



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

June 19, 2018

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

Re: Case No. PU-18-002 (Therm Billing)  
Monthly Report – April 2018

Montana-Dakota Utilities Co., a Division 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 May 2018.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of April 2018.
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 April 2018.

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**  
**May-18**

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1136
MDU-308-ARNEGARD	025	1.1136
MDU-314-APPLE VALLEY	271	1.1453
MDU-318-BEACH	032	1.0202
MDU-319-BELFIELD	032	1.0277
MDU-323-BERTHOLD	262	1.1325
MDU-327-BISMARCK	028	1.0816
MDU-330-BOWMAN	034	0.9137
MDU-337-BURLINGTON	262	1.1569
MDU-343-CARRINGTON	273	1.1453
MDU-344-CLEVELAND	272	1.1372
MDU-364-CAVALIER	273	1.1695
MDU-365-DAWSON	271	1.1372
MDU-368-DES LACS	262	1.1330
MDU-369-DICKINSON	031	1.4092
MDU-374-FT TOTTEN	273	1.1534
MDU-375-DEVILS LAKE	273	1.1534
MDU-379-BARLOW	273	1.1453
MDU-384-EPPING	264	1.0560
MDU-387-ELDRIDGE	272	1.1453
MDU-407-GLADSTONE	031	1.0521
MDU-411-GLEN ULLIN	031	1.0597
MDU-413-GOLVA	032	1.0053
MDU-416-GARRISON	262	1.1406
MDU-417-GRAFTON	273	1.1775
MDU-429-HEBRON	031	1.0597
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1534
MDU-459-KILLDEER	033	1.1098
MDU-463-LANGDON	273	1.1453
MDU-469-LEFOR	031	1.0521
MDU-474-LIGNITE	263	1.0607
MDU-475-LINTON	802	1.0314
MDU-478-LINCOLN	028	1.0816
MDU-488-MCKENZIE	271	1.1453
MDU-494-MEDINA	271	1.1372
MDU-498-MANDAN	028	1.0816
MDU-500-MARMARTH	034	0.9204
MDU-505-MINOT	262	1.1569
MDU-510-MOTT	031	1.0521
MDU-512-MAX	262	1.1325
MDU-522-NEW ENGLAND	031	1.0445
MDU-524-NEW SALEM	028	1.0588
MDU-532-NEW ROCKFORD	273	1.1453
MDU-539-PARK RIVER	273	1.1695
MDU-540-PALERMO	262	1.1325
MDU-558-RAY	264	1.0560
MDU-561-REGENT	031	1.0521
MDU-563-RHAME	034	0.9069

MDU-564-RICHARDTON	031	1.0445
MDU-568-ROSS	261	1.0999
MDU-572-RUTHVILLE	262	1.1569
MDU-574-SANBORN	272	1.1534
MDU-583-SENTINEL BUTTE	032	1.0202
MDU-588-SOUTH HEART	031	1.0445
MDU-717-SPIRITWOOD	272	1.1534
MDU-590-SPRINGBROOK	264	1.0560
MDU-591-STANLEY	261	1.1159
MDU-593-STEELE	271	1.1372
MDU-598-SHEYENNE	273	1.1534
MDU-605-SURREY	262	1.1569
MDU-610-TAPPEN	271	1.1372
MDU-611-TAYLOR	031	1.0259
MDU-616-TIOGA	260	0.9389
MDU-619-TURTLE LAKE	262	1.1406
MDU-620-TRENTON	024	1.0845
MDU-624-UNDERWOOD	262	1.1406
MDU-625-VALLEY CITY	272	1.1614
MDU-629-WALHALLA	273	1.1695
MDU-632-WATFORD CITY	610	1.1051
MDU-636-WHEELOCK	264	1.0484
MDU-637-WHITE EARTH	261	1.1079
MDU-642-WILLISTON	024	1.0845
MDU-646-WASHBURN	262	1.1487
MDU-647-WILTON	262	1.1325
MDU-664-RIVERDALE	262	1.1406
MDU-691-FAIRVIEW	241	1.1463
MDU-712-MINOT AFB	262	1.1569
MDU-718-FAIRMOUNT	600	1.1336
MDU-732-NEKOMA	273	1.1453
MDU-732-MSR SITE	273	1.1453

# Source Daily Summary

April 2018

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	0.7459	1198.3	1219.5	1214.9	1.282	3.735	67.017	23.157	4.244	0.189	0.345	0.018	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1408.66
2	0.7436	1194.9	1216.1	1211.6	1.288	3.725	66.951	23.659	3.888	0.165	0.297	0.015	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1406.87
3	0.7284	1179.4	1200.2	1195.8	1.103	3.527	69.271	22.282	3.406	0.136	0.250	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1402.95
4	0.7314	1187.4	1208.4	1203.9	1.047	3.397	69.641	21.335	3.947	0.200	0.389	0.024	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1409.55
5	0.7202	1169.5	1190.2	1185.8	1.023	3.470	71.216	20.259	3.523	0.162	0.312	0.018	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1399.14
6	0.7233	1175.7	1196.5	1192.0	1.019	3.397	70.455	21.181	3.478	0.150	0.287	0.017	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1403.45
7	0.7210	1170.3	1191.0	1186.5	1.055	3.457	70.567	21.283	3.236	0.131	0.245	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1399.25
8	0.7229	1172.0	1192.7	1188.3	1.090	3.476	70.298	21.425	3.301	0.135	0.250	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1399.48
9	0.7236	1171.7	1192.5	1188.0	1.115	3.519	70.306	21.235	3.395	0.141	0.262	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1398.47
10	0.7272	1176.0	1196.8	1192.2	1.141	3.556	69.714	21.657	3.493	0.145	0.267	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1400.10
11	0.7264	1175.3	1196.1	1191.6	1.120	3.562	69.800	21.627	3.460	0.143	0.263	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1399.97
12	0.7212	1169.1	1189.8	1185.4	1.092	3.494	70.586	21.153	3.274	0.131	0.244	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1397.62
13	0.7234	1173.4	1194.2	1189.7	1.075	3.460	70.383	21.199	3.444	0.141	0.269	0.015	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1400.64
14	0.7215	1172.1	1192.9	1188.4	1.046	3.404	70.488	21.392	3.283	0.125	0.237	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1400.97
15	0.7191	1169.5	1190.2	1185.8	1.017	3.386	70.909	21.002	3.343	0.112	0.209	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1400.15
16	0.7156	1165.3	1185.9	1181.4	0.980	3.369	71.360	20.838	3.112	0.110	0.208	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1398.50
17	0.7198	1168.1	1188.7	1184.3	1.067	3.461	70.732	21.157	3.214	0.123	0.224	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1397.79
18	0.7144	1158.6	1179.1	1174.6	1.046	3.567	71.719	20.176	3.107	0.125	0.236	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1391.58
19	0.7220	1168.7	1189.4	1184.8	1.117	3.552	70.349	21.389	3.214	0.125	0.231	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.42
20	0.7255	1172.9	1193.7	1189.1	1.159	3.566	69.783	21.787	3.312	0.130	0.240	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1397.98
21	0.7229	1170.2	1190.9	1186.4	1.111	3.554	70.242	21.408	3.317	0.121	0.224	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1397.31
22	0.7201	1167.2	1187.9	1183.4	1.086	3.509	70.634	21.245	3.154	0.122	0.226	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1396.50
23	0.7149	1162.5	1183.1	1178.7	1.019	3.412	71.375	20.908	2.943	0.112	0.209	0.012	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1395.90
24	0.7158	1162.4	1183.0	1178.5	1.048	3.461	71.289	20.847	2.997	0.116	0.218	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
25	0.7127	1159.3	1179.8	1175.4	1.022	3.403	71.798	20.511	2.921	0.111	0.210	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.12
26	0.7124	1159.2	1179.7	1175.3	1.023	3.377	71.920	20.371	2.962	0.111	0.211	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.29
27	0.7088	1152.2	1172.6	1168.2	1.019	3.462	72.635	19.592	2.939	0.113	0.215	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1389.49
28	0.7151	1161.5	1182.0	1177.5	1.056	3.442	71.457	20.685	2.998	0.117	0.220	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.39
29	0.7122	1156.1	1176.5	1172.1	1.054	3.500	72.058	20.014	3.005	0.119	0.223	0.013	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1390.72
30	0.7195	1166.3	1186.9	1182.4	1.091	3.508	70.708	21.209	3.121	0.119	0.221	0.013	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.90
Avg	0.7217	1170.0	1190.9	1186.4	1.080	3.490	70.522	21.199	3.301	0.133	0.248	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1398.44

Zone 211

# Source Daily Summary

April 2018

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	0.6760	1117.8	1137.6	1134.7	0.748	2.893	77.733	16.598	1.815	0.062	0.132	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1380.42	
2	0.6750	1116.7	1136.4	1133.6	0.724	2.901	77.847	16.563	1.759	0.059	0.127	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1380.07	
3	0.6752	1115.5	1135.2	1132.3	0.732	2.985	77.866	16.384	1.821	0.060	0.131	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1378.33	
4	0.6746	1114.3	1134.0	1131.1	0.726	3.007	78.014	16.208	1.828	0.062	0.133	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1377.47	
5	0.6825	1127.9	1147.8	1144.9	0.716	2.928	77.394	16.102	2.487	0.106	0.229	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1386.15	
6	0.6798	1123.8	1143.7	1140.8	0.706	2.942	77.690	16.003	2.311	0.099	0.213	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1383.90	
7	0.6778	1120.2	1140.0	1137.1	0.730	2.940	77.422	16.812	1.883	0.062	0.131	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1381.54	
8	0.6757	1117.6	1137.4	1134.5	0.719	2.922	77.751	16.577	1.823	0.060	0.127	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1380.44	
9	0.6764	1118.2	1138.0	1135.1	0.719	2.954	77.651	16.609	1.853	0.061	0.131	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1380.41	
10	0.6755	1115.5	1135.3	1132.4	0.722	3.025	77.868	16.286	1.878	0.063	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.08	
11	0.6745	1114.6	1134.3	1131.4	0.714	2.996	78.072	16.134	1.855	0.064	0.140	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1377.97	
12	0.6727	1112.3	1132.0	1129.1	0.704	2.984	78.279	16.070	1.763	0.058	0.123	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1376.96	
13	0.6732	1112.0	1131.7	1128.8	0.734	3.000	78.322	15.883	1.840	0.063	0.135	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1376.11	
14	0.6717	1110.5	1130.2	1127.3	0.731	2.960	78.566	15.737	1.790	0.062	0.133	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1375.75	
15	0.6717	1110.0	1129.7	1126.8	0.724	2.994	78.578	15.672	1.820	0.061	0.131	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1375.23	
16	0.6748	1115.2	1134.9	1132.0	0.717	2.989	77.924	16.345	1.814	0.060	0.130	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.38	
17	0.6757	1116.2	1136.0	1133.1	0.723	3.000	77.738	16.528	1.800	0.061	0.130	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1378.74	
18	0.6762	1115.3	1135.0	1132.1	0.731	3.095	77.688	16.416	1.848	0.063	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1377.02	
19	0.6745	1114.2	1133.9	1130.9	0.730	3.002	78.026	16.184	1.844	0.062	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1377.43	
20	0.6757	1115.7	1135.4	1132.4	0.721	3.031	77.830	16.317	1.881	0.063	0.135	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1378.12	
21	0.6755	1115.7	1135.5	1132.5	0.712	3.024	77.840	16.340	1.870	0.062	0.132	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1378.39	
22	0.6767	1117.9	1137.7	1134.7	0.749	2.946	77.720	16.441	1.915	0.067	0.140	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1379.88	
23	0.6752	1115.8	1135.5	1132.5	0.740	2.954	77.969	16.221	1.897	0.065	0.135	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1378.69	
24	0.6734	1112.7	1132.4	1129.4	0.735	2.978	78.201	16.085	1.797	0.060	0.125	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1376.78	
25	0.6762	1117.3	1137.1	1134.0	0.742	2.953	77.770	16.423	1.887	0.065	0.139	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1379.55	
26	0.6762	1117.4	1137.2	1134.1	0.757	2.922	77.836	16.334	1.927	0.064	0.136	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1379.67	
27	0.6752	1114.9	1134.6	1131.5	0.755	2.986	77.960	16.202	1.891	0.060	0.126	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1377.55	
28	0.6778	1119.9	1139.7	1136.5	0.750	2.933	77.357	16.938	1.816	0.059	0.125	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1381.08	
29	0.6796	1122.5	1142.3	1139.2	0.758	2.930	77.042	17.208	1.852	0.061	0.128	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1382.49	
30	0.6780	1120.2	1140.0	1136.9	0.757	2.922	77.354	16.919	1.838	0.061	0.128	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1381.28	
Avg	0.6758	1117.0	1136.4	1133.4	0.731	2.970	77.844	16.351	1.880	0.065	0.138	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1379.13	

Zone 24

# Gas Composition and Properties

Effective April 1, 2018

Source #: 0602160  
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7624		1.6875
Nitrogen, N2	3.0661		4.3197
Methane, C1	75.6527		61.0377
Ethane, C2	18.0650	4.8334	27.3186
Propane, C3	2.1866	0.6007	4.8492
iso-Butane, iC4	0.0797	0.0260	0.2330
n-Butane, nC4	0.1586	0.0499	0.4636
iso-Pentane, iC5	0.0107	0.0039	0.0388
n-Pentane, nC5	0.0112	0.0040	0.0406
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0070		0.0113
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.5180	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-30.795	
Cricondentherm	-17.457	
HV, Dry @ Base P, T	1151.06	
HV, Sat @ Base P, T	1131.03	
HV, Sat @ Sample P, T	1151.06	
Relative Density	0.6871	

C6+: 100

**Sample**

Date: 05/01/2018      Pressure: 422.0  
 Type: Composite      Temperature: 0.0  
 Tech: RR      H2O: lbs/mm  
                                  H2S: ppm

Remarks:

**Analysis**

Date: 05/02/2018      Instrument: WBI- 98  
                                  Cylinder: 319

Tech: MB

Remarks:

Zone 241

# Gas Composition and Properties

Effective April 1, 2018

Source #: 0602225  
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.3431		2.8326
Nitrogen, N2	3.3517		4.4995
Methane, C1	71.0929		54.6554
Ethane, C2	20.2361	0.0000	29.1595
Propane, C3	3.3508	0.9205	7.0807
iso-Butane, iC4	0.1812	0.0591	0.5047
n-Butane, nC4	0.3755	0.1181	1.0459
iso-Pentane, iC5	0.0304	0.0111	0.1051
n-Pentane, nC5	0.0300	0.0108	0.1037
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0084		0.0129
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		
Cricondentherm		
HV, Dry @ Base P, T	1184.60	
HV, Sat @ Base P, T	1163.99	
HV, Sat @ Sample P, T	1184.60	
Relative Density	0.7210	

C6+: 100

Totals 100.0001 1.1190 100.0000

## Sample

Date: 05/01/2018 Pressure: 510.0  
Type: Composite Temperature: 0.0  
Tech: RR H2O: lbs/mm  
H2S: ppm

Remarks:

## Analysis

Date: 05/02/2018 Instrument: WBI-97  
Cylinder: 327

Tech: MB

Remarks:

Zone 25

# Source Daily Summary

April 2018

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	0.5833	969.8	987.0		0.008	4.328	93.609	1.949	0.087	0.005	0.012	0.001	0.001	0.000					1289.27	
2	0.5828	968.8	985.9		0.008	4.337	93.726	1.826	0.084	0.005	0.012	0.001	0.001	0.000					1288.54	
3	0.5828	969.4	986.5		0.008	4.300	93.733	1.853	0.086	0.005	0.012	0.001	0.001	0.000					1289.34	
4	0.5830	969.5	986.6		0.008	4.314	93.691	1.880	0.088	0.005	0.012	0.001	0.002	0.000					1289.22	
5	0.5832	969.9	987.1		0.008	4.306	93.650	1.928	0.090	0.005	0.012	0.001	0.001	0.000					1289.61	
6	0.5904	982.1	999.5		0.008	4.243	92.216	3.390	0.123	0.005	0.012	0.001	0.001	0.000					1297.79	
7	0.5833	970.6	987.8		0.008	4.276	93.629	1.978	0.090	0.005	0.012	0.001	0.001	0.000					1290.36	
8	0.5839	971.2	988.4		0.008	4.301	93.497	2.084	0.092	0.005	0.012	0.001	0.001	0.000					1290.43	
9	0.5834	969.8	987.0		0.008	4.336	93.591	1.957	0.090	0.005	0.012	0.001	0.001	0.000					1289.20	
10	0.5860	974.9	992.2		0.008	4.270	93.161	2.373	0.156	0.009	0.020	0.001	0.002	0.000					1293.09	
11	0.5841	971.7	988.9		0.008	4.283	93.484	2.103	0.101	0.006	0.013	0.001	0.001	0.000					1290.95	
12	0.5836	970.6	987.8		0.008	4.303	93.580	1.994	0.095	0.005	0.012	0.001	0.002	0.000					1290.03	
13	0.5834	970.2	987.4		0.008	4.311	93.604	1.963	0.095	0.005	0.012	0.001	0.001	0.000					1289.73	
14	0.5828	969.8	986.9		0.008	4.276	93.737	1.872	0.089	0.005	0.011	0.001	0.001	0.000					1289.85	
15	0.5861	974.9	992.2		0.008	4.271	93.139	2.406	0.145	0.008	0.019	0.001	0.001	0.000					1293.07	
16	0.5834	968.9	986.1		0.008	4.386	93.593	1.908	0.086	0.005	0.012	0.001	0.001	0.000					1288.03	
17	0.5829	968.3	985.5		0.008	4.378	93.694	1.815	0.086	0.005	0.012	0.001	0.001	0.000					1287.77	
18	0.5895	973.5	990.7		0.008	4.690	92.322	2.841	0.115	0.006	0.016	0.001	0.002	0.000					1287.32	
19	0.5834	969.9	987.1		0.008	4.325	93.603	1.958	0.088	0.005	0.011	0.001	0.001	0.000					1289.37	
20	0.5834	969.6	986.8		0.008	4.344	93.607	1.932	0.090	0.005	0.012	0.001	0.002	0.000					1288.95	
21	0.5843	971.5	988.8		0.008	4.314	93.415	2.154	0.091	0.005	0.011	0.001	0.001	0.000					1290.50	
22	0.5835	970.6	987.8		0.007	4.290	93.594	2.000	0.090	0.005	0.012	0.001	0.001	0.000					1290.22	
23	0.5837	970.9	988.1		0.008	4.293	93.546	2.044	0.090	0.005	0.012	0.001	0.001	0.000					1290.37	
24	0.5843	970.5	987.7		0.008	4.374	93.417	2.091	0.091	0.005	0.012	0.001	0.001	0.000					1289.16	
25	0.5895	979.9	997.2		0.008	4.291	92.375	3.201	0.106	0.005	0.011	0.001	0.001	0.000					1295.88	
26	0.5876	978.1	995.4		0.008	4.226	92.755	2.903	0.090	0.005	0.011	0.001	0.001	0.000					1295.52	
27	0.5896	980.6	998.0		0.008	4.258	92.333	3.296	0.089	0.005	0.011	0.001	0.001	0.000					1296.73	
28	0.5852	973.1	990.3		0.008	4.301	93.259	2.310	0.102	0.005	0.013	0.001	0.002	0.000					1291.60	
29	0.5859	973.8	991.0		0.008	4.328	93.095	2.458	0.092	0.005	0.012	0.001	0.002	0.000					1291.70	
30	0.5834	970.1	987.3		0.008	4.315	93.596	1.975	0.088	0.005	0.011	0.001	0.001	0.000					1289.62	
Avg	0.5847	972.0	989.3		0.008	4.319	93.342	2.215	0.097	0.005	0.012	0.001	0.001	0.000					1290.77	

Zone 260

# Source Daily Summary

April 2018

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	0.7105	1161.1	1181.6	1177.6	0.905	3.261	71.849	21.096	2.525	0.097	0.222	0.019	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1398.41
2	0.7076	1156.3	1176.8	1173.1	0.908	3.278	72.143	20.975	2.398	0.084	0.183	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.58
3	0.7050	1152.6	1173.0	1169.4	0.901	3.264	72.576	20.654	2.326	0.081	0.173	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.76
4	0.7048	1152.7	1173.1	1169.4	0.891	3.257	72.726	20.432	2.392	0.086	0.184	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.97
5	0.7069	1155.6	1176.1	1172.3	0.901	3.255	72.506	20.522	2.478	0.093	0.201	0.017	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1395.38
6	0.7042	1151.8	1172.2	1168.6	0.888	3.261	72.805	20.366	2.388	0.085	0.178	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.52
7	0.7076	1156.8	1177.2	1173.6	0.911	3.238	72.163	21.021	2.362	0.085	0.186	0.014	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1396.16
8	0.7066	1155.6	1176.1	1172.4	0.893	3.241	72.445	20.662	2.445	0.089	0.190	0.014	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1395.77
9	0.7073	1156.6	1177.1	1173.2	0.901	3.236	72.404	20.664	2.456	0.093	0.203	0.017	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1396.13
10	0.7070	1156.2	1176.7	1172.9	0.890	3.247	72.353	20.785	2.406	0.088	0.193	0.016	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.04
11	0.7073	1157.1	1177.6	1173.9	0.885	3.234	72.341	20.757	2.448	0.092	0.203	0.017	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1396.80
12	0.7038	1151.7	1172.1	1168.5	0.882	3.238	72.689	20.657	2.278	0.076	0.156	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.85
13	0.7058	1153.3	1173.7	1170.1	0.921	3.273	72.289	21.029	2.225	0.076	0.161	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.72
14	0.7052	1153.3	1173.7	1170.1	0.891	3.252	72.580	20.650	2.334	0.083	0.177	0.014	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1394.40
15	0.7050	1152.9	1173.3	1169.6	0.906	3.243	72.571	20.680	2.328	0.079	0.167	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.03
16	0.7043	1151.7	1172.1	1168.6	0.891	3.266	72.638	20.644	2.298	0.078	0.161	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.43
17	0.7047	1152.4	1172.8	1169.2	0.904	3.246	72.663	20.583	2.313	0.083	0.176	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.72
18	0.7051	1153.4	1173.8	1170.2	0.897	3.231	72.572	20.661	2.364	0.081	0.169	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1394.64
19	0.7056	1154.1	1174.5	1173.5	0.865	3.252	72.468	20.561	2.488	0.099	0.227	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.82
20	0.7061	1154.8	1175.2	1173.9	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
21	0.7065	1155.5	1176.0	1173.9	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
22	0.7070	1156.2	1176.7	1173.8	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
23	0.7075	1156.9	1177.4	1173.8	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
24	0.7080	1157.6	1178.1	1173.8	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
25	0.7084	1158.3	1178.8	1173.8	0.865	3.251	72.457	20.567	2.490	0.099	0.228	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.91
26	0.7076	1157.2	1177.7	1173.3	0.882	3.244	72.334	20.778	2.457	0.086	0.186	0.015	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1396.47
27	0.7094	1159.8	1180.3	1176.6	0.910	3.226	71.913	21.140	2.515	0.087	0.182	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1398.06
28	0.7080	1157.9	1178.5	1174.8	0.906	3.218	72.069	21.094	2.433	0.082	0.172	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.21
29	0.7094	1159.8	1180.4	1176.6	0.908	3.225	71.877	21.204	2.501	0.085	0.174	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.11
30	0.7084	1158.6	1179.1	1175.3	0.896	3.226	72.035	21.083	2.480	0.084	0.171	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.60
Avg	0.7067	1156.0	1176.1	1172.5	0.891	3.247	72.392	20.737	2.419	0.088	0.192	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1395.83

Zone 261

# Source Daily Summary

April 2018

<b>Number:</b>	091	<b>Pressure Base:</b>	14.730	<b>Contract Day:</b>	1
<b>Name:</b>	MNT BRD-PLRMO BRD-BIS STN	<b>Temperature Base:</b>		<b>Contract Hour:</b>	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	0.7382	1176.0	1196.8	1193.6	0.895	4.962	67.898	21.562	4.113	0.159	0.363	0.022	0.025	0.000	0.000	0.000	0.000	0.000	1389.62	
2	0.7387	1175.9	1196.8	1193.5	0.893	5.019	67.754	21.667	4.118	0.154	0.350	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1389.03	
3	0.7381	1174.9	1195.7	1192.6	0.901	5.013	67.808	21.648	4.095	0.152	0.343	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1388.47	
4	0.7381	1175.0	1195.8	1192.7	0.886	5.023	67.865	21.548	4.130	0.153	0.351	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1388.65	
5	0.7387	1176.2	1197.1	1193.9	0.889	5.008	67.802	21.570	4.173	0.156	0.358	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.43	
6	0.7372	1174.7	1195.5	1192.3	0.888	4.960	68.156	21.258	4.160	0.161	0.369	0.022	0.025	0.000	0.000	0.000	0.000	0.000	1388.99	
7	0.7382	1174.4	1195.2	1192.0	0.901	5.049	67.901	21.442	4.143	0.158	0.362	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1387.79	
8	0.7384	1176.3	1197.2	1194.0	0.892	4.972	67.883	21.508	4.184	0.158	0.360	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.80	
9	0.7390	1177.1	1198.0	1194.8	0.897	4.968	67.827	21.527	4.209	0.159	0.366	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1390.19	
10	0.7410	1179.2	1200.1	1196.9	0.889	5.039	67.562	21.586	4.338	0.163	0.376	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1390.80	
11	0.7398	1177.0	1197.8	1194.6	0.887	5.062	67.713	21.482	4.292	0.158	0.362	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.33	
12	0.7394	1176.5	1197.3	1194.1	0.887	5.057	67.773	21.458	4.255	0.158	0.365	0.022	0.025	0.000	0.000	0.000	0.000	0.000	1389.08	
13	0.7394	1175.9	1196.7	1193.6	0.899	5.079	67.674	21.581	4.218	0.154	0.352	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1388.39	
14	0.7389	1176.0	1196.9	1193.7	0.891	5.029	67.776	21.558	4.196	0.154	0.352	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.09	
15	0.7378	1175.0	1195.8	1192.6	0.896	4.988	67.944	21.473	4.162	0.151	0.345	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1388.81	
16	0.7379	1174.2	1195.0	1191.9	0.890	5.052	67.918	21.422	4.181	0.152	0.345	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1387.84	
17	0.7387	1175.0	1195.9	1192.7	0.895	5.072	67.835	21.420	4.224	0.155	0.354	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1388.01	
18	0.7393	1175.4	1196.2	1193.1	0.892	5.108	67.776	21.384	4.279	0.158	0.361	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1387.92	
19	0.7395	1175.2	1196.0	1192.8	0.890	5.147	67.724	21.398	4.281	0.157	0.359	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1387.44	
20	0.7412	1177.1	1198.0	1194.8	0.893	5.178	67.541	21.391	4.434	0.159	0.361	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1388.17	
21	0.7413	1177.6	1198.5	1195.3	0.890	5.162	67.516	21.438	4.430	0.158	0.362	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1388.67	
22	0.7413	1177.8	1198.7	1195.5	0.885	5.155	67.485	21.509	4.410	0.157	0.358	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1388.95	
23	0.7422	1179.6	1200.4	1197.2	0.886	5.131	67.358	21.610	4.456	0.158	0.359	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1390.15	
24	0.7418	1179.2	1200.1	1196.7	0.886	5.120	67.470	21.486	4.471	0.160	0.364	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1390.03	
25	0.7405	1178.2	1199.0	1195.6	0.886	5.056	67.691	21.379	4.429	0.158	0.359	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1390.10	
26	0.7407	1177.5	1198.4	1194.9	0.894	5.109	67.650	21.351	4.428	0.160	0.364	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.07	
27	0.7406	1177.6	1198.5	1195.1	0.890	5.100	67.629	21.416	4.408	0.157	0.357	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1389.28	
28	0.7420	1178.8	1199.6	1196.2	0.886	5.160	67.457	21.434	4.493	0.160	0.365	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.38	
29	0.7428	1179.6	1200.5	1196.9	0.886	5.191	67.309	21.520	4.519	0.160	0.370	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1389.58	
30	0.7431	1179.4	1200.3	1196.9	0.891	5.220	67.281	21.491	4.543	0.160	0.369	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.07	
Avg	0.7398	1177.0	1197.6	1194.3	0.891	5.073	67.699	21.484	4.292	0.157	0.359	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.04	

Zone 2b2

# Gas Composition and Properties

Effective April 1, 2018

Source #: 2501030  
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.1336		0.3034
Nitrogen, N2	3.2677		4.7243
Methane, C1	77.8213		64.4324
Ethane, C2	16.8539	4.5087	26.1549
Propane, C3	1.7997	0.4944	4.0957
iso-Butane, iC4	0.0384	0.0125	0.1152
n-Butane, nC4	0.0207	0.0065	0.0621
iso-Pentane, iC5	0.0000	0.0000	0.0000
n-Pentane, nC5	0.0000	0.0000	0.0000
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0018	0.0008	0.0080
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0630		0.1040
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0001	5.0240	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure	-33.495	
Cricondentherm	-30.253	
HV, Dry @ Base P, T	1135.19	
HV, Sat @ Base P, T	1115.43	
HV, Sat @ Sample P, T	1135.19	
Relative Density	0.6696	

C6+: 100

Sample		
Date: 05/01/2018	Pressure:	640.0
Type: Composite	Temperature:	0.0
Tech: ES	H2O:	lbs/mm
	H2S:	ppm
Remarks:		

Analysis		
Date: 05/02/2018	Instrument:	WBI- 99
	Cylinder:	125
Tech: MB		
Remarks:		

Zone 263

# Gas Composition and Properties

Effective April 1, 2018 09:00 - January 18, 2038 21:14

Source #: 3002013  
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7060		1.6035
Nitrogen, N2	2.8846		4.1703
Methane, C1	78.5532		65.0357
Ethane, C2	15.9999	4.2802	24.8287
Propane, C3	1.6697	0.4587	3.7997
iso-Butane, iC4	0.0541	0.0177	0.1623
n-Butane, nC4	0.1097	0.0345	0.3291
iso-Pentane, iC5	0.0076	0.0028	0.0283
n-Pentane, nC5	0.0084	0.0030	0.0313
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0067		0.0111
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	99.9999	4.7980	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm		
HV, Dry @ Base P, T	1128.17	
HV, Sat @ Base P, T	1108.53	
HV, Sat @ Sample P, T	1128.17	
Relative Density	0.6696	
C6+: 100		

**Sample**

Date: 05/01/2018      Pressure: 510.0  
 Type: Composite      Temperature: 0.0  
 Tech: ES      H2O: lbs/mm  
    H2S: ppm

Remarks:

**Analysis**

Date: 05/02/2018      Instrument: WBI- 100  
    Cylinder: 393  
 Tech: MB

Remarks:

Zone 264

# Source Daily Summary

April 2018

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	0.7101	1160.5	1181.0	1177.7	0.900	3.262	71.881	21.100	2.509	0.095	0.213	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1398.16
2	0.7071	1155.6	1176.0	1172.9	0.905	3.278	72.208	20.946	2.370	0.084	0.181	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.24
3	0.7060	1153.8	1174.2	1171.1	0.920	3.257	72.426	20.762	2.349	0.082	0.176	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1394.18
4	0.7052	1152.9	1173.3	1170.2	0.900	3.264	72.670	20.458	2.402	0.086	0.187	0.014	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1393.90
5	0.7082	1157.9	1178.4	1175.0	0.899	3.241	72.328	20.653	2.522	0.097	0.214	0.019	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1396.85
6	0.7046	1152.2	1172.6	1169.5	0.894	3.262	72.721	20.449	2.383	0.085	0.177	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.66
7	0.7078	1157.4	1177.9	1174.7	0.908	3.229	72.113	21.076	2.368	0.086	0.187	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1396.70
8	0.7081	1158.1	1178.6	1175.4	0.897	3.223	72.254	20.787	2.502	0.095	0.206	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1397.31
9	0.7088	1159.1	1179.6	1176.2	0.901	3.224	72.197	20.808	2.511	0.097	0.217	0.019	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1397.67
10	0.7076	1157.4	1177.9	1174.6	0.892	3.235	72.207	20.941	2.406	0.089	0.193	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1396.83
11	0.7082	1158.5	1179.0	1175.7	0.885	3.229	72.267	20.770	2.490	0.097	0.219	0.018	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1397.59
12	0.7042	1152.2	1172.6	1169.4	0.886	3.238	72.630	20.711	2.276	0.077	0.158	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1394.02
13	0.7060	1153.6	1174.1	1170.9	0.922	3.269	72.247	21.074	2.221	0.077	0.163	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.95
14	0.7065	1155.6	1176.1	1172.8	0.891	3.236	72.411	20.766	2.381	0.087	0.190	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1395.84
15	0.7051	1153.1	1173.6	1170.4	0.905	3.241	72.515	20.757	2.316	0.078	0.163	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.22
16	0.7049	1152.6	1173.0	1169.9	0.896	3.263	72.550	20.713	2.304	0.079	0.167	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.86
17	0.7049	1152.8	1173.2	1170.0	0.907	3.240	72.614	20.635	2.317	0.083	0.175	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1393.98
18	0.7059	1154.7	1175.1	1172.0	0.901	3.227	72.459	20.742	2.383	0.083	0.176	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1395.31
19	0.7061	1154.9	1175.3	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.013	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.89
20	0.7062	1155.1	1175.5	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
21	0.7064	1155.3	1175.8	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
22	0.7066	1155.5	1176.0	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
23	0.7067	1155.7	1176.2	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
24	0.7069	1156.0	1176.4	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
25	0.7071	1156.2	1176.7	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
26	0.7072	1156.4	1176.9	1171.6	0.901	3.250	72.401	20.815	2.359	0.079	0.165	0.012	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1394.88
27	0.7076	1157.1	1177.6	1173.8	0.898	3.248	72.182	20.983	2.414	0.080	0.168	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.16
28	0.7089	1159.2	1179.8	1176.6	0.913	3.207	71.919	21.239	2.438	0.083	0.173	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1397.92
29	0.7097	1160.2	1180.8	1177.6	0.910	3.223	71.819	21.260	2.504	0.086	0.173	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1398.34
30	0.7090	1159.5	1180.0	1176.9	0.900	3.221	71.936	21.165	2.494	0.084	0.174	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1398.13
Avg	0.7069	1156.0	1176.4	1172.9	0.901	3.244	72.326	20.844	2.391	0.084	0.179	0.014	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1395.63

Zone 2b5

# Source Daily Summary

April 2018

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	0.7186	1154.8	1175.2	1171.3	0.754	4.632	70.973	19.706	3.470	0.131	0.294	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1382.95	
2	0.7205	1157.5	1178.0	1174.2	0.742	4.662	70.604	20.015	3.512	0.131	0.294	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1384.44	
3	0.7256	1162.9	1183.5	1179.6	0.788	4.739	69.763	20.584	3.650	0.134	0.302	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1386.02	
4	0.7337	1171.6	1192.3	1188.2	0.848	4.881	68.570	21.210	3.958	0.149	0.338	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1388.57	
5	0.7342	1172.4	1193.2	1189.1	0.839	4.896	68.477	21.278	3.973	0.149	0.341	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.03	
6	0.7262	1166.6	1187.3	1183.3	0.815	4.532	69.812	20.627	3.704	0.144	0.321	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1389.79	
7	0.7213	1158.6	1179.1	1175.2	0.818	4.550	70.620	19.967	3.563	0.136	0.305	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1385.01	
8	0.7265	1165.0	1185.7	1181.7	0.821	4.644	69.749	20.561	3.724	0.141	0.318	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.66	
9	0.7372	1176.2	1197.0	1192.9	0.875	4.886	68.154	21.374	4.135	0.159	0.365	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.70	
10	0.7390	1178.2	1199.1	1194.8	0.876	4.932	67.916	21.445	4.246	0.161	0.371	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1391.33	
11	0.7396	1177.7	1198.5	1194.4	0.870	5.025	67.804	21.434	4.289	0.160	0.368	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.24	
12	0.7388	1177.5	1198.3	1194.2	0.868	4.965	67.929	21.423	4.230	0.161	0.371	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.75	
13	0.7370	1175.0	1195.8	1191.7	0.856	4.965	68.058	21.479	4.102	0.151	0.343	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.57	
14	0.7378	1176.2	1197.0	1192.9	0.869	4.959	67.942	21.554	4.124	0.153	0.351	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.08	
15	0.7372	1175.4	1196.2	1191.9	0.873	4.939	68.087	21.414	4.140	0.152	0.348	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.76	
16	0.7371	1174.4	1195.2	1190.8	0.873	4.992	68.087	21.355	4.150	0.152	0.346	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1388.71	
17	0.7375	1174.8	1195.6	1191.0	0.877	4.998	68.063	21.335	4.174	0.154	0.352	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.79	
18	0.7384	1175.3	1196.1	1191.4	0.876	5.053	67.962	21.308	4.231	0.159	0.363	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.52	
19	0.7391	1175.9	1196.8	1192.1	0.875	5.084	67.823	21.399	4.251	0.158	0.361	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.59	
20	0.7403	1177.4	1198.2	1193.9	0.872	5.115	67.701	21.365	4.376	0.159	0.364	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.13	
21	0.7405	1177.9	1198.7	1194.4	0.874	5.101	67.692	21.361	4.399	0.159	0.366	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.52	
22	0.7401	1177.6	1198.5	1194.2	0.868	5.087	67.725	21.380	4.375	0.158	0.360	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.64	
23	0.7416	1179.8	1200.7	1196.4	0.866	5.089	67.502	21.540	4.430	0.160	0.366	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.91	
24	0.7397	1178.1	1199.0	1194.6	0.868	5.013	67.850	21.310	4.394	0.158	0.359	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.65	
25	0.7398	1177.2	1198.0	1193.6	0.875	5.069	67.873	21.194	4.412	0.161	0.367	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.41	
26	0.7383	1175.5	1196.3	1192.0	0.874	5.039	68.025	21.193	4.314	0.156	0.353	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.79	
27	0.7414	1179.5	1200.4	1196.2	0.869	5.086	67.603	21.390	4.475	0.161	0.367	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.68	
28	0.7413	1179.1	1199.9	1195.7	0.872	5.097	67.607	21.395	4.451	0.161	0.368	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.27	
29	0.7419	1179.3	1200.2	1195.9	0.873	5.145	67.535	21.350	4.515	0.162	0.370	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.87	
30	0.7427	1179.9	1200.7	1196.5	0.871	5.190	67.390	21.418	4.549	0.163	0.370	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.81	
Avg	0.7358	1174.0	1194.4	1190.1	0.853	4.945	68.363	21.145	4.144	0.153	0.349	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.97	

Zone 271

# Source Daily Summary

April 2018

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	0.7158	1151.1	1171.4	1167.8	0.752	4.595	71.402	19.444	3.371	0.124	0.274	0.019	0.020	0.000					1381.22	
2	0.7212	1158.0	1178.5	1174.8	0.761	4.673	70.529	20.030	3.530	0.134	0.300	0.021	0.023	0.000					1384.22	
3	0.7207	1157.2	1177.7	1174.1	0.749	4.691	70.523	20.088	3.498	0.128	0.284	0.019	0.020	0.000					1383.79	
4	0.7293	1166.5	1187.2	1183.6	0.818	4.826	69.171	20.923	3.771	0.139	0.310	0.020	0.022	0.000					1386.69	
5	0.7361	1173.5	1194.2	1190.6	0.864	4.967	68.209	21.365	4.052	0.152	0.344	0.023	0.025	0.000					1388.50	
6	0.7310	1170.3	1191.0	1187.3	0.809	4.770	68.934	21.149	3.825	0.143	0.323	0.022	0.024	0.000					1389.49	
7	0.7222	1160.4	1180.9	1177.3	0.835	4.508	70.534	20.010	3.622	0.139	0.309	0.020	0.022	0.000					1386.14	
8	0.7249	1162.7	1183.3	1179.6	0.826	4.635	69.979	20.425	3.646	0.137	0.309	0.021	0.022	0.000					1386.29	
9	0.7314	1170.1	1190.8	1187.1	0.851	4.756	69.004	20.949	3.913	0.148	0.334	0.022	0.024	0.000					1388.92	
10	0.7387	1177.3	1198.1	1194.3	0.887	4.944	67.927	21.463	4.201	0.160	0.365	0.025	0.027	0.000					1390.54	
11	0.7407	1179.4	1200.2	1196.4	0.880	5.019	67.649	21.529	4.332	0.164	0.374	0.025	0.028	0.000					1391.07	
12	0.7396	1177.5	1198.4	1194.6	0.877	5.027	67.816	21.401	4.299	0.162	0.367	0.024	0.026	0.000					1390.02	
13	0.7379	1175.5	1196.4	1192.5	0.868	5.006	67.983	21.415	4.175	0.154	0.349	0.024	0.026	0.000					1389.20	
14	0.7364	1173.7	1194.4	1190.6	0.866	4.978	68.158	21.386	4.079	0.150	0.337	0.022	0.024	0.000					1388.48	
15	0.7386	1176.4	1197.2	1193.5	0.880	5.003	67.873	21.489	4.197	0.156	0.353	0.024	0.026	0.000					1389.57	
16	0.7372	1174.6	1195.4	1192.1	0.885	4.969	68.076	21.394	4.137	0.151	0.341	0.022	0.024	0.000					1388.82	
17	0.7372	1173.6	1194.4	1191.1	0.881	5.032	68.076	21.322	4.151	0.151	0.341	0.022	0.023	0.000					1387.70	
18	0.7381	1174.6	1195.4	1192.2	0.884	5.056	67.959	21.351	4.196	0.155	0.350	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1388.00	
19	0.7388	1175.0	1195.8	1192.5	0.883	5.099	67.894	21.301	4.259	0.159	0.359	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1387.80	
20	0.7395	1175.4	1196.2	1192.5	0.879	5.141	67.788	21.335	4.291	0.158	0.359	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1387.66	
21	0.7411	1177.8	1198.6	1194.9	0.884	5.143	67.594	21.380	4.430	0.160	0.361	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1388.94	
22	0.7410	1177.9	1198.8	1194.8	0.881	5.129	67.604	21.405	4.410	0.159	0.362	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1389.17	
23	0.7411	1178.2	1199.1	1195.1	0.873	5.132	67.561	21.452	4.417	0.159	0.358	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1389.48	
24	0.7415	1179.4	1200.3	1196.3	0.877	5.096	67.544	21.459	4.454	0.160	0.361	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.40	
25	0.7400	1177.8	1198.7	1195.4	0.877	5.043	67.796	21.316	4.406	0.158	0.356	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.05	
26	0.7399	1176.5	1197.4	1194.1	0.883	5.110	67.810	21.232	4.397	0.159	0.360	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1388.55	
27	0.7392	1176.4	1197.2	1194.0	0.882	5.057	67.850	21.328	4.336	0.154	0.347	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1389.03	
28	0.7412	1178.0	1198.9	1195.6	0.877	5.151	67.611	21.324	4.464	0.160	0.363	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1389.06	
29	0.7414	1178.1	1199.0	1195.7	0.880	5.151	67.557	21.395	4.449	0.159	0.360	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1389.11	
30	0.7424	1179.0	1199.9	1196.6	0.878	5.197	67.429	21.396	4.525	0.161	0.365	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1389.16	
Avg	0.7355	1173.0	1193.5	1189.9	0.858	4.963	68.395	21.115	4.128	0.152	0.342	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1388.24	

Zone 292

# Source Daily Summary

April 2018

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	0.7158	1150.9	1171.3	1168.1	0.754	4.603	71.395	19.442	3.369	0.125	0.274	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.03
2	0.7211	1157.7	1178.2	1174.9	0.761	4.680	70.542	20.016	3.525	0.133	0.299	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1383.98
3	0.7209	1157.3	1177.8	1174.5	0.751	4.698	70.492	20.102	3.505	0.128	0.284	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.79
4	0.7300	1167.2	1187.8	1184.4	0.824	4.841	69.068	20.976	3.797	0.140	0.313	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1386.82
5	0.7364	1173.8	1194.6	1191.2	0.868	4.971	68.153	21.403	4.060	0.152	0.345	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.59
6	0.7311	1170.2	1190.9	1187.5	0.812	4.775	68.924	21.150	3.826	0.144	0.323	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.38
7	0.7224	1160.4	1181.0	1177.7	0.836	4.521	70.502	20.024	3.625	0.140	0.310	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1386.01
8	0.7249	1162.5	1183.1	1179.8	0.827	4.644	69.973	20.424	3.643	0.137	0.308	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1386.10
9	0.7318	1170.4	1191.2	1187.8	0.853	4.769	68.940	20.982	3.928	0.148	0.335	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.95
10	0.7387	1177.3	1198.1	1194.5	0.887	4.946	67.915	21.479	4.195	0.160	0.364	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.50
11	0.7408	1179.4	1200.3	1196.7	0.880	5.021	67.634	21.543	4.330	0.164	0.374	0.025	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1391.07
12	0.7397	1177.6	1198.4	1194.9	0.878	5.030	67.800	21.415	4.298	0.162	0.367	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1390.01
13	0.7377	1175.1	1195.9	1192.5	0.869	5.013	68.012	21.386	4.166	0.154	0.349	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.88
14	0.7362	1173.3	1194.1	1190.7	0.867	4.985	68.171	21.374	4.072	0.149	0.336	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.22
15	0.7388	1176.5	1197.3	1193.8	0.880	5.012	67.844	21.503	4.200	0.156	0.354	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1389.53
16	0.7373	1174.7	1195.5	1192.2	0.885	4.969	68.061	21.405	4.139	0.151	0.342	0.022	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1388.88
17	0.7373	1173.9	1194.6	1191.4	0.881	5.035	68.050	21.336	4.158	0.152	0.343	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.81
18	0.7379	1174.3	1195.1	1191.9	0.884	5.054	67.987	21.336	4.187	0.154	0.349	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.84
19	0.7386	1174.6	1195.4	1192.2	0.883	5.103	67.920	21.279	4.250	0.159	0.359	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.55
20	0.7395	1175.5	1196.3	1192.8	0.880	5.137	67.785	21.334	4.295	0.159	0.361	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.76
21	0.7411	1177.7	1198.6	1195.0	0.884	5.147	67.595	21.377	4.428	0.160	0.361	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.85
22	0.7410	1177.4	1198.3	1194.6	0.883	5.160	67.592	21.383	4.414	0.159	0.361	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.57
23	0.7407	1177.6	1198.4	1194.8	0.873	5.135	67.620	21.412	4.398	0.158	0.357	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.06
24	0.7416	1179.4	1200.3	1196.6	0.877	5.096	67.533	21.470	4.453	0.160	0.362	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.44
25	0.7398	1177.6	1198.4	1195.2	0.877	5.046	67.818	21.297	4.402	0.158	0.355	0.023	0.024	0.000	0.000	0.000	0.000	0.000	0.000	1389.88
26	0.7396	1175.9	1196.7	1193.4	0.884	5.114	67.857	21.207	4.373	0.158	0.357	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.11
27	0.7336	1166.5	1187.2	1184.2	0.885	5.128	68.445	21.054	4.053	0.130	0.277	0.014	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1382.72
28	0.7347	1166.6	1187.3	1184.3	0.881	5.229	68.290	21.028	4.133	0.132	0.280	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1381.83
29	0.7375	1171.5	1192.2	1189.2	0.883	5.188	67.958	21.230	4.256	0.142	0.309	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1384.97
30	0.7361	1168.0	1188.6	1185.7	0.883	5.273	68.073	21.132	4.195	0.133	0.283	0.014	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1382.14
Avg	0.7348	1171.0	1192.1	1188.7	0.859	4.977	68.465	21.083	4.089	0.149	0.333	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.31

Zone 273

# Source Daily Summary

April 2018

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	0.6537	1080.5	1099.7	1096.7	0.317	3.726	81.011	13.548	1.288	0.039	0.060	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1356.89	
2	0.6589	1090.6	1109.9	1106.9	0.275	3.670	79.915	14.715	1.326	0.036	0.055	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1364.09	
3	0.6658	1099.7	1119.2	1116.2	0.314	3.696	78.791	15.558	1.520	0.043	0.068	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1368.41	
4	0.6687	1104.3	1123.8	1120.7	0.338	3.666	78.185	16.198	1.488	0.045	0.072	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1370.98	
5	0.6788	1120.4	1140.2	1137.1	0.381	3.564	76.399	17.849	1.663	0.051	0.084	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1380.64	
6	0.6748	1120.4	1140.2	1137.2	0.587	2.867	77.545	17.213	1.619	0.058	0.100	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1384.83	
7	0.6597	1099.1	1118.6	1115.6	0.561	2.790	80.270	14.888	1.353	0.045	0.083	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1373.92	
8	0.6640	1106.9	1126.5	1123.5	0.522	2.782	79.244	16.040	1.300	0.037	0.066	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1379.14	
9	0.6598	1100.4	1119.9	1116.8	0.567	2.712	80.078	15.317	1.219	0.036	0.064	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1375.41	
10	0.6640	1105.0	1124.5	1121.4	0.571	2.824	79.320	15.859	1.304	0.039	0.075	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1376.80	
11	0.6531	1094.1	1113.4	1110.4	0.583	2.442	81.177	14.767	0.957	0.024	0.044	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1374.53	
12	0.6751	1125.2	1145.1	1142.1	0.343	2.983	76.538	18.930	1.126	0.028	0.048	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1390.43	
13	0.6822	1129.2	1149.2	1146.1	0.326	3.432	75.452	19.169	1.498	0.042	0.073	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1388.06	
14	0.6813	1124.9	1144.9	1141.8	0.365	3.542	75.848	18.459	1.650	0.047	0.081	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1383.79	
15	0.6988	1141.5	1161.7	1158.5	0.514	3.952	73.423	19.400	2.442	0.081	0.168	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1386.46	
16	0.7262	1165.3	1185.9	1182.5	0.766	4.691	69.577	20.855	3.649	0.131	0.293	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1388.30	
17	0.7348	1172.4	1193.2	1189.7	0.851	4.928	68.436	21.203	4.050	0.149	0.338	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1388.54	
18	0.7384	1175.3	1196.1	1192.7	0.876	5.050	67.962	21.313	4.229	0.159	0.363	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1388.55	
19	0.7391	1175.9	1196.7	1193.2	0.875	5.081	67.835	21.390	4.251	0.158	0.362	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1388.61	
20	0.7404	1177.2	1198.0	1194.5	0.872	5.129	67.685	21.371	4.371	0.159	0.364	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1388.87	
21	0.7406	1177.9	1198.8	1195.2	0.874	5.101	67.683	21.370	4.399	0.159	0.366	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1389.56	
22	0.7401	1177.4	1198.3	1194.7	0.868	5.093	67.736	21.368	4.370	0.158	0.360	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1389.44	
23	0.7414	1179.6	1200.5	1197.0	0.866	5.087	67.524	21.524	4.427	0.160	0.364	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1390.81	
24	0.7397	1178.1	1199.0	1195.4	0.868	5.016	67.846	21.310	4.394	0.158	0.360	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1390.60	
25	0.7398	1177.3	1198.2	1194.6	0.875	5.063	67.867	21.205	4.412	0.161	0.367	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1389.56	
26	0.7382	1175.1	1196.0	1192.4	0.874	5.043	68.049	21.174	4.305	0.155	0.353	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1388.56	
27	0.7413	1179.5	1200.4	1196.7	0.869	5.080	67.616	21.387	4.472	0.160	0.366	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1390.70	
28	0.7412	1178.8	1199.7	1196.0	0.872	5.103	67.625	21.374	4.448	0.161	0.368	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1390.07	
29	0.7411	1177.1	1197.9	1194.0	0.867	5.213	67.696	21.120	4.519	0.162	0.372	0.024	0.027	0.000	0.000	0.000	0.000	0.000	1388.04	
30	0.7415	1177.9	1198.8	1195.0	0.860	5.205	67.618	21.207	4.528	0.161	0.369	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1388.71	
Avg	0.7041	1143.0	1163.1	1159.8	0.650	4.151	73.065	18.903	2.886	0.100	0.217	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1383.11	

Zone 28

# Source Daily Summary

April 2018

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	0.6561	1087.2	1106.4	1103.7	0.266	3.627	80.453	14.241	1.314	0.035	0.055	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1362.81
2	0.6609	1093.0	1112.4	1109.6	0.288	3.689	79.666	14.783	1.461	0.040	0.065	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1365.11
3	0.6677	1103.2	1122.8	1120.0	0.324	3.654	78.396	15.976	1.525	0.044	0.072	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1370.82
4	0.6774	1119.5	1139.3	1136.5	0.376	3.492	76.642	17.712	1.637	0.048	0.084	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1381.10
5	0.6842	1131.9	1151.9	1149.1	0.459	3.251	75.600	18.719	1.796	0.059	0.104	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1389.37
6	0.6817	1126.2	1146.1	1143.3	0.363	3.506	76.037	18.072	1.842	0.059	0.109	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1384.95
7	0.6831	1130.9	1151.0	1148.1	0.313	3.434	75.483	18.924	1.702	0.048	0.088	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1389.29
8	0.6805	1126.5	1146.4	1143.6	0.330	3.436	75.882	18.639	1.585	0.044	0.079	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1386.46
9	0.6798	1128.9	1148.9	1146.0	0.274	3.303	75.699	19.280	1.347	0.033	0.059	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1390.22
10	0.6810	1135.3	1155.5	1152.6	0.191	3.155	75.058	20.449	1.082	0.023	0.040	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1396.89
11	0.6809	1130.4	1150.4	1147.5	0.263	3.339	75.451	19.500	1.352	0.033	0.059	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1390.87
12	0.6790	1124.0	1143.9	1141.1	0.321	3.453	76.108	18.472	1.525	0.041	0.074	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1385.04
13	0.6781	1120.9	1140.7	1137.9	0.353	3.515	76.452	17.901	1.647	0.045	0.080	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1382.02
14	0.6801	1124.3	1144.2	1141.4	0.334	3.520	76.104	18.197	1.702	0.048	0.087	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1384.25
15	0.6806	1127.8	1147.8	1144.9	0.288	3.422	75.713	18.965	1.500	0.038	0.069	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1388.10
16	0.6798	1129.1	1149.1	1146.2	0.279	3.283	75.688	19.327	1.327	0.032	0.057	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1390.45
17	0.6711	1113.1	1132.8	1130.0	0.397	3.259	77.802	16.918	1.512	0.038	0.068	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1379.61
18	0.6631	1100.1	1119.6	1116.8	0.392	3.309	79.256	15.575	1.359	0.039	0.066	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1371.69
19	0.6747	1113.7	1133.4	1130.5	0.383	3.585	77.159	17.101	1.645	0.044	0.077	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1376.63
20	0.6694	1107.0	1126.6	1123.7	0.313	3.599	77.885	16.694	1.404	0.036	0.062	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1373.80
21	0.6838	1138.0	1158.1	1155.1	0.120	3.364	74.276	21.196	0.997	0.017	0.029	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1397.28
22	0.6885	1151.0	1171.4	1168.3	0.000	3.200	72.899	23.137	0.750	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.45
23	0.6875	1149.8	1170.2	1167.2	0.000	3.177	73.085	22.994	0.729	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.05
24	0.6872	1150.0	1170.4	1167.3	0.000	3.136	73.166	22.951	0.733	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1408.58
25	0.6866	1148.9	1169.2	1166.2	0.000	3.145	73.268	22.854	0.719	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1407.90
26	0.6466	1089.3	1108.6	1105.7	0.522	2.221	82.045	14.543	0.637	0.011	0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.26
27	0.6209	1053.3	1071.9	1069.1	0.824	1.531	87.587	9.523	0.501	0.012	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1357.22
28	0.6218	1055.0	1073.7	1070.7	0.828	1.501	87.476	9.615	0.531	0.017	0.027	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1358.50
29	0.6242	1058.8	1077.5	1074.5	0.820	1.509	87.065	9.937	0.623	0.017	0.027	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1360.75
30	0.6294	1066.3	1085.2	1082.2	0.809	1.563	86.179	10.563	0.846	0.015	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1364.65
Avg	0.6695	1114.0	1134.2	1131.3	0.348	3.106	77.786	17.425	1.244	0.031	0.055	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1382.87

Zone 31

# Source Daily Summary

April 2018

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	0.6746	1112.1	1131.8	1128.3	0.670	3.228	78.196	15.595	2.072	0.081	0.139	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1374.72	
2	0.6822	1123.4	1143.3	1139.8	0.785	3.075	77.123	16.413	2.319	0.097	0.167	0.011	0.010	0.000	0.000	0.000	0.000	0.000	1380.96	
3	0.6741	1108.0	1127.6	1124.2	0.530	3.642	77.924	15.724	1.986	0.067	0.115	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1370.22	
4	0.6798	1117.7	1137.5	1134.3	0.556	3.546	77.048	16.452	2.170	0.077	0.137	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1376.42	
5	0.6820	1129.8	1149.8	1146.4	1.012	2.317	77.505	16.585	2.274	0.101	0.183	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1389.07	
6	0.6501	1090.4	1109.7	1106.3	0.957	1.813	82.737	13.047	1.293	0.051	0.091	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1373.10	
7	0.6443	1082.7	1101.9	1098.5	0.933	1.769	83.681	12.384	1.107	0.042	0.075	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1369.57	
8	0.6441	1082.4	1101.5	1098.2	0.932	1.774	83.725	12.335	1.104	0.042	0.078	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1369.33	
9	0.6475	1086.8	1106.0	1102.6	0.964	1.779	83.171	12.752	1.188	0.047	0.087	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1371.25	
10	0.6498	1090.1	1109.4	1106.1	0.965	1.783	82.762	13.109	1.228	0.049	0.090	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1373.12	
11	0.6505	1091.2	1110.5	1107.2	0.954	1.806	82.668	13.131	1.285	0.051	0.093	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1373.64	
12	0.6559	1097.6	1117.1	1113.6	0.958	1.919	81.672	13.893	1.384	0.057	0.103	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1376.02	
13	0.6518	1091.3	1110.7	1107.1	0.960	1.905	82.391	13.307	1.280	0.052	0.093	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1372.54	
14	0.6521	1092.8	1112.1	1108.6	0.957	1.859	82.337	13.380	1.319	0.049	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1373.94	
15	0.6506	1093.5	1112.9	1109.7	0.935	1.694	82.970	12.627	1.626	0.051	0.088	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1376.57	
16	0.6507	1092.2	1111.6	1108.0	0.934	1.790	82.797	12.841	1.479	0.053	0.095	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1374.76	
17	0.6629	1093.9	1113.2	1110.2	0.547	3.431	79.918	14.208	1.737	0.054	0.094	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1364.07	
18	0.6632	1093.6	1113.0	1109.3	0.476	3.578	79.761	14.298	1.735	0.052	0.091	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1363.49	
19	0.6642	1094.6	1114.0	1110.3	0.474	3.614	79.554	14.462	1.742	0.052	0.091	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1363.73	
20	0.6694	1099.9	1119.4	1115.7	0.484	3.770	78.566	15.196	1.823	0.055	0.096	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1364.93	
21	0.6545	1077.3	1096.4	1092.9	0.440	3.811	81.316	12.696	1.588	0.052	0.087	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1351.99	
22	0.6614	1099.9	1119.3	1116.0	0.889	2.396	80.832	13.956	1.713	0.071	0.126	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1373.22	
23	0.6595	1095.9	1115.3	1111.8	0.765	2.652	80.779	14.088	1.553	0.054	0.098	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1370.21	
24	0.6723	1101.7	1121.2	1117.8	0.565	3.808	78.203	15.317	1.922	0.062	0.112	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1364.23	
25	0.6613	1086.5	1105.7	1102.4	0.464	3.854	80.012	13.866	1.650	0.052	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1356.53	
26	0.6481	1069.7	1088.6	1085.5	0.424	3.699	82.307	12.125	1.318	0.043	0.075	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1349.10	
27	0.6703	1106.2	1125.8	1122.5	0.798	2.987	79.143	14.860	1.971	0.080	0.143	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1371.76	
28	0.6795	1127.9	1147.9	1144.6	1.110	2.051	78.076	16.257	2.201	0.101	0.180	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1389.25	
29	0.6460	1085.6	1104.8	1101.7	0.941	1.740	83.435	12.588	1.151	0.049	0.084	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1371.39	
30	0.6491	1090.6	1109.9	1106.8	0.936	1.732	82.959	12.902	1.332	0.047	0.081	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1374.47	
Avg	0.6601	1097.0	1116.3	1112.9	0.777	2.627	80.786	14.013	1.618	0.060	0.106	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1370.79	

Zone 32

# Source Daily Summary

April 2018

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	0.6896	1153.9	1174.3	1169.4	0.000	3.134	72.600	23.574	0.678	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.80	
2	0.6888	1153.0	1173.4	1168.7	0.000	3.106	72.746	23.488	0.646	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.63	
3	0.6893	1154.0	1174.4	1169.3	0.000	3.095	72.680	23.527	0.684	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.28	
4	0.6893	1154.2	1174.7	1169.7	0.000	3.076	72.683	23.551	0.676	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.63	
5	0.6892	1154.1	1174.6	1170.0	0.000	3.077	72.662	23.607	0.639	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.55	
6	0.6895	1153.5	1174.0	1168.6	0.000	3.140	72.613	23.575	0.658	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.54	
7	0.6893	1153.5	1173.9	1169.0	0.000	3.130	72.665	23.518	0.673	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.59	
8	0.6894	1153.3	1173.7	1168.6	0.000	3.144	72.642	23.537	0.663	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.35	
9	0.6893	1154.0	1174.4	1168.8	0.000	3.091	72.703	23.498	0.693	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.32	
10	0.6892	1154.2	1174.6	1169.7	0.000	3.070	72.719	23.505	0.691	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.67	
11	0.6899	1155.0	1175.5	1170.7	0.000	3.089	72.573	23.627	0.697	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.93	-24.73
12	0.6892	1154.4	1174.9	1170.4	0.000	3.059	72.690	23.574	0.662	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.90	-25.15
13	0.6892	1154.9	1175.4	1170.5	0.000	3.024	72.707	23.588	0.666	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.57	-25.07
14	0.6893	1154.9	1175.4	1170.6	0.000	3.040	72.672	23.603	0.670	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.41	-25.00
15	0.6888	1154.5	1174.9	1170.2	0.000	3.021	72.771	23.529	0.664	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.35	-25.23
16	0.6890	1154.9	1175.4	1170.7	0.000	3.015	72.732	23.572	0.667	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.67	-25.10
17	0.6887	1154.0	1174.5	1169.5	0.000	3.031	72.827	23.444	0.684	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.00	-25.28
18	0.6902	1155.9	1176.3	1171.4	0.000	3.067	72.561	23.618	0.738	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.61	-24.38
19	0.6892	1155.0	1175.5	1170.8	0.000	3.024	72.733	23.525	0.703	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.62	-24.91
20	0.6909	1156.3	1176.7	1172.2	0.000	3.107	72.417	23.713	0.748	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.42	-24.07
21	0.6905	1154.7	1175.1	1170.5	0.000	3.166	72.477	23.610	0.732	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.87	-24.48
22	0.6906	1155.5	1176.0	1171.4	0.000	3.120	72.476	23.645	0.743	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.88	-24.28
23	0.6899	1154.4	1174.9	1170.1	0.000	3.121	72.603	23.544	0.718	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.23	-24.75
24	0.6894	1154.6	1175.0	1170.3	0.000	3.070	72.698	23.497	0.720	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.87	-24.84
25	0.6901	1155.6	1176.1	1171.6	0.000	3.068	72.580	23.604	0.732	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.47	-24.47
26	0.6907	1156.0	1176.4	1171.9	0.000	3.101	72.487	23.634	0.762	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.30	-24.14
27	0.6910	1155.9	1176.3	1171.7	0.000	3.137	72.387	23.732	0.729	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.86	-24.18
28	0.6902	1155.0	1175.4	1171.0	0.000	3.117	72.531	23.625	0.711	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.58	-24.60
29	0.6894	1154.5	1175.0	1170.3	0.000	3.073	72.671	23.548	0.691	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.81	-24.95
30	0.6880	1152.8	1173.2	1168.6	0.000	3.050	72.915	23.374	0.646	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.08	-25.78
Avg	0.6896	1155.0	1175.0	1170.2	0.000	3.086	72.641	23.566	0.693	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.69	-24.77

Zone 33

# Gas Composition and Properties

Effective June 1, 2016 09:00 - January 18, 2038 21:14

Source #: 1202160  
Name: BOWMAN BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.2321		0.6048
Nitrogen, N2	3.4604		5.7399
Methane, C1	94.0188		89.3085
Ethane, C2	1.9955	0.5321	3.5530
Propane, C3	0.2261	0.0621	0.5904
iso-Butane, iC4	0.0203	0.0066	0.5904
n-Butane, nC4	0.0216	0.0068	0.0743
iso-Pentane, iC5	0.0028	0.0010	0.0120
n-Pentane, nC5	0.0020	0.0007	0.0085
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0204		
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		
Cricondentherm		
HV, Dry @ Base P, T	996.12	
HV, Sat @ Base P, T	978.78	
HV, Sat @ Sample P, T	996.12	
Relative Density	0.5840	

C6+: 100

Totals 100.0000 0.6100 100.4818

## Sample

Date: 07/01/2016 Pressure: 380.0  
Type: Spot Temperature:  
Tech: MG H2O: lbs/mm  
H2S: ppm

Remarks:

## Analysis

Date: 07/05/2016 Instrument: WBI- 447  
Cylinder: 100  
Tech: MB

Remarks: Inactive

Zone 34

# Source Daily Summary

April 2018

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	0.6850	1129.3	1149.3	1146.2	0.979	2.702	75.020	20.247	0.981	0.019	0.042	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1385.33	-27.09
2	0.6859	1130.3	1150.3	1147.3	0.982	2.721	74.832	20.374	1.049	0.013	0.026	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1385.71	-27.09
3	0.6873	1133.7	1153.8	1150.8	0.982	2.645	74.737	20.397	1.163	0.022	0.047	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1388.48	-25.09
4	0.6890	1136.8	1156.9	1153.8	0.976	2.627	74.555	20.455	1.303	0.022	0.048	0.005	0.007	0.000	0.000	0.000	0.000	0.000	1390.42	-23.48
5	0.6908	1139.9	1160.1	1157.0	0.974	2.601	74.152	20.914	1.287	0.021	0.043	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1392.57	-22.89
6	0.6890	1136.8	1156.9	1153.9	0.975	2.626	74.132	21.268	0.945	0.016	0.033	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1390.56	-25.41
7	0.6961	1148.7	1169.1	1165.7	0.964	2.575	73.716	20.926	1.616	0.050	0.120	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1397.80	-16.49
8	0.6968	1150.1	1170.5	1167.1	0.963	2.570	73.178	21.842	1.250	0.048	0.116	0.014	0.018	0.000	0.000	0.000	0.000	0.000	1398.70	-17.62
9	0.6976	1151.3	1171.7	1168.5	0.957	2.575	72.827	22.321	1.160	0.040	0.094	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1399.50	-18.41
10	0.6978	1150.9	1171.2	1167.9	0.964	2.608	73.223	21.525	1.466	0.054	0.127	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1398.71	-16.30
11	0.6999	1154.3	1174.8	1171.5	0.956	2.612	72.387	22.686	1.196	0.042	0.097	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1400.85	-17.26
12	0.6838	1126.8	1146.7	1143.8	0.984	2.738	74.868	20.689	0.692	0.010	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1383.53	-29.81
13	0.6986	1152.2	1172.6	1169.5	0.954	2.624	73.010	21.633	1.643	0.038	0.083	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1399.50	-17.28
14	0.7206	1190.3	1211.4	1208.2	0.925	2.400	70.664	22.110	3.740	0.057	0.093	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1423.64	-0.28
15	0.7082	1169.9	1190.6	1187.5	0.949	2.442	72.096	21.733	2.630	0.051	0.088	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1411.45	-9.52
16	0.6859	1127.3	1147.2	1144.3	0.974	2.912	75.020	19.756	1.318	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.04	-26.95
17	0.6888	1137.8	1157.9	1154.9	0.978	2.540	74.372	20.982	1.026	0.031	0.062	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1391.94	-24.41
18	0.6864	1135.1	1155.2	1152.2	0.981	2.476	74.793	20.676	0.993	0.024	0.051	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1391.09	-25.80
19	0.6896	1137.6	1157.7	1154.7	0.977	2.627	74.562	20.381	1.311	0.041	0.088	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1390.91	-22.35
20	0.6907	1138.2	1158.4	1155.4	0.969	2.703	74.302	20.547	1.373	0.032	0.064	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1390.61	-22.36
21	0.6923	1142.6	1162.8	1159.8	0.969	2.594	73.696	21.542	1.098	0.030	0.061	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1394.27	-22.39
22	0.6909	1139.7	1159.9	1156.9	0.976	2.623	73.963	21.267	1.075	0.029	0.058	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1392.20	-23.35
23	0.6875	1133.9	1154.0	1151.0	0.980	2.655	74.553	20.708	1.029	0.024	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1388.52	-25.62
24	0.6895	1137.0	1157.2	1154.1	0.976	2.651	74.657	20.164	1.428	0.038	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1390.34	-22.27
25	0.6862	1132.1	1152.2	1149.2	0.980	2.644	74.820	20.460	1.012	0.025	0.051	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1387.60	-26.13
26	0.6899	1138.0	1158.2	1155.1	0.977	2.635	73.945	21.513	0.821	0.030	0.066	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1391.07	-24.53
27	0.6878	1131.8	1151.9	1148.9	1.000	2.780	74.119	21.330	0.745	0.009	0.016	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1385.70	-27.70
28	0.6941	1142.3	1162.6	1159.5	0.980	2.768	72.713	22.842	0.684	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1392.16	-24.77
29	0.7131	1173.7	1194.5	1191.3	0.953	2.667	70.901	22.740	2.698	0.019	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.24	-8.71
30	0.7009	1153.4	1173.8	1170.8	0.973	2.739	72.172	22.577	1.513	0.011	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1398.79	-18.67
Avg	0.6933	1143.0	1163.6	1160.6	0.971	2.636	73.733	21.220	1.341	0.029	0.059	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1394.17	-21.33

Zone 43

April-18

ZONE 550

MANDAN BORDER

01970  
WBI - Mandan Border  
WBI Meter #0202220

NBPL - St Anthony

Weighted

Begin Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
4/1/2018	4/2/2018	1800	1928	1.0710	3113	3426	1.0997	1.089	4/1/2018
4/2/2018	4/3/2018				6442	7152	1.1099	1.110	4/2/2018
4/3/2018	4/4/2018				6000	6715	1.1192	1.119	4/3/2018
4/4/2018	4/5/2018				4426	4976	1.1238	1.124	4/4/2018
4/5/2018	4/6/2018	25	26	1.0729	5871	6699	1.1402	1.140	4/5/2018
4/6/2018	4/7/2018				6115	6960	1.1402	1.140	4/6/2018
4/7/2018	4/8/2018				4932	5522	1.1186	1.119	4/7/2018
4/8/2018	4/9/2018				5102	5745	1.1265	1.127	4/8/2018
4/9/2018	4/10/2018				4188	4689	1.1199	1.120	4/9/2018
4/10/2018	4/11/2018				3145	3533	1.1245	1.125	4/10/2018
4/11/2018	4/12/2018				3649	4067	1.1134	1.113	4/11/2018
4/12/2018	4/13/2018				4276	4899	1.1451	1.145	4/12/2018
4/13/2018	4/14/2018	22	24	1.0760	4720	5422	1.1492	1.149	4/13/2018
4/14/2018	4/15/2018				4092	4686	1.1449	1.145	4/14/2018
4/15/2018	4/16/2018				3886	4506	1.1617	1.162	4/15/2018
4/16/2018	4/17/2018				3729	4423	1.1859	1.186	4/16/2018
4/17/2018	4/18/2018				3559	4247	1.1932	1.193	4/17/2018
4/18/2018	4/19/2018				3176	3799	1.1961	1.196	4/18/2018
4/19/2018	4/20/2018				2552	3054	1.1967	1.197	4/19/2018
4/20/2018	4/21/2018				2282	2735	1.1980	1.198	4/20/2018
4/21/2018	4/22/2018				1990	2385	1.1988	1.199	4/21/2018
4/22/2018	4/23/2018				1522	1824	1.1983	1.198	4/22/2018
4/23/2018	4/24/2018				1845	2215	1.2005	1.201	4/23/2018
4/24/2018	4/25/2018	70	76	1.0816	2121	2544	1.1990	1.195	4/24/2018
4/25/2018	4/26/2018				1634	1958	1.1982	1.198	4/25/2018
4/26/2018	4/27/2018				1473	1761	1.1960	1.196	4/26/2018
4/27/2018	4/28/2018				1716	2060	1.2004	1.200	4/27/2018
4/28/2018	4/29/2018				1442	1730	1.1997	1.200	4/28/2018
4/29/2018	4/30/2018				1058	1268	1.1979	1.198	4/29/2018
4/30/2018	5/1/2018				1668	2000	1.1988	1.199	4/30/2018
		1,917	2,054	1.0754	101,724	117,000	1.1631	1.1626	



# Alliance Pipeline

DAILY ANALYSIS — USA  
 ND07MD1 — Hankinson Sales  
 April 2018

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	1,153.867	0.6636	84.2577	9.1190	3.8733	0.3634	0.6237	0.0612	0.0525	0.0262	1.1341	0.4773	0.0116
2	1,155.597	0.6646	84.1403	9.1707	3.9407	0.3663	0.6305	0.0603	0.0519	0.0268	1.1337	0.4674	0.0113
3	1,153.349	0.6634	84.2523	9.1572	3.8257	0.3645	0.6237	0.0610	0.0524	0.0271	1.1538	0.4709	0.0115
4	1,155.972	0.6645	84.1426	9.2223	3.8892	0.3734	0.6444	0.0611	0.0521	0.0269	1.1179	0.4587	0.0112
5	1,156.938	0.6645	84.1018	9.3141	3.8832	0.3715	0.6502	0.0582	0.0503	0.0260	1.1005	0.4327	0.0114
6	1,152.847	0.6610	84.5561	9.1558	3.7256	0.3575	0.6096	0.0580	0.0491	0.0256	1.0111	0.4400	0.0117
7	1,153.669	0.6618	84.3746	9.3065	3.7378	0.3531	0.6095	0.0560	0.0476	0.0247	1.0513	0.4272	0.0118
8	1,154.676	0.6627	84.2509	9.3781	3.7542	0.3589	0.6172	0.0570	0.0488	0.0253	1.0619	0.4358	0.0118
9	1,156.309	0.6638	84.2050	9.2944	3.8357	0.3740	0.6462	0.0582	0.0493	0.0254	1.0606	0.4399	0.0113
10	1,153.670	0.6626	84.3562	9.1868	3.7779	0.3678	0.6272	0.0589	0.0495	0.0255	1.0769	0.4618	0.0113
11	1,156.032	0.6641	84.1919	9.2306	3.8640	0.3757	0.6507	0.0594	0.0493	0.0259	1.0923	0.4488	0.0114
12	1,154.528	0.6633	84.3136	9.1805	3.7814	0.3748	0.6520	0.0607	0.0508	0.0285	1.0743	0.4723	0.0111
13	1,152.047	0.6625	84.4369	9.0422	3.7586	0.3696	0.6433	0.0587	0.0490	0.0269	1.0978	0.5060	0.0111
14	1,149.877	0.6616	84.5169	8.9909	3.7511	0.3513	0.6102	0.0565	0.0469	0.0268	1.1221	0.5161	0.0113
15	1,149.229	0.6611	84.5435	9.0091	3.7318	0.3446	0.5953	0.0556	0.0469	0.0266	1.1267	0.5087	0.0112
16	1,150.169	0.6613	84.5663	8.9915	3.7287	0.3538	0.6160	0.0569	0.0472	0.0276	1.0900	0.5110	0.0108
17	1,149.945	0.6607	84.6379	8.9785	3.7027	0.3551	0.6170	0.0561	0.0467	0.0260	1.0769	0.4923	0.0107
18	1,149.926	0.6610	84.6116	8.9654	3.7142	0.3553	0.6137	0.0584	0.0489	0.0283	1.1032	0.4896	0.0114
19	1,147.152	0.6586	84.9359	8.8395	3.5915	0.3506	0.5979	0.0579	0.0486	0.0284	1.0500	0.4883	0.0114
20	1,146.486	0.6577	84.9639	8.9607	3.4468	0.3539	0.6138	0.0575	0.0479	0.0279	1.0721	0.4441	0.0114
21	1,148.590	0.6595	84.7219	9.0560	3.5792	0.3498	0.6068	0.0571	0.0466	0.0265	1.0756	0.4689	0.0118
22	1,148.431	0.6602	84.6202	9.0373	3.6208	0.3506	0.6114	0.0564	0.0462	0.0269	1.1519	0.4673	0.0111
23	1,151.355	0.6609	84.5632	9.0909	3.6957	0.3590	0.6171	0.0579	0.0482	0.0278	1.0925	0.4369	0.0110
24	1,150.457	0.6605	84.6576	8.9913	3.6961	0.3594	0.6140	0.0582	0.0476	0.0279	1.0867	0.4501	0.0111
25	1,153.117	0.6627	84.3501	9.0770	3.8294	0.3655	0.6357	0.0577	0.0488	0.0264	1.1646	0.4336	0.0112
26	1,154.791	0.6634	84.2250	9.2113	3.8425	0.3680	0.6404	0.0573	0.0487	0.0263	1.1514	0.4179	0.0113
27	1,148.991	0.6594	84.7132	9.0384	3.6631	0.3448	0.5814	0.0524	0.0434	0.0264	1.0714	0.4542	0.0113
28	1,150.435	0.6605	84.5358	9.1487	3.7152	0.3427	0.5887	0.0509	0.0416	0.0245	1.0879	0.4523	0.0115
29	1,152.062	0.6612	84.4527	9.1592	3.7837	0.3466	0.6026	0.0502	0.0423	0.0237	1.1075	0.4199	0.0116
30	1,148.479	0.6590	84.6866	9.1478	3.5546	0.3471	0.5987	0.0525	0.0436	0.0244	1.1114	0.4214	0.0119
Volume	1,152.081	0.6618	84.4555	9.1131	3.7491	0.3595	0.6205	0.0575	0.0483	0.0266	1.0962	0.4623	0.0113
Weight Avg Energy	1,152.088	0.6618	84.4550	9.1134	3.7493	0.3595	0.6206	0.0575	0.0483	0.0265	1.0963	0.4623	0.0113

*Handwritten initials/signature*

April-18

ZONE 610

**Watford City**

01325  
Watford City West Border  
WBI Meter #0602225

01312  
Watford City East Border  
WBI Meter #2702230

**Weighted**

Begin Date	End Date	MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43	AVG BTU	
4/1/2018	4/2/2018	561	664	1.185	569	654	1.149	1.167	4/1/2018
4/2/2018	4/3/2018	634	751	1.185	645	742	1.150	1.167	4/2/2018
4/3/2018	4/4/2018	598	708	1.185	671	775	1.154	1.168	4/3/2018
4/4/2018	4/5/2018	478	566	1.185	583	675	1.157	1.169	4/4/2018
4/5/2018	4/6/2018	682	808	1.185	618	717	1.160	1.173	4/5/2018
4/6/2018	4/7/2018	662	785	1.185	595	688	1.157	1.171	4/6/2018
4/7/2018	4/8/2018	597	707	1.185	488	570	1.169	1.178	4/7/2018
4/8/2018	4/9/2018	603	714	1.185	445	521	1.171	1.179	4/8/2018
4/9/2018	4/10/2018	531	629	1.185	482	564	1.172	1.178	4/9/2018
4/10/2018	4/11/2018	349	413	1.185	332	388	1.171	1.178	4/10/2018
4/11/2018	4/12/2018	343	406	1.185	252	296	1.175	1.180	4/11/2018
4/12/2018	4/13/2018	513	608	1.185	348	399	1.147	1.169	4/12/2018
4/13/2018	4/14/2018	512	607	1.185	363	425	1.173	1.180	4/13/2018
4/14/2018	4/15/2018	441	523	1.185	299	362	1.211	1.195	4/14/2018
4/15/2018	4/16/2018	400	474	1.185	286	340	1.191	1.187	4/15/2018
4/16/2018	4/17/2018	433	513	1.185	320	367	1.147	1.169	4/16/2018
4/17/2018	4/18/2018	442	524	1.185	312	362	1.158	1.174	4/17/2018
4/18/2018	4/19/2018	329	390	1.185	283	326	1.155	1.171	4/18/2018
4/19/2018	4/20/2018	296	351	1.185	246	282	1.158	1.172	4/19/2018
4/20/2018	4/21/2018	192	227	1.185	210	243	1.158	1.171	4/20/2018
4/21/2018	4/22/2018	103	122	1.185	169	197	1.163	1.171	4/21/2018
4/22/2018	4/23/2018	103	123	1.185	188	218	1.160	1.169	4/22/2018
4/23/2018	4/24/2018	319	378	1.185	259	299	1.154	1.171	4/23/2018
4/24/2018	4/25/2018	191	226	1.185	196	227	1.157	1.171	4/24/2018
4/25/2018	4/26/2018	160	189	1.185	213	245	1.152	1.166	4/25/2018
4/26/2018	4/27/2018	100	119	1.185	187	217	1.158	1.167	4/26/2018
4/27/2018	4/28/2018	105	125	1.185	206	237	1.152	1.163	4/27/2018
4/28/2018	4/29/2018	63	74	1.185	177	206	1.163	1.168	4/28/2018
4/29/2018	4/30/2018	29	34	1.185	143	171	1.195	1.193	4/29/2018
4/30/2018	5/1/2018	205	243	1.185	236	277	1.174	1.179	4/30/2018

10,974 13,001

10,321 11,990

1.1636

1.1738

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/CF)	SPECIFIC GRAVITY	WOBBE (cal)	CRICONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Changetimestamp	NOTES
11587	GLEN ULLIN	1073.4	0.6221	1360.9	-64.5	1.4868	0.8701	87.1515	9.8181	0.5104	0.0199	0.0111	0.0009	0.0009	0	0.0001	0.1151	0.0161	3/31/2018	4/1/2018	4/1/2018 3:19:46 PM	
11587	GLEN ULLIN	1070.8	0.6199	1360	-66	1.4524	0.8618	87.5264	9.5211	0.4671	0.0187	0.0102	0.0013	0.0011	0	0.0004	0.1236	0.0162	4/1/2018	4/2/2018	4/2/2018 3:21:17 PM	
11587	GLEN ULLIN	1068.7	0.6186	1358.8	-67.5	1.4513	0.8643	87.7729	9.268	0.4763	0.014	0.0082	0.0001	0.0001	0	0	0.1272	0.0162	4/2/2018	4/3/2018	4/3/2018 3:22:39 PM	
11587	GLEN ULLIN	1071.8	0.622	1359.1	-64.9	1.5565	0.8832	87.0559	9.8015	0.5041	0.0166	0.0093	0.0004	0.0004	0	0	0.1572	0.0162	4/3/2018	4/4/2018	4/4/2018 3:21:25 PM	
11587	GLEN ULLIN	1070.1	0.6201	1358.9	-66.2	1.4903	0.8759	87.4898	9.4645	0.4978	0.0169	0.0096	0.0006	0.0005	0	0.0001	0.1388	0.0154	4/4/2018	4/5/2018	4/5/2018 3:25:53 PM	
11587	GLEN ULLIN	1071.8	0.6213	1359.7	-65.1	1.5012	0.8769	87.2893	9.6257	0.5313	0.0171	0.0098	0.0006	0.0005	0	0.0001	0.1316	0.0179	4/5/2018	4/6/2018	4/6/2018 3:21:24 PM	
11587	GLEN ULLIN	1071.9	0.6214	1359.8	-65.3	1.5124	0.8702	87.236	9.7095	0.4997	0.0175	0.01	0.0001	0.0001	0	0	0.1307	0.0135	4/6/2018	4/7/2018	4/7/2018 3:25:49 PM	
11587	GLEN ULLIN	1073.7	0.6232	1360.1	-62.4	1.575	0.8695	86.9638	9.7786	0.6098	0.026	0.0135	0.0018	0.0016	0	0.0005	0.1425	0.0133	4/7/2018	4/8/2018	4/8/2018 3:17:57 PM	
11587	GLEN ULLIN	1074.6	0.6239	1360.5	-62	1.5638	0.8836	86.8168	9.9643	0.5684	0.0265	0.0136	0.0026	0.0022	0	0.0008	0.141	0.0133	4/8/2018	4/9/2018	4/9/2018 3:23:04 PM	
11587	GLEN ULLIN	1074.3	0.6233	1360.7	-63.1	1.5462	0.8721	86.8802	9.9748	0.5304	0.0237	0.0124	0.002	0.0017	0	0.0004	0.1401	0.0146	4/9/2018	4/10/2018	4/10/2018 3:22:25 PM	
11587	GLEN ULLIN	1076.9	0.6253	1361.9	-60.8	1.5966	0.8592	86.5717	10.1589	0.6217	0.0281	0.0146	0.0023	0.002	0	0.0005	0.1301	0.0144	4/10/2018	4/11/2018	4/11/2018 3:20:46 PM	
11587	GLEN ULLIN	1081.7	0.6288	1364.1	-58.2	1.6244	0.8665	85.9779	10.7142	0.6469	0.0323	0.0179	0.0027	0.0027	0	0.0007	0.1026	0.0102	4/11/2018	4/12/2018	4/12/2018 3:25:58 PM	
11587	GLEN ULLIN	1072.3	0.6228	1358.7	-64.8	1.6174	0.8699	86.9259	9.9322	0.4859	0.0159	0.0096	0	0.0001	0	0	0.1268	0.0124	4/12/2018	4/13/2018	4/13/2018 3:20:59 PM	
11587	GLEN ULLIN	1077.2	0.6262	1361.2	-61.5	1.6537	0.8693	86.3845	10.3614	0.5804	0.0226	0.0129	0.0011	0.0012	0	0.0001	0.0999	0.011	4/13/2018	4/14/2018	4/14/2018 3:24:40 PM	
11587	GLEN ULLIN	1086.1	0.6305	1367.9	-54.4	1.5152	0.8691	85.9742	10.3329	1.0948	0.0292	0.0187	0.0009	0.0013	0	0.0001	0.1468	0.0173	4/14/2018	4/15/2018	4/15/2018 3:19:58 PM	
11587	GLEN ULLIN	1083.4	0.6282	1366.9	-55.8	1.4673	0.8687	86.4142	9.9787	1.0472	0.0352	0.0216	0.0011	0.0013	0	0	0.148	0.0173	4/15/2018	4/16/2018	4/16/2018 3:23:53 PM	
11587	GLEN ULLIN	1064.7	0.6171	1355.3	-68	1.5325	0.8723	88.1406	8.6831	0.5675	0.0198	0.0119	0.0001	0.0001	0	0	0.1563	0.0161	4/16/2018	4/17/2018	4/17/2018 3:23:30 PM	
11587	GLEN ULLIN	1069.9	0.6216	1357.1	-64.6	1.6211	0.8874	87.2891	9.4222	0.5867	0.0242	0.0141	0.0006	0.0008	0	0	0.1378	0.0157	4/17/2018	4/18/2018	4/18/2018 3:23:48 PM	
11587	GLEN ULLIN	1074.1	0.6235	1360.3	-62.2	1.5323	0.9023	86.982	9.7202	0.6498	0.0304	0.0173	0.0009	0.0012	0	0.0001	0.1497	0.014	4/18/2018	4/19/2018	4/19/2018 3:20:58 PM	
11587	GLEN ULLIN	1071.7	0.6228	1357.9	-63	1.6467	0.876	87.2671	9.4003	0.6697	0.0313	0.0179	0.0013	0.0016	0	0	0.0791	0.0079	4/19/2018	4/20/2018	4/20/2018 3:20:35 PM	
11587	GLEN ULLIN	1079.8	0.6279	1362.7	-58	1.649	0.8688	86.3778	10.0775	0.8663	0.0315	0.0185	0.0013	0.0016	0	0	0.0977	0.0093	4/20/2018	4/21/2018	4/21/2018 3:20:38 PM	
11587	GLEN ULLIN	1074.8	0.6236	1361	-62.3	1.5316	0.8794	86.9355	9.7857	0.6631	0.0237	0.014	0.0006	0.0009	0	0	0.1496	0.0163	4/21/2018	4/22/2018	4/22/2018 3:20:40 PM	
11587	GLEN ULLIN	1070.4	0.6202	1359.2	-65.1	1.4986	0.8633	87.5033	9.3437	0.5678	0.0249	0.0142	0.001	0.0013	0	0.0001	0.1651	0.0163	4/22/2018	4/23/2018	4/23/2018 3:27:38 PM	
11587	GLEN ULLIN	1077.2	0.6256	1362	-59.7	1.5461	0.8998	86.5329	10.1032	0.6701	0.0306	0.0207	0.0021	0.0029	0	0.0008	0.1742	0.0163	4/23/2018	4/24/2018	4/24/2018 3:21:19 PM	
11587	GLEN ULLIN	1079.5	0.627	1363.3	-58	1.5648	0.8879	86.3739	10.1465	0.7811	0.0373	0.0233	0.0024	0.0029	0	0.0003	0.1652	0.0163	4/24/2018	4/25/2018	4/25/2018 3:29:02 PM	
11587	GLEN ULLIN	1073.6	0.623	1360.2	-63.2	1.5355	0.8845	87.008	9.7655	0.6045	0.0228	0.0138	0.0007	0.0011	0	0	0.1467	0.0163	4/25/2018	4/26/2018	4/26/2018 3:23:33 PM	
11587	GLEN ULLIN	1069.4	0.6197	1358.5	-66.5	1.5303	0.8524	87.485	9.4482	0.4816	0.0179	0.0104	0.0004	0.0004	0	0	0.1573	0.0163	4/26/2018	4/27/2018	4/27/2018 3:24:30 PM	
11587	GLEN ULLIN	1070.3	0.6202	1359.1	-65.6	1.5123	0.8566	87.4272	9.4735	0.5119	0.0208	0.0125	0.0011	0.0012	0	0.0001	0.1662	0.0163	4/27/2018	4/28/2018	4/28/2018 3:23:24 PM	
11587	GLEN ULLIN	1074.3	0.6227	1361.4	-62.1	1.5034	0.8641	87.0478	9.7888	0.5741	0.029	0.0195	0.0023	0.0031	0	0.001	0.1515	0.0163	4/28/2018	4/29/2018	4/29/2018 3:21:36 PM	
11587	GLEN ULLIN	1079.1	0.6258	1364.1	-59.7	1.5055	0.8633	86.5408	10.161	0.7168	0.026	0.0171	0.0016	0.0022	0	0.0003	0.1483	0.0163	4/29/2018	4/30/2018	4/30/2018 3:26:26 PM	
11587	GLEN ULLIN	1082.4	0.6283	1365.5	-58.2	1.5449	0.862	86.0729	10.5002	0.8083	0.0212	0.0132	0.0002	0.0003	0	0	0.1601	0.0163	4/30/2018	5/1/2018	5/1/2018 3:23:25 PM	

31 record(s) retrieved

FORM 802

<b>NORTH DAKOTA HEATING VALUE ZONES</b>		
<b>ZONES</b>	<b>MEASURING DEVICE</b>	<b>LOCATION</b>
211	Chromatograph	Sidney Border
24	Monthly Sampler	Williston Border
241	Monthly Sampler	Fairview Border
25	Monthly Sampler	Watford City West Border
260	Chromatograph	North Tioga Transfer
261	Chromatograph	Tioga Comp Station – Robinson Lake Plant
262	Chromatograph	Minot Border
263	Monthly Sampler	Lignite Plant
264	Monthly Sampler	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	Monthly Sampler	Bowman Border
43	Chromatograph	Spring Creek
550	Monthly Sampler & Chromatograph	Mandan Border
600	Chromatograph	Hankinson Area
610	Monthly Sampler & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO  
 NORTH DAKOTA  
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	APRIL 18	MARCH 18	FEB 18	JAN 18	DEC 17	NOV 17	OCT 17	SEPT 17	AUG 17	JULY 17	JUNE 17	MAY 17	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1199	1191	1211	1195	1185	1193	1210	1201	1200	1204	1201	1191	1206	211
ND	24	Williston Border - Charbonneau Station	1142	1136	1140	1140	1138	1143	1144	1144	1142	1142	1141	1141	1148	24
ND	25	Watford City West Border	1190	1185	1179	1184	1174	1165	1169	1204	1205	1202	1206	1204	1204	25
ND	28	Bismarck Station - Glen Ullin Station	1153	1163	1121	1098	1096	1114	1111	1173	1196	1195	1194	1188	1191	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1130	1134	1122	1102	1095	1111	1110	1132	1100	1169	1179	1171	1137	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1107	1116	1104	1080	1072	1096	1090	1113	1103	1136	1157	1122	1097	32
ND	33	Little Knife Plant	1176	1175	1175	1176	1175	1174	1174	1174	1177	1181	1180	1177	1177	33
ND	34	Bowman Border	996	996	996	996	996	996	996	996	996	996	996	996	996	34
ND	43	Spring Creek I - Sax Valve I	1149	1164	1158	1148	1153	1165	1158	1143	1147	1151	1141	1126	1136	43
ND/MT	241	Fairview Border	1183	1151	1205	1206	1203	1190	1204	1196	1175	1169	1165	1161	1168	241
ND	260	North Tioga Transfer - Nesson Plant	1011	989	987	986	1021	998	992	996	987	993	1002	1087	1090	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1175	1176	1173	1171	1173	1167	1170	1176	1175	1177	1183	1181	1176	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1194	1198	1199	1191	1193	1196	1190	1194	1196	1195	1193	1189	1192	262
ND	263	Lignite Plant	1130	1135	1115	1135	1114	1120	1143	1141	1123	1143	1146	1135	1115	263
ND	264	Epping Border	1137	1128	1118	1144	1161	1142	1133	1134	1136	1133	1138	1133	1145	264
ND	265	Tioga Comp Station - County Line Plant	1175	1176	1173	1171	1174	1167	1170	1176	1176	1177	1184	1181	1176	265
ND	266	County Line Plant	1184	1181	1182	1185	1183	1181	1184	1185	1189	1184	1191	1183	1185	266
ND	271	Bismarck Station - Cleveland Station	1184	1194	1187	1159	1161	1176	1179	1192	1196	1195	1194	1188	1192	271
ND	272	Cleveland Station - Mapleton	1184	1194	1187	1158	1160	1177	1179	1192	1196	1195	1193	1188	1191	272
ND	273	Cleveland Station - Grafton Border	1184	1192	1187	1158	1160	1177	1179	1192	1196	1195	1194	1189	1192	273
ND	550	Mandan Border / NBPL-St Anthony	1163	1100	1090	1088	1099	1093								550
ND	610	MDU-Watford City BTU	1176	1174	1170	1168	1164	1165	1165	1189	1190	1183	1185	1176	1183	610
ND	802	Linton	1066	1074	1069	1068	1069	1073	1075	1064	1065	1062	1057	1054	1063	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903

**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**April 2018**

<b>ZONE</b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
211	-20	Blend of Gas
28	42	Blend of Gas
241	-54	Blend of Gas
263	20	Operational Change