

Gas Quality Reports

Haysville Anthony
9/6/2019 - 12/6/2019

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%)
09/06/2019	1,037.7	1,019.7	0.590	1,351.49	-146.12	1.169	0.469	93.406	4.720	0.219	0.006	0.007	0.001	0.001	0.003
09/07/2019	1,038.5	1,020.5	0.590	1,351.99	-145.32	1.133	0.491	93.370	4.748	0.232	0.007	0.011	0.002	0.002	0.004
09/08/2019	1,037.8	1,019.7	0.590	1,351.15	-146.01	1.131	0.514	93.359	4.780	0.198	0.005	0.006	0.001	0.001	0.004
09/09/2019	1,043.3	1,025.2	0.594	1,353.29	-141.07	1.158	0.552	92.574	5.433	0.254	0.009	0.014	0.002	0.002	0.003
09/10/2019	1,044.2	1,026.1	0.596	1,353.08	-139.64	1.202	0.563	92.405	5.490	0.299	0.011	0.018	0.004	0.004	0.005
09/11/2019	1,041.7	1,023.6	0.593	1,352.64	-142.30	1.161	0.535	92.805	5.225	0.252	0.007	0.008	0.001	0.001	0.005
09/12/2019	1,044.1	1,025.9	0.595	1,353.13	-140.13	1.209	0.551	92.389	5.538	0.285	0.009	0.013	0.002	0.002	0.003
09/13/2019	1,043.4	1,025.3	0.595	1,353.23	-140.97	1.187	0.540	92.518	5.464	0.269	0.008	0.010	0.001	0.001	0.003
09/14/2019	1,049.2	1,030.9	0.600	1,354.38	-135.60	1.308	0.578	91.484	6.285	0.298	0.012	0.021	0.004	0.004	0.005
09/15/2019	1,047.4	1,029.1	0.599	1,353.51	-136.99	1.355	0.537	91.691	6.077	0.303	0.012	0.016	0.003	0.002	0.004
09/16/2019	1,044.0	1,025.9	0.595	1,353.13	-140.47	1.262	0.515	92.250	5.749	0.203	0.006	0.008	0.002	0.002	0.003
09/17/2019	1,039.1	1,021.0	0.591	1,351.29	-144.94	1.226	0.486	92.984	5.127	0.164	0.004	0.004	0.001	0.001	0.002
09/18/2019	1,042.1	1,024.0	0.594	1,351.87	-141.59	1.316	0.489	92.453	5.515	0.196	0.007	0.017	0.002	0.002	0.003
09/19/2019	1,043.7	1,025.5	0.597	1,351.21	-140.06	1.301	0.584	92.051	5.840	0.203	0.006	0.008	0.001	0.001	0.004
09/20/2019	1,039.7	1,021.7	0.593	1,349.69	-143.14	1.324	0.528	92.630	5.303	0.196	0.006	0.008	0.001	0.001	0.004
09/21/2019	1,041.6	1,023.5	0.594	1,351.82	-141.77	1.238	0.526	92.685	5.269	0.238	0.012	0.020	0.004	0.004	0.004
09/22/2019	1,039.8	1,021.7	0.591	1,352.19	-144.46	1.194	0.479	93.014	5.118	0.176	0.005	0.007	0.001	0.001	0.004
09/23/2019	1,043.9	1,025.7	0.594	1,354.70	-141.12	1.050	0.565	92.695	5.438	0.219	0.008	0.014	0.003	0.003	0.005
09/24/2019	1,039.1	1,021.0	0.590	1,353.27	-146.14	0.975	0.543	93.435	4.873	0.164	0.004	0.003	0	0	0.002
09/25/2019	1,038.3	1,020.2	0.590	1,351.99	-146.13	1.033	0.550	93.420	4.810	0.166	0.006	0.009	0.002	0.002	0.003
09/26/2019	1,041.0	1,022.9	0.593	1,352.37	-143.20	1.087	0.577	92.915	5.199	0.204	0.006	0.006	0.001	0.001	0.004
09/27/2019	1,043.1	1,024.9	0.594	1,353.52	-141.63	1.117	0.559	92.643	5.428	0.231	0.007	0.009	0.001	0.001	0.002
09/28/2019	1,045.3	1,027.2	0.596	1,353.75	-139.40	1.149	0.596	92.224	5.749	0.257	0.007	0.011	0.002	0.002	0.004
09/29/2019	1,043.6	1,025.4	0.595	1,352.70	-140.65	1.188	0.573	92.369	5.648	0.189	0.007	0.014	0.003	0.004	0.005
09/30/2019	1,042.5	1,024.4	0.593	1,353.38	-142.38	1.092	0.567	92.672	5.494	0.160	0.005	0.006	0.001	0.001	0.004
10/01/2019	1,043.4	1,025.3	0.594	1,354.22	-141.91	1.053	0.575	92.637	5.550	0.166	0.005	0.008	0.001	0.001	0.002
10/02/2019	1,037.7	1,019.7	0.590	1,350.65	-146.25	1.073	0.578	93.320	4.852	0.160	0.005	0.007	0.001	0.001	0.003
10/03/2019	1,038.1	1,020.0	0.590	1,351.36	-146.04	1.064	0.556	93.381	4.787	0.194	0.006	0.007	0.001	0.001	0.002
10/04/2019	1,041.0	1,022.9	0.593	1,351.43	-142.46	1.137	0.594	92.816	5.201	0.206	0.012	0.020	0.005	0.004	0.004
10/05/2019	1,037.7	1,019.6	0.591	1,349.80	-144.49	1.191	0.543	93.315	4.661	0.220	0.016	0.028	0.008	0.008	0.008
10/06/2019	1,039.7	1,021.6	0.593	1,350.59	-142.90	1.198	0.560	92.946	5.030	0.219	0.011	0.018	0.005	0.005	0.008
10/07/2019	1,038.4	1,020.3	0.591	1,350.24	-144.40	1.189	0.543	93.175	4.839	0.206	0.011	0.020	0.005	0.005	0.007
10/08/2019	1,039.8	1,021.7	0.592	1,351.08	-143.39	1.155	0.563	92.996	5.043	0.203	0.009	0.016	0.004	0.004	0.007
10/09/2019	1,038.3	1,020.2	0.592	1,349.74	-144.88	1.170	0.580	93.062	4.980	0.179	0.007	0.011	0.003	0.003	0.004
10/10/2019	1,038.4	1,020.4	0.591	1,350.62	-145.09	1.152	0.549	93.157	4.936	0.173	0.008	0.015	0.003	0.003	0.003
10/11/2019	1,039.6	1,021.5	0.593	1,349.89	-143.07	1.265	0.550	92.788	5.164	0.189	0.010	0.019	0.005	0.005	0.005
10/12/2019	1,035.9	1,017.9	0.590	1,348.18	-146.94	1.202	0.570	93.254	4.819	0.140	0.004	0.006	0.001	0.001	0.004
10/13/2019	1,039.8	1,021.7	0.593	1,350.20	-142.98	1.294	0.522	92.755	5.185	0.210	0.009	0.014	0.003	0.003	0.005
10/14/2019	1,037.1	1,019.0	0.590	1,349.86	-145.97	1.208	0.511	93.307	4.758	0.187	0.008	0.012	0.003	0.003	0.004
10/15/2019	1,037.9	1,019.8	0.591	1,350.04	-145.42	1.207	0.528	93.139	4.923	0.179	0.007	0.010	0.002	0.002	0.003
10/16/2019	1,037.5	1,019.5	0.591	1,350.01	-145.26	1.241	0.495	93.240	4.783	0.203	0.009	0.016	0.004	0.004	0.005
10/17/2019	1,051.5	1,033.2	0.600	1,357.83	-53.36	1.227	0.510	92.177	5.268	0.629	0.053	0.089	0.016	0.015	0.014
10/18/2019	1,046.7	1,028.5	0.596	1,355.49	-137.14	1.147	0.542	92.542	5.211	0.453	0.036	0.050	0.008	0.005	0.006

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Haysville Anthony
9/6/2019 - 12/6/2019

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%)
10/19/2019	1,042.2	1,024.1	0.594	1,352.74	-142.13	1.097	0.587	92.745	5.320	0.220	0.011	0.014	0.002	0.002	0.003
10/20/2019	1,040.1	1,022.0	0.593	1,350.64	-143.14	1.176	0.585	92.819	5.192	0.192	0.008	0.016	0.003	0.004	0.003
10/21/2019	1,045.2	1,027.1	0.598	1,351.51	-138.03	1.255	0.646	91.952	5.827	0.267	0.013	0.024	0.005	0.005	0.006
10/22/2019	1,047.7	1,029.5	0.598	1,355.18	-48.41	1.196	0.559	92.447	5.181	0.434	0.037	0.086	0.019	0.022	0.020
10/23/2019	1,046.8	1,028.6	0.596	1,356.06	-51.24	1.158	0.508	92.720	5.035	0.406	0.034	0.081	0.018	0.021	0.019
10/24/2019	1,041.1	1,023.0	0.592	1,353.26	-141.37	1.157	0.485	93.234	4.712	0.317	0.020	0.045	0.009	0.010	0.011
10/25/2019	1,038.4	1,020.4	0.590	1,351.43	-145.41	1.139	0.513	93.276	4.854	0.191	0.006	0.012	0.002	0.002	0.004
10/26/2019	1,041.4	1,023.2	0.594	1,351.53	-142.06	1.232	0.538	92.684	5.282	0.225	0.010	0.017	0.004	0.004	0.004
10/27/2019	1,048.0	1,029.7	0.597	1,356.03	-136.34	1.171	0.538	92.278	5.482	0.447	0.027	0.038	0.007	0.005	0.006
10/28/2019	1,051.4	1,033.1	0.599	1,358.04	-133.53	1.153	0.547	91.991	5.655	0.544	0.037	0.052	0.010	0.006	0.004
10/29/2019	1,043.7	1,025.6	0.595	1,353.40	-139.49	1.237	0.505	92.670	5.126	0.388	0.021	0.035	0.006	0.006	0.004
10/30/2019	1,041.2	1,023.1	0.595	1,350.27	-68.24	1.404	0.488	92.767	4.826	0.401	0.026	0.052	0.011	0.012	0.012
10/31/2019	1,036.0	1,018.0	0.591	1,348.08	-145.74	1.314	0.504	93.291	4.618	0.223	0.012	0.023	0.005	0.005	0.004
11/01/2019	1,037.4	1,019.4	0.592	1,348.81	-144.56	1.301	0.517	93.139	4.745	0.245	0.014	0.024	0.005	0.005	0.005
11/02/2019	1,035.6	1,017.6	0.589	1,349.86	-147.00	1.160	0.497	93.695	4.405	0.193	0.012	0.021	0.006	0.005	0.006
11/03/2019	1,038.2	1,020.1	0.592	1,349.62	-144.66	1.326	0.481	92.944	5.032	0.190	0.007	0.010	0.003	0.002	0.004
11/04/2019	1,034.2	1,016.2	0.588	1,348.41	-148.47	1.233	0.483	93.640	4.464	0.157	0.006	0.009	0.002	0.002	0.004
11/05/2019	1,034.8	1,016.8	0.588	1,349.61	-148.05	1.158	0.485	93.797	4.340	0.180	0.009	0.017	0.004	0.004	0.005
11/06/2019	1,035.3	1,017.3	0.588	1,349.94	-147.38	1.128	0.504	93.788	4.345	0.187	0.011	0.019	0.006	0.005	0.007
11/07/2019	1,036.6	1,018.5	0.589	1,350.32	-145.21	1.220	0.461	93.630	4.378	0.233	0.017	0.031	0.009	0.009	0.012
11/08/2019	1,036.2	1,018.1	0.588	1,351.37	-146.80	1.134	0.449	93.819	4.334	0.212	0.011	0.020	0.006	0.005	0.009
11/09/2019	1,040.1	1,022.0	0.592	1,352.20	-144.06	1.129	0.530	93.057	5.054	0.202	0.007	0.012	0.003	0.003	0.004
11/10/2019	1,039.8	1,021.7	0.592	1,351.87	-143.55	1.201	0.490	93.067	4.993	0.207	0.010	0.016	0.005	0.004	0.006
11/11/2019	1,036.7	1,018.6	0.590	1,349.89	-146.65	1.217	0.492	93.338	4.766	0.167	0.006	0.008	0.002	0.002	0.003
11/12/2019	1,036.4	1,018.4	0.590	1,349.68	-146.88	1.230	0.486	93.341	4.759	0.170	0.005	0.005	0.001	0.001	0.003
11/13/2019	1,036.7	1,018.6	0.591	1,348.90	-145.91	1.282	0.503	93.227	4.745	0.208	0.011	0.016	0.004	0.003	0.001
11/14/2019	1,040.4	1,022.3	0.594	1,349.73	-141.90	1.290	0.567	92.636	5.235	0.227	0.010	0.017	0.005	0.005	0.008
11/15/2019	1,042.6	1,024.4	0.596	1,350.24	-140.07	1.417	0.525	92.175	5.557	0.290	0.012	0.016	0.003	0.002	0.003
11/16/2019	1,040.1	1,022.0	0.594	1,349.75	-142.95	1.304	0.547	92.591	5.341	0.196	0.006	0.009	0.002	0.001	0.002
11/17/2019	1,038.9	1,020.8	0.594	1,348.54	-143.22	1.361	0.540	92.649	5.225	0.196	0.007	0.011	0.003	0.003	0.005
11/18/2019	1,038.7	1,020.6	0.596	1,345.97	-141.83	1.540	0.557	92.282	5.353	0.228	0.010	0.014	0.005	0.004	0.007
11/19/2019	1,039.3	1,021.2	0.595	1,347.65	-141.96	1.439	0.549	92.469	5.276	0.224	0.011	0.015	0.005	0.004	0.008
11/20/2019	1,038.7	1,020.7	0.596	1,345.59	-142.06	1.575	0.556	92.137	5.501	0.205	0.007	0.010	0.002	0.002	0.005
11/21/2019	1,032.0	1,014.1	0.587	1,346.59	-149.77	1.308	0.466	93.793	4.244	0.164	0.006	0.010	0.002	0.002	0.004
11/22/2019	1,034.3	1,016.3	0.588	1,348.49	-147.76	1.166	0.527	93.763	4.317	0.182	0.011	0.017	0.006	0.004	0.008
11/23/2019	1,036.9	1,018.9	0.590	1,349.48	-145.22	1.241	0.505	93.364	4.607	0.228	0.014	0.022	0.006	0.005	0.007
11/24/2019	1,037.3	1,019.2	0.591	1,349.39	-145.17	1.251	0.515	93.209	4.787	0.199	0.009	0.015	0.004	0.003	0.007
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

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%)
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

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