



UTILITIES CO.

A Subsidiary of MDU Resources Group, Inc.

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

February 11, 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 – December 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 January 2020.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of December 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 December 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 black ink that reads 'Tamie Aberle'.

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Jan-20

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1277
MDU-308-ARNEGARD	025	1.1277
MDU-314-APPLE VALLEY	271	1.1328
MDU-318-BEACH	032	1.0369
MDU-319-BELFIELD	032	1.0445
MDU-323-BERTHOLD	262	1.1268
MDU-324-BEULAH	032	1.0445
MDU-327-BISMARCK	028	1.0778
MDU-330-BOWMAN	034	1.0109
MDU-337-BURLINGTON	262	1.1511
MDU-343-CARRINGTON	273	1.1318
MDU-344-CLEVELAND	272	1.1248
MDU-364-CAVALIER	273	1.1557
MDU-365-DAWSON	271	1.1248
MDU-368-DES LACS	262	1.1349
MDU-369-DICKINSON	031	1.0549
MDU-374-FT TOTTEN	273	1.1398
MDU-375-DEVILS LAKE	273	1.1398
MDU-379-BARLOW	273	1.1318
MDU-384-EPPING	264	1.0994
MDU-387-ELDRIDGE	272	1.1328
MDU-407-GLADSTONE	031	1.0549
MDU-411-GLEN ULLIN	031	1.0626
MDU-413-GOLVA	032	1.0216
MDU-416-GARRISON	262	1.1349
MDU-417-GRAFTON	273	1.1636
MDU-403-GWINNER	601	1.1488
MDU-429-HEBRON	031	1.0626
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1407
MDU-459-KILLDEER	033	1.1070
MDU-463-LANGDON	273	1.1318
MDU-469-LEFOR	031	1.0549
MDU-474-LIGNITE	263	1.0930
MDU-475-LINTON	802	1.0681
MDU-478-LINCOLN	028	1.0855
MDU-488-MCKENZIE	271	1.1328
MDU-494-MEDINA	271	1.1248
MDU-498-MANDAN	028	1.0855
MDU-500-MARMARTH	034	1.0184
MDU-505-MINOT	262	1.1511
MDU-510-MOTT	031	1.0549
MDU-512-MAX	262	1.1268
MDU-513-MILNOR	601	1.1488
MDU-522-NEW ENGLAND	031	1.0473
MDU-524-NEW SALEM	028	1.0855
MDU-532-NEW ROCKFORD	273	1.1318
MDU-539-PARK RIVER	273	1.1557
MDU-540-PALERMO	262	1.1268

MDU-558-RAY	264	1.0994
MDU-561-REGENT	031	1.0549
MDU-563-RHAME	034	1.0034
MDU-564-RICHARDTON	031	1.0473
MDU-568-ROSS	261	1.1046
MDU-572-RUTHVILLE	262	1.1511
MDU-574-SANBORN	272	1.1407
MDU-583-SENTINEL BUTTE	032	1.0369
MDU-588-SOUTH HEART	031	1.0473
MDU-717-SPIRITWOOD	272	1.1543
MDU-590-SPRINGBROOK	264	1.0994
MDU-591-STANLEY	261	1.1206
MDU-593-STEELE	271	1.1248
MDU-594-STERLING	028	1.0855
MDU-598-SHEYENNE	273	1.1398
MDU-605-SURREY	262	1.1511
MDU-610-TAPPEN	271	1.1248
MDU-611-TAYLOR	031	1.0473
MDU-616-TIOGA	260	1.0746
MDU-619-TURTLE LAKE	262	1.1349
MDU-620-TRENTON	024	1.1197
MDU-624-UNDERWOOD	262	1.1349
MDU-625-VALLEY CITY	272	1.1487
MDU-629-WALHALLA	273	1.1557
MDU-632-WATFORD CITY	610	1.1070
MDU-636-WHEELOCK	264	1.0915
MDU-637-WHITE EARTH	261	1.1126
MDU-642-WILLISTON	024	1.1197
MDU-646-WASHBURN	262	1.1430
MDU-647-WILTON	262	1.1268
MDU-664-RIVERDALE	262	1.1349
MDU-691-FAIRVIEW	241	1.1435
MDU-712-MINOT AFB	262	1.1511
MDU-718-FAIRMOUNT	600	1.1464
MDU-732-NEKOMA	273	1.1318
MDU-732-MSR SITE	273	1.1318

Source Daily Summary

December 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	0.7196	1183.7	1204.6	1201.3	0.524	3.320	69.642	23.329	3.013	0.063	0.103	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1416.91
2	0.7090	1180.1	1201.0	1197.8	0.133	3.136	70.987	22.900	2.778	0.028	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.06
3	0.7100	1181.3	1202.2	1199.0	0.132	3.165	70.817	22.999	2.813	0.031	0.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.44
4	0.7077	1177.4	1198.2	1195.0	0.135	3.179	71.120	22.848	2.654	0.027	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.04
5	0.7364	1193.5	1214.7	1211.2	1.043	3.506	67.935	23.383	3.686	0.149	0.272	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1412.20
6	0.7437	1194.9	1216.1	1212.5	1.368	3.615	66.909	23.906	3.676	0.175	0.322	0.017	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1406.68
7	0.7445	1196.5	1217.7	1214.1	1.360	3.606	66.637	24.295	3.583	0.172	0.316	0.017	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1407.79
8	0.7400	1195.2	1216.3	1212.9	1.170	3.548	67.317	23.789	3.784	0.136	0.237	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1410.67
9	0.7443	1195.3	1216.4	1213.0	1.358	3.659	66.884	23.733	3.892	0.162	0.289	0.013	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1406.55
10	0.7247	1198.6	1219.8	1216.2	0.290	3.239	69.913	22.171	3.947	0.126	0.268	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1429.32
11	0.7118	1182.7	1203.6	1200.5	0.149	3.217	70.761	22.717	3.059	0.039	0.057	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1423.37
12	0.7236	1184.5	1205.5	1202.2	0.683	3.406	69.578	22.610	3.468	0.091	0.152	0.007	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1413.86
13	0.7169	1187.0	1208.0	1204.8	0.286	3.225	70.445	22.343	3.553	0.057	0.086	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1423.43
14	0.7163	1183.7	1204.7	1201.6	0.322	3.313	70.307	22.636	3.278	0.055	0.085	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1420.18
15	0.7090	1178.6	1199.4	1196.3	0.174	3.169	71.272	22.310	2.985	0.037	0.052	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1421.18
16	0.7084	1178.8	1199.7	1196.5	0.137	3.154	71.330	22.314	2.992	0.032	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.07
17	0.7088	1178.5	1199.4	1196.2	0.139	3.212	71.078	22.660	2.841	0.030	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.25
18	0.7303	1178.0	1198.9	1195.5	1.238	3.579	69.210	22.015	3.496	0.153	0.281	0.015	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1399.59
19	0.7144	1182.3	1203.3	1200.0	0.320	3.227	70.537	22.670	3.094	0.057	0.090	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1420.32
20	0.7159	1180.8	1201.8	1198.5	0.455	3.256	70.282	22.862	2.972	0.063	0.103	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1417.10
21	0.7208	1184.3	1205.3	1202.0	0.611	3.265	69.640	23.191	3.071	0.078	0.132	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1416.45
22	0.7464	1199.9	1221.1	1217.6	1.353	3.584	66.384	24.453	3.707	0.169	0.316	0.018	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1409.99
23	0.7415	1192.0	1213.2	1209.7	1.362	3.594	66.676	24.699	3.283	0.131	0.235	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1405.45
24	0.7432	1194.6	1215.8	1212.4	1.358	3.600	66.327	25.036	3.294	0.131	0.233	0.011	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1406.95
25	0.7415	1191.6	1212.7	1209.4	1.362	3.620	66.702	24.600	3.335	0.131	0.232	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.01
26	0.7419	1192.9	1214.0	1210.7	1.363	3.575	66.549	24.885	3.244	0.132	0.234	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1406.18
27	0.7413	1191.9	1213.0	1209.6	1.362	3.584	66.704	24.713	3.229	0.137	0.249	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1405.51
28	0.7419	1192.4	1213.5	1210.1	1.367	3.607	66.659	24.617	3.363	0.132	0.235	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1405.44
29	0.7410	1190.8	1211.9	1208.6	1.368	3.613	66.826	24.448	3.370	0.129	0.228	0.010	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1404.52
30	0.7244	1187.1	1208.2	1204.9	0.694	3.303	69.131	23.422	3.233	0.079	0.130	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1416.32
31	0.7311	1186.3	1207.3	1204.0	1.021	3.481	68.095	24.026	3.069	0.106	0.186	0.009	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1408.85
Avg	0.7274	1188.0	1208.6	1205.3	0.795	3.405	68.795	23.438	3.283	0.098	0.171	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1413.89

Zone 211

Source Daily Summary

December 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	0.6984	1155.0	1175.4	1172.3	0.957	2.410	74.291	19.238	3.096	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1402.93
2	0.6935	1146.6	1166.9	1127.5	0.974	2.503	76.808	19.716	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.15
3	0.6951	1148.5	1168.8	1123.1	0.934	2.680	77.060	19.325	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.38
4	0.6967	1150.4	1170.8	1121.7	0.921	2.725	77.177	19.176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.27
5	0.6983	1152.3	1172.7	1122.1	0.975	2.528	77.640	18.695	0.144	0.005	0.011	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1373.72
6	0.6999	1154.3	1174.7	1161.3	0.991	2.548	74.677	19.643	1.859	0.079	0.173	0.014	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.13
7	0.6999	1154.3	1174.7	1171.3	0.967	2.581	73.965	19.789	2.352	0.099	0.210	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1400.78
8	0.7006	1155.7	1176.2	1172.9	0.950	2.587	73.824	19.891	2.410	0.099	0.205	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1401.86
9	0.7007	1155.5	1176.0	1172.6	0.955	2.597	73.742	20.044	2.336	0.094	0.197	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1401.43
10	0.6996	1153.7	1174.2	1170.9	0.964	2.589	73.905	19.936	2.277	0.095	0.199	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1400.46
11	0.7007	1155.3	1175.7	1172.4	0.964	2.602	73.808	19.927	2.339	0.101	0.218	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1401.14
12	0.7012	1156.1	1176.5	1173.2	0.981	2.576	73.773	19.918	2.390	0.102	0.218	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1401.60
13	0.7003	1156.7	1177.2	1174.0	0.977	2.451	73.934	19.934	2.344	0.103	0.218	0.017	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1403.38
14	0.6996	1155.2	1175.7	1172.4	0.964	2.497	74.085	19.739	2.347	0.104	0.223	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1402.24
15	0.6976	1153.2	1173.7	1170.4	0.934	2.476	74.336	19.635	2.271	0.099	0.212	0.017	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1401.87
16	0.6992	1157.6	1178.1	1174.7	0.953	2.334	74.158	19.863	2.316	0.106	0.227	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1405.47
17	0.6989	1157.2	1177.7	1174.4	0.937	2.350	74.217	19.794	2.322	0.106	0.230	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1405.37
18	0.7003	1158.4	1178.9	1175.5	0.950	2.392	74.113	19.691	2.451	0.114	0.244	0.020	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1405.33
19	0.6975	1152.4	1172.8	1169.4	0.931	2.529	74.656	19.013	2.468	0.113	0.244	0.021	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1400.75
20	0.6985	1152.4	1172.8	1169.5	0.933	2.614	74.169	19.639	2.292	0.099	0.213	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1399.89
21	0.6993	1152.9	1173.3	1170.0	0.952	2.629	74.095	19.620	2.342	0.101	0.218	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1399.71
22	0.6993	1153.2	1173.6	1170.3	0.973	2.588	74.068	19.691	2.325	0.100	0.215	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1399.98
23	0.6986	1151.5	1171.9	1168.6	0.984	2.596	74.309	19.376	2.367	0.103	0.222	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1398.77
24	0.6927	1142.8	1163.0	1159.8	0.927	2.664	75.233	18.630	2.204	0.096	0.208	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1394.02
25	0.6922	1142.1	1162.3	1159.1	0.928	2.656	75.302	18.594	2.182	0.095	0.205	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1393.71
26	0.6934	1145.2	1165.4	1162.2	0.915	2.606	75.042	18.919	2.180	0.095	0.205	0.017	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1396.20
27	0.6973	1150.4	1170.8	1167.6	0.976	2.558	74.463	19.350	2.300	0.099	0.214	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1398.70
28	0.6995	1153.2	1173.6	1170.3	0.999	2.564	74.068	19.685	2.325	0.101	0.217	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1399.80
29	0.7002	1154.7	1175.2	1171.9	0.996	2.536	74.016	19.698	2.384	0.104	0.224	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1401.03
30	0.6993	1153.8	1174.2	1170.9	0.985	2.526	74.213	19.516	2.378	0.107	0.231	0.019	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1400.77
31	0.7001	1154.1	1174.6	1171.3	0.995	2.560	74.025	19.685	2.362	0.105	0.226	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1400.45
Avg	0.6983	1153.0	1173.1	1164.0	0.959	2.550	74.618	19.528	2.044	0.085	0.182	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1397.07

Zone 24

Gas Composition and Properties

Effective December 1, 2019

Attachment B
Page 3 of 24

Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2227		2.5372
Nitrogen, N2	3.5966		4.7507
Methane, C1	68.3268		51.6843
Ethane, C2	22.8445	6.1148	32.3889
Propane, C3	3.5767	0.9862	7.4366
iso-Butane, iC4	0.1420	0.0465	0.3892
n-Butane, nC4	0.2665	0.0841	0.7304
iso-Pentane, iC5	0.0132	0.0048	0.0449
n-Pentane, nC5	0.0103	0.0037	0.0350
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0007	0.0003	0.0028
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	-8.979	
Cricodentherm	5.417	
HV, Dry @ Base P, T	1205.59	
HV, Sat @ Base P, T	1184.61	
HV, Sat @ Sample P, T	1205.59	
Relative Density	0.7345	

C6+: 100

Totals 100.0000 7.2410 100.0000

Sample

Date: 12/01/2019 Pressure: 460.0
Type: Temperature:
Tech: Kevin Moos H2O: lbs/mm
H2S: ppm

Remarks:

Analysis

Date: 12/01/2019 Instrument:
Cylinder:

Tech: Kevin Moos

Remarks:

Zone 241

Gas Composition and Properties

Effective December 1, 2019

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2037		2.5090
Nitrogen, N2	4.1220		5.4690
Methane, C1	69.3937		52.7262
Ethane, C2	21.0888	5.6444	30.0335
Propane, C3	3.5147	0.9691	7.3404
iso-Butane, iC4	0.1855	0.0608	0.5106
n-Butane, nC4	0.4117	0.1299	1.1333
iso-Pentane, iC5	0.0359	0.0131	0.1227
n-Pentane, nC5	0.0366	0.0133	0.1251
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0074	0.0030	0.0302
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	-2.520	
Cricondentherm	8.203	
HV, Dry @ Base P, T	1191.99	
HV, Sat @ Base P, T	1171.24	
HV, Sat @ Sample P, T	1191.99	
Relative Density	0.7312	

C6+: 100

Totals 100.0000 6.8330 100.0000

Sample
Date: 12/01/2019 Pressure: 465.0
Type: Temperature:
Tech: Kevin Moos H2O: lbs/mm
H2S: ppm
Remarks:

Analysis
Date: 12/01/2019 Instrument:
Cylinder: 318
Tech: Kevin Moos
Remarks:

Zone 25

Source Daily Summary

December 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	0.6862	1123.2	1143.1		0.783	3.476	75.628	18.021	1.893	0.058	0.119	0.010	0.011	0.001					1376.72	
2	0.6858	1123.2	1143.1		0.763	3.469	75.705	17.933	1.940	0.057	0.113	0.009	0.009	0.000					1377.13	
3	0.6693	1097.6	1117.1		0.637	3.665	78.578	15.325	1.624	0.049	0.102	0.009	0.010	0.001					1362.28	
4	0.6887	1123.7	1143.6		0.763	3.710	75.182	18.124	2.024	0.059	0.119	0.009	0.010	0.000					1374.84	
5	0.6860	1123.4	1143.3		0.758	3.486	75.700	17.897	1.960	0.058	0.118	0.010	0.011	0.001					1377.10	
6	0.6857	1122.1	1141.9		0.783	3.492	75.796	17.787	1.936	0.059	0.124	0.010	0.012	0.001					1375.88	
7	0.6847	1122.0	1141.9		0.741	3.466	75.913	17.751	1.942	0.056	0.112	0.008	0.009	0.000					1376.82	
8	0.6897	1129.3	1149.3		0.788	3.424	75.037	18.547	2.003	0.059	0.121	0.010	0.010	0.000					1380.70	
9	0.6895	1130.0	1150.0		0.774	3.385	75.048	18.596	2.006	0.058	0.114	0.009	0.009	0.000					1381.72	
10	0.6863	1123.9	1143.8		0.776	3.448	75.712	17.880	1.975	0.061	0.125	0.011	0.012	0.001					1377.54	
11	0.6867	1124.8	1144.7		0.750	3.478	75.702	17.792	2.052	0.065	0.134	0.012	0.013	0.001					1378.10	
12	0.6750	1106.1	1125.7		0.673	3.632	77.642	16.092	1.775	0.053	0.109	0.010	0.011	0.002					1366.93	
13	0.6564	1077.8	1096.9		0.515	3.844	80.790	13.307	1.402	0.042	0.084	0.007	0.007	0.000					1350.75	
14	0.6668	1092.3	1111.6		0.634	3.766	79.087	14.719	1.608	0.051	0.111	0.010	0.012	0.001					1358.08	
15	0.6621	1085.5	1104.8		0.573	3.822	79.871	14.038	1.527	0.047	0.100	0.010	0.012	0.000					1354.57	
16	0.6037	994.9	1012.5		0.107	4.568	89.825	5.112	0.332	0.012	0.029	0.003	0.011	0.001					1300.08	
17	0.6108	1005.5	1023.3		0.183	4.467	88.646	6.169	0.457	0.017	0.043	0.005	0.012	0.001					1306.34	
18	0.6456	1060.0	1078.8		0.455	4.007	82.818	11.318	1.222	0.048	0.107	0.011	0.011	0.001					1339.47	
19	0.6442	1056.1	1074.9		0.435	4.146	82.970	11.117	1.171	0.042	0.096	0.009	0.011	0.002					1336.00	
20	0.6752	1104.7	1124.3		0.683	3.719	77.562	16.107	1.746	0.052	0.108	0.011	0.011	0.000					1365.04	
21	0.6455	1060.7	1079.4		0.467	3.936	82.873	11.312	1.250	0.037	0.098	0.009	0.014	0.003					1340.42	
22	0.6410	1054.2	1072.9		0.473	3.736	81.674	12.729	1.254	0.042	0.080	0.005	0.006	0.001					1340.08	
23	0.6365	1047.7	1066.3		0.459	3.754	82.251	12.206	1.191	0.041	0.083	0.006	0.007	0.001					1336.53	
24	0.6321	1041.3	1059.7		0.234	3.679	86.728	8.499	0.721	0.034	0.082	0.009	0.011	0.003					1332.88	
25	0.6276	1034.8	1053.1		0.234	3.679	86.728	8.499	0.721	0.034	0.082	0.009	0.011	0.003					1329.32	
26	0.6231	1028.3	1046.5		0.291	4.068	86.685	8.065	0.780	0.023	0.071	0.005	0.012	0.001					1322.74	
27	0.6713	1100.1	1119.6		0.648	3.687	78.172	15.698	1.631	0.047	0.097	0.009	0.011	0.000					1363.32	
28	0.6741	1103.8	1123.3		0.676	3.684	77.709	16.082	1.666	0.050	0.106	0.011	0.013	0.001					1364.98	
29	0.6707	1099.1	1118.6		0.643	3.701	78.259	15.630	1.601	0.047	0.098	0.010	0.011	0.000					1362.67	
30	0.6647	1090.4	1109.7		0.571	3.777	79.324	14.647	1.514	0.046	0.097	0.010	0.012	0.001					1357.93	
31	0.6745	1105.3	1124.8		0.669	3.649	77.610	16.222	1.667	0.050	0.106	0.012	0.013	0.002					1369.63	
Avg	0.6626	1087.0	1106.1		0.579	3.736	79.717	14.298	1.503	0.047	0.100	0.009	0.011	0.001					1356.02	

Zone 2b0

Source Daily Summary

December 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	0.7029	1148.0	1168.3	1165.2	0.923	3.316	72.776	20.538	2.236	0.065	0.128	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1390.26	
2	0.7018	1145.7	1166.0	1162.9	0.934	3.343	72.939	20.404	2.162	0.065	0.132	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1388.49	
3	0.7018	1145.8	1166.1	1163.1	0.923	3.343	72.988	20.312	2.220	0.066	0.130	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1388.75	
4	0.7039	1148.3	1168.6	1165.5	0.934	3.374	72.623	20.596	2.250	0.067	0.135	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1389.62	
5	0.7050	1146.5	1166.8	1163.8	0.918	3.614	72.374	20.563	2.313	0.068	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1386.41	
6	0.7044	1150.0	1170.4	1167.3	0.917	3.339	72.574	20.629	2.314	0.070	0.137	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1391.26	
7	0.7046	1149.2	1169.5	1166.4	0.962	3.342	72.556	20.632	2.272	0.070	0.143	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1390.04	
8	0.7032	1149.0	1169.3	1166.2	0.911	3.308	72.757	20.517	2.290	0.067	0.131	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1391.08	
9	0.7041	1150.3	1170.6	1167.6	0.915	3.303	72.548	20.768	2.248	0.066	0.131	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1391.83	
10	0.7041	1150.2	1170.6	1167.5	0.917	3.309	72.577	20.700	2.277	0.067	0.133	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1391.68	
11	0.7038	1149.0	1169.4	1166.2	0.943	3.308	72.721	20.512	2.282	0.070	0.141	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1390.57	
12	0.7024	1147.6	1167.9	1164.8	0.917	3.307	72.913	20.380	2.265	0.067	0.132	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1390.23	
13	0.7032	1148.1	1168.4	1165.3	0.925	3.337	72.823	20.366	2.330	0.068	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1390.04	
14	0.7029	1148.2	1168.6	1165.5	0.908	3.331	72.866	20.341	2.331	0.070	0.135	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1390.47	
15	0.7030	1145.5	1165.8	1162.7	0.966	3.408	72.946	20.129	2.302	0.072	0.152	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1387.16	
16	0.7027	1146.0	1166.3	1163.2	0.928	3.415	72.972	20.095	2.349	0.071	0.147	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1387.97	
17	0.6982	1133.6	1153.6	1150.5	1.011	3.625	73.768	19.209	2.130	0.072	0.158	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1377.28	
18	0.6998	1133.2	1153.3	1150.2	1.082	3.684	73.504	19.358	2.101	0.074	0.168	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1375.36	
19	0.6991	1139.0	1159.1	1156.1	0.911	3.520	73.924	18.927	2.382	0.096	0.207	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1383.05	
20	0.7055	1143.4	1163.6	1160.5	1.028	3.681	72.587	20.073	2.321	0.087	0.192	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1382.08	
21	0.7043	1147.6	1167.9	1164.8	0.945	3.438	72.618	20.449	2.318	0.069	0.143	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1388.41	
22	0.7035	1147.7	1168.0	1164.7	0.923	3.394	72.845	20.244	2.351	0.071	0.144	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1389.13	
23	0.7034	1147.8	1168.1	1165.0	0.921	3.386	72.730	20.458	2.273	0.070	0.142	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1389.41	
24	0.7021	1145.8	1166.1	1162.9	0.927	3.371	73.015	20.196	2.253	0.071	0.143	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1388.31	
25	0.7013	1145.2	1165.5	1162.3	0.902	3.366	73.077	20.227	2.208	0.066	0.132	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1388.42	
26	0.7011	1144.4	1164.7	1161.6	0.922	3.363	73.074	20.261	2.169	0.063	0.128	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1387.75	
27	0.6992	1146.9	1167.2	1164.0	0.884	3.096	73.468	20.160	2.194	0.060	0.118	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1392.51	
28	0.6994	1142.8	1163.0	1159.9	0.909	3.328	73.420	19.950	2.188	0.063	0.125	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1387.36	
29	0.7012	1144.2	1164.5	1161.3	0.930	3.382	73.076	20.219	2.172	0.065	0.133	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1387.23	
30	0.7022	1146.4	1166.7	1163.7	0.927	3.338	72.876	20.464	2.181	0.065	0.131	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1389.07	
31	0.7027	1148.5	1168.8	1165.6	0.880	3.331	72.814	20.519	2.231	0.066	0.135	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1391.02	
Avg	0.7025	1146.0	1166.2	1163.1	0.934	3.387	72.927	20.264	2.255	0.069	0.141	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1388.14	

Zone 261

Source Daily Summary

December 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	0.7472	1171.3	1192.1	1188.9	0.931	6.030	66.998	20.251	5.233	0.164	0.354	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.85	
2	0.7484	1173.5	1194.3	1191.2	0.929	6.008	66.846	20.364	5.280	0.169	0.363	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1377.37	
3	0.7478	1172.5	1193.3	1190.1	0.926	6.020	66.910	20.333	5.251	0.165	0.356	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1376.69	
4	0.7456	1169.9	1190.6	1187.5	0.925	5.972	67.221	20.194	5.145	0.159	0.345	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.69	
5	0.7446	1170.4	1191.2	1188.0	0.926	5.853	67.349	20.264	5.065	0.158	0.345	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.17	
6	0.7462	1171.4	1192.2	1189.0	0.927	5.938	67.122	20.310	5.154	0.160	0.351	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1376.88	
7	0.7449	1170.9	1191.6	1188.5	0.926	5.846	67.305	20.313	5.065	0.159	0.347	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.49	
8	0.7449	1168.8	1189.5	1186.4	0.924	5.975	67.254	20.234	5.095	0.151	0.331	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1375.07	
9	0.7466	1171.4	1192.2	1189.0	0.934	5.964	66.982	20.439	5.165	0.152	0.330	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1376.54	
10	0.7446	1167.9	1188.6	1185.5	0.930	6.001	67.195	20.329	5.061	0.144	0.309	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1374.21	
11	0.7461	1171.2	1191.9	1188.8	0.929	5.937	67.034	20.458	5.137	0.150	0.322	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1376.73	
12	0.7409	1166.4	1187.1	1184.0	0.927	5.747	67.706	20.348	4.804	0.140	0.297	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1375.93	
13	0.7318	1161.1	1181.6	1178.6	0.927	5.221	68.940	20.292	4.208	0.125	0.260	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1378.10	
14	0.7325	1159.0	1179.6	1176.5	0.922	5.421	68.827	20.141	4.273	0.128	0.262	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1374.99	
15	0.7364	1165.5	1186.2	1183.1	0.933	5.371	68.422	20.294	4.498	0.143	0.304	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1379.01	
16	0.7286	1156.4	1176.8	1173.7	0.934	5.196	69.414	20.026	4.026	0.123	0.252	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1375.51	
17	0.7274	1151.1	1171.5	1168.4	0.970	5.353	69.605	19.702	3.965	0.122	0.255	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1370.32	
18	0.7254	1152.2	1172.6	1169.5	0.946	5.129	70.042	19.528	3.928	0.127	0.268	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1373.59	
19	0.7335	1158.6	1179.1	1176.0	0.946	5.506	68.740	20.054	4.304	0.135	0.284	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1373.49	
20	0.7368	1162.5	1183.1	1180.0	0.942	5.578	68.290	20.230	4.484	0.142	0.300	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.10	
21	0.7383	1164.2	1184.8	1181.7	0.926	5.636	68.113	20.221	4.626	0.145	0.301	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1375.72	
22	0.7356	1160.7	1181.3	1178.2	0.916	5.611	68.431	20.126	4.469	0.135	0.279	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1374.13	
23	0.7339	1158.9	1179.4	1176.3	0.921	5.564	68.626	20.108	4.351	0.131	0.270	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1373.47	
24	0.7326	1157.9	1178.4	1175.3	0.917	5.508	68.824	20.033	4.302	0.127	0.262	0.013	0.014	0.000	0.000	0.000	0.000	0.000	1373.52	
25	0.7316	1157.8	1178.3	1175.2	0.917	5.414	68.952	20.094	4.207	0.126	0.260	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1374.41	
26	0.7330	1158.6	1179.1	1176.0	0.915	5.498	68.729	20.167	4.271	0.127	0.265	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1374.07	
27	0.7320	1158.2	1178.7	1175.6	0.918	5.434	68.942	20.008	4.275	0.129	0.265	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1374.39	
28	0.7315	1155.1	1175.6	1172.5	0.917	5.570	68.968	19.893	4.238	0.127	0.259	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1371.32	
29	0.7323	1156.8	1177.3	1174.2	0.921	5.537	68.838	20.036	4.250	0.128	0.262	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1372.55	
30	0.7314	1157.2	1177.7	1174.6	0.923	5.420	68.976	20.084	4.184	0.125	0.260	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1373.93	
31	0.7336	1159.6	1180.1	1177.0	0.909	5.507	68.635	20.224	4.299	0.130	0.267	0.014	0.015	0.000	0.000	0.000	0.000	0.000	1374.63	
Avg	0.7376	1163.0	1183.7	1180.6	0.928	5.638	68.201	20.164	4.600	0.140	0.296	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1375.09	

Zone 2b2

Gas Composition and Properties

Effective December 1, 2019

Attachment B
Page 8 of 24

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.2189		0.4943
Nitrogen, N2	2.8544		4.1031
Methane, C1	77.7020		63.9637
Ethane, C2	16.8317	4.5030	25.9703
Propane, C3	2.3282	0.6416	5.2680
iso-Butane, iC4	0.0352	0.0115	0.1050
n-Butane, nC4	0.0233	0.0073	0.0695
iso-Pentane, iC5	0.0011	0.0004	0.0041
n-Pentane, nC5	0.0013	0.0005	0.0048
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0039	0.0016	0.0172
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	-34.424	
Cricondentherm	-24.749	
HV, Dry @ Base P, T	1149.44	
HV, Sat @ Base P, T	1129.44	
HV, Sat @ Sample P, T	1149.44	
Relative Density	0.6746	

C6+: 100

Totals 100.0000 5.1660 100.0000

Sample

Date: 12/01/2019 Pressure: 480.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 12/01/2019 Instrument:
 Cylinder: 342
 Tech: Kevin Moos

Remarks:

Zone 263

Gas Composition and Properties

Effective December 1, 2019

Attachment B
Page 9 of 24

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8658		1.9108
Nitrogen, N2	2.6067		3.6619
Methane, C1	75.5626		60.7891
Ethane, C2	18.4509	4.9369	27.8217
Propane, C3	2.1954	0.6051	4.8546
iso-Butane, iC4	0.0869	0.0285	0.2533
n-Butane, nC4	0.1912	0.0603	0.5573
iso-Pentane, iC5	0.0153	0.0056	0.0554
n-Pentane, nC5	0.0185	0.0067	0.0669
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0067	0.0028	0.0290
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	-19.655	
Cricodentherm	-13.690	
HV, Dry @ Base P, T	1161.92	
HV, Sat @ Base P, T	1141.70	
HV, Sat @ Sample P, T	1161.92	
Relative Density	0.6903	

C6+: 100

Totals 100.0000 5.6460 100.0000

Sample

Date: 12/01/2019 Pressure: 525.0
 Type: Temperature:
 Tech: Kevin Moos H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 12/01/2019 Instrument:
 Cylinder: 360
 Tech: Kevin Moos

Remarks:

*** End of Report ***

Zone 264

Source Daily Summary

December 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	0.7017	1145.4	1165.7	1162.4	0.934	3.345	73.060	20.205	2.232	0.067	0.135	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1388.25	
2	0.7017	1145.1	1165.4	1162.2	0.942	3.352	72.967	20.375	2.141	0.066	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1387.91	
3	0.7021	1146.8	1167.1	1163.9	0.919	3.322	72.934	20.382	2.229	0.066	0.130	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1389.56	
4	0.7035	1148.1	1168.4	1165.2	0.933	3.358	72.676	20.571	2.238	0.067	0.135	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1389.69	
5	0.7049	1146.4	1166.7	1163.5	0.915	3.623	72.367	20.581	2.295	0.068	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1386.25	
6	0.7041	1149.3	1169.6	1166.4	0.915	3.361	72.645	20.535	2.313	0.070	0.138	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1390.59	
7	0.7055	1150.7	1171.1	1168.0	0.964	3.332	72.357	20.833	2.287	0.069	0.138	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1391.01	
8	0.7031	1148.8	1169.2	1166.0	0.920	3.292	72.815	20.461	2.285	0.068	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1391.00	
9	0.7040	1149.9	1170.2	1167.1	0.918	3.316	72.586	20.690	2.271	0.067	0.133	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1391.41	
10	0.7052	1152.2	1172.6	1169.4	0.918	3.284	72.354	20.959	2.267	0.067	0.131	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1393.05	
11	0.7040	1149.9	1170.2	1167.0	0.929	3.300	72.625	20.646	2.276	0.068	0.135	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1391.38	
12	0.7005	1144.7	1165.0	1161.8	0.886	3.351	73.322	19.914	2.294	0.070	0.138	0.010	0.014	0.000	0.000	0.000	0.000	0.000	1388.57	
13	0.7037	1149.2	1169.5	1166.3	0.931	3.314	72.733	20.477	2.317	0.069	0.137	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1390.79	
14	0.7033	1148.5	1168.8	1165.6	0.911	3.340	72.811	20.373	2.342	0.069	0.134	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1390.45	
15	0.7034	1146.7	1167.0	1163.8	0.956	3.390	72.853	20.252	2.301	0.072	0.150	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1388.17	
16	0.7030	1146.2	1166.4	1163.3	0.936	3.422	72.927	20.119	2.351	0.072	0.150	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1387.86	
17	0.7006	1139.7	1159.9	1156.7	0.986	3.513	73.346	19.686	2.220	0.071	0.153	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1382.40	
18	0.7061	1141.6	1161.8	1158.7	1.142	3.674	72.395	20.302	2.207	0.078	0.175	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1379.39	
19	0.7089	1152.1	1172.5	1169.3	1.036	3.459	72.213	20.424	2.515	0.099	0.217	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1389.26	
20	0.7084	1147.1	1167.4	1164.2	1.070	3.661	72.140	20.424	2.373	0.092	0.205	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1383.78	
21	0.7059	1150.2	1170.6	1167.4	0.943	3.437	72.398	20.576	2.390	0.075	0.157	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1389.92	
22	0.7040	1147.9	1168.2	1164.9	0.938	3.409	72.755	20.299	2.352	0.072	0.147	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1388.87	
23	0.7039	1148.8	1169.2	1166.0	0.912	3.374	72.655	20.528	2.304	0.068	0.137	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1390.27	
24	0.7034	1147.3	1167.7	1164.4	0.936	3.386	72.838	20.283	2.300	0.076	0.156	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1388.89	
25	0.7009	1144.9	1165.1	1162.0	0.901	3.356	73.107	20.231	2.197	0.064	0.127	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1388.40	
26	0.7018	1145.4	1165.6	1162.4	0.924	3.374	72.991	20.289	2.196	0.066	0.136	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1388.09	
27	0.7001	1147.4	1167.7	1164.5	0.885	3.151	73.268	20.316	2.175	0.061	0.123	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1392.24	
28	0.6996	1144.3	1164.6	1161.4	0.907	3.258	73.399	20.023	2.210	0.063	0.122	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1388.99	
29	0.7009	1143.9	1164.1	1160.9	0.928	3.373	73.153	20.146	2.179	0.065	0.133	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1387.19	
30	0.7021	1146.1	1166.4	1163.3	0.925	3.355	72.881	20.444	2.181	0.065	0.131	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1388.76	
31	0.7016	1146.7	1167.0	1163.7	0.887	3.330	73.005	20.355	2.198	0.065	0.135	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1389.88	
Avg	0.7033	1147.0	1167.4	1164.2	0.940	3.381	72.793	20.377	2.272	0.070	0.143	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1388.78	

Zone 265

Source Daily Summary

December 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	0.7248	1155.3	1175.8	1172.1	0.714	5.244	70.090	19.396	4.137	0.126	0.267	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.77
2	0.7343	1164.4	1185.1	1181.3	0.788	5.463	68.803	19.850	4.612	0.145	0.307	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1379.64
3	0.7376	1165.3	1185.9	1182.2	0.829	5.658	68.347	19.888	4.772	0.150	0.321	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.55
4	0.7342	1162.1	1182.6	1178.9	0.816	5.555	68.873	19.633	4.636	0.143	0.311	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.93
5	0.7241	1153.5	1174.0	1170.3	0.734	5.256	70.244	19.224	4.117	0.125	0.271	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.31
6	0.7263	1156.5	1177.0	1173.4	0.739	5.266	69.991	19.300	4.263	0.130	0.282	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1377.83
7	0.7337	1162.2	1182.8	1179.1	0.817	5.494	68.886	19.774	4.551	0.141	0.305	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.63
8	0.7179	1148.5	1168.9	1165.3	0.680	5.054	71.105	18.965	3.822	0.111	0.238	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1376.31
9	0.7011	1134.7	1154.8	1151.3	0.545	4.530	73.588	17.934	3.117	0.087	0.181	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1375.93
10	0.7008	1134.7	1154.8	1151.3	0.551	4.490	73.603	18.008	3.072	0.085	0.173	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1376.23
11	0.6971	1129.1	1149.1	1145.6	0.545	4.492	74.376	17.242	3.054	0.089	0.183	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1373.05
12	0.6978	1130.6	1150.7	1147.1	0.576	4.420	74.281	17.364	3.068	0.089	0.182	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1374.22
13	0.7106	1143.0	1163.3	1159.6	0.766	4.580	72.314	18.540	3.467	0.102	0.209	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.65
14	0.7088	1140.7	1160.9	1157.3	0.769	4.545	72.466	18.622	3.289	0.097	0.192	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1375.66
15	0.7252	1156.2	1176.7	1172.9	0.844	5.029	70.179	19.417	4.097	0.130	0.274	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.38
16	0.7166	1147.5	1167.8	1164.1	0.833	4.766	71.300	19.160	3.588	0.109	0.222	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1376.25
17	0.7081	1137.7	1157.9	1154.1	0.813	4.599	72.638	18.376	3.246	0.100	0.203	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1372.63
18	0.7110	1141.2	1161.5	1157.7	0.858	4.584	72.216	18.679	3.312	0.106	0.219	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1374.13
19	0.7013	1135.1	1155.2	1151.6	0.706	4.281	73.692	18.006	3.007	0.095	0.190	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.14
20	0.7087	1138.8	1159.0	1155.3	0.761	4.659	72.547	18.390	3.304	0.103	0.211	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1373.48
21	0.7228	1152.6	1173.0	1169.3	0.796	5.095	70.454	19.249	3.993	0.126	0.260	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.45
22	0.7226	1152.3	1172.7	1169.0	0.796	5.092	70.396	19.397	3.931	0.119	0.243	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1376.28
23	0.7146	1145.3	1165.5	1161.9	0.737	4.867	71.462	19.080	3.525	0.102	0.206	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1375.47
24	0.7187	1148.6	1168.9	1165.2	0.782	4.973	70.943	19.210	3.731	0.111	0.226	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.56
25	0.7188	1149.4	1169.8	1166.1	0.779	4.942	70.861	19.368	3.698	0.108	0.222	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.44
26	0.7157	1148.2	1168.6	1164.9	0.731	4.796	71.158	19.544	3.449	0.099	0.202	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1378.01
27	0.7140	1148.3	1168.6	1165.0	0.711	4.660	71.462	19.443	3.411	0.098	0.196	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1379.74
28	0.7106	1143.7	1164.0	1160.3	0.703	4.630	72.027	19.034	3.300	0.096	0.190	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1377.53
29	0.7130	1145.6	1165.9	1162.3	0.725	4.709	71.641	19.229	3.380	0.099	0.196	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.50
30	0.7128	1145.6	1165.9	1162.3	0.744	4.658	71.746	19.129	3.401	0.100	0.201	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.71
31	0.7128	1145.3	1165.6	1161.9	0.741	4.686	71.742	19.108	3.400	0.100	0.201	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1377.25
Avg	0.7160	1147.0	1167.5	1163.8	0.740	4.873	71.401	18.953	3.669	0.110	0.228	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1376.47

Zone 271

Source Daily Summary

December 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	0.7215	1152.9	1173.4	1169.7	0.687	5.116	70.457	19.472	3.889	0.115	0.239	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1378.05
2	0.7251	1155.3	1175.7	1172.1	0.718	5.265	70.061	19.390	4.151	0.125	0.263	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.38
3	0.7348	1164.7	1185.3	1181.7	0.794	5.484	68.741	19.870	4.625	0.145	0.306	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1379.40
4	0.7382	1165.4	1186.0	1182.3	0.837	5.693	68.252	19.934	4.783	0.149	0.317	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1377.09
5	0.7343	1161.7	1182.3	1178.4	0.819	5.576	68.860	19.638	4.625	0.142	0.306	0.017	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1376.38
6	0.7244	1153.3	1173.8	1169.9	0.740	5.287	70.225	19.184	4.140	0.125	0.270	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.71
7	0.7262	1155.7	1176.1	1172.4	0.747	5.300	70.005	19.264	4.250	0.129	0.276	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1376.79
8	0.7339	1162.2	1182.8	1179.2	0.821	5.512	68.852	19.790	4.553	0.140	0.300	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.29
9	0.7172	1147.7	1168.0	1164.4	0.677	5.049	71.217	18.896	3.795	0.110	0.232	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.85
10	0.7001	1133.5	1153.6	1150.0	0.539	4.523	73.757	17.819	3.080	0.087	0.176	0.010	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1375.30
11	0.6999	1133.2	1153.3	1149.7	0.550	4.502	73.754	17.883	3.044	0.083	0.167	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1375.19
12	0.6974	1129.1	1149.1	1145.5	0.548	4.515	74.327	17.259	3.061	0.089	0.181	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1372.71
13	0.6982	1131.0	1151.0	1147.5	0.591	4.415	74.209	17.441	3.056	0.089	0.179	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1374.16
14	0.7111	1143.0	1163.2	1159.7	0.773	4.615	72.226	18.587	3.470	0.102	0.205	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.10
15	0.7097	1141.1	1161.3	1157.6	0.777	4.593	72.343	18.654	3.323	0.097	0.191	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1375.13
16	0.7253	1156.2	1176.6	1173.0	0.851	5.029	70.156	19.453	4.083	0.129	0.269	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.20
17	0.7167	1147.3	1167.6	1164.0	0.839	4.778	71.280	19.174	3.577	0.108	0.219	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.88
18	0.7082	1137.4	1157.5	1153.8	0.818	4.622	72.628	18.363	3.245	0.099	0.199	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1372.03
19	0.7110	1141.0	1161.2	1157.5	0.857	4.599	72.238	18.638	3.318	0.106	0.217	0.013	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.77
20	0.7017	1135.1	1155.2	1151.3	0.710	4.312	73.642	18.015	3.015	0.095	0.188	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1375.64
21	0.7090	1138.8	1159.0	1155.1	0.764	4.688	72.499	18.393	3.319	0.103	0.209	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1373.07
22	0.7233	1152.8	1173.3	1169.4	0.801	5.123	70.380	19.275	4.009	0.126	0.257	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1376.12
23	0.7229	1152.5	1172.9	1169.0	0.800	5.110	70.346	19.420	3.938	0.118	0.240	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1376.03
24	0.7148	1145.1	1165.4	1161.7	0.744	4.881	71.441	19.083	3.526	0.102	0.203	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1375.06
25	0.7191	1148.7	1169.0	1165.3	0.789	5.000	70.879	19.230	3.743	0.111	0.224	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.17
26	0.7189	1149.4	1169.7	1166.0	0.779	4.950	70.857	19.373	3.693	0.108	0.218	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.24
27	0.7157	1147.9	1168.2	1164.5	0.734	4.816	71.161	19.528	3.444	0.099	0.199	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.45
28	0.7143	1148.2	1168.5	1164.9	0.716	4.686	71.434	19.427	3.424	0.098	0.195	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1379.27
29	0.7110	1143.8	1164.0	1160.5	0.708	4.655	71.975	19.046	3.312	0.095	0.187	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1377.17
30	0.7133	1145.6	1165.9	1162.2	0.725	4.741	71.593	19.237	3.393	0.097	0.193	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.05
31	0.7131	1145.6	1165.9	1162.1	0.743	4.690	71.704	19.127	3.419	0.098	0.198	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.30
Avg	0.7165	1147.0	1167.6	1163.9	0.742	4.907	71.339	18.963	3.687	0.110	0.227	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1376.06

Zone 272

Source Daily Summary

December 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	0.7211	1152.6	1173.0	1169.7	0.686	5.101	70.522	19.441	3.873	0.115	0.238	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1378.00
2	0.7248	1154.7	1175.2	1171.7	0.716	5.275	70.085	19.385	4.125	0.125	0.262	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1377.00
3	0.7346	1164.5	1185.1	1181.8	0.791	5.478	68.768	19.867	4.615	0.144	0.304	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1379.41
4	0.7381	1165.3	1186.0	1182.7	0.836	5.689	68.269	19.926	4.778	0.149	0.317	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1377.10
5	0.7348	1162.2	1182.7	1179.4	0.823	5.594	68.790	19.652	4.654	0.144	0.309	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1376.40
6	0.7244	1153.2	1173.6	1170.3	0.740	5.298	70.226	19.168	4.144	0.126	0.270	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.50
7	0.7262	1155.9	1176.3	1172.9	0.744	5.286	70.021	19.257	4.255	0.129	0.277	0.015	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1377.09
8	0.7342	1162.4	1183.0	1179.7	0.823	5.519	68.819	19.797	4.568	0.141	0.302	0.016	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1377.32
9	0.7180	1148.2	1168.6	1165.3	0.685	5.080	71.095	18.942	3.826	0.111	0.236	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.72
10	0.7009	1133.8	1153.9	1150.7	0.547	4.562	73.633	17.862	3.113	0.087	0.178	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1374.97
11	0.7007	1134.1	1154.2	1151.1	0.554	4.517	73.640	17.928	3.084	0.085	0.172	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1375.48
12	0.6971	1128.7	1148.7	1145.6	0.547	4.512	74.373	17.233	3.046	0.089	0.180	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1372.54
13	0.6983	1130.8	1150.8	1147.7	0.579	4.449	74.197	17.418	3.069	0.089	0.180	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1373.89
14	0.7111	1143.1	1163.3	1160.1	0.769	4.619	72.241	18.547	3.490	0.103	0.208	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.17
15	0.7088	1140.5	1160.7	1157.4	0.774	4.550	72.472	18.621	3.278	0.096	0.189	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1375.31
16	0.7258	1156.4	1176.8	1173.5	0.850	5.060	70.099	19.444	4.114	0.130	0.272	0.016	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1378.01
17	0.7174	1147.7	1168.0	1164.8	0.843	4.811	71.181	19.198	3.613	0.109	0.221	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.72
18	0.7089	1138.2	1158.4	1155.1	0.821	4.630	72.529	18.422	3.270	0.101	0.203	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1372.39
19	0.7117	1141.5	1161.7	1158.5	0.867	4.620	72.113	18.721	3.328	0.106	0.218	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1373.70
20	0.7015	1134.8	1154.8	1151.6	0.711	4.310	73.681	17.983	3.008	0.095	0.188	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1375.46
21	0.7090	1138.8	1159.0	1155.8	0.767	4.687	72.503	18.390	3.316	0.103	0.210	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1373.01
22	0.7232	1152.4	1172.8	1169.6	0.802	5.134	70.403	19.243	4.005	0.126	0.258	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1375.76
23	0.7231	1152.3	1172.7	1169.5	0.804	5.127	70.325	19.409	3.949	0.119	0.241	0.013	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1375.74
24	0.7149	1145.0	1165.3	1162.1	0.744	4.899	71.424	19.073	3.532	0.102	0.204	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1374.79
25	0.7190	1148.3	1168.6	1165.5	0.789	5.011	70.898	19.203	3.740	0.111	0.224	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1374.85
26	0.7189	1148.9	1169.2	1166.1	0.783	4.971	70.860	19.342	3.695	0.108	0.218	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1375.69
27	0.7159	1147.9	1168.2	1165.0	0.737	4.829	71.138	19.522	3.454	0.099	0.200	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1377.27
28	0.7140	1147.6	1167.9	1164.7	0.715	4.702	71.462	19.400	3.409	0.098	0.194	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1378.76
29	0.7109	1143.6	1163.8	1160.7	0.710	4.665	71.987	19.016	3.315	0.095	0.188	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1376.92
30	0.7130	1145.1	1165.4	1162.2	0.725	4.747	71.634	19.204	3.381	0.097	0.193	0.010	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1376.70
31	0.7130	1145.2	1165.5	1162.3	0.743	4.704	71.722	19.098	3.416	0.098	0.198	0.011	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1376.94
Avg	0.7166	1147.0	1167.5	1164.3	0.743	4.917	71.326	18.958	3.692	0.111	0.227	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1375.92

Zone 273

Source Daily Summary

December 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	0.6738	1117.3	1137.1	1133.9	0.241	3.497	77.080	17.511	1.588	0.031	0.047	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1381.95
2	0.6743	1120.1	1139.9	1136.8	0.200	3.430	76.976	17.696	1.623	0.028	0.042	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1384.97
3	0.6660	1106.3	1125.9	1122.8	0.204	3.489	78.357	16.541	1.346	0.024	0.036	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.40
4	0.6616	1098.7	1118.1	1115.1	0.206	3.531	79.236	15.647	1.316	0.024	0.036	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1371.49
5	0.6626	1100.7	1120.2	1117.1	0.190	3.537	78.980	15.926	1.304	0.023	0.035	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1372.84
6	0.6639	1102.3	1121.8	1118.7	0.202	3.540	78.868	15.894	1.429	0.026	0.038	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1373.51
7	0.6685	1109.5	1129.2	1126.1	0.210	3.517	78.026	16.670	1.504	0.027	0.041	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1377.82
8	0.6674	1106.7	1126.3	1123.3	0.228	3.555	78.241	16.427	1.475	0.028	0.042	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1375.49
9	0.6663	1105.1	1124.6	1121.6	0.259	3.504	78.609	16.007	1.523	0.035	0.057	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1374.55
10	0.6697	1110.0	1129.7	1126.6	0.290	3.475	78.170	16.258	1.678	0.043	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1377.17
11	0.6628	1098.5	1118.0	1114.9	0.287	3.530	79.473	15.011	1.562	0.045	0.080	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1369.99
12	0.6648	1102.6	1122.1	1119.0	0.347	3.386	79.203	15.300	1.624	0.046	0.081	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1372.88
13	0.6627	1101.7	1121.2	1118.0	0.473	3.048	79.718	15.093	1.539	0.043	0.070	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1373.94
14	0.6636	1102.7	1122.3	1119.1	0.465	3.080	79.551	15.215	1.558	0.044	0.072	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1374.32
15	0.6622	1100.3	1119.7	1116.5	0.471	3.085	79.869	14.869	1.574	0.044	0.072	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1372.73
16	0.6635	1103.2	1122.7	1119.5	0.469	3.037	79.554	15.270	1.542	0.043	0.070	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1374.99
17	0.6602	1097.7	1117.2	1114.0	0.489	3.031	80.164	14.735	1.451	0.043	0.071	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.56
18	0.6596	1096.3	1115.7	1112.4	0.494	3.053	80.282	14.613	1.428	0.044	0.072	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1370.40
19	0.6703	1113.2	1132.9	1129.7	0.498	3.019	78.370	16.308	1.655	0.050	0.083	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1380.43
20	0.6622	1100.2	1119.7	1116.6	0.422	3.163	79.701	15.112	1.474	0.043	0.071	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1372.68
21	0.6641	1103.6	1123.1	1120.0	0.364	3.231	79.222	15.572	1.497	0.039	0.063	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1374.87
22	0.6657	1107.8	1127.4	1124.3	0.333	3.167	78.780	16.186	1.437	0.033	0.053	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1378.54
23	0.6665	1108.7	1128.4	1125.3	0.321	3.211	78.595	16.323	1.461	0.032	0.049	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1378.82
24	0.6671	1109.9	1129.5	1126.4	0.354	3.145	78.646	16.198	1.548	0.037	0.059	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1379.59
25	0.6678	1110.6	1130.3	1127.1	0.290	3.262	78.396	16.406	1.551	0.034	0.053	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1379.82
26	0.6785	1124.4	1144.3	1141.2	0.323	3.381	76.405	18.058	1.728	0.038	0.060	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1385.89
27	0.6787	1125.2	1145.1	1142.0	0.339	3.326	76.441	18.010	1.774	0.040	0.063	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1386.70
28	0.6764	1122.0	1141.8	1138.7	0.376	3.250	76.950	17.575	1.729	0.042	0.068	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1385.04
29	0.6794	1125.6	1145.6	1142.5	0.407	3.259	76.501	17.864	1.836	0.047	0.076	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1386.51
30	0.6742	1118.4	1138.2	1135.0	0.403	3.222	77.453	17.059	1.735	0.044	0.072	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1382.81
31	0.6727	1117.9	1137.7	1134.6	0.395	3.117	77.705	16.988	1.672	0.042	0.068	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1383.84
Avg	0.6677	1109.0	1128.3	1125.1	0.340	3.293	78.501	16.205	1.554	0.038	0.061	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1377.50

Zone 28

Source Daily Summary

December 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	0.6729	1118.5	1138.3	1135.4	0.186	3.421	77.239	17.438	1.645	0.028	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.43
2	0.6675	1110.1	1129.7	1126.9	0.195	3.414	78.059	16.902	1.370	0.024	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.57
3	0.6612	1098.9	1118.4	1115.6	0.194	3.498	79.284	15.651	1.315	0.024	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.25
4	0.6615	1099.7	1119.2	1116.4	0.183	3.494	79.198	15.768	1.299	0.023	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.94
5	0.6616	1099.2	1118.7	1115.9	0.186	3.528	79.235	15.634	1.359	0.023	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1372.20
6	0.6669	1108.2	1127.8	1125.0	0.192	3.477	78.312	16.449	1.501	0.027	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.84
7	0.6681	1108.9	1128.5	1125.7	0.206	3.520	78.114	16.561	1.530	0.027	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.52
8	0.6644	1102.6	1122.1	1119.3	0.236	3.515	78.795	15.958	1.421	0.029	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1373.47
9	0.6683	1108.9	1128.5	1125.7	0.257	3.460	78.440	16.011	1.701	0.044	0.079	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1377.30
10	0.6657	1104.2	1123.7	1120.9	0.290	3.458	78.851	15.689	1.598	0.040	0.068	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1374.07
11	0.6639	1100.9	1120.4	1117.6	0.269	3.516	79.286	15.158	1.630	0.046	0.084	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1371.90
12	0.6624	1101.0	1120.5	1117.7	0.425	3.131	79.676	15.116	1.530	0.042	0.069	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1373.58
13	0.6632	1103.0	1122.6	1119.7	0.462	3.026	79.604	15.223	1.560	0.042	0.069	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1375.25
14	0.6616	1100.2	1119.7	1116.8	0.456	3.056	79.936	14.862	1.563	0.044	0.071	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1373.40
15	0.6633	1103.1	1122.7	1119.8	0.455	3.038	79.597	15.209	1.578	0.042	0.069	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1375.30
16	0.6609	1099.8	1119.3	1116.4	0.475	2.993	80.018	14.897	1.492	0.042	0.069	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1373.52
17	0.6588	1095.9	1115.4	1112.5	0.482	3.014	80.395	14.560	1.421	0.043	0.071	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1370.96
18	0.6668	1108.4	1128.1	1125.2	0.491	2.997	78.980	15.773	1.619	0.046	0.078	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1378.16
19	0.6660	1107.4	1127.0	1124.2	0.451	3.045	79.063	15.714	1.589	0.046	0.077	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1377.73
20	0.6619	1100.8	1120.3	1117.5	0.357	3.202	79.608	15.254	1.470	0.037	0.061	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1373.81
21	0.6646	1106.8	1126.4	1123.6	0.320	3.149	78.955	16.047	1.434	0.033	0.053	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1378.49
22	0.6657	1108.5	1128.1	1125.3	0.286	3.198	78.708	16.261	1.464	0.030	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1379.47
23	0.6663	1109.3	1128.9	1126.1	0.327	3.145	78.745	16.141	1.540	0.036	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1379.79
24	0.6665	1109.7	1129.3	1126.5	0.303	3.176	78.675	16.197	1.555	0.033	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1380.10
25	0.6782	1124.7	1144.7	1141.8	0.304	3.355	76.455	18.031	1.759	0.036	0.059	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.77
26	0.6757	1120.8	1140.7	1137.9	0.308	3.352	76.906	17.643	1.698	0.035	0.057	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.51
27	0.6767	1123.0	1142.9	1140.0	0.362	3.231	76.912	17.594	1.783	0.042	0.067	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1386.14
28	0.6781	1124.8	1144.7	1141.9	0.396	3.202	76.677	17.816	1.784	0.044	0.071	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1386.91
29	0.6754	1120.0	1139.9	1137.0	0.392	3.244	77.251	17.177	1.810	0.045	0.072	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1383.79
30	0.6725	1117.8	1137.6	1134.7	0.392	3.114	77.733	16.945	1.694	0.042	0.068	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1383.93
31	0.6697	1115.8	1135.5	1132.7	0.319	3.078	78.175	16.673	1.650	0.037	0.058	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1384.40
Avg	0.6670	1108.0	1128.1	1125.2	0.328	3.260	78.609	16.140	1.560	0.037	0.059	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1378.05

Zone 31

Source Daily Summary

December 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	0.6400	1060.5	1079.3	1076.7	0.327	3.664	83.565	11.166	1.180	0.035	0.057	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.03
2	0.6399	1060.4	1079.2	1076.3	0.327	3.663	83.566	11.165	1.179	0.035	0.057	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.03
3	0.6397	1060.4	1079.2	1075.9	0.321	3.632	83.693	11.109	1.149	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.14
4	0.6403	1061.3	1080.0	1076.9	0.323	3.629	83.600	11.191	1.160	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.63
5	0.6396	1060.1	1078.9	1075.7	0.321	3.636	83.728	11.069	1.151	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1345.94
6	0.6397	1060.4	1079.2	1075.9	0.321	3.631	83.701	11.096	1.155	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.15
7	0.6285	1043.3	1061.7	1058.6	0.289	3.670	85.740	9.258	0.961	0.030	0.046	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1336.13
8	0.6301	1045.8	1064.4	1061.3	0.293	3.661	85.439	9.534	0.989	0.030	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1337.70
9	0.6394	1060.0	1078.7	1075.6	0.321	3.631	83.754	11.054	1.145	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1345.89
10	0.6404	1061.2	1080.0	1076.8	0.324	3.640	83.586	11.188	1.165	0.035	0.056	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.47
11	0.6405	1061.2	1080.0	1076.8	0.324	3.647	83.577	11.180	1.173	0.035	0.056	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1346.38
12	0.6314	1047.6	1066.1	1063.0	0.296	3.672	85.213	9.715	1.018	0.031	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1338.54
13	0.6285	1043.3	1061.8	1058.7	0.285	3.671	85.757	9.226	0.978	0.030	0.046	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1336.22
14	0.6315	1047.6	1066.1	1063.0	0.292	3.680	85.220	9.688	1.035	0.032	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1338.54
15	0.6316	1047.8	1066.4	1063.3	0.292	3.682	85.185	9.715	1.039	0.032	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1338.65
16	0.6320	1048.5	1067.1	1063.9	0.293	3.677	85.116	9.782	1.045	0.032	0.049	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1339.08
17	0.6393	1059.1	1077.9	1074.7	0.312	3.681	83.798	10.944	1.169	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1344.97
18	0.6396	1059.4	1078.2	1074.9	0.313	3.690	83.749	10.971	1.179	0.035	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1345.01
19	0.6401	1060.2	1079.0	1075.8	0.313	3.696	83.652	11.040	1.200	0.035	0.056	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1345.43
20	0.6381	1057.0	1075.8	1072.6	0.307	3.706	84.028	10.694	1.169	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.56
21	0.6381	1057.0	1075.8	1072.5	0.307	3.705	84.031	10.692	1.169	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.57
22	0.6381	1057.0	1075.8	1072.5	0.307	3.705	84.032	10.691	1.169	0.035	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.57
23	0.6367	1054.9	1073.6	1070.4	0.311	3.701	84.304	10.428	1.158	0.035	0.055	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1342.28
24	0.6360	1053.4	1072.1	1069.0	0.302	3.737	84.429	10.283	1.152	0.035	0.054	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1341.15
25	0.6360	1053.8	1072.5	1069.3	0.314	3.690	84.493	10.227	1.177	0.036	0.055	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1341.68
26	0.6414	1061.5	1080.3	1077.1	0.302	3.750	83.507	11.007	1.337	0.036	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1345.78
27	0.6375	1056.1	1074.8	1071.6	0.303	3.715	84.135	10.588	1.162	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1342.97
28	0.6376	1056.2	1074.9	1071.7	0.303	3.713	84.125	10.600	1.162	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.04
29	0.6375	1056.2	1074.9	1071.7	0.303	3.714	84.128	10.598	1.162	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.01
30	0.6375	1056.2	1074.9	1071.7	0.303	3.712	84.130	10.596	1.162	0.035	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.02
31	0.6384	1057.6	1076.3	1073.0	0.306	3.702	83.981	10.739	1.175	0.035	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.91
Avg	0.6369	1056.0	1074.3	1071.2	0.308	3.681	84.225	10.556	1.136	0.034	0.053	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1343.02

Zone 32

Source Daily Summary

December 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	0.6849	1151.7	1172.1	1166.9	0.000	2.822	73.570	22.955	0.638	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.98	-26.88
2	0.6843	1152.0	1172.4	1167.5	0.000	2.738	73.729	22.877	0.642	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.08	-27.03
3	0.6843	1152.3	1172.7	1167.7	0.000	2.727	73.710	22.913	0.635	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.36	-26.99
4	0.6853	1153.4	1173.8	1169.2	0.000	2.750	73.534	23.048	0.653	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.70	-26.50
5	0.6848	1152.6	1173.0	1168.5	0.000	2.753	73.601	23.012	0.620	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.22	-26.88
6	0.6852	1153.2	1173.6	1168.7	0.000	2.755	73.552	23.027	0.652	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.52	-26.56
7	0.6851	1153.1	1173.5	1168.9	0.000	2.753	73.550	23.044	0.639	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.52	-26.63
8	0.6847	1152.1	1172.5	1167.7	0.000	2.774	73.587	23.037	0.588	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.70	-27.11
9	0.6844	1151.9	1172.3	1167.4	0.000	2.764	73.624	23.018	0.580	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.72	-27.22
10	0.6844	1152.3	1172.7	1167.5	0.000	2.739	73.644	23.014	0.589	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.19	-27.14
11	0.6853	1152.6	1173.0	1167.9	0.000	2.807	73.455	23.126	0.597	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.62	-26.79
12	0.6848	1151.8	1172.2	1166.7	0.000	2.801	73.578	23.001	0.606	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.27	-27.03
13	0.6843	1151.7	1172.1	1167.0	0.000	2.766	73.638	23.015	0.567	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.57	-27.35
14	0.6844	1151.9	1172.3	1166.9	0.000	2.763	73.646	22.980	0.597	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.72	-27.17
15	0.6849	1152.5	1172.9	1167.8	0.000	2.772	73.585	22.993	0.636	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.96	-26.79
16	0.6855	1153.4	1173.8	1168.9	0.000	2.772	73.472	23.100	0.642	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.45	-26.48
17	0.6852	1152.9	1173.3	1168.0	0.000	2.773	73.520	23.069	0.624	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.15	-26.72
18	0.6848	1152.7	1173.2	1168.2	0.000	2.750	73.593	23.015	0.629	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.35	-26.81
19	0.6853	1152.9	1173.3	1168.2	0.000	2.785	73.484	23.102	0.616	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.02	-26.71
20	0.6854	1153.1	1173.6	1168.6	0.000	2.779	73.497	23.058	0.652	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.24	-26.50
21	0.6852	1153.2	1173.6	1168.8	0.000	2.753	73.542	23.046	0.644	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.56	-26.59
22	0.6853	1153.2	1173.6	1169.0	0.000	2.764	73.496	23.098	0.628	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.46	-26.60
23	0.6847	1152.6	1173.0	1167.9	0.000	2.744	73.616	23.015	0.611	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.30	-26.95
24	0.6848	1153.0	1173.5	1168.5	0.000	2.730	73.572	23.084	0.601	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.73	-26.87
25	0.6849	1152.8	1173.2	1168.1	0.000	2.748	73.563	23.069	0.606	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.42	-26.87
26	0.6848	1152.6	1173.0	1168.0	0.000	2.752	73.577	23.062	0.597	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.25	-26.97
27	0.6852	1152.8	1173.2	1167.7	0.000	2.781	73.509	23.069	0.627	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.05	-26.69
28	0.6851	1152.7	1173.1	1167.9	0.000	2.779	73.513	23.093	0.602	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.98	-26.85
29	0.6847	1152.0	1172.4	1167.5	0.000	2.784	73.579	23.031	0.592	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.55	-27.09
30	0.6846	1152.5	1172.9	1167.9	0.000	2.744	73.617	23.021	0.605	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.28	-27.00
31	0.6847	1152.8	1173.2	1168.2	0.000	2.732	73.606	23.039	0.610	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.58	-26.91
Avg	0.6849	1153.0	1173.0	1168.0	0.000	2.763	73.573	23.033	0.617	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.11	-26.86

Zone 33

Source Daily Summary

December 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	0.6620	1092.5	1111.9	1108.9	0.376	3.686	79.687	14.555	1.559	0.045	0.080	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1363.35
2	0.6624	1092.4	1111.8	1108.7	0.377	3.731	79.614	14.567	1.572	0.046	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1362.78
3	0.6628	1092.8	1112.1	1109.0	0.376	3.749	79.554	14.596	1.580	0.047	0.086	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1362.78
4	0.6630	1093.0	1112.4	1109.3	0.377	3.753	79.491	14.659	1.579	0.046	0.083	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1362.87
5	0.6630	1093.2	1112.5	1109.5	0.377	3.737	79.504	14.665	1.577	0.046	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1363.13
6	0.6628	1093.1	1112.5	1109.4	0.376	3.723	79.548	14.639	1.575	0.046	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1363.26
7	0.6625	1093.2	1112.5	1109.5	0.375	3.693	79.602	14.622	1.569	0.046	0.081	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1363.64
8	0.6618	1092.7	1112.0	1109.1	0.374	3.667	79.712	14.552	1.560	0.045	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1363.67
9	0.6612	1092.6	1112.0	1109.1	0.374	3.607	79.832	14.513	1.546	0.044	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1364.30
10	0.6609	1092.5	1111.9	1108.9	0.374	3.586	79.886	14.490	1.538	0.044	0.073	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1364.45
11	0.6609	1092.4	1111.7	1108.7	0.373	3.599	79.888	14.471	1.543	0.044	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1364.25
12	0.6610	1092.0	1111.3	1108.3	0.371	3.630	79.879	14.436	1.553	0.045	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1363.71
13	0.6606	1091.9	1111.3	1108.3	0.370	3.604	79.931	14.428	1.541	0.044	0.072	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1363.98
14	0.6606	1091.6	1111.0	1108.0	0.369	3.617	79.944	14.401	1.543	0.044	0.072	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1363.68
15	0.6610	1092.3	1111.6	1108.6	0.368	3.620	79.862	14.479	1.544	0.044	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1364.03
16	0.6606	1091.6	1110.9	1108.0	0.367	3.623	79.937	14.404	1.543	0.044	0.072	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1363.64
17	0.6606	1091.0	1110.3	1107.3	0.366	3.660	79.954	14.338	1.555	0.044	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.89
18	0.6601	1090.4	1109.7	1106.7	0.364	3.656	80.400	14.259	1.555	0.044	0.072	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.65
19	0.6600	1089.9	1109.2	1106.2	0.363	3.677	80.067	14.208	1.557	0.045	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.13
20	0.6599	1089.8	1109.1	1106.0	0.362	3.679	80.085	14.189	1.557	0.045	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.04
21	0.6593	1088.2	1107.5	1104.4	0.360	3.724	80.209	14.009	1.565	0.046	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1360.64
22	0.6585	1087.2	1106.4	1103.3	0.373	3.684	80.402	13.852	1.556	0.046	0.076	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1360.26
23	0.6586	1086.7	1105.9	1102.8	0.355	3.752	80.349	13.856	1.557	0.045	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1359.54
24	0.6581	1085.9	1105.1	1102.0	0.363	3.743	80.485	13.703	1.572	0.046	0.077	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1359.02
25	0.6609	1091.0	1110.3	1107.3	0.370	3.682	80.008	14.146	1.663	0.046	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.58
26	0.6601	1090.3	1109.6	1106.6	0.357	3.672	80.077	14.168	1.599	0.045	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.51
27	0.6590	1088.8	1108.1	1105.1	0.358	3.663	80.245	14.063	1.543	0.044	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1361.72
28	0.6590	1088.7	1108.0	1105.0	0.359	3.662	80.242	14.075	1.536	0.044	0.071	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1361.67
29	0.6591	1088.9	1108.2	1105.2	0.359	3.658	80.228	14.093	1.536	0.044	0.071	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1361.81
30	0.6590	1088.6	1107.8	1104.8	0.358	3.672	80.250	14.055	1.538	0.044	0.072	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1361.47
31	0.6579	1086.7	1106.0	1102.9	0.360	3.680	80.481	13.806	1.542	0.045	0.074	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1360.28
Avg	0.6606	1091.0	1110.0	1107.0	0.368	3.674	79.968	14.300	1.560	0.045	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.54

Zone 34

Source Daily Summary

December 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	0.6787	1115.4	1135.2	1132.3	1.090	2.788	75.571	20.245	0.304	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1374.77	-34.99
2	0.6748	1108.7	1128.3	1125.4	1.096	2.829	76.301	19.524	0.247	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1370.32	-37.45
3	0.6707	1100.4	1119.9	1117.1	1.113	2.916	77.120	18.631	0.218	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1364.34	-40.26
4	0.6740	1107.2	1126.8	1124.0	1.108	2.818	76.587	19.137	0.348	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.39	-37.60
5	0.6745	1107.3	1126.9	1124.0	1.102	2.875	76.387	19.366	0.269	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.92	-37.71
6	0.6732	1104.4	1123.9	1121.1	1.109	2.915	76.615	19.132	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1366.70	-38.78
7	0.6731	1104.2	1123.7	1120.9	1.108	2.925	76.625	19.111	0.231	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1366.49	-38.82
8	0.6738	1105.9	1125.5	1122.7	1.103	2.883	76.490	19.301	0.222	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1368.05	-38.37
9	0.6721	1101.9	1121.4	1118.5	1.109	2.965	76.822	18.888	0.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1364.70	-39.61
10	0.6716	1100.1	1119.6	1116.7	1.114	3.019	76.932	18.704	0.230	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1363.00	-39.99
11	0.6713	1100.8	1120.3	1117.4	1.114	2.951	77.015	18.677	0.242	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1364.14	-39.94
12	0.6759	1108.5	1128.1	1125.3	1.102	2.929	76.063	19.668	0.237	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1369.04	-37.23
13	0.6835	1121.9	1141.7	1138.8	1.074	2.877	74.545	21.202	0.298	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1377.76	-32.55
14	0.6920	1137.1	1157.2	1154.3	1.048	2.793	72.795	23.059	0.303	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.85	-27.55
15	0.6927	1138.3	1158.4	1155.5	1.054	2.776	72.656	23.214	0.297	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1388.61	-27.17
16	0.6921	1136.2	1156.4	1153.4	1.064	2.822	72.805	23.003	0.302	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.79	-27.62
17	0.6910	1134.4	1154.5	1151.6	1.058	2.842	72.945	22.913	0.238	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1385.64	-28.46
18	0.6920	1136.4	1156.6	1153.6	1.057	2.818	72.793	23.038	0.291	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.07	-27.65
19	0.6918	1135.9	1156.0	1153.1	1.056	2.827	72.833	22.999	0.283	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.71	-27.85
20	0.6923	1137.3	1157.5	1154.5	1.057	2.789	72.747	23.109	0.295	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.88	-27.45
21	0.6917	1136.8	1156.9	1154.0	1.053	2.772	72.866	23.013	0.293	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.81	-27.71
22	0.6913	1135.5	1155.6	1152.6	1.053	2.810	72.939	22.909	0.286	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.66	-28.06
23	0.6916	1136.4	1156.5	1153.6	1.059	2.779	72.870	23.012	0.277	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.41	-27.86
24	0.6905	1134.6	1154.7	1151.7	1.055	2.789	73.083	22.803	0.268	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.34	-28.50
25	0.6912	1135.8	1156.0	1153.0	1.056	2.777	72.931	22.981	0.253	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.19	-28.15
26	0.6910	1135.6	1155.7	1152.8	1.058	2.767	72.962	22.972	0.238	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1387.14	-28.29
27	0.6906	1134.9	1155.0	1152.0	1.056	2.780	73.024	22.910	0.228	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.58	-28.57
28	0.6907	1134.9	1155.0	1152.0	1.057	2.791	72.999	22.918	0.233	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.48	-28.50
29	0.6908	1135.0	1155.1	1152.2	1.058	2.788	72.987	22.934	0.231	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.56	-28.47
30	0.6908	1135.0	1155.1	1152.2	1.058	2.787	72.986	22.937	0.230	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.57	-28.47
31	0.6911	1135.4	1155.5	1152.6	1.057	2.789	72.950	22.952	0.250	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1386.80	-28.26
Avg	0.6843	1124.0	1143.5	1140.6	1.076	2.838	74.363	21.460	0.261	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1379.15	-32.19

Zone 43

MANDAN BORDER

Start Date	End Date	NBPL - St Anthony			Mandan Border			Weighted	
		MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
12/1/2019	12/2/2019				5396	6135	1.1371	1.137	12/1/2019
12/2/2019	12/3/2019				4641	5290	1.1399	1.140	12/2/2019
12/3/2019	12/4/2019	1781	1962	1.1019	2344	2638	1.1259	1.116	12/3/2019
12/4/2019	12/5/2019	1859	2037	1.0961	2255	2522	1.1181	1.108	12/4/2019
12/5/2019	12/6/2019	1851	2035	1.0995	3235	3624	1.1202	1.113	12/5/2019
12/6/2019	12/7/2019	1801	1978	1.0981	3078	3453	1.1218	1.113	12/6/2019
12/7/2019	12/8/2019	1871	2062	1.1020	2523	2849	1.1292	1.118	12/7/2019
12/8/2019	12/9/2019	1812	1992	1.0997	5453	6139	1.1263	1.120	12/8/2019
12/9/2019	12/10/2019	1805	1984	1.0990	5756	6476	1.1246	1.118	12/9/2019
12/10/2019	12/11/2019	1743	1906	1.0938	6424	7255	1.1297	1.122	12/10/2019
12/11/2019	12/12/2019	1818	1997	1.0983	5886	6581	1.1180	1.113	12/11/2019
12/12/2019	12/13/2019	1833	2014	1.0987	4726	5304	1.1221	1.116	12/12/2019
12/13/2019	12/14/2019	1839	2019	1.0979	5209	5842	1.1212	1.115	12/13/2019
12/14/2019	12/15/2019	1835	2023	1.1023	5534	6211	1.1223	1.117	12/14/2019
12/15/2019	12/16/2019	1820	2006	1.1021	4018	4501	1.1197	1.114	12/15/2019
12/16/2019	12/17/2019	1841	2030	1.1026	3808	4275	1.1227	1.116	12/16/2019
12/17/2019	12/18/2019	1830	2018	1.1029	4213	4706	1.1172	1.113	12/17/2019
12/18/2019	12/19/2019	1812	1993	1.0999	3254	3631	1.1157	1.110	12/18/2019
12/19/2019	12/20/2019	1823	2012	1.1040	4098	4642	1.1329	1.124	12/19/2019
12/20/2019	12/21/2019	1821	2012	1.1049	3710	4154	1.1197	1.115	12/20/2019
12/21/2019	12/22/2019	1856	2047	1.1028	2646	2972	1.1231	1.115	12/21/2019
12/22/2019	12/23/2019	1848	2033	1.1005	2583	2912	1.1274	1.116	12/22/2019
12/23/2019	12/24/2019	1818	2005	1.1030	3137	3540	1.1284	1.119	12/23/2019
12/24/2019	12/25/2019	1828	2019	1.1041	3404	3845	1.1295	1.121	12/24/2019
12/25/2019	12/26/2019	1847	2040	1.1048	3475	3928	1.1303	1.121	12/25/2019
12/26/2019	12/27/2019	1821	2013	1.1057	4307	4925	1.1443	1.133	12/26/2019
12/27/2019	12/28/2019	1813	2011	1.1095	3933	4505	1.1451	1.134	12/27/2019
12/28/2019	12/29/2019	1859	2059	1.1076	3783	4321	1.1418	1.131	12/28/2019
12/29/2019	12/30/2019	1848	2045	1.1067	4505	5160	1.1456	1.134	12/29/2019
12/30/2019	12/31/2019	1789	1976	1.1042	4327	4925	1.1382	1.128	12/30/2019
12/31/2019	1/1/2020	1802	1988	1.1034	3174	3611	1.1377	1.125	12/31/2019
		52,924	58,316	1.1019	124,835	140,872	1.1282	1.1205	



Alliance Pipeline

DAILY ANALYSIS — USA
 ND07MD1 — Hankinson Sales
 December 2019

DAY	Heating Value (BTU/#3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,160.600	0.6654	83.8758	9.6871	3.7991	0.3838	0.6974	0.0576	0.0429	0.0219	1.0440	0.3806	0.0099
2	1,162.606	0.6667	83.7324	9.7349	3.8623	0.3888	0.7149	0.0617	0.0446	0.0224	1.0411	0.3872	0.0096
3	1,161.232	0.6653	83.8912	9.7209	3.8120	0.3810	0.6920	0.0575	0.0405	0.0200	0.9915	0.3837	0.0096
4	1,161.090	0.6657	83.7878	9.7860	3.8160	0.3756	0.6889	0.0545	0.0409	0.0206	1.0194	0.4003	0.0099
5	1,160.542	0.6656	83.7495	9.8210	3.8245	0.3699	0.6799	0.0502	0.0358	0.0179	1.0444	0.3970	0.0099
6	1,162.708	0.6675	83.4933	9.9418	3.8910	0.3772	0.6988	0.0510	0.0362	0.0181	1.0765	0.4063	0.0096
7	1,159.235	0.6641	83.9465	9.7849	3.7454	0.3667	0.6576	0.0513	0.0368	0.0200	0.9849	0.3964	0.0095
8	1,162.587	0.6675	83.4379	10.0151	3.8605	0.3760	0.6957	0.0520	0.0370	0.0177	1.0987	0.3994	0.0100
9	1,160.818	0.6660	83.6694	9.8715	3.8353	0.3703	0.6761	0.0517	0.0365	0.0166	1.0636	0.3992	0.0098
10	1,161.137	0.6658	83.7390	9.8225	3.8399	0.3725	0.6802	0.0534	0.0372	0.0179	1.0345	0.3935	0.0094
11	1,160.330	0.6644	83.9393	9.7947	3.7663	0.3675	0.6712	0.0526	0.0366	0.0187	0.9543	0.3886	0.0101
12	1,160.292	0.6649	83.7997	9.8924	3.7510	0.3673	0.6687	0.0551	0.0379	0.0180	1.0124	0.3874	0.0101
13	1,157.846	0.6632	83.9729	9.8738	3.6712	0.3529	0.6341	0.0520	0.0357	0.0176	0.9935	0.3865	0.0099
14	1,160.348	0.6659	83.6084	9.9801	3.7731	0.3662	0.6691	0.0541	0.0369	0.0175	1.0900	0.3948	0.0098
15	1,156.834	0.6627	84.0262	9.8667	3.6155	0.3594	0.6302	0.0491	0.0366	0.0174	0.9934	0.3958	0.0099
16	1,158.962	0.6649	83.7073	9.9677	3.7035	0.3681	0.6616	0.0487	0.0345	0.0196	1.0883	0.3910	0.0097
17	1,158.394	0.6644	83.8787	9.8100	3.7041	0.3716	0.6659	0.0518	0.0384	0.0185	1.0368	0.4139	0.0102
18	1,159.904	0.6663	83.5664	9.9263	3.7988	0.3760	0.6727	0.0500	0.0364	0.0182	1.1459	0.3992	0.0099
19	1,156.253	0.6628	84.0397	9.7806	3.6363	0.3629	0.6325	0.0511	0.0369	0.0174	1.0352	0.3973	0.0100
20	1,157.376	0.6631	84.0276	9.8070	3.6294	0.3700	0.6503	0.0524	0.0380	0.0181	1.0013	0.3959	0.0100
21	1,156.648	0.6628	84.0134	9.8296	3.6244	0.3619	0.6392	0.0495	0.0361	0.0175	1.0334	0.3853	0.0098
22	1,154.950	0.6625	84.0320	9.7785	3.6142	0.3507	0.6299	0.0487	0.0361	0.0172	1.0851	0.3976	0.0099
23	1,154.559	0.6617	84.2088	9.6277	3.5993	0.3585	0.6530	0.0480	0.0347	0.0163	1.0675	0.3765	0.0098
24	1,153.786	0.6615	84.1994	9.6602	3.5742	0.3538	0.6423	0.0467	0.0337	0.0159	1.0705	0.3934	0.0099
25	1,159.945	0.6658	83.6084	9.9978	3.7354	0.3728	0.6720	0.0509	0.0362	0.0192	1.0988	0.3986	0.0098
26	1,159.821	0.6658	83.6173	9.9791	3.7529	0.3709	0.6669	0.0513	0.0362	0.0170	1.0909	0.4078	0.0097
27	1,157.752	0.6631	83.9811	9.9190	3.6169	0.3642	0.6356	0.0505	0.0371	0.0172	0.9646	0.4038	0.0102
28	1,159.330	0.6657	83.6130	9.9621	3.7509	0.3693	0.6691	0.0504	0.0351	0.0163	1.1259	0.3983	0.0096
29	1,158.423	0.6649	83.6949	9.9568	3.7211	0.3625	0.6527	0.0482	0.0345	0.0162	1.1007	0.4025	0.0100
30	1,160.490	0.6662	83.5573	10.0035	3.7831	0.3719	0.6699	0.0510	0.0356	0.0165	1.0967	0.4045	0.0099
31	1,159.212	0.6648	83.7739	9.9227	3.7233	0.3679	0.6548	0.0530	0.0364	0.0166	1.0426	0.3988	0.0100
Volume	1,159.194	0.6648	83.8117	9.8545	3.7379	0.3688	0.6657	0.0519	0.0371	0.0181	1.0490	0.3955	0.0099
Weight Avg Energy	1,159.198	0.6648	83.8115	9.8545	3.7381	0.3688	0.6657	0.0519	0.0371	0.0181	1.0490	0.3955	0.0099

NOV 2019



Alliance Pipeline

DAILY ANALYSIS — USA
 ND14MD1 — Milnor Sales
 December 2019

DAY	Heating Value (BTU/ft3)	Relative Density	C1 Mol%	C2 Mol%	C3 Mol%	IC4 Mol%	NC4 Mol%	IC5 Mol%	NC5 Mol%	C6+ Mol%	N2 Mol%	CO2 Mol%	Hel Mol%
1	1,161.142	0.6659	83.8212	9.7014	3.8166	0.3860	0.7050	0.0582	0.0437	0.0222	1.0551	0.3807	0.0099
2	1,161.967	0.6663	83.7905	9.7152	3.8417	0.3864	0.7089	0.0609	0.0441	0.0219	1.0346	0.3861	0.0096
3	1,160.898	0.6652	83.9015	9.7207	3.8019	0.3791	0.6891	0.0576	0.0404	0.0197	0.9904	0.3899	0.0097
4	1,160.756	0.6656	83.8039	9.7855	3.8081	0.3734	0.6846	0.0538	0.0402	0.0203	1.0189	0.4013	0.0099
5	1,161.306	0.6663	83.6695	9.8530	3.8513	0.3728	0.6867	0.0504	0.0360	0.0177	1.0528	0.3999	0.0099
6	1,163.692	0.6678	83.4596	9.9704	3.9144	0.3806	0.7044	0.0502	0.0361	0.0173	1.0642	0.3931	0.0097
7	1,159.683	0.6646	83.9008	9.7976	3.7647	0.3681	0.6598	0.0519	0.0370	0.0209	0.9904	0.3992	0.0095
8	1,162.841	0.6680	83.3893	10.0190	3.8815	0.3758	0.7013	0.0517	0.0368	0.0174	1.1151	0.4021	0.0100
9	1,160.478	0.6658	83.7135	9.8559	3.8195	0.3698	0.6729	0.0517	0.0365	0.0169	1.0536	0.3998	0.0099
10	1,161.110	0.6658	83.7296	9.8475	3.8305	0.3714	0.6781	0.0531	0.0370	0.0177	1.0310	0.3948	0.0094
11	1,159.885	0.6640	84.0047	9.7551	3.7548	0.3661	0.6683	0.0529	0.0369	0.0190	0.9451	0.3870	0.0101
12	1,160.230	0.6651	83.7700	9.9169	3.7452	0.3670	0.6672	0.0554	0.0378	0.0181	1.0232	0.3892	0.0101
13	1,157.881	0.6632	83.9790	9.8745	3.6695	0.3532	0.6344	0.0518	0.0357	0.0175	0.9900	0.3846	0.0098
14	1,159.933	0.6657	83.6417	9.9617	3.7592	0.3666	0.6672	0.0537	0.0370	0.0174	1.0908	0.3950	0.0098
15	1,157.518	0.6631	83.9678	9.9062	3.6281	0.3627	0.6345	0.0492	0.0365	0.0174	0.9953	0.3926	0.0099
16	1,158.574	0.6649	83.7255	9.9420	3.7052	0.3661	0.6594	0.0495	0.0345	0.0185	1.0969	0.3926	0.0097
17	1,158.533	0.6648	83.8349	9.8178	3.7204	0.3717	0.6682	0.0514	0.0380	0.0182	1.0509	0.4182	0.0102
18	1,159.187	0.6660	83.6088	9.9040	3.7829	0.3734	0.6664	0.0498	0.0359	0.0178	1.1487	0.4024	0.0099
19	1,155.830	0.6624	84.0947	9.7614	3.6220	0.3597	0.6276	0.0513	0.0367	0.0173	1.0215	0.3978	0.0100
20	1,157.120	0.6631	84.0191	9.8088	3.6225	0.3687	0.6517	0.0520	0.0379	0.0179	1.0154	0.3960	0.0099
21	1,156.656	0.6630	83.9951	9.8303	3.6278	0.3615	0.6410	0.0504	0.0363	0.0176	1.0432	0.3870	0.0098
22	1,154.804	0.6623	84.0871	9.7207	3.6143	0.3541	0.6381	0.0479	0.0359	0.0170	1.0833	0.3919	0.0099
23	1,154.268	0.6616	84.2135	9.6281	3.5920	0.3567	0.6511	0.0476	0.0344	0.0161	1.0727	0.3781	0.0098
24	1,154.664	0.6621	84.1269	9.6981	3.6005	0.3567	0.6460	0.0471	0.0340	0.0164	1.0705	0.3938	0.0100
25	1,160.675	0.6664	83.5153	10.0586	3.7562	0.3740	0.6736	0.0506	0.0362	0.0189	1.1062	0.4005	0.0098
26	1,158.680	0.6649	83.7387	9.9578	3.6930	0.3675	0.6555	0.0515	0.0364	0.0169	1.0643	0.4085	0.0098
27	1,158.261	0.6637	83.9086	9.9076	3.6630	0.3659	0.6447	0.0497	0.0363	0.0169	0.9960	0.4014	0.0100
28	1,158.818	0.6655	83.6341	9.9517	3.7379	0.3671	0.6656	0.0502	0.0350	0.0162	1.1334	0.3993	0.0096
29	1,158.548	0.6650	83.6975	9.9545	3.7254	0.3633	0.6520	0.0484	0.0348	0.0162	1.0930	0.4048	0.0100
30	1,160.820	0.6665	83.5281	10.0090	3.7956	0.3735	0.6739	0.0517	0.0356	0.0165	1.1036	0.4025	0.0099
31	1,158.839	0.6644	83.8168	9.9175	3.7030	0.3663	0.6509	0.0525	0.0364	0.0166	1.0323	0.3977	0.0100
Volume	1,159.384	0.6649	83.8051	9.8486	3.7480	0.3695	0.6676	0.0521	0.0372	0.0181	1.0479	0.3959	0.0099
Weight Avg Energy	1,159.382	0.6649	83.8057	9.8483	3.7479	0.3695	0.6676	0.0521	0.0372	0.0181	1.0478	0.3959	0.0099

APC
12/31/19

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		
12/1/2019	12/2/2019	509	607	1.1920	607	689	1.1352	1.161	12/1/2019
12/2/2019	12/3/2019	456	544	1.1920	442	499	1.1283	1.161	12/2/2019
12/3/2019	12/4/2019	459	547	1.1920	468	524	1.1199	1.156	12/3/2019
12/4/2019	12/5/2019	432	515	1.1920	430	485	1.1268	1.159	12/4/2019
12/5/2019	12/6/2019	394	469	1.1920	775	873	1.1269	1.149	12/5/2019
12/6/2019	12/7/2019	338	402	1.1920	758	852	1.1239	1.145	12/6/2019
12/7/2019	12/8/2019	296	352	1.1920	593	666	1.1237	1.146	12/7/2019
12/8/2019	12/9/2019	551	657	1.1920	1041	1172	1.1255	1.149	12/8/2019
12/9/2019	12/10/2019	592	706	1.1920	1109	1243	1.1214	1.146	12/9/2019
12/10/2019	12/11/2019	601	717	1.1920	1112	1246	1.1196	1.145	12/10/2019
12/11/2019	12/12/2019	562	670	1.1920	1074	1203	1.1203	1.145	12/11/2019
12/12/2019	12/13/2019	462	550	1.1920	905	1022	1.1281	1.150	12/12/2019
12/13/2019	12/14/2019	535	638	1.1920	1052	1201	1.1417	1.159	12/13/2019
12/14/2019	12/15/2019	495	590	1.1920	934	1080	1.1572	1.169	12/14/2019
12/15/2019	12/16/2019	447	533	1.1920	831	962	1.1584	1.170	12/15/2019
12/16/2019	12/17/2019	445	530	1.1920	820	948	1.1564	1.169	12/16/2019
12/17/2019	12/18/2019	447	533	1.1920	906	1046	1.1545	1.167	12/17/2019
12/18/2019	12/19/2019	370	442	1.1920	836	967	1.1566	1.167	12/18/2019
12/19/2019	12/20/2019	451	538	1.1920	945	1092	1.1560	1.168	12/19/2019
12/20/2019	12/21/2019	326	388	1.1920	566	655	1.1575	1.170	12/20/2019
12/21/2019	12/22/2019	272	324	1.1920	489	566	1.1569	1.169	12/21/2019
12/22/2019	12/23/2019	313	373	1.1920	560	647	1.1556	1.169	12/22/2019
12/23/2019	12/24/2019	387	461	1.1920	697	806	1.1565	1.169	12/23/2019
12/24/2019	12/25/2019	361	430	1.1920	674	778	1.1547	1.168	12/24/2019
12/25/2019	12/26/2019	370	441	1.1920	672	777	1.1560	1.169	12/25/2019
12/26/2019	12/27/2019	432	515	1.1920	945	1092	1.1557	1.167	12/26/2019
12/27/2019	12/28/2019	398	475	1.1920	862	995	1.1550	1.167	12/27/2019
12/28/2019	12/29/2019	420	501	1.1920	839	969	1.1550	1.167	12/28/2019
12/29/2019	12/30/2019	458	546	1.1920	857	990	1.1551	1.168	12/29/2019
12/30/2019	12/31/2019	445	531	1.1920	829	957	1.1551	1.168	12/30/2019
12/31/2019	1/1/2020	333	397	1.1920	636	735	1.1555	1.168	12/31/2019
		13,357	15,922	1.1920	24,264	27,737	1.1435	1.1613	

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal/c)	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	ChangeTimestamp	NOTES
11587	GLEN ULLIN	1105.8	0.6496	1372	-44.8	2.0885	0.9047	81.7758	14.0383	0.9251	0.0376	0.0206	0.0022	0.0021	0	0	0.1839	0.0214	11/30/2019	12/1/2019	12/1/2019 4:13:48 PM	
11587	GLEN ULLIN	1101.6	0.647	1369.6	-46.4	2.1162	0.8857	82.2888	13.5301	0.9105	0.0382	0.0208	0.0024	0.0022	0	0.0001	0.1835	0.0218	12/1/2019	12/2/2019	12/2/2019 4:17:30 PM	
11587	GLEN ULLIN	1100.9	0.6466	1369.1	-46	2.125	0.8826	82.4795	13.2515	0.9879	0.0446	0.0241	0.0026	0.0026	0	0.0001	0.178	0.0217	12/2/2019	12/3/2019	12/3/2019 4:22:47 PM	
11587	GLEN ULLIN	1101.9	0.6482	1368.6	-44.2	2.1949	0.9008	82.274	13.3059	1.0512	0.0546	0.0283	0.0036	0.0034	0	0.0005	0.1609	0.0222	12/3/2019	12/4/2019	12/4/2019 4:20:52 PM	
11587	GLEN ULLIN	1096	0.6431	1366.7	-47.4	2.0958	0.8802	83.2514	12.5031	0.9968	0.0542	0.0278	0.0031	0.0031	0	0.0002	0.1628	0.0217	12/4/2019	12/5/2019	12/5/2019 4:20:44 PM	
11587	GLEN ULLIN	1099.4	0.6459	1368	-45.2	2.0997	0.9134	82.7564	12.9573	0.9849	0.064	0.0337	0.0037	0.0041	0	0.0008	0.1604	0.0215	12/5/2019	12/6/2019	12/6/2019 4:24:17 PM	
11587	GLEN ULLIN	1098.2	0.6455	1366.9	-47.4	2.1277	0.9216	82.6121	13.1975	0.8656	0.0468	0.0244	0.0022	0.0024	0	0	0.1781	0.0216	12/6/2019	12/7/2019	12/7/2019 4:19:46 PM	
11587	GLEN ULLIN	1101.9	0.6486	1368.2	-45	2.1779	0.9323	82.1111	13.5622	0.9354	0.0571	0.0286	0.0026	0.0028	0	0	0.1683	0.0218	12/7/2019	12/8/2019	12/8/2019 4:20:49 PM	
11587	GLEN ULLIN	1099.5	0.6469	1367	-46.7	2.1697	0.9294	82.335	13.4225	0.8689	0.0469	0.0243	0.0022	0.0023	0	0	0.1771	0.0219	12/8/2019	12/9/2019	12/9/2019 4:10:45 PM	
11587	GLEN ULLIN	1098.9	0.646	1367.3	-46.7	2.1239	0.9259	82.5391	13.217	0.9012	0.0509	0.0256	0.0024	0.0026	0	0	0.1902	0.0214	12/9/2019	12/10/2019	12/10/2019 4:13:40 PM	
11587	GLEN ULLIN	1094.6	0.6418	1366.4	-48.5	1.9871	0.9249	83.4508	12.3639	0.9628	0.0512	0.0267	0.0023	0.0025	0	0	0.207	0.0209	12/10/2019	12/11/2019	12/11/2019 4:13:42 PM	
11587	GLEN ULLIN	1097.6	0.6436	1368.2	-47.9	1.9452	0.9419	83.2876	12.6708	0.95	0.0474	0.0252	0.0022	0.0024	0	0	0.1066	0.0207	12/11/2019	12/12/2019	12/12/2019 4:17:05 PM	
11587	GLEN ULLIN	1099.3	0.6446	1369.2	-47.3	1.9708	0.9198	83.1214	12.8635	0.9434	0.0507	0.0264	0.0023	0.0025	0	0	0.0782	0.0211	12/12/2019	12/13/2019	12/13/2019 4:19:23 PM	
11587	GLEN ULLIN	1098.2	0.6435	1369	-47.8	1.9446	0.9153	83.318	12.7299	0.9194	0.0471	0.0269	0.0025	0.003	0	0.0004	0.0719	0.0212	12/13/2019	12/14/2019	12/14/2019 4:27:03 PM	
11587	GLEN ULLIN	1102.1	0.647	1370.2	-45.6	2.0304	0.9189	82.6994	13.198	0.988	0.0506	0.0272	0.0026	0.0029	0	0.0003	0.06	0.0217	12/14/2019	12/15/2019	12/15/2019 4:21:30 PM	
11587	GLEN ULLIN	1102.2	0.6467	1370.7	-46.4	1.9987	0.9159	82.7134	13.2679	0.9576	0.0424	0.0238	0.0019	0.0022	0	0	0.055	0.0215	12/15/2019	12/16/2019	12/16/2019 4:19:04 PM	
11587	GLEN ULLIN	1102.9	0.6468	1371.3	-45.1	1.972	0.9189	82.7862	13.1507	1.0103	0.0507	0.0309	0.0027	0.0035	0	0.0009	0.0524	0.0211	12/16/2019	12/17/2019	12/17/2019 4:23:19 PM	
11587	GLEN ULLIN	1102.8	0.6466	1371.5	-45.7	1.9757	0.906	82.6738	13.2926	0.9653	0.0431	0.0274	0.0026	0.0032	0	0.0007	0.0888	0.0211	12/17/2019	12/18/2019	12/18/2019 5:09:40 PM	
11587	GLEN ULLIN	1100.2	0.645	1369.9	-47.5	1.9804	0.9088	82.8254	13.1951	0.884	0.0351	0.0222	0.002	0.0025	0	0.0005	0.1227	0.0212	12/18/2019	12/19/2019	12/19/2019 5:01:15 PM	
11587	GLEN ULLIN	1104.3	0.6485	1371.4	-44.8	2.0372	0.9265	82.2046	13.6332	0.9696	0.0437	0.0264	0.0023	0.0027	0	0.0004	0.1321	0.0214	12/19/2019	12/20/2019	12/20/2019 4:26:16 PM	
11587	GLEN ULLIN	1104.9	0.6492	1371.3	-44.7	2.0809	0.9166	82.013	13.784	0.9689	0.039	0.0256	0.0019	0.0024	0	0.0002	0.1463	0.0215	12/20/2019	12/21/2019	12/21/2019 4:48:25 PM	
11587	GLEN ULLIN	1103.1	0.6483	1370.1	-46	2.0951	0.9184	82.1165	13.7396	0.9009	0.0349	0.0218	0.0016	0.002	0	0.0001	0.1476	0.0217	12/21/2019	12/22/2019	12/22/2019 3:58:35 PM	
11587	GLEN ULLIN	1100.9	0.6467	1369	-47.1	2.1023	0.9079	82.3302	13.5443	0.8711	0.0329	0.0193	0.001	0.0015	0	0	0.168	0.0216	12/22/2019	12/23/2019	12/23/2019 3:58:39 PM	
11587	GLEN ULLIN	1102.9	0.6486	1369.5	-46	2.154	0.9083	82.017	13.7885	0.9035	0.0339	0.0198	0.0009	0.0014	0	0	0.1508	0.022	12/23/2019	12/24/2019	12/24/2019 3:56:52 PM	
11587	GLEN ULLIN	1104.1	0.6493	1370.2	-45.8	2.1302	0.9209	81.9799	13.8699	0.9219	0.0293	0.0181	0.0003	0.001	0	0	0.1067	0.022	12/24/2019	12/25/2019	12/25/2019 3:58:20 PM	
11587	GLEN ULLIN	1104.8	0.6501	1370.2	-45.7	2.1606	0.9253	81.7663	14.0655	0.9023	0.0269	0.0165	0.0002	0.0004	0	0	0.1139	0.0222	12/25/2019	12/26/2019	12/26/2019 3:58:01 PM	
11587	GLEN ULLIN	1106.1	0.6511	1370.8	-44.6	2.1455	0.9454	81.5953	14.1862	0.9252	0.031	0.0192	0.0011	0.0015	0	0	0.1279	0.0219	12/26/2019	12/27/2019	12/27/2019 3:57:10 PM	
11587	GLEN ULLIN	1109.6	0.6544	1371.6	-43.4	2.2581	0.9368	81.1109	14.6659	0.9397	0.0284	0.0176	0.0003	0.0008	0	0	0.0183	0.0232	12/27/2019	12/28/2019	12/28/2019 3:56:31 PM	
11587	GLEN ULLIN	1107.9	0.6529	1371.1	-44.2	2.2208	0.9355	81.3469	14.4399	0.9358	0.0273	0.017	0.0002	0.0005	0	0	0.0533	0.0229	12/28/2019	12/29/2019	12/29/2019 3:59:58 PM	
11587	GLEN ULLIN	1106.5	0.652	1370.3	-44.4	2.24	0.9243	81.3747	14.3218	0.9425	0.0278	0.0173	0.0004	0.0008	0	0	0.1275	0.023	12/29/2019	12/30/2019	12/30/2019 3:58:42 PM	
11587	GLEN ULLIN	1104.4	0.6501	1369.7	-45.1	2.1967	0.9173	81.5436	14.1178	0.919	0.0285	0.0178	0.0006	0.0012	0	0	0.2353	0.0223	12/30/2019	12/31/2019	12/31/2019 3:57:59 PM	
11587	GLEN ULLIN	1103.2	0.6494	1369	-45.8	2.2142	0.9103	81.8139	13.9163	0.9168	0.0285	0.0174	0.0004	0.001	0	0	0.1588	0.0224	12/31/2019	1/1/2020	1/1/2020 3:59:12 PM	

32 record(s) retrieved

12/30/19

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
601	Chromatograph	Milnor 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	DEC 19	NOV 19	OCT 19	SEPT 19	AUG 19	JULY 19	JUNE 19	MAY 19	APR 19	MAR 19	FEB 19	JAN 19	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1205	1209	1198	1210	1218	1200	1199	1208	1207	1202	1205	1207	1202	211
ND	24	Williston Border - Charbonneau Station	1164	1173	1177	1160	1164	1165	1165	1152	1158	1164	1166	1162	1163	24
ND	25	Watford City West Border	1196	1192	1194	1199	1195	1197	1195	1199	1188	1202	1198	1204	1191	25
ND	28	Bismarck Station - Glen Ullin Station	1158	1128	1125	1137	1189	1196	1186	1205	1178	1147	1144	1115	1141	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1140	1128	1125	1137	1163	1114	1128	1168	1165	1152	1143	1116	1139	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1126	1074	1122	1134	1130	1137	1133	1147	1138	1131	1139	1104	1128	32
ND	33	Little Knife Plant	1173	1173	1172	1173	1174	1175	1175	1174	1173	1173	1173	1173	1172	33
ND	34	Badlands Plant/Bowman Border	1027	1110	1102	1054	1001	1013	989	978	979	979	1013	1062	1048	34
ND	43	Spring Creek I - Sax Valve I	1128	1144	1151	1143	1144	1150	1140	1149	1148	1136	1127	1061	1044	43
ND/MT	241	Fairview Border	1198	1206	1202	1208	1210	1194	1191	1200	1202	1196	1188	1204	1173	241
ND	260	North Tioga Transfer - Nesson Plant	1124	1106	1146	1126	1136	1135	1132	1115	1118	1121	1127	1109	1113	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1177	1166	1178	1174	1189	1189	1179	1175	1164	1170	1179	1184	1180	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1190	1184	1193	1195	1193	1197	1198	1205	1185	1183	1182	1182	1183	262
ND	263	Lignite Plant	1152	1149	1149	1146	1146	1163	1164	1160	1152	1148	1149	1146	1149	263
ND	264	Epping Border	1152	1162	1164	1144	1148	1155	1154	1150	1143	1151	1153	1148	1149	264
ND	265	Tioga Comp Station - County Line Plant	1175	1167	1168	1169	1176	1177	1175	1175	1177	1171	1181	1184	1179	265
ND	266	County Line Plant	1171	1165	1170	1170	1172	1170	1166	1170	1171	1174	1176	1170	1177	266
ND	271	Bismarck Station - Cleveland Station	1185	1168	1174	1189	1191	1197	1196	1206	1186	1183	1181	1168	1176	271
ND	272	Cleveland Station - Mapleton	1184	1168	1174	1188	1191	1196	1195	1206	1185	1183	1180	1167	1176	272
ND	273	Cleveland Station - Grafton Border	1183	1168	1173	1188	1190	1195	1194	1204	1185	1180	1181	1167	1176	273
ND	550	Mandan Border / NBPL-St Anthony	1152	1121	1125	1137	1189	1196	1186	1202	1176	1147	1119	1107	1121	550
ND	610	MDU-Watford City BTU	1163	1161	1172	1174	1178	1181	1180	1187	1176	1175	1158	1113	1101	610
ND	802	NBPL - Linton	1095	1102	1107	1098	1094	1094	1091	1098	1101	1101	1083	1083	1083	802
ND	903	Heltinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1162	1159	1166	1170	1167	1162	1161	1158	1169	1163	1157	1151	1155	600
ND	601	Alliance Pipeline - Milnor	1161	1159	1166	1170	1167	1162	1160	1156	1169	1162	1156	1151	1155	602

**THERMAL ZONE VARIANCE
DOCUMENTATION**

December 2019

<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
32	-48	Direction of Flow and Source of Gas
260	-40	Direction of Flow