

Gas Quality Reports

LS335 Blackwell to Shidler

5/17/2019 - 8/17/2019

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%)
05/17/2019	1,021.4	1,003.6	0.582	1,339.27	-158.82	1.548	0.372	94.714	3.295	0.060	0.002	0.004	0.001	0.001	0.004
05/18/2019	1,022.8	1,005.0	0.582	1,340.29	-157.15	1.548	0.360	94.625	3.354	0.086	0.005	0.011	0.002	0.003	0.006
05/19/2019	1,022.2	1,004.4	0.582	1,339.79	-158.27	1.551	0.366	94.598	3.428	0.051	0	0	0	0	0.005
05/20/2019	1,025.5	1,007.7	0.583	1,342.62	-155.78	1.472	0.370	94.343	3.750	0.060	0	0	0	0	0.005
05/21/2019	1,024.8	1,007.0	0.583	1,341.67	-156.11	1.509	0.375	94.339	3.711	0.062	0	0	0	0	0.004
05/22/2019	1,025.5	1,007.6	0.583	1,342.83	-156.06	1.442	0.377	94.399	3.720	0.057	0	0	0	0	0.004
05/23/2019	1,023.1	1,005.3	0.582	1,340.90	-157.95	1.500	0.368	94.586	3.491	0.051	0	0	0	0	0.003
05/24/2019	1,022.9	1,005.1	0.582	1,340.72	-158.00	1.504	0.371	94.592	3.475	0.054	0	0.001	0	0	0.003
05/25/2019	1,024.6	1,006.8	0.583	1,342.29	-156.96	1.447	0.376	94.490	3.631	0.053	0	0	0	0	0.002
05/26/2019	1,024.2	1,006.3	0.583	1,341.65	-157.09	1.470	0.381	94.491	3.596	0.059	0	0	0	0	0.003
05/27/2019	1,023.5	1,005.7	0.582	1,341.20	-157.61	1.476	0.380	94.575	3.501	0.064	0	0	0	0	0.003
05/28/2019	1,024.2	1,006.4	0.583	1,341.81	-156.91	1.475	0.372	94.502	3.580	0.064	0.001	0.001	0	0	0.003
05/29/2019	1,024.5	1,006.6	0.583	1,341.61	-156.55	1.509	0.367	94.397	3.662	0.061	0	0	0	0	0.004
05/30/2019	1,022.9	1,005.1	0.582	1,340.85	-158.14	1.493	0.369	94.632	3.449	0.053	0	0	0	0	0.003
05/31/2019	1,021.5	1,003.7	0.582	1,339.21	-158.71	1.586	0.353	94.642	3.353	0.061	0	0.001	0	0	0.004
06/01/2019	1,021.9	1,004.1	0.582	1,339.59	-158.56	1.560	0.362	94.614	3.407	0.052	0	0	0	0	0.004
06/02/2019	1,023.8	1,006.0	0.583	1,340.34	-156.52	1.598	0.356	94.318	3.652	0.070	0.001	0.002	0	0	0.003
06/03/2019	1,021.5	1,003.7	0.582	1,339.47	-158.55	1.553	0.362	94.744	3.242	0.080	0.003	0.008	0.002	0.002	0.004
06/04/2019	1,026.1	1,008.3	0.582	1,344.70	-156.03	1.321	0.375	94.659	3.532	0.098	0.003	0.007	0.001	0.001	0.003
06/05/2019	1,014.4	996.8	0.583	1,328.33	-161.04	2.126	0.365	94.318	3.085	0.096	0.002	0.004	0	0	0.003
06/06/2019	1,009.8	992.2	0.584	1,321.49	-162.70	2.472	0.362	94.149	2.897	0.106	0.003	0.006	0	0	0.004
06/07/2019	1,022.0	1,004.2	0.584	1,337.06	-156.95	1.733	0.389	94.173	3.616	0.082	0.001	0.003	0	0	0.002
06/08/2019	1,020.3	1,002.5	0.583	1,336.08	-158.51	1.763	0.368	94.365	3.425	0.074	0.001	0.002	0	0	0.002
06/09/2019	1,004.6	987.1	0.584	1,314.87	-166.21	2.797	0.342	94.108	2.639	0.105	0.002	0.003	0	0	0.004
06/10/2019	1,010.9	993.3	0.583	1,323.85	-162.70	2.340	0.355	94.326	2.863	0.103	0.003	0.005	0	0	0.004
06/11/2019	1,021.3	1,003.5	0.587	1,333.13	-154.83	2.056	0.367	93.687	3.692	0.186	0.003	0.006	0	0	0.003
06/12/2019	1,021.9	1,004.1	0.583	1,338.42	-157.80	1.647	0.368	94.429	3.473	0.078	0.001	0.001	0	0	0.003
06/13/2019	1,021.7	1,004.0	0.582	1,338.95	-158.31	1.604	0.363	94.549	3.416	0.060	0.001	0.002	0	0	0.004
06/14/2019	1,021.4	1,003.6	0.584	1,335.98	-157.02	1.834	0.361	94.069	3.659	0.073	0	0.001	0	0	0.003
06/15/2019	1,016.2	998.5	0.589	1,323.93	-156.15	2.567	0.372	93.079	3.845	0.130	0.002	0.003	0	0	0.002
06/16/2019	1,013.2	995.5	0.588	1,321.38	-158.23	2.649	0.362	93.304	3.552	0.124	0.003	0.004	0	0	0.003
06/17/2019	1,012.6	995.0	0.592	1,316.55	-155.97	3.039	0.355	92.513	3.932	0.154	0.003	0.004	0	0	0.002
06/18/2019	1,015.3	997.7	0.589	1,323.50	-156.76	2.604	0.346	93.165	3.747	0.132	0.002	0.003	0	0	0.002
06/19/2019	1,011.8	994.2	0.591	1,315.61	-156.46	3.050	0.373	92.540	3.885	0.140	0.003	0.005	0.001	0.001	0.002
06/20/2019	1,011.4	993.8	0.594	1,312.04	-154.87	3.324	0.378	91.974	4.142	0.174	0.003	0.005	0	0	0.001
06/21/2019	1,009.9	992.3	0.599	1,305.15	-152.24	3.801	0.404	91.040	4.534	0.208	0.004	0.008	0	0	0.001
06/22/2019	1,007.8	990.3	0.596	1,305.73	-155.62	3.680	0.382	91.565	4.222	0.145	0.002	0.003	0	0	0.001
06/23/2019	1,008.7	991.2	0.596	1,306.77	-154.91	3.642	0.379	91.573	4.231	0.167	0.003	0.004	0	0	0.002
06/24/2019	1,018.6	1,000.9	0.590	1,326.51	-154.60	2.469	0.372	92.996	4.024	0.129	0.002	0.003	0	0	0.004
06/25/2019	1,011.7	994.1	0.593	1,313.54	-155.48	3.217	0.375	92.152	4.115	0.133	0.002	0.003	0	0	0.002
06/26/2019	1,038.0	1,019.9	0.595	1,345.76	-55.79	1.792	0.376	92.707	4.526	0.435	0.036	0.079	0.016	0.017	0.017
06/27/2019	1,034.4	1,016.4	0.597	1,339.27	-38.64	2.150	0.384	92.572	4.167	0.474	0.051	0.117	0.027	0.030	0.027
06/28/2019	1,025.2	1,007.4	0.593	1,331.25	-60.35	2.382	0.380	92.818	3.973	0.298	0.029	0.068	0.017	0.018	0.016

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06/29/2019	1,025.2	1,007.4	0.593	1,331.25	-60.35	2.382	0.380	92.818	3.973	0.298	0.029	0.068	0.017	0.018	0.016
06/30/2019	1,025.2	1,007.4	0.593	1,331.25	-60.35	2.382	0.380	92.818	3.973	0.298	0.029	0.068	0.017	0.018	0.016
07/01/2019	1,025.2	1,007.4	0.593	1,331.25	-60.35	2.382	0.380	92.818	3.973	0.298	0.029	0.068	0.017	0.018	0.016
07/02/2019	1,032.8	1,014.8	0.605	1,328.28	-138.83	2.728	0.567	90.358	6.034	0.237	0.016	0.036	0.008	0.009	0.007
07/03/2019	1,029.6	1,011.7	0.611	1,316.93	-138.29	3.426	0.652	88.714	7.032	0.170	0.003	0.004	0	0	0
07/04/2019	1,031.7	1,013.8	0.611	1,319.86	-137.46	3.268	0.659	88.837	7.010	0.217	0.003	0.005	0	0	0
07/05/2019	1,032.6	1,014.6	0.611	1,321.32	-137.55	3.194	0.652	88.868	7.114	0.166	0.002	0.004	0	0	0
07/06/2019	1,035.4	1,017.4	0.610	1,325.67	-136.74	2.964	0.651	89.067	7.109	0.203	0.002	0.003	0	0	0
07/07/2019	1,032.1	1,014.2	0.608	1,323.19	-138.72	3.052	0.624	89.322	6.824	0.170	0.003	0.005	0	0	0
07/08/2019	1,036.1	1,018.1	0.610	1,326.26	-136.43	2.955	0.645	88.997	7.210	0.186	0.002	0.004	0	0	0
07/09/2019	1,035.9	1,017.9	0.611	1,325.80	-136.09	3.015	0.626	88.980	7.132	0.235	0.004	0.008	0	0	0
07/10/2019	1,042.6	1,024.5	0.615	1,329.20	-131.09	3.026	0.650	88.121	7.875	0.307	0.007	0.013	0	0	0.001
07/11/2019	1,046.4	1,028.2	0.612	1,337.33	-49.87	2.612	0.581	89.234	6.974	0.438	0.031	0.076	0.017	0.021	0.016
07/12/2019	1,036.3	1,018.3	0.609	1,328.31	-136.15	2.895	0.576	89.462	6.699	0.340	0.010	0.016	0.001	0	0.001
07/13/2019	1,034.0	1,016.0	0.607	1,327.54	-138.84	2.839	0.579	89.688	6.703	0.185	0.002	0.004	0	0	0
07/14/2019	1,034.3	1,016.3	0.605	1,330.22	-139.68	2.673	0.546	90.128	6.449	0.196	0.003	0.005	0	0	0
07/15/2019	1,036.1	1,018.1	0.606	1,331.11	-138.14	2.673	0.555	89.936	6.582	0.240	0.005	0.008	0	0	0.001
07/16/2019	1,035.8	1,017.7	0.613	1,322.48	-134.75	3.267	0.645	88.387	7.434	0.259	0.003	0.005	0	0	0
07/17/2019	1,028.8	1,010.9	0.609	1,318.68	-139.46	3.384	0.549	89.224	6.603	0.232	0.003	0.004	0	0	0
07/18/2019	1,030.8	1,012.9	0.604	1,326.52	-141.02	2.898	0.493	90.215	6.154	0.232	0.003	0.005	0	0	0
07/19/2019	1,031.7	1,013.7	0.615	1,315.41	-135.43	3.685	0.639	87.933	7.505	0.231	0.002	0.003	0	0	0
07/20/2019	1,035.0	1,017.0	0.613	1,321.62	-135.03	3.327	0.632	88.363	7.419	0.252	0.003	0.004	0	0	0
07/21/2019	1,038.6	1,020.5	0.614	1,325.07	-132.69	3.196	0.637	88.312	7.513	0.311	0.007	0.017	0.002	0.003	0.002
07/22/2019	1,035.3	1,017.2	0.609	1,326.25	-136.84	2.996	0.591	89.189	6.983	0.233	0.003	0.005	0	0	0.001
07/23/2019	1,035.7	1,017.7	0.601	1,336.23	-140.92	2.311	0.492	90.923	6.068	0.195	0.003	0.005	0	0	0.002
07/24/2019	1,034.0	1,016.0	0.608	1,326.03	-137.62	2.993	0.564	89.467	6.700	0.258	0.005	0.010	0.001	0.001	0.001
07/25/2019	1,028.0	1,010.1	0.613	1,312.49	-137.33	3.805	0.603	88.236	7.098	0.251	0.003	0.004	0	0	0
07/26/2019	1,035.3	1,017.3	0.606	1,330.35	-138.15	2.763	0.514	89.963	6.465	0.278	0.005	0.009	0	0	0.002
07/27/2019	1,037.4	1,019.3	0.617	1,320.36	-131.88	3.610	0.597	87.568	7.890	0.322	0.005	0.008	0	0	0
07/28/2019	1,040.1	1,022.0	0.621	1,320.21	-129.44	3.718	0.629	86.907	8.389	0.343	0.005	0.008	0	0	0
07/29/2019	1,038.9	1,020.8	0.608	1,332.11	-135.85	2.778	0.522	89.418	7.011	0.256	0.004	0.008	0	0	0.001
07/30/2019	1,041.7	1,023.6	0.607	1,337.50	-135.65	2.465	0.516	89.796	6.952	0.256	0.005	0.008	0	0	0.001
07/31/2019	1,044.1	1,025.9	0.613	1,334.05	-131.93	2.750	0.602	88.665	7.666	0.300	0.006	0.010	0	0	0
08/01/2019	1,046.5	1,028.3	0.613	1,336.86	-130.97	2.656	0.586	88.611	7.823	0.309	0.005	0.010	0	0	0
08/02/2019	1,046.4	1,028.2	0.612	1,337.20	-131.33	2.604	0.598	88.679	7.827	0.281	0.004	0.007	0	0	0
08/03/2019	1,046.0	1,027.8	0.614	1,334.78	-130.66	2.750	0.625	88.346	7.973	0.293	0.005	0.008	0	0	0
08/04/2019	1,053.6	1,035.3	0.603	1,356.44	-133.15	1.591	0.420	90.436	7.329	0.220	0.002	0.002	0	0	0
08/05/2019	1,052.5	1,034.2	0.605	1,352.72	-132.53	1.819	0.440	90.032	7.460	0.246	0.002	0.002	0	0	0
08/06/2019	1,055.4	1,037.0	0.604	1,358.41	-132.29	1.528	0.407	90.425	7.377	0.259	0.002	0.002	0	0	0
08/07/2019	1,058.6	1,040.2	0.604	1,361.58	-129.67	1.433	0.396	90.454	7.321	0.344	0.012	0.025	0.005	0.005	0.006
08/08/2019	1,053.5	1,035.2	0.602	1,358.03	-133.91	1.491	0.394	90.772	7.093	0.245	0.002	0.003	0	0	0
08/09/2019	1,050.9	1,032.6	0.600	1,356.85	-135.77	1.445	0.408	91.172	6.736	0.236	0.002	0.002	0	0	0
08/10/2019	1,051.1	1,032.8	0.601	1,356.19	-135.16	1.506	0.408	91.060	6.742	0.276	0.003	0.004	0	0	0.001

Gas Quality Reports

LS335 Blackwell to Shidler

5/17/2019 - 8/17/2019

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%)
08/11/2019	1,053.6	1,035.2	0.602	1,357.78	-133.61	1.497	0.405	90.733	7.104	0.255	0.002	0.002	0	0	0
08/12/2019	1,050.8	1,032.5	0.603	1,353.48	-134.33	1.734	0.398	90.557	7.071	0.225	0.004	0.008	0.001	0.001	0.001
08/13/2019	1,070.8	1,052.2	0.613	1,367.90	-26.86	1.471	0.400	89.721	7.395	0.719	0.057	0.139	0.030	0.036	0.032
08/14/2019	1,052.2	1,033.9	0.601	1,357.00	-134.63	1.496	0.405	90.908	6.945	0.240	0.002	0.003	0	0	0.001
08/15/2019	1,053.3	1,035.0	0.602	1,358.11	-133.09	1.449	0.411	90.987	6.814	0.299	0.009	0.018	0.003	0.004	0.005

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 = 66332