KOLAR Document ID: 1841958

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 # 33629
Name: Great Plains Energy, Inc.
Address 1: 6121 S 58TH ST, STE B
Address 2:
City: LINCOLN State: NE Zip: 68516 + 3669
Contact Person: Matthew Mondero
Phone: (402) 443-6125
Lease Name: SHULTE
Well Number: 2

API No.: 15-137-20477-00-00
Permit No: D30228.0
Reporting Year: 2024
(January 1 to December 31)

S2 (Q/Q/Q/Q) - NE - NW - NW Sec. 16 Twp. 2 S. R. 25 ☐ E ☑ W
4740 feet from ☐ N / ☑ S Line of Section
4375 feet from ☑ E / ☐ W Line of Section
County: Norton

I. Injection Fluid:

Type *(Pick one)*: ☐ Fresh Water ☐ Treated Brine ☑ Untreated Brine ☐ Water/Brine
Source: ☑ Produced Water ☐ Other *(Attach list)*
Quality: Total Dissolved Solids: 83315 mg/l Specific Gravity: 1.075 Additives:
(Attach water analysis, if available)

II. Well Data:

Maximum Authorized Injection Pressure: 0 psi Injection Zone: CEDAR HILLS
Maximum Authorized Injection Rate: 500 barrels per day
Total Number of Enhanced Recovery Injection Wells Covered by this Permit: 1 *(Include TA's)*

III.

Month:	Total Fluid Injected BBL	Maximum Fluid Pressure	Total Gas Injected MCF	Maximum Gas Pressure	# Days of Injection
January	400	0			4
February	1280	0			4
March	1040	0			4
April	880	0			4
May	1200	0			4
June	1200	0			4
July	1520	0			5
August	2560	0			8
September	2640	0			8
October	2800	0			8
November	1920	0			5
December	2400	0			6
TOTAL	19840		0		

Submitted Electronically

Baker Hughes
1625
Plainville Kansas 67663

Report Date: 2/26/2020

Complete Water Analysis Report SSP v.8

Customer:	Great Plains	**Sample Date:**	2/20/20202
District:	Kansas	**Log Out Date:**	
Area:	Norton	**Sample ID:**	
Lease:	Shulte No. 2 SWD	**Analyst:**	Tim Beims
Sample Point Name	Tank to Shulte 2 SWD well	**Chemical Used:**	
Sales Rep:	Tim Beims	**Comments:**	

Great Plains, Shulte No. 2 SWD, Tank to Shulte 2 SWD well

Field Data

Initial Temperature (°F):	71
Final Temperature (°F):	85
Initial Pressure (psi):	15
Final Pressure (psi):	15

pH:	
pH at time of sampling:	6.0
pH at time of analysis:	NA
pH used in Calcs:	6.0

Alkalinity by Titration:	**mg/L**	**meq/L**
Bicarbonate (HCO_3^-):	160	2.6
Carbonate (CO_3^{2-}):	0	0.0
Hydroxide (OH^-):	0	0.0
aqueous CO_2 (ppm):	70	0.0
aqueous H_2S (ppm):	15	0.0
aqueous O_2 (ppb):		

Calculated TDS (mg/L):	83315
Density/Specific Gravity (g/cm³):	1.0750
Measured Density/Specific Gravity	0
Conductivity (µmhos):	0
MCF/D:	0
BOPD:	0
BWPD:	0

Analysis of Sample

Anions:	**mg/L**	**meq/L**
Chloride (Cl^-):	57600	1622.5
Sulfate (SO_4^{2-}):	500	10.4
Borate (H_3BO_3):	0.0	0.0
Fluoride (F^-):	0.0	0.0
Bromide (Br^-):	0.0	0.0
Nitrite (NO_2^-):	0.0	0.0
Nitrate (NO_3^-):	0.0	0.0
Phosphate (PO_4^{3-}):	0.0	0.0
Silica (SiO_2):	0.0	0.0

Organic Acids:	**mg/L**	**meq/L**
Formate:	0.0	0.0
Acetate:	0.0	0.0
Propionate:	0.0	0.0
Butyrate:	0.0	0.0
Valerate:	0.0	0.0

Anion/Cation Ratio:	1.00

Cations:	**mg/L**	**meq/L**
Sodium (Na^+):	29476	1287.2
Potassium (K^+):	0	0.0
Magnesium (Mg^{2+}):	1040	85.6
Calcium (Ca^{2+}):	5200	259.5
Strontium (Sr^{2+}):	0	0.0
Barium (Ba^{2+}):	0	0.0
Iron (Fe^{2+}):	9	0.3
Manganese (Mn^{2+}):	20	0.7
Lead (Pb^{2+}):	0	0.0
Zinc (Zn^{2+}):	0	0.0
Aluminum (Al^{3+}):	0.0	0.0
Chromium (Cr^{3+}):	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:	16500	

Conditions		**Barite ($BaSO_4$)**		**Calcite ($CaCO_3$)**		**Gypsum ($CaSO_4 \cdot 2H_2O$)**		**Anhydrite ($CaSO_4$)**	
Temp	**Press.**	**Index**	**Amt (PTB)**	**Index**	**Amt (PTB)**	**Index**	**Amount**	**Index**	**Amt (PTB)**
85°F	15 psi		0.000	0.07	3.567	-0.56	0.000	-0.74	0.000
83°F	15 psi		0.000	0.06	2.936	-0.56	0.000	-0.75	0.000
82°F	15 psi		0.000	0.05	2.294	-0.56	0.000	-0.75	0.000
80°F	15 psi		0.000	0.03	1.641	-0.56	0.000	-0.76	0.000
79°F	15 psi		0.000	0.02	0.976	-0.56	0.000	-0.77	0.000
77°F	15 psi		0.000	0.01	0.342	-0.56	0.000	-0.78	0.000
76°F	15 psi		0.000	-0.01	0.000	-0.57	0.000	-0.78	0.000
74°F	15 psi		0.000	-0.02	0.000	-0.57	0.000	-0.79	0.000
73°F	15 psi		0.000	-0.04	0.000	-0.57	0.000	-0.80	0.000
71°F	15 psi		0.000	-0.05	0.000	-0.57	0.000	-0.81	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)**
85°F	15 psi		0.000	-1.59	0.000	-10.14	0.000	-1.01	0.000
83°F	15 psi		0.000	-1.59	0.000	-10.15	0.000	-1.03	0.000
82°F	15 psi		0.000	-1.59	0.000	-10.16	0.000	-1.05	0.000
80°F	15 psi		0.000	-1.59	0.000	-10.17	0.000	-1.07	0.000
79°F	15 psi		0.000	-1.59	0.000	-10.17	0.000	-1.09	0.000
77°F	15 psi		0.000	-1.58	0.000	-10.18	0.000	-1.11	0.000
76°F	15 psi		0.000	-1.58	0.000	-10.19	0.000	-1.12	0.000
74°F	15 psi		0.000	-1.58	0.000	-10.20	0.000	-1.14	0.000
73°F	15 psi		0.000	-1.58	0.000	-10.21	0.000	-1.16	0.000
71°F	15 psi		0.000	-1.58	0.000	-10.21	0.000	-1.18	0.000

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered

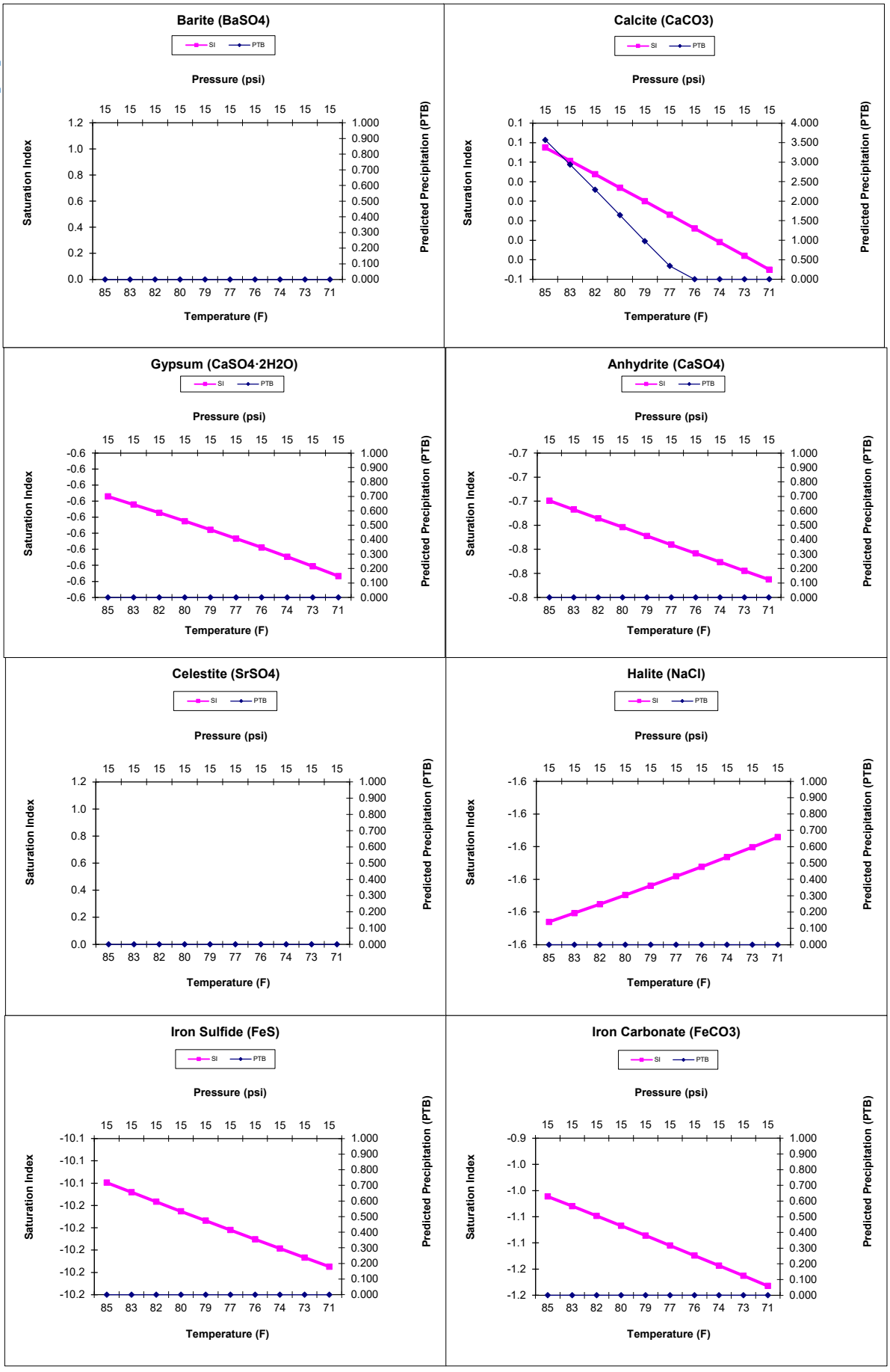
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the eight (8) scales.

Note 3: Saturation Index predictions on this sheet use pH and alkalinity; $\%CO_2$ is not included in the calculations.

Calculate

EESI ScaleSoftPitzer™ SSP2010

Sample ID: Great Plains, Shulte No. 2 SWD, Tank to Shulte 2 SWD well



Customer	District	Area	Lease	Sample Point	Salesman
Great Plains	Kansas	Norton	ulte No. 2 SW	to Shulte 2 SWD	Tim Beims

Sampling Date	Analysis Date	Sample ID	Analyst	Chemical Used	Comments
2/20/20202	1/0/1900	0	Tim Beims	0	0

Total Dissolved Solids	Anion-Cation Ratio	Total Hardness	Density	Conductivty
83315	1.00	16500	1.075	0.000

ppm CO2 (aq)	ppm H2S (aq)	ppb O2 (aq)	pH field	pH lab	pH in calc	Bicarbonate	Carbonate	Hydroxide
0.00	0.00	0.00	6.00	NA	0.00	160	0	0

Chloride	Sulfate	Borate	Flouride	Bromide	Nitrite	Nitrate	Phosphate	Silica	Formate
57600	500	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.0

Acetate	Propionate	Butyrate	Valerate	Sodium	Potassium	Magnesium	Calcium	Strontium
0.0	0.0	0.0	0.0	29476	0	1040	5200	0

Barium	Iron	Manganese	Zinc	Lead	Aluminum	Chromium	Colbalt	Copper
0.0	9.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00

Molybdenum	Nickel	Tin	Titanium	Vanadium	Zirconium	SSP Temp 1	SSP Pressure 1
0.00	0.00	0.00	0.00	0.00	0.00	85°F	15 psi

Barite SI 1	Barite PTB 1	Calcite SI 1	Calcite PTB 1	Gypsum SI 1	Gypsum PTB 1	Anhydrite SI 1
	0	0.07	4	-0.56	0	-0.74

Anhydrite PTB 1	Celestite SI 1	Celestite PTB 1	NaCl SI 1	NaCl PTB 1	FeS SI 1	FeS PTB 1	FeCO3 SI 1
0		0	-1.59	0	-10.14	0	-1.01

FeCO3 PTB 1	SSP Temp 2	SSP Pressure 2	Barite SI 2	Barite PTB 2	Calcite SI 2	Calcite PTB 2
0	71°F	15 psi		0	-0.05	0

Gypsum SI 2	Gypsum PTB 2	Anhydrite SI 2	Anhydrite PTB 2	Celestite SI 2	Celestite PTB 2	NaCl SI 2
-0.57	0	-0.81	0		0	-1.58

NaCl PTB 2	FeS SI 2	FeS PTB 2	FeCO3 SI 2	FeCO3 PTB 2
0	-10.21	0	-1.18	0