



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

400 North Fourth Street
Bismarck, ND 58501
(701) 222-7900

September 13, 2019

Executive Secretary
North Dakota Public Service Commission
State Capitol Building
Bismarck, ND 58505-0480

Re: Case No. PU-19-002 (Therm Billing)
Monthly Report – July 2019

Montana-Dakota Utilities Co., a Subsidiary of MDU Resources Group, Inc., herewith submits the following information, pursuant to the Ordering paragraphs one and two of the Order issued in Case No. 11,006, dated October 20, 1987 and pursuant to the North Dakota Administrative Code 69-09-01-02, part 2.

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in August 2019.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of July 2019.
3. Attachment C is a listing which states the type of measuring device in place at each zone.
4. Attachment D is a monthly list of the heating value data, by zone, for the most recent 12-month period and an average thereof. It is being provided pursuant to a Staff request.
5. Attachment E provides a brief explanation of the thermal variances, where applicable, for the month of July 2019.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope. Should the Commission or its Staff have any comments or questions with respect to these reports, please call me.

Sincerely,

A handwritten signature in blue ink that reads 'Tamie Aberle'.

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Aug-19

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1325
MDU-308-ARNEGARD	025	1.1325
MDU-314-APPLE VALLEY	271	1.1636
MDU-318-BEACH	032	1.0600
MDU-319-BELFIELD	032	1.0678
MDU-323-BERTHOLD	262	1.1381
MDU-324-BEULAH	032	1.0678
MDU-327-BISMARCK	028	1.1381
MDU-330-BOWMAN	034	0.8972
MDU-337-BURLINGTON	262	1.1627
MDU-343-CARRINGTON	273	1.1617
MDU-344-CLEVELAND	272	1.1554
MDU-364-CAVALIER	273	1.1862
MDU-365-DAWSON	271	1.1554
MDU-368-DES LACS	262	1.1463
MDU-369-DICKINSON	031	1.0952
MDU-374-FT TOTTEN	273	1.1699
MDU-375-DEVILS LAKE	273	1.1699
MDU-379-BARLOW	273	1.1617
MDU-384-EPPING	264	1.0862
MDU-387-ELDRIDGE	272	1.1636
MDU-407-GLADSTONE	031	1.0952
MDU-411-GLEN ULLIN	031	1.1032
MDU-413-GOLVA	032	1.0444
MDU-416-GARRISON	262	1.1463
MDU-417-GRAFTON	273	1.1944
MDU-429-HEBRON	031	1.1032
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1718
MDU-459-KILLDEER	033	1.1088
MDU-463-LANGDON	273	1.1617
MDU-469-LEFOR	031	1.0952
MDU-474-LIGNITE	263	1.1035
MDU-475-LINTON	802	1.0594
MDU-478-LINCOLN	028	1.1627
MDU-488-MCKENZIE	271	1.1636
MDU-494-MEDINA	271	1.1554
MDU-498-MANDAN	028	1.1627
MDU-500-MARMARTH	034	0.9038
MDU-505-MINOT	262	1.1627
MDU-510-MOTT	031	1.0952
MDU-512-MAX	262	1.1627
MDU-522-NEW ENGLAND	031	1.0873
MDU-524-NEW SALEM	028	1.1381
MDU-532-NEW ROCKFORD	273	1.1617
MDU-539-PARK RIVER	273	1.1862
MDU-540-PALERMO	262	1.1381
MDU-558-RAY	264	1.0862
MDU-561-REGENT	031	1.0952

MDU-563-RHAME	034	0.8905
MDU-564-RICHARDTON	031	1.0873
MDU-568-ROSS	261	1.1018
MDU-572-RUTHVILLE	262	1.1627
MDU-574-SANBORN	272	1.1718
MDU-583-SENTINEL BUTTE	032	1.0600
MDU-588-SOUTH HEART	031	1.0873
MDU-717-SPIRITWOOD	272	1.1718
MDU-590-SPRINGBROOK	264	1.0862
MDU-591-STANLEY	261	1.1178
MDU-593-STEELE	271	1.1554
MDU-594-STERLING	028	1.1627
MDU-598-SHEYENNE	273	1.1699
MDU-605-SURREY	262	1.1627
MDU-610-TAPPEN	271	1.1554
MDU-611-TAYLOR	031	1.0873
MDU-616-TIOGA	260	1.0607
MDU-619-TURTLE LAKE	262	1.1463
MDU-620-TRENTON	024	1.0959
MDU-624-UNDERWOOD	262	1.1463
MDU-625-VALLEY CITY	272	1.1800
MDU-629-WALHALLA	273	1.1862
MDU-632-WATFORD CITY	610	1.1211
MDU-636-WHEELOCK	264	1.0784
MDU-637-WHITE EARTH	261	1.1098
MDU-642-WILLISTON	024	1.0959
MDU-646-WASHBURN	262	1.1545
MDU-647-WILTON	262	1.1381
MDU-664-RIVERDALE	262	1.1463
MDU-691-FAIRVIEW	241	1.1415
MDU-712-MINOT AFB	262	1.1627
MDU-718-FAIRMOUNT	600	1.1385
MDU-732-NEKOMA	273	1.1617
MDU-732-MSR SITE	273	1.1617

Source Daily Summary

July 2019

Number:	251	Pressure Base:	14.730	Contract Day:	1
Name:	SDNY BDR-MNDK JNCTN-SDNY PLT	Temperature Base:		Contract Hour:	9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7400	1188.3	1209.3	1205.3	1.348	3.702	67.277	23.758	3.448	0.150	0.284	0.018	0.015	0.000	0.000	0.000	0.000	0.000	1402.46	
2	0.7378	1185.0	1206.0	1202.1	1.349	3.699	67.596	23.531	3.384	0.143	0.267	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1400.61	
3	0.7365	1182.6	1203.5	1199.7	1.360	3.703	67.675	23.633	3.195	0.141	0.263	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1399.07	
4	0.7283	1181.2	1202.1	1199.4	0.975	3.534	68.553	23.639	2.978	0.106	0.193	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1406.80	
5	0.7395	1188.1	1209.1	1205.1	1.356	3.656	67.192	24.059	3.302	0.141	0.265	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1402.69	
6	0.7395	1187.4	1208.4	1204.3	1.342	3.721	67.535	23.270	3.716	0.134	0.253	0.016	0.013	0.000	0.000	0.000	0.000	0.000	1401.80	
7	0.7421	1191.2	1212.3	1208.0	1.328	3.749	67.622	22.568	4.286	0.143	0.272	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1403.83	
8	0.7393	1186.7	1207.7	1203.5	1.332	3.755	67.911	22.533	4.045	0.136	0.258	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1401.19	
9	0.7309	1185.6	1206.6	1202.7	0.980	3.567	69.328	21.677	3.976	0.150	0.287	0.018	0.016	0.000	0.000	0.000	0.000	0.000	1408.04	
10	0.7333	1175.9	1196.8	1192.7	1.338	3.832	68.879	21.793	3.680	0.154	0.291	0.018	0.015	0.000	0.000	0.000	0.000	0.000	1394.26	
11	0.7313	1174.5	1195.3	1191.2	1.305	3.783	69.296	21.467	3.636	0.164	0.311	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1394.39	
12	0.7329	1175.5	1196.4	1192.4	1.332	3.834	68.965	21.725	3.627	0.165	0.314	0.020	0.016	0.000	0.000	0.000	0.000	0.000	1394.07	
13	0.7330	1175.9	1196.7	1192.5	1.333	3.814	69.005	21.680	3.641	0.168	0.320	0.021	0.017	0.000	0.000	0.000	0.000	0.000	1394.46	
14	0.7314	1173.8	1194.5	1190.4	1.335	3.796	69.135	21.733	3.496	0.163	0.306	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1393.42	
15	0.7300	1170.7	1191.4	1187.3	1.341	3.839	69.394	21.443	3.486	0.160	0.302	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1391.17	
16	0.7295	1158.4	1178.9	1186.1	1.342	3.874	69.494	21.300	3.495	0.159	0.300	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1390.00	
17	0.7291	1168.4	1189.1	1185.1	1.345	3.895	69.657	21.029	3.572	0.161	0.305	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1389.21	
18	0.7290	1170.2	1190.9	1186.8	1.288	3.856	69.362	21.649	3.384	0.148	0.280	0.017	0.014	0.000	0.000	0.000	0.000	0.000	1391.57	
19	0.7363	1184.0	1204.9	1200.8	1.242	3.769	68.655	21.808	3.948	0.183	0.352	0.023	0.020	0.000	0.000	0.000	0.000	0.000	1400.89	
20	0.7315	1172.9	1193.7	1189.7	1.335	3.859	68.826	22.220	3.286	0.153	0.288	0.018	0.015	0.000	0.000	0.000	0.000	0.000	1392.33	
21	0.7309	1171.8	1192.6	1188.6	1.338	3.862	69.126	21.754	3.431	0.157	0.297	0.018	0.015	0.000	0.000	0.000	0.000	0.000	1391.62	
22	0.7310	1172.7	1193.5	1189.5	1.336	3.818	69.132	21.785	3.432	0.159	0.302	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1392.62	
23	0.7284	1172.1	1192.9	1188.6	1.268	3.713	69.597	21.503	3.434	0.153	0.295	0.019	0.017	0.000	0.000	0.000	0.000	0.000	1394.37	
24	0.7329	1175.3	1196.1	1191.8	1.337	3.839	68.965	21.726	3.625	0.163	0.310	0.020	0.016	0.000	0.000	0.000	0.000	0.000	1393.80	
25	0.7331	1175.4	1196.2	1192.1	1.338	3.853	68.815	21.953	3.542	0.160	0.304	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1393.72	
26	0.7317	1173.5	1194.2	1190.2	1.341	3.833	69.005	21.884	3.437	0.161	0.305	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1392.82	
27	0.7367	1182.6	1203.6	1199.4	1.323	3.771	68.359	22.248	3.782	0.165	0.315	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1398.88	
28	0.7306	1171.7	1192.4	1188.4	1.343	3.832	69.309	21.511	3.498	0.163	0.308	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1391.75	
29	0.7310	1172.7	1193.5	1189.5	1.339	3.821	69.077	21.872	3.400	0.157	0.298	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1392.53	
30	0.7373	1183.5	1204.5	1200.4	1.324	3.768	68.173	22.499	3.725	0.163	0.310	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1399.40	
31	0.7356	1179.6	1200.5	1196.3	1.343	3.821	68.667	21.834	3.778	0.177	0.339	0.022	0.018	0.000	0.000	0.000	0.000	0.000	1396.33	
Avg	0.7336	1178.0	1198.5	1194.8	1.308	3.780	68.696	22.164	3.570	0.155	0.293	0.019	0.016	0.000	0.000	0.000	0.000	0.000	1396.45	

Zone 211

Source Daily Summary

July 2019

Number: 571

Pressure Base: 14.730

Contract Day: 1

Name: WILLISTON BDR-CHARBN STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6961	1143.9	1164.1	1160.7	0.902	2.952	74.647	18.700	2.502	0.085	0.181	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1392.07
2	0.6962	1144.3	1164.6	1161.1	0.910	2.927	74.554	18.864	2.465	0.082	0.172	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.48
3	0.6952	1142.6	1162.8	1159.4	0.907	2.948	74.675	18.804	2.386	0.081	0.171	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.29
4	0.6945	1142.0	1162.3	1158.8	0.887	2.946	74.754	18.781	2.356	0.080	0.170	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.37
5	0.6947	1142.0	1162.2	1158.6	0.865	3.000	74.721	18.753	2.379	0.080	0.172	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.08
6	0.6952	1144.0	1164.2	1160.7	0.879	2.902	74.668	18.874	2.393	0.082	0.174	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.06
7	0.6980	1148.4	1168.8	1165.2	0.911	2.846	74.196	19.333	2.415	0.084	0.182	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1395.64
8	0.6972	1145.7	1166.0	1162.4	0.906	2.945	74.406	18.955	2.487	0.086	0.183	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.13
9	0.6959	1143.7	1163.9	1160.4	0.905	2.949	74.599	18.835	2.411	0.086	0.181	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.94
10	0.6956	1143.0	1163.2	1159.6	0.877	3.003	74.690	18.641	2.496	0.084	0.179	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.43
11	0.6971	1147.2	1167.6	1164.1	0.882	2.877	74.443	18.984	2.510	0.087	0.184	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1395.11
12	0.6931	1142.7	1162.9	1159.5	0.877	2.783	75.045	18.690	2.327	0.079	0.169	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.62
13	0.6945	1144.3	1164.5	1161.0	0.886	2.806	74.832	18.822	2.358	0.083	0.180	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1394.11
14	0.6978	1145.5	1165.8	1162.1	0.858	3.084	74.478	18.562	2.684	0.096	0.204	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.31
15	0.6992	1146.3	1166.6	1163.1	0.847	3.180	74.287	18.573	2.766	0.100	0.212	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.87
16	0.6984	1144.1	1164.4	1160.8	0.848	3.234	74.357	18.522	2.708	0.095	0.203	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.08
17	0.7007	1146.5	1166.8	1163.2	0.856	3.294	73.990	18.733	2.785	0.098	0.210	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1390.65
18	0.6993	1145.2	1165.5	1161.9	0.863	3.229	74.247	18.575	2.742	0.098	0.210	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1390.49
19	0.6971	1143.5	1163.8	1160.2	0.868	3.124	74.499	18.617	2.570	0.092	0.198	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.57
20	0.6953	1143.4	1163.6	1160.1	0.872	2.958	74.734	18.693	2.431	0.088	0.191	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.19
21	0.6936	1142.2	1162.4	1158.8	0.886	2.854	74.871	18.856	2.247	0.079	0.174	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.40
22	0.6946	1143.1	1163.3	1159.7	0.877	2.899	74.798	18.764	2.371	0.081	0.177	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.57
23	0.6976	1146.5	1166.8	1163.1	0.894	2.946	74.421	18.896	2.515	0.090	0.200	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1393.71
24	0.6979	1145.6	1165.9	1162.2	0.875	3.058	74.375	18.794	2.563	0.093	0.205	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.37
25	0.6960	1145.0	1165.3	1161.7	0.893	2.895	74.641	18.828	2.425	0.087	0.194	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1393.39
26	0.6956	1144.6	1164.9	1161.2	0.885	2.890	74.730	18.753	2.417	0.088	0.198	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1393.36
27	0.6970	1145.6	1165.8	1162.2	0.892	2.957	74.454	18.911	2.469	0.087	0.193	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1393.10
28	0.6933	1140.6	1160.8	1157.3	0.882	2.917	75.012	18.584	2.316	0.081	0.176	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1390.91
29	0.6969	1144.1	1164.3	1160.6	0.889	3.038	74.547	18.711	2.479	0.091	0.204	0.018	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1391.35
30	0.6950	1143.7	1164.0	1160.3	0.885	2.892	74.740	18.836	2.335	0.084	0.189	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1392.82
31	0.6979	1145.9	1166.2	1162.4	0.880	3.035	74.290	18.972	2.513	0.087	0.188	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1392.63
Avg	0.6963	1144.0	1164.6	1161.0	0.882	2.980	74.571	18.781	2.478	0.087	0.188	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1392.36

Zone 24

Gas Composition and Properties

Effective July 1, 2019 09:00 - January 18, 2038 21:14

Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2929		2.7036
Nitrogen, N2	3.8338		5.1030
Methane, C1	69.4647		52.9497
Ethane, C2	21.4825	5.7497	30.6925
Propane, C3	3.4710	0.9570	7.2724
iso-Butane, iC4	0.1427	0.0467	0.3941
n-Butane, nC4	0.2811	0.0887	0.7763
iso-Pentane, iC5	0.0162	0.0059	0.0555
n-Pentane, nC5	0.0134	0.0049	0.0459
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0017	0.0007	0.0070
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-11.390	
Cricodentherm	3.181	
HV, Dry @ Base P, T	1190.92	
HV, Sat @ Base P, T	1170.19	
HV, Sat @ Sample P, T	1190.92	
Relative Density	0.7288	

C6+: 100

Totals	100.0000	6.8550	100.0000
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Sample

Date: 07/01/2019 Pressure: 440.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm
 Remarks:

Analysis

Date: 07/01/2019 Instrument:
 Cylinder:
 Tech: Kevin Moos
 Remarks:

Zone 241

Gas Composition and Properties

Effective July 1, 2019

Attachment B
Page 4 of 23

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2241		2.5575
Nitrogen, N2	3.7379		4.9711
Methane, C1	70.3424		53.5730
Ethane, C2	20.0904	5.3772	28.6790
Propane, C3	3.8359	1.0576	8.0301
iso-Butane, iC4	0.2078	0.0681	0.5734
n-Butane, nC4	0.4700	0.1483	1.2969
iso-Pentane, iC5	0.0409	0.0150	0.1401
n-Pentane, nC5	0.0422	0.0153	0.1445
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0084	0.0035	0.0344
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	0.053	
Cricondentherm	10.576	
HV, Dry @ Base P, T	1195.10	
HV, Sat @ Base P, T	1174.30	
HV, Sat @ Sample P, T	1195.10	
Relative Density	0.7294	

C6+: 100

Totals	100.0000	6.6840	100.0000
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Sample		
Date: 07/01/2019	Pressure:	460.0
Type:	Temperature:	
Tech: Kevin Moos	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis	
Date: 07/01/2019	Instrument:
	Cylinder:
Tech: Kevin Moos	
Remarks:	

Zone 25

Source Daily Summary

July 2019

Number: 164

Pressure Base: 14.730

Contract Day: 1

Name: N TIOGA TRANSFER-NESSON PLT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6859	1118.1	1137.9		0.712	3.859	76.096	16.780	2.290	0.077	0.160	0.011	0.013	0.003					1370.82	
2	0.6844	1116.0	1135.8		0.712	3.845	76.259	16.740	2.210	0.071	0.144	0.009	0.010	0.000					1369.77	
3	0.6837	1114.3	1134.1		0.727	3.868	76.370	16.628	2.166	0.071	0.146	0.010	0.012	0.002					1368.30	
4	0.6815	1111.1	1130.8		0.733	3.851	76.686	16.442	2.066	0.066	0.138	0.009	0.009	0.000					1366.52	
5	0.6839	1115.1	1134.8		0.709	3.865	76.316	16.710	2.161	0.070	0.147	0.011	0.012	0.002					1369.07	
6	0.6821	1114.7	1134.4		0.688	3.753	76.533	16.733	2.077	0.065	0.132	0.009	0.009	0.000					1370.36	
7	0.6856	1121.0	1140.9		0.698	3.674	75.849	17.503	2.052	0.065	0.135	0.010	0.011	0.001					1374.72	
8	0.6843	1115.9	1135.6		0.665	3.915	76.362	16.492	2.318	0.076	0.153	0.010	0.010	0.000					1369.68	
9	0.6838	1115.6	1135.4		0.703	3.828	76.429	16.569	2.214	0.075	0.157	0.011	0.013	0.002					1369.84	
10	0.6816	1112.0	1131.7		0.671	3.897	76.764	16.232	2.195	0.071	0.147	0.010	0.011	0.000					1367.53	
11	0.6830	1116.6	1136.4		0.685	3.728	76.437	16.796	2.119	0.069	0.142	0.010	0.012	0.002					1371.79	
12	0.6729	1104.1	1123.7		0.651	3.586	78.036	15.780	1.765	0.054	0.112	0.008	0.009	0.000					1366.68	
13	0.6771	1110.4	1130.0		0.670	3.572	77.377	16.284	1.893	0.059	0.122	0.010	0.012	0.002					1370.13	
14	0.6859	1112.6	1132.3		0.593	4.372	76.488	15.445	2.783	0.099	0.196	0.011	0.012	0.000					1364.08	
15	0.6868	1112.5	1132.2		0.588	4.468	76.330	15.467	2.829	0.099	0.195	0.011	0.012	0.000					1363.07	
16	0.6857	1109.2	1128.9		0.595	4.554	76.425	15.386	2.746	0.092	0.181	0.010	0.011	0.000					1360.15	
17	0.6902	1115.7	1135.4		0.607	4.575	75.643	16.002	2.865	0.097	0.189	0.011	0.011	0.000					1363.50	
18	0.6854	1110.6	1130.2		0.591	4.459	76.490	15.419	2.743	0.094	0.184	0.011	0.011	0.000					1362.00	
19	0.6821	1107.0	1126.6		0.578	4.381	76.936	15.266	2.567	0.085	0.166	0.010	0.010	0.000					1360.98	
20	0.6725	1099.8	1119.3		0.562	3.949	78.238	15.050	1.995	0.063	0.126	0.008	0.009	0.000					1361.70	
21	0.6701	1099.5	1119.0		0.586	3.701	78.517	15.270	1.744	0.053	0.109	0.009	0.010	0.001					1363.81	
22	0.6742	1105.4	1125.0		0.632	3.662	77.810	15.860	1.857	0.055	0.109	0.007	0.008	0.000					1366.90	
23	0.6826	1116.9	1136.6		0.689	3.657	76.685	16.504	2.210	0.074	0.154	0.012	0.014	0.006					1372.74	
24	0.6866	1121.5	1141.4		0.698	3.743	76.111	16.772	2.378	0.084	0.181	0.014	0.017	0.002					1374.23	
25	0.6805	1114.1	1133.8		0.683	3.646	77.092	16.133	2.180	0.076	0.159	0.013	0.015	0.004					1371.22	
26	0.6790	1112.5	1132.2		0.676	3.606	77.467	15.808	2.136	0.081	0.183	0.017	0.021	0.006					1370.82	
27	0.6779	1109.7	1129.4		0.672	3.684	77.411	15.935	2.073	0.067	0.137	0.009	0.011	0.001					1368.50	
28	0.6786	1109.8	1129.4		0.700	3.704	77.303	15.997	2.063	0.067	0.140	0.011	0.013	0.002					1367.85	
29	0.6836	1115.1	1134.9		0.702	3.843	76.653	16.174	2.337	0.082	0.176	0.014	0.016	0.003					1369.40	
30	0.6787	1111.0	1130.7		0.670	3.685	77.149	16.286	1.992	0.063	0.130	0.010	0.012	0.002					1369.26	
31	0.6856	1118.7	1138.5		0.666	3.861	76.194	16.625	2.403	0.077	0.154	0.010	0.011	0.000					1371.90	
Avg	0.6818	1112.0	1132.2		0.662	3.896	76.789	16.164	2.240	0.074	0.152	0.010	0.012	0.001					1367.98	

Zone 260

Source Daily Summary

July 2019

Number: 601

Pressure Base: 14.730

Contract Day: 1

Name: TIOGA STN-ROBINSON LAKE PLNT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7158	1159.6	1180.2	1176.6	0.929	3.809	71.032	20.938	2.958	0.098	0.205	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.65
2	0.7138	1156.9	1177.4	1174.1	0.925	3.797	71.229	20.903	2.847	0.091	0.185	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.35
3	0.7128	1154.5	1174.9	1171.6	0.943	3.820	71.402	20.764	2.769	0.089	0.184	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1388.39
4	0.7124	1153.6	1174.0	1170.8	0.973	3.791	71.384	20.881	2.686	0.085	0.177	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1387.80
5	0.7135	1156.4	1176.9	1173.5	0.921	3.806	71.246	20.939	2.784	0.089	0.187	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1390.00
6	0.7124	1157.3	1177.8	1174.4	0.903	3.673	71.323	21.130	2.696	0.083	0.170	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1392.23
7	0.7122	1157.9	1178.5	1174.8	0.922	3.593	71.379	21.155	2.666	0.084	0.174	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.09
8	0.7148	1158.0	1178.5	1175.0	0.875	3.898	71.158	20.745	3.006	0.098	0.195	0.012	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1390.74
9	0.7137	1157.8	1178.3	1174.9	0.917	3.746	71.343	20.808	2.856	0.097	0.202	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.43
10	0.7108	1153.0	1173.4	1170.0	0.875	3.834	71.787	20.363	2.837	0.091	0.186	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1388.48
11	0.7129	1158.6	1179.1	1175.5	0.919	3.623	71.416	20.930	2.808	0.090	0.185	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.15
12	0.7052	1150.6	1171.0	1167.6	0.886	3.437	72.441	20.593	2.399	0.073	0.150	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1391.15
13	0.7094	1156.6	1177.1	1173.4	0.911	3.423	71.831	21.022	2.546	0.079	0.161	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.26
14	0.7221	1160.8	1181.4	1177.7	0.809	4.506	70.482	20.021	3.754	0.133	0.263	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1387.04
15	0.7215	1158.5	1179.1	1175.4	0.791	4.612	70.560	19.861	3.758	0.131	0.257	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1384.94
16	0.7197	1153.7	1174.1	1170.6	0.799	4.738	70.724	19.705	3.647	0.122	0.239	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1380.76
17	0.7221	1156.2	1176.7	1173.1	0.809	4.795	70.398	19.820	3.776	0.127	0.247	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1381.45
18	0.7212	1157.7	1178.2	1174.6	0.801	4.622	70.520	19.968	3.690	0.125	0.245	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1384.22
19	0.7178	1153.7	1174.2	1170.7	0.796	4.560	70.939	19.847	3.493	0.115	0.224	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1382.65
20	0.7093	1150.6	1171.0	1167.6	0.803	3.937	71.946	20.222	2.807	0.087	0.174	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1387.27
21	0.7044	1148.0	1168.3	1165.0	0.831	3.603	72.590	20.283	2.443	0.074	0.150	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1388.76
22	0.7076	1153.0	1173.5	1170.1	0.875	3.530	72.048	20.773	2.534	0.075	0.146	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1391.75
23	0.7171	1156.4	1176.9	1173.3	0.903	4.165	70.822	20.670	3.118	0.099	0.197	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1386.64
24	0.7353	1170.6	1191.3	1187.7	0.918	4.980	68.550	20.713	4.363	0.148	0.295	0.016	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1386.14
25	0.7384	1172.1	1192.9	1189.4	0.918	5.179	68.232	20.542	4.594	0.164	0.332	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1385.01
26	0.7181	1162.2	1182.8	1179.2	0.934	3.861	70.859	20.801	3.174	0.108	0.226	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1392.48
27	0.7243	1168.7	1189.4	1185.5	0.923	4.054	70.282	20.614	3.646	0.136	0.296	0.022	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1394.39
28	0.7278	1166.7	1187.4	1183.7	0.931	4.491	69.610	20.695	3.827	0.133	0.273	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1388.62
29	0.7147	1159.3	1179.9	1176.4	0.916	3.733	71.398	20.534	3.089	0.102	0.202	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.51
30	0.7459	1171.6	1192.4	1188.9	0.919	5.911	67.229	20.190	5.188	0.177	0.349	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.38
31	0.7284	1165.9	1186.5	1182.8	0.919	4.625	69.498	20.601	3.906	0.137	0.279	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1387.08
Avg	0.7179	1159.0	1179.1	1175.6	0.887	4.134	70.828	20.549	3.247	0.108	0.218	0.014	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1388.44

Zone 261

Source Daily Summary

July 2019

Number: 091

Pressure Base: 14.730

Contract Day: 1

Name: MNT BRD-PLRMO BRD-BIS STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7581	1188.5	1209.6	1205.5	0.934	6.002	65.928	20.425	5.934	0.235	0.492	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1385.86
2	0.7541	1182.5	1203.4	1199.5	0.928	6.000	66.431	20.199	5.710	0.221	0.463	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1382.54
3	0.7499	1175.2	1196.0	1192.3	0.930	6.052	66.904	19.984	5.455	0.206	0.426	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1377.82
4	0.7487	1173.2	1194.0	1190.3	0.928	6.065	67.001	19.977	5.389	0.198	0.403	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.58
5	0.7454	1167.2	1187.9	1184.1	0.927	6.120	67.349	19.841	5.171	0.185	0.373	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1372.64
6	0.7441	1164.9	1185.5	1181.7	0.927	6.140	67.502	19.755	5.110	0.179	0.357	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.08
7	0.7459	1168.1	1188.7	1184.7	0.929	6.112	67.285	19.868	5.220	0.185	0.369	0.015	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1373.18
8	0.7465	1169.4	1190.1	1186.1	0.931	6.084	67.200	19.941	5.258	0.186	0.370	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.22
9	0.7493	1174.7	1195.5	1191.8	0.929	6.029	66.870	20.136	5.416	0.195	0.390	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.79
10	0.7535	1180.3	1201.3	1197.4	0.929	6.072	66.426	20.159	5.758	0.206	0.414	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1380.63
11	0.7550	1183.5	1204.5	1200.5	0.926	6.027	66.268	20.236	5.864	0.212	0.426	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1382.92
12	0.7544	1181.3	1202.2	1198.3	0.918	6.120	66.267	20.245	5.784	0.209	0.418	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.86
13	0.7550	1182.8	1203.8	1199.7	0.917	6.080	66.182	20.363	5.771	0.215	0.430	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1382.14
14	0.7539	1182.0	1202.9	1198.6	0.926	6.019	66.402	20.240	5.703	0.217	0.447	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.12
15	0.7534	1181.1	1202.0	1197.7	0.927	6.019	66.444	20.249	5.669	0.214	0.435	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.61
16	0.7566	1186.8	1207.8	1203.5	0.922	5.981	66.032	20.457	5.914	0.217	0.436	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1385.28
17	0.7553	1184.4	1205.4	1201.1	0.924	5.998	66.223	20.309	5.866	0.211	0.428	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.76
18	0.7534	1181.3	1202.2	1197.9	0.927	6.018	66.399	20.304	5.674	0.210	0.426	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.70
19	0.7480	1171.6	1192.4	1188.3	0.932	6.087	67.032	20.003	5.337	0.191	0.383	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.45
20	0.7488	1173.8	1194.6	1190.7	0.937	6.020	66.865	20.226	5.361	0.189	0.370	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.29
21	0.7468	1170.9	1191.6	1187.9	0.938	6.012	67.124	20.093	5.271	0.181	0.353	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1375.67
22	0.7465	1169.9	1190.6	1186.8	0.934	6.056	67.138	20.061	5.251	0.181	0.351	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1374.73
23	0.7507	1178.4	1199.3	1195.3	0.932	5.931	66.671	20.344	5.507	0.197	0.385	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1380.88
24	0.7488	1173.9	1194.7	1190.8	0.932	6.022	66.947	20.087	5.391	0.196	0.390	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.40
25	0.7460	1168.4	1189.0	1185.2	0.932	6.099	67.251	19.931	5.199	0.187	0.369	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1373.45
26	0.7488	1173.9	1194.6	1190.8	0.934	6.021	66.925	20.137	5.363	0.197	0.390	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.34
27	0.7517	1179.1	1200.0	1196.0	0.929	5.982	66.577	20.308	5.554	0.205	0.408	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1380.82
28	0.7517	1178.7	1199.6	1195.7	0.928	6.014	66.532	20.343	5.548	0.200	0.398	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1380.27
29	0.7530	1180.9	1201.8	1198.0	0.928	5.998	66.364	20.445	5.628	0.200	0.400	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1381.69
30	0.7554	1185.2	1206.2	1202.3	0.925	5.969	66.096	20.554	5.783	0.211	0.422	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1384.46
31	0.7579	1190.0	1211.1	1207.0	0.921	5.912	65.874	20.614	5.957	0.223	0.454	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.82
Avg	0.7512	1177.0	1198.3	1194.4	0.928	6.034	66.662	20.188	5.542	0.202	0.406	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1379.36

Zone 262

Gas Composition and Properties

Effective July 1, 2019

Attachment B
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Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.0866		0.1938
Nitrogen, N2	2.8008		3.9889
Methane, C1	76.3305		62.2552
Ethane, C2	18.3340	4.9054	28.0274
Propane, C3	2.3860	0.6576	5.3490
iso-Butane, iC4	0.0379	0.0124	0.1120
n-Butane, nC4	0.0227	0.0072	0.0671
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0015	0.0006	0.0066
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.5830	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-29.216	
Cricondentherm	-21.597	
HV, Dry @ Base P, T	1163.66	
HV, Sat @ Base P, T	1143.41	
HV, Sat @ Sample P, T	1163.66	
Relative Density	0.6809	

C6+: 100

Sample			
Date: 07/01/2019	Pressure:	550.0	
Type:	Temperature:		
Tech: Kevin Moos	H2O:	lbs/mm	
	H2S:	ppm	
Remarks:			

Analysis			
Date: 07/01/2019	Instrument:		
	Cylinder:		
Tech: Kevin Moos			
Remarks:			

Zone 263

Gas Composition and Properties

Effective July 1, 2019

Attachment B
Page 9 of 23

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7999		1.7707
Nitrogen, N2	2.9955		4.2208
Methane, C1	75.7620		61.1344
Ethane, C2	17.9132	4.7928	27.0928
Propane, C3	2.3058	0.6355	5.1142
iso-Butane, iC4	0.0662	0.0217	0.1935
n-Butane, nC4	0.1398	0.0441	0.4087
iso-Pentane, iC5	0.0078	0.0029	0.0283
n-Pentane, nC5	0.0084	0.0030	0.0305
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0014	0.0006	0.0061
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-23.042	
Cricondentherm	-17.555	
HV, Dry @ Base P, T	1153.79	
HV, Sat @ Base P, T	1133.71	
HV, Sat @ Sample P, T	1153.79	
Relative Density	0.6882	

C6+: 100

Totals	100.0000	5.5020	100.0000
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Sample			
Date: 07/01/2019	Pressure:	570.0	
Type:	Temperature:		
Tech: Kevin Moos	H2O:	lbs/mm	
	H2S:	ppm	
Remarks:			

Analysis			
Date: 07/01/2019	Instrument:		
	Cylinder:		
Tech: Kevin Moos			
Remarks:			

*** End of Report ***

Zone 264

Source Daily Summary

July 2019

Number: 603

Pressure Base: 14.730

Contract Day: 1

Name: TIOGA STN-COUNTY LINE PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7083	1156.2	1176.7	1173.3	0.947	3.286	71.836	21.377	2.323	0.069	0.140	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.86
2	0.7084	1156.3	1176.8	1173.4	0.939	3.303	71.843	21.330	2.342	0.071	0.147	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.86
3	0.7083	1156.1	1176.6	1173.2	0.939	3.306	71.803	21.402	2.322	0.069	0.139	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.76
4	0.7081	1155.6	1176.1	1172.7	0.945	3.307	71.923	21.230	2.348	0.072	0.149	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.34
5	0.7078	1154.0	1174.5	1171.2	0.948	3.370	71.918	21.207	2.322	0.070	0.144	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1392.78
6	0.7091	1155.2	1175.7	1172.3	0.998	3.352	71.718	21.380	2.300	0.072	0.155	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.81
7	0.7083	1156.5	1176.9	1173.6	0.912	3.327	71.810	21.362	2.355	0.070	0.143	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.19
8	0.7094	1157.9	1178.4	1175.0	0.938	3.297	71.630	21.556	2.339	0.071	0.147	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1395.90
9	0.7080	1156.6	1177.1	1173.7	0.888	3.325	71.920	21.213	2.412	0.076	0.147	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1395.65
10	0.7066	1154.1	1174.5	1171.1	0.906	3.320	72.183	21.004	2.342	0.073	0.148	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.93
11	0.7078	1154.6	1175.0	1171.7	0.929	3.368	71.933	21.187	2.340	0.072	0.149	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.42
12	0.7083	1155.9	1176.4	1173.0	0.920	3.344	71.900	21.197	2.393	0.072	0.149	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1394.52
13	0.7088	1157.7	1178.2	1174.9	0.903	3.315	71.804	21.276	2.463	0.073	0.145	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.16
14	0.7092	1157.3	1177.8	1174.3	0.924	3.344	71.740	21.319	2.425	0.073	0.150	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1395.24
15	0.7071	1154.3	1174.8	1171.4	0.850	3.437	72.155	20.811	2.495	0.077	0.153	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.79
16	0.7020	1149.0	1169.3	1165.9	0.705	3.499	73.159	19.807	2.559	0.088	0.163	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1392.38
17	0.6999	1146.4	1166.7	1163.3	0.702	3.467	73.260	20.027	2.307	0.074	0.143	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1391.33
18	0.6993	1144.4	1164.7	1161.3	0.702	3.532	73.388	19.820	2.319	0.074	0.145	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1389.52
19	0.7001	1145.5	1165.8	1162.4	0.699	3.547	73.297	19.826	2.382	0.077	0.150	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.01
20	0.7010	1146.9	1167.2	1163.8	0.712	3.526	73.092	20.075	2.352	0.076	0.147	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1390.83
21	0.6990	1143.8	1164.0	1160.7	0.704	3.544	73.349	19.933	2.238	0.071	0.141	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1389.01
22	0.7043	1150.5	1170.8	1167.4	0.827	3.439	72.536	20.624	2.337	0.070	0.143	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1391.92
23	0.7032	1149.0	1169.3	1166.0	0.833	3.423	72.687	20.511	2.330	0.067	0.130	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1391.20
24	0.7083	1156.4	1176.9	1173.5	0.909	3.336	71.985	21.032	2.480	0.076	0.156	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1395.06
25	0.7115	1161.8	1182.4	1178.9	0.915	3.299	71.639	21.147	2.710	0.085	0.177	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.40
26	0.7126	1162.5	1183.1	1179.5	0.943	3.315	71.672	20.935	2.784	0.097	0.212	0.018	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1398.06
27	0.7122	1162.4	1182.9	1179.3	0.916	3.320	71.848	20.696	2.840	0.104	0.230	0.019	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1398.35
28	0.7097	1157.7	1178.2	1174.6	0.931	3.349	72.080	20.658	2.649	0.092	0.201	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1395.18
29	0.7086	1156.2	1176.6	1173.2	0.922	3.360	72.134	20.654	2.653	0.084	0.169	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1394.46
30	0.7060	1151.9	1172.3	1168.8	0.933	3.354	72.572	20.356	2.504	0.080	0.169	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1391.83
31	0.7079	1155.4	1175.8	1172.3	0.922	3.336	72.387	20.419	2.606	0.091	0.202	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1394.18
Avg	0.7067	1154.0	1174.6	1171.2	0.876	3.376	72.232	20.818	2.438	0.077	0.158	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.87

Zone 265

Source Daily Summary

July 2019

Number: 043

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-CLEVELAND STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7469	1171.5	1192.3	1188.3	0.916	6.018	67.275	19.837	5.327	0.196	0.394	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.23
2	0.7462	1170.5	1191.2	1187.3	0.911	6.018	67.346	19.829	5.289	0.190	0.381	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.71
3	0.7424	1163.6	1184.3	1180.4	0.913	6.082	67.743	19.661	5.047	0.177	0.347	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1371.16
4	0.7453	1168.9	1189.6	1185.7	0.914	6.035	67.398	19.854	5.207	0.186	0.371	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.59
5	0.7468	1171.8	1192.5	1188.6	0.916	5.992	67.230	19.959	5.293	0.191	0.383	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.66
6	0.7471	1171.8	1192.6	1188.7	0.914	6.019	67.226	19.891	5.330	0.193	0.388	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.42
7	0.7476	1172.8	1193.5	1189.6	0.915	6.003	67.203	19.863	5.395	0.195	0.389	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1377.11
8	0.7573	1189.2	1210.3	1206.2	0.911	5.912	66.146	20.263	6.016	0.229	0.469	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1387.40
9	0.7534	1181.0	1201.9	1198.0	0.902	6.064	66.449	20.179	5.735	0.209	0.418	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.40
10	0.7528	1182.3	1203.2	1199.2	0.912	5.919	66.556	20.268	5.651	0.216	0.433	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.43
11	0.7503	1177.0	1197.9	1193.9	0.911	6.008	66.818	20.104	5.505	0.205	0.408	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.54
12	0.7517	1179.4	1200.3	1196.4	0.911	5.986	66.692	20.118	5.625	0.207	0.417	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1381.16
13	0.7532	1182.9	1203.8	1199.8	0.910	5.917	66.490	20.335	5.650	0.217	0.436	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.82
14	0.7528	1182.7	1203.7	1199.6	0.910	5.887	66.609	20.212	5.685	0.216	0.434	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1384.03
15	0.7504	1177.7	1198.6	1194.5	0.910	5.977	66.805	20.131	5.531	0.204	0.402	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.29
16	0.7398	1164.1	1184.7	1180.9	0.899	5.823	68.206	19.570	4.957	0.174	0.339	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1374.20
17	0.7271	1152.2	1172.6	1168.8	0.912	5.340	70.297	18.472	4.490	0.157	0.303	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1371.93
18	0.7264	1153.0	1173.4	1169.6	0.911	5.230	70.421	18.487	4.466	0.156	0.301	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.52
19	0.7341	1160.3	1180.8	1177.0	0.916	5.500	69.198	19.086	4.790	0.165	0.316	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.92
20	0.7459	1171.9	1192.7	1188.8	0.916	5.899	67.352	19.988	5.252	0.188	0.369	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.64
21	0.7461	1170.4	1191.1	1187.2	0.914	6.015	67.292	19.946	5.230	0.190	0.376	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.64
22	0.7486	1175.2	1196.0	1192.0	0.920	5.948	67.044	20.066	5.370	0.203	0.408	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.93
23	0.7504	1178.5	1199.4	1195.4	0.915	5.918	66.822	20.186	5.500	0.204	0.411	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.24
24	0.7534	1183.4	1204.3	1200.3	0.911	5.911	66.443	20.364	5.691	0.211	0.424	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1384.13
25	0.7535	1183.4	1204.4	1200.3	0.913	5.910	66.415	20.402	5.690	0.208	0.417	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1384.13
26	0.7529	1182.2	1203.1	1199.1	0.913	5.928	66.475	20.383	5.635	0.207	0.415	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.24
27	0.7504	1177.2	1198.1	1194.0	0.913	5.999	66.753	20.206	5.497	0.197	0.393	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.70
28	0.7564	1188.4	1209.5	1205.2	0.910	5.879	66.127	20.486	5.877	0.221	0.449	0.025	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1387.33
29	0.7506	1177.6	1198.5	1194.3	0.911	6.001	66.708	20.243	5.508	0.196	0.392	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.98
30	0.7493	1175.1	1195.9	1191.8	0.912	6.029	66.857	20.158	5.445	0.188	0.373	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.23
31	0.7541	1183.9	1204.8	1200.8	0.911	5.946	66.308	20.444	5.719	0.209	0.418	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1384.06
Avg	0.7478	1175.0	1195.6	1191.7	0.912	5.907	67.184	19.967	5.400	0.197	0.393	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.28

Zone 271

Source Daily Summary

July 2019

Number: 063

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STN-MAPLETON

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7499	1176.5	1197.3	1193.4	0.910	6.236	66.435	20.169	5.609	0.203	0.398	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.06
2	0.7469	1170.8	1191.5	1187.7	0.929	6.040	67.235	19.876	5.304	0.193	0.384	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.46
3	0.7467	1171.1	1191.9	1187.8	0.919	6.017	67.241	19.912	5.307	0.189	0.376	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.04
4	0.7424	1162.9	1183.5	1179.0	0.921	6.113	67.709	19.679	5.034	0.174	0.338	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1370.34
5	0.7455	1168.5	1189.2	1184.7	0.923	6.060	67.352	19.861	5.217	0.185	0.365	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.07
6	0.7465	1170.5	1191.2	1186.6	0.925	6.027	67.253	19.916	5.280	0.189	0.373	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.49
7	0.7470	1170.8	1191.6	1186.8	0.924	6.054	67.184	19.932	5.299	0.190	0.377	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1375.43
8	0.7483	1173.4	1194.2	1189.5	0.923	6.024	67.045	19.983	5.409	0.194	0.384	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.21
9	0.7584	1190.3	1211.3	1206.6	0.919	5.940	65.930	20.416	6.051	0.228	0.463	0.027	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1387.68
10	0.7533	1180.3	1201.2	1196.5	0.911	6.089	66.425	20.186	5.730	0.206	0.409	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.68
11	0.7535	1182.8	1203.7	1199.0	0.920	5.937	66.458	20.295	5.695	0.216	0.431	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.48
12	0.7507	1176.1	1197.0	1191.9	0.916	6.091	66.748	20.102	5.493	0.204	0.403	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.98
13	0.7521	1179.3	1200.2	1195.5	0.923	6.015	66.586	20.181	5.638	0.205	0.407	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.72
14	0.7533	1182.4	1203.3	1198.6	0.919	5.945	66.418	20.395	5.637	0.214	0.426	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.22
15	0.7533	1183.2	1204.1	1199.3	0.919	5.903	66.469	20.328	5.693	0.215	0.427	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1384.09
16	0.7507	1177.7	1198.6	1193.9	0.922	5.987	66.732	20.185	5.535	0.202	0.396	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.08
17	0.7408	1164.9	1185.5	1180.8	0.909	5.860	68.033	19.647	5.008	0.174	0.337	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1374.20
18	0.7257	1150.1	1170.5	1165.6	0.920	5.328	70.458	18.415	4.410	0.152	0.289	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1370.77
19	0.7258	1151.9	1172.3	1167.5	0.922	5.220	70.487	18.475	4.424	0.153	0.292	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1372.91
20	0.7337	1159.5	1180.0	1175.2	0.923	5.497	69.244	19.064	4.768	0.163	0.310	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1374.43
21	0.7459	1171.2	1191.9	1187.1	0.925	5.931	67.319	19.998	5.244	0.186	0.361	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.84
22	0.7466	1170.5	1191.3	1186.4	0.923	6.038	67.204	19.985	5.251	0.190	0.372	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.45
23	0.7487	1174.6	1195.4	1191.5	0.929	5.971	67.005	20.087	5.367	0.201	0.399	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.34
24	0.7503	1177.7	1198.5	1194.6	0.923	5.948	66.791	20.212	5.480	0.201	0.401	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.39
25	0.7537	1183.2	1204.1	1200.1	0.920	5.936	66.364	20.419	5.691	0.209	0.416	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.70
26	0.7534	1182.6	1203.5	1199.6	0.925	5.937	66.357	20.472	5.653	0.205	0.406	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1383.28
27	0.7542	1184.1	1205.1	1201.8	0.921	5.926	66.272	20.512	5.694	0.210	0.418	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1384.29
28	0.7498	1175.5	1196.3	1193.1	0.921	6.038	66.764	20.234	5.429	0.193	0.380	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.26
29	0.7611	1192.1	1213.2	1207.7	0.913	6.093	65.440	20.701	6.092	0.231	0.472	0.028	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1387.27
30	0.7505	1176.9	1197.7	1194.5	0.919	6.026	66.685	20.267	5.483	0.194	0.384	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.20
31	0.7486	1173.2	1193.9	1190.1	0.920	6.069	66.892	20.156	5.377	0.185	0.362	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.66
Avg	0.7480	1174.0	1195.1	1190.7	0.920	5.945	67.114	20.002	5.397	0.195	0.386	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.55

Zone 272

Source Daily Summary

July 2019

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STN-GRAFTON BDR

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7487	1174.3	1195.1	1191.7	0.922	6.009	66.992	20.022	5.431	0.196	0.389	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.94
2	0.7445	1166.3	1187.0	1183.6	0.928	6.090	67.496	19.746	5.159	0.184	0.362	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1372.44
3	0.7461	1169.8	1190.5	1187.1	0.920	6.040	67.305	19.868	5.272	0.187	0.371	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.06
4	0.7426	1163.2	1183.8	1180.0	0.922	6.110	67.695	19.680	5.043	0.176	0.342	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1370.55
5	0.7456	1168.5	1189.2	1185.2	0.924	6.062	67.350	19.857	5.219	0.185	0.367	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1374.06
6	0.7465	1170.7	1191.4	1187.4	0.925	6.021	67.245	19.929	5.282	0.188	0.373	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.65
7	0.7468	1170.5	1191.2	1187.6	0.925	6.057	67.219	19.900	5.295	0.190	0.376	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.17
8	0.7472	1171.2	1192.0	1188.5	0.924	6.043	67.171	19.927	5.335	0.189	0.373	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.78
9	0.7570	1187.8	1208.9	1205.0	0.921	5.955	66.096	20.335	5.962	0.224	0.454	0.026	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1386.12
10	0.7537	1180.8	1201.7	1197.8	0.911	6.093	66.373	20.215	5.743	0.208	0.412	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1380.92
11	0.7534	1182.6	1203.6	1199.6	0.921	5.942	66.462	20.289	5.692	0.216	0.431	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.31
12	0.7496	1174.3	1195.1	1190.7	0.914	6.106	66.853	20.068	5.425	0.201	0.393	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1376.83
13	0.7523	1179.7	1200.6	1196.4	0.921	6.013	66.564	20.186	5.653	0.206	0.411	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.00
14	0.7528	1181.6	1202.5	1198.6	0.919	5.953	66.465	20.368	5.614	0.212	0.423	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.70
15	0.7532	1182.9	1203.8	1199.7	0.920	5.904	66.496	20.306	5.685	0.215	0.428	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.89
16	0.7510	1178.2	1199.1	1194.8	0.919	5.985	66.705	20.199	5.549	0.203	0.399	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1380.42
17	0.7409	1164.9	1185.5	1181.5	0.912	5.864	68.022	19.645	5.012	0.174	0.337	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1374.11
18	0.7247	1148.8	1169.1	1165.9	0.920	5.316	70.600	18.335	4.366	0.149	0.285	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1370.14
19	0.7243	1149.8	1170.2	1166.4	0.919	5.214	70.694	18.356	4.353	0.150	0.285	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1371.77
20	0.7324	1158.1	1178.6	1174.2	0.925	5.463	69.441	18.960	4.713	0.161	0.306	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1373.93
21	0.7457	1170.7	1191.4	1187.1	0.925	5.936	67.353	19.972	5.231	0.185	0.360	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.50
22	0.7464	1170.1	1190.8	1186.7	0.923	6.048	67.226	19.967	5.239	0.189	0.371	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.07
23	0.7484	1174.1	1194.9	1191.4	0.929	5.977	67.032	20.075	5.350	0.200	0.396	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.98
24	0.7490	1175.7	1196.6	1193.1	0.929	5.933	66.960	20.148	5.393	0.199	0.395	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1379.35
25	0.7530	1181.9	1202.8	1199.4	0.923	5.948	66.441	20.376	5.650	0.206	0.410	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.79
26	0.7524	1180.9	1201.8	1198.3	0.923	5.953	66.477	20.403	5.599	0.202	0.400	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.16
27	0.7513	1178.5	1199.4	1196.2	0.926	5.982	66.603	20.337	5.521	0.198	0.390	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.48
28	0.7505	1176.5	1197.3	1194.2	0.922	6.037	66.694	20.254	5.463	0.197	0.390	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1378.85
29	0.7586	1187.8	1208.9	1203.5	0.918	6.111	65.785	20.540	5.869	0.229	0.482	0.032	0.035	0.000	0.000	0.000	0.000	0.000	0.000	1384.52
30	0.7493	1174.6	1195.4	1192.2	0.920	6.044	66.850	20.175	5.392	0.193	0.384	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1377.72
31	0.7493	1174.5	1195.3	1191.9	0.920	6.059	66.805	20.197	5.425	0.187	0.367	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.54
Avg	0.7473	1173.0	1194.0	1190.2	0.922	5.944	67.209	19.956	5.353	0.194	0.383	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1377.90

Zone 273

Source Daily Summary

July 2019

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-GLEN ULLIN STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7463	1170.4	1191.2	1187.5	0.917	6.024	67.347	19.805	5.288	0.194	0.389	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.55
2	0.7493	1176.5	1197.3	1193.5	0.913	5.942	67.016	19.996	5.476	0.204	0.414	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1379.88
3	0.7429	1164.5	1185.2	1181.6	0.913	6.068	67.688	19.705	5.067	0.178	0.350	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1371.81
4	0.7458	1169.8	1190.5	1186.9	0.915	6.023	67.347	19.882	5.233	0.188	0.376	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1375.23
5	0.7464	1171.0	1191.7	1188.1	0.916	5.999	67.276	19.941	5.264	0.189	0.378	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1376.15
6	0.7477	1172.8	1193.6	1189.8	0.914	6.011	67.162	19.922	5.362	0.196	0.393	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.08
7	0.7467	1171.2	1191.9	1188.1	0.914	6.015	67.296	19.836	5.331	0.191	0.380	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1376.13
8	0.7531	1182.6	1203.6	1199.8	0.913	5.922	66.581	20.160	5.726	0.216	0.435	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.56
9	0.7536	1181.5	1202.4	1198.6	0.903	6.060	66.421	20.187	5.755	0.210	0.419	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1381.71
10	0.7526	1181.9	1202.9	1199.1	0.912	5.924	66.581	20.248	5.642	0.215	0.432	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.18
11	0.7496	1175.9	1196.7	1192.8	0.912	6.012	66.898	20.070	5.462	0.203	0.403	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1378.86
12	0.7522	1180.3	1201.2	1197.4	0.910	5.986	66.632	20.136	5.661	0.209	0.421	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.65
13	0.7529	1182.4	1203.3	1199.4	0.910	5.925	66.522	20.312	5.633	0.216	0.435	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1383.44
14	0.7526	1182.6	1203.5	1199.6	0.911	5.887	66.623	20.207	5.677	0.216	0.433	0.023	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.93
15	0.7536	1184.0	1204.9	1201.0	0.909	5.890	66.481	20.307	5.714	0.217	0.436	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1384.73
16	0.7089	1144.3	1164.5	1160.9	0.791	4.299	72.973	17.988	3.534	0.129	0.258	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1380.54
17	0.6499	1084.7	1103.9	1100.4	0.882	2.251	82.794	12.497	1.424	0.050	0.090	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1366.43
18	0.6494	1082.2	1101.4	1098.0	0.869	2.378	82.787	12.421	1.414	0.043	0.079	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1363.93
19	0.6345	1069.7	1088.6	1085.2	0.858	1.762	85.293	11.129	0.870	0.032	0.047	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1363.40
20	0.6828	1115.5	1135.2	1131.7	0.869	3.487	77.583	14.933	2.809	0.104	0.193	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1371.20
21	0.7462	1170.4	1191.2	1187.5	0.914	6.018	67.282	19.948	5.235	0.190	0.376	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1375.66
22	0.7481	1174.2	1195.0	1191.3	0.921	5.955	67.109	20.028	5.341	0.201	0.404	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1378.33
23	0.7502	1178.2	1199.0	1195.2	0.915	5.918	66.855	20.169	5.486	0.204	0.410	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1381.04
24	0.7533	1183.1	1204.1	1200.2	0.911	5.916	66.458	20.351	5.685	0.210	0.422	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.94
25	0.7532	1182.9	1203.8	1199.9	0.913	5.914	66.455	20.378	5.672	0.207	0.415	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.78
26	0.7522	1181.1	1202.0	1198.1	0.913	5.935	66.551	20.341	5.603	0.205	0.409	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1382.55
27	0.7504	1177.2	1198.0	1194.1	0.914	6.004	66.759	20.194	5.493	0.199	0.396	0.021	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1379.62
28	0.7559	1187.6	1208.6	1204.7	0.910	5.883	66.179	20.464	5.854	0.218	0.441	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1386.81
29	0.7509	1178.1	1198.9	1195.2	0.911	5.996	66.685	20.255	5.518	0.197	0.395	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1380.26
30	0.7489	1174.4	1195.2	1191.4	0.912	6.034	66.908	20.126	5.424	0.187	0.371	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1377.80
31	0.7532	1182.1	1203.0	1199.1	0.912	5.967	66.407	20.389	5.667	0.205	0.408	0.022	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.86
Avg	0.7366	1165.0	1185.6	1181.8	0.903	5.465	68.998	19.107	4.946	0.181	0.362	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.42

Zone 28

Source Daily Summary

July 2019

Number: 271

Pressure Base: 14.730

Contract Day: 1

Name: DCKSN BRD-BLFD TSF-G.U. STN

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6866	1153.6	1174.1	1170.6	0.000	2.858	73.331	23.058	0.736	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.65
2	0.6856	1152.1	1172.5	1169.1	0.000	2.861	73.482	22.946	0.696	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.79
3	0.6844	1150.7	1171.1	1167.7	0.000	2.833	73.685	22.825	0.643	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.28
4	0.6853	1151.6	1172.0	1168.6	0.000	2.863	73.526	22.919	0.677	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.48
5	0.6850	1150.9	1171.3	1167.8	0.000	2.875	73.568	22.889	0.654	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.96
6	0.6851	1151.3	1171.7	1168.1	0.000	2.861	73.601	22.818	0.705	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.32
7	0.6858	1152.2	1172.6	1168.8	0.000	2.873	73.461	22.945	0.706	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.68
8	0.6608	1112.0	1131.7	1128.2	0.445	2.283	79.202	17.282	0.749	0.015	0.023	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1388.86
9	0.6739	1133.2	1153.3	1149.9	0.210	2.586	76.189	20.265	0.723	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1401.51
10	0.6865	1153.1	1173.5	1170.0	0.000	2.883	73.327	23.059	0.715	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.06
11	0.6865	1153.2	1173.6	1170.1	0.000	2.878	73.385	22.943	0.778	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.18
12	0.6860	1151.6	1172.0	1168.4	0.000	2.922	73.423	22.930	0.709	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.83
13	0.6731	1131.6	1151.6	1147.9	0.237	2.576	76.403	19.996	0.762	0.010	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1400.21
14	0.6384	1075.3	1094.4	1090.9	0.875	1.758	84.327	12.224	0.753	0.023	0.038	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1366.50
15	0.6407	1079.3	1098.4	1095.0	0.799	1.847	83.766	12.774	0.755	0.021	0.036	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1369.08
16	0.6462	1088.6	1107.9	1104.6	0.690	1.958	82.533	13.995	0.767	0.021	0.034	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1375.03
17	0.6330	1068.3	1087.2	1083.9	0.853	1.704	85.435	11.188	0.761	0.022	0.036	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1363.43
18	0.6339	1070.1	1089.0	1085.7	0.848	1.694	85.389	11.114	0.874	0.031	0.045	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1364.65
19	0.6346	1071.0	1089.9	1086.6	0.839	1.715	85.292	11.168	0.894	0.033	0.051	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1365.08
20	0.6367	1073.7	1092.7	1089.4	0.830	1.767	84.642	11.934	0.762	0.023	0.038	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1366.22
21	0.6376	1074.2	1093.2	1090.0	0.838	1.802	84.383	12.228	0.695	0.019	0.032	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1366.01
22	0.6366	1073.0	1092.0	1088.6	0.843	1.783	84.501	12.200	0.626	0.019	0.028	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1365.43
23	0.6357	1071.5	1090.5	1087.0	0.853	1.770	84.718	11.972	0.636	0.018	0.030	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1364.52
24	0.6388	1074.4	1093.5	1090.1	0.857	1.879	84.325	12.013	0.851	0.025	0.046	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1364.95
25	0.6423	1078.3	1097.4	1094.0	0.854	1.971	83.652	12.557	0.891	0.026	0.047	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1366.16
26	0.6449	1079.9	1099.0	1095.6	0.872	2.095	83.200	12.772	0.984	0.027	0.047	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1365.40
27	0.6490	1083.9	1103.1	1099.3	0.867	2.244	82.657	12.886	1.235	0.038	0.069	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1366.11
28	0.6591	1093.3	1112.6	1109.1	0.855	2.638	81.165	13.418	1.747	0.057	0.109	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1367.29
29	0.6583	1094.0	1113.4	1109.9	0.836	2.547	81.250	13.512	1.684	0.055	0.105	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1369.06
30	0.6617	1098.4	1117.9	1114.1	0.836	2.595	80.724	13.850	1.793	0.066	0.120	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.06
31	0.6727	1106.6	1126.2	1122.1	0.837	3.132	78.881	14.680	2.246	0.071	0.139	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1369.91
Avg	0.6602	1108.0	1127.7	1124.2	0.515	2.357	79.594	16.560	0.910	0.023	0.038	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1384.60

Zone 31

Source Daily Summary

July 2019

Number: 051

Pressure Base: 14.730

Contract Day: 1

Name: CABIN CRK STN-BELFIELD TRSFR

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6643	1110.0	1129.6	1126.2	0.888	2.066	79.842	15.644	1.405	0.050	0.091	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.65
2	0.6661	1113.3	1133.0	1129.6	0.867	2.060	79.442	16.093	1.383	0.051	0.091	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1384.98
3	0.6700	1120.0	1139.9	1136.4	0.738	2.210	78.325	17.353	1.236	0.045	0.081	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1389.36
4	0.6689	1117.2	1137.0	1129.2	0.828	2.147	78.764	16.777	1.327	0.050	0.091	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1386.91
5	0.6681	1115.7	1135.5	1132.0	0.836	2.143	78.948	16.593	1.324	0.050	0.091	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1385.96
6	0.6690	1116.7	1136.5	1133.0	0.875	2.117	78.878	16.575	1.387	0.054	0.097	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1386.14
7	0.6667	1112.5	1132.2	1128.7	0.947	2.038	79.496	15.917	1.429	0.055	0.100	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1383.42
8	0.6664	1112.0	1131.7	1128.2	0.932	2.062	79.545	15.857	1.430	0.056	0.100	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1383.10
9	0.6706	1113.9	1133.6	1130.2	0.552	2.933	78.149	16.735	1.482	0.049	0.089	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1380.99
10	0.6742	1120.7	1140.6	1137.1	0.565	2.824	77.853	16.745	1.851	0.056	0.095	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1385.87
11	0.6765	1119.3	1139.1	1135.6	0.719	2.894	77.577	16.775	1.844	0.064	0.112	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1381.72
12	0.6750	1119.5	1139.3	1135.8	0.634	2.878	77.584	17.051	1.687	0.055	0.097	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1383.42
13	0.6776	1124.1	1144.0	1140.5	0.631	2.836	77.147	17.466	1.748	0.057	0.101	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1386.57
14	0.6777	1124.6	1144.5	1141.0	0.684	2.745	77.204	17.432	1.752	0.060	0.107	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1386.95
15	0.6748	1120.7	1140.6	1137.1	0.659	2.740	77.682	17.068	1.683	0.056	0.098	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1385.24
16	0.6731	1119.1	1139.0	1135.4	0.586	2.790	77.840	17.018	1.615	0.051	0.088	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1384.99
17	0.6738	1120.4	1140.2	1136.6	0.608	2.744	77.805	17.018	1.664	0.054	0.093	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1385.83
18	0.6710	1116.8	1136.6	1133.0	0.573	2.758	78.244	16.659	1.625	0.048	0.082	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1384.22
19	0.6711	1116.9	1136.6	1133.1	0.621	2.687	78.309	16.619	1.608	0.053	0.090	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1384.24
20	0.6687	1115.9	1135.7	1132.1	0.914	2.075	79.232	16.008	1.574	0.065	0.114	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1385.50
21	0.6589	1102.2	1121.7	1118.1	0.888	2.027	80.722	15.028	1.199	0.044	0.079	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.65
22	0.6562	1098.1	1117.5	1113.9	0.920	1.973	81.218	14.643	1.117	0.042	0.075	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1376.35
23	0.6580	1100.0	1119.5	1115.8	0.957	1.972	81.066	14.601	1.253	0.049	0.088	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1376.83
24	0.6646	1106.4	1126.0	1122.4	0.734	2.541	79.926	14.915	1.685	0.064	0.119	0.008	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1377.96
25	0.6693	1109.4	1129.0	1125.4	0.677	2.888	78.751	15.862	1.666	0.052	0.092	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1376.84
26	0.6697	1111.7	1131.4	1127.7	0.817	2.567	78.930	15.821	1.688	0.058	0.103	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.32
27	0.6589	1099.9	1119.3	1115.6	0.952	2.071	80.895	14.632	1.308	0.046	0.083	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1375.73
28	0.6614	1102.6	1122.1	1118.3	0.912	2.202	80.505	14.763	1.459	0.052	0.093	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1376.53
29	0.6603	1102.1	1121.6	1117.8	0.947	2.069	80.808	14.561	1.445	0.055	0.100	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1377.11
30	0.6704	1111.6	1131.3	1127.6	0.710	2.808	78.692	15.857	1.769	0.055	0.096	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.40
31	0.6718	1112.0	1131.7	1128.1	0.705	2.919	78.512	15.828	1.850	0.062	0.109	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1377.52
Avg	0.6685	1113.0	1132.8	1129.1	0.770	2.445	78.964	16.126	1.532	0.053	0.095	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1382.23

Zone 32

Source Daily Summary

July 2019

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6879	1155.7	1176.2	1171.7	0.000	2.861	73.056	23.329	0.741	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.78	-25.08
2	0.6872	1154.8	1175.2	1170.9	0.000	2.844	73.148	23.323	0.673	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.45	-25.68
3	0.6875	1154.9	1175.3	1170.8	0.000	2.870	73.091	23.335	0.689	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.21	-25.51
4	0.6874	1154.6	1175.1	1170.4	0.000	2.878	73.102	23.319	0.688	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.01	-25.56
5	0.6876	1155.1	1175.6	1170.8	0.000	2.865	73.093	23.317	0.710	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.39	-25.37
6	0.6875	1154.6	1175.1	1170.5	0.000	2.889	73.112	23.263	0.722	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.87	-25.41
7	0.6881	1155.3	1175.7	1171.0	0.000	2.905	73.024	23.304	0.753	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.04	-25.04
8	0.6881	1155.7	1176.2	1171.7	0.000	2.877	73.036	23.312	0.761	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.61	-24.95
9	0.6880	1155.4	1175.9	1171.6	0.000	2.881	72.996	23.416	0.693	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.42	-25.27
10	0.6881	1155.9	1176.4	1171.9	0.000	2.863	73.007	23.391	0.726	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.88	-25.05
11	0.6884	1155.8	1176.3	1171.7	0.000	2.901	72.975	23.344	0.766	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.39	-24.82
12	0.6874	1154.8	1175.2	1170.7	0.000	2.862	73.151	23.258	0.716	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.25	-25.46
13	0.6875	1154.9	1175.4	1170.9	0.000	2.868	73.141	23.237	0.740	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.26	-25.31
14	0.6879	1155.2	1175.7	1171.1	0.000	2.890	73.064	23.282	0.750	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.17	-25.12
15	0.6876	1155.2	1175.7	1171.2	0.000	2.856	73.121	23.277	0.732	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.57	-25.28
16	0.6870	1154.5	1175.0	1170.3	0.000	2.844	73.200	23.254	0.688	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.29	-25.72
17	0.6869	1153.9	1174.3	1169.8	0.000	2.870	73.238	23.170	0.707	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.66	-25.76
18	0.6875	1154.8	1175.3	1170.8	0.000	2.874	73.136	23.241	0.735	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.14	-25.34
19	0.6872	1154.4	1174.9	1170.7	0.000	2.872	73.154	23.265	0.695	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.93	-25.63
20	0.6874	1154.3	1174.8	1170.4	0.000	2.895	73.117	23.274	0.700	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.65	-25.56
21	0.6873	1153.8	1174.2	1169.9	0.000	2.918	73.127	23.250	0.691	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.08	-25.71
22	0.6873	1154.1	1174.5	1170.0	0.000	2.896	73.154	23.228	0.707	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.49	-25.61
23	0.6865	1153.5	1173.9	1169.5	0.000	2.860	73.329	23.083	0.715	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.54	-25.91
24	0.6859	1153.2	1173.6	1169.2	0.000	2.824	73.426	23.042	0.695	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.78	-26.19
25	0.6862	1153.4	1173.9	1169.5	0.000	2.840	73.362	23.084	0.700	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.75	-26.04
26	0.6864	1153.3	1173.8	1169.2	0.000	2.865	73.329	23.084	0.708	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.40	-25.97
27	0.6874	1154.7	1175.1	1170.6	0.000	2.874	73.168	23.194	0.750	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.07	-25.33
28	0.6865	1153.2	1173.6	1169.1	0.000	2.879	73.298	23.118	0.690	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.16	-26.03
29	0.6860	1152.7	1173.1	1168.8	0.000	2.859	73.393	23.063	0.672	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.09	-26.34
30	0.6861	1152.6	1173.0	1168.5	0.000	2.878	73.383	23.031	0.695	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.85	-26.21
31	0.6866	1154.1	1174.5	1169.9	0.000	2.830	73.411	22.953	0.777	0.009	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1414.17	-25.34
Avg	0.6872	1154.0	1174.9	1170.4	0.000	2.871	73.172	23.227	0.716	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.98	-25.54

Zone 33

Source Daily Summary

July 2019

Number: 351

Pressure Base: 14.730

Contract Day: 1

Name: BADLANDS PLANT

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.5720	961.7	978.7	975.5	0.099	3.617	96.032	0.228	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.05
2	0.5731	960.8	977.8	974.7	0.106	3.758	95.806	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.72
3	0.5730	960.9	977.9	975.0	0.106	3.748	95.816	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1288.90
4	0.5729	961.4	978.4	975.4	0.106	3.708	95.857	0.306	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.62
5	0.5729	961.3	978.3	975.3	0.106	3.710	95.854	0.306	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.57
6	0.5728	961.5	978.5	975.5	0.108	3.697	95.863	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.78
7	0.5729	961.3	978.3	975.3	0.108	3.711	95.852	0.306	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.53
8	0.5728	961.4	978.4	975.3	0.108	3.700	95.863	0.305	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.72
9	0.5728	961.6	978.6	975.6	0.107	3.683	95.879	0.307	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.06
10	0.5725	961.7	978.7	975.6	0.108	3.656	95.933	0.279	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.39
11	0.5733	961.5	978.5	976.3	0.108	3.660	95.808	0.390	0.016	0.008	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1291.00
12	0.5728	961.7	978.7	975.2	0.109	3.674	95.883	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.20
13	0.5728	961.5	978.5	975.1	0.108	3.692	95.867	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.89
14	0.5729	961.4	978.4	974.8	0.108	3.706	95.854	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.64
15	0.5728	961.7	978.7	975.4	0.109	3.676	95.880	0.310	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1290.15
16	0.5728	961.5	978.5	975.3	0.109	3.693	95.865	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.86
17	0.5728	961.5	978.5	975.2	0.109	3.694	95.864	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.84
18	0.5728	961.4	978.5	975.2	0.108	3.697	95.863	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.81
19	0.5728	961.5	978.5	975.2	0.108	3.696	95.864	0.308	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.81
20	0.5729	961.4	978.4	975.2	0.108	3.701	95.858	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.72
21	0.5729	961.4	978.5	975.4	0.108	3.696	95.862	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.79
22	0.5729	961.5	978.5	975.2	0.109	3.696	95.863	0.309	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1289.80
23	0.5877	969.4	986.5	983.1	0.176	4.512	93.032	2.006	0.243	0.014	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1283.72
24	0.6126	1019.6	1037.7	1034.0	0.405	3.440	89.019	6.248	0.785	0.038	0.057	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1322.59
25	0.5923	991.6	1009.2	1005.7	0.297	3.402	92.587	3.264	0.390	0.024	0.031	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1308.06
26	0.5871	986.5	1003.9	1000.4	0.254	3.292	93.514	2.587	0.304	0.021	0.023	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1307.04
27	0.5834	981.0	998.4	994.9	0.225	3.315	94.104	2.136	0.188	0.015	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1304.07
28	0.5905	992.5	1010.0	1006.6	0.302	3.177	92.828	3.384	0.272	0.017	0.018	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1311.17
29	0.6118	1023.7	1041.8	1038.2	0.509	2.952	89.108	6.775	0.581	0.027	0.041	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1328.88
30	0.6076	1017.8	1035.8	1032.1	0.463	2.992	89.884	6.029	0.556	0.027	0.041	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1325.66
31	0.5953	998.0	1015.6	1011.7	0.340	3.227	92.020	3.991	0.371	0.020	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1313.20
Avg	0.5797	972.0	989.2	985.9	0.172	3.599	94.683	1.392	0.130	0.012	0.009	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1296.17

Zone 34

Source Daily Summary

July 2019

Number: 471

Pressure Base: 14.730

Contract Day:

Name: SPRING CREEK I - SAX VALVE I

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT	
1	0.6919	1136.8	1156.9	1153.9	1.034	2.808	73.538	21.612	0.987	0.008	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.69	-25.04
2	0.6821	1119.7	1139.6	1136.6	1.048	2.909	75.126	20.306	0.604	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.63	-31.99
3	0.6810	1118.0	1137.8	1134.9	1.057	2.894	75.396	20.007	0.640	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.65	-32.47
4	0.6826	1120.7	1140.5	1137.5	1.056	2.885	75.202	20.082	0.769	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.27	-31.06
5	0.6853	1124.3	1144.2	1141.2	1.054	2.923	75.005	19.872	1.135	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.94	-28.26
6	0.6834	1122.8	1142.7	1139.7	1.055	2.831	75.271	19.840	0.993	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.05	-29.61
7	0.6825	1121.2	1141.0	1138.0	1.046	2.863	75.486	19.548	1.047	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.92	-29.89
8	0.6806	1118.5	1138.3	1135.3	1.046	2.846	75.752	19.430	0.918	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.56	-31.41
9	0.6834	1122.6	1142.5	1139.5	1.040	2.867	75.399	19.537	1.146	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.80	-29.03
10	0.6823	1120.5	1140.4	1137.4	1.045	2.882	75.489	19.565	1.009	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.39	-30.19
11	0.6811	1118.0	1137.8	1134.9	1.050	2.918	75.561	19.620	0.843	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.48	-31.59
12	0.6829	1121.1	1141.0	1138.0	1.038	2.910	75.438	19.519	1.083	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.51	-29.65
13	0.6810	1118.2	1138.0	1135.0	1.042	2.905	75.688	19.418	0.939	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.83	-31.24
14	0.6815	1119.1	1138.9	1135.9	1.043	2.898	75.548	19.596	0.906	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1376.42	-31.07
15	0.6840	1123.0	1142.9	1139.9	1.056	2.876	75.112	19.980	0.967	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1378.68	-29.50
16	0.6801	1118.5	1138.3	1135.3	1.039	2.807	75.750	19.602	0.780	0.007	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.10	-31.89
17	0.6828	1122.8	1142.7	1139.6	1.032	2.816	75.490	19.539	1.105	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.58	-29.25
18	0.6792	1116.1	1135.8	1132.8	1.038	2.876	75.897	19.403	0.766	0.007	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1375.01	-32.55
19	0.6796	1117.6	1137.4	1134.4	1.020	2.844	75.857	19.453	0.794	0.010	0.019	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.52	-31.88
20	0.6808	1118.6	1138.4	1135.4	1.045	2.864	75.626	19.631	0.810	0.008	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1376.46	-31.50
21	0.6754	1109.8	1129.5	1126.5	1.065	2.858	76.274	19.436	0.365	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.17	-36.65
22	0.6773	1113.0	1132.7	1129.7	1.059	2.857	76.008	19.587	0.472	0.006	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1373.11	-34.82
23	0.6792	1115.5	1135.2	1132.2	1.052	2.889	75.800	19.591	0.649	0.006	0.012	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1374.29	-33.15
24	0.6791	1115.6	1135.4	1132.4	1.047	2.882	75.749	19.695	0.615	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.55	-33.41
25	0.6796	1115.6	1135.4	1132.4	1.054	2.917	75.796	19.461	0.763	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.04	-32.74
26	0.6787	1112.9	1132.6	1129.6	1.062	2.982	75.837	19.491	0.622	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1371.66	-34.04
27	0.6801	1117.0	1136.8	1133.8	1.055	2.875	75.741	19.521	0.801	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.28	-32.27
28	0.6800	1116.2	1136.0	1133.0	1.060	2.910	75.639	19.699	0.686	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.35	-32.86
29	0.6802	1117.5	1137.3	1134.0	1.054	2.856	75.613	19.777	0.694	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.81	-32.57
30	0.6927	1139.2	1159.4	1119.0	0.999	2.793	73.722	21.121	1.311	0.018	0.033	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1389.75	-22.74
31	0.6903	1135.1	1155.2	1109.4	0.996	2.811	74.459	20.159	1.506	0.022	0.040	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1387.22	-22.92
Avg	0.6820	1120.0	1140.0	1134.4	1.045	2.873	75.428	19.777	0.862	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.28	-30.88

Zone 43

July-19

ZONE 550

MANDAN BORDER

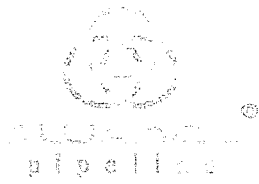
NBPL - St Anthony

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
7/1/2019	7/2/2019				932	1110	1.1912	1.191	7/1/2019
7/2/2019	7/3/2019				880	1055	1.1973	1.197	7/2/2019
7/3/2019	7/4/2019				841	996	1.1852	1.185	7/3/2019
7/4/2019	7/5/2019				715	851	1.1905	1.191	7/4/2019
7/5/2019	7/6/2019				727	866	1.1917	1.192	7/5/2019
7/6/2019	7/7/2019				687	819	1.1936	1.194	7/6/2019
7/7/2019	7/8/2019				745	888	1.1919	1.192	7/7/2019
7/8/2019	7/9/2019				823	990	1.2036	1.204	7/8/2019
7/9/2019	7/10/2019				864	1038	1.2024	1.202	7/9/2019
7/10/2019	7/11/2019				823	990	1.2029	1.203	7/10/2019
7/11/2019	7/12/2019				749	897	1.1967	1.197	7/11/2019
7/12/2019	7/13/2019				764	917	1.2012	1.201	7/12/2019
7/13/2019	7/14/2019				631	759	1.2033	1.203	7/13/2019
7/14/2019	7/15/2019				689	830	1.2035	1.204	7/14/2019
7/15/2019	7/16/2019				753	908	1.2049	1.205	7/15/2019
7/16/2019	7/17/2019				852	995	1.1645	1.165	7/16/2019
7/17/2019	7/18/2019				863	953	1.1039	1.104	7/17/2019
7/18/2019	7/19/2019				843	928	1.1014	1.101	7/18/2019
7/19/2019	7/20/2019				800	871	1.0886	1.089	7/19/2019
7/20/2019	7/21/2019				728	822	1.1352	1.135	7/20/2019
7/21/2019	7/22/2019				853	1016	1.1912	1.191	7/21/2019
7/22/2019	7/23/2019				844	1008	1.1950	1.195	7/22/2019
7/23/2019	7/24/2019				797	955	1.1990	1.199	7/23/2019
7/24/2019	7/25/2019				794	956	1.2041	1.204	7/24/2019
7/25/2019	7/26/2019				753	906	1.2038	1.204	7/25/2019
7/26/2019	7/27/2019				706	848	1.2020	1.202	7/26/2019
7/27/2019	7/28/2019				619	742	1.1980	1.198	7/27/2019
7/28/2019	7/29/2019				747	904	1.2086	1.209	7/28/2019
7/29/2019	7/30/2019				888	1064	1.1989	1.199	7/29/2019
7/30/2019	7/31/2019				761	909	1.1952	1.195	7/30/2019
7/31/2019	8/1/2019				747	899	1.2030	1.203	7/31/2019
		0	0	#DIV/0!	24,218	28,690	1.1856	1.1856	

Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 July 2019



DAY	Heating Value (BTU/H3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	HeI Mol%
1	1,163.702	0.6676	83.7087	9.6326	4.0249	0.3901	0.6650	0.0639	0.0528	0.0268	1.0072	0.4170	0.0110
2	1,163.898	0.6669	83.8580	9.5633	4.0032	0.3920	0.6738	0.0660	0.0543	0.0261	0.9410	0.4115	0.0107
3	1,161.250	0.6651	84.0416	9.5743	3.8236	0.3898	0.6673	0.0664	0.0546	0.0284	0.9401	0.4029	0.0109
4	1,162.150	0.6664	83.8582	9.6332	3.8840	0.3927	0.6701	0.0670	0.0557	0.0268	0.9675	0.4340	0.0109
5	1,166.714	0.6693	83.5332	9.7768	4.0041	0.4189	0.7063	0.0684	0.0561	0.0293	0.9685	0.4278	0.0104
6	1,162.219	0.6657	83.9164	9.6831	3.8371	0.3919	0.6692	0.0650	0.0537	0.0267	0.9385	0.4079	0.0104
7	1,162.506	0.6663	83.8361	9.6829	3.8742	0.3906	0.6714	0.0669	0.0538	0.0279	0.9784	0.4074	0.0105
8	1,158.517	0.6628	84.2817	9.5686	3.6870	0.3749	0.6401	0.0626	0.0519	0.0295	0.8895	0.4034	0.0109
9	1,156.534	0.6622	84.2498	9.6314	3.6377	0.3619	0.6196	0.0597	0.0500	0.0247	0.9336	0.4198	0.0119
10	1,157.333	0.6626	84.2077	9.6158	3.7059	0.3654	0.6152	0.0568	0.0475	0.0252	0.9526	0.3972	0.0107
11	1,156.442	0.6620	84.2747	9.6141	3.6516	0.3639	0.6081	0.0578	0.0486	0.0259	0.9326	0.4117	0.0108
12	1,158.404	0.6636	84.0451	9.7586	3.6583	0.3748	0.6442	0.0595	0.0486	0.0244	0.9583	0.4168	0.0113
13	1,156.776	0.6627	84.1991	9.6035	3.6734	0.3650	0.6331	0.0589	0.0481	0.0230	0.9621	0.4227	0.0113
14	1,157.600	0.6635	84.1070	9.6273	3.6933	0.3698	0.6507	0.0611	0.0486	0.0225	0.9905	0.4176	0.0116
15	1,162.072	0.6659	83.9050	9.6842	3.7838	0.3978	0.7144	0.0637	0.0512	0.0221	0.9488	0.4173	0.0118
16	1,162.292	0.6659	83.9183	9.6486	3.8132	0.4006	0.7128	0.0618	0.0508	0.0226	0.9530	0.4070	0.0112
17	1,160.929	0.6648	84.0422	9.6460	3.7286	0.3977	0.7023	0.0608	0.0495	0.0249	0.9297	0.4075	0.0109
18	1,161.879	0.6657	83.9135	9.7042	3.7821	0.3952	0.7005	0.0615	0.0500	0.0238	0.9478	0.4100	0.0114
19	1,165.654	0.6682	83.6454	9.8098	3.8610	0.4302	0.7441	0.0632	0.0508	0.0222	0.9372	0.4248	0.0113
20	1,160.273	0.6648	83.9813	9.6812	3.7517	0.3821	0.6818	0.0605	0.0493	0.0241	0.9766	0.4006	0.0110
21	1,161.457	0.6653	83.9472	9.7124	3.7417	0.3958	0.7027	0.0612	0.0499	0.0246	0.9474	0.4062	0.0108
22	1,164.262	0.6674	83.7439	9.7240	3.8566	0.4060	0.7337	0.0666	0.0522	0.0262	0.9749	0.4051	0.0108
23	1,161.105	0.6654	83.8883	9.7612	3.7401	0.3902	0.6907	0.0614	0.0498	0.0245	0.9679	0.4150	0.0109
24	1,162.316	0.6663	83.7914	9.7929	3.7830	0.3943	0.7040	0.0615	0.0500	0.0235	0.9699	0.4183	0.0111
25	1,163.080	0.6667	83.7511	9.8218	3.7829	0.3984	0.7138	0.0646	0.0511	0.0243	0.9605	0.4201	0.0115
26	1,162.019	0.6662	83.7529	9.8538	3.7654	0.3890	0.6945	0.0616	0.0501	0.0222	0.9748	0.4239	0.0119
27	1,162.323	0.6665	83.7915	9.7442	3.7996	0.3971	0.7120	0.0634	0.0498	0.0241	0.9805	0.4263	0.0114
28	1,158.288	0.6637	84.1006	9.6585	3.6683	0.3774	0.6748	0.0593	0.0469	0.0210	0.9567	0.4244	0.0120
29	1,156.504	0.6625	84.2831	9.5397	3.5825	0.3816	0.6839	0.0598	0.0480	0.0243	0.9764	0.4090	0.0116
30	1,158.097	0.6638	84.0641	9.6962	3.5995	0.3868	0.6964	0.0613	0.0471	0.0241	1.0017	0.4111	0.0118
31	1,161.324	0.6656	83.8328	9.8321	3.6942	0.3932	0.7119	0.0628	0.0471	0.0233	0.9941	0.3971	0.0114
Volume	1,160.891	0.6652	83.9508	9.6868	3.7698	0.3889	0.6811	0.0624	0.0506	0.0248	0.9601	0.4136	0.0112
Weight Avg Energy	1,160.897	0.6652	83.9504	9.6869	3.7701	0.3889	0.6811	0.0624	0.0506	0.0248	0.9601	0.4136	0.0112

2019
 7/31

July-19

ZONE 610

Watford City

Watford City West Border

Watford City East Border

Weighted

Start Date	End Date	BTU			BTU			AVG BTU	
		MCF	DK	Zone 25	MCF	DK	Zone 43		
7/1/2019	7/2/2019	123	147	1.1951	59	69	1.1569	1.183	7/1/2019
7/2/2019	7/3/2019	174	208	1.1951	66	75	1.1396	1.180	7/2/2019
7/3/2019	7/4/2019	171	204	1.1951	68	77	1.1378	1.179	7/3/2019
7/4/2019	7/5/2019	137	164	1.1951	55	62	1.1405	1.179	7/4/2019
7/5/2019	7/6/2019	142	170	1.1951	56	64	1.1442	1.181	7/5/2019
7/6/2019	7/7/2019	135	161	1.1951	51	58	1.1427	1.181	7/6/2019
7/7/2019	7/8/2019	127	152	1.1951	38	44	1.1410	1.183	7/7/2019
7/8/2019	7/9/2019	146	174	1.1951	65	74	1.1383	1.178	7/8/2019
7/9/2019	7/10/2019	181	217	1.1951	77	88	1.1425	1.179	7/9/2019
7/10/2019	7/11/2019	144	172	1.1951	55	62	1.1404	1.180	7/10/2019
7/11/2019	7/12/2019	125	149	1.1951	67	76	1.1378	1.175	7/11/2019
7/12/2019	7/13/2019	133	159	1.1951	52	59	1.1410	1.180	7/12/2019
7/13/2019	7/14/2019	114	136	1.1951	39	45	1.1380	1.181	7/13/2019
7/14/2019	7/15/2019	125	149	1.1951	38	43	1.1389	1.182	7/14/2019
7/15/2019	7/16/2019	135	162	1.1951	50	57	1.1429	1.181	7/15/2019
7/16/2019	7/17/2019	134	160	1.1951	69	78	1.1383	1.176	7/16/2019
7/17/2019	7/18/2019	134	160	1.1951	60	68	1.1427	1.179	7/17/2019
7/18/2019	7/19/2019	145	173	1.1951	68	77	1.1358	1.176	7/18/2019
7/19/2019	7/20/2019	126	151	1.1951	46	52	1.1374	1.180	7/19/2019
7/20/2019	7/21/2019	128	153	1.1951	43	49	1.1384	1.181	7/20/2019
7/21/2019	7/22/2019	135	161	1.1951	37	42	1.1295	1.181	7/21/2019
7/22/2019	7/23/2019	129	154	1.1951	51	58	1.1327	1.177	7/22/2019
7/23/2019	7/24/2019	129	155	1.1951	51	58	1.1352	1.178	7/23/2019
7/24/2019	7/25/2019	137	163	1.1951	56	64	1.1354	1.178	7/24/2019
7/25/2019	7/26/2019	147	175	1.1951	67	76	1.1354	1.176	7/25/2019
7/26/2019	7/27/2019	142	169	1.1951	46	52	1.1326	1.180	7/26/2019
7/27/2019	7/28/2019	98	118	1.1951	35	40	1.1368	1.180	7/27/2019
7/28/2019	7/29/2019	153	183	1.1951	38	43	1.1360	1.183	7/28/2019
7/29/2019	7/30/2019	148	177	1.1951	52	59	1.1373	1.180	7/29/2019
7/30/2019	7/31/2019	135	161	1.1951	68	79	1.1594	1.183	7/30/2019
7/31/2019	8/1/2019	112	133	1.1951	44	51	1.1552	1.184	7/31/2019
		4,244	5,070		1,667	1,899	1.1400	1.1798	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Changestimestamp	NOTES
11587	GLEN ULLIN	1092.1	0.6364	1369	-52.7	1.6817	0.8884	84.4643	11.9055	0.8234	0.0313	0.0177	0.0018	0.0018	0	0	0.1658	0.0185	6/30/2019	7/1/2019	7/1/2019 3:34:37 PM	
11587	GLEN ULLIN	1092.8	0.6372	1369	-52.2	1.7207	0.8891	84.2556	12.0885	0.7962	0.0351	0.0198	0.002	0.0021	0	0	0.1725	0.0186	7/1/2019	7/2/2019	7/2/2019 3:33:31 PM	
11587	GLEN ULLIN	1091	0.6363	1367.7	-52.8	1.7361	0.8963	84.3407	12.0816	0.6858	0.0379	0.0202	0.0034	0.0032	0	0.0009	0.175	0.0189	7/2/2019	7/3/2019	7/3/2019 3:35:35 PM	
11587	GLEN ULLIN	1093	0.6379	1368.5	-51.1	1.775	0.8906	84.0953	12.1835	0.7888	0.0381	0.0206	0.0036	0.0033	0	0.0011	0.1808	0.0194	7/3/2019	7/4/2019	7/4/2019 3:35:55 PM	
11587	GLEN ULLIN	1094.5	0.6389	1369.3	-50.2	1.7789	0.8894	83.9521	12.3318	0.796	0.0404	0.0225	0.0037	0.0037	0	0.0013	0.161	0.0194	7/4/2019	7/5/2019	7/5/2019 3:35:30 PM	
11587	GLEN ULLIN	1097.2	0.6408	1370.6	-48.9	1.7727	0.9022	83.6537	12.6134	0.8262	0.0406	0.0235	0.0037	0.0038	0	0.0013	0.1401	0.019	7/5/2019	7/6/2019	7/6/2019 3:34:21 PM	
11587	GLEN ULLIN	1094.9	0.6392	1369.5	-50.6	1.7818	0.8891	83.8391	12.4424	0.7891	0.0369	0.021	0.003	0.0031	0	0.0006	0.1748	0.0193	7/6/2019	7/7/2019	7/7/2019 3:34:54 PM	
11587	GLEN ULLIN	1093.5	0.6383	1368.7	-50.9	1.7772	0.8888	84.082	12.2011	0.8025	0.0384	0.0223	0.0033	0.0034	0	0.0009	0.1613	0.0189	7/7/2019	7/8/2019	7/8/2019 3:34:28 PM	
11587	GLEN ULLIN	1090.6	0.6365	1367.1	-53.4	1.7784	0.8921	84.3481	11.9641	0.7843	0.027	0.0153	0.0004	0.0005	0	0	0.1705	0.0194	7/8/2019	7/9/2019	7/9/2019 3:25:52 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/9/2019	7/10/2019	7/10/2019 3:25:28 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/10/2019	7/11/2019	7/11/2019 3:27:38 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/11/2019	7/12/2019	7/12/2019 3:24:40 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/12/2019	7/13/2019	7/13/2019 3:26:14 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/13/2019	7/14/2019	7/14/2019 3:24:33 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/14/2019	7/15/2019	7/15/2019 3:35:39 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/15/2019	7/16/2019	7/16/2019 3:28:37 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/16/2019	7/17/2019	7/17/2019 3:27:33 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/17/2019	7/18/2019	7/18/2019 3:26:59 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/18/2019	7/19/2019	7/19/2019 3:26:03 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/19/2019	7/20/2019	7/20/2019 3:25:30 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/20/2019	7/21/2019	7/21/2019 3:26:11 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/21/2019	7/22/2019	7/22/2019 3:27:39 PM	
11587	GLEN ULLIN	1090.6	0.6366	1366.8	-53.5	1.7854	0.8947	84.3307	11.9652	0.7889	0.0267	0.0151	0	0	0	0	0.1736	0.0197	7/22/2019	7/23/2019	7/23/2019 3:27:19 PM	
11587	GLEN ULLIN	1087.9	0.634	1366.3	-54.7	1.7216	0.8802	84.8148	11.6664	0.6815	0.0337	0.018	0.0022	0.0021	0	0.0006	0.1596	0.0191	7/23/2019	7/24/2019	7/24/2019 3:25:30 PM	
11587	GLEN ULLIN	1089	0.6347	1366.9	-54.7	1.7354	0.8723	84.6567	11.8198	0.6834	0.0309	0.0173	0.0021	0.0022	0	0	0.1612	0.0187	7/24/2019	7/25/2019	7/25/2019 3:25:45 PM	
11587	GLEN ULLIN	1093.1	0.6387	1367.8	-52.1	1.8542	0.8789	83.8839	12.4004	0.7522	0.0298	0.0174	0.0017	0.0018	0	0	0.1603	0.0193	7/25/2019	7/26/2019	7/26/2019 3:31:34 PM	
11587	GLEN ULLIN	1091.1	0.6375	1366.5	-53.2	1.8385	0.8938	84.1063	12.1957	0.7335	0.0266	0.0159	0.001	0.0013	0	0	0.1688	0.0189	7/26/2019	7/27/2019	7/27/2019 3:25:50 PM	
11587	GLEN ULLIN	1088.1	0.6344	1366.1	-54.6	1.7704	0.8695	84.7194	11.6499	0.7451	0.0299	0.0176	0.0015	0.0018	0	0	0.176	0.0191	7/27/2019	7/28/2019	7/28/2019 3:26:11 PM	
11587	GLEN ULLIN	1089.5	0.6353	1366.9	-53.3	1.7815	0.8624	84.6145	11.6962	0.7933	0.0381	0.0206	0.0026	0.0027	0	0	0.1693	0.019	7/28/2019	7/29/2019	7/29/2019 3:26:54 PM	
11587	GLEN ULLIN	1091.4	0.6368	1367.7	-52.3	1.7978	0.8707	84.2742	12.0123	0.7837	0.0346	0.0217	0.0022	0.0028	0	0.0004	0.1809	0.0189	7/29/2019	7/30/2019	7/30/2019 3:26:56 PM	
11587	GLEN ULLIN	1092.8	0.6377	1368.4	-51.4	1.8081	0.8612	84.149	12.0722	0.8431	0.0362	0.0214	0.0024	0.0026	0	0.0004	0.1845	0.0191	7/30/2019	7/31/2019	7/31/2019 3:24:46 PM	
11587	GLEN ULLIN	1096	0.6403	1369.7	-49.3	1.8675	0.8533	83.8274	12.2656	0.9538	0.0441	0.0241	0.0027	0.0029	0	0.0001	0.1394	0.0194	7/31/2019	8/1/2019	8/1/2019 3:48:20 PM	

32 record(s) retrieved

7/31/2019

NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
211	Chromatograph	Sidney Border
24	Chromatograph	Williston Border
241	Accumulated Sample	Fairview Border
25	Accumulated Sample	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Accumulated Sample	Lignite Plant
264	Accumulated Sample	Epping Border
265	Chromatograph	Tioga Comp Station – County Line Plant
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck Station
31	Chromatograph	Dickinson Border
32	Chromatograph	Cabin Creek Station
33	Chromatograph	Little Knife Plant
34	Chromatograph	Bowman Border
43	Chromatograph	Spring Creek
550	Accumulated Sample & Chromatograph	Mandan Border
600	Chromatograph	Hankinson Area
610	Accumulated Sample & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO
NORTH DAKOTA
HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	JULY 19	JUNE 19	MAY 19	APR 19	MAR 19	FEB 19	JAN 19	DEC 18	NOV 18	OCT 18	SEPT 18	AUG 18	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1203	1199	1208	1207	1202	1205	1207	1202	1200	1207	1202	1191	1203	211
ND	24	Williston Border - Charbonneau Station	1157	1165	1152	1158	1164	1166	1162	1163	1164	1163	1140	1152	1136	24
ND	25	Watford City West Border	1197	1195	1199	1188	1202	1198	1204	1191	1196	1199	1199	1200	1197	25
ND	28	Bismarck Station - Glen Ullin Station	1153	1186	1205	1178	1147	1144	1115	1141	1120	1112	1153	1173	1162	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1139	1128	1168	1165	1152	1143	1116	1139	1132	1110	1134	1144	1132	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1119	1133	1147	1138	1131	1139	1104	1128	1093	1068	1110	1106	1133	32
ND	33	Little Knife Plant	1173	1175	1174	1173	1173	1173	1172	1173	1174	1174	1172	1172	1176	33
ND	34	Badlands Plant/Bowman Border	1019	989	978	979	979	1013	1062	1048	1042	1073	1063	1018	979	34
ND	43	Spring Creek I - Sax Valve I	1116	1140	1149	1148	1136	1127	1061	1044	1051	1062	1144	1158	1172	43
ND/MT	241	Fairview Border	1190	1191	1200	1202	1196	1188	1204	1173	1181	1193	1175	1186	1195	241
ND	260	North Tioga Transfer - Nesson Plant	1113	1132	1115	1118	1121	1127	1109	1113	1104	1095	1102	1120	1101	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1177	1179	1175	1164	1170	1179	1184	1180	1173	1177	1183	1181	1175	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1183	1198	1205	1185	1183	1182	1182	1183	1182	1182	1179	1175	1160	262
ND	263	Lignite Plant	1149	1164	1160	1152	1148	1149	1146	1149	1146	1127	1140	1146	1162	263
ND	264	Epping Border	1146	1154	1150	1143	1151	1153	1148	1149	1147	1153	1139	1135	1135	264
ND	265	Tioga Comp Station - County Line Plant	1178	1175	1175	1177	1171	1181	1184	1179	1173	1177	1183	1182	1178	265
ND	266	County Line Plant	1175	1166	1170	1171	1174	1176	1170	1177	1179	1180	1181	1180	1178	266
ND	271	Bismarck Station - Cleveland Station	1181	1196	1206	1186	1183	1181	1168	1176	1180	1180	1178	1173	1162	271
ND	272	Cleveland Station - Mapleton	1180	1195	1206	1185	1183	1180	1167	1176	1180	1179	1177	1173	1160	272
ND	273	Cleveland Station - Grafton Border	1180	1194	1204	1185	1180	1181	1167	1176	1180	1179	1177	1173	1161	273
ND	550	Mandan Border / NBPL-St Anthony	1146	1186	1202	1176	1147	1119	1107	1121	1106	1102	1145	1173	1162	550
ND	610	MDU-Watford City BTU	1156	1180	1187	1176	1175	1158	1113	1101	1109	1131	1180	1181	1175	610
ND	802	NBPL - Linton	1091	1091	1098	1101	1101	1083	1083	1083	1084	1086	1092	1097	1092	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1158	1161	1158	1169	1163	1157	1151	1155	1153	1155	1155	1160	1159	600

**THERMAL ZONE VARIANCE
DOCUMENTATION**

July 2019

<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
31	-40	Direction of Flow and Source of Gas