KOLAR Document ID: 1765198

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: HARPER-TALDO
Well Number: 1-22

API No.: 15-101-22435-00-01
Permit No: E32554.1
Reporting Year: 2023
(January 1 to December 31)

SE - SW - SE - NE Sec. 22 Twp. 18 S. R. 29 ☐ E ☑ W
(Q/Q/Q/Q)
2483 feet from ☑ N / ☐ S Line of Section
926 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: 55600 mg/l Specific Gravity: 1.049 Additives:
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: 1200 psi Injection Zone: ALTAMONT,JOHNSON
Maximum Authorized Injection Rate: 750 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	5177	1200	0	0	31
February	4217	1100	0	0	28
March	4220	1000	0	0	31
April	3789	1150	0	0	30
May	3823	850	0	0	31
June	4475	1100	0	0	30
July	4744	1100	0	0	31
August	3302	1100	0	0	31
September	4910	1200	0	0	30
October	4568	1200	0	0	31
November	4945	1200	0	0	30
December	5069	1200	0	0	31
TOTAL	53239		0		

Submitted Electronically

Complete Water Analysis

Customer:	**SHAKESPEARE OIL COMPANY**	Equipment Description:	**Harper Taldo 1-22**	Collect Date:	**02/20/2024**
Formation Zone:		Sample Point:	**Bleeder**	Submit Date:	**02/20/2024**
Geographic Region:	**Kansas**	Customer ID:		Report Date:	**02/22/2024**
Geographic Location:	**Lane County**	Latitude/Longitude:	**0.00, 0.00**	Sample ID:	**AX37091**
System Description:	**Production System**	Account Rep:	**Michael.walters@championx.com**	Location Code:	**430647**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	**171** mg/L	Titration
Dissolved CO2	**270** mg/L	Titration
Dissolved H2S	**68** mg/L	Titration
Pressure Surface	**25** psi	
Temperature	**100** ° F	
pH of Water	**7.5**	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	**1.049**	Densitometer
Ionic Strength	**0.990** mol/L	Calculation
Total Dissolved Solids	**55600** mg/L	Calculation
Calculated pH	**7.50**	Calculation
Calculated CO2 in the gas	**0.0900** %	Calculation

Cations - Analyzed By ICP

Iron	**0.870** mg/L	Boron	**22.7** mg/L	Silicon	**7.83** mg/L
Manganese	**<0.200** mg/L	Lithium	**3.87** mg/L	Aluminum	**<0.400** mg/L
Barium	**<0.100** mg/L	Copper	**<0.200** mg/L	Molybdenum	**<0.200** mg/L
Strontium	**36.9** mg/L	Nickel	**<0.200** mg/L	Phosphorus	**1.38** mg/L
Calcium	**725** mg/L	Zinc	**<0.400** mg/L	Measured Sodium	**18600** mg/L
Magnesium	**307** mg/L	Lead	**<0.500** mg/L		
Sodium	**18600** mg/L	Cobalt	**<0.500** mg/L		
Potassium	**245** mg/L	Chromium	**<0.100** mg/L		

Anions - Analyzed by IC*

Chloride	**31700** mg/L	Bromide	**27.4** mg/L	Sulfate	**3710** mg/L

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	2.89	1.20	0.00	0.00	0.00	0.48
75°	0.00	0.00	3.30	1.02	0.00	0.00	0.00	0.47
100°	0.00	0.00	3.92	2.39	0.00	0.00	0.00	0.47
125°	0.00	0.00	4.77	4.65	0.00	0.00	0.00	0.47
150°	0.00	0.00	5.84	7.31	0.00	0.00	0.00	0.46
175°	0.00	0.00	7.05	10.03	0.00	0.00	0.00	0.46
200°	82.54	0.00	8.34	12.61	0.00	0.00	0.00	0.46
225°	231.84	0.00	9.67	14.94	0.00	0.00	0.00	0.47
250°	351.88	0.00	11.00	16.98	0.00	0.00	0.00	0.47
275°	449.05	0.00	12.32	18.72	0.00	0.00	0.00	0.47
300°	528.24	0.00	13.63	20.19	0.00	0.00	0.00	0.47
325°	593.12	0.00	14.94	21.41	0.00	0.00	0.00	0.47
350°	646.40	0.00	16.26	22.43	0.00	0.00	0.00	0.47
375°	690.12	0.00	17.61	23.25	0.00	0.00	0.00	0.48
400°	725.78	0.00	19.01	23.91	237.77	0.00	0.00	0.48

SI

	Anhydrite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	-0.94	0.09	0.02	-0.34	-2.05	-1.47	2.18
75°	-0.73	0.11	0.02	-0.35	-2.08	-1.34	1.91
100°	-0.55	0.13	0.04	-0.35	-2.11	-1.23	1.71
125°	-0.38	0.17	0.08	-0.33	-2.12	-1.12	1.59
150°	-0.22	0.22	0.14	-0.31	-2.13	-1.02	1.52
175°	-0.07	0.28	0.20	-0.30	-2.13	-0.92	1.49
200°	0.06	0.35	0.20	-0.30	-2.13	-0.84	1.50
225°	0.19	0.42	0.35	-0.32	-2.12	-0.76	1.53
250°	0.32	0.51	0.43	-0.33	-2.11	-0.69	1.59
275°	0.44	0.60	0.51	-0.35	-2.10	-0.64	1.66
300°	0.56	0.69	0.60	-0.35	-2.08	-0.59	1.75
325°	0.67	0.78	0.68	-0.32	-2.06	-0.57	1.84
350°	0.79	0.87	0.77	-0.24	-2.04	-0.56	1.93
375°	0.90	0.95	0.85	-0.09	-2.01	-0.57	2.03
400°	1.02	1.03	0.93	0.15	-1.97	-0.59	2.13

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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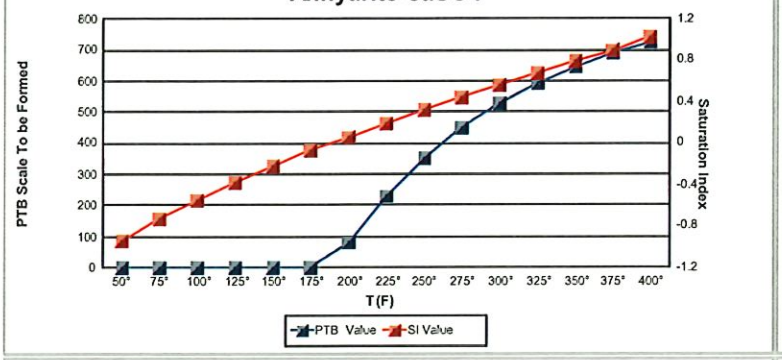
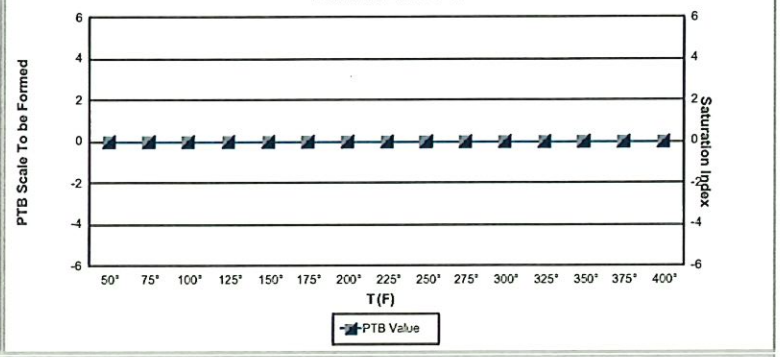
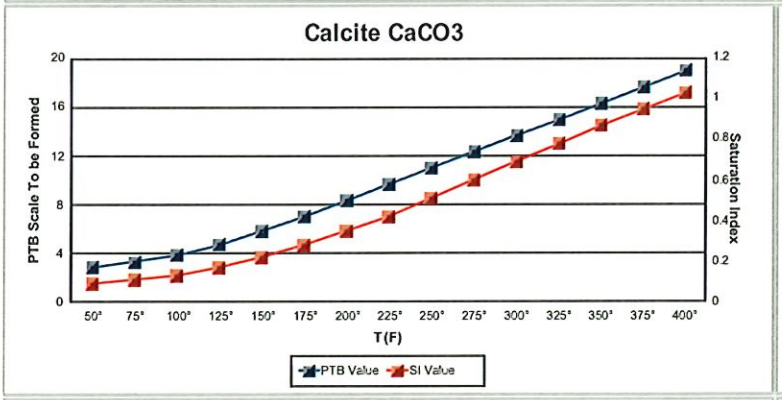
Anhydrite CaSO4



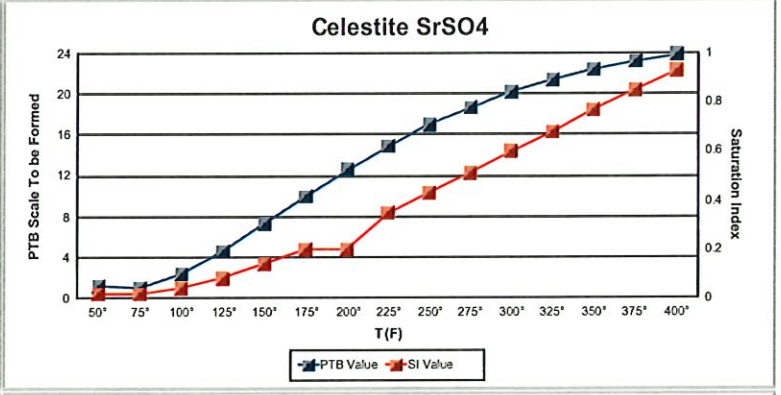
Barite BaSO4



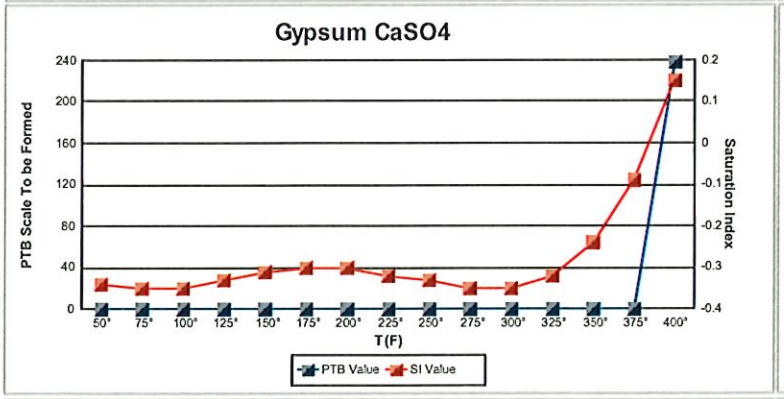
Calcite CaCO3



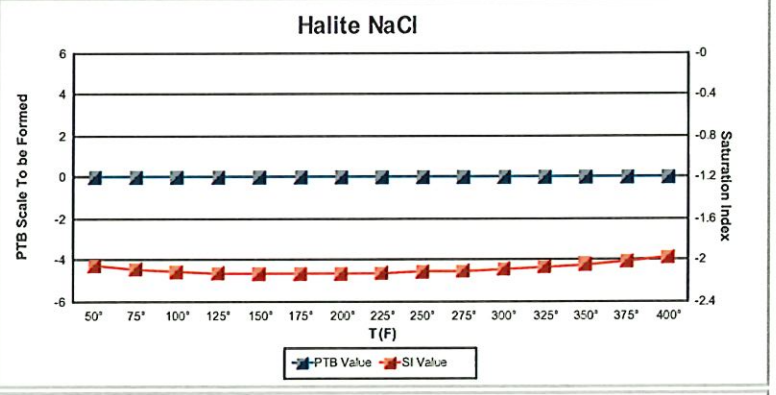
Celestite SrSO4



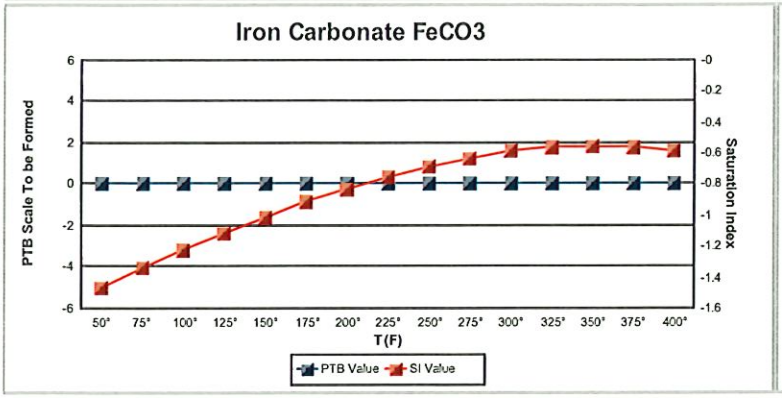
Gypsum CaSO4



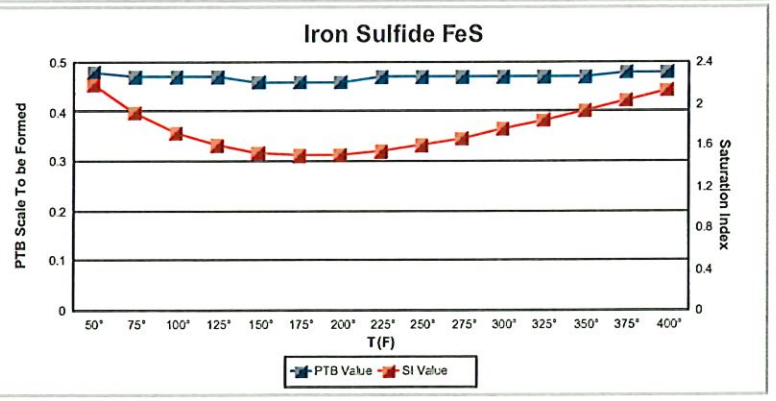
Halite NaCl



Iron Carbonate FeCO3



Iron Sulfide FeS



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