Facility Well Name CHS Refinery #1 **UIC Permit #** KS-01-113-008 **Month** December **Year** 2020

Submitted 01/15/2021 **Approved** 01/19/2021 **KOLAR Document ID** 1542623

Class I-V Injection Well Monthly Monitoring

Summary of Monthly Report

Number of days injection occurred: 31

Barrels per Day Maximum: 51,429

			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	10,380	7.21	108	106	4.2	3.4	
Monthly Maximum	12,338	8.57	118	112	14.0	13.9	
Monthly Minimum	7,018	4.88	98	96	2.0	0.8	
Monthly Total	321,775						

Summary of Continuous Recorder Data

Maximum Annulus Pressure psig	Minimum Annulus Pressure psig	Maximum Injection Pressure psig	Minimum Injection Pressure psig
117.96	94.34	14.16	0.64

Comments:

CHS Refinery #1 12/2020

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	11,362.29	7.88	110	108.2	2	1.1	5			MW		
2	07:00	10,954.62	7.62	110	110.4	2	1.3	6			JM		
3	07:00	10,043.31	6.98	102	104.6	3	3.6	5			JM		
4	07:00	11,849.83	8.24	108	105.5	14	13.2	6			MW		
5	07:00	11,810.40	8.19	110	106.9	14	13.9	6			MW		
6	07:00	12,337.71	8.57	110	106.0	14	13.8	6			MW		
7	07:00	10,658.05	7.40	112	109.2	2	1.0	7			AS		
8	07:00	9,132.00	6.33	110	108.2	2	1.1	7			AS		
9	07:00	10,173.60	7.07	112	112.2	11	10.7	8			MB		
10	07:00	11,539.88	8.02	112	112.0	2	1.2	9			MB		
11	07:00	11,315.67	7.86	106	102.7	2	1.2	7			AS		
12	07:00	9,603.10	6.67	106	103.4	2	0.9	5			AS		
13	07:00	10,375.19	7.21	105	103.4	2	0.9	5			MB		
14	07:00	8,365.38	5.81	118	111.4	2	1.3	6			JC		
15	07:00	7,017.60	4.88	110	109.0	2	0.9	5			JC		
16	07:00	10,245.60	7.12	112	111.6	2	1.0	6			MH		
17	07:00	10,307.31	7.17	109	107.2	2	0.9	6			MH		
18	07:00	10,150.29	7.05	110	110.3	3	1.5	6			MD		
19	07:00	10,370.40	7.19	108	104.7	2	1.4	6			JC		
20	07:00	10,589.14	7.36	110	108.0	2	1.3	6			JC		
21	07:00	10,045.71	6.98	106	104.7	2	0.9	6			RM		
22	07:00	11,222.05	7.79	108	104.4	2	0.9	7			RM		
23	07:00	11,504.24	8.00	102	104.5	2	1.0	6			JC		
24	07:00	10,628.24	7.38	104	105.0	2	0.9	5			JC		
25	07:00	11,736.69	8.14	110	108.0	2	1.0	7			MB		
26	07:00	9,424.12	6.55	110	107.4	2	0.8	6			MB		
27	07:00	9,641.83	6.69	110	108.9	2	1.4	6			MB		
28	07:00	9,834.52	6.83	110	108.1	13	13.6	7			MW		
29	07:00	12,033.60	8.36	104	101.1	13	11.8	6			MW		
30	07:00	9,224.57	6.40	100	97.1	2	0.8	5			MB		
31	07:00	8,277.95	5.74	98	95.9	2	0.9	5			MB		

CHS Refinery #1 12/2020

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	82.00	12/01/2020	7.55	12/01/2020	466.0	12/01/2020	12/22/2020		
2	78.00	12/08/2020	7.62	12/08/2020	797.0	12/08/2020	12/29/2020		
3	72.00	12/15/2020	8.40	12/15/2020	450.0	12/15/2020	12/29/2020		
4	73.00	12/22/2020	7.48	12/22/2020	656.0	12/22/2020	12/29/2020		
5	85.00	12/29/2020	7.41	12/29/2020	697.0	12/29/2020	01/07/2021		

No monthly injectate samples required.

CHS Refinery #1 12/2020

Quarterly Injectate Samples

Quarter 4
Date Sample Collected 12/22/2020
Kansas Lab Certificate Number E-10116
Lab Name Pace Analytical-Lenexa

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

Constituent	Value	Units
Ammonia	2.100	mg/l
Benzene	0.072	mg/l
Calcium	342.000	mg/l
Conductivity	4.000	Mmhos
Ethylbenzene	0.008	mg/l
Iron	6.320	mg/l
Magnesium	33.300	mg/l
Oil & Grease	16.300	mg/l
Sodium	596.000	mg/l
Sulfate	436.000	mg/l
Toluene	0.102	mg/l
Total Alkalinity as CaCO3	616.000	mg/l
Total Dissolved Solids	3,210.000	mg/l
Total Suspended Solids	28.000	mg/l
Xylene	0.153	mg/l