

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	_____	_____	_____	_____	_____



Location/Laboratory
Address
City, State, Zip

Report Date: 2/2/2018

Complete Water Analysis Report SSP v.8

Customer:	Great Plains Energy	Sample Date:	2/19/2018
District:		Log Out Date:	
Area:	Oberlin,ks	Sample ID:	
Lease:	Sauvage#2 SWD	Analyst:	Greg Pollnow
Sample Point Name	Tank to Disposal	Chemical Used:	
Sales Rep:	Greg Pollnow	Comments:	

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

Field Data		Analysis of Sample					
		Anions:		Cations:			
		mg/L	meq/L	mg/L	meq/L		
Initial Temperature (°F):	40	Chloride (Cl ⁻):	54000	1521.1	Sodium (Na ⁺):	30681	1339.8
Final Temperature (°F):	100	Sulfate (SO ₄ ²⁻):	600	12.5	Potassium (K ⁺):	0	0.0
Initial Pressure (psi):	1	Borate (H ₃ BO ₃):	0.0	0.0	Magnesium (Mg ²⁺):	486	40.0
Final Pressure (psi):	25	Fluoride (F ⁻):	0.0	0.0	Calcium (Ca ²⁺):	3200	159.7
		Bromide (Br ⁻):	0.0	0.0	Strontium (Sr ²⁺):	0	0.0
pH:		Nitrite (NO ₂ ⁻):	0.0	0.0	Barium (Ba ²⁺):	0.0	0.0
pH at time of sampling:	5.8	Nitrate (NO ₃ ⁻):	0.0	0.0	Iron (Fe ²⁺):	25.0	0.9
pH at time of analysis:	NA	Phosphate (PO ₄ ³⁻):	0.0	0.0	Manganese (Mn ²⁺):	0.00	0.0
pH used in Calcs:	6	Silica (SiO ₂):	0.0	0.0	Lead (Pb ²⁺):	0.00	0.0
					Zinc (Zn ²⁺):	0.0	0.0
Alkalinity by Titration:		mg/L	meq/L				
Bicarbonate (HCO ₃ ⁻):	280	4.6					
Carbonate (CO ₃ ²⁻):	0	0.0					
Hydroxide (OH ⁻):	0	0.0					
aqueous CO ₂ (ppm):	110	0.0					
aqueous H ₂ S (ppm):	5	0.0					
aqueous O ₂ (ppb):	0	0.0					
Calculated TDS (mg/L):	89272						
Density/Specific Gravity (g/cm ³):	1.0600						
Measured Density/Specific Gravity	0						
Conductivity (µmhos):	0						
MCF/D:	0						
BOPD:	0						
BWPD:	0						
		Anion/Cation Ratio:	1.00				
					Aluminum (Al ³⁺):	0.0	0.0
					Chromium (Cr ²⁺):	0.0	0.0
					Cobalt (Co ²⁺):	0.0	0.0
					Copper (Cu ²⁺):	0.0	0.0
					Molybdenum (Mo ²⁺):	0.0	0.0
					Nickel (Ni ²⁺):	0.0	0.0
					Tin (Sn ²⁺):	0.0	0.0
					Titanium (Ti ²⁺):	0.0	0.0
					Vanadium (V ²⁺):	0.0	0.0
					Zirconium (Zr ²⁺):	0.0	0.0
					Total Hardness:	8600	N/A

Conditions		Barite (BaSO ₄)		Calcite (CaCO ₃)		Gypsum (CaSO ₄ ·2H ₂ O)		Anhydrite (CaSO ₄)	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt	Index	Amt (PTB)
100°F	25 psi		0.000	0.31	21.919	-0.63	0.000	-0.75	0.000
93°F	24 psi		0.000	0.26	19.009	-0.63	0.000	-0.78	0.000
87°F	23 psi		0.000	0.21	15.925	-0.64	0.000	-0.81	0.000
80°F	22 psi		0.000	0.17	12.647	-0.64	0.000	-0.84	0.000
73°F	20 psi		0.000	0.12	9.155	-0.65	0.000	-0.87	0.000
67°F	19 psi		0.000	0.07	5.416	-0.65	0.000	-0.90	0.000
60°F	18 psi		0.000	0.02	1.383	-0.66	0.000	-0.93	0.000
53°F	17 psi		0.000	-0.04	0.000	-0.66	0.000	-0.97	0.000
47°F	16 psi		0.000	-0.09	0.000	-0.67	0.000	-1.00	0.000
40°F	15 psi		0.000	-0.16	0.000	-0.69	0.000	-1.04	0.000

Conditions		Celestite (SrSO ₄)		Halite (NaCl)		Iron Sulfide (FeS)		Iron Carbonate (FeCO ₃)	
Temp	Press.	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)	Index	Amt (PTB)
100°F	25 psi		0.000	-1.62	0.000	-9.44	0.000	-0.08	0.000
93°F	24 psi		0.000	-1.62	0.000	-9.46	0.000	-0.15	0.000
87°F	23 psi		0.000	-1.61	0.000	-9.48	0.000	-0.21	0.000
80°F	22 psi		0.000	-1.61	0.000	-9.50	0.000	-0.28	0.000
73°F	20 psi		0.000	-1.60	0.000	-9.51	0.000	-0.35	0.000
67°F	19 psi		0.000	-1.59	0.000	-9.53	0.000	-0.42	0.000
60°F	18 psi		0.000	-1.59	0.000	-9.54	0.000	-0.50	0.000
53°F	17 psi		0.000	-1.58	0.000	-9.55	0.000	-0.57	0.000
47°F	16 psi		0.000	-1.57	0.000	-9.55	0.000	-0.65	0.000
40°F	15 psi		0.000	-1.56	0.000	-9.55	0.000	-0.73	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. %CO₂ is not included in the calculations.



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

