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

**Submitted** 03/05/2021 **Approved** 03/15/2021 **KOLAR Document ID** 1563011

# Class I-V Injection Well Monthly Monitoring

## Summary of Monthly Report

**Number of days injection occurred:** 28

**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** | 2,007 | 1.66 | 79 | 79 | -12.0 | -13.0 | 0 |
| **Monthly Maximum** | 3,005 | 4.62 | 82 | 82 | -11.0 | -11.8 | 0 |
| **Monthly Minimum** | 1,225 | 0.14 | 77 | 77 | -12.0 | -13.4 | 0 |
| **Monthly Total** | 56,184 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 83.53 | 75.29 | -6.69 | -13.68 |

**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 | 2,861.33 | 3.86 | 80 | 79.7 | -12 | -12.9 | 21 | N/A | 0 | DWK | 6.20 | 71.60 |
| 2 | 06:45 | 2,956.43 | 1.21 | 80 | 80.0 | -12 | -13.0 | 22 | N/A | 0 | DWK | 6.80 | 77.80 |
| 3 | 06:45 | 2,658.33 | 3.79 | 80 | 80.3 | -12 | -12.9 | 22 | N/A | 0 | DWK | 7.00 | 78.50 |
| 4 | 06:45 | 2,823.81 | 4.62 | 81 | 80.7 | -12 | -12.6 | 23 | N/A | 0 | DWK | 7.00 | 81.70 |
| 5 | 06:45 | 2,987.43 | 2.64 | 81 | 80.8 | -12 | -13.0 | 23 | N/A | 0 | DWK | 6.60 | 81.60 |
| 6 | 09:30 | 2,562.10 | 1.31 | 81 | 81.3 | -12 | -12.7 | 22 | N/A | 0 | RLW | 7.00 | 78.20 |
| 7 | 06:49 | 1,861.05 | 1.14 | 81 | 82.3 | -12 | -11.8 | 22 | N/A | 0 | AWK | 7.20 | 75.60 |
| 8 | 07:25 | 2,047.71 | 1.24 | 82 | 82.4 | -11 | -13.0 | 22 | N/A | 0 | DWK | 7.10 | 77.20 |
| 9 | 07:30 | 1,779.10 | 1.21 | 79 | 78.8 | -12 | -13.0 | 22 | N/A | 0 | DWK | 7.20 | 78.70 |
| 10 | 06:55 | 1,784.33 | 0.24 | 78 | 78.0 | -12 | -12.8 | 22 | N/A | 0 | DWK | 7.10 | 76.30 |
| 11 | 06:45 | 1,634.19 | 1.17 | 79 | 78.8 | -12 | -13.1 | 22 | N/A | 0 | DWK | 7.10 | 77.40 |
| 12 | 06:45 | 1,759.90 | 2.40 | 79 | 78.4 | -12 | -13.4 | 22 | N/A | 0 | DWK | 7.20 | 75.90 |
| 13 | 09:30 | 1,224.76 | 1.31 | 79 | 78.0 | -12 | -13.1 | 22 | N/A | 0 | RLW | 7.10 | 75.80 |
| 14 | 06:45 | 1,357.81 | 2.57 | 78 | 78.4 | -12 | -13.4 | 22 | N/A | 0 | DWK | 7.20 | 74.90 |
| 15 | 06:55 | 1,284.86 | 2.60 | 78 | 78.5 | -12 | -13.4 | 21 | N/A | 0 | DWK | 7.20 | 73.60 |
| 16 | 07:00 | 1,740.52 | 1.21 | 78 | 78.4 | -12 | -13.1 | 21 | N/A | 0 | DWK | 7.20 | 72.90 |
| 17 | 07:00 | 1,419.81 | 0.14 | 78 | 77.6 | -12 | -12.9 | 21 | N/A | 0 | DWK | 6.90 | 74.30 |
| 18 | 06:55 | 1,237.71 | 0.19 | 78 | 77.7 | -12 | -13.0 | 21 | N/A | 0 | DWK | 7.00 | 70.60 |
| 19 | 06:40 | 1,600.24 | 0.29 | 78 | 78.2 | -12 | -12.9 | 21 | N/A | 0 | DWK | 7.30 | 71.70 |
| 20 | 06:48 | 1,325.05 | 0.21 | 78 | 77.5 | -12 | -13.2 | 21 | N/A | 0 | AWK | 7.20 | 71.90 |
| 21 | 06:55 | 1,249.90 | 1.10 | 78 | 77.5 | -12 | -13.1 | 21 | N/A | 0 | DWK | 7.20 | 74.00 |
| 22 | 06:45 | 2,613.43 | 2.31 | 78 | 77.3 | -12 | -13.4 | 21 | N/A | 0 | DWK | 7.20 | 72.50 |
| 23 | 06:43 | 1,343.81 | 1.29 | 78 | 78.1 | -12 | -13.1 | 21 | N/A | 0 | AWK | 7.00 | 73.10 |
| 24 | 06:48 | 1,337.81 | 1.38 | 78 | 77.3 | -12 | -13.1 | 21 | N/A | 0 | AWK | 7.10 | 73.20 |
| 25 | 06:45 | 2,311.81 | 1.19 | 78 | 77.2 | -12 | -13.2 | 21 | N/A | 0 | DWK | 6.70 | 70.90 |
| 26 | 06:40 | 3,005.24 | 1.43 | 77 | 77.0 | -12 | -12.8 | 22 | N/A | 0 | DWK | 6.50 | 80.00 |
| 27 | 05:32 | 2,767.43 | 1.33 | 77 | 77.1 | -12 | -12.7 | 22 | N/A | 0 | AWK | 6.50 | 80.10 |
| 28 | 06:54 | 2,648.48 | 2.98 | 77 | 76.5 | -12 | -13.1 | 22 | N/A | 0 | AWK | 6.60 | 80.90 |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | |

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# Quarterly Injectate Samples

**Quarter** 4
**Date Sample Collected** 10/13/2020
**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 | <0.003 | mg/l |
| 1,1-Dichloroethane | <0.003 | mg/l |
| 1,2-Dichlorobenzene | <0.003 | mg/l |
| 1,2-Dichloroethane | <0.003 | mg/l |
| 1,1-Dichloroethylene | <0.003 | mg/l |
| 1,2-Dichloropropane | <0.003 | mg/l |
| 1,3-Dichloropropene | <0.005 | mg/l |
| Acetone | 3.360 | mg/l |
| Arsenic | 0.085 | mg/l |
| Benzene | 0.003 | mg/l |
| Calcium | 69.500 | mg/l |
| Chloride | 1,800.000 | mg/l |
| Chlorobenzene | <0.003 | mg/l |
| Chloroethane | <0.013 | mg/l |
| Chloroform | <0.003 | mg/l |
| Cis-1,2-Dichloroethylene | <0.003 | mg/l |
| Conductivity | 15.600 | Mmhos |
| Copper | 0.010 | mg/l |
| Dichloromethane (Methylene Chloride) | <0.013 | mg/l |
| Ethylbenzene | 0.005 | mg/l |
| Heptachlor | <0.000 | mg/l |
| Iron | 2.520 | mg/l |
| Lead | 0.008 | mg/l |

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# Quarterly Injectate Samples (continued)

| Constituent | Value | Units |
|---|---|---|
| Magnesium | 115.000 | mg/l |
| Methyl Ethyl Ketone (2-Butanone) | 1.600 | mg/l |
| Methyl Isobutyl Ketone (4-Methyl-2-Pentanone) | 0.015 | mg/l |
| Nitrobenzene | <0.200 | mg/l |
| Phenol | 0.316 | mg/l |
| Pyrene | <0.020 | mg/l |
| Silver | <0.018 | mg/l |
| Sulfate | 205.000 | mg/l |
| Tetrachloroethylene | <0.003 | mg/l |
| Thallium | <0.018 | mg/l |
| Toluene | 0.014 | mg/l |
| Total Alkalinity as CaCO3 | 6,430.000 | mg/l |
| Total Dissolved Solids | 8,520.000 | mg/l |
| Total Hardness as CaCO3 | 649.000 | mg/l |
| Total Suspended Solids | 21.600 | mg/l |
| Trichloroethylene | <0.003 | mg/l |
| Trichlorofluoromethane | <0.013 | mg/l |
| Vinyl Chloride | <0.003 | mg/l |
| Xylene | 0.011 | mg/l |
| Zinc | 0.123 | mg/l |
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