Facility Well Name Deffenbaugh #2 **UIC Permit #** KS-01-091-002 **Month** November **Year** 2019

Submitted 12/09/2019 **Approved** 12/20/2019 **KOLAR Document ID** 1484945

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 30

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	1,826	1.59	77	77	-11.9	-12.7	0
Monthly Maximum	4,606	7.38	79	80	-9.0	-7.8	0
Monthly Minimum	41	0.00	75	75	-12.0	-13.5	0
Monthly Total	54,786						0

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
82.09	74.25	0.00	-13.52

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	Temp-ature degrees F
1	07:00	2,424.05	1.12	76	75.7	-12	-12.6	23	N/A	0	DWK	7.40	79.20
2	10:00	2,448.60	1.05	76	76.1	-12	-12.7	23	N/A	0	RLW	7.50	79.40
3	07:02	466.55	1.07	76	76.3	-12	-12.6	23	N/A	0	AWK	7.50	77.30
4	06:55	1,370.57	1.05	77	76.8	-12	-12.4	23	N/A	0	DWK	7.40	76.20
5	07:00	1,603.71	1.00	77	76.8	-12	-12.8	23	N/A	0	DWK	7.50	75.70
6	07:00	1,679.14	0.14	77	77.1	-12	-12.7	23	N/A	0	DWK	7.50	75.20
7	06:55	1,821.05	2.36	78	77.7	-12	-13.5	23	N/A	0	DWK	7.60	77.30
8	06:55	2,464.67	1.05	78	78.0	-12	-12.8	23	N/A	0	DWK	7.50	76.20
9	10:00	1,491.71	2.36	78	77.9	-12	-13.1	22	N/A	0	RLW	7.50	80.10
10	08:05	1,395.43	0.95	79	78.4	-12	-12.6	23	N/A	0	DWK	7.50	79.20
11	07:00	1,670.02	1.07	79	78.9	-12	-13.0	23	N/A	0	DWK	7.60	75.20
12	06:55	1,966.93	1.02	79	79.8	-12	-13.0	23	N/A	0	DWK	7.60	73.80
13	07:00	629.14	1.07	79	78.9	-12	-12.7	22	N/A	0	DWK	7.50	75.00
14	07:25	41.43	0.00	78	77.8	-9	-7.8	22	N/A	0	DWK	7.70	63.40
15	06:55	4,605.62	7.38	78	77.5	-12	-13.3	22	N/A	0	DWK	7.70	62.60
16	10:00	1,374.19	1.02	76	74.9	-12	-12.8	23	N/A	0	RLW	7.60	80.70
17	06:58	1,844.33	2.48	76	75.7	-12	-13.1	23	N/A	0	DWK	7.50	79.30
18	06:55	1,894.14	1.10	76	76.3	-12	-12.7	23	N/A	0	DWK	7.60	78.00
19	06:55	1,935.10	1.07	76	76.2	-12	-12.7	23	N/A	0	DWK	7.60	77.60
20	06:58	1,691.43	1.00	76	75.8	-12	-12.7	23	N/A	0	AWK	7.50	77.80
21	06:57	1,938.69	3.40	76	76.3	-12	-13.2	23	N/A	0	AWK	7.70	76.70
22	06:55	1,223.21	2.45	76	76.1	-12	-12.9	23	N/A	0	AWK	7.60	78.10
23	06:58	2,271.57	2.67	76	76.3	-12	-12.9	23	N/A	0	AWK	7.40	76.30
24	07:00	1,846.10	2.12	77	76.0	-12	-12.8	23	N/A	0	AWK	7.60	76.00
25	07:00	1,729.33	0.17	76	76.0	-12	-12.5	23	N/A	0	DWK	7.60	76.20
26	06:55	1,670.62	1.00	76	75.6	-12	-12.7	23	N/A	0	DWK	7.50	76.80
27	06:50	1,505.38	1.17	76	75.5	-12	-13.2	23	N/A	0	DWK	7.60	74.70
28	06:55	2,817.19	1.02	76	75.5	-12	-13.0	23	N/A	0	DWK	7.60	76.10
29	06:45	3,142.62	1.50	76	75.4	-12	-13.1	23	N/A	0	DWK	7.50	76.50
30	10:00	1,823.38	2.71	75	74.8	-12	-12.9	23	N/A	0	RLW	7.50	79.30
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Quarterly Injectate Samples

Quarter 4
Date Sample Collected 11/04/2019
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	0.062	mg/l
Arsenic	0.027	mg/l
Benzene	0.003	mg/l
Calcium	140.000	mg/l
Chloride	1,140.000	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	9.270	Mmhos
Copper	0.018	mg/l
Dichloromethane (Methylene Chloride)	<0.001	mg/l
Ethylbenzene	0.006	mg/l
Heptachlor	0.000	mg/l
Iron	1.380	mg/l
Lead	<0.005	mg/l

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Quarterly Injectate Samples (continued)

Constituent	Value	Units
Magnesium	112.000	mg/l
Methyl Ethyl Ketone (2-Butanone)	0.053	mg/l
Methyl Isobutyl Ketone (4-Methyl 2-Pentanone)	0.003	mg/l
Nitrobenzene	<0.010	mg/l
Phenol	3.930	mg/l
Pyrene	0.002	mg/l
Silver	0.005	mg/l
Sulfate	265.000	mg/l
Tetrachloroethylene	<0.001	mg/l
Thallium	<0.002	mg/l
Toluene	0.004	mg/l
Total Alkalinity as CaCO3	3,190.000	mg/l
Total Dissolved Solids	4,930.000	mg/l
Total Hardness as CaCO3	810.000	mg/l
Total Suspended Solids	14.000	mg/l
Trichloroethylene	<0.001	mg/l
Trichlorofluoromethane	<0.003	mg/l
Vinyl Chloride	<0.001	mg/l
Xylene	0.014	mg/l
Zinc	0.065	mg/l