

Gas Quality Reports

LS235 - On Sedalia 20" at Peculiar
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	1,064.9	1,046.4	0.616	1,356.89	-54.36	2.560	0.112	88.592	7.483	1.116	0.045	0.070	0.009	0.007	0.006
09/07/2019	1,060.2	1,041.8	0.613	1,353.73	-58.56	2.512	0.171	88.999	7.236	0.955	0.040	0.066	0.009	0.007	0.005
09/08/2019	1,068.9	1,050.3	0.618	1,359.79	-49.48	2.388	0.190	88.460	7.563	1.243	0.049	0.081	0.011	0.008	0.007
09/09/2019	1,062.8	1,044.3	0.615	1,354.92	-53.18	2.504	0.193	88.762	7.353	1.045	0.045	0.073	0.010	0.008	0.007
09/10/2019	1,059.0	1,040.6	0.613	1,352.37	-60.66	2.710	0.080	88.856	7.299	0.949	0.034	0.056	0.007	0.006	0.004
09/11/2019	1,059.7	1,041.3	0.613	1,353.53	-58.31	2.579	0.121	89.036	7.171	0.970	0.038	0.063	0.009	0.007	0.005
09/12/2019	1,058.8	1,040.3	0.613	1,352.67	-60.77	2.677	0.075	88.942	7.287	0.918	0.032	0.051	0.007	0.006	0.005
09/13/2019	1,055.7	1,037.3	0.610	1,351.55	-62.67	2.640	0.063	89.425	6.893	0.871	0.034	0.055	0.008	0.006	0.005
09/14/2019	1,060.5	1,042.1	0.612	1,355.79	-58.29	2.455	0.102	89.312	6.984	1.027	0.038	0.061	0.008	0.006	0.005
09/15/2019	1,043.0	1,024.9	0.604	1,341.80	-134.13	2.629	0.208	90.336	6.232	0.532	0.019	0.031	0.005	0.004	0.004
09/16/2019	1,046.5	1,028.3	0.605	1,345.80	-132.30	2.385	0.259	90.421	6.259	0.600	0.023	0.037	0.006	0.005	0.005
09/17/2019	1,056.4	1,038.0	0.611	1,351.16	-57.18	2.628	0.114	89.396	6.759	0.972	0.041	0.064	0.011	0.007	0.007
09/18/2019	1,041.7	1,023.6	0.602	1,342.44	-135.98	2.224	0.396	90.965	5.873	0.478	0.019	0.029	0.005	0.004	0.006
09/19/2019	1,054.3	1,035.9	0.612	1,347.71	-63.22	2.878	0.077	89.011	7.047	0.897	0.028	0.047	0.006	0.005	0.005
09/20/2019	1,056.7	1,038.3	0.613	1,349.80	-60.18	2.744	0.125	89.058	6.949	1.008	0.036	0.062	0.008	0.006	0.004
09/21/2019	1,056.0	1,037.6	0.611	1,351.10	-56.98	2.581	0.136	89.548	6.583	1.025	0.041	0.062	0.010	0.007	0.007
09/22/2019	1,061.7	1,043.2	0.616	1,352.79	-48.56	2.645	0.183	88.878	6.852	1.277	0.051	0.085	0.012	0.009	0.009
09/23/2019	1,060.3	1,041.9	0.613	1,353.87	-54.38	2.517	0.163	89.172	6.899	1.112	0.043	0.071	0.009	0.007	0.007
09/24/2019	1,063.3	1,044.8	0.610	1,361.12	-57.46	2.161	0.087	89.692	6.901	1.034	0.039	0.066	0.009	0.006	0.006
09/25/2019	1,059.8	1,041.4	0.609	1,358.33	-60.15	2.215	0.095	89.888	6.746	0.940	0.037	0.059	0.008	0.006	0.006
09/26/2019	1,051.8	1,033.5	0.608	1,349.00	-68.08	2.637	0.083	89.733	6.711	0.752	0.026	0.042	0.006	0.005	0.005
09/27/2019	1,052.5	1,034.2	0.610	1,347.74	-68.51	2.748	0.103	89.386	6.872	0.804	0.027	0.047	0.006	0.005	0.003
09/28/2019	1,050.0	1,031.8	0.610	1,344.28	-67.61	2.833	0.162	89.325	6.846	0.738	0.029	0.049	0.007	0.006	0.004
09/29/2019	1,049.0	1,030.7	0.607	1,345.87	-73.05	2.704	0.124	89.747	6.672	0.675	0.024	0.040	0.006	0.004	0.003
09/30/2019	1,049.7	1,031.5	0.609	1,345.59	-69.40	2.747	0.135	89.606	6.698	0.716	0.031	0.051	0.006	0.005	0.004
10/01/2019	1,052.2	1,033.9	0.609	1,347.74	-68.85	2.706	0.121	89.460	6.848	0.772	0.030	0.049	0.006	0.005	0.003
10/02/2019	1,063.8	1,045.3	0.614	1,357.58	-52.77	2.355	0.174	89.075	7.151	1.103	0.045	0.072	0.011	0.008	0.007
10/03/2019	1,058.5	1,040.0	0.610	1,355.46	-55.03	2.022	0.339	90.055	6.460	0.974	0.046	0.077	0.011	0.008	0.009
10/04/2019	1,053.0	1,034.7	0.609	1,349.07	-61.37	2.491	0.214	89.725	6.632	0.839	0.030	0.047	0.008	0.006	0.008
10/05/2019	1,043.2	1,025.1	0.604	1,342.02	-133.65	2.529	0.268	90.481	6.063	0.588	0.021	0.034	0.006	0.005	0.006
10/06/2019	1,047.3	1,029.0	0.608	1,343.40	-66.54	2.742	0.180	89.907	6.284	0.793	0.029	0.045	0.007	0.005	0.006
10/07/2019	1,035.2	1,017.2	0.601	1,335.55	-138.84	2.742	0.229	90.950	5.579	0.443	0.017	0.026	0.005	0.004	0.005
10/08/2019	1,040.6	1,022.5	0.605	1,338.28	-134.61	2.909	0.143	90.153	6.199	0.536	0.018	0.028	0.005	0.004	0.005
10/09/2019	1,049.6	1,031.3	0.609	1,344.43	-65.22	2.742	0.198	89.512	6.724	0.726	0.030	0.046	0.009	0.006	0.007
10/10/2019	1,032.5	1,014.6	0.604	1,328.36	-138.31	3.361	0.139	89.986	6.067	0.407	0.011	0.019	0.003	0.003	0.003
10/11/2019	1,046.6	1,028.3	0.609	1,340.99	-69.66	2.970	0.144	89.449	6.645	0.708	0.026	0.040	0.007	0.005	0.005
10/12/2019	1,053.0	1,034.6	0.611	1,346.95	-61.43	2.787	0.137	89.273	6.817	0.886	0.032	0.049	0.008	0.006	0.006
10/13/2019	1,035.2	1,017.1	0.603	1,332.67	-76.33	3.031	0.199	90.423	5.801	0.468	0.021	0.036	0.007	0.006	0.007
10/14/2019	1,043.6	1,025.4	0.605	1,341.82	-72.52	2.607	0.240	90.388	6.051	0.622	0.028	0.045	0.007	0.006	0.005
10/15/2019	1,047.0	1,028.7	0.609	1,342.12	-68.07	2.885	0.149	89.597	6.574	0.699	0.029	0.047	0.008	0.006	0.006
10/16/2019	1,034.0	1,016.0	0.596	1,339.38	-142.91	1.999	0.468	92.122	5.045	0.322	0.012	0.020	0.004	0.003	0.004
10/17/2019	1,058.9	1,040.5	0.612	1,353.60	-58.31	2.526	0.127	89.246	6.997	0.993	0.035	0.054	0.009	0.006	0.006
10/18/2019	1,044.9	1,026.7	0.607	1,341.49	-73.45	2.949	0.077	89.768	6.502	0.629	0.023	0.038	0.005	0.004	0.005

Gas Quality Reports

LS235 - On Sedalia 20" at Peculiar

Page 2 of 3

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	1,052.2	1,033.9	0.610	1,347.26	-66.77	2.816	0.075	89.380	6.794	0.845	0.029	0.046	0.006	0.004	0.004
10/20/2019	1,068.0	1,049.4	0.618	1,358.62	-46.07	2.565	0.111	88.585	7.160	1.368	0.064	0.120	0.012	0.009	0.007
10/21/2019	1,050.0	1,031.8	0.610	1,344.85	-69.88	2.929	0.067	89.293	6.884	0.749	0.024	0.040	0.005	0.004	0.004
10/22/2019	1,044.3	1,026.1	0.604	1,344.15	-133.65	2.424	0.252	90.627	6.028	0.600	0.021	0.033	0.006	0.004	0.005
10/23/2019	1,038.3	1,020.3	0.606	1,333.70	-135.32	3.310	0.063	89.530	6.627	0.441	0.008	0.012	0.003	0.002	0.003
10/24/2019	1,044.7	1,026.5	0.608	1,339.70	-75.30	3.065	0.094	89.477	6.656	0.644	0.020	0.031	0.005	0.004	0.004
10/25/2019	1,059.1	1,040.6	0.614	1,351.69	-57.85	2.708	0.119	88.905	7.092	1.054	0.040	0.064	0.008	0.006	0.005
10/26/2019	1,046.3	1,028.1	0.608	1,341.77	-66.72	2.922	0.122	89.698	6.434	0.730	0.030	0.045	0.008	0.005	0.007
10/27/2019	1,046.7	1,028.5	0.610	1,339.89	-60.92	3.088	0.132	89.368	6.465	0.843	0.032	0.048	0.009	0.006	0.008
10/28/2019	1,036.0	1,018.0	0.596	1,342.21	-141.92	1.967	0.396	92.157	5.063	0.372	0.013	0.020	0.004	0.003	0.005
10/29/2019	1,036.6	1,018.6	0.594	1,345.47	-141.93	1.600	0.477	92.901	4.541	0.364	0.028	0.058	0.012	0.012	0.007
10/30/2019	1,036.4	1,018.4	0.598	1,340.32	-140.13	2.044	0.462	91.839	5.226	0.351	0.018	0.035	0.007	0.008	0.009
10/31/2019	1,036.5	1,018.5	0.597	1,341.35	-140.91	1.934	0.481	91.999	5.167	0.356	0.016	0.029	0.005	0.005	0.007
11/01/2019	1,047.8	1,029.5	0.606	1,345.59	-67.41	2.449	0.267	90.249	6.232	0.705	0.030	0.048	0.008	0.006	0.007
11/02/2019	1,058.0	1,039.6	0.614	1,350.27	-54.26	2.765	0.126	88.913	7.024	1.037	0.042	0.069	0.009	0.007	0.008
11/03/2019	1,054.2	1,035.9	0.613	1,346.73	-53.07	2.876	0.131	89.171	6.624	1.058	0.044	0.070	0.010	0.007	0.009
11/04/2019	1,058.5	1,040.1	0.615	1,349.37	-53.18	2.834	0.148	88.721	7.032	1.132	0.042	0.068	0.009	0.006	0.008
11/05/2019	1,044.5	1,026.3	0.605	1,343.16	-73.58	2.489	0.272	90.404	6.172	0.589	0.022	0.035	0.006	0.005	0.006
11/06/2019	1,057.1	1,038.7	0.613	1,350.15	-60.85	2.803	0.080	88.918	7.116	0.984	0.032	0.053	0.006	0.004	0.005
11/07/2019	1,042.5	1,024.3	0.606	1,339.05	-133.22	3.020	0.088	89.776	6.509	0.547	0.019	0.031	0.004	0.003	0.002
11/08/2019	1,057.7	1,039.3	0.612	1,352.06	-61.63	2.679	0.073	89.129	7.056	0.960	0.034	0.054	0.007	0.005	0.004
11/09/2019	1,053.7	1,035.4	0.611	1,348.26	-65.63	2.653	0.177	89.314	6.936	0.824	0.033	0.049	0.006	0.004	0.005
11/10/2019	1,061.7	1,043.2	0.615	1,353.79	-56.60	2.558	0.184	88.813	7.221	1.094	0.043	0.069	0.008	0.005	0.005
11/11/2019	1,063.5	1,045.0	0.614	1,356.83	-57.01	2.373	0.193	88.966	7.279	1.049	0.047	0.074	0.009	0.006	0.004
11/12/2019	1,061.9	1,043.5	0.611	1,359.10	-59.63	1.883	0.339	89.788	6.968	0.901	0.037	0.062	0.009	0.007	0.006
11/13/2019	1,069.9	1,051.3	0.617	1,362.00	-49.62	2.037	0.329	88.686	7.711	1.073	0.050	0.085	0.012	0.010	0.008
11/14/2019	1,064.9	1,046.4	0.617	1,356.28	-53.51	2.258	0.347	88.673	7.567	1.005	0.047	0.080	0.010	0.008	0.006
11/15/2019	1,066.0	1,047.5	0.617	1,356.69	-52.95	2.259	0.358	88.532	7.667	1.031	0.048	0.081	0.010	0.008	0.006
11/16/2019	1,066.2	1,047.6	0.618	1,355.76	-51.75	2.420	0.309	88.327	7.689	1.092	0.049	0.089	0.010	0.009	0.005
11/17/2019	1,065.7	1,047.1	0.616	1,357.97	-55.05	2.216	0.303	88.782	7.525	1.029	0.046	0.077	0.010	0.008	0.005
11/18/2019	1,055.1	1,036.8	0.610	1,350.51	-65.34	2.571	0.150	89.344	7.056	0.783	0.030	0.048	0.007	0.006	0.005
11/19/2019	1,055.3	1,037.0	0.610	1,350.71	-63.21	2.566	0.149	89.354	7.036	0.794	0.031	0.051	0.008	0.006	0.005
11/20/2019	1,056.6	1,038.3	0.612	1,350.46	-61.60	2.584	0.193	89.084	7.204	0.831	0.032	0.053	0.007	0.006	0.006
11/21/2019	1,065.3	1,046.8	0.618	1,354.71	-45.19	2.501	0.287	88.407	7.520	1.074	0.057	0.111	0.018	0.017	0.010
11/22/2019	1,064.2	1,045.7	0.616	1,355.73	-46.37	2.454	0.226	88.672	7.468	0.999	0.049	0.092	0.015	0.015	0.012
11/23/2019	1,059.7	1,041.2	0.612	1,354.57	-58.44	2.394	0.183	89.226	7.208	0.871	0.036	0.058	0.009	0.007	0.007
11/24/2019	1,045.3	1,027.1	0.608	1,340.33	-72.89	3.004	0.120	89.436	6.792	0.571	0.022	0.039	0.006	0.005	0.005
11/25/2019	1,048.3	1,030.0	0.609	1,343.19	-72.33	2.884	0.134	89.372	6.889	0.641	0.025	0.041	0.006	0.005	0.003
11/26/2019	1,057.1	1,038.7	0.613	1,350.30	-60.50	2.708	0.136	88.941	7.205	0.902	0.033	0.056	0.008	0.006	0.005
11/27/2019	1,052.5	1,034.2	0.610	1,347.80	-69.09	2.708	0.127	89.336	7.022	0.726	0.026	0.041	0.006	0.005	0.004
11/28/2019	1,057.8	1,039.4	0.612	1,352.42	-62.09	2.556	0.138	89.154	7.187	0.865	0.031	0.051	0.007	0.006	0.005
11/29/2019	1,052.2	1,033.9	0.610	1,347.69	-61.61	2.645	0.164	89.522	6.824	0.731	0.035	0.054	0.010	0.008	0.007
11/30/2019	1,054.8	1,036.4	0.612	1,348.42	-60.07	2.787	0.113	89.076	7.068	0.842	0.035	0.058	0.008	0.006	0.007

TSP Name: Southern Star Central Gas Pipeline, Inc.

CSI048

TSP: 007906233

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Gas Quality Reports

LS235 - On Sedalia 20" at Peculiar

Page 3 of 3

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%)
12/01/2019	1,047.7	1,029.5	0.609	1,342.86	-69.18	2.953	0.089	89.395	6.842	0.635	0.026	0.043	0.006	0.005	0.006
12/02/2019	1,056.5	1,038.1	0.614	1,347.85	-59.91	2.955	0.091	88.621	7.258	0.956	0.036	0.066	0.007	0.006	0.004
12/03/2019	1,066.4	1,047.8	0.617	1,357.25	-49.84	2.381	0.257	88.511	7.612	1.074	0.049	0.087	0.011	0.009	0.008
12/04/2019	1,069.2	1,050.6	0.618	1,360.15	-47.49	2.283	0.248	88.522	7.608	1.143	0.058	0.107	0.013	0.010	0.008

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 = 68421