

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	_____	_____	_____	_____	_____
	TOTAL	_____	_____	_____	_____	_____

Complete Water Analysis

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

Equipment Description: **Steele 1 SWD**
 Sample Point: **Bleeder**
 Sample ID: **AV13096**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430655**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO ₃)	283 mg/L	Titration
Dissolved CO ₂	330 mg/L	Titration
Dissolved H ₂ S	87 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis

Analysis	Result	Analysis Method
Specific Gravity	1.038	Densitometer
Ionic Strength	0.860 mol/L	Calculation
Total Dissolved Solids	46800 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO ₂ in the gas	0.220 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	20.5 mg/L	Silicon	8.95 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	26.6 mg/L	Nickel	<0.200 mg/L	Phosphorus	0.870 mg/L
Calcium	965 mg/L	Zinc	<0.400 mg/L	Measured Sodium	15400 mg/L
Magnesium	322 mg/L	Lead	<0.500 mg/L		
Sodium	15400 mg/L	Cobalt	0.728 mg/L		
Potassium	183 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	25300 mg/L	Sulfate	4230 mg/L
Bromide	25.1 mg/L		

PTB

	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	26.81	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.00	27.83	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.00	29.09	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	30.60	0.99	0.00	0.00	0.00	0.00
150°	0.00	0.00	32.28	3.01	0.00	0.00	0.00	0.00
175°	205.59	0.00	34.07	5.16	0.00	0.00	0.00	0.00
200°	386.30	0.00	35.93	7.24	0.00	0.00	0.00	0.00
225°	530.79	0.00	37.81	9.16	0.00	0.00	0.00	0.00
250°	647.52	0.00	39.71	10.86	0.00	0.00	0.00	0.00
275°	742.42	0.00	41.62	12.33	0.00	0.00	0.00	0.00
300°	820.08	0.00	43.55	13.58	0.00	0.00	0.00	0.00
325°	883.92	0.00	45.52	14.62	0.00	0.00	0.00	0.00
350°	936.50	0.00	47.55	15.49	0.00	0.00	0.00	0.00
375°	979.72	0.00	49.65	16.20	234.48	0.00	0.00	0.00
400°	1,015.04	0.00	51.82	16.77	627.32	0.00	0.00	0.00

SI

	Anhydrite	Calcite	Celestite	Gypsum	Halite
50°	-0.72	0.54	-0.02	-0.11	-2.23
75°	-0.52	0.57	-0.03	-0.13	-2.26
100°	-0.33	0.61	-0.01	-0.13	-2.29
125°	-0.17	0.66	0.02	-0.11	-2.30
150°	-0.01	0.73	0.07	-0.10	-2.31
175°	0.13	0.82	0.13	-0.09	-2.31
200°	0.27	0.91	0.13	-0.10	-2.31
225°	0.40	1.02	0.28	-0.11	-2.30
250°	0.52	1.13	0.35	-0.13	-2.29
275°	0.64	1.25	0.43	-0.14	-2.27
300°	0.76	1.37	0.52	-0.14	-2.26
325°	0.87	1.48	0.60	-0.11	-2.23
350°	0.99	1.59	0.69	-0.03	-2.21
375°	1.10	1.70	0.77	0.12	-2.18
400°	1.22	1.80	0.85	0.36	-2.14

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.

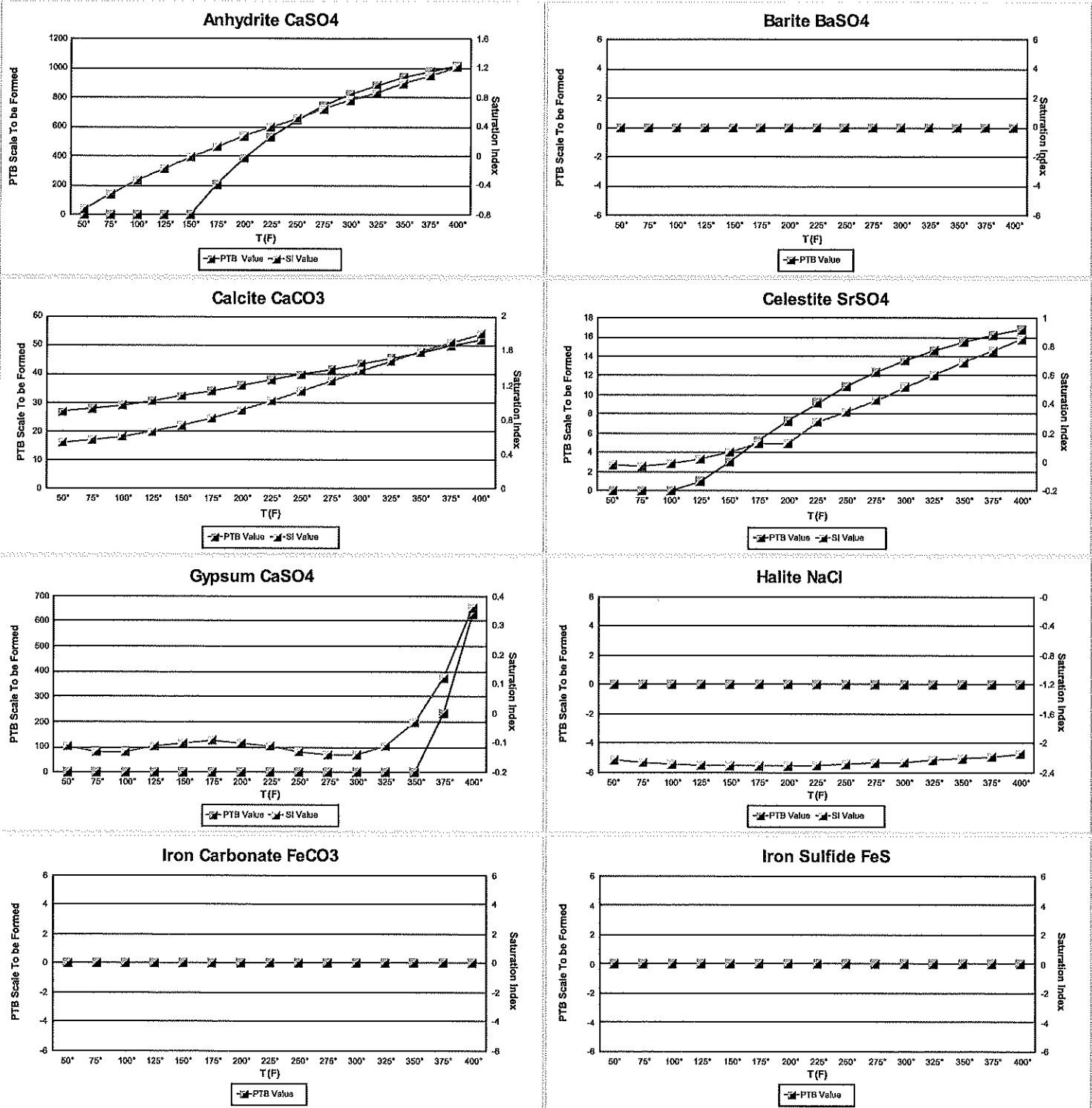
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 02/24/2023

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