

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 Disposal**  
 Sample Point: **Bleeder**  
 Sample ID: **AV13090**  
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**  
 Receive Date: **02/22/2023**  
 Report Date: **02/23/2023**  
 Location Code: **503169**

### Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	322 mg/L	Titration
Dissolved CO2	130 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	1.039	Densitometer
Ionic Strength	0.870 mol/L	Calculation
Total Dissolved Solids	46500 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.180 %	Calculation

### Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	16.6 mg/L	Silicon	9.34 mg/L
Manganese	<0.200 mg/L	Lithium	<1.000 mg/L	Aluminum	<0.400 mg/L
Barium	0.101 mg/L	Copper	<0.200 mg/L	Molybdenum	<0.200 mg/L
Strontium	41.2 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	1530 mg/L	Zinc	1.51 mg/L	Measured Sodium	16000 mg/L
Magnesium	434 mg/L	Lead	<0.500 mg/L		
Sodium	16000 mg/L	Cobalt	0.899 mg/L		
Potassium	221 mg/L	Chromium	<0.100 mg/L		

### Anions - Analyzed by IC

Chloride	25700 mg/L	Sulfate	2210 mg/L
Bromide	30.8 mg/L		

### PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Hallite	Iron Carbonate	Iron Sulfide
50°	0.00	0.04	34.65	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.03	34.35	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.02	34.28	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	34.49	0.00	0.00	0.00	0.00	0.00
150°	0.00	0.00	34.98	0.00	0.00	0.00	0.00	0.00
175°	54.40	0.00	35.74	2.12	0.00	0.00	0.00	0.00
200°	244.48	0.00	36.74	6.17	0.00	0.00	0.00	0.00
225°	397.50	0.00	37.95	9.89	0.00	0.00	0.00	0.00
250°	522.17	0.00	39.37	13.19	0.00	0.00	0.00	0.00
275°	624.61	0.00	40.97	16.05	0.00	0.00	0.00	0.00
300°	709.49	0.00	42.76	18.48	0.00	0.00	0.00	0.00
325°	780.29	0.00	44.73	20.52	0.00	0.00	0.00	0.00
350°	839.56	0.00	46.88	22.22	0.00	0.00	0.00	0.00
375°	889.17	0.00	49.20	23.61	45.71	0.00	0.00	0.00
400°	930.50	0.00	51.65	24.73	456.55	0.00	0.00	0.00

### SI

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Hallite
50°	-0.82	0.59	0.64	-0.13	-0.22	-2.19
75°	-0.62	0.34	0.65	-0.14	-0.24	-2.23
100°	-0.43	0.13	0.67	-0.12	-0.23	-2.26
125°	-0.26	-0.04	0.71	-0.08	-0.21	-2.27
150°	-0.11	-0.17	0.75	-0.03	-0.20	-2.28
175°	0.04	-0.28	0.81	0.03	-0.19	-2.28
200°	0.17	-0.36	0.88	0.03	-0.19	-2.28
225°	0.30	-0.42	0.97	0.17	-0.20	-2.27
250°	0.43	-0.47	1.06	0.25	-0.22	-2.26
275°	0.55	-0.51	1.16	0.33	-0.24	-2.24
300°	0.67	-0.54	1.27	0.41	-0.24	-2.23
325°	0.78	-0.57	1.38	0.50	-0.21	-2.20
350°	0.90	-0.60	1.50	0.58	-0.13	-2.18
375°	1.01	-0.63	1.61	0.66	0.02	-2.15
400°	1.13	-0.66	1.72	0.74	0.27	-2.11

### 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.

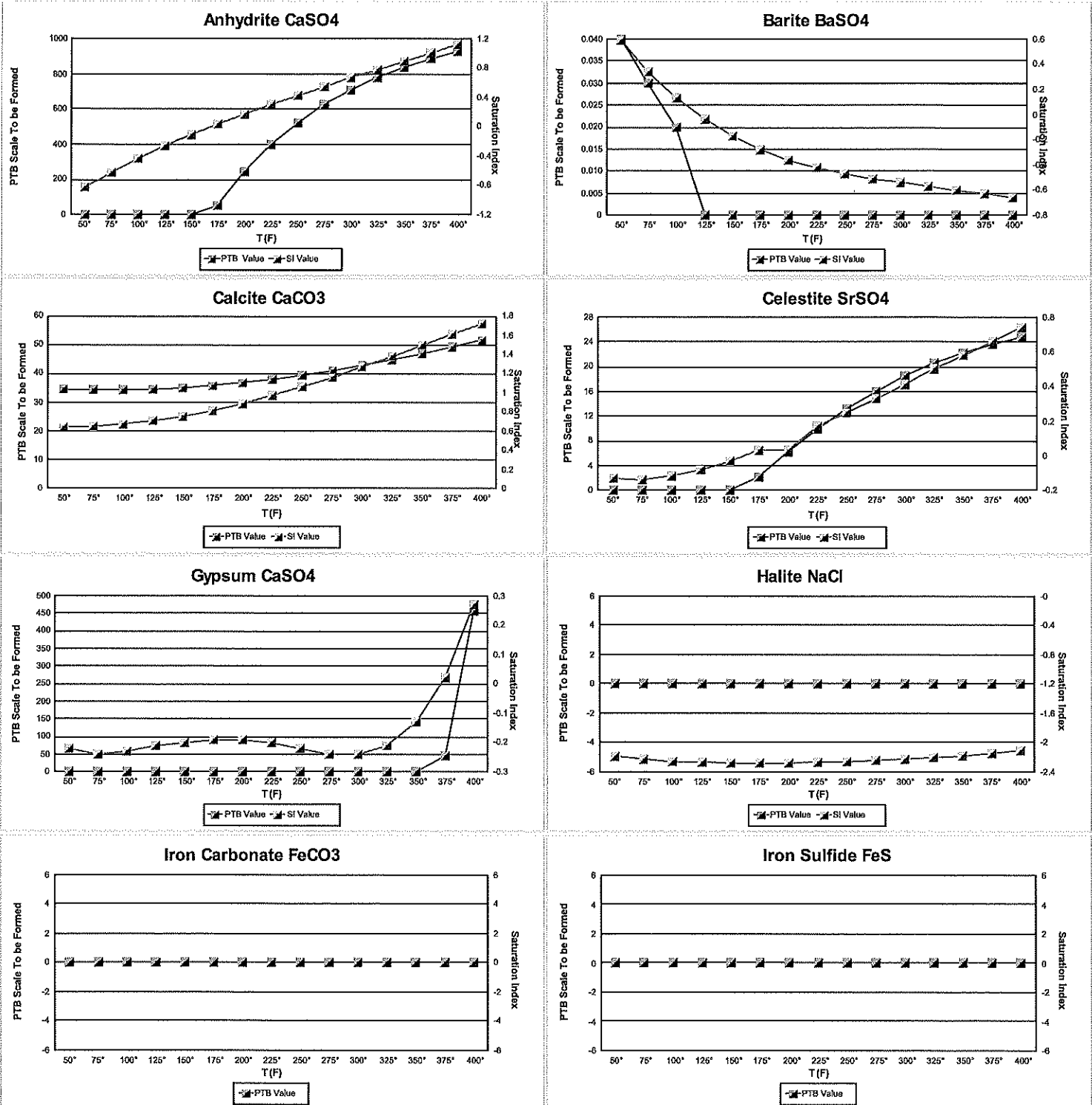
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 02/24/2023

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