

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

September 23, 2020

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

Re: Case No. PU-20-002 (Therm Billing)
Monthly Report – July 2020

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

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in August 2020.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of July 2020.
3. Attachment C is a listing which states the type of measuring device in place at each zone.
4. Attachment D is a monthly list of the heating value data, by zone, for the most recent 12-month period and an average thereof. It is being provided pursuant to a Staff request.
5. Attachment E provides a brief explanation of the thermal variances, where applicable, for the month of July 2020.

Montana-Dakota respectfully request this electronic filing, in lieu of an original and one copy, be accepted as being in full compliance with the filing requirements of this Commission.

Sincerely,

/s/ Travis R. Jacobson

Travis R. Jacobson
Director of Regulatory Affairs

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

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.0966
MDU-308-ARNEGARD	025	1.0966
MDU-314-APPLE VALLEY	271	1.1511
MDU-318-BEACH	032	1.0249
MDU-319-BELFIELD	032	1.0324
MDU-323-BERTHOLD	262	1.1258
MDU-324-BEULAH	032	1.0324
MDU-327-BISMARCK	028	1.1443
MDU-330-BOWMAN	034	0.9504
MDU-337-BURLINGTON	262	1.1501
MDU-343-CARRINGTON	273	1.1501
MDU-344-CLEVELAND	272	1.1420
MDU-364-CAVALIER	273	1.1744
MDU-365-DAWSON	271	1.1430
MDU-368-DES LACS	262	1.1339
MDU-369-DICKINSON	031	1.0174
MDU-374-FT TOTTEN	273	1.1582
MDU-375-DEVILS LAKE	273	1.1582
MDU-379-BARLOW	273	1.1501
MDU-384-EPPING	264	1.0890
MDU-387-ELDRIDGE	272	1.1501
MDU-407-GLADSTONE	031	1.0174
MDU-411-GLEN ULLIN	031	1.0248
MDU-413-GOLVA	032	1.0098
MDU-416-GARRISON	262	1.1339
MDU-417-GRAFTON	273	1.1825
MDU-403-GWINNER	601	1.1468
MDU-429-HEBRON	031	1.0248
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1582
MDU-459-KILLDEER	033	1.1164
MDU-463-LANGDON	273	1.1501
MDU-469-LEFOR	031	1.0174
MDU-474-LIGNITE	263	1.0930
MDU-475-LINTON	802	1.0440
MDU-478-LINCOLN	028	1.1443
MDU-488-MCKENZIE	271	1.1511
MDU-494-MEDINA	271	1.1430
MDU-498-MANDAN	028	1.1443
MDU-500-MARMARTH	034	0.9574
MDU-505-MINOT	262	1.1501
MDU-510-MOTT	031	1.0174
MDU-512-MAX	262	1.1258
MDU-513-MILNOR	601	1.1468
MDU-522-NEW ENGLAND	031	1.0101
MDU-524-NEW SALEM	028	1.1202
MDU-532-NEW ROCKFORD	273	1.1501
MDU-539-PARK RIVER	273	1.1744
MDU-540-PALERMO	262	1.1258

MDU-558-RAY	264	1.0890
MDU-561-REGENT	031	1.0174
MDU-563-RHAME	034	0.9433
MDU-564-RICHARDTON	031	1.0101
MDU-568-ROSS	261	1.1037
MDU-572-RUTHVILLE	262	1.1501
MDU-574-SANBORN	272	1.1582
MDU-583-SENTINEL BUTTE	032	1.0249
MDU-588-SOUTH HEART	031	1.0101
MDU-717-SPIRITWOOD	272	1.1582
MDU-590-SPRINGBROOK	264	1.0890
MDU-591-STANLEY	261	1.1117
MDU-593-STEELE	271	1.1430
MDU-594-STERLING	028	1.1443
MDU-598-SHEYENNE	273	1.1582
MDU-605-SURREY	262	1.1501
MDU-610-TAPPEN	271	1.1430
MDU-611-TAYLOR	031	1.0101
MDU-616-TIOGA	260	1.0465
MDU-619-TURTLE LAKE	262	1.1339
MDU-620-TRENTON	024	1.1064
MDU-624-UNDERWOOD	262	1.1339
MDU-625-VALLEY CITY	272	1.1663
MDU-629-WALHALLA	273	1.1744
MDU-632-WATFORD CITY	610	1.0852
MDU-636-WHEELOCK	264	1.0812
MDU-637-WHITE EARTH	261	1.1117
MDU-642-WILLISTON	024	1.1064
MDU-646-WASHBURN	262	1.1420
MDU-647-WILTON	262	1.1258
MDU-664-RIVERDALE	262	1.1339
MDU-691-FAIRVIEW	241	1.1025
MDU-712-MINOT AFB	262	1.1501
MDU-718-FAIRMOUNT	600	1.1444
MDU-732-NEKOMA	273	1.1501
MDU-732-MSR SITE	273	1.1501

Source Daily Summary

July 2020

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	0.7265	1173.3	1194.0	1191.0	1.161	3.551	69.889	21.459	3.534	0.126	0.246	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1398.86	
2	0.7171	1160.8	1181.4	1178.5	1.121	3.486	71.376	20.435	3.204	0.117	0.229	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1393.18	
3	0.7260	1172.3	1193.1	1190.1	1.139	3.586	70.434	20.434	3.993	0.128	0.251	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1398.33	
4	0.7206	1166.8	1187.5	1183.1	1.132	3.515	70.885	20.675	3.401	0.121	0.238	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1395.34	
5	0.7211	1169.5	1190.2	1185.9	1.108	3.435	70.879	20.668	3.535	0.115	0.228	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1398.04	
6	0.7229	1170.7	1191.4	1187.2	1.133	3.493	70.513	20.976	3.495	0.120	0.238	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1397.76	
7	0.7254	1175.4	1196.2	1192.0	1.119	3.460	70.357	20.819	3.856	0.120	0.237	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1400.95	
8	0.7207	1165.4	1186.1	1181.9	1.143	3.588	70.947	20.440	3.503	0.118	0.230	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1393.64	
9	0.7280	1172.1	1192.9	1188.7	1.219	3.754	69.630	21.432	3.533	0.137	0.262	0.017	0.015	0.000	0.000	0.000	0.000	0.000	1394.60	
10	0.7135	1157.0	1177.5	1173.4	1.115	3.471	71.818	20.319	2.877	0.123	0.243	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1390.54	
11	0.7177	1163.5	1184.1	1180.0	1.129	3.448	71.197	20.698	3.150	0.116	0.229	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1394.27	
12	0.7238	1173.1	1193.9	1189.5	1.121	3.446	70.614	20.656	3.764	0.122	0.243	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1399.77	
13	0.7205	1167.5	1188.2	1184.0	1.123	3.472	70.921	20.672	3.431	0.117	0.232	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1396.32	
14	0.7205	1168.5	1189.1	1185.1	1.124	3.416	70.768	21.059	3.227	0.125	0.247	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1397.48	
15	0.7209	1169.7	1190.4	1186.3	1.122	3.386	70.798	20.927	3.379	0.119	0.236	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1398.50	
16	0.7174	1165.0	1185.6	1181.6	1.092	3.385	71.471	20.253	3.444	0.110	0.216	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1396.38	
17	0.7111	1156.8	1177.2	1173.1	1.079	3.312	72.511	19.578	3.147	0.113	0.225	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1392.60	
18	0.7204	1169.9	1190.6	1186.5	1.104	3.344	71.118	20.440	3.622	0.115	0.227	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1399.30	
19	0.7144	1159.5	1180.0	1175.9	1.097	3.431	72.040	19.721	3.324	0.118	0.235	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1392.62	
20	0.7101	1154.8	1175.3	1171.4	1.086	3.328	72.563	19.644	3.014	0.112	0.221	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1391.26	
21	0.7217	1169.7	1190.4	1186.2	1.152	3.412	70.543	21.241	3.269	0.118	0.233	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1397.78	
22	0.7210	1169.3	1190.0	1185.6	1.180	3.332	70.434	21.707	2.951	0.121	0.241	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1397.98	
23	0.7276	1176.6	1197.4	1193.0	1.228	3.428	69.364	22.414	3.146	0.131	0.255	0.018	0.016	0.000	0.000	0.000	0.000	0.000	1400.40	
24	0.7231	1170.5	1191.3	1187.0	1.211	3.400	70.090	21.900	2.997	0.124	0.244	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1397.51	
25	0.7256	1173.9	1194.6	1190.4	1.225	3.419	69.601	22.332	3.020	0.125	0.245	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1399.00	
26	0.7223	1171.2	1192.0	1187.8	1.190	3.321	70.146	22.017	2.934	0.121	0.238	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1399.07	
27	0.7259	1174.5	1195.3	1191.1	1.219	3.415	69.548	22.376	3.038	0.125	0.245	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1399.53	
28	0.7310	1178.1	1199.0	1194.7	1.273	3.592	68.746	22.758	3.196	0.137	0.264	0.018	0.016	0.000	0.000	0.000	0.000	0.000	1398.94	
29	0.7230	1170.3	1191.0	1186.7	1.170	3.467	70.222	21.571	3.168	0.124	0.244	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1397.33	
30	0.7430	1196.2	1217.4	1212.8	1.282	3.596	67.476	22.880	4.308	0.146	0.277	0.018	0.016	0.000	0.000	0.000	0.000	0.000	1408.85	
31	0.7521	1208.6	1230.0	1225.6	1.319	3.636	65.893	24.027	4.776	0.111	0.212	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1414.90	
Avg	0.7231	1171.0	1191.4	1187.3	1.159	3.462	70.413	21.178	3.395	0.122	0.239	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1397.77	

Source Daily Summary

July 2020

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	0.6854	1130.8	1150.8	1147.2	0.837	2.846	76.398	17.507	2.129	0.079	0.170	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1386.73	
2	0.6815	1125.3	1145.3	1141.7	0.828	2.822	77.104	16.927	2.037	0.080	0.170	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1384.04	
3	0.6831	1127.9	1147.9	1144.3	0.841	2.798	76.789	17.256	2.033	0.079	0.170	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1385.55	
4	0.6834	1130.0	1150.0	1146.3	0.843	2.707	76.627	17.595	1.952	0.077	0.167	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1387.71	
5	0.6837	1130.1	1150.2	1146.5	0.846	2.717	76.581	17.629	1.948	0.078	0.168	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1387.63	
6	0.6839	1130.4	1150.4	1146.9	0.846	2.715	76.512	17.722	1.933	0.076	0.165	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1387.85	
7	0.6821	1126.6	1146.6	1143.0	0.832	2.802	76.938	17.144	2.002	0.078	0.168	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1384.92	
8	0.6792	1122.0	1141.9	1138.3	0.822	2.822	77.427	16.725	1.939	0.075	0.160	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1382.26	
9	0.6813	1128.1	1148.1	1144.4	0.823	2.651	76.919	17.513	1.819	0.077	0.165	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1387.55	
10	0.6831	1128.9	1148.9	1145.3	0.837	2.745	76.648	17.581	1.921	0.075	0.161	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1386.78	
11	0.6836	1129.9	1149.9	1146.4	0.843	2.725	76.563	17.669	1.927	0.076	0.165	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1387.49	
12	0.6808	1124.3	1144.2	1140.6	0.824	2.831	77.185	16.879	2.002	0.078	0.169	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1383.44	
13	0.6832	1129.1	1149.1	1145.5	0.846	2.731	76.616	17.636	1.899	0.076	0.164	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1386.91	
14	0.6836	1130.0	1150.0	1146.4	0.843	2.716	76.562	17.688	1.923	0.075	0.162	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1387.61	
15	0.6828	1128.4	1148.4	1144.8	0.835	2.748	76.799	17.356	1.978	0.079	0.171	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1386.46	
16	0.6802	1125.2	1145.1	1141.7	0.823	2.720	77.039	17.352	1.836	0.067	0.139	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1385.27	
17	0.6823	1128.4	1148.4	1144.8	0.841	2.699	76.779	17.526	1.886	0.076	0.160	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1386.95	
18	0.6856	1133.3	1153.3	1149.8	0.831	2.726	76.266	17.862	2.033	0.080	0.170	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1389.53	
19	0.6823	1126.6	1146.6	1142.9	0.842	2.796	77.006	17.014	2.047	0.082	0.177	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1384.79	
20	0.6855	1133.1	1153.2	1149.7	0.867	2.670	76.210	18.050	1.928	0.077	0.165	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1389.50	
21	0.6915	1141.2	1161.4	1157.7	0.919	2.664	75.220	18.828	2.083	0.079	0.172	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1393.29	
22	0.6944	1145.7	1166.0	1162.3	0.931	2.641	74.704	19.288	2.150	0.080	0.172	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1395.95	
23	0.6953	1147.7	1168.0	1164.3	0.935	2.598	74.585	19.405	2.183	0.083	0.177	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1397.48	
24	0.6953	1147.7	1168.0	1164.3	0.919	2.622	74.541	19.463	2.168	0.081	0.172	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1397.43	
25	0.6942	1146.2	1166.5	1162.8	0.931	2.592	74.792	19.228	2.158	0.083	0.179	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1396.71	
26	0.6946	1146.5	1166.8	1163.1	0.931	2.613	74.699	19.297	2.171	0.082	0.175	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1396.68	
27	0.6943	1145.4	1165.7	1162.0	0.934	2.644	74.787	19.157	2.185	0.082	0.177	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1395.68	
28	0.6834	1127.8	1147.7	1144.2	0.839	2.846	76.602	17.459	1.996	0.073	0.155	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1385.03	
29	0.6811	1124.2	1144.1	1140.5	0.819	2.873	77.029	17.048	1.975	0.073	0.154	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1383.05	
30	0.6929	1144.2	1164.5	1160.7	0.901	2.636	75.062	18.883	2.233	0.082	0.171	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1395.62	
31	0.6955	1148.3	1168.6	1164.8	0.937	2.576	74.687	19.239	2.235	0.089	0.196	0.019	0.023	0.000	0.000	0.000	0.000	0.000	1397.94	
Avg	0.6861	1133.0	1153.4	1149.8	0.863	2.719	76.183	17.933	2.023	0.078	0.168	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1389.16	

Gas Composition and Properties

Effective July 1, 2020

Attachment B
Page 3 of 24

Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8676		1.9229
Nitrogen, N2	2.8538		4.0260
Methane, C1	76.0531		61.4430
Ethane, C2	17.7787	4.7568	26.9217
Propane, C3	2.1432	0.5907	4.7593
iso-Butane, iC4	0.0789	0.0258	0.2309
n-Butane, nC4	0.1797	0.0567	0.5260
iso-Pentane, iC5	0.0164	0.0060	0.0596
n-Pentane, nC5	0.0192	0.0070	0.0698
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0094	0.0039	0.0408
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.4480	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-21.711	
Cricondentherm	-15.203	
HV, Dry @ Base P, T	1153.09	
HV, Sat @ Base P, T	1133.02	
HV, Sat @ Sample P, T	1153.09	
Relative Density	0.6874	

C6+: 100

Sample

Date: 07/01/2020 Pressure: 490.0
 Type: Temperature:
 Tech: Zach Curtiss H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 07/01/2020 Instrument:
 Cylinder: 457
 Tech: Zach Curtiss

Remarks:

Gas Composition and Properties

Effective July 1, 2020

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1556		2.4027
Nitrogen, N2	4.2623		5.6411
Methane, C1	69.9805		53.0401
Ethane, C2	19.6411	5.2570	27.9022
Propane, C3	4.0661	1.1211	8.4708
iso-Butane, iC4	0.2364	0.0774	0.6491
n-Butane, nC4	0.5392	0.1701	1.4806
iso-Pentane, iC5	0.0517	0.0189	0.1762
n-Pentane, nC5	0.0543	0.0197	0.1851
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0128	0.0053	0.0521
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	6.6690	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	4.901	
Cricodentherm	14.228	
HV, Dry @ Base P, T	1193.57	
HV, Sat @ Base P, T	1172.80	
HV, Sat @ Sample P, T	1193.57	
Relative Density	0.7330	
C6+: 100		

Sample

Date: 07/01/2020 Pressure: 472.0
 Type: Temperature:
 Tech: Zach Curtiss H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 07/01/2020 Instrument:
 Cylinder: 310
 Tech: Zach Curtiss

Remarks:

Source Daily Summary

July 2020

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	0.6611	1086.8	1106.0		0.551	3.681	80.392	13.331	1.905	0.041	0.086	0.006	0.007	0.000						1357.16		
2	0.6621	1088.5	1107.8		0.576	3.636	80.231	13.491	1.920	0.044	0.090	0.006	0.007	0.000							1358.27	
3	0.6612	1086.7	1105.9		0.574	3.663	80.405	13.317	1.890	0.043	0.089	0.007	0.009	0.002							1356.93	
4	0.6565	1080.1	1099.3		0.517	3.705	81.100	12.814	1.739	0.038	0.077	0.006	0.006	0.000							1353.61	
5	0.6574	1080.9	1100.1		0.558	3.681	80.996	12.861	1.778	0.038	0.078	0.005	0.006	0.000							1356.77	
6	0.6577	1081.7	1100.9		0.526	3.710	80.855	13.051	1.733	0.037	0.077	0.005	0.006	0.000							1354.31	
7	0.6599	1084.6	1103.9		0.559	3.685	80.584	13.200	1.826	0.041	0.086	0.007	0.009	0.002							1355.76	
8	0.6574	1080.9	1100.1		0.558	3.681	80.996	12.860	1.778	0.038	0.078	0.005	0.006	0.000							1353.66	
9	0.6381	1054.5	1073.2		0.349	3.793	84.124	10.402	1.231	0.029	0.060	0.005	0.006	0.000							1340.40	
10	0.6603	1085.3	1104.5		0.544	3.707	80.413	13.416	1.784	0.040	0.083	0.006	0.007	0.000							1356.15	
11	0.6585	1082.6	1101.8		0.537	3.712	80.803	13.014	1.789	0.040	0.087	0.007	0.009	0.001							1354.63	
12	0.6609	1086.6	1105.8		0.562	3.665	80.318	13.515	1.806	0.039	0.081	0.006	0.007	0.000							1357.05	
13	0.6568	1079.5	1098.6		0.539	3.738	81.030	12.868	1.689	0.038	0.081	0.007	0.008	0.002							1352.51	
14	0.6586	1083.3	1102.5		0.536	3.683	80.714	13.174	1.767	0.038	0.077	0.005	0.006	0.000							1355.38	
15	0.6587	1083.4	1102.6		0.533	3.689	80.763	13.078	1.794	0.040	0.085	0.007	0.009	0.001							1355.40	
16	0.6625	1089.3	1108.6		0.560	3.650	80.054	13.740	1.862	0.040	0.081	0.006	0.007	0.000							1358.83	
17	0.6553	1078.7	1097.8		0.489	3.727	81.259	12.721	1.672	0.038	0.078	0.007	0.008	0.001							1352.98	
18	0.6682	1099.3	1118.7		0.537	3.615	79.032	14.667	2.002	0.045	0.091	0.006	0.006	0.000							1365.39	
19	0.6616	1087.8	1107.0		0.563	3.650	80.231	13.590	1.825	0.040	0.085	0.007	0.008	0.001							1357.91	
20	0.6585	1082.7	1101.9		0.543	3.696	80.687	13.232	1.722	0.036	0.074	0.005	0.006	0.000							1354.80	
21	0.6842	1119.9	1139.7		0.755	3.529	76.440	16.722	2.373	0.051	0.109	0.009	0.011	0.002							1374.68	
22	0.6873	1124.3	1144.2		0.754	3.549	75.876	17.189	2.458	0.051	0.105	0.008	0.009	0.000							1376.99	
23	0.6878	1126.4	1146.4		0.725	3.515	75.831	17.233	2.503	0.057	0.112	0.009	0.012	0.003							1379.06	
24	0.6904	1131.1	1151.2		0.724	3.467	75.297	17.814	2.524	0.052	0.103	0.008	0.010	0.000							1382.30	
25	0.6874	1125.5	1145.4		0.764	3.477	75.896	17.223	2.450	0.054	0.113	0.009	0.011	0.002							1378.28	
26	0.6882	1126.8	1146.8		0.753	3.487	75.736	17.341	2.511	0.052	0.105	0.007	0.008	0.000							1379.14	
27	0.6886	1126.5	1146.5		0.784	3.488	75.744	17.288	2.500	0.055	0.117	0.010	0.011	0.002							1378.46	
28	0.6636	1088.6	1107.9		0.587	3.756	79.890	13.722	1.903	0.042	0.087	0.006	0.007	0.000							1356.84	
29	0.6631	1088.8	1108.1		0.578	3.712	80.132	13.416	2.002	0.047	0.096	0.007	0.009	0.002							1357.56	
30	0.6923	1134.5	1154.6		0.747	3.409	75.260	17.576	2.811	0.062	0.118	0.007	0.008	0.000							1384.43	
31	0.6896	1129.7	1149.7		0.756	3.436	75.582	17.445	2.599	0.053	0.108	0.009	0.011	0.002							1381.27	
Avg	0.6675	1096.0	1115.7		0.601	3.632	79.248	14.365	2.005	0.044	0.090	0.007	0.008	0.001							1362.48	

Source Daily Summary

July 2020

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	0.7013	1143.7	1163.9	1160.3	0.912	3.443	73.652	18.978	2.801	0.062	0.129	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1386.57
2	0.7034	1147.3	1167.6	1164.0	0.909	3.423	73.272	19.292	2.898	0.062	0.126	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1389.00
3	0.7009	1143.7	1164.0	1160.4	0.906	3.409	73.764	18.846	2.866	0.064	0.127	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1387.13
4	0.7009	1143.6	1163.9	1160.1	0.915	3.399	73.792	18.833	2.846	0.064	0.129	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1386.95
5	0.7021	1146.1	1166.4	1162.9	0.892	3.401	73.448	19.215	2.845	0.061	0.120	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1388.82
6	0.7036	1147.9	1168.3	1164.7	0.910	3.406	73.166	19.499	2.813	0.060	0.124	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1389.44
7	0.7028	1146.8	1167.2	1163.7	0.903	3.405	73.275	19.424	2.796	0.060	0.120	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1389.01
8	0.7016	1145.2	1165.5	1161.9	0.902	3.394	73.556	19.150	2.789	0.062	0.124	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1388.15
9	0.6962	1136.6	1156.7	1153.4	0.895	3.421	74.540	18.209	2.744	0.059	0.115	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1383.11
10	0.7019	1145.5	1165.8	1162.3	0.915	3.382	73.474	19.264	2.759	0.061	0.123	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1388.23
11	0.7019	1144.7	1164.9	1161.6	0.901	3.451	73.472	19.173	2.798	0.062	0.124	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1387.33
12	0.7043	1148.6	1169.0	1165.4	0.910	3.422	73.090	19.505	2.859	0.062	0.129	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1389.69
13	0.7016	1144.7	1165.0	1161.7	0.913	3.404	73.527	19.168	2.788	0.061	0.121	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1387.67
14	0.7020	1144.7	1164.9	1161.5	0.929	3.424	73.463	19.219	2.756	0.061	0.125	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1387.08
15	0.7026	1146.5	1166.8	1163.4	0.902	3.410	73.320	19.357	2.817	0.060	0.117	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1388.79
16	0.7036	1148.0	1168.3	1164.7	0.911	3.399	73.255	19.342	2.881	0.063	0.127	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1389.53
17	0.7031	1147.8	1168.1	1164.6	0.900	3.378	73.259	19.426	2.839	0.062	0.119	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1389.90
18	0.7043	1149.4	1169.8	1166.4	0.901	3.389	73.097	19.526	2.875	0.064	0.125	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.61
19	0.7045	1150.3	1170.7	1167.3	0.892	3.368	72.917	19.824	2.811	0.059	0.114	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1391.59
20	0.7044	1149.1	1169.5	1166.2	0.919	3.390	73.011	19.658	2.819	0.061	0.123	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1390.21
21	0.7040	1148.6	1169.0	1165.6	0.918	3.389	73.001	19.726	2.777	0.058	0.115	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1390.00
22	0.7050	1149.5	1169.8	1166.2	0.942	3.389	72.947	19.679	2.833	0.061	0.126	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1390.02
23	0.7035	1147.6	1167.9	1164.2	0.900	3.433	73.139	19.503	2.827	0.059	0.120	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1389.22
24	0.7070	1153.7	1174.2	1170.4	0.905	3.378	72.690	19.812	2.992	0.068	0.132	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.10
25	0.7041	1150.2	1170.6	1167.2	0.868	3.371	73.048	19.665	2.848	0.062	0.118	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1391.84
26	0.7041	1149.3	1169.6	1166.1	0.917	3.354	73.107	19.582	2.834	0.062	0.123	0.009	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.69
27	0.7047	1150.4	1170.8	1167.3	0.901	3.365	72.986	19.661	2.889	0.061	0.120	0.008	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1391.53
28	0.7037	1148.0	1168.3	1164.6	0.928	3.382	73.212	19.425	2.839	0.063	0.128	0.010	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1389.46
29	0.7016	1144.2	1164.5	1160.9	0.932	3.408	73.595	19.032	2.831	0.062	0.123	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1387.02
30	0.7028	1146.7	1167.0	1163.1	0.922	3.387	73.542	18.934	2.996	0.069	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1388.75
31	0.7050	1152.1	1172.5	1169.0	0.870	3.337	73.123	19.375	3.080	0.068	0.129	0.008	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1393.23
Avg	0.7030	1147.0	1167.4	1163.9	0.908	3.397	73.314	19.332	2.843	0.062	0.123	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1389.15

Source Daily Summary

July 2020

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	0.7479	1172.4	1193.1	1189.7	0.941	6.021	66.924	20.206	5.395	0.151	0.326	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1376.46	
2	0.7446	1169.1	1189.8	1186.4	0.943	5.904	67.390	20.072	5.196	0.144	0.314	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1375.67	
3	0.7478	1171.1	1191.8	1188.4	0.944	6.081	66.945	20.126	5.386	0.153	0.328	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1375.06	
4	0.7447	1169.0	1189.8	1186.4	0.943	5.921	67.387	20.013	5.247	0.145	0.310	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.49	
5	0.7443	1170.5	1191.2	1187.9	0.940	5.791	67.476	20.094	5.207	0.145	0.312	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1377.66	
6	0.7433	1169.4	1190.1	1186.7	0.938	5.777	67.573	20.093	5.136	0.143	0.306	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1377.17	
7	0.7423	1167.8	1188.5	1185.1	0.940	5.770	67.715	20.034	5.062	0.141	0.302	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1376.29	
8	0.7466	1172.6	1193.4	1190.0	0.936	5.890	67.121	20.228	5.316	0.151	0.323	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1377.95	
9	0.7347	1164.0	1184.6	1181.1	0.927	5.315	68.870	19.755	4.687	0.130	0.281	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1378.99	
10	0.7382	1164.7	1185.3	1181.9	0.931	5.594	68.316	19.848	4.849	0.136	0.290	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1376.40	
11	0.7452	1170.0	1190.7	1187.3	0.932	5.922	67.303	20.099	5.250	0.144	0.315	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1376.19	
12	0.7430	1166.4	1187.1	1183.7	0.934	5.931	67.500	20.108	5.062	0.135	0.297	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1374.03	
13	0.7470	1172.4	1193.2	1189.8	0.932	5.942	67.043	20.255	5.315	0.147	0.327	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.36	
14	0.7460	1173.6	1194.3	1190.9	0.934	5.775	67.311	20.167	5.258	0.157	0.353	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1379.59	
15	0.7462	1173.1	1193.9	1190.5	0.930	5.830	67.161	20.332	5.218	0.151	0.337	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1378.88	
16	0.7472	1174.1	1194.9	1191.5	0.930	5.858	66.997	20.413	5.284	0.148	0.329	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1379.20	
17	0.7458	1173.0	1193.8	1190.4	0.928	5.804	67.183	20.358	5.224	0.143	0.319	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1379.10	
18	0.7472	1175.7	1196.5	1193.1	0.927	5.774	67.048	20.406	5.317	0.150	0.336	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1380.96	
19	0.7440	1167.6	1188.2	1184.8	0.927	5.973	67.281	20.281	5.081	0.134	0.291	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1374.36	
20	0.7409	1165.0	1185.7	1182.3	0.926	5.832	67.745	20.138	4.923	0.128	0.279	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1374.33	
21	0.7404	1164.2	1184.8	1181.5	0.926	5.833	67.802	20.120	4.886	0.127	0.275	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1373.83	
22	0.7481	1168.3	1189.0	1185.6	0.931	6.297	66.679	20.303	5.309	0.141	0.307	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.57	
23	0.7453	1165.9	1186.6	1183.1	0.929	6.183	67.063	20.224	5.138	0.136	0.296	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.35	
24	0.7434	1162.2	1182.8	1179.4	0.932	6.227	67.298	20.075	5.020	0.133	0.285	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1368.74	
25	0.7456	1166.1	1186.8	1183.4	0.927	6.204	67.051	20.172	5.171	0.140	0.303	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1371.28	
26	0.7441	1165.2	1185.8	1182.4	0.926	6.119	67.300	20.084	5.099	0.138	0.300	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1371.57	
27	0.7440	1163.6	1184.2	1180.8	0.935	6.202	67.248	20.095	5.047	0.138	0.301	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1369.69	
28	0.7457	1164.8	1185.5	1182.0	0.933	6.286	67.001	20.159	5.139	0.141	0.309	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1369.64	
29	0.7470	1164.1	1184.7	1181.3	0.932	6.450	66.778	20.162	5.189	0.144	0.313	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1367.64	
30	0.7486	1169.4	1190.1	1186.7	0.931	6.276	66.659	20.318	5.286	0.154	0.338	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1372.39	
31	0.7498	1173.4	1194.2	1190.8	0.924	6.157	66.551	20.450	5.373	0.156	0.347	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1375.95	
Avg	0.7448	1169.0	1189.4	1186.0	0.933	5.966	67.281	20.167	5.164	0.143	0.311	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1374.99	

Gas Composition and Properties

Effective July 1, 2020

Attachment B
Page 8 of 24

Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.2722		0.6169
Nitrogen, N2	2.9101		4.1984
Methane, C1	77.7961		64.2744
Ethane, C2	17.0384	4.5582	26.3849
Propane, C3	1.9547	0.5387	4.4390
iso-Butane, iC4	0.0217	0.0071	0.0650
n-Butane, nC4	0.0061	0.0019	0.0183
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0007	0.0003	0.0031
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.1060	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-42.215	
Cricondentherm	-28.984	
HV, Dry @ Base P, T	1143.31	
HV, Sat @ Base P, T	1123.41	
HV, Sat @ Sample P, T	1143.31	
Relative Density	0.6721	
C6+: 100		

Sample

Date: 07/01/2020 Pressure: 450.0
 Type: Temperature:
 Tech: Zach Curtiss H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 07/01/2020 Instrument:
 Cylinder: 335
 Tech: Zach Curtiss

Remarks:

Gas Composition and Properties

Effective July 1, 2020

Attachment B
Page 9 of 24

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.8234		1.8409
Nitrogen, N2	2.7074		3.8529
Methane, C1	76.8205		62.6063
Ethane, C2	17.5293	4.6898	26.7764
Propane, C3	1.9004	0.5238	4.2570
iso-Butane, iC4	0.0603	0.0197	0.1780
n-Butane, nC4	0.1323	0.0417	0.3906
iso-Pentane, iC5	0.0119	0.0044	0.0436
n-Pentane, nC5	0.0128	0.0046	0.0469
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0017	0.0007	0.0074
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.2860	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-27.472	
Cricodentherm	-21.410	
HV, Dry @ Base P, T	1147.28	
HV, Sat @ Base P, T	1127.31	
HV, Sat @ Sample P, T	1147.28	
Relative Density	0.6814	
C6+: 100		

Sample			
Date: 07/01/2020	Pressure:	540.0	
Type:	Temperature:		
Tech: Zach Curtiss	H2O:	lbs/mm	
	H2S:	ppm	
Remarks:			

Analysis			
Date: 07/01/2020	Instrument:		
	Cylinder:	322	
Tech: Zach Curtiss			
Remarks:			

*** End of Report ***

Gas Composition and Properties

Effective July 1, 2020

Source #: 2702230
Name: WATFORD CITY EAST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.0550		2.3703
Nitrogen, N2	2.4000		3.4323
Methane, C1	75.6492		61.9552
Ethane, C2	20.6698	5.5300	31.7291
Propane, C3	0.2211	0.0609	0.4977
iso-Butane, iC4	0.0013	0.0004	0.0039
n-Butane, nC4	0.0030	0.0009	0.0089
iso-Pentane, iC5			
n-Pentane, nC5			
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0006	0.0002	0.0026
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2			
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.5920	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-90.149	
Cricodentherm	-34.418	
HV, Dry @ Base P, T	1141.55	
HV, Sat @ Base P, T	1121.68	
HV, Sat @ Sample P, T	1141.55	
Relative Density	0.6780	
C6+: 100		

Sample

Date: 07/01/2020 Pressure: 150.0
 Type: Temperature:
 Tech: Zach Curtiss H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 07/01/2020 Instrument:
 Cylinder: 343
 Tech: Zach Curtiss

Remarks:

MANDAN BORDER

WBI - Mandan Border

Weighted

NBPL - St Anthony

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
7/1/2020	7/2/2020				855	1018	1.1914	1.191	7/1/2020
7/2/2020	7/3/2020				767	913	1.1915	1.192	7/2/2020
7/3/2020	7/4/2020				653	779	1.1920	1.192	7/3/2020
7/4/2020	7/5/2020				635	756	1.1909	1.191	7/4/2020
7/5/2020	7/6/2020				711	845	1.1896	1.190	7/5/2020
7/6/2020	7/7/2020	1547	1675	1.0826	770	916	1.1897	1.118	7/6/2020
7/7/2020	7/8/2020	3801	4114	1.0830	768	912	1.1883	1.101	7/7/2020
7/8/2020	7/9/2020				779	928	1.1920	1.192	7/8/2020
7/9/2020	7/10/2020	1332	1445	1.0854	820	972	1.1866	1.124	7/9/2020
7/10/2020	7/11/2020				826	978	1.1847	1.185	7/10/2020
7/11/2020	7/12/2020				781	930	1.1909	1.191	7/11/2020
7/12/2020	7/13/2020				759	902	1.1876	1.188	7/12/2020
7/13/2020	7/14/2020				697	832	1.1925	1.193	7/13/2020
7/14/2020	7/15/2020				709	846	1.1941	1.194	7/14/2020
7/15/2020	7/16/2020				752	899	1.1947	1.195	7/15/2020
7/16/2020	7/17/2020				697	833	1.1954	1.195	7/16/2020
7/17/2020	7/18/2020				571	681	1.1926	1.193	7/17/2020
7/18/2020	7/19/2020				580	696	1.1980	1.198	7/18/2020
7/19/2020	7/20/2020				689	818	1.1869	1.187	7/19/2020
7/20/2020	7/21/2020				803	952	1.1860	1.186	7/20/2020
7/21/2020	7/22/2020				701	832	1.1870	1.187	7/21/2020
7/22/2020	7/23/2020				747	888	1.1900	1.190	7/22/2020
7/23/2020	7/24/2020				634	754	1.1874	1.187	7/23/2020
7/24/2020	7/25/2020	839	922	1.0998	697	824	1.1824	1.137	7/24/2020
7/25/2020	7/26/2020				715	847	1.1859	1.186	7/25/2020
7/26/2020	7/27/2020				728	862	1.1852	1.185	7/26/2020
7/27/2020	7/28/2020				843	998	1.1839	1.184	7/27/2020
7/28/2020	7/29/2020				760	901	1.1857	1.186	7/28/2020
7/29/2020	7/30/2020				727	861	1.1845	1.185	7/29/2020
7/30/2020	7/31/2020				775	923	1.1926	1.193	7/30/2020
7/31/2020	8/1/2020				784	938	1.1967	1.197	7/31/2020
		7,519	8,156	1.0877	22,733	27,034	1.1896	1.1810	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 July 2020

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	1,158.317	0.6641	84.1913	9.4393	3.6706	0.3947	0.7279	0.0653	0.0518	0.0253	1.0100	0.4133	0.0106
2	1,158.682	0.6645	84.1042	9.4863	3.6919	0.3947	0.7259	0.0646	0.0504	0.0257	1.0380	0.4078	0.0105
3	1,157.387	0.6636	84.3142	9.2961	3.6759	0.3965	0.7334	0.0658	0.0507	0.0259	1.0200	0.4109	0.0107
4	1,157.052	0.6637	84.2649	9.3338	3.6744	0.3938	0.7249	0.0639	0.0503	0.0257	1.0422	0.4155	0.0106
5	1,157.430	0.6643	84.1909	9.3164	3.7052	0.3956	0.7437	0.0647	0.0502	0.0247	1.0855	0.4126	0.0105
6	1,157.928	0.6648	84.0918	9.4232	3.6923	0.3947	0.7410	0.0651	0.0504	0.0251	1.0877	0.4181	0.0106
7	1,156.355	0.6629	84.3892	9.3042	3.6132	0.3922	0.7224	0.0706	0.0538	0.0225	0.9879	0.4328	0.0113
8	1,156.953	0.6636	84.2850	9.3286	3.6829	0.3894	0.7197	0.0676	0.0509	0.0198	1.0101	0.4349	0.0112
9	1,158.475	0.6644	84.2101	9.3087	3.7839	0.3906	0.7221	0.0663	0.0506	0.0202	1.0093	0.4271	0.0111
10	1,155.442	0.6612	84.6232	9.1903	3.6558	0.3788	0.6833	0.0632	0.0492	0.0199	0.9126	0.4122	0.0116
11	1,159.933	0.6665	83.9605	9.2816	3.9070	0.4008	0.7640	0.0620	0.0476	0.0187	1.1250	0.4218	0.0110
12	1,154.048	0.6616	84.4171	9.3065	3.6797	0.3625	0.6334	0.0634	0.0513	0.0221	1.0530	0.4002	0.0108
13	1,153.926	0.6615	84.4909	9.1724	3.7628	0.3587	0.6189	0.0625	0.0491	0.0251	1.0496	0.3993	0.0108
14	1,157.235	0.6634	84.2998	9.2770	3.8099	0.3748	0.6615	0.0649	0.0510	0.0266	1.0158	0.4076	0.0111
15	1,158.169	0.6634	84.4459	9.1180	3.8050	0.3939	0.7174	0.0650	0.0503	0.0259	0.9617	0.4059	0.0110
16	1,160.975	0.6667	83.9456	9.3291	3.9311	0.3982	0.7394	0.0672	0.0509	0.0246	1.0869	0.4162	0.0107
17	1,158.420	0.6654	83.9685	9.3256	4.0516	0.3609	0.6084	0.0633	0.0494	0.0242	1.1158	0.4219	0.0106
18	1,159.795	0.6657	83.9563	9.3858	4.0352	0.3655	0.6270	0.0643	0.0503	0.0240	1.0552	0.4258	0.0105
19	1,158.575	0.6638	84.1571	9.4495	3.8857	0.3618	0.6099	0.0644	0.0502	0.0259	0.9729	0.4121	0.0104
20	1,158.719	0.6638	84.2253	9.3978	3.8507	0.3698	0.6337	0.0678	0.0517	0.0262	0.9467	0.4194	0.0109
21	1,159.522	0.6647	84.1167	9.3739	3.9448	0.3729	0.6277	0.0675	0.0523	0.0267	0.9829	0.4236	0.0109
22	1,161.571	0.6670	83.8182	9.4007	4.1079	0.3772	0.6435	0.0655	0.0504	0.0259	1.0824	0.4177	0.0106
23	1,160.361	0.6662	83.9415	9.3424	4.0617	0.3752	0.6391	0.0654	0.0493	0.0261	1.0576	0.4309	0.0108
24	1,158.496	0.6646	84.1010	9.3880	3.9195	0.3689	0.6220	0.0653	0.0504	0.0269	1.0136	0.4334	0.0109
25	1,158.539	0.6646	84.0714	9.4095	3.9354	0.3679	0.6151	0.0627	0.0494	0.0263	1.0208	0.4307	0.0109
26	1,158.474	0.6645	84.0263	9.5144	3.9067	0.3604	0.6047	0.0613	0.0479	0.0253	1.0068	0.4354	0.0109
27	1,158.966	0.6647	84.1060	9.3470	3.9773	0.3649	0.6170	0.0654	0.0505	0.0263	1.0159	0.4184	0.0112
28	1,162.071	0.6664	83.9240	9.3920	4.0757	0.3772	0.6494	0.0667	0.0518	0.0278	1.0317	0.3919	0.0116
29	1,157.785	0.6630	84.1794	9.7476	3.5471	0.3779	0.6517	0.0665	0.0531	0.0290	0.8859	0.4492	0.0126
30	1,160.953	0.6656	83.8713	9.7862	3.7159	0.3875	0.6850	0.0650	0.0515	0.0297	0.9543	0.4418	0.0118
31	1,155.151	0.6627	84.2704	9.4013	3.6844	0.3712	0.6413	0.0636	0.0506	0.0275	1.0589	0.4194	0.0115
Volume	1,158.242	0.6643	84.1610	9.3645	3.8251	0.3798	0.6737	0.0650	0.0505	0.0249	1.0256	0.4190	0.0109
Weight Avg Energy	1,158.244	0.6643	84.1608	9.3646	3.8252	0.3798	0.6737	0.0650	0.0505	0.0249	1.0256	0.4190	0.0109



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 July 2020

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	1,158.380	0.6643	84.1801	9.4283	3.6754	0.3965	0.7341	0.0652	0.0516	0.0252	1.0180	0.4150	0.0105
2	1,159.229	0.6650	83.9320	9.7121	3.6598	0.3878	0.7058	0.0638	0.0503	0.0258	1.0434	0.4086	0.0105
3	1,156.938	0.6634	84.3332	9.3001	3.6608	0.3941	0.7261	0.0654	0.0508	0.0258	1.0197	0.4132	0.0107
4	1,157.282	0.6641	84.2295	9.3281	3.6903	0.3959	0.7312	0.0642	0.0504	0.0257	1.0566	0.4176	0.0106
5	1,157.154	0.6640	84.2377	9.3164	3.6763	0.3955	0.7434	0.0649	0.0497	0.0248	1.0729	0.4079	0.0104
6	1,157.827	0.6647	84.1188	9.4134	3.6872	0.3946	0.7372	0.0657	0.0510	0.0253	1.0747	0.4214	0.0107
7	1,156.351	0.6631	84.3743	9.3086	3.6168	0.3921	0.7233	0.0705	0.0535	0.0218	0.9949	0.4330	0.0112
8	1,157.175	0.6637	84.2711	9.3351	3.6955	0.3886	0.7192	0.0671	0.0508	0.0196	1.0072	0.4346	0.0112
9	1,158.422	0.6644	84.2338	9.2910	3.7867	0.3905	0.7203	0.0662	0.0507	0.0204	1.0028	0.4264	0.0111
10	1,155.676	0.6617	84.5792	9.1779	3.6818	0.3806	0.6893	0.0634	0.0489	0.0196	0.9346	0.4131	0.0115
11	1,160.725	0.6676	83.8374	9.3065	3.9338	0.4082	0.7844	0.0623	0.0477	0.0184	1.1571	0.4332	0.0109
12	1,154.659	0.6620	84.4120	9.2298	3.7842	0.3616	0.6164	0.0632	0.0507	0.0221	1.0503	0.3989	0.0108
13	1,154.526	0.6619	84.4442	9.2027	3.7767	0.3598	0.6217	0.0630	0.0494	0.0255	1.0478	0.3985	0.0107
14	1,157.060	0.6631	84.3864	9.2159	3.7995	0.3775	0.6688	0.0648	0.0508	0.0263	0.9933	0.4056	0.0111
15	1,159.288	0.6645	84.2933	9.1745	3.8497	0.3972	0.7293	0.0656	0.0504	0.0258	0.9967	0.4065	0.0109
16	1,160.377	0.6664	83.9718	9.3301	3.9290	0.3924	0.7214	0.0664	0.0508	0.0244	1.0853	0.4175	0.0108
17	1,158.350	0.6654	83.9850	9.3226	4.0473	0.3605	0.6063	0.0633	0.0495	0.0242	1.1073	0.4234	0.0106
18	1,159.632	0.6658	83.9671	9.3716	4.0307	0.3644	0.6273	0.0652	0.0512	0.0252	1.0563	0.4306	0.0105
19	1,157.431	0.6630	84.2119	9.5377	3.7651	0.3615	0.6072	0.0627	0.0488	0.0261	0.9604	0.4082	0.0102
20	1,159.270	0.6642	84.2180	9.3343	3.9158	0.3711	0.6342	0.0685	0.0521	0.0263	0.9486	0.4201	0.0110
21	1,159.647	0.6650	84.0829	9.3812	3.9569	0.3736	0.6291	0.0670	0.0519	0.0267	0.9956	0.4241	0.0109
22	1,161.764	0.6672	83.8117	9.4022	4.1160	0.3777	0.6440	0.0655	0.0503	0.0258	1.0780	0.4181	0.0107
23	1,160.054	0.6660	83.9811	9.3279	4.0491	0.3738	0.6356	0.0655	0.0497	0.0263	1.0489	0.4313	0.0108
24	1,158.615	0.6648	84.0515	9.4563	3.8917	0.3700	0.6240	0.0654	0.0505	0.0270	1.0169	0.4358	0.0109
25	1,159.358	0.6652	83.9845	9.4542	3.9776	0.3672	0.6132	0.0618	0.0487	0.0259	1.0321	0.4241	0.0108
26	1,157.706	0.6641	84.1620	9.3502	3.9321	0.3623	0.6029	0.0628	0.0489	0.0260	0.9994	0.4426	0.0108
27	1,159.563	0.6650	84.0738	9.3575	3.9959	0.3678	0.6217	0.0655	0.0507	0.0264	1.0179	0.4114	0.0113
28	1,161.457	0.6661	83.9427	9.4256	4.0319	0.3742	0.6445	0.0662	0.0515	0.0280	1.0301	0.3936	0.0117
29	1,157.689	0.6628	84.1956	9.7715	3.5265	0.3776	0.6506	0.0648	0.0518	0.0292	0.8861	0.4339	0.0125
30	1,161.412	0.6660	83.8313	9.7876	3.7476	0.3874	0.6866	0.0647	0.0514	0.0297	0.9636	0.4383	0.0117
31	1,155.214	0.6629	84.2405	9.4013	3.7063	0.3702	0.6365	0.0637	0.0508	0.0272	1.0698	0.4222	0.0116
Volume	1,158.381	0.6644	84.1534	9.3784	3.8297	0.3791	0.6691	0.0653	0.0507	0.0252	1.0187	0.4196	0.0110
Weight Avg Energy	1,158.383	0.6644	84.1536	9.3781	3.8293	0.3792	0.6694	0.0653	0.0507	0.0252	1.0186	0.4196	0.0110

Watford City

Watford City West Border

Watford City East Border

Weighted

Start Date	End Date	Watford City West Border			Watford City East Border			AVG BTU	
		MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43		
7/1/2020	7/2/2020	64	76	1.1936	70	80	1.1416	1.166	7/1/2020
7/2/2020	7/3/2020	45	54	1.1936	62	71	1.1416	1.163	7/2/2020
7/3/2020	7/4/2020	39	46	1.1936	54	62	1.1416	1.163	7/3/2020
7/4/2020	7/5/2020	2	3	1.1936	37	42	1.1416	1.144	7/4/2020
7/5/2020	7/6/2020	11	14	1.1936	39	45	1.1416	1.153	7/5/2020
7/6/2020	7/7/2020	45	54	1.1936	48	55	1.1416	1.167	7/6/2020
7/7/2020	7/8/2020	44	53	1.1936	61	70	1.1416	1.163	7/7/2020
7/8/2020	7/9/2020	68	81	1.1936	53	61	1.1416	1.171	7/8/2020
7/9/2020	7/10/2020	75	90	1.1936	59	67	1.1416	1.171	7/9/2020
7/10/2020	7/11/2020	47	56	1.1936	54	62	1.1416	1.166	7/10/2020
7/11/2020	7/12/2020	26	31	1.1936	52	59	1.1416	1.159	7/11/2020
7/12/2020	7/13/2020	7	8	1.1936	36	41	1.1416	1.150	7/12/2020
7/13/2020	7/14/2020	59	70	1.1936	65	75	1.1416	1.166	7/13/2020
7/14/2020	7/15/2020	61	73	1.1936	66	75	1.1416	1.167	7/14/2020
7/15/2020	7/16/2020	44	53	1.1936	61	69	1.1416	1.163	7/15/2020
7/16/2020	7/17/2020	18	21	1.1936	44	50	1.1416	1.157	7/16/2020
7/17/2020	7/18/2020	5	6	1.1936	50	57	1.1416	1.146	7/17/2020
7/18/2020	7/19/2020	16	19	1.1936	51	58	1.1416	1.154	7/18/2020
7/19/2020	7/20/2020	19	22	1.1936	54	62	1.1416	1.155	7/19/2020
7/20/2020	7/21/2020	50	60	1.1936	72	82	1.1416	1.163	7/20/2020
7/21/2020	7/22/2020	62	73	1.1936	69	79	1.1416	1.166	7/21/2020
7/22/2020	7/23/2020	15	19	1.1936	52	59	1.1416	1.153	7/22/2020
7/23/2020	7/24/2020	33	39	1.1936	57	65	1.1416	1.161	7/23/2020
7/24/2020	7/25/2020	50	59	1.1936	52	60	1.1416	1.167	7/24/2020
7/25/2020	7/26/2020	53	63	1.1936	51	58	1.1416	1.168	7/25/2020
7/26/2020	7/27/2020	50	60	1.1936	45	51	1.1416	1.169	7/26/2020
7/27/2020	7/28/2020	71	85	1.1936	53	61	1.1416	1.171	7/27/2020
7/28/2020	7/29/2020	62	74	1.1936	52	59	1.1416	1.170	7/28/2020
7/29/2020	7/30/2020	48	57	1.1936	56	64	1.1416	1.166	7/29/2020
7/30/2020	7/31/2020	57	68	1.1936	51	58	1.1416	1.169	7/30/2020
7/31/2020	8/1/2020	50	59	1.1936	51	59	1.1416	1.167	7/31/2020

1,296 1,546 1.1936 1,677 1,916 1.1416 1.1625

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (calc)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Changestimestamp	NOTES
11587	GLEN ULLIN	1078.2	0.6289	1359.6	-60.7	1.7692	0.9202	85.4321	11.0904	0.4916	0.014	0.0091	0	0	0	0	0.2553	0.0182	6/30/2020	7/1/2020	7/1/2020 4:07:11 PM	
11587	GLEN ULLIN	1077.2	0.6279	1359.4	-61.4	1.7309	0.9207	85.6704	10.9166	0.4826	0.0129	0.0084	0	0	0	0	0.2395	0.0181	7/1/2020	7/2/2020	7/2/2020 4:24:48 PM	
11587	GLEN ULLIN	1077.8	0.6284	1359.7	-61.3	1.7821	0.8952	85.6129	11.0018	0.4783	0.0115	0.0077	0	0	0	0	0.192	0.0186	7/2/2020	7/3/2020	7/3/2020 4:09:26 PM	
11587	GLEN ULLIN	1080.2	0.6294	1361.5	-60	1.7498	0.8882	85.3878	11.1839	0.5238	0.0135	0.009	0	0	0	0	0.2256	0.0184	7/3/2020	7/4/2020	7/4/2020 4:05:24 PM	
11587	GLEN ULLIN	1084.7	0.6332	1363.1	-57.6	1.8196	0.8979	84.6949	11.7992	0.5469	0.0142	0.0098	0	0.0003	0	0	0.1982	0.0191	7/4/2020	7/5/2020	7/5/2020 4:01:47 PM	
11587	GLEN ULLIN	1084.9	0.6325	1364.1	-57.7	1.737	0.9007	84.8229	11.7251	0.5523	0.0151	0.0104	0.0001	0.0003	0	0	0.2178	0.0185	7/5/2020	7/6/2020	7/6/2020 4:11:53 PM	
11587	GLEN ULLIN	1083	0.6319	1362.4	-58.4	1.7678	0.9187	85.0819	11.4884	0.5464	0.0166	0.0105	0.0003	0.0003	0	0	0.1508	0.0183	7/6/2020	7/7/2020	7/7/2020 4:03:27 PM	
11587	GLEN ULLIN	1084.1	0.6329	1362.7	-57.7	1.8068	0.9071	84.9132	11.6206	0.5592	0.0195	0.0113	0.0006	0.0006	N/A	0	0.1419	0.0192	7/7/2020	7/8/2020	7/8/2020 4:09:51 PM	
11587	GLEN ULLIN	1083.2	0.6324	1362.1	-58	1.8052	0.9152	84.9656	11.5714	0.5358	0.0177	0.0124	0.001	0.0013	N/A	0.0002	0.1548	0.0195	7/8/2020	7/9/2020	7/9/2020 4:32:18 PM	
11587	GLEN ULLIN	1085.6	0.6343	1363	-57.2	1.8157	0.9313	84.5816	11.9595	0.5205	0.0141	0.0097	0.0003	0.0005	N/A	0	0.1467	0.0203	7/9/2020	7/10/2020	7/10/2020 4:05:31 PM	
11587	GLEN ULLIN	1085.1	0.6339	1362.9	-57.4	1.8252	0.919	84.6298	11.8813	0.5361	0.0143	0.0096	0.0001	0.0002	N/A	0	0.1644	0.0202	7/10/2020	7/11/2020	7/11/2020 4:02:15 PM	
11587	GLEN ULLIN	1085.6	0.6347	1362.6	-56.6	1.8965	0.9052	84.3469	12.0208	0.5656	0.0139	0.0091	0.0001	0.0001	N/A	0	0.2221	0.0199	7/11/2020	7/12/2020	7/12/2020 4:02:46 PM	
11587	GLEN ULLIN	1083.4	0.6331	1361.6	-57.9	1.8918	0.8977	84.6501	11.7656	0.541	0.0121	0.0082	0	0	N/A	0	0.2136	0.0199	7/12/2020	7/13/2020	7/13/2020 4:04:44 PM	
11587	GLEN ULLIN	1082.2	0.6326	1360.7	-57.9	1.8756	0.9181	84.8409	11.5312	0.5703	0.0175	0.0115	0.0004	0.0007	N/A	0	0.2145	0.0194	7/13/2020	7/14/2020	7/14/2020 4:11:39 PM	
11587	GLEN ULLIN	1084.9	0.6356	1360.8	-56.3	1.9767	0.9385	83.9773	12.2163	0.5429	0.0111	0.0076	0	0	N/A	0	0.3102	0.0196	7/14/2020	7/15/2020	7/15/2020 4:05:23 PM	
11587	GLEN ULLIN	1088.1	0.6379	1362.4	-54.4	1.9841	0.9517	83.4763	12.6233	0.5709	0.0146	0.0095	0.0002	0.0005	N/A	0	0.3489	0.0201	7/15/2020	7/16/2020	7/16/2020 4:18:01 PM	
11587	GLEN ULLIN	1088.4	0.6389	1361.7	-54.3	2.0153	0.9766	83.4425	12.6876	0.5691	0.012	0.008	0	0	N/A	0	0.269	0.02	7/16/2020	7/17/2020	7/17/2020 4:04:10 PM	
11587	GLEN ULLIN	1085.5	0.6368	1360.3	-55.7	1.9879	0.9785	84.0222	12.1704	0.5889	0.0136	0.0092	0.0001	0.0002	N/A	0	0.2096	0.0198	7/17/2020	7/18/2020	7/18/2020 4:20:49 PM	
11587	GLEN ULLIN	1083.5	0.6351	1359.5	-57	1.983	0.9532	84.3075	11.9397	0.5594	0.0119	0.0078	0	0	N/A	0	0.2175	0.02	7/18/2020	7/19/2020	7/19/2020 4:21:15 PM	
11587	GLEN ULLIN	1088.3	0.6388	1361.6	-54.5	2.0245	0.9679	83.6022	12.568	0.591	0.0123	0.008	0	0	N/A	0	0.2058	0.0203	7/19/2020	7/20/2020	7/20/2020 4:07:57 PM	
11587	GLEN ULLIN	1091.5	0.641	1363.3	-53.1	2.069	0.9497	83.1633	12.9788	0.6057	0.0114	0.0076	0	0	N/A	0	0.1938	0.0209	7/20/2020	7/21/2020	7/21/2020 4:12:27 PM	
11587	GLEN ULLIN	1090.4	0.6384	1364.7	-53.8	1.9165	0.9272	83.7373	12.5324	0.6371	0.0151	0.0105	0.0003	0.0005	N/A	0.0002	0.2027	0.0203	7/21/2020	7/22/2020	7/22/2020 4:10:08 PM	
11587	GLEN ULLIN	1090.4	0.6384	1364.7	-53.8	1.9165	0.9272	83.7373	12.5324	0.6371	0.0151	0.0105	0.0003	0.0005	N/A	0.0002	0.2027	0.0203	7/21/2020	7/23/2020	7/23/2020 4:08:25 PM	
11587	GLEN ULLIN	1090.4	0.6384	1364.7	-53.8	1.9165	0.9272	83.7373	12.5324	0.6371	0.0151	0.0105	0.0003	0.0005	N/A	0.0002	0.2027	0.0203	7/21/2020	7/24/2020	7/24/2020 4:06:39 PM	
11587	GLEN ULLIN	1090.4	0.6384	1364.7	-53.8	1.9165	0.9272	83.7373	12.5324	0.6371	0.0151	0.0105	0.0003	0.0005	N/A	0.0002	0.2027	0.0203	7/21/2020	7/25/2020	7/25/2020 4:05:25 PM	
11587	GLEN ULLIN	1090.4	0.6384	1364.7	-53.8	1.9165	0.9272	83.7373	12.5324	0.6371	0.0151	0.0105	0.0003	0.0005	N/A	0.0002	0.2027	0.0203	7/21/2020	7/26/2020	7/26/2020 4:08:06 PM	
11587	GLEN ULLIN	1095.8	0.6462	1363.2	-50.3	2.2577	0.9718	82.3784	13.5964	0.6675	0.0134	0.0085	0	0	N/A	0	0.0845	0.0219	7/26/2020	7/27/2020	7/27/2020 4:07:13 PM	
11587	GLEN ULLIN	1093.6	0.6439	1362.8	-51.8	2.2536	0.9206	82.7716	13.2948	0.6346	0.0135	0.0084	0	0	N/A	0	0.0813	0.0218	7/27/2020	7/28/2020	7/28/2020 4:05:39 PM	
11587	GLEN ULLIN	1093.9	0.6442	1362.9	-51.4	2.2379	0.9356	82.7826	13.2654	0.6615	0.015	0.0093	0	0	N/A	0	0.071	0.0218	7/28/2020	7/29/2020	7/29/2020 4:06:41 PM	
11587	GLEN ULLIN	1094.6	0.6447	1363.3	-49.8	2.2009	0.9608	82.8559	13.0715	0.7689	0.0271	0.0146	0.0014	0.0013	N/A	0.0003	0.0756	0.0217	7/29/2020	7/30/2020	7/30/2020 4:10:44 PM	
11587	GLEN ULLIN	1093.3	0.6439	1362.5	-51	2.1909	0.9742	82.9205	13.0645	0.7132	0.0196	0.0113	0.0006	0.0006	N/A	0	0.0833	0.0214	7/30/2020	7/31/2020	7/31/2020 4:54:20 PM	
11587	GLEN ULLIN	1093.8	0.644	1363	-50.9	2.163	0.9784	82.7603	13.1718	0.7219	0.015	0.0097	0	0	N/A	0	0.1589	0.0213	7/31/2020	8/1/2020	8/1/2020 4:09:40 PM	

32 record(s) retrieved

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	Accumulated Sample	Watford City East Border
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	JULY 20	JUNE 20	MAY 20	APR 20	MAR 20	FEB 20	JAN 20	DEC 19	NOV19	OCT 19	SEPT 19	AUG 19	ZONE
MT/ND	211	Sidney Border - MonDak Trf - Sidney Plt	1200	1191	1169	1174	1202	1211	1215	1207	1209	1198	1210	1218	1200	211
ND	24	Williston Border - Charbonneau Station	1165	1153	1163	1159	1155	1169	1171	1172	1173	1177	1160	1164	1165	24
ND	25	Watford City West Border	1194	1194	1161	1206	1188	1202	1204	1196	1192	1194	1199	1195	1197	25
ND	28	Bismarck Station - Glen Ullin Station	1151	1190	1186	1129	1149	1138	1126	1123	1128	1125	1137	1189	1196	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1123	1092	1085	1093	1150	1138	1126	1122	1128	1125	1137	1163	1114	31
ND/MT	32	Cabin Creek Station - Belfield Transfer	1113	1115	1109	1109	1133	1103	1096	1093	1074	1122	1134	1130	1137	32
ND	33	Little Knife Plant	1176	1183	1182	1179	1175	1173	1175	1174	1173	1172	1173	1174	1175	33
ND	34	Badlands Plant/Bowman Border	1048	984	1036	1047	1048	1024	1073	1082	1110	1102	1054	1001	1013	34
ND	43	1/ Watford City East Border	1148	1142	1138	1151	1157	1152	1151	1154	1144	1151	1143	1144	1150	43
ND/MT	241	Fairview Border	1190	1153	1159	1164	1182	1195	1203	1209	1206	1202	1208	1210	1194	241
ND	260	North Tioga Transfer - Nesson Plant	1117	1116	1116	1099	1096	1132	1111	1089	1106	1146	1126	1136	1135	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1176	1167	1177	1178	1179	1174	1173	1168	1166	1178	1174	1189	1189	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1189	1189	1192	1193	1190	1180	1180	1176	1184	1193	1195	1193	1197	262
ND	263	Lignite Plant	1149	1143	1149	1146	1146	1160	1143	1145	1149	1149	1146	1146	1163	263
ND	264	Epping Border	1156	1147	1153	1168	1147	1157	1165	1163	1162	1164	1144	1148	1155	264
ND	265	Tioga Comp Station - County Line Plant	1171	1168	1178	1158	1180	1174	1174	1168	1167	1168	1169	1176	1177	265
ND	266	County Line Plant	1173	1191	1194	1168	1193	1164	1161	1162	1165	1170	1170	1172	1170	266
ND	271	Bismarck Station - Cleveland Station	1181	1190	1193	1190	1186	1169	1165	1159	1168	1174	1189	1191	1197	271
ND	272	Cleveland Station - Mapleton	1181	1190	1192	1189	1185	1169	1165	1159	1168	1174	1188	1191	1196	272
ND	273	Cleveland Station - Grafton Border	1180	1190	1192	1189	1184	1169	1165	1159	1168	1173	1188	1190	1195	273
ND	550	Mandan Border / NBPL-St Anthony	1147	1181	1186	1129	1149	1119	1117	1115	1121	1125	1137	1189	1196	550
ND	610	MDU-Watford City BTU	1170	1163	1149	1182	1171	1169	1168	1168	1161	1172	1174	1178	1181	610
ND	802	NBPL - Linton	1097	1088	1082	1086	1105	1102	1102	1102	1102	1107	1098	1094	1094	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1163	1158	1164	1158	1163	1164	1162	1160	1159	1166	1170	1167	1162	600
ND	601	Alliance Pipeline - Milnor	1162	1158	1164	1157	1158	1164	1162	1160	1159	1166	1170	1167	1162	601

1/ Values for June 2020 forward reflect the BTU from the accumulated sampler and previous values were from the chromatograph

THERMAL ZONE VARIANCE DOCUMENTATION		
July 2020		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
211	22	Operational – Maintenance
25	33	Operational – Maintenance
34	(52)	Operational