

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: **Ness County**
 System Description: **Production System**

Equipment Description: **Vogel B 1-30 SWD**
 Sample Point: **Bleeder**
 Sample ID: **AV13083**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430675**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	239 mg/L	Titration
Dissolved CO2	400 mg/L	Titration
Dissolved H2S	120 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 °F	
pH of Water	7.5	Meter

Sample Analysis		
Analysis	Result	Analysis Method
Specific Gravity	1.025	Densitometer
Ionic Strength	0.570 mol/L	Calculation
Total Dissolved Solids	29600 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.0900 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	15.1 mg/L	Silicon	9.65 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	41.3 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	1370 mg/L	Zinc	<0.400 mg/L	Measured Sodium	8500 mg/L
Magnesium	385 mg/L	Lead	<0.500 mg/L		
Sodium	8500 mg/L	Cobalt	0.762 mg/L		
Potassium	187 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	16800 mg/L	Sulfate	2000 mg/L
Bromide	28.6 mg/L		

	PTB							
	Anhydrite	Barite	Calcite	Colestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	12.13	0.43	0.00	0.00	0.00	0.00
75°	0.00	0.00	11.88	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.00	11.48	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	11.55	1.05	0.00	0.00	0.00	0.00
150°	0.00	0.00	11.89	3.82	0.00	0.00	0.00	0.00
175°	131.21	0.00	12.48	6.96	0.00	0.00	0.00	0.00
200°	291.34	0.00	13.28	10.15	0.00	0.00	0.00	0.00
225°	420.95	0.00	14.28	13.17	0.00	0.00	0.00	0.00
250°	526.95	0.00	15.45	15.92	0.00	0.00	0.00	0.00
275°	614.20	0.00	16.78	18.33	0.00	0.00	0.00	0.00
300°	686.44	0.00	18.24	20.42	0.00	0.00	0.00	0.00
325°	746.45	0.00	19.84	22.18	0.00	0.00	0.00	0.00
350°	796.30	0.00	21.54	23.65	0.00	0.00	0.00	0.00
375°	837.57	0.00	23.32	24.85	225.98	0.00	0.00	0.00
400°	871.45	0.00	25.15	25.82	557.99	0.00	0.00	0.00

	SI				
	Anhydrite	Calcite	Colestite	Gypsum	Halite
50°	-0.74	0.33	0.01	-0.13	-2.63
75°	-0.55	0.32	-0.02	-0.15	-2.67
100°	-0.37	0.33	-0.01	-0.15	-2.70
125°	-0.20	0.34	0.02	-0.14	-2.72
150°	-0.05	0.37	0.06	-0.12	-2.72
175°	0.10	0.41	0.12	-0.12	-2.72
200°	0.24	0.46	0.12	-0.12	-2.72
225°	0.37	0.52	0.25	-0.13	-2.71
250°	0.50	0.60	0.33	-0.14	-2.70
275°	0.62	0.68	0.41	-0.15	-2.68
300°	0.75	0.78	0.49	-0.15	-2.66
325°	0.87	0.88	0.58	-0.11	-2.63
350°	0.99	0.99	0.66	-0.02	-2.60
375°	1.12	1.11	0.75	0.14	-2.56
400°	1.24	1.23	0.83	0.39	-2.52

Comments

Scaling predictions calculated using Scale Soft Pitzer 2019

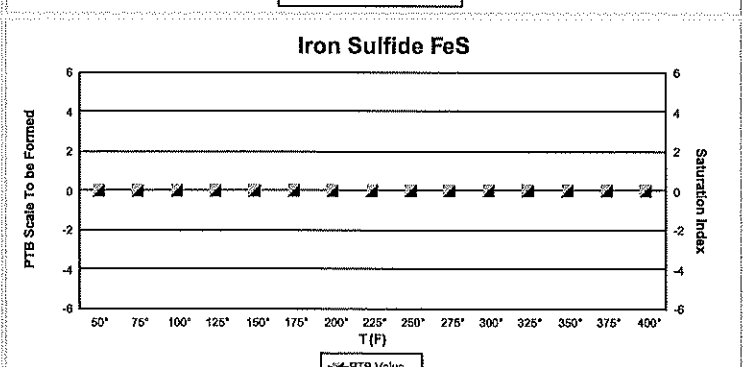
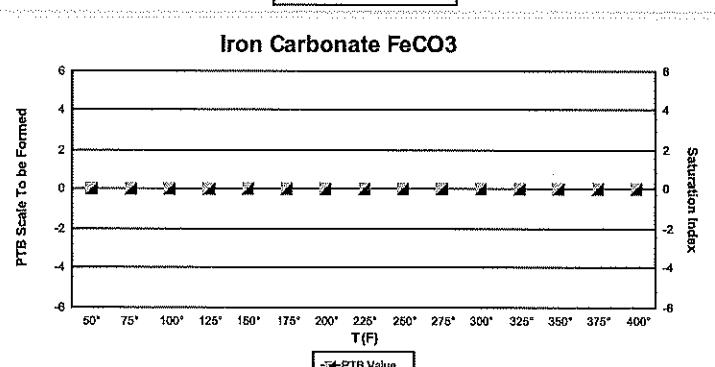
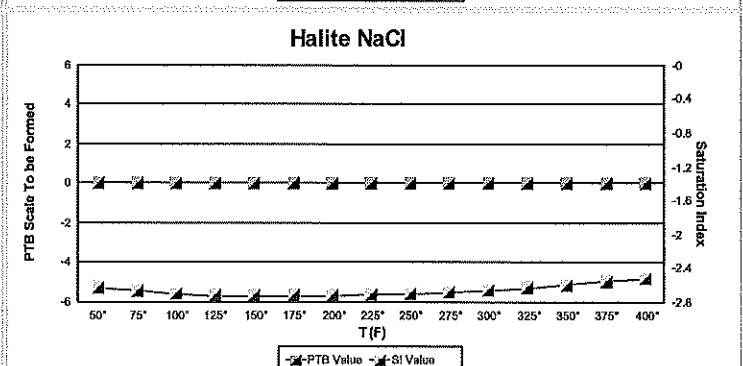
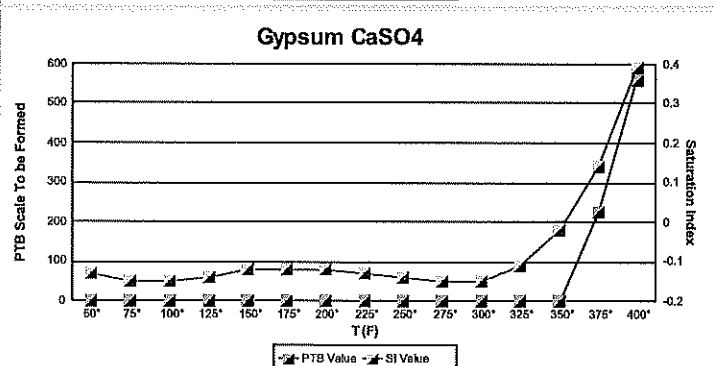
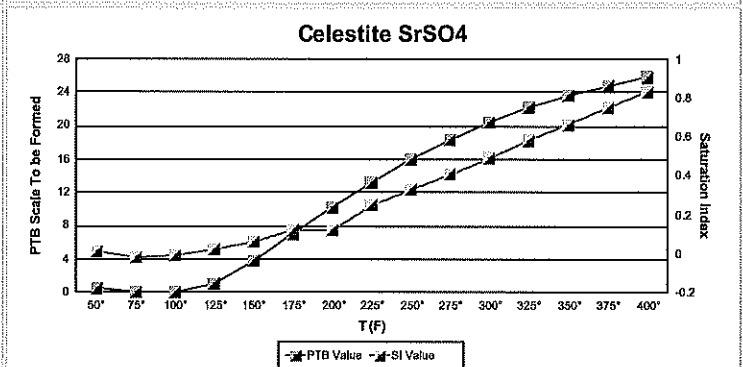
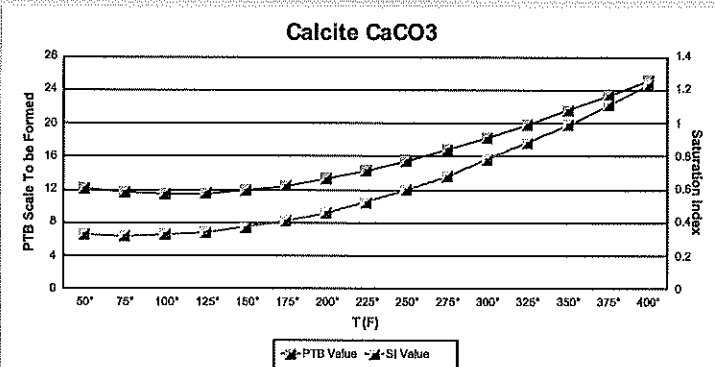
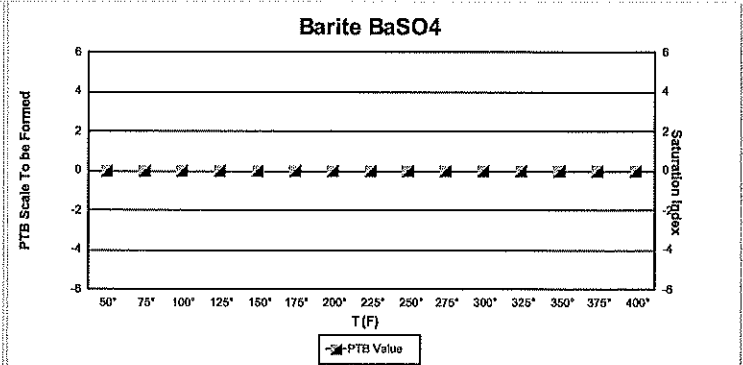
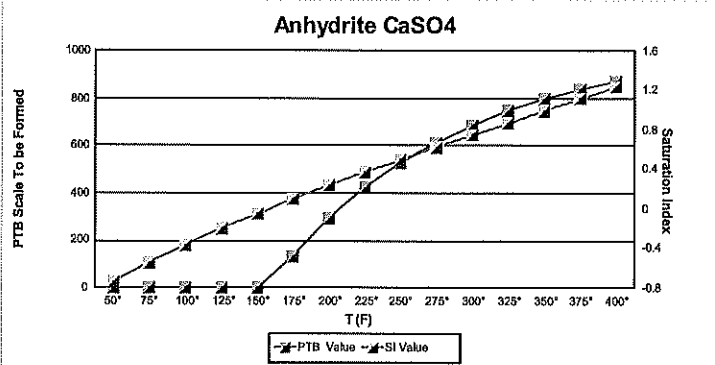
Scaling predictions dependent on provided field data. Incomplete/partial field data may impact results generated by scaling software.

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Scaling predictions calculated using Scale Soft Pitzer 2010

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