KOLAR Document ID: 1835168

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 # 7311
Name: Shakespeare Oil Co., Inc.
Address 1: 202 W MAIN ST
Address 2:
City: SALEM State: IL Zip: 62881 + 1519
Contact Person: Anna Diss
Phone: (618) 548-1585
Lease Name: CALE
Well Number: 3-27

API No.: 15-063-22412-00-00
Permit No: D34243.0
Reporting Year: 2024
(January 1 to December 31)

SW - NE - SW - NE (Q/Q/Q/Q) Sec. 27 Twp. 11 S. R. 31 ☐ E ☑ W
1940 feet from ☑ N / ☐ S Line of Section
1965 feet from ☑ E / ☐ W Line of Section
County: Gove

I. Injection Fluid:

Type *(Pick one)*: ☐ Fresh Water ☐ Treated Brine ☐ Untreated Brine ☑ Water/Brine
Source: ☑ Produced Water ☐ Other *(Attach list)*
Quality: Total Dissolved Solids: 126118 mg/l Specific Gravity: 1.0799 Additives:
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: 0 psi Injection Zone: CEDAR HILLS
Maximum Authorized Injection Rate: 500 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	6843	0	0	0	31
February	6650	0	0	0	29
March	6700	0	0	0	31
April	6509	0	0	0	30
May	6847	0	0	0	31
June	6981	0	0	0	30
July	6704	0	0	0	31
August	6945	0	0	0	31
September	6972	0	0	0	30
October	6910	0	0	0	31
November	6826	0	0	0	30
December	6555	0	0	0	31
TOTAL	81442		0		

Submitted Electronically

Baker Hughes

Central Area Laboratory
12701 N. Santa Fe Ave, Suite 151
Oklahoma City, Oklahoma 73114

Upstream Chemicals

REPORT DATE: 3/13/2025

COMPLETE WATER ANALYSIS REPORT SSP v.2010

CUSTOMER:	SHAKESPEARE OIL	**ACCOUNT REP:**	BRETT J SUTER
DISTRICT:	KANSAS	**SAMPLE ID:**	202510002016
AREA/LEASE:	CALE	**SAMPLE DATE:**	2/27/2025
SAMPLE POINT NAME	CALE 3-27 SWD	**ANALYSIS DATE:**	3/13/2025
SITE TYPE:	WELL SITES	**ANALYST:**	BS/RH
SAMPLE POINT DESCRIPTION:	TANK		
CUSTOMER SAMPLE POINT ID:			

SHAKESPEARE OIL, CALE, CALE 3-27 SWD

FIELD DATA

Initial Temperature (°F):	100
Final Temperature (°F):	50
Initial Pressure (psi):	100
Final Pressure (psi):	15
pH:	
pH at time of sampling:	6.9

ALKALINITY BY TITRATION:	**mg/L**	**meq/L**
Bicarbonate (HCO_3^-):	360.0	5.9
Carbonate (CO_3^{2-}):	ND	
Hydroxide (OH^-):	ND	

aqueous CO_2 (ppm):	80.0
aqueous H_2S (ppm):	10.0
aqueous O2 (ppb):	ND
Calculated TDS (mg/L):	126118
Density/Specific Gravity (g/cm³):	1.0799
Measured Specific Gravity	ND
Conductivity (mmhos):	ND
Resistivity:	ND
MCF/D:	No Data
BOPD:	No Data
BWPD:	No Data

ANALYSIS OF SAMPLE

ANIONS:	**mg/L**	**meq/L**
Chloride (Cl^-):	72817.0	2054.1
Sulfate (SO_4^{2-}):	4543.0	94.6
Borate (H_3BO_3):	134.6	2.2
Fluoride (F^-):	ND	
Bromide (Br^-):	ND	
Nitrite (NO_2^-):	ND	
Nitrate (NO_3^-):	ND	
Phosphate (PO_4^{3-}):	0.5	0.0
Silica (SiO_2):	ND	

ORGANIC ACIDS:	**mg/L**	**meq/L**
Formic Acid:	ND	
Acetic Acid:	ND	
Propionic Acid:	ND	
Butyric Acid:	ND	
Valeric Acid:	ND	

Anion/Cation Ratio:	1.01

CATIONS:	**mg/L**	**meq/L**
Sodium (Na^+):	45838.5	1994.7
Potassium (K^+):	417.7	10.7
Magnesium (Mg^{2+}):	488.7	40.2
Calcium (Ca^{2+}):	1585.0	79.1
Strontium (Sr^{2+}):	67.3	1.5
Barium (Ba^{2+}):	0.5	0.0
Iron (Fe^{2+}):	0.4	0.0
Manganese (Mn^{2+}):	0.0	0.0
Lead (Pb^{2+}):	ND	
Zinc (Zn^{2+}):	0.0	0.0
Aluminum (Al^{3+}):	ND	
Chromium (Cr^{3+}):	ND	
Cobalt (Co^{2+}):	ND	
Copper (Cu^{2+}):	ND	
Molybdenum (Mo^{2+}):	ND	
Nickel (Ni^{2+}):	ND	
Tin (Sn^{2+}):	ND	
Titanium (Ti^{2+}):	ND	
Vanadium (V^{2+}):	ND	
Zirconium (Zr^{2+}):	ND	
Lithium (Li):	ND	
Total Hardness:	6053	N/A

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 ($CaSO_4 \cdot 2H_2O$)**		**Anhydrite ($CaSO_4$)**	
Temp	**Press.**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**	**Index**	**Amt (ptb)**
50°F	15 psi	1.12	0.259	0.52	33.724	-0.19	0.000	-0.48	0.000
56°F	24 psi	1.08	0.257	0.51	32.735	-0.18	0.000	-0.45	0.000
61°F	34 psi	1.03	0.254	0.52	33.460	-0.17	0.000	-0.42	0.000
67°F	43 psi	0.98	0.251	0.54	34.788	-0.16	0.000	-0.39	0.000
72°F	53 psi	0.94	0.248	0.57	36.677	-0.15	0.000	-0.37	0.000
78°F	62 psi	0.90	0.245	0.61	39.003	-0.15	0.000	-0.34	0.000
83°F	72 psi	0.86	0.241	0.65	41.210	-0.14	0.000	-0.31	0.000
89°F	81 psi	0.81	0.237	0.69	43.309	-0.14	0.000	-0.29	0.000
94°F	91 psi	0.78	0.233	0.72	45.309	-0.14	0.000	-0.26	0.000
100°F	100 psi	0.74	0.229	0.76	47.219	-0.14	0.000	-0.23	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)**
50°F	15 psi	0.17	15.826	-1.25	0.000	0.95	0.213	-1.49	0.000
56°F	24 psi	0.18	16.222	-1.26	0.000	0.85	0.206	-1.49	0.000
61°F	34 psi	0.18	16.553	-1.26	0.000	0.79	0.201	-1.46	0.000
67°F	43 psi	0.18	16.828	-1.27	0.000	0.76	0.197	-1.42	0.000
72°F	53 psi	0.19	17.056	-1.27	0.000	0.73	0.195	-1.37	0.000
78°F	62 psi	0.19	17.244	-1.27	0.000	0.73	0.195	-1.32	0.000
83°F	72 psi	0.19	17.401	-1.28	0.000	0.72	0.194	-1.26	0.000
89°F	81 psi	0.19	17.533	-1.28	0.000	0.72	0.193	-1.21	0.000
94°F	91 psi	0.19	17.645	-1.28	0.000	0.71	0.193	-1.16	0.000
100°F	100 psi	0.20	17.745	-1.29	0.000	0.71	0.193	-1.11	0.000

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

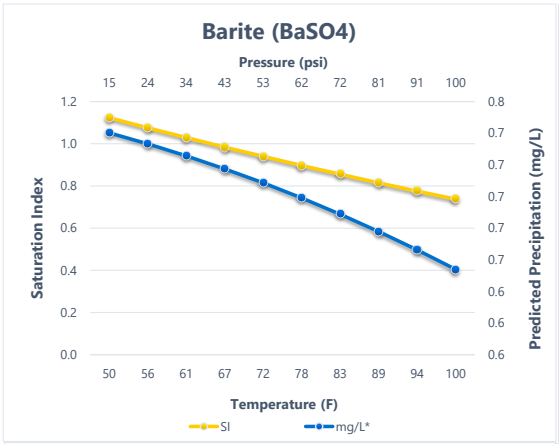
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.

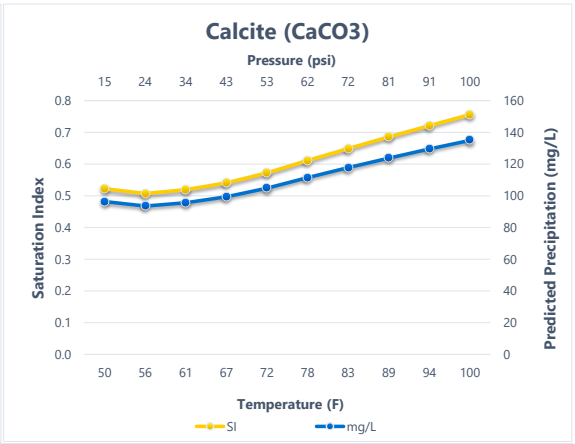
Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

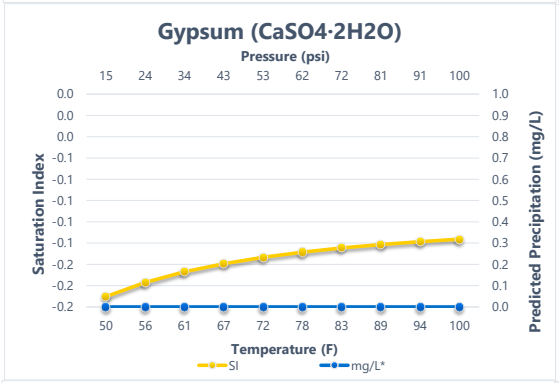
EESI ScaleSoftPitzer™ SSP2010

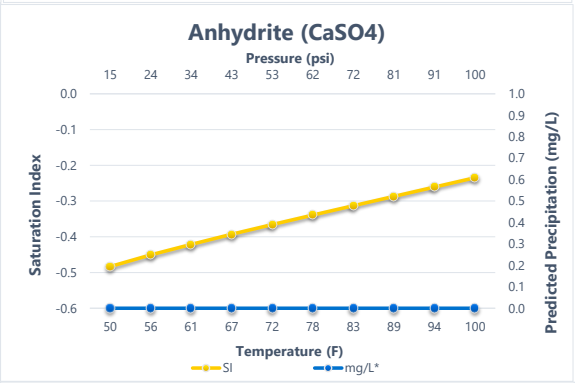
Comments:

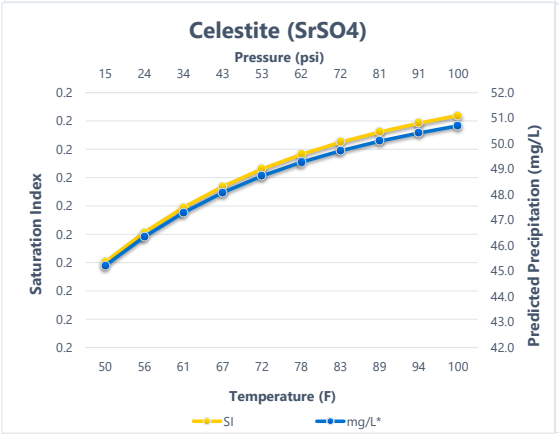
SAMPLE ID: 202510002016 SHAKESPEARE OIL, CALE, CALE 3-27 SWD

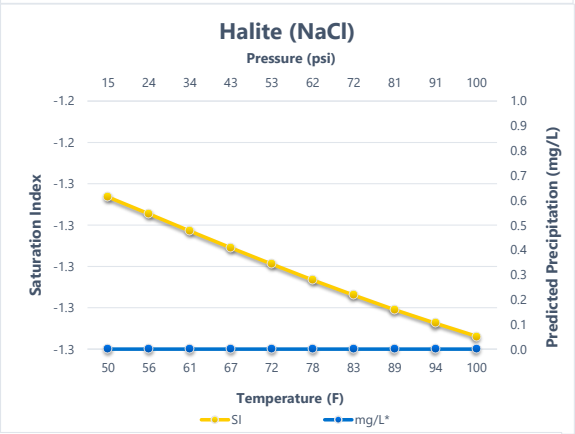


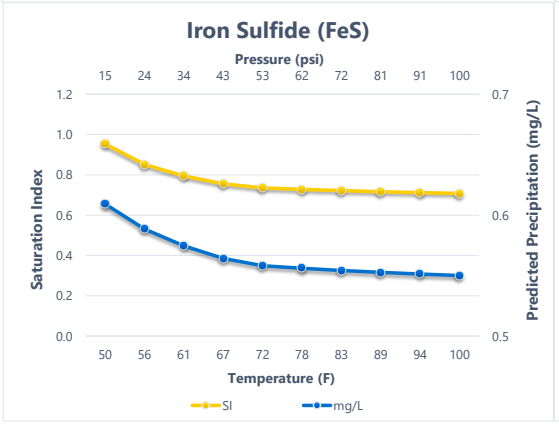


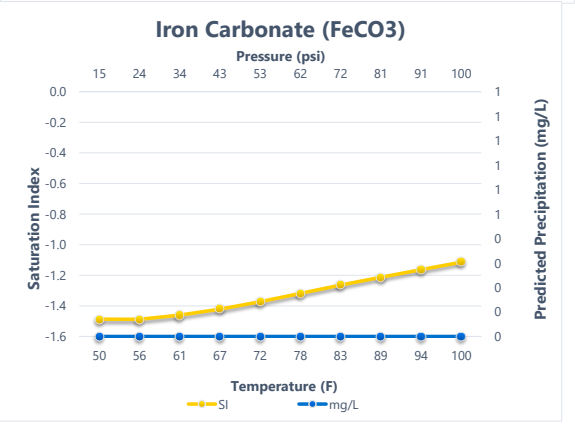












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