

July 9, 2013

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

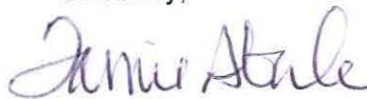
Re: Case No. 11,006 (Therm Billing)
Monthly Report – May 2013

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 June 2013.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our supplier for the month of May, 2013. There is a report for each of the 17 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 May 2013.

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

Sincerely,



Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors- North Dakota
June 2013

| Town | Heat Zone | Therm Factor |
|----------------------|-----------|--------------|
| MDU-303-ALEXANDER | 025 | 1.089954 |
| MDU-308-ARNEGARD | 025 | 1.133401 |
| MDU-314-APPLE VALLEY | 271 | 1.133720 |
| MDU-318-BEACH | 032 | 1.016547 |
| MDU-319-BELFIELD | 032 | 1.024015 |
| MDU-323-BERTHOLD | 262 | 1.111678 |
| MDU-327-BISMARCK | 028 | 1.131790 |
| MDU-330-BOWMAN | 034 | 1.042105 |
| MDU-337-BURLINGTON | 262 | 1.130825 |
| MDU-343-CARRINGTON | 273 | 1.135650 |
| MDU-344-CLEVELAND | 272 | 1.128617 |
| MDU-364-CAVALIER | 273 | 1.151739 |
| MDU-365-DAWSON | 271 | 1.118078 |
| MDU-368-DES LACS | 262 | 1.119668 |
| MDU-369-DICKINSON | 031 | 1.090559 |
| MDU-374-FT TOTTEN | 273 | 1.143639 |
| MDU-375-DEVILS LAKE | 273 | 1.143639 |
| MDU-379-BARLOW | 273 | 1.135650 |
| MDU-384-EPPING | 264 | 1.130568 |
| MDU-387-ELDRIDGE | 272 | 1.136615 |
| MDU-407-GLADSTONE | 031 | 1.047424 |
| MDU-411-GLEN ULLIN | 028 | 1.055008 |
| MDU-413-GOLVA | 032 | 1.001613 |
| MDU-416-GARRISON | 262 | 1.119668 |
| MDU-417-GRAFTON | 273 | 1.167611 |
| MDU-429-HEBRON | 311 | 1.098455 |
| MDU-432-HETTINGER | 903 | 2.387549 |
| MDU-449-JAMESTOWN | 272 | 1.144611 |
| MDU-459-KILLDEER | 033 | 1.113567 |
| MDU-463-LANGDON | 273 | 1.135650 |
| MDU-469-LEFOR | 031 | 1.090559 |
| MDU-474-LIGNITE | 263 | 1.068299 |
| MDU-475-LINTON | 802 | 0.994779 |
| MDU-478-LINCOLN | 028 | 1.131790 |
| MDU-494-MEDINA | 271 | 1.125743 |
| MDU-498-MANDAN | 028 | 1.131790 |
| MDU-500-MARMARTH | 034 | 1.049816 |
| MDU-505-MINOT | 262 | 1.135650 |
| MDU-510-MOTT | 031 | 1.090559 |
| MDU-512-MAX | 262 | 1.111678 |
| MDU-522-NEW ENGLAND | 031 | 1.039841 |
| MDU-524-NEW SALEM | 028 | 1.107900 |
| MDU-532-NEW ROCKFORD | 273 | 1.135650 |
| MDU-539-PARK RIVER | 273 | 1.159620 |
| MDU-540-PALERMO | 262 | 1.111678 |
| MDU-558-RAY | 264 | 1.130568 |
| MDU-561-REGENT | 031 | 1.090559 |
| MDU-563-RHAME | 034 | 1.034393 |
| MDU-564-RICHARDTON | 311 | 1.039841 |
| MDU-568-ROSS | 261 | 1.086808 |
| MDU-572-RUTHVILLE | 262 | 1.135650 |
| MDU-574-SANBORN | 272 | 1.144611 |

Montana-Dakota Utilities Co.
Therm Billing Factors- North Dakota
June 2013

| Town | Heat Zone | Therm Factor |
|------------------------|-----------|--------------|
| MDU-583-SENTINEL BUTTE | 032 | 1.016547 |
| MDU-588-SOUTH HEART | 031 | 1.039841 |
| MDU-590-SPRINGBROOK | 264 | 1.130568 |
| MDU-591-STANLEY | 261 | 1.094677 |
| MDU-593-STEELE | 271 | 1.125743 |
| MDU-598-SHEYENNE | 273 | 1.143639 |
| MDU-605-SURREY | 262 | 1.135650 |
| MDU-610-TAPPEN | 271 | 1.125743 |
| MDU-611-TAYLOR | 031 | 1.039841 |
| MDU-616-TIOGA | 261 | 1.086808 |
| MDU-619-TURTLE LAKE | 262 | 1.119668 |
| MDU-620-TRENTON | 024 | 1.138694 |
| MDU-624-UNDERWOOD | 262 | 1.119668 |
| MDU-625-VALLEY CITY | 272 | 1.152608 |
| MDU-629-WALHALLA | 273 | 1.159620 |
| MDU-632-WATFORD CITY | 025 | 1.133401 |
| MDU-636-WHEELOCK | 264 | 1.122441 |
| MDU-637-WHITE EARTH | 261 | 1.094677 |
| MDU-642-WILLISTON | 024 | 1.138694 |
| MDU-646-WASHBURN | 262 | 1.122869 |
| MDU-647-WILTON | 262 | 1.106955 |
| MDU-664-RIVERDALE | 262 | 1.119668 |
| MDU-691-FAIRVIEW | 241 | 1.144402 |
| MDU-712-MINOT AFB | 262 | 1.135650 |
| MDU-717-SPIRITWOOD | 272 | 1.144611 |
| MDU-732-MSR SITE | 273 | 1.127931 |

GQ Source Daily Summary

May 2013

Number: 251

Pressure Base: 14.730

Contract Day: 1

Name: SIDNEY BORDER-MONDAK JNCTN-SIDNEY 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 | 0.7272 | 1184.1 | 1205.0 | 0.780 | 3.621 | 69.117 | 22.539 | 3.690 | 0.086 | 0.152 | 0.007 | 0.006 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.17 | |
| 2 | 0.7252 | 1184.1 | 1205.1 | 0.679 | 3.587 | 69.223 | 22.742 | 3.548 | 0.076 | 0.132 | 0.006 | 0.005 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1415.14 | |
| 3 | 0.7306 | 1183.2 | 1204.1 | 1.011 | 3.636 | 69.056 | 22.011 | 3.986 | 0.102 | 0.180 | 0.009 | 0.007 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.82 | |
| 4 | 0.7344 | 1185.7 | 1206.7 | 1.139 | 3.646 | 68.664 | 22.034 | 4.181 | 0.113 | 0.202 | 0.010 | 0.008 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.09 | |
| 5 | 0.7344 | 1184.8 | 1205.8 | 1.141 | 3.694 | 68.663 | 21.991 | 4.168 | 0.114 | 0.207 | 0.010 | 0.008 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.08 | |
| 6 | 0.7328 | 1182.6 | 1203.6 | 1.143 | 3.676 | 68.878 | 21.902 | 4.066 | 0.111 | 0.202 | 0.010 | 0.008 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.98 | |
| 7 | 0.6840 | 1125.5 | 1145.4 | 1.001 | 2.786 | 77.321 | 15.915 | 2.742 | 0.078 | 0.140 | 0.008 | 0.006 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.00 | |
| 8 | 0.6947 | 1137.5 | 1157.7 | 1.046 | 2.990 | 75.453 | 17.252 | 3.004 | 0.086 | 0.152 | 0.009 | 0.007 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.99 | |
| 9 | 0.7304 | 1179.6 | 1200.5 | 1.154 | 3.618 | 69.175 | 21.853 | 3.882 | 0.106 | 0.191 | 0.010 | 0.008 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.68 | |
| 10 | 0.7318 | 1181.5 | 1202.4 | 1.151 | 3.636 | 68.954 | 21.990 | 3.946 | 0.108 | 0.194 | 0.010 | 0.008 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.66 | |
| 11 | 0.7328 | 1183.5 | 1204.5 | 1.153 | 3.604 | 68.834 | 22.073 | 4.006 | 0.110 | 0.199 | 0.010 | 0.008 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.08 | |
| 12 | 0.7250 | 1172.7 | 1193.5 | 1.133 | 3.562 | 70.403 | 20.584 | 3.977 | 0.113 | 0.205 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.67 | |
| 13 | 0.7258 | 1175.1 | 1195.9 | 1.120 | 3.509 | 70.451 | 20.377 | 4.212 | 0.108 | 0.198 | 0.011 | 0.009 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.76 | |
| 14 | 0.7237 | 1173.8 | 1194.6 | 1.105 | 3.415 | 70.746 | 20.318 | 4.086 | 0.109 | 0.198 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.25 | |
| 15 | 0.7307 | 1182.1 | 1203.1 | 1.129 | 3.527 | 69.432 | 21.405 | 4.166 | 0.113 | 0.204 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.44 | |
| 16 | 0.7335 | 1184.8 | 1205.8 | 1.142 | 3.614 | 68.896 | 21.791 | 4.220 | 0.111 | 0.203 | 0.012 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.86 | |
| 17 | 0.7333 | 1184.0 | 1205.0 | 1.141 | 3.643 | 68.944 | 21.712 | 4.212 | 0.114 | 0.210 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.14 | |
| 18 | 0.7323 | 1182.1 | 1203.0 | 1.157 | 3.640 | 69.022 | 21.762 | 4.077 | 0.112 | 0.207 | 0.011 | 0.009 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.84 | |
| 19 | 0.7322 | 1181.8 | 1202.7 | 1.170 | 3.635 | 68.884 | 22.042 | 3.941 | 0.108 | 0.198 | 0.011 | 0.008 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.50 | |
| 20 | 0.7332 | 1182.8 | 1203.8 | 1.165 | 3.667 | 68.965 | 21.685 | 4.154 | 0.119 | 0.221 | 0.012 | 0.010 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.85 | |
| 21 | 0.7330 | 1182.8 | 1203.7 | 1.163 | 3.651 | 68.876 | 21.902 | 4.071 | 0.112 | 0.203 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.03 | |
| 22 | 0.7331 | 1183.0 | 1203.9 | 1.148 | 3.673 | 68.989 | 21.630 | 4.224 | 0.110 | 0.202 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.11 | |
| 23 | 0.7340 | 1185.5 | 1206.5 | 1.143 | 3.611 | 68.859 | 21.780 | 4.265 | 0.113 | 0.206 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.26 | |
| 24 | 0.7355 | 1186.9 | 1207.9 | 1.165 | 3.636 | 68.735 | 21.678 | 4.447 | 0.112 | 0.205 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.46 | |
| 25 | 0.7360 | 1187.8 | 1208.8 | 1.160 | 3.638 | 68.686 | 21.682 | 4.489 | 0.114 | 0.209 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.99 | |
| 26 | 0.7377 | 1190.3 | 1211.4 | 1.165 | 3.632 | 68.527 | 21.662 | 4.669 | 0.114 | 0.208 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.41 | |
| 27 | 0.7352 | 1186.1 | 1207.1 | 1.162 | 3.659 | 68.746 | 21.692 | 4.403 | 0.111 | 0.204 | 0.011 | 0.009 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.84 | |
| 28 | 0.7362 | 1187.4 | 1208.5 | 1.157 | 3.677 | 68.556 | 21.862 | 4.407 | 0.112 | 0.206 | 0.011 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.47 | |
| 29 | 0.7359 | 1187.0 | 1208.0 | 1.159 | 3.674 | 68.661 | 21.732 | 4.418 | 0.118 | 0.215 | 0.012 | 0.010 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.20 | |
| 30 | 0.7345 | 1185.2 | 1206.2 | 1.157 | 3.659 | 68.730 | 21.888 | 4.207 | 0.121 | 0.215 | 0.012 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.42 | |
| 31 | 0.7356 | 1186.8 | 1207.8 | 1.157 | 3.660 | 68.516 | 22.099 | 4.209 | 0.118 | 0.216 | 0.012 | 0.009 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1408.30 | |
| Avg | 0.7295 | 1180.0 | 1200.9 | 1.109 | 3.577 | 69.515 | 21.406 | 4.067 | 0.108 | 0.196 | 0.011 | 0.008 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.05 | |

Zone 211

GQ Source Analysis

WBI Energy Transmission, Inc

| | | | |
|----------------------------|---------------------|------------------------------|---------|
| GQ Source Number: | 0602230 | Specific Gravity: | 0.6834 |
| GQ Source Name: | WATFORD CITY BORDER | Dry Heat Value: | 1153.57 |
| Effective Date: | 5/1/2013 9:00:00 AM | Wet Heat Value: | 1133.50 |
| Effective End Date: | 6/1/2013 9:00:00 AM | As Deliv. Heat Value: | 1153.57 |
| Pressure Base: | 14.730 | Sample Pressure: | 460.00 |
| Viscosity: | | Sample Temperature: | |

| | | <u>Mol %</u> | <u>Liquid Content</u> | | | <u>Mol %</u> |
|-----|------------|---------------|-----------------------|--------|------------------|--------------|
| C1 | Methane | 77.467 | | CO2 | Carbon Dioxide | 0.880 |
| C2 | Ethane | 15.937 | 4.2490 | N2 | Nitrogen | 2.395 |
| C3 | Propane | 3.069 | 0.8430 | O2 | Oxygen | 0.000 |
| IC4 | Isobutane | 0.094 | 0.0310 | He | Helium | |
| NC4 | n-Butane | 0.151 | 0.0480 | H2 | Hydrogen | |
| IC5 | Isopentane | 0.000 | 0.0000 | H2S | Hydrogen Sulfide | |
| NC5 | n-Pentane | 0.006 | 0.0020 | Ar | Argon | |
| C6 | Hexanes | 0.000 | 0.0000 | CO | Carbon Monoxide | |
| C7 | Heptanes | | | H2 | Water | |
| C8 | Octanes | | | Neo-C5 | Neopentane | |
| C9 | Nonanes | | | | | |
| C10 | Decanes | | | | | |
| | | Totals | 99.999% | | | 5.173 GPM |

Sample Date: 6/3/2013 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: Lab

Analysis Remarks:

Zone 25

GQ Source Analysis

WBI Energy Transmission, Inc

| | | | |
|----------------------------|----------------------|------------------------------|---------|
| GQ Source Number: | 0602160 | Specific Gravity: | 0.7329 |
| GQ Source Name: | FAIRVIEW BORDER | Dry Heat Value: | 1202.92 |
| Effective Date: | 4/1/2013 9:00:00 AM | Wet Heat Value: | 1181.98 |
| Effective End Date: | 1/18/2038 9:14:07 PM | As Deliv. Heat Value: | 1202.92 |
| Pressure Base: | 14.730 | Sample Pressure: | 250.00 |
| Viscosity: | | Sample Temperature: | |

| | | <u>Mol %</u> | <u>Liquid Content</u> | | | <u>Mol %</u> |
|---------------|------------|--------------|-----------------------|--------|------------------|--------------|
| C1 | Methane | 68.676 | | CO2 | Carbon Dioxide | 1.150 |
| C2 | Ethane | 21.911 | 5.8425 | N2 | Nitrogen | 3.677 |
| C3 | Propane | 4.253 | 1.1682 | O2 | Oxygen | 0.000 |
| IC4 | Isobutane | 0.114 | 0.0371 | He | Helium | |
| NC4 | n-Butane | 0.203 | 0.0638 | H2 | Hydrogen | |
| IC5 | Isopentane | 0.007 | 0.0026 | H2S | Hydrogen Sulfide | |
| NC5 | n-Pentane | 0.008 | 0.0030 | Ar | Argon | |
| C6 | Hexanes | 0.000 | 0.0000 | CO | Carbon Monoxide | |
| C7 | Heptanes | | | H2 | Water | |
| C8 | Octanes | | | Neo-C5 | Neopentane | |
| C9 | Nonanes | | | | | |
| C10 | Decanes | | | | | |
| Totals | | | 100.000% | | | 7.117 GPM |

Sample Date: 4/30/2013 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: Lab

Analysis Remarks:

Zone 241

GQ Source Analysis

WBI Energy Transmission, Inc

| | | | |
|----------------------------|---------------------|------------------------------|---------|
| GQ Source Number: | 2501030 | Specific Gravity: | 0.6672 |
| GQ Source Name: | LIGNITE PLANT | Dry Heat Value: | 1123.36 |
| Effective Date: | 5/1/2013 9:00:00 AM | Wet Heat Value: | 1103.81 |
| Effective End Date: | 6/1/2013 9:00:00 AM | As Deliv. Heat Value: | 1123.36 |
| Pressure Base: | 14.730 | Sample Pressure: | 345.00 |
| Viscosity: | | Sample Temperature: | |

| | <u>Mol %</u> | <u>Liquid Content</u> | | | <u>Mol %</u> | |
|---------------|--------------|-----------------------|---------|--------|------------------|-------|
| C1 | Methane | 77.219 | | CO2 | Carbon Dioxide | 0.090 |
| C2 | Ethane | 17.832 | 0.0000 | N2 | Nitrogen | 3.899 |
| C3 | Propane | 0.955 | 0.2620 | O2 | Oxygen | 0.000 |
| IC4 | Isobutane | 0.000 | 0.0000 | He | Helium | |
| NC4 | n-Butane | 0.000 | 0.0000 | H2 | Hydrogen | |
| IC5 | Isopentane | 0.000 | 0.0000 | H2S | Hydrogen Sulfide | |
| NC5 | n-Pentane | 0.000 | 0.0000 | Ar | Argon | |
| C6 | Hexanes | 0.000 | 0.0000 | CO | Carbon Monoxide | |
| C7 | Heptanes | | | H2 | Water | |
| C8 | Octanes | | | Neo-C5 | Neopentane | |
| C9 | Nonanes | | | | | |
| C10 | Decanes | | | | | |
| Totals | | | 99.995% | | 0.262 GPM | |

Sample Date: 6/3/2013 12:00:00 AM
Sample Type: Composite
Sample Tech: sampler
H2S: ppm

Sample Remarks:

Analysis Tech: Lab

Analysis Remarks:

Zone 263

*** End of Report ***

GQ Source Daily Summary

May 2013

Number: 043

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STATION-CLEVELAND STATION

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7066 | 1153.4 | 1173.8 | 0.508 | 3.974 | 71.924 | 20.777 | 2.556 | 0.075 | 0.150 | 0.008 | 0.008 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.39 | |
| 2 | 0.7148 | 1158.3 | 1178.8 | 0.531 | 4.404 | 70.512 | 21.467 | 2.801 | 0.079 | 0.169 | 0.009 | 0.010 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.31 | |
| 3 | 0.7101 | 1155.0 | 1175.5 | 0.497 | 4.214 | 71.313 | 21.034 | 2.667 | 0.074 | 0.158 | 0.010 | 0.011 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.98 | |
| 4 | 0.7080 | 1163.1 | 1183.7 | 0.514 | 3.492 | 72.441 | 20.134 | 3.068 | 0.100 | 0.203 | 0.012 | 0.013 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.76 | |
| 5 | 0.7041 | 1155.2 | 1175.6 | 0.507 | 3.624 | 72.918 | 19.741 | 2.921 | 0.084 | 0.165 | 0.009 | 0.009 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.05 | |
| 6 | 0.7058 | 1157.7 | 1178.2 | 0.500 | 3.641 | 72.581 | 20.066 | 2.921 | 0.080 | 0.163 | 0.010 | 0.012 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.40 | |
| 7 | 0.7064 | 1158.5 | 1179.0 | 0.477 | 3.686 | 72.396 | 20.239 | 2.916 | 0.079 | 0.162 | 0.009 | 0.010 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.76 | |
| 8 | 0.7089 | 1162.5 | 1183.1 | 0.471 | 3.673 | 72.692 | 19.369 | 3.327 | 0.127 | 0.280 | 0.018 | 0.019 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.16 | |
| 9 | 0.7114 | 1166.6 | 1187.3 | 0.486 | 3.639 | 72.334 | 19.832 | 3.088 | 0.138 | 0.353 | 0.039 | 0.049 | 0.041 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.60 | |
| 10 | 0.6992 | 1146.7 | 1167.0 | 0.494 | 3.708 | 73.224 | 19.953 | 2.398 | 0.064 | 0.124 | 0.006 | 0.007 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.57 | |
| 11 | 0.7007 | 1149.5 | 1169.9 | 0.512 | 3.640 | 72.989 | 20.226 | 2.399 | 0.066 | 0.130 | 0.007 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.63 | |
| 12 | 0.6997 | 1147.7 | 1168.0 | 0.507 | 3.670 | 73.223 | 19.899 | 2.479 | 0.066 | 0.126 | 0.006 | 0.006 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.34 | |
| 13 | 0.7022 | 1151.8 | 1172.1 | 0.499 | 3.673 | 72.928 | 19.979 | 2.687 | 0.068 | 0.134 | 0.007 | 0.007 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.74 | |
| 14 | 0.7170 | 1160.7 | 1181.2 | 0.522 | 4.478 | 70.428 | 21.098 | 3.193 | 0.077 | 0.165 | 0.010 | 0.010 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.01 | |
| 15 | 0.7118 | 1153.1 | 1173.5 | 0.491 | 4.507 | 70.856 | 21.228 | 2.660 | 0.070 | 0.151 | 0.008 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.90 | |
| 16 | 0.7131 | 1155.2 | 1175.6 | 0.487 | 4.504 | 70.693 | 21.295 | 2.769 | 0.068 | 0.147 | 0.008 | 0.008 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.20 | |
| 17 | 0.7137 | 1154.3 | 1174.8 | 0.498 | 4.599 | 70.639 | 21.185 | 2.816 | 0.070 | 0.152 | 0.009 | 0.010 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.54 | |
| 18 | 0.7152 | 1156.9 | 1177.4 | 0.488 | 4.589 | 70.457 | 21.283 | 2.894 | 0.077 | 0.169 | 0.010 | 0.011 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.28 | |
| 19 | 0.7154 | 1157.4 | 1177.9 | 0.495 | 4.574 | 70.264 | 21.599 | 2.816 | 0.069 | 0.148 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.61 | |
| 20 | 0.7141 | 1155.9 | 1176.3 | 0.498 | 4.544 | 70.448 | 21.531 | 2.725 | 0.068 | 0.147 | 0.009 | 0.009 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.00 | |
| 21 | 0.7104 | 1152.3 | 1172.7 | 0.490 | 4.419 | 71.041 | 21.242 | 2.565 | 0.066 | 0.141 | 0.008 | 0.008 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.38 | |
| 22 | 0.7065 | 1149.1 | 1169.5 | 0.493 | 4.241 | 71.673 | 20.972 | 2.390 | 0.063 | 0.134 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.38 | |
| 23 | 0.7070 | 1150.2 | 1170.6 | 0.489 | 4.233 | 71.623 | 20.997 | 2.410 | 0.065 | 0.142 | 0.009 | 0.010 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.13 | |
| 24 | 0.7062 | 1148.8 | 1169.2 | 0.485 | 4.244 | 71.726 | 20.927 | 2.385 | 0.063 | 0.135 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.30 | |
| 25 | 0.7072 | 1150.8 | 1171.1 | 0.491 | 4.212 | 71.585 | 21.033 | 2.450 | 0.062 | 0.132 | 0.007 | 0.008 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.66 | |
| 26 | 0.7086 | 1152.7 | 1173.1 | 0.488 | 4.228 | 71.492 | 20.951 | 2.591 | 0.065 | 0.141 | 0.009 | 0.010 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.62 | |
| 27 | 0.7085 | 1153.0 | 1173.4 | 0.486 | 4.204 | 71.450 | 21.066 | 2.555 | 0.064 | 0.137 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.09 | |
| 28 | 0.7091 | 1154.7 | 1175.2 | 0.491 | 4.154 | 71.440 | 21.012 | 2.661 | 0.065 | 0.139 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.51 | |
| 29 | 0.7077 | 1153.6 | 1174.1 | 0.482 | 4.093 | 71.857 | 20.547 | 2.781 | 0.065 | 0.136 | 0.007 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.65 | |
| 30 | 0.7082 | 1153.8 | 1174.3 | 0.482 | 4.132 | 71.590 | 20.942 | 2.610 | 0.064 | 0.136 | 0.008 | 0.009 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.36 | |
| 31 | 0.7079 | 1153.4 | 1173.8 | 0.488 | 4.128 | 71.516 | 21.130 | 2.501 | 0.064 | 0.136 | 0.007 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.06 | |
| Avg | 0.7086 | 1155.0 | 1175.0 | 0.495 | 4.101 | 71.686 | 20.734 | 2.710 | 0.074 | 0.158 | 0.010 | 0.011 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.92 | |

Zone 271

GQ Source Daily Summary

May 2013

Number: 063

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-MAPLETON

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7017 | 1150.2 | 1170.6 | 0.480 | 3.740 | 72.802 | 20.321 | 2.389 | 0.076 | 0.152 | 0.008 | 0.009 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.48 | |
| 2 | 0.7150 | 1159.8 | 1180.4 | 0.539 | 4.321 | 70.543 | 21.453 | 2.851 | 0.082 | 0.172 | 0.009 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.92 | |
| 3 | 0.7157 | 1159.2 | 1179.7 | 0.527 | 4.448 | 70.323 | 21.607 | 2.803 | 0.080 | 0.175 | 0.010 | 0.010 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.42 | |
| 4 | 0.7069 | 1158.5 | 1179.0 | 0.496 | 3.703 | 72.111 | 20.692 | 2.718 | 0.079 | 0.160 | 0.009 | 0.010 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.28 | |
| 5 | 0.7090 | 1163.2 | 1183.8 | 0.514 | 3.584 | 72.242 | 20.212 | 3.097 | 0.099 | 0.205 | 0.012 | 0.013 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.87 | |
| 6 | 0.7066 | 1159.0 | 1179.5 | 0.507 | 3.623 | 72.455 | 20.161 | 2.964 | 0.083 | 0.167 | 0.009 | 0.010 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.23 | |
| 7 | 0.7097 | 1163.0 | 1183.6 | 0.494 | 3.693 | 71.893 | 20.605 | 2.998 | 0.086 | 0.180 | 0.012 | 0.013 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.95 | |
| 8 | 0.7051 | 1156.9 | 1177.4 | 0.472 | 3.663 | 72.564 | 20.195 | 2.834 | 0.078 | 0.154 | 0.008 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.15 | |
| 9 | 0.7214 | 1182.1 | 1203.0 | 0.484 | 3.633 | 71.434 | 19.799 | 3.814 | 0.196 | 0.506 | 0.049 | 0.058 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 1416.36 | |
| 10 | 0.7024 | 1151.5 | 1171.8 | 0.505 | 3.700 | 72.775 | 20.278 | 2.481 | 0.068 | 0.137 | 0.008 | 0.014 | 0.033 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.18 | |
| 11 | 0.7013 | 1150.3 | 1170.7 | 0.502 | 3.668 | 72.851 | 20.340 | 2.403 | 0.065 | 0.134 | 0.008 | 0.009 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.95 | |
| 12 | 0.7016 | 1150.7 | 1171.1 | 0.513 | 3.657 | 72.801 | 20.370 | 2.436 | 0.065 | 0.126 | 0.006 | 0.006 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.12 | |
| 13 | 0.7019 | 1150.9 | 1171.3 | 0.510 | 3.670 | 72.834 | 20.242 | 2.517 | 0.067 | 0.130 | 0.007 | 0.007 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.14 | |
| 14 | 0.7048 | 1155.9 | 1176.4 | 0.499 | 3.659 | 72.431 | 20.473 | 2.699 | 0.069 | 0.137 | 0.008 | 0.008 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.24 | |
| 15 | 0.7215 | 1168.3 | 1189.0 | 0.551 | 4.391 | 69.835 | 21.465 | 3.465 | 0.082 | 0.173 | 0.010 | 0.010 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.81 | |
| 16 | 0.7135 | 1155.5 | 1175.9 | 0.498 | 4.510 | 70.563 | 21.479 | 2.685 | 0.072 | 0.156 | 0.009 | 0.009 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.14 | |
| 17 | 0.7156 | 1157.8 | 1178.3 | 0.505 | 4.550 | 70.275 | 21.578 | 2.829 | 0.072 | 0.155 | 0.009 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.95 | |
| 18 | 0.7150 | 1156.2 | 1176.6 | 0.502 | 4.604 | 70.370 | 21.452 | 2.806 | 0.071 | 0.155 | 0.009 | 0.010 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.48 | |
| 19 | 0.7171 | 1159.7 | 1180.3 | 0.494 | 4.588 | 70.132 | 21.564 | 2.925 | 0.080 | 0.175 | 0.011 | 0.011 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.81 | |
| 20 | 0.7166 | 1158.9 | 1179.4 | 0.500 | 4.585 | 70.058 | 21.769 | 2.830 | 0.071 | 0.151 | 0.009 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.28 | |
| 21 | 0.7152 | 1157.3 | 1177.8 | 0.503 | 4.547 | 70.253 | 21.708 | 2.733 | 0.069 | 0.150 | 0.009 | 0.009 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.72 | |
| 22 | 0.7094 | 1152.2 | 1172.6 | 0.489 | 4.341 | 71.152 | 21.301 | 2.479 | 0.065 | 0.140 | 0.008 | 0.008 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.16 | |
| 23 | 0.7086 | 1152.2 | 1172.6 | 0.500 | 4.249 | 71.336 | 21.216 | 2.452 | 0.065 | 0.143 | 0.009 | 0.010 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.93 | |
| 24 | 0.7076 | 1151.5 | 1171.9 | 0.485 | 4.221 | 71.401 | 21.302 | 2.358 | 0.063 | 0.136 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.09 | |
| 25 | 0.7078 | 1151.5 | 1171.9 | 0.495 | 4.219 | 71.443 | 21.188 | 2.422 | 0.064 | 0.136 | 0.008 | 0.008 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.94 | |
| 26 | 0.7101 | 1155.0 | 1175.4 | 0.494 | 4.221 | 71.148 | 21.334 | 2.555 | 0.065 | 0.142 | 0.009 | 0.010 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.92 | |
| 27 | 0.7099 | 1154.6 | 1175.1 | 0.488 | 4.234 | 71.202 | 21.246 | 2.586 | 0.065 | 0.140 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.67 | |
| 28 | 0.7098 | 1155.1 | 1175.5 | 0.494 | 4.193 | 71.210 | 21.282 | 2.579 | 0.065 | 0.139 | 0.008 | 0.008 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.25 | |
| 29 | 0.7103 | 1157.4 | 1177.9 | 0.490 | 4.102 | 71.324 | 21.062 | 2.776 | 0.067 | 0.140 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.61 | |
| 30 | 0.7080 | 1154.4 | 1174.9 | 0.445 | 4.133 | 71.625 | 20.905 | 2.647 | 0.066 | 0.138 | 0.008 | 0.009 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.28 | |
| 31 | 0.7102 | 1157.2 | 1177.7 | 0.459 | 4.149 | 71.141 | 21.398 | 2.610 | 0.065 | 0.138 | 0.008 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.50 | |
| Avg | 0.7100 | 1157.0 | 1177.5 | 0.498 | 4.084 | 71.436 | 20.968 | 2.734 | 0.076 | 0.163 | 0.010 | 0.011 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.41 | |

Zone 272



GQ Source Daily Summary

May 2013

Number: 061

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STATION-GRAFTON BORDER

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 |
|-----|------------------|---------------|-----------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| | | Value Wet | Value Dry | | | | | | | | | | | | | | | | |
| 1 | 0.7015 | 1150.1 | 1170.5 | 0.478 | 3.734 | 72.835 | 20.295 | 2.387 | 0.077 | 0.154 | 0.008 | 0.009 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.51 | |
| 2 | 0.7148 | 1159.6 | 1180.2 | 0.540 | 4.310 | 70.559 | 21.459 | 2.848 | 0.081 | 0.171 | 0.009 | 0.009 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.91 | |
| 3 | 0.7157 | 1159.1 | 1179.6 | 0.526 | 4.449 | 70.322 | 21.610 | 2.802 | 0.080 | 0.174 | 0.010 | 0.010 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.35 | |
| 4 | 0.7069 | 1158.4 | 1178.9 | 0.496 | 3.714 | 72.095 | 20.689 | 2.728 | 0.079 | 0.160 | 0.009 | 0.010 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.09 | |
| 5 | 0.7085 | 1162.5 | 1183.1 | 0.514 | 3.583 | 72.265 | 20.220 | 3.082 | 0.098 | 0.202 | 0.012 | 0.012 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.50 | |
| 6 | 0.7065 | 1158.9 | 1179.4 | 0.507 | 3.622 | 72.465 | 20.146 | 2.975 | 0.084 | 0.168 | 0.009 | 0.009 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.14 | |
| 7 | 0.7096 | 1162.8 | 1183.4 | 0.493 | 3.693 | 71.905 | 20.590 | 3.008 | 0.086 | 0.182 | 0.012 | 0.013 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.88 | |
| 8 | 0.7050 | 1156.8 | 1177.3 | 0.472 | 3.666 | 72.560 | 20.209 | 2.820 | 0.077 | 0.154 | 0.008 | 0.009 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.10 | |
| 9 | 0.7199 | 1179.5 | 1200.4 | 0.485 | 3.643 | 71.535 | 19.786 | 3.787 | 0.190 | 0.477 | 0.041 | 0.044 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.80 | |
| 10 | 0.7022 | 1151.1 | 1171.5 | 0.505 | 3.703 | 72.790 | 20.264 | 2.487 | 0.068 | 0.137 | 0.008 | 0.012 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.96 | |
| 11 | 0.7010 | 1149.8 | 1170.2 | 0.504 | 3.669 | 72.879 | 20.321 | 2.401 | 0.065 | 0.130 | 0.008 | 0.008 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.61 | |
| 12 | 0.7015 | 1150.5 | 1170.9 | 0.513 | 3.658 | 72.811 | 20.362 | 2.436 | 0.065 | 0.127 | 0.006 | 0.006 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.00 | |
| 13 | 0.7018 | 1150.9 | 1171.3 | 0.510 | 3.664 | 72.845 | 20.239 | 2.515 | 0.067 | 0.130 | 0.007 | 0.007 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.19 | |
| 14 | 0.7047 | 1155.8 | 1176.2 | 0.500 | 3.660 | 72.446 | 20.463 | 2.688 | 0.069 | 0.137 | 0.007 | 0.008 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.14 | |
| 15 | 0.7213 | 1168.2 | 1188.9 | 0.555 | 4.375 | 69.882 | 21.433 | 3.462 | 0.082 | 0.172 | 0.010 | 0.010 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.84 | |
| 16 | 0.7137 | 1155.7 | 1176.2 | 0.499 | 4.506 | 70.552 | 21.480 | 2.695 | 0.072 | 0.156 | 0.009 | 0.009 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.29 | |
| 17 | 0.7155 | 1157.8 | 1178.3 | 0.503 | 4.544 | 70.307 | 21.567 | 2.808 | 0.072 | 0.155 | 0.009 | 0.009 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.00 | |
| 18 | 0.7152 | 1156.4 | 1176.9 | 0.501 | 4.603 | 70.361 | 21.452 | 2.808 | 0.072 | 0.155 | 0.009 | 0.010 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.65 | |
| 19 | 0.7169 | 1159.4 | 1179.9 | 0.492 | 4.595 | 70.162 | 21.534 | 2.919 | 0.079 | 0.174 | 0.011 | 0.011 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.53 | |
| 20 | 0.7166 | 1159.0 | 1179.5 | 0.500 | 4.584 | 70.043 | 21.787 | 2.828 | 0.071 | 0.151 | 0.008 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.35 | |
| 21 | 0.7152 | 1157.4 | 1177.9 | 0.503 | 4.546 | 70.249 | 21.710 | 2.736 | 0.069 | 0.150 | 0.009 | 0.009 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.76 | |
| 22 | 0.7095 | 1152.2 | 1172.6 | 0.488 | 4.343 | 71.144 | 21.303 | 2.482 | 0.065 | 0.140 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.18 | |
| 23 | 0.7087 | 1152.2 | 1172.6 | 0.501 | 4.249 | 71.331 | 21.216 | 2.455 | 0.065 | 0.143 | 0.009 | 0.010 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.95 | |
| 24 | 0.7077 | 1151.6 | 1172.0 | 0.485 | 4.221 | 71.392 | 21.308 | 2.359 | 0.064 | 0.136 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.12 | |
| 25 | 0.7078 | 1151.5 | 1171.9 | 0.497 | 4.220 | 71.434 | 21.194 | 2.422 | 0.064 | 0.136 | 0.008 | 0.008 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.91 | |
| 26 | 0.7100 | 1155.0 | 1175.4 | 0.493 | 4.221 | 71.159 | 21.321 | 2.558 | 0.066 | 0.142 | 0.009 | 0.010 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.92 | |
| 27 | 0.7099 | 1154.7 | 1175.2 | 0.488 | 4.233 | 71.194 | 21.252 | 2.588 | 0.065 | 0.140 | 0.008 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.75 | |
| 28 | 0.7098 | 1155.1 | 1175.5 | 0.496 | 4.191 | 71.207 | 21.287 | 2.576 | 0.065 | 0.140 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.24 | |
| 29 | 0.7104 | 1157.6 | 1178.1 | 0.490 | 4.099 | 71.306 | 21.083 | 2.775 | 0.067 | 0.140 | 0.008 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.75 | |
| 30 | 0.7079 | 1154.3 | 1174.7 | 0.446 | 4.134 | 71.635 | 20.899 | 2.642 | 0.066 | 0.139 | 0.008 | 0.009 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.19 | |
| 31 | 0.7102 | 1157.2 | 1177.7 | 0.461 | 4.147 | 71.143 | 21.394 | 2.614 | 0.065 | 0.138 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.51 | |
| Avg | 0.7099 | 1157.0 | 1177.3 | 0.498 | 4.083 | 71.446 | 20.964 | 2.732 | 0.076 | 0.162 | 0.010 | 0.010 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.33 | |

Zone 293

GQ Source Daily Summary

May 2013

| | | |
|---|-----------------------|------------------|
| Number: 041 | Pressure Base: 14.730 | Contract Day: 1 |
| Name: BISMARCK STATION-GLEN ULLIN STATION | Temperature Base: | Contract Hour: 9 |

| Day | Relative Density | Heating Value Wet | Heating Value Dry | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.6817 | 1121.4 | 1141.3 | 0.501 | 3.583 | 76.276 | 17.582 | 1.850 | 0.062 | 0.106 | 0.010 | 0.007 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.33 | |
| 2 | 0.6941 | 1132.2 | 1152.3 | 0.519 | 4.071 | 74.152 | 18.748 | 2.266 | 0.070 | 0.135 | 0.011 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.01 | |
| 3 | 0.7066 | 1150.8 | 1171.1 | 0.487 | 4.160 | 71.904 | 20.631 | 2.552 | 0.071 | 0.152 | 0.010 | 0.011 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.27 | |
| 4 | 0.7077 | 1162.7 | 1183.2 | 0.514 | 3.498 | 72.461 | 20.128 | 3.048 | 0.099 | 0.203 | 0.012 | 0.012 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.47 | |
| 5 | 0.7042 | 1155.4 | 1175.9 | 0.507 | 3.622 | 72.906 | 19.747 | 2.926 | 0.085 | 0.167 | 0.009 | 0.009 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.18 | |
| 6 | 0.7078 | 1160.7 | 1181.2 | 0.503 | 3.642 | 72.383 | 20.083 | 3.065 | 0.089 | 0.186 | 0.012 | 0.013 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.04 | |
| 7 | 0.7065 | 1158.5 | 1179.1 | 0.477 | 3.689 | 72.389 | 20.241 | 2.917 | 0.079 | 0.163 | 0.009 | 0.010 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.74 | |
| 8 | 0.7083 | 1161.7 | 1182.3 | 0.469 | 3.675 | 72.741 | 19.366 | 3.293 | 0.124 | 0.273 | 0.017 | 0.019 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.73 | |
| 9 | 0.7115 | 1166.7 | 1187.4 | 0.487 | 3.640 | 72.336 | 19.815 | 3.101 | 0.140 | 0.353 | 0.039 | 0.050 | 0.041 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.64 | |
| 10 | 0.6993 | 1146.7 | 1167.0 | 0.495 | 3.713 | 73.224 | 19.935 | 2.409 | 0.064 | 0.125 | 0.006 | 0.007 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.52 | |
| 11 | 0.7007 | 1149.5 | 1169.8 | 0.511 | 3.646 | 72.993 | 20.214 | 2.403 | 0.066 | 0.130 | 0.007 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.56 | |
| 12 | 0.6997 | 1147.7 | 1168.0 | 0.507 | 3.670 | 73.219 | 19.908 | 2.471 | 0.066 | 0.126 | 0.006 | 0.006 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.33 | |
| 13 | 0.7019 | 1151.2 | 1171.6 | 0.499 | 3.671 | 72.990 | 19.936 | 2.669 | 0.068 | 0.134 | 0.007 | 0.007 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.45 | |
| 14 | 0.7167 | 1160.8 | 1181.3 | 0.522 | 4.444 | 70.496 | 21.055 | 3.204 | 0.076 | 0.163 | 0.010 | 0.010 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.43 | |
| 15 | 0.7117 | 1152.9 | 1173.3 | 0.491 | 4.506 | 70.881 | 21.211 | 2.654 | 0.070 | 0.151 | 0.008 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.81 | |
| 16 | 0.7130 | 1155.1 | 1175.5 | 0.488 | 4.500 | 70.720 | 21.263 | 2.778 | 0.068 | 0.147 | 0.008 | 0.009 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.17 | |
| 17 | 0.7138 | 1154.4 | 1174.9 | 0.498 | 4.600 | 70.641 | 21.166 | 2.830 | 0.071 | 0.153 | 0.009 | 0.010 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.58 | |
| 18 | 0.7149 | 1156.4 | 1176.9 | 0.487 | 4.596 | 70.505 | 21.239 | 2.886 | 0.077 | 0.168 | 0.010 | 0.011 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.94 | |
| 19 | 0.7154 | 1157.4 | 1177.9 | 0.495 | 4.576 | 70.270 | 21.588 | 2.819 | 0.069 | 0.149 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.57 | |
| 20 | 0.7141 | 1155.7 | 1176.2 | 0.498 | 4.548 | 70.456 | 21.517 | 2.729 | 0.068 | 0.147 | 0.009 | 0.009 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.90 | |
| 21 | 0.7106 | 1152.5 | 1172.9 | 0.490 | 4.430 | 71.003 | 21.255 | 2.578 | 0.067 | 0.142 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.39 | |
| 22 | 0.7063 | 1148.9 | 1169.2 | 0.493 | 4.243 | 71.703 | 20.939 | 2.389 | 0.063 | 0.134 | 0.008 | 0.008 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.20 | |
| 23 | 0.7070 | 1150.1 | 1170.4 | 0.490 | 4.239 | 71.633 | 20.976 | 2.415 | 0.065 | 0.141 | 0.009 | 0.010 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.99 | |
| 24 | 0.7062 | 1148.9 | 1169.2 | 0.484 | 4.243 | 71.727 | 20.930 | 2.383 | 0.063 | 0.135 | 0.008 | 0.008 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.35 | |
| 25 | 0.7070 | 1150.6 | 1170.9 | 0.491 | 4.213 | 71.607 | 21.017 | 2.443 | 0.062 | 0.132 | 0.007 | 0.008 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.54 | |
| 26 | 0.7085 | 1152.6 | 1173.1 | 0.488 | 4.230 | 71.496 | 20.948 | 2.589 | 0.065 | 0.141 | 0.009 | 0.010 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.59 | |
| 27 | 0.7085 | 1152.9 | 1173.4 | 0.486 | 4.206 | 71.453 | 21.060 | 2.555 | 0.064 | 0.137 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.04 | |
| 28 | 0.7090 | 1154.5 | 1174.9 | 0.491 | 4.157 | 71.453 | 21.005 | 2.652 | 0.065 | 0.139 | 0.008 | 0.008 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.35 | |
| 29 | 0.7078 | 1153.9 | 1174.3 | 0.482 | 4.092 | 71.844 | 20.548 | 2.794 | 0.066 | 0.136 | 0.007 | 0.008 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.79 | |
| 30 | 0.7079 | 1153.5 | 1173.9 | 0.480 | 4.133 | 71.629 | 20.917 | 2.597 | 0.064 | 0.136 | 0.008 | 0.009 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.19 | |
| 31 | 0.7080 | 1153.5 | 1173.9 | 0.490 | 4.125 | 71.512 | 21.129 | 2.507 | 0.064 | 0.136 | 0.008 | 0.008 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.14 | |
| Avg | 0.7070 | 1153.0 | 1173.0 | 0.494 | 4.076 | 71.968 | 20.519 | 2.670 | 0.074 | 0.156 | 0.010 | 0.011 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.04 | |

Zone 28

GQ Source Daily Summary

May 2013

Number: 271

Pressure Base: 14.730

Contract Day: 1

Name: DICKINSON STN-BELFIELD TSF-GLENULLIN STN

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 | 0.6632 | 1101.7 | 1121.2 | 0.244 | 3.436 | 78.776 | 16.299 | 1.196 | 0.019 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1376.75 | |
| 2 | 0.6534 | 1090.5 | 1109.8 | 0.108 | 3.412 | 80.302 | 15.298 | 0.842 | 0.016 | 0.020 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1372.94 | |
| 3 | 0.6572 | 1097.9 | 1117.3 | 0.078 | 3.368 | 79.388 | 16.387 | 0.748 | 0.014 | 0.017 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1378.24 | |
| 4 | 0.6811 | 1150.1 | 1170.5 | 0.000 | 2.557 | 74.161 | 22.865 | 0.404 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.30 | |
| 5 | 0.6834 | 1153.2 | 1173.6 | 0.000 | 2.586 | 73.926 | 22.895 | 0.531 | 0.016 | 0.036 | 0.004 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.66 | |
| 6 | 0.6823 | 1151.3 | 1171.7 | 0.000 | 2.598 | 73.945 | 23.014 | 0.430 | 0.006 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.50 | |
| 7 | 0.6818 | 1150.6 | 1171.0 | 0.000 | 2.593 | 74.015 | 22.980 | 0.400 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.18 | |
| 8 | 0.6821 | 1151.3 | 1171.7 | 0.000 | 2.578 | 73.953 | 23.060 | 0.396 | 0.006 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.74 | |
| 9 | 0.6815 | 1149.3 | 1169.7 | 0.000 | 2.640 | 74.069 | 22.884 | 0.392 | 0.005 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1416.94 | |
| 10 | 0.6815 | 1149.3 | 1169.7 | 0.000 | 2.640 | 74.069 | 22.884 | 0.392 | 0.005 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1416.94 | |
| 11 | 0.6812 | 1148.9 | 1169.2 | 0.001 | 2.644 | 74.120 | 22.825 | 0.394 | 0.005 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1416.60 | |
| 12 | 0.6733 | 1130.1 | 1150.1 | 0.087 | 2.911 | 76.134 | 20.125 | 0.710 | 0.013 | 0.018 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1401.56 | |
| 13 | 0.6816 | 1147.6 | 1168.0 | 0.043 | 2.686 | 74.335 | 22.286 | 0.625 | 0.010 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.73 | |
| 14 | 0.6692 | 1121.6 | 1141.4 | 0.105 | 3.010 | 77.019 | 19.087 | 0.743 | 0.014 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.35 | |
| 15 | 0.6759 | 1136.7 | 1156.9 | 0.054 | 2.798 | 75.461 | 21.068 | 0.593 | 0.011 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.16 | |
| 16 | 0.6677 | 1119.1 | 1139.0 | 0.128 | 2.990 | 77.363 | 18.718 | 0.762 | 0.016 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.77 | |
| 17 | 0.6763 | 1138.7 | 1158.8 | 0.066 | 2.758 | 75.694 | 20.945 | 0.508 | 0.011 | 0.014 | 0.002 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.13 | |
| 18 | 0.6846 | 1155.9 | 1176.4 | 0.000 | 2.528 | 73.887 | 22.813 | 0.692 | 0.023 | 0.047 | 0.004 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1421.81 | |
| 19 | 0.6826 | 1151.9 | 1172.3 | 0.000 | 2.591 | 73.913 | 23.011 | 0.473 | 0.005 | 0.006 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.92 | |
| 20 | 0.6822 | 1151.1 | 1171.5 | 0.000 | 2.606 | 74.006 | 22.888 | 0.488 | 0.005 | 0.006 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.28 | |
| 21 | 0.6844 | 1154.4 | 1174.8 | 0.000 | 2.607 | 73.778 | 22.909 | 0.690 | 0.007 | 0.010 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1420.10 | |
| 22 | 0.6825 | 1151.8 | 1172.2 | 0.000 | 2.585 | 73.952 | 22.970 | 0.481 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.91 | |
| 23 | 0.6825 | 1151.8 | 1172.2 | 0.000 | 2.582 | 73.955 | 22.969 | 0.483 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.97 | |
| 24 | 0.6829 | 1152.3 | 1172.7 | 0.000 | 2.596 | 73.906 | 22.961 | 0.525 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.07 | |
| 25 | 0.6826 | 1152.0 | 1172.4 | 0.000 | 2.581 | 73.958 | 22.943 | 0.507 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.10 | |
| 26 | 0.6827 | 1152.5 | 1172.9 | 0.000 | 2.563 | 73.951 | 22.948 | 0.526 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.57 | |
| 27 | 0.6820 | 1150.9 | 1171.3 | 0.000 | 2.594 | 74.058 | 22.843 | 0.494 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1418.34 | |
| 28 | 0.6828 | 1152.6 | 1173.0 | 0.000 | 2.565 | 73.932 | 22.971 | 0.520 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.58 | |
| 29 | 0.6827 | 1152.9 | 1173.3 | 0.000 | 2.538 | 73.948 | 22.991 | 0.511 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1420.04 | |
| 30 | 0.6827 | 1152.8 | 1173.2 | 0.000 | 2.543 | 73.929 | 23.020 | 0.496 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.95 | |
| 31 | 0.6825 | 1152.6 | 1173.0 | 0.000 | 2.538 | 73.963 | 23.004 | 0.485 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1419.88 | |
| Avg | 0.6784 | 1143.0 | 1162.9 | 0.030 | 2.717 | 74.899 | 21.770 | 0.563 | 0.009 | 0.013 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.81 | |

Zone 31, 311

GQ Source Daily Summary

May 2013

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE-BELFIELD TRANSFER

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 | 0.6857 | 1157.4 | 1177.9 | 0.000 | 2.553 | 73.239 | 23.765 | 0.430 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.39 |
| 2 | 0.6855 | 1156.9 | 1177.3 | 0.000 | 2.562 | 73.294 | 23.697 | 0.434 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.01 |
| 3 | 0.6859 | 1157.6 | 1178.1 | 0.000 | 2.553 | 73.219 | 23.780 | 0.435 | 0.005 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.51 |
| 4 | 0.6856 | 1156.8 | 1177.3 | 0.000 | 2.574 | 73.317 | 23.629 | 0.455 | 0.008 | 0.015 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1421.83 |
| 5 | 0.6851 | 1156.0 | 1176.4 | 0.000 | 2.585 | 73.334 | 23.662 | 0.407 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1421.25 |
| 6 | 0.6859 | 1157.2 | 1177.7 | 0.000 | 2.584 | 73.169 | 23.830 | 0.405 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1421.96 |
| 7 | 0.6863 | 1158.0 | 1178.5 | 0.000 | 2.574 | 73.094 | 23.912 | 0.408 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.49 |
| 8 | 0.6861 | 1157.7 | 1178.2 | 0.000 | 2.573 | 73.128 | 23.885 | 0.403 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.35 |
| 9 | 0.6854 | 1156.7 | 1177.1 | 0.000 | 2.562 | 73.296 | 23.719 | 0.411 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1421.89 |
| 10 | 0.6861 | 1157.8 | 1178.3 | 0.000 | 2.562 | 73.145 | 23.877 | 0.404 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.51 |
| 11 | 0.6862 | 1158.3 | 1178.8 | 0.000 | 2.547 | 73.117 | 23.915 | 0.409 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.95 |
| 12 | 0.6858 | 1157.7 | 1178.2 | 0.000 | 2.538 | 73.227 | 23.800 | 0.422 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.73 |
| 13 | 0.6860 | 1158.0 | 1178.6 | 0.000 | 2.533 | 73.207 | 23.810 | 0.435 | 0.006 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.98 |
| 14 | 0.6861 | 1157.8 | 1178.3 | 0.000 | 2.561 | 73.141 | 23.886 | 0.400 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.54 |
| 15 | 0.6859 | 1157.8 | 1178.3 | 0.000 | 2.547 | 73.180 | 23.851 | 0.409 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.70 |
| 16 | 0.6856 | 1157.5 | 1178.0 | 0.000 | 2.533 | 73.235 | 23.824 | 0.396 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.70 |
| 17 | 0.6920 | 1167.5 | 1188.2 | 0.000 | 2.517 | 72.812 | 23.563 | 0.944 | 0.043 | 0.095 | 0.010 | 0.011 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1428.31 |
| 18 | 0.6861 | 1158.1 | 1178.6 | 0.000 | 2.549 | 73.150 | 23.865 | 0.425 | 0.004 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.84 |
| 19 | 0.6866 | 1158.1 | 1178.6 | 0.000 | 2.591 | 73.113 | 23.797 | 0.488 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.38 |
| 20 | 0.6865 | 1158.3 | 1178.8 | 0.000 | 2.570 | 73.146 | 23.768 | 0.504 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.72 |
| 21 | 0.6897 | 1162.7 | 1183.3 | 0.000 | 2.604 | 72.787 | 23.799 | 0.791 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1424.75 |
| 22 | 0.6871 | 1159.1 | 1179.7 | 0.000 | 2.574 | 73.050 | 23.842 | 0.523 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.14 |
| 23 | 0.6866 | 1158.2 | 1178.7 | 0.000 | 2.584 | 73.145 | 23.744 | 0.516 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.49 |
| 24 | 0.6871 | 1159.2 | 1179.7 | 0.000 | 2.574 | 73.045 | 23.848 | 0.522 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.16 |
| 25 | 0.6867 | 1158.8 | 1179.3 | 0.000 | 2.561 | 73.113 | 23.805 | 0.510 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.09 |
| 26 | 0.6866 | 1158.4 | 1178.9 | 0.000 | 2.571 | 73.151 | 23.742 | 0.525 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.77 |
| 27 | 0.6864 | 1158.4 | 1178.9 | 0.000 | 2.554 | 73.167 | 23.768 | 0.500 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.96 |
| 28 | 0.6867 | 1159.3 | 1179.8 | 0.000 | 2.528 | 73.127 | 23.823 | 0.511 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.71 |
| 29 | 0.6868 | 1159.3 | 1179.9 | 0.000 | 2.532 | 73.111 | 23.830 | 0.516 | 0.005 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.72 |
| 30 | 0.6863 | 1158.6 | 1179.1 | 0.000 | 2.531 | 73.180 | 23.793 | 0.486 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.33 |
| 31 | 0.6870 | 1159.6 | 1180.1 | 0.000 | 2.541 | 73.039 | 23.910 | 0.498 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1423.75 |
| Avg | 0.6865 | 1158.0 | 1179.0 | 0.000 | 2.559 | 73.144 | 23.798 | 0.481 | 0.006 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1422.93 |

Zone 33

GQ Source Daily Summary

May 2013

Number: 331

Pressure Base: 14.730

Contract Day: 1

Name: MARMARTH PLANT

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 | 0.6709 | 1049.8 | 1068.3 | 0.713 | 6.619 | 77.950 | 12.865 | 1.676 | 0.049 | 0.109 | 0.006 | 0.010 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 1306.20 | |
| 2 | 0.6955 | 1060.0 | 1078.8 | 1.023 | 7.843 | 73.238 | 15.880 | 1.796 | 0.055 | 0.139 | 0.007 | 0.015 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 1295.54 | |
| 3 | 0.7970 | 1128.4 | 1148.3 | 1.715 | 12.177 | 53.979 | 28.838 | 2.894 | 0.084 | 0.262 | 0.012 | 0.033 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 1286.35 | |
| 4 | 0.8018 | 1131.4 | 1151.4 | 2.159 | 11.767 | 53.774 | 28.758 | 3.124 | 0.089 | 0.278 | 0.012 | 0.033 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1285.87 | |
| 5 | 0.8019 | 1132.2 | 1152.3 | 2.099 | 11.820 | 53.667 | 28.871 | 3.134 | 0.087 | 0.272 | 0.012 | 0.032 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1286.73 | |
| 6 | 0.8025 | 1126.2 | 1146.2 | 2.435 | 11.728 | 53.684 | 28.815 | 2.935 | 0.086 | 0.269 | 0.012 | 0.031 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1279.48 | |
| 7 | 0.8048 | 1135.7 | 1155.8 | 2.325 | 11.535 | 53.529 | 28.868 | 3.342 | 0.086 | 0.267 | 0.011 | 0.031 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1288.38 | |
| 8 | 0.7994 | 1132.2 | 1152.3 | 2.010 | 11.718 | 53.852 | 29.075 | 2.991 | 0.076 | 0.235 | 0.010 | 0.027 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1288.79 | |
| 9 | 0.8022 | 1137.3 | 1157.4 | 2.054 | 11.605 | 53.470 | 29.425 | 3.071 | 0.080 | 0.249 | 0.011 | 0.030 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1292.30 | |
| 10 | 0.7973 | 1128.2 | 1148.2 | 1.962 | 11.837 | 54.227 | 28.648 | 2.949 | 0.080 | 0.249 | 0.011 | 0.031 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1285.91 | |
| 11 | 0.8012 | 1127.9 | 1147.8 | 2.221 | 11.832 | 53.913 | 28.501 | 3.136 | 0.086 | 0.265 | 0.011 | 0.031 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1282.38 | |
| 12 | 0.8029 | 1124.8 | 1144.7 | 2.446 | 11.838 | 53.922 | 28.151 | 3.216 | 0.090 | 0.284 | 0.013 | 0.035 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1277.50 | |
| 13 | 0.7983 | 1117.1 | 1136.9 | 2.333 | 12.051 | 54.558 | 27.551 | 3.092 | 0.087 | 0.275 | 0.012 | 0.034 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 1272.34 | |
| 14 | 0.7922 | 1112.6 | 1132.3 | 2.033 | 12.202 | 55.162 | 27.420 | 2.790 | 0.081 | 0.259 | 0.012 | 0.035 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 1272.22 | |
| 15 | 0.7920 | 1116.7 | 1136.5 | 1.905 | 12.137 | 54.907 | 28.027 | 2.634 | 0.081 | 0.256 | 0.012 | 0.034 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 1276.97 | |
| 16 | 0.7975 | 1121.6 | 1141.5 | 2.255 | 11.819 | 54.395 | 28.284 | 2.864 | 0.082 | 0.255 | 0.011 | 0.030 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1278.18 | |
| 17 | 0.8000 | 1123.0 | 1142.9 | 2.350 | 11.821 | 54.185 | 28.222 | 3.019 | 0.086 | 0.269 | 0.012 | 0.032 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1277.79 | |
| 18 | 0.7995 | 1121.8 | 1141.7 | 2.322 | 11.891 | 54.119 | 28.349 | 2.936 | 0.082 | 0.256 | 0.011 | 0.030 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1276.83 | |
| 19 | 0.8011 | 1119.2 | 1139.0 | 2.537 | 11.880 | 53.788 | 28.661 | 2.775 | 0.077 | 0.239 | 0.011 | 0.029 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 1272.60 | |
| 20 | 0.7992 | 1129.5 | 1149.5 | 2.063 | 11.788 | 53.871 | 29.025 | 2.876 | 0.081 | 0.252 | 0.011 | 0.030 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1285.83 | |
| 21 | 0.7936 | 1128.6 | 1148.5 | 1.686 | 11.897 | 54.388 | 28.983 | 2.685 | 0.077 | 0.239 | 0.011 | 0.029 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1289.27 | |
| 22 | 0.7949 | 1126.9 | 1146.9 | 1.900 | 11.791 | 54.302 | 28.998 | 2.659 | 0.075 | 0.232 | 0.010 | 0.028 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1286.36 | |
| 23 | 0.7935 | 1121.5 | 1141.3 | 1.924 | 11.953 | 54.588 | 28.533 | 2.651 | 0.075 | 0.233 | 0.011 | 0.028 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1281.28 | |
| 24 | 0.7956 | 1120.8 | 1140.7 | 2.030 | 12.033 | 54.358 | 28.476 | 2.739 | 0.078 | 0.242 | 0.011 | 0.029 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1278.83 | |
| 25 | 0.7963 | 1124.5 | 1144.5 | 1.969 | 11.959 | 54.172 | 28.802 | 2.735 | 0.078 | 0.242 | 0.010 | 0.028 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1282.54 | |
| 26 | 0.7973 | 1123.2 | 1143.0 | 2.012 | 12.079 | 54.013 | 28.771 | 2.756 | 0.079 | 0.246 | 0.011 | 0.029 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1280.09 | |
| 27 | 0.7885 | 1113.7 | 1133.4 | 1.724 | 12.264 | 55.228 | 27.916 | 2.524 | 0.073 | 0.228 | 0.011 | 0.029 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1276.39 | |
| 28 | 0.7852 | 1119.6 | 1139.4 | 1.518 | 11.914 | 55.556 | 28.302 | 2.387 | 0.069 | 0.214 | 0.010 | 0.027 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1285.79 | |
| 29 | 0.7826 | 1101.5 | 1121.0 | 1.803 | 12.336 | 56.145 | 27.165 | 2.229 | 0.068 | 0.213 | 0.010 | 0.026 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1267.18 | |
| 30 | 0.8070 | 1085.4 | 1104.6 | 2.381 | 14.726 | 52.278 | 27.259 | 2.938 | 0.090 | 0.280 | 0.012 | 0.033 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1229.83 | |
| 31 | 0.8102 | 1059.1 | 1077.9 | 2.250 | 16.833 | 51.292 | 26.156 | 3.033 | 0.093 | 0.289 | 0.013 | 0.036 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 1197.49 | |
| Avg | 0.7904 | 1116.0 | 1135.9 | 2.005 | 11.861 | 55.500 | 27.471 | 2.793 | 0.079 | 0.245 | 0.011 | 0.029 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 1278.17 | |

Zone 34

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

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

| STATE | ZONE | ZONE BOUNDARY | 12 MONTH AVERAGE | MAY 13 | APR 13 | MAR 13 | FEB 13 | JAN 13 | DEC 12 | NOV 12 | OCT 12 | SEPT 12 | AUG 12 | JULY 12 | JUNE 12 | ZONE |
|-------|------|-----------------------------------|------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|---------|---------|------|
| MT/ND | 211 | Sidney Area | 1202 | 1201 | 1213 | 1206 | 1202 | 1203 | 1200 | 1201 | 1200 | 1202 | 1197 | 1197 | 1200 | 211 |
| ND | 24 | Williston Area | 1201 | 1197 | 1216 | 1204 | 1204 | 1204 | 1203 | 1199 | 1195 | 1197 | 1198 | 1203 | 1197 | 24 |
| ND | 25 | Watford City Area | 1183 | 1154 | 1200 | 1201 | 1196 | 1192 | 1192 | 1188 | 1176 | 1183 | 1184 | 1176 | 1151 | 25 |
| ND/MT | 241 | Fairview Area | 1193 | 1203 | 1203 | 1195 | 1196 | 1191 | 1191 | 1192 | 1189 | 1191 | 1187 | 1185 | 1191 | 241 |
| ND | 261 | Williston - Tioga - Minot Line | 1156 | 1159 | 1163 | 1123 | 1139 | 1160 | 1162 | 1162 | 1164 | 1170 | 1151 | 1161 | 1157 | 261 |
| ND | 262 | Minot Area | 1169 | 1177 | 1172 | 1170 | 1168 | 1163 | 1165 | 1165 | 1171 | 1175 | 1179 | 1163 | 1160 | 262 |
| ND | 263 | Tioga - Portal | 1120 | 1123 | 1117 | 1116 | 1116 | 1069 | 1069 | 1135 | 1140 | 1142 | 1143 | 1132 | 1136 | 263 |
| ND | 264 | Williston - Ray | 1201 | 1197 | 1216 | 1204 | 1204 | 1204 | 1203 | 1199 | 1195 | 1197 | 1198 | 1203 | 1197 | 264 |
| ND | 271 | Bismarck - Cleveland | 1159 | 1175 | 1167 | 1145 | 1144 | 1137 | 1147 | 1154 | 1170 | 1173 | 1178 | 1161 | 1157 | 271 |
| ND | 272 | Cleveland - Mapleton | 1161 | 1178 | 1169 | 1147 | 1145 | 1138 | 1148 | 1155 | 1171 | 1175 | 1180 | 1162 | 1159 | 272 |
| ND | 273 | Cleveland - Grafton | 1161 | 1177 | 1169 | 1146 | 1145 | 1138 | 1149 | 1155 | 1171 | 1175 | 1180 | 1162 | 1159 | 273 |
| ND | 28 | Bismarck - Cabin Creek | 1136 | 1173 | 1117 | 1102 | 1100 | 1108 | 1114 | 1104 | 1149 | 1173 | 1178 | 1160 | 1157 | 28 |
| ND | 31 | Dickinson Area | 1115 | 1163 | 1117 | 1103 | 1098 | 1105 | 1110 | 1111 | 1152 | 1074 | 1102 | 1150 | 1092 | 31 |
| ND | 311 | Taylor Take-Off - Glen Ullin Comp | | 1163 | 1117 | 1103 | 1098 | 1105 | 1110 | | | | | | | |
| ND/MT | 32 | Cabin Creek - Dickinson | 1110 | 1100 | 1088 | 1089 | 1086 | 1094 | 1099 | 1056 | 1121 | 1131 | 1135 | 1164 | 1152 | 32 |
| ND | 33 | Killdeer | 1178 | 1179 | 1177 | 1176 | 1177 | 1177 | 1176 | 1177 | 1177 | 1180 | 1179 | 1181 | 1184 | 33 |
| ND | 34 | Bowman Area | 1136 | 1136 | 1146 | 1144 | 1147 | 1143 | 1142 | 1142 | 1140 | 1136 | 1130 | 1126 | 1098 | 34 |

**THERMAL ZONE VARIANCE
DOCUMENTATION**

May 2013

| <i>ZONE</i> | <i>BTU VARIANCE</i> | <i>REASON</i> |
|--------------------|--------------------------------|------------------------------------|
| 25 | -46 | Red Wing Plant down part of month. |
| 311 | 46 | Mix of gas in the area |
| 28 | 56 | Mix of gas in the area |
| 31 | 46 | Mix of gas in the area |