**Facility Well Name** Deffenbaugh #2 **UIC Permit #** KS-01-091-002 **Month** December **Year** 2020

**Submitted** 02/03/2021 **Approved** 02/09/2021 **KOLAR Document ID** 1548607

# 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** | 1,657 | 1.00 | 79 | 79 | -12.0 | -12.9 | 0 |
| **Monthly Maximum** | 3,518 | 3.40 | 83 | 83 | -11.0 | -12.0 | 0 |
| **Monthly Minimum** | 1,179 | 0.12 | 75 | 75 | -12.0 | -13.3 | 0 |
| **Monthly Total** | 51,356 | | | | | | 0 |

## Summary of Continuous Recorder Data

| Maximum Annulus Pressure psig | Minimum Annulus Pressure psig | Maximum Injection Pressure psig | Minimum Injection Pressure psig |
|---|---|---|---|
| 83.23 | 73.25 | -1.54 | -13.71 |

**Comments:**

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# 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 | pH Standard Units | Temperature degrees F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 06:40 | 1,361.86 | 1.17 | 75 | 74.7 | -12 | -12.9 | 0 | N/A | 0 | DWK | 7.20 | 77.70 |
| 2 | 06:35 | 1,569.29 | 0.26 | 75 | 75.0 | -12 | -12.7 | 0 | N/A | 0 | DWK | 7.30 | 79.00 |
| 3 | 06:35 | 1,514.48 | 0.26 | 75 | 75.1 | -12 | -12.6 | 0 | N/A | 0 | DWK | 7.30 | 78.80 |
| 4 | 06:35 | 1,971.19 | 1.43 | 77 | 76.9 | -12 | -12.9 | 0 | N/A | 0 | DWK | 7.00 | 82.60 |
| 5 | 10:00 | 1,179.19 | 0.26 | 77 | 75.8 | -12 | -12.7 | 0 | N/A | 0 | RLW | 7.10 | 76.90 |
| 6 | 06:44 | 1,388.76 | 0.26 | 77 | 76.7 | -12 | -12.8 | 0 | N/A | 0 | AWK | 7.20 | 78.50 |
| 7 | 06:40 | 1,414.48 | 0.24 | 77 | 77.2 | -12 | -12.8 | 0 | N/A | 0 | DWK | 7.20 | 75.40 |
| 8 | 06:40 | 1,900.48 | 1.24 | 78 | 77.9 | -12 | -13.0 | 0 | N/A | 0 | DWK | 7.30 | 79.60 |
| 9 | 06:40 | 1,809.43 | 0.12 | 78 | 77.8 | -12 | -12.9 | 0 | N/A | 0 | DWK | 7.10 | 78.50 |
| 10 | 06:45 | 1,404.57 | 1.45 | 79 | 78.7 | -12 | -12.8 | 0 | N/A | 0 | DWK | 6.90 | 82.30 |
| 11 | 06:45 | 1,605.71 | 0.17 | 79 | 78.4 | -12 | -12.7 | 0 | N/A | 0 | DWK | 7.10 | 81.00 |
| 12 | 10:00 | 1,310.10 | 0.26 | 79 | 78.9 | -12 | -12.7 | 0 | N/A | 0 | RLW | 7.30 | 78.20 |
| 13 | 06:50 | 1,350.57 | 1.19 | 80 | 79.3 | -12 | -13.1 | 0 | N/A | 0 | DWK | 7.20 | 75.20 |
| 14 | 06:40 | 1,609.05 | 1.50 | 80 | 80.0 | -12 | -13.3 | 0 | N/A | 0 | DWK | 7.30 | 75.50 |
| 15 | 06:40 | 1,456.67 | 1.26 | 82 | 82.0 | -12 | -13.1 | 0 | N/A | 0 | DWK | 6.90 | 81.70 |
| 16 | 06:45 | 1,499.19 | 0.14 | 80 | 80.4 | -12 | -12.7 | 0 | N/A | 0 | DWK | 7.00 | 81.20 |
| 17 | 06:45 | 1,405.67 | 1.24 | 80 | 80.5 | -12 | -13.0 | 0 | N/A | 0 | DWK | 7.20 | 78.10 |
| 18 | 06:40 | 1,526.69 | 0.26 | 81 | 80.7 | -12 | -12.7 | 0 | N/A | 0 | DWK | 7.30 | 77.90 |
| 19 | 06:43 | 1,448.07 | 1.43 | 81 | 81.4 | -12 | -12.8 | 0 | N/A | 0 | AWK | 7.30 | 72.00 |
| 20 | 07:00 | 1,565.57 | 3.40 | 83 | 83.1 | -12 | -13.1 | 0 | N/A | 0 | DWK | 7.00 | 81.60 |
| 21 | 06:35 | 1,365.76 | 0.24 | 82 | 81.7 | -12 | -12.5 | 0 | N/A | 0 | DWK | 6.80 | 81.50 |
| 22 | 06:30 | 1,472.76 | 2.43 | 82 | 82.5 | -12 | -13.2 | 0 | N/A | 0 | DWK | 7.20 | 80.30 |
| 23 | 06:40 | 1,424.48 | 0.26 | 78 | 77.3 | -12 | -12.7 | 0 | N/A | 0 | DWK | 7.30 | 79.60 |
| 24 | 06:30 | 1,374.79 | 0.19 | 78 | 78.1 | -12 | -12.8 | 0 | N/A | 0 | DWK | 7.40 | 74.50 |
| 25 | 07:00 | 1,866.45 | 1.05 | 78 | 79.3 | -12 | -13.1 | 0 | N/A | 0 | DWK | 7.20 | 76.40 |
| 26 | 09:30 | 1,495.81 | 3.31 | 78 | 78.2 | -12 | -13.0 | 0 | N/A | 0 | RLW | 7.20 | 80.50 |
| 27 | 06:34 | 1,257.62 | 3.14 | 78 | 79.6 | -12 | -13.1 | 0 | N/A | 0 | AWK | 6.90 | 78.20 |
| 28 | 06:40 | 1,606.21 | 0.24 | 78 | 77.0 | -12 | -12.7 | 0 | N/A | 0 | DWK | 6.80 | 81.10 |
| 29 | 06:40 | 2,363.76 | 1.21 | 78 | 77.4 | -12 | -13.1 | 0 | N/A | 0 | DWK | 6.90 | 79.20 |
| 30 | 06:35 | 3,517.93 | 1.24 | 76 | 75.9 | -12 | -12.9 | 0 | N/A | 0 | DWK | 7.10 | 80.80 |
| 31 | 06:35 | 3,319.05 | 0.24 | 76 | 76.3 | -11 | -12.0 | 0 | N/A | 0 | DWK | 6.20 | 66.90 |

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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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