

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 | _____ | _____ | _____ | _____ | _____ |

THE SYLVESTER OIL CO
 KYLE FRENCH
 LEAVENWORT KS

THEIS 5
 BLEEDER

Report Date: 05-27-2022 Sampled: 05-17-2022 at 0000
 Sample #: 6456 Sample ID: 302292

CATIONS

| | |
|-------------------------------|--------|
| Calcium (as Ca) | 432.40 |
| Magnesium (as Mg) | 180.30 |
| Barium (as Ba) | 68.01 |
| Strontium (as Sr) | 37.69 |
| Sodium (as Na) | 9677 |
| Potassium (as K) | 39.51 |
| Lithium (as Li) | 1.00 |
| Ammonia (as NH ₃) | 0.00 |
| Aluminum (as Al) | 0.140 |
| Iron (as Fe) | 29.85 |
| Manganese (as Mn) | 0.363 |
| Zinc (as Zn) | 0.157 |
| Lead (as Pb) | 0.00 |

ANIONS

| | |
|---|--------|
| Chloride (as Cl) | 16000 |
| Sulfate (as SO ₄) | 0.00 |
| Bromine (as Br) | 0.00 |
| Dissolved CO ₂ (as CO ₂) | 90.00 |
| Bicarbonate (as HCO ₃) | 610.00 |
| Carbonate (as CO ₃) | 0.00 |
| Oxalic acid (as C ₂ O ₄) | 0.00 |
| Silica (as SiO ₂) | 0.00 |
| Phosphate(as PO ₄) | 0.00 |
| H ₂ S (as H ₂ S) | 0.00 |
| Fluoride (as F) | 0.00 |
| Nitrate (as NO ₃) | 0.00 |
| Boron (as B) | 2.73 |

PARAMETERS

| | |
|------------------------|--------|
| Calculated T.D.S. | 27437 |
| Molar Conductivity | 34589 |
| Resistivity | 28.91 |
| Sp.Gr.(g/mL) | 1.016 |
| Pressure(atm) | 1.00 |
| pCO ₂ (atm) | 0.0171 |
| pH ₂ S(atm) | 0.00 |
| Temperature (°F) | 70.00 |
| pH | 7.45 |

BOUND IONS

| | TOTAL | FREE |
|-----------|--------------|-------------|
| Calcium | 439.32 | 426.76 |
| Barium | 69.10 | 69.10 |
| Carbonate | 8.94 | 1.87 |
| Phosphate | 0.00 | 0.00 |
| Sulfate | 0.00 | 0.00 |

CORROSION RATE PREDICTION

| | |
|--|--------|
| CO ₂ - H ₂ S Rate(mpy) | 0.0371 |
|--|--------|

COMMENTS

LEAVENWORT KS

THE SYLVESTER OIL CO
KYLE FRENCH
LEAVENWORT KS

THEIS 5
BLEEDER

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Sample #: 6456

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SATURATION RATIO as IAP/Ksp

| | |
|--|---------|
| Calcite (CaCO ₃) | 4.51 |
| Aragonite (CaCO ₃) | 4.24 |
| Witherite (BaCO ₃) | 0.30 |
| Strontianite (SrCO ₃) | 1.35 |
| Calcium oxalate (CaC ₂ O ₄) | 0.00 |
| Magnesite (MgCO ₃) | 1.48 |
| Anhydrite (CaSO ₄) | 0.00 |
| Gypsum (CaSO ₄ *2H ₂ O) | 0.00 |
| Barite (BaSO ₄) | 0.00 |
| Celestite (SrSO ₄) | 0.00 |
| Fluorite (CaF ₂) | 0.00 |
| Calcium phosphate | 0.00 |
| Hydroxyapatite | 0.00 |
| Silica (SiO ₂) | 0.00 |
| Brucite (Mg(OH) ₂) | < 0.001 |
| Magnesium silicate | 0.00 |
| Iron hydroxide (Fe(OH) ₃) | 3746.81 |
| Strengite (FePO ₄ *2H ₂ O) | 0.00 |
| Siderite (FeCO ₃) | 480.39 |
| Halite (NaCl) | 0.00 |
| Thenardite (Na ₂ SO ₄) | 0.00 |
| Iron sulfide (FeS) | 0.00 |

FREE ION MOMENTARY EXCESS (Lbs/1000 Barrels)

| | |
|--|----------|
| Calcite (CaCO ₃) | 0.843 |
| Aragonite (CaCO ₃) | 0.828 |
| Witherite (BaCO ₃) | -4.19 |
| Strontianite (SrCO ₃) | 0.392 |
| Calcium oxalate (CaC ₂ O ₄) | -0.114 |
| Magnesite (MgCO ₃) | 0.297 |
| Anhydrite (CaSO ₄) | -1115 |
| Gypsum (CaSO ₄ *2H ₂ O) | -929.83 |
| Barite (BaSO ₄) | -0.319 |
| Celestite (SrSO ₄) | -129.12 |
| Fluorite (CaF ₂) | -11.45 |
| Calcium phosphate | >-0.001 |
| Hydroxyapatite | -304.26 |
| Silica (SiO ₂) | -36.44 |
| Brucite (Mg(OH) ₂) | -0.837 |
| Magnesium silicate | -97.18 |
| Iron hydroxide (Fe(OH) ₃) | < 0.001 |
| Strengite (FePO ₄ *2H ₂ O) | >-0.001 |
| Siderite (FeCO ₃) | 1.25 |
| Halite (NaCl) | -172343 |
| Thenardite (Na ₂ SO ₄) | -60728 |
| Iron sulfide (FeS) | -0.00610 |

SIMPLE INDICES

| | |
|--------------------|-------|
| Langelier | 0.751 |
| Ryznar | 5.95 |
| Puckorius | 4.89 |
| Larson-Skold Index | 44.42 |
| Stiff Davis Index | 0.308 |
| Oddo-Tomson | 0.190 |

CARBONATE PRECIPITATION POTENTIAL (Lbs/1000 Barrels)

| | |
|-----------------------------------|-------|
| Calcite (CaCO ₃) | 46.49 |
| Aragonite (CaCO ₃) | 44.63 |
| Witherite (BaCO ₃) | -7.38 |
| Strontianite (SrCO ₃) | 5.21 |
| Magnesite (MgCO ₃) | 15.70 |
| Siderite (FeCO ₃) | 19.10 |

OPERATING CONDITIONS

| | |
|------------------|-------|
| Temperature (°F) | 70.00 |
| Time(secs) | 0.00 |



SYSTEM IDENTIFICATION

THE SYLVESTER OIL CO
THEIS 5
KYLE FRENCH
BLEEDER
LEAVENWORT KS

Sample ID#: 6456
ID 302292

Sample Date: 05-17-2022 at 0000
Report Date: 05-27-2022

WATER CHEMISTRY

CATIONS

Table listing cations: Calcium(as Ca), Magnesium(as Mg), Barium(as Ba), Strontium(as Sr), Sodium(as Na), Potassium(as K), Lithium(as Li), Iron(as Fe), Ammonia(as NH3), Aluminum(as Al), Manganese(as Mn), Zinc(as Zn), Lead(as Pb) with their respective concentrations.

ANIONS

Table listing anions: Chloride(as Cl), Sulfate(as SO4), Bromine(as Br), Dissolved CO2(as CO2), Bicarbonate(as HCO3), Carbonate(as CO3), Silica(as SiO2), Phosphate(as PO4), H2S (as H2S), Fluoride(as F), Nitrate(as NO3), Boron(as B) with their respective concentrations.

PARAMETERS

Table listing parameters: Temperature(°F), Conductivity, Resistivity, Sample pH, Sp.Gr.(g/mL), T.D.S. with their respective values.

SCALE AND CORROSION POTENTIAL

Large table showing saturation ratios for various minerals (Calcite, Anhydrite, Gypsum, Barite, Celestite, Siderite, Mackinawite) across a range of temperatures (50.00 to 220.00 °F) and pressures (1.000 to 18.207 atm). Includes columns for xSAT and precipitation/dissolution in lbs per 1000 barrels.

Saturation Ratios (xSAT) are the ratio of ion activity to solubility, e.g. {Ca}{CO3}/Ksp. pCO2 (atm) is the partial pressure of CO2 in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

