

Gas Quality Reports

LS225 - C.V. to Saginaw at Saginaw

5/13/2020 - 8/13/2020

Gas Day	Gross Heating Value (HHV) (Btu/scf)	Net Heating Value (LHV) (Btu/scf)	Specific Gravity	Wobbe Index	Hydrocarbon Dewpoint (HCDP) (deg F)	N2 (mol%)	CO2 (mol%)	Methane (mol%)	Ethane (mol%)	Propane (mol%)	Isobutane (mol%)	N-Butane (mol%)	Isopentane (mol%)	N-Pentane (mol%)	C6 Plus (mol%)
05/13/2020	1,027.5	1,009.5	0.587	1,340.70	-150.80	1.689	0.389	93.785	3.874	0.216	0.011	0.021	0.005	0.005	0.005
05/14/2020	1,021.6	1,003.7	0.583	1,338.32	-157.08	1.612	0.384	94.676	3.127	0.160	0.009	0.018	0.004	0.004	0.005
05/15/2020	1,018.4	1,000.6	0.580	1,336.74	-159.93	1.638	0.353	95.103	2.705	0.157	0.010	0.019	0.005	0.005	0.006
05/16/2020	1,023.3	1,005.4	0.584	1,339.51	-154.90	1.690	0.322	94.494	3.237	0.199	0.013	0.026	0.006	0.006	0.006
05/17/2020	1,021.7	1,003.9	0.583	1,337.80	-155.83	1.749	0.326	94.543	3.128	0.194	0.013	0.026	0.006	0.006	0.007
05/18/2020	1,016.5	998.7	0.580	1,334.97	-161.23	1.734	0.325	95.196	2.544	0.158	0.010	0.019	0.005	0.005	0.006
05/19/2020	1,016.7	999.0	0.580	1,335.41	-161.19	1.713	0.324	95.205	2.562	0.155	0.009	0.017	0.004	0.005	0.006
05/20/2020	1,017.7	999.9	0.580	1,336.30	-160.47	1.669	0.334	95.171	2.628	0.155	0.009	0.019	0.005	0.005	0.006
05/21/2020	1,018.3	1,000.5	0.580	1,337.39	-160.69	1.585	0.349	95.224	2.661	0.145	0.008	0.015	0.004	0.004	0.005
05/22/2020	1,021.5	1,003.7	0.580	1,341.08	-158.50	1.374	0.389	95.257	2.757	0.176	0.010	0.020	0.005	0.005	0.007
05/23/2020	1,021.6	1,003.7	0.581	1,340.52	-157.81	1.410	0.398	95.198	2.733	0.204	0.013	0.025	0.006	0.006	0.007
05/24/2020	1,022.9	1,005.0	0.582	1,340.73	-155.87	1.491	0.373	94.940	2.902	0.226	0.015	0.030	0.007	0.007	0.008
05/25/2020	1,021.3	1,003.5	0.581	1,340.35	-158.04	1.420	0.391	95.227	2.691	0.220	0.012	0.022	0.005	0.005	0.007
05/26/2020	1,018.5	1,000.8	0.580	1,337.10	-159.89	1.572	0.381	95.206	2.612	0.185	0.010	0.019	0.004	0.005	0.006
05/27/2020	1,018.7	1,000.9	0.582	1,335.34	-158.55	1.701	0.395	94.879	2.774	0.204	0.010	0.021	0.005	0.005	0.006
05/28/2020	1,020.8	1,003.0	0.582	1,337.74	-157.12	1.678	0.346	94.783	2.934	0.211	0.011	0.021	0.005	0.005	0.006
05/29/2020	1,019.0	1,001.2	0.582	1,335.91	-158.15	1.677	0.390	94.927	2.756	0.195	0.011	0.023	0.006	0.006	0.010
05/30/2020	1,017.5	999.7	0.581	1,335.05	-159.78	1.665	0.396	95.121	2.571	0.192	0.011	0.024	0.006	0.006	0.007
05/31/2020	1,019.4	1,001.6	0.582	1,336.35	-157.71	1.693	0.369	94.907	2.759	0.210	0.013	0.027	0.007	0.007	0.008
06/01/2020	1,021.9	1,004.1	0.583	1,338.73	-77.28	1.608	0.374	94.991	2.612	0.287	0.026	0.061	0.013	0.016	0.012
06/02/2020	1,013.1	995.4	0.578	1,333.02	-165.29	1.698	0.347	95.654	2.124	0.129	0.010	0.020	0.005	0.006	0.007
06/03/2020	1,014.0	996.3	0.578	1,333.89	-164.33	1.667	0.350	95.617	2.179	0.134	0.010	0.023	0.006	0.006	0.008
06/04/2020	1,014.0	996.3	0.578	1,333.89	-164.33	1.667	0.350	95.617	2.179	0.134	0.010	0.023	0.006	0.006	0.008
06/05/2020	1,037.4	1,019.3	0.592	1,348.26	-61.76	1.418	0.467	93.104	4.652	0.288	0.011	0.028	0.006	0.008	0.020
06/06/2020	1,022.0	1,004.2	0.582	1,339.17	-156.61	1.568	0.380	94.770	3.071	0.155	0.011	0.025	0.006	0.007	0.008
06/07/2020	1,018.7	1,000.9	0.582	1,335.80	-159.18	1.672	0.390	94.878	2.893	0.121	0.008	0.020	0.005	0.006	0.007
06/08/2020	1,025.1	1,007.2	0.585	1,340.23	-153.30	1.594	0.404	94.248	3.517	0.195	0.008	0.018	0.004	0.005	0.007
06/09/2020	1,018.3	1,000.6	0.581	1,335.74	-159.65	1.703	0.361	94.899	2.875	0.122	0.007	0.016	0.004	0.004	0.007
06/10/2020	1,017.2	999.5	0.581	1,335.05	-161.08	1.712	0.360	94.963	2.847	0.094	0.005	0.009	0.002	0.003	0.006
06/11/2020	1,018.8	1,001.0	0.583	1,334.82	-158.74	1.782	0.375	94.599	3.087	0.130	0.006	0.011	0.003	0.003	0.006
06/12/2020	1,019.6	1,001.8	0.584	1,334.75	-157.54	1.818	0.381	94.428	3.187	0.153	0.007	0.013	0.003	0.003	0.005
06/13/2020	1,020.5	1,002.7	0.585	1,334.69	-156.22	1.847	0.394	94.249	3.294	0.179	0.009	0.016	0.004	0.004	0.005
06/14/2020	1,016.3	998.5	0.582	1,332.52	-160.66	1.723	0.458	94.904	2.751	0.125	0.008	0.015	0.004	0.004	0.008
06/15/2020	1,019.8	1,002.0	0.581	1,337.61	-159.23	1.577	0.391	94.896	2.991	0.120	0.005	0.009	0.002	0.002	0.006
06/16/2020	1,016.9	999.2	0.580	1,335.01	-161.81	1.650	0.393	95.048	2.806	0.084	0.004	0.007	0.002	0.002	0.005
06/17/2020	1,017.8	1,000.1	0.580	1,336.63	-161.35	1.605	0.364	95.116	2.806	0.086	0.004	0.009	0.002	0.003	0.006
06/18/2020	1,020.3	1,002.5	0.581	1,338.65	-159.24	1.537	0.376	94.965	2.976	0.119	0.006	0.011	0.002	0.003	0.005
06/19/2020	1,018.2	1,000.4	0.580	1,336.79	-161.30	1.579	0.382	95.071	2.869	0.080	0.003	0.007	0.002	0.002	0.005
06/20/2020	1,020.7	1,002.9	0.582	1,338.30	-158.77	1.581	0.380	94.756	3.169	0.094	0.004	0.008	0.002	0.003	0.005
06/21/2020	1,035.7	1,017.6	0.591	1,346.73	-144.33	1.525	0.426	93.215	4.370	0.407	0.015	0.027	0.004	0.005	0.005
06/22/2020	1,035.7	1,017.6	0.591	1,346.73	-144.33	1.525	0.426	93.215	4.370	0.407	0.015	0.027	0.004	0.005	0.005
06/23/2020	1,020.8	1,003.0	0.582	1,338.51	-158.52	1.536	0.400	94.857	3.055	0.125	0.005	0.011	0.003	0.003	0.006
06/24/2020	1,022.0	1,004.2	0.583	1,338.61	-156.61	1.647	0.359	94.592	3.202	0.164	0.008	0.016	0.004	0.004	0.006

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5/13/2020 - 8/13/2020

Gas Day	Gross Heating Value (HHV) (Btu/scf)	Net Heating Value (LHV) (Btu/scf)	Specific Gravity	Wobbe Index	Hydrocarbon Dewpoint (HCDP) (deg F)	N2 (mol%)	CO2 (mol%)	Methane (mol%)	Ethane (mol%)	Propane (mol%)	Isobutane (mol%)	N-Butane (mol%)	Isopentane (mol%)	N-Pentane (mol%)	C6 Plus (mol%)
06/25/2020	1,019.1	1,001.3	0.580	1,338.34	-160.94	1.506	0.376	95.142	2.865	0.090	0.004	0.009	0.002	0.002	0.004
06/26/2020	1,019.6	1,001.8	0.580	1,338.52	-160.05	1.473	0.404	95.148	2.834	0.105	0.007	0.016	0.004	0.005	0.006
06/27/2020	1,019.2	1,001.4	0.580	1,338.14	-160.44	1.507	0.388	95.144	2.829	0.099	0.006	0.014	0.003	0.004	0.005
06/28/2020	1,020.1	1,002.3	0.581	1,338.55	-159.43	1.500	0.398	95.037	2.922	0.106	0.007	0.016	0.004	0.005	0.006
06/29/2020	1,020.9	1,003.1	0.581	1,339.33	-158.83	1.482	0.395	94.975	3.005	0.108	0.007	0.015	0.004	0.004	0.005
06/30/2020	1,021.9	1,004.1	0.581	1,340.41	-158.29	1.447	0.391	94.925	3.100	0.106	0.006	0.014	0.003	0.004	0.005
07/01/2020	1,023.1	1,005.2	0.583	1,340.35	-156.71	1.508	0.390	94.656	3.283	0.129	0.008	0.016	0.003	0.003	0.005
07/02/2020	1,021.9	1,004.1	0.583	1,337.89	-156.33	1.662	0.386	94.502	3.254	0.155	0.008	0.019	0.004	0.004	0.006
07/03/2020	1,021.4	1,003.5	0.583	1,338.22	-157.34	1.613	0.383	94.675	3.157	0.133	0.007	0.017	0.004	0.005	0.006
07/04/2020	1,018.0	1,000.3	0.585	1,330.93	-156.25	2.028	0.399	94.233	3.098	0.161	0.015	0.037	0.010	0.011	0.008
07/05/2020	1,012.9	995.2	0.583	1,326.20	-160.53	2.188	0.388	94.484	2.730	0.158	0.011	0.021	0.006	0.006	0.007
07/06/2020	1,017.8	1,000.1	0.582	1,333.83	-158.12	1.756	0.413	94.850	2.752	0.152	0.014	0.032	0.008	0.009	0.013
07/07/2020	1,017.2	999.4	0.580	1,336.17	-161.18	1.614	0.362	95.261	2.608	0.113	0.008	0.016	0.004	0.005	0.009
07/08/2020	1,020.3	1,002.5	0.582	1,337.45	-157.78	1.639	0.374	94.834	2.913	0.202	0.009	0.017	0.003	0.003	0.007
07/09/2020	1,020.5	1,002.7	0.582	1,338.24	-158.30	1.587	0.373	94.902	2.912	0.195	0.008	0.014	0.002	0.003	0.004
07/10/2020	1,026.2	1,008.3	0.585	1,341.73	-152.10	1.554	0.382	94.392	3.316	0.294	0.015	0.030	0.006	0.006	0.006
07/11/2020	1,026.5	1,008.6	0.586	1,341.48	-151.16	1.600	0.375	94.321	3.303	0.328	0.018	0.036	0.006	0.007	0.008
07/12/2020	1,023.8	1,005.9	0.584	1,340.08	-154.75	1.564	0.390	94.602	3.126	0.271	0.012	0.022	0.004	0.004	0.005
07/13/2020	1,018.9	1,001.1	0.583	1,334.27	-158.00	1.818	0.384	94.549	3.033	0.183	0.008	0.014	0.003	0.003	0.005
07/14/2020	1,021.6	1,003.8	0.583	1,337.57	-156.33	1.665	0.391	94.583	3.106	0.215	0.010	0.018	0.004	0.004	0.005
07/15/2020	1,027.1	1,009.1	0.584	1,344.35	-153.04	1.481	0.316	94.468	3.488	0.205	0.009	0.018	0.004	0.004	0.006
07/16/2020	1,026.3	1,008.4	0.582	1,345.14	-155.00	1.407	0.300	94.697	3.413	0.148	0.007	0.014	0.004	0.004	0.006
07/17/2020	1,021.9	1,004.1	0.581	1,340.08	-157.49	1.514	0.363	94.928	2.974	0.182	0.008	0.017	0.004	0.004	0.006
07/18/2020	1,021.9	1,004.1	0.583	1,338.95	-156.68	1.578	0.383	94.763	3.024	0.210	0.009	0.019	0.004	0.005	0.006
07/19/2020	1,020.0	1,002.2	0.582	1,336.79	-157.90	1.679	0.374	94.770	2.941	0.198	0.008	0.017	0.004	0.004	0.005
07/20/2020	1,019.7	1,001.9	0.584	1,334.80	-157.44	1.783	0.403	94.495	3.084	0.206	0.007	0.014	0.002	0.002	0.004
07/21/2020	1,024.6	1,006.7	0.585	1,339.91	-153.36	1.589	0.406	94.441	3.208	0.311	0.012	0.021	0.003	0.004	0.005
07/22/2020	1,023.4	1,005.6	0.584	1,339.78	-155.21	1.573	0.389	94.600	3.140	0.260	0.009	0.017	0.003	0.004	0.005
07/23/2020	1,025.6	1,007.8	0.585	1,340.44	-152.15	1.615	0.394	94.285	3.341	0.313	0.012	0.024	0.005	0.005	0.006
07/24/2020	1,020.0	1,002.2	0.581	1,337.94	-158.21	1.594	0.365	95.020	2.785	0.185	0.010	0.022	0.005	0.005	0.009
07/25/2020	1,019.9	1,002.1	0.581	1,338.13	-158.35	1.611	0.343	95.041	2.766	0.185	0.011	0.024	0.006	0.006	0.007
07/26/2020	1,026.0	1,008.1	0.584	1,342.05	-151.29	1.577	0.342	94.597	3.031	0.355	0.022	0.045	0.009	0.010	0.010
07/27/2020	1,027.5	1,009.6	0.586	1,342.43	-82.91	1.560	0.379	94.396	3.183	0.381	0.024	0.046	0.009	0.009	0.012
07/28/2020	1,025.2	1,007.3	0.585	1,340.08	-151.66	1.660	0.369	94.404	3.132	0.360	0.019	0.035	0.007	0.006	0.009
07/29/2020	1,020.0	1,002.2	0.587	1,330.80	-152.91	2.155	0.387	93.824	3.249	0.317	0.017	0.031	0.006	0.006	0.008
07/30/2020	1,023.3	1,005.4	0.586	1,336.45	-152.13	1.859	0.375	94.159	3.176	0.362	0.018	0.032	0.006	0.006	0.007
07/31/2020	1,026.7	1,008.8	0.586	1,341.15	-150.52	1.647	0.366	94.283	3.224	0.403	0.021	0.037	0.006	0.006	0.007
08/01/2020	1,022.3	1,004.5	0.585	1,336.65	-154.19	1.813	0.364	94.333	3.138	0.293	0.015	0.028	0.005	0.005	0.006
08/02/2020	1,019.8	1,002.0	0.585	1,333.07	-155.62	1.954	0.388	94.188	3.191	0.228	0.013	0.023	0.005	0.005	0.006
08/03/2020	1,022.4	1,004.6	0.583	1,338.83	-155.48	1.600	0.390	94.711	2.988	0.248	0.016	0.029	0.006	0.006	0.007
08/04/2020	1,023.2	1,005.3	0.582	1,341.50	-156.48	1.416	0.391	94.977	2.952	0.215	0.011	0.022	0.004	0.005	0.007
08/05/2020	1,021.2	1,003.4	0.581	1,339.85	-158.08	1.451	0.396	95.111	2.812	0.180	0.011	0.022	0.005	0.005	0.007
08/06/2020	1,020.1	1,002.3	0.580	1,339.26	-159.28	1.470	0.379	95.230	2.713	0.160	0.010	0.020	0.005	0.005	0.007

TSP Name: Southern Star Central Gas Pipeline, Inc.

CSI048

TSP: 007906233

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Gas Day	Gross Heating Value (HHV) (Btu/scf)	Net Heating Value (LHV) (Btu/scf)	Specific Gravity	Wobbe Index	Hydrocarbon Dewpoint (HCDP) (deg F)	N2 (mol%)	CO2 (mol%)	Methane (mol%)	Ethane (mol%)	Propane (mol%)	Isobutane (mol%)	N-Butane (mol%)	Isopentane (mol%)	N-Pentane (mol%)	C6 Plus (mol%)
08/07/2020	1,018.8	1,001.1	0.578	1,340.19	-162.08	1.390	0.345	95.547	2.590	0.102	0.006	0.011	0.003	0.003	0.005
08/08/2020	1,020.4	1,002.6	0.580	1,340.28	-159.41	1.476	0.330	95.270	2.735	0.143	0.010	0.019	0.005	0.005	0.007
08/09/2020	1,021.7	1,003.9	0.581	1,340.99	-158.05	1.488	0.327	95.080	2.912	0.146	0.010	0.020	0.005	0.005	0.007
08/10/2020	1,021.7	1,003.9	0.580	1,341.77	-158.68	1.423	0.327	95.215	2.853	0.139	0.009	0.018	0.005	0.005	0.006
08/11/2020	1,022.2	1,004.4	0.581	1,341.54	-157.58	1.462	0.330	95.086	2.913	0.157	0.011	0.022	0.006	0.006	0.007

NOTES:**Wobbe Index:** Interchangeability constant calculated using the Gross (or Higher) Heating Value (HHV) divided by the square root of the Specific Gravity**Hydrocarbon Dewpoint (HCDP):** Theoretically determined value using the Redlich-Kwong equation of state (EOS)

Selection: Business Unit ID = 70; Analysis_Key = 53874