KOLAR Document ID: 1701808

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: Joseph McDanel
Phone: (618) 548-1585
Lease Name: BURNETT D
Well Number: 1

API No.: 15-101-21604-00-01
Permit No: E32909.1
Reporting Year: 2022
(January 1 to December 31)

____ - NE - SW - NW Sec. 16 Twp. 18 S. R. 30 ☐ E ☑ W
(Q/Q/Q/Q)
3707 feet from ☐ N / ☑ S Line of Section
4328 feet from ☑ E / ☐ W Line of Section
County: Lane

I. Injection Fluid:

Type *(Pick one)*: ☐ Fresh Water ☐ Treated Brine ☐ Untreated Brine ☑ Water/Brine
Source: ☑ Produced Water ☐ Other *(Attach list)*
Quality: Total Dissolved Solids: 35900 mg/l Specific Gravity: 1.028 Additives:
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: 1200 psi Injection Zone: LANSING-KANSAS CITY
Maximum Authorized Injection Rate: 600 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	2047	0	0	0	31
February	1913	0	0	0	28
March	2153	0	0	0	31
April	1962	0	0	0	30
May	1987	0	0	0	31
June	2102	0	0	0	30
July	2129	0	0	0	31
August	2014	0	0	0	31
September	2055	0	0	0	30
October	2111	0	0	0	31
November	2089	0	0	0	30
December	2116	0	0	0	31
TOTAL	24678		0		

Submitted Electronically

CHAMPIONX

Complete Water Analysis

Customer:	**SHAKESPEARE OIL COMPANY**	Equipment Description:	**Burnett D**	Collection Date:	**02/16/2023**
Geographic Region:	**Kansas**	Sample Point:	**Bleeder**	Receive Date:	**02/22/2023**
Geographic Location:	**Lane County**	Sample ID:	**AV13098**	Report Date:	**02/23/2023**
System Description:	**Production System**	Account Rep:	**Michael.Walters@championx.com**	Location Code:	**463114**

Field Analysis

Analysis	Result		Analysis Method
Total Alkalinity (M-Alk as HCO3)	**215**	mg/L	Titration
Dissolved CO2	**340**	mg/L	Titration
Dissolved H2S	**130**	mg/L	Titration
Pressure Surface	**25**	psi	
Temperature	**100**	°F	
pH of Water	**7.5**		Meter

Sample Analysis

Analysis	Result		Analysis Method
Specific Gravity	**1.028**		Densitometer
Ionic Strength	**0.640**	mol/L	Calculation
Total Dissolved Solids	**35900**	mg/L	Calculation
Calculated pH	**7.50**		Calculation
Calculated CO2 in the gas	**0.0200**	%	Calculation

Cations - Analyzed By ICP

Iron	**2.49**	mg/L	Boron	**15.9**	mg/L	Silicon	**6.55**	mg/L
Manganese	**<0.200**	mg/L	Lithium	**<1.000**	mg/L	Aluminum	**<0.400**	mg/L
Barium	**0.167**	mg/L	Copper	**49.7**	mg/L	Molybdenum	**<0.200**	mg/L
Strontium	**17.9**	mg/L	Nickel	**<0.200**	mg/L	Phosphorus	**0.934**	mg/L
Calcium	**469**	mg/L	Zinc	**161**	mg/L	Measured Sodium	**12100**	mg/L
Magnesium	**228**	mg/L	Lead	**14.3**	mg/L			
Sodium	**12100**	mg/L	Cobalt	**0.558**	mg/L			
Potassium	**154**	mg/L	Chromium	**<0.100**	mg/L			

Anions - Analyzed by IC

Chloride	**20800**	mg/L	Sulfate	**1660**	mg/L
Bromide	**21.5**	mg/L			

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.08	0.00	0.00	0.00	0.00	0.00	1.37
75°	0.00	0.07	0.00	0.00	0.00	0.00	0.00	1.37
100°	0.00	0.06	0.00	0.00	0.00	0.00	0.00	1.37
125°	0.00	0.04	0.00	0.00	0.00	0.00	0.00	1.36
150°	0.00	0.02	0.00	0.00	0.00	0.00	0.00	1.36
175°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36
200°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36
225°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36
250°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36
275°	80.70	0.00	0.00	0.68	0.00	0.00	0.00	1.36
300°	162.73	0.00	0.00	3.10	0.00	0.00	0.00	1.36
325°	232.13	0.00	0.00	5.09	0.00	0.00	0.00	1.37
350°	291.10	0.00	0.00	6.71	0.00	0.00	0.00	1.37
375°	341.24	0.00	0.00	8.00	0.00	0.00	0.00	1.37
400°	383.70	0.00	0.00	9.02	0.00	0.00	0.00	1.37

SI

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	-1.33	0.83	-0.75	-0.48	-0.72	-2.39	-1.73	2.89
75°	-1.13	0.58	-0.76	-0.50	-0.74	-2.43	-1.64	2.59
100°	-0.94	0.37	-0.77	-0.48	-0.73	-2.46	-1.55	2.36
125°	-0.76	0.20	-0.77	-0.44	-0.71	-2.48	-1.48	2.20
150°	-0.60	0.07	-0.76	-0.38	-0.68	-2.48	-1.42	2.09
175°	-0.45	-0.02	-0.75	-0.31	-0.67	-2.48	-1.37	2.03
200°	-0.30	-0.10	-0.72	-0.31	-0.66	-2.48	-1.33	2.00
225°	-0.16	-0.15	-0.69	-0.16	-0.66	-2.47	-1.30	2.01
250°	-0.02	-0.19	-0.64	-0.07	-0.67	-2.46	-1.27	2.05
275°	0.11	-0.21	-0.58	0.02	-0.67	-2.44	-1.25	2.10
300°	0.25	-0.23	-0.51	0.12	-0.65	-2.42	-1.23	2.18
325°	0.38	-0.25	-0.43	0.21	-0.61	-2.40	-1.21	2.28
350°	0.51	-0.26	-0.33	0.31	-0.51	-2.37	-1.20	2.39
375°	0.64	-0.27	-0.23	0.41	-0.34	-2.33	-1.18	2.52
400°	0.78	-0.29	-0.11	0.51	-0.08	-2.29	-1.17	2.65

Comments

Scaling predictions calculated using Scale Soft Pitzer 2019

Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

Complete Water Analysis

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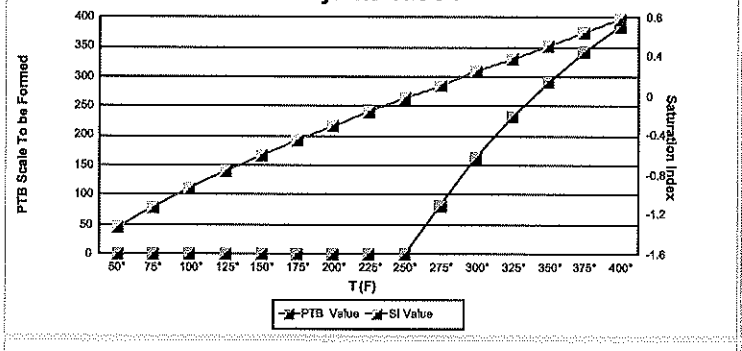
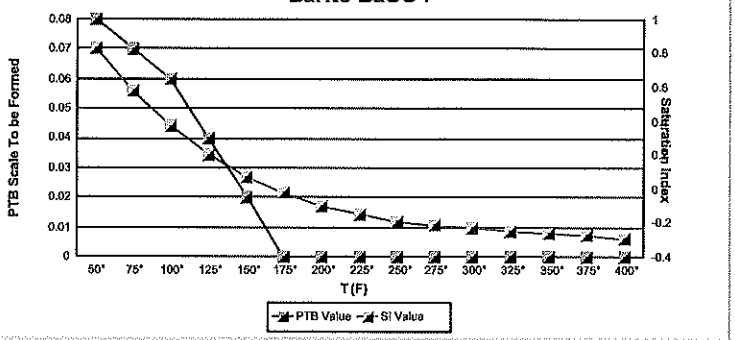
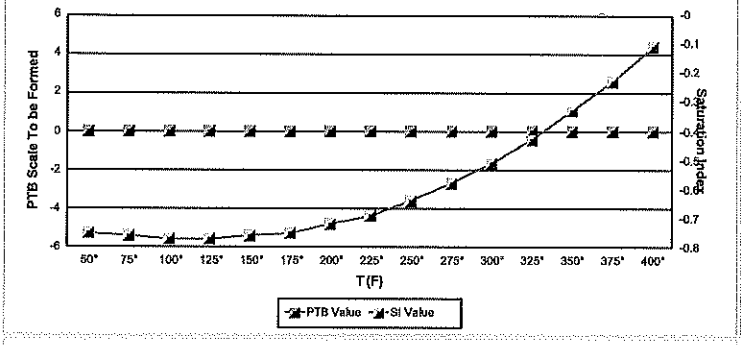
Anhydrite CaSO4



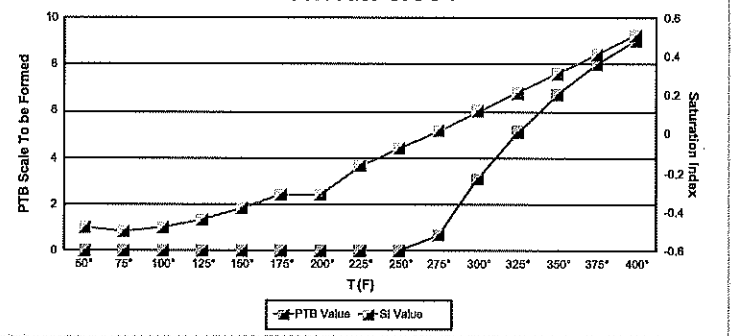
Barite BaSO4



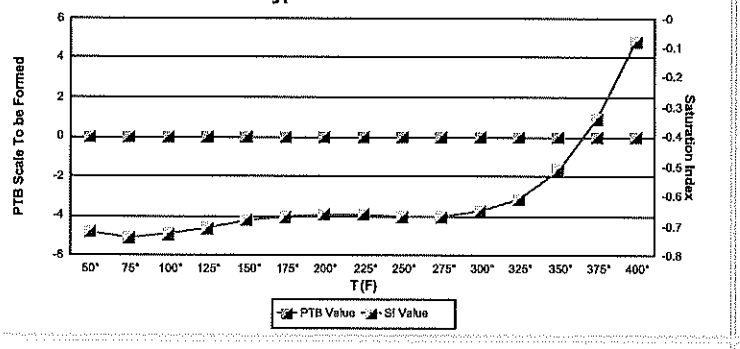
Calcite CaCO3



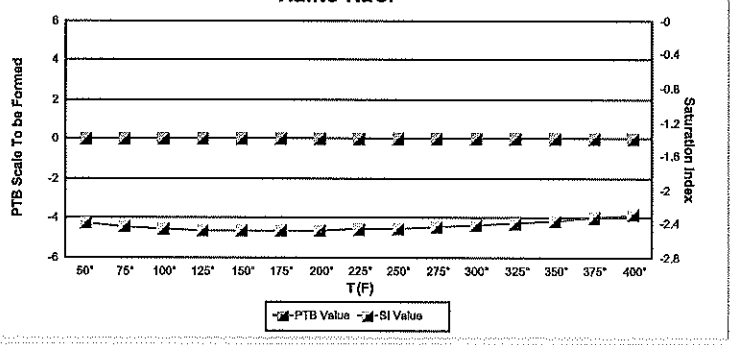
Celestite SrSO4



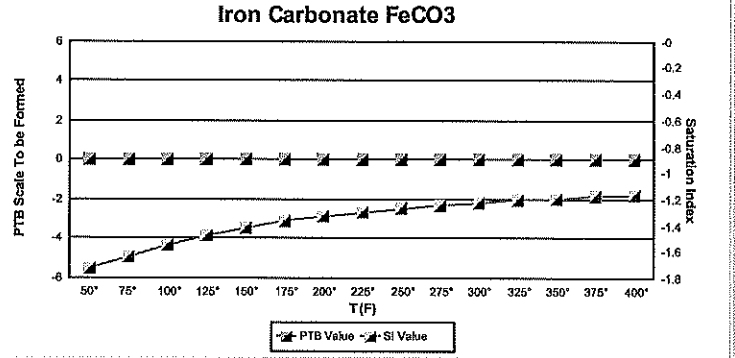
Gypsum CaSO4



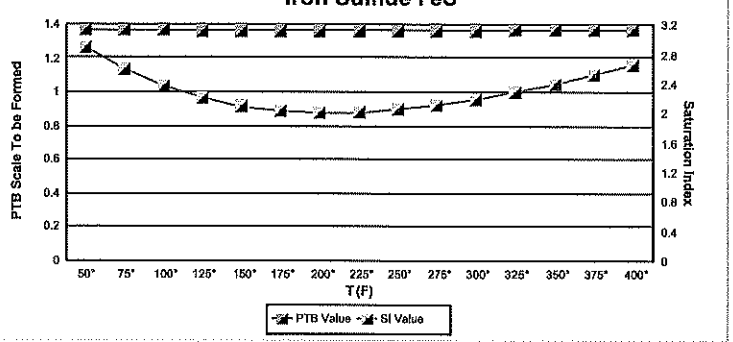
Halite NaCl



Iron Carbonate FeCO3



Iron Sulfide FeS



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