

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

February 11, 2022

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

Re: Case No. PU-21-002 (Therm Billing)
Monthly Report – December 2021

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 January 2022.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of December 2021.
3. Attachment C is a listing which states the type of measuring device in place at each zone.
4. Attachment D is a monthly list of the heating value data, by zone, for the most recent 12-month period and an average thereof. It is being provided pursuant to a Staff request.
5. Attachment E provides a brief explanation of the thermal variances, where applicable, for the month of December 2021.

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

Sincerely,

/s/ Travis R. Jacobson

Travis R. Jacobson
Director of Regulatory Affairs

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

<u>Town</u>	<u>Heat Zone</u>	<u>Therm Factor</u>
MDU-303-ALEXANDER	025	1.1410
MDU-308-ARNEGARD	025	1.1410
MDU-314-APPLE VALLEY	271	1.1559
MDU-318-BEACH	032	1.0433
MDU-319-BELFIELD	032	1.0510
MDU-323-BERTHOLD	262	1.1315
MDU-324-BEULAH	032	1.0510
MDU-327-BISMARCK	028	1.0951
MDU-330-BOWMAN	034	0.8999
MDU-337-BURLINGTON	262	1.1559
MDU-343-CARRINGTON	273	1.1559
MDU-344-CLEVELAND	272	1.1478
MDU-364-CAVALIER	273	1.1803
MDU-365-DAWSON	271	1.1478
MDU-368-DES LACS	262	1.1396
MDU-369-DICKINSON	031	1.0699
MDU-374-FT TOTTEN	273	1.1640
MDU-375-DEVILS LAKE	273	1.1640
MDU-379-BARLOW	273	1.1559
MDU-384-EPPING	264	1.0881
MDU-387-ELDRIDGE	272	1.1559
MDU-407-GLADSTONE	031	1.0699
MDU-411-GLEN ULLIN	031	1.0777
MDU-413-GOLVA	032	1.0280
MDU-416-GARRISON	262	1.1396
MDU-417-GRAFTON	273	1.1884
MDU-403-GWINNER	601	1.1399
MDU-429-HEBRON	031	1.0777
MDU-432-HETTINGER	903	2.4049
MDU-449-JAMESTOWN	272	1.1640
MDU-459-KILLDEER	033	1.1164
MDU-463-LANGDON	273	1.1559
MDU-469-LEFOR	031	1.0699
MDU-474-LIGNITE	263	1.0759
MDU-475-LINTON	802	1.0478
MDU-478-LINCOLN	028	1.0951
MDU-488-MCKENZIE	271	1.1559
MDU-494-MEDINA	271	1.1478
MDU-498-MANDAN	028	1.0951
MDU-500-MARMARTH	034	0.9066
MDU-505-MINOT	262	1.1559
MDU-510-MOTT	031	1.0699
MDU-512-MAX	262	1.1559
MDU-513-MILNOR	601	1.1399
MDU-522-NEW ENGLAND	031	1.0622
MDU-524-NEW SALEM	028	1.0720
MDU-532-NEW ROCKFORD	273	1.1559
MDU-539-PARK RIVER	273	1.1803
MDU-540-PALERMO	262	1.1315

MDU-558-RAY	264	1.0881
MDU-561-REGENT	031	1.0699
MDU-563-RHAME	034	0.8933
MDU-564-RICHARDTON	031	1.0622
MDU-568-ROSS	261	1.1027
MDU-572-RUTHVILLE	262	1.1559
MDU-574-SANBORN	272	1.1640
MDU-583-SENTINEL BUTTE	032	1.0433
MDU-588-SOUTH HEART	031	1.0622
MDU-717-SPIRITWOOD	272	1.1640
MDU-590-SPRINGBROOK	264	1.0881
MDU-591-STANLEY	261	1.1107
MDU-593-STEELE	271	1.1478
MDU-594-STERLING	028	1.0951
MDU-598-SHEYENNE	273	1.1640
MDU-605-SURREY	262	1.1559
MDU-610-TAPPEN	271	1.1478
MDU-611-TAYLOR	031	1.0622
MDU-616-TIOGA	260	1.0662
MDU-619-TURTLE LAKE	262	1.1396
MDU-620-TRENTON	024	1.1044
MDU-624-UNDERWOOD	262	1.1396
MDU-625-VALLEY CITY	272	1.1722
MDU-629-WALHALLA	273	1.1803
MDU-632-WATFORD CITY	610	1.0484
MDU-636-WHEELOCK	264	1.0802
MDU-637-WHITE EARTH	261	1.1107
MDU-642-WILLISTON	024	1.1044
MDU-646-WASHBURN	262	1.1478
MDU-647-WILTON	262	1.1315
MDU-664-RIVERDALE	262	1.1396
MDU-691-FAIRVIEW	241	1.1387
MDU-712-MINOT AFB	262	1.1559
MDU-718-FAIRMOUNT	600	1.1385
MDU-732-NEKOMA	273	1.1559
MDU-732-MSR SITE	273	1.1559

Source Daily Summary

December 2021

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	0.7430	1203.1	1224.4	1223.9	1.166	3.365	65.917	26.131	3.077	0.114	0.211	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1420.48	
2	0.7486	1207.0	1228.4	1228.0	1.347	3.373	65.082	26.703	3.106	0.127	0.239	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1419.74	
3	0.7499	1209.1	1230.5	1230.1	1.343	3.373	64.861	26.886	3.145	0.128	0.241	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1420.98	
4	0.7508	1210.5	1231.9	1231.5	1.349	3.368	64.581	27.242	3.081	0.125	0.234	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1421.75	
5	0.7410	1195.6	1216.8	1216.4	1.302	3.420	66.610	25.126	3.172	0.122	0.228	0.011	0.009	0.000	0.000	0.000	0.000	0.000	1413.44	
6	0.7422	1200.6	1221.9	1221.5	1.263	3.290	66.022	26.179	2.904	0.111	0.212	0.011	0.008	0.000	0.000	0.000	0.000	0.000	1418.28	
7	0.7452	1205.1	1226.4	1226.0	1.233	3.347	65.365	26.792	2.934	0.109	0.201	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1420.75	
8	0.7488	1207.5	1228.9	1228.5	1.337	3.382	64.996	26.799	3.105	0.125	0.233	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1420.09	
9	0.7451	1201.5	1222.7	1222.3	1.349	3.380	65.689	26.165	3.044	0.122	0.228	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1416.53	
10	0.7482	1210.4	1231.8	1231.4	1.220	3.322	65.470	26.066	3.531	0.128	0.241	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1424.11	
11	0.7431	1205.4	1226.7	1226.3	1.098	3.330	66.311	25.443	3.406	0.134	0.255	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1423.12	
12	0.7326	1186.2	1207.2	1206.8	1.236	3.308	68.024	24.144	2.913	0.119	0.231	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1410.36	
13	0.7392	1193.9	1215.0	1214.6	1.300	3.364	66.918	24.950	3.076	0.127	0.242	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1413.18	
14	0.7414	1193.4	1214.6	1214.2	1.340	3.530	66.516	25.125	3.098	0.129	0.240	0.012	0.009	0.000	0.000	0.000	0.000	0.000	1410.53	
15	0.7375	1186.9	1207.9	1207.6	1.363	3.525	67.365	24.190	3.192	0.123	0.223	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1406.48	
16	0.7147	1187.6	1208.7	1208.3	0.150	3.183	70.201	23.331	3.004	0.050	0.076	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1429.75	
17	0.7127	1187.0	1208.1	1207.7	0.072	3.150	70.992	22.344	3.164	0.095	0.171	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1430.99	
18	0.7268	1197.9	1219.1	1218.8	0.465	3.212	68.817	23.803	3.375	0.111	0.201	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1430.16	
19	0.6957	1155.1	1175.5	1175.1	0.099	3.462	74.072	19.291	2.808	0.090	0.164	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1408.14	
20	0.6864	1120.3	1140.2	1139.8	0.630	3.892	75.786	17.245	2.215	0.079	0.143	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1375.27	
21	0.7414	1217.8	1239.4	1238.9	0.528	3.263	67.929	22.897	4.728	0.211	0.408	0.020	0.017	0.000	0.000	0.000	0.000	0.000	1439.21	
22	0.7398	1198.2	1219.4	1219.0	1.150	3.386	66.682	25.247	3.162	0.125	0.229	0.011	0.008	0.000	0.000	0.000	0.000	0.000	1417.77	
23	0.7451	1200.6	1221.8	1221.4	1.343	3.442	65.840	25.819	3.167	0.127	0.239	0.013	0.010	0.000	0.000	0.000	0.000	0.000	1415.47	
24	0.7447	1201.0	1222.3	1221.9	1.334	3.400	65.667	26.240	3.003	0.118	0.219	0.011	0.008	0.000	0.000	0.000	0.000	0.000	1416.31	
25	0.7465	1204.1	1225.4	1225.1	1.332	3.377	65.354	26.517	3.079	0.115	0.210	0.010	0.007	0.000	0.000	0.000	0.000	0.000	1418.32	
26	0.7306	1183.4	1204.4	1204.1	1.202	3.339	68.287	23.957	2.866	0.112	0.215	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1409.04	
27	0.7208	1171.7	1192.4	1192.1	1.078	3.320	70.138	22.292	2.816	0.110	0.220	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1404.49	
28	0.7262	1200.9	1222.2	1221.8	0.180	3.395	69.949	21.745	4.167	0.172	0.344	0.024	0.023	0.000	0.000	0.000	0.000	0.000	1434.19	
29	0.7420	1199.9	1221.2	1220.8	1.198	3.414	66.403	25.354	3.233	0.130	0.244	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1417.67	
30	0.7428	1206.1	1227.4	1227.1	1.025	3.368	66.437	25.262	3.469	0.140	0.268	0.016	0.014	0.000	0.000	0.000	0.000	0.000	1424.25	
31	0.7114	1167.4	1188.1	1187.8	0.633	3.368	72.248	20.070	3.277	0.128	0.247	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1408.46	
Avg	0.7350	1194.0	1215.2	1214.8	1.021	3.376	67.565	24.495	3.171	0.121	0.228	0.012	0.010	0.000	0.000	0.000	0.000	0.000	1417.40	

Source Daily Summary

December 2021

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	0.6851	1127.1	1147.1	1146.8	0.873	2.987	76.355	17.531	1.929	0.088	0.201	0.016	0.020	0.000	0.000	0.000	0.000	0.000	1385.86	
2	0.6849	1127.6	1147.5	1147.3	0.847	2.984	76.302	17.627	1.943	0.083	0.184	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1386.59	
3	0.6862	1130.4	1150.4	1150.1	0.878	2.887	75.989	18.084	1.884	0.079	0.173	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1388.77	
4	0.6870	1131.8	1151.9	1151.6	0.897	2.846	75.757	18.416	1.816	0.076	0.165	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1389.73	
5	0.6862	1130.2	1150.2	1150.0	0.890	2.876	75.933	18.197	1.838	0.076	0.164	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1388.59	
6	0.6862	1130.3	1150.3	1150.0	0.902	2.864	75.966	18.153	1.839	0.078	0.170	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1388.55	
7	0.6880	1132.8	1152.9	1152.5	0.909	2.860	75.656	18.436	1.855	0.079	0.175	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1389.92	
8	0.6874	1131.7	1151.7	1151.4	0.902	2.887	75.730	18.341	1.868	0.077	0.168	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1389.11	
9	0.6872	1131.3	1151.4	1151.1	0.886	2.913	75.822	18.173	1.929	0.079	0.171	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1388.87	
10	0.6893	1134.8	1154.9	1154.6	0.894	2.888	75.240	18.924	1.794	0.073	0.160	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1391.02	
11	0.6887	1133.7	1153.8	1153.4	0.890	2.899	75.398	18.726	1.830	0.074	0.159	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1390.35	
12	0.6895	1135.2	1155.3	1154.9	0.868	2.923	75.343	18.657	1.929	0.079	0.172	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1391.26	
13	0.6893	1135.4	1155.5	1155.1	0.878	2.879	75.187	19.019	1.787	0.071	0.154	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1391.72	
14	0.6869	1131.5	1151.6	1151.2	0.855	2.922	75.657	18.537	1.772	0.073	0.159	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1389.43	
15	0.6889	1132.5	1152.5	1152.2	0.855	3.049	75.466	18.385	1.970	0.079	0.170	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1388.58	
16	0.6877	1132.8	1152.8	1152.5	0.848	2.925	75.637	18.450	1.860	0.080	0.173	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1390.21	
17	0.6858	1130.8	1150.9	1150.5	0.840	2.877	75.949	18.265	1.792	0.078	0.170	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1389.74	
18	0.6841	1127.6	1147.5	1147.2	0.849	2.911	76.285	17.873	1.817	0.076	0.165	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1387.37	
19	0.6848	1127.8	1147.7	1147.4	0.855	2.947	76.297	17.693	1.929	0.080	0.171	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1386.98	
20	0.6847	1128.1	1148.0	1147.7	0.865	2.911	76.185	17.938	1.841	0.075	0.160	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1387.38	
21	0.6860	1130.2	1150.2	1149.9	0.866	2.896	75.954	18.176	1.840	0.076	0.166	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1388.77	
22	0.6860	1129.5	1149.5	1149.2	0.867	2.939	75.971	18.082	1.872	0.076	0.166	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1387.88	
23	0.6941	1136.9	1157.0	1156.7	0.893	3.209	74.851	18.415	2.312	0.092	0.197	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1388.77	
24	0.6954	1138.2	1158.4	1158.0	0.891	3.248	74.655	18.522	2.354	0.096	0.204	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1389.15	
25	0.6938	1137.5	1157.7	1157.3	0.904	3.126	74.871	18.563	2.212	0.091	0.199	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1389.85	
26	0.6938	1137.3	1157.4	1157.1	0.904	3.137	74.834	18.589	2.226	0.090	0.190	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1389.59	
27	0.6957	1137.5	1157.7	1157.3	0.887	3.329	74.823	18.062	2.531	0.105	0.228	0.016	0.019	0.000	0.000	0.000	0.000	0.000	1387.93	
28	0.6923	1134.8	1154.9	1154.6	0.887	3.176	75.211	18.104	2.298	0.093	0.200	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1388.02	
29	0.6906	1132.5	1152.6	1152.3	0.889	3.149	75.424	18.045	2.185	0.089	0.190	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1386.98	
30	0.6873	1130.2	1150.2	1149.9	0.884	2.988	75.894	17.952	1.992	0.084	0.179	0.013	0.014	0.000	0.000	0.000	0.000	0.000	1387.46	
31	0.6907	1131.9	1152.0	1151.7	0.886	3.202	75.410	17.990	2.201	0.090	0.192	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1386.12	
Avg	0.6885	1132.0	1152.3	1152.0	0.879	2.988	75.615	18.256	1.976	0.082	0.177	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1388.73	

Gas Composition and Properties

Effective December 1, 2021

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	1.1973		2.4884	Pressure Base	14.730	
Nitrogen, N2	3.3728		4.4621	Temperature Base	60.00	
Methane, C1	67.8849		51.4308	HCDP @ Sample Pressure		
Ethane, C2	24.1678	6.4691	34.3190	Cricondentherm	3.032	
Propane, C3	2.9985	0.8268	6.2442	HV, Dry @ Base P, T	1208.23	
iso-Butane, iC4	0.1259	0.0412	0.3456	HV, Sat @ Base P, T	1187.20	
n-Butane, nC4	0.2295	0.0724	0.6299	HV, Sat @ Sample P, T	1208.23	
iso-Pentane, iC5	0.0128	0.0047	0.0436	Relative Density	0.7333	
n-Pentane, nC5	0.0097	0.0035	0.0331			
Neo-Pentane, neo						
Hexanes Plus, C6+	0.0008	0.0003	0.0033			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	7.4180	100.0000			

Sample

Date: 12/01/2021 Type:
Tech: Wayne Sampson
Pressure: Temp.:
Gauge: H2O:
Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:
 Cylinder:
Tech:

Remarks:

Gas Composition and Properties

Effective December 1, 2021

Attachment B
Page 4 of 24

Source #: 0602225
Name: WATFORD CITY WEST BORDER

Component	Mole %	Liquid Content	Mass %
Carbon Dioxide, CO2	1.2448		2.5724
Nitrogen, N2	4.0253		5.2948
Methane, C1	69.7900		52.5718
Ethane, C2	19.5216	5.2253	27.5627
Propane, C3	4.3735	1.2059	9.0555
iso-Butane, iC4	0.2868	0.0939	0.7827
n-Butane, nC4	0.6313	0.1992	1.7229
iso-Pentane, iC5	0.0561	0.0205	0.1901
n-Pentane, nC5	0.0586	0.0213	0.1985
Neo-Pentane, neo			
Hexanes Plus, C6+	0.0120	0.0049	0.0486
Argon, Ar			
Carbon Monoxide, CO			
Hydrogen, H2			
Oxygen, O2			
Helium, He			
Water, H2O			
Hydrogen Sulfide, H2S			
Totals	100.0000	6.7710	100.0000

Property	Total Sample	C6 Plus Fraction
Pressure Base	14.730	
Temperature Base	60.00	
HCDP @ Sample Pressure		
Cricondentherm	18.207	
HV, Dry @ Base P, T	1202.33	
HV, Sat @ Base P, T	1181.40	
HV, Sat @ Sample P, T	1202.33	
Relative Density	0.7375	
C6+:		

Sample

Date: 12/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

Source Daily Summary

December 2021

Source #: 164
Name: N TIOGA TRANSFER-NESSON 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	0.6682	1094.1	1113.5		0.672	3.723	79.088	14.591	1.647	0.071	0.172	0.015	0.018	0.004					1362.12	
2	0.6633	1089.6	1108.9		0.556	3.713	79.667	14.369	1.486	0.057	0.130	0.010	0.011	0.001					1361.52	
3	0.6676	1095.0	1114.4		0.666	3.620	79.020	14.878	1.610	0.058	0.128	0.009	0.010	0.000					1363.88	
4	0.6694	1097.2	1116.6		0.696	3.611	78.691	15.175	1.623	0.057	0.127	0.009	0.010	0.000					1364.76	
5	0.6664	1091.8	1111.1		0.705	3.640	79.261	14.607	1.596	0.054	0.119	0.008	0.009	0.000					1361.14	
6	0.6668	1092.0	1111.3		0.722	3.640	79.170	14.708	1.567	0.054	0.120	0.009	0.010	0.001					1361.00	
7	0.6711	1098.8	1118.3		0.742	3.598	78.423	15.386	1.641	0.057	0.130	0.009	0.011	0.001					1365.11	
8	0.6705	1098.5	1118.0		0.720	3.593	78.538	15.283	1.662	0.056	0.126	0.009	0.011	0.001					1365.35	
9	0.6739	1105.0	1124.6		0.723	3.516	77.803	16.123	1.647	0.054	0.118	0.008	0.009	0.000					1369.93	
10	0.6771	1110.3	1129.9		0.728	3.489	77.165	16.789	1.633	0.054	0.121	0.009	0.011	0.001					1373.19	
11	0.6763	1109.6	1129.2		0.697	3.500	77.242	16.775	1.604	0.052	0.114	0.008	0.008	0.000					1373.18	
12	0.6798	1115.5	1135.3		0.694	3.477	76.608	17.374	1.645	0.055	0.124	0.009	0.011	0.002					1376.89	
13	0.6767	1110.0	1129.7		0.702	3.512	77.134	16.878	1.591	0.052	0.114	0.008	0.009	0.000					1373.22	
14	0.6719	1102.6	1122.2		0.657	3.575	78.057	15.967	1.549	0.054	0.121	0.009	0.011	0.001					1368.99	
15	0.6779	1107.2	1126.8		0.685	3.814	77.195	16.206	1.884	0.063	0.135	0.009	0.009	0.000					1368.61	
16	0.6671	1095.4	1114.8		0.598	3.654	78.911	15.159	1.477	0.054	0.124	0.009	0.011	0.002					1364.85	
17	0.6647	1091.7	1111.0		0.578	3.680	79.350	14.750	1.445	0.053	0.122	0.010	0.012	0.002					1362.77	
18	0.6636	1089.4	1108.7		0.615	3.658	79.671	14.324	1.553	0.051	0.111	0.007	0.008	0.000					1361.06	
19	0.6676	1095.4	1114.8		0.672	3.591	79.041	14.850	1.654	0.054	0.117	0.009	0.010	0.002					1364.33	
20	0.6680	1095.9	1115.3		0.667	3.605	78.922	14.973	1.651	0.053	0.113	0.007	0.008	0.000					1364.55	
21	0.6680	1095.6	1115.0		0.666	3.615	78.911	15.013	1.604	0.054	0.120	0.008	0.009	0.000					1364.30	
22	0.6717	1101.0	1120.5		0.672	3.630	78.353	15.354	1.787	0.058	0.127	0.009	0.010	0.000					1367.19	
23	0.6897	1119.0	1138.8		0.747	4.107	75.797	16.353	2.680	0.092	0.194	0.013	0.014	0.002					1371.27	
24	0.6882	1116.0	1135.8		0.748	4.151	75.925	16.315	2.572	0.087	0.180	0.010	0.011	0.000					1369.07	
25	0.6838	1111.2	1130.9		0.752	4.021	76.563	16.067	2.344	0.076	0.158	0.010	0.010	0.000					1367.60	
26	0.6863	1114.2	1134.0		0.758	4.063	76.230	16.195	2.475	0.082	0.171	0.011	0.012	0.001					1368.79	
27	0.6885	1113.8	1133.5		0.726	4.338	76.437	15.148	2.962	0.109	0.241	0.017	0.020	0.003					1366.10	
28	0.6805	1105.2	1124.8		0.721	4.125	77.294	15.174	2.414	0.080	0.169	0.011	0.012	0.001					1363.46	
29	0.6749	1099.1	1118.5		0.710	3.989	78.087	14.865	2.106	0.071	0.151	0.010	0.011	0.001					1361.53	
30	0.6719	1097.4	1116.8		0.696	3.833	78.485	14.834	1.931	0.064	0.138	0.009	0.010	0.000					1362.44	
31	0.6804	1104.8	1124.4		0.720	4.141	77.340	15.110	2.390	0.085	0.186	0.013	0.014	0.001					1363.08	
Avg	0.6739	1102.0	1121.5		0.691	3.749	78.012	15.471	1.853	0.064	0.139	0.010	0.011	0.001					1366.17	

Source Daily Summary

December 2021

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	0.6975	1136.5	1156.6	1156.4	1.038	3.326	74.521	18.401	2.322	0.096	0.238	0.025	0.034	0.000	0.000	0.000	0.000	0.000	1384.96	
2	0.6986	1134.5	1154.6	1154.4	1.110	3.443	74.500	18.086	2.440	0.107	0.262	0.024	0.030	0.000	0.000	0.000	0.000	0.000	1381.43	
3	0.6944	1126.3	1146.2	1146.0	1.015	3.697	74.969	17.561	2.440	0.089	0.198	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1375.60	
4	0.6865	1120.5	1140.4	1140.2	0.971	3.378	76.034	17.310	2.065	0.070	0.150	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1376.29	
5	0.6904	1126.4	1146.3	1146.1	1.007	3.328	75.309	18.035	2.079	0.070	0.149	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1379.63	
6	0.6890	1124.5	1144.4	1144.2	0.992	3.342	75.432	18.015	2.000	0.064	0.136	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1378.64	
7	0.6899	1124.9	1144.8	1144.6	1.029	3.341	75.215	18.272	1.934	0.060	0.129	0.009	0.011	0.000	0.000	0.000	0.000	0.000	1378.30	
8	0.6945	1131.9	1152.0	1151.8	1.046	3.323	74.433	18.935	2.032	0.065	0.144	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1382.28	
9	0.6949	1133.0	1153.0	1152.8	1.034	3.318	74.390	18.941	2.088	0.065	0.142	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1383.12	
10	0.6938	1132.0	1152.0	1151.9	1.018	3.296	74.569	18.813	2.088	0.064	0.134	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.06	
11	0.6946	1133.1	1153.2	1153.0	1.026	3.285	74.363	19.098	2.010	0.062	0.134	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1383.70	
12	0.6955	1134.9	1155.0	1154.8	1.019	3.277	74.204	19.229	2.052	0.063	0.134	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1384.89	
13	0.6975	1137.8	1157.9	1157.7	1.015	3.288	73.947	19.385	2.124	0.067	0.145	0.012	0.016	0.000	0.000	0.000	0.000	0.000	1386.50	
14	0.6965	1136.3	1156.4	1156.2	1.019	3.278	74.016	19.405	2.065	0.063	0.135	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1385.71	
15	0.6935	1131.6	1151.6	1151.5	1.018	3.287	74.619	18.811	2.044	0.063	0.134	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1382.92	
16	0.7156	1145.5	1165.7	1165.6	0.993	4.555	71.608	19.021	3.427	0.119	0.247	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1378.30	
17	0.7055	1140.0	1160.2	1160.0	0.984	3.952	72.927	19.090	2.719	0.094	0.204	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1381.43	
18	0.6933	1131.5	1151.6	1151.4	0.975	3.335	74.699	18.691	2.046	0.068	0.157	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1383.08	
19	0.6924	1131.0	1151.0	1150.9	0.963	3.305	74.752	18.727	2.048	0.061	0.127	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1383.28	
20	0.6950	1135.3	1155.4	1155.2	0.972	3.274	74.361	19.015	2.172	0.064	0.126	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1385.93	
21	0.6930	1132.1	1152.2	1152.0	0.967	3.292	74.587	18.923	2.038	0.058	0.120	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1384.00	
22	0.6919	1129.8	1149.8	1149.6	0.982	3.305	74.810	18.704	1.995	0.060	0.127	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1382.28	
23	0.6937	1132.8	1152.8	1152.6	0.967	3.312	74.643	18.719	2.115	0.068	0.150	0.012	0.014	0.000	0.000	0.000	0.000	0.000	1384.14	
24	0.7484	1168.8	1189.5	1189.3	0.920	6.312	67.162	19.468	5.479	0.200	0.414	0.021	0.023	0.000	0.000	0.000	0.000	0.000	1374.99	
25	0.7534	1172.3	1193.1	1192.9	0.922	6.562	66.499	19.555	5.734	0.219	0.461	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1374.51	
26	0.7491	1163.6	1184.2	1184.0	0.919	6.697	66.942	19.260	5.563	0.192	0.388	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1368.21	
27	0.7507	1166.2	1186.9	1186.7	0.917	6.689	66.752	19.337	5.681	0.194	0.391	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1369.84	
28	0.7562	1176.1	1196.9	1196.7	0.918	6.603	66.139	19.606	6.047	0.210	0.430	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1376.36	
29	0.7512	1166.7	1187.4	1187.2	0.917	6.706	66.685	19.323	5.771	0.187	0.372	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1369.95	
30	0.7435	1159.6	1180.1	1179.9	0.930	6.399	67.686	19.196	5.242	0.172	0.341	0.017	0.018	0.000	0.000	0.000	0.000	0.000	1368.67	
31	0.7163	1143.7	1164.0	1163.8	0.969	4.759	71.387	19.052	3.472	0.112	0.225	0.012	0.013	0.000	0.000	0.000	0.000	0.000	1375.51	
Avg	0.7083	1141.0	1160.8	1160.6	0.986	4.170	72.650	18.838	3.011	0.101	0.214	0.014	0.016	0.000	0.000	0.000	0.000	0.000	1379.60	

Source Daily Summary

December 2021

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	0.7615	1183.5	1204.5	1204.2	0.933	6.619	65.545	19.805	6.323	0.237	0.484	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1380.26	
2	0.7608	1181.9	1202.8	1202.5	0.930	6.658	65.622	19.760	6.246	0.239	0.492	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1378.99	
3	0.7586	1177.8	1198.7	1198.4	0.927	6.711	65.876	19.586	6.153	0.229	0.468	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1376.17	
4	0.7598	1179.7	1200.6	1200.3	0.927	6.700	65.750	19.608	6.280	0.222	0.462	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1377.38	
5	0.7607	1182.4	1203.3	1203.0	0.930	6.623	65.647	19.751	6.270	0.237	0.486	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1379.59	
6	0.7529	1168.0	1188.6	1188.3	0.940	6.750	66.497	19.335	5.854	0.197	0.387	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1369.91	
7	0.7636	1188.0	1209.0	1208.7	0.938	6.533	65.353	19.940	6.395	0.253	0.528	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1383.55	
8	0.7655	1191.6	1212.7	1212.4	0.937	6.490	65.151	20.027	6.534	0.257	0.541	0.030	0.033	0.000	0.000	0.000	0.000	0.000	1386.10	
9	0.7681	1196.5	1217.7	1217.4	0.934	6.448	64.876	20.141	6.691	0.268	0.572	0.033	0.036	0.000	0.000	0.000	0.000	0.000	1389.34	
10	0.7648	1190.7	1211.8	1211.5	0.930	6.490	65.216	20.027	6.492	0.250	0.531	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1385.68	
11	0.7654	1191.8	1212.9	1212.7	0.936	6.470	65.176	20.017	6.546	0.257	0.536	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1386.43	
12	0.7632	1189.4	1210.4	1210.2	0.944	6.408	65.480	19.953	6.324	0.262	0.562	0.032	0.034	0.000	0.000	0.000	0.000	0.000	1385.50	
13	0.7633	1188.1	1209.2	1208.9	0.941	6.493	65.417	19.948	6.330	0.258	0.548	0.031	0.034	0.000	0.000	0.000	0.000	0.000	1384.00	
14	0.7586	1179.1	1200.0	1199.7	0.942	6.600	65.925	19.667	6.088	0.235	0.489	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1377.77	
15	0.7572	1176.4	1197.2	1196.9	0.939	6.643	66.059	19.570	6.069	0.220	0.449	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1375.81	
16	0.7588	1177.3	1198.2	1197.9	0.941	6.735	65.846	19.502	6.302	0.204	0.422	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1375.42	
17	0.7511	1167.2	1187.9	1187.6	0.937	6.631	66.739	19.330	5.761	0.190	0.373	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1370.70	
18	0.7568	1177.6	1198.4	1198.2	0.935	6.540	66.078	19.701	6.043	0.217	0.437	0.023	0.025	0.000	0.000	0.000	0.000	0.000	1377.56	
19	0.7605	1181.0	1202.0	1201.7	0.933	6.673	65.651	19.734	6.240	0.235	0.481	0.026	0.028	0.000	0.000	0.000	0.000	0.000	1378.31	
20	0.7563	1172.4	1193.1	1192.8	0.931	6.815	66.085	19.459	6.022	0.213	0.429	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1371.96	
21	0.7568	1174.0	1194.8	1194.6	0.931	6.761	66.051	19.500	6.055	0.218	0.440	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1373.46	
22	0.7581	1177.1	1197.9	1197.7	0.928	6.697	65.949	19.589	6.073	0.232	0.481	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1375.88	
23	0.7578	1176.1	1196.9	1196.6	0.934	6.725	65.960	19.610	5.988	0.235	0.495	0.025	0.027	0.000	0.000	0.000	0.000	0.000	1374.93	
24	0.7528	1167.0	1187.7	1187.4	0.931	6.813	66.518	19.297	5.765	0.208	0.425	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1368.86	
25	0.7533	1167.6	1188.3	1188.0	0.928	6.834	66.428	19.306	5.856	0.203	0.405	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1369.06	
26	0.7581	1175.9	1196.7	1196.5	0.929	6.774	65.876	19.558	6.169	0.215	0.434	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1374.43	
27	0.7564	1172.4	1193.1	1192.8	0.928	6.831	66.067	19.428	6.081	0.206	0.413	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1371.84	
28	0.7529	1166.2	1186.8	1186.5	0.927	6.878	66.452	19.272	5.852	0.196	0.384	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1367.83	
29	0.7530	1167.9	1188.6	1188.3	0.930	6.785	66.467	19.334	5.851	0.200	0.393	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1369.67	
30	0.7568	1174.6	1195.4	1195.1	0.930	6.726	66.030	19.579	6.037	0.216	0.435	0.022	0.023	0.000	0.000	0.000	0.000	0.000	1374.12	
31	0.7566	1171.6	1192.3	1192.1	0.917	6.918	65.931	19.517	6.080	0.201	0.394	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1370.73	
Avg	0.7587	1178.0	1199.3	1199.0	0.933	6.670	65.862	19.640	6.154	0.226	0.464	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1376.81	

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 December 1, 2021

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	0.8485		1.8893	Pressure Base	14.730	
Nitrogen, N2	2.9706		4.2102	Temperature Base	60.00	
Methane, C1	76.5377		62.1208	HCDP @ Sample Pressure		
Ethane, C2	17.3302	4.6366	26.3642	Cricondentherm	-18.079	
Propane, C3	1.9917	0.5489	4.4434	HV, Dry @ Base P, T	1146.61	
iso-Butane, iC4	0.0900	0.0295	0.2647	HV, Sat @ Base P, T	1126.65	
n-Butane, nC4	0.1960	0.0618	0.5764	HV, Sat @ Sample P, T	1146.61	
iso-Pentane, iC5	0.0154	0.0056	0.0562	Relative Density	0.6842	
n-Pentane, nC5	0.0169	0.0061	0.0617			
Neo-Pentane, neo						
Hexanes Plus, C6+	0.0030	0.0012	0.0131			
Argon, Ar						
Carbon Monoxide, CO						
Hydrogen, H2						
Oxygen, O2						
Helium, He						
Water, H2O						
Hydrogen Sulfide, H2S						
				C6+: 100		
Totals	100.0000	5.2900	100.0000			

Sample

Date: 12/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

*** End of Report ***

Source Daily Summary

December 2021

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	0.6960	1129.8	1149.8	1149.5	1.138	3.442	75.099	17.468	2.407	0.110	0.273	0.027	0.035	0.000	0.000	0.000	0.000	0.000	1378.24	
2	0.6988	1132.1	1152.1	1151.9	1.200	3.474	74.703	17.677	2.472	0.117	0.292	0.028	0.037	0.000	0.000	0.000	0.000	0.000	1378.22	
3	0.6887	1123.0	1142.8	1142.6	0.987	3.405	75.764	17.420	2.157	0.075	0.165	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1377.15	
4	0.6863	1120.3	1140.2	1139.9	0.959	3.390	76.087	17.242	2.075	0.071	0.154	0.011	0.012	0.000	0.000	0.000	0.000	0.000	1376.25	
5	0.6900	1125.7	1145.6	1145.3	1.011	3.333	75.399	17.925	2.086	0.070	0.152	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1379.12	
6	0.6892	1125.0	1144.9	1144.6	0.987	3.332	75.413	18.041	2.007	0.065	0.137	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1379.12	
7	0.6885	1122.4	1142.3	1142.0	1.030	3.364	75.426	18.088	1.893	0.058	0.124	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1376.64	
8	0.6932	1129.7	1149.7	1149.5	1.043	3.339	74.664	18.722	1.999	0.065	0.144	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1380.90	
9	0.6945	1132.0	1152.0	1151.7	1.039	3.326	74.481	18.847	2.075	0.066	0.144	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1382.37	
10	0.6938	1131.8	1151.9	1151.6	1.018	3.300	74.607	18.748	2.105	0.065	0.138	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1382.91	
11	0.6950	1133.8	1153.8	1153.6	1.027	3.284	74.308	19.129	2.026	0.064	0.138	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1384.06	
12	0.6950	1134.3	1154.4	1154.1	1.011	3.276	74.259	19.207	2.040	0.061	0.129	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1384.74	
13	0.6976	1138.0	1158.2	1157.9	1.019	3.280	73.915	19.417	2.130	0.067	0.147	0.011	0.014	0.000	0.000	0.000	0.000	0.000	1386.66	
14	0.6960	1136.4	1156.5	1156.2	0.999	3.261	74.042	19.457	2.030	0.061	0.131	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1386.27	
15	0.6941	1132.5	1152.6	1152.3	1.015	3.295	74.477	18.965	2.021	0.064	0.139	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1383.42	
16	0.6934	1131.7	1151.8	1151.5	0.986	3.319	74.482	19.032	1.984	0.058	0.123	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1383.20	
17	0.6922	1129.6	1149.6	1149.3	0.995	3.323	74.765	18.731	1.972	0.061	0.131	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1381.76	
18	0.6935	1131.9	1152.0	1151.7	0.975	3.335	74.629	18.774	2.034	0.068	0.156	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1383.28	
19	0.6909	1128.3	1148.3	1148.0	0.967	3.320	75.018	18.499	1.985	0.060	0.130	0.010	0.011	0.000	0.000	0.000	0.000	0.000	1381.51	
20	0.6944	1134.0	1154.1	1153.8	0.975	3.293	74.554	18.762	2.190	0.067	0.136	0.010	0.013	0.000	0.000	0.000	0.000	0.000	1384.91	
21	0.6935	1132.9	1152.9	1152.7	0.982	3.263	74.569	18.904	2.087	0.060	0.119	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1384.49	
22	0.6955	1135.7	1155.8	1155.5	0.986	3.279	74.178	19.262	2.086	0.061	0.129	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1385.86	
23	0.6967	1136.5	1156.7	1156.4	1.011	3.297	74.084	19.210	2.170	0.066	0.142	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1385.75	
24	0.6964	1137.0	1157.1	1156.8	0.971	3.304	74.274	18.910	2.303	0.070	0.144	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1386.55	
25	0.6952	1135.4	1155.5	1155.3	0.959	3.301	74.394	18.881	2.252	0.065	0.129	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1385.90	
26	0.6946	1133.4	1153.4	1153.2	0.988	3.334	74.343	19.043	2.090	0.061	0.124	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1383.92	
27	0.6965	1137.6	1157.7	1157.5	0.970	3.275	74.074	19.293	2.171	0.065	0.132	0.009	0.010	0.000	0.000	0.000	0.000	0.000	1387.25	
28	0.6936	1131.1	1151.2	1150.9	0.994	3.358	74.925	18.169	2.280	0.077	0.167	0.013	0.016	0.000	0.000	0.000	0.000	0.000	1382.25	
29	0.7007	1142.2	1162.4	1162.1	0.990	3.358	73.865	18.915	2.532	0.090	0.211	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1388.64	
30	0.6923	1128.3	1148.3	1148.0	1.003	3.402	74.841	18.452	2.092	0.063	0.130	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1380.03	
31	0.6932	1129.9	1149.9	1149.7	1.005	3.382	74.691	18.618	2.083	0.064	0.136	0.010	0.012	0.000	0.000	0.000	0.000	0.000	1381.14	
Avg	0.6938	1132.0	1151.7	1151.5	1.008	3.330	74.656	18.639	2.124	0.069	0.150	0.011	0.013	0.000	0.000	0.000	0.000	0.000	1382.66	

Source Daily Summary

December 2021

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	0.7605	1184.2	1205.2	1204.3	0.914	6.511	65.720	19.800	6.271	0.239	0.491	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1382.03	
2	0.7604	1184.0	1205.0	1204.1	0.912	6.523	65.699	19.846	6.226	0.242	0.498	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1381.80	
3	0.7578	1179.0	1199.9	1199.0	0.909	6.588	65.985	19.681	6.087	0.230	0.470	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1378.32	
4	0.7578	1178.8	1199.6	1198.8	0.908	6.599	66.030	19.569	6.164	0.221	0.459	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1378.10	
5	0.7520	1179.3	1200.2	1199.4	0.855	6.106	66.877	19.623	5.810	0.223	0.456	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1384.04	
6	0.7194	1148.5	1168.8	1168.1	0.725	5.126	71.139	18.550	4.047	0.134	0.255	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1378.12	
7	0.7393	1169.2	1189.9	1189.2	0.805	5.607	68.608	19.231	5.116	0.194	0.395	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1383.90	
8	0.7538	1181.4	1202.3	1201.5	0.880	6.115	66.717	19.581	5.935	0.233	0.484	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.73	
9	0.7673	1197.7	1218.9	1218.0	0.916	6.324	65.045	20.134	6.653	0.275	0.584	0.033	0.035	0.000	0.000	0.000	0.000	0.000	1391.52	
10	0.7649	1193.3	1214.5	1213.5	0.911	6.374	65.244	20.093	6.518	0.256	0.542	0.030	0.032	0.000	0.000	0.000	0.000	0.000	1388.62	
11	0.7637	1191.7	1212.8	1211.9	0.916	6.356	65.422	19.985	6.471	0.257	0.533	0.029	0.031	0.000	0.000	0.000	0.000	0.000	1387.77	
12	0.7632	1191.8	1212.9	1212.0	0.925	6.287	65.545	19.994	6.343	0.269	0.572	0.032	0.033	0.000	0.000	0.000	0.000	0.000	1388.36	
13	0.7622	1190.1	1211.2	1210.3	0.912	6.312	65.612	20.016	6.266	0.263	0.557	0.031	0.032	0.000	0.000	0.000	0.000	0.000	1387.32	
14	0.7544	1178.2	1199.1	1198.3	0.894	6.335	66.537	19.589	5.885	0.231	0.478	0.026	0.026	0.000	0.000	0.000	0.000	0.000	1380.58	
15	0.7324	1162.3	1182.8	1182.1	0.744	5.482	69.481	18.979	4.728	0.180	0.367	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1382.15	
16	0.7238	1155.4	1175.8	1175.1	0.770	5.050	70.754	18.583	4.360	0.150	0.299	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1382.12	
17	0.7236	1148.0	1168.3	1167.6	0.764	5.492	70.632	18.303	4.368	0.139	0.273	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1373.47	
18	0.7306	1156.5	1176.9	1176.2	0.787	5.593	69.678	18.756	4.671	0.162	0.318	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.99	
19	0.7500	1177.2	1198.1	1197.2	0.853	6.050	67.161	19.510	5.714	0.218	0.444	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1383.39	
20	0.7352	1160.5	1181.0	1180.2	0.779	5.798	68.989	19.009	4.857	0.177	0.356	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1377.37	
21	0.7371	1157.5	1178.0	1177.2	0.822	6.094	68.720	18.794	5.010	0.176	0.350	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1372.08	
22	0.7549	1176.6	1197.4	1196.5	0.896	6.482	66.449	19.465	5.967	0.227	0.467	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1378.15	
23	0.7544	1176.0	1196.8	1195.9	0.895	6.474	66.499	19.502	5.857	0.234	0.490	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1377.94	
24	0.7277	1153.3	1173.7	1172.9	0.735	5.597	69.991	18.732	4.408	0.165	0.337	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.92	
25	0.7217	1147.0	1167.3	1166.5	0.712	5.460	70.708	18.566	4.112	0.140	0.275	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1374.04	
26	0.7217	1149.8	1170.1	1169.4	0.696	5.312	70.715	18.731	4.105	0.140	0.274	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1377.40	
27	0.7210	1155.1	1175.5	1174.8	0.657	4.983	70.909	18.890	4.103	0.143	0.284	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1384.40	
28	0.7144	1146.5	1166.8	1166.1	0.703	4.815	71.782	18.600	3.719	0.123	0.234	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1380.50	
29	0.7070	1134.4	1154.5	1153.8	0.708	4.854	73.047	17.526	3.493	0.118	0.229	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1372.99	
30	0.7124	1135.4	1155.5	1154.7	0.742	5.248	72.018	18.329	3.094	0.199	0.342	0.012	0.015	0.000	0.000	0.000	0.000	0.000	1368.94	
31	0.7108	1139.8	1160.0	1159.3	0.736	4.838	72.522	17.849	3.651	0.127	0.248	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1375.84	
Avg	0.7405	1167.0	1187.7	1186.9	0.819	5.832	68.395	19.155	5.162	0.196	0.399	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1380.29	

Source Daily Summary

December 2021

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	0.7568	1176.7	1197.6	1196.6	0.922	6.610	66.100	19.602	6.060	0.219	0.438	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1376.62	
2	0.7607	1183.9	1204.8	1203.9	0.922	6.539	65.678	19.812	6.275	0.237	0.481	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1381.41	
3	0.7610	1184.2	1205.2	1204.3	0.920	6.547	65.638	19.846	6.257	0.242	0.495	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1381.58	
4	0.7582	1178.9	1199.8	1198.9	0.918	6.615	65.956	19.645	6.119	0.230	0.467	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1377.90	
5	0.7582	1178.7	1199.6	1198.7	0.918	6.627	65.968	19.584	6.177	0.221	0.454	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1377.65	
6	0.7522	1179.1	1199.9	1199.0	0.861	6.128	66.874	19.581	5.832	0.222	0.451	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1383.59	
7	0.7195	1148.4	1168.7	1167.8	0.728	5.145	71.125	18.535	4.056	0.133	0.253	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1377.82	
8	0.7386	1168.0	1188.7	1187.7	0.807	5.611	68.686	19.210	5.071	0.189	0.381	0.021	0.022	0.000	0.000	0.000	0.000	0.000	1383.11	
9	0.7546	1182.0	1203.0	1202.0	0.885	6.137	66.591	19.688	5.934	0.232	0.479	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1384.83	
10	0.7679	1198.0	1219.2	1219.0	0.924	6.348	64.961	20.163	6.690	0.272	0.574	0.033	0.035	0.000	0.000	0.000	0.000	0.000	1391.33	
11	0.7646	1191.9	1213.0	1212.9	0.918	6.417	65.280	20.043	6.496	0.252	0.532	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1387.29	
12	0.7624	1188.6	1209.6	1209.5	0.922	6.414	65.537	19.927	6.385	0.248	0.509	0.029	0.030	0.000	0.000	0.000	0.000	0.000	1385.34	
13	0.7635	1191.5	1212.6	1212.1	0.933	6.322	65.478	20.014	6.362	0.266	0.561	0.031	0.033	0.000	0.000	0.000	0.000	0.000	1387.74	
14	0.7621	1189.1	1210.2	1209.3	0.921	6.350	65.614	19.984	6.261	0.260	0.549	0.031	0.032	0.000	0.000	0.000	0.000	0.000	1386.28	
15	0.7534	1177.1	1197.9	1197.2	0.895	6.310	66.640	19.606	5.809	0.225	0.464	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1380.15	
16	0.7330	1161.5	1182.1	1181.4	0.760	5.554	69.403	18.951	4.751	0.179	0.362	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1380.73	
17	0.7237	1154.5	1174.9	1174.4	0.774	5.090	70.771	18.538	4.352	0.148	0.294	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1381.13	
18	0.7238	1147.6	1168.0	1167.4	0.767	5.528	70.605	18.293	4.372	0.138	0.268	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1372.85	
19	0.7298	1155.3	1175.8	1175.2	0.791	5.588	69.771	18.725	4.625	0.158	0.309	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.35	
20	0.7504	1177.4	1198.3	1197.6	0.859	6.066	67.094	19.556	5.719	0.217	0.439	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1383.25	
21	0.7361	1160.9	1181.4	1181.2	0.788	5.842	68.857	19.055	4.893	0.176	0.351	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1377.03	
22	0.7362	1156.1	1176.6	1176.5	0.822	6.087	68.814	18.809	4.927	0.171	0.336	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1371.35	
23	0.7541	1175.2	1196.1	1195.9	0.898	6.485	66.505	19.496	5.897	0.221	0.450	0.023	0.024	0.000	0.000	0.000	0.000	0.000	1377.33	
24	0.7546	1176.1	1196.9	1196.5	0.898	6.481	66.463	19.536	5.857	0.232	0.482	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1377.86	
25	0.7301	1154.7	1175.1	1174.5	0.756	5.711	69.664	18.783	4.536	0.170	0.345	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.27	
26	0.7216	1146.3	1166.6	1165.9	0.715	5.481	70.756	18.491	4.118	0.140	0.272	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1373.36	
27	0.7212	1149.3	1169.7	1169.1	0.695	5.292	70.771	18.756	4.055	0.137	0.267	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1377.35	
28	0.7215	1154.3	1174.8	1174.2	0.669	5.055	70.827	18.873	4.125	0.142	0.278	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1383.04	
29	0.7144	1146.0	1166.3	1165.8	0.705	4.845	71.778	18.578	3.718	0.122	0.231	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1379.87	
30	0.7074	1134.4	1154.5	1154.0	0.713	4.880	72.995	17.539	3.504	0.118	0.227	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1372.63	
31	0.7183	1144.9	1165.2	1164.8	0.741	5.224	71.413	18.137	4.046	0.139	0.271	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1374.75	
Avg	0.7422	1168.0	1188.8	1188.2	0.831	5.914	68.149	19.205	5.267	0.195	0.396	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1379.90	

Source Daily Summary

December 2021

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	0.7563	1175.9	1196.7	1196.4	0.922	6.621	66.152	19.566	6.037	0.218	0.435	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1376.01	
2	0.7610	1184.5	1205.5	1205.1	0.923	6.534	65.642	19.822	6.295	0.240	0.488	0.028	0.028	0.000	0.000	0.000	0.000	0.000	1381.81	
3	0.7610	1184.2	1205.2	1204.7	0.921	6.549	65.640	19.839	6.257	0.242	0.496	0.027	0.028	0.000	0.000	0.000	0.000	0.000	1381.54	
4	0.7582	1178.8	1199.7	1199.2	0.919	6.619	65.958	19.639	6.116	0.230	0.468	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1377.79	
5	0.7584	1179.1	1199.9	1199.6	0.918	6.624	65.947	19.591	6.192	0.222	0.456	0.025	0.025	0.000	0.000	0.000	0.000	0.000	1377.89	
6	0.7497	1177.1	1198.0	1197.8	0.849	6.036	67.209	19.499	5.699	0.218	0.441	0.024	0.025	0.000	0.000	0.000	0.000	0.000	1383.60	
7	0.7206	1148.9	1169.3	1169.1	0.737	5.202	70.982	18.538	4.120	0.136	0.258	0.013	0.013	0.000	0.000	0.000	0.000	0.000	1377.37	
8	0.7393	1168.9	1189.5	1189.3	0.810	5.625	68.598	19.229	5.111	0.193	0.389	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1383.44	
9	0.7551	1182.4	1203.4	1203.1	0.887	6.153	66.532	19.697	5.959	0.233	0.482	0.027	0.029	0.000	0.000	0.000	0.000	0.000	1384.87	
10	0.7679	1198.0	1219.2	1219.0	0.926	6.351	64.954	20.178	6.665	0.275	0.581	0.034	0.036	0.000	0.000	0.000	0.000	0.000	1391.25	
11	0.7651	1193.0	1214.1	1214.0	0.919	6.407	65.211	20.069	6.546	0.253	0.533	0.030	0.031	0.000	0.000	0.000	0.000	0.000	1387.96	
12	0.7542	1174.0	1194.7	1194.7	0.928	6.533	66.334	19.654	5.911	0.205	0.399	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1375.69	
13	0.7551	1176.7	1197.5	1197.2	0.939	6.434	66.296	19.731	5.895	0.222	0.443	0.020	0.020	0.000	0.000	0.000	0.000	0.000	1378.07	
14	0.7626	1189.9	1210.9	1210.5	0.924	6.352	65.551	20.003	6.291	0.262	0.554	0.031	0.033	0.000	0.000	0.000	0.000	0.000	1386.64	
15	0.7542	1177.8	1198.7	1198.4	0.900	6.339	66.540	19.608	5.863	0.228	0.470	0.026	0.027	0.000	0.000	0.000	0.000	0.000	1380.19	
16	0.7306	1159.8	1180.3	1180.1	0.739	5.468	69.737	18.855	4.632	0.175	0.354	0.020	0.021	0.000	0.000	0.000	0.000	0.000	1380.96	
17	0.7231	1154.1	1174.5	1174.2	0.772	5.066	70.832	18.545	4.315	0.147	0.290	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1381.19	
18	0.7245	1148.8	1169.1	1168.8	0.772	5.518	70.534	18.310	4.420	0.140	0.276	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1373.54	
19	0.7295	1155.1	1175.5	1175.1	0.789	5.575	69.823	18.704	4.611	0.158	0.308	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.35	
20	0.7509	1178.2	1199.0	1198.6	0.862	6.067	67.032	19.578	5.748	0.219	0.443	0.025	0.026	0.000	0.000	0.000	0.000	0.000	1383.64	
21	0.7361	1160.9	1181.5	1181.4	0.786	5.838	68.859	19.061	4.887	0.177	0.354	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1377.14	
22	0.7360	1156.3	1176.8	1176.7	0.820	6.063	68.840	18.819	4.916	0.171	0.335	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1371.71	
23	0.7537	1174.6	1195.4	1195.3	0.899	6.486	66.538	19.495	5.879	0.218	0.440	0.022	0.022	0.000	0.000	0.000	0.000	0.000	1376.91	
24	0.7539	1174.5	1195.3	1195.0	0.901	6.509	66.519	19.508	5.816	0.228	0.470	0.024	0.024	0.000	0.000	0.000	0.000	0.000	1376.60	
25	0.7318	1155.8	1176.3	1175.9	0.769	5.780	69.431	18.836	4.622	0.174	0.353	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1375.08	
26	0.7216	1146.3	1166.6	1166.2	0.716	5.484	70.756	18.485	4.118	0.140	0.273	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1373.29	
27	0.7210	1149.2	1169.5	1169.3	0.694	5.284	70.797	18.748	4.044	0.137	0.268	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1377.36	
28	0.7223	1155.3	1175.8	1175.5	0.670	5.071	70.721	18.910	4.168	0.144	0.284	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1383.43	
29	0.7148	1146.7	1167.1	1166.8	0.702	4.841	71.708	18.645	3.726	0.122	0.232	0.012	0.011	0.000	0.000	0.000	0.000	0.000	1380.37	
30	0.7072	1134.1	1154.2	1153.9	0.720	4.868	73.034	17.518	3.493	0.117	0.227	0.012	0.012	0.000	0.000	0.000	0.000	0.000	1372.48	
31	0.7174	1143.6	1163.8	1163.6	0.737	5.218	71.539	18.080	3.995	0.137	0.265	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1374.12	
Avg	0.7417	1167.0	1187.8	1187.6	0.831	5.920	68.202	19.186	5.237	0.193	0.389	0.021	0.021	0.000	0.000	0.000	0.000	0.000	1379.30	

Source Daily Summary

December 2021

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	0.6893	1141.6	1161.8	1161.3	0.384	3.256	74.286	20.299	1.613	0.052	0.098	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1399.33	
2	0.6893	1136.1	1156.2	1155.8	0.442	3.498	74.833	18.987	2.025	0.068	0.131	0.009	0.009	0.000	0.000	0.000	0.000	0.000	1392.57	
3	0.6817	1127.6	1147.5	1147.1	0.260	3.581	76.013	17.973	2.050	0.045	0.071	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1389.82	
4	0.6760	1117.1	1136.9	1136.5	0.376	3.508	77.154	16.956	1.868	0.048	0.081	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1382.69	
5	0.6806	1124.7	1144.6	1144.2	0.415	3.417	76.533	17.382	2.097	0.055	0.091	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1387.36	
6	0.6819	1125.0	1144.9	1144.5	0.506	3.382	76.308	17.618	2.016	0.058	0.100	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1386.47	
7	0.6820	1125.8	1145.8	1145.3	0.494	3.353	76.312	17.640	2.031	0.058	0.100	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1387.43	
8	0.6793	1121.3	1141.1	1140.7	0.519	3.340	76.762	17.302	1.909	0.057	0.099	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1384.55	
9	0.6786	1121.9	1141.8	1141.3	0.431	3.374	76.815	17.272	1.958	0.052	0.087	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1386.00	
10	0.6810	1125.6	1145.5	1145.1	0.413	3.402	76.415	17.593	1.986	0.064	0.115	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1388.10	
11	0.6846	1129.2	1149.2	1148.7	0.431	3.491	76.056	17.543	2.226	0.081	0.154	0.009	0.008	0.000	0.000	0.000	0.000	0.000	1388.87	
12	0.6896	1133.6	1153.6	1153.2	0.435	3.690	75.282	17.866	2.444	0.090	0.175	0.010	0.009	0.000	0.000	0.000	0.000	0.000	1389.25	
13	0.6820	1129.0	1149.0	1148.6	0.354	3.376	76.215	17.844	1.998	0.070	0.130	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1391.32	
14	0.6865	1134.5	1154.5	1154.1	0.365	3.449	75.384	18.489	2.114	0.067	0.120	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1393.44	
15	0.6805	1124.5	1144.4	1144.0	0.390	3.457	76.413	17.636	1.919	0.062	0.111	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1387.26	
16	0.6808	1123.5	1143.4	1143.0	0.582	3.252	76.704	17.254	1.999	0.069	0.125	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1385.74	
17	0.6757	1115.9	1135.7	1135.3	0.482	3.382	77.407	16.721	1.832	0.058	0.105	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1381.62	
18	0.6743	1114.3	1134.0	1133.7	0.445	3.410	77.484	16.779	1.730	0.051	0.091	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1381.03	
19	0.6743	1114.4	1134.1	1133.7	0.456	3.385	77.435	16.912	1.659	0.050	0.091	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1381.18	
20	0.6759	1119.7	1139.5	1139.1	0.390	3.319	76.897	17.720	1.533	0.046	0.085	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1386.02	
21	0.6728	1112.9	1132.6	1132.2	0.442	3.359	77.620	16.874	1.558	0.048	0.087	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1380.81	
22	0.6722	1111.5	1131.2	1130.8	0.451	3.378	77.745	16.719	1.559	0.048	0.089	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1379.64	
23	0.6706	1108.7	1128.3	1127.9	0.435	3.424	78.000	16.479	1.516	0.047	0.087	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1377.80	
24	0.6737	1114.1	1133.8	1133.5	0.369	3.487	77.355	17.056	1.587	0.049	0.087	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1381.32	
25	0.6764	1117.7	1137.5	1137.1	0.400	3.471	76.909	17.426	1.646	0.050	0.088	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1383.07	
26	0.6792	1122.1	1142.0	1141.7	0.416	3.441	76.397	17.915	1.677	0.052	0.092	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1385.69	
27	0.6823	1127.4	1147.4	1147.0	0.412	3.411	76.043	18.055	1.905	0.059	0.104	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1389.07	
28	0.6904	1132.7	1152.8	1152.5	0.550	3.637	75.092	18.107	2.373	0.079	0.145	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1387.49	
29	0.6721	1108.0	1127.6	1127.3	0.553	3.418	78.031	16.153	1.678	0.054	0.100	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1375.50	
30	0.6728	1108.6	1128.3	1128.0	0.524	3.496	77.731	16.676	1.259	0.106	0.197	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1375.51	
31	0.6753	1113.2	1132.9	1132.6	0.598	3.334	77.570	16.533	1.783	0.059	0.109	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1378.67	
Avg	0.6794	1122.0	1141.9	1141.5	0.443	3.425	76.619	17.477	1.856	0.060	0.108	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1385.31	

Source Daily Summary

December 2021

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	0.6832	1127.2	1147.2	1146.9	0.381	3.559	75.654	18.418	1.843	0.050	0.086	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1387.90	
2	0.6820	1130.2	1150.2	1149.9	0.213	3.522	75.937	18.108	2.103	0.045	0.068	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1392.74	
3	0.6766	1119.0	1138.8	1138.5	0.381	3.441	77.037	17.136	1.864	0.050	0.083	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1384.42	
4	0.6798	1124.5	1144.4	1144.1	0.395	3.381	76.599	17.438	2.039	0.053	0.086	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1388.00	
5	0.6830	1128.1	1148.1	1147.9	0.495	3.307	76.154	17.786	2.087	0.060	0.100	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1389.25	
6	0.6831	1128.0	1148.0	1147.7	0.523	3.286	76.123	17.847	2.048	0.060	0.102	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1388.92	
7	0.6812	1125.6	1145.5	1145.3	0.507	3.279	76.353	17.772	1.924	0.056	0.097	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1387.89	
8	0.6798	1124.5	1144.4	1144.2	0.452	3.298	76.582	17.570	1.943	0.054	0.091	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1387.96	
9	0.6820	1128.1	1148.1	1147.9	0.417	3.337	76.230	17.819	2.003	0.065	0.118	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1390.19	
10	0.6816	1128.1	1148.1	1147.9	0.391	3.332	76.361	17.685	2.013	0.071	0.133	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1390.65	
11	0.6817	1129.5	1149.5	1149.3	0.370	3.293	76.232	17.947	1.951	0.068	0.126	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1392.22	
12	0.6825	1132.8	1152.8	1152.6	0.272	3.316	76.040	18.145	2.020	0.068	0.126	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1395.46	
13	0.6867	1135.1	1155.2	1155.0	0.399	3.380	75.317	18.642	2.065	0.067	0.119	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1394.00	
14	0.6798	1124.7	1144.6	1144.4	0.388	3.376	76.478	17.726	1.850	0.061	0.109	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1388.30	
15	0.6808	1125.3	1145.2	1145.0	0.473	3.304	76.558	17.470	1.993	0.068	0.120	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1387.98	
16	0.6787	1121.5	1141.4	1141.2	0.539	3.234	76.974	17.143	1.913	0.065	0.117	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1385.52	
17	0.6745	1116.4	1136.2	1136.0	0.426	3.328	77.460	16.873	1.754	0.054	0.095	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1383.47	
18	0.6742	1115.8	1135.5	1135.3	0.445	3.308	77.432	17.010	1.655	0.050	0.089	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1382.99	
19	0.6769	1122.7	1142.6	1142.4	0.371	3.254	76.684	18.005	1.547	0.046	0.084	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1388.81	
20	0.6739	1116.5	1136.2	1136.0	0.433	3.257	77.357	17.275	1.537	0.047	0.085	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1384.15	
21	0.6727	1113.9	1133.6	1133.4	0.438	3.294	77.603	16.983	1.535	0.048	0.088	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1382.19	
22	0.6710	1110.9	1130.6	1130.4	0.425	3.336	77.900	16.691	1.505	0.047	0.086	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1380.22	
23	0.6722	1113.5	1133.2	1133.0	0.343	3.423	77.590	16.951	1.550	0.049	0.086	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1382.11	
24	0.6753	1117.2	1137.0	1136.8	0.393	3.404	77.090	17.354	1.613	0.050	0.088	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1383.65	
25	0.6790	1123.3	1143.2	1143.0	0.397	3.375	76.407	18.001	1.668	0.052	0.090	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1387.35	
26	0.6803	1126.2	1146.1	1145.9	0.388	3.336	76.187	18.219	1.722	0.051	0.089	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1389.58	
27	0.6854	1133.2	1153.3	1153.1	0.450	3.296	75.627	18.382	2.045	0.068	0.120	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1392.99	
28	0.6816	1125.1	1145.0	1144.8	0.524	3.318	76.385	17.629	1.948	0.065	0.118	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1386.87	
29	0.6738	1112.1	1131.8	1131.6	0.487	3.436	77.624	16.572	1.713	0.055	0.101	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1378.77	
30	0.6775	1117.4	1137.2	1137.0	0.545	3.368	77.119	16.932	1.848	0.061	0.113	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1381.61	
31	0.6758	1115.2	1135.0	1134.8	0.567	3.304	77.435	16.721	1.789	0.060	0.110	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1380.70	
Avg	0.6789	1123.0	1142.8	1142.6	0.427	3.345	76.662	17.556	1.842	0.057	0.101	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1387.00	

Source Daily Summary

December 2021

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	0.6729	1113.6	1133.4	1132.4	0.196	3.690	77.824	16.023	2.151	0.044	0.066	0.003	0.002	0.000	0.000	0.000	0.000	0.000	0.000	1381.66
2	0.6699	1106.2	1125.7	1125.2	0.431	3.508	78.483	15.571	1.853	0.053	0.091	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1375.43
3	0.6696	1104.8	1124.4	1123.4	0.531	3.413	78.556	15.602	1.730	0.055	0.100	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1374.09
4	0.6727	1110.2	1129.9	1129.1	0.546	3.351	78.022	16.117	1.793	0.056	0.102	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.62
5	0.6731	1110.7	1130.4	1129.7	0.561	3.343	77.941	16.195	1.788	0.057	0.103	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.76
6	0.6728	1110.4	1130.1	1129.4	0.563	3.328	77.995	16.166	1.775	0.057	0.103	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.70
7	0.6726	1110.1	1129.7	1129.1	0.567	3.319	78.033	16.152	1.757	0.056	0.102	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.54
8	0.6727	1110.5	1130.1	1129.4	0.559	3.319	78.003	16.187	1.762	0.056	0.101	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.90
9	0.6736	1111.8	1131.5	1130.8	0.557	3.325	77.871	16.267	1.799	0.059	0.109	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.65
10	0.6737	1112.1	1131.8	1131.0	0.556	3.321	77.846	16.303	1.795	0.058	0.108	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.85
11	0.6727	1110.6	1130.3	1129.5	0.545	3.335	78.035	16.110	1.795	0.058	0.108	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.03
12	0.6738	1111.9	1131.6	1130.9	0.559	3.333	77.820	16.318	1.795	0.057	0.105	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.61
13	0.6735	1111.5	1131.2	1130.5	0.559	3.329	77.864	16.296	1.778	0.057	0.105	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.40
14	0.6732	1111.2	1130.9	1130.1	0.553	3.327	77.915	16.260	1.773	0.056	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.34
15	0.6745	1113.1	1132.8	1132.2	0.577	3.303	77.733	16.383	1.823	0.059	0.109	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.30
16	0.6736	1111.7	1131.4	1130.7	0.568	3.314	77.852	16.317	1.775	0.056	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.52
17	0.6733	1111.2	1130.9	1130.2	0.556	3.335	77.882	16.289	1.768	0.055	0.102	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.20
18	0.6734	1111.3	1131.0	1130.3	0.562	3.327	77.873	16.297	1.768	0.055	0.104	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.24
19	0.6731	1110.7	1130.3	1129.6	0.563	3.336	77.936	16.228	1.765	0.055	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.77
20	0.6733	1110.9	1130.5	1129.8	0.562	3.344	77.895	16.260	1.767	0.055	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.81
21	0.6739	1111.8	1131.5	1130.8	0.562	3.346	77.771	16.371	1.777	0.055	0.104	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.35
22	0.6735	1111.1	1130.7	1130.0	0.555	3.365	77.835	16.305	1.769	0.055	0.103	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.81
23	0.6728	1109.5	1129.2	1128.4	0.540	3.413	77.980	16.112	1.781	0.056	0.105	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1376.64
24	0.6737	1111.0	1130.7	1130.0	0.539	3.408	77.793	16.302	1.785	0.055	0.104	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1377.59
25	0.6756	1114.2	1133.9	1133.2	0.549	3.379	77.452	16.632	1.815	0.056	0.105	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1379.58
26	0.6768	1115.8	1135.5	1134.8	0.532	3.418	77.319	16.644	1.899	0.062	0.112	0.006	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1380.32
27	0.6778	1117.4	1137.2	1136.5	0.565	3.366	77.153	16.810	1.920	0.061	0.113	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1381.29
28	0.6755	1113.9	1133.6	1132.9	0.556	3.381	77.488	16.573	1.826	0.057	0.107	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1379.27
29	0.6753	1113.4	1133.1	1132.4	0.551	3.398	77.527	16.526	1.821	0.057	0.107	0.007	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.84
30	0.6762	1114.6	1134.4	1133.7	0.560	3.391	77.393	16.625	1.850	0.058	0.109	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1379.50
31	0.6748	1112.5	1132.2	1131.6	0.562	3.384	77.644	16.412	1.819	0.057	0.108	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1378.33
Avg	0.6737	1112.0	1131.3	1130.6	0.540	3.369	77.830	16.279	1.809	0.056	0.103	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1378.32

Source Daily Summary

December 2021

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	0.6921	1159.5	1180.0	1178.7	0.000	3.012	72.517	23.400	1.049	0.009	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.50	-22.16
2	0.6933	1161.2	1181.8	1180.5	0.000	3.026	72.518	23.141	1.278	0.013	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.28	-20.56
3	0.6934	1161.5	1182.1	1180.4	0.000	3.015	72.552	23.076	1.315	0.014	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.55	-20.29
4	0.6931	1160.8	1181.4	1180.3	0.000	3.029	72.503	23.217	1.212	0.013	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.03	-20.86
5	0.6924	1159.6	1180.1	1179.2	0.000	3.038	72.611	23.139	1.174	0.013	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.24	-21.37
6	0.6921	1158.8	1179.4	1178.0	0.000	3.052	72.714	22.973	1.223	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.66	-21.38
7	0.6935	1161.5	1182.1	1180.6	0.000	3.023	72.483	23.173	1.293	0.011	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.49	-20.55
8	0.6923	1160.0	1180.5	1179.0	0.000	3.004	72.593	23.235	1.129	0.014	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.85	-21.48
9	0.6914	1158.3	1178.8	1177.2	0.000	3.029	72.616	23.332	0.985	0.013	0.023	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.63	-22.47
10	0.6918	1159.8	1180.3	1179.0	0.000	2.976	72.584	23.376	1.024	0.014	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1419.04	-21.99
11	0.6911	1157.9	1178.4	1177.1	0.000	3.022	72.708	23.212	1.021	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.50	-22.49
12	0.6914	1158.6	1179.1	1177.7	0.000	3.007	72.602	23.379	0.983	0.011	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1418.03	-22.64
13	0.6911	1158.4	1178.9	1177.8	0.000	2.993	72.659	23.353	0.954	0.014	0.025	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.08	-22.63
14	0.6915	1158.3	1178.9	1177.6	0.000	3.035	72.566	23.405	0.956	0.013	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.60	-22.52
15	0.6902	1157.1	1177.6	1176.7	0.000	2.989	72.726	23.408	0.838	0.013	0.024	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.40	-23.48
16	0.6910	1158.2	1178.7	1177.6	0.000	2.987	72.672	23.358	0.946	0.013	0.022	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1418.06	-22.77
17	0.6876	1152.8	1173.2	1171.4	0.000	3.010	73.003	23.341	0.625	0.008	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.77	-25.91
18	0.6883	1153.4	1173.9	1172.0	0.000	3.032	72.888	23.397	0.662	0.008	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.90	-25.47
19	0.6858	1153.7	1174.1	1172.4	0.000	2.785	73.361	23.259	0.572	0.008	0.014	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1417.74	-26.44
20	0.6879	1157.3	1177.8	1175.9	0.000	2.754	73.179	23.240	0.798	0.010	0.017	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1420.06	-24.49
21	0.6865	1155.4	1175.9	1173.7	0.000	2.741	73.279	23.328	0.629	0.008	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1419.18	-25.82
22	0.6859	1153.9	1174.3	1172.4	0.000	2.781	73.355	23.246	0.600	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1417.89	-26.37
23	0.6851	1151.5	1171.9	1169.7	0.000	2.850	73.532	22.982	0.616	0.007	0.013	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1415.80	-26.85
24	0.6836	1149.1	1169.4	1167.6	0.000	2.853	73.759	22.832	0.537	0.007	0.011	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1414.42	-27.94
25	0.6842	1150.3	1170.7	1168.8	0.000	2.837	73.659	22.921	0.564	0.007	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.30	-27.48
26	0.6837	1149.6	1169.9	1168.0	0.000	2.837	73.724	22.884	0.535	0.007	0.011	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1414.87	-27.83
27	0.6847	1151.1	1171.5	1169.1	0.000	2.837	73.569	22.992	0.588	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.74	-27.21
28	0.6871	1151.5	1171.9	1169.6	0.000	3.035	73.033	23.363	0.551	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.80	-26.56
29	0.6864	1149.9	1170.3	1168.6	0.000	3.072	73.052	23.408	0.452	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.53	-27.33
30	0.6864	1150.2	1170.6	1168.8	0.000	3.053	73.061	23.410	0.460	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.89	-27.26
31	0.6866	1150.3	1170.7	1169.0	0.000	3.059	73.078	23.349	0.498	0.007	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.88	-27.08
Avg	0.6891	1156.0	1176.3	1174.7	0.000	2.960	72.941	23.230	0.841	0.010	0.017	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1416.99	-24.18

Source Daily Summary

December 2021

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	0.5724	962.9	979.9	979.4	0.108	3.564	95.985	0.318	0.017	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.25	
2	0.5722	962.7	979.7	979.3	0.107	3.565	96.007	0.298	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1295.11	
3	0.6355	1044.9	1063.4	1063.1	0.350	4.129	84.767	9.357	1.229	0.048	0.104	0.006	0.010	0.000	0.000	0.000	0.000	0.000	1334.08	
4	0.6693	1094.7	1114.1	1113.7	0.508	4.044	78.705	14.702	1.814	0.065	0.140	0.009	0.012	0.000	0.000	0.000	0.000	0.000	1361.71	
5	0.6681	1094.4	1113.7	1113.5	0.511	3.947	78.903	14.648	1.777	0.063	0.132	0.008	0.011	0.000	0.000	0.000	0.000	0.000	1362.53	
6	0.6678	1094.0	1113.3	1113.0	0.513	3.936	78.953	14.625	1.761	0.062	0.129	0.008	0.011	0.000	0.000	0.000	0.000	0.000	1362.38	
7	0.6656	1092.5	1111.9	1111.5	0.515	3.813	79.290	14.515	1.680	0.057	0.113	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1362.86	
8	0.6646	1093.2	1112.6	1112.2	0.515	3.671	79.482	14.501	1.652	0.055	0.108	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1364.82	
9	0.6651	1092.9	1112.3	1111.9	0.511	3.751	79.375	14.509	1.670	0.056	0.111	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1363.81	
10	0.6663	1093.2	1112.5	1112.2	0.506	3.853	79.178	14.558	1.711	0.058	0.118	0.008	0.009	0.000	0.000	0.000	0.000	0.000	1362.93	
11	0.6668	1093.5	1112.9	1112.5	0.496	3.897	79.101	14.570	1.736	0.060	0.123	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1362.82	
12	0.6670	1093.6	1113.0	1112.6	0.491	3.915	79.063	14.585	1.744	0.060	0.124	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1362.78	
13	0.6672	1094.1	1113.5	1113.2	0.492	3.904	79.032	14.616	1.753	0.061	0.126	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1363.20	
14	0.6673	1094.2	1113.6	1113.2	0.490	3.914	79.000	14.644	1.749	0.060	0.125	0.008	0.010	0.000	0.000	0.000	0.000	0.000	1363.13	
15	0.6555	1077.9	1097.0	1096.7	0.465	3.833	81.049	13.011	1.482	0.051	0.096	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1354.88	
16	0.6534	1073.6	1092.6	1092.3	0.466	3.896	81.491	12.502	1.474	0.053	0.103	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1351.66	
17	0.6512	1072.4	1091.3	1091.1	0.467	3.763	81.846	12.366	1.408	0.048	0.089	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1352.38	
18	0.6516	1072.9	1091.9	1091.6	0.464	3.774	81.762	12.434	1.416	0.048	0.088	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1352.63	
19	0.6566	1079.2	1098.3	1098.0	0.468	3.847	80.896	13.097	1.525	0.052	0.100	0.007	0.008	0.000	0.000	0.000	0.000	0.000	1355.41	
20	0.6557	1078.2	1097.3	1097.1	0.460	3.839	81.008	13.036	1.498	0.051	0.094	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1355.08	
21	0.6493	1066.9	1085.8	1085.5	0.449	3.944	82.191	11.867	1.394	0.049	0.092	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1347.45	
22	0.6490	1066.2	1085.1	1084.8	0.446	3.961	82.251	11.792	1.396	0.050	0.092	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1346.92	
23	0.6508	1069.2	1088.2	1087.8	0.449	3.941	81.932	12.090	1.431	0.050	0.094	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1348.88	
24	0.6587	1084.1	1103.3	1103.1	0.462	3.759	80.490	13.561	1.564	0.052	0.098	0.007	0.007	0.000	0.000	0.000	0.000	0.000	1359.40	
25	0.6573	1082.0	1101.2	1101.0	0.460	3.760	80.742	13.338	1.539	0.051	0.096	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1358.21	
26	0.6548	1078.7	1097.8	1097.6	0.457	3.728	81.195	12.981	1.486	0.050	0.091	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1356.65	
27	0.6540	1077.7	1096.8	1096.6	0.459	3.709	81.349	12.860	1.470	0.050	0.090	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1356.24	
28	0.6526	1075.3	1094.4	1094.1	0.455	3.727	81.609	12.609	1.449	0.049	0.089	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1354.71	
29	0.6538	1077.6	1096.7	1096.5	0.463	3.692	81.398	12.820	1.473	0.050	0.091	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1356.33	
30	0.6557	1080.5	1099.6	1099.4	0.465	3.688	81.063	13.117	1.509	0.051	0.093	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1358.01	
31	0.6560	1081.3	1100.5	1100.3	0.465	3.668	81.007	13.188	1.514	0.051	0.093	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1358.70	
Avg	0.6526	1074.0	1093.0	1092.7	0.449	3.820	81.617	12.488	1.463	0.051	0.098	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1352.93	

Gas Composition and Properties

Effective December 1, 2021

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	1.2386		3.0226	Pressure Base	14.730	
Nitrogen, N2	2.9601		4.5981	Temperature Base	60.00	
Methane, C1	87.2107		77.5798	HCDP @ Sample Pressure		
Ethane, C2	8.0189	2.1441	13.3703	Cricondentherm	-69.902	
Propane, C3	0.5315	0.1464	1.2996	HV, Dry @ Base P, T	1042.23	
iso-Butane, iC4	0.0178	0.0058	0.0574	HV, Sat @ Base P, T	1024.09	
n-Butane, nC4	0.0224	0.0071	0.0722	HV, Sat @ Sample P, T	1042.23	
iso-Pentane, iC5				Relative Density	0.6239	
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	2.3030	100.0000			

Sample

Date: 12/01/2021 Type:

Tech: Wayne Sampson

Pressure: Temp.:

Gauge: H2O:

Atm. Pressure: H2S:

Remarks:

Analysis

Date: Instrument:

Tech: Cylinder:

Remarks:

December-21

ZONE 550

MANDAN BORDER

NBPL - St Anthony

WBI - Mandan Border

Weighted

Start Date	End Date	MCF	DK	BTU	MCF	DK	BTU Zone 28	AVG BTU	
12/1/2021	12/2/2021	0	0	0.00	2,358	2,739	1161.8	1161.800	12/1/2021
12/2/2021	12/3/2021	0	0	0.00	3,539	4,086	1156.2	1156.200	12/2/2021
12/3/2021	12/4/2021	0	0	0.00	3,918	4,497	1147.5	1147.500	12/3/2021
12/4/2021	12/5/2021	0	0	0.00	4,700	5,343	1136.9	1136.900	12/4/2021
12/5/2021	12/6/2021	0	0	0.00	6,324	7,242	1144.6	1144.600	12/5/2021
12/6/2021	12/7/2021	14,512	15,751	1085.40	6,828	7,818	1144.9	1104.438	12/6/2021
12/7/2021	12/8/2021	5,978	6,481	1083.70	6,190	7,092	1145.8	1115.291	12/7/2021
12/8/2021	12/9/2021	0	0	0.00	4,821	5,502	1141.1	1141.100	12/8/2021
12/9/2021	12/10/2021	0	0	0.00	4,829	5,516	1141.8	1141.800	12/9/2021
12/10/2021	12/11/2021	0	0	0.00	5,268	6,036	1145.5	1145.500	12/10/2021
12/11/2021	12/12/2021	0	0	0.00	4,449	5,112	1149.2	1149.200	12/11/2021
12/12/2021	12/13/2021	0	0	0.00	4,051	4,667	1153.6	1153.600	12/12/2021
12/13/2021	12/14/2021	0	0	0.00	4,500	5,171	1149.0	1149.000	12/13/2021
12/14/2021	12/15/2021	0	0	0.00	4,276	4,937	1154.5	1154.500	12/14/2021
12/15/2021	12/16/2021	0	0	0.00	7,014	8,025	1144.4	1144.400	12/15/2021
12/16/2021	12/17/2021	0	0	0.00	7,237	8,275	1143.4	1143.400	12/16/2021
12/17/2021	12/18/2021	0	0	0.00	7,376	8,376	1135.7	1135.700	12/17/2021
12/18/2021	12/19/2021	0	0	0.00	6,904	7,830	1134.0	1134.000	12/18/2021
12/19/2021	12/20/2021	0	0	0.00	5,775	6,550	1134.1	1134.100	12/19/2021
12/20/2021	12/21/2021	4,428	4,771	1078.10	6,466	7,367	1139.5	1114.543	12/20/2021
12/21/2021	12/22/2021	0	0	0.00	6,097	6,905	1132.6	1132.600	12/21/2021
12/22/2021	12/23/2021	0	0	0.00	5,504	6,226	1131.2	1131.200	12/22/2021
12/23/2021	12/24/2021	0	0	0.00	3,960	4,465	1128.3	1128.300	12/23/2021
12/24/2021	12/25/2021	0	0	0.00	5,916	6,711	1133.8	1133.800	12/24/2021
12/25/2021	12/26/2021	0	0	0.00	6,686	7,606	1137.5	1137.500	12/25/2021
12/26/2021	12/27/2021	0	0	0.00	7,136	8,150	1142.0	1142.000	12/26/2021
12/27/2021	12/28/2021	6,985	7,564	1084.00	6,852	7,861	1147.4	1115.395	12/27/2021
12/28/2021	12/29/2021	11,058	11,983	1084.50	7,171	8,260	1152.8	1111.368	12/28/2021
12/29/2021	12/30/2021	1,882	2,051	1089.70	6,933	7,817	1127.6	1119.508	12/29/2021
12/30/2021	12/31/2021	1,851	2,008	1084.70	6,529	7,368	1128.3	1118.669	12/30/2021
12/31/2021	1/1/2022	1,840	2,001	1087.70	8,173	9,259	1132.9	1124.594	12/31/2021
		48,534	52,610	279.9290	177,780	202,809	1141.8677	1135.5648	



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND07MD1 --- Hankinson Sales
 December 2021

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	1,155.768	0.6607	84.4013	9.6471	3.5177	0.3690	0.6418	0.0559	0.0431	0.0234	0.9395	0.3523	0.0090
2	1,156.227	0.6603	84.4547	9.6703	3.5157	0.3673	0.6299	0.0563	0.0432	0.0230	0.8877	0.3428	0.0092
3	1,154.230	0.6588	84.5023	9.7530	3.5232	0.3373	0.5349	0.0547	0.0436	0.0234	0.8916	0.3268	0.0092
4	1,154.988	0.6591	84.4262	9.8279	3.5571	0.3323	0.5213	0.0547	0.0436	0.0222	0.8862	0.3192	0.0093
5	1,154.517	0.6585	84.5247	9.7377	3.5803	0.3276	0.5147	0.0545	0.0431	0.0212	0.8754	0.3111	0.0098
6	1,152.794	0.6572	84.6858	9.6824	3.5117	0.3214	0.5056	0.0542	0.0415	0.0202	0.8557	0.3115	0.0100
7	1,150.211	0.6558	84.9040	9.4937	3.4872	0.3142	0.4874	0.0539	0.0418	0.0207	0.8692	0.3177	0.0101
8	1,154.179	0.6584	84.5929	9.6221	3.6271	0.3258	0.5080	0.0557	0.0437	0.0223	0.8776	0.3151	0.0098
9	1,154.209	0.6587	84.5090	9.6496	3.6742	0.3202	0.5029	0.0516	0.0396	0.0198	0.9148	0.3084	0.0099
10	1,152.559	0.6574	84.7198	9.5574	3.5973	0.3207	0.4961	0.0514	0.0395	0.0202	0.8563	0.3315	0.0096
11	1,154.152	0.6583	84.5286	9.7536	3.6010	0.3194	0.4953	0.0515	0.0400	0.0200	0.8678	0.3133	0.0096
12	1,154.935	0.6592	84.4061	9.7840	3.6430	0.3202	0.5048	0.0523	0.0410	0.0201	0.8992	0.3195	0.0098
13	1,154.289	0.6587	84.4319	9.8220	3.6047	0.3168	0.4972	0.0495	0.0388	0.0191	0.8802	0.3301	0.0097
14	1,154.674	0.6589	84.3887	9.8799	3.5977	0.3175	0.4975	0.0488	0.0382	0.0189	0.8806	0.3228	0.0095
15	1,155.472	0.6597	84.2909	9.8758	3.6716	0.3170	0.4982	0.0484	0.0384	0.0186	0.9013	0.3301	0.0098
16	1,156.765	0.6614	84.0257	9.9785	3.7580	0.3147	0.5028	0.0476	0.0370	0.0180	0.9667	0.3408	0.0102
17	1,152.531	0.6573	84.6733	9.6290	3.6213	0.3109	0.4743	0.0483	0.0360	0.0175	0.8440	0.3359	0.0095
18	1,155.785	0.6591	84.4247	9.7873	3.6916	0.3204	0.4919	0.0510	0.0387	0.0186	0.8558	0.3106	0.0093
19	1,154.358	0.6580	84.6505	9.5838	3.6724	0.3236	0.5000	0.0520	0.0391	0.0181	0.8457	0.3055	0.0093
20	1,155.172	0.6586	84.5916	9.5954	3.6957	0.3300	0.5092	0.0523	0.0397	0.0194	0.8536	0.3040	0.0091
21	1,157.037	0.6600	84.4123	9.6836	3.7721	0.3340	0.5086	0.0521	0.0404	0.0201	0.8563	0.3113	0.0091
22	1,158.949	0.6618	84.1444	9.7857	3.8746	0.3323	0.5219	0.0504	0.0393	0.0189	0.9063	0.3167	0.0096
23	1,155.905	0.6600	84.3824	9.6694	3.7466	0.3308	0.5150	0.0513	0.0403	0.0203	0.9130	0.3211	0.0098
24	1,151.908	0.6579	84.5491	9.7316	3.5035	0.3207	0.5086	0.0508	0.0390	0.0200	0.9289	0.3384	0.0093
25	1,152.746	0.6584	84.4790	9.7626	3.5332	0.3215	0.5135	0.0519	0.0392	0.0201	0.9344	0.3350	0.0095
26	1,153.623	0.6586	84.4861	9.7304	3.5806	0.3232	0.5161	0.0528	0.0396	0.0198	0.9222	0.3199	0.0093
27	1,152.761	0.6579	84.5713	9.6851	3.5627	0.3222	0.5052	0.0515	0.0396	0.0194	0.9188	0.3150	0.0093
28	1,153.859	0.6584	84.5623	9.6573	3.6138	0.3276	0.5105	0.0523	0.0400	0.0191	0.8868	0.3215	0.0089
29	1,155.284	0.6591	84.5357	9.6272	3.6503	0.3382	0.5286	0.0559	0.0430	0.0209	0.8687	0.3224	0.0091
30	1,155.216	0.6590	84.5625	9.6018	3.6476	0.3441	0.5333	0.0537	0.0421	0.0200	0.8735	0.3127	0.0086
31	1,154.983	0.6592	84.5582	9.5920	3.6102	0.3499	0.5504	0.0560	0.0433	0.0209	0.8888	0.3219	0.0084
Volume	1,154.508	0.6589	84.4995	9.7009	3.6206	0.3284	0.5174	0.0525	0.0405	0.0202	0.8887	0.3219	0.0094
Weight Avg Energy	1,154.511	0.6589	84.4993	9.7010	3.6207	0.3284	0.5175	0.0525	0.0406	0.0202	0.8887	0.3219	0.0094



Alliance Pipeline

DAILY ANALYSIS --- USA
 ND14MD1 --- Milnor Sales
 December 2021

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	1,155.950	0.6608	84.3887	9.6545	3.5235	0.3693	0.6431	0.0557	0.0430	0.0232	0.9397	0.3503	0.0089
2	1,156.077	0.6603	84.4588	9.6738	3.5166	0.3655	0.6229	0.0564	0.0434	0.0230	0.8862	0.3441	0.0093
3	1,154.452	0.6589	84.4888	9.7662	3.5233	0.3389	0.5363	0.0550	0.0438	0.0234	0.8898	0.3252	0.0092
4	1,155.189	0.6593	84.4179	9.8235	3.5659	0.3336	0.5233	0.0549	0.0440	0.0224	0.8870	0.3182	0.0093
5	1,153.732	0.6580	84.5874	9.7272	3.5556	0.3220	0.5041	0.0541	0.0421	0.0209	0.8696	0.3074	0.0097
6	1,152.769	0.6573	84.6828	9.6721	3.5225	0.3209	0.5039	0.0540	0.0415	0.0201	0.8612	0.3110	0.0099
7	1,150.698	0.6562	84.8757	9.4987	3.5139	0.3149	0.4869	0.0540	0.0419	0.0207	0.8654	0.3180	0.0101
8	1,154.549	0.6587	84.5644	9.6314	3.6399	0.3268	0.5106	0.0560	0.0442	0.0226	0.8786	0.3157	0.0098
9	1,154.301	0.6589	84.4970	9.6623	3.6731	0.3204	0.5025	0.0517	0.0397	0.0200	0.9130	0.3103	0.0099
10	1,152.718	0.6576	84.7030	9.5757	3.5978	0.3208	0.4957	0.0514	0.0396	0.0202	0.8559	0.3304	0.0096
11	1,154.051	0.6583	84.5259	9.7651	3.5928	0.3183	0.4941	0.0515	0.0399	0.0201	0.8693	0.3133	0.0096
12	1,154.618	0.6591	84.4316	9.7647	3.6436	0.3194	0.5015	0.0510	0.0403	0.0195	0.8954	0.3232	0.0099
13	1,154.423	0.6588	84.4177	9.8472	3.5994	0.3164	0.4960	0.0496	0.0389	0.0192	0.8779	0.3280	0.0097
14	1,154.432	0.6587	84.4260	9.8574	3.5822	0.3187	0.5005	0.0490	0.0385	0.0191	0.8784	0.3208	0.0094
15	1,155.539	0.6600	84.2457	9.8953	3.6819	0.3156	0.4986	0.0478	0.0379	0.0184	0.9163	0.3325	0.0099
16	1,156.398	0.6609	84.1188	9.9373	3.7442	0.3141	0.4963	0.0475	0.0371	0.0181	0.9409	0.3355	0.0102
17	1,151.796	0.6567	84.7676	9.6019	3.5874	0.3089	0.4672	0.0478	0.0356	0.0172	0.8209	0.3360	0.0095
18	1,155.894	0.6591	84.4343	9.7871	3.6904	0.3210	0.4921	0.0512	0.0390	0.0186	0.8497	0.3072	0.0094
19	1,154.141	0.6580	84.6821	9.5440	3.6714	0.3248	0.5035	0.0524	0.0394	0.0183	0.8485	0.3064	0.0092
20	1,155.491	0.6589	84.5567	9.6184	3.7062	0.3303	0.5090	0.0520	0.0397	0.0194	0.8540	0.3051	0.0091
21	1,156.914	0.6599	84.4202	9.6847	3.7690	0.3327	0.5060	0.0519	0.0401	0.0203	0.8560	0.3100	0.0091
22	1,159.149	0.6621	84.1165	9.7939	3.8857	0.3328	0.5232	0.0503	0.0393	0.0189	0.9118	0.3180	0.0096
23	1,156.343	0.6604	84.3397	9.6894	3.7650	0.3307	0.5160	0.0513	0.0404	0.0205	0.9154	0.3217	0.0098
24	1,151.604	0.6577	84.5878	9.6978	3.5021	0.3205	0.5073	0.0512	0.0388	0.0198	0.9292	0.3363	0.0093
25	1,153.162	0.6589	84.4262	9.7811	3.5526	0.3222	0.5165	0.0521	0.0393	0.0201	0.9443	0.3362	0.0095
26	1,153.225	0.6583	84.5382	9.7002	3.5691	0.3223	0.5139	0.0528	0.0396	0.0198	0.9163	0.3183	0.0093
27	1,153.167	0.6583	84.5339	9.7073	3.5769	0.3229	0.5057	0.0512	0.0395	0.0194	0.9185	0.3153	0.0092
28	1,153.898	0.6584	84.5821	9.6351	3.6192	0.3284	0.5123	0.0525	0.0400	0.0192	0.8809	0.3216	0.0088
29	1,155.374	0.6592	84.5381	9.6315	3.6482	0.3396	0.5285	0.0557	0.0432	0.0209	0.8656	0.3197	0.0090
30	1,154.866	0.6588	84.5841	9.6022	3.6312	0.3429	0.5304	0.0536	0.0419	0.0198	0.8720	0.3131	0.0087
31	1,154.302	0.6587	84.6088	9.6012	3.5607	0.3489	0.5483	0.0559	0.0434	0.0210	0.8835	0.3200	0.0083
Volume	1,154.464	0.6588	84.5087	9.6990	3.6220	0.3274	0.5148	0.0522	0.0404	0.0201	0.8843	0.3217	0.0095
Weight Avg Energy	1,154.461	0.6588	84.5090	9.6988	3.6218	0.3274	0.5149	0.0522	0.0404	0.0201	0.8843	0.3217	0.0095

December-21

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		
12/1/2021	12/2/2021	181	218	1202.3	475	495	1042.2	1086.374	12/1/2021
12/2/2021	12/3/2021	276	331	1202.3	579	604	1042.2	1093.881	12/2/2021
12/3/2021	12/4/2021	335	403	1202.3	661	689	1042.2	1096.049	12/3/2021
12/4/2021	12/5/2021	377	453	1202.3	774	807	1042.2	1094.639	12/4/2021
12/5/2021	12/6/2021	543	653	1202.3	1,090	1,136	1042.2	1095.436	12/5/2021
12/6/2021	12/7/2021	522	627	1202.3	1,144	1,192	1042.2	1092.363	12/6/2021
12/7/2021	12/8/2021	468	562	1202.3	988	1,029	1042.2	1093.661	12/7/2021
12/8/2021	12/9/2021	302	363	1202.3	678	707	1042.2	1091.537	12/8/2021
12/9/2021	12/10/2021	387	465	1202.3	850	885	1042.2	1092.288	12/9/2021
12/10/2021	12/11/2021	398	478	1202.3	834	869	1042.2	1093.921	12/10/2021
12/11/2021	12/12/2021	315	379	1202.3	660	688	1042.2	1093.925	12/11/2021
12/12/2021	12/13/2021	281	338	1202.3	607	632	1042.2	1092.862	12/12/2021
12/13/2021	12/14/2021	328	394	1202.3	745	776	1042.2	1091.140	12/13/2021
12/14/2021	12/15/2021	315	379	1202.3	712	742	1042.2	1091.306	12/14/2021
12/15/2021	12/16/2021	578	694	1202.3	1,194	1,245	1042.2	1094.422	12/15/2021
12/16/2021	12/17/2021	544	654	1202.3	1,132	1,180	1042.2	1094.166	12/16/2021
12/17/2021	12/18/2021	609	732	1202.3	1,244	1,296	1042.2	1094.818	12/17/2021
12/18/2021	12/19/2021	460	553	1202.3	955	995	1042.2	1094.247	12/18/2021
12/19/2021	12/20/2021	486	585	1202.3	974	1,015	1042.2	1095.494	12/19/2021
12/20/2021	12/21/2021	503	604	1202.3	964	1,005	1042.2	1097.095	12/20/2021
12/21/2021	12/22/2021	467	562	1202.3	906	944	1042.2	1096.655	12/21/2021
12/22/2021	12/23/2021	387	465	1202.3	757	789	1042.2	1096.360	12/22/2021
12/23/2021	12/24/2021	304	366	1202.3	612	638	1042.2	1095.334	12/23/2021
12/24/2021	12/25/2021	500	601	1202.3	956	997	1042.2	1097.179	12/24/2021
12/25/2021	12/26/2021	571	686	1202.3	1,094	1,140	1042.2	1097.105	12/25/2021
12/26/2021	12/27/2021	597	718	1202.3	1,108	1,155	1042.2	1098.258	12/26/2021
12/27/2021	12/28/2021	704	846	1202.3	1,358	1,416	1042.2	1096.861	12/27/2021
12/28/2021	12/29/2021	681	819	1202.3	1,307	1,363	1042.2	1097.043	12/28/2021
12/29/2021	12/30/2021	704	846	1202.3	1,332	1,388	1042.2	1097.559	12/29/2021
12/30/2021	12/31/2021	700	842	1202.3	1,303	1,358	1042.2	1098.151	12/30/2021
12/31/2021	1/1/2022	753	905	1202.3	1,439	1,499	1042.2	1097.198	12/31/2021
		14,576	17,521	1202.3000	29,432	30,674	1042.2000	1094.7524	

Tsp	EffDate	EndDate	Device	GasDay	EndDt	BTU	SpecGrav	CriconTherm	WobbeIndex	CO2	N2	Methane	Ethane	Propane	iButane	nButane	iPentane	nPentane	NeoPentane	C6Plus	Hydrogen	Helium	WaterVapor	TotalSulfur	HydrogenSulfur	Oxygen
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/1/2021	12/2/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.4265	0.0952	0.0524	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/2/2021	12/3/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.415	0.0933	0.048	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/3/2021	12/4/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.4126	0.0883	0.0442	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/4/2021	12/5/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.3884	0.0863	0.0437	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/5/2021	12/6/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.3946	0.0855	0.0435	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/6/2021	12/7/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.3884	0.0809	0.0394	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/7/2021	12/8/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.3683	0.084	0.0412	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/8/2021	12/9/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.4077	0.1017	0.054	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/9/2021	12/10/2021	1054	0.6226	-63.8	1335.783433	1.0265	2.4268	87.3245	7.9699	0.9661	0.0185	0.0304	0	0	N/A	0	0.2128	0.0245	0.4103	0.0986	0.0491	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/10/2021	12/11/2021	1078	0.6369	-54.4	1350.77538	0.9882	2.3773	84.3941	11.1087	0.8921	0.0182	0.0313	0.0008	0.0004	N/A	0	0.1652	0.0238	0.3988	0.0777	0.044	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/11/2021	12/12/2021	1085	0.6413	-52.4	1354.874653	0.9886	2.4117	83.6526	11.955	0.8619	0.0165	0.0276	0.0001	0.0001	N/A	0	0.0615	0.0243	0.4011	0.0712	0.0423	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/12/2021	12/13/2021	1087	0.6423	-52	1356.315057	0.9879	2.389	83.5219	12.1746	0.8459	0.016	0.0267	0.0001	0	N/A	0	0.0136	0.0245	0.4001	0.0719	0.0435	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/13/2021	12/14/2021	1087	0.6428	-51.6	1355.787452	0.9899	2.3765	83.4411	12.2554	0.8573	0.0158	0.0261	0	0	N/A	0	0.0135	0.0244	0.3683	0.0691	0.041	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/14/2021	12/15/2021	1088	0.6439	-51.1	1355.875093	1.0063	2.4174	83.206	12.4414	0.8481	0.0157	0.0262	0.0001	0	N/A	0	0.0143	0.0246	0.3731	0.0738	0.046	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/15/2021	12/16/2021	1091	0.6453	-49.5	1358.138054	1.0056	2.3982	82.9714	12.6254	0.893	0.0189	0.0336	0.0013	0.0012	N/A	0	0.0271	0.0243	0.3598	0.066	0.0385	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/16/2021	12/17/2021	1089	0.6455	-49.4	1355.43831	1.0191	2.4842	82.7709	12.6388	0.9073	0.0184	0.0323	0.001	0.0009	N/A	0	0.1126	0.0246	0.3784	0.0665	0.0543	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/17/2021	12/18/2021	1085	0.6421	-51.6	1354.030363	1.0061	2.4295	83.2577	12.1917	0.8579	0.017	0.0286	0.0002	0	N/A	0	0.1876	0.024	0.3875	0.0829	0.0511	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/18/2021	12/19/2021	1085	0.6414	-51.3	1354.769031	1.0081	2.3953	83.3981	11.9792	0.9177	0.0199	0.033	0.0005	0	N/A	0	0.2247	0.0236	0.3938	0.0904	0.055	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/19/2021	12/20/2021	1082	0.6389	-53.4	1353.663805	0.994	2.3385	83.8713	11.703	0.8285	0.0182	0.0303	0.0004	0.0001	N/A	0	0.1925	0.0234	0.4357	0.0899	0.0617	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/20/2021	12/21/2021	1079	0.637	-55.1	1351.92229	0.9894	2.3229	84.2557	11.4149	0.7823	0.016	0.026	0.0002	0.0001	N/A	0	0.1694	0.0232	0.4165	0.0888	0.0594	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/21/2021	12/22/2021	1083	0.6398	-53.2	1353.961573	0.9899	2.3745	83.7791	11.8464	0.8072	0.0178	0.0297	0.001	0.0005	N/A	0	0.1302	0.0239	0.4122	0.094	0.0619	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/22/2021	12/23/2021	1082	0.6385	-54.5	1354.087752	0.9895	2.3166	83.9665	11.7898	0.745	0.0146	0.0239	0	0	N/A	0	0.1308	0.0235	0.4234	0.0914	0.0597	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/23/2021	12/24/2021	1083	0.6402	-53.3	1353.538526	1.013	2.3632	83.6816	11.9544	0.7882	0.0159	0.0261	0.0002	0.0001	N/A	0	0.1336	0.0238	0.4513	0.0891	0.0574	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/24/2021	12/25/2021	1085	0.6433	-51.9	1352.766882	1.0352	2.5251	83.0185	12.4275	0.7857	0.0147	0.0242	0.0002	0.0002	N/A	0	0.1443	0.0246	0.4001	0.0806	0.0501	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/25/2021	12/26/2021	1085	0.6459	-50.1	1350.041429	1.0586	2.6938	82.5172	12.6366	0.8557	0.017	0.0293	0.0004	0.0003	N/A	0	0.1652	0.0251	0.3699	0.0761	0.0462	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/26/2021	12/27/2021	1086	0.6457	-49.7	1351.494965	1.0501	2.6738	82.6135	12.507	0.9112	0.0189	0.0322	0.0006	0.0002	N/A	0	0.1676	0.025	0.3809	0.0808	0.0501	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/27/2021	12/28/2021	1084	0.644	-51	1350.785371	1.0474	2.6324	82.8905	12.2874	0.8778	0.0175	0.0292	0.0002	0.0001	N/A	0	0.1928	0.0248	0.3889	0.0817	0.0498	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/28/2021	12/29/2021	1084	0.6433	-50.5	1351.520092	1.027	2.5639	83.072	12.1265	0.9263	0.0207	0.0357	0.001	0.0006	N/A	0	0.2017	0.0246	0.389	0.0882	0.0539	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/29/2021	12/30/2021	1090	0.6464	-45.7	1355.738172	1.023	2.5308	82.837	12.1557	1.1458	0.036	0.0713	0.0034	0.0029	N/A	0	0.1701	0.0242	0.4027	0.0879	0.0548	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/30/2021	12/31/2021	1084	0.6415	-51.9	1353.414895	1.0088	2.4401	83.4327	12.0134	0.8619	0.0181	0.0314	0.0008	0.0003	N/A	0	0.1689	0.0236	0.4186	0.0844	0.0529	0.0008
NBPL	11/29/2021 0:00	1/2/2022 0:00	GLNU1 - GLEN ULLIN	12/30/2021	1/1/2022	1084	0.6415	-51.9	1353.414895	1.0088	2.4401	83.4327	12.0134	0.8619	0.0181	0.0314	0.0008	0.0003	N/A	0	0.1689	0.0236	0.4186	0.0844	0.0529	0.0008

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	DEC21	NOV21	OCT21	SEP21	AUG21	JUL21	JUN 21	MAY 21	APR 21	MAR 21	FEB 21	JAN 21	ZONE
MT/ND	211	Sidney Border - MonDak Tfr - Sidney Plt	1203	1215	1208	1201	1213	1216	1210	1152	1204	1198	1208	1206	1209	211
ND	24	Williston Border - Charbonneau Station	1168	1152	1161	1159	1167	1173	1172	1164	1168	1167	1176	1176	1177	24
ND	25	Watford City West Border	1202	1202	1208	1206	1205	1211	1203	1199	1202	1199	1194	1194	1195	25
ND	28	Bismarck Station - Glen Ullin Station	1160	1142	1135	1185	1196	1202	1200	1202	1161	1117	1148	1110	1121	28
ND	31	Dickinson Brd - Belfield Trf - G Ullin Stn	1140	1143	1141	1141	1130	1191	1123	1129	1160	1154	1127	1113	1122	31
ND/MT	32	Cabin Creek Station - Belfied Transfer	1126	1131	1129	1132	1136	1162	1135	1127	1122	1124	1121	1091	1105	32
ND	33	Little Knife Plant	1177	1176	1182	1177	1179	1182	1184	1179	1175	1173	1172	1171	1172	33
ND	34	Badlands Plant/Bowman Border	1033	1093	981	1022	1059	1025	980	980	989	981	1040	1079	1172	34
ND	43	Watford City East Border	1092	1042	1047	1060	1062	1088	1109	1119	1123	1119	1126	1106	1104	43
ND/MT	241	Fairview Border	1193	1208	1197	1162	1193	1201	1213	1185	1173	1185	1198	1204	1192	241
ND	260	North Tioga Transfer - Nesson Plant	1148	1122	1137	1135	1145	1159	1167	1153	1159	1148	1160	1149	1144	260
ND	261	Tioga Comp Station - Robinson Lake Plan	1183	1161	1176	1197	1192	1194	1196	1195	1193	1180	1173	1171	1168	261
ND	262	Minot Bdr - Palermo Bdr - Bismarck Stn	1197	1199	1198	1211	1203	1202	1200	1203	1195	1189	1191	1187	1184	262
ND	263	Lignite Plant	1136	1131	1131	1131	1134	1129	1143	1147	1137	1147	1148	1125	1133	263
ND	264	Epping Border	1162	1147	1152	1145	1164	1167	1172	1165	1163	1165	1168	1168	1167	264
ND	265	Tioga Comp Station - County Line Plant	1166	1152	1159	1166	1165	1163	1166	1165	1172	1170	1172	1171	1168	265
ND	266	County Line Plant	1174	1178	1183	1174	1185	1175	1174	1169	1171	1169	1174	1176	1164	266
ND	271	Bismarck Station - Cleveland Station	1193	1188	1198	1208	1197	1202	1200	1202	1196	1186	1191	1165	1180	271
ND	272	Cleveland Station - Mapleton	1193	1189	1198	1211	1196	1202	1199	1200	1196	1185	1190	1165	1179	272
ND	273	Cleveland Station - Grafton Border	1192	1188	1198	1210	1195	1202	1200	1195	1184	1189	1189	1164	1179	273
ND	550	Mandan Border / NBPL-St Anthony	1156	1136	1135	1173	1196	1196	1190	1182	1161	1120	1148	1110	1121	550
ND	610	MDU-Watford City BTU	1129	1095	1110	1130	1098	1106	1121	1132	1162	1158	1158	1141	1140	610
ND	802	NBPL - Linton	1093	1085	1086	1089	1094	1090	1089	1090	1094	1093	1099	1101	1103	802
ND	903	Hettinger Propane	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	2549	903
ND	600	Alliance Pipeline - Hankinson	1154	1155	1158	1158	1158	1153	1156	1157	1158	1154	1150	1146	1148	600
ND	601	Alliance Pipeline - Milnor	1154	1154	1157	1158	1158	1153	1156	1157	1158	1154	1150	1146	1148	602

THERMAL ZONE VARIANCE DOCUMENTATION		
December 2021		
<i>ZONE</i>	<i>BTU VARIANCE</i>	<i>REASON</i>
34	-24	Operational