



MONTANA-DAKOTA

UTILITIES CO.

A Division of MDU Resources Group, Inc.

400 North Fourth Street

Bismarck, ND 58501

(701) 222-7900

March 11, 2015

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

Re: Case No. 11,006 (Therm Billing)
Monthly Report – January 2015

Montana-Dakota Utilities Co., a Division of MDU Resources Group, Inc., herewith submits the following information, pursuant to the Ordering paragraphs one and two of the Order issued in the above-referenced docket, 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 February 2015.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of January 2014.
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 January 2014.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope. Should the Commission or its Staff have any comments or questions with respect to these reports, please call me.

Sincerely,

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
February 2015

Town	Heat Zone	Therm Factor
MDU-303-ALEXANDER	025	1.1343
MDU-308-ARNEGARD	025	1.1362
MDU-314-APPLE VALLEY	271	1.1106
MDU-318-BEACH	032	1.0082
MDU-319-BELFIELD	032	1.0156
MDU-323-BERTHOLD	262	1.1079
MDU-327-BISMARCK	028	1.0623
MDU-330-BOWMAN	034	0.9623
MDU-337-BURLINGTON	262	1.1318
MDU-343-CARRINGTON	273	1.1086
MDU-344-CLEVELAND	272	1.1008
MDU-364-CAVALIER	273	1.1320
MDU-365-DAWSON	271	1.1027
MDU-368-DES LACS	262	1.1159
MDU-369-DICKINSON	031	1.0352
MDU-374-FT TOTTEN	273	1.1164
MDU-375-DEVILS LAKE	273	1.1164
MDU-379-BARLOW	273	1.1086
MDU-384-EPPING	264	1.1079
MDU-387-ELDRIDGE	272	1.1086
MDU-407-GLADSTONE	031	1.0352
MDU-411-GLEN ULLIN	311	1.0333
MDU-413-GOLVA	032	0.9934
MDU-416-GARRISON	262	1.1159
MDU-417-GRAFTON	273	1.1398
MDU-421-HALLIDAY	031	1.0521
MDU-429-HEBRON	311	1.0333
MDU-432-HETTINGER	903	2.3875
MDU-449-JAMESTOWN	272	1.1164
MDU-459-KILLDEER	033	1.1117
MDU-463-LANGDON	273	1.1086
MDU-469-LEFOR	031	1.0352
MDU-474-LIGNITE	263	1.0436
MDU-475-LINTON	802	1.0189
MDU-478-LINCOLN	028	1.0623
MDU-488-MCKENZIE	271	1.1106
MDU-494-MEDINA	271	1.1027
MDU-498-MANDAN	028	1.0623
MDU-500-MARMARTH	034	0.9694
MDU-505-MINOT	262	1.1318
MDU-510-MOTT	031	1.0352
MDU-512-MAX	262	1.1079
MDU-522-NEW ENGLAND	031	1.0277
MDU-524-NEW SALEM	028	1.0623
MDU-532-NEW ROCKFORD	273	1.1086
MDU-539-PARK RIVER	273	1.1409
MDU-540-PALERMO	262	1.1079
MDU-558-RAY	264	1.1079
MDU-561-REGENT	031	1.0352

MDU-563-RHAME	034	0.9552
MDU-564-RICHARDTON	311	1.0184
MDU-568-ROSS	261	0.9518
MDU-572-RUTHVILLE	262	1.1279
MDU-574-SANBORN	272	1.1164
MDU-583-SENTINEL BUTTE	032	1.0082
MDU-588-SOUTH HEART	031	1.0277
MDU-717-SPIRITWOOD	272	1.1164
MDU-590-SPRINGBROOK	264	1.1079
MDU-591-STANLEY	261	0.9587
MDU-593-STEELE	271	1.1027
MDU-598-SHEYENNE	273	1.1164
MDU-605-SURREY	262	1.1318
MDU-610-TAPPEN	271	1.1027
MDU-611-TAYLOR	031	1.0277
MDU-616-TIOGA	261	0.9518
MDU-619-TURTLE LAKE	262	1.1159
MDU-620-TRENTON	024	1.1159
MDU-624-UNDERWOOD	262	1.1159
MDU-625-VALLEY CITY	272	1.1242
MDU-629-WALHALLA	273	1.1320
MDU-632-WATFORD CITY	610	1.1230
MDU-636-WHEELOCK	264	1.0999
MDU-637-WHITE EARTH	261	0.9587
MDU-642-WILLISTON	024	1.1159
MDU-646-WASHBURN	262	1.1238
MDU-647-WILTON	262	1.1079
MDU-664-RIVERDALE	262	1.1159
MDU-691-FAIRVIEW	241	1.1444
MDU-712-MINOT AFB	262	1.1318
MDU-718-FAIRMOUNT	600	1.1090
MDU-732-NEKOMA	273	1.1086
MDU-732-MSR SITE	273	1.1173

GQ Source Daily Summary

January 2015

Number: 372

Pressure Base: 14.730

Contract Day: 1

Name: NESSON PLANT-CHARBONNEAU STATION

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7099	1166.7	1187.4	0.858	2.930	71.862	21.575	2.420	0.096	0.219	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1409.30	
2	0.7070	1162.3	1182.9	0.859	2.926	72.077	21.678	2.160	0.082	0.184	0.015	0.019	0.000	0.000	0.000	0.000	0.000	1406.88	
3	0.7070	1164.1	1184.7	0.884	2.785	72.209	21.635	2.139	0.090	0.212	0.020	0.026	0.000	0.000	0.000	0.000	0.000	1408.94	
4	0.7006	1160.5	1181.0	0.915	2.362	72.839	22.030	1.594	0.072	0.160	0.013	0.015	0.000	0.000	0.000	0.000	0.000	1410.99	
5	0.6980	1158.6	1179.1	0.900	2.250	73.060	22.154	1.446	0.058	0.117	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1411.36	
6	0.6986	1159.1	1179.6	0.893	2.294	72.825	22.434	1.372	0.057	0.113	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1411.29	
7	0.6986	1158.9	1179.4	0.895	2.302	72.832	22.411	1.381	0.056	0.112	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1411.08	
8	0.6986	1158.9	1179.4	0.895	2.302	72.832	22.411	1.381	0.056	0.112	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1411.08	
9	0.7141	1173.0	1193.7	0.878	2.915	71.765	21.165	2.776	0.124	0.305	0.032	0.041	0.000	0.000	0.000	0.000	0.000	1412.62	
10	0.7110	1168.4	1189.1	0.862	2.931	71.970	21.211	2.622	0.106	0.248	0.022	0.028	0.000	0.000	0.000	0.000	0.000	1410.10	
11	0.7060	1159.6	1180.1	0.830	3.046	72.809	20.360	2.572	0.105	0.237	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1404.44	
12	0.7091	1165.2	1185.8	0.882	2.913	72.044	21.389	2.428	0.092	0.212	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1408.22	
13	0.7072	1168.1	1188.8	0.902	2.531	72.065	22.274	1.837	0.090	0.230	0.029	0.040	0.000	0.000	0.000	0.000	0.000	1413.63	
14	0.6966	1147.4	1167.7	0.792	2.958	74.157	19.767	1.969	0.090	0.217	0.021	0.027	0.000	0.000	0.000	0.000	0.000	1399.07	
15	0.6959	1145.4	1165.7	0.751	3.081	74.263	19.460	2.099	0.091	0.214	0.018	0.023	0.000	0.000	0.000	0.000	0.000	1397.32	
16	0.6922	1138.6	1158.7	0.740	3.166	75.038	18.581	2.111	0.094	0.224	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1392.69	
17	0.6917	1136.8	1156.9	0.722	3.248	75.170	18.338	2.161	0.094	0.223	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1391.09	
18	0.6933	1139.7	1159.8	0.729	3.217	74.801	18.745	2.159	0.092	0.216	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1392.95	
19	0.6887	1133.0	1153.1	0.698	3.233	75.561	18.166	1.995	0.089	0.214	0.019	0.024	0.000	0.000	0.000	0.000	0.000	1389.50	
20	0.6968	1147.7	1168.0	0.782	2.980	74.085	19.722	2.092	0.090	0.208	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1399.22	
21	0.6988	1151.4	1171.8	0.760	2.974	73.821	19.892	2.178	0.098	0.232	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1401.76	
22	0.7009	1154.0	1174.5	0.786	2.965	73.602	20.000	2.231	0.105	0.255	0.024	0.031	0.000	0.000	0.000	0.000	0.000	1402.89	
23	0.6934	1142.4	1162.6	0.738	3.050	74.715	19.094	2.062	0.088	0.209	0.019	0.023	0.000	0.000	0.000	0.000	0.000	1396.14	
24	0.6949	1144.1	1164.3	0.746	3.073	74.564	19.077	2.182	0.093	0.221	0.019	0.024	0.000	0.000	0.000	0.000	0.000	1396.72	
25	0.6944	1143.6	1163.8	0.759	3.037	74.543	19.241	2.080	0.089	0.210	0.018	0.023	0.000	0.000	0.000	0.000	0.000	1396.63	
26	0.6932	1142.0	1162.2	0.757	3.027	74.773	19.061	2.028	0.092	0.218	0.019	0.025	0.000	0.000	0.000	0.000	0.000	1395.85	
27	0.6912	1139.7	1159.9	0.724	3.022	75.205	18.630	2.057	0.094	0.223	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1395.18	
28	0.6933	1142.8	1163.1	0.770	2.967	74.654	19.302	1.982	0.086	0.201	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1396.80	
29	0.6989	1151.1	1171.5	0.785	2.961	73.783	19.977	2.119	0.097	0.231	0.020	0.025	0.000	0.000	0.000	0.000	0.000	1401.31	
30	0.6952	1146.0	1166.3	0.752	2.978	74.356	19.507	2.068	0.091	0.211	0.017	0.021	0.000	0.000	0.000	0.000	0.000	1398.78	
31	0.7032	1158.2	1178.7	0.835	2.856	72.944	20.856	2.155	0.095	0.218	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1405.68	
Avg	0.6993	1152.0	1172.9	0.809	2.880	73.588	20.327	2.060	0.089	0.207	0.018	0.022	0.000	0.000	0.000	0.000	0.000	1402.56	

Zone 24, 264

GQ Source Analysis

GQ Source Number:	0602160	Specific Gravity:	0.7310
GQ Source Name:	FAIRVIEW BORDER	Dry Heat Value:	1202.51
Effective Date:	1/1/2015 9:00:00 AM	Wet Heat Value:	1181.59
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1202.51
Pressure Base:	14.730	Sample Pressure:	383.00
Viscosity:		Sample Temperature:	

	<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>	
C1	Methane	68.740		CO2	Carbon Dioxide	1.055
C2	Ethane	22.183	5.9150	N2	Nitrogen	3.665
C3	Propane	4.002	1.0992	O2	Oxygen	0.011
IC4	Isobutane	0.120	0.0392	He	Helium	
NC4	n-Butane	0.206	0.0647	H2	Hydrogen	
IC5	Isopentane	0.011	0.0039	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.009	0.0031	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 7.125 GPM

Sample Date: 2/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 241

GQ Source Analysis

GQ Source Number:	0602230	Specific Gravity:	0.7175
GQ Source Name:	WATFORD CITY BORDER	Dry Heat Value:	1203.39
Effective Date:	1/1/2015 9:00:00 AM	Wet Heat Value:	1182.44
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1203.39
Pressure Base:	14.730	Sample Pressure:	1,001.00
Viscosity:		Sample Temperature:	

	<u>Mol %</u>	<u>Liquid Content</u>		<u>Mol %</u>	
C1	Methane	70.187	CO2	Carbon Dioxide	1.000
C2	Ethane	23.609	N2	Nitrogen	2.435
C3	Propane	2.363	O2	Oxygen	0.000
IC4	Isobutane	0.123	He	Helium	
NC4	n-Butane	0.238	H2	Hydrogen	
IC5	Isopentane	0.021	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.022	Ar	Argon	
C6	Hexanes	0.002	CO	Carbon Monoxide	
C7	Heptanes		H2	Water	
C8	Octanes		Neo-C5	Neopentane	
C9	Nonanes				
C10	Decanes				
Totals		100.000%	7.075 GPM		

Sample Date: 2/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 25

GQ Source Analysis

GQ Source Number:	2501030	Specific Gravity:	0.6517
GQ Source Name:	LIGNITE PLANT	Dry Heat Value:	1096.99
Effective Date:	1/1/2015 9:00:00 AM	Wet Heat Value:	1077.90
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1096.99
Pressure Base:	14.730	Sample Pressure:	456.00
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	80.208		CO2	Carbon Dioxide	0.135
C2	Ethane	14.972	3.9922	N2	Nitrogen	3.950
C3	Propane	0.728	0.2000	O2	Oxygen	0.007
IC4	Isobutane	0.000	0.0000	He	Hellum	
NC4	n-Butane	0.000	0.0000	H2	Hydrogen	
IC5	Isopentane	0.000	0.0000	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.000	0.0000	Ar	Argon	
C6	Hexanes	0.000	0.0000	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 4.192 GPM

Sample Date: 2/2/2015 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 263

*** End of Report ***

GQ Source Daily Summary

January 2015

Number: 043	Pressure Base: 14.730	Contract Day: 1
Name: BISMARCK STATION-CLEVELAND STATION	Temperature Base:	Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7100	1135.5	1155.6	0.582	5.256	72.561	17.542	3.609	0.132	0.284	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1371.47	
2	0.7103	1136.3	1156.4	0.576	5.241	72.512	17.596	3.631	0.132	0.281	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1372.21	
3	0.6952	1122.9	1142.8	0.483	4.788	74.745	16.621	3.021	0.103	0.211	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1370.61	
4	0.6885	1115.9	1135.7	0.481	4.586	75.872	15.985	2.738	0.098	0.208	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1368.72	
5	0.6678	1094.3	1113.6	0.424	4.051	79.170	14.184	1.905	0.076	0.158	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1362.77	
6	0.6692	1094.6	1114.0	0.439	4.133	78.983	14.182	1.997	0.078	0.159	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1361.80	
7	0.6730	1099.2	1118.7	0.466	4.172	78.354	14.614	2.117	0.082	0.166	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1363.62	
8	0.6794	1106.0	1125.6	0.481	4.336	77.315	15.218	2.345	0.090	0.184	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1365.61	
9	0.6797	1103.5	1123.0	0.464	4.539	77.394	14.761	2.538	0.094	0.183	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1362.21	
10	0.6794	1101.3	1120.8	0.477	4.635	77.433	14.617	2.535	0.093	0.184	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1359.70	
11	0.6879	1112.9	1132.6	0.502	4.678	76.015	15.706	2.773	0.101	0.200	0.014	0.013	0.000	0.000	0.000	0.000	0.000	1365.65	
12	0.6854	1110.3	1130.0	0.494	4.617	76.466	15.358	2.742	0.101	0.196	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1364.89	
13	0.6764	1098.5	1117.9	0.477	4.516	78.023	14.189	2.498	0.093	0.179	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1359.31	
14	0.6926	1120.3	1140.1	0.539	4.616	75.535	15.881	3.003	0.123	0.264	0.019	0.020	0.000	0.000	0.000	0.000	0.000	1369.97	
15	0.7226	1151.9	1172.3	0.630	5.363	70.526	18.963	4.031	0.147	0.306	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1379.15	
16	0.7121	1139.5	1159.7	0.573	5.228	72.090	18.060	3.617	0.131	0.271	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1374.26	
17	0.7179	1145.1	1165.4	0.611	5.366	71.214	18.513	3.825	0.141	0.297	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1375.46	
18	0.7188	1145.4	1165.7	0.627	5.417	71.084	18.522	3.876	0.142	0.300	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1374.85	
19	0.7272	1154.1	1174.5	0.658	5.624	69.759	19.260	4.187	0.153	0.326	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1377.33	
20	0.7281	1155.7	1176.1	0.654	5.617	69.583	19.444	4.184	0.153	0.330	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1378.37	
21	0.7121	1137.9	1158.1	0.586	5.305	71.962	18.221	3.497	0.129	0.271	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1372.33	
22	0.7162	1140.6	1160.8	0.609	5.484	71.366	18.397	3.688	0.136	0.289	0.015	0.015	0.000	0.000	0.000	0.000	0.000	1371.72	
23	0.7245	1148.2	1168.6	0.660	5.722	70.061	19.078	3.983	0.147	0.316	0.016	0.017	0.000	0.000	0.000	0.000	0.000	1372.92	
24	0.7304	1155.4	1175.8	0.690	5.802	69.073	19.762	4.159	0.152	0.327	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1375.79	
25	0.7248	1149.9	1170.3	0.656	5.659	69.983	19.238	3.970	0.147	0.316	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1374.59	
26	0.7271	1153.1	1173.5	0.661	5.672	69.645	19.440	4.074	0.151	0.324	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1376.23	
27	0.7244	1149.4	1169.8	0.649	5.659	70.080	19.124	3.995	0.146	0.314	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1374.43	
28	0.7261	1153.5	1173.9	0.655	5.563	69.726	19.593	3.974	0.145	0.310	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1377.66	
29	0.7162	1145.8	1166.1	0.573	5.232	71.313	18.787	3.644	0.135	0.287	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1377.85	
30	0.7139	1140.8	1161.0	0.577	5.311	71.730	18.329	3.606	0.134	0.284	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1374.05	
31	0.7000	1129.4	1149.4	0.504	4.812	73.839	17.447	3.036	0.111	0.225	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1373.81	
Avg	0.7044	1131.0	1150.6	0.563	5.064	73.336	17.311	3.316	0.122	0.256	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1370.95	

Zone 271

GQ Source Daily Summary

January 2015

Number: 063	Pressure Base: 14.730	Contract Day: 1
Name: CLEVELAND STATION-MAPLETON	Temperature Base:	Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7099	1135.3	1155.4	0.586	5.253	72.552	17.580	3.582	0.132	0.281	0.017	0.017	0.000					1371.33	
2	0.7084	1132.2	1152.3	0.577	5.319	72.781	17.327	3.560	0.130	0.276	0.016	0.016	0.000					1369.02	
3	0.6992	1125.6	1145.6	0.509	4.959	74.129	16.867	3.167	0.112	0.229	0.014	0.013	0.000					1369.98	
4	0.6892	1114.6	1134.3	0.475	4.741	75.738	15.914	2.811	0.095	0.198	0.015	0.014	0.000					1366.36	
5	0.6703	1095.9	1115.3	0.424	4.182	78.774	14.326	2.018	0.079	0.165	0.016	0.016	0.000					1362.27	
6	0.6697	1095.0	1114.4	0.449	4.143	78.903	14.234	1.999	0.079	0.162	0.016	0.015	0.000					1361.78	
7	0.6688	1093.3	1112.6	0.435	4.183	79.021	14.110	1.993	0.076	0.154	0.014	0.013	0.000					1360.55	
8	0.6786	1105.1	1124.7	0.489	4.304	77.415	15.214	2.279	0.088	0.180	0.016	0.015	0.000					1365.26	
9	0.6791	1102.8	1122.3	0.470	4.520	77.406	14.863	2.450	0.090	0.176	0.014	0.012	0.000					1361.93	
10	0.6788	1100.1	1119.6	0.475	4.643	77.543	14.525	2.513	0.093	0.183	0.014	0.012	0.000					1358.98	
11	0.6832	1106.0	1125.6	0.478	4.701	76.738	15.160	2.616	0.095	0.187	0.013	0.012	0.000					1361.73	
12	0.6876	1111.9	1131.6	0.504	4.710	76.061	15.629	2.773	0.101	0.197	0.014	0.012	0.000					1364.65	
13	0.6802	1102.8	1122.4	0.489	4.590	77.344	14.688	2.585	0.095	0.183	0.013	0.011	0.000					1360.88	
14	0.6849	1110.3	1130.0	0.518	4.529	76.699	15.158	2.736	0.107	0.222	0.016	0.015	0.000					1365.43	
15	0.7110	1137.7	1157.8	0.584	5.213	72.448	17.641	3.644	0.138	0.293	0.019	0.019	0.000					1373.15	
16	0.7147	1141.5	1161.7	0.596	5.309	71.695	18.256	3.699	0.134	0.279	0.017	0.016	0.000					1374.21	
17	0.7172	1143.8	1164.1	0.602	5.398	71.255	18.510	3.782	0.137	0.286	0.016	0.015	0.000					1374.54	
18	0.7200	1146.5	1166.8	0.630	5.459	70.861	18.671	3.905	0.143	0.299	0.017	0.016	0.000					1375.03	
19	0.7197	1144.1	1164.3	0.634	5.564	70.934	18.481	3.912	0.142	0.300	0.017	0.016	0.000					1372.50	
20	0.7297	1156.2	1176.7	0.665	5.721	69.304	19.545	4.250	0.154	0.326	0.017	0.017	0.000					1377.46	
21	0.7160	1140.3	1160.5	0.607	5.495	71.388	18.368	3.693	0.135	0.283	0.016	0.015	0.000					1371.44	
22	0.7129	1137.0	1157.2	0.591	5.423	71.824	18.200	3.533	0.129	0.271	0.015	0.014	0.000					1370.53	
23	0.7202	1142.5	1162.7	0.642	5.698	70.711	18.652	3.825	0.140	0.301	0.016	0.016	0.000					1370.13	
24	0.7292	1152.8	1173.2	0.684	5.855	69.239	19.606	4.109	0.151	0.323	0.017	0.017	0.000					1373.87	
25	0.7262	1149.7	1170.1	0.668	5.778	69.718	19.340	4.005	0.146	0.312	0.016	0.016	0.000					1373.11	
26	0.7253	1150.0	1170.3	0.656	5.700	69.905	19.245	3.998	0.147	0.316	0.017	0.016	0.000					1374.23	
27	0.7257	1149.9	1170.3	0.659	5.739	69.843	19.233	4.033	0.147	0.314	0.016	0.016	0.000					1373.76	
28	0.7245	1149.5	1169.8	0.656	5.658	69.979	19.293	3.934	0.143	0.304	0.016	0.016	0.000					1374.34	
29	0.7179	1145.7	1166.0	0.589	5.371	71.031	18.848	3.706	0.137	0.288	0.016	0.015	0.000					1376.12	
30	0.7127	1138.6	1158.8	0.571	5.344	71.899	18.181	3.568	0.131	0.277	0.015	0.014	0.000					1372.56	
31	0.7044	1131.6	1151.6	0.535	5.049	73.154	17.662	3.212	0.118	0.242	0.015	0.013	0.000					1372.08	
Avg	0.7037	1129.0	1148.6	0.563	5.115	73.429	17.204	3.287	0.121	0.252	0.016	0.015	0.000					1369.33	

Zone 272

GQ Source Daily Summary

January 2015

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-GRAFTON BORDER

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.7103	1136.1	1156.2	0.586	5.241	72.497	17.627	3.598	0.132	0.283	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1371.91	
2	0.7088	1133.0	1153.1	0.577	5.303	72.735	17.370	3.576	0.130	0.277	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1369.61	
3	0.6995	1126.3	1146.2	0.511	4.942	74.091	16.908	3.179	0.112	0.229	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1370.50	
4	0.6893	1115.0	1134.7	0.477	4.728	75.703	15.956	2.816	0.094	0.197	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1366.70	
5	0.6704	1096.2	1115.7	0.425	4.173	78.753	14.346	2.026	0.079	0.166	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1362.58	
6	0.6698	1095.4	1114.8	0.449	4.134	78.884	14.255	2.004	0.079	0.163	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1362.08	
7	0.6690	1093.8	1113.2	0.436	4.174	78.987	14.142	2.002	0.077	0.155	0.014	0.014	0.000	0.000	0.000	0.000	0.000	1360.95	
8	0.6789	1105.7	1125.3	0.492	4.294	77.367	15.258	2.289	0.089	0.181	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1365.68	
9	0.6794	1103.4	1123.0	0.470	4.508	77.366	14.902	2.461	0.090	0.177	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1362.42	
10	0.6790	1100.7	1120.2	0.476	4.632	77.512	14.553	2.524	0.094	0.184	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1359.39	
11	0.6834	1106.3	1125.9	0.478	4.692	76.716	15.185	2.621	0.095	0.187	0.013	0.012	0.000	0.000	0.000	0.000	0.000	1362.02	
12	0.6879	1112.7	1132.4	0.505	4.696	76.009	15.674	2.788	0.102	0.199	0.014	0.012	0.000	0.000	0.000	0.000	0.000	1365.24	
13	0.6805	1103.4	1123.0	0.490	4.579	77.305	14.724	2.596	0.096	0.185	0.013	0.011	0.000	0.000	0.000	0.000	0.000	1361.33	
14	0.6855	1111.4	1131.0	0.520	4.521	76.602	15.236	2.759	0.108	0.223	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1366.09	
15	0.7110	1138.0	1158.1	0.585	5.195	72.449	17.657	3.643	0.138	0.294	0.019	0.019	0.000	0.000	0.000	0.000	0.000	1373.49	
16	0.7150	1142.1	1162.4	0.597	5.297	71.649	18.299	3.709	0.135	0.280	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1374.67	
17	0.7176	1144.6	1164.9	0.603	5.384	71.201	18.557	3.798	0.138	0.288	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1375.12	
18	0.7205	1147.4	1167.7	0.630	5.448	70.793	18.727	3.924	0.144	0.301	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1375.64	
19	0.7193	1143.8	1164.1	0.622	5.563	70.987	18.447	3.912	0.140	0.297	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1372.56	
20	0.7301	1157.1	1177.6	0.667	5.702	69.247	19.597	4.268	0.155	0.328	0.018	0.017	0.000	0.000	0.000	0.000	0.000	1378.16	
21	0.7165	1141.3	1161.5	0.608	5.478	71.324	18.424	3.713	0.136	0.286	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1372.15	
22	0.7132	1137.7	1157.9	0.592	5.408	71.783	18.239	3.547	0.130	0.272	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1371.07	
23	0.7205	1143.2	1163.4	0.642	5.684	70.674	18.687	3.838	0.141	0.302	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1370.66	
24	0.7295	1153.5	1173.9	0.685	5.840	69.198	19.643	4.125	0.151	0.324	0.017	0.017	0.000	0.000	0.000	0.000	0.000	1374.42	
25	0.7265	1150.4	1170.8	0.669	5.767	69.670	19.381	4.020	0.147	0.313	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1373.62	
26	0.7255	1150.5	1170.9	0.656	5.686	69.876	19.277	4.007	0.148	0.317	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1374.68	
27	0.7261	1150.7	1171.1	0.660	5.725	69.789	19.280	4.049	0.148	0.316	0.017	0.016	0.000	0.000	0.000	0.000	0.000	1374.35	
28	0.7249	1150.2	1170.6	0.657	5.646	69.925	19.338	3.952	0.144	0.306	0.016	0.016	0.000	0.000	0.000	0.000	0.000	1374.90	
29	0.7183	1146.4	1166.7	0.590	5.358	70.982	18.893	3.719	0.137	0.290	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1376.65	
30	0.7131	1139.3	1159.5	0.572	5.332	71.848	18.225	3.582	0.132	0.279	0.015	0.014	0.000	0.000	0.000	0.000	0.000	1373.09	
31	0.7048	1132.4	1152.4	0.536	5.034	73.100	17.713	3.228	0.118	0.243	0.015	0.013	0.000	0.000	0.000	0.000	0.000	1372.71	
Avg	0.7040	1129.0	1149.3	0.563	5.102	73.388	17.243	3.299	0.121	0.253	0.016	0.015	0.000	0.000	0.000	0.000	0.000	1369.82	

Zone 293

GQ Source Daily Summary

January 2015

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STATION-GLEN ULLIN STATION

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6514	1081.7	1100.8	0.310	3.456	81.391	13.617	1.121	0.040	0.046	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1363.90	
2	0.6533	1085.6	1104.8	0.315	3.384	81.059	13.999	1.132	0.043	0.049	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1366.89	
3	0.6545	1086.9	1106.2	0.274	3.484	80.723	14.277	1.146	0.038	0.043	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1367.26	
4	0.6464	1071.5	1090.4	0.281	3.645	82.361	12.478	1.131	0.040	0.049	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1356.33	
5	0.6409	1062.8	1081.6	0.281	3.654	83.368	11.574	1.024	0.038	0.046	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1351.15	
6	0.6390	1059.2	1077.9	0.289	3.687	83.807	11.052	1.058	0.040	0.051	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1348.48	
7	0.6426	1065.3	1084.2	0.324	3.601	83.158	11.706	1.099	0.042	0.054	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1352.48	
8	0.6456	1069.3	1088.2	0.330	3.634	82.597	12.182	1.141	0.043	0.056	0.010	0.007	0.000	0.000	0.000	0.000	0.000	1354.34	
9	0.6408	1061.5	1080.3	0.304	3.697	83.446	11.382	1.067	0.039	0.049	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1349.47	
10	0.6387	1057.8	1076.5	0.324	3.694	83.834	11.035	1.014	0.038	0.046	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1347.01	
11	0.6437	1068.0	1087.0	0.320	3.545	82.930	12.002	1.096	0.041	0.049	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1354.76	
12	0.6436	1069.0	1087.9	0.341	3.446	83.039	11.926	1.134	0.045	0.053	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1356.06	
13	0.6388	1060.5	1079.3	0.348	3.498	83.950	11.035	1.055	0.044	0.052	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1350.35	
14	0.6424	1064.8	1083.7	0.328	3.607	83.324	11.446	1.162	0.049	0.065	0.012	0.008	0.000	0.000	0.000	0.000	0.000	1352.04	
15	0.6515	1081.6	1100.7	0.309	3.466	81.664	13.106	1.299	0.055	0.079	0.013	0.008	0.000	0.000	0.000	0.000	0.000	1363.71	
16	0.6549	1089.0	1108.3	0.293	3.356	80.742	14.340	1.158	0.043	0.050	0.011	0.007	0.000	0.000	0.000	0.000	0.000	1369.57	
17	0.6516	1082.0	1101.1	0.325	3.427	81.487	13.434	1.212	0.044	0.054	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1364.13	
18	0.6473	1074.5	1093.5	0.359	3.432	82.230	12.797	1.081	0.040	0.045	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1359.16	
19	0.6467	1074.2	1093.2	0.343	3.412	82.334	12.746	1.064	0.039	0.044	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1359.47	
20	0.6485	1078.9	1098.0	0.281	3.388	81.960	13.160	1.110	0.040	0.045	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1363.56	
21	0.6544	1088.2	1107.5	0.286	3.375	80.822	14.239	1.170	0.042	0.049	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1369.03	
22	0.6601	1097.5	1116.9	0.270	3.365	79.803	15.142	1.306	0.043	0.053	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1374.75	
23	0.6535	1086.5	1105.7	0.309	3.362	81.101	13.898	1.215	0.044	0.052	0.012	0.007	0.000	0.000	0.000	0.000	0.000	1367.74	
24	0.6546	1091.1	1110.5	0.339	3.138	80.780	14.582	1.053	0.043	0.044	0.013	0.007	0.000	0.000	0.000	0.000	0.000	1372.44	
25	0.6628	1104.6	1124.2	0.290	3.163	79.175	16.066	1.203	0.041	0.043	0.012	0.006	0.000	0.000	0.000	0.000	0.000	1380.78	
26	0.6662	1109.4	1129.0	0.302	3.170	78.637	16.446	1.337	0.043	0.046	0.012	0.006	0.000	0.000	0.000	0.000	0.000	1383.24	
27	0.6667	1111.3	1131.0	0.286	3.122	78.551	16.583	1.352	0.043	0.046	0.012	0.006	0.000	0.000	0.000	0.000	0.000	1385.14	
28	0.6658	1108.5	1128.2	0.363	3.086	78.666	16.584	1.201	0.041	0.041	0.012	0.006	0.000	0.000	0.000	0.000	0.000	1382.67	
29	0.6633	1103.6	1123.2	0.261	3.306	79.093	15.958	1.290	0.037	0.039	0.010	0.005	0.000	0.000	0.000	0.000	0.000	1379.10	
30	0.6586	1094.5	1113.9	0.270	3.405	80.023	14.941	1.258	0.040	0.047	0.010	0.005	0.000	0.000	0.000	0.000	0.000	1372.61	
31	0.6575	1092.0	1111.3	0.272	3.455	80.284	14.582	1.300	0.041	0.049	0.010	0.006	0.000	0.000	0.000	0.000	0.000	1370.55	
Avg	0.6512	1082.0	1100.8	0.307	3.434	81.495	13.494	1.161	0.042	0.049	0.011	0.006	0.000	0.000	0.000	0.000	0.000	1364.13	

Zone 28

GQ Source Analysis

GQ Source Number:	0202080	Specific Gravity:	0.6484
GQ Source Name:	RICHARDTON-GLEN ULLIN COMPRE	Dry Heat Value:	1094.32
Effective Date:	1/1/2015 9:00:00 AM	Wet Heat Value:	1075.27
Effective End Date:	1/18/2038 9:14:00 PM	As Deliv. Heat Value:	
Pressure Base:	14.730	Sample Pressure:	336.00
Viscosity:		Sample Temperature:	0.00

	<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>	
C1	Methane	81.943		CO2	Carbon Dioxide	0.283
C2	Ethane	12.928	3.4470	N2	Nitrogen	3.601
C3	Propane	1.126	0.3090	O2	Oxygen	
IC4	Isobutane	0.040	0.0130	He	Helium	
NC4	n-Butane	0.050	0.0160	H2	Hydrogen	
IC5	Isopentane	0.010	0.0040	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.006	0.0020	Ar	Argon	
C6	Hexanes	0.013	0.0050	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 3.796 GPM

Sample Date: 5/1/2014 10:29:00 AM
Sample Type: Composite
Sample Tech: RR
H2S: ppm

Sample Remarks:

Analysis Tech: MB

Analysis Remarks:

Zone 311

GQ Source Daily Summary

January 2015

Number: 051

Pressure Base: 14.730

Contract Day: 1

Name: CABIN CREEK STATION-BELFIELD TRANSFER

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6490	1071.2	1090.2	0.148	4.111	81.868	12.307	1.478	0.032	0.049	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1353.22	
2	0.6501	1073.2	1092.2	0.134	4.111	81.586	12.640	1.453	0.029	0.042	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1354.64	
3	0.6414	1059.0	1077.8	0.185	4.087	83.303	11.022	1.312	0.033	0.050	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1345.68	
4	0.6353	1049.4	1068.0	0.197	4.074	84.446	10.015	1.181	0.032	0.047	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1339.93	
5	0.6343	1047.5	1066.0	0.218	4.063	84.724	9.700	1.197	0.036	0.053	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1338.53	
6	0.6333	1046.7	1065.2	0.221	4.018	84.857	9.659	1.156	0.033	0.048	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1338.52	
7	0.6427	1060.3	1079.1	0.273	3.991	83.198	11.121	1.302	0.041	0.063	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1346.00	
8	0.6382	1054.0	1072.6	0.202	4.059	83.931	10.478	1.235	0.034	0.050	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1342.70	
9	0.6327	1045.1	1063.6	0.211	4.069	84.954	9.545	1.130	0.033	0.048	0.005	0.004	0.000	0.000	0.000	0.000	0.000	1337.20	
10	0.6382	1054.9	1073.6	0.240	3.948	83.971	10.524	1.222	0.035	0.049	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1343.85	
11	0.6387	1057.1	1075.9	0.263	3.826	83.950	10.593	1.270	0.038	0.051	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1346.17	
12	0.6360	1053.0	1071.6	0.288	3.788	84.520	10.065	1.231	0.041	0.056	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1343.69	
13	0.6378	1053.4	1072.1	0.240	3.995	84.211	10.116	1.314	0.044	0.068	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1342.43	
14	0.6447	1064.4	1083.2	0.188	4.057	82.914	11.222	1.486	0.045	0.076	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1349.09	
15	0.6545	1082.5	1101.6	0.136	3.962	80.879	13.334	1.590	0.036	0.055	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1361.65	
16	0.6461	1069.4	1088.3	0.144	3.957	82.486	11.852	1.461	0.036	0.056	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1353.91	
17	0.6397	1059.1	1077.9	0.148	3.967	83.573	10.967	1.266	0.030	0.043	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1347.70	
18	0.6395	1058.7	1077.5	0.151	3.969	83.635	10.879	1.287	0.030	0.042	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1347.39	
19	0.6479	1072.0	1091.0	0.137	3.974	82.053	12.329	1.417	0.033	0.050	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1355.37	
20	0.6530	1080.2	1099.3	0.135	3.961	81.083	13.232	1.500	0.032	0.049	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1360.33	
21	0.6564	1085.4	1104.6	0.137	3.958	80.520	13.685	1.601	0.035	0.055	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1363.39	
22	0.6509	1076.9	1096.0	0.131	3.964	81.503	12.822	1.495	0.032	0.047	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1358.49	
23	0.6628	1097.3	1116.7	0.078	3.929	79.139	15.120	1.661	0.028	0.042	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1371.61	
24	0.6688	1106.4	1126.0	0.109	3.889	78.176	15.876	1.867	0.032	0.048	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1376.83	
25	0.6695	1108.5	1128.1	0.075	3.872	78.036	16.045	1.891	0.031	0.047	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1378.78	
26	0.6674	1104.3	1123.8	0.085	3.920	78.295	15.881	1.753	0.027	0.038	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1375.66	
27	0.6656	1101.9	1121.4	0.075	3.918	78.579	15.666	1.700	0.025	0.035	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1374.47	
28	0.6607	1093.6	1112.9	0.094	3.932	79.544	14.733	1.631	0.026	0.037	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1369.19	
29	0.6550	1083.0	1102.2	0.138	3.969	80.718	13.537	1.550	0.033	0.049	0.003	0.003	0.000	0.000	0.000	0.000	0.000	1361.88	
30	0.6555	1083.2	1102.4	0.142	4.000	80.650	13.544	1.574	0.033	0.050	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1361.58	
31	0.6455	1066.5	1085.4	0.174	4.025	82.592	11.694	1.418	0.036	0.054	0.004	0.004	0.000	0.000	0.000	0.000	0.000	1350.98	
Avg	0.6481	1072.0	1090.5	0.164	3.980	82.061	12.265	1.440	0.034	0.050	0.004	0.003	0.000	0.000	0.000	0.000	0.000	1354.54	

Zone 32

GQ Source Daily Summary

January 2015

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE-BELFIELD TRANSFER

Temperature Base:

Contract Hour: 9

Day	Relative Density	Heating Value Wet	Heating Value Dry	CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
1	0.6856	1157.2	1177.7	0.003	2.546	73.421	23.437	0.580	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.31	
2	0.6854	1156.9	1177.4	0.003	2.543	73.447	23.437	0.557	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.16	
3	0.6851	1156.2	1176.6	0.003	2.560	73.459	23.453	0.512	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.57	
4	0.6855	1156.8	1177.3	0.003	2.556	73.416	23.468	0.544	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1421.97	
5	0.6860	1157.6	1178.1	0.003	2.555	73.326	23.542	0.561	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.46	
6	0.6857	1157.6	1178.1	0.004	2.529	73.404	23.474	0.574	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.72	
7	0.6850	1157.0	1177.5	0.004	2.499	73.560	23.344	0.577	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.68	
8	0.6846	1156.6	1177.1	0.003	2.487	73.555	23.444	0.498	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.64	
9	0.6851	1157.4	1177.9	0.002	2.486	73.476	23.500	0.523	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.13	
10	0.6843	1156.2	1176.7	0.002	2.487	73.623	23.361	0.514	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.44	
11	0.6851	1157.5	1178.0	0.002	2.488	73.462	23.518	0.516	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.11	
12	0.6851	1157.4	1177.9	0.002	2.490	73.458	23.524	0.514	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.07	
13	0.6848	1156.9	1177.4	0.001	2.489	73.513	23.486	0.499	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.83	
14	0.6851	1157.5	1178.0	0.001	2.483	73.480	23.493	0.531	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.22	
15	0.6845	1156.8	1177.3	0.001	2.467	73.604	23.395	0.520	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.98	
16	0.6845	1156.8	1177.3	0.002	2.470	73.615	23.369	0.530	0.006	0.008	0.000	0.001	0.000	0.000	0.000	0.000	0.000	1422.94	
17	0.6841	1156.1	1176.6	0.002	2.468	73.686	23.312	0.519	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.59	
18	0.6843	1156.5	1177.0	0.002	2.470	73.642	23.343	0.530	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.76	
19	0.6849	1157.4	1177.9	0.002	2.469	73.600	23.318	0.596	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.28	
20	0.6836	1155.3	1175.7	0.001	2.478	73.743	23.281	0.486	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.03	
21	0.6846	1157.0	1177.5	0.002	2.460	73.591	23.413	0.522	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.17	
22	0.6837	1155.5	1175.9	0.001	2.479	73.758	23.221	0.527	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.11	
23	0.6837	1155.6	1176.1	0.002	2.462	73.776	23.225	0.523	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.36	
24	0.6836	1155.5	1175.9	0.002	2.469	73.803	23.164	0.549	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.19	
25	0.6836	1155.6	1176.1	0.002	2.449	73.837	23.134	0.564	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.52	
26	0.6832	1155.1	1175.5	0.001	2.448	73.898	23.099	0.541	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.24	
27	0.6835	1155.4	1175.9	0.002	2.457	73.798	23.220	0.511	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.33	
28	0.6846	1156.8	1177.3	0.001	2.479	73.566	23.426	0.516	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.89	
29	0.6845	1156.8	1177.3	0.001	2.468	73.613	23.376	0.530	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.99	
30	0.6845	1157.1	1177.6	0.001	2.446	73.635	23.354	0.550	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1423.41	
31	0.6840	1156.1	1176.6	0.001	2.465	73.662	23.379	0.481	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.62	
Avg	0.6846	1157.0	1177.1	0.002	2.487	73.594	23.371	0.532	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1422.64	

Zone 33

GQ Source Analysis

GQ Source Number:	1202160	Specific Gravity:	0.6553
GQ Source Name:	BOWMAN BORDER	Dry Heat Value:	1049.16
Effective Date:	1/1/2015 9:00:00 AM	Wet Heat Value:	1030.90
Effective End Date:	1/18/2038 9:14:07 PM	As Deliv. Heat Value:	1049.16
Pressure Base:	14.730	Sample Pressure:	
Viscosity:		Sample Temperature:	

		<u>Mol %</u>	<u>Liquid Content</u>			<u>Mol %</u>
C1	Methane	80.884		CO2	Carbon Dioxide	0.712
C2	Ethane	10.573	2.8190	N2	Nitrogen	6.309
C3	Propane	1.310	0.3600	O2	Oxygen	
IC4	Isobutane	0.052	0.0170	He	Helium	
NC4	n-Butane	0.119	0.0370	H2	Hydrogen	
IC5	Isopentane	0.012	0.0040	H2S	Hydrogen Sulfide	
NC5	n-Pentane	0.022	0.0080	Ar	Argon	
C6	Hexanes	0.007	0.0030	CO	Carbon Monoxide	
C7	Heptanes			H2	Water	
C8	Octanes			Neo-C5	Neopentane	
C9	Nonanes					
C10	Decanes					

Totals 100.000% 3.248 GPM

Sample Date: 4/1/2014 1:01:00 PM
Sample Type: Composite
Sample Tech: MIKE GENTILINI
H2S: ppm

Sample Remarks:

Analysis Tech: MIKE GENTILINI

Analysis Remarks:

Zone 34

ZONE 610

Watford City

01320

Watford City Border

01312

Watford City East Border

Weighted

Begin Date	End Date	Watford City		BTU Zone 25	01312		BTU Zone 43	AVG BTU	
		MCF	DK		MCF	DK			
1/1/2015	1/2/2015	596	718	1.203	373	443	1.188	1.197	1/1/2015
1/2/2015	1/3/2015	613	738	1.203	250	294	1.174	1.195	1/2/2015
1/3/2015	1/4/2015	818	985	1.203	455	533	1.173	1.192	1/3/2015
1/4/2015	1/5/2015	920	1108	1.203	618	725	1.172	1.191	1/4/2015
1/5/2015	1/6/2015	878	1057	1.203	721	842	1.168	1.187	1/5/2015
1/6/2015	1/7/2015	919	1106	1.203	851	1000	1.175	1.190	1/6/2015
1/7/2015	1/8/2015	841	1012	1.203	692	811	1.172	1.189	1/7/2015
1/8/2015	1/9/2015	907	1092	1.203	542	635	1.172	1.191	1/8/2015
1/9/2015	1/10/2015	857	1031	1.203	496	583	1.174	1.192	1/9/2015
1/10/2015	1/11/2015	783	942	1.203	654	768	1.174	1.190	1/10/2015
1/11/2015	1/12/2015	828	996	1.203	913	1073	1.175	1.188	1/11/2015
1/12/2015	1/13/2015	835	1005	1.203	878	1032	1.175	1.189	1/12/2015
1/13/2015	1/14/2015	334	402	1.203	1237	1452	1.173	1.179	1/13/2015
1/14/2015	1/15/2015	103	123	1.203	1296	1525	1.176	1.178	1/14/2015
1/15/2015	1/16/2015	1	1	1.203	1402	1645	1.174	1.174	1/15/2015
1/16/2015	1/17/2015	0	0	1.203	1325	1572	1.187	1.187	1/16/2015
1/17/2015	1/18/2015	0	0	1.203	1264	1512	1.196	1.196	1/17/2015
1/18/2015	1/19/2015	0	0	1.203	1135	1369	1.205	1.205	1/18/2015
1/19/2015	1/20/2015	0	0	1.203	1009	1211	1.202	1.202	1/19/2015
1/20/2015	1/21/2015	0	0	1.203	1222	1444	1.181	1.181	1/20/2015
1/21/2015	1/22/2015	0	0	1.203	1144	1352	1.182	1.182	1/21/2015
1/22/2015	1/23/2015	0	0	1.203	1163	1377	1.183	1.183	1/22/2015
1/23/2015	1/24/2015	0	0	1.203	711	836	1.176	1.176	1/23/2015
1/24/2015	1/25/2015	0	0	1.203	592	706	1.191	1.191	1/24/2015
1/25/2015	1/26/2015	0	0	1.203	628	739	1.178	1.178	1/25/2015
1/26/2015	1/27/2015	0	0	1.203	543	645	1.188	1.188	1/26/2015
1/27/2015	1/28/2015	0	0	1.203	553	659	1.193	1.193	1/27/2015
1/28/2015	1/29/2015	0	0	1.203	802	950	1.184	1.184	1/28/2015
1/29/2015	1/30/2015	275	330	1.203	594	703	1.184	1.190	1/29/2015
1/30/2015	1/31/2015	391	471	1.203	681	813	1.193	1.197	1/30/2015
1/31/2015	2/1/2015	614	739	1.203	1189	1418	1.193	1.196	1/31/2015
		11,513	13,856		25,933	30,667	1.1816	1.1888	

[Gas Quality Download - Chromatograph]

ROW ID	LOCATION DESCRIPTION	GROSS HEATING VALUE (BTU/GP)	SPECIFIC GRAVITY	WOBBE (cal)	CRI/CONDENTHERM (deg F)	NITROGEN (mole percent)	CARBON DIOXIDE (mole percent)	METHANE (mole percent)	ETHANE (mole percent)	PROPANE (mole percent)	NORMAL BUTANE (mole percent)	ISO BUTANE (mole percent)	PENTANE (mole percent)	ISO PENTANE (mole percent)	NEO PENTANE (mole percent)	HEXANES PLUS (mole percent)	HYDROGEN (mole percent)	HELIUM (mole percent)	PRODUCTION DATE	POSTING DATE	Change(timestamp)	NOTES
11587	GLEN ULLIN	1054.2	0.6058	1354.5	-63.9	1.1601	0.8292	90.4811	6.8126	0.4647	0.037	0.0291	0.0046	0.0064	0	0.003	0.158	0.0162	12/31/2014	1/1/2015	1/1/2015 2:18:58 PM	
11587	GLEN ULLIN	1053	0.6053	1353.5	-68.6	1.2031	0.8234	90.4693	6.8171	0.4377	0.0311	0.0238	0.0033	0.0049	0	0.0022	0.1695	0.0162	1/1/2015	1/2/2015	1/2/2015 2:18:42 PM	
11587	GLEN ULLIN	1056.3	0.6075	1355.2	-62.7	1.2225	0.8167	90.9958	7.1283	0.4779	0.0357	0.0285	0.0045	0.0063	0	0.0031	0.1664	0.0162	1/2/2015	1/3/2015	1/3/2015 2:19:14 PM	
11587	GLEN ULLIN	1051.3	0.6037	1353.1	-66.3	1.1797	0.7991	90.8001	6.5671	0.41	0.0319	0.0254	0.0037	0.0056	0	0.0028	0.1594	0.0162	1/3/2015	1/4/2015	1/4/2015 2:19:17 PM	
11587	GLEN ULLIN	1052.8	0.6046	1354	-63.8	1.126	0.8374	90.6871	6.676	0.426	0.0351	0.0282	0.0044	0.0064	0	0.0032	0.1573	0.0162	1/4/2015	1/5/2015	1/5/2015 2:18:40 PM	
11587	GLEN ULLIN	1045.8	0.5998	1350.3	-67.1	1.1012	0.8317	91.6475	5.781	0.4024	0.0331	0.0265	0.004	0.0059	0	0.0027	0.1494	0.0162	1/5/2015	1/6/2015	1/6/2015 2:19:25 PM	
11587	GLEN ULLIN	1050.2	0.6025	1352.9	-60.3	1.111	0.8206	91.209	6.1488	0.4647	0.041	0.0329	0.0057	0.0078	0	0.004	0.1391	0.0162	1/6/2015	1/7/2015	1/7/2015 2:19:33 PM	
11587	GLEN ULLIN	1053.8	0.6053	1354.5	-50.3	1.1504	0.8229	90.808	6.3778	0.5514	0.0582	0.0469	0.0091	0.0121	0	0.0067	0.142	0.0162	1/7/2015	1/8/2015	1/8/2015 2:22:18 PM	
11587	GLEN ULLIN	1054.3	0.6065	1353.8	-54.3	1.2148	0.8331	90.5104	6.6233	0.5414	0.0522	0.0407	0.0077	0.0102	0	0.0052	0.146	0.0162	1/8/2015	1/9/2015	1/9/2015 2:19:17 PM	
11587	GLEN ULLIN	1057.7	0.6095	1354.9	-47.2	1.2512	0.8612	90.0442	6.897	0.6278	0.0639	0.0506	0.0099	0.013	0	0.0075	0.1577	0.0162	1/9/2015	1/10/2015	1/10/2015 2:19:31 PM	
11587	GLEN ULLIN	1072.7	0.619	1363.4	-39.5	1.2026	0.8883	88.5158	8.1302	0.8995	0.0838	0.071	0.0117	0.0157	0	0.0093	0.1572	0.0162	1/10/2015	1/11/2015	1/11/2015 2:19:26 PM	
11587	GLEN ULLIN	1059.8	0.6107	1356.1	-46	1.2254	0.8702	89.8572	7.0923	0.6403	0.0659	0.0517	0.0102	0.0134	0	0.0079	0.1506	0.0162	1/11/2015	1/12/2015	1/12/2015 2:19:12 PM	
11587	GLEN ULLIN	1058.4	0.6095	1355.7	-46.3	1.2017	0.8645	90.0484	6.9399	0.6203	0.0643	0.0514	0.0101	0.0134	0	0.0079	0.1639	0.0162	1/12/2015	1/13/2015	1/13/2015 2:19:35 PM	
11587	GLEN ULLIN	1054.8	0.6075	1353.4	-52.2	1.2209	0.8691	90.3527	6.7047	0.5535	0.0555	0.0432	0.0085	0.0111	0	0.0058	0.1605	0.0162	1/13/2015	1/14/2015	1/14/2015 2:19:47 PM	
11587	GLEN ULLIN	1053	0.6059	1352.8	-57.5	1.2371	0.8326	90.5278	6.6258	0.5006	0.0462	0.0352	0.007	0.0089	0	0.0044	0.1588	0.0162	1/14/2015	1/15/2015	1/15/2015 2:19:29 PM	
11587	GLEN ULLIN	1054.9	0.607	1354	-55.2	1.2307	0.8335	90.3038	6.8363	0.5032	0.0488	0.0378	0.0075	0.0096	0	0.005	0.1673	0.0162	1/15/2015	1/16/2015	1/16/2015 2:19:32 PM	
11587	GLEN ULLIN	1055.1	0.6076	1353.6	-57.3	1.2765	0.8304	90.17	6.946	0.4996	0.0454	0.0358	0.0067	0.0089	0	0.0044	0.1604	0.0162	1/16/2015	1/17/2015	1/17/2015 2:19:47 PM	
11587	GLEN ULLIN	1055.7	0.608	1354	-57.7	1.2489	0.8482	90.1329	6.9579	0.5336	0.0444	0.035	0.0066	0.0086	0	0.0041	0.1624	0.0162	1/17/2015	1/18/2015	1/18/2015 2:19:52 PM	
11587	GLEN ULLIN	1057.6	0.6091	1355.1	-56.9	1.2355	0.8542	89.9962	7.0374	0.6034	0.0456	0.0362	0.0066	0.0087	0	0.0041	0.1572	0.0162	1/18/2015	1/19/2015	1/19/2015 2:19:36 PM	
11587	GLEN ULLIN	1057.9	0.6095	1355	-56.2	1.2596	0.8496	89.9054	7.1145	0.5912	0.0472	0.0373	0.0069	0.0091	0	0.0043	0.1574	0.0162	1/19/2015	1/20/2015	1/20/2015 2:19:39 PM	
11587	GLEN ULLIN	1056.4	0.6083	1354.4	-56.6	1.2352	0.8495	90.1284	6.9631	0.5484	0.0476	0.0374	0.0072	0.0093	0	0.0045	0.1535	0.0162	1/20/2015	1/21/2015	1/21/2015 2:19:24 PM	
11587	GLEN ULLIN	1053.5	0.6063	1353	-62	1.2359	0.8408	90.3497	6.869	0.4412	0.0393	0.0305	0.0053	0.0072	0	0.0034	0.1612	0.0162	1/21/2015	1/22/2015	1/22/2015 2:19:55 PM	
11587	GLEN ULLIN	1055	0.6078	1353.2	-59.7	1.2618	0.857	90.1324	6.9854	0.4952	0.0424	0.0327	0.0056	0.0078	0	0.0037	0.1598	0.0162	1/22/2015	1/23/2015	1/23/2015 2:20:43 PM	
11587	GLEN ULLIN	1055.8	0.6085	1353.4	-59.7	1.2865	0.8567	89.9186	7.2019	0.4581	0.0424	0.0324	0.006	0.0079	0	0.0037	0.1691	0.0162	1/23/2015	1/24/2015	1/24/2015 2:21:06 PM	
11587	GLEN ULLIN	1057.6	0.61	1354.1	-62.4	1.3229	0.8545	89.6301	7.4358	0.4919	0.0397	0.0301	0.005	0.0068	0	0.003	0.1636	0.0162	1/24/2015	1/25/2015	1/25/2015 2:22:11 PM	
11587	GLEN ULLIN	1059.1	0.6106	1355.4	-62.7	1.2621	0.8705	89.5487	7.5683	0.4922	0.0406	0.0309	0.005	0.0069	0	0.0029	0.1588	0.0162	1/25/2015	1/26/2015	1/26/2015 2:20:27 PM	
11587	GLEN ULLIN	1057.1	0.6101	1353.4	-66.5	1.3588	0.8514	89.5435	7.5154	0.4707	0.0343	0.0253	0.0037	0.0053	0	0.0022	0.1725	0.0162	1/26/2015	1/27/2015	1/27/2015 2:21:01 PM	
11587	GLEN ULLIN	1055.9	0.6085	1353.7	-64.1	1.2754	0.8546	89.9517	7.1785	0.4899	0.0371	0.0284	0.0041	0.006	0	0.0027	0.1573	0.0162	1/27/2015	1/28/2015	1/28/2015 2:20:48 PM	
11587	GLEN ULLIN	1053.3	0.606	1353.1	-67.2	1.24	0.8238	90.3651	6.8935	0.4318	0.0331	0.0255	0.0038	0.0055	0	0.0024	0.1601	0.0162	1/28/2015	1/29/2015	1/29/2015 2:20:45 PM	
11587	GLEN ULLIN	1054.5	0.6076	1352.8	-66.5	1.3193	0.8293	90.0264	7.1276	0.4472	0.0344	0.0261	0.004	0.0057	0	0.0025	0.1628	0.0162	1/29/2015	1/30/2015	1/30/2015 2:20:58 PM	
11587	GLEN ULLIN	1054.6	0.608	1352.5	-69.4	1.336	0.8395	89.9544	7.1692	0.4622	0.0311	0.0234	0.0033	0.0047	0	0.0018	0.1589	0.0162	1/30/2015	1/31/2015	1/31/2015 2:22:09 PM	

31 record(s) retrieved

Zone 802

NORTH DAKOTA HEATING VALUE ZONES		
<i>ZONES</i>	<i>MEASURING DEVICE</i>	<i>LOCATION</i>
211	Chromatograph	Sidney Area
24	Chromatograph	Williston Area
241	Monthly Sampler	Fairview Area
25	Monthly Sampler	Watford City Area
261	Chromatograph	Williston – Tioga – Minot Line
262	Chromatograph	Minot Area
263	Monthly Sampler	Tioga – Portal
264	Chromatograph	Williston – Ray
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck
31	Chromatograph	Dickinson
311	Monthly Sampler	Taylor Take-Off – Glen Ullin Comp
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Monthly Sampler	Bowman Area
600	Chromatograph	Hankinson Area
610	Monthly Sampler & Chromatograph	Watford City
802	Chromatograph	Linton

MONTANA DAKOTA UTILITIES CO
 NORTH DAKOTA
 HEATING VALUE DATA

STATE	ZONE	ZONE BOUNDARY	12 MONTH AVERAGE	JAN 15	DEC 14	NOV 14	OCT 14	SEPT 14	AUG 14	JULY 14	JUNE 14	MAY 14	APR 14	MAR 14	FEB 14	ZONE
MT/ND	211	Sidney Area	1209	1215	1214	1215	1211	1204	1209	1212	1207	1212	1198	1204	1205	211
ND	24	Williston Area	1182	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	1181	1177	24
ND	25	Wattford City Border	1214	1203	1201	1199	1207	1217	1205	1219	1226	1241	1221	1220	1205	25
ND/MT	241	Fairview Area	1201	1203	1203	1203	1197	1205	1201	1208	1202	1204	1194	1197	1197	241
ND	261	Williston - Tioga - Minot Line	1087	1015	1035	1058	1021	1027	1013	1094	1115	1118	1181	1187	1185	261
ND	262	Minot Area	1170	1173	1189	1171	1155	1150	1149	1154	1166	1161	1196	1201	1200	262
ND	263	Tioga - Portal	1084	1097	1094	1097	1103	1103	1089	1098	1078	1062	1074	1058	1051	263
ND	264	Williston - Ray	1182	1173	1180	1182	1190	1189	1186	1184	1183	1180	1177	1181	1177	264
ND	271	Bismarck - Cleveland	1156	1151	1160	1159	1155	1147	1148	1152	1164	1162	1192	1159	1127	271
ND	272	Cleveland - Mapleton	1155	1149	1157	1157	1154	1146	1148	1151	1163	1162	1192	1158	1127	272
ND	273	Cleveland - Grafton	1155	1149	1158	1158	1154	1146	1148	1151	1163	1162	1190	1158	1127	273
ND	28	Bismarck - Cabin Creek	1127	1101	1116	1118	1140	1147	1148	1151	1163	1155	1135	1077	1072	28
ND	31	Dickinson Area	1133	1104	1122	1125	1154	1170	1174	1176	1171	1140	1102	1079	1073	31
ND	311	Taylor Take-Off - Glen Ullin Comp	1119	1094	1114	1121	1116	1130	1114	1131	1138	1105	1091	1072	1197	311
ND/MT	32	Cabin Creek - Dickinson	1110	1091	1103	1110	1144	1164	1134	1147	1134	1100	1077	1061	1058	32
ND	33	Killdeer	1181	1177	1178	1176	1180	1182	1182	1183	1183	1183	1183	1180	1181	33
ND	34	Bowman Area	1096	1049	1089	1116	1136	1128	1127	1130	1119	1123	1030	1059	1047	34
ND	610	MDU-Wattford City BTU	1199	1189	1195	1193	1205	1210	1204	1204	1195					
ND	802	Linton	1050	1056	1055	1054	1051	1054	1060	1050	1047	1047	1044	1045	1039	802

**THERMAL ZONE VARIANCE
DOCUMENTATION**

January 2014

ZONE	<i>BTU VARIANCE</i>	<i>REASON</i>
261	-20	Corrected plant equipment issue
311	-20	Mix of gas
34	-40	Mix of gas