

Gas Quality Reports

LS115 - Glavin to Kansas City

5/13/2020 - 8/13/2020

Page 1 of 3

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	1,035.0	1,017.0	0.598	1,338.88	-140.67	2.124	0.444	91.934	4.986	0.444	0.019	0.030	0.006	0.005	0.008
05/14/2020	1,046.7	1,028.5	0.600	1,351.43	-134.91	1.798	0.339	91.497	5.779	0.512	0.022	0.034	0.007	0.005	0.008
05/15/2020	1,039.5	1,021.4	0.596	1,346.44	-139.61	1.843	0.354	92.226	5.060	0.446	0.020	0.031	0.006	0.005	0.008
05/16/2020	1,040.2	1,022.1	0.599	1,344.34	-138.39	2.131	0.303	91.486	5.644	0.382	0.014	0.023	0.005	0.004	0.008
05/17/2020	1,049.1	1,030.8	0.603	1,350.91	-73.36	1.864	0.399	90.892	6.264	0.508	0.021	0.034	0.007	0.005	0.007
05/18/2020	1,053.6	1,035.2	0.609	1,350.50	-51.72	2.069	0.429	90.181	6.485	0.636	0.050	0.082	0.011	0.049	0.008
05/19/2020	1,046.4	1,028.2	0.598	1,352.61	-136.77	1.605	0.391	91.634	5.989	0.332	0.012	0.021	0.005	0.004	0.007
05/20/2020	1,050.7	1,032.5	0.602	1,354.00	-132.95	1.705	0.387	90.962	6.442	0.459	0.013	0.019	0.004	0.003	0.007
05/21/2020	1,049.7	1,031.4	0.602	1,353.17	-133.62	1.837	0.312	90.911	6.483	0.417	0.011	0.016	0.004	0.002	0.007
05/22/2020	1,051.0	1,032.7	0.603	1,353.42	-132.32	1.775	0.381	90.823	6.470	0.503	0.014	0.022	0.004	0.003	0.006
05/23/2020	1,050.0	1,031.7	0.604	1,351.07	-132.21	1.802	0.460	90.758	6.385	0.543	0.015	0.023	0.004	0.003	0.006
05/24/2020	1,053.2	1,034.9	0.607	1,352.29	-130.33	1.600	0.628	90.394	6.804	0.527	0.015	0.023	0.003	0.002	0.006
05/25/2020	1,057.2	1,038.8	0.612	1,351.00	-66.98	1.501	0.892	89.779	7.003	0.739	0.028	0.043	0.005	0.004	0.005
05/26/2020	1,054.5	1,036.2	0.609	1,351.28	-128.86	1.458	0.818	90.201	6.850	0.623	0.016	0.024	0.002	0.002	0.004
05/27/2020	1,048.0	1,029.8	0.605	1,347.53	-133.14	1.537	0.768	90.901	6.202	0.548	0.016	0.022	0.003	0.002	0.003
05/28/2020	1,051.2	1,032.9	0.606	1,349.89	-131.23	1.556	0.725	90.555	6.554	0.566	0.015	0.021	0.003	0.002	0.004
05/29/2020	1,054.5	1,036.2	0.606	1,355.07	-130.12	1.584	0.527	90.534	6.734	0.571	0.018	0.023	0.003	0.002	0.004
05/30/2020	1,048.7	1,030.4	0.599	1,354.85	-134.96	1.753	0.242	91.494	5.964	0.502	0.016	0.016	0.004	0.003	0.006
05/31/2020	1,041.3	1,023.2	0.597	1,347.71	-138.85	1.810	0.365	91.995	5.326	0.456	0.015	0.018	0.004	0.003	0.006
06/01/2020	1,042.9	1,024.8	0.600	1,345.87	-136.33	1.909	0.452	91.423	5.657	0.497	0.017	0.027	0.005	0.004	0.007
06/02/2020	1,047.9	1,029.7	0.602	1,350.38	-133.66	1.709	0.493	91.191	6.000	0.545	0.019	0.029	0.005	0.003	0.006
06/03/2020	1,048.1	1,029.9	0.597	1,357.06	-73.41	1.634	0.182	92.125	5.413	0.564	0.025	0.035	0.008	0.005	0.008
06/04/2020	1,022.9	1,005.1	0.590	1,331.37	-149.91	2.232	0.398	93.262	3.708	0.335	0.015	0.027	0.007	0.006	0.009
06/05/2020	1,029.8	1,011.9	0.592	1,338.10	-146.15	1.897	0.470	92.984	4.231	0.360	0.013	0.026	0.005	0.005	0.009
06/06/2020	1,027.9	1,010.0	0.592	1,335.65	-70.17	2.352	0.243	92.847	4.063	0.389	0.029	0.042	0.012	0.009	0.013
06/07/2020	1,036.0	1,018.0	0.597	1,340.45	-73.22	1.920	0.522	92.201	4.793	0.461	0.026	0.046	0.011	0.010	0.009
06/08/2020	1,035.4	1,017.4	0.598	1,338.52	-140.49	1.842	0.662	92.051	4.917	0.459	0.018	0.031	0.006	0.005	0.008
06/09/2020	1,028.6	1,010.7	0.591	1,337.59	-146.77	2.058	0.354	93.046	4.113	0.365	0.018	0.026	0.006	0.005	0.009
06/10/2020	1,033.0	1,015.0	0.594	1,339.90	-143.44	1.906	0.467	92.604	4.550	0.415	0.017	0.025	0.005	0.004	0.008
06/11/2020	1,027.2	1,009.3	0.592	1,335.02	-147.32	2.060	0.448	93.014	4.045	0.372	0.017	0.026	0.006	0.005	0.008
06/12/2020	1,026.0	1,008.1	0.590	1,335.48	-148.67	2.126	0.341	93.228	3.900	0.349	0.016	0.022	0.005	0.004	0.008
06/13/2020	1,028.1	1,010.3	0.591	1,337.22	-146.91	2.091	0.337	93.112	3.996	0.395	0.021	0.027	0.006	0.005	0.009
06/14/2020	1,024.0	1,006.2	0.591	1,332.51	-149.72	2.175	0.408	93.175	3.871	0.326	0.012	0.015	0.005	0.004	0.009
06/15/2020	1,037.8	1,019.7	0.595	1,345.72	-140.79	1.972	0.255	92.382	4.858	0.475	0.019	0.024	0.005	0.003	0.008
06/16/2020	1,040.5	1,022.4	0.598	1,345.29	-138.48	1.956	0.376	91.766	5.369	0.484	0.017	0.019	0.004	0.003	0.006
06/17/2020	1,042.8	1,024.7	0.598	1,348.10	-137.04	1.847	0.366	91.843	5.340	0.530	0.023	0.034	0.006	0.005	0.007
06/18/2020	1,022.9	1,005.1	0.590	1,331.49	-150.37	2.077	0.494	93.376	3.668	0.323	0.014	0.026	0.006	0.006	0.009
06/19/2020	1,043.7	1,025.6	0.601	1,346.76	-135.99	1.712	0.557	91.590	5.540	0.528	0.022	0.034	0.006	0.005	0.007
06/20/2020	1,045.2	1,027.0	0.600	1,348.88	-73.18	1.657	0.522	91.675	5.506	0.548	0.025	0.044	0.008	0.007	0.007
06/21/2020	1,030.5	1,012.6	0.599	1,331.77	-70.51	2.761	0.272	91.731	4.497	0.615	0.034	0.061	0.011	0.010	0.008
06/22/2020	1,038.4	1,020.4	0.597	1,343.87	-74.19	1.910	0.417	92.190	4.858	0.536	0.025	0.041	0.008	0.007	0.009
06/23/2020	1,030.9	1,013.0	0.593	1,339.13	-144.89	2.022	0.366	92.895	4.207	0.436	0.020	0.035	0.007	0.006	0.007
06/24/2020	1,024.7	1,006.9	0.591	1,333.40	-149.35	1.987	0.506	93.353	3.739	0.351	0.016	0.029	0.006	0.005	0.008

Gas Quality Reports

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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%)
06/25/2020	1,024.5	1,006.7	0.588	1,335.52	-150.60	1.968	0.395	93.635	3.627	0.318	0.014	0.024	0.005	0.004	0.008
06/26/2020	1,011.2	993.6	0.585	1,322.02	-160.18	2.319	0.479	94.217	2.742	0.202	0.007	0.017	0.004	0.004	0.010
06/27/2020	1,014.9	997.2	0.586	1,325.41	-157.65	2.365	0.382	93.788	3.268	0.170	0.002	0.012	0.003	0.003	0.008
06/28/2020	1,023.8	1,006.0	0.591	1,332.26	-150.25	2.124	0.449	93.180	3.916	0.291	0.008	0.018	0.003	0.003	0.007
06/29/2020	1,030.2	1,012.3	0.595	1,335.51	-144.68	2.004	0.555	92.526	4.448	0.411	0.015	0.026	0.004	0.004	0.007
06/30/2020	1,016.6	998.9	0.586	1,327.79	-156.59	2.197	0.415	93.975	3.149	0.219	0.009	0.018	0.005	0.004	0.009
07/01/2020	1,014.4	996.7	0.585	1,326.20	-158.83	2.158	0.457	94.205	2.950	0.199	0.004	0.012	0.003	0.003	0.009
07/02/2020	1,016.8	999.1	0.586	1,327.91	-156.22	2.220	0.401	93.936	3.148	0.260	0.006	0.013	0.004	0.003	0.009
07/03/2020	1,016.7	999.0	0.585	1,329.20	-157.12	2.114	0.398	94.205	2.990	0.258	0.008	0.012	0.004	0.003	0.008
07/04/2020	1,012.7	995.1	0.585	1,323.99	-159.22	2.265	0.454	94.224	2.806	0.200	0.010	0.019	0.006	0.005	0.010
07/05/2020	1,019.0	1,001.3	0.587	1,329.93	-153.66	2.205	0.371	93.856	3.191	0.321	0.014	0.023	0.005	0.004	0.009
07/06/2020	1,017.2	999.5	0.585	1,329.82	-156.40	2.178	0.335	94.184	2.989	0.263	0.012	0.020	0.005	0.004	0.010
07/07/2020	1,011.8	994.2	0.585	1,323.32	-159.69	2.312	0.432	94.305	2.684	0.208	0.013	0.022	0.007	0.006	0.010
07/08/2020	1,019.7	1,001.9	0.586	1,332.47	-154.23	2.027	0.370	94.212	3.030	0.286	0.017	0.029	0.009	0.007	0.013
07/09/2020	1,011.5	993.9	0.587	1,319.71	-157.74	2.633	0.409	93.677	2.984	0.248	0.011	0.019	0.005	0.004	0.010
07/10/2020	1,013.5	995.9	0.586	1,324.18	-158.00	2.441	0.355	93.942	2.991	0.227	0.010	0.016	0.005	0.004	0.008
07/11/2020	1,018.8	1,001.1	0.588	1,328.86	-153.48	2.273	0.377	93.705	3.284	0.304	0.014	0.025	0.005	0.005	0.008
07/12/2020	1,024.9	1,007.1	0.591	1,333.41	-148.48	2.208	0.367	93.196	3.751	0.417	0.019	0.026	0.005	0.004	0.008
07/13/2020	1,022.9	1,005.1	0.588	1,334.44	-150.86	2.219	0.240	93.714	3.359	0.408	0.017	0.026	0.005	0.004	0.008
07/14/2020	1,012.1	994.5	0.587	1,321.07	-157.73	2.525	0.425	93.829	2.900	0.269	0.012	0.021	0.005	0.004	0.010
07/15/2020	1,014.8	997.1	0.587	1,324.79	-156.68	2.377	0.403	93.894	2.982	0.304	0.011	0.015	0.004	0.003	0.009
07/16/2020	1,016.6	998.9	0.586	1,327.87	-156.45	2.201	0.410	93.999	3.085	0.270	0.008	0.012	0.004	0.003	0.009
07/17/2020	1,016.2	998.5	0.585	1,328.37	-157.33	2.073	0.454	94.252	2.919	0.262	0.011	0.012	0.004	0.004	0.009
07/18/2020	1,024.6	1,006.7	0.588	1,336.20	-150.79	1.903	0.404	93.785	3.504	0.352	0.013	0.022	0.005	0.004	0.008
07/19/2020	1,028.4	1,010.5	0.593	1,335.00	-145.58	2.214	0.386	92.734	4.132	0.478	0.017	0.024	0.004	0.004	0.007
07/20/2020	1,019.6	1,001.9	0.592	1,324.88	-150.42	2.601	0.408	92.788	3.797	0.357	0.013	0.020	0.004	0.004	0.007
07/21/2020	1,009.8	992.3	0.586	1,319.18	-159.69	2.479	0.484	94.109	2.593	0.286	0.012	0.018	0.005	0.004	0.010
07/22/2020	1,016.0	998.3	0.587	1,325.65	-155.62	2.317	0.433	93.848	3.022	0.331	0.013	0.019	0.004	0.004	0.008
07/23/2020	1,014.0	996.3	0.587	1,323.95	-157.54	2.243	0.511	94.037	2.891	0.274	0.010	0.015	0.005	0.004	0.010
07/24/2020	1,015.7	998.1	0.586	1,327.29	-157.41	2.107	0.475	94.176	2.944	0.266	0.004	0.012	0.004	0.003	0.010
07/25/2020	1,021.4	1,003.6	0.591	1,329.00	-150.75	2.367	0.392	93.110	3.749	0.345	0.011	0.011	0.004	0.003	0.008
07/26/2020	1,027.4	1,009.5	0.591	1,336.18	-147.17	2.099	0.365	93.153	3.882	0.442	0.017	0.024	0.005	0.004	0.008
07/27/2020	1,026.2	1,008.4	0.592	1,333.51	-146.90	2.190	0.414	93.038	3.808	0.484	0.020	0.028	0.005	0.004	0.009
07/28/2020	1,017.8	1,000.1	0.591	1,324.03	-151.86	2.486	0.470	93.211	3.379	0.397	0.016	0.022	0.005	0.004	0.009
07/29/2020	1,009.3	991.7	0.590	1,313.82	-156.88	2.779	0.567	93.372	2.883	0.334	0.016	0.028	0.006	0.005	0.010
07/30/2020	1,025.9	1,008.1	0.593	1,332.24	-146.54	2.193	0.473	92.947	3.832	0.481	0.021	0.032	0.006	0.005	0.010
07/31/2020	1,025.8	1,007.9	0.594	1,331.46	-146.09	2.482	0.321	92.653	3.976	0.496	0.021	0.034	0.006	0.005	0.007
08/01/2020	1,016.1	998.4	0.590	1,323.13	-153.10	2.357	0.550	93.596	3.007	0.422	0.018	0.029	0.006	0.004	0.011
08/02/2020	1,000.6	983.2	0.586	1,307.31	-165.73	2.837	0.603	94.168	2.115	0.222	0.011	0.020	0.005	0.005	0.014
08/03/2020	1,021.3	1,003.5	0.591	1,328.83	-149.84	2.516	0.300	93.111	3.582	0.433	0.016	0.027	0.004	0.003	0.007
08/04/2020	1,008.0	990.4	0.584	1,318.45	-161.80	2.393	0.521	94.475	2.278	0.278	0.013	0.023	0.005	0.005	0.010
08/05/2020	1,009.3	991.7	0.585	1,319.92	-161.20	2.338	0.519	94.395	2.448	0.254	0.011	0.016	0.004	0.004	0.011
08/06/2020	1,010.0	992.5	0.584	1,322.25	-161.89	2.147	0.542	94.659	2.382	0.226	0.010	0.015	0.005	0.004	0.012

TSP Name: Southern Star Central Gas Pipeline, Inc.

CSI048

TSP: 007906233

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Gas Quality Reports

LS115 - Glavin to Kansas City

Page 3 of 3

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%)
08/07/2020	1,014.7	997.1	0.586	1,325.29	-157.30	2.173	0.507	94.133	2.849	0.289	0.013	0.017	0.004	0.004	0.010
08/08/2020	1,040.2	1,022.1	0.599	1,344.46	-74.08	2.230	0.230	91.701	5.146	0.619	0.023	0.033	0.005	0.004	0.009
08/09/2020	1,033.9	1,015.9	0.594	1,340.95	-78.75	2.059	0.336	92.663	4.267	0.593	0.025	0.036	0.006	0.005	0.010
08/10/2020	1,030.6	1,012.7	0.591	1,340.63	-145.77	1.985	0.298	93.155	4.072	0.431	0.017	0.022	0.006	0.004	0.011
08/11/2020	1,037.6	1,019.6	0.594	1,346.40	-140.88	1.996	0.198	92.503	4.750	0.491	0.019	0.025	0.006	0.004	0.009

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 = 52871