

Gas Quality Reports

Rawlins Hesston 18"

11/25/2019 - 2/25/2020

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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%)
11/25/2019	1,091.3	1,072.3	0.621	1,384.85	-34.06	1.156	0.305	88.653	8.047	1.637	0.064	0.098	0.015	0.010	0.016
11/26/2019	1,097.1	1,078.0	0.626	1,386.73	-30.45	1.117	0.405	87.975	8.482	1.786	0.072	0.120	0.016	0.012	0.016
11/27/2019	1,074.1	1,055.4	0.616	1,368.71	-32.14	1.489	0.445	89.602	6.888	1.332	0.076	0.107	0.022	0.015	0.023
11/28/2019	1,087.7	1,068.7	0.624	1,376.98	-26.51	1.545	0.373	88.319	7.748	1.758	0.081	0.120	0.020	0.013	0.024
11/29/2019	1,093.7	1,074.7	0.626	1,381.84	-23.49	1.465	0.342	88.123	7.759	2.010	0.094	0.151	0.020	0.014	0.023
11/30/2019	1,120.9	1,101.4	0.644	1,397.11	-10.64	1.398	0.375	85.924	8.904	2.907	0.147	0.283	0.025	0.018	0.020
12/01/2019	1,105.8	1,086.6	0.634	1,388.31	-16.89	1.290	0.473	87.179	8.344	2.277	0.126	0.244	0.026	0.020	0.020
12/02/2019	1,067.1	1,048.5	0.616	1,359.67	-22.16	1.937	0.430	89.996	5.746	1.506	0.115	0.184	0.033	0.022	0.031
12/03/2019	1,068.5	1,049.9	0.617	1,360.71	-23.58	1.852	0.473	89.766	6.132	1.422	0.106	0.169	0.030	0.020	0.031
12/04/2019	1,083.8	1,065.0	0.623	1,372.82	-19.31	1.629	0.427	88.794	6.988	1.778	0.112	0.193	0.028	0.020	0.030
12/05/2019	1,128.4	1,108.8	0.648	1,401.57	-4.65	1.495	0.293	85.435	8.968	3.203	0.172	0.359	0.030	0.023	0.021
12/06/2019	1,093.1	1,074.1	0.629	1,378.51	-18.53	1.531	0.466	88.014	7.545	2.036	0.120	0.218	0.027	0.019	0.025
12/07/2019	1,109.2	1,089.9	0.636	1,390.80	-17.92	1.391	0.371	86.731	8.736	2.402	0.110	0.200	0.022	0.016	0.020
12/08/2019	1,064.8	1,046.3	0.611	1,361.85	-32.83	1.716	0.385	90.227	6.278	1.172	0.071	0.087	0.022	0.014	0.027
12/09/2019	1,071.0	1,052.4	0.610	1,370.71	-37.93	1.421	0.282	90.269	6.661	1.181	0.060	0.076	0.017	0.011	0.022
12/10/2019	1,078.7	1,059.9	0.614	1,376.27	-37.33	1.391	0.235	89.603	7.231	1.358	0.061	0.078	0.015	0.009	0.019
12/11/2019	1,084.7	1,065.8	0.620	1,378.05	-36.55	1.369	0.339	88.606	8.160	1.349	0.057	0.077	0.015	0.010	0.018
12/12/2019	1,078.5	1,059.7	0.616	1,374.50	-40.12	1.352	0.353	89.175	7.838	1.112	0.054	0.073	0.015	0.010	0.018
12/13/2019	1,086.8	1,067.8	0.622	1,377.59	-34.38	1.403	0.406	88.198	8.393	1.406	0.061	0.087	0.016	0.011	0.019
12/14/2019	1,080.4	1,061.6	0.617	1,375.34	-38.93	1.308	0.395	88.994	7.970	1.153	0.056	0.079	0.016	0.011	0.018
12/15/2019	1,084.6	1,065.7	0.620	1,377.42	-38.42	1.232	0.462	88.517	8.398	1.217	0.054	0.077	0.015	0.011	0.017
12/16/2019	1,071.8	1,053.1	0.613	1,368.65	-37.57	1.460	0.395	89.704	7.203	1.041	0.061	0.083	0.019	0.013	0.022
12/17/2019	1,077.5	1,058.8	0.615	1,374.50	-39.23	1.449	0.259	89.274	7.758	1.095	0.053	0.068	0.015	0.010	0.020
12/18/2019	1,080.2	1,061.4	0.618	1,373.92	-37.92	1.382	0.419	88.794	8.079	1.146	0.056	0.078	0.016	0.011	0.019
12/19/2019	1,085.0	1,066.1	0.620	1,377.98	-39.36	1.003	0.594	88.581	8.549	1.092	0.055	0.082	0.016	0.012	0.016
12/20/2019	1,080.6	1,061.8	0.617	1,376.20	-37.53	1.252	0.390	89.223	7.705	1.236	0.062	0.087	0.016	0.011	0.018
12/21/2019	1,073.5	1,054.8	0.611	1,373.61	-44.54	1.170	0.367	89.975	7.440	0.896	0.047	0.063	0.015	0.010	0.018
12/22/2019	1,074.1	1,055.4	0.613	1,371.74	-41.23	1.333	0.380	89.681	7.379	1.059	0.053	0.071	0.015	0.010	0.019
12/23/2019	1,073.7	1,055.0	0.612	1,372.43	-42.16	1.235	0.395	89.863	7.342	0.996	0.052	0.072	0.016	0.011	0.018
12/24/2019	1,078.3	1,059.5	0.616	1,374.41	-38.91	1.288	0.394	89.299	7.708	1.130	0.056	0.079	0.016	0.011	0.019
12/25/2019	1,070.8	1,052.1	0.611	1,369.87	-39.91	1.414	0.326	90.053	6.989	1.043	0.055	0.071	0.017	0.011	0.021
12/26/2019	1,075.6	1,056.9	0.613	1,373.47	-40.67	1.370	0.309	89.566	7.526	1.051	0.055	0.077	0.016	0.011	0.018
12/27/2019	1,075.6	1,056.8	0.613	1,374.13	-40.68	1.307	0.312	89.684	7.496	1.031	0.053	0.072	0.015	0.011	0.019
12/28/2019	1,074.7	1,056.0	0.612	1,373.28	-40.78	1.311	0.328	89.745	7.429	1.015	0.053	0.073	0.016	0.011	0.019
12/29/2019	1,071.6	1,053.0	0.612	1,370.30	-39.95	1.380	0.353	89.911	7.197	0.979	0.056	0.075	0.018	0.012	0.021
12/30/2019	1,061.6	1,043.1	0.607	1,362.39	-38.33	1.528	0.378	90.691	6.404	0.803	0.060	0.077	0.021	0.014	0.025
12/31/2019	1,056.3	1,037.9	0.604	1,358.91	-38.41	1.560	0.381	91.219	5.932	0.702	0.062	0.081	0.021	0.015	0.027
01/01/2020	1,069.2	1,050.6	0.611	1,367.60	-34.16	1.474	0.365	90.095	6.849	0.996	0.064	0.094	0.022	0.017	0.026
01/02/2020	1,075.7	1,057.0	0.614	1,373.19	-37.56	1.352	0.339	89.591	7.444	1.091	0.056	0.075	0.018	0.012	0.021
01/03/2020	1,059.7	1,041.2	0.609	1,357.65	-30.30	1.896	0.337	90.479	6.039	1.014	0.074	0.088	0.025	0.016	0.032
01/04/2020	1,088.5	1,069.6	0.624	1,377.71	-29.38	1.769	0.213	87.773	8.470	1.564	0.068	0.092	0.018	0.011	0.023
01/05/2020	1,082.1	1,063.3	0.614	1,380.95	-40.33	1.252	0.175	89.355	7.910	1.161	0.047	0.060	0.013	0.008	0.019
01/06/2020	1,069.0	1,050.4	0.614	1,363.73	-32.80	1.803	0.355	89.456	7.089	1.080	0.069	0.086	0.022	0.013	0.027

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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%)
01/07/2020	1,071.3	1,052.7	0.617	1,364.30	-30.42	1.905	0.330	89.107	7.227	1.212	0.069	0.085	0.022	0.013	0.028
01/08/2020	1,080.5	1,061.7	0.616	1,376.49	-39.18	1.497	0.209	88.918	8.082	1.139	0.049	0.062	0.015	0.009	0.019
01/09/2020	1,064.3	1,045.8	0.601	1,372.50	-51.34	1.141	0.165	91.391	6.546	0.631	0.040	0.045	0.013	0.009	0.018
01/10/2020	1,072.3	1,053.7	0.613	1,370.15	-35.65	1.618	0.226	89.741	7.090	1.139	0.060	0.074	0.019	0.011	0.024
01/11/2020	1,065.7	1,047.1	0.615	1,359.26	-27.73	2.010	0.363	89.696	6.368	1.312	0.079	0.100	0.025	0.016	0.031
01/12/2020	1,078.0	1,059.2	0.621	1,368.11	-27.08	1.802	0.396	88.586	7.534	1.456	0.070	0.091	0.022	0.014	0.029
01/13/2020	1,112.6	1,093.2	0.638	1,392.62	-23.24	1.690	0.183	85.542	10.132	2.241	0.069	0.102	0.014	0.009	0.018
01/14/2020	1,085.2	1,066.3	0.622	1,375.67	-31.36	1.690	0.275	88.167	8.159	1.506	0.065	0.088	0.018	0.011	0.022
01/15/2020	1,081.2	1,062.4	0.619	1,374.76	-33.82	1.554	0.291	88.803	7.789	1.373	0.061	0.080	0.017	0.010	0.022
01/16/2020	1,095.0	1,075.9	0.628	1,381.78	-30.94	1.406	0.427	87.300	9.042	1.627	0.061	0.091	0.015	0.011	0.018
01/17/2020	1,072.8	1,054.1	0.619	1,362.97	-28.05	1.807	0.515	88.898	7.197	1.336	0.077	0.104	0.023	0.015	0.028
01/18/2020	1,095.8	1,076.8	0.630	1,380.42	-25.26	1.700	0.337	87.067	8.766	1.891	0.076	0.111	0.018	0.012	0.022
01/19/2020	1,081.1	1,062.2	0.621	1,372.36	-33.46	1.513	0.447	88.534	7.980	1.331	0.062	0.083	0.018	0.012	0.022
01/20/2020	1,091.2	1,072.2	0.624	1,381.12	-32.75	1.274	0.433	87.895	8.767	1.438	0.059	0.087	0.016	0.012	0.019
01/21/2020	1,074.2	1,055.6	0.615	1,369.46	-35.63	1.485	0.412	89.363	7.424	1.119	0.061	0.081	0.019	0.013	0.023
01/22/2020	1,079.9	1,061.1	0.617	1,374.65	-37.04	1.401	0.356	89.003	7.846	1.218	0.057	0.074	0.016	0.010	0.020
01/23/2020	1,089.2	1,070.2	0.621	1,381.60	-36.93	1.321	0.313	88.179	8.665	1.358	0.053	0.072	0.013	0.009	0.017
01/24/2020	1,067.7	1,049.1	0.610	1,366.91	-40.59	1.394	0.409	90.110	7.074	0.835	0.056	0.070	0.018	0.012	0.022
01/25/2020	1,071.7	1,053.1	0.614	1,367.61	-36.88	1.615	0.351	89.454	7.329	1.065	0.060	0.073	0.019	0.012	0.023
01/26/2020	1,078.6	1,059.8	0.619	1,371.09	-33.66	1.616	0.372	88.568	8.145	1.109	0.059	0.077	0.018	0.011	0.025
01/27/2020	1,087.9	1,069.0	0.622	1,379.50	-36.74	1.465	0.296	87.976	8.816	1.281	0.053	0.071	0.014	0.009	0.018
01/28/2020	1,082.0	1,063.2	0.619	1,375.64	-38.42	1.345	0.405	88.640	8.307	1.130	0.054	0.075	0.015	0.010	0.019
01/29/2020	1,073.9	1,055.2	0.612	1,372.72	-44.86	1.170	0.430	89.717	7.692	0.832	0.050	0.067	0.015	0.010	0.017
01/30/2020	1,075.8	1,057.1	0.614	1,373.06	-41.38	1.290	0.390	89.420	7.796	0.933	0.054	0.073	0.016	0.010	0.019
01/31/2020	1,074.1	1,055.4	0.611	1,374.42	-45.92	1.142	0.359	89.893	7.647	0.801	0.049	0.066	0.015	0.010	0.017
02/01/2020	1,069.0	1,050.4	0.610	1,369.27	-44.32	1.308	0.377	90.109	7.280	0.758	0.052	0.068	0.016	0.011	0.019
02/02/2020	1,067.2	1,048.7	0.611	1,365.70	-39.79	1.534	0.369	89.968	7.098	0.848	0.058	0.074	0.018	0.012	0.023
02/03/2020	1,074.8	1,056.1	0.613	1,372.58	-40.50	1.286	0.388	89.583	7.622	0.954	0.053	0.070	0.015	0.010	0.020
02/04/2020	1,077.1	1,058.4	0.616	1,371.88	-38.57	1.544	0.330	89.020	7.786	1.132	0.060	0.083	0.017	0.011	0.019
02/05/2020	1,041.8	1,023.6	0.602	1,343.08	-32.84	2.098	0.440	91.813	4.719	0.676	0.080	0.094	0.029	0.018	0.033
02/06/2020	1,042.5	1,024.3	0.604	1,341.61	-28.79	2.215	0.467	91.472	4.838	0.752	0.079	0.093	0.028	0.018	0.037
02/07/2020	1,092.6	1,073.5	0.628	1,378.34	-26.04	1.713	0.341	87.335	8.592	1.785	0.079	0.103	0.017	0.011	0.024
02/08/2020	1,084.5	1,065.6	0.616	1,381.29	-40.06	1.346	0.166	88.931	8.167	1.231	0.052	0.069	0.013	0.008	0.017
02/09/2020	1,083.7	1,064.8	0.616	1,380.27	-38.66	1.379	0.175	88.986	8.040	1.249	0.057	0.073	0.014	0.009	0.018
02/10/2020	1,079.2	1,060.5	0.613	1,378.18	-41.80	1.352	0.172	89.463	7.749	1.110	0.051	0.064	0.014	0.009	0.018
02/11/2020	1,071.5	1,052.9	0.613	1,368.15	-35.74	1.731	0.235	89.701	6.875	1.246	0.069	0.090	0.019	0.012	0.022
02/12/2020	1,051.7	1,033.4	0.608	1,349.18	-30.45	2.189	0.360	90.851	5.298	1.043	0.081	0.102	0.027	0.017	0.031
02/13/2020	1,065.2	1,046.6	0.613	1,360.47	-28.93	2.005	0.280	89.820	6.458	1.200	0.074	0.093	0.023	0.014	0.031
02/14/2020	1,103.7	1,084.5	0.630	1,390.30	-29.49	1.519	0.146	86.855	9.335	1.943	0.066	0.099	0.013	0.008	0.015
02/15/2020	1,081.9	1,063.1	0.612	1,383.03	-43.96	1.111	0.146	89.753	7.691	1.147	0.051	0.065	0.012	0.008	0.015
02/16/2020	1,078.0	1,059.3	0.613	1,377.31	-40.47	1.355	0.180	89.685	7.443	1.165	0.058	0.073	0.015	0.009	0.018
02/17/2020	1,082.2	1,063.4	0.616	1,378.68	-37.41	1.428	0.184	89.103	7.815	1.290	0.058	0.078	0.015	0.009	0.019
02/18/2020	1,084.8	1,066.0	0.616	1,382.41	-40.27	1.266	0.168	89.086	8.073	1.245	0.054	0.072	0.013	0.008	0.016

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	1,072.8	1,054.2	0.612	1,371.18	-37.92	1.570	0.215	89.759	7.176	1.089	0.062	0.079	0.018	0.011	0.022
02/20/2020	1,087.5	1,068.6	0.620	1,381.04	-34.64	1.485	0.183	88.430	8.285	1.429	0.060	0.084	0.015	0.009	0.019
02/21/2020	1,078.0	1,059.3	0.615	1,374.51	-37.83	1.571	0.193	89.190	7.688	1.174	0.059	0.079	0.016	0.010	0.020
02/22/2020	1,084.6	1,065.7	0.618	1,380.10	-37.39	1.398	0.201	88.846	8.051	1.328	0.057	0.078	0.014	0.009	0.018
02/23/2020	1,083.2	1,064.3	0.614	1,381.88	-42.30	1.168	0.210	89.384	7.880	1.192	0.059	0.072	0.013	0.008	0.015

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 = 52812