

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: **Keenan 1 SWD**
 Sample Point: **Bleeder**
 Sample ID: **AV13085**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430666**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	210 mg/L	Titration
Dissolved CO2	290 mg/L	Titration
Dissolved H2S	82 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 ° F	
pH of Water	7.5	Meter

Sample Analysis		
Analysis	Result	Analysis Method
Specific Gravity	1.042	Densitometer
Ionic Strength	0.970 mol/L	Calculation
Total Dissolved Solids	53600 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.110 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	22.2 mg/L	Silicon	8.26 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	34.8 mg/L	Nickel	<0.200 mg/L	Phosphorus	0.935 mg/L
Calcium	924 mg/L	Zinc	<0.400 mg/L	Measured Sodium	17900 mg/L
Magnesium	320 mg/L	Lead	<0.500 mg/L		
Sodium	17900 mg/L	Cobalt	0.807 mg/L		
Potassium	207 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	30100 mg/L	Sulfate	3870 mg/L
Bromide	25.5 mg/L		

	PTB							
	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	10.93	1.02	0.00	0.00	0.00	0.00
75°	0.00	0.00	11.22	0.70	0.00	0.00	0.00	0.00
100°	0.00	0.00	11.73	1.91	0.00	0.00	0.00	0.00
125°	0.00	0.00	12.48	3.98	0.00	0.00	0.00	0.00
150°	0.00	0.00	13.46	6.46	0.00	0.00	0.00	0.00
175°	72.30	0.00	14.59	9.03	0.00	0.00	0.00	0.00
200°	263.05	0.00	15.85	11.48	0.00	0.00	0.00	0.00
225°	416.01	0.00	17.17	13.71	0.00	0.00	0.00	0.00
250°	540.08	0.00	18.54	15.67	0.00	0.00	0.00	0.00
275°	641.52	0.00	19.95	17.35	0.00	0.00	0.00	0.00
300°	725.13	0.00	21.39	18.77	0.00	0.00	0.00	0.00
325°	794.46	0.00	22.87	19.96	0.00	0.00	0.00	0.00
350°	852.14	0.00	24.41	20.94	0.00	0.00	0.00	0.00
375°	900.12	0.00	26.02	21.75	46.71	0.00	0.00	0.00
400°	939.82	0.00	27.71	22.39	462.14	0.00	0.00	0.00

	SI				
	Anhydrite	Calcite	Celestite	Gypsum	Halite
50°	-0.81	0.29	0.02	-0.21	-2.09
75°	-0.61	0.31	0.01	-0.23	-2.12
100°	-0.42	0.33	0.03	-0.22	-2.15
125°	-0.25	0.37	0.07	-0.20	-2.16
150°	-0.10	0.42	0.13	-0.19	-2.17
175°	0.05	0.48	0.19	-0.18	-2.17
200°	0.18	0.55	0.19	-0.18	-2.17
225°	0.31	0.63	0.34	-0.20	-2.16
250°	0.44	0.72	0.41	-0.22	-2.15
275°	0.56	0.81	0.50	-0.23	-2.14
300°	0.67	0.91	0.58	-0.23	-2.12
325°	0.79	1.01	0.66	-0.20	-2.10
350°	0.90	1.10	0.76	-0.13	-2.07
375°	1.01	1.19	0.83	0.02	-2.04
400°	1.13	1.28	0.91	0.27	-2.01

Comments

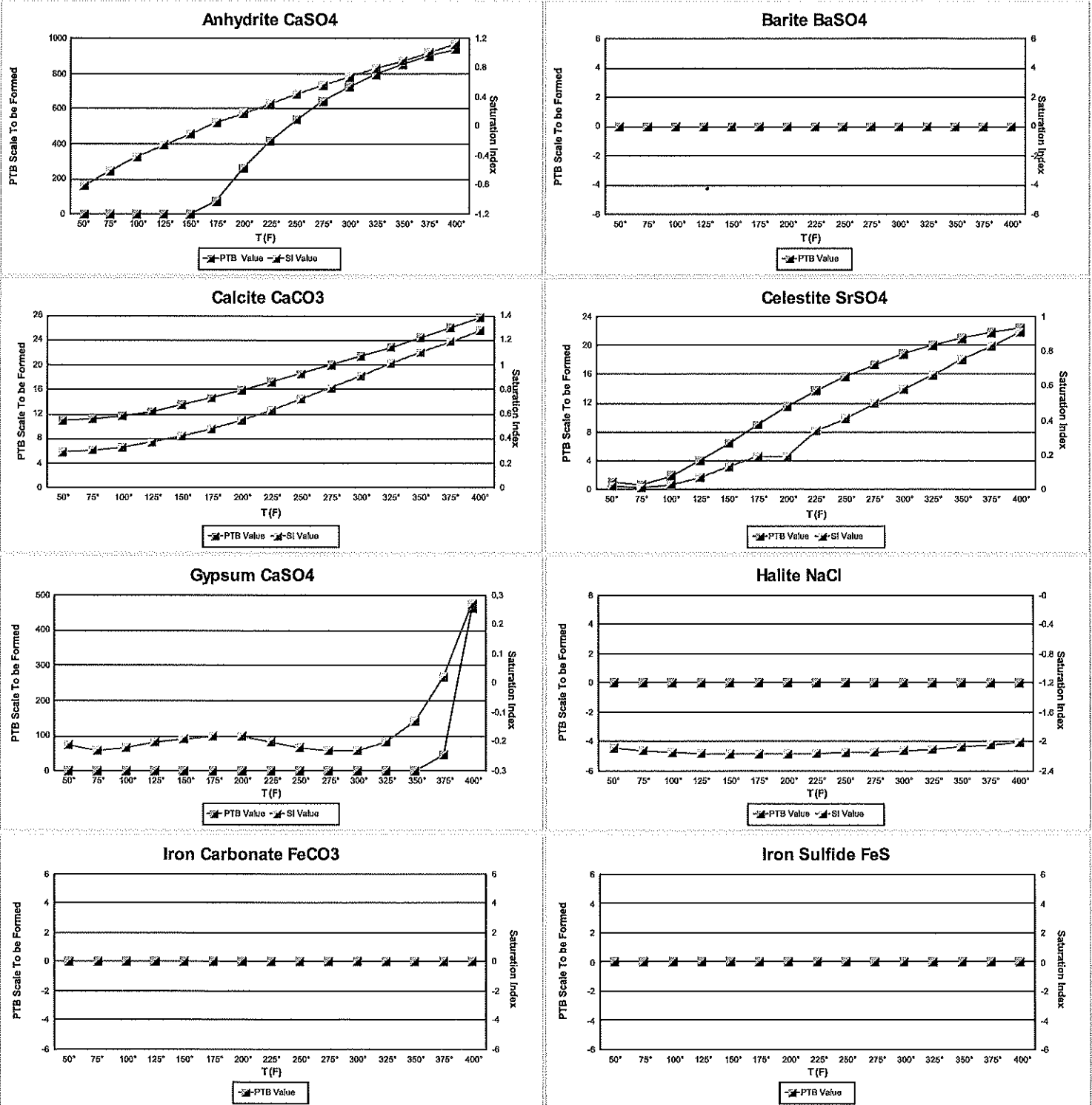
Scaling predictions calculated using Scale Soft Pitzer 2019
 Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

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 02/24/2023