Facility Well Name Northern (Cunningham) #2 **UIC Permit #** KS-05-151-002 **Month** March **Year** 2019

Submitted 06/01/2019 **Approved** 06/04/2019 **KOLAR Document ID** 1458010

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 31

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	1,692	1.96	100	98	-24.2	-23.5	0
Monthly Maximum	1,862	2.05	106	104	-17.0	-11.5	0
Monthly Minimum	1,356	1.52	97	96	-27.0	-25.6	0
Monthly Total	52,448						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
106.40	93.50	-29.30	-8.90

Comments:

Northern (Cunningham) #2 03/2019

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	09:20	1,482.14	1.98	100	99.6	-23	-23.6	16		0	KS		
2	07:25	1,674.67	2.00	102	101.0	-23	-24.7	16		0	KS		
3	08:10	1,848.60	2.00	100	97.2	-24	-25.6	16		0	KS		
4	09:00	1,862.36	1.52	103	101.4	-27	-11.5	17		0	GH		
5	08:00	1,762.43	2.02	99	96.4	-23	-24.4	16		0	GH		
6	08:15	1,752.62	2.00	99	96.3	-24	-25.5	17		0	GH		
7	08:35	1,755.07	2.00	99	97.5	-25	-23.5	17		0	GH		
8	08:05	1,698.45	2.00	98	96.0	-17	-16.3	17		0	GH		
9	06:40	1,743.24	2.02	98	96.5	-23	-23.8	17		0	GH		
10	06:45	1,736.98	2.00	98	95.5	-23	-24.8	17		0	GH		
11	09:45	1,729.12	1.98	97	95.8	-25	-24.3	17		0	WV		
12	09:05	1,381.24	1.93	98	96.3	-24	-23.2	17		0	WV		
13	15:25	1,355.62	1.93	104	103.1	-24	-22.7	15		0	WV		
14	08:55	1,726.74	2.00	106	104.4	-24	-23.8	16		0	WV		
15	09:15	1,735.10	2.05	106	104.2	-25	-24.4	17		0	WV		
16	08:20	1,743.62	1.98	105	103.1	-25	-24.2	17		0	WV		
17	08:35	1,699.02	1.95	104	102.2	-25	-24.4	17		0	WV		
18	08:30	1,620.24	1.98	103	100.6	-25	-24.4	17		0	LF		
19	08:10	1,687.17	1.95	103	100.4	-25	-24.5	17		0	LF		
20	08:40	1,639.40	1.98	100	98.6	-25	-24.1	17		0	LF		
21	08:00	1,684.60	1.90	101	99.7	-25	-24.2	18		0	LF		
22	07:35	1,690.60	1.95	100	98.6	-24	-23.7	18		0	LF		
23	07:45	1,684.55	1.95	98	96.5	-24	-24.3	18		0	LF		
24	07:50	1,680.62	1.95	97	95.9	-25	-23.9	18		0	LF		
25	09:15	1,703.33	1.95	97	95.8	-25	-24.6	18		0	WV		
26	08:45	1,737.02	1.98	98	95.9	-25	-24.1	18		0	WV		
27	08:20	1,748.40	1.98	98	95.9	-24	-23.8	18		0	WV		
28	08:35	1,736.40	1.95	98	96.1	-25	-23.8	19		0	WV		
29	09:05	1,727.31	1.93	98	95.8	-25	-23.8	19		0	WV		
30	08:25	1,731.40	1.93	98	95.5	-25	-24.5	19		0	WV		
31	08:40	1,690.12	1.90	98	95.6	-25	-24.4	19		0	WV		

Northern (Cunningham) #2 03/2019

Weekly Injectate Samples

Kansas Lab Certificate Number E-10116

Week	**Temperature**		**pH**		**Chloride**				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	90.50		6.00						
2	87.00		6.20						
3	75.00		5.90						
4	88.00		6.30						
5									

No monthly injectate samples required.

Northern (Cunningham) #2 03/2019

Quarterly Injectate Samples

Quarter 1
Date Sample Collected 01/30/2019
Kansas Lab Certificate Number E-10116
Lab Name Pace Analytical-Lenexa

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

Constituent	Value	Units
Calcium	2,290.000	mg/l
Chloride	28,800.000	mg/l
Conductivity	74.300	Mmhos
Magnesium	540.000	mg/l
Sodium	15,800.000	mg/l
Sulfate	2,350.000	mg/l
Total Alkalinity as CaCO3	272.000	mg/l
Total Dissolved Solids	10,700.000	mg/l
Total Suspended Solids	11.500	mg/l