

Gas Quality Reports

Haysville Anthony
11/25/2019 - 2/25/2020

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%)
11/25/2019	1,040.0	1,021.9	0.594	1,349.91	-142.28	1.318	0.526	92.715	5.170	0.224	0.011	0.018	0.005	0.004	0.008
11/26/2019	1,038.7	1,020.6	0.594	1,348.25	-142.90	1.363	0.548	92.713	5.114	0.215	0.011	0.019	0.005	0.005	0.007
11/27/2019	1,038.3	1,020.2	0.593	1,348.85	-143.95	1.386	0.487	92.807	5.093	0.195	0.008	0.012	0.003	0.003	0.007
11/28/2019	1,037.2	1,019.2	0.592	1,348.62	-144.95	1.396	0.459	92.996	4.902	0.214	0.009	0.014	0.003	0.003	0.004
11/29/2019	1,037.1	1,019.0	0.591	1,348.85	-144.94	1.415	0.430	93.064	4.826	0.231	0.008	0.014	0.004	0.003	0.006
11/30/2019	1,037.3	1,019.2	0.592	1,348.27	-144.56	1.466	0.435	92.892	4.954	0.221	0.008	0.013	0.004	0.003	0.005
12/01/2019	1,036.2	1,018.1	0.590	1,348.41	-145.92	1.400	0.435	93.168	4.759	0.208	0.008	0.012	0.003	0.002	0.004
12/02/2019	1,039.1	1,021.0	0.592	1,349.99	-143.26	1.351	0.473	92.858	5.047	0.234	0.009	0.015	0.004	0.003	0.006
12/03/2019	1,038.0	1,019.9	0.593	1,347.70	-143.94	1.476	0.480	92.648	5.151	0.224	0.006	0.009	0.001	0.001	0.004
12/04/2019	1,035.9	1,017.9	0.590	1,348.72	-145.89	1.352	0.442	93.358	4.570	0.235	0.010	0.017	0.005	0.004	0.006
12/05/2019	1,034.3	1,016.3	0.588	1,348.40	-147.69	1.274	0.459	93.711	4.278	0.240	0.010	0.017	0.003	0.003	0.005
12/06/2019	1,033.1	1,015.1	0.588	1,346.93	-148.38	1.332	0.464	93.691	4.245	0.232	0.010	0.017	0.003	0.003	0.003
12/07/2019	1,038.5	1,020.5	0.592	1,349.72	-143.54	1.327	0.485	93.005	4.882	0.253	0.013	0.020	0.005	0.004	0.006
12/08/2019	1,035.9	1,017.9	0.590	1,348.69	-146.32	1.363	0.437	93.274	4.694	0.206	0.006	0.010	0.003	0.002	0.005
12/09/2019	1,032.3	1,014.3	0.587	1,346.83	-149.40	1.366	0.422	93.767	4.220	0.202	0.006	0.011	0.002	0.002	0.003
12/10/2019	1,032.6	1,014.6	0.586	1,348.34	-149.16	1.254	0.423	94.078	3.962	0.230	0.013	0.024	0.006	0.005	0.005
12/11/2019	1,037.9	1,019.9	0.591	1,349.86	-143.40	1.238	0.516	93.347	4.513	0.305	0.022	0.033	0.008	0.007	0.010
12/12/2019	1,037.9	1,019.9	0.591	1,349.86	-143.40	1.238	0.516	93.347	4.513	0.305	0.022	0.033	0.008	0.007	0.010
12/13/2019	1,034.1	1,016.1	0.590	1,345.88	-147.38	1.340	0.547	93.282	4.625	0.184	0.006	0.008	0.002	0.002	0.004
12/14/2019	1,035.1	1,017.1	0.590	1,347.24	-146.78	1.325	0.515	93.271	4.664	0.199	0.007	0.010	0.003	0.002	0.003
12/15/2019	1,034.0	1,016.0	0.589	1,347.03	-146.98	1.343	0.480	93.554	4.351	0.220	0.012	0.020	0.006	0.005	0.008
12/16/2019	1,031.8	1,013.8	0.587	1,346.69	-149.28	1.326	0.440	93.937	4.053	0.200	0.010	0.017	0.005	0.004	0.008
12/17/2019	1,030.4	1,012.4	0.586	1,346.11	-150.62	1.316	0.434	94.142	3.875	0.192	0.009	0.015	0.005	0.004	0.008
12/18/2019	1,033.2	1,015.2	0.588	1,346.94	-147.80	1.369	0.441	93.683	4.236	0.224	0.011	0.018	0.005	0.005	0.008
12/19/2019	1,030.1	1,012.2	0.584	1,347.64	-151.21	1.210	0.412	94.529	3.590	0.201	0.013	0.022	0.007	0.006	0.010
12/20/2019	1,033.0	1,015.0	0.587	1,348.68	-148.58	1.191	0.460	94.086	4.005	0.197	0.013	0.023	0.007	0.006	0.011
12/21/2019	1,032.8	1,014.9	0.588	1,346.94	-147.78	1.247	0.511	93.880	4.105	0.189	0.014	0.024	0.009	0.007	0.014
12/22/2019	1,029.2	1,011.3	0.587	1,343.23	-150.48	1.403	0.495	93.954	3.931	0.171	0.010	0.016	0.005	0.005	0.010
12/23/2019	1,028.6	1,010.7	0.587	1,342.58	-150.70	1.471	0.467	93.941	3.896	0.178	0.010	0.017	0.006	0.005	0.009
12/24/2019	1,027.9	1,010.0	0.586	1,342.74	-151.61	1.429	0.465	94.121	3.763	0.176	0.010	0.016	0.005	0.004	0.009
12/25/2019	1,032.4	1,014.5	0.587	1,347.75	-148.37	1.232	0.464	94.098	3.925	0.211	0.015	0.024	0.008	0.007	0.015
12/26/2019	1,032.6	1,014.6	0.587	1,348.30	-148.43	1.249	0.428	94.124	3.909	0.222	0.015	0.025	0.008	0.007	0.013
12/27/2019	1,031.7	1,013.8	0.586	1,347.57	-148.93	1.271	0.426	94.193	3.823	0.219	0.014	0.024	0.008	0.007	0.015
12/28/2019	1,029.2	1,011.3	0.585	1,345.19	-150.47	1.292	0.461	94.411	3.540	0.222	0.016	0.027	0.009	0.008	0.014
12/29/2019	1,030.9	1,012.9	0.587	1,345.55	-72.29	1.281	0.502	94.134	3.780	0.225	0.017	0.027	0.010	0.008	0.016
12/30/2019	1,029.7	1,011.8	0.585	1,345.96	-73.36	1.245	0.466	94.443	3.555	0.212	0.017	0.027	0.010	0.008	0.016
12/31/2019	1,029.3	1,011.4	0.585	1,345.70	-69.01	1.226	0.481	94.500	3.518	0.195	0.017	0.027	0.010	0.009	0.018
01/01/2020	1,030.0	1,012.0	0.586	1,345.86	-67.76	1.259	0.471	94.396	3.565	0.221	0.018	0.032	0.011	0.009	0.018
01/02/2020	1,032.0	1,014.0	0.587	1,346.67	-66.73	1.228	0.511	94.126	3.810	0.239	0.018	0.030	0.010	0.009	0.018
01/03/2020	1,029.3	1,011.4	0.584	1,347.35	-151.36	1.143	0.448	94.759	3.362	0.217	0.016	0.025	0.009	0.007	0.016
01/04/2020	1,026.9	1,009.0	0.582	1,346.17	-154.22	1.201	0.398	94.986	3.183	0.169	0.013	0.021	0.008	0.007	0.014
01/05/2020	1,025.7	1,007.9	0.581	1,345.21	-155.50	1.190	0.421	95.067	3.119	0.149	0.011	0.018	0.007	0.006	0.012
01/06/2020	1,024.7	1,006.8	0.580	1,344.88	-156.74	1.169	0.419	95.245	2.974	0.141	0.011	0.018	0.006	0.005	0.011

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11/25/2019 - 2/25/2020

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01/07/2020	1,025.3	1,007.5	0.581	1,345.39	-156.96	1.190	0.400	95.071	3.191	0.122	0.006	0.009	0.003	0.003	0.007
01/08/2020	1,025.3	1,007.4	0.582	1,344.11	-155.98	1.282	0.405	94.906	3.216	0.154	0.008	0.012	0.004	0.004	0.007
01/09/2020	1,024.3	1,006.5	0.581	1,343.39	-156.54	1.238	0.445	95.064	3.048	0.160	0.011	0.016	0.005	0.004	0.009
01/10/2020	1,029.7	1,011.8	0.585	1,346.01	-150.81	1.298	0.430	94.372	3.590	0.251	0.016	0.024	0.006	0.005	0.007
01/11/2020	1,027.2	1,009.3	0.583	1,345.67	-153.50	1.188	0.443	94.882	3.237	0.191	0.013	0.021	0.007	0.006	0.011
01/12/2020	1,025.9	1,008.1	0.583	1,343.50	-154.45	1.324	0.431	94.727	3.281	0.187	0.012	0.020	0.006	0.005	0.009
01/13/2020	1,027.6	1,009.8	0.583	1,345.42	-75.62	1.239	0.436	94.811	3.212	0.217	0.018	0.033	0.010	0.009	0.015
01/14/2020	1,023.8	1,005.9	0.580	1,344.12	-157.04	1.198	0.413	95.337	2.850	0.142	0.012	0.021	0.007	0.006	0.014
01/15/2020	1,023.9	1,006.1	0.581	1,343.27	-156.48	1.267	0.419	95.150	2.940	0.164	0.013	0.022	0.007	0.006	0.011
01/16/2020	1,024.3	1,006.5	0.583	1,341.13	-155.21	1.538	0.369	94.499	3.422	0.133	0.007	0.014	0.004	0.004	0.009
01/17/2020	1,026.2	1,008.4	0.583	1,344.03	-154.67	1.359	0.389	94.637	3.431	0.146	0.008	0.014	0.004	0.004	0.008
01/18/2020	1,028.6	1,010.7	0.587	1,343.07	-150.81	1.487	0.431	94.003	3.825	0.208	0.010	0.017	0.005	0.005	0.008
01/19/2020	1,026.9	1,009.1	0.584	1,343.63	-152.23	1.403	0.403	94.557	3.358	0.203	0.017	0.031	0.009	0.008	0.012
01/20/2020	1,025.8	1,007.9	0.583	1,343.22	-154.37	1.362	0.415	94.687	3.316	0.167	0.011	0.019	0.006	0.005	0.011
01/21/2020	1,025.2	1,007.4	0.582	1,343.41	-155.05	1.317	0.418	94.871	3.168	0.171	0.012	0.019	0.007	0.006	0.011
01/22/2020	1,026.5	1,008.6	0.584	1,343.77	-153.54	1.323	0.435	94.636	3.386	0.171	0.011	0.017	0.006	0.005	0.011
01/23/2020	1,026.3	1,008.4	0.584	1,343.22	-153.53	1.416	0.397	94.510	3.468	0.161	0.010	0.018	0.005	0.005	0.009
01/24/2020	1,027.0	1,009.1	0.586	1,342.01	-152.04	1.497	0.431	94.189	3.654	0.172	0.012	0.024	0.006	0.006	0.008
01/25/2020	1,028.1	1,010.2	0.585	1,343.68	-152.12	1.432	0.418	94.157	3.801	0.158	0.007	0.012	0.004	0.003	0.007
01/26/2020	1,029.5	1,011.6	0.587	1,343.92	-150.78	1.509	0.400	93.815	4.092	0.154	0.007	0.012	0.003	0.003	0.005
01/27/2020	1,029.1	1,011.2	0.587	1,343.04	-150.38	1.553	0.406	93.795	4.034	0.166	0.010	0.019	0.005	0.005	0.007
01/28/2020	1,026.8	1,008.9	0.586	1,341.25	-151.98	1.591	0.405	94.030	3.743	0.186	0.010	0.018	0.005	0.004	0.007
01/29/2020	1,028.2	1,010.3	0.586	1,343.29	-151.23	1.478	0.411	94.153	3.696	0.207	0.012	0.024	0.006	0.006	0.008
01/30/2020	1,025.9	1,008.0	0.584	1,342.90	-154.82	1.435	0.389	94.471	3.535	0.143	0.006	0.011	0.002	0.002	0.005
01/31/2020	1,029.0	1,011.1	0.585	1,345.45	-152.64	1.415	0.362	94.130	3.940	0.139	0.004	0.006	0.001	0.001	0.001
02/01/2020	1,028.2	1,010.3	0.584	1,346.07	-152.95	1.317	0.370	94.561	3.525	0.183	0.011	0.018	0.005	0.004	0.006
02/02/2020	1,028.8	1,010.9	0.584	1,346.44	-152.72	1.243	0.415	94.504	3.663	0.131	0.009	0.015	0.005	0.004	0.009
02/03/2020	1,030.8	1,012.9	0.586	1,347.05	-150.59	1.283	0.419	94.174	3.920	0.157	0.010	0.018	0.006	0.005	0.008
02/04/2020	1,028.8	1,010.9	0.584	1,345.67	-152.31	1.293	0.424	94.391	3.704	0.141	0.010	0.020	0.006	0.005	0.007
02/05/2020	1,028.0	1,010.1	0.583	1,345.86	-154.03	1.309	0.378	94.507	3.642	0.139	0.006	0.010	0.002	0.002	0.005
02/06/2020	1,027.4	1,009.6	0.584	1,344.84	-154.33	1.400	0.357	94.384	3.710	0.130	0.005	0.009	0.002	0.001	0.002
02/07/2020	1,027.8	1,009.9	0.584	1,345.14	-154.28	1.342	0.390	94.384	3.739	0.128	0.004	0.008	0.001	0.001	0.002
02/08/2020	1,028.0	1,010.2	0.583	1,345.91	-154.20	1.262	0.408	94.535	3.627	0.141	0.006	0.012	0.003	0.003	0.003
02/09/2020	1,029.1	1,011.2	0.584	1,346.83	-153.27	1.256	0.395	94.412	3.793	0.125	0.005	0.008	0.002	0.001	0.003
02/10/2020	1,028.5	1,010.6	0.583	1,347.00	-153.22	1.177	0.420	94.714	3.492	0.150	0.011	0.018	0.006	0.005	0.008
02/11/2020	1,027.9	1,010.0	0.583	1,345.81	-154.44	1.280	0.399	94.490	3.698	0.117	0.004	0.006	0.001	0.001	0.004
02/12/2020	1,024.9	1,007.1	0.582	1,343.72	-157.23	1.332	0.383	94.768	3.400	0.110	0.003	0.004	0	0	0.001
02/13/2020	1,025.9	1,008.0	0.582	1,344.29	-156.14	1.351	0.370	94.648	3.497	0.119	0.004	0.007	0.001	0.001	0.001
02/14/2020	1,024.8	1,007.0	0.582	1,343.84	-157.24	1.320	0.382	94.827	3.344	0.115	0.004	0.005	0.001	0.001	0.002
02/15/2020	1,032.4	1,014.5	0.587	1,347.93	-149.14	1.301	0.409	94.030	3.951	0.267	0.012	0.018	0.004	0.003	0.004
02/16/2020	1,025.5	1,007.7	0.583	1,343.55	-156.07	1.380	0.380	94.624	3.464	0.139	0.004	0.006	0.001	0.001	0.001
02/17/2020	1,027.9	1,010.0	0.583	1,346.09	-154.55	1.302	0.367	94.535	3.646	0.131	0.005	0.008	0.002	0.001	0.002
02/18/2020	1,029.5	1,011.6	0.585	1,346.53	-151.83	1.334	0.373	94.326	3.757	0.167	0.009	0.018	0.005	0.005	0.005

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%)
02/19/2020	1,031.1	1,013.2	0.585	1,348.32	-150.88	1.230	0.394	94.326	3.830	0.174	0.010	0.018	0.005	0.005	0.007
02/20/2020	1,031.5	1,013.5	0.585	1,349.15	-151.62	1.195	0.385	94.292	3.962	0.146	0.004	0.009	0.002	0.002	0.003
02/21/2020	1,039.9	1,021.8	0.591	1,352.45	-142.51	1.310	0.390	93.220	4.690	0.300	0.023	0.045	0.009	0.008	0.005
02/22/2020	1,032.9	1,015.0	0.588	1,346.75	-148.34	1.423	0.409	93.614	4.309	0.208	0.008	0.018	0.003	0.003	0.004
02/23/2020	1,035.1	1,017.1	0.588	1,350.14	-147.54	1.238	0.415	93.739	4.388	0.174	0.010	0.018	0.005	0.005	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 = 66022