

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	_____	_____	_____	_____	_____
	<b>TOTAL</b>	_____	_____	_____	_____	_____

## Complete Water Analysis

Customer: **SHAKESPEARE OIL COMPANY**  
 Geographic Region: **Kansas**  
 Geographic Location: **Scott County**  
 System Description: **Production System**

Equipment Description: **Strickert 2**  
 Sample Point: **SWD**  
 Sample ID: **AV13091**  
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**  
 Receive Date: **02/22/2023**  
 Report Date: **02/23/2023**  
 Location Code: **503170**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	298 mg/L	Titration
Dissolved CO2	470 mg/L	Titration
Dissolved H2S	110 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis		
Analysis	Result	Analysis Method
Specific Gravity	1.026	Densitometer
Ionic Strength	0.570 mol/L	Calculation
Total Dissolved Solids	30500 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.210 %	Calculation

### Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	15.0 mg/L	Silicon	10.8 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	<0.100 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	31.7 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	1050 mg/L	Zinc	<0.400 mg/L	Measured Sodium	9860 mg/L
Magnesium	287 mg/L	Lead	<0.500 mg/L		
Sodium	9860 mg/L	Cobalt	0.666 mg/L		
Potassium	164 mg/L	Chromium	<0.100 mg/L		

### Anions - Analyzed by IC

Chloride	16400 mg/L	Sulfate	2380 mg/L
Bromide	23.8 mg/L		

### PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	29.07	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.00	29.25	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.00	29.79	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	30.67	0.00	0.00	0.00	0.00	0.00
150°	0.00	0.00	31.85	1.18	0.00	0.00	0.00	0.00
175°	73.92	0.00	33.26	3.99	0.00	0.00	0.00	0.00
200°	244.66	0.00	34.85	6.78	0.00	0.00	0.00	0.00
225°	384.73	0.00	36.58	9.39	0.00	0.00	0.00	0.00
250°	501.31	0.00	38.45	11.73	0.00	0.00	0.00	0.00
275°	599.43	0.00	40.44	13.77	0.00	0.00	0.00	0.00
300°	682.95	0.00	42.54	15.50	0.00	0.00	0.00	0.00
325°	754.76	0.00	44.79	16.96	0.00	0.00	0.00	0.00
350°	816.99	0.00	47.17	18.15	0.00	0.00	0.00	0.00
375°	871.17	0.00	49.69	19.13	193.68	0.00	0.00	0.00
400°	918.43	0.00	52.34	19.90	540.52	0.00	0.00	0.00

### SI

	Anhydrite	Calcite	Celestite	Gypsum	Halite
50°	-0.80	0.54	-0.05	-0.18	-2.58
75°	-0.60	0.56	-0.07	-0.21	-2.62
100°	-0.42	0.58	-0.06	-0.21	-2.65
125°	-0.25	0.63	-0.03	-0.19	-2.67
150°	-0.09	0.69	0.02	-0.17	-2.67
175°	0.05	0.76	0.08	-0.16	-2.67
200°	0.20	0.84	0.08	-0.16	-2.67
225°	0.33	0.94	0.23	-0.17	-2.66
250°	0.46	1.05	0.31	-0.18	-2.64
275°	0.59	1.17	0.39	-0.19	-2.63
300°	0.72	1.29	0.48	-0.18	-2.60
325°	0.84	1.41	0.57	-0.14	-2.58
350°	0.97	1.54	0.66	-0.05	-2.55
375°	1.10	1.67	0.75	0.12	-2.51
400°	1.23	1.79	0.84	0.38	-2.47

### 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.

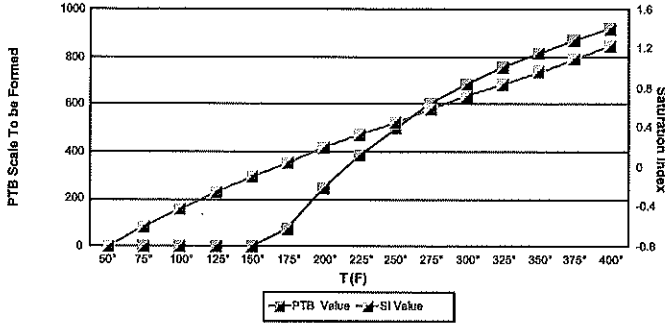
## Complete Water Analysis

Customer: SHAKESPEARE OIL COMPANY  
 Geographic Region: Kansas  
 Geographic Location: Scott County  
 System Description: Production System

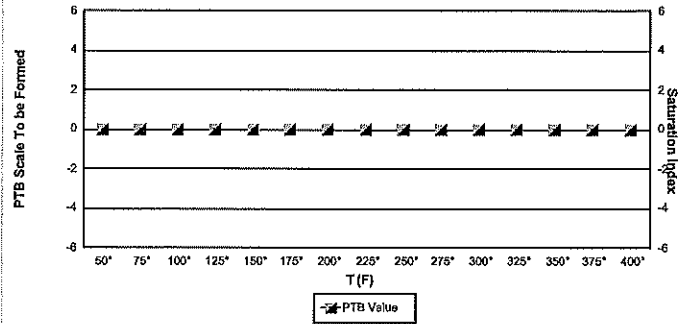
Equipment Description: Strickert 2  
 Sample Point: SWD  
 Sample ID: AV13091  
 Account Rep: Michael.Walters@championx.com

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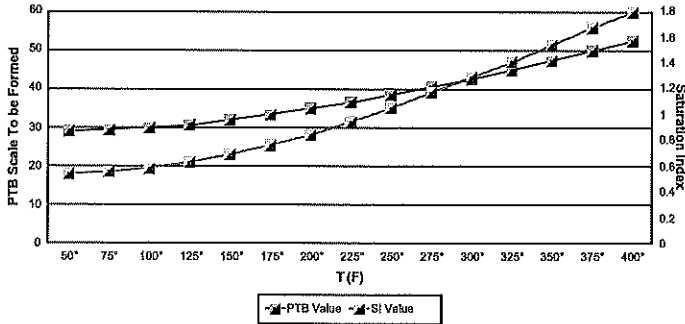
**Anhydrite CaSO4**



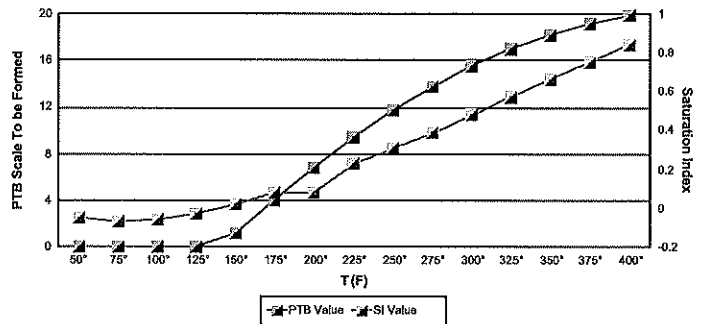
**Barite BaSO4**



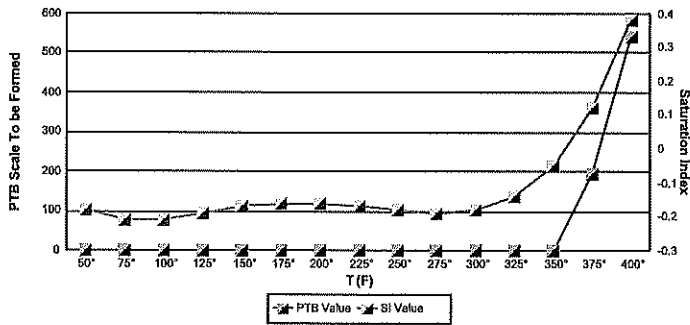
**Calcite CaCO3**



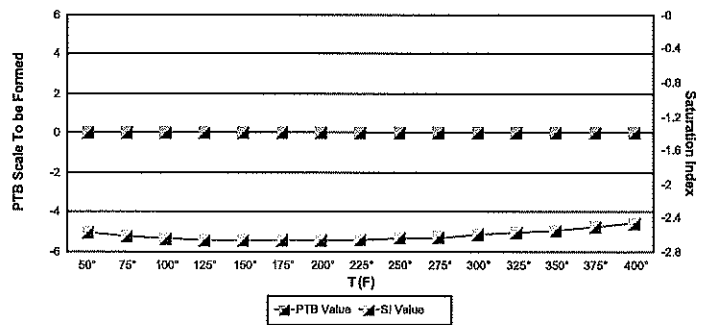
**Celestite SrSO4**



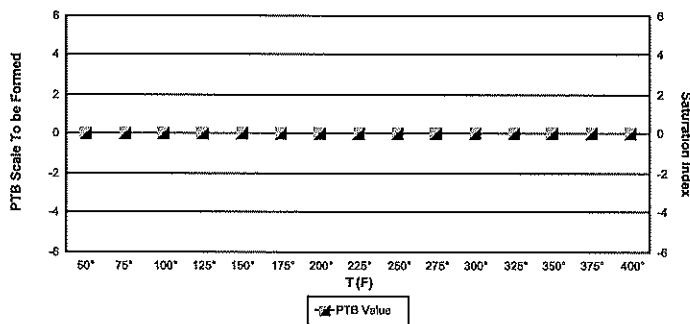
**Gypsum CaSO4**



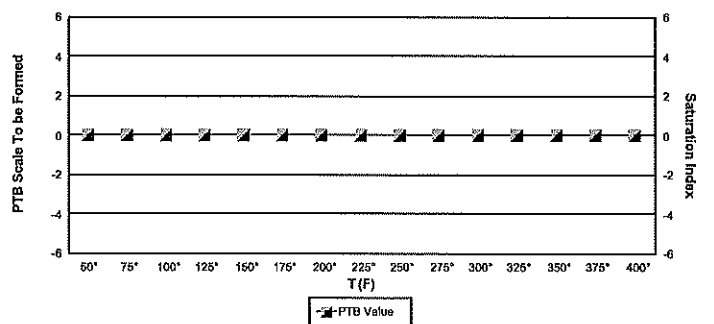
**Halite NaCl**



**Iron Carbonate FeCO3**



**Iron Sulfide FeS**



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 02/24/2023