Facility Well Name CHS Refinery #4 **UIC Permit #** KS-01-113-011 **Month** January **Year** 2020

Submitted 02/21/2020 **Approved** 02/27/2020 **KOLAR Document ID** 1500577

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 31

Barrels per Day Maximum: 34,286

			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	20,808	14.45	100	100	2.2	1.7	
Monthly Maximum	26,976	18.74	115	117	3.0	2.3	
Monthly Minimum	16,210	11.26	90	90	2.0	1.1	
Monthly Total	645,041						

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
105.01	89.14	9.08	1.06

Comments:

The continuous recorder's range maxed out at 105 psi. Thus, any reading above 105 simply read as 105. This range has been fixed and the continuous recorder is correctly recording values over 105 psi.

CHS Refinery #4 01/2020

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		
1	07:00	26,976.24	18.74	100	101.6	3	2.3	13			BF		
2	07:00	19,157.36	13.31	98	99.5	2	1.8	13			RM		
3	07:00	21,644.90	15.02	100	98.5	2	1.7	13			MW		
4	07:00	24,728.67	17.17	90	90.3	2	1.7	9			TB		
5	07:00	20,876.12	14.50	99	101.3	2	1.7	11			TB		
6	07:00	18,782.98	13.05	100	98.3	2	1.5	10			MH		
7	07:00	18,881.83	13.12	100	100.6	2	1.4	11			MH		
8	07:00	19,031.02	13.21	98	97.1	2	1.5	9			TB		
9	07:00	20,366.10	14.14	98	98.7	2	1.7	10			TB		
10	07:00	23,020.98	15.98	96	97.3	2	1.6	11			MH		
11	07:00	21,986.86	15.26	96	98.1	2	1.5	8			MH		
12	07:00	21,688.52	15.07	96	97.2	3	2.0	9			MH		
13	07:00	21,485.24	14.93	99	98.6	2	1.7	9			MW		
14	07:00	21,136.14	14.67	100	99.2	2	1.8	14			MW		
15	07:00	19,313.88	13.40	100	98.5	2	1.8	14			MH		
16	07:00	18,281.24	12.69	98	98.1	3	1.1	12			MH		
17	07:00	21,293.17	14.79	100	96.2	2	1.5	11			JC		
18	07:00	23,633.36	16.40	98	97.5	3	1.9	13			JC		
19	07:00	20,777.10	14.43	102	105.6	3	1.4	13			JC		
20	07:00	20,719.83	14.38	95	96.5	2	1.6	13			MW		
21	07:00	21,905.76	15.21	105	108.9	2	1.8	16			MW		
22	07:00	22,670.76	15.74	101	103.1	3	2.1	15			MW		
23	07:00	21,774.83	15.12	97	95.0	2	1.7	15			MW		
24	07:00	22,229.40	15.43	95	94.6	2	1.6	11			BF		
25	07:00	20,677.93	14.36	111	112.4	2	1.9	15			BF		
26	07:00	20,739.05	14.40	102	105.1	3	2.0	15			RM		
27	07:00	16,209.88	11.26	98	96.0	2	1.3	15			ZB		
28	07:00	18,231.14	12.67	103	104.6	2	2.0	15			ZB		
29	07:00	20,344.67	14.12	115	117.3	2	1.7	16			MW		
30	07:00	18,997.64	13.19	100	100.6	2	1.5	15			MW		
31	07:00	17,478.50	12.14	104	104.4	2	1.5	14			MW		

CHS Refinery #4 01/2020

Weekly Injectate Samples

Kansas Lab Certificate Number E-10116

Week	**Temperature**		**pH**		**Chloride**				
	Degrees Fahrenheit	Date	Standard Units	Date	Cl concentration (mg/l)	Date Sample Collected	Date Sampl Analysed		
1	73.90	01/07/2020	7.31	01/07/2020	1,090.0	01/07/2020	01/21/2020		
2	81.00	01/14/2020	7.54	01/14/2020	905.0	01/14/2020	01/21/2020		
3	72.10	01/21/2020	6.98	01/21/2020	933.0	01/21/2020	01/29/2020		
4	82.00	01/28/2020	7.43	01/28/2020	931.0	01/28/2020	02/10/2020		
5									

No monthly injectate samples required.