Facility Well Name Northern (Mullinville) #1 **UIC Permit #** KS-01-097-001 **Month** February **Year** 2020

Submitted 03/19/2020 **Approved** 03/20/2020 **KOLAR Document ID** 1510550

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 17

Barrels per Day Maximum: 2,381

			Annulus Pressure psig min 40		Injection Pressure		
	Injection Volume Barrels per Day	Injection Rate Barrels per Minute	Gauge psig	Cont. Record psig	Gauge psig	Cont. Record psig	Amount Added to Seal Pot
Monthly Average	182	0.15	70	69	-27.1	-26.0	0
Monthly Maximum	595	2.14	71	71	-26.0	-25.0	5
Monthly Minimum	0	0.00	68	68	-28.0	-28.0	0
Monthly Total	5,286						5

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
71.00	65.00	-25.00	-27.00

Comments:

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Daily Recorder Data

Day	Time 24 hr	Injection Volume Barrels Per Day	Injection Rate Barrels Per Minute	Annulus Pressure (Gauge) psig	Annulus Pressure (Continuous Recorder) psig	Injection Pressure (Gauge) + / -	Injection Pressure (Continuous Recorder) + / -	Seal Pot Fluid Level inches	Type of Fluid Added to Seal Pot	Amount of Fluid Added to Seal Pot gallons	Initials of Collector of Field Recordings		
1	09:40	0.00	0.00	70	69.0	-27	-26.0	42	N/A	0	GDJ		
2	09:15	0.00	0.00	70	69.0	-27	-26.0	43	N/A	0	GDJ		
3	13:50	500.00	0.00	70	69.0	-27	-26.0	43	N/A	0	GDJ		
4	08:38	0.00	0.00	70	69.0	-27	-26.0	45	N/A	0	RFS		
5	08:32	214.29	0.00	71	71.0	-27	-26.0	36	N/A	0	RFS		
6	08:40	285.71	0.00	68	69.0	-26	-25.0	45	N/A	0	DJA		
7	08:40	380.95	0.00	70	70.0	-27	-26.0	37	Mobile 224	5	DJA		
8	09:30	0.00	0.00	70	69.0	-28	-26.0	46	N/A	0	AT		
9	10:00	333.33	0.00	69	68.0	-27	-25.0	38	N/A	0	AT		
10	09:05	595.24	0.00	71	71.0	-27	-26.0	37	N/A	0	AT		
11	08:00	0.00	0.00	70	69.0	-27	-27.0	45	N/A	0	AT		
12	08:34	0.00	0.00	70	69.0	-27	-26.0	47	N/A	0	RS		
13	08:10	142.86	2.14	70	69.0	-26	-28.0	48	N/A	0	RS		
14	08:17	547.62	2.14	71	71.0	-27	-26.0	36	N/A	0	RS		
15	08:15	142.86	0.00	69	69.0	-27	-26.0	45	N/A	0	KG		
16	08:20	0.00	0.00	69	69.0	-27	-26.0	45	N/A	0	KG		
17	08:30	166.67	0.00	70	69.0	-27	-26.0	47	N/A	0	RS		
18	08:35	333.33	0.00	70	70.0	-27	-26.0	42	N/A	0	RS		
19	06:34	0.00	0.00	70	69.0	-28	-26.0	46	N/A	0	RS		
20	11:01	500.00	0.00	69	71.0	-28	-26.0	33	N/A	0	RS		
21	10:00	0.00	0.00	70	70.0	-28	-26.0	44	N/A	0	RS		
22	06:30	0.00	0.00	70	69.0	-27	-26.0	47	N/A	0	RS		
23	11:45	0.00	0.00	70	69.0	-27	-26.0	48	N/A	0	RS		
24	09:40	142.86	0.00	70	70.0	-27	-26.0	44	N/A	0	RS		
25	08:31	166.67	0.00	70	69.0	-27	-26.0	46	N/A	0	RS		
26	15:45	190.48	0.00	70	69.0	-27	-26.0	46	N/A	0	GDJ		
27	15:00	142.86	0.00	70	70.0	-27	-26.0	45	N/A	0	GDJ		
28	09:30	0.00	0.00	70	69.0	-27	-26.0	47	N/A	0	GDJ		
29	08:40	500.00	0.00	70	70.0	-27	-26.0	33	N/A	0	GDJ		

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Weekly Injectate Samples

Kansas Lab Certificate Number E-10146

Week	**Temperature**		**pH**		**Chloride**				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	55.20	02/06/2020	7.80	02/06/2020	N/A				
2	51.50	02/13/2020	8.60	02/13/2020	N/A				
3	55.30	02/20/2020	7.00	02/20/2020	N/A				
4	48.90	02/27/2020	7.50	02/27/2020	N/A				
5					N/A				

No monthly injectate samples required.

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Quarterly Injectate Samples

Quarter 1
Date Sample Collected 01/21/2020
Kansas Lab Certificate Number E-10146
Lab Name Pace Analytical-Salina

These samples shall be representative of injection activity and shall therefore be collected on days of injection.

Constituent	Value	Units
Calcium	270,000.000	mg/l
Chloride	219.000	mg/l
Iron	537.000	mg/l
Magnesium	34,800.000	mg/l
Sulfate	743.000	mg/l
Total Dissolved Solids	1,680.000	mg/l
Total Alkalinity as CaCO3		mg/l (as CaCO3)
Total Hardness as CaCO3	818,000.000	mg/l (as CaCO3)
Conductivity	2,280.000	Mmhos