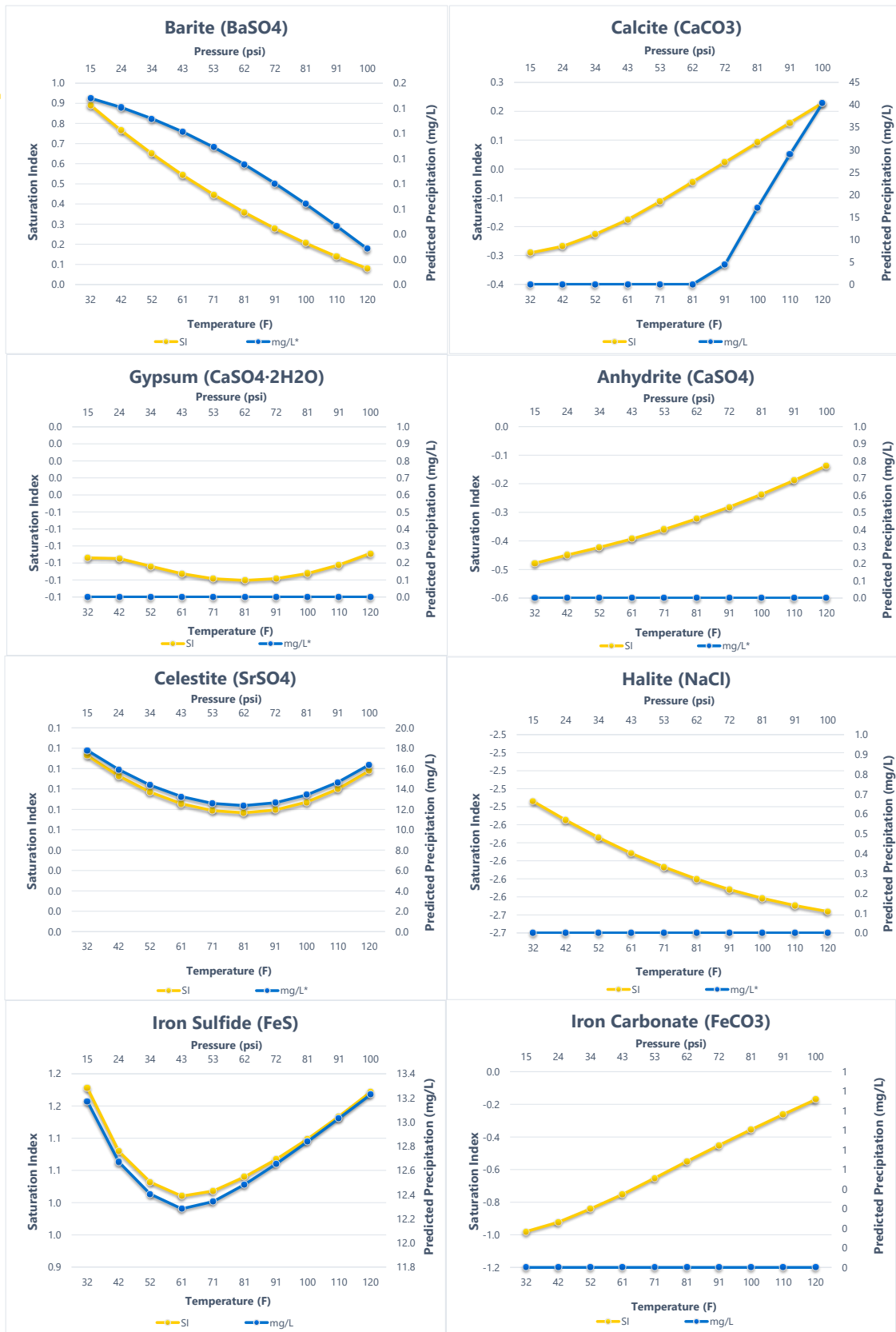
Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

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:



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