



# MONTANA-DAKOTA

UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

October 28, 2009

RECEIVED

OCT 30 2009

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 – September 2009

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 October 2009.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our supplier for the month of September 2009. 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 September.

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  
OCT 2009

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
12	314	APPLE VALLEY	271	1.1251
12	327	BISMARCK	28	1.1251
12	343	CARRINGTON	273	1.1260
12	344	CLEVELAND	272	1.1181
12	364	CAVALIER	273	1.1497
12	365	DAWSON	271	1.1171
12	374	FT TOTTEN	273	1.1340
12	375	DEVILS LAKE	273	1.1340
12	379	BARLOW	273	1.1260
12	387	ELDRIDGE	272	1.1260
12	411	GLEN ULLIN	31	1.0767
12	417	GRAFTON	273	1.1577
12	439	HANKINSON	600	1.0768
12	449	JAMESTOWN	272	1.1340
12	463	LANGDON	273	1.1260
12	475	LINTON	802	.9726
12	478	LINCOLN	28	1.1251
12	494	MEDINA	271	1.1171
12	498	MANDAN	28	1.1251
12	524	NEW SALEM	28	1.1013
12	532	NEW ROCKFORD	273	1.1260
12	539	PARK RIVER	273	1.1497
12	574	SANBORN	272	1.1340
12	593	STEELE	271	1.1171
12	598	SHEYENNE	273	1.1340
12	610	TAPPEN	271	1.1171
12	625	VALLEY CITY	272	1.1418
12	629	WALHALLA	273	1.1497
12	647	WILTON	262	1.1032
12	717	SPIRITWOOD	272	1.1340
12	718	FAIRMOUNT	600	1.0746
12	732	MSR SITE	273	1.1260
12	733	PAR SITE	273	1.1260
15	303	ALEXANDER	25	1.0607
15	308	ARNEGARD	25	1.0607

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
OCT 2009

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
15	318	BEACH	32	1.0535
15	319	BELFIELD	32	1.0612
15	323	BERTHOLD	262	1.1032
15	330	BOWMAN	34	1.0769
15	337	BURLINGTON	262	1.1270
15	368	DES LACS	262	1.1111
15	369	DICKINSON	31	1.0690
15	384	EPPING	264	1.1155
15	407	GLADSTONE	31	1.0690
15	413	GOLVA	32	1.0381
15	416	GARRISON	262	1.1111
15	429	HEBRON	31	1.0767
15	459	KILLDEER	33	1.0937
15	469	LEFOR	31	1.0690
15	474	LIGNITE	263	1.0826
15	500	MARMARTH	34	1.0849
15	505	MINOT	262	1.1270
15	510	MOTT	31	1.0690
15	512	MAX	262	1.1032
15	522	NEW ENGLAND	31	1.0612
15	540	PALERMO	262	1.1032
15	558	RAY	264	1.1155
15	561	REGENT	31	1.0690
15	563	RHAME	34	1.0690
15	564	RICHARDTON	31	1.0612
15	568	ROSS	261	1.0671
15	572	RUTHVILLE	262	1.1270
15	583	SENTINEL BUTTE	32	1.0535
15	588	SOUTH HEART	31	1.0612
15	590	SPRINGBROOK	264	1.1155
15	591	STANLEY	261	1.0748
15	605	SURREY	262	1.1270
15	611	TAYLOR	31	1.0612
15	616	TIOGA	261	1.0671
15	619	TURTLE LAKE	262	1.1111

MONTANA-DAKOTA UTILITIES CO.  
Therm Billing Factor  
OCT 2009

Div Nbr	Off Code	City Name	Heat Zone Nbr	Therm Billing Factor
15	620	TRENTON	24	1.1235
15	624	UNDERWOOD	262	1.1111
15	632	WATFORD CITY	25	1.0607
15	636	WHEELLOCK	264	1.1074
15	637	WHITE EARTH	261	1.0748
15	642	WILLISTON	24	1.1235
15	646	WASHBURN	262	1.1191
15	664	RIVERDALE	262	1.1111
15	691	FAIRVIEW	24	1.1235
15	712	MINOT AFB	262	1.1270
15	743	BAKER FIELD	35	.8971

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

# GQ Source Daily Summary

## September 2009

**Number:** 251      **Pressure Base:** 14.730      **Contract Day:** 1  
**Name:** SIDNEY AREA      **Temperature Base:**      **Contract Hour:** 9

Day	Relative Density	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.7067	1168.4	1189.1	0.303	3.377	71.528	22.110	2.515	0.059	0.098	0.005	0.004	0.001	0.000	0.000	0.000	0.000	0.000	1414.58
2	0.6976	1165.5	1186.1	0.042	3.091	72.752	21.793	2.226	0.038	0.053	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1420.15
3	0.6991	1168.0	1188.7	0.040	3.086	72.448	22.080	2.253	0.037	0.051	0.001	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1421.65
4	0.6992	1168.6	1189.2	0.038	3.061	72.476	22.061	2.260	0.041	0.059	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1422.27
5	0.6994	1169.3	1190.0	0.033	3.044	72.492	21.999	2.326	0.041	0.059	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1422.95
6	0.7020	1171.1	1191.9	0.082	3.102	72.223	21.964	2.503	0.053	0.068	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1422.56
7	0.6987	1166.8	1187.4	0.053	3.102	72.430	22.185	2.141	0.038	0.049	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1420.59
8	0.6965	1164.7	1185.3	0.034	3.051	72.770	22.006	2.053	0.035	0.048	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1420.32
9	0.6949	1163.2	1183.8	0.032	3.001	73.098	21.730	2.051	0.036	0.050	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1420.02
10	0.6997	1170.0	1190.8	0.038	3.018	72.429	22.113	2.293	0.047	0.069	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	1423.54
11	0.6988	1168.6	1189.3	0.040	3.021	72.550	22.034	2.245	0.046	0.058	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1422.65
12	0.7025	1174.1	1194.9	0.039	3.028	72.043	22.319	2.441	0.049	0.075	0.003	0.003	0.001	0.000	0.000	0.000	0.000	0.000	1425.71
13	0.7007	1171.9	1192.6	0.038	3.007	72.300	22.156	2.399	0.043	0.062	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1424.71
14	0.6996	1170.2	1190.9	0.035	3.010	72.380	22.216	2.259	0.040	0.057	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.75
15	0.7015	1172.7	1193.5	0.054	3.001	72.301	22.015	2.517	0.045	0.063	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.94
16	0.7008	1170.8	1191.6	0.040	3.075	72.356	21.951	2.461	0.050	0.062	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.32
17	0.7042	1176.0	1196.9	0.028	3.088	71.984	22.023	2.740	0.055	0.077	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1426.27
18	0.7047	1178.1	1199.0	0.050	2.980	72.020	22.005	2.763	0.066	0.107	0.004	0.003	0.001	0.000	0.000	0.000	0.000	0.000	1428.23
19	0.7035	1176.2	1197.0	0.038	3.000	72.247	21.794	2.727	0.069	0.114	0.005	0.005	0.001	0.000	0.000	0.000	0.000	0.000	1427.11
20	0.7035	1175.3	1196.1	0.045	3.043	72.194	21.859	2.665	0.069	0.115	0.005	0.004	0.001	0.000	0.000	0.000	0.000	0.000	1426.03
21	0.7056	1178.5	1199.4	0.052	3.032	71.939	21.987	2.756	0.084	0.135	0.007	0.006	0.001	0.000	0.000	0.000	0.000	0.000	1427.83
22	0.7052	1177.8	1198.6	0.054	3.034	71.892	22.101	2.752	0.062	0.097	0.004	0.004	0.001	0.000	0.000	0.000	0.000	0.000	1427.37
23	0.7019	1172.7	1193.5	0.064	3.022	72.299	21.965	2.488	0.065	0.087	0.004	0.004	0.002	0.000	0.000	0.000	0.000	0.000	1424.54
24	0.7010	1171.4	1192.2	0.052	3.036	72.375	21.960	2.430	0.058	0.083	0.003	0.003	0.001	0.000	0.000	0.000	0.000	0.000	1423.91
25	0.6995	1169.0	1189.7	0.051	3.039	72.623	21.758	2.399	0.050	0.075	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1422.54
26	0.7060	1179.0	1199.9	0.057	3.031	71.724	22.250	2.789	0.060	0.085	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1428.07
27	0.7038	1174.4	1195.2	0.058	3.107	71.918	22.188	2.613	0.047	0.065	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1424.66
28	0.7031	1174.2	1195.0	0.046	3.071	72.004	22.212	2.542	0.050	0.069	0.002	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1425.12
29	0.7008	1170.8	1191.5	0.042	3.068	72.339	21.993	2.455	0.042	0.058	0.001	0.001	0.001	0.000	0.000	0.000	0.000	0.000	1423.36
30	0.7023	1172.5	1193.2	0.038	3.116	71.932	22.469	2.325	0.045	0.067	0.003	0.004	0.002	0.000	0.000	0.000	0.000	0.000	1423.83
AVG	0.7014	1172.0	1192.4	0.054	3.058	72.269	22.043	2.446	0.051	0.074	0.003	0.002	0.001	0.000	0.000	0.000	0.000	0.000	1423.75

*Zone 211*

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	0602330	<b>Specific Gravity:</b>	0.7117
<b>GQ Source Name:</b>	WILLISTON BORDER	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	9/1/2009 9:00:00 AM	<b>Dry Heat Value:</b>	1180.73
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	1160.18
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	1180.73
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	71.703		
C2	Ethane	20.233		5.395
C3	Propane	3.285	0.902	0.902
IC4	Iso-Butane	0.123	0.040	0.040
NC4	N-Butane	0.222	0.070	0.070
IC5	Iso-Pentane	0.011	0.004	0.004
NC5	N-Pentane	0.011	0.004	0.004
C6+	Hexanes Plus	0.000	0.000	0.000
CO2	Carbon Dioxide	0.688		
N2	Nitrogen	3.721		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		99.999	1.021	6.416

**Sample Date:** 9/30/2009 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**Sample Remarks:** Zone 24 & 264  
**Analysis Remarks:**

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	0602230	<b>Specific Gravity:</b>	0.7303
<b>GQ Source Name:</b>	WATFORD CITY BORDER	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	9/1/2009 9:00:00 AM	<b>Dry Heat Value:</b>	1122.76
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	1103.22
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	1122.76
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	68.242		
C2	Ethane	17.637		4.703
C3	Propane	3.854	1.059	1.059
IC4	Iso-Butane	0.200	0.065	0.065
NC4	N-Butane	0.367	0.115	0.115
IC5	Iso-Pentane	0.028	0.010	0.010
NC5	N-Pentane	0.027	0.010	0.010
C6+	Hexanes Plus	0.007	0.003	0.003
CO2	Carbon Dioxide	0.701		
N2	Nitrogen	8.934		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		99.998	1.263	5.965

**Sample Date:** 9/30/2009 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler  
**Sample Remarks:** Zone 25  
**Analysis Remarks:**

# GQ Source Daily Summary

## September 2009

**Number:** 163      **Pressure Base:** 14.730      **Contract Day:** 1  
**Name:** NORTH TIOGA-MINOT      **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	0.6846	1138.2	1158.3	0.285	3.158	76.360	17.590	2.173	0.100	0.246	0.025	0.035	0.030					1399.97	
2	0.6784	1125.3	1145.3	0.344	3.270	76.987	17.329	1.803	0.050	0.124	0.019	0.027	0.047					1390.51	
3	0.6749	1119.4	1139.3	0.356	3.290	77.224	17.283	1.719	0.042	0.074	0.002	0.002	0.009					1386.74	
4	0.6756	1119.0	1138.8	0.364	3.372	77.043	17.401	1.693	0.042	0.073	0.002	0.001	0.008					1385.46	
5	0.6745	1114.7	1134.4	0.318	3.596	77.185	17.114	1.646	0.044	0.081	0.003	0.003	0.010					1381.30	
6	0.6737	1113.0	1132.7	0.318	3.621	77.306	17.001	1.622	0.041	0.076	0.003	0.002	0.010					1380.07	
7	0.6769	1118.7	1138.5	0.345	3.541	76.981	17.156	1.776	0.056	0.117	0.008	0.009	0.010					1383.73	
8	0.6686	1104.8	1124.4	0.251	3.746	78.064	16.416	1.367	0.040	0.090	0.007	0.008	0.011					1375.12	
9	0.6700	1109.6	1129.3	0.279	3.540	77.879	16.739	1.409	0.041	0.088	0.006	0.007	0.012					1379.68	
10	0.6695	1110.9	1130.6	0.263	3.443	77.819	17.005	1.367	0.031	0.058	0.002	0.002	0.010					1381.75	
11	0.6735	1116.6	1136.4	0.316	3.388	77.466	17.064	1.567	0.053	0.116	0.009	0.010	0.012					1384.73	
12	0.6809	1128.3	1148.3	0.322	3.363	75.601	19.214	1.410	0.027	0.049	0.001	0.001	0.011					1391.64	
13	0.6749	1119.4	1139.2	0.339	3.321	76.840	17.992	1.413	0.030	0.052	0.001	0.001	0.010					1386.68	
14	0.6952	1135.7	1155.8	0.592	3.844	74.035	18.965	2.357	0.069	0.118		0.006	0.010					1386.18	
15	0.6709	1113.6	1133.3	0.252	3.430	77.651	17.078	1.477	0.033	0.063	0.002	0.003	0.011					1383.59	
16	0.6697	1111.3	1131.0	0.251	3.454	77.865	16.867	1.460	0.030	0.056	0.002	0.005	0.010					1382.04	
17	0.6681	1109.0	1128.7	0.242	3.453	78.164	16.633	1.382	0.032	0.068	0.005	0.009	0.012					1380.91	
18	0.6667	1106.1	1125.7	0.250	3.492	78.214	16.721	1.238	0.024	0.044	0.001	0.006	0.010					1378.68	
19	0.6747	1118.7	1138.6	0.313	3.376	77.155	17.368	1.666	0.037	0.069	0.003	0.004	0.010					1386.14	
20	0.6746	1119.1	1138.9	0.352	3.290	77.187	17.398	1.658	0.037	0.066	0.003	0.002	0.007					1386.63	
21	0.6861	1138.1	1158.3	0.358	3.189	76.004	17.854	2.215	0.097	0.228	0.020	0.023	0.012					1398.42	
22	0.6669	1108.0	1127.6	0.264	3.372	78.445	16.453	1.294	0.041	0.097	0.009	0.011	0.013					1380.83	
23	0.6718	1115.5	1135.2	0.281	3.354	77.507	17.259	1.494	0.033	0.060	0.002	0.002	0.009					1385.05	
24	0.6758	1121.3	1141.2	0.291	3.360	77.042	17.394	1.773	0.044	0.081	0.003	0.003	0.008					1388.12	
25	0.6767	1122.3	1142.1	0.315	3.349	76.846	17.604	1.750	0.043	0.079	0.003	0.002	0.007					1388.39	
26	0.6709	1112.1	1131.8	0.271	3.485	77.623	17.061	1.458	0.032	0.059	0.002	0.002	0.008					1381.86	
27	0.6714	1113.8	1133.5	0.348	3.319	77.558	17.247	1.435	0.032	0.053	0.001	0.000	0.006					1383.36	
28	0.6735	1117.0	1136.8	0.377	3.275	77.265	17.464	1.521	0.035	0.057	0.001	0.000	0.005					1385.20	
29	0.6753	1118.7	1138.5	0.370	3.345	77.242	17.205	1.632	0.057	0.123	0.008	0.010	0.008					1385.46	
30	0.6756	1121.2	1141.1	0.390	3.198	77.047	17.580	1.663	0.043	0.072	0.002	0.001	0.005					1388.20	
Avg	0.6747	1118.0	1137.8	0.321	3.408	77.187	17.315	1.615	0.044	0.088	0.005	0.007	0.011					1385.21	

*Zone 261*

# GQ Source Daily Summary

## September 2009

**Number:** 091      **Pressure Base:** 14.730      **Contract Day:** 1  
**Name:** MINOT      **Temperature Base:**      **Contract Hour:** 9

Day	Relative Density		Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT	
	Wet	Dry	Wet	Dry																	
1	0.7309	1153.1	1173.5	1173.5	0.495	6.284	68.069	21.141	3.454	0.163	0.342	0.022	0.024	0.006	0.000	0.000	0.000	0.000	0.000	1372.65	
2	0.7296	1150.2	1170.5	1170.5	0.510	6.315	68.220	21.041	3.392	0.156	0.318	0.021	0.022	0.005	0.000	0.000	0.000	0.000	0.000	1370.41	
3	0.7267	1149.0	1169.3	1169.3	0.515	6.116	68.314	21.543	3.099	0.130	0.249	0.012	0.015	0.007	0.000	0.000	0.000	0.000	0.000	1371.67	
4	0.7300	1148.0	1168.3	1168.3	0.497	6.510	67.592	21.836	3.173	0.131	0.237	0.008	0.007	0.009	0.000	0.000	0.000	0.000	0.000	1367.45	
5	0.7311	1151.8	1172.2	1172.2	0.542	6.313	67.754	21.602	3.335	0.136	0.269	0.017	0.019	0.013	0.000	0.000	0.000	0.000	0.000	1370.93	
6	0.7275	1147.2	1167.5	1167.5	0.553	6.242	68.066	21.663	3.128	0.118	0.207	0.006	0.004	0.012	0.000	0.000	0.000	0.000	0.000	1368.80	
7	0.7281	1146.6	1166.9	1166.9	0.560	6.322	67.950	21.659	3.167	0.119	0.207	0.006	0.003	0.006	0.000	0.000	0.000	0.000	0.000	1367.57	
8	0.7289	1145.3	1165.6	1165.6	0.563	6.474	67.781	21.647	3.202	0.118	0.202	0.005	0.001	0.006	0.000	0.000	0.000	0.000	0.000	1365.23	
9	0.7298	1144.7	1165.0	1165.0	0.547	6.613	67.631	21.609	3.270	0.117	0.200	0.005	0.001	0.007	0.000	0.000	0.000	0.000	0.000	1363.77	
10	0.7305	1145.6	1165.9	1165.9	0.551	6.627	67.635	21.473	3.347	0.126	0.223	0.007	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1364.05	
11	0.7317	1145.3	1165.6	1165.6	0.543	6.761	67.275	21.785	3.285	0.122	0.213	0.007	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1362.71	
12	0.7340	1148.3	1168.6	1168.6	0.546	6.798	67.110	21.606	3.578	0.126	0.219	0.007	0.004	0.007	0.000	0.000	0.000	0.000	0.000	1363.99	
13	0.7286	1144.4	1164.7	1164.7	0.534	6.544	67.777	21.630	3.188	0.115	0.199	0.005	0.001	0.007	0.000	0.000	0.000	0.000	0.000	1364.49	
14	0.7287	1144.9	1165.2	1165.2	0.539	6.516	67.907	21.415	3.261	0.124	0.199	0.007	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1364.93	
15	0.7307	1144.5	1164.7	1164.7	0.556	6.706	67.424	21.721	3.266	0.116	0.199	0.005	0.002	0.006	0.000	0.000	0.000	0.000	0.000	1362.55	
16	0.7279	1143.3	1163.5	1163.5	0.540	6.541	67.832	21.654	3.110	0.114	0.198	0.005	0.001	0.005	0.000	0.000	0.000	0.000	0.000	1363.75	
17	0.7268	1143.5	1163.7	1163.7	0.542	6.415	68.262	21.198	3.241	0.121	0.208	0.006	0.002	0.006	0.000	0.000	0.000	0.000	0.000	1365.08	
18	0.7325	1148.2	1168.6	1168.6	0.549	6.657	67.219	21.847	3.366	0.125	0.220	0.007	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1365.34	
19	0.7328	1148.1	1168.5	1168.5	0.537	6.704	67.148	21.878	3.379	0.123	0.216	0.006	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1364.99	
20	0.7336	1148.3	1168.7	1168.7	0.539	6.767	67.092	21.757	3.482	0.125	0.220	0.007	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1364.46	
21	0.7298	1145.2	1165.5	1165.5	0.535	6.605	67.622	21.640	3.259	0.118	0.207	0.006	0.004	0.005	0.000	0.000	0.000	0.000	0.000	1364.32	
22	0.7292	1147.3	1167.6	1167.6	0.559	6.391	67.780	21.672	3.269	0.115	0.201	0.006	0.003	0.005	0.000	0.000	0.000	0.000	0.000	1367.30	
23	0.7295	1149.4	1169.8	1169.8	0.559	6.284	67.862	21.631	3.289	0.124	0.229	0.009	0.008	0.004	0.000	0.000	0.000	0.000	0.000	1369.56	
24	0.7372	1160.2	1180.7	1180.7	0.566	6.342	66.931	21.928	3.779	0.147	0.279	0.013	0.013	0.002	0.000	0.000	0.000	0.000	0.000	1375.11	
25	0.7302	1147.2	1167.6	1167.6	0.541	6.511	67.703	21.546	3.317	0.127	0.234	0.009	0.008	0.004	0.000	0.000	0.000	0.000	0.000	1366.33	
26	0.7361	1160.0	1180.6	1180.6	0.525	6.304	67.645	21.021	3.854	0.181	0.396	0.029	0.032	0.012	0.000	0.000	0.000	0.000	0.000	1375.95	
27	0.7360	1155.0	1175.4	1175.4	0.544	6.576	67.174	21.516	3.678	0.154	0.306	0.019	0.021	0.013	0.000	0.000	0.000	0.000	0.000	1370.10	
28	0.7291	1146.7	1167.0	1167.0	0.559	6.410	67.872	21.521	3.286	0.123	0.215	0.006	0.003	0.005	0.000	0.000	0.000	0.000	0.000	1366.73	
29	0.7275	1145.2	1165.4	1165.4	0.564	6.350	68.105	21.424	3.225	0.116	0.204	0.005	0.002	0.004	0.000	0.000	0.000	0.000	0.000	1366.38	
30	0.7254	1145.7	1166.0	1166.0	0.560	6.119	68.600	21.174	3.180	0.122	0.225	0.008	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1369.10	
Avg	0.7303	1148.0	1168.4	1168.4	0.542	6.471	67.712	21.559	3.329	0.128	0.235	0.009	0.008	0.006	0.000	0.000	0.000	0.000	0.000	1367.19	

*Zone 262*

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

<b>GQ Source Number:</b>	2501030	<b>Specific Gravity:</b>	0.6670
<b>GQ Source Name:</b>	LIGNITE PLANT	<b>BTU Base:</b>	Dry
<b>Effective Date:</b>	9/1/2009 9:00:00 AM	<b>Dry Heat Value:</b>	1138.31
<b>Effective End Date:</b>	1/18/2038 9:14:07 PM	<b>Wet Heat Value:</b>	1118.49
<b>Pressure Base:</b>	14.730	<b>As Deliv. Heat Value:</b>	1138.31
<b>Viscosity:</b>			

		<u>Mol %</u>	<u>Imported GPM</u>	<u>Calculated GPM</u>
C1	Methane	77.894		
C2	Ethane	17.690	0.000	4.717
C3	Propane	1.326	0.364	0.364
IC4	Iso-Butane	0.002	0.001	0.001
NC4	N-Butane	0.001	0.000	0.000
IC5	Iso-Pentane	0.001	0.001	0.001
NC5	N-Pentane	0.002	0.001	0.001
C6+	Hexanes Plus	0.021	0.009	0.008
CO2	Carbon Dioxide	0.105		
N2	Nitrogen	2.954		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		99.995	0.376	5.092

**Sample Date:** 9/30/2009 12:00:00 AM  
**Sample Type:** Composite  
**Sample Tech:** sampler

**Sample Remarks:** Zone 263

**Analysis Remarks:**

# GQ Source Daily Summary

## September 2009

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

Day	Heating Value		C02	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Dry																
1	0.7252	1143.8	1164.0	0.501	6.307	68.944	20.511	3.242	0.144	0.294	0.018	0.018	0.000	0.000	0.000	0.000	0.000	1366.88
2	0.7315	1153.8	1174.3	0.537	6.234	67.908	21.410	3.391	0.150	0.305	0.019	0.021	0.000	0.000	0.000	0.000	0.000	1372.92
3	0.7270	1146.3	1166.6	0.557	6.239	68.361	21.301	3.137	0.118	0.228	0.014	0.017	0.000	0.000	0.000	0.000	0.000	1368.24
4	0.7255	1143.9	1164.2	0.565	6.225	68.451	21.344	3.074	0.114	0.203	0.007	0.005	0.011	0.000	0.000	0.000	0.000	1366.87
5	0.7256	1142.7	1162.9	0.568	6.311	68.461	21.191	3.132	0.113	0.202	0.007	0.005	0.010	0.000	0.000	0.000	0.000	1365.24
6	0.7265	1141.8	1162.0	0.552	6.470	68.273	21.212	3.152	0.114	0.202	0.007	0.005	0.011	0.000	0.000	0.000	0.000	1363.36
7	0.7259	1140.1	1160.3	0.557	6.419	68.256	21.161	3.233	0.120	0.221	0.010	0.009	0.013	0.000	0.000	0.000	0.000	1361.89
8	0.7274	1143.9	1164.2	0.544	6.614	67.881	21.429	3.180	0.116	0.209	0.008	0.007	0.012	0.000	0.000	0.000	0.000	1365.05
9	0.7285	1142.8	1163.1	0.544	6.594	68.105	21.131	3.267	0.114	0.207	0.008	0.007	0.013	0.000	0.000	0.000	0.000	1362.68
10	0.7279	1141.9	1162.1	0.553	6.463	68.321	21.242	3.106	0.109	0.195	0.007	0.006	0.015	0.000	0.000	0.000	0.000	1362.19
11	0.7258	1142.0	1162.3	0.546	6.406	68.462	21.067	3.157	0.117	0.215	0.009	0.008	0.013	0.000	0.000	0.000	0.000	1363.46
12	0.7258	1142.0	1162.3	0.546	6.406	68.462	21.067	3.157	0.117	0.215	0.009	0.008	0.013	0.000	0.000	0.000	0.000	1364.25
13	0.7274	1141.9	1162.1	0.560	6.540	68.019	21.427	3.131	0.109	0.195	0.007	0.005	0.011	0.000	0.000	0.000	0.000	1362.63
14	0.7229	1138.6	1158.8	0.540	6.345	68.898	20.826	3.061	0.111	0.195	0.007	0.005	0.011	0.000	0.000	0.000	0.000	1362.96
15	0.7306	1148.9	1169.3	0.576	6.383	67.608	21.817	3.266	0.115	0.210	0.008	0.006	0.011	0.000	0.000	0.000	0.000	1368.04
16	0.7291	1144.6	1164.9	0.541	6.560	67.819	21.492	3.239	0.115	0.209	0.008	0.006	0.011	0.000	0.000	0.000	0.000	1364.31
17	0.7297	1145.7	1166.0	0.542	6.553	67.723	21.553	3.285	0.113	0.205	0.008	0.006	0.011	0.000	0.000	0.000	0.000	1364.98
18	0.7304	1146.2	1166.4	0.545	6.585	67.670	21.498	3.347	0.115	0.211	0.009	0.008	0.012	0.000	0.000	0.000	0.000	1364.89
19	0.7278	1142.5	1162.7	0.542	6.571	67.981	21.406	3.164	0.112	0.202	0.007	0.006	0.010	0.000	0.000	0.000	0.000	1362.92
20	0.7273	1145.3	1165.5	0.550	6.340	68.182	21.376	3.213	0.112	0.203	0.007	0.006	0.011	0.000	0.000	0.000	0.000	1366.72
21	0.7264	1144.4	1164.6	0.566	6.284	68.239	21.487	3.109	0.105	0.187	0.007	0.005	0.011	0.000	0.000	0.000	0.000	1366.51
22	0.7354	1157.4	1177.9	0.575	6.318	67.305	21.667	3.654	0.145	0.290	0.015	0.015	0.015	0.000	0.000	0.000	0.000	1373.58
23	0.7282	1145.2	1165.5	0.545	6.434	68.088	21.326	3.221	0.121	0.231	0.011	0.010	0.014	0.000	0.000	0.000	0.000	1365.84
24	0.7313	1152.3	1172.7	0.534	6.306	68.155	20.889	3.579	0.153	0.327	0.021	0.021	0.016	0.000	0.000	0.000	0.000	1371.42
25	0.7361	1156.2	1176.6	0.549	6.495	67.495	21.146	3.708	0.159	0.344	0.029	0.035	0.039	0.000	0.000	0.000	0.000	1371.42
26	0.7316	1147.9	1168.2	0.560	6.571	67.615	21.410	3.455	0.129	0.234	0.009	0.007	0.011	0.000	0.000	0.000	0.000	1365.76
27	0.7293	1144.5	1164.7	0.537	6.595	67.888	21.289	3.322	0.122	0.221	0.008	0.006	0.011	0.000	0.000	0.000	0.000	1363.92
28	0.7288	1146.3	1166.6	0.569	6.389	67.994	21.406	3.280	0.121	0.216	0.007	0.006	0.010	0.000	0.000	0.000	0.000	1366.52
29	0.7282	1145.9	1166.2	0.575	6.349	68.075	21.394	3.260	0.117	0.209	0.007	0.005	0.010	0.000	0.000	0.000	0.000	1366.62
30	0.7249	1144.6	1164.9	0.566	6.132	68.720	21.060	3.146	0.120	0.225	0.010	0.009	0.012	0.000	0.000	0.000	0.000	1368.18
Avg	0.7283	1145.0	1165.7	0.552	6.418	68.111	21.282	3.257	0.121	0.226	0.010	0.009	0.014	0.000	0.000	0.000	0.000	1366.01

Zone 271



# GQ Source Daily Summary

## September 2009

**Number:** 061      **Pressure Base:** 14.730      **Contract Day:** 1

**Name:** CLEVELAND-GRAFTON      **Temperature Base:**      **Contract Hour:** 9

Day	Relative Density		Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT	
	Wet	Dry	Wet	Dry																	
1	0.7276	1149.1	1169.5	1169.5	0.511	6.191	68.584	20.884	3.292	0.152	0.321	0.024	0.027	0.014	0.000	0.000	0.000	0.000	0.000	1371.04	
2	0.7250	1145.2	1165.5	1165.5	0.496	6.205	68.867	20.746	3.211	0.141	0.286	0.018	0.019	0.010	0.000	0.000	0.000	0.000	0.000	1368.78	
3	0.7314	1153.1	1173.5	1173.5	0.531	6.278	67.795	21.524	3.366	0.150	0.301	0.019	0.022	0.013	0.000	0.000	0.000	0.000	0.000	1372.13	
4	0.7288	1149.2	1169.5	1169.5	0.555	6.227	68.105	21.457	3.226	0.128	0.248	0.016	0.018	0.019	0.000	0.000	0.000	0.000	0.000	1369.93	
5	0.7263	1145.2	1165.4	1165.4	0.563	6.238	68.248	21.501	3.109	0.116	0.204	0.007	0.006	0.007	0.000	0.000	0.000	0.000	0.000	1367.53	
6	0.7257	1144.1	1164.4	1164.4	0.564	6.233	68.347	21.444	3.085	0.112	0.197	0.007	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1366.91	
7	0.7269	1142.7	1162.9	1162.9	0.549	6.459	68.153	21.316	3.189	0.116	0.202	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1364.03	
8	0.7278	1143.4	1163.7	1163.7	0.557	6.489	67.948	21.503	3.181	0.111	0.193	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1364.06	
9	0.7303	1146.7	1167.1	1167.1	0.558	6.518	67.732	21.456	3.354	0.127	0.230	0.010	0.009	0.007	0.000	0.000	0.000	0.000	0.000	1365.66	
10	0.7273	1142.4	1162.6	1162.6	0.541	6.530	68.012	21.462	3.114	0.113	0.204	0.008	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1363.24	
11	0.7309	1146.4	1166.7	1166.7	0.547	6.622	67.635	21.377	3.454	0.121	0.219	0.009	0.008	0.007	0.000	0.000	0.000	0.000	0.000	1364.66	
12	0.7257	1141.8	1162.0	1162.0	0.533	6.432	68.195	21.512	3.010	0.108	0.190	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1364.02	
13	0.7278	1145.6	1165.9	1165.9	0.554	6.356	68.063	21.488	3.176	0.119	0.218	0.010	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1366.66	
14	0.7276	1141.9	1162.1	1162.1	0.549	6.576	67.962	21.418	3.170	0.112	0.194	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1362.40	
15	0.7291	1145.0	1165.2	1165.2	0.559	6.516	67.645	21.826	3.126	0.113	0.197	0.007	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1364.68	
16	0.7235	1141.8	1162.1	1162.1	0.544	6.213	68.778	21.011	3.127	0.113	0.196	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	1366.19	
17	0.7294	1145.3	1165.6	1165.6	0.549	6.538	67.706	21.636	3.232	0.116	0.208	0.008	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1364.83	
18	0.7301	1146.2	1166.5	1166.5	0.539	6.572	67.597	21.640	3.309	0.116	0.207	0.008	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1365.16	
19	0.7305	1146.2	1166.5	1166.5	0.540	6.587	67.600	21.592	3.328	0.118	0.213	0.009	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1364.92	
20	0.7282	1143.3	1163.6	1163.6	0.541	6.558	67.840	21.554	3.173	0.113	0.203	0.007	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1363.58	
21	0.7276	1145.5	1165.8	1165.8	0.544	6.366	68.076	21.441	3.237	0.114	0.203	0.007	0.006	0.006	0.000	0.000	0.000	0.000	0.000	1366.70	
22	0.7266	1144.6	1164.9	1164.9	0.563	6.293	68.197	21.479	3.146	0.109	0.194	0.007	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1366.65	
23	0.7353	1157.5	1178.0	1178.0	0.572	6.306	67.253	21.730	3.669	0.147	0.287	0.015	0.015	0.008	0.000	0.000	0.000	0.000	0.000	1373.82	
24	0.7291	1146.0	1166.3	1166.3	0.544	6.471	67.905	21.421	3.281	0.123	0.230	0.010	0.009	0.006	0.000	0.000	0.000	0.000	0.000	1373.80	
25	0.7364	1160.8	1181.3	1181.3	0.528	6.277	67.763	20.814	3.900	0.193	0.444	0.034	0.036	0.012	0.000	0.000	0.000	0.000	0.000	1376.66	
26	0.7345	1152.9	1173.3	1173.3	0.557	6.539	67.241	21.721	3.472	0.131	0.256	0.021	0.027	0.035	0.000	0.000	0.000	0.000	0.000	1368.99	
27	0.7323	1150.5	1170.9	1170.9	0.550	6.486	67.400	21.744	3.438	0.128	0.233	0.009	0.007	0.006	0.000	0.000	0.000	0.000	0.000	1368.28	
28	0.7288	1144.1	1164.3	1164.3	0.536	6.577	67.936	21.247	3.340	0.124	0.222	0.008	0.007	0.005	0.000	0.000	0.000	0.000	0.000	1363.92	
29	0.7280	1146.1	1166.4	1166.4	0.570	6.321	68.062	21.452	3.247	0.120	0.211	0.008	0.006	0.005	0.000	0.000	0.000	0.000	0.000	1367.03	
30	0.7275	1145.1	1165.4	1165.4	0.571	6.330	68.148	21.363	3.245	0.118	0.208	0.007	0.006	0.004	0.000	0.000	0.000	0.000	0.000	1366.40	
AVG	0.7289	1147.0	1166.9	1166.9	0.547	6.410	67.960	21.425	3.274	0.124	0.231	0.011	0.010	0.008	0.000	0.000	0.000	0.000	0.000	1366.83	

*Zone 273*



# GQ Source Daily Summary

## September 2009

**Number:** 271

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** DICKINSON AREA

**Temperature Base:**

**Contract Hour:** 9

Day	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Relative Density	Dry																
1	0.7244	1143.2	1163.4	0.504	6.263	69.118	20.329	3.268	0.154	0.334	0.006	0.009	0.016	0.000	0.000	0.000	0.000	1366.91
2	0.7227	1141.1	1161.3	0.496	6.240	69.247	20.363	3.210	0.141	0.287	0.000	0.002	0.014	0.000	0.000	0.000	0.000	1366.06
3	0.7259	1146.7	1167.0	0.525	6.152	68.693	20.959	3.200	0.142	0.301	0.008	0.010	0.010	0.000	0.000	0.000	0.000	1369.79
4	0.7269	1144.9	1165.2	0.545	6.333	68.484	20.938	3.258	0.137	0.271	0.007	0.007	0.020	0.000	0.000	0.000	0.000	1366.60
5	0.7230	1140.4	1160.6	0.560	6.224	68.824	21.041	3.020	0.112	0.204	0.000	0.000	0.015	0.000	0.000	0.000	0.000	1364.89
6	0.7242	1139.5	1159.7	0.563	6.377	68.661	20.947	3.123	0.114	0.205	0.000	0.000	0.010	0.000	0.000	0.000	0.000	1362.77
7	0.7248	1138.3	1158.5	0.559	6.511	68.527	20.933	3.143	0.114	0.204	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1360.84
8	0.6598	1072.8	1091.8	0.570	4.375	80.611	12.386	1.869	0.065	0.118	0.000	0.000	0.006	0.000	0.000	0.000	0.000	1344.58
9	0.6203	1033.0	1051.3	0.582	3.064	87.806	7.481	0.980	0.031	0.056	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1334.86
10	0.6108	1023.3	1041.4	0.597	2.743	89.660	6.078	0.839	0.029	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1332.47
11	0.6329	1045.7	1064.2	0.582	3.478	85.511	9.040	1.265	0.043	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1337.70
12	0.6479	1060.9	1079.7	0.583	3.963	82.761	10.949	1.587	0.054	0.097	0.000	0.000	0.005	0.000	0.000	0.000	0.000	1341.31
13	0.6560	1070.3	1089.2	0.563	4.184	81.271	12.047	1.752	0.062	0.115	0.000	0.000	0.005	0.000	0.000	0.000	0.000	1344.81
14	0.6677	1080.2	1099.4	0.573	4.655	79.052	13.568	1.962	0.066	0.117	0.000	0.000	0.005	0.000	0.000	0.000	0.000	1345.51
15	0.6834	1097.0	1116.4	0.530	5.181	76.067	15.746	2.249	0.080	0.141	0.000	0.000	0.006	0.000	0.000	0.000	0.000	1350.58
16	0.7282	1144.2	1164.4	0.580	6.442	67.989	21.401	3.252	0.116	0.211	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1364.62
17	0.7266	1139.7	1159.9	0.539	6.636	68.204	21.058	3.228	0.116	0.210	0.000	0.000	0.008	0.000	0.000	0.000	0.000	1360.67
18	0.7278	1142.4	1162.6	0.537	6.582	68.003	21.288	3.263	0.114	0.206	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1362.84
19	0.7279	1141.5	1161.7	0.532	6.653	68.090	21.024	3.360	0.118	0.215	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1361.65
20	0.7254	1138.1	1158.3	0.538	6.618	68.345	21.029	3.150	0.111	0.201	0.000	0.000	0.008	0.000	0.000	0.000	0.000	1359.97
21	0.7240	1140.0	1160.2	0.535	6.380	68.646	20.984	3.140	0.109	0.199	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1363.47
22	0.7248	1140.9	1161.1	0.559	6.357	68.556	21.037	3.174	0.110	0.198	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1363.87
23	0.7278	1146.3	1166.6	0.565	6.300	68.298	21.084	3.366	0.128	0.250	0.000	0.000	0.010	0.000	0.000	0.000	0.000	1367.43
24	0.7256	1142.4	1162.6	0.549	6.357	68.538	20.952	3.237	0.124	0.236	0.000	0.000	0.008	0.000	0.000	0.000	0.000	1364.88
25	0.7248	1139.1	1159.3	0.534	6.501	68.659	20.719	3.227	0.121	0.229	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1361.73
26	0.7286	1152.9	1173.3	0.517	6.038	68.881	20.350	3.582	0.178	0.396	0.018	0.023	0.017	0.000	0.000	0.000	0.000	1374.62
27	0.7294	1145.7	1166.0	0.544	6.514	67.942	21.202	3.428	0.126	0.232	0.000	0.000	0.010	0.000	0.000	0.000	0.000	1365.30
28	0.7309	1144.8	1165.1	0.555	6.699	67.684	21.204	3.470	0.133	0.246	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1362.78
29	0.7273	1137.6	1157.7	0.540	6.821	68.160	20.820	3.310	0.121	0.219	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1357.57
30	0.7244	1138.6	1158.8	0.546	6.478	68.815	20.497	3.310	0.123	0.223	0.000	0.000	0.009	0.000	0.000	0.000	0.000	1361.51
Avg	0.7051	1120.0	1140.2	0.550	5.771	72.303	18.248	2.807	0.106	0.202	0.001	0.002	0.009	0.000	0.000	0.000	0.000	1358.09

Zone 31

# GQ Source Daily Summary

## September 2009

**Number:** 051

**Pressure Base:** 14.730

**Contract Day:** 1

**Name:** CABIN CR-DICKINSON

**Temperature Base:**

**Contract Hour:** 9

Day	Relative Density		Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Wet	Dry	Wet	Dry																
1	0.6804	1102.9	1122.4	0.498	4.584	77.014	15.354	2.202	0.099	0.211	0.013	0.015	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1360.90
2	0.7200	1145.3	1165.6	0.459	5.786	69.758	20.527	2.989	0.134	0.290	0.021	0.024	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1373.70
3	0.7187	1142.2	1162.4	0.450	5.864	69.879	20.412	2.963	0.127	0.260	0.015	0.017	0.013	0.000	0.000	0.000	0.000	0.000	0.000	1371.23
4	0.7169	1140.5	1160.7	0.500	5.724	70.246	20.192	2.911	0.126	0.256	0.015	0.017	0.012	0.000	0.000	0.000	0.000	0.000	0.000	1370.89
5	0.7207	1145.1	1165.4	0.493	5.818	69.377	21.019	2.913	0.110	0.215	0.015	0.017	0.023	0.000	0.000	0.000	0.000	0.000	0.000	1372.72
6	0.7175	1141.5	1161.8	0.496	5.732	69.652	21.090	2.732	0.099	0.176	0.006	0.005	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1371.51
7	0.7175	1141.2	1161.4	0.495	5.756	69.665	21.020	2.773	0.098	0.174	0.006	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.11
8	0.7146	1135.7	1155.8	0.504	5.802	70.328	20.244	2.830	0.099	0.175	0.006	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1367.32
9	0.6253	1041.6	1060.1	0.553	3.060	86.804	8.521	0.964	0.033	0.057	0.002	0.002	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1340.57
10	0.6196	1035.8	1054.1	0.549	2.880	87.902	7.703	0.873	0.031	0.055	0.002	0.002	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1339.23
11	0.6229	1037.8	1056.2	0.578	3.025	87.363	7.948	0.978	0.036	0.064	0.003	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	1338.29
12	0.6415	1057.3	1076.1	0.550	3.627	83.955	10.299	1.422	0.049	0.088	0.004	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1343.52
13	0.6549	1071.4	1090.4	0.553	4.030	81.316	12.373	1.569	0.054	0.095	0.003	0.003	0.003	0.004	0.000	0.000	0.000	0.000	0.000	1347.38
14	0.6575	1075.2	1094.3	0.512	4.106	80.939	12.547	1.704	0.063	0.114	0.005	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1349.48
15	0.6711	1088.4	1107.6	0.526	4.562	78.256	14.597	1.871	0.064	0.112	0.004	0.003	0.005	0.005	0.000	0.000	0.000	0.000	0.000	1352.10
16	0.6923	1112.9	1132.6	0.476	5.140	74.320	17.517	2.309	0.082	0.142	0.005	0.004	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1361.22
17	0.7228	1144.4	1164.6	0.515	6.024	68.835	21.314	3.004	0.103	0.185	0.007	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1369.91
18	0.7206	1141.8	1162.0	0.474	6.043	69.116	21.161	2.907	0.101	0.181	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1368.85
19	0.7207	1142.9	1163.1	0.471	5.987	69.103	21.233	2.909	0.099	0.179	0.007	0.005	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1370.10
20	0.7214	1142.9	1163.2	0.479	6.038	69.054	21.144	2.976	0.101	0.186	0.007	0.006	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1369.50
21	0.7222	1140.1	1160.3	0.494	6.265	68.861	21.100	2.973	0.103	0.186	0.007	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1365.30
22	0.7188	1141.3	1161.5	0.475	5.901	69.467	20.993	2.869	0.098	0.179	0.007	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1369.97
23	0.7183	1142.0	1162.2	0.487	5.796	69.555	21.027	2.847	0.097	0.173	0.006	0.005	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1371.24
24	0.7196	1147.5	1167.8	0.477	5.588	69.617	20.976	2.984	0.111	0.218	0.011	0.011	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1376.67
25	0.7172	1145.8	1166.1	0.436	5.532	69.796	21.127	2.787	0.103	0.195	0.009	0.008	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1376.94
26	0.7177	1142.0	1162.2	0.451	5.785	69.652	21.013	2.784	0.101	0.191	0.009	0.008	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1371.93
27	0.7260	1155.0	1175.5	0.464	5.744	69.085	20.846	3.288	0.148	0.338	0.029	0.034	0.025	0.000	0.000	0.000	0.000	0.000	0.000	1379.64
28	0.7200	1145.5	1165.8	0.447	5.793	69.465	20.944	3.010	0.111	0.205	0.008	0.007	0.011	0.000	0.000	0.000	0.000	0.000	0.000	1373.95
29	0.7009	1120.8	1140.6	0.559	5.337	72.862	18.497	2.478	0.089	0.159	0.006	0.005	0.008	0.000	0.000	0.000	0.000	0.000	0.000	1362.41
30	0.7249	1147.0	1167.3	0.488	6.109	68.599	21.302	3.141	0.120	0.220	0.008	0.006	0.006	0.000	0.000	0.000	0.000	0.000	0.000	1370.96
AVG	0.6987	1120.0	1140.3	0.497	5.248	73.328	18.135	2.499	0.093	0.176	0.008	0.008	0.008	0.008	0.000	0.000	0.000	0.000	0.000	1364.29

*Zone 32*

# GQ Source Daily Summary

## September 2009

**Number:** 111      **Pressure Base:** 14.730      **Contract Day:** 1  
**Name:** LITTLE KNIFE PLANT      **Temperature Base:**      **Contract Hour:** 9

Day	Relative Value		Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
	Wet	Dry	Wet	Dry																
1	0.6710	1139.4	1159.6	0.000	0.000	2.257	76.380	20.835	0.512	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.59
2	0.6715	1140.1	1160.3	0.000	0.000	2.260	76.266	20.966	0.493	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.92
3	0.6709	1138.8	1159.0	0.000	0.000	2.288	76.371	20.833	0.493	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.90
4	0.6713	1139.3	1159.5	0.000	0.000	2.287	76.307	20.897	0.494	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.17
5	0.6715	1139.6	1159.8	0.000	0.000	2.291	76.252	20.946	0.497	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.33
6	0.6725	1141.1	1161.3	0.000	0.000	2.292	76.050	21.152	0.492	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.15
7	0.6720	1140.0	1160.2	0.000	0.000	2.309	76.139	21.063	0.474	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.35
8	0.6693	1136.9	1157.2	0.000	0.000	2.255	76.679	20.583	0.468	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.18
9	0.6698	1137.1	1157.2	0.000	0.000	2.285	76.579	20.650	0.471	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.96
10	0.6699	1136.9	1157.0	0.000	0.000	2.307	76.552	20.855	0.471	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.63
11	0.6685	1134.9	1155.0	0.000	0.000	2.298	76.830	20.388	0.468	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.59
12	0.6689	1135.7	1155.8	0.000	0.000	2.288	76.777	20.436	0.484	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.15
13	0.6683	1134.6	1154.7	0.000	0.000	2.292	76.886	20.339	0.468	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.52
14	0.6694	1135.4	1155.5	0.000	0.000	2.334	76.747	20.432	0.471	0.007	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.24
15	0.6701	1137.5	1157.7	0.000	0.000	2.282	76.657	20.469	0.562	0.010	0.015	0.002	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1414.24
16	0.6708	1138.1	1158.3	0.000	0.000	2.318	76.368	20.829	0.472	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.20
17	0.6702	1137.8	1157.9	0.000	0.000	2.278	76.510	20.722	0.475	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.43
18	0.6683	1134.5	1154.6	0.000	0.000	2.294	76.890	20.335	0.467	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.43
19	0.6689	1134.9	1155.0	0.000	0.000	2.328	76.744	20.466	0.449	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.29
20	0.6701	1137.2	1157.4	0.000	0.000	2.307	76.473	20.767	0.439	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.81
21	0.6698	1136.7	1156.8	0.000	0.000	2.304	76.562	20.672	0.446	0.007	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1413.52
22	0.6685	1134.9	1155.0	0.000	0.000	2.295	76.820	20.426	0.445	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1412.62
23	0.6714	1139.4	1159.6	0.000	0.000	2.295	76.220	21.024	0.447	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.17
24	0.6731	1142.2	1162.5	0.000	0.000	2.285	75.888	21.352	0.461	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.85
25	0.6734	1142.2	1162.5	0.000	0.000	2.309	75.859	21.335	0.483	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1416.58
26	0.6720	1140.3	1160.4	0.000	0.000	2.300	76.097	21.150	0.441	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.59
27	0.6722	1140.4	1160.6	0.000	0.000	2.311	76.019	21.240	0.416	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1415.54
28	0.6727	1141.4	1161.6	0.000	0.000	2.301	75.966	21.276	0.433	0.007	0.012	0.001	0.001	0.002	0.000	0.000	0.000	0.000	0.000	1416.18
29	0.6714	1139.3	1159.4	0.000	0.000	2.304	76.202	21.057	0.425	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.98
30	0.6712	1138.8	1158.9	0.000	0.000	2.313	76.236	21.017	0.421	0.006	0.008	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.61
Avg	0.6706	1138.0	1158.3	0.000	0.000	2.296	76.411	20.810	0.468	0.006	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1414.46

*Zone 33*

# GQ Source Daily Summary

## September 2009

**Number:** 331      **Pressure Base:** 14.730      **Contract Day:** 1  
**Name:** MARMARTH PLANT      **Temperature Base:**      **Contract Hour:** 9

Day	Relative Density	Heating Value		CO2	N2	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7	C8	C9	C10	Wobbe	CCT
		Wet	Dry																
1	0.7999	1150.5	1170.8	1.978	10.705	53.694	30.425	2.876	0.070	0.216	0.009	0.024	0.003	0.000	0.000	0.000	0.000	0.000	1309.10
2	0.8021	1150.4	1170.7	2.073	10.769	53.567	30.176	3.074	0.073	0.228	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1307.22
3	0.7993	1149.0	1169.3	2.107	10.537	53.991	30.154	2.889	0.069	0.215	0.009	0.025	0.003	0.000	0.000	0.000	0.000	0.000	1307.93
4	0.8046	1153.6	1174.0	2.234	10.561	53.421	30.203	3.231	0.076	0.234	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1308.83
5	0.8024	1153.2	1173.6	2.126	10.546	53.661	30.189	3.130	0.074	0.232	0.010	0.027	0.004	0.000	0.000	0.000	0.000	0.000	1310.19
6	0.8050	1158.4	1178.9	2.200	10.358	53.259	30.690	3.139	0.076	0.237	0.010	0.027	0.004	0.000	0.000	0.000	0.000	0.000	1313.98
7	0.8037	1152.9	1173.3	2.283	10.441	53.504	30.368	3.057	0.074	0.232	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1308.80
8	0.8074	1159.7	1180.2	2.389	10.224	52.951	30.940	3.156	0.074	0.229	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1313.41
9	0.8070	1157.2	1177.7	2.422	10.284	53.165	30.543	3.233	0.076	0.237	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1313.41
10	0.8066	1155.6	1176.1	2.408	10.361	53.310	30.268	3.281	0.080	0.249	0.011	0.028	0.003	0.000	0.000	0.000	0.000	0.000	1310.96
11	0.8061	1156.5	1177.0	2.376	10.309	53.207	30.621	3.137	0.076	0.235	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1310.92
12	0.8067	1153.7	1174.1	2.414	10.481	53.138	30.431	3.184	0.076	0.237	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1307.23
13	0.8059	1153.6	1174.0	2.374	10.473	53.237	30.417	3.136	0.078	0.242	0.011	0.028	0.003	0.000	0.000	0.000	0.000	0.000	1307.77
14	0.7998	1146.1	1166.4	2.294	10.473	54.330	29.492	3.050	0.077	0.241	0.011	0.029	0.004	0.000	0.000	0.000	0.000	0.000	1304.29
15	0.8043	1144.4	1164.6	2.760	10.298	53.896	29.617	3.071	0.077	0.238	0.011	0.028	0.004	0.000	0.000	0.000	0.000	0.000	1298.61
16	0.8002	1148.6	1169.0	2.373	10.238	54.254	29.826	2.954	0.077	0.237	0.010	0.027	0.004	0.000	0.000	0.000	0.000	0.000	1306.81
17	0.8093	1152.9	1173.4	2.636	10.427	53.043	30.195	3.317	0.082	0.256	0.011	0.029	0.004	0.000	0.000	0.000	0.000	0.000	1306.81
18	0.8077	1154.0	1174.4	2.425	10.534	53.188	30.117	3.349	0.083	0.259	0.011	0.030	0.004	0.000	0.000	0.000	0.000	0.000	1304.35
19	0.8071	1152.9	1173.3	2.423	10.552	53.276	30.033	3.333	0.082	0.257	0.011	0.030	0.004	0.000	0.000	0.000	0.000	0.000	1306.76
20	0.8071	1152.5	1172.9	2.451	10.527	53.237	30.137	3.273	0.080	0.251	0.011	0.029	0.003	0.000	0.000	0.000	0.000	0.000	1306.00
21	0.8070	1153.9	1174.4	2.424	10.478	53.094	30.461	3.196	0.075	0.233	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1307.27
22	0.8071	1155.3	1175.8	2.415	10.414	53.128	30.453	3.240	0.075	0.235	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1308.79
23	0.8083	1157.3	1177.8	2.452	10.350	52.988	30.564	3.290	0.077	0.239	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1310.05
24	0.8045	1149.0	1169.4	2.416	10.557	53.585	29.893	3.201	0.075	0.233	0.010	0.027	0.004	0.000	0.000	0.000	0.000	0.000	1303.70
25	0.8061	1152.8	1173.2	2.427	10.462	53.299	30.236	3.239	0.073	0.226	0.010	0.025	0.003	0.000	0.000	0.000	0.000	0.000	1306.65
26	0.8077	1154.9	1175.3	2.466	10.421	53.138	30.290	3.341	0.074	0.231	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1307.78
27	0.8059	1154.1	1174.5	2.385	10.424	53.255	30.413	3.165	0.075	0.234	0.010	0.026	0.003	0.000	0.000	0.000	0.000	0.000	1308.34
28	0.8060	1156.5	1177.0	2.320	10.384	53.255	30.468	3.208	0.079	0.245	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1311.02
29	0.8062	1157.0	1177.4	2.378	10.287	53.296	30.446	3.241	0.076	0.236	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1311.36
30	0.8057	1154.5	1175.0	2.363	10.407	53.257	30.473	3.167	0.072	0.223	0.010	0.025	0.003	0.000	0.000	0.000	0.000	0.000	1309.06
Avg	0.8052	1153.0	1173.8	2.360	10.443	53.388	30.285	3.172	0.076	0.237	0.010	0.027	0.003	0.000	0.000	0.000	0.000	0.000	1308.08

\*\*\* End of Report\*\*\*

Zone 3A

## Williston Basin Interstate Pipeline Co. GQ Source Analysis

GQ Source Number:	1201140	Specific Gravity:	0.5730
GQ Source Name:	EAGLE 8B ND	BTU Base:	Dry
Effective Date:	6/19/2009 9:00:00 AM	Dry Heat Value:	977.72
Effective End Date:	1/18/2038 9:14:07 PM	Wet Heat Value:	960.70
Pressure Base:	14.730	As Deliv. Heat Value:	977.72
Viscosity:			

		Mol %	Imported GPM	Calculated GPM
C1	Methane	95.826		
C2	Ethane	0.305		0.081
C3	Propane	0.009	0.002	0.002
IC4	Iso-Butane	0.007	0.002	0.002
NC4	N-Butane	0.000	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	0.000	0.000	0.000
CO2	Carbon Dioxide	0.096		
N2	Nitrogen	3.757		
O2	Oxygen	0.000		
HE	Helium			
H2	Hydrogen			
H2S	Hydrogen Sulfide			
<b>Totals</b>		100.000	0.005	0.086

**Sample Date:** 6/12/2009 12:00:00 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	Chromatograph	Bowman Area
35	Monthly Sampler	Baker Field – North Dakota



**THERMAL ZONE VARIANCE  
DOCUMENTATION**

**September 2009**

<b><i>ZONE</i></b>	<b><i>BTU VARIANCE</i></b>	<b><i>REASON</i></b>
31	88	Receipt from Minot & Bismarck Area, going West
32	100	Receipt from Minot & Bismarck Area, going West