**Facility Well Name** Sunflower (Fort Dodge) #1 **UIC Permit #** KS-01-057-003 **Month** September **Year** 2021

**Submitted** 10/21/2021 **Approved** 10/25/2021 **KOLAR Document ID** 1595732

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 3

**Barrels per Day Maximum:** 20,571

| | Injection Volume Barrels per Day | Injection Rate Barrels per Minute | Annulus Pressure psig min 60 Gauge psig | Annulus Pressure Cont. Record psig | Injection Pressure Gauge psig | Injection Pressure Cont. Record psig | Amount Added to Seal Pot |
|---|---|---|---|---|---|---|---|
| **Monthly Average** | 356 | 0.23 | 292 | 282 | -0.7 | 0.4 | |
| **Monthly Maximum** | 6,071 | 7.00 | 600 | 599 | 0.0 | 1.3 | |
| **Monthly Minimum** | 0 | 0.00 | 155 | 146 | -22.0 | -25.6 | |
| **Monthly Total** | 10,690 | | | | | | |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 600.00 | 138.89 | 1.45 | -26.25 |

### Comments:

The actual injection rate (GPM) reading showed negative values throughout the month when the injection well had no flow and was recorded as negative, but changed to 0 for the report to indicate no flow at that time.

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# 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 | 08:25 | 0.00 | 0.00 | 354 | 344.0 | 0 | 1.3 | 33 | | | LF | | |
| 2 | 08:22 | 0.00 | 0.00 | 317 | 307.2 | 0 | 1.3 | 33 | | | LF | | |
| 3 | 08:20 | 0.00 | 0.00 | 285 | 275.7 | 0 | 1.3 | 33 | | | LF | | |
| 4 | 07:57 | 0.00 | 0.00 | 260 | 249.9 | 0 | 1.3 | 33 | | | MH | | |
| 5 | 07:34 | 0.00 | 0.00 | 238 | 228.1 | 0 | 1.3 | 33 | | | MH | | |
| 6 | 06:34 | 0.00 | 0.00 | 220 | 210.2 | 0 | 1.3 | 33 | | | MH | | |
| 7 | 07:56 | 0.00 | 0.00 | 204 | 193.0 | 0 | 1.3 | 33 | | | MH | | |
| 8 | 07:42 | 0.00 | 0.00 | 188 | 178.7 | 0 | 1.3 | 33 | | | MH | | |
| 9 | 08:00 | 0.00 | 0.00 | 176 | 166.6 | 0 | 1.3 | 33 | | | MH | | |
| 10 | 08:18 | 0.00 | 0.00 | 164 | 155.8 | 0 | 1.3 | 33 | | | MH | | |
| 11 | 07:40 | 0.00 | 0.00 | 155 | 145.8 | 0 | 1.3 | 33 | | | LF | | |
| 12 | 07:43 | 0.00 | 0.00 | 336 | 326.2 | 0 | 1.3 | 33 | | | LF | | |
| 13 | 08:33 | 0.00 | 0.00 | 298 | 286.3 | 0 | 1.3 | 33 | | | TK | | |
| 14 | 08:10 | 6,071.43 | 0.00 | 263 | 253.1 | 0 | 1.3 | 33 | | | LF | | |
| 15 | 08:19 | 4,142.86 | 7.00 | 193 | 183.8 | -22 | -25.6 | 33 | | | LF | | |
| 16 | 08:27 | 476.19 | 0.00 | 600 | 599.0 | 0 | 1.3 | 33 | | | LF | | |
| 17 | 08:20 | 0.00 | 0.00 | 596 | 586.2 | 0 | 1.3 | 33 | | | LF | | |
| 18 | 07:56 | 0.00 | 0.00 | 510 | 500.9 | 0 | 1.3 | 33 | | | CS | | |
| 19 | 07:33 | 0.00 | 0.00 | 445 | 435.3 | 0 | 1.3 | 33 | | | CS | | |
| 20 | 08:29 | 0.00 | 0.00 | 390 | 383.9 | 0 | 1.3 | 33 | | | CS | | |
| 21 | 08:06 | 0.00 | 0.00 | 355 | 345.6 | 0 | 1.3 | 33 | | | CS | | |
| 22 | 07:38 | 0.00 | 0.00 | 325 | 314.6 | 0 | 1.3 | 33 | | | CS | | |
| 23 | 08:21 | 0.00 | 0.00 | 300 | 288.9 | 0 | 1.3 | 33 | | | CS | | |
| 24 | 08:22 | 0.00 | 0.00 | 275 | 266.3 | 0 | 1.3 | 33 | | | CS | | |
| 25 | 08:04 | 0.00 | 0.00 | 257 | 246.7 | 0 | 1.3 | 33 | | | KK | | |
| 26 | 07:57 | 0.00 | 0.00 | 240 | 229.4 | 0 | 1.3 | 33 | | | KK | | |
| 27 | 08:19 | 0.00 | 0.00 | 222 | 213.2 | 0 | 1.3 | 33 | | | KK | | |
| 28 | 08:12 | 0.00 | 0.00 | 209 | 198.9 | 0 | 1.3 | 33 | | | KK | | |
| 29 | 08:07 | 0.00 | 0.00 | 195 | 185.9 | 0 | 1.3 | 33 | | | KK | | |
| 30 | 08:03 | 0.00 | 0.00 | 183 | 174.5 | 0 | 1.3 | 34 | | | KK | | |
| 31 | | | | | | | | | | | | | |

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# Weekly Injectate Samples

**Kansas Lab Certificate Number** E-10150

| **Week** | **Temperature** | | **pH** | | **Chloride** | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Degrees Fahrenheit | Date | Standard Units | Date | Cl concentration (mg/l) | Date Sample Collected | Date Sampl Analysed | | |
| 1 | 67.40 | 09/14/2021 | 7.39 | 09/14/2021 | 750.0 | 09/14/2021 | 09/15/2021 | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |

## No monthly injectate samples required.

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# Quarterly Injectate Samples

**Quarter** 3
**Date Sample Collected** 09/14/2021
**Kansas Lab Certificate Number** E-10150
**Lab Name** Servi-Tech Lab

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

| Constituent | Value | Units |
|---|---|---|
| Ammonia | ND | mg/l |
| Calcium | 464.000 | mg/l |
| Chloride | 750.000 | mg/l |
| Conductivity | 5,180.000 | Mmhos |
| Magnesium | 118.000 | mg/l |
| Sodium | 630.000 | mg/l |
| Sulfate | 870.000 | mg/l |
| Total Alkalinity as CaCO3 | 910.00000 | mg/l (as CaCO3) |
| Total Dissolved Solids | 3,850.000 | mg/l |
| Total Hardness as CaCO3 | 1,600.00000 | mg/l (as CaCO3) |
| Total Suspended Solids | ND | mg/l |
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