Facility Well Name Northern (Mullinville) #1 **UIC Permit #** KS-01-097-001 **Month** July **Year** 2019

Submitted 12/31/2019 **Approved** 01/02/2020 **KOLAR Document ID** 1468472

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 19

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	204	0.14	70	69	-26.3	-24.9	0
Monthly Maximum	952	2.24	71	70	-24.0	-23.0	0
Monthly Minimum	0	0.00	69	68	-27.0	-27.0	0
Monthly Total	6,310						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
70.00	68.00	-23.00	-25.00

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	15:45	523.81	0.00	70	68.0	-25	-23.0	42	N/A	0	JN		
2	13:15	952.38	2.10	70	70.0	-25	-24.0	40	N/A	0	JN		
3	09:45	261.90	0.00	70	69.0	-26	-25.0	46	N/A	0	GBS		
4	07:30	0.00	0.00	70	69.0	-26	-25.0	46	N/A	0	GBS		
5	08:43	0.00	0.00	70	69.0	-26	-25.0	46	N/A	0	RFS		
6	08:00	0.00	0.00	70	69.0	-27	-25.0	46	N/A	0	GBS		
7	08:00	333.33	0.00	70	69.0	-26	-25.0	46	N/A	0	GBS		
8	09:11	0.00	0.00	70	69.0	-27	-25.0	46	N/A	0	GBS		
9	07:25	333.33	0.00	70	69.0	-27	-25.0	46	N/A	0	GBS		
10	17:45	142.86	0.00	70	69.0	-27	-25.0	46	N/A	0	AT		
11	06:10	23.81	2.24	70	69.0	-27	-25.0	46	N/A	0	RFS		
12	13:00	309.52	0.00	70	70.0	-25	-24.0	46	N/A	0	AT		
13	08:54	0.00	0.00	70	69.0	-27	-26.0	46	N/A	0	KBG		
14	12:05	0.00	0.00	70	69.0	-27	-26.0	47	N/A	0	JN		
15	12:00	333.33	0.00	70	70.0	-24	-26.0	47	N/A	0	AT		
16	13:50	0.00	0.00	70	69.0	-27	-25.0	47	N/A	0	AT		
17	11:00	166.67	0.00	70	69.0	-27	-25.0	47	N/A	0	AT		
18	07:00	690.48	0.00	70	69.0	-25	-24.0	44	N/A	0	RS		
19	06:30	166.67	0.00	70	69.0	-25	-24.0	44	N/A	0	RS		
20	11:45	0.00	0.00	70	69.0	-27	-25.0	47	N/A	0	AT		
21	08:45	500.00	0.00	70	68.0	-26	-24.0	42	N/A	0	JN		
22	15:30	23.81	0.00	70	69.0	-27	-25.0	48	N/A	0	JN		
23	09:30	0.00	0.00	70	69.0	-27	-26.0	48	N/A	0	JN		
24	02:00	333.33	0.00	69	68.0	-26	-27.0	47	N/A	0	RS		
25	09:05	190.48	0.00	70	69.0	-26	-25.0	47	N/A	0	RS		
26	19:56	0.00	0.00	70	69.0	-26	-25.0	48	N/A	0	GDJ		
27	07:50	166.67	0.00	70	69.0	-26	-24.0	41	N/A	0	GDJ		
28	08:15	309.52	0.00	70	69.0	-27	-25.0	46	N/A	0	GDJ		
29	12:30	0.00	0.00	70	69.0	-27	-25.0	47	N/A	0	RFS		
30	07:00	547.62	0.00	71	70.0	-26	-25.0	46	N/A	0	RFS		
31	06:30	0.00	0.00	70	69.0	-27	-25.0	47	N/A	0	RFS		

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Weekly Injectate Samples

Kansas Lab Certificate Number

Week	Temperature		pH		Chloride				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	79.50	07/03/2019	8.40	07/03/2019	N/A				
2	78.60	07/11/2019	8.70	07/11/2019	N/A				
3	78.40	07/18/2019	8.20	07/18/2019	N/A				
4	78.10	07/25/2019	7.90	07/25/2019	N/A				
5					N/A				

No monthly injectate samples required.

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Quarterly Injectate Samples

Quarter 3
Date Sample Collected 07/24/2019
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	3,080,000.000	mg/l
Chloride	149.000	mg/l
Iron	161.000	mg/l
Magnesium	41,200.000	mg/l
Sulfate	753.000	mg/l
Total Dissolved Solids	1,800.000	mg/l
Conductivity	2,140.000	Mmhos