

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	_____	_____	_____	_____	_____
	<b>TOTAL</b>	_____	_____	_____	_____	_____



Location/Laboratory  
Address  
City, State, Zip

Report Date: 2/20/2019

### Complete Water Analysis Report SSP v.8

Customer:	Great Plains Energy	Sample Date:	2/20/2019
District:		Log Out Date:	
Area:	Norton Kansas Area	Sample ID:	
Lease:	Shulte #2 SWD	Analyst:	Greg Pollnow
Sample Point Name	Tank to Disposal	Chemical Used:	
Sales Rep:	Greg Pollnow	Comments:	

#### Great Plains Energy, Shulte #2 SWD, Tank to Disposal

Field Data		Analysis of Sample											
		Anions:		mg/L		meq/L		Cations:		mg/L		meq/L	
Initial Temperature (°F):	40	Chloride (Cl <sup>-</sup> ):	48300	1360.6	Sodium (Na <sup>+</sup> ):	24408	1065.8	Potassium (K <sup>+</sup> ):	0	0.0			
Final Temperature (°F):	100	Sulfate (SO <sub>4</sub> <sup>2-</sup> ):	485	10.1	Magnesium (Mg <sup>2+</sup> ):	486	40.0	Calcium (Ca <sup>2+</sup> ):	5400	269.5			
Initial Pressure (psi):	1	Borate (H <sub>3</sub> BO <sub>3</sub> ):	0.0	0.0	Strontium (Sr <sup>2+</sup> ):	0	0.0	Barium (Ba <sup>2+</sup> ):	0.0	0.0			
Final Pressure (psi):	25	Fluoride (F <sup>-</sup> ):	0.0	0.0	Iron (Fe <sup>2+</sup> ):	25.0	0.9	Manganese (Mn <sup>2+</sup> ):	0.00	0.0			
		Bromide (Br <sup>-</sup> ):	0.0	0.0	Lead (Pb <sup>2+</sup> ):	0.00	0.0	Zinc (Zn <sup>2+</sup> ):	0.0	0.0			
pH:		Nitrite (NO <sub>2</sub> <sup>-</sup> ):	0.0	0.0	Aluminum (Al <sup>3+</sup> ):	0.0	0.0	Chromium (Cr <sup>3+</sup> ):	0.0	0.0			
pH at time of sampling:	6.0	Nitrate (NO <sub>3</sub> <sup>-</sup> ):	0.0	0.0	Cobalt (Co <sup>2+</sup> ):	0.0	0.0	Copper (Cu <sup>2+</sup> ):	0.0	0.0			
pH at time of analysis:	NA	Phosphate (PO <sub>4</sub> <sup>3-</sup> ):	0.0	0.0	Molybdenum (Mo <sup>2+</sup> ):	0.0	0.0	Nickel (Ni <sup>2+</sup> ):	0.0	0.0			
pH used in Calcs:	6	Silica (SiO <sub>2</sub> ):	0.0	0.0	Tin (Sn <sup>2+</sup> ):	0.0	0.0	Titanium (Ti <sup>2+</sup> ):	0.0	0.0			
					Vanadium (V <sup>2+</sup> ):	0.0	0.0	Zirconium (Zr <sup>2+</sup> ):	0.0	0.0			
								Total Hardness:	8125	N/A			
Alkalinity by Titration:	mg/L meq/L	Organic Acids:		mg/L meq/L									
Bicarbonate (HCO <sub>3</sub> <sup>-</sup> ):	215 3.5	Formate:	0.0	0.0									
Carbonate (CO <sub>3</sub> <sup>2-</sup> ):	0 0.0	Acetate:	0.0	0.0									
Hydroxide (OH <sup>-</sup> ):	0 0.0	Propionate:	0.0	0.0									
aqueous CO <sub>2</sub> (ppm):	115 0.0	Butyrate:	0.0	0.0									
aqueous H <sub>2</sub> S (ppm):	10 0.0	Valerate:	0.0	0.0									
aqueous O <sub>2</sub> (ppb):	0 0.0	Anion/Cation Ratio:		1.00									
Calculated TDS (mg/L):	79319												
Density/Specific Gravity (g/cm <sup>3</sup> ):	1.0700												
Measured Density/Specific Gravity	0												
Conductivity (µmhos):	0												
MCF/D:	0												
BOPD:	0												
BWPD:	0												

Conditions		Barite (BaSO <sub>4</sub> )		Calcite (CaCO <sub>3</sub> )		Gypsum (CaSO <sub>4</sub> ·2H <sub>2</sub> O)		Anhydrite (CaSO <sub>4</sub> )	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amount	Index	Amt (PTB)
100°F	25 psi		0.000	0.42	22.196	-0.49	0.000	-0.62	0.000
93°F	24 psi		0.000	0.37	20.218	-0.50	0.000	-0.65	0.000
87°F	23 psi		0.000	0.33	18.126	-0.50	0.000	-0.68	0.000
80°F	22 psi		0.000	0.28	15.911	-0.50	0.000	-0.71	0.000
73°F	20 psi		0.000	0.24	13.561	-0.51	0.000	-0.74	0.000
67°F	19 psi		0.000	0.19	11.056	-0.51	0.000	-0.78	0.000
60°F	18 psi		0.000	0.14	8.369	-0.52	0.000	-0.81	0.000
53°F	17 psi		0.000	0.09	5.451	-0.53	0.000	-0.84	0.000
47°F	16 psi		0.000	0.04	2.213	-0.54	0.000	-0.87	0.000
40°F	15 psi		0.000	-0.02	0.000	-0.55	0.000	-0.91	0.000

Conditions		Celestite (SrSO <sub>4</sub> )		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO <sub>3</sub> )	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)
100°F	25 psi		0.000	-1.76	0.000	-9.48	0.000	-0.18	0.000
93°F	24 psi		0.000	-1.77	0.000	-9.50	0.000	-0.25	0.000
87°F	23 psi		0.000	-1.77	0.000	-9.52	0.000	-0.31	0.000
80°F	22 psi		0.000	-1.76	0.000	-9.53	0.000	-0.38	0.000
73°F	20 psi		0.000	-1.75	0.000	-9.55	0.000	-0.45	0.000
67°F	19 psi		0.000	-1.75	0.000	-9.56	0.000	-0.52	0.000
60°F	18 psi		0.000	-1.74	0.000	-9.57	0.000	-0.59	0.000
53°F	17 psi		0.000	-1.73	0.000	-9.58	0.000	-0.67	0.000
47°F	16 psi		0.000	-1.72	0.000	-9.58	0.000	-0.74	0.000
40°F	15 psi		0.000	-1.71	0.000	-9.58	0.000	-0.82	0.000

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered  
 Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.  
 Note 3: Saturation Index predictions on this sheet use pH and alkalinity. %CO<sub>2</sub> is not included in the calculations.



Sample ID: Great Plains Energy, Shulte #2 SWD, Tank to Disposal

