



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

May 8, 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 – March 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 April 2018.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of March 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 March 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
Apr-18

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1183
MDU-308-ARNEGARD	025	1.1183
MDU-314-APPLE VALLEY	271	1.1183
MDU-318-BEACH	032	0.9981
MDU-319-BELFIELD	032	1.0054
MDU-323-BERTHOLD	262	1.1249
MDU-327-BISMARCK	028	1.0520
MDU-330-BOWMAN	034	0.9340
MDU-337-BURLINGTON	262	1.1492
MDU-343-CARRINGTON	273	1.1173
MDU-344-CLEVELAND	272	1.1095
MDU-364-CAVALIER	273	1.1409
MDU-365-DAWSON	271	1.1104
MDU-368-DES LACS	262	1.1330
MDU-369-DICKINSON	031	1.0334
MDU-374-FT TOTTEN	273	1.1252
MDU-375-DEVILS LAKE	273	1.1252
MDU-379-BARLOW	273	1.1173
MDU-384-EPPING	264	1.0805
MDU-387-ELDRIDGE	272	1.1173
MDU-407-GLADSTONE	031	1.0334
MDU-411-GLEN ULLIN	031	1.0408
MDU-413-GOLVA	032	0.9834
MDU-416-GARRISON	262	1.1330
MDU-417-GRAFTON	273	1.1488
MDU-429-HEBRON	031	1.0408
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1252
MDU-459-KILLDEER	033	1.1107
MDU-463-LANGDON	273	1.1173
MDU-469-LEFOR	031	1.0334
MDU-474-LIGNITE	263	1.0797
MDU-475-LINTON	802	1.0305
MDU-478-LINCOLN	028	1.0594
MDU-488-MCKENZIE	271	1.1183
MDU-494-MEDINA	271	1.1104
MDU-498-MANDAN	028	1.0594
MDU-500-MARMARTH	034	0.9204
MDU-505-MINOT	262	1.1492
MDU-510-MOTT	031	1.0334
MDU-512-MAX	262	1.1249
MDU-522-NEW ENGLAND	031	1.0259
MDU-524-NEW SALEM	028	1.0371
MDU-532-NEW ROCKFORD	273	1.1173
MDU-539-PARK RIVER	273	1.1409
MDU-540-PALERMO	262	1.1249
MDU-558-RAY	264	1.0805
MDU-561-REGENT	031	1.0334
MDU-563-RHAME	034	0.9069

MDU-564-RICHARDTON	031	1.0259
MDU-568-ROSS	261	1.0981
MDU-572-RUTHVILLE	262	1.1492
MDU-574-SANBORN	272	1.1252
MDU-583-SENTINEL BUTTE	032	0.9981
MDU-588-SOUTH HEART	031	1.1259
MDU-717-SPIRITWOOD	272	1.1252
MDU-590-SPRINGBROOK	264	1.0805
MDU-591-STANLEY	261	1.1140
MDU-593-STEELE	271	1.1104
MDU-598-SHEYENNE	273	1.1252
MDU-605-SURREY	262	1.1492
MDU-610-TAPPEN	271	1.1104
MDU-611-TAYLOR	031	1.0259
MDU-616-TIOGA	260	0.9313
MDU-619-TURTLE LAKE	262	1.1330
MDU-620-TRENTON	024	1.0845
MDU-624-UNDERWOOD	262	1.1330
MDU-625-VALLEY CITY	272	1.1330
MDU-629-WALHALLA	273	1.1409
MDU-632-WATFORD CITY	610	1.1032
MDU-636-WHEELOCK	264	1.0727
MDU-637-WHITE EARTH	261	1.1060
MDU-642-WILLISTON	024	1.0845
MDU-646-WASHBURN	262	1.1411
MDU-647-WILTON	262	1.1249
MDU-664-RIVERDALE	262	1.1330
MDU-691-FAIRVIEW	241	1.1473
MDU-712-MINOT AFB	262	1.1492
MDU-718-FAIRMOUNT	600	1.1326
MDU-732-NEKOMA	273	1.1173
MDU-732-MSR SITE	273	1.1173

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7430	1193.8	1214.9	1210.3	1.283	3.748	66.942	23.750	3.826	0.153	0.274	0.014	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1406.00
2	0.7443	1195.9	1217.1	1212.5	1.281	3.733	66.946	23.502	4.098	0.149	0.266	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1407.36
3	0.7418	1191.5	1212.6	1207.9	1.284	3.770	67.157	23.532	3.820	0.149	0.265	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1404.49
4	0.7376	1183.8	1204.8	1200.1	1.295	3.823	68.039	22.567	3.833	0.151	0.268	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1399.43
5	0.7009	1165.9	1186.5	1182.2	0.234	3.095	72.250	22.099	2.227	0.038	0.056	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1414.13
6	0.6920	1159.2	1179.7	1175.4	0.030	2.977	73.344	21.800	1.813	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.88
7	0.7200	1175.1	1195.9	1191.5	0.787	3.481	70.053	22.332	3.083	0.093	0.158	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1406.30
8	0.7374	1184.1	1205.0	1200.5	1.307	3.775	67.742	23.204	3.575	0.137	0.240	0.011	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1399.90
9	0.7398	1188.2	1209.2	1204.7	1.296	3.773	67.290	23.623	3.614	0.138	0.245	0.012	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1402.43
10	0.7396	1187.5	1208.6	1204.0	1.299	3.780	67.299	23.648	3.574	0.137	0.241	0.012	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1401.95
11	0.7411	1190.0	1211.1	1206.5	1.295	3.777	67.206	23.566	3.722	0.148	0.263	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1403.41
12	0.7409	1189.7	1210.8	1206.1	1.297	3.772	67.431	23.179	3.868	0.153	0.273	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1403.23
13	0.7421	1192.0	1213.1	1208.4	1.291	3.753	67.294	23.240	3.965	0.155	0.277	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1404.82
14	0.7411	1190.2	1211.3	1206.7	1.292	3.770	67.457	23.095	3.923	0.157	0.281	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1403.63
15	0.7428	1193.1	1214.2	1209.5	1.287	3.761	67.113	23.456	3.923	0.155	0.279	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1405.40
16	0.7433	1194.1	1215.2	1210.5	1.289	3.744	67.023	23.551	3.936	0.155	0.277	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1406.10
17	0.7438	1195.2	1216.3	1211.7	1.283	3.737	66.884	23.728	3.909	0.155	0.278	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1406.89
18	0.7442	1195.7	1216.9	1212.3	1.282	3.740	66.856	23.697	3.965	0.155	0.278	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1407.19
19	0.7459	1198.8	1220.0	1215.2	1.284	3.715	66.666	23.761	4.110	0.157	0.281	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1409.11
20	0.7432	1193.8	1214.9	1210.3	1.281	3.764	67.227	23.146	4.105	0.161	0.291	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1405.90
21	0.7432	1194.1	1215.2	1210.6	1.287	3.739	67.081	23.470	3.935	0.164	0.296	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1406.26
22	0.7432	1194.2	1215.4	1210.7	1.287	3.730	67.111	23.427	3.960	0.163	0.294	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1406.37
23	0.7440	1195.3	1216.5	1211.8	1.280	3.751	66.959	23.550	3.975	0.163	0.293	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1406.85
24	0.7441	1195.5	1216.7	1211.9	1.280	3.743	66.973	23.516	4.008	0.162	0.291	0.015	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1407.02
25	0.7439	1195.3	1216.4	1211.7	1.284	3.735	67.014	23.464	4.038	0.158	0.282	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1406.96
26	0.7447	1196.9	1218.0	1213.2	1.276	3.730	66.915	23.507	4.099	0.160	0.287	0.015	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1408.00
27	0.7437	1195.3	1216.5	1211.8	1.281	3.718	67.104	23.343	4.087	0.158	0.283	0.014	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1407.17
28	0.7460	1199.1	1220.4	1215.7	1.278	3.705	66.773	23.593	4.152	0.166	0.304	0.016	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1409.46
29	0.7436	1195.5	1216.6	1211.9	1.271	3.715	67.369	22.929	4.169	0.179	0.333	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1407.37
30	0.7168	1180.0	1200.8	1196.3	0.544	3.259	70.171	22.968	2.827	0.080	0.140	0.007	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1415.25
31	0.7201	1180.1	1201.0	1196.6	0.694	3.321	69.887	22.843	2.986	0.094	0.162	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1412.31
Avg	0.7374	1190.0	1210.7	1206.1	1.153	3.666	67.793	23.261	3.714	0.141	0.251	0.013	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1406.63

Zone 211

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6788	1118.4	1138.2	1135.4	0.841	2.975	77.495	16.391	2.093	0.061	0.126	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1378.34	
2	0.6787	1119.2	1139.0	1136.1	0.835	2.934	77.448	16.541	2.040	0.060	0.123	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1379.29	
3	0.6781	1118.0	1137.8	1134.9	0.842	2.931	77.645	16.290	2.087	0.061	0.126	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1378.54	
4	0.6785	1118.1	1137.9	1135.0	0.813	3.009	77.452	16.528	1.974	0.065	0.137	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1378.22	
5	0.6790	1119.2	1139.0	1136.1	0.856	2.929	77.422	16.547	2.041	0.060	0.126	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1379.03	
6	0.6749	1113.3	1133.0	1130.1	0.855	2.901	78.188	15.868	1.996	0.056	0.118	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1375.97	
7	0.6762	1115.6	1135.4	1132.5	0.839	2.904	77.933	16.124	2.004	0.057	0.120	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1377.50	
8	0.6784	1118.3	1138.1	1135.2	0.843	2.947	77.443	16.597	1.977	0.057	0.119	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1378.52	
9	0.6803	1119.5	1139.4	1136.5	0.839	3.051	77.081	16.825	2.002	0.059	0.124	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1378.20	
10	0.6764	1114.8	1134.6	1131.7	0.843	2.969	77.876	16.120	1.991	0.060	0.124	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1376.31	
11	0.6797	1120.0	1139.9	1136.9	0.837	2.971	77.301	16.629	2.034	0.065	0.140	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1379.33	
12	0.6768	1115.8	1135.6	1132.7	0.838	2.951	77.814	16.190	2.000	0.061	0.127	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1377.15	
13	0.6794	1120.9	1140.7	1137.8	0.835	2.896	77.238	16.876	1.947	0.061	0.127	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1380.68	
14	0.6771	1117.3	1137.0	1134.1	0.841	2.884	77.907	16.087	2.031	0.070	0.153	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1378.58	
15	0.6801	1117.8	1137.6	1134.7	0.834	3.146	77.093	16.751	1.954	0.065	0.136	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1376.28	
16	0.6791	1115.5	1135.3	1132.4	0.842	3.185	77.249	16.579	1.935	0.062	0.130	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1374.40	
17	0.6786	1119.4	1139.2	1136.3	0.854	2.874	77.498	16.569	1.984	0.064	0.136	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1379.77	
18	0.6795	1120.4	1140.3	1137.4	0.845	2.911	77.325	16.685	2.014	0.064	0.136	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1380.11	
19	0.6789	1119.4	1139.2	1136.2	0.846	2.912	77.659	16.215	2.101	0.072	0.165	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1379.40	
20	0.6795	1121.1	1141.0	1138.1	0.847	2.868	77.314	16.753	1.995	0.065	0.138	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1380.96	
21	0.6787	1119.9	1139.8	1136.9	0.846	2.864	77.413	16.719	1.947	0.062	0.129	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1380.31	
22	0.6794	1121.2	1141.1	1138.2	0.854	2.843	77.338	16.750	1.993	0.065	0.137	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1381.15	
23	0.6821	1126.2	1146.1	1143.2	0.856	2.787	76.837	17.282	2.011	0.067	0.139	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1384.57	
24	0.6807	1124.0	1143.9	1141.0	0.847	2.805	77.128	16.959	2.033	0.066	0.141	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1383.27	
25	0.6817	1125.0	1145.0	1140.8	0.848	2.837	77.035	16.914	2.125	0.069	0.148	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1383.46	
26	0.6811	1124.0	1143.9	1141.0	0.842	2.849	77.089	16.911	2.077	0.067	0.142	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1382.87	
27	0.6815	1124.5	1144.4	1141.5	0.845	2.858	77.018	16.957	2.089	0.068	0.143	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1382.98	
28	0.6806	1123.1	1143.0	1140.1	0.841	2.858	77.249	16.690	2.126	0.070	0.146	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1382.28	
29	0.6806	1122.0	1141.8	1138.9	0.867	2.885	77.388	16.412	2.188	0.075	0.160	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1380.87	
30	0.6791	1122.1	1142.0	1139.0	0.845	2.768	77.525	16.564	2.054	0.070	0.149	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1382.59	
31	0.6762	1117.7	1137.5	1134.5	0.849	2.761	78.083	16.043	2.025	0.069	0.147	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1380.07	
Avg	0.6790	1120.0	1139.6	1136.6	0.844	2.912	77.435	16.560	2.028	0.064	0.136	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1379.71	

Zone 24

Gas Composition and Properties

Effective March 1, 2018

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.1351		2.4170
Nitrogen, N2	3.3061		4.4810
Methane, C1	71.7402		55.6841
Ethane, C2	20.2938	5.4311	29.5242
Propane, C3	2.9636	0.8141	6.3228
iso-Butane, iC4	0.1558	0.0508	0.4381
n-Butane, nC4	0.3144	0.0989	0.8841
iso-Pentane, iC5	0.0278	0.0101	0.0970
n-Pentane, nC5	0.0278	0.0100	0.0970
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.0353		0.0547
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		
Cricodentherm		
HV, Dry @ Base P, T	1179.42	
HV, Sat @ Base P, T	1158.90	
HV, Sat @ Sample P, T	1179.42	
Relative Density	0.7141	

C6+: 100

Totals 99.9999 6.4150 100.0000

Sample
Date: 04/02/2018 Pressure: 520.0
Type: Composite Temperature: 0.0
Tech: Eric Smeltzer H2O: lbs/mm
H2S: ppm
Remarks:

Analysis
Date: 04/03/2018 Instrument: WBI- 75
Cylinder: 387
Tech: MB
Remarks:

Zone 25

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.5837	964.1	981.2		0.007	4.712	93.477	1.701	0.084	0.005	0.011	0.001	0.001	0.001					1281.29	
2	0.5825	968.3	985.5		0.008	4.337	93.790	1.760	0.086	0.005	0.012	0.001	0.001	0.000					1288.25	
3	0.5823	969.1	986.2		0.008	4.272	93.842	1.773	0.086	0.005	0.012	0.001	0.001	0.000					1289.47	
4	0.5824	967.5	984.6		0.008	4.379	93.797	1.711	0.085	0.005	0.012	0.001	0.001	0.000					1287.26	
5	0.5820	967.7	984.8		0.009	4.326	93.893	1.669	0.083	0.005	0.012	0.001	0.001	0.000					1287.97	
6	0.5877	979.0	996.3		0.008	4.180	92.746	2.953	0.090	0.006	0.014	0.001	0.001	0.000					1296.61	
7	0.5828	970.8	988.0		0.008	4.218	93.737	1.930	0.086	0.005	0.013	0.001	0.001	0.000					1291.18	
8	0.5839	970.7	987.9		0.008	4.330	93.495	2.057	0.087	0.006	0.014	0.001	0.002	0.000					1289.79	
9	0.5843	969.5	986.7		0.008	4.433	93.422	2.020	0.094	0.006	0.014	0.001	0.002	0.000					1287.85	
10	0.5824	969.4	986.5		0.008	4.265	93.820	1.800	0.087	0.005	0.013	0.001	0.001	0.000					1289.74	
11	0.5823	967.7	984.9		0.008	4.355	93.824	1.707	0.086	0.005	0.013	0.001	0.001	0.000					1287.68	
12	0.5830	969.1	986.3		0.008	4.338	93.688	1.861	0.086	0.005	0.012	0.001	0.001	0.002					1288.71	
13	0.5824	968.5	985.7		0.008	4.315	93.810	1.765	0.084	0.005	0.011	0.001	0.001	0.000					1288.63	
14	0.5830	968.6	985.8		0.008	4.363	93.687	1.836	0.087	0.005	0.012	0.002	0.002	0.000					1288.15	
15	0.5824	969.8	987.0		0.008	4.233	93.823	1.833	0.084	0.005	0.012	0.001	0.001	0.000					1290.40	
16	0.5824	969.0	986.1		0.008	4.288	93.812	1.791	0.083	0.005	0.012	0.001	0.001	0.000					1289.22	
17	0.5825	968.3	985.4		0.008	4.346	93.767	1.776	0.084	0.005	0.011	0.001	0.001	0.000					1288.12	
18	0.5828	967.5	984.6		0.008	4.420	93.703	1.762	0.086	0.005	0.012	0.001	0.002	0.000					1286.78	
19	0.5829	969.0	986.1		0.008	4.342	93.699	1.840	0.089	0.005	0.013	0.002	0.002	0.001					1288.59	
20	0.5831	968.9	986.1		0.008	4.363	93.648	1.873	0.088	0.005	0.012	0.001	0.001	0.000					1288.32	
21	0.5835	969.8	987.0		0.008	4.339	93.585	1.961	0.087	0.005	0.011	0.001	0.001	0.000					1289.14	
22	0.5886	979.2	996.5		0.008	4.250	92.552	3.083	0.088	0.005	0.011	0.001	0.001	0.000					1295.90	
23	0.5826	969.1	986.3		0.008	4.302	93.756	1.831	0.084	0.005	0.011	0.001	0.001	0.000					1289.15	
24	0.5825	969.4	986.5		0.008	4.274	93.796	1.816	0.087	0.005	0.012	0.002	0.002	0.000					1289.64	
25	0.5823	969.4	986.6		0.008	4.250	93.843	1.795	0.086	0.005	0.012	0.001	0.002	0.000					1289.96	
26	0.5828	969.9	987.1		0.008	4.271	93.723	1.892	0.087	0.005	0.011	0.001	0.001	0.000					1290.02	
27	0.5827	968.7	985.9		0.007	4.336	93.734	1.820	0.084	0.005	0.011	0.001	0.001	0.000					1288.52	
28	0.5839	971.6	988.8		0.008	4.270	93.514	2.097	0.091	0.005	0.012	0.001	0.001	0.000					1291.04	
29	0.5833	969.9	987.0		0.008	4.317	93.629	1.941	0.087	0.005	0.011	0.001	0.001	0.000					1289.43	
30	0.5826	969.2	986.3		0.006	4.297	93.767	1.827	0.084	0.005	0.011	0.001	0.001	0.000					1289.27	
31	0.5826	970.4	987.6		0.008	4.224	93.774	1.890	0.086	0.005	0.012	0.001	0.001	0.000					1290.86	
Avg	0.5832	970.0	986.8		0.008	4.321	93.650	1.915	0.086	0.005	0.012	0.001	0.001	0.000					1289.26	

Zone 260

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7043	1153.0	1173.4	1169.8	0.866	3.233	72.566	20.805	2.281	0.075	0.152	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1394.84
2	0.7035	1151.5	1171.9	1168.4	0.858	3.256	72.693	20.680	2.266	0.074	0.151	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1393.95
3	0.7023	1148.7	1169.1	1165.5	0.870	3.298	72.960	20.360	2.261	0.075	0.153	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1391.68
4	0.7037	1151.1	1171.5	1167.9	0.869	3.287	72.725	20.572	2.283	0.077	0.161	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.15
5	0.7046	1151.7	1172.0	1168.4	0.893	3.301	72.516	20.771	2.263	0.076	0.157	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.00
6	0.7109	1156.9	1177.4	1173.8	1.043	3.344	71.424	21.653	2.253	0.079	0.176	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.15
7	0.7033	1150.5	1170.8	1167.3	0.873	3.285	72.582	20.880	2.151	0.068	0.141	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1392.82
8	0.7036	1150.7	1171.0	1167.4	0.883	3.285	72.663	20.703	2.212	0.072	0.156	0.011	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.70
9	0.7039	1151.3	1171.7	1168.1	0.886	3.270	72.635	20.701	2.255	0.075	0.157	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.23
10	0.7029	1149.6	1169.9	1166.2	0.879	3.285	72.910	20.374	2.286	0.077	0.161	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.15
11	0.7078	1156.7	1177.2	1173.4	0.897	3.282	72.184	20.898	2.422	0.089	0.195	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1395.90
12	0.7054	1153.1	1173.5	1169.8	0.890	3.291	72.396	20.866	2.300	0.076	0.158	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.94
13	0.7045	1151.6	1172.0	1168.3	0.880	3.313	72.584	20.647	2.317	0.076	0.159	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.01
14	0.7049	1152.1	1172.5	1168.6	0.889	3.307	72.626	20.556	2.336	0.079	0.174	0.015	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1393.08
15	0.7078	1157.0	1177.5	1173.7	0.896	3.266	72.211	20.869	2.432	0.090	0.199	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1396.24
16	0.7042	1150.5	1170.9	1167.1	0.900	3.322	72.667	20.554	2.286	0.077	0.166	0.012	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1391.93
17	0.7048	1151.7	1172.1	1168.4	0.905	3.296	72.550	20.703	2.273	0.078	0.168	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.83
18	0.7060	1154.0	1174.4	1170.6	0.897	3.279	72.352	20.877	2.323	0.078	0.167	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.40
19	0.7026	1147.8	1168.1	1164.0	0.888	3.349	73.346	19.707	2.323	0.090	0.226	0.033	0.037	0.000	0.000	0.000	0.000	0.000	0.000	1390.05
20	0.7063	1154.7	1175.1	1171.4	0.894	3.277	72.440	20.664	2.423	0.087	0.186	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.85
21	0.7050	1152.8	1173.2	1169.5	0.885	3.278	72.586	20.626	2.341	0.082	0.174	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.93
22	0.7043	1151.6	1172.0	1168.4	0.895	3.271	72.615	20.676	2.281	0.077	0.161	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.24
23	0.7049	1151.2	1171.6	1167.9	0.923	3.308	72.512	20.732	2.256	0.077	0.165	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.17
24	0.7040	1150.4	1170.8	1167.1	0.907	3.296	72.630	20.676	2.237	0.074	0.157	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1392.10
25	0.7036	1150.4	1170.8	1167.1	0.890	3.288	72.815	20.404	2.332	0.079	0.166	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.45
26	0.7043	1151.4	1171.8	1167.9	0.883	3.301	72.708	20.498	2.331	0.080	0.170	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1392.90
27	0.7157	1160.6	1181.1	1175.0	0.913	3.769	71.054	21.141	2.707	0.107	0.257	0.023	0.031	0.000	0.000	0.000	0.000	0.000	0.000	1392.89
28	0.7023	1150.8	1171.2	1168.1	0.813	3.254	72.938	20.447	2.307	0.074	0.147	0.009	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1394.27
29	0.7075	1157.2	1177.7	1174.6	0.889	3.239	72.174	20.964	2.451	0.083	0.175	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1396.85
30	0.7088	1158.6	1179.2	1175.5	0.889	3.271	72.071	20.942	2.498	0.092	0.203	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1397.25
31	0.7077	1156.9	1177.3	1173.6	0.889	3.280	72.210	20.861	2.435	0.090	0.199	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1396.16
Avg	0.7053	1153.0	1173.2	1169.4	0.891	3.303	72.495	20.703	2.327	0.080	0.172	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.58

Zone 2b1

Source Daily Summary

March 2018

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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7381	1172.9	1193.7	1190.4	0.883	5.156	67.722	21.698	4.001	0.152	0.343	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1386.09	
2	0.7360	1171.5	1192.3	1189.2	0.875	5.067	68.000	21.605	3.934	0.148	0.333	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1386.40	
3	0.7355	1170.5	1191.2	1188.1	0.882	5.073	68.086	21.533	3.906	0.148	0.334	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1385.62	
4	0.7373	1171.5	1192.3	1189.2	0.885	5.169	67.838	21.568	4.007	0.152	0.342	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1385.23	
5	0.7380	1171.7	1192.4	1189.3	0.885	5.228	67.709	21.617	4.022	0.153	0.347	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1384.72	
6	0.7391	1172.8	1193.6	1190.4	0.935	5.181	67.579	21.738	4.014	0.156	0.356	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1385.05	
7	0.7368	1171.5	1192.3	1189.1	0.894	5.110	67.956	21.508	3.992	0.153	0.348	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1385.66	
8	0.7384	1173.8	1194.6	1191.4	0.893	5.116	67.860	21.410	4.155	0.159	0.364	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1386.88	
9	0.7401	1177.4	1198.2	1195.1	0.886	5.075	67.665	21.492	4.306	0.162	0.370	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.46	
10	0.7404	1177.6	1198.5	1195.3	0.883	5.089	67.633	21.494	4.323	0.162	0.371	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1389.48	
11	0.7427	1179.9	1200.7	1197.6	0.891	5.157	67.365	21.518	4.454	0.172	0.395	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1389.95	
12	0.7416	1177.8	1198.7	1195.5	0.894	5.170	67.445	21.548	4.357	0.165	0.377	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1388.62	
13	0.7427	1180.0	1200.9	1197.7	0.882	5.166	67.346	21.515	4.496	0.167	0.382	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1390.08	
14	0.7429	1179.7	1200.6	1197.4	0.888	5.188	67.356	21.457	4.500	0.171	0.392	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1389.59	
15	0.7444	1184.0	1204.9	1201.7	0.883	5.075	67.249	21.541	4.615	0.176	0.407	0.025	0.029	0.000	0.000	0.000	0.000	0.000	1393.20	
16	0.7416	1179.2	1200.1	1196.9	0.885	5.100	67.552	21.435	4.422	0.170	0.389	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1390.22	
17	0.7414	1178.7	1199.5	1196.4	0.888	5.114	67.552	21.437	4.409	0.168	0.385	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1389.76	
18	0.7439	1182.5	1203.5	1200.3	0.885	5.109	67.310	21.479	4.582	0.176	0.407	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1392.02	
19	0.7436	1182.2	1203.1	1199.8	0.882	5.111	67.540	21.134	4.644	0.194	0.438	0.027	0.030	0.000	0.000	0.000	0.000	0.000	1391.79	
20	0.7461	1186.1	1207.1	1203.7	0.886	5.096	67.208	21.341	4.764	0.206	0.440	0.027	0.031	0.000	0.000	0.000	0.000	0.000	1394.07	
21	0.7444	1184.7	1205.6	1202.4	0.879	5.038	67.330	21.412	4.708	0.174	0.407	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1394.03	
22	0.7440	1185.6	1206.5	1203.3	0.880	4.945	67.377	21.482	4.703	0.168	0.394	0.024	0.027	0.000	0.000	0.000	0.000	0.000	1395.45	
23	0.7445	1184.8	1205.8	1202.6	0.889	5.027	67.305	21.430	4.725	0.174	0.402	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1394.08	
24	0.7450	1186.0	1207.0	1203.8	0.889	5.002	67.239	21.493	4.750	0.174	0.402	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1394.98	
25	0.7457	1186.6	1207.6	1204.4	0.877	5.050	67.208	21.374	4.846	0.180	0.414	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1395.02	
26	0.7434	1182.9	1203.8	1200.6	0.883	5.048	67.406	21.432	4.607	0.173	0.401	0.024	0.027	0.000	0.000	0.000	0.000	0.000	1392.86	
27	0.7435	1177.6	1198.5	1195.3	0.879	5.390	67.116	21.558	4.461	0.168	0.384	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1386.56	
28	0.7449	1178.9	1199.7	1196.5	0.879	5.445	66.906	21.634	4.530	0.171	0.390	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1386.72	
29	0.7432	1177.7	1198.6	1195.4	0.879	5.351	67.151	21.587	4.446	0.165	0.377	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1387.01	
30	0.7376	1174.4	1195.2	1192.0	0.885	5.014	67.974	21.450	4.124	0.154	0.354	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1388.40	
31	0.7363	1174.0	1194.7	1191.6	0.892	4.920	68.131	21.475	4.047	0.150	0.344	0.020	0.022	0.000	0.000	0.000	0.000	0.000	1388.98	
Avg	0.7414	1179.0	1199.4	1196.2	0.886	5.122	67.520	21.497	4.382	0.167	0.380	0.022	0.024	0.000	0.000	0.000	0.000	0.000	1389.61	

Zone 2b2

Gas Composition and Properties

Effective March 1, 2018

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	0.7479		1.6671
Nitrogen, N2	4.2659		6.0528
Methane, C1	75.9137		61.6840
Ethane, C2	16.8102	4.4970	25.6019
Propane, C3	1.7504	0.4808	3.9094
iso-Butane, iC4	0.0550	0.0179	0.1619
n-Butane, nC4	0.1125	0.0354	0.3312
iso-Pentane, iC5	0.0077	0.0028	0.0281
n-Pentane, nC5	0.0088	0.0032	0.0322
Neo-Pentane, NeoC5			
Hexanes Plus, C6+	0.0000	0.0000	0.0000
Water, H2O			
Hydrogen Sulfide, H2S			
Oxygen, O2	0.3279		0.5314
Carbon Monoxide, CO			
Hydrogen, H2			
Helium, He			
Argon, Ar			
Totals	100.0000	5.0370	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	1117.91	
HV, Sat @ Base P, T	1098.45	
HV, Sat @ Sample P, T	1117.91	
Relative Density	0.6822	
C6+: 100		

Sample

Date: 04/02/2018 Pressure: 600.0
 Type: Composite Temperature: 0.0
 Tech: Eric Smeltzer H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 04/03/2018 Instrument: WBI- 76
 Cylinder: 396
 Tech: MB

Remarks:

Zone 264

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7045	1153.3	1173.7	1170.6	0.867	3.229	72.522	20.856	2.277	0.075	0.152	0.010	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1395.09
2	0.7037	1151.7	1172.1	1169.0	0.863	3.258	72.652	20.725	2.253	0.074	0.153	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.95
3	0.7024	1148.9	1169.3	1166.2	0.867	3.297	72.936	20.385	2.265	0.075	0.152	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1391.87
4	0.7040	1151.5	1171.9	1168.8	0.873	3.280	72.664	20.647	2.273	0.077	0.160	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.40
5	0.7051	1152.1	1172.5	1169.4	0.905	3.306	72.417	20.854	2.261	0.076	0.158	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.01
6	0.7112	1157.5	1178.0	1174.9	1.043	3.339	71.355	21.723	2.255	0.080	0.177	0.013	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1393.57
7	0.7034	1150.7	1171.0	1168.0	0.873	3.283	72.567	20.895	2.152	0.068	0.142	0.009	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1392.95
8	0.7040	1151.2	1171.6	1168.4	0.887	3.281	72.607	20.752	2.214	0.073	0.160	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.99
9	0.7042	1151.6	1172.0	1168.9	0.888	3.270	72.587	20.749	2.253	0.075	0.157	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.38
10	0.7030	1149.7	1170.1	1166.9	0.883	3.286	72.889	20.384	2.291	0.077	0.163	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1392.16
11	0.7087	1158.2	1178.7	1175.5	0.899	3.274	72.056	20.991	2.452	0.091	0.200	0.016	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1396.79
12	0.7054	1153.1	1173.5	1170.5	0.889	3.293	72.382	20.881	2.298	0.076	0.157	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.96
13	0.7048	1152.0	1172.4	1169.3	0.884	3.308	72.544	20.682	2.318	0.077	0.161	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1393.25
14	0.7068	1155.3	1175.7	1172.4	0.887	3.292	72.431	20.623	2.437	0.089	0.202	0.017	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1395.06
15	0.7076	1156.7	1177.1	1173.9	0.897	3.272	72.236	20.845	2.421	0.090	0.201	0.016	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1395.95
16	0.7039	1150.1	1170.4	1167.2	0.899	3.324	72.686	20.562	2.269	0.075	0.159	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.67
17	0.7051	1152.3	1172.7	1169.5	0.907	3.292	72.494	20.752	2.278	0.079	0.170	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.15
18	0.7059	1154.0	1174.4	1171.3	0.897	3.277	72.339	20.901	2.318	0.077	0.166	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1394.48
19	0.7037	1149.6	1170.0	1166.4	0.889	3.339	73.187	19.827	2.362	0.093	0.231	0.032	0.040	0.000	0.000	0.000	0.000	0.000	0.000	1391.16
20	0.7064	1154.8	1175.2	1172.1	0.893	3.276	72.429	20.672	2.427	0.087	0.187	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.97
21	0.7054	1153.4	1173.9	1170.7	0.888	3.272	72.518	20.688	2.345	0.083	0.176	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1394.31
22	0.7044	1151.8	1172.2	1169.2	0.897	3.267	72.577	20.727	2.271	0.076	0.161	0.011	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1393.39
23	0.7049	1151.0	1171.4	1168.3	0.927	3.313	72.513	20.727	2.251	0.077	0.165	0.012	0.015	0.000	0.000	0.000	0.000	0.000	0.000	1391.93
24	0.7039	1150.5	1170.8	1167.8	0.904	3.295	72.634	20.674	2.240	0.074	0.157	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1392.21
25	0.7039	1150.8	1171.2	1168.1	0.891	3.290	72.771	20.436	2.337	0.080	0.169	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1392.64
26	0.7043	1151.5	1171.9	1168.7	0.882	3.298	72.693	20.525	2.324	0.080	0.169	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.02
27	0.7055	1142.9	1163.2	1158.5	0.866	3.957	72.270	20.323	2.321	0.078	0.161	0.011	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1381.86
28	0.7030	1151.1	1171.5	1168.4	0.822	3.287	72.828	20.492	2.325	0.074	0.150	0.010	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1393.93
29	0.7078	1157.9	1178.4	1175.3	0.890	3.221	72.145	20.995	2.461	0.084	0.177	0.012	0.014	0.000	0.000	0.000	0.000	0.000	0.000	1397.36
30	0.7087	1158.7	1179.2	1176.0	0.885	3.269	72.084	20.929	2.501	0.093	0.205	0.016	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1397.39
31	0.7084	1157.7	1178.2	1174.9	0.897	3.279	72.150	20.875	2.457	0.093	0.208	0.018	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1396.47
Avg	0.7053	1153.0	1173.0	1169.8	0.892	3.307	72.489	20.713	2.320	0.080	0.171	0.013	0.016	0.000	0.000	0.000	0.000	0.000	0.000	1393.46

Zone 265

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7308	1167.1	1187.7	1183.7	0.820	4.934	68.855	21.131	3.749	0.143	0.324	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1385.91
2	0.7284	1165.3	1185.9	1181.9	0.802	4.844	69.182	21.043	3.645	0.137	0.307	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1386.11
3	0.7291	1165.4	1186.1	1182.0	0.826	4.864	69.083	21.083	3.654	0.138	0.310	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1385.61
4	0.7268	1162.1	1182.7	1178.6	0.835	4.839	69.565	20.615	3.654	0.139	0.313	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1383.80
5	0.7259	1161.6	1182.2	1178.3	0.807	4.820	69.643	20.658	3.589	0.136	0.306	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1384.18
6	0.7190	1153.6	1174.0	1170.2	0.755	4.748	70.637	20.109	3.312	0.125	0.278	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1381.12
7	0.7160	1149.8	1170.1	1166.3	0.735	4.719	71.191	19.662	3.258	0.124	0.276	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1379.55
8	0.7149	1148.5	1168.8	1165.0	0.710	4.740	71.403	19.423	3.291	0.123	0.274	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.96
9	0.7194	1156.0	1176.5	1172.7	0.709	4.697	70.781	19.837	3.517	0.129	0.291	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.74
10	0.7247	1163.0	1183.6	1179.7	0.733	4.737	69.924	20.440	3.682	0.136	0.306	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1386.93
11	0.7285	1166.2	1186.9	1182.9	0.776	4.833	69.401	20.633	3.849	0.143	0.323	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1387.11
12	0.7341	1172.0	1192.7	1188.7	0.807	4.952	68.623	20.984	4.069	0.157	0.358	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.69
13	0.7305	1168.8	1189.5	1185.5	0.772	4.866	69.108	20.792	3.939	0.147	0.332	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1388.29
14	0.7348	1172.1	1192.9	1188.8	0.812	5.009	68.569	20.865	4.181	0.157	0.358	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1388.11
15	0.7329	1172.2	1193.0	1188.9	0.780	4.871	68.912	20.746	4.122	0.158	0.362	0.024	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1390.06
16	0.7187	1157.4	1177.8	1174.0	0.683	4.597	70.876	19.892	3.499	0.129	0.287	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1385.92
17	0.7187	1155.2	1175.6	1171.8	0.707	4.691	70.948	19.655	3.531	0.132	0.296	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.32
18	0.7306	1168.1	1188.8	1184.8	0.785	4.893	69.288	20.427	4.049	0.155	0.354	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.42
19	0.7417	1181.1	1202.0	1197.8	0.862	5.024	67.699	21.277	4.502	0.175	0.405	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1392.27
20	0.7436	1184.1	1205.0	1200.7	0.860	5.028	67.672	21.033	4.697	0.192	0.450	0.032	0.036	0.000	0.000	0.000	0.000	0.000	0.000	1393.86
21	0.7438	1184.8	1205.8	1201.5	0.864	4.997	67.484	21.325	4.671	0.181	0.420	0.028	0.030	0.000	0.000	0.000	0.000	0.000	0.000	1394.61
22	0.7436	1185.6	1206.6	1202.4	0.864	4.926	67.498	21.401	4.678	0.174	0.403	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1395.80
23	0.7410	1182.8	1203.8	1199.6	0.852	4.872	67.866	21.228	4.572	0.169	0.389	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1394.93
24	0.7389	1180.5	1201.4	1197.3	0.843	4.830	68.143	21.127	4.468	0.163	0.375	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1394.20
25	0.7418	1183.5	1204.4	1200.3	0.845	4.918	67.807	21.143	4.660	0.173	0.399	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1394.94
26	0.7404	1181.8	1202.7	1198.5	0.834	4.908	68.038	20.982	4.615	0.171	0.396	0.026	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1394.20
27	0.7225	1159.7	1180.3	1176.3	0.778	4.656	70.345	20.143	3.608	0.133	0.298	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1385.28
28	0.7278	1162.8	1183.4	1179.4	0.763	4.991	69.519	20.355	3.865	0.144	0.321	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1383.77
29	0.7147	1151.1	1171.5	1167.6	0.736	4.518	71.577	19.370	3.368	0.125	0.271	0.017	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1382.34
30	0.7159	1151.4	1171.8	1168.0	0.733	4.616	71.392	19.397	3.417	0.127	0.280	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1381.54
31	0.7145	1150.2	1170.6	1166.7	0.749	4.533	71.600	19.361	3.321	0.124	0.273	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.45
Avg	0.7288	1167.0	1187.2	1183.2	0.788	4.822	69.440	20.521	3.904	0.147	0.333	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.23

Zone 271

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7315	1168.4	1189.1	1185.4	0.821	4.911	68.919	20.910	3.927	0.145	0.324	0.021	0.023	0.000					1386.86	
2	0.7294	1165.2	1185.9	1182.2	0.825	4.900	69.075	21.017	3.689	0.139	0.312	0.020	0.022	0.000					1385.11	
3	0.7290	1165.5	1186.1	1182.4	0.803	4.880	69.081	21.105	3.651	0.136	0.304	0.020	0.021	0.000					1385.77	
4	0.7298	1165.2	1185.8	1182.1	0.850	4.905	69.048	20.990	3.709	0.140	0.314	0.021	0.022	0.000					1384.63	
5	0.7246	1159.7	1180.2	1176.5	0.822	4.796	69.899	20.443	3.566	0.134	0.300	0.020	0.021	0.000					1383.03	
6	0.7230	1157.9	1178.4	1174.7	0.799	4.790	70.095	20.373	3.482	0.131	0.292	0.019	0.020	0.000					1382.41	
7	0.7169	1150.2	1170.6	1167.0	0.738	4.773	70.981	19.843	3.237	0.122	0.270	0.018	0.019	0.000					1379.14	
8	0.7155	1148.9	1169.2	1165.7	0.723	4.752	71.269	19.557	3.271	0.122	0.269	0.018	0.018	0.000					1378.81	
9	0.7170	1151.4	1171.8	1168.2	0.712	4.746	71.120	19.591	3.388	0.125	0.279	0.019	0.020	0.000					1380.48	
10	0.7227	1160.0	1180.6	1176.9	0.728	4.738	70.256	20.185	3.624	0.133	0.297	0.020	0.021	0.000					1385.25	
11	0.7246	1162.2	1182.8	1179.1	0.739	4.766	69.959	20.371	3.687	0.135	0.301	0.020	0.022	0.000					1386.02	
12	0.7317	1168.8	1189.5	1185.8	0.797	4.941	69.006	20.695	4.013	0.153	0.346	0.023	0.025	0.000					1387.14	
13	0.7317	1168.4	1189.0	1185.3	0.802	4.959	68.921	20.829	3.961	0.148	0.333	0.022	0.023	0.000					1386.60	
14	0.7317	1169.6	1190.3	1186.6	0.779	4.917	68.953	20.807	4.017	0.148	0.333	0.022	0.023	0.000					1388.13	
15	0.7363	1173.5	1194.3	1190.5	0.829	5.040	68.329	21.020	4.213	0.159	0.361	0.024	0.026	0.000					1388.31	
16	0.7272	1167.3	1187.9	1184.2	0.731	4.711	69.722	20.433	3.883	0.145	0.328	0.023	0.025	0.000					1389.57	
17	0.7175	1154.3	1174.8	1171.2	0.690	4.652	71.105	19.629	3.470	0.129	0.285	0.019	0.020	0.000					1383.46	
18	0.7237	1160.0	1180.5	1176.9	0.749	4.797	70.227	20.001	3.730	0.140	0.313	0.021	0.022	0.000					1384.28	
19	0.7353	1173.6	1194.3	1190.7	0.817	4.956	68.600	20.801	4.242	0.162	0.370	0.025	0.027	0.000					1389.37	
20	0.7424	1181.3	1202.2	1198.5	0.867	5.075	67.724	21.065	4.595	0.184	0.428	0.029	0.032	0.000					1391.77	
21	0.7450	1185.2	1206.2	1202.4	0.876	5.068	67.379	21.245	4.749	0.187	0.432	0.030	0.033	0.000					1393.91	
22	0.7439	1184.6	1205.6	1201.9	0.871	5.002	67.445	21.365	4.676	0.178	0.408	0.027	0.029	0.000					1394.39	
23	0.7426	1184.7	1205.7	1201.9	0.868	4.885	67.625	21.375	4.632	0.171	0.390	0.026	0.028	0.000					1395.64	
24	0.7402	1180.8	1201.7	1198.0	0.852	4.919	67.968	21.119	4.541	0.168	0.380	0.025	0.027	0.000					1393.33	
25	0.7390	1180.3	1201.2	1197.5	0.844	4.851	68.136	21.088	4.491	0.164	0.374	0.025	0.027	0.000					1393.89	
26	0.7428	1184.0	1205.0	1201.3	0.852	4.972	67.658	21.172	4.717	0.174	0.400	0.027	0.029	0.000					1394.62	
27	0.7305	1170.1	1190.8	1187.1	0.810	4.726	69.396	20.412	4.112	0.151	0.343	0.023	0.025	0.000					1389.88	
28	0.7294	1164.7	1185.3	1181.6	0.795	4.982	69.267	20.552	3.896	0.144	0.321	0.021	0.022	0.000					1384.40	
29	0.7216	1157.1	1177.6	1173.9	0.753	4.770	70.486	19.910	3.617	0.133	0.292	0.019	0.020	0.000					1382.87	
30	0.7113	1145.8	1166.1	1162.5	0.709	4.559	72.145	18.889	3.283	0.121	0.260	0.017	0.017	0.000					1379.22	
31	0.7171	1152.7	1173.1	1169.5	0.759	4.612	71.216	19.530	3.433	0.128	0.281	0.019	0.020	0.000					1381.84	
Avg	0.7292	1166.0	1187.1	1183.5	0.794	4.850	69.387	20.526	3.919	0.147	0.330	0.022	0.024	0.000					1386.78	

Zone 272

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7321	1169.0	1189.7	1186.2	0.824	4.926	68.837	20.938	3.960	0.146	0.326	0.021	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1386.99
2	0.7300	1165.7	1186.3	1182.9	0.830	4.922	68.977	21.068	3.708	0.140	0.313	0.020	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1385.06
3	0.7293	1165.6	1186.3	1182.8	0.807	4.892	69.031	21.128	3.661	0.137	0.304	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1385.70
4	0.7303	1165.6	1186.2	1182.8	0.852	4.923	68.960	21.044	3.722	0.141	0.315	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1384.65
5	0.7252	1160.1	1180.6	1177.3	0.825	4.819	69.801	20.495	3.584	0.135	0.301	0.019	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1382.99
6	0.7232	1157.9	1178.4	1175.1	0.801	4.807	70.060	20.384	3.488	0.131	0.291	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1382.19
7	0.7169	1150.1	1170.5	1167.2	0.740	4.784	70.968	19.841	3.239	0.122	0.270	0.018	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1378.95
8	0.7155	1148.6	1169.0	1165.8	0.724	4.761	71.273	19.549	3.267	0.122	0.269	0.018	0.018	0.000	0.000	0.000	0.000	0.000	0.000	1378.59
9	0.7170	1151.3	1171.7	1168.4	0.714	4.756	71.115	19.581	3.392	0.125	0.279	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1380.30
10	0.7228	1159.8	1180.3	1177.0	0.731	4.751	70.246	20.178	3.625	0.133	0.296	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1384.95
11	0.7247	1162.2	1182.7	1179.4	0.742	4.777	69.936	20.375	3.692	0.135	0.302	0.020	0.021	0.000	0.000	0.000	0.000	0.000	0.000	1385.85
12	0.7321	1169.2	1189.9	1186.5	0.801	4.953	68.951	20.712	4.030	0.154	0.349	0.024	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1387.14
13	0.7316	1168.1	1188.8	1185.4	0.804	4.966	68.927	20.821	3.956	0.148	0.333	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1386.36
14	0.7320	1169.7	1190.4	1187.0	0.782	4.934	68.914	20.811	4.031	0.149	0.334	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1387.95
15	0.7367	1173.6	1194.4	1191.0	0.835	5.059	68.279	21.025	4.230	0.159	0.362	0.024	0.026	0.000	0.000	0.000	0.000	0.000	0.000	1388.06
16	0.7270	1166.7	1187.4	1184.0	0.731	4.726	69.751	20.399	3.874	0.145	0.328	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1389.12
17	0.7174	1154.1	1174.6	1171.3	0.690	4.660	71.106	19.628	3.463	0.128	0.284	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1383.26
18	0.7235	1159.5	1180.1	1176.8	0.751	4.811	70.242	19.979	3.725	0.139	0.312	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1383.89
19	0.7355	1173.8	1194.6	1191.1	0.819	4.960	68.567	20.818	4.249	0.163	0.371	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1389.42
20	0.7426	1181.5	1202.4	1198.9	0.869	5.079	67.681	21.102	4.595	0.185	0.428	0.030	0.032	0.000	0.000	0.000	0.000	0.000	0.000	1391.84
21	0.7451	1185.2	1206.2	1202.6	0.876	5.073	67.371	21.244	4.752	0.187	0.434	0.030	0.033	0.000	0.000	0.000	0.000	0.000	0.000	1393.86
22	0.7440	1184.8	1205.8	1202.3	0.871	5.005	67.423	21.375	4.682	0.178	0.409	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1394.47
23	0.7428	1184.9	1205.8	1202.3	0.869	4.890	67.592	21.395	4.639	0.171	0.390	0.026	0.028	0.000	0.000	0.000	0.000	0.000	0.000	1395.67
24	0.7403	1180.8	1201.7	1198.3	0.856	4.928	67.941	21.127	4.547	0.168	0.381	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1393.22
25	0.7390	1180.1	1201.0	1197.6	0.845	4.866	68.133	21.075	4.492	0.164	0.373	0.025	0.027	0.000	0.000	0.000	0.000	0.000	0.000	1393.59
26	0.7429	1183.9	1204.9	1201.5	0.854	4.984	67.639	21.171	4.722	0.174	0.400	0.027	0.029	0.000	0.000	0.000	0.000	0.000	0.000	1394.42
27	0.7312	1170.9	1191.6	1188.2	0.812	4.741	69.301	20.445	4.155	0.153	0.346	0.023	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1390.17
28	0.7300	1165.2	1185.8	1182.4	0.799	5.003	69.176	20.588	3.921	0.145	0.324	0.021	0.022	0.000	0.000	0.000	0.000	0.000	0.000	1384.42
29	0.7215	1156.8	1177.3	1174.0	0.754	4.778	70.490	19.903	3.612	0.133	0.291	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	1382.64
30	0.7113	1145.6	1165.9	1162.7	0.710	4.569	72.134	18.889	3.282	0.121	0.260	0.017	0.017	0.000	0.000	0.000	0.000	0.000	0.000	1379.02
31	0.7169	1152.3	1172.7	1169.5	0.760	4.616	71.245	19.504	3.428	0.128	0.280	0.019	0.020	0.000	0.000	0.000	0.000	0.000	0.000	1381.60
Avg	0.7294	1167.0	1187.2	1183.8	0.796	4.862	69.357	20.535	3.927	0.147	0.331	0.022	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1386.66

Zone 273

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6641	1107.4	1127.0	1124.0	0.380	2.981	78.810	16.632	1.114	0.029	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1379.62
2	0.6648	1104.7	1124.3	1121.3	0.363	3.235	78.715	16.390	1.208	0.032	0.051	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1375.57
3	0.6632	1100.7	1120.2	1117.2	0.374	3.307	79.091	15.903	1.230	0.034	0.054	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1372.27
4	0.6400	1073.4	1092.4	1089.5	0.566	2.495	83.637	12.442	0.803	0.020	0.032	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1362.33
5	0.6529	1092.9	1112.3	1109.4	0.440	2.711	80.952	14.923	0.918	0.020	0.032	0.002	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1373.33
6	0.6581	1094.2	1113.6	1110.6	0.341	3.274	79.950	15.235	1.126	0.027	0.041	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1369.46
7	0.6534	1081.4	1100.5	1097.6	0.246	3.756	80.816	13.931	1.166	0.031	0.046	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1358.27
8	0.6539	1082.6	1101.7	1098.8	0.230	3.761	80.714	14.010	1.206	0.029	0.043	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1359.18
9	0.6585	1091.7	1111.0	1108.0	0.202	3.674	79.760	15.086	1.205	0.027	0.039	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1365.91
10	0.6637	1100.9	1120.4	1117.4	0.200	3.610	78.744	16.116	1.258	0.027	0.039	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1371.97
11	0.6638	1099.5	1119.0	1116.0	0.244	3.637	78.800	15.962	1.273	0.031	0.047	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1370.16
12	0.6626	1098.0	1117.4	1114.4	0.229	3.635	78.972	15.874	1.211	0.029	0.043	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1369.53
13	0.6673	1107.5	1127.1	1124.0	0.203	3.542	77.948	17.054	1.181	0.027	0.040	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.46
14	0.6665	1103.9	1123.4	1120.4	0.252	3.605	78.346	16.373	1.334	0.033	0.050	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1372.87
15	0.6677	1105.8	1125.4	1122.3	0.246	3.618	78.047	16.707	1.293	0.032	0.050	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1373.94
16	0.6682	1104.7	1124.3	1121.3	0.272	3.686	78.073	16.482	1.387	0.036	0.056	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1372.15
17	0.6592	1090.8	1110.1	1107.1	0.265	3.705	79.741	14.952	1.243	0.034	0.052	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1363.99
18	0.6595	1090.2	1109.5	1106.5	0.288	3.725	79.782	14.810	1.294	0.036	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1363.03
19	0.6682	1102.5	1122.0	1118.9	0.307	3.767	78.293	15.993	1.509	0.044	0.076	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.36
20	0.6698	1106.9	1126.5	1123.5	0.298	3.665	77.840	16.653	1.433	0.039	0.063	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1373.19
21	0.6710	1107.7	1127.3	1124.2	0.352	3.643	77.865	16.430	1.568	0.048	0.082	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1372.93
22	0.6929	1143.9	1164.1	1160.9	0.621	3.096	74.387	19.625	2.033	0.081	0.140	0.009	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1395.11
23	0.6806	1121.5	1141.4	1138.2	0.487	3.502	76.404	17.589	1.833	0.064	0.108	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1380.09
24	0.6671	1107.2	1126.8	1123.8	0.396	3.246	78.502	16.340	1.415	0.036	0.059	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1376.35
25	0.6698	1105.5	1125.1	1122.1	0.377	3.632	78.054	16.270	1.541	0.045	0.074	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1371.46
26	0.6681	1103.2	1122.8	1119.8	0.390	3.590	78.325	16.121	1.454	0.042	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1370.40
27	0.6745	1112.9	1132.6	1128.4	0.527	3.390	77.603	16.556	1.745	0.057	0.107	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1375.91
28	0.6672	1104.8	1124.3	1121.3	0.417	3.373	78.594	16.025	1.462	0.045	0.074	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1373.15
29	0.6662	1104.0	1123.5	1120.4	0.532	3.144	79.068	15.587	1.518	0.053	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1373.27
30	0.6646	1097.2	1116.6	1113.6	0.453	3.529	79.399	14.826	1.625	0.058	0.097	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1366.42
31	0.6585	1087.3	1106.6	1103.5	0.414	3.622	80.394	13.944	1.481	0.051	0.082	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1360.32
Avg	0.6647	1101.0	1120.6	1117.6	0.352	3.457	78.891	15.834	1.357	0.039	0.063	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1371.23

Zone 28

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6719	1112.9	1132.6	1129.8	0.254	3.571	77.238	17.493	1.347	0.035	0.058	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1378.48
2	0.6669	1104.3	1123.9	1121.1	0.245	3.632	78.217	16.494	1.321	0.033	0.054	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1373.04
3	0.6720	1118.1	1137.9	1135.1	0.129	3.444	76.810	18.449	1.115	0.020	0.031	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1384.95
4	0.6731	1117.1	1136.9	1134.1	0.194	3.517	76.794	18.180	1.242	0.027	0.044	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1382.50
5	0.6662	1103.0	1122.6	1119.8	0.225	3.676	78.296	16.413	1.309	0.030	0.047	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1372.13
6	0.6540	1083.5	1102.7	1100.0	0.233	3.706	80.665	14.133	1.181	0.030	0.046	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1360.36
7	0.6521	1080.2	1099.4	1096.6	0.228	3.734	81.064	13.696	1.200	0.029	0.044	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1358.22
8	0.6566	1089.0	1108.3	1105.6	0.191	3.673	80.121	14.733	1.212	0.026	0.039	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1364.65
9	0.6617	1098.4	1117.8	1115.1	0.188	3.597	79.115	15.770	1.261	0.026	0.039	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1370.93
10	0.6611	1096.0	1115.4	1112.6	0.224	3.624	79.301	15.515	1.256	0.029	0.045	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1368.64
11	0.6613	1097.2	1116.6	1113.9	0.204	3.605	79.158	15.764	1.196	0.027	0.042	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1369.89
12	0.6672	1108.5	1128.2	1125.4	0.182	3.500	77.916	17.159	1.176	0.025	0.039	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1377.97
13	0.6659	1103.3	1122.9	1120.1	0.248	3.595	78.459	16.251	1.358	0.033	0.052	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1372.81
14	0.6664	1104.9	1124.4	1121.7	0.220	3.591	78.221	16.622	1.266	0.029	0.047	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1374.22
15	0.6666	1103.0	1122.5	1119.8	0.256	3.670	78.334	16.270	1.375	0.034	0.054	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1371.66
16	0.6604	1092.8	1112.1	1109.4	0.262	3.693	79.555	15.089	1.308	0.034	0.054	0.004	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1365.40
17	0.6580	1088.7	1107.9	1105.2	0.271	3.706	80.025	14.623	1.279	0.034	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1362.71
18	0.6643	1098.9	1118.3	1115.6	0.273	3.678	78.836	15.735	1.377	0.036	0.057	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1368.90
19	0.6676	1104.1	1123.6	1120.8	0.285	3.651	78.241	16.295	1.423	0.037	0.061	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1372.00
20	0.6729	1112.5	1132.2	1129.4	0.420	3.430	77.651	16.697	1.649	0.053	0.090	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1376.95
21	0.6887	1140.0	1160.2	1157.3	0.479	3.149	74.703	19.721	1.761	0.063	0.112	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1394.82
22	0.6859	1131.8	1151.9	1149.0	0.558	3.257	75.606	18.395	1.975	0.070	0.123	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1387.59
23	0.6661	1103.8	1123.3	1120.5	0.369	3.402	78.719	15.926	1.478	0.038	0.064	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1373.16
24	0.6686	1105.2	1124.7	1121.9	0.367	3.550	78.274	16.156	1.534	0.041	0.071	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1372.36
25	0.6682	1101.8	1121.3	1118.5	0.353	3.744	78.276	16.004	1.504	0.041	0.073	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1368.58
26	0.6618	1100.2	1119.7	1116.9	0.454	3.085	79.604	15.405	1.339	0.039	0.066	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1373.17
27	0.6647	1101.9	1121.4	1118.6	0.385	3.357	79.017	15.692	1.428	0.042	0.071	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1372.30
28	0.6678	1107.2	1126.8	1124.0	0.507	3.138	78.758	15.867	1.581	0.051	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.68
29	0.6600	1092.7	1112.0	1109.2	0.438	3.393	80.145	14.387	1.494	0.049	0.084	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1365.66
30	0.6610	1091.3	1110.6	1107.9	0.433	3.577	80.039	14.195	1.599	0.054	0.090	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1362.91
31	0.6530	1079.8	1098.9	1096.6	0.363	3.656	81.211	13.269	1.370	0.044	0.071	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1356.75
Avg	0.6656	1102.0	1121.8	1119.1	0.304	3.536	78.657	16.013	1.384	0.037	0.062	0.004	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1371.92

Zone 31

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6520	1074.5	1093.5	1090.1	0.364	3.865	81.589	12.577	1.480	0.044	0.071	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1351.01
2	0.6553	1081.6	1100.7	1097.4	0.328	3.791	80.929	13.302	1.537	0.040	0.064	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1356.62
3	0.6547	1079.2	1098.3	1094.9	0.348	3.854	81.048	13.111	1.522	0.042	0.066	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1354.19
4	0.6525	1075.7	1094.7	1091.4	0.328	3.892	81.400	12.804	1.466	0.040	0.062	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1352.07
5	0.6405	1057.7	1076.5	1073.2	0.315	3.882	83.607	10.848	1.245	0.037	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1341.81
6	0.6439	1064.0	1082.8	1079.4	0.291	3.852	82.919	11.575	1.267	0.035	0.052	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1346.23
7	0.6458	1067.8	1086.7	1083.3	0.280	3.810	82.533	12.003	1.279	0.034	0.051	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1349.13
8	0.6496	1074.2	1093.2	1089.7	0.288	3.771	81.895	12.549	1.398	0.036	0.054	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1353.14
9	0.6529	1078.1	1097.2	1093.7	0.325	3.793	81.305	13.020	1.449	0.039	0.060	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1354.59
10	0.6496	1073.0	1092.0	1088.6	0.312	3.808	81.878	12.537	1.362	0.037	0.056	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1351.67
11	0.6523	1077.1	1096.2	1092.7	0.327	3.790	81.421	12.919	1.434	0.039	0.060	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1354.02
12	0.6548	1081.3	1100.5	1097.1	0.334	3.754	80.996	13.308	1.496	0.040	0.063	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1356.80
13	0.6548	1080.1	1099.2	1095.7	0.353	3.809	81.037	13.165	1.514	0.043	0.068	0.006	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1355.10
14	0.6570	1082.7	1101.8	1098.4	0.362	3.839	80.674	13.421	1.578	0.045	0.072	0.006	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1356.14
15	0.6517	1074.6	1093.6	1090.3	0.358	3.842	81.628	12.578	1.471	0.044	0.069	0.006	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1351.47
16	0.6508	1073.1	1092.1	1088.8	0.356	3.854	81.797	12.414	1.457	0.043	0.069	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1350.45
17	0.6539	1077.3	1096.4	1093.1	0.380	3.847	81.293	12.813	1.536	0.046	0.074	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1352.59
18	0.6664	1096.5	1116.0	1112.5	0.498	3.673	79.266	14.545	1.842	0.061	0.102	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1363.76
19	0.6640	1093.5	1112.8	1109.4	0.486	3.646	79.688	14.235	1.773	0.060	0.100	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1362.48
20	0.6812	1118.0	1137.8	1134.8	0.680	3.471	77.000	16.364	2.233	0.085	0.149	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1375.36
21	0.6797	1116.5	1136.2	1133.2	0.553	3.626	76.922	16.583	2.110	0.071	0.122	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1374.89
22	0.6862	1132.4	1152.4	1148.9	0.989	2.595	76.733	16.958	2.409	0.105	0.187	0.012	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1387.90
23	0.6429	1081.8	1101.0	1097.5	0.940	1.682	83.995	12.144	1.109	0.043	0.077	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1369.92
24	0.6434	1082.5	1101.7	1098.3	0.932	1.697	83.911	12.190	1.138	0.044	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1370.31
25	0.6558	1085.8	1105.0	1101.9	0.533	3.277	81.115	13.423	1.515	0.047	0.079	0.005	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1361.32
26	0.6602	1090.2	1109.5	1106.4	0.519	3.438	80.365	13.867	1.656	0.053	0.089	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1362.32
27	0.6606	1089.0	1108.2	1105.0	0.462	3.646	80.203	13.861	1.677	0.053	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1360.26
28	0.6621	1089.2	1108.5	1105.5	0.425	3.821	79.859	14.042	1.706	0.051	0.085	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1359.12
29	0.6624	1090.0	1109.3	1106.1	0.462	3.744	80.011	13.811	1.794	0.061	0.104	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1359.75
30	0.6544	1078.8	1097.9	1094.8	0.478	3.651	81.455	12.651	1.599	0.057	0.094	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1353.95
31	0.6652	1097.0	1116.4	1113.1	0.610	3.352	79.805	14.147	1.872	0.073	0.124	0.010	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1365.61
Avg	0.6567	1084.0	1103.5	1100.2	0.459	3.560	80.912	13.347	1.578	0.050	0.082	0.006	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1358.52

Zone 32

Source Daily Summary

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6901	1155.5	1175.9	1170.9	0.000	3.074	72.549	23.662	0.699	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.34
2	0.6898	1155.0	1175.5	1170.6	0.000	3.080	72.577	23.654	0.675	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.00
3	0.6903	1155.7	1176.1	1171.0	0.000	3.083	72.496	23.713	0.694	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.35
4	0.6900	1154.3	1174.8	1170.0	0.000	3.142	72.531	23.627	0.686	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.96
5	0.6890	1154.7	1175.1	1170.6	0.000	3.025	72.682	23.665	0.613	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.45
6	0.6898	1155.5	1175.9	1171.1	0.000	3.055	72.539	23.750	0.642	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.54
7	0.6901	1154.5	1174.9	1169.9	0.000	3.142	72.496	23.673	0.675	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.07
8	0.6898	1154.4	1174.9	1169.7	0.000	3.112	72.580	23.620	0.673	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.33
9	0.6890	1154.4	1174.9	1169.8	0.000	3.039	72.744	23.525	0.678	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.16
10	0.6892	1154.8	1175.2	1170.6	0.000	3.036	72.689	23.602	0.658	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.37
11	0.6895	1155.4	1175.8	1170.8	0.000	3.029	72.662	23.603	0.691	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.76
12	0.6893	1155.5	1176.0	1170.8	0.000	3.000	72.720	23.565	0.699	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.15
13	0.6908	1156.8	1177.3	1172.1	0.000	3.065	72.426	23.770	0.724	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.15
14	0.6907	1155.8	1176.3	1171.4	0.000	3.118	72.407	23.757	0.705	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.07
15	0.6906	1154.7	1175.2	1170.4	0.000	3.178	72.415	23.690	0.703	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.78
16	0.6900	1154.7	1175.1	1170.3	0.000	3.118	72.542	23.634	0.690	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.42
17	0.6908	1155.3	1175.7	1170.8	0.000	3.154	72.403	23.718	0.711	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.36
18	0.6903	1155.4	1175.9	1171.0	0.000	3.105	72.481	23.710	0.689	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.96
19	0.6893	1154.1	1174.6	1169.3	0.000	3.085	72.700	23.506	0.694	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.46
20	0.6893	1154.5	1174.9	1169.9	0.000	3.061	72.686	23.567	0.671	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.91
21	0.6890	1154.2	1174.7	1169.5	0.000	3.047	72.752	23.513	0.673	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.93
22	0.6896	1154.0	1174.5	1170.1	0.008	3.113	72.608	23.577	0.678	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.00
23	0.6900	1153.4	1173.9	1168.8	0.000	3.192	72.512	23.613	0.668	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1409.92
24	0.6900	1153.7	1174.2	1169.5	0.000	3.179	72.521	23.603	0.683	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.23
25	0.6900	1154.0	1174.4	1169.5	0.000	3.159	72.535	23.604	0.686	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.58
26	0.6899	1153.5	1173.9	1169.1	0.000	3.183	72.557	23.547	0.698	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.05
27	0.6885	1152.8	1173.2	1168.4	0.000	3.090	72.844	23.373	0.678	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.67
28	0.6882	1153.4	1173.9	1169.0	0.000	3.023	72.895	23.405	0.662	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.78
29	0.6872	1153.5	1173.9	1168.9	0.000	2.932	73.102	23.304	0.648	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.74
30	0.6886	1152.5	1172.9	1168.5	0.000	3.121	72.773	23.455	0.637	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.16
31	0.6893	1153.2	1173.6	1168.9	0.000	3.146	72.641	23.538	0.660	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1410.29
Avg	0.6896	1154.0	1174.9	1170.0	0.000	3.093	72.615	23.598	0.679	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1411.58

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		
Cricodentherm		
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

March 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 Drv	Heating Value As Del	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6933	1143.2	1163.5	1160.4	0.977	2.634	73.697	21.293	1.305	0.027	0.058	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1394.07	
2	0.6841	1127.6	1147.6	1144.6	0.990	2.707	75.127	20.218	0.862	0.027	0.058	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1384.17	
3	0.6869	1132.6	1152.7	1149.6	0.988	2.659	74.896	20.241	1.075	0.040	0.087	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1387.55	
4	0.6879	1134.4	1154.5	1151.5	0.983	2.657	74.794	20.159	1.316	0.027	0.056	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1388.72	
5	0.6847	1128.8	1148.8	1145.8	0.985	2.695	74.788	20.718	0.783	0.009	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1385.11	
6	0.6808	1122.6	1142.5	1139.5	0.994	2.690	75.533	20.088	0.620	0.021	0.046	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1381.46	
7	0.6816	1124.4	1144.4	1141.4	0.982	2.671	75.448	20.124	0.700	0.022	0.046	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1382.92	
8	0.6843	1129.0	1149.0	1146.0	0.971	2.662	75.202	20.115	0.939	0.031	0.068	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1385.77	
9	0.6893	1137.0	1157.2	1154.1	0.976	2.631	74.694	20.205	1.339	0.043	0.095	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1390.54	
10	0.6894	1137.9	1158.0	1155.0	0.968	2.609	74.047	21.446	0.813	0.033	0.071	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1391.45	
11	0.6905	1139.7	1159.9	1156.8	0.974	2.590	74.037	21.268	1.009	0.035	0.074	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1392.57	
12	0.6869	1133.2	1153.2	1150.2	0.982	2.635	74.766	20.538	0.928	0.041	0.092	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1388.22	
13	0.6881	1134.2	1154.3	1151.3	0.985	2.683	74.396	20.894	0.950	0.027	0.056	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1388.28	
14	0.6887	1135.7	1155.8	1152.8	0.983	2.653	74.024	21.538	0.722	0.023	0.049	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1389.52	
15	0.6931	1144.5	1164.7	1161.7	0.962	2.571	73.273	22.252	0.837	0.030	0.064	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1395.71	
16	0.6922	1141.9	1162.2	1159.1	0.961	2.639	73.372	22.185	0.730	0.032	0.070	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1393.58	
17	0.6976	1149.8	1170.1	1167.0	0.955	2.673	72.687	22.394	1.192	0.029	0.060	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1397.73	
18	0.7007	1156.5	1177.0	1173.9	0.952	2.557	72.282	22.703	1.405	0.030	0.061	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1402.83	
19	0.6946	1146.5	1166.8	1163.8	0.962	2.582	73.218	22.047	1.087	0.030	0.063	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1396.74	
20	0.6962	1149.2	1169.5	1166.4	0.956	2.580	72.684	22.763	0.942	0.022	0.045	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1398.38	
21	0.6904	1138.7	1158.9	1155.8	0.973	2.643	74.167	20.909	1.229	0.024	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1391.48	
22	0.6938	1144.5	1164.8	1161.8	0.964	2.623	73.557	21.452	1.329	0.023	0.046	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1395.14	
23	0.6924	1142.0	1162.3	1159.3	0.960	2.653	73.247	22.265	0.856	0.006	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1393.53	
24	0.6837	1127.8	1147.7	1144.7	0.973	2.682	74.809	20.898	0.614	0.007	0.015	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1384.87	
25	0.6825	1126.1	1146.0	1143.1	0.973	2.675	75.279	20.218	0.817	0.012	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1383.95	
26	0.6808	1123.7	1143.6	1140.6	0.971	2.663	75.654	19.899	0.718	0.028	0.058	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1382.73	
27	0.6928	1143.0	1163.2	1160.1	0.962	2.628	74.226	20.329	1.763	0.028	0.056	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1394.17	
28	0.6915	1141.3	1161.5	1158.5	0.966	2.601	73.996	21.062	1.304	0.021	0.044	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1393.52	-18.14
29	0.6995	1154.4	1174.8	1171.8	0.955	2.568	72.626	22.226	1.548	0.023	0.047	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1401.44	-17.65
30	0.6909	1139.7	1159.9	1156.8	0.973	2.626	74.367	20.490	1.424	0.033	0.073	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1392.18	-21.43
31	0.6916	1140.9	1161.1	1157.9	0.975	2.618	74.168	20.814	1.265	0.041	0.095	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1392.82	-20.92
Avg	0.6897	1138.0	1157.9	1154.9	0.972	2.637	74.162	21.090	1.046	0.027	0.057	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1391.02	-19.54

Zone 43

March-18

ZONE 550

MANDAN BORDER

NBPL - St Anthony					01970 WBI - Mandan Border			Weighted		
Begin Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU		
3/1/2018	3/2/2018	1677	1798	1.0722	2705	3046	1.1270	1.106	3/1/2018	
3/2/2018	3/3/2018	1876	2011	1.0719	2749	3095	1.1242	1.103	3/2/2018	
3/3/2018	3/4/2018	1846	1976	1.0702	1894	2117	1.1201	1.095	3/3/2018	
3/4/2018	3/5/2018	1841	1967	1.0685	2664	2910	1.0924	1.083	3/4/2018	
3/5/2018	3/6/2018	1855	1975	1.0648	4110	4571	1.1123	1.098	3/5/2018	
3/6/2018	3/7/2018	1816	1922	1.0586	4298	4788	1.1136	1.097	3/6/2018	
3/7/2018	3/8/2018	1878	1998	1.0642	4466	4917	1.1005	1.090	3/7/2018	
3/8/2018	3/9/2018	1853	1966	1.0608	3664	4038	1.1017	1.088	3/8/2018	
3/9/2018	3/10/2018	1863	1984	1.0645	2953	3281	1.1110	1.093	3/9/2018	
3/10/2018	3/11/2018	1867	1988	1.0652	3354	3758	1.1203	1.101	3/10/2018	
3/11/2018	3/12/2018	1891	2019	1.0678	2789	3118	1.1190	1.098	3/11/2018	
3/12/2018	3/13/2018	1872	2003	1.0699	2742	3068	1.1174	1.098	3/12/2018	
3/13/2018	3/14/2018	1856	1992	1.0734	2346	2646	1.1271	1.103	3/13/2018	
3/14/2018	3/15/2018	1832	1963	1.0717	2237	2521	1.1234	1.100	3/14/2018	
3/15/2018	3/16/2018	1906	2041	1.0708	3208	3613	1.1254	1.105	3/15/2018	
3/16/2018	3/17/2018	1829	1959	1.0712	2893	3251	1.1243	1.104	3/16/2018	
3/17/2018	3/18/2018	1842	1973	1.0713	2669	2964	1.1101	1.094	3/17/2018	
3/18/2018	3/19/2018	1850	1984	1.0724	2647	2938	1.1095	1.094	3/18/2018	
3/19/2018	3/20/2018	1844	1982	1.0746	2531	2837	1.1220	1.102	3/19/2018	
3/20/2018	3/21/2018	1842	1976	1.0726	2279	2566	1.1265	1.102	3/20/2018	
3/21/2018	3/22/2018	1829	1954	1.0682	1902	2152	1.1273	1.098	3/21/2018	
3/22/2018	3/23/2018	1853	1982	1.0693	2668	3105	1.1641	1.125	3/22/2018	
3/23/2018	3/24/2018	1817	1940	1.0678	3011	3439	1.1414	1.114	3/23/2018	
3/24/2018	3/25/2018	1862	1993	1.0705	2710	3054	1.1268	1.104	3/24/2018	
3/25/2018	3/26/2018	1855	1983	1.0688	2135	2402	1.1251	1.099	3/25/2018	
3/26/2018	3/27/2018	1859	1987	1.0686	2452	2752	1.1228	1.099	3/26/2018	
3/27/2018	3/28/2018	1868	1996	1.0682	1700	1924	1.1326	1.099	3/27/2018	
3/28/2018	3/29/2018	1847	1981	1.0721	2793	3143	1.1243	1.104	3/28/2018	
3/29/2018	3/30/2018	1867	2006	1.0743	2439	2731	1.1235	1.102	3/29/2018	
3/30/2018	3/31/2018	1882	2018	1.0725	4156	4640	1.1166	1.103	3/30/2018	
3/31/2018	4/1/2018	1849	1984	1.0732	4586	5075	1.1066	1.097	3/31/2018	
		57,324	61,301	1.0694	89,750	100,460	1.1206	1.1000		



Alliance Pipeline

DAILY ANALYSIS — USA
 ND07MD1 — Hankinson Sales
 March 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	1,151.241	0.6620	84.5256	8.9707	3.6581	0.3820	0.6810	0.0633	0.0538	0.0290	1.1656	0.4595	0.0115
2	1,149.846	0.6610	84.5880	9.0125	3.5864	0.3749	0.6689	0.0601	0.0509	0.0274	1.1564	0.4630	0.0114
3	1,152.809	0.6634	84.2354	9.1691	3.7664	0.3680	0.6559	0.0582	0.0491	0.0269	1.1893	0.4700	0.0116
4	1,154.540	0.6640	84.2280	9.1166	3.8540	0.3718	0.6564	0.0617	0.0536	0.0281	1.1561	0.4622	0.0115
5	1,151.803	0.6621	84.3996	9.1091	3.7440	0.3616	0.6326	0.0581	0.0497	0.0255	1.1511	0.4571	0.0116
6	1,149.281	0.6599	84.6627	9.0641	3.6395	0.3503	0.5899	0.0587	0.0500	0.0255	1.0946	0.4529	0.0117
7	1,148.391	0.6600	84.5854	9.1094	3.6298	0.3451	0.5789	0.0572	0.0487	0.0252	1.1467	0.4621	0.0116
8	1,149.997	0.6609	84.4539	9.2150	3.6525	0.3487	0.5872	0.0580	0.0495	0.0256	1.1359	0.4621	0.0116
9	1,148.317	0.6600	84.5761	9.1538	3.5723	0.3479	0.5930	0.0582	0.0500	0.0259	1.1463	0.4649	0.0115
10	1,145.452	0.6580	84.8477	9.0074	3.4948	0.3379	0.5728	0.0574	0.0494	0.0262	1.1284	0.4662	0.0119
11	1,142.566	0.6561	85.0450	8.9663	3.3612	0.3316	0.5617	0.0555	0.0476	0.0253	1.1286	0.4652	0.0120
12	1,148.563	0.6600	84.6651	9.0591	3.5480	0.3590	0.6196	0.0620	0.0538	0.0281	1.1280	0.4659	0.0115
13	1,152.195	0.6628	84.3482	9.1454	3.6771	0.3748	0.6614	0.0632	0.0549	0.0288	1.1559	0.4785	0.0117
14	1,155.168	0.6647	84.0765	9.3271	3.7452	0.3800	0.6743	0.0649	0.0564	0.0296	1.1579	0.4768	0.0114
15	1,156.382	0.6651	84.0868	9.2696	3.8529	0.3765	0.6573	0.0646	0.0560	0.0317	1.1109	0.4823	0.0114
16	1,155.477	0.6647	84.0074	9.4047	3.8363	0.3624	0.6100	0.0611	0.0522	0.0364	1.1488	0.4692	0.0114
17	1,151.924	0.6622	84.3300	9.2500	3.7125	0.3580	0.5951	0.0603	0.0514	0.0319	1.1235	0.4760	0.0115
18	1,152.468	0.6622	84.5071	8.9571	3.8203	0.3678	0.6330	0.0599	0.0507	0.0258	1.0928	0.4739	0.0117
19	1,153.223	0.6630	84.3194	9.1363	3.8210	0.3638	0.6187	0.0608	0.0510	0.0257	1.1065	0.4850	0.0117
20	1,157.475	0.6657	83.9696	9.3169	3.9556	0.3735	0.6449	0.0604	0.0508	0.0258	1.1154	0.4754	0.0116
21	1,157.917	0.6662	83.9064	9.3026	3.9955	0.3755	0.6499	0.0609	0.0517	0.0266	1.1497	0.4696	0.0115
22	1,157.153	0.6655	83.9876	9.3115	3.9439	0.3710	0.6451	0.0594	0.0498	0.0268	1.1207	0.4723	0.0120
23	1,158.546	0.6664	83.8604	9.4189	3.9197	0.3823	0.6684	0.0617	0.0528	0.0272	1.1267	0.4701	0.0116
24	1,156.449	0.6654	83.9163	9.4403	3.8561	0.3722	0.6370	0.0608	0.0520	0.0275	1.1523	0.4738	0.0117
25	1,157.331	0.6652	84.0132	9.3407	3.9236	0.3739	0.6277	0.0626	0.0539	0.0288	1.1078	0.4565	0.0113
26	1,157.879	0.6650	83.9978	9.4110	3.9275	0.3712	0.6169	0.0609	0.0515	0.0279	1.0882	0.4359	0.0113
27	1,159.323	0.6668	83.8090	9.4203	4.0109	0.3741	0.6461	0.0611	0.0514	0.0282	1.1095	0.4774	0.0121
28	1,157.734	0.6664	83.9078	9.2780	3.9929	0.3770	0.6550	0.0616	0.0513	0.0281	1.1524	0.4841	0.0117
29	1,156.103	0.6650	84.1105	9.1592	3.9506	0.3733	0.6480	0.0601	0.0501	0.0276	1.1347	0.4745	0.0115
30	1,156.219	0.6648	84.1240	9.2055	3.9203	0.3736	0.6449	0.0605	0.0506	0.0270	1.1044	0.4774	0.0117
31	1,152.251	0.6622	84.3991	9.1178	3.7968	0.3559	0.6020	0.0593	0.0505	0.0268	1.1181	0.4619	0.0117
Volume	1,153.330	0.6631	84.2759	9.1983	3.7787	0.3656	0.6299	0.0604	0.0514	0.0276	1.1323	0.4684	0.0116
Weight Avg Energy	1,153.345	0.6631	84.2747	9.1987	3.7793	0.3656	0.6299	0.0604	0.0515	0.0276	1.1323	0.4684	0.0116

Handwritten initials/signature

March-18

ZONE 610

Watford City

Begin Date	End Date	01325 Watford City West Border			01312 Watford City East Border			Weighted AVG BTU	
		MCF	DK	BTU Zone 25	MCF	DK	BTU Zone 43		
3/1/2018	3/2/2018	531	626	1.179	533	619	1.164	1.171	3/1/2018
3/2/2018	3/3/2018	624	736	1.179	532	610	1.148	1.165	3/2/2018
3/3/2018	3/4/2018	531	627	1.179	382	440	1.153	1.168	3/3/2018
3/4/2018	3/5/2018	572	675	1.179	459	529	1.155	1.168	3/4/2018
3/5/2018	3/6/2018	721	850	1.179	505	580	1.149	1.167	3/5/2018
3/6/2018	3/7/2018	713	841	1.179	596	682	1.143	1.163	3/6/2018
3/7/2018	3/8/2018	689	813	1.179	718	822	1.144	1.161	3/7/2018
3/8/2018	3/9/2018	702	828	1.179	638	733	1.149	1.165	3/8/2018
3/9/2018	3/10/2018	586	691	1.179	467	541	1.157	1.169	3/9/2018
3/10/2018	3/11/2018	665	784	1.179	498	577	1.158	1.170	3/10/2018
3/11/2018	3/12/2018	585	690	1.179	525	608	1.160	1.170	3/11/2018
3/12/2018	3/13/2018	537	634	1.179	491	566	1.153	1.167	3/12/2018
3/13/2018	3/14/2018	469	553	1.179	483	556	1.154	1.166	3/13/2018
3/14/2018	3/15/2018	486	573	1.179	420	485	1.156	1.168	3/14/2018
3/15/2018	3/16/2018	561	661	1.179	453	528	1.165	1.173	3/15/2018
3/16/2018	3/17/2018	498	587	1.179	375	436	1.162	1.172	3/16/2018
3/17/2018	3/18/2018	410	483	1.179	453	530	1.170	1.174	3/17/2018
3/18/2018	3/19/2018	525	619	1.179	601	708	1.177	1.178	3/18/2018
3/19/2018	3/20/2018	459	542	1.179	587	684	1.167	1.172	3/19/2018
3/20/2018	3/21/2018	465	548	1.179	691	808	1.170	1.174	3/20/2018
3/21/2018	3/22/2018	407	480	1.179	298	346	1.159	1.171	3/21/2018
3/22/2018	3/23/2018	479	565	1.179	327	380	1.165	1.173	3/22/2018
3/23/2018	3/24/2018	508	599	1.179	306	356	1.162	1.173	3/23/2018
3/24/2018	3/25/2018	428	505	1.179	290	333	1.148	1.166	3/24/2018
3/25/2018	3/26/2018	414	489	1.179	310	356	1.146	1.165	3/25/2018
3/26/2018	3/27/2018	449	529	1.179	326	372	1.144	1.164	3/26/2018
3/27/2018	3/28/2018	389	459	1.179	287	334	1.163	1.172	3/27/2018
3/28/2018	3/29/2018	529	623	1.179	367	427	1.162	1.172	3/28/2018
3/29/2018	3/30/2018	558	659	1.179	508	597	1.175	1.177	3/29/2018
3/30/2018	3/31/2018	713	841	1.179	553	641	1.160	1.171	3/30/2018
3/31/2018	4/1/2018	723	852	1.179	745	866	1.161	1.170	3/31/2018
		16,926	19,962		14,724	17,050	1.1580	1.1695	

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	1070.3	0.6199	1359.4	-66.1	1.5042	0.8479	87.3989	9.5429	0.4769	0.0192	0.011	0.0006	0.0007	0	0	0.1826	0.015	2/28/2018	3/1/2018	3/1/2018 3:18:56 PM	
11587	GLEN ULLIN	1072.2	0.6212	1360.3	-64.7	1.5155	0.8483	87.1592	9.7078	0.5248	0.0212	0.012	0.0007	0.0009	0	0	0.1932	0.015	3/1/2018	3/2/2018	3/2/2018 3:17:21 PM	
11587	GLEN ULLIN	1071.8	0.622	1358.9	-64.3	1.5928	0.8608	86.979	9.7919	0.5183	0.0225	0.0125	0.0011	0.0012	0	0	0.204	0.015	3/2/2018	3/3/2018	3/3/2018 3:17:37 PM	
11587	GLEN ULLIN	1069.7	0.6202	1358.3	-65.4	1.5687	0.8485	87.3763	9.4407	0.524	0.0238	0.013	0.0015	0.0015	0	0	0.187	0.014	3/3/2018	3/4/2018	3/4/2018 3:14:23 PM	
11587	GLEN ULLIN	1068.7	0.6194	1357.9	-66	1.5663	0.8363	87.5153	9.2796	0.5447	0.0218	0.012	0.0008	0.0009	0	0	0.2076	0.0152	3/4/2018	3/5/2018	3/5/2018 3:19:09 PM	
11587	GLEN ULLIN	1063.5	0.6151	1356.1	-69.7	1.4647	0.8415	88.3359	8.648	0.4662	0.018	0.0101	0.0005	0.0006	0	0	0.1995	0.0169	3/5/2018	3/6/2018	3/6/2018 3:21:49 PM	
11587	GLEN ULLIN	1059.4	0.6121	1354.1	-72.5	1.4261	0.8473	88.8771	8.1969	0.4074	0.0158	0.0094	0	0.0001	0	0	0.2043	0.0169	3/6/2018	3/7/2018	3/7/2018 3:20:02 PM	
11587	GLEN ULLIN	1064.2	0.6158	1356.1	-68.9	1.5041	0.8314	88.2206	8.7204	0.4769	0.023	0.0126	0.001	0.0012	0	0	0.1925	0.0169	3/7/2018	3/8/2018	3/8/2018 3:20:41 PM	
11587	GLEN ULLIN	1060.8	0.6123	1355.7	-72.3	1.3671	0.8425	88.8866	8.3188	0.3769	0.017	0.0095	0.0004	0.0006	0	0	0.1681	0.0169	3/8/2018	3/9/2018	3/9/2018 3:17:49 PM	
11587	GLEN ULLIN	1064.9	0.6154	1357.5	-69.1	1.3958	0.8503	88.3714	8.7039	0.4587	0.0223	0.012	0.0015	0.0015	0	0	0.1675	0.0169	3/9/2018	3/10/2018	3/10/2018 3:18:04 PM	
11587	GLEN ULLIN	1065.2	0.6157	1357.5	-69.5	1.4357	0.8344	88.1954	8.8955	0.4142	0.0184	0.01	0.0006	0.0005	0	0	0.1804	0.0166	3/10/2018	3/11/2018	3/11/2018 3:16:41 PM	
11587	GLEN ULLIN	1068.1	0.6181	1358.6	-67.3	1.4639	0.8504	87.7271	9.2478	0.4579	0.021	0.0117	0.001	0.0012	0	0	0.2006	0.0157	3/11/2018	3/12/2018	3/12/2018 3:17:43 PM	
11587	GLEN ULLIN	1068.1	0.6181	1358.6	-67.3	1.4639	0.8504	87.7271	9.2478	0.4579	0.021	0.0117	0.001	0.0012	0	0	0.2006	0.0157	3/11/2018	3/13/2018	3/13/2018 3:22:28 PM	
11587	GLEN ULLIN	1073.5	0.6224	1360.7	-63.3	1.5308	0.8595	86.9241	9.8624	0.5444	0.0267	0.015	0.0017	0.0019	0	0	0.2183	0.0175	3/13/2018	3/14/2018	3/14/2018 3:16:24 PM	
11587	GLEN ULLIN	1071.6	0.6205	1360.4	-65	1.5152	0.8254	87.1089	9.7509	0.4786	0.0229	0.0132	0.0012	0.0015	0	0.0001	0.2648	0.0175	3/14/2018	3/15/2018	3/15/2018 3:20:55 PM	
11587	GLEN ULLIN	1070.7	0.6201	1359.7	-65.9	1.5212	0.8329	87.2608	9.6632	0.4578	0.0205	0.0112	0.0008	0.0008	0	0.0001	0.2142	0.0175	3/15/2018	3/16/2018	3/16/2018 3:17:43 PM	
11587	GLEN ULLIN	1071.3	0.6207	1359.7	-65.1	1.5199	0.8504	87.2523	9.6492	0.4843	0.0253	0.013	0.0018	0.0017	0	0	0.1858	0.0175	3/16/2018	3/17/2018	3/17/2018 3:15:29 PM	
11587	GLEN ULLIN	1071.3	0.6207	1359.8	-65.4	1.5211	0.8492	87.2267	9.6741	0.4906	0.02	0.0108	0.0007	0.0008	0	0	0.1906	0.0152	3/17/2018	3/18/2018	3/18/2018 3:18:00 PM	
11587	GLEN ULLIN	1072.5	0.6215	1360.5	-64.6	1.499	0.862	87.0749	9.7733	0.5281	0.0198	0.011	0.0004	0.0004	0	0	0.2151	0.0155	3/18/2018	3/19/2018	3/19/2018 3:23:32 PM	
11587	GLEN ULLIN	1074.6	0.6227	1361.7	-63.8	1.507	0.8503	86.8254	10.056	0.5093	0.0202	0.0113	0.0006	0.0007	0	0	0.2017	0.0141	3/19/2018	3/20/2018	3/20/2018 3:18:00 PM	
11587	GLEN ULLIN	1072.6	0.6215	1360.6	-64.9	1.4983	0.8605	87.0689	9.8423	0.4911	0.0189	0.0107	0.0002	0.0003	0	0	0.1928	0.0141	3/20/2018	3/21/2018	3/21/2018 3:19:16 PM	
11587	GLEN ULLIN	1068	0.6185	1358	-67.3	1.4825	0.8642	87.6935	9.2449	0.4819	0.0176	0.01	0.0001	0.0001	0	0	0.1893	0.0141	3/21/2018	3/22/2018	3/22/2018 3:20:24 PM	
11587	GLEN ULLIN	1069.5	0.6189	1359.5	-66.7	1.4354	0.863	87.7112	9.2996	0.496	0.0193	0.0112	0.0004	0.0006	0	0	0.1476	0.014	3/22/2018	3/23/2018	3/23/2018 3:18:00 PM	
11587	GLEN ULLIN	1067.7	0.6176	1358.6	-68.2	1.4408	0.8447	87.9939	9.0842	0.4815	0.0136	0.0083	0	0	0	0	0.1216	0.0126	3/23/2018	3/24/2018	3/24/2018 3:17:06 PM	
11587	GLEN ULLIN	1070.6	0.6199	1359.8	-66.8	1.4802	0.8519	87.4755	9.5851	0.4468	0.0138	0.009	0	0.0003	0	0	0.1247	0.0122	3/24/2018	3/25/2018	3/25/2018 3:16:31 PM	
11587	GLEN ULLIN	1068.7	0.6187	1358.6	-67.4	1.4884	0.8464	87.7047	9.3076	0.4718	0.0149	0.0093	0	0.0001	0	0	0.142	0.0162	3/25/2018	3/26/2018	3/26/2018 3:18:43 PM	
11587	GLEN ULLIN	1068.7	0.6184	1359	-67.3	1.4553	0.8507	87.7958	9.2484	0.4649	0.0199	0.0117	0.0005	0.0009	0	0	0.1354	0.017	3/26/2018	3/27/2018	3/27/2018 3:18:16 PM	
11587	GLEN ULLIN	1068.5	0.618	1359.1	-67.1	1.4273	0.8483	87.9926	9.0107	0.5494	0.019	0.0108	0.0005	0.0007	0	0	0.1256	0.017	3/27/2018	3/28/2018	3/28/2018 3:18:04 PM	
11587	GLEN ULLIN	1072	0.6209	1360.5	-65.1	1.4653	0.8639	87.3936	9.5427	0.5577	0.0187	0.0107	0.0002	0.0003	0	0	0.1324	0.0157	3/28/2018	3/29/2018	3/29/2018 3:23:49 PM	
11587	GLEN ULLIN	1074.5	0.6223	1362	-63.9	1.4645	0.8551	87.1041	9.8346	0.5625	0.0187	0.0109	0.0003	0.0005	0	0	0.1331	0.0144	3/29/2018	3/30/2018	3/30/2018 3:17:56 PM	
11587	GLEN ULLIN	1072.2	0.6211	1360.5	-65.1	1.4628	0.8694	87.4032	9.5799	0.5387	0.0185	0.0106	0.0005	0.0005	0	0	0.1024	0.0133	3/30/2018	3/31/2018	3/31/2018 3:17:41 PM	
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	

12 record(s) retrieved

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NORTH DAKOTA HEATING VALUE ZONES		
ZONES	MEASURING DEVICE	LOCATION
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	MARCH 18	FEB 18	JAN 18	DEC 17	NOV 17	OCT 17	SEPT 17	AUG 17	JULY 17	JUNE 17	MAY 17	APRIL 17	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1199	1211	1195	1185	1193	1210	1201	1200	1204	1201	1191	1206	1191	211
ND	24	Williston Border - Charbonneau Station	1143	1140	1140	1138	1143	1144	1144	1142	1142	1141	1141	1148	1158	24
ND	25	Watford City West Border	1191	1179	1184	1174	1165	1169	1204	1205	1202	1206	1204	1204	1200	25
ND	28	Bismarck Station - Glen Ullin Station	1153	1121	1098	1096	1114	1111	1173	1196	1195	1194	1188	1191	1161	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1131	1122	1102	1095	1111	1110	1132	1100	1169	1179	1171	1137	1147	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1106	1104	1080	1072	1096	1090	1113	1103	1136	1157	1122	1097	1104	32
ND	33	Little Knife Plant	1177	1175	1176	1175	1174	1174	1177	1177	1181	1180	1177	1177	1178	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	1147	1158	1148	1153	1165	1158	1143	1147	1151	1141	1126	1136	1141	43
ND/MT	241	Fairview Border	1184	1205	1206	1203	1190	1204	1196	1175	1169	1165	1161	1168	1167	241
ND	260	North Tioga Transfer - Nesson Plant	1018	987	986	1021	998	992	996	987	993	1002	1087	1090	1082	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1174	1173	1171	1173	1167	1170	1176	1175	1177	1183	1181	1176	1170	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1193	1199	1191	1193	1196	1190	1194	1196	1195	1193	1189	1192	1189	262
ND	263	Lignite Plant	1128	1115	1135	1114	1120	1143	1141	1123	1143	1146	1135	1115	1103	263
ND	264	Epping Border	1139	1118	1144	1161	1142	1133	1134	1136	1133	1138	1133	1145	1154	264
ND	265	Tioga Comp Station - County Line Plant	1175	1173	1171	1174	1167	1170	1176	1176	1177	1184	1181	1176	1170	265
ND	266	County Line Plant	1185	1182	1185	1183	1181	1184	1185	1189	1184	1191	1183	1185	1185	266
ND	271	Bismarck Station - Cleveland Station	1184	1187	1159	1161	1176	1179	1192	1196	1195	1194	1188	1192	1189	271
ND	272	Cleveland Station - Mapleton	1184	1187	1158	1160	1177	1179	1192	1196	1195	1193	1188	1191	1187	272
ND	273	Cleveland Station - Grafton Border	1184	1187	1158	1160	1177	1179	1192	1196	1195	1194	1189	1192	1187	273
ND	550	Mandan Border / NBPL-St Anthony	1100	1090	1088	1099	1093									550
ND	610	MDU-Watford City BTU	1177	1170	1168	1164	1165	1165	1189	1190	1183	1185	1176	1183	1188	610
ND	802	Linton	1065	1069	1068	1069	1073	1075	1064	1065	1062	1057	1054	1063	1059	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903

**THERMAL ZONE VARIANCE
DOCUMENTATION**

March 2018

ZONE	<i>BTU VARIANCE</i>	<i>REASON</i>
28	23	Source of Gas
31	20	Source of Gas
32	24	Source of Gas
263	-20	Operational Change
264	-26	Operational Change
271	28	Source of Gas
272	29	Source of Gas
273	29	Source of Gas