

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: 2/28/2024

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER: SHAKESPEARE OIL
DISTRICT: KANSAS
AREA/LEASE: OTTLEY
SAMPLE POINT NAME: OTTLEY 1-10 SWD
SITE TYPE: WELL SITES
SAMPLE POINT DESCRIPTION: TANK
CUSTOMER SAMPLE POINT ID:

ACCOUNT REP: BRETT J SUTER
SAMPLE ID: 202410001355
SAMPLE DATE: 2/9/2024
ANALYSIS DATE: 2/23/2024
ANALYST: BS

SHAKESPEARE OIL, OTTLEY, OTTLEY 1-10 SWD

FIELD DATA			ANALYSIS OF SAMPLE											
			ANIONS:		mg/L		meq/L		CATIONS:		mg/L		meq/L	
Initial Temperature (°F):	150		Chloride (Cl ⁻):	41740.0	1177.4	Sodium (Na ⁺):	24176.7	1052.1						
Final Temperature (°F):	40		Sulfate (SO ₄ ²⁻):	3189.0	66.4	Potassium (K ⁺):	310.4	7.9						
Initial Pressure (psi):	100		Borate (H ₃ BO ₃):	163.1	2.6	Magnesium (Mg ²⁺):	394.4	32.5						
Final Pressure (psi):	15		Fluoride (F ⁻):	ND		Calcium (Ca ²⁺):	1063.0	53.0						
			Bromide (Br ⁻):	ND		Strontium (Sr ²⁺):	45.0	1.0						
pH:			Nitrite (NO ₂ ⁻):	ND		Barium (Ba ²⁺):	0.4	0.0						
pH at time of sampling:	7.0		Nitrate (NO ₃ ⁻):	ND		Iron (Fe ²⁺):	7.3	0.3						
			Phosphate (PO ₄ ³⁻):	1.7	0.1	Manganese (Mn ²⁺):	0.2	0.0						
			Silica (SiO ₂):	ND		Lead (Pb ²⁺):	ND							
						Zinc (Zn ²⁺):	0.1	0.0						
ALKALINITY BY TITRATION:			mg/L		meq/L									
Bicarbonate (HCO ₃ ⁻):	400.0	6.6												
Carbonate (CO ₃ ²⁻):	ND													
Hydroxide (OH ⁻):	ND													
			ORGANIC ACIDS:		mg/L		meq/L							
aqueous CO ₂ (ppm):	120.0		Formic Acid:	ND		Molybdenum (Mo ²⁺):	ND							
aqueous H ₂ S (ppm):	15.0		Acetic Acid:	ND		Nickel (Ni ²⁺):	ND							
aqueous O ₂ (ppb):	ND		Propionic Acid:	ND		Tin (Sn ²⁺):	ND							
			Butyric Acid:	ND		Titanium (Ti ²⁺):	ND							
Calculated TDS (mg/L):	71327		Valeric Acid:	ND		Vanadium (V ²⁺):	ND							
Density/Specific Gravity (g/cm ³):	1.0448						Zirconium (Zr ²⁺):	ND						
Measured Specific Gravity:	ND						Lithium (Li):	ND						
Conductivity (mmhos):	ND						Total Hardness:	4334	N/A					
Resistivity:	ND													
MCF/D:	No Data													
BOPD:	No Data													
BWPD:	No Data													
			Anion/Cation Ratio:		1.09		ND = Not Determined							

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

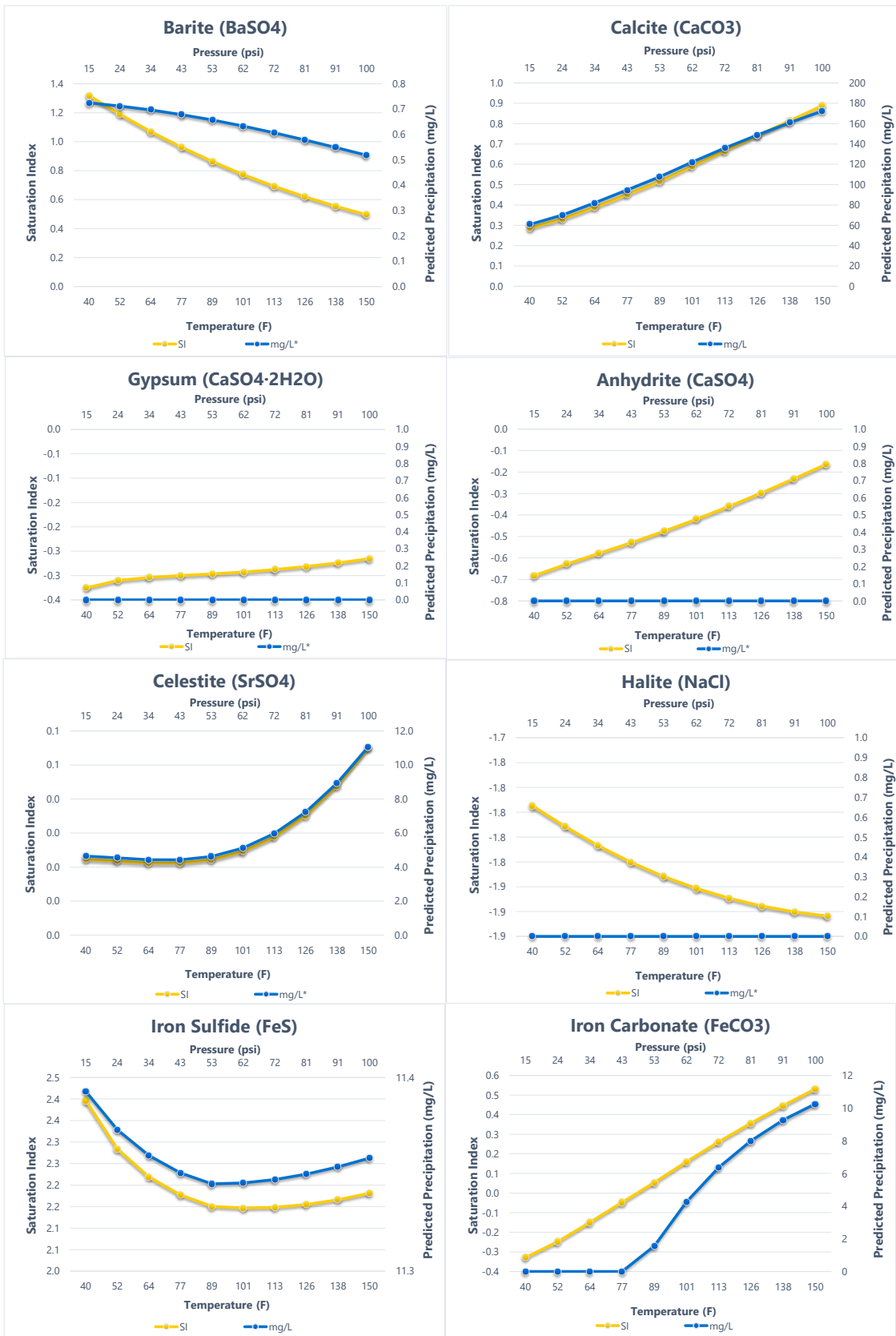
Conditions		Barite (BaSO ₄)		Calcite (CaCO ₃)		Gypsum (CaSO ₄ ·2H ₂ O)		Anhydrite (CaSO ₄)	
Temp	Press.	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)	Index	Amt (ptb)
40°F	15 psi	1.32	0.254	0.29	21.283	-0.33	0.000	-0.68	0.000
52°F	24 psi	1.19	0.249	0.33	24.533	-0.31	0.000	-0.63	0.000
64°F	34 psi	1.07	0.244	0.39	28.724	-0.30	0.000	-0.58	0.000
77°F	43 psi	0.96	0.237	0.45	33.190	-0.30	0.000	-0.53	0.000
89°F	53 psi	0.86	0.230	0.52	37.700	-0.30	0.000	-0.48	0.000
101°F	62 psi	0.77	0.222	0.59	42.770	-0.29	0.000	-0.42	0.000
113°F	72 psi	0.69	0.212	0.67	47.565	-0.29	0.000	-0.36	0.000
126°F	81 psi	0.62	0.202	0.74	52.084	-0.28	0.000	-0.30	0.000
138°F	91 psi	0.55	0.192	0.81	56.340	-0.27	0.000	-0.23	0.000
150°F	100 psi	0.50	0.181	0.89	60.346	-0.27	0.000	-0.16	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)
40°F	15 psi	0.02	1.626	-1.79	0.000	2.40	3.987	-0.33	0.000
52°F	24 psi	0.02	1.589	-1.81	0.000	2.28	3.981	-0.25	0.000
64°F	34 psi	0.02	1.550	-1.83	0.000	2.22	3.976	-0.15	0.000
77°F	43 psi	0.02	1.548	-1.84	0.000	2.18	3.973	-0.05	0.000
89°F	53 psi	0.02	1.618	-1.85	0.000	2.15	3.971	0.05	0.544
101°F	62 psi	0.02	1.790	-1.86	0.000	2.15	3.971	0.16	1.494
113°F	72 psi	0.03	2.089	-1.87	0.000	2.15	3.972	0.26	2.229
126°F	81 psi	0.04	2.531	-1.88	0.000	2.15	3.973	0.36	2.799
138°F	91 psi	0.04	3.127	-1.88	0.000	2.17	3.974	0.45	3.243
150°F	100 psi	0.05	3.877	-1.88	0.000	2.18	3.975	0.53	3.591

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.