

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

Upstream Chemicals

REPORT DATE: 2/22/2023

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	SHAKESPEARE OIL	ACCOUNT REP:	BRETT J SUTER
DISTRICT:	KANSAS	SAMPLE ID:	202310001783
AREA/LEASE:	OTTLEY	SAMPLE DATE:	2/13/2023
SAMPLE POINT NAME:	OTTLEY 9-15	ANALYSIS DATE:	2/21/2023
SITE TYPE:	WELL SITES	ANALYST:	BS
SAMPLE POINT DESCRIPTION:	NOT PROVIDED		
CUSTOMER SAMPLE POINT ID:			

SHAKESPEARE OIL, OTTLEY, OTTLEY 9-15

FIELD DATA		ANALYSIS OF SAMPLE					
		ANIONS:		CATIONS:			
		mg/L	meq/L	mg/L	meq/L		
Initial Temperature (°F):	150	Chloride (Cl ⁻):	49249.0	1389.3	Sodium (Na ⁺):	29201.8	1270.7
Final Temperature (°F):	75	Sulfate (SO ₄ ²⁻):	3017.0	62.8	Potassium (K ⁺):	295.1	7.5
Initial Pressure (psi):	100	Borate (H ₃ BO ₃):	167.5	2.7	Magnesium (Mg ²⁺):	388.4	32.0
Final Pressure (psi):	15	Fluoride (F ⁻):	ND		Calcium (Ca ²⁺):	963.6	48.1
		Bromide (Br ⁻):	ND		Strontium (Sr ²⁺):	46.3	1.1
pH:		Nitrite (NO ₂ ⁻):	ND		Barium (Ba ²⁺):	0.0	0.0
pH at time of sampling:	7.0	Nitrate (NO ₃ ⁻):	ND		Iron (Fe ²⁺):	0.0	0.0
		Phosphate (PO ₄ ³⁻):	0.5	0.0	Manganese (Mn ²⁺):	0.7	0.0
		Silica (SiO ₂):	ND		Lead (Pb ²⁺):	ND	ND
					Zinc (Zn ²⁺):	0.0	0.0
ALKALINITY BY TITRATION:		mg/L	meq/L				
Bicarbonate (HCO ₃ ⁻):	500.0		8.2				
Carbonate (CO ₃ ²⁻):	ND						
Hydroxide (OH ⁻):	ND						
		ORGANIC ACIDS:		mg/L	meq/L		
aqueous CO ₂ (ppm):	200.0	Formic Acid:	ND				
aqueous H ₂ S (ppm):	15.0	Acetic Acid:	ND				
aqueous O ₂ (ppb):	ND	Propionic Acid:	ND				
		Butyric Acid:	ND				
		Valeric Acid:	ND				
Calculated TDS (mg/L):	83662						
Density/Specific Gravity (g/cm ³):	1.0526						
Measured Specific Gravity:	ND						
Conductivity (mmhos):	ND						
Resistivity:	ND						
MCF/D:	No Data						
BOPD:	No Data						
BWPD:	No Data						
		Anion/Cation Ratio:		1.08	ND = Not Determined		

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

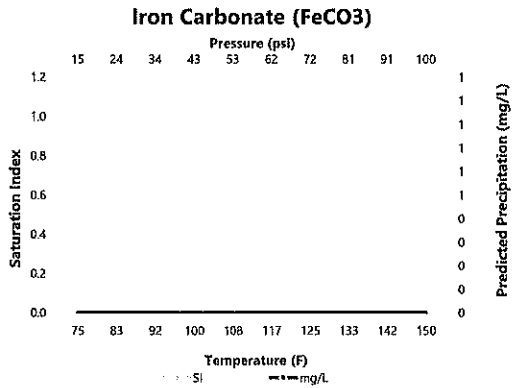
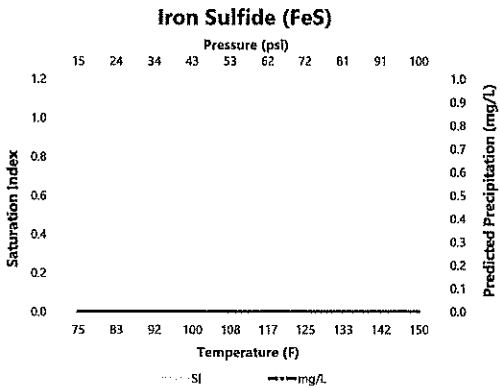
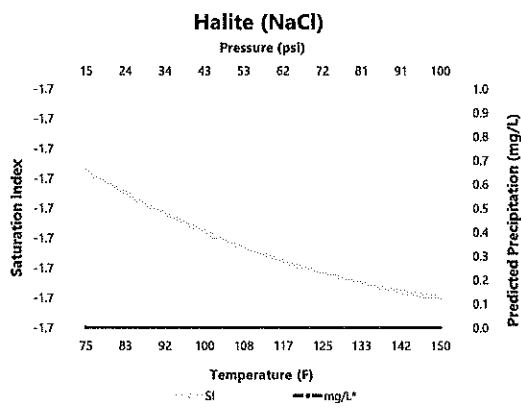
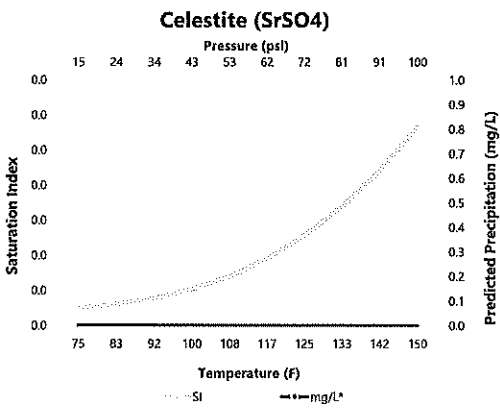
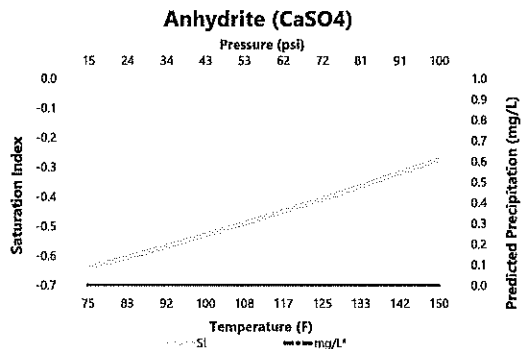
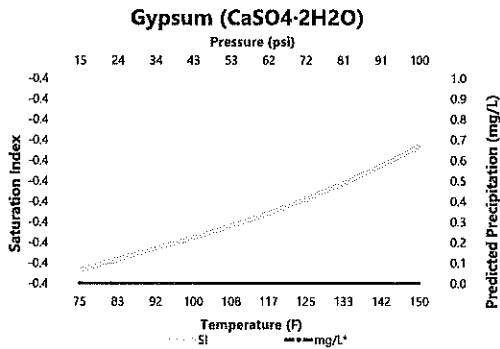
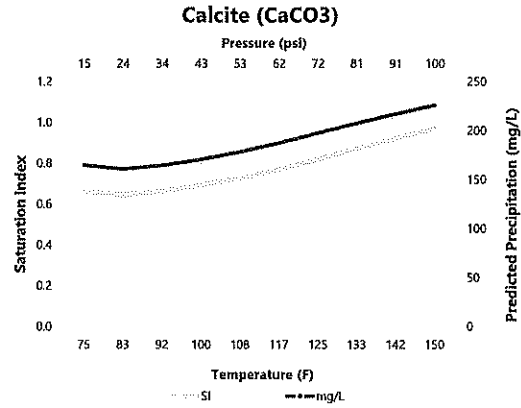
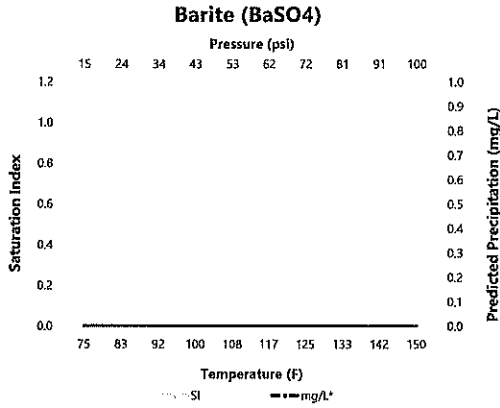
Conditions		Barite (BaSO ₄)		Calcite (CaCO ₃)		Gypsum (CaSO ₄ ·2H ₂ O)		Anhydrite (CaSO ₄)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
75°F	15 psi	0.000	0.000	0.67	57.667	-0.41	0.000	-0.64	0.000
83°F	24 psi	0.000	0.000	0.65	56.320	-0.41	0.000	-0.60	0.000
92°F	34 psi	0.000	0.000	0.67	57.569	-0.41	0.000	-0.57	0.000
100°F	43 psi	0.000	0.000	0.70	59.795	-0.40	0.000	-0.53	0.000
108°F	53 psi	0.000	0.000	0.73	62.446	-0.40	0.000	-0.49	0.000
117°F	62 psi	0.000	0.000	0.77	65.627	-0.40	0.000	-0.45	0.000
125°F	72 psi	0.000	0.000	0.83	69.240	-0.39	0.000	-0.41	0.000
133°F	81 psi	0.000	0.000	0.88	72.695	-0.39	0.000	-0.36	0.000
142°F	91 psi	0.000	0.000	0.93	76.000	-0.39	0.000	-0.32	0.000
150°F	100 psi	0.000	0.000	0.97	79.163	-0.38	0.000	-0.27	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)
75°F	15 psi	-0.03	0.000	-1.68	0.000	0	0.000		0.000
83°F	24 psi	-0.03	0.000	-1.68	0.000	0	0.000		0.000
92°F	34 psi	-0.03	0.000	-1.69	0.000	0	0.000		0.000
100°F	43 psi	-0.03	0.000	-1.70	0.000	0	0.000		0.000
108°F	53 psi	-0.03	0.000	-1.70	0.000	0	0.000		0.000
117°F	62 psi	-0.03	0.000	-1.71	0.000	0	0.000		0.000
125°F	72 psi	-0.02	0.000	-1.71	0.000	0	0.000		0.000
133°F	81 psi	-0.02	0.000	-1.71	0.000	0	0.000		0.000
142°F	91 psi	-0.01	0.000	-1.72	0.000	0	0.000		0.000
150°F	100 psi	-0.01	0.000	-1.72	0.000	0	0.000		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.