

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: **Hineman 1 OWWO**
 Sample Point: **Bleeder**
 Sample ID: **AV13103**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430649**

Field Analysis		
Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO3)	195 mg/L	Titration
Dissolved CO2	260 mg/L	Titration
Dissolved H2S	140 mg/L	Titration
Pressure Surface	25 psi	
Temperature	100 °F	
pH of Water	7.5	Meter

Sample Analysis		
Analysis	Result	Analysis Method
Specific Gravity	1.055	Densitometer
Ionic Strength	1.29 mol/L	Calculation
Total Dissolved Solids	71900 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO2 in the gas	0.00 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	25.1 mg/L	Silicon	7.64 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	8.41 mg/L
Calcium	1090 mg/L	Zinc	<0.400 mg/L	Measured Sodium	24800 mg/L
Magnesium	330 mg/L	Lead	<0.500 mg/L		
Sodium	24800 mg/L	Cobalt	0.909 mg/L		
Potassium	267 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	40900 mg/L	Sulfate	4250 mg/L
Bromide	36.7 mg/L		

	PTB							
	Anhydrite	Barite	Calcite	Celestite	Gypsum	Halite	Iron Carbonate	Iron Sulfide
50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125°	0.00	0.00	0.00	2.20	0.00	0.00	0.00	0.00
150°	0.00	0.00	0.00	5.09	0.00	0.00	0.00	0.00
175°	129.69	0.00	0.00	7.95	0.00	0.00	0.00	0.00
200°	338.58	0.00	0.00	10.61	0.00	0.00	0.00	0.00
225°	505.73	0.00	0.00	12.98	0.00	0.00	0.00	0.00
250°	641.27	0.00	0.00	15.03	0.00	0.00	0.00	0.00
275°	752.26	0.00	0.00	16.78	0.00	0.00	0.00	0.00
300°	844.11	0.00	0.00	18.24	0.00	0.00	0.00	0.00
325°	920.81	0.00	0.00	19.47	0.00	0.00	0.00	0.00
350°	985.31	0.00	0.00	20.49	0.00	0.00	0.00	0.00
375°	1,039.70	0.00	0.00	21.32	0.00	0.00	0.00	0.00
400°	1,085.47	0.00	0.00	22.00	468.81	0.00	0.00	0.00

	SI			
	Anhydrite	Celestite	Gypsum	Halite
50°	-0.79	-0.04	-0.20	-1.82
75°	-0.58	-0.04	-0.21	-1.85
100°	-0.39	-0.01	-0.20	-1.87
125°	-0.23	0.04	-0.19	-1.88
150°	-0.07	0.10	-0.17	-1.89
175°	0.07	0.16	-0.16	-1.89
200°	0.21	0.16	-0.17	-1.89
225°	0.33	0.31	-0.18	-1.88
250°	0.45	0.39	-0.21	-1.88
275°	0.57	0.47	-0.23	-1.87
300°	0.68	0.55	-0.24	-1.85
325°	0.79	0.63	-0.21	-1.84
350°	0.89	0.70	-0.14	-1.81
375°	1.00	0.78	0.00	-1.79
400°	1.10	0.86	0.23	-1.76

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.

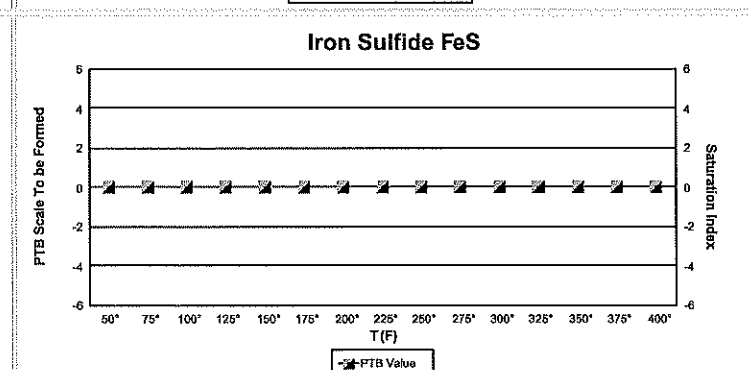
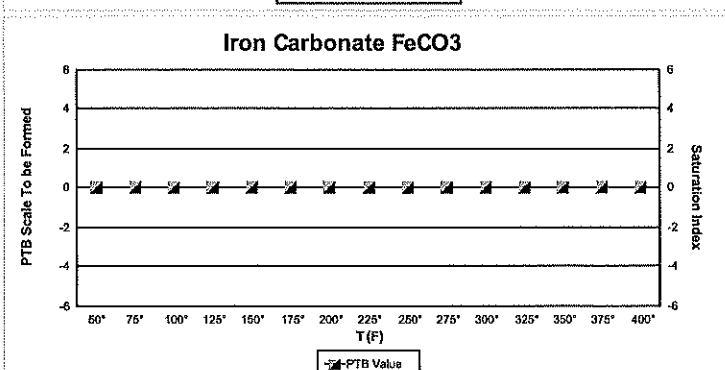
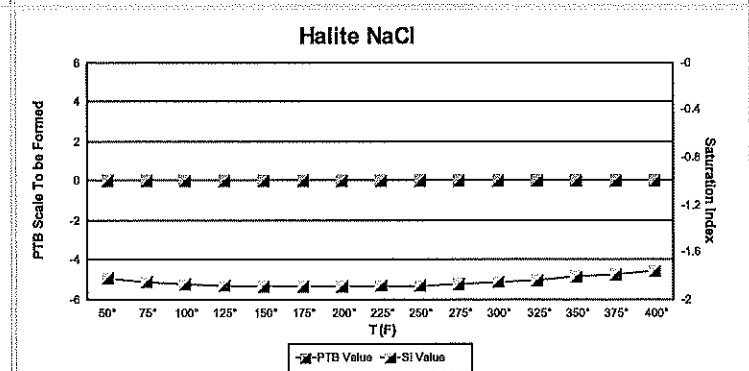
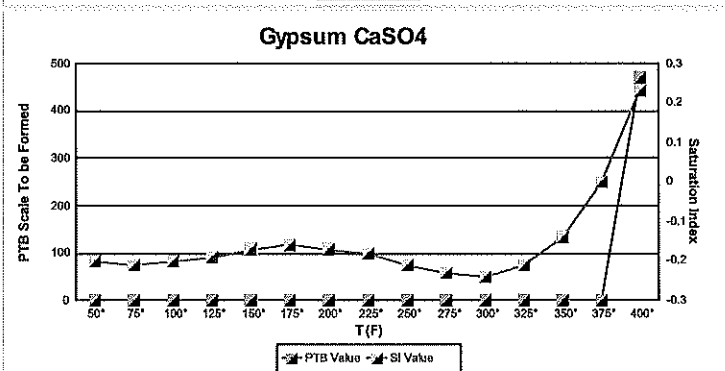
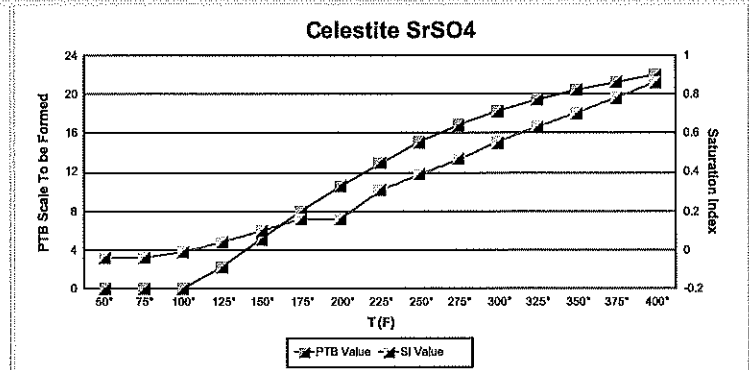
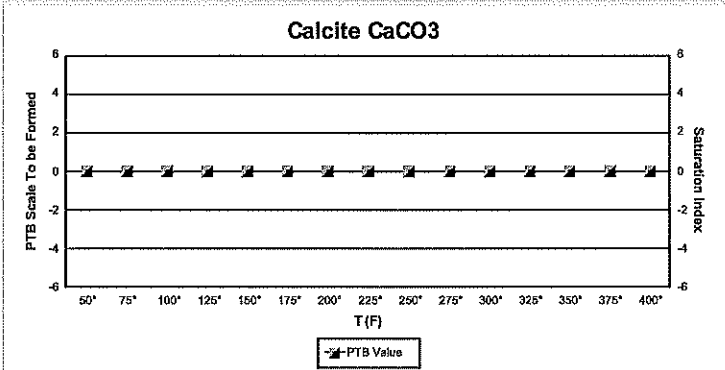
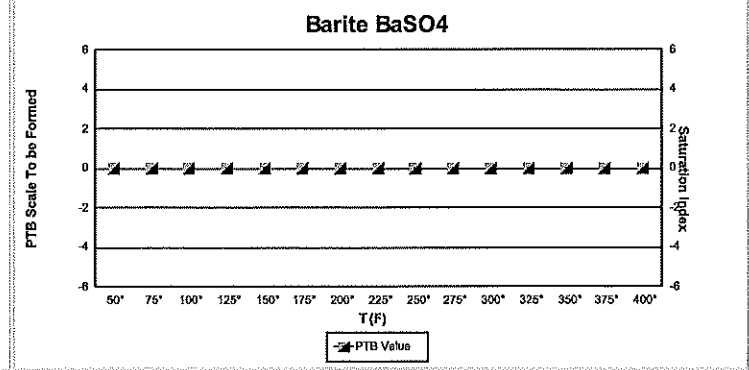
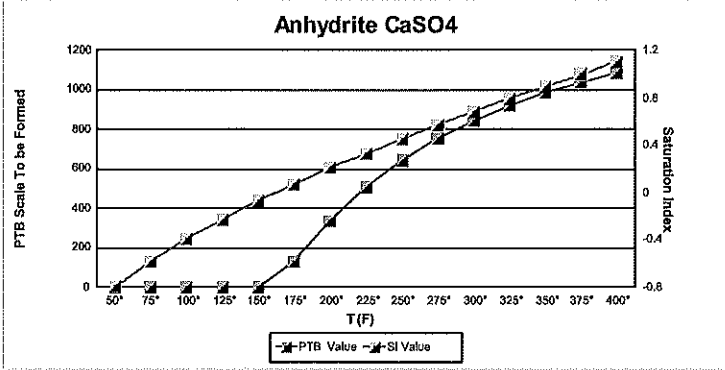
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 02/24/2023

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