**Facility Well Name** Deffenbaugh #2 **UIC Permit #** KS-01-091-002 **Month** March **Year** 2021

**Submitted** 04/05/2021 **Approved** 04/07/2021 **KOLAR Document ID** 1567199

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 31

**Barrels per Day Maximum:** 14,286

| | | | 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** | 1,929 | 1.50 | 78 | 78 | -12.0 | -13.0 | 0 |
| **Monthly Maximum** | 3,681 | 3.81 | 82 | 82 | -11.0 | -11.7 | 0 |
| **Monthly Minimum** | 824 | 0.00 | 73 | 72 | -12.0 | -13.6 | 0 |
| **Monthly Total** | 59,784 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 82.49 | 72.07 | -11.21 | -13.76 |

**Comments:**

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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 | pH Standard Units | Temperature<br>degrees F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 06:45 | 1,487.43 | 2.95 | 77 | 77.1 | -12 | -13.2 | 22 | N/A | 0 | DWK | 6.50 | 78.80 |
| 2 | 06:45 | 1,025.33 | 1.29 | 77 | 76.8 | -12 | -13.5 | 21 | N/A | 0 | DWK | 7.10 | 70.40 |
| 3 | 06:50 | 1,050.86 | 0.24 | 77 | 76.8 | -12 | -13.1 | 21 | N/A | 0 | DWK | 7.10 | 70.60 |
| 4 | 06:50 | 899.62 | 0.24 | 77 | 76.9 | -12 | -13.1 | 21 | N/A | 0 | DWK | 7.10 | 70.80 |
| 5 | 06:45 | 1,175.90 | 2.74 | 77 | 76.6 | -12 | -13.5 | 21 | N/A | 0 | DWK | 7.20 | 71.60 |
| 6 | 10:00 | 823.90 | 1.21 | 73 | 72.4 | -12 | -13.4 | 21 | N/A | 0 | RLW | 7.10 | 71.70 |
| 7 | 07:20 | 1,087.81 | 2.57 | 74 | 73.7 | -12 | -13.6 | 21 | N/A | 0 | DWK | 7.20 | 71.60 |
| 8 | 06:55 | 1,278.02 | 0.17 | 74 | 73.8 | -12 | -13.2 | 21 | N/A | 0 | DWK | 6.90 | 73.90 |
| 9 | 06:50 | 1,027.50 | 0.19 | 74 | 74.0 | -12 | -13.2 | 21 | N/A | 0 | DWK | 6.90 | 74.50 |
| 10 | 06:45 | 1,789.71 | 1.31 | 74 | 74.5 | -12 | -13.1 | 21 | N/A | 0 | DWK | 7.10 | 75.70 |
| 11 | 06:40 | 1,438.00 | 1.29 | 75 | 75.4 | -12 | -12.2 | 21 | N/A | 0 | DWK | 5.70 | 69.70 |
| 12 | 06:45 | 2,050.29 | 0.17 | 75 | 75.7 | -12 | -12.0 | 21 | N/A | 0 | DWK | 6.00 | 69.60 |
| 13 | 10:00 | 1,223.33 | 0.19 | 75 | 75.7 | -12 | -13.1 | 21 | N/A | 0 | RLW | 6.60 | 73.50 |
| 14 | 06:40 | 3,034.19 | 0.26 | 76 | 75.9 | -12 | -12.9 | 21 | N/A | 0 | DWK | 6.80 | 74.70 |
| 15 | 06:58 | 3,069.90 | 2.60 | 76 | 76.5 | -12 | -13.0 | 21 | N/A | 0 | AWK | 6.00 | 68.20 |
| 16 | 06:56 | 2,824.95 | 1.98 | 77 | 77.2 | -12 | -13.1 | 21 | N/A | 0 | AWK | 5.90 | 68.80 |
| 17 | 06:40 | 1,788.33 | 0.00 | 78 | 78.1 | -11 | -11.7 | 20 | N/A | 0 | DWK | 6.20 | 68.90 |
| 18 | 06:40 | 2,160.05 | 2.71 | 78 | 78.3 | -12 | -13.3 | 21 | N/A | 0 | DWK | 6.90 | 74.30 |
| 19 | 06:45 | 2,107.05 | 0.26 | 79 | 78.8 | -12 | -13.0 | 21 | N/A | 0 | DWK | 6.90 | 74.50 |
| 20 | 06:59 | 1,563.81 | 1.31 | 79 | 78.9 | -12 | -13.3 | 22 | N/A | 0 | AWK | 7.00 | 75.90 |
| 21 | 06:40 | 1,926.38 | 2.90 | 79 | 79.0 | -12 | -13.2 | 22 | N/A | 0 | AWK | 7.00 | 74.80 |
| 22 | 06:50 | 3,181.14 | 1.21 | 80 | 79.1 | -12 | -13.1 | 22 | N/A | 0 | DWK | 7.00 | 78.20 |
| 23 | 06:45 | 3,680.76 | 3.43 | 80 | 79.5 | -12 | -12.8 | 22 | N/A | 0 | DWK | 6.10 | 72.40 |
| 24 | 06:45 | 3,539.62 | 2.45 | 80 | 80.0 | -12 | -12.9 | 21 | N/A | 0 | DWK | 6.00 | 71.30 |
| 25 | 06:50 | 1,643.05 | 1.24 | 80 | 80.2 | -12 | -12.3 | 21 | N/A | 0 | DWK | 6.10 | 71.70 |
| 26 | 06:45 | 2,728.67 | 1.98 | 81 | 80.9 | -12 | -13.5 | 21 | N/A | 0 | DWK | 7.00 | 74.50 |
| 27 | 10:00 | 2,357.62 | 3.81 | 81 | 80.5 | -12 | -12.9 | 21 | N/A | 0 | RLW | 6.20 | 72.90 |
| 28 | 07:15 | 1,674.48 | 2.12 | 82 | 81.5 | -12 | -13.6 | 21 | N/A | 0 | DWK | 6.80 | 75.00 |
| 29 | 06:45 | 1,715.05 | 1.21 | 82 | 81.7 | -12 | -13.0 | 21 | N/A | 0 | DWK | 7.00 | 75.10 |
| 30 | 06:55 | 1,736.76 | 1.26 | 82 | 81.8 | -12 | -12.9 | 22 | N/A | 0 | DWK | 7.10 | 77.50 |
| 31 | 06:55 | 2,694.52 | 1.19 | 79 | 78.7 | -12 | -13.1 | 22 | N/A | 0 | DWK | 7.10 | 73.80 |

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# Quarterly Injectate Samples

**Quarter** 1
**Date Sample Collected** 03/09/2021
**Kansas Lab Certificate Number** E-10277
**Lab Name** Pace Analytical National Center for Testing & Training

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

| Constituent | Value | Units |
|---|---|---|
| 1,1,1-Trichloroethane | <0.001 | mg/l |
| 1,1-Dichloroethane | <0.001 | mg/l |
| 1,2-Dichlorobenzene | 0.001 | mg/l |
| 1,2-Dichloroethane | <0.001 | mg/l |
| 1,1-Dichloroethylene | <0.001 | mg/l |
| 1,2-Dichloropropane | <0.001 | mg/l |
| 1,3-Dichloropropene | <0.001 | mg/l |
| Acetone | 6,680.000 | mg/l |
| Arsenic | 0.044 | mg/l |
| Benzene | 0.002 | mg/l |
| Calcium | 94.400 | mg/l |
| Chloride | 1,530.000 | mg/l |
| Chlorobenzene | <0.001 | mg/l |
| Chloroethane | <0.001 | mg/l |
| Chloroform | <0.001 | mg/l |
| Cis-1,2-Dichloroethylene | <0.001 | mg/l |
| Conductivity | 10.930 | Mmhos |
| Copper | 0.028 | mg/l |
| Dichloromethane (Methylene Chloride) | 0.005 | mg/l |
| Ethylbenzene | 0.003 | mg/l |
| Heptachlor | 0.000 | mg/l |
| Iron | 1.810 | mg/l |
| Lead | <0.005 | mg/l |

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# Quarterly Injectate Samples (continued)

| Constituent | Value | Units |
|---|---|---|
| Magnesium | 106.000 | mg/l |
| Methyl Ethyl Ketone (2-Butanone) | 3.510 | mg/l |
| Methyl Isobutyl Ketone (4-Methyl 2-Pentanone) | 0.04120 | mg/l |
| Nitrobenzene | <0.010 | mg/l |
| Phenol | 0.149 | mg/l |
| Pyrene | 0.002 | mg/l |
| Silver | <0.005 | mg/l |
| Sulfate | 216.000 | mg/l |
| Tetrachloroethylene | <0.001 | mg/l |
| Thallium | <0.002 | mg/l |
| Toluene | <0.005 | mg/l |
| Total Alkalinity as CaCO3 | 4,970.000 | mg/l |
| Total Dissolved Solids | 7,000.000 | mg/l |
| Total Hardness as CaCO3 | 673.000 | mg/l |
| Total Suspended Solids | 21.500 | mg/l |
| Trichloroethylene | <0.001 | mg/l |
| Trichlorofluoromethane | <0.003 | mg/l |
| Vinyl Chloride | <0.001 | mg/l |
| Xylene | 0.007 | mg/l |
| Zinc | 0.071 | mg/l |
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