**Facility Well Name** Northern (Bushton) #1 **UIC Permit #** KS-01-159-003 **Month** April **Year** 2021

**Submitted** 05/24/2021 **Approved** 05/31/2021 **KOLAR Document ID** 1574267

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 13

**Barrels per Day Maximum:** 3,840

| | | | 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** | 28 | 0.00 | 120 | 117 | -26.0 | -24.4 | 0 |
| **Monthly Maximum** | 165 | 0.00 | 124 | 120 | -26.0 | -23.6 | 0 |
| **Monthly Minimum** | 0 | 0.00 | 117 | 113 | -26.0 | -25.4 | 0 |
| **Monthly Total** | 847 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 121.00 | 109.30 | -23.40 | -25.50 |

**Comments:**

Northern (Bushton) #1 04/2021

# Daily Recorder Data

| Day | Time<br>24 hr | Injection Volume<br>Barrels Per Day | Injection Rate<br>Barrels Per Minute | Annulus Pressure (Gauge)<br>psig | Annulus Pressure (Continuous Recorder)<br>psig | Injection Pressure (Gauge)<br>+ / - | Injection Pressure (Continuous Recorder)<br>+ / - | Seal Pot Fluid Level<br>inches | Type of Fluid Added to Seal Pot | Amount of Fluid Added to Seal Pot<br>gallons | Initials of Collector of Field Recordings | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 08:26 | 165.48 | 0.00 | 117 | 113.3 | -26 | -24.5 | 7 | N | 0 | LM | | |
| 2 | 06:00 | 72.71 | 0.00 | 117 | 113.3 | -26 | -24.2 | 7 | N | 0 | MU | | |
| 3 | 10:00 | 73.36 | 0.00 | 117 | 113.3 | -26 | -24.6 | 7 | N | 0 | MU | | |
| 4 | 10:00 | 72.26 | 0.00 | 120 | 116.7 | -26 | -24.0 | 7 | N | 0 | MU | | |
| 5 | 07:30 | 72.86 | 0.00 | 120 | 115.3 | -26 | -24.0 | 7 | N | 0 | MW | | |
| 6 | 07:30 | 0.10 | 0.00 | 120 | 118.0 | -26 | -23.6 | 7 | N | 0 | MW | | |
| 7 | 07:30 | 72.07 | 0.00 | 120 | 114.8 | -26 | -23.7 | 7 | N | 0 | MW | | |
| 8 | 06:10 | 85.62 | 0.00 | 119 | 114.0 | -26 | -23.9 | 7 | N | 0 | MW | | |
| 9 | 09:00 | 34.43 | 0.00 | 119 | 114.6 | -26 | -23.9 | 7 | N | 0 | RB | | |
| 10 | 10:30 | 38.26 | 0.00 | 119 | 114.0 | -26 | -23.9 | 7 | N | 0 | RB | | |
| 11 | 08:45 | 75.29 | 0.00 | 119 | 114.5 | -26 | -23.9 | 7 | N | 0 | RB | | |
| 12 | 08:30 | 0.00 | 0.00 | 120 | 116.7 | -26 | -24.0 | 7 | N | 0 | MU | | |
| 13 | 11:30 | 0.00 | 0.00 | 121 | 117.6 | -26 | -24.1 | 7 | N | 0 | MU | | |
| 14 | 08:00 | 0.00 | 0.00 | 120 | 117.0 | -26 | -24.0 | 7 | N | 0 | MU | | |
| 15 | 08:00 | 84.02 | 0.00 | 120 | 116.5 | -26 | -24.1 | 7 | N | 0 | MU | | |
| 16 | 08:35 | 0.00 | 0.00 | 121 | 116.8 | -26 | -24.0 | 7 | N | 0 | LM | | |
| 17 | 07:27 | 0.60 | 0.00 | 120 | 116.6 | -26 | -25.1 | 7 | N | 0 | LM | | |
| 18 | 08:15 | 0.00 | 0.00 | 120 | 117.0 | -26 | -25.0 | 7 | N | 0 | LM | | |
| 19 | 09:30 | 0.00 | 0.00 | 121 | 117.7 | -26 | -25.2 | 7 | N | 0 | RB | | |
| 20 | 10:00 | 0.00 | 0.00 | 120 | 117.0 | -26 | -25.0 | 7 | N | 0 | RB | | |
| 21 | 09:30 | 0.00 | 0.00 | 120 | 117.3 | -26 | -25.0 | 7 | N | 0 | RB | | |
| 22 | 10:00 | 0.00 | 0.00 | 121 | 117.8 | -26 | -25.4 | 7 | N | 0 | RB | | |
| 23 | 08:00 | 0.00 | 0.00 | 121 | 117.7 | -26 | -24.8 | 7 | N | 0 | MW | | |
| 24 | 08:00 | 0.00 | 0.00 | 121 | 117.8 | -26 | -24.9 | 7 | N | 0 | MW | | |
| 25 | 07:00 | 0.00 | 0.00 | 121 | 118.2 | -26 | -24.8 | 7 | N | 0 | MW | | |
| 26 | 07:42 | 0.00 | 0.00 | 122 | 119.1 | -26 | -24.3 | 7 | N | 0 | LM | | |
| 27 | 07:58 | 0.00 | 0.00 | 124 | 119.6 | -26 | -24.5 | 7 | N | 0 | LM | | |
| 28 | 07:45 | 0.00 | 0.00 | 123 | 119.7 | -26 | -24.7 | 7 | N | 0 | LM | | |
| 29 | 08:00 | 0.00 | 0.00 | 122 | 118.6 | -26 | -25.0 | 7 | N | 0 | LM | | |
| 30 | 08:15 | 0.00 | 0.00 | 123 | 118.0 | -26 | -25.2 | 7 | N | 0 | DJ | | |
| 31 | | | | | | | | | | | | | |

Northern (Bushton) #1 04/2021

# 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 | 60.00 | 04/05/2021 | 7.48 | 04/05/2021 | N/A | | | | |
| 2 | 57.00 | 04/13/2021 | 8.36 | 04/13/2021 | N/A | | | | |
| 3 | | | | | N/A | | | | |
| 4 | | | | | N/A | | | | |
| 5 | | | | | N/A | | | | |

## No monthly injectate samples required.

Northern (Bushton) #1 04/2021

# Quarterly Injectate Samples

**Quarter** 1
**Date Sample Collected** 02/08/2021
**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 | 127.000 | mg/l |
| Chloride | 67.200 | mg/l |
| Conductivity | 77.400 | Mmhos |
| Diethanolamine | <100.000 | mg/l |
| Iron | 7.360 | mg/l |
| Magnesium | 27.200 | mg/l |
| Sulfate | 21.900 | mg/l |
| Total Alkalinity as CaCO3 | 288.000 | mg/l |
| Total Dissolved Solids | 513.000 | mg/l |
| Total Hardness as CaCO3 | 428.000 | mg/l |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |