

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	_____	_____	_____	_____	_____

Submitted Electronically

Complete Water Analysis

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

Equipment Description: **Hineman Unit 1-28**
 Sample Point: **Bleeder**
 Sample ID: **AV13095**
 Account Rep: **Michael.Walters@championx.com**

Collection Date: **02/16/2023**
 Receive Date: **02/22/2023**
 Report Date: **02/23/2023**
 Location Code: **430648**

Field Analysis

Analysis	Result	Analysis Method
Total Alkalinity (M-Alk as HCO ₃)	171 mg/L	Titration
Dissolved CO ₂	190 mg/L	Titration
Dissolved H ₂ S	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	1.045	Densitometer
Ionic Strength	1.04 mol/L	Calculation
Total Dissolved Solids	57700 mg/L	Calculation
Calculated pH	7.50	Calculation
Calculated CO ₂ in the gas	0.00 %	Calculation

Cations - Analyzed By ICP

Iron	<0.500 mg/L	Boron	22.6 mg/L	Silicon	7.75 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	28.5 mg/L	Nickel	<0.200 mg/L	Phosphorus	<0.500 mg/L
Calcium	925 mg/L	Zinc	<0.400 mg/L	Measured Sodium	19700 mg/L
Magnesium	334 mg/L	Lead	<0.500 mg/L		
Sodium	19700 mg/L	Cobalt	0.785 mg/L		
Potassium	224 mg/L	Chromium	<0.100 mg/L		

Anions - Analyzed by IC

Chloride	32300 mg/L	Sulfate	3940 mg/L
Bromide	29.2 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	0.00	0.00	0.00	0.00	0.00
150°	0.00	0.00	0.00	1.32	0.00	0.00	0.00	0.00
175°	48.01	0.00	0.00	4.01	0.00	0.00	0.00	0.00
200°	243.65	0.00	0.00	6.55	0.00	0.00	0.00	0.00
225°	400.20	0.00	0.00	8.84	0.00	0.00	0.00	0.00
250°	526.95	0.00	0.00	10.84	0.00	0.00	0.00	0.00
275°	630.42	0.00	0.00	12.56	0.00	0.00	0.00	0.00
300°	715.61	0.00	0.00	14.00	0.00	0.00	0.00	0.00
325°	786.21	0.00	0.00	15.21	0.00	0.00	0.00	0.00
350°	844.96	0.00	0.00	16.21	0.00	0.00	0.00	0.00
375°	893.86	0.00	0.00	17.02	0.00	0.00	0.00	0.00
400°	934.39	0.00	0.00	17.68	422.27	0.00	0.00	0.00

SI

	Anhydrite	Celestite	Gypsum	Halite
50°	-0.83	-0.09	-0.23	-2.02
75°	-0.63	-0.09	-0.25	-2.05
100°	-0.44	-0.07	-0.24	-2.07
125°	-0.27	-0.03	-0.22	-2.09
150°	-0.11	0.03	-0.21	-2.09
175°	0.03	0.09	-0.20	-2.10
200°	0.17	0.09	-0.20	-2.09
225°	0.30	0.24	-0.22	-2.09
250°	0.42	0.32	-0.23	-2.08
275°	0.54	0.40	-0.25	-2.07
300°	0.65	0.48	-0.25	-2.05
325°	0.77	0.57	-0.23	-2.03
350°	0.88	0.65	-0.15	-2.01
375°	0.99	0.73	0.00	-1.98
400°	1.10	0.81	0.24	-1.94

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

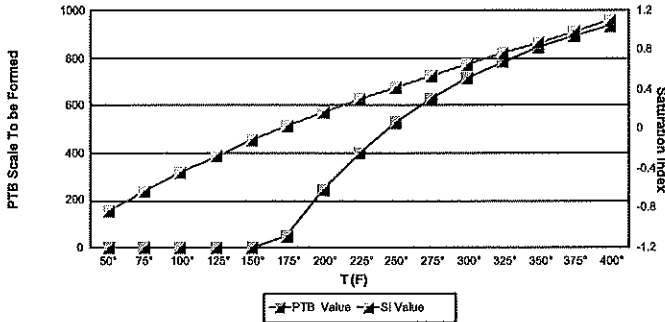
Complete Water Analysis

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

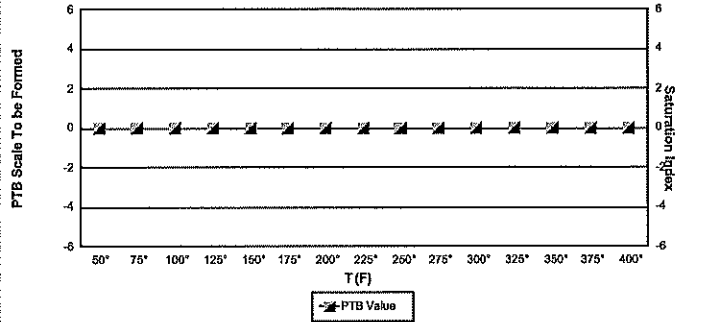
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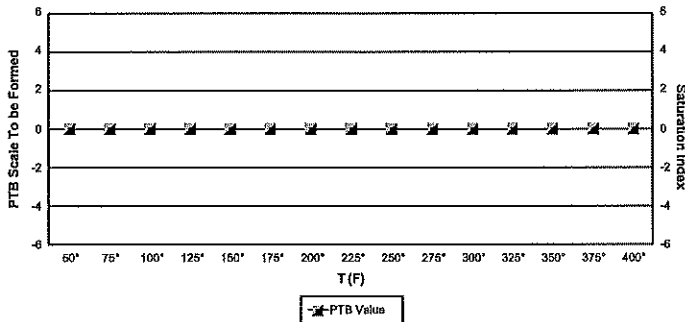
Anhydrite CaSO₄



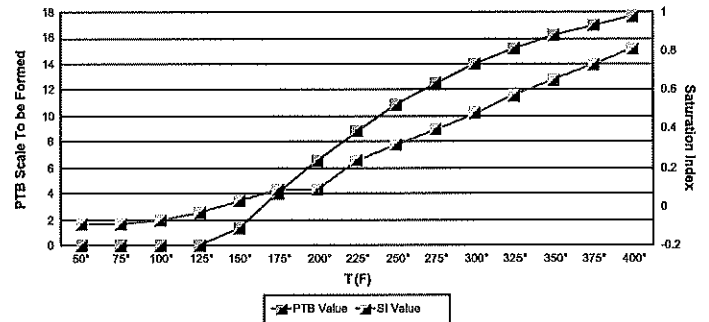
Barite BaSO₄



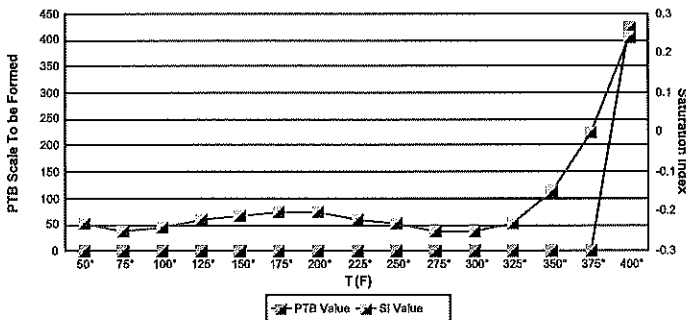
Calcite CaCO₃



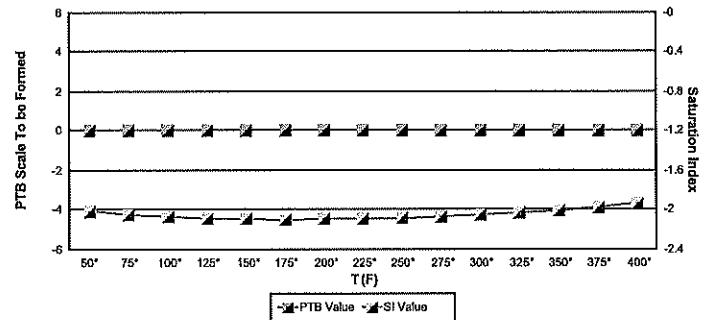
Celestite SrSO₄



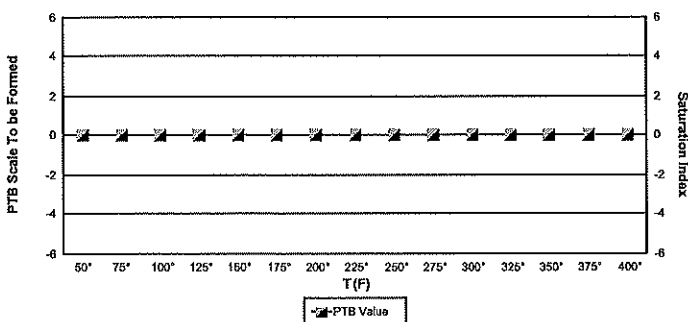
Gypsum CaSO₄



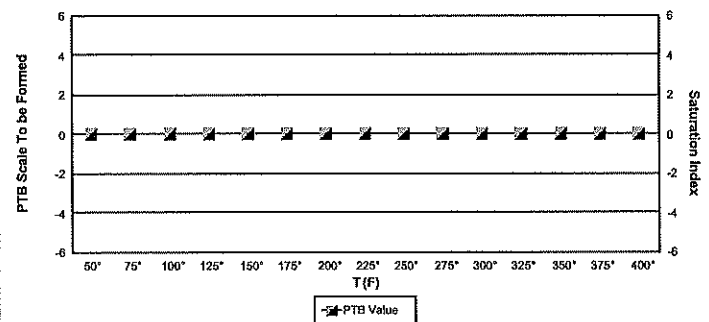
Halite NaCl



Iron Carbonate FeCO₃



Iron Sulfide FeS



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