

Gas Quality Reports

LS315 - Straight Blackwell at Blackwell

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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 (HC DP) (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	1,045.9	1,027.7	0.596	1,354.26	-64.60	1.426	0.403	92.002	5.819	0.339	0.005	0.006	0	0	0
09/07/2019	1,054.9	1,036.6	0.602	1,360.07	-50.82	1.377	0.397	91.539	5.919	0.615	0.039	0.080	0.014	0.015	0.005
09/08/2019	1,052.3	1,033.9	0.600	1,358.53	-75.40	1.364	0.408	91.643	5.979	0.514	0.026	0.050	0.008	0.007	0.001
09/09/2019	1,048.1	1,029.8	0.597	1,356.42	-84.34	1.342	0.408	91.948	5.902	0.383	0.006	0.008	0	0	0
09/10/2019	1,046.3	1,028.1	0.596	1,355.00	-81.16	1.390	0.401	92.024	5.840	0.336	0.004	0.005	0	0	0
09/11/2019	1,048.6	1,030.3	0.598	1,355.59	-72.88	1.442	0.405	91.650	6.136	0.329	0.011	0.021	0.002	0.002	0.001
09/12/2019	1,050.7	1,032.4	0.600	1,356.65	-84.42	1.456	0.405	91.121	6.839	0.176	0.002	0.002	0	0	0
09/13/2019	1,050.3	1,032.1	0.600	1,355.91	-82.17	1.515	0.395	91.108	6.763	0.205	0.004	0.007	0.001	0.001	0.001
09/14/2019	1,047.8	1,029.6	0.599	1,354.09	-77.25	1.554	0.390	91.303	6.577	0.172	0.002	0.002	0	0	0
09/15/2019	1,048.7	1,030.5	0.599	1,354.91	-69.46	1.531	0.390	91.232	6.672	0.171	0.002	0.002	0	0	0
09/16/2019	1,048.1	1,029.8	0.599	1,354.25	-72.25	1.557	0.388	91.267	6.609	0.175	0.002	0.003	0	0	0
09/17/2019	1,049.2	1,030.9	0.600	1,354.67	-64.21	1.574	0.388	91.058	6.828	0.149	0.001	0.002	0	0	0
09/18/2019	1,048.0	1,029.7	0.599	1,353.86	-66.13	1.577	0.393	91.203	6.671	0.153	0.002	0.002	0	0	0
09/19/2019	1,052.5	1,034.2	0.602	1,356.78	-55.55	1.554	0.390	90.927	6.796	0.267	0.014	0.033	0.006	0.008	0.004
09/20/2019	1,046.5	1,028.3	0.598	1,353.26	-77.50	1.556	0.394	91.420	6.493	0.134	0.001	0.002	0	0	0
09/21/2019	1,046.7	1,028.5	0.599	1,352.76	-81.30	1.607	0.393	91.282	6.575	0.140	0.001	0.002	0	0	0
09/22/2019	1,047.5	1,029.2	0.599	1,353.86	-75.31	1.548	0.395	91.318	6.593	0.142	0.001	0.002	0	0	0
09/23/2019	1,047.3	1,029.0	0.599	1,353.61	-68.16	1.562	0.394	91.307	6.597	0.137	0.001	0.002	0	0	0
09/24/2019	1,047.7	1,029.5	0.599	1,354.25	-77.02	1.540	0.388	91.316	6.613	0.140	0.001	0.002	0	0	0
09/25/2019	1,048.9	1,030.6	0.599	1,355.58	-65.54	1.466	0.400	91.307	6.686	0.136	0.002	0.003	0	0	0
09/26/2019	1,048.6	1,030.4	0.597	1,356.57	-66.04	1.345	0.416	91.617	6.455	0.162	0.002	0.003	0	0	0
09/27/2019	1,049.7	1,031.4	0.599	1,356.16	-58.17	1.448	0.405	91.272	6.705	0.163	0.002	0.004	0	0	0
09/28/2019	1,047.1	1,028.8	0.598	1,353.92	-67.22	1.516	0.401	91.460	6.454	0.160	0.003	0.005	0	0.001	0
09/29/2019	1,046.8	1,028.5	0.598	1,353.82	-67.47	1.506	0.403	91.528	6.392	0.156	0.004	0.007	0.001	0.001	0.001
09/30/2019	1,046.6	1,028.4	0.598	1,353.66	-71.67	1.518	0.400	91.533	6.367	0.171	0.004	0.006	0	0	0
10/01/2019	1,036.3	1,018.3	0.592	1,347.43	-78.73	1.556	0.392	92.751	5.161	0.133	0.002	0.004	0	0	0
10/02/2019	1,029.7	1,011.8	0.587	1,344.48	-78.63	1.479	0.397	93.744	4.275	0.100	0.002	0.003	0	0	0
10/03/2019	1,029.0	1,011.1	0.586	1,343.99	-97.59	1.475	0.404	93.831	4.188	0.096	0.002	0.004	0	0	0
10/04/2019	1,029.5	1,011.6	0.587	1,343.84	-91.82	1.520	0.396	93.711	4.244	0.122	0.002	0.004	0	0	0
10/05/2019	1,030.3	1,012.3	0.587	1,344.23	-85.81	1.538	0.387	93.629	4.273	0.165	0.003	0.004	0	0	0
10/06/2019	1,028.9	1,011.0	0.586	1,343.79	-93.94	1.496	0.395	93.828	4.172	0.103	0.002	0.004	0	0	0
10/07/2019	1,031.2	1,013.2	0.588	1,344.95	-74.22	1.509	0.396	93.558	4.370	0.161	0.002	0.004	0	0	0
10/08/2019	1,029.9	1,011.9	0.587	1,344.20	-85.84	1.512	0.393	93.707	4.248	0.125	0.004	0.007	0.001	0.002	0.001
10/09/2019	1,029.3	1,011.4	0.586	1,344.05	-93.51	1.512	0.384	93.758	4.235	0.105	0.002	0.003	0	0	0
10/10/2019	1,031.0	1,013.1	0.588	1,345.06	-96.35	1.493	0.396	93.545	4.466	0.095	0.002	0.004	0	0	0
10/11/2019	1,026.9	1,009.0	0.586	1,341.69	-98.80	1.597	0.381	93.852	4.085	0.082	0.001	0.001	0	0	0
10/12/2019	1,027.7	1,009.8	0.587	1,341.78	-98.02	1.630	0.379	93.682	4.217	0.088	0.001	0.002	0	0	0
10/13/2019	1,027.6	1,009.7	0.587	1,341.62	-79.31	1.631	0.384	93.687	4.205	0.090	0.001	0.002	0	0	0
10/14/2019	1,029.0	1,011.1	0.587	1,343.00	-78.55	1.577	0.389	93.641	4.281	0.109	0.001	0.002	0	0	0
10/15/2019	1,029.7	1,011.8	0.587	1,344.16	-92.34	1.513	0.390	93.718	4.247	0.125	0.002	0.004	0	0	0
10/16/2019	1,045.2	1,027.0	0.596	1,353.32	-63.86	1.484	0.390	92.628	4.741	0.558	0.044	0.104	0.019	0.022	0.009
10/17/2019	1,030.5	1,012.6	0.587	1,345.27	-96.37	1.464	0.388	93.731	4.282	0.127	0.003	0.004	0	0	0
10/18/2019	1,029.4	1,011.5	0.586	1,344.59	-96.43	1.460	0.393	93.863	4.160	0.115	0.003	0.005	0.001	0.001	0

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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%)
10/19/2019	1,028.6	1,010.7	0.586	1,343.95	-97.14	1.474	0.392	93.932	4.082	0.112	0.002	0.004	0	0	0
10/20/2019	1,030.4	1,012.5	0.587	1,345.14	-78.65	1.465	0.389	93.806	4.148	0.178	0.005	0.008	0.001	0.001	0
10/21/2019	1,053.8	1,035.5	0.601	1,359.39	-16.12	1.395	0.383	92.456	4.579	0.781	0.082	0.198	0.044	0.052	0.027
10/22/2019	1,055.4	1,037.0	0.602	1,360.21	-24.87	1.399	0.385	92.267	4.727	0.807	0.084	0.206	0.045	0.054	0.024
10/23/2019	1,056.4	1,038.1	0.603	1,360.80	-20.28	1.400	0.384	92.180	4.779	0.829	0.086	0.212	0.046	0.055	0.025
10/24/2019	1,040.3	1,022.2	0.594	1,350.08	-78.83	1.527	0.388	92.790	4.780	0.425	0.023	0.048	0.008	0.009	0.004
10/25/2019	1,034.4	1,016.4	0.589	1,347.46	-94.04	1.448	0.402	93.248	4.749	0.145	0.003	0.004	0	0.001	0
10/26/2019	1,036.7	1,018.7	0.591	1,348.95	-91.27	1.379	0.436	93.110	4.862	0.191	0.006	0.010	0.002	0.002	0.001
10/27/2019	1,038.9	1,020.8	0.592	1,350.62	-87.07	1.340	0.439	93.035	4.860	0.286	0.014	0.020	0.003	0.002	0.001
10/28/2019	1,045.6	1,027.4	0.596	1,354.52	-71.94	1.327	0.442	92.603	5.029	0.446	0.037	0.075	0.016	0.016	0.007
10/29/2019	1,039.9	1,021.8	0.593	1,350.68	-76.71	1.457	0.389	93.038	4.616	0.371	0.029	0.065	0.012	0.015	0.007
10/30/2019	1,038.6	1,020.5	0.592	1,349.70	-83.09	1.489	0.381	93.022	4.665	0.366	0.020	0.038	0.007	0.008	0.003
10/31/2019	1,029.9	1,012.0	0.587	1,344.55	-96.99	1.494	0.389	93.727	4.266	0.113	0.003	0.005	0.001	0.001	0
11/01/2019	1,036.2	1,018.1	0.590	1,348.85	-93.47	1.431	0.391	93.075	4.959	0.137	0.002	0.004	0	0	0
11/02/2019	1,047.4	1,029.2	0.597	1,355.85	-80.85	1.375	0.399	91.788	6.224	0.206	0.003	0.004	0.001	0	0
11/03/2019	1,044.6	1,026.4	0.595	1,354.19	-88.36	1.380	0.399	92.101	5.950	0.163	0.003	0.004	0.001	0	0
11/04/2019	1,047.2	1,029.0	0.596	1,356.38	-78.34	1.327	0.395	91.992	6.060	0.184	0.009	0.020	0.005	0.005	0.002
11/05/2019	1,048.4	1,030.2	0.597	1,356.93	-81.35	1.330	0.399	91.897	6.087	0.235	0.012	0.025	0.006	0.006	0.002
11/06/2019	1,050.7	1,032.5	0.598	1,358.50	-80.02	1.311	0.399	91.672	6.296	0.266	0.013	0.027	0.006	0.007	0.002
11/07/2019	1,050.4	1,032.2	0.598	1,357.91	-81.14	1.344	0.400	91.617	6.330	0.258	0.012	0.025	0.006	0.006	0.002
11/08/2019	1,050.4	1,032.2	0.598	1,357.91	-81.14	1.344	0.400	91.617	6.330	0.258	0.012	0.025	0.006	0.006	0.002
11/09/2019	1,047.8	1,029.6	0.597	1,356.26	-85.55	1.355	0.400	91.814	6.206	0.203	0.005	0.011	0.002	0.002	0.001
11/10/2019	1,046.9	1,028.7	0.596	1,355.64	-86.45	1.373	0.397	91.822	6.234	0.169	0.002	0.003	0	0	0
11/11/2019	1,047.4	1,029.1	0.597	1,355.83	-84.67	1.372	0.400	91.808	6.206	0.201	0.004	0.006	0.001	0.001	0
11/12/2019	1,046.8	1,028.6	0.597	1,355.16	-79.24	1.407	0.397	91.825	6.138	0.215	0.005	0.009	0.002	0.002	0.001
11/13/2019	1,048.4	1,030.1	0.598	1,355.95	-67.68	1.415	0.396	91.676	6.239	0.237	0.009	0.019	0.004	0.004	0.001
11/14/2019	1,048.4	1,030.1	0.598	1,355.95	-67.68	1.415	0.396	91.676	6.239	0.237	0.009	0.019	0.004	0.004	0.001
11/15/2019	1,044.9	1,026.8	0.596	1,353.01	-67.41	1.484	0.405	91.845	6.064	0.185	0.004	0.009	0.001	0.002	0.001
11/16/2019	1,044.5	1,026.3	0.596	1,352.72	-66.73	1.494	0.399	91.903	5.990	0.199	0.004	0.007	0.001	0.001	0.001
11/17/2019	1,045.2	1,027.0	0.597	1,353.08	-67.77	1.504	0.395	91.794	6.095	0.197	0.004	0.007	0.001	0.001	0.001
11/18/2019	1,044.1	1,026.0	0.596	1,352.68	-61.56	1.487	0.395	91.954	5.971	0.179	0.004	0.007	0.001	0.001	0.001
11/19/2019	1,045.5	1,027.3	0.597	1,353.59	-66.19	1.467	0.401	91.808	6.129	0.181	0.004	0.006	0.001	0.001	0.001
11/20/2019	1,046.2	1,028.0	0.597	1,354.22	-75.62	1.444	0.404	91.764	6.194	0.182	0.003	0.006	0.001	0.001	0.001
11/21/2019	1,045.5	1,027.4	0.596	1,354.22	-76.71	1.423	0.398	91.912	6.074	0.181	0.003	0.006	0.001	0.001	0.001
11/22/2019	1,045.9	1,027.7	0.596	1,354.47	-66.27	1.406	0.405	91.891	6.102	0.183	0.003	0.006	0.001	0.001	0.001
11/23/2019	1,045.9	1,027.7	0.596	1,355.14	-67.30	1.354	0.403	92.047	5.979	0.203	0.004	0.007	0.001	0.001	0.001
11/24/2019	1,046.7	1,028.5	0.596	1,355.36	-60.29	1.378	0.403	91.840	6.195	0.174	0.003	0.005	0.001	0.001	0
11/25/2019	1,047.8	1,029.6	0.597	1,356.28	-75.19	1.358	0.399	91.733	6.335	0.167	0.002	0.003	0	0	0
11/26/2019	1,047.0	1,028.7	0.597	1,355.37	-73.65	1.390	0.401	91.806	6.201	0.189	0.004	0.007	0.001	0.001	0.001
11/27/2019	1,047.2	1,029.0	0.597	1,355.45	-68.14	1.392	0.403	91.792	6.185	0.215	0.004	0.007	0.001	0.001	0
11/28/2019	1,046.7	1,028.5	0.597	1,355.04	-71.01	1.409	0.399	91.790	6.208	0.183	0.003	0.006	0.001	0.001	0
11/29/2019	1,046.6	1,028.4	0.597	1,354.89	-68.83	1.404	0.405	91.802	6.196	0.181	0.003	0.006	0.001	0.001	0
11/30/2019	1,047.1	1,028.8	0.597	1,355.16	-69.54	1.406	0.405	91.729	6.276	0.174	0.003	0.005	0.001	0.001	0

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	1,045.3	1,027.1	0.596	1,354.06	-71.58	1.414	0.405	91.935	6.064	0.170	0.003	0.006	0.001	0.001	0
12/02/2019	1,045.4	1,027.3	0.596	1,353.70	-67.78	1.449	0.406	91.843	6.108	0.181	0.003	0.006	0.001	0.001	0.001
12/03/2019	1,045.4	1,027.3	0.596	1,353.70	-67.78	1.449	0.406	91.843	6.108	0.181	0.003	0.006	0.001	0.001	0.001
12/04/2019	1,042.2	1,024.1	0.594	1,352.79	-63.55	1.376	0.401	92.583	5.367	0.220	0.012	0.027	0.005	0.006	0.003

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 = 66321