

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

October 10, 2008

RECEIVED

OCT 13 2008

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

PUBLIC SERVICE COMMISSION

Re: Case No. 11,006 (Therm Billing)  
Monthly Report – August 2008

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:

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 September 2008.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our supplier for the month of August 2008. There is a report for each of the 16 thermal zones for the month.
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 August.

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  
Pricing & Tariff Manager

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
SEPT 2008

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
12	314	APPLE VALLEY	271	1.1000
12	327	BISMARCK	28	1.0768
12	343	CARRINGTON	273	1.1000
12	344	CLEVELAND	272	1.0922
12	364	CAVALIER	273	1.1231
12	365	DAWSON	271	1.0922
12	374	FT TOTTEN	273	1.1077
12	375	DEVILS LAKE	273	1.1077
12	379	BARLOW	273	1.1000
12	387	ELDRIDGE	272	1.1000
12	411	GLEN ULLIN	31	.9861
12	417	GRAFTON	273	1.1309
12	449	JAMESTOWN	272	1.1077
12	463	LANGDON	273	1.1000
12	475	LINTON	802	.9765
12	478	LINCOLN	28	1.0768
12	494	MEDINA	271	1.0922
12	498	MANDAN	28	1.0768
12	524	NEW SALEM	28	1.0541
12	532	NEW ROCKFORD	273	1.1000
12	539	PARK RIVER	273	1.1231
12	574	SANBORN	272	1.1077
12	593	STEELE	271	1.0922
12	598	SHEYENNE	273	1.1077
12	610	TAPPEN	271	1.0922
12	625	VALLEY CITY	272	1.1154
12	629	WALHALLA	273	1.1231
12	647	WILTON	262	1.0777
12	717	SPIRITWOOD	272	1.1077
12	732	MSR SITE	273	1.1000
12	733	PAR SITE	273	1.1000
15	303	ALEXANDER	25	1.0682
15	308	ARNEGARD	25	1.0682
15	318	BEACH	32	.9574
15	319	BELFIELD	32	.9644

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
SEPT 2008

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Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
15	323	BERTHOLD	261	1.0720
15	330	BOWMAN	34	1.0815
15	337	BURLINGTON	262	1.1010
15	368	DES LACS	261	1.0797
15	369	DICKINSON	31	.9790
15	407	GLADSTONE	31	.9790
15	413	GOLVA	32	.9434
15	416	GARRISON	262	1.0854
15	429	HEBRON	31	.9861
15	459	KILLDEER	33	1.0966
15	469	LEFOR	31	.9790
15	474	LIGNITE	263	1.0892
15	500	MARMARTH	34	1.0895
15	505	MINOT	262	1.1010
15	510	MOTT	31	.9790
15	512	MAX	262	1.0777
15	522	NEW ENGLAND	31	.9719
15	540	PALERMO	261	1.0720
15	561	REGENT	31	.9790
15	563	RHAME	34	1.0736
15	564	RICHARDTON	31	.9719
15	568	ROSS	261	1.0643
15	572	RUTHVILLE	262	1.1010
15	583	SENTINEL BUTTE	32	.9574
15	588	SOUTH HEART	31	.9719
15	591	STANLEY	261	1.0720
15	605	SURREY	262	1.1010
15	611	TAYLOR	31	.9719
15	616	TIOGA	261	1.0643
15	619	TURTLE LAKE	262	1.0854
15	620	TRENTON	24	1.1311
15	624	UNDERWOOD	262	1.0854
15	632	WATFORD CITY	25	1.0682
15	637	WHITE EARTH	261	1.0720
15	642	WILLISTON	24	1.1311

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
SEPT 2008

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Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
15	646	WASHBURN	262	1.0932
15	664	RIVERDALE	262	1.0854
15	691	FAIRVIEW	24	1.1311
15	712	MINOT AFB	262	1.1010
15	743	BAKER FIELD	35	.8935

\* \* \* E N D O F R E P O R T \* \* \*

**GQ Source Daily Summary**

August 2008

Number: 251

Name: SIDNEY BORDER

Pressure Base: 14.730

Temperature Base:

Contract Day: 1 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	Crit'herm
1	0.7289	1172.7	1193.5		1.092	3.995	68.914	22.307	3.313	0.125	0.228	0.013	0.011	0.001	0.000				1397.85	
2	0.7293	1173.2	1194.0		1.090	3.998	68.903	22.270	3.347	0.129	0.236	0.014	0.012	0.001	0.000				1398.15	
3	0.7297	1173.9	1194.7		1.087	4.001	68.817	22.356	3.338	0.132	0.241	0.014	0.012	0.002	0.000				1398.58	
4	0.7292	1172.8	1193.5		1.089	4.018	68.943	22.191	3.363	0.129	0.237	0.015	0.013	0.001	0.000				1397.69	
5	0.7297	1173.9	1194.7		1.086	4.004	68.911	22.168	3.429	0.131	0.242	0.014	0.012	0.001	0.000				1398.52	
6	0.7303	1174.7	1195.5		1.088	4.002	68.829	22.232	3.438	0.135	0.249	0.014	0.012	0.001	0.000				1398.98	
7	0.7292	1172.9	1193.7		1.088	4.007	69.005	22.102	3.390	0.133	0.245	0.015	0.013	0.002	0.000				1397.90	
8	0.7275	1170.4	1191.1		1.091	4.002	69.058	22.293	3.194	0.120	0.217	0.013	0.011	0.001	0.000				1396.47	
9	0.7284	1171.7	1192.4		1.091	4.005	68.955	22.321	3.257	0.122	0.223	0.013	0.011	0.001	0.000				1397.19	
10	0.7287	1172.6	1193.3		1.090	3.982	68.947	22.300	3.311	0.122	0.222	0.013	0.011	0.001	0.000				1397.94	
11	0.7299	1174.4	1195.2		1.089	3.985	68.846	22.250	3.463	0.122	0.221	0.013	0.011	0.001	0.000				1398.98	
12	0.7317	1176.5	1197.3		1.075	4.046	69.175	21.164	4.156	0.127	0.231	0.014	0.012	0.001	0.000				1399.62	
13	0.7306	1174.8	1195.6		1.080	4.040	69.267	21.248	3.950	0.136	0.251	0.015	0.013	0.001	0.000				1398.67	
14	0.7316	1177.0	1197.9		1.083	3.990	68.661	22.318	3.537	0.133	0.249	0.015	0.013	0.001	0.000				1400.50	
15	0.7288	1172.3	1193.1		1.085	4.016	69.001	22.164	3.328	0.132	0.245	0.015	0.013	0.002	0.000				1397.54	
16	0.7293	1173.3	1194.1		1.089	3.998	68.885	22.307	3.316	0.132	0.243	0.015	0.013	0.001	0.000				1398.23	
17	0.7296	1173.5	1194.3		1.089	4.009	68.872	22.284	3.339	0.132	0.245	0.015	0.013	0.002	0.000				1398.20	
18	0.7298	1173.7	1194.5		1.101	3.998	68.862	22.280	3.344	0.135	0.250	0.015	0.013	0.002	0.000				1398.23	
19	0.7294	1173.2	1194.0		1.096	4.004	68.965	22.131	3.395	0.134	0.246	0.015	0.013	0.002	0.000				1397.98	
20	0.7296	1172.9	1193.7		1.094	4.033	69.037	21.942	3.468	0.139	0.256	0.016	0.013	0.002	0.000				1397.55	
21	0.7297	1173.1	1193.9		1.086	4.042	68.998	21.998	3.446	0.141	0.259	0.015	0.013	0.002	0.000				1397.70	
22	0.7301	1173.8	1194.6		1.091	4.037	68.776	22.338	3.347	0.134	0.247	0.015	0.013	0.001	0.000				1398.05	
23	0.7305	1175.0	1195.8		1.094	4.000	68.778	22.299	3.413	0.136	0.251	0.016	0.014	0.002	0.000				1399.06	
24	0.7299	1172.3	1193.1		1.098	4.096	68.875	22.113	3.408	0.135	0.245	0.016	0.014	0.002	0.000				1396.52	
25	0.7289	1168.5	1189.2		1.096	4.237	68.999	21.910	3.340	0.137	0.249	0.016	0.014	0.002	0.000				1392.92	
26	0.7299	1174.2	1195.0		1.092	3.993	68.822	22.332	3.348	0.137	0.249	0.015	0.012	0.002	0.000				1398.74	
27	0.7290	1172.4	1193.1		1.104	4.004	68.898	22.335	3.262	0.131	0.239	0.014	0.012	0.001	0.000				1397.38	
28	0.7290	1172.9	1193.6		1.089	3.995	68.975	22.211	3.318	0.135	0.249	0.014	0.012	0.002	0.000				1398.00	
29	0.7290	1172.7	1193.5		1.086	4.002	68.994	22.169	3.340	0.134	0.242	0.017	0.014	0.001	0.000				1397.89	
30	0.7290	1172.9	1193.6		1.089	3.995	68.975	22.211	3.318	0.135	0.249	0.014	0.012	0.002	0.000				1398.00	
31	0.7313	1176.6	1197.4		1.088	3.987	68.624	22.459	3.417	0.139	0.256	0.015	0.013	0.001	0.000				1400.20	
AVG	0.7297	1174.0	1194.3		1.090	4.017	68.899	22.180	3.409	0.132	0.243	0.015	0.012	0.002	0.000				1398.13	

*Zone all*

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	0602230	<b>Specific Gravity:</b>	0.7306
<b>GQ Source Name:</b>	WATFORD CITY BORDER	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	8/10/2008 9:00:00 AM	<b>Dry Heat Value:</b>	1131.31
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	1111.62
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	1131.31
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	68.283		
C2	Ethane	18.194		4.851
C3	Propane	3.760	1.034	1.033
IC4	Iso-Butane	0.203	0.066	0.066
NC4	N-Butane	0.375	0.118	0.118
IC5	Iso-Pentane	0.030	0.011	0.011
NC5	N-Pentane	0.030	0.011	0.011
C6+	Hexanes Plus	0.008	0.004	0.003
CO2	Carbon Dioxide	0.766		
N2	Nitrogen	8.349		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		99.998	1.244	6.093

**Sample Date:** 7/31/2008 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler

**Sample Remarks:** Zone 25  
**Analysis Remarks:** \_\_\_\_\_

**GQ Source Daily Summary**

August 2008

Number: 163

Name: NORTH TIOGA MINOT

Pressure Base: 14.730

Temperature Base:

Contract Day: 1      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	Crit'herm
1	0.6977	1137.4	1157.6		0.629	3.915	73.648	19.191	2.367	0.081	0.144	0.009	0.007	0.009					1385.87	
2	0.6956	1135.2	1155.3		0.606	3.892	73.891	19.142	2.231	0.076	0.137	0.008	0.007	0.010					1385.24	
3	0.6956	1134.4	1154.5		0.610	3.941	73.845	19.178	2.178	0.080	0.144	0.008	0.007	0.009					1384.16	
4	0.6942	1134.2	1154.3		0.591	3.846	74.119	19.038	2.155	0.081	0.145	0.009	0.007	0.010					1385.38	
5	0.6953	1134.9	1155.0		0.619	3.862	73.975	19.078	2.222	0.079	0.142	0.008	0.007	0.008					1385.12	
6	0.6947	1133.3	1153.4		0.618	3.906	74.077	18.946	2.205	0.080	0.144	0.009	0.007	0.008					1383.78	
7	0.6948	1133.5	1153.5		0.622	3.899	74.047	18.996	2.182	0.082	0.148	0.009	0.007	0.008					1383.87	
8	0.6857	1127.4	1147.4		0.538	3.534	75.862	17.699	2.081	0.092	0.161	0.013	0.012	0.009					1385.67	
9	0.6817	1123.3	1143.2		0.507	3.463	76.426	17.428	1.916	0.087	0.144	0.011	0.010	0.009					1384.57	
10	0.6814	1122.8	1142.6		0.501	3.473	76.552	17.246	1.958	0.091	0.148	0.011	0.011	0.008					1384.24	
11	0.6804	1121.1	1140.9		0.492	3.498	76.702	17.112	1.933	0.088	0.145	0.011	0.011	0.008					1383.15	
12	0.6811	1122.2	1142.1		0.489	3.498	76.553	17.259	1.945	0.085	0.140	0.011	0.010	0.009					1383.84	
13	0.6843	1126.4	1146.4		0.493	3.537	76.254	17.160	2.291	0.088	0.146	0.011	0.011	0.009					1385.78	
14	0.6766	1119.4	1139.2		0.436	3.329	77.497	16.496	1.979	0.088	0.143	0.012	0.011	0.009					1384.91	
15	0.6829	1126.3	1146.2		0.461	3.460	76.243	17.574	1.997	0.087	0.144	0.011	0.011	0.011					1387.05	
16	0.6894	1131.2	1151.3		0.494	3.720	74.944	18.520	2.081	0.077	0.133	0.009	0.008	0.013					1386.58	
17	0.6944	1134.1	1154.2		0.546	3.941	74.045	19.019	2.213	0.074	0.135	0.008	0.007	0.011					1385.03	
18	0.6701	1109.1	1128.8		0.198	3.708	77.394	17.441	1.164	0.026	0.047	0.003	0.003	0.018					1378.93	
19	0.6575	1103.2	1122.7		0.099	3.036	80.052	15.534	1.132	0.046	0.065	0.007	0.008	0.020					1384.58	
20	0.6569	1102.0	1121.5		0.101	3.048	80.296	15.174	1.223	0.048	0.071	0.008	0.009	0.023					1383.70	
21	0.6532	1098.7	1118.1		0.082	2.924	81.168	14.398	1.229	0.062	0.085	0.009	0.011	0.031					1383.50	
22	0.6490	1093.6	1113.0		0.093	2.825	81.694	14.245	0.981	0.055	0.073	0.009	0.010	0.015					1381.55	
23	0.6488	1093.7	1113.1		0.091	2.801	81.733	14.254	0.954	0.056	0.076	0.009	0.010	0.016					1381.92	
24	0.6484	1092.1	1111.5		0.090	2.860	81.788	14.158	0.938	0.056	0.075	0.009	0.010	0.017					1380.35	
25	0.6515	1093.6	1113.0		0.104	3.042	81.193	14.480	1.031	0.049	0.068	0.008	0.008	0.018					1378.94	
26	0.6484	1089.7	1109.0		0.091	3.011	81.785	14.002	0.971	0.054	0.072	0.008	0.009	0.015					1377.25	
27	0.6476	1092.5	1111.9		0.093	2.759	81.931	14.136	0.917	0.056	0.074	0.009	0.010	0.014					1381.68	
28	0.6500	1097.5	1116.9		0.138	2.615	81.977	13.808	1.219	0.084	0.115	0.014	0.015	0.015					1385.32	
29	0.6646	1103.2	1122.8		0.238	3.482	79.106	15.528	1.432	0.070	0.108	0.010	0.011	0.013					1377.27	
30	0.6686	1106.5	1126.1		0.287	3.581	78.732	15.404	1.722	0.091	0.143	0.014	0.014	0.012					1377.26	
31	0.6745	1115.2	1134.9		0.373	3.483	77.566	16.602	1.727	0.083	0.134	0.011	0.011	0.010					1381.88	
AVG	0.6740	1116.0	1135.5		0.365	3.416	77.583	16.718	1.696	0.073	0.118	0.010	0.009	0.013					1383.17	

*Zone 261*

**GQ Source Daily Summary**

August 2008

Number: 091  
Name: MINOT

Pressure Base: 14.730

Temperature Base:

Contract Day: 1 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	Gr1therm
1	0.6954	1132.1	1152.1		0.593	4.086	73.878	19.005	2.189	0.079	0.143	0.007	0.005	0.016	0.000				1381.57	
2	0.6972	1134.1	1154.1		0.616	4.098	73.561	19.251	2.231	0.077	0.140	0.006	0.005	0.015	0.000				1382.24	
3	0.6973	1132.5	1152.5		0.630	4.182	73.547	19.162	2.237	0.077	0.140	0.007	0.005	0.015	0.000				1380.20	
4	0.7007	1136.1	1156.2		0.653	4.245	73.094	19.314	2.435	0.083	0.150	0.007	0.005	0.014	0.000				1381.25	
5	0.6983	1133.2	1153.3		0.624	4.236	73.372	19.259	2.259	0.079	0.143	0.007	0.005	0.016	0.000				1380.16	
6	0.6997	1136.2	1156.3		0.632	4.180	73.195	19.393	2.337	0.085	0.152	0.007	0.005	0.015	0.000				1382.31	
7	0.6981	1134.4	1154.4		0.616	4.160	73.478	19.182	2.302	0.084	0.151	0.007	0.005	0.014	0.000				1381.74	
8	0.7000	1135.7	1155.8		0.648	4.205	73.208	19.276	2.402	0.085	0.151	0.007	0.005	0.012	0.000				1381.54	
9	0.6992	1134.9	1155.0		0.642	4.192	73.364	19.152	2.380	0.087	0.156	0.007	0.006	0.013	0.000				1381.28	
10	0.6993	1134.9	1155.0		0.646	4.193	73.329	19.196	2.365	0.088	0.158	0.007	0.006	0.011	0.000				1381.22	
11	0.6902	1129.0	1148.9		0.562	3.833	75.083	17.987	2.242	0.095	0.165	0.010	0.009	0.012	0.000				1382.94	
12	0.6869	1125.3	1145.2		0.532	3.796	75.591	17.676	2.126	0.093	0.154	0.009	0.009	0.014	0.000				1381.70	
13	0.6861	1123.3	1143.2		0.527	3.843	75.753	17.466	2.129	0.095	0.155	0.010	0.009	0.013	0.000				1380.17	
14	0.6848	1122.1	1141.9		0.514	3.816	75.965	17.342	2.085	0.093	0.152	0.010	0.009	0.014	0.000				1379.93	
15	0.6884	1124.8	1144.7		0.528	3.967	75.344	17.672	2.215	0.091	0.151	0.009	0.008	0.014	0.000				1379.65	
16	0.6891	1128.0	1148.0		0.512	3.853	75.537	17.296	2.517	0.095	0.156	0.010	0.010	0.015	0.000				1382.99	
17	0.6844	1124.1	1144.0		0.478	3.706	76.210	17.079	2.240	0.096	0.157	0.010	0.010	0.014	0.000				1382.84	
18	0.6892	1128.5	1148.5		0.517	3.829	75.267	17.841	2.259	0.095	0.159	0.010	0.009	0.015	0.000				1383.48	
19	0.6992	1136.3	1156.4		0.567	4.223	73.277	19.279	2.400	0.081	0.144	0.007	0.006	0.017	0.000				1382.98	
20	0.6974	1133.7	1153.7		0.568	4.214	73.517	19.174	2.272	0.081	0.145	0.007	0.006	0.016	0.000				1381.54	
21	0.6931	1126.4	1146.3		0.459	4.418	74.046	18.733	2.125	0.070	0.124	0.005	0.004	0.018	0.000				1376.96	
22	0.6756	1112.9	1132.6		0.208	3.977	76.671	17.505	1.501	0.042	0.068	0.002	0.002	0.024	0.000				1377.99	
23	0.6892	1128.5	1148.5		0.517	3.829	75.267	17.841	2.259	0.095	0.159	0.010	0.009	0.015	0.000				1383.48	
24	0.6892	1128.5	1148.5		0.517	3.829	75.267	17.841	2.259	0.095	0.159	0.010	0.009	0.015	0.000				1376.44	
25	0.6590	1098.0	1117.4		0.124	3.456	80.029	14.855	1.340	0.063	0.088	0.008	0.009	0.028	0.000				1376.88	
26	0.6587	1098.0	1117.5		0.130	3.411	80.083	14.849	1.330	0.067	0.094	0.008	0.008	0.020	0.000				1376.44	
27	0.6592	1097.9	1117.4		0.126	3.473	79.971	14.893	1.342	0.065	0.094	0.007	0.008	0.021	0.000				1376.19	
28	0.6606	1098.2	1117.6		0.135	3.577	79.716	14.986	1.403	0.061	0.085	0.006	0.007	0.023	0.000				1375.02	
29	0.6586	1094.9	1114.3		0.126	3.598	80.110	14.606	1.370	0.064	0.089	0.006	0.008	0.023	0.000				1373.05	
30	0.6590	1097.6	1117.0		0.135	3.462	80.062	14.774	1.360	0.069	0.102	0.008	0.009	0.020	0.000				1375.98	
31	0.6600	1102.0	1121.5		0.136	3.276	80.287	14.420	1.606	0.091	0.141	0.012	0.013	0.018	0.000				1380.53	
Avg	0.6837	1121.0	1141.1		0.432	3.890	75.943	17.492	2.001	0.079	0.131	0.008	0.007	0.018	0.000				1380.08	

*Zone 262*

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	2501030	<b>Specific Gravity:</b>	0.6695
<b>GQ Source Name:</b>	LIGNITE PLANT	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	8/10/2008 9:00:00 AM	<b>Dry Heat Value:</b>	1144.97
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	1125.04
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	1144.97
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	77.382		
C2	Ethane	18.500		4.933
C3	Propane	1.126	0.310	0.309
IC4	Iso-Butane	0.000	0.000	0.000
NC4	N-Butane	0.001	0.000	0.000
IC5	Iso-Pentane	0.000	0.000	0.000
NC5	N-Pentane	0.000	0.000	0.000
C6+	Hexanes Plus	0.067	0.031	0.027
CO2	Carbon Dioxide	0.091		
N2	Nitrogen	2.805		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		99.971	0.340	5.270

**Sample Date:** 7/31/2008 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler

**Sample Remarks:** Zone 263

**Analysis Remarks:**

**GQ Source Daily Summary**

August 2008

Number: 043

Name: BISMARCK PLANT CLEVELAND PLANT

Pressure Base: 14.730

Temperature Base:

Contract Day: 1 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	Crittherm
1	0.6962	1131.2	1151.2	1151.2	0.638	4.143	73.797	18.969	2.202	0.076	0.140	0.008	0.007	0.020	0.000				1379.70	
2	0.7002	1135.1	1155.2	1155.2	0.660	4.248	73.248	19.144	2.432	0.082	0.151	0.009	0.008	0.020	0.000				1380.46	
3	0.6981	1133.5	1153.5	1153.5	0.636	4.185	73.518	19.101	2.301	0.077	0.144	0.008	0.007	0.022	0.000				1380.59	
4	0.6982	1133.0	1153.1	1153.1	0.641	4.208	73.456	19.190	2.239	0.081	0.150	0.009	0.007	0.019	0.000				1380.03	
5	0.6982	1135.0	1155.1	1155.1	0.622	4.125	73.580	19.038	2.359	0.085	0.155	0.009	0.008	0.020	0.000				1382.31	
6	0.6990	1134.6	1154.7	1154.7	0.653	4.172	73.450	19.076	2.379	0.083	0.153	0.009	0.007	0.017	0.000				1381.09	
7	0.6985	1133.6	1153.6	1153.6	0.651	4.189	73.575	18.926	2.379	0.087	0.159	0.009	0.008	0.018	0.000				1380.36	
8	0.6987	1133.8	1153.8	1153.8	0.656	4.194	73.503	19.011	2.353	0.087	0.161	0.009	0.008	0.018	0.000				1380.36	
9	0.6902	1128.8	1148.8	1148.8	0.574	3.815	75.206	17.827	2.266	0.096	0.172	0.013	0.012	0.019	0.000				1382.79	
10	0.6860	1123.9	1143.8	1143.8	0.542	3.776	75.806	17.492	2.100	0.091	0.154	0.011	0.010	0.018	0.000				1380.90	
11	0.6859	1123.5	1143.4	1143.4	0.535	3.796	75.870	17.371	2.133	0.094	0.159	0.012	0.011	0.018	0.000				1380.59	
12	0.6846	1121.2	1141.0	1141.0	0.526	3.825	76.089	17.173	2.098	0.092	0.156	0.011	0.011	0.018	0.000				1379.07	
13	0.6854	1121.8	1141.7	1141.7	0.524	3.871	75.915	17.286	2.121	0.091	0.153	0.011	0.011	0.018	0.000				1379.00	
14	0.6893	1126.6	1146.5	1146.5	0.544	3.924	75.439	17.402	2.412	0.092	0.157	0.011	0.011	0.018	0.000				1381.00	
15	0.6819	1120.6	1140.5	1140.5	0.474	3.688	76.696	16.669	2.175	0.095	0.160	0.012	0.012	0.019	0.000				1381.06	
16	0.6871	1126.3	1146.3	1146.3	0.494	3.799	75.607	17.651	2.160	0.090	0.155	0.011	0.011	0.021	0.000				1382.85	
17	0.6935	1131.5	1151.5	1151.5	0.528	4.035	74.370	18.531	2.265	0.082	0.146	0.010	0.009	0.023	0.000				1382.77	
18	0.6968	1133.9	1153.9	1153.9	0.549	4.163	73.681	19.039	2.304	0.082	0.146	0.009	0.009	0.018	0.000				1382.45	
19	0.6994	1136.3	1156.4	1156.4	0.563	4.244	73.266	19.211	2.461	0.081	0.144	0.008	0.007	0.015	0.000				1382.76	
20	0.6993	1135.6	1155.7	1155.7	0.585	4.240	73.232	19.317	2.371	0.079	0.143	0.008	0.007	0.015	0.000				1382.03	
21	0.6837	1118.3	1138.2	1138.2	0.344	4.192	75.404	18.143	1.750	0.050	0.089	0.005	0.004	0.019	0.000				1376.55	
22	0.6680	1108.3	1127.9	1127.9	0.163	3.602	78.305	16.259	1.501	0.052	0.078	0.007	0.007	0.027	0.000				1380.08	
23	0.6636	1103.0	1122.5	1122.5	0.130	3.559	79.382	15.120	1.597	0.065	0.093	0.008	0.009	0.036	0.000				1377.98	
24	0.6576	1095.5	1114.9	1114.9	0.134	3.447	80.247	14.706	1.272	0.062	0.087	0.008	0.009	0.027	0.000				1374.84	
25	0.6571	1095.3	1114.7	1114.7	0.136	3.412	80.457	14.438	1.338	0.071	0.105	0.011	0.012	0.021	0.000				1375.10	
26	0.6567	1094.6	1114.0	1114.0	0.133	3.418	80.437	14.541	1.270	0.067	0.096	0.009	0.010	0.019	0.000				1374.69	
27	0.6585	1096.6	1116.0	1116.0	0.142	3.451	80.177	14.660	1.360	0.070	0.102	0.009	0.010	0.020	0.000				1375.34	
28	0.6596	1095.9	1115.3	1115.3	0.138	3.604	79.882	14.827	1.368	0.059	0.083	0.007	0.008	0.023	0.000				1373.26	
29	0.6577	1095.3	1114.7	1114.7	0.143	3.457	80.270	14.620	1.308	0.066	0.097	0.009	0.010	0.021	0.000				1374.51	
30	0.6553	1106.8	1126.4	1126.4	0.218	3.351	79.457	14.912	1.767	0.095	0.152	0.014	0.015	0.020	0.000				1381.03	
31	0.6703	1102.7	1122.2	1122.2	0.256	4.014	78.373	15.267	1.814	0.089	0.144	0.012	0.013	0.017	0.000				1370.79	
Avg	0.6827	1120.0	1139.6	1139.6	0.436	3.876	76.184	17.255	1.995	0.080	0.135	0.010	0.009	0.020	0.000				1379.24	

*Zone 271*

**GQ Source Daily Summary**

August 2008

Number: 063

Name: CLEVELAND PLANT MAPLETON

Pressure Base: 14.730

Temperature Base:

Contract Day: 1 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	Critherm
1	0.6962	1131.2	1151.2		0.638	4.143	73.797	18.969	2.202	0.076	0.140	0.008	0.007	0.020	0.000				1379.70	
2	0.7002	1135.1	1155.2		0.660	4.248	73.248	19.143	2.432	0.082	0.151	0.009	0.008	0.020	0.000				1380.47	
3	0.6981	1133.5	1153.5		0.636	4.185	73.518	19.101	2.301	0.077	0.144	0.008	0.007	0.022	0.000				1380.59	
4	0.6982	1133.0	1153.1		0.641	4.208	73.455	19.190	2.240	0.081	0.150	0.009	0.007	0.019	0.000				1380.03	
5	0.6982	1135.0	1155.1		0.622	4.125	73.580	19.038	2.359	0.085	0.155	0.009	0.008	0.020	0.000				1382.31	
6	0.6990	1134.6	1154.7		0.653	4.172	73.450	19.076	2.379	0.083	0.153	0.009	0.007	0.017	0.000				1381.09	
7	0.6985	1133.6	1153.6		0.651	4.189	73.575	18.926	2.379	0.087	0.159	0.009	0.008	0.018	0.000				1380.36	
8	0.6987	1133.8	1153.8		0.656	4.194	73.503	19.011	2.353	0.087	0.161	0.009	0.008	0.018	0.000				1380.36	
9	0.6902	1128.8	1148.8		0.574	3.815	75.206	17.828	2.266	0.096	0.172	0.013	0.012	0.019	0.000				1382.79	
10	0.6860	1123.9	1143.8		0.542	3.776	75.805	17.492	2.100	0.091	0.154	0.011	0.010	0.018	0.000				1380.90	
11	0.6859	1123.5	1143.4		0.535	3.796	75.870	17.371	2.133	0.094	0.159	0.012	0.011	0.018	0.000				1380.59	
12	0.6846	1121.2	1141.0		0.526	3.825	76.090	17.173	2.098	0.092	0.156	0.011	0.011	0.018	0.000				1379.07	
13	0.6854	1121.8	1141.7		0.524	3.873	75.915	17.284	2.121	0.091	0.153	0.011	0.011	0.018	0.000				1378.97	
14	0.6893	1126.6	1146.5		0.534	3.924	75.438	17.403	2.412	0.092	0.157	0.011	0.011	0.018	0.000				1381.01	
15	0.6819	1120.6	1140.5		0.474	3.688	76.696	16.670	2.175	0.095	0.160	0.012	0.012	0.019	0.000				1381.06	
16	0.6871	1126.3	1146.3		0.494	3.799	75.608	17.650	2.160	0.090	0.155	0.011	0.011	0.021	0.000				1382.85	
17	0.6935	1131.5	1151.5		0.528	4.035	74.370	18.531	2.265	0.082	0.146	0.010	0.009	0.023	0.000				1382.77	
18	0.6899	1128.7	1148.7		0.493	3.920	74.988	18.138	2.190	0.087	0.148	0.009	0.008	0.017	0.000				1382.98	
19	0.6992	1136.3	1156.4		0.567	4.223	73.277	19.279	2.400	0.081	0.144	0.007	0.006	0.017	0.000				1382.98	
20	0.6947	1059.1	1077.8		0.517	8.589	72.995	15.699	1.989	0.064	0.116	0.007	0.005	0.020	0.000				1293.14	
21	0.6931	1126.4	1146.3		0.459	4.418	74.046	18.733	2.125	0.070	0.124	0.005	0.004	0.018	0.000				1376.96	
22	0.6756	1112.9	1132.6		0.208	3.977	76.671	17.505	1.501	0.042	0.068	0.002	0.002	0.024	0.000				1377.99	
23	0.6658	1107.7	1127.3		0.125	3.500	78.731	15.983	1.490	0.053	0.079	0.006	0.006	0.027	0.000				1381.53	
24	0.6646	1105.4	1124.9		0.117	3.542	79.154	15.375	1.610	0.063	0.090	0.007	0.007	0.035	0.000				1379.86	
25	0.6590	1098.0	1117.4		0.124	3.456	80.029	14.855	1.340	0.063	0.088	0.008	0.009	0.028	0.000				1376.44	
26	0.6587	1098.0	1117.5		0.130	3.411	80.083	14.849	1.330	0.067	0.094	0.008	0.008	0.020	0.000				1376.88	
27	0.6592	1097.9	1117.4		0.126	3.473	79.971	14.893	1.342	0.065	0.094	0.007	0.008	0.021	0.000				1376.19	
28	0.6606	1098.2	1117.6		0.135	3.577	79.716	14.986	1.403	0.061	0.085	0.006	0.007	0.023	0.000				1375.02	
29	0.6586	1094.9	1114.3		0.126	3.598	80.110	14.606	1.370	0.064	0.089	0.007	0.008	0.023	0.000				1373.05	
30	0.6590	1097.6	1117.0		0.135	3.462	80.062	14.774	1.360	0.069	0.102	0.008	0.009	0.020	0.000				1375.98	
31	0.6600	1102.0	1121.5		0.136	3.276	80.287	14.420	1.606	0.091	0.141	0.012	0.013	0.018	0.000				1380.53	
Avg	0.6830	1120.0	1140.2		0.430	3.872	76.122	17.336	1.991	0.079	0.133	0.009	0.008	0.020	0.000				1379.77	

*Zone 272*

**GQ Source Daily Summary**

August 2008

Number: 061

Pressure Base: 14.730

Name: CLEVELAND PLANT GRAFTON

Temperature Base:

Contract Day: 1 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	Crittherm
1	0.6962	1131.2	1151.2		0.638	4.143	73.797	18.969	2.202	0.076	0.140	0.008	0.007	0.020	0.000				1379.70	
2	0.7002	1135.1	1155.2		0.660	4.247	73.248	19.143	2.432	0.082	0.151	0.009	0.008	0.020	0.000				1380.47	
3	0.6981	1133.5	1153.5		0.636	4.185	73.518	19.101	2.301	0.077	0.144	0.008	0.007	0.022	0.000				1380.59	
4	0.6982	1133.0	1153.1		0.641	4.208	73.455	19.190	2.240	0.081	0.150	0.009	0.007	0.019	0.000				1380.03	
5	0.6982	1135.0	1155.1		0.622	4.125	73.581	19.037	2.359	0.085	0.155	0.009	0.008	0.020	0.000				1382.31	
6	0.6990	1134.6	1154.7		0.653	4.172	73.448	19.078	2.379	0.083	0.153	0.009	0.007	0.017	0.000				1381.10	
7	0.6985	1133.6	1153.6		0.651	4.189	73.575	18.926	2.379	0.087	0.159	0.009	0.008	0.018	0.000				1380.36	
8	0.6987	1133.8	1153.8		0.656	4.194	73.503	19.011	2.353	0.087	0.161	0.009	0.008	0.018	0.000				1380.36	
9	0.6902	1128.8	1148.8		0.574	3.815	75.206	17.828	2.266	0.096	0.172	0.013	0.012	0.019	0.000				1382.79	
10	0.6860	1123.9	1143.8		0.542	3.776	75.805	17.492	2.100	0.091	0.154	0.011	0.010	0.018	0.000				1380.90	
11	0.6859	1123.5	1143.4		0.535	3.796	75.870	17.371	2.133	0.094	0.159	0.012	0.011	0.018	0.000				1380.59	
12	0.6846	1121.2	1141.7		0.526	3.825	76.090	17.173	2.098	0.092	0.156	0.011	0.011	0.018	0.000				1379.07	
13	0.6854	1121.8	1141.7		0.524	3.872	75.915	17.285	2.121	0.091	0.153	0.011	0.011	0.018	0.000				1378.98	
14	0.6893	1126.6	1146.6		0.534	3.923	75.436	17.406	2.412	0.092	0.157	0.011	0.011	0.018	0.000				1381.02	
15	0.6819	1120.6	1140.5		0.474	3.688	76.696	16.669	2.175	0.095	0.160	0.012	0.012	0.019	0.000				1381.06	
16	0.6871	1126.3	1146.3		0.494	3.799	75.607	17.651	2.160	0.090	0.155	0.011	0.011	0.021	0.000				1382.85	
17	0.6935	1131.5	1151.5		0.528	4.035	74.370	18.531	2.265	0.082	0.146	0.010	0.009	0.023	0.000				1381.06	
18	0.6899	1128.7	1148.7		0.493	3.920	74.988	18.137	2.190	0.087	0.148	0.009	0.008	0.017	0.000				1382.77	
19	0.6992	1136.3	1156.4		0.567	4.223	73.277	19.279	2.400	0.081	0.144	0.007	0.006	0.017	0.000				1382.98	
20	0.6974	1133.7	1153.7		0.568	4.214	73.517	19.174	2.272	0.081	0.145	0.007	0.006	0.016	0.000				1382.98	
21	0.6931	1126.4	1146.3		0.459	4.418	74.046	18.733	2.125	0.070	0.124	0.005	0.004	0.018	0.000				1381.54	
22	0.6756	1112.9	1132.6		0.208	3.977	76.671	17.505	1.501	0.042	0.068	0.002	0.002	0.024	0.000				1376.96	
23	0.6658	1107.7	1127.3		0.125	3.500	78.731	15.983	1.490	0.053	0.079	0.006	0.006	0.027	0.000				1377.99	
24	0.6646	1105.4	1124.9		0.117	3.542	79.154	15.375	1.610	0.063	0.090	0.007	0.007	0.035	0.000				1381.53	
25	0.6590	1098.0	1117.4		0.124	3.456	80.029	14.855	1.340	0.063	0.088	0.008	0.009	0.028	0.000				1379.86	
26	0.6587	1098.0	1117.5		0.130	3.411	80.083	14.849	1.330	0.067	0.094	0.008	0.008	0.020	0.000				1376.44	
27	0.6592	1097.9	1117.4		0.126	3.473	79.971	14.893	1.342	0.065	0.094	0.007	0.008	0.021	0.000				1376.88	
28	0.6606	1098.2	1117.6		0.135	3.577	79.716	14.986	1.403	0.061	0.085	0.006	0.007	0.023	0.000				1376.19	
29	0.6586	1094.9	1114.3		0.126	3.598	80.110	14.606	1.370	0.064	0.089	0.007	0.008	0.023	0.000				1375.02	
30	0.6590	1097.6	1117.0		0.135	3.462	80.062	14.774	1.360	0.069	0.102	0.008	0.009	0.020	0.000				1373.05	
31	0.6600	1102.0	1121.5		0.136	3.276	80.287	14.420	1.606	0.091	0.141	0.012	0.013	0.018	0.000				1375.98	
Avg	0.6830	1120.0	1140.2		0.430	3.872	76.121	17.336	1.991	0.079	0.133	0.009	0.008	0.020	0.000				1379.77	

*Zone 273*

**GQ Source Daily Summary**

August 2008

Number: 041

Pressure Base: 14.730

Name: BISMARCK PLANT DICKINSON PLANT

Temperature Base:

Contract Day: 1 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	Critherm
1	0.6963	1131.4	1151.4		0.638	4.142	73.781	18.979	2.207	0.076	0.141	0.008	0.007	0.020	0.000				1379.81	
2	0.7004	1135.3	1155.4		0.661	4.248	73.226	19.156	2.437	0.082	0.152	0.009	0.008	0.020	0.000				1380.56	
3	0.6983	1133.7	1153.8		0.637	4.181	73.495	19.121	2.306	0.078	0.144	0.008	0.007	0.023	0.000				1380.78	
4	0.6982	1133.2	1153.3		0.641	4.206	73.442	19.203	2.241	0.081	0.151	0.009	0.007	0.019	0.000				1380.13	
5	0.6984	1135.1	1155.2		0.623	4.125	73.561	19.050	2.364	0.085	0.155	0.009	0.008	0.021	0.000				1382.40	
6	0.6991	1134.7	1154.8		0.653	4.173	73.436	19.086	2.381	0.084	0.153	0.009	0.007	0.018	0.000				1381.16	
7	0.6986	1133.7	1153.8		0.651	4.187	73.559	18.939	2.382	0.087	0.159	0.009	0.008	0.018	0.000				1380.46	
8	0.6989	1134.0	1154.1		0.656	4.193	73.485	19.024	2.357	0.088	0.162	0.009	0.008	0.019	0.000				1380.48	
9	0.6905	1129.4	1149.4		0.575	3.812	75.160	17.857	2.281	0.097	0.174	0.013	0.012	0.019	0.000				1383.14	
10	0.6862	1124.1	1144.0		0.543	3.776	75.780	17.512	2.103	0.091	0.155	0.011	0.010	0.019	0.000				1381.00	
11	0.6861	1123.8	1143.7		0.536	3.795	75.847	17.389	2.136	0.095	0.160	0.012	0.011	0.019	0.000				1380.71	
12	0.6848	1121.5	1141.3		0.528	3.826	76.052	17.201	2.104	0.093	0.157	0.011	0.011	0.018	0.000				1379.21	
13	0.6856	1122.0	1141.8		0.525	3.874	75.894	17.299	2.124	0.091	0.153	0.011	0.011	0.019	0.000				1379.03	
14	0.6895	1127.1	1147.1		0.536	3.909	75.407	17.433	2.427	0.091	0.156	0.011	0.010	0.019	0.000				1381.44	
15	0.6821	1120.7	1140.6		0.476	3.690	76.681	16.675	2.180	0.096	0.160	0.012	0.012	0.019	0.000				1381.07	
16	0.6873	1126.6	1146.5		0.495	3.798	75.585	17.667	2.165	0.090	0.156	0.011	0.011	0.022	0.000				1382.99	
17	0.6934	1131.3	1151.3		0.529	4.036	74.391	18.509	2.265	0.082	0.146	0.010	0.009	0.024	0.000				1382.65	
18	0.6229	1014.7	1032.7		0.492	4.577	86.903	7.020	0.930	0.027	0.047	0.001	0.003	0.001	0.000				1308.39	
19	0.6366	1036.6	1055.0		0.563	4.423	84.626	8.993	1.265	0.044	0.075	0.005	0.004	0.002	0.000				1322.16	
20	0.6358	1031.2	1049.5		0.647	4.547	84.829	8.552	1.282	0.045	0.079	0.004	0.003	0.002	0.000				1316.17	
21	0.6400	1038.7	1057.1		0.614	4.535	84.097	9.242	1.374	0.047	0.083	0.004	0.003	0.002	0.000				1321.34	
22	0.6387	1038.4	1056.8		0.607	4.444	84.281	9.229	1.307	0.045	0.080	0.004	0.003	0.001	0.000				1322.28	
23	0.6424	1046.1	1064.7		0.496	4.488	83.558	9.893	1.414	0.052	0.091	0.005	0.004	0.001	0.000				1328.30	
24	0.6436	1047.9	1066.5		0.490	4.498	83.256	10.224	1.393	0.048	0.083	0.004	0.003	0.001	0.000				1329.38	
25	0.6439	1049.1	1067.7		0.458	4.504	83.174	10.323	1.407	0.047	0.079	0.004	0.003	0.001	0.000				1330.53	
26	0.6364	1033.7	1052.0		0.616	4.498	84.780	8.668	1.295	0.050	0.080	0.005	0.004	0.004	0.000				1318.65	
27	0.6532	1082.5	1101.6		0.251	3.658	81.231	13.369	1.312	0.060	0.088	0.007	0.006	0.017	0.000				1362.93	
28	0.6606	1098.2	1117.6		0.135	3.578	79.717	14.986	1.403	0.061	0.085	0.006	0.007	0.023	0.000				1375.02	
29	0.6586	1094.9	1114.3		0.126	3.598	80.110	14.606	1.370	0.064	0.089	0.006	0.007	0.023	0.000				1373.05	
30	0.6590	1097.6	1117.0		0.135	3.462	80.062	14.774	1.360	0.069	0.102	0.008	0.009	0.020	0.000				1375.98	
31	0.6600	1102.0	1121.5		0.136	3.275	80.288	14.420	1.606	0.091	0.141	0.012	0.013	0.018	0.000				1380.53	
Avg	0.6711	1097.0	1116.5		0.505	4.066	78.377	14.981	1.844	0.072	0.124	0.008	0.007	0.015	0.000				1362.64	

Zone 28

**GQ Source Daily Summary**

August 2008

Number: 271

Name: DICKINSON BORDER

Pressure Base: 14.730

Temperature Base:

Contract Day: 1 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	Critherm
1	0.6143	1026.1	1044.3		0.792	2.600	89.503	6.005	0.912	0.085	0.072	0.003	0.000	0.029	0.000				1332.36	
2	0.6092	1021.1	1039.1		0.888	2.278	90.662	5.112	0.870	0.089	0.070	0.001	0.000	0.030	0.000				1331.34	
3	0.6055	1014.7	1032.7		0.778	2.487	91.146	4.653	0.749	0.087	0.067	0.003	0.000	0.030	0.000				1327.09	
4	0.6130	1028.5	1046.7		0.783	2.336	89.883	5.977	0.905	0.095	0.078	0.004	0.000	0.038	0.000				1336.95	
5	0.6132	1030.2	1048.4		0.908	2.062	89.969	5.975	0.875	0.093	0.077	0.004	0.000	0.038	0.000				1338.92	
6	0.6120	1028.3	1046.5		0.959	1.995	90.276	5.685	0.862	0.087	0.081	0.005	0.000	0.040	0.000				1337.67	
7	0.6207	1022.1	1040.2		0.839	2.522	90.022	5.619	0.809	0.082	0.069	0.004	0.000	0.035	0.000				1330.01	
8	0.6259	1022.0	1040.1		0.376	4.613	87.197	6.826	0.921	0.022	0.034	0.000	0.000	0.011	0.000				1309.13	
9	0.6259	1022.0	1040.1		0.401	4.545	86.252	7.736	0.990	0.024	0.040	0.000	0.000	0.011	0.000				1314.61	
10	0.6221	1016.8	1034.8		0.447	4.428	87.051	7.074	0.918	0.025	0.046	0.000	0.000	0.011	0.000				1311.96	
11	0.6213	1012.2	1030.1		0.568	4.463	87.199	6.834	0.862	0.021	0.042	0.000	0.000	0.011	0.000				1306.87	
12	0.6203	1009.7	1027.6		0.575	4.501	87.418	6.599	0.834	0.021	0.040	0.000	0.000	0.011	0.000				1304.70	
13	0.6180	1007.5	1025.4		0.626	4.336	87.970	6.171	0.822	0.022	0.042	0.000	0.000	0.012	0.000				1304.34	
14	0.6179	1009.6	1027.5		0.509	4.379	87.920	6.237	0.879	0.023	0.042	0.000	0.000	0.011	0.000				1307.12	
15	0.6235	1014.0	1032.0		0.578	4.535	86.903	6.951	0.942	0.028	0.053	0.000	0.000	0.011	0.000				1306.91	
16	0.6214	1013.8	1031.8		0.531	4.420	87.168	6.970	0.839	0.021	0.041	0.000	0.000	0.010	0.000				1308.86	
17	0.6210	1011.6	1029.5		0.536	4.506	87.325	6.656	0.896	0.025	0.047	0.000	0.000	0.010	0.000				1306.45	
18	0.6243	1017.7	1035.7		0.511	4.483	86.698	7.262	0.961	0.027	0.048	0.000	0.000	0.010	0.000				1310.84	
19	0.6363	1035.9	1054.3		0.588	4.385	84.694	8.960	1.248	0.042	0.073	0.000	0.000	0.010	0.000				1321.67	
20	0.6368	1033.0	1051.3		0.669	4.486	84.712	8.709	1.294	0.044	0.077	0.000	0.000	0.010	0.000				1317.45	
21	0.6398	1039.4	1057.8		0.617	4.460	84.132	9.284	1.370	0.046	0.080	0.000	0.000	0.010	0.000				1322.43	
22	0.6392	1039.1	1057.5		0.607	4.434	84.205	9.295	1.323	0.044	0.080	0.000	0.000	0.011	0.000				1322.73	
23	0.6421	1046.2	1064.7		0.498	4.437	83.631	9.879	1.403	0.050	0.089	0.000	0.000	0.012	0.000				1328.75	
24	0.6431	1047.9	1066.5		0.478	4.457	83.339	10.213	1.378	0.046	0.080	0.000	0.000	0.010	0.000				1329.93	
25	0.6441	1049.5	1068.0		0.480	4.453	83.174	10.342	1.416	0.046	0.079	0.000	0.000	0.010	0.000				1330.84	
26	0.6341	1030.8	1049.1		0.653	4.390	85.236	8.339	1.242	0.048	0.077	0.000	0.000	0.013	0.000				1317.42	
27	0.6300	1028.6	1046.8		0.615	4.196	85.950	7.981	1.125	0.047	0.072	0.000	0.000	0.015	0.000				1318.84	
28	0.6329	1034.4	1052.9		0.674	4.023	85.529	8.440	1.190	0.051	0.077	0.000	0.000	0.015	0.000				1323.31	
29	0.6204	1017.3	1035.3		0.548	4.088	87.604	6.725	0.929	0.035	0.056	0.000	0.000	0.017	0.000				1314.35	
30	0.6366	1041.2	1059.6		0.484	4.251	84.536	9.372	1.236	0.041	0.069	0.000	0.000	0.012	0.000				1328.01	
31	0.6219	1023.1	1041.3		0.564	3.693	87.673	6.799	1.016	0.062	0.071	0.000	0.000	0.022	0.000				1320.35	
Avg	0.6249	1025.0	1043.5		0.619	3.911	86.935	7.374	1.033	0.048	0.063	0.001	0.000	0.017	0.000				1320.07	

*Zone 31*

**GQ Source Daily Summary**

August 2008

Number: 051

Pressure Base: 14.730

Name: CABIN CREEK DICKINSON PLANT

Temperature Base:

Contract Day: 1 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	Crit/therm
1	0.6062	1018.4	1036.4		0.982	2.017	91.541	4.375	0.838	0.103	0.084	0.023	0.012	0.024	0.000				1331.18	
2	0.6060	1014.9	1032.9		0.796	2.494	91.168	4.354	0.791	0.086	0.067	0.018	0.010	0.017	0.000				1326.86	
3	0.6084	1018.8	1036.9		0.825	2.439	90.908	4.712	0.864	0.101	0.085	0.024	0.013	0.027	0.000				1329.31	
4	0.6111	1025.0	1043.1		0.907	2.197	90.463	5.321	0.869	0.097	0.082	0.024	0.014	0.027	0.000				1334.35	
5	0.6096	1023.0	1041.1		0.991	2.049	90.884	4.974	0.846	0.102	0.086	0.025	0.015	0.030	0.000				1333.39	
6	0.6087	1022.2	1040.3		0.988	2.015	91.063	4.848	0.827	0.103	0.086	0.025	0.015	0.030	0.000				1333.34	
7	0.6160	1011.3	1029.3		0.550	4.035	88.528	5.895	0.867	0.048	0.053	0.009	0.006	0.009	0.000				1311.41	
8	0.6192	1008.1	1026.0		0.387	4.778	87.543	6.291	0.929	0.026	0.041	0.003	0.003	0.001	0.000				1303.88	
9	0.6253	1018.5	1036.5		0.427	4.568	86.507	7.248	1.052	0.034	0.056	0.003	0.004	0.001	0.000				1310.72	
10	0.6179	1005.7	1023.5		0.537	4.580	87.885	6.096	0.823	0.025	0.047	0.003	0.003	0.001	0.000				1302.07	
11	0.6197	1005.8	1023.6		0.595	4.651	87.608	6.206	0.860	0.025	0.047	0.003	0.004	0.001	0.000				1300.35	
12	0.6166	1001.4	1019.2		0.639	4.563	88.249	5.659	0.806	0.028	0.049	0.003	0.004	0.001	0.000				1297.89	
13	0.6135	999.2	1016.9		0.537	4.566	88.818	5.140	0.861	0.025	0.046	0.003	0.003	0.001	0.000				1298.21	
14	0.6146	999.4	1017.1		0.546	4.641	88.704	5.075	0.935	0.033	0.058	0.004	0.004	0.001	0.000				1297.33	
15	0.6198	1006.7	1024.5		0.568	4.657	87.545	6.292	0.854	0.027	0.049	0.003	0.004	0.001	0.000				1301.26	
16	0.6162	1001.8	1019.6		0.560	4.622	88.273	5.633	0.823	0.029	0.053	0.003	0.004	0.001	0.000				1298.82	
17	0.6190	1005.2	1023.0		0.534	4.713	87.681	6.139	0.849	0.027	0.049	0.003	0.004	0.001	0.000				1300.34	
18	0.6308	1025.4	1043.5		0.559	4.555	85.703	7.900	1.160	0.042	0.070	0.004	0.005	0.001	0.000				1313.94	
19	0.6293	1020.4	1038.5		0.651	4.586	86.224	7.127	1.276	0.046	0.080	0.005	0.005	0.001	0.000				1308.98	
20	0.6317	1022.2	1040.3		0.674	4.662	85.771	7.461	1.291	0.046	0.083	0.005	0.005	0.001	0.000				1308.85	
21	0.6352	1030.4	1048.6		0.638	4.544	85.048	8.330	1.300	0.046	0.083	0.005	0.004	0.001	0.000				1315.76	
22	0.6373	1034.0	1052.3		0.554	4.647	84.604	8.689	1.356	0.050	0.089	0.005	0.005	0.001	0.000				1318.20	
23	0.6396	1039.2	1057.6		0.530	4.592	84.130	9.224	1.367	0.052	0.092	0.006	0.005	0.001	0.000				1322.34	
24	0.6405	1040.9	1059.3		0.491	4.631	83.884	9.478	1.371	0.049	0.086	0.005	0.005	0.001	0.000				1323.60	
25	0.6411	1041.4	1059.9		0.514	4.621	83.824	9.479	1.416	0.050	0.085	0.005	0.004	0.001	0.000				1323.62	
26	0.6294	1023.9	1042.0		0.663	4.357	86.207	7.433	1.189	0.053	0.082	0.007	0.005	0.003	0.000				1313.45	
27	0.6274	1023.7	1041.8		0.630	4.233	86.467	7.455	1.078	0.049	0.074	0.007	0.005	0.003	0.000				1315.28	
28	0.6291	1026.9	1045.0		0.657	4.157	86.223	7.701	1.115	0.051	0.079	0.008	0.006	0.005	0.000				1317.59	
29	0.6186	1009.7	1027.6		0.480	4.486	87.916	6.028	0.988	0.035	0.060	0.004	0.003	0.000	0.000				1306.48	
30	0.6186	1013.1	1031.0		0.650	4.016	88.372	5.744	1.054	0.060	0.081	0.010	0.006	0.007	0.000				1310.89	
31	0.6179	1010.8	1028.7		0.626	4.126	88.440	5.613	1.042	0.056	0.073	0.010	0.006	0.008	0.000				1308.68	
AVG	0.6218	1018.0	1035.7		0.635	4.061	87.619	6.520	1.022	0.052	0.069	0.009	0.006	0.007	0.000				1313.50	

Zone 30

**GQ Source Daily Summary**

August 2008

Number: 111

Pressure Base: 14.730

Name: LITTLE KNIFE PLANT

Temperature Base:

Contract Day: 1 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	Crit'herm
1	0.6703	1143.6	1163.9		0.000	1.928	77.504	19.125	1.413	0.013	0.017	0.000	0.000	0.001	0.000				1421.53	
2	0.6668	1138.3	1158.4		0.000	1.918	78.214	18.501	1.273	0.032	0.053	0.005	0.004	0.002	0.000				1418.65	
3	0.6635	1133.5	1153.2		0.000	1.908	78.394	18.753	0.922	0.010	0.012	0.000	0.000	0.000	0.000				1416.13	
4	0.6635	1133.1	1153.2		0.000	1.931	78.310	18.890	0.850	0.009	0.011	0.000	0.000	0.000	0.000				1415.70	
5	0.6639	1133.7	1153.8		0.000	1.929	78.196	19.045	0.810	0.009	0.011	0.000	0.000	0.000	0.000				1416.05	
6	0.6680	1139.7	1159.9		0.000	1.951	77.707	19.157	1.163	0.010	0.012	0.000	0.000	0.000	0.000				1419.11	
7	0.6669	1137.6	1157.7		0.000	1.974	77.893	18.986	1.125	0.010	0.013	0.000	0.000	0.000	0.000				1417.69	
8	0.6653	1134.8	1154.9		0.000	1.994	77.949	19.182	0.856	0.009	0.011	0.000	0.000	0.000	0.000				1415.92	
9	0.6654	1135.0	1155.1		0.000	1.989	78.094	18.930	0.929	0.018	0.030	0.004	0.004	0.003	0.000				1416.07	
10	0.6657	1135.9	1156.0		0.000	1.965	77.857	19.315	0.843	0.009	0.011	0.000	0.000	0.000	0.000				1416.88	
11	0.6700	1144.0	1164.3		0.012	1.849	77.493	19.320	1.298	0.011	0.013	0.001	0.001	0.001	0.000				1422.46	
12	0.6687	1141.1	1161.3		0.000	1.929	77.702	19.053	1.292	0.010	0.014	0.000	0.000	0.000	0.000				1420.13	
13	0.6688	1140.4	1160.6		0.000	1.984	77.591	19.182	1.221	0.009	0.012	0.000	0.000	0.000	0.000				1419.12	
14	0.6724	1146.4	1166.7		0.000	1.958	77.222	19.213	1.586	0.009	0.011	0.000	0.000	0.001	0.000				1422.72	
15	0.6775	1153.9	1174.3		0.000	1.971	76.631	19.349	2.023	0.011	0.013	0.000	0.000	0.001	0.000				1426.73	
16	0.6762	1151.8	1172.2		0.000	1.975	76.858	19.162	1.974	0.013	0.017	0.000	0.000	0.001	0.000				1425.48	
17	0.6706	1143.2	1163.4		0.000	1.980	77.639	18.730	1.623	0.012	0.016	0.000	0.000	0.001	0.000				1420.69	
18	0.6724	1146.4	1166.7		0.000	1.945	77.473	18.742	1.814	0.011	0.014	0.000	0.000	0.001	0.000				1422.88	
19	0.6741	1149.4	1169.7		0.000	1.927	77.544	18.264	2.241	0.011	0.014	0.000	0.000	0.001	0.000				1424.68	
20	0.6671	1137.9	1158.0		0.000	1.968	78.452	17.851	1.695	0.014	0.018	0.000	0.000	0.001	0.000				1417.84	
21	0.6672	1138.3	1158.5		0.000	1.960	78.098	18.527	1.389	0.012	0.014	0.000	0.000	0.000	0.000				1418.21	
22	0.6699	1142.7	1163.0		0.000	1.942	77.700	18.788	1.544	0.010	0.014	0.000	0.000	0.001	0.000				1420.86	
23	0.6699	1142.7	1163.0		0.000	1.948	76.453	19.276	2.296	0.013	0.014	0.000	0.000	0.001	0.000				1420.86	
24	0.6797	1157.7	1178.2		0.000	1.959	77.214	18.479	2.323	0.011	0.012	0.000	0.000	0.001	0.000				1429.09	
25	0.6761	1151.9	1172.3		0.000	1.987	78.650	17.767	1.576	0.008	0.011	0.000	0.000	0.001	0.000				1425.70	
26	0.6654	1134.9	1155.0		0.000	1.954	78.669	17.939	1.423	0.006	0.009	0.000	0.000	0.000	0.000				1416.02	
27	0.6645	1134.2	1154.3		0.000	1.954	78.669	17.939	1.423	0.006	0.009	0.000	0.000	0.000	0.000				1415.97	
28	0.6645	1134.2	1154.3		0.000	1.942	77.700	18.788	1.544	0.010	0.014	0.000	0.000	0.001	0.000				1415.97	
29	0.6699	1142.7	1163.0		0.000	1.954	78.669	17.939	1.423	0.006	0.009	0.000	0.000	0.001	0.000				1420.86	
30	0.6645	1134.2	1154.3		0.000	1.954	78.669	17.939	1.423	0.006	0.009	0.000	0.000	0.000	0.000				1415.97	
31	0.6645	1134.2	1154.3		0.000	1.954	78.669	17.939	1.423	0.006	0.009	0.000	0.000	0.000	0.000				1415.97	
AVG	0.6687	1141.0	1160.9		0.000	1.953	77.867	18.691	1.463	0.011	0.014	0.000	0.000	0.001	0.000				1419.63	

Zone 33



## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	1201140	<b>Specific Gravity:</b>	0.5740
<b>GQ Source Name:</b>	EAGLE 8B ND	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	7/1/2008 9:00:00 AM	<b>Dry Heat Value:</b>	974.02
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	957.16
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	974.02
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	95.505		
C2	Ethane	0.281	0.076	0.075
C3	Propane	0.009	0.002	0.002
IC4	Iso-Butane	0.007	0.002	0.002
NC4	N-Butane	0.000	0.000	
IC5	Iso-Pentane	0.000	0.000	
NC5	N-Pentane	0.000	0.000	
C6+	Hexanes Plus	0.000	0.000	0.000
CO2	Carbon Dioxide	0.072		
N2	Nitrogen	4.126		
O2	Oxygen	0.000		
HE	Helium	0.000		
H2	Hydrogen	0.000		
H2S	Hydrogen Sulfide	0.000		
<b>Totals</b>		100.000	0.080	0.080

**Sample Date:** 6/13/2006 9:00:00 AM  
**Sample Type:** Spot  
**Sample Tech:** MG

**Sample Remarks:** Zone 35

**Analysis Remarks:**

<b>NORTH DAKOTA HEATING VALUE ZONES</b>		
<b>ZONES</b>	<b>MEASURING DEVICE</b>	<b>LOCATION</b>
211	Chromatograph	Sidney Area
24	Monthly Sampler	Williston Area
25	Monthly Sampler	Watford City Area
261	Chromatograph	Williston – Tioga – Minot Line
262	Chromatograph	Minot Area
263	Monthly Sampler	Tioga – Portal
264	Monthly Sampler	Williston – Ray
271	Chromatograph	Bismarck – Cleveland
272	Chromatograph	Cleveland – Mapleton
273	Chromatograph	Cleveland – Grafton
28	Chromatograph	Bismarck
31	Chromatograph	Dickinson
32	Chromatograph	Cabin Creek – Dickinson
33	Chromatograph	Killdeer
34	Monthly Sampler	Bowman Area
35	Monthly Sampler	Baker Field – North Dakota

MONTANA DAKOTA UTILITIES CO  
 NORTH DAKOTA  
 HEATING VALUE DATA  
 12 MONTH ACCUMULATIVE AT 14.73 psia, 60 f. DRY

STATE	ZONE	ZONE BOUNDARY	AUG 08	JULY 08	JUNE 08	MAY 08	APR 08	MAR 08	FEB 08	JAN 08	DEC 07	NOV 07	OCT 07	SEPT 07	ZONE
MT/ND	211	Sidney Area	1149	1194	1192	1190	1180	1095	1028	1075	1124	1160	1170	1183	21
ND	24	Williston Area	1184	1189	1189	1195	1187	1160	1173	1181	1192	1195	1194	1190	24
ND	25	Watford City Area	1124	1131	1132	1130	1120	1119	1125	1126	1118	1118	1119	1119	25
ND	261	Williston - Toga - Minot Line	1144	1135	1148	1141	1147	1140	1126	1136	1142	1147	1158	1152	261
ND	262	Minot Area	1146	1141	1147	1144	1155	1140	1127	1136	1143	1149	1159	1153	262
ND	263	Toga - Portal	1132	1145	1141	1132	1127	1125	1130	1129	1132	1128	1129	1131	263
ND	264	Williston - Ray	1185	1189	1189	1189	1167	0	0	0	0	0	0	0	264
ND	271	Bismarck - Cleveland	1116	1140	1146	1151	1138	1086	1053	1059	1063	1105	1158	1153	271
ND	272	Cleveland - Mapleton	1116	1140	1142	1142	1137	1086	1052	1059	1062	1107	1158	1152	272
ND	273	Cleveland - Grafton	1116	1140	1146	1142	1137	1086	1052	1059	1062	1107	1158	1152	273
ND	28	Bismarck	1080	1116	1147	1143	1035	1023	1022	1017	1015	1030	1124	1151	28
ND	31	Dickinson	1026	1044	1040	1032	1023	1022	1021	1016	1014	1023	1023	1017	31
ND/MT	32	Cabin Creek - Dickinson	1022	1036	1027	1031	1019	1020	1019	1014	1012	1021	1020	1013	32
ND	33	Killdeer	1129	1161	1158	1149	1126	1122	1118	1114	1111	1118	1113	1109	33
ND	34	Bowman Area	1172	1179	1170	1165	1158	1161	1165	1174	1182	1189	1175	1175	34
ND	35	Baker Field - North Dakota	976	974	974	976	976	976	976	976	976	976	976	976	35

**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**August 2008**

<b>ZONE</b>	<b>BTU VARIANCE</b>	<b>REASON</b>
28	-31	Receipt from Cabin Creek Area