Facility Well Name Northern (Cunningham) #3 **UIC Permit #** KS-05-151-003 **Month** November **Year** 2020

Submitted 12/18/2020 **Approved** 12/21/2020 **KOLAR Document ID** 1539620

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 30

Barrels per Day Maximum: 4,000

			Annulus Pressure psig min 60		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	530	0.56	98	98	-21.4	-22.5	0
Monthly Maximum	683	0.67	105	105	-19.0	-21.0	0
Monthly Minimum	346	0.50	90	89	-23.0	-24.0	0
Monthly Total	15,912						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
108.40	86.00	-13.60	-29.30

Comments:

Northern (Cunningham) #3 11/2020

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	07:30	534.62	0.52	100	98.8	-20	-22.0	17		0	KS		
2	08:35	577.40	0.50	99	97.5	-21	-23.0	17		0	GH		
3	08:55	561.05	0.57	103	101.4	-22	-22.0	18		0	GH		
4	08:15	532.31	0.52	101	99.8	-21	-22.0	17		0	GH		
5	08:20	548.98	0.57	102	100.8	-21	-22.0	18		0	GH		
6	08:35	535.19	0.57	101	99.4	-22	-22.0	17		0	GH		
7	07:15	668.17	0.57	103	101.8	-21	-22.0	18		0	GH		
8	07:15	659.05	0.57	105	103.5	-21	-22.0	19		0	GH		
9	09:15	642.48	0.67	105	104.8	-22	-22.0	19		0	KS		
10	09:05	571.21	0.57	100	99.8	-21	-22.0	18		0	KS		
11	08:40	667.48	0.52	100	99.1	-21	-23.0	18		0	KS		
12	08:45	604.17	0.57	100	99.9	-20	-22.0	18		0	KS		
13	08:10	662.31	0.52	100	99.2	-19	-22.0	18		0	KS		
14	07:25	682.69	0.64	101	102.7	-20	-21.0	18		0	KS		
15	07:40	656.67	0.55	101	102.8	-21	-23.0	19		0	KS		
16	08:35	419.86	0.60	105	103.3	-21	-22.0	19		0	LF		
17	09:00	387.64	0.55	98	96.7	-23	-24.0	17		0	LF		
18	08:35	535.98	0.60	99	97.3	-22	-23.0	17		0	LF		
19	09:20	513.10	0.52	100	99.4	-21	-22.0	17		0	LF		
20	10:55	405.52	0.57	96	95.2	-22	-23.0	16		0	LF		
21	08:40	519.45	0.52	97	96.3	-22	-23.0	16		0	LF		
22	08:45	458.29	0.57	95	94.6	-21	-23.0	16		0	LF		
23	10:20	468.90	0.57	95	94.5	-21	-22.0	16		0	WV		
24	09:20	536.76	0.57	95	95.2	-21	-22.0	16		0	WV		
25	10:25	345.83	0.57	93	92.9	-23	-24.0	15		0	WV		
26	08:20	541.93	0.57	95	94.5	-21	-22.0	16		0	WV		
27	09:20	431.52	0.57	93	92.6	-22	-23.0	15		0	WV		
28	09:50	411.93	0.55	92	90.8	-23	-24.0	14		0	WV		
29	10:10	400.79	0.57	90	89.8	-22	-23.0	14		0	WV		
30	09:15	430.98	0.57	90	88.7	-23	-24.0	14		0	GH		
31													

Northern (Cunningham) #3 11/2020

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	87.00	11/02/2020	6.90	11/02/2020	N/A				
2	88.50	11/09/2020	6.90	11/09/2020	N/A				
3	91.50	11/16/2020	6.40	11/16/2020	N/A				
4	89.00	11/23/2020	6.60	11/23/2020	N/A				
5	80.00	11/30/2020	6.80	11/30/2020	N/A				

No monthly injectate samples required.

Northern (Cunningham) #3 11/2020

Quarterly Injectate Samples

Quarter 4
Date Sample Collected 10/15/2020
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	2,100.000	mg/l
Chloride	28,000.000	mg/l
Conductivity	69.800	Mmhos
Magnesium	572.000	mg/l
Sodium	16,900.000	mg/l
Sulfate	2,300.000	mg/l
Total Alkalinity as CaCO3	283.000	mg/l
Total Dissolved Solids	58,800.000	mg/l
Total Suspended Solids	47.500	mg/l