

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

January 17, 2022

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

Re: Case No. PU-22-002 (Therm Billing)
Monthly Report – November 2022

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

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in December 2022.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of November 2022.
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 November 2022.

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

Sincerely,

/s/ Travis R. Jacobson

Travis R. Jacobson
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Dec-22

<u>Town</u>	<u>Heat Zone</u>	<u>Therm Factor</u>
MDU-303-ALEXANDER	025	1.1428
MDU-308-ARNEGARD	025	1.1428
MDU-314-APPLE VALLEY	271	1.1549
MDU-318-BEACH	032	1.0369
MDU-319-BELFIELD	032	1.0445
MDU-323-BERTHOLD	262	1.1287
MDU-327-BISMARCK	028	1.1337
MDU-330-BOWMAN	034	0.9073
MDU-337-BURLINGTON	262	1.1530
MDU-343-CARRINGTON	273	1.1559
MDU-344-CLEVELAND	272	1.1468
MDU-364-CAVALIER	273	1.1803
MDU-365-DAWSON	271	1.1468
MDU-368-DES LACS	262	1.1368
MDU-369-DICKINSON	031	1.0287
MDU-374-FT TOTTEN	273	1.1640
MDU-375-DEVILS LAKE	273	1.1640
MDU-379-BARLOW	273	1.1559
MDU-384-EPPING	264	1.1315
MDU-387-ELDRIDGE	272	1.1549
MDU-407-GLADSTONE	031	1.0287
MDU-411-GLEN ULLIN	031	1.0361
MDU-413-GOLVA	032	1.0216
MDU-416-GARRISON	262	1.1368
MDU-417-GRAFTON	273	1.1884
MDU-403-GWINNER	601	1.1419
MDU-429-HEBRON	031	1.0361
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1631
MDU-459-KILLDEER	033	1.1136
MDU-463-LANGDON	273	1.1559
MDU-469-LEFOR	031	1.0287
MDU-474-LIGNITE	263	1.0759
MDU-475-LINTON	802	1.0459
MDU-478-LINCOLN	028	1.1337
MDU-488-MCKENZIE	271	1.1549
MDU-494-MEDINA	271	1.1468
MDU-498-MANDAN	028	1.1337
MDU-500-MARMARTH	034	0.9140
MDU-505-MINOT	262	1.1530
MDU-510-MOTT	031	1.0287
MDU-512-MAX	262	1.1530
MDU-513-MILNOR	601	1.1419
MDU-522-NEW ENGLAND	031	1.0212
MDU-524-NEW SALEM	028	1.1098
MDU-532-NEW ROCKFORD	273	1.1559
MDU-539-PARK RIVER	273	1.1803
MDU-540-PALERMO	262	1.1287
MDU-558-RAY	264	1.1315

MDU-561-REGENT	031	1.0212
MDU-563-RHAME	034	0.9005
MDU-564-RICHARDTON	031	1.0212
MDU-568-ROSS	261	1.1196
MDU-572-RUTHVILLE	262	1.1559
MDU-574-SANBORN	272	1.1631
MDU-583-SENTINEL BUTTE	032	1.0369
MDU-588-SOUTH HEART	031	1.0212
MDU-717-SPIRITWOOD	272	1.1631
MDU-590-SPRINGBROOK	264	1.1315
MDU-591-STANLEY	261	1.1277
MDU-593-STEELE	271	1.1468
MDU-594-STERLING	028	1.1337
MDU-598-SHEYENNE	273	1.1640
MDU-605-SURREY	262	1.1530
MDU-610-TAPPEN	271	1.1468
MDU-611-TAYLOR	031	1.0212
MDU-616-TIOGA	260	1.1046
MDU-619-TURTLE LAKE	262	1.1368
MDU-620-TRENTON	024	1.1358
MDU-624-UNDERWOOD	262	1.1368
MDU-625-VALLEY CITY	272	1.1712
MDU-629-WALHALLA	273	1.1803
MDU-632-WATFORD CITY	610	1.0512
MDU-636-WHEELOCK	264	1.1234
MDU-637-WHITE EARTH	261	1.1296
MDU-642-WILLISTON	024	1.1358
MDU-646-WASHBURN	262	1.1449
MDU-647-WILTON	262	1.1287
MDU-664-RIVERDALE	262	1.1368
MDU-691-FAIRVIEW	241	1.1463
MDU-712-MINOT AFB	262	1.1530
MDU-718-FAIRMOUNT	600	1.1395
MDU-732-NEKOMA	273	1.1559
MDU-732-MSR SITE	273	1.1559

Source Daily Summary

November 2022

Source #: 251
Name: SDNY BDR-MNDK JNCTN-SDNY PLT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7304	1187.6	1208.7	1208.0	1.203	3.058	69.263	22.590	3.355	0.158	0.328	0.022	0.021	0.000	0.000	0.000	0.000	0.000	1414.21	
2	0.7143	1174.9	1195.7	1195.1	0.600	3.245	70.430	22.991	2.498	0.076	0.144	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1414.89	
3	0.7246	1182.9	1203.9	1203.4	0.868	3.310	69.017	23.719	2.785	0.097	0.185	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1414.47	
4	0.6935	1155.9	1176.4	1175.8	0.069	3.257	72.769	22.340	1.525	0.017	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.65	
5	0.7298	1187.3	1208.3	1207.8	1.011	3.316	68.539	23.663	3.117	0.114	0.217	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1414.53	
6	0.7260	1186.6	1207.6	1207.1	0.865	3.221	68.825	23.918	2.874	0.097	0.182	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1417.52	
7	0.6995	1167.4	1188.1	1187.6	0.031	3.183	71.956	22.808	1.983	0.018	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.48	
8	0.6951	1159.9	1180.4	1180.0	0.030	3.229	72.438	22.688	1.585	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.82	
9	0.6964	1162.3	1182.8	1182.4	0.027	3.210	72.373	22.570	1.787	0.015	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.38	
10	0.6969	1162.7	1183.3	1182.9	0.028	3.225	72.259	22.692	1.760	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.44	
11	0.7279	1188.4	1209.5	1209.0	0.862	3.297	68.692	23.708	3.134	0.101	0.187	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1417.75	
12	0.7397	1197.8	1219.0	1218.5	1.206	3.314	67.086	24.609	3.374	0.132	0.253	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1417.29	
13	0.7420	1199.0	1220.2	1219.8	1.291	3.326	66.656	25.035	3.238	0.145	0.280	0.016	0.012	0.000	0.000	0.000	0.000	0.000	1416.55	
14	0.7104	1176.5	1197.3	1196.9	0.334	3.185	70.716	23.174	2.454	0.048	0.081	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1420.69	
15	0.7222	1184.7	1205.7	1205.2	0.682	3.268	69.178	23.864	2.759	0.084	0.152	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1418.84	
16	0.6988	1167.0	1187.6	1187.2	0.036	3.133	71.938	23.049	1.810	0.016	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1420.70	
17	0.7032	1173.5	1194.2	1193.9	0.059	3.118	71.404	23.239	2.130	0.021	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1424.08	
18	0.7263	1184.4	1205.3	1204.9	0.912	3.316	68.829	23.774	2.838	0.112	0.203	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1414.48	
19	0.7205	1181.3	1202.2	1201.7	0.718	3.260	69.162	24.267	2.343	0.083	0.154	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1416.48	
20	0.7097	1172.4	1193.1	1192.7	0.418	3.250	70.539	23.598	2.055	0.049	0.084	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1416.38	
21	0.7345	1191.2	1212.3	1211.8	1.140	3.328	67.333	25.100	2.752	0.113	0.214	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1414.60	
22	0.7269	1186.0	1207.0	1206.6	0.908	3.278	68.417	24.473	2.638	0.094	0.176	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1415.92	
23	0.7360	1190.6	1211.7	1211.2	1.241	3.352	67.418	24.621	2.987	0.123	0.234	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1412.39	
24	0.7401	1194.0	1215.1	1214.7	1.349	3.366	66.930	24.789	3.151	0.134	0.255	0.014	0.011	0.000	0.000	0.000	0.000	0.000	1412.41	
25	0.7174	1175.5	1196.4	1195.9	0.731	3.304	69.699	23.751	2.277	0.078	0.146	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1412.62	
26	0.7330	1186.8	1207.8	1207.4	1.196	3.367	67.887	24.267	2.915	0.120	0.226	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1410.85	
27	0.7260	1183.8	1204.8	1204.4	0.968	3.234	68.916	23.760	2.792	0.105	0.203	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1414.07	
28	0.7372	1192.2	1213.3	1212.9	1.259	3.339	67.280	24.663	3.083	0.122	0.231	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1413.08	
29	0.7377	1195.7	1216.9	1216.4	1.158	3.321	67.279	24.580	3.303	0.118	0.221	0.011	0.008	0.000	0.000	0.000	0.000	0.000	1416.87	
30	0.7397	1197.1	1218.3	1217.9	1.240	3.297	67.001	24.800	3.261	0.130	0.248	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1416.60	
Avg	0.7212	1182.0	1202.4	1202.0	0.748	3.264	69.341	23.770	2.619	0.085	0.158	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1416.07	

Source Daily Summary

November 2022

Source #: 571
Name: WILLISTON BDR-CHARBN STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7148	1177.5	1198.3	1197.7	1.004	2.505	71.836	21.207	2.992	0.126	0.279	0.023	0.027	0.000	0.000	0.000	0.000	0.000	1417.39	
2	0.7146	1179.1	1200.0	1199.5	0.989	2.408	71.914	21.208	3.019	0.130	0.284	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1419.60	
3	0.7139	1179.0	1199.9	1199.4	0.990	2.356	72.069	21.086	3.034	0.131	0.286	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1420.06	
4	0.7143	1178.1	1198.9	1198.4	1.003	2.429	71.915	21.229	2.965	0.128	0.282	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1418.54	
5	0.7141	1177.7	1198.5	1198.1	1.005	2.428	71.906	21.284	2.925	0.126	0.277	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1418.32	
6	0.7111	1173.2	1193.9	1193.4	0.600	3.038	71.527	21.852	2.631	0.100	0.213	0.018	0.020	0.000	0.000	0.000	0.000	0.000	1415.89	
7	0.7308	1193.1	1214.2	1213.7	0.813	3.359	68.416	23.717	3.274	0.131	0.256	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1420.37	
8	0.7303	1186.2	1207.2	1206.7	1.107	3.277	68.936	22.979	3.199	0.145	0.308	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1412.68	
9	0.7193	1176.8	1197.7	1197.2	1.061	2.890	70.867	21.781	2.933	0.129	0.287	0.024	0.028	0.000	0.000	0.000	0.000	0.000	1412.12	
10	0.7193	1176.4	1197.3	1196.8	1.025	2.966	70.683	22.031	2.856	0.121	0.270	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1411.68	
11	0.7155	1181.3	1202.3	1201.8	0.997	2.346	71.846	21.253	3.073	0.136	0.297	0.024	0.028	0.000	0.000	0.000	0.000	0.000	1421.34	
12	0.7156	1178.1	1198.9	1198.5	1.021	2.526	71.533	21.590	2.891	0.122	0.270	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1417.25	
13	0.7165	1176.3	1197.2	1196.8	1.043	2.686	71.197	21.861	2.798	0.115	0.255	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1414.29	
14	0.7150	1176.1	1197.0	1196.6	0.932	2.721	71.444	21.650	2.832	0.119	0.259	0.021	0.024	0.000	0.000	0.000	0.000	0.000	1415.58	
15	0.7121	1176.4	1197.2	1196.8	0.999	2.327	72.136	21.324	2.787	0.121	0.261	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1418.76	
16	0.7163	1176.4	1197.2	1196.8	0.755	3.096	70.818	22.163	2.787	0.108	0.233	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1414.60	
17	0.7151	1177.2	1198.0	1197.7	0.822	2.832	71.215	21.936	2.799	0.112	0.241	0.019	0.022	0.000	0.000	0.000	0.000	0.000	1416.75	
18	0.7142	1173.1	1193.8	1193.5	0.679	3.219	70.787	22.430	2.581	0.087	0.186	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1412.70	
19	0.7191	1175.6	1196.4	1196.0	1.077	2.918	70.636	22.197	2.763	0.112	0.254	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1410.91	
20	0.7142	1178.9	1199.8	1199.4	1.006	2.361	71.989	21.182	2.997	0.132	0.285	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1419.69	
21	0.7138	1176.3	1197.1	1196.7	1.021	2.465	71.857	21.371	2.856	0.121	0.264	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1416.90	
22	0.7147	1177.5	1198.4	1198.0	1.025	2.468	71.789	21.336	2.936	0.126	0.273	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1417.50	
23	0.7109	1174.2	1194.9	1194.6	1.008	2.337	72.327	21.167	2.740	0.119	0.258	0.020	0.024	0.000	0.000	0.000	0.000	0.000	1417.27	
24	0.7130	1177.1	1198.0	1197.6	1.018	2.342	72.195	21.045	2.930	0.132	0.288	0.023	0.027	0.000	0.000	0.000	0.000	0.000	1418.69	
25	0.7127	1176.5	1197.3	1197.0	1.021	2.345	72.249	21.009	2.904	0.132	0.289	0.023	0.028	0.000	0.000	0.000	0.000	0.000	1418.25	
26	0.7141	1172.0	1192.8	1192.4	1.062	2.692	71.604	21.538	2.691	0.113	0.254	0.021	0.025	0.000	0.000	0.000	0.000	0.000	1411.48	
27	0.7123	1175.4	1196.2	1195.9	1.029	2.363	72.250	21.042	2.859	0.129	0.280	0.022	0.026	0.000	0.000	0.000	0.000	0.000	1417.34	
28	0.7129	1175.4	1196.2	1195.9	1.029	2.420	72.067	21.204	2.833	0.126	0.273	0.022	0.025	0.000	0.000	0.000	0.000	0.000	1416.75	
29	0.7129	1176.2	1197.0	1196.7	1.027	2.375	72.124	21.162	2.852	0.130	0.282	0.023	0.026	0.000	0.000	0.000	0.000	0.000	1417.70	
30	0.7056	1163.9	1184.6	1184.2	1.049	2.401	72.959	20.844	2.387	0.102	0.220	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1410.22	
Avg	0.7153	1177.0	1197.9	1197.5	0.974	2.630	71.503	21.589	2.871	0.122	0.265	0.021	0.024	0.000	0.000	0.000	0.000	0.000	1416.35	

Gas Composition and Properties

Effective November 1, 2022 0

Attachment B
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Source #: 0602160
Name: FAIRVIEW BORDER

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	1.1537		2.4002	Pressure Base	14.730	
Nitrogen, N2	3.2658		4.3248	Temperature Base	60.00	
Methane, C1	68.3831		51.8601	HCDP @ Sample Pressure		
Ethane, C2	23.5080	6.2925	33.4155	Cricondentherm	4.621	
Propane, C3	3.2576	0.8983	6.7906	HV, Dry @ Base P, T	1209.92	
iso-Butane, iC4	0.1397	0.0458	0.3838	HV, Sat @ Base P, T	1188.86	
n-Butane, nC4	0.2595	0.0819	0.7130	HV, Sat @ Sample P, T	1209.92	
iso-Pentane, iC5	0.0165	0.0060	0.0563	Relative Density	0.7326	
n-Pentane, nC5	0.0150	0.0054	0.0512			
Neo-Pentane, neo						
Hexanes Plus, C6+	0.0011	0.0005	0.0045			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	7.3290	100.0000			

Sample

Date: 11/01/2022 Type:

Tech: Sampson, Wayne

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: 11/01/2022 Instrument:

Tech: Sampson, Wayne Cylinder:

Remarks:

Gas Composition and Properties

Effective November 1, 2022

Attachment B
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Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2243		2.5219
Nitrogen, N2	3.9939		5.2368
Methane, C1	69.2281		51.9821
Ethane, C2	20.1183	5.3852	28.3146
Propane, C3	4.4475	1.2264	9.1793
iso-Butane, iC4	0.2806	0.0919	0.7634
n-Butane, nC4	0.5974	0.1885	1.6252
iso-Pentane, iC5	0.0508	0.0186	0.1716
n-Pentane, nC5	0.0508	0.0184	0.1716
Neo-Pentane, neo			
Hexanes Plus, C6+	0.0083	0.0034	0.0335
Argon, Ar			
Carbon Monoxide, CO			
Hydrogen, H2			
Oxygen, O2			
Helium, He			
Water, H2O			
Hydrogen Sulfide, H2S			
Totals	100.0000	6.9320	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm	17.809	
HV, Dry @ Base P, T	1207.14	
HV, Sat @ Base P, T	1186.13	
HV, Sat @ Sample P, T	1207.14	
Relative Density	0.7399	
C6+:		

Sample

Date: 11/01/2022 Type:

Tech: Sampson, Wayne

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: 11/01/2022 Instrument:

 Cylinder:

Tech: Sampson, Wayne

Remarks:

Source Daily Summary

November 2022

Source #: 602
Name: TIOGA STN-N TIOGA TRANSFER

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7003	1158.8	1179.4	1179.0	0.972	2.343	73.308	21.158	1.957	0.075	0.161	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1409.34	-12.42
2	0.6984	1154.7	1175.1	1174.8	0.978	2.411	73.296	21.443	1.653	0.062	0.134	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1406.08	-15.19
3	0.6988	1154.8	1175.2	1174.9	0.977	2.437	73.253	21.439	1.671	0.064	0.137	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1405.89	-14.98
4	0.6992	1155.8	1176.3	1176.0	0.977	2.419	73.233	21.407	1.729	0.067	0.144	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1406.71	-14.29
5	0.7000	1156.3	1176.8	1176.5	0.977	2.456	73.176	21.343	1.803	0.070	0.151	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1406.57	-13.57
6	0.7061	1168.6	1189.3	1189.0	0.945	2.323	72.816	21.102	2.462	0.102	0.216	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1415.35	-6.72
7	0.7054	1166.9	1187.6	1187.2	0.977	2.316	72.780	21.301	2.290	0.095	0.206	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1413.97	-7.87
8	0.7041	1164.8	1185.4	1185.1	0.975	2.323	72.995	21.127	2.253	0.094	0.201	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1412.72	-8.70
9	0.6993	1156.2	1176.6	1176.3	0.983	2.392	73.319	21.280	1.777	0.071	0.153	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1407.05	-13.86
10	0.7012	1162.3	1182.9	1182.6	0.977	2.203	73.306	21.199	2.015	0.086	0.184	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1412.58	-11.00
11	0.6949	1149.5	1169.9	1169.6	0.996	2.364	73.692	21.394	1.371	0.052	0.113	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1403.43	-18.33
12	0.6971	1153.8	1174.2	1174.0	0.988	2.324	73.584	21.251	1.626	0.065	0.139	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1406.38	-15.59
13	0.6994	1158.3	1178.8	1178.5	0.983	2.271	73.450	21.159	1.867	0.077	0.165	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1409.53	-12.94
14	0.6975	1155.7	1176.1	1175.9	0.982	2.256	73.660	21.121	1.733	0.071	0.152	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1408.23	-14.59
15	0.6941	1148.2	1168.5	1168.3	0.992	2.378	73.840	21.245	1.362	0.052	0.114	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1402.58	-18.79
16	0.6989	1158.4	1178.9	1178.6	0.973	2.238	73.578	21.047	1.884	0.080	0.172	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1410.08	-12.76
17	0.7003	1160.6	1181.2	1180.9	0.977	2.222	73.502	20.975	2.016	0.087	0.189	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1411.43	-11.28
18	0.7009	1162.2	1182.8	1182.5	0.983	2.167	73.513	20.923	2.089	0.092	0.199	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1412.81	-10.35
19	0.6998	1159.1	1179.7	1179.4	0.985	2.257	73.463	21.080	1.935	0.079	0.172	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1410.12	-12.19
20	0.6973	1152.7	1173.2	1172.9	0.993	2.400	73.442	21.354	1.631	0.051	0.112	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1404.89	-16.43
21	0.6973	1152.1	1172.5	1172.3	0.993	2.435	73.396	21.404	1.598	0.049	0.108	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1404.17	-16.73
22	0.6987	1155.7	1176.2	1175.9	0.997	2.342	73.416	21.237	1.789	0.062	0.135	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1407.10	-14.47
23	0.6971	1151.1	1171.5	1171.3	1.005	2.459	73.501	21.263	1.555	0.057	0.135	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1403.15	-16.27
24	0.6950	1147.7	1168.1	1167.8	1.008	2.466	73.568	21.457	1.357	0.041	0.089	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1401.13	-19.25
25	0.6951	1146.9	1167.2	1166.9	0.995	2.551	73.615	21.243	1.442	0.044	0.096	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1399.94	-18.85
26	0.6979	1153.3	1173.7	1173.4	0.999	2.410	73.498	21.156	1.724	0.061	0.131	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1404.96	-15.32
27	0.6955	1147.6	1168.0	1167.7	0.998	2.534	73.678	21.090	1.525	0.050	0.109	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1400.49	-17.98
28	0.6959	1149.2	1169.5	1169.3	0.995	2.486	73.611	21.195	1.532	0.052	0.110	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1401.91	-17.55
29	0.6960	1149.2	1169.5	1169.3	0.999	2.487	73.559	21.276	1.506	0.049	0.107	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1401.85	-17.76
30	0.6934	1145.7	1166.0	1165.8	1.004	2.447	73.818	21.293	1.302	0.039	0.085	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1400.27	-20.27
Avg	0.6985	1155.0	1175.7	1175.4	0.986	2.371	73.429	21.232	1.749	0.067	0.144	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1406.69	-14.54

*** End of Report ***

Source Daily Summary

November 2022

Source #: 601
Name: TIOGA STN-ROBINSON LAKE PLNT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7430	1165.6	1186.2	1185.8	0.898	6.031	67.468	20.170	4.899	0.149	0.343	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1376.22	
2	0.7406	1168.5	1189.1	1188.8	0.929	5.594	67.647	20.758	4.571	0.140	0.322	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1381.88	
3	0.7403	1169.0	1189.7	1189.5	0.920	5.546	67.684	20.799	4.548	0.142	0.322	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1382.87	
4	0.7475	1171.4	1192.2	1191.9	0.910	6.082	66.825	20.503	5.120	0.156	0.361	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1378.97	
5	0.7514	1171.9	1192.6	1192.3	0.885	6.463	66.362	20.192	5.523	0.161	0.371	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1375.81	
6	0.7498	1170.5	1191.3	1191.0	0.885	6.388	66.580	20.177	5.398	0.160	0.368	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1375.79	
7	0.7176	1165.7	1186.3	1186.1	0.983	3.521	70.873	21.299	2.928	0.110	0.248	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1400.52	
8	0.7459	1170.8	1191.6	1191.3	0.904	5.979	67.041	20.504	5.018	0.155	0.355	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1379.72	
9	0.7380	1168.3	1189.0	1188.7	0.930	5.350	68.104	20.674	4.447	0.139	0.318	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1384.22	
10	0.7095	1160.2	1180.8	1180.6	1.022	3.044	71.826	21.507	2.278	0.091	0.202	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1401.81	
11	0.7040	1156.1	1176.6	1176.4	1.033	2.762	72.460	21.634	1.841	0.076	0.168	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1402.32	
12	0.7174	1159.8	1180.4	1180.2	1.141	3.632	70.187	22.526	2.165	0.093	0.222	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1393.59	
13	0.7152	1160.9	1181.5	1181.2	1.113	3.408	70.585	22.414	2.140	0.092	0.214	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1397.00	
14	0.7047	1157.7	1178.2	1178.0	1.016	2.754	72.657	21.162	2.095	0.089	0.196	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1403.53	
15	0.6868	1125.1	1145.0	1144.8	0.913	3.219	75.310	18.877	1.455	0.061	0.141	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1381.60	
16	0.7012	1152.0	1172.4	1172.2	0.978	2.827	73.208	20.681	2.000	0.085	0.189	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1400.11	
17	0.6995	1147.7	1168.0	1167.8	1.002	2.902	73.329	20.661	1.824	0.078	0.175	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1396.46	
18	0.7066	1160.6	1181.2	1181.0	1.033	2.722	72.469	21.229	2.202	0.096	0.214	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1405.22	
19	0.7060	1158.8	1179.3	1179.1	1.046	2.763	72.331	21.548	1.998	0.087	0.196	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1403.54	
20	0.7049	1155.4	1175.9	1175.7	1.034	2.890	72.382	21.463	1.955	0.076	0.172	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1400.50	
21	0.7050	1153.2	1173.6	1173.4	1.057	3.000	72.092	21.851	1.764	0.064	0.148	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1397.72	
22	0.7063	1158.7	1179.2	1179.0	1.049	2.797	72.199	21.660	2.014	0.078	0.175	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1403.14	
23	0.7078	1156.5	1176.9	1176.7	1.078	3.030	71.637	22.175	1.829	0.068	0.158	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1398.94	
24	0.7111	1158.5	1179.0	1178.8	1.032	3.280	71.589	21.390	2.386	0.090	0.201	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1398.27	
25	0.7491	1169.3	1190.0	1189.8	0.892	6.388	66.743	20.025	5.352	0.170	0.385	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1374.95	
26	0.7515	1172.7	1193.4	1193.2	0.888	6.417	66.476	20.067	5.516	0.177	0.410	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1376.66	
27	0.7459	1168.8	1189.5	1189.3	0.933	6.057	67.000	20.537	4.888	0.162	0.375	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1377.38	
28	0.7460	1169.1	1189.8	1189.7	0.906	6.086	67.157	20.187	5.062	0.166	0.387	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1377.66	
29	0.7305	1160.0	1180.5	1180.3	0.958	5.124	68.905	20.774	3.798	0.123	0.283	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1381.42	
30	0.7182	1155.7	1176.1	1175.9	1.028	4.125	70.438	21.285	2.778	0.096	0.220	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1388.02	
Avg	0.7234	1161.0	1181.8	1181.6	0.980	4.339	69.986	20.958	3.326	0.114	0.261	0.017	0.019	0.000	0.000	0.000	0.000	0.000	1389.86	

Source Daily Summary

November 2022

Source #: 091
Name: MNT BRD-PLRMO BRD-BIS STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7507	1166.5	1187.2	1186.7	0.917	6.670	66.415	20.006	5.408	0.166	0.376	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1370.22	
2	0.7525	1170.4	1191.1	1190.7	0.916	6.603	66.201	20.164	5.510	0.172	0.390	0.022	0.021	0.000	0.000	0.000	0.000	0.000	1373.13	
3	0.7521	1168.1	1188.8	1188.4	0.912	6.717	66.272	19.956	5.544	0.171	0.387	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1370.74	
4	0.7542	1173.1	1193.9	1193.5	0.913	6.600	66.004	20.230	5.632	0.175	0.401	0.023	0.021	0.000	0.000	0.000	0.000	0.000	1374.79	
5	0.7528	1170.0	1190.7	1190.3	0.903	6.676	66.203	20.027	5.575	0.174	0.398	0.023	0.021	0.000	0.000	0.000	0.000	0.000	1372.37	
6	0.7527	1169.9	1190.6	1190.2	0.907	6.673	66.225	19.989	5.590	0.175	0.397	0.022	0.021	0.000	0.000	0.000	0.000	0.000	1372.28	
7	0.7528	1170.3	1191.1	1190.7	0.913	6.640	66.199	20.057	5.585	0.173	0.391	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1372.77	
8	0.7527	1169.8	1190.5	1190.1	0.914	6.668	66.208	20.018	5.583	0.173	0.393	0.022	0.020	0.000	0.000	0.000	0.000	0.000	1372.17	
9	0.7507	1165.3	1185.9	1185.6	0.916	6.748	66.498	19.754	5.487	0.170	0.386	0.021	0.020	0.000	0.000	0.000	0.000	0.000	1368.77	
10	0.7510	1165.2	1185.8	1185.5	0.909	6.795	66.476	19.687	5.523	0.174	0.393	0.022	0.021	0.000	0.000	0.000	0.000	0.000	1368.34	
11	0.7507	1166.3	1186.9	1186.6	0.895	6.720	66.564	19.668	5.546	0.172	0.392	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1369.90	
12	0.7510	1166.6	1187.3	1187.0	0.895	6.723	66.538	19.669	5.560	0.173	0.396	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1370.09	
13	0.7479	1168.2	1188.9	1188.6	0.927	6.294	66.985	19.895	5.276	0.175	0.400	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1374.76	
14	0.7284	1166.6	1187.2	1186.9	0.970	4.496	70.212	19.628	3.986	0.191	0.451	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1391.06	
15	0.7003	1135.5	1155.6	1155.3	0.915	3.842	73.692	18.791	2.392	0.099	0.233	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1381.01	
16	0.7252	1159.7	1180.2	1179.9	0.944	4.659	70.206	19.880	3.800	0.144	0.323	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1386.00	
17	0.7321	1158.6	1179.1	1178.7	0.957	5.359	68.782	20.405	4.068	0.124	0.273	0.015	0.016	0.000	0.000	0.000	0.000	0.000	1378.00	
18	0.7319	1160.3	1180.8	1180.5	0.969	5.213	69.009	20.198	4.155	0.133	0.288	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1380.25	
19	0.7327	1159.5	1180.0	1179.7	0.971	5.338	68.797	20.305	4.136	0.132	0.288	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1378.53	
20	0.7356	1162.5	1183.1	1182.8	0.964	5.433	68.365	20.493	4.276	0.136	0.300	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1379.42	
21	0.7341	1160.8	1181.3	1181.0	0.970	5.392	68.471	20.610	4.103	0.130	0.291	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1378.75	
22	0.7397	1166.9	1187.6	1187.3	0.954	5.562	67.869	20.557	4.533	0.150	0.337	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1380.82	
23	0.7495	1167.7	1188.4	1188.1	0.907	6.507	66.755	19.795	5.404	0.180	0.405	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1372.63	
24	0.7511	1168.3	1189.0	1188.7	0.899	6.626	66.482	19.877	5.496	0.177	0.397	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1371.94	
25	0.7531	1172.0	1192.7	1192.4	0.894	6.598	66.297	19.916	5.631	0.186	0.427	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1374.42	
26	0.7532	1172.0	1192.7	1192.5	0.896	6.600	66.306	19.893	5.633	0.187	0.432	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1374.36	
27	0.7539	1173.7	1194.5	1194.2	0.894	6.565	66.192	20.012	5.673	0.185	0.428	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1375.75	
28	0.7513	1168.5	1189.2	1188.9	0.886	6.657	66.472	19.823	5.533	0.176	0.405	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1371.94	
29	0.7505	1165.8	1186.5	1186.2	0.890	6.732	66.574	19.689	5.498	0.175	0.397	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1369.61	
30	0.7502	1166.0	1186.6	1186.3	0.893	6.692	66.578	19.781	5.444	0.174	0.394	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1370.05	
Avg	0.7448	1166.0	1186.4	1186.1	0.920	6.160	67.328	19.959	5.053	0.164	0.372	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1374.83	

Gas Composition and Properties

Effective October 1, 2021

Attachment B
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Source #: 2501030
Name: LIGNITE PLANT

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	0.2283		0.5237	Pressure Base	14.730	
Nitrogen, N2	2.9631		4.3268	Temperature Base	60.00	
Methane, C1	79.4957		66.4767	HCDP @ Sample Pressure		
Ethane, C2	15.2390	4.0765	23.8852	Cricondentherm	-32.804	
Propane, C3	2.0456	0.5637	4.7019	HV, Dry @ Base P, T	1130.73	
iso-Butane, iC4	0.0244	0.0080	0.0739	HV, Sat @ Base P, T	1111.05	
n-Butane, nC4	0.0039	0.0012	0.0118	HV, Sat @ Sample P, T	1130.73	
iso-Pentane, iC5				Relative Density	0.6640	
n-Pentane, nC5						
Neo-Pentane, neo						
Hexanes Plus, C6+						
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	4.6490	100.0000			

Sample

Date: 10/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

Gas Composition and Properties

Effective November 1, 2022

Attachment B
Page 9 of 24

Source #: 3002013
Name: EPPING BORDER

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	1.0159		2.1911	Pressure Base	14.730	
Nitrogen, N2	1.9947		2.7385	Temperature Base	60.00	
Methane, C1	73.3023		57.6321	HCDP @ Sample Pressure		
Ethane, C2	20.4793	5.4807	30.1792	Cricondentherm	-3.673	
Propane, C3	2.7751	0.7651	5.9972	HV, Dry @ Base P, T	1193.63	
iso-Butane, iC4	0.1287	0.0421	0.3666	HV, Sat @ Base P, T	1172.86	
n-Butane, nC4	0.2632	0.0830	0.7497	HV, Sat @ Sample P, T	1193.63	
iso-Pentane, iC5	0.0184	0.0067	0.0651	Relative Density	0.7065	
n-Pentane, nC5	0.0205	0.0074	0.0725			
Neo-Pentane, neo						
Hexanes Plus, C6+	0.0019	0.0008	0.0080			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	6.3860	100.0000			

Sample

Date: 11/01/2022 Type:

Tech: Sampson, Wayne

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: 11/01/2022 Instrument:

Tech: Sampson, Wayne Cylinder:

Remarks:

*** End of Report ***

Source Daily Summary

November 2022

Source #: 603
Name: TIOGA STN-COUNTY LINE PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7201	1162.1	1182.7	1182.3	1.149	3.731	69.685	22.874	2.209	0.095	0.224	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1393.73	
2	0.7196	1161.8	1182.4	1182.1	1.139	3.720	69.767	22.811	2.215	0.094	0.220	0.015	0.018	0.000	0.000	0.000	0.000	0.000	1393.84	
3	0.7203	1164.0	1184.7	1184.3	1.139	3.652	69.651	22.975	2.237	0.095	0.219	0.015	0.017	0.000	0.000	0.000	0.000	0.000	1395.82	
4	0.7201	1163.0	1183.6	1183.3	1.152	3.671	69.737	22.839	2.244	0.096	0.226	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1394.83	
5	0.7212	1164.4	1185.0	1184.7	1.151	3.692	69.474	23.115	2.217	0.095	0.222	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1395.41	
6	0.7214	1164.3	1184.9	1184.6	1.142	3.730	69.493	22.994	2.283	0.097	0.227	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1395.12	
7	0.7209	1163.6	1184.2	1183.8	1.144	3.730	69.602	22.882	2.276	0.098	0.232	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1394.65	
8	0.7202	1162.9	1183.5	1183.2	1.145	3.702	69.704	22.845	2.245	0.097	0.227	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1394.55	
9	0.7187	1159.7	1180.2	1179.9	1.145	3.754	69.982	22.542	2.219	0.096	0.226	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1392.14	
10	0.7183	1159.3	1179.8	1179.5	1.141	3.750	70.093	22.411	2.240	0.098	0.231	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1392.02	
11	0.7177	1158.5	1179.0	1178.7	1.150	3.728	70.200	22.330	2.235	0.096	0.226	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1391.68	
12	0.7192	1160.3	1180.9	1180.6	1.162	3.741	69.902	22.621	2.209	0.097	0.233	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1392.43	
13	0.7194	1161.5	1182.1	1181.8	1.147	3.710	69.818	22.772	2.196	0.095	0.227	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1393.66	
14	0.7188	1159.2	1179.7	1179.4	1.140	3.797	69.972	22.511	2.223	0.096	0.225	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1391.49	
15	0.7184	1158.3	1178.8	1178.5	1.151	3.803	70.021	22.477	2.190	0.095	0.226	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1390.77	
16	0.7198	1161.0	1181.6	1181.3	1.139	3.784	69.712	22.830	2.181	0.094	0.224	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1392.73	
17	0.7193	1161.6	1182.2	1181.9	1.147	3.693	69.849	22.749	2.210	0.095	0.223	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1393.86	
18	0.7181	1159.7	1180.2	1180.0	1.162	3.675	70.144	22.426	2.234	0.096	0.227	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1392.73	
19	0.7192	1160.6	1181.2	1180.9	1.152	3.732	69.864	22.699	2.201	0.095	0.224	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1392.84	
20	0.7193	1160.7	1181.3	1181.0	1.149	3.740	69.839	22.722	2.196	0.095	0.224	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1392.84	
21	0.7200	1162.2	1182.7	1182.5	1.167	3.694	69.684	22.938	2.163	0.094	0.225	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1393.88	
22	0.7190	1159.7	1180.3	1180.0	1.170	3.732	69.928	22.635	2.179	0.094	0.225	0.017	0.020	0.000	0.000	0.000	0.000	0.000	1391.98	
23	0.7193	1161.0	1181.6	1181.3	1.156	3.711	69.852	22.734	2.196	0.094	0.223	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1393.20	
24	0.7202	1162.5	1183.1	1182.8	1.162	3.697	69.669	22.920	2.201	0.094	0.223	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1394.11	
25	0.7199	1162.5	1183.0	1182.8	1.169	3.664	69.723	22.911	2.182	0.094	0.223	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1394.31	
26	0.7195	1161.4	1182.0	1181.7	1.172	3.679	69.827	22.777	2.193	0.095	0.223	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1393.52	
27	0.7196	1161.4	1181.9	1181.7	1.171	3.702	69.790	22.789	2.196	0.094	0.224	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1393.28	
28	0.7196	1161.0	1181.6	1181.3	1.159	3.735	69.790	22.760	2.206	0.095	0.221	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1392.91	
29	0.7203	1161.5	1182.1	1181.8	1.149	3.787	69.680	22.778	2.252	0.095	0.225	0.016	0.018	0.000	0.000	0.000	0.000	0.000	1392.80	
30	0.7193	1159.4	1179.9	1179.7	1.157	3.809	69.890	22.549	2.234	0.096	0.231	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1391.26	
Avg	0.7196	1161.0	1181.9	1181.6	1.153	3.725	69.811	22.740	2.215	0.095	0.225	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1393.28	

Source Daily Summary

November 2022

Source #: 043
Name: BISMARCK STN-CLEVELAND STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7520	1173.1	1193.8	1192.7	0.877	6.461	66.359	20.097	5.605	0.169	0.387	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.65	
2	0.7525	1174.2	1195.0	1193.9	0.877	6.438	66.308	20.138	5.630	0.172	0.393	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1377.54	
3	0.7510	1170.8	1191.6	1190.5	0.870	6.512	66.527	19.890	5.612	0.167	0.380	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1374.95	
4	0.7540	1176.2	1197.0	1196.0	0.872	6.464	66.143	20.145	5.756	0.174	0.401	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1378.47	
5	0.7520	1172.4	1193.1	1192.2	0.869	6.516	66.372	20.010	5.628	0.171	0.391	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1375.84	
6	0.7509	1172.0	1192.7	1191.8	0.872	6.431	66.560	19.951	5.585	0.170	0.388	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1376.40	
7	0.7442	1165.4	1186.1	1185.2	0.886	6.178	67.562	19.554	5.269	0.156	0.356	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1374.86	
8	0.7507	1172.2	1193.0	1192.0	0.878	6.389	66.619	19.910	5.611	0.168	0.384	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1376.87	
9	0.7427	1161.8	1182.3	1181.4	0.889	6.261	67.813	19.263	5.219	0.157	0.359	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1371.88	
10	0.7291	1146.2	1166.5	1165.7	0.921	5.883	69.760	18.487	4.485	0.133	0.300	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1366.16	
11	0.7361	1155.6	1176.1	1175.3	0.911	5.982	68.837	18.863	4.875	0.151	0.344	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1370.73	
12	0.7315	1150.9	1171.2	1170.4	0.869	5.900	69.505	18.542	4.674	0.145	0.329	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1369.42	
13	0.7379	1158.7	1179.2	1178.3	0.874	6.018	68.576	19.000	4.986	0.154	0.353	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1372.72	
14	0.7209	1157.3	1177.8	1176.9	0.839	4.560	70.921	19.496	3.630	0.153	0.355	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1387.20	
15	0.7071	1148.0	1168.3	1167.5	0.786	3.919	72.651	19.440	2.787	0.116	0.266	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1389.40	
16	0.6948	1135.3	1155.4	1154.6	0.714	3.647	74.406	18.646	2.276	0.088	0.197	0.013	0.014	0.000	0.000	0.000	0.000	0.000	1386.17	
17	0.7208	1153.7	1174.2	1173.3	0.881	4.713	70.526	19.933	3.554	0.116	0.250	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1382.97	
18	0.7125	1144.3	1164.6	1163.7	0.847	4.553	71.822	19.186	3.244	0.103	0.220	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1379.70	
19	0.7140	1146.3	1166.6	1165.8	0.814	4.624	71.543	19.350	3.318	0.104	0.222	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1380.64	
20	0.7165	1147.0	1167.3	1166.5	0.821	4.804	71.120	19.494	3.398	0.107	0.230	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1379.07	
21	0.7153	1146.8	1167.2	1166.3	0.799	4.738	71.308	19.425	3.371	0.105	0.229	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1380.00	
22	0.7210	1151.5	1171.9	1171.1	0.819	4.958	70.500	19.677	3.638	0.118	0.262	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1380.15	
23	0.7384	1164.0	1184.6	1183.7	0.848	5.784	68.324	19.693	4.782	0.162	0.365	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1378.53	
24	0.7444	1164.5	1185.2	1184.2	0.845	6.317	67.441	19.621	5.200	0.166	0.369	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1373.60	
25	0.7508	1172.2	1193.0	1192.0	0.863	6.412	66.681	19.829	5.564	0.183	0.420	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1376.86	
26	0.7534	1175.6	1196.4	1195.5	0.868	6.441	66.327	20.006	5.680	0.189	0.437	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1378.44	
27	0.7463	1167.5	1188.2	1187.3	0.853	6.294	67.290	19.629	5.312	0.175	0.401	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1375.44	
28	0.7411	1165.1	1185.7	1184.9	0.808	6.027	67.982	19.562	5.040	0.163	0.375	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1377.35	
29	0.7332	1156.0	1176.4	1175.6	0.791	5.873	68.960	19.304	4.575	0.144	0.320	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1373.87	
30	0.7316	1156.6	1177.1	1176.2	0.797	5.671	69.267	19.262	4.504	0.144	0.319	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1376.15	
Avg	0.7349	1160.0	1180.6	1179.7	0.849	5.692	68.800	19.513	4.627	0.147	0.333	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1377.27	

Source Daily Summary

November 2022

Source #: 063
Name: CLEVELAND STN-MAPLETON

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7525	1173.2	1194.0	1193.7	0.882	6.491	66.287	20.122	5.619	0.170	0.385	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.34	
2	0.7523	1172.7	1193.5	1193.3	0.885	6.491	66.305	20.132	5.594	0.168	0.380	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.04	
3	0.7523	1173.0	1193.8	1193.6	0.883	6.480	66.321	20.115	5.603	0.170	0.384	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1376.36	
4	0.7525	1171.9	1192.6	1192.4	0.874	6.583	66.307	19.966	5.679	0.168	0.381	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1374.83	
5	0.7538	1175.2	1196.0	1195.8	0.879	6.490	66.147	20.168	5.708	0.172	0.391	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1377.56	
6	0.7541	1175.5	1196.3	1196.1	0.869	6.520	66.129	20.117	5.736	0.178	0.403	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1377.57	
7	0.7472	1167.5	1188.2	1188.0	0.878	6.344	67.150	19.622	5.437	0.164	0.367	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1374.57	
8	0.7463	1167.9	1188.6	1188.4	0.885	6.227	67.298	19.632	5.392	0.162	0.364	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1375.86	
9	0.7488	1168.7	1189.4	1189.2	0.887	6.405	66.914	19.710	5.505	0.165	0.373	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1374.54	
10	0.7402	1158.1	1178.6	1178.2	0.902	6.229	68.150	19.133	5.060	0.150	0.338	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1369.88	
11	0.7306	1148.7	1169.0	1168.2	0.934	5.853	69.610	18.564	4.556	0.139	0.310	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1367.68	
12	0.7320	1149.6	1170.0	1169.0	0.914	5.956	69.464	18.472	4.693	0.144	0.323	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1367.46	
13	0.7342	1154.6	1175.1	1174.1	0.865	5.929	69.131	18.750	4.804	0.149	0.336	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1371.39	
14	0.7330	1158.7	1179.2	1178.2	0.858	5.580	69.153	19.364	4.514	0.151	0.340	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1377.41	
15	0.7168	1157.6	1178.1	1177.2	0.838	4.160	71.584	19.492	3.365	0.154	0.355	0.024	0.026	0.000	0.000	0.000	0.000	0.000	1391.50	
16	0.6903	1129.7	1149.7	1148.8	0.710	3.578	74.823	18.753	1.888	0.070	0.156	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1383.77	
17	0.7121	1150.3	1170.7	1169.8	0.822	4.188	72.036	19.348	3.199	0.118	0.256	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1387.33	
18	0.7210	1151.7	1172.1	1171.1	0.873	4.868	70.423	19.913	3.552	0.109	0.235	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1380.33	
19	0.7128	1145.9	1166.2	1165.2	0.858	4.467	71.860	19.176	3.286	0.106	0.222	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1381.31	
20	0.7153	1146.8	1167.1	1166.1	0.799	4.740	71.280	19.504	3.329	0.103	0.221	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1379.95	
21	0.7186	1149.6	1170.0	1169.0	0.839	4.818	70.897	19.529	3.537	0.112	0.241	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1380.14	
22	0.7153	1145.7	1166.0	1165.1	0.801	4.803	71.265	19.456	3.319	0.104	0.227	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1378.67	
23	0.7295	1159.3	1179.8	1178.8	0.854	5.231	69.364	19.982	4.103	0.135	0.299	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1381.28	
24	0.7439	1165.1	1185.8	1184.8	0.851	6.224	67.605	19.557	5.163	0.173	0.384	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1374.79	
25	0.7473	1167.2	1187.9	1187.1	0.862	6.395	67.069	19.730	5.353	0.170	0.379	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1374.15	
26	0.7532	1173.8	1194.6	1193.6	0.880	6.518	66.339	19.925	5.676	0.187	0.425	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1376.47	
27	0.7506	1171.5	1192.2	1191.2	0.869	6.430	66.717	19.797	5.536	0.183	0.417	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1376.13	
28	0.7471	1170.4	1191.2	1190.3	0.848	6.201	67.204	19.772	5.351	0.176	0.401	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1378.11	
29	0.7377	1160.6	1181.2	1180.4	0.805	5.984	68.387	19.469	4.822	0.153	0.342	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.23	
30	0.7329	1157.1	1177.6	1176.8	0.809	5.744	69.090	19.283	4.570	0.146	0.322	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.55	
Avg	0.7358	1161.0	1181.1	1180.5	0.857	5.731	68.677	19.552	4.665	0.148	0.332	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1377.07	

Source Daily Summary

November 2022

Source #: 061
Name: CLEVELAND STN-GRAFTON BDR

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7524	1173.0	1193.8	1193.6	0.883	6.496	66.296	20.113	5.614	0.169	0.385	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.18	
2	0.7523	1172.7	1193.5	1193.3	0.885	6.495	66.301	20.131	5.595	0.169	0.381	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1375.99	
3	0.7523	1172.9	1193.7	1193.6	0.882	6.485	66.320	20.113	5.602	0.170	0.384	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.26	
4	0.7524	1171.7	1192.4	1192.3	0.875	6.586	66.318	19.956	5.675	0.168	0.380	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1374.67	
5	0.7538	1175.3	1196.1	1196.0	0.880	6.490	66.143	20.165	5.712	0.172	0.392	0.023	0.023	0.000	0.000	0.000	0.000	0.000	1377.60	
6	0.7542	1175.6	1196.4	1196.3	0.869	6.523	66.122	20.113	5.741	0.178	0.405	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1377.61	
7	0.7481	1168.5	1189.2	1189.1	0.877	6.371	67.011	19.685	5.480	0.165	0.370	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1374.90	
8	0.7461	1167.7	1188.3	1188.2	0.885	6.223	67.328	19.615	5.383	0.162	0.363	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1375.74	
9	0.7492	1168.7	1189.4	1189.2	0.886	6.447	66.823	19.757	5.514	0.164	0.369	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1374.12	
10	0.7419	1159.8	1180.3	1180.1	0.900	6.283	67.909	19.222	5.148	0.154	0.346	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1370.37	
11	0.7308	1148.9	1169.2	1168.9	0.933	5.861	69.588	18.561	4.572	0.139	0.312	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1367.71	
12	0.7320	1149.7	1170.0	1169.7	0.915	5.955	69.460	18.474	4.693	0.144	0.324	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1367.50	
13	0.7342	1154.3	1174.8	1174.4	0.866	5.946	69.129	18.734	4.804	0.149	0.335	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1371.04	
14	0.7333	1158.6	1179.1	1178.7	0.858	5.614	69.103	19.358	4.538	0.151	0.339	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1377.03	
15	0.7168	1157.5	1178.0	1177.6	0.838	4.165	71.596	19.475	3.366	0.154	0.356	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1391.37	
16	0.6905	1129.6	1149.6	1149.2	0.711	3.592	74.807	18.745	1.895	0.070	0.157	0.011	0.011	0.000	0.000	0.000	0.000	0.000	1383.55	
17	0.7121	1150.4	1170.8	1170.4	0.822	4.180	72.033	19.369	3.189	0.118	0.256	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1387.48	
18	0.7205	1151.0	1171.4	1171.1	0.870	4.864	70.503	19.859	3.534	0.109	0.234	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1380.04	
19	0.7126	1145.6	1165.9	1165.6	0.858	4.469	71.883	19.160	3.278	0.105	0.221	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1381.12	
20	0.7151	1146.5	1166.8	1166.5	0.799	4.740	71.304	19.485	3.323	0.103	0.220	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1379.79	
21	0.7184	1149.2	1169.6	1169.3	0.839	4.821	70.930	19.502	3.529	0.111	0.240	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1379.90	
22	0.7147	1144.8	1165.1	1164.8	0.796	4.809	71.375	19.353	3.311	0.104	0.227	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1378.15	
23	0.7292	1158.9	1179.4	1179.0	0.854	5.222	69.412	19.962	4.084	0.134	0.298	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1381.15	
24	0.7438	1165.1	1185.7	1185.2	0.852	6.212	67.621	19.565	5.151	0.172	0.383	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1374.84	
25	0.7473	1167.2	1187.9	1187.5	0.862	6.396	67.075	19.718	5.353	0.171	0.381	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1374.14	
26	0.7530	1173.4	1194.1	1193.7	0.880	6.528	66.361	19.905	5.666	0.187	0.424	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1376.11	
27	0.7507	1171.5	1192.2	1191.8	0.870	6.436	66.704	19.797	5.541	0.183	0.418	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1376.08	
28	0.7469	1170.0	1190.7	1190.4	0.848	6.206	67.235	19.745	5.341	0.176	0.401	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1377.80	
29	0.7375	1160.4	1180.9	1180.5	0.805	5.985	68.409	19.453	4.815	0.153	0.342	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1375.08	
30	0.7330	1157.0	1177.5	1177.1	0.809	5.761	69.069	19.283	4.573	0.146	0.322	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.31	
Avg	0.7358	1161.0	1181.1	1180.8	0.857	5.739	68.672	19.546	4.667	0.148	0.332	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1376.95	

Source Daily Summary

November 2022

Source #: 041
Name: BISMARCK STN-GLEN ULLIN STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.7444	1165.6	1186.3	1185.6	0.887	6.185	67.543	19.562	5.264	0.158	0.361	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1374.98	
2	0.7526	1174.3	1195.1	1194.4	0.877	6.434	66.297	20.152	5.631	0.172	0.392	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1377.64	
3	0.6575	1081.5	1100.7	1100.2	1.002	2.979	80.985	13.668	1.253	0.034	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1357.59	
4	0.6645	1087.4	1106.7	1106.1	1.044	3.226	79.426	14.895	1.294	0.035	0.071	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1357.60	
5	0.6632	1084.4	1103.6	1103.1	1.077	3.233	79.617	14.784	1.181	0.034	0.067	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1355.24	
6	0.6713	1092.0	1111.3	1110.8	1.048	3.575	78.534	15.061	1.626	0.047	0.099	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1356.55	
7	0.6536	1075.0	1094.1	1093.6	1.060	2.933	81.264	13.755	0.911	0.025	0.046	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1353.26	
8	0.6518	1073.1	1092.1	1091.7	1.050	2.890	81.762	13.297	0.921	0.026	0.049	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1352.73	
9	0.6491	1069.0	1087.9	1087.5	1.047	2.903	82.029	13.125	0.820	0.024	0.046	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1350.27	
10	0.6603	1080.7	1099.8	1099.4	1.100	3.156	80.186	14.434	1.030	0.030	0.059	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1353.40	
11	0.6605	1080.4	1099.5	1099.0	1.114	3.167	80.110	14.545	0.976	0.028	0.054	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1352.90	
12	0.6516	1080.3	1099.5	1099.0	0.856	2.723	81.575	13.934	0.842	0.023	0.043	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1362.01	
13	0.6446	1071.3	1090.3	1089.8	0.798	2.702	82.958	12.629	0.838	0.024	0.046	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1357.95	
14	0.6759	1123.4	1143.3	1142.8	0.450	2.996	76.707	18.413	1.353	0.029	0.047	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1390.74	
15	0.6780	1126.9	1146.8	1146.3	0.390	3.083	76.199	18.903	1.335	0.031	0.053	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1392.74	
16	0.6750	1121.5	1141.4	1140.8	0.362	3.167	76.706	18.408	1.262	0.032	0.055	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1389.22	
17	0.6803	1127.7	1147.7	1147.3	0.671	2.820	76.474	18.274	1.588	0.056	0.100	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1391.38	
18	0.6723	1114.0	1133.7	1133.3	0.581	3.036	77.681	17.201	1.372	0.043	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1382.70	
19	0.6754	1115.8	1135.6	1135.2	0.513	3.320	77.144	17.323	1.564	0.045	0.081	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1381.77	
20	0.6742	1113.9	1133.7	1133.3	0.477	3.375	77.258	17.263	1.499	0.042	0.075	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1380.67	
21	0.6713	1109.1	1128.7	1128.3	0.482	3.396	77.792	16.758	1.446	0.042	0.075	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1377.57	
22	0.6713	1109.7	1129.4	1128.8	0.408	3.466	77.668	16.926	1.415	0.039	0.070	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1378.40	
23	0.6728	1111.4	1131.1	1130.6	0.426	3.477	77.481	16.985	1.505	0.042	0.076	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1378.98	
24	0.6701	1109.1	1128.7	1128.1	0.414	3.379	77.928	16.750	1.411	0.039	0.069	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1378.90	
25	0.6737	1113.9	1133.6	1132.4	0.426	3.411	77.334	17.182	1.516	0.044	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1381.09	
26	0.6738	1111.7	1131.4	1131.0	0.582	3.311	77.671	16.649	1.611	0.057	0.103	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1378.35	
27	0.6724	1111.2	1130.8	1130.5	0.560	3.247	77.878	16.593	1.553	0.055	0.099	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1379.09	
28	0.6737	1114.4	1134.2	1133.8	0.471	3.304	77.412	17.176	1.492	0.048	0.085	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1381.85	
29	0.6809	1124.5	1144.4	1144.0	0.520	3.295	76.203	18.152	1.665	0.054	0.098	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1386.88	
30	0.6810	1123.7	1143.6	1143.2	0.576	3.271	76.386	17.806	1.780	0.059	0.107	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1385.76	
Avg	0.6732	1107.0	1126.2	1125.7	0.709	3.382	77.807	16.353	1.599	0.047	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1372.61	

Source Daily Summary

November 2022

Source #: 271
Name: DCKSN BRD-BLFD TSF-G.U. STN

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6436	1070.7	1089.6	1089.3	0.960	2.395	83.298	12.494	0.790	0.022	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1358.28	
2	0.6457	1071.8	1090.8	1090.5	0.969	2.514	82.856	12.798	0.803	0.022	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1357.51	
3	0.6656	1112.4	1132.1	1131.8	0.498	2.633	78.219	17.862	0.738	0.017	0.032	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1387.39	
4	0.6638	1101.2	1120.7	1120.3	0.736	2.782	78.921	16.665	0.839	0.020	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1375.36	
5	0.6611	1084.2	1103.4	1103.0	1.054	3.081	79.971	14.793	1.014	0.030	0.055	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1357.04	
6	0.6545	1077.2	1096.3	1095.9	1.020	2.933	81.185	13.876	0.915	0.025	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1355.18	
7	0.6536	1076.8	1095.9	1095.5	1.021	2.872	81.350	13.792	0.895	0.025	0.044	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1355.56	
8	0.6510	1074.4	1093.4	1093.1	1.006	2.802	81.857	13.384	0.882	0.025	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1355.18	
9	0.6648	1106.8	1126.4	1126.1	0.608	2.737	78.645	17.059	0.890	0.022	0.039	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1381.14	
10	0.6851	1152.4	1172.8	1172.6	0.064	2.698	73.905	22.421	0.871	0.014	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.88	
11	0.6786	1137.4	1157.6	1157.3	0.236	2.735	75.376	20.757	0.858	0.015	0.024	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1405.17	
12	0.6758	1124.2	1144.1	1143.9	0.289	3.191	76.611	18.374	1.456	0.029	0.046	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1391.63	
13	0.6881	1145.7	1166.0	1165.7	0.263	3.075	74.120	20.988	1.471	0.031	0.050	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1405.65	
14	0.6836	1138.2	1158.3	1158.0	0.265	3.110	75.035	20.030	1.477	0.031	0.051	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1400.97	
15	0.6771	1127.0	1147.0	1146.7	0.227	3.232	76.042	19.214	1.205	0.029	0.049	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1393.93	
16	0.6749	1121.8	1141.7	1141.4	0.597	2.780	77.280	17.761	1.440	0.048	0.084	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1389.73	
17	0.6782	1126.2	1146.1	1145.7	0.533	2.920	76.586	18.329	1.483	0.050	0.088	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1391.71	
18	0.6725	1114.2	1134.0	1133.6	0.567	3.065	77.720	17.031	1.481	0.046	0.083	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1382.74	
19	0.6733	1115.3	1135.1	1134.8	0.414	3.305	77.294	17.423	1.456	0.038	0.068	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1383.29	
20	0.6708	1110.1	1129.8	1129.6	0.497	3.253	77.935	16.742	1.445	0.042	0.078	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1379.50	
21	0.6703	1110.5	1130.2	1129.9	0.377	3.375	77.788	16.964	1.386	0.038	0.069	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1380.38	
22	0.6708	1111.0	1130.6	1130.4	0.392	3.371	77.779	16.890	1.449	0.041	0.073	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1380.43	
23	0.6687	1109.2	1128.9	1128.5	0.392	3.276	78.162	16.665	1.391	0.039	0.070	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1380.47	
24	0.6718	1112.8	1132.5	1132.1	0.423	3.300	77.697	16.964	1.482	0.046	0.080	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1381.73	
25	0.6717	1110.7	1130.4	1130.1	0.553	3.218	78.050	16.420	1.586	0.057	0.102	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1379.26	
26	0.6711	1111.7	1131.3	1131.0	0.519	3.162	78.043	16.592	1.520	0.054	0.097	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1380.98	
27	0.6733	1116.1	1135.9	1135.6	0.408	3.263	77.338	17.407	1.451	0.045	0.079	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1384.29	
28	0.6800	1125.8	1145.7	1145.4	0.496	3.172	76.335	18.188	1.642	0.056	0.100	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1389.38	
29	0.6795	1123.4	1143.3	1143.0	0.543	3.192	76.587	17.777	1.723	0.060	0.106	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1387.03	
30	0.6783	1122.0	1141.9	1141.6	0.469	3.274	76.713	17.653	1.734	0.053	0.094	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1386.54	
Avg	0.6699	1111.0	1131.1	1130.8	0.547	3.024	77.957	17.111	1.259	0.036	0.063	0.003	0.002	0.000	0.000	0.000	0.000	0.000	1381.81	

Source Daily Summary

November 2022

Source #: 051
Name: CABIN CRK STN-BELFIELD TRSFR

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6668	1112.0	1131.7	1131.2	0.640	2.551	78.485	17.220	1.025	0.026	0.048	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1385.88	
2	0.6598	1101.3	1120.8	1120.4	0.643	2.542	79.633	16.328	0.798	0.019	0.034	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1379.85	
3	0.6729	1111.8	1131.5	1131.0	0.482	3.374	77.604	16.836	1.573	0.042	0.078	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1379.36	
4	0.6706	1110.8	1130.4	1130.0	0.362	3.410	77.662	17.103	1.369	0.031	0.056	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1380.41	
5	0.6927	1140.7	1160.9	1160.3	1.252	2.291	76.087	17.301	2.738	0.110	0.192	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1394.82	
6	0.6739	1102.7	1122.2	1121.6	1.203	2.931	78.290	15.795	1.613	0.055	0.101	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1367.03	
7	0.6717	1101.6	1121.1	1120.8	1.183	2.818	78.710	15.539	1.587	0.053	0.098	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1367.91	
8	0.6813	1116.9	1136.7	1136.3	1.271	2.653	77.488	16.280	2.079	0.074	0.135	0.010	0.010	0.000	0.000	0.000	0.000	0.000	1377.08	
9	0.6787	1127.9	1147.9	1147.7	0.625	2.727	76.300	18.975	1.267	0.035	0.063	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1393.33	
10	0.6806	1140.3	1160.5	1160.3	0.222	2.772	74.962	21.132	0.873	0.014	0.024	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1406.61	
11	0.6910	1134.5	1154.6	1154.3	1.313	2.428	76.006	17.608	2.343	0.098	0.178	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1388.88	
12	0.6740	1106.2	1125.8	1125.3	1.223	2.696	78.464	15.742	1.672	0.065	0.121	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1371.23	
13	0.6692	1103.5	1123.0	1122.4	1.029	2.697	79.250	15.156	1.674	0.063	0.115	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1372.82	
14	0.6739	1111.2	1130.9	1130.0	0.921	2.835	78.378	15.792	1.857	0.071	0.128	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1377.59	
15	0.6737	1112.6	1132.3	1131.7	0.486	3.397	77.549	16.748	1.684	0.045	0.080	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1379.54	
16	0.6716	1108.8	1128.4	1128.1	0.472	3.458	77.862	16.473	1.606	0.043	0.076	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1376.87	
17	0.6706	1106.0	1125.6	1124.9	0.493	3.493	78.059	16.261	1.563	0.043	0.079	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1374.57	
18	0.6719	1109.1	1128.8	1127.9	0.536	3.359	77.882	16.508	1.579	0.044	0.080	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1377.08	
19	0.6722	1109.1	1128.7	1127.9	0.523	3.416	77.796	16.545	1.582	0.045	0.083	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1376.66	
20	0.6682	1102.3	1121.9	1121.0	0.513	3.468	78.520	15.849	1.513	0.044	0.082	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1372.37	
21	0.6675	1101.8	1121.3	1120.2	0.492	3.462	78.632	15.784	1.496	0.043	0.080	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1372.44	
22	0.6659	1099.2	1118.7	1117.9	0.532	3.405	79.062	15.328	1.535	0.046	0.083	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1370.93	
23	0.6700	1106.1	1125.7	1125.0	0.462	3.482	78.234	16.047	1.638	0.046	0.082	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1375.22	
24	0.6702	1105.0	1124.6	1124.0	0.502	3.504	78.198	16.074	1.572	0.049	0.089	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1373.68	
25	0.6710	1107.1	1126.7	1126.4	0.434	3.560	77.944	16.332	1.594	0.045	0.082	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1375.41	
26	0.6696	1104.7	1124.3	1123.5	0.587	3.332	78.559	15.707	1.643	0.057	0.102	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1373.99	
27	0.6794	1117.9	1137.7	1136.8	0.653	3.356	76.929	16.950	1.911	0.065	0.119	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1380.20	
28	0.6802	1119.4	1139.2	1138.3	0.674	3.300	76.836	17.058	1.921	0.068	0.125	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1381.34	
29	0.6743	1111.6	1131.2	1130.6	0.496	3.496	77.537	16.578	1.739	0.050	0.092	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1377.67	
30	0.6771	1115.9	1135.7	1134.7	0.506	3.481	77.084	16.925	1.845	0.052	0.095	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1380.16	
Avg	0.6737	1112.0	1131.6	1131.0	0.691	3.123	77.800	16.599	1.630	0.051	0.093	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1378.70	

Source Daily Summary

November 2022

Source #: 111
Name: LITTLE KNIFE PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.6865	1156.1	1176.5	1175.1	0.000	2.701	73.373	23.197	0.698	0.010	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.99	-25.33
2	0.6869	1156.0	1176.5	1175.3	0.000	2.741	73.269	23.278	0.681	0.010	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.53	-25.28
3	0.6851	1153.0	1173.4	1171.5	0.000	2.758	73.564	23.022	0.632	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.65	-26.53
4	0.6835	1150.3	1170.7	1168.6	0.000	2.769	73.826	22.803	0.586	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.04	-27.69
5	0.6858	1154.8	1175.2	1174.1	0.001	2.709	73.425	23.232	0.604	0.010	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.18	-26.08
6	0.6871	1156.4	1176.9	1175.5	0.000	2.737	73.252	23.268	0.711	0.011	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.82	-25.03
7	0.6876	1157.2	1177.7	1176.5	0.000	2.739	73.269	23.126	0.830	0.012	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.20	-24.30
8	0.6886	1158.7	1179.2	1177.9	0.000	2.737	73.108	23.263	0.855	0.012	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1421.03	-23.73
9	0.6873	1156.5	1177.0	1175.7	0.000	2.747	73.263	23.189	0.777	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.73	-24.91
10	0.6896	1160.2	1180.8	1179.6	0.000	2.738	73.056	23.161	1.004	0.014	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1421.89	-22.68
11	0.6886	1158.6	1179.1	1177.7	0.000	2.743	73.163	23.137	0.921	0.012	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.94	-23.51
12	0.6887	1158.8	1179.3	1177.9	0.000	2.741	73.128	23.187	0.909	0.012	0.021	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1421.06	-23.51
13	0.6844	1151.4	1171.8	1169.9	0.000	2.785	73.752	22.765	0.674	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.46	-26.84
14	0.6829	1147.9	1168.2	1165.9	0.001	2.856	74.017	22.461	0.642	0.008	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1413.69	-27.87
15	0.6844	1150.4	1170.7	1168.4	0.003	2.848	73.769	22.655	0.702	0.008	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1415.15	-26.84
16	0.6852	1152.2	1172.6	1170.6	0.003	2.811	73.603	22.848	0.717	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.54	-26.36
17	0.6853	1152.3	1172.7	1171.3	0.002	2.810	73.633	22.811	0.706	0.011	0.022	0.002	0.003	0.000	0.000	0.000	0.000	0.000	1416.67	-25.53
18	0.6860	1154.8	1175.3	1174.0	0.001	2.730	73.366	23.277	0.597	0.009	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.00	-26.03
19	0.6863	1155.2	1175.6	1174.4	0.000	2.740	73.346	23.229	0.656	0.010	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.07	-25.70
20	0.6867	1156.0	1176.4	1175.1	0.000	2.725	73.323	23.227	0.694	0.011	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.67	-25.29
21	0.6867	1155.6	1176.0	1174.8	0.000	2.752	73.275	23.270	0.682	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.17	-25.57
22	0.6872	1156.5	1177.0	1175.5	0.000	2.742	73.205	23.335	0.687	0.010	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.81	-25.11
23	0.6870	1156.1	1176.5	1175.2	0.000	2.753	73.262	23.246	0.707	0.011	0.020	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.42	-25.12
24	0.6872	1156.4	1176.9	1175.6	0.000	2.747	73.246	23.254	0.721	0.011	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.69	-25.01
25	0.6869	1155.8	1176.3	1174.9	0.000	2.752	73.305	23.190	0.722	0.010	0.019	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.30	-25.17
26	0.6871	1156.6	1177.1	1175.9	0.000	2.726	73.256	23.273	0.715	0.010	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.03	-25.04
27	0.6862	1155.0	1175.5	1174.2	0.000	2.740	73.382	23.173	0.684	0.008	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.99	-25.77
28	0.6855	1154.1	1174.6	1173.6	0.000	2.729	73.524	23.066	0.645	0.012	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.60	-26.00
29	0.6859	1154.8	1175.2	1174.2	0.000	2.727	73.412	23.206	0.625	0.010	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.98	-25.98
30	0.6852	1152.4	1172.9	1171.6	0.000	2.796	73.547	23.005	0.624	0.010	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1416.93	-26.54
Avg	0.6864	1155.0	1175.5	1174.0	0.000	2.754	73.397	23.105	0.714	0.010	0.018	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.81	-25.48

Source Daily Summary

November 2022

Source #: 351
Name: BADLANDS PLANT

Pressure Base:	14.730	Contract Day:	1
Temperature Base:	60	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	0.5725	962.2	979.2	978.6	0.105	3.623	95.952	0.293	0.018	0.009	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.16	
2	0.5723	962.3	979.4	978.8	0.106	3.596	95.981	0.294	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.59	
3	0.5723	962.3	979.4	979.0	0.106	3.597	95.980	0.294	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.56	
4	0.5723	962.4	979.4	979.0	0.106	3.595	95.983	0.294	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.61	
5	0.5883	976.8	994.1	993.7	0.272	3.961	93.063	2.464	0.214	0.012	0.013	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1296.02	
6	0.6272	1031.8	1050.1	1049.7	0.409	4.062	86.117	8.351	0.950	0.033	0.067	0.004	0.006	0.000	0.000	0.000	0.000	0.000	1326.27	
7	0.6182	1018.2	1036.2	1035.9	0.358	4.122	87.665	7.025	0.735	0.028	0.059	0.003	0.006	0.000	0.000	0.000	0.000	0.000	1317.88	
8	0.5724	962.3	979.4	979.1	0.105	3.600	95.976	0.295	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1294.54	
9	0.6180	1018.5	1036.5	1036.2	0.253	4.249	87.500	7.223	0.692	0.025	0.050	0.003	0.005	0.000	0.000	0.000	0.000	0.000	1318.63	
10	0.6644	1092.6	1112.0	1111.7	0.416	3.846	78.816	15.576	1.245	0.031	0.062	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1364.26	
11	0.6713	1101.9	1121.4	1121.1	0.389	3.970	77.718	16.258	1.526	0.042	0.085	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1368.72	
12	0.6756	1109.2	1128.8	1128.5	0.443	3.855	77.040	16.874	1.635	0.047	0.094	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1373.33	
13	0.6787	1113.3	1133.0	1132.7	0.479	3.839	76.578	17.198	1.744	0.050	0.100	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1375.25	
14	0.6733	1107.2	1126.8	1126.4	0.476	3.707	77.506	16.578	1.586	0.046	0.089	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1373.20	
15	0.6645	1090.5	1109.9	1109.5	0.468	3.908	79.107	14.938	1.436	0.044	0.087	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1361.43	
16	0.6632	1090.0	1109.3	1109.0	0.480	3.802	79.368	14.800	1.414	0.044	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1362.11	
17	0.6634	1091.3	1110.6	1110.4	0.489	3.727	79.329	14.915	1.409	0.042	0.078	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1363.52	
18	0.6629	1091.2	1110.5	1110.2	0.496	3.676	79.437	14.862	1.400	0.042	0.077	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1363.90	
19	0.6609	1089.1	1108.4	1108.1	0.510	3.594	79.799	14.630	1.346	0.039	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1363.37	
20	0.6588	1086.5	1105.7	1105.4	0.520	3.536	80.184	14.358	1.286	0.037	0.069	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1362.30	
21	0.6574	1084.9	1104.1	1103.8	0.532	3.482	80.442	14.189	1.244	0.036	0.066	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1361.79	
22	0.6567	1084.2	1103.4	1103.0	0.548	3.440	80.590	14.077	1.232	0.037	0.068	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1361.56	
23	0.6565	1083.9	1103.1	1102.7	0.562	3.416	80.659	14.013	1.233	0.037	0.070	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1361.42	
24	0.6567	1084.0	1103.2	1102.8	0.564	3.429	80.646	13.987	1.253	0.038	0.073	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1361.27	
25	0.6553	1081.7	1100.9	1100.4	0.563	3.434	80.889	13.780	1.217	0.037	0.070	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1359.92	
26	0.6577	1082.7	1101.9	1101.6	0.557	3.606	80.492	13.909	1.302	0.041	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1358.74	
27	0.6577	1083.9	1103.1	1102.7	0.565	3.525	80.520	13.943	1.311	0.042	0.082	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1360.16	
28	0.6559	1081.8	1101.0	1100.7	0.572	3.471	80.835	13.730	1.264	0.040	0.077	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1359.42	
29	0.6542	1078.9	1098.0	1097.8	0.574	3.482	81.139	13.464	1.218	0.039	0.074	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1357.55	
30	0.6537	1077.9	1097.0	1096.7	0.582	3.489	81.249	13.330	1.224	0.039	0.076	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1356.75	
Avg	0.6404	1058.0	1076.9	1076.5	0.420	3.688	83.552	11.198	1.040	0.033	0.061	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1345.37	

Gas Composition and Properties

Effective November 1, 2022

Attachment B
Page 19 of 24

Source #: 2702230
Name: WATFORD CITY EAST BORDER

Component	Mole %	Liquid Content	Mass %	Property	Total Sample	C6 Plus Fraction
Carbon Dioxide, CO2	0.7272		1.7368	Pressure Base	14.730	
Nitrogen, N2	4.2681		6.4884	Temperature Base	60.00	
Methane, C1	86.7811		75.5505	HCDP @ Sample Pressure		
Ethane, C2	5.5463	1.4830	9.0503	Cricondentherm	-6.748	
Propane, C3	2.0966	0.5775	5.0171	HV, Dry @ Base P, T	1054.41	4755.9000
iso-Butane, iC4	0.1044	0.0342	0.3293	HV, Sat @ Base P, T	1036.06	
n-Butane, nC4	0.1040	0.0328	0.3280	HV, Sat @ Sample P, T	1054.41	
iso-Pentane, iC5	0.1071	0.0392	0.4193	Relative Density	0.6375	0.66406
n-Pentane, nC5	0.1090	0.0395	0.4268			
Neo-Pentane, neo	0.1010		0.3954			
Hexanes Plus, C6+	0.0552	0.0227	0.2581			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	2.2300	100.0000			

Sample

Date: 11/01/2022 Type:

Tech: Sampson, Wayne

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: 11/01/2022 Instrument:

 Cylinder:

Tech: Sampson, Wayne

Remarks:

November-22

ZONE 550

MANDAN BORDER

MANDAN BORDER			NBPL - St Anthony			WBI - Mandan Border			Weighted	
Start Date	End Date		MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
11/1/2022	11/2/2022		0	0	0	1,876	2,218	1186.3	1186.300	11/1/2022
11/2/2022	11/3/2022		632	687	1090.5	1,819	2,176	1195.1	1168.128	11/2/2022
11/3/2022	11/4/2022		0	0	0	4,380	4,819	1100.7	1100.700	11/3/2022
11/4/2022	11/5/2022		0	0	0	3,722	4,115	1106.7	1106.700	11/4/2022
11/5/2022	11/6/2022		0	0	0	3,851	4,247	1103.4	1103.400	11/5/2022
11/6/2022	11/7/2022		0	0	0	5,249	5,833	1111.3	1111.300	11/6/2022
11/7/2022	11/8/2022		0	0	0	5,505	6,023	1094.1	1094.100	11/7/2022
11/8/2022	11/9/2022		0	0	0	4,321	4,719	1092.1	1092.100	11/8/2022
11/9/2022	11/10/2022		0	0	0	5,726	6,232	1087.9	1087.900	11/9/2022
11/10/2022	11/11/2022		0	0	0	6,585	7,242	1099.8	1099.800	11/10/2022
11/11/2022	11/12/2022		0	0	0	6,767	7,437	1099.5	1099.500	11/11/2022
11/12/2022	11/13/2022		0	0	0	7,091	7,796	1099.5	1099.500	11/12/2022
11/13/2022	11/14/2022		0	0	0	6,338	6,906	1090.3	1090.300	11/13/2022
11/14/2022	11/15/2022		2,591	2,816	1086.8	5,906	6,753	1143.3	1126.071	11/14/2022
11/15/2022	11/16/2022		65	71	1088.6	6,048	6,936	1146.8	1146.181	11/15/2022
11/16/2022	11/17/2022		5,520	5,997	1086.5	22	26	1150.1	1086.752	11/16/2022
11/17/2022	11/18/2022		3,349	3,638	1086.4	4,081	4,685	1147.7	1120.070	11/17/2022
11/18/2022	11/19/2022		3,214	3,487	1084.9	3,317	3,761	1133.7	1109.685	11/18/2022
11/19/2022	11/20/2022		3,233	3,509	1085.4	2,496	2,834	1135.6	1107.271	11/19/2022
11/20/2022	11/21/2022		3,257	3,537	1086.1	1,484	1,682	1133.7	1100.999	11/20/2022
11/21/2022	11/22/2022		3,253	3,538	1087.7	1,554	1,754	1128.6	1100.922	11/21/2022
11/22/2022	11/23/2022		3,177	3,440	1082.5	1,215	1,373	1129.7	1095.557	11/22/2022
11/23/2022	11/24/2022		3,261	3,522	1080.1	867	980	1131.8	1090.959	11/23/2022
11/24/2022	11/25/2022		3,172	3,420	1078.3	701	791	1128.4	1087.368	11/24/2022
11/25/2022	11/26/2022		3,096	3,347	1081.1	129	146	1131.1	1083.100	11/25/2022
11/26/2022	11/27/2022		3,266	3,522	1078.6	980	1,110	1132.1	1090.948	11/26/2022
11/27/2022	11/28/2022		3,272	3,529	1078.8	877	991	1131.1	1089.834	11/27/2022
11/28/2022	11/29/2022		3,289	3,543	1077.1	2,449	2,780	1134.2	1101.470	11/28/2022
11/29/2022	11/30/2022		3,294	3,551	1078	3,900	4,462	1144.4	1113.997	11/29/2022
11/30/2022	12/1/2022		3,851	4,138	1074.6	3,440	3,933	1143.6	1107.155	11/30/2022
			54,792	59,292	649.7333	102,696	114,760	1126.4167	1106.6023	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 November 2022

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	1,155.892	0.6610	84.4775	9.4548	3.6695	0.3695	0.5632	0.0723	0.0580	0.0290	0.9300	0.3656	0.0106
2	1,156.840	0.6615	84.3954	9.5137	3.6966	0.3714	0.5697	0.0708	0.0571	0.0261	0.9356	0.3529	0.0106
3	1,160.003	0.6636	84.1342	9.6363	3.7785	0.3838	0.5968	0.0743	0.0586	0.0270	0.9428	0.3579	0.0098
4	1,154.040	0.6597	84.6703	9.3300	3.6382	0.3596	0.5590	0.0695	0.0566	0.0257	0.9068	0.3743	0.0100
5	1,151.293	0.6578	84.8849	9.2366	3.5942	0.3353	0.5376	0.0626	0.0522	0.0219	0.8797	0.3848	0.0101
6	1,150.224	0.6569	85.0059	9.1775	3.5624	0.3320	0.5335	0.0613	0.0503	0.0207	0.8652	0.3810	0.0102
7	1,149.600	0.6561	85.0897	9.2034	3.5004	0.3294	0.5199	0.0621	0.0514	0.0225	0.8300	0.3808	0.0103
8	1,151.145	0.6574	84.9490	9.2219	3.5853	0.3361	0.5274	0.0628	0.0512	0.0226	0.8520	0.3813	0.0104
9	1,151.897	0.6577	84.8499	9.3487	3.5528	0.3381	0.5317	0.0645	0.0519	0.0229	0.8591	0.3699	0.0105
10	1,152.655	0.6582	84.8214	9.3078	3.6150	0.3397	0.5378	0.0631	0.0519	0.0229	0.8592	0.3705	0.0106
11	1,152.029	0.6578	84.8776	9.2842	3.5832	0.3383	0.5340	0.0650	0.0539	0.0239	0.8580	0.3712	0.0107
12	1,152.734	0.6583	84.8531	9.2436	3.6441	0.3396	0.5357	0.0668	0.0536	0.0232	0.8574	0.3723	0.0104
13	1,151.415	0.6576	84.9690	9.1712	3.5991	0.3359	0.5390	0.0675	0.0537	0.0216	0.8420	0.3903	0.0106
14	1,150.771	0.6565	85.1167	9.1415	3.5501	0.3393	0.5323	0.0643	0.0515	0.0207	0.7852	0.3873	0.0110
15	1,147.914	0.6545	85.3768	9.0205	3.4533	0.3288	0.5166	0.0629	0.0517	0.0213	0.7781	0.3792	0.0107
16	1,145.586	0.6524	85.6209	8.9629	3.3738	0.3170	0.4840	0.0592	0.0491	0.0205	0.7174	0.3843	0.0109
17	1,148.036	0.6555	85.1843	9.1782	3.3745	0.3356	0.5504	0.0634	0.0497	0.0211	0.8249	0.4073	0.0105
18	1,149.416	0.6559	85.0362	9.4217	3.3675	0.3271	0.5217	0.0618	0.0492	0.0216	0.7609	0.4212	0.0111
19	1,146.978	0.6545	85.3781	9.0473	3.3788	0.3318	0.5230	0.0637	0.0518	0.0239	0.7689	0.4223	0.0106
20	1,145.355	0.6533	85.4831	9.0541	3.2870	0.3283	0.5183	0.0622	0.0494	0.0227	0.7803	0.4038	0.0107
21	1,145.999	0.6535	85.4302	9.0786	3.3107	0.3294	0.5247	0.0612	0.0483	0.0224	0.8069	0.3771	0.0105
22	1,144.450	0.6524	85.5449	9.0875	3.2200	0.3218	0.5101	0.0600	0.0520	0.0237	0.7980	0.3714	0.0107
23	1,146.130	0.6541	85.3064	9.1680	3.2971	0.3242	0.5264	0.0605	0.0533	0.0241	0.8569	0.3720	0.0111
24	1,144.730	0.6534	85.3678	9.1102	3.2868	0.3215	0.5150	0.0585	0.0501	0.0229	0.9025	0.3539	0.0108
25	1,144.091	0.6531	85.3982	9.1037	3.2688	0.3167	0.5110	0.0582	0.0490	0.0224	0.8937	0.3676	0.0108
26	1,143.279	0.6523	85.4937	9.0754	3.2279	0.3145	0.5033	0.0603	0.0491	0.0223	0.8797	0.3627	0.0111
27	1,144.371	0.6527	85.4554	9.0958	3.2620	0.3185	0.5072	0.0601	0.0494	0.0221	0.8681	0.3505	0.0110
28	1,142.514	0.6520	85.5637	9.0022	3.2302	0.3139	0.4994	0.0593	0.0491	0.0216	0.8747	0.3749	0.0112
29	1,142.590	0.6520	85.5382	9.0300	3.2291	0.3126	0.4993	0.0594	0.0481	0.0205	0.8783	0.3733	0.0114
30	1,142.427	0.6518	85.5714	9.0165	3.2396	0.3087	0.4911	0.0579	0.0468	0.0201	0.8626	0.3741	0.0111
Volume	1,148.755	0.6557	85.1324	9.1898	3.4433	0.3330	0.5271	0.0631	0.0516	0.0228	0.8480	0.3782	0.0107
Weight Avg Energy	1,148.772	0.6558	85.1310	9.1904	3.4439	0.3331	0.5272	0.0631	0.0516	0.0228	0.8481	0.3782	0.0107



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 November 2022

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	1,155.846	0.6609	84.4937	9.4454	3.6669	0.3704	0.5631	0.0724	0.0580	0.0288	0.9284	0.3623	0.0106
2	1,157.367	0.6619	84.3406	9.5357	3.7166	0.3716	0.5753	0.0707	0.0570	0.0261	0.9393	0.3565	0.0106
3	1,159.653	0.6633	84.1747	9.6291	3.7590	0.3830	0.5932	0.0742	0.0590	0.0269	0.9348	0.3564	0.0097
4	1,154.040	0.6598	84.6575	9.3403	3.6397	0.3580	0.5591	0.0690	0.0564	0.0254	0.9069	0.3778	0.0099
5	1,151.044	0.6577	84.9019	9.2343	3.5817	0.3351	0.5372	0.0624	0.0519	0.0215	0.8779	0.3860	0.0102
6	1,149.227	0.6562	85.0831	9.1856	3.4907	0.3307	0.5307	0.0615	0.0507	0.0207	0.8579	0.3781	0.0102
7	1,150.431	0.6567	85.0340	9.2054	3.5491	0.3312	0.5216	0.0623	0.0514	0.0227	0.8295	0.3827	0.0103
8	1,151.002	0.6573	84.9623	9.2142	3.5832	0.3355	0.5263	0.0625	0.0508	0.0225	0.8490	0.3834	0.0103
9	1,152.191	0.6579	84.8287	9.3628	3.5578	0.3388	0.5330	0.0652	0.0526	0.0231	0.8585	0.3689	0.0105
10	1,152.464	0.6581	84.8465	9.2858	3.6151	0.3393	0.5365	0.0633	0.0519	0.0227	0.8593	0.3688	0.0107
11	1,152.464	0.6582	84.8330	9.3099	3.5937	0.3394	0.5364	0.0655	0.0543	0.0240	0.8618	0.3713	0.0106
12	1,152.743	0.6584	84.8544	9.2298	3.6521	0.3400	0.5363	0.0670	0.0536	0.0233	0.8575	0.3756	0.0104
13	1,150.821	0.6571	85.0246	9.1585	3.5758	0.3340	0.5334	0.0665	0.0529	0.0212	0.8320	0.3903	0.0107
14	1,150.777	0.6566	85.1051	9.1529	3.5468	0.3385	0.5327	0.0644	0.0518	0.0207	0.7892	0.3868	0.0110
15	1,147.460	0.6540	85.4367	9.0167	3.4321	0.3256	0.5076	0.0622	0.0512	0.0212	0.7561	0.3799	0.0107
16	1,145.620	0.6526	85.6046	8.9633	3.3757	0.3177	0.4867	0.0595	0.0493	0.0207	0.7274	0.3842	0.0108
17	1,148.039	0.6555	85.1759	9.2001	3.3643	0.3352	0.5505	0.0632	0.0494	0.0208	0.8208	0.4091	0.0107
18	1,150.172	0.6563	84.9598	9.4948	3.3761	0.3274	0.5212	0.0619	0.0494	0.0217	0.7595	0.4172	0.0110
19	1,146.582	0.6542	85.4011	9.0416	3.3615	0.3310	0.5218	0.0637	0.0515	0.0236	0.7735	0.4200	0.0105
20	1,145.325	0.6533	85.4768	9.0563	3.2883	0.3286	0.5193	0.0617	0.0486	0.0222	0.7831	0.4044	0.0108
21	1,145.817	0.6534	85.4520	9.0712	3.2987	0.3290	0.5253	0.0611	0.0487	0.0227	0.8067	0.3743	0.0104
22	1,144.351	0.6523	85.5490	9.0778	3.2223	0.3218	0.5101	0.0599	0.0518	0.0234	0.8035	0.3697	0.0107
23	1,145.988	0.6541	85.2998	9.1520	3.3115	0.3228	0.5248	0.0600	0.0525	0.0240	0.8727	0.3690	0.0110
24	1,144.488	0.6532	85.3857	9.0988	3.2816	0.3208	0.5137	0.0583	0.0502	0.0225	0.9015	0.3560	0.0108
25	1,143.976	0.6530	85.4156	9.0850	3.2697	0.3175	0.5112	0.0582	0.0487	0.0224	0.8919	0.3692	0.0108
26	1,143.301	0.6523	85.4944	9.0837	3.2245	0.3142	0.5026	0.0605	0.0491	0.0219	0.8781	0.3598	0.0112
27	1,143.714	0.6523	85.5090	9.0589	3.2489	0.3167	0.5039	0.0596	0.0490	0.0219	0.8668	0.3542	0.0111
28	1,142.511	0.6520	85.5589	9.0081	3.2294	0.3135	0.4993	0.0593	0.0490	0.0212	0.8738	0.3764	0.0113
29	1,142.367	0.6519	85.5662	9.0118	3.2249	0.3119	0.4981	0.0592	0.0479	0.0205	0.8740	0.3742	0.0113
30	1,142.738	0.6520	85.5456	9.0370	3.2432	0.3099	0.4929	0.0582	0.0470	0.0201	0.8621	0.3730	0.0111
Volume	1,148.530	0.6555	85.1620	9.1842	3.4327	0.3317	0.5249	0.0629	0.0512	0.0225	0.8375	0.3797	0.0107
Weight Avg Energy	1,148.545	0.6555	85.1607	9.1845	3.4332	0.3318	0.5250	0.0629	0.0512	0.0225	0.8376	0.3797	0.0107

November-22

ZONE 610

Watford City

Watford City West Border

Watford City East Border

Weighted

Start Date	End Date	BTU			BTU			AVG BTU	
		MCF	DK	Zone 25	MCF	DK	Zone 43		
11/1/2022	11/2/2022	173	208	1207.1	298	314	1054.4	1110.487	11/1/2022
11/2/2022	11/3/2022	255	308	1207.1	441	465	1054.4	1110.346	11/2/2022
11/3/2022	11/4/2022	383	463	1207.1	684	722	1054.4	1109.212	11/3/2022
11/4/2022	11/5/2022	320	387	1207.1	451	475	1054.4	1117.777	11/4/2022
11/5/2022	11/6/2022	348	420	1207.1	500	528	1054.4	1117.065	11/5/2022
11/6/2022	11/7/2022	479	578	1207.1	896	945	1054.4	1107.595	11/6/2022
11/7/2022	11/8/2022	441	532	1207.1	811	855	1054.4	1108.187	11/7/2022
11/8/2022	11/9/2022	428	516	1207.1	796	839	1054.4	1107.795	11/8/2022
11/9/2022	11/10/2022	445	538	1207.1	992	1,046	1054.4	1101.687	11/9/2022
11/10/2022	11/11/2022	509	614	1207.1	1,061	1,119	1054.4	1103.906	11/10/2022
11/11/2022	11/12/2022	533	643	1207.1	1,308	1,379	1054.4	1098.609	11/11/2022
11/12/2022	11/13/2022	483	582	1207.1	1,111	1,171	1054.4	1100.670	11/12/2022
11/13/2022	11/14/2022	427	515	1207.1	949	1,001	1054.4	1101.786	11/13/2022
11/14/2022	11/15/2022	429	517	1207.1	996	1,050	1054.4	1100.371	11/14/2022
11/15/2022	11/16/2022	450	543	1207.1	1,069	1,127	1054.4	1099.637	11/15/2022
11/16/2022	11/17/2022	426	515	1207.1	1,051	1,108	1054.4	1098.442	11/16/2022
11/17/2022	11/18/2022	552	667	1207.1	1,261	1,329	1054.4	1100.892	11/17/2022
11/18/2022	11/19/2022	476	574	1207.1	1,164	1,227	1054.4	1098.720	11/18/2022
11/19/2022	11/20/2022	403	486	1207.1	950	1,002	1054.4	1099.883	11/19/2022
11/20/2022	11/21/2022	348	420	1207.1	881	929	1054.4	1097.638	11/20/2022
11/21/2022	11/22/2022	327	395	1207.1	920	970	1054.4	1094.442	11/21/2022
11/22/2022	11/23/2022	287	347	1207.1	765	807	1054.4	1096.059	11/22/2022
11/23/2022	11/24/2022	268	324	1207.1	691	728	1054.4	1097.073	11/23/2022
11/24/2022	11/25/2022	247	298	1207.1	704	743	1054.4	1094.060	11/24/2022
11/25/2022	11/26/2022	220	265	1207.1	625	659	1054.4	1094.156	11/25/2022
11/26/2022	11/27/2022	289	349	1207.1	817	862	1054.4	1094.301	11/26/2022
11/27/2022	11/28/2022	286	345	1207.1	758	799	1054.4	1096.232	11/27/2022
11/28/2022	11/29/2022	495	597	1207.1	1,101	1,161	1054.4	1101.760	11/28/2022
11/29/2022	11/30/2022	531	641	1207.1	1,210	1,275	1054.4	1100.973	11/29/2022
11/30/2022	12/1/2022	466	562	1207.1	1,104	1,164	1054.4	1099.724	11/30/2022
		11,724	14,149	1207.1000	26,365	27,799	1054.4000	1101.9828	

Tsp	EffDate	EndDate	Device	GasDay	EndDt	BTU	SpecGrav	CriconTherm	Wobbelindex	CO2	N2	Methane	Ethane	Propane	iButane	nButane	iPentane	nPentane	Neopentane	CGPlus	Hydrogen	Helium	WaterVapor	TotalSulfur	HydrogenSulfur	Oxygen	
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/1/2022	11/2/2022	1089	0.6449		-49.9	1356.068698	0.9811	2.4887	82.9476	12.6188	0.8319	0.0212	0.0394	0.0019	0.0018	N/A	0	0.0438	0.0239	6.8881	0.0035	0.0008	0.3227
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/2/2022	11/3/2022	1092	0.6485		-48	1356.024849	0.9923	2.6637	82.2742	13.0919	0.8666	0.0216	0.0405	0.0021	0.0021	N/A	0	0.0202	0.0249	6.8881	0.0035	0.0007	0.3685
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/3/2022	11/4/2022	1099	0.6564		-42.9	1356.480035	1.0357	2.9014	80.5009	14.3294	0.9691	0.0242	0.0456	0.0022	0.0022	N/A	0	0.1636	0.0257	6.8881	0.0029	0.0005	0.4411
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/4/2022	11/5/2022	1099	0.6587		-41.3	1354.109736	1.0664	3.0544	80.0098	14.4992	1.0375	0.0279	0.053	0.0025	0.0024	N/A	0	0.2203	0.0268	6.8881	0.0033	0.0006	0.4206
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/5/2022	11/6/2022	1098	0.6584		-41.9	1353.185791	1.0701	3.1162	80.0918	14.3994	1.007	0.0277	0.053	0.0025	0.0023	N/A	0	0.1937	0.0273	6.8881	0.003	0.0006	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/6/2022	11/7/2022	1093	0.6529		-45.1	1352.685478	1.0417	2.9238	81.0654	13.7261	0.9302	0.024	0.0449	0.0021	0.0019	N/A	0	0.2148	0.0253	6.8881	0.0029	0.0005	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/7/2022	11/8/2022	1091	0.6506		-46.6	1352.594824	1.0397	2.8541	81.5678	13.3537	0.8998	0.0235	0.0435	0.0019	0.0016	N/A	0	0.189	0.0255	6.8881	0.0028	0.0005	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/8/2022	11/9/2022	1086	0.6469		-49	1350.240871	1.0239	2.8151	82.2174	12.8136	0.8277	0.0238	0.0453	0.002	0.0017	N/A	0	0.2044	0.0253	6.8881	0.003	0.0006	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/9/2022	11/10/2022	1093	0.6535		-44.5	1352.064363	1.0537	2.9562	81.0135	13.6964	0.953	0.0279	0.0537	0.0024	0.0021	N/A	0	0.2155	0.0257	6.8881	0.0027	0.0005	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/10/2022	11/11/2022	1100	0.6604		-41	1353.596282	1.1016	3.1384	79.8752	14.6394	1.0175	0.0285	0.055	0.0025	0.0022	N/A	0	0.1118	0.0279	6.8881	0.0027	0.0005	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/11/2022	11/12/2022	1090	0.6505		-47.3	1351.458915	1.0315	2.8634	81.8998	13.2212	0.8681	0.0238	0.045	0.0022	0.002	N/A	0	0.0161	0.0271	6.8881	0.0028	0.0005	0.4594
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/12/2022	11/13/2022	1083	0.6404		-52.5	1353.327151	0.9404	2.4625	83.8982	11.7771	0.8109	0.024	0.045	0.0022	0.002	N/A	0	0.0141	0.0238	6.8881	0.0029	0.0005	0.4797
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/13/2022	11/14/2022	1084	0.6394		-53.6	1355.635603	0.934	2.361	83.9904	11.8919	0.7217	0.0208	0.0397	0.002	0.0018	N/A	0	0.014	0.0228	6.8881	0.0029	0.0005	0.4452
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/14/2022	11/15/2022	1087	0.6414		-51.6	1357.266301	0.9355	2.3599	83.6632	12.1687	0.7589	0.0259	0.0459	0.0031	0.0025	N/A	0.0002	0.0137	0.0227	6.8881	0.003	0.0005	0.4412
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/15/2022	11/16/2022	1086	0.6407		-52.1	1356.758226	0.9221	2.3437	83.7982	12.0511	0.7759	0.0232	0.0449	0.0025	0.0022	N/A	0	0.0136	0.0227	6.8881	0.0027	0.0005	0.4271
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/16/2022	11/17/2022	1086	0.6422		-51.2	1355.172795	0.9404	2.4748	83.5225	12.138	0.81	0.0244	0.0473	0.0025	0.0022	N/A	0	0.0143	0.0237	6.8881	0.0027	0.0005	0.4261
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/17/2022	11/18/2022	1086	0.6406		-51.8	1356.864119	0.9324	2.3557	83.8855	11.8726	0.8422	0.0251	0.046	0.0022	0.0018	N/A	0	0.0136	0.0231	6.8881	0.0026	0.0005	0.4475
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/18/2022	11/19/2022	1084	0.6393		-53	1355.741624	0.925	2.3449	84.1016	11.7067	0.8223	0.0215	0.0386	0.0017	0.0012	N/A	0	0.0134	0.0232	6.8881	0.0027	0.0005	0.4057
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/19/2022	11/20/2022	1085	0.6407		-51.9	1355.508099	0.9338	2.395	83.864	11.845	0.854	0.0239	0.0437	0.002	0.0016	N/A	0	0.0137	0.0235	6.8881	0.0029	0.0005	0.3315
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/20/2022	11/21/2022	1086	0.6418		-51.4	1355.595033	0.9401	2.4512	83.6413	12.0064	0.8536	0.0233	0.0425	0.002	0.0017	N/A	0	0.014	0.024	6.8881	0.0027	0.0005	0.3244
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/21/2022	11/22/2022	1087	0.6424		-50.8	1356.209487	0.9408	2.435	83.5414	12.1133	0.8558	0.025	0.0466	0.0023	0.0019	N/A	0	0.0143	0.0237	6.8881	0.0029	0.0006	0.2641
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/22/2022	11/23/2022	1082	0.6386		-53.3	1353.981728	0.936	2.397	84.1703	11.5351	0.81	0.0236	0.0434	0.0021	0.0018	N/A	0	0.0576	0.0232	6.8881	0.0028	0.0005	0.2347
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/23/2022	11/24/2022	1080	0.6382		-53.9	1351.902451	0.9517	2.4625	84.1762	11.4154	0.8162	0.0224	0.0393	0.0017	0.0013	N/A	0	0.0899	0.0236	6.8881	0.0035	0.0005	0.2894
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/24/2022	11/25/2022	1078	0.6376		-55.1	1350.036991	0.9499	2.4968	84.3309	11.3546	0.745	0.0199	0.0368	0.0018	0.0017	N/A	0	0.039	0.0239	6.8881	0.0049	0.0005	0.407
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/25/2022	11/26/2022	1081	0.6408		-53.5	1350.40626	0.9769	2.6093	83.6942	11.8494	0.7609	0.019	0.0348	0.0015	0.0011	N/A	0	0.0385	0.0244	6.8881	0.0045	0.0006	0.4437
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/26/2022	11/27/2022	1078	0.6385		-55.2	1349.081883	0.9696	2.5548	84.1177	11.5336	0.7131	0.0116	0.0323	0.0015	0.0011	N/A	0	0.0344	0.0243	6.8881	0.004	0.0004	0.4803
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/27/2022	11/28/2022	1078	0.6378		-55.6	1349.822004	0.9543	2.5111	84.2628	11.4762	0.7046	0.017	0.0313	0.0013	0.0011	N/A	0	0.0163	0.024	6.8881	0.004	0.0005	0.4803
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/28/2022	11/29/2022	1077	0.6364		-57	1350.052377	0.9476	2.4747	84.4968	11.3414	0.6564	0.0153	0.0278	0.0008	0.0006	N/A	0	0.0145	0.0244	6.8881	0.004	0.0004	0.4803
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/29/2022	11/30/2022	1078	0.6374		-55.9	1350.245477	0.9648	2.4876	84.3053	11.4537	0.6822	0.0167	0.0316	0.0013	0.0013	N/A	0	0.0319	0.0237	6.8881	0.004	0.0004	0.4803
NBPL	10/31/2022 0:00	12/1/2022 0:00	GLNU1 - GLEN ULLIN	11/30/2022	12/1/2022	1074	0.6343		-57.6	1348.518552	0.9664	2.4171	84.8441	10.953	0.6531	0.0182	0.0348	0.0022	0.0022	N/A	0.0001	0.0855	0.0233	6.8881	0.004	0.0004	0.4803

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

MONTANA DAKOTA UTILITIES CO
 NORTH DAKOTA
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	NOV22	OCT22	SEP22	AUG22	JUL22	JUN22	MAY22	APR22	MAR22	FEB22	JAN22	DEC21	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1197	1202	1201	1198	1205	1200	1198	1185	1191	1196	1196	1171	1215	211
ND	24	Williston Border - Charbonneau Station	1184	1198	1194	1188	1192	1195	1187	1185	1188	1189	1180	1155	1152	24
ND	25	Watford City West Border	1202	1207	1210	1209	1210	1201	1199	1195	1200	1197	1200	1198	1202	25
ND	28	Bismarck Station - Glen Ullin Station	1159	1126	1175	1191	1198	1202	1204	1196	1087	1131	1131	1126	1142	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1113	1131	1097	1099	1087	1094	1105	1100	1108	1130	1132	1132	1143	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1124	1132	1122	1128	1129	1115	1124	1138	1126	1095	1122	1127	1131	32
ND	33	Little Knife Plant	1176	1176	1179	1173	1174	1177	1175	1175	1176	1178	1176	1173	1176	33
ND	34	Badlands Plant/Bowman Border	1049	1077	989	1056	1031	1033	1014	1019	1021	1070	1087	1097	1093	34
ND	43	Watford City East Border	1057	1054	1050	1051	1057	1062	1044	1036	1042	1042	1108	1094	1042	43
ND/MT	241	Fairview Border	1196	1210	1205	1193	1197	1199	1186	1178	1191	1191	1197	1200	1208	241
ND	267	North Tioga Transfer - Nesson Plant	1166	1176	1178	1174	1184	1173	1172	1176	1172	1157	1122	1122	267	
ND	261	Tioga Comp Station - Robinson Lake Plan	1187	1182	1194	1196	1196	1201	1200	1200	1191	1191	1155	1175	1161	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1196	1186	1195	1198	1196	1203	1205	1202	1202	1194	1187	1180	1199	262
ND	263	Lignite Plant	1131	1131	1131	1131	1131	1130	1131	1131	1131	1131	1131	1131	1131	263
ND	264	Epping Border	1181	1194	1198	1196	1192	1188	1182	1188	1188	1185	1173	1145	1147	264
ND	265	Tioga Comp Station - County Line Plant	1169	1182	1180	1178	1178	1180	1176	1163	1170	1167	1150	1157	1152	265
ND	266	County Line Plant	1176	1181	1180	1180	1182	1179	1179	1167	1173	1172	1166	1175	1178	266
ND	271	Bismarck Station - Cleveland Station	1187	1181	1197	1191	1198	1202	1205	1205	1164	1185	1169	1162	1188	271
ND	272	Cleveland Station - Mapleton	1188	1181	1197	1191	1198	1202	1205	1204	1175	1184	1167	1161	1189	272
ND	273	Cleveland Station - Grafton Border	1186	1181	1198	1194	1198	1200	1205	1202	1168	1176	1166	1161	1188	273
ND	550	Mandan Border / NBPL-St Anthony	1150	1107	1173	1189	1194	1182	1201	1189	1087	1103	1119	1116	1136	550
ND	610	MDU-Watford City BTU	1093	1102	1113	1072	1068	1065	1063	1086	1093	1087	1138	1129	1095	610
ND	802	NBPL - Linton	1082	1087	1084	1081	1083	1086	1084	1074	1067	1073	1088	1091	1085	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1155	1149	1159	1159	1157	1160	1153	1151	1155	1157	1152	1149	1155	600
ND	601	Alliance Pipeline - Milnor	1155	1149	1159	1160	1157	1160	1153	1151	1154	1157	1152	1149	1154	602

THERMAL ZONE VARIANCE DOCUMENTATION		
November 2022		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
28	-49	Direction/Blend
550	-66	Direction/Blend
31	34	Direction/Blend
34	88	Blend