



UTILITIES CO.

A Division of MDU Resources Group, Inc.

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

November 3, 2017

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

Re: Case No. PU-17-002 (Therm Billing)
Monthly Report – September 2017

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 Case No. 11,006, dated October 20, 1987 and pursuant to the North Dakota Administrative Code 69-09-01-02, part 2.

1. Attachment A is a schedule showing the thermal billing factors by community that reflect the BTU values shown on Attachment B and were used for billing purposes in October 2017.
2. Attachment B consists of copies of the monthly Heating Value Test Reports received from our suppliers for the month of September 2017.
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 2017.

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,

A handwritten signature in purple ink that reads 'Tamie Aberle'.

Tamie Aberle
Director of Regulatory Affairs

Montana-Dakota Utilities Co.
Therm Billing Factors - North Dakota
Oct-17

| Town | Heat Zone | Therm Factor |
|----------------------|-----------|--------------|
| MDU-303-ALEXANDER | 025 | 1.1353 |
| MDU-308-ARNEGARD | 025 | 1.1353 |
| MDU-314-APPLE VALLEY | 271 | 1.1530 |
| MDU-318-BEACH | 032 | 1.0498 |
| MDU-319-BELFIELD | 032 | 1.0575 |
| MDU-323-BERTHOLD | 262 | 1.1287 |
| MDU-327-BISMARCK | 028 | 1.1530 |
| MDU-330-BOWMAN | 034 | 0.9340 |
| MDU-337-BURLINGTON | 262 | 1.1530 |
| MDU-343-CARRINGTON | 273 | 1.1530 |
| MDU-344-CLEVELAND | 272 | 1.1449 |
| MDU-364-CAVALIER | 273 | 1.1774 |
| MDU-365-DAWSON | 271 | 1.1449 |
| MDU-368-DES LACS | 262 | 1.1368 |
| MDU-369-DICKINSON | 031 | 1.0962 |
| MDU-374-FT TOTTEN | 273 | 1.1611 |
| MDU-375-DEVILS LAKE | 273 | 1.1611 |
| MDU-379-BARLOW | 273 | 1.1530 |
| MDU-384-EPPING | 264 | 1.0701 |
| MDU-387-ELDRIDGE | 272 | 1.1530 |
| MDU-407-GLADSTONE | 031 | 1.0962 |
| MDU-411-GLEN ULLIN | 031 | 1.1041 |
| MDU-413-GOLVA | 032 | 1.0344 |
| MDU-416-GARRISON | 262 | 1.1368 |
| MDU-417-GRAFTON | 273 | 1.1855 |
| MDU-429-HEBRON | 031 | 1.1041 |
| MDU-432-HETTINGER | 903 | 2.3875 |
| MDU-449-JAMESTOWN | 272 | 1.1611 |
| MDU-459-KILLDEER | 033 | 1.1155 |
| MDU-463-LANGDON | 273 | 1.1530 |
| MDU-469-LEFOR | 031 | 1.0962 |
| MDU-474-LIGNITE | 263 | 1.0873 |
| MDU-475-LINTON | 802 | 1.0247 |
| MDU-478-LINCOLN | 028 | 1.1530 |
| MDU-488-MCKENZIE | 271 | 1.1530 |
| MDU-494-MEDINA | 271 | 1.1449 |
| MDU-498-MANDAN | 028 | 1.1530 |
| MDU-500-MARMARTH | 034 | 0.9204 |
| MDU-505-MINOT | 262 | 1.1530 |
| MDU-510-MOTT | 031 | 1.0962 |
| MDU-512-MAX | 262 | 1.1287 |
| MDU-522-NEW ENGLAND | 031 | 1.0882 |
| MDU-524-NEW SALEM | 028 | 1.1287 |
| MDU-532-NEW ROCKFORD | 273 | 1.1530 |
| MDU-539-PARK RIVER | 273 | 1.1774 |
| MDU-540-PALERMO | 262 | 1.1287 |
| MDU-558-RAY | 264 | 1.0701 |
| MDU-561-REGENT | 031 | 1.0962 |
| MDU-563-RHAME | 034 | 0.9069 |

| | | |
|------------------------|-----|--------|
| MDU-564-RICHARDTON | 031 | 1.0882 |
| MDU-568-ROSS | 261 | 1.1037 |
| MDU-572-RUTHVILLE | 262 | 1.1530 |
| MDU-574-SANBORN | 272 | 1.1611 |
| MDU-583-SENTINEL BUTTE | 032 | 1.0498 |
| MDU-588-SOUTH HEART | 031 | 1.0882 |
| MDU-717-SPIRITWOOD | 272 | 1.1611 |
| MDU-590-SPRINGBROOK | 264 | 1.0701 |
| MDU-591-STANLEY | 261 | 1.1197 |
| MDU-593-STEELE | 271 | 1.1449 |
| MDU-598-SHEYENNE | 273 | 1.1611 |
| MDU-605-SURREY | 262 | 1.1530 |
| MDU-610-TAPPEN | 271 | 1.1449 |
| MDU-611-TAYLOR | 031 | 1.0882 |
| MDU-616-TIOGA | 260 | 0.9311 |
| MDU-619-TURTLE LAKE | 262 | 1.1368 |
| MDU-620-TRENTON | 024 | 1.0864 |
| MDU-624-UNDERWOOD | 262 | 1.1368 |
| MDU-625-VALLEY CITY | 272 | 1.1692 |
| MDU-629-WALHALLA | 273 | 1.1774 |
| MDU-632-WATFORD CITY | 610 | 1.1173 |
| MDU-636-WHEELOCK | 264 | 1.0624 |
| MDU-637-WHITE EARTH | 261 | 1.1117 |
| MDU-642-WILLISTON | 024 | 1.0864 |
| MDU-646-WASHBURN | 262 | 1.1449 |
| MDU-647-WILTON | 262 | 1.1287 |
| MDU-664-RIVERDALE | 262 | 1.1368 |
| MDU-691-FAIRVIEW | 241 | 1.1121 |
| MDU-712-MINOT AFB | 262 | 1.1530 |
| MDU-718-FAIRMOUNT | 600 | 1.1326 |
| MDU-732-NEKOMA | 273 | 1.1530 |
| MDU-732-MSR SITE | 273 | 1.1530 |

Source Daily Summary

September 2017

Number: 251

Pressure Base: 14.730

Contract Day: 1

Name: SDNY BDR-MNDK JNCTN-SDNY PLT

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7191 | 1169.6 | 1190.3 | 1185.7 | 0.963 | 3.463 | 70.452 | 21.829 | 2.956 | 0.106 | 0.204 | 0.014 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.31 | |
| 2 | 0.7190 | 1169.7 | 1190.5 | 1185.8 | 0.959 | 3.451 | 70.531 | 21.713 | 3.001 | 0.108 | 0.209 | 0.014 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.55 | |
| 3 | 0.7160 | 1165.3 | 1186.0 | 1181.4 | 0.938 | 3.466 | 71.057 | 21.266 | 2.926 | 0.108 | 0.210 | 0.015 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.23 | |
| 4 | 0.7114 | 1157.5 | 1178.0 | 1173.7 | 0.927 | 3.526 | 71.886 | 20.462 | 2.866 | 0.105 | 0.202 | 0.014 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.35 | |
| 5 | 0.7150 | 1161.3 | 1181.9 | 1177.5 | 0.965 | 3.573 | 71.454 | 20.579 | 3.053 | 0.118 | 0.228 | 0.015 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.41 | |
| 6 | 0.7346 | 1178.5 | 1199.3 | 1194.5 | 1.251 | 3.933 | 68.736 | 21.765 | 3.785 | 0.168 | 0.321 | 0.022 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.94 | |
| 7 | 0.7360 | 1181.0 | 1201.9 | 1197.0 | 1.246 | 3.924 | 68.499 | 21.969 | 3.819 | 0.171 | 0.330 | 0.022 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.53 | |
| 8 | 0.7221 | 1170.4 | 1191.1 | 1186.4 | 1.008 | 3.624 | 70.559 | 20.943 | 3.409 | 0.142 | 0.277 | 0.019 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.31 | |
| 9 | 0.7202 | 1170.5 | 1191.3 | 1186.5 | 0.940 | 3.535 | 71.000 | 20.587 | 3.466 | 0.146 | 0.287 | 0.020 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.33 | |
| 10 | 0.7199 | 1170.1 | 1190.8 | 1186.1 | 0.947 | 3.529 | 70.904 | 20.800 | 3.385 | 0.136 | 0.265 | 0.018 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.06 | |
| 11 | 0.7196 | 1170.4 | 1191.1 | 1186.4 | 0.927 | 3.511 | 71.041 | 20.653 | 3.395 | 0.145 | 0.288 | 0.021 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.72 | |
| 12 | 0.7292 | 1172.6 | 1193.4 | 1188.7 | 1.215 | 3.838 | 69.767 | 20.932 | 3.703 | 0.172 | 0.331 | 0.022 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.10 | |
| 13 | 0.7358 | 1182.9 | 1203.8 | 1199.2 | 1.236 | 3.799 | 68.606 | 21.960 | 3.856 | 0.170 | 0.330 | 0.023 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.00 | |
| 14 | 0.7335 | 1186.0 | 1207.0 | 1202.7 | 1.126 | 3.563 | 68.558 | 22.704 | 3.584 | 0.146 | 0.282 | 0.019 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.90 | |
| 15 | 0.7356 | 1185.8 | 1206.8 | 1202.6 | 1.198 | 3.666 | 67.967 | 23.297 | 3.434 | 0.140 | 0.267 | 0.017 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.71 | |
| 16 | 0.7484 | 1203.3 | 1224.6 | 1220.1 | 1.253 | 3.710 | 66.716 | 23.375 | 4.302 | 0.202 | 0.394 | 0.026 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.14 | |
| 17 | 0.7475 | 1201.5 | 1222.8 | 1218.1 | 1.261 | 3.727 | 66.883 | 23.229 | 4.234 | 0.208 | 0.406 | 0.028 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.81 | |
| 18 | 0.7402 | 1189.1 | 1210.2 | 1205.5 | 1.273 | 3.776 | 67.645 | 22.967 | 3.838 | 0.158 | 0.304 | 0.021 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.21 | |
| 19 | 0.7288 | 1175.2 | 1196.0 | 1191.8 | 1.159 | 3.731 | 69.388 | 21.752 | 3.555 | 0.131 | 0.251 | 0.017 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.58 | |
| 20 | 0.7241 | 1170.7 | 1191.4 | 1187.1 | 1.076 | 3.687 | 70.241 | 21.079 | 3.482 | 0.137 | 0.263 | 0.018 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.76 | |
| 21 | 0.7297 | 1173.8 | 1194.6 | 1190.3 | 1.191 | 3.849 | 69.292 | 21.698 | 3.492 | 0.152 | 0.290 | 0.019 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.10 | |
| 22 | 0.7348 | 1179.9 | 1200.8 | 1196.5 | 1.224 | 3.910 | 68.742 | 21.703 | 3.913 | 0.163 | 0.309 | 0.020 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.40 | |
| 23 | 0.7344 | 1177.7 | 1198.5 | 1194.1 | 1.250 | 3.965 | 68.968 | 21.293 | 4.002 | 0.168 | 0.317 | 0.020 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.13 | |
| 24 | 0.7380 | 1184.2 | 1205.2 | 1200.8 | 1.236 | 3.923 | 68.049 | 22.424 | 3.874 | 0.160 | 0.299 | 0.019 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.54 | |
| 25 | 0.7412 | 1190.6 | 1211.7 | 1207.3 | 1.256 | 3.807 | 67.339 | 23.306 | 3.816 | 0.153 | 0.290 | 0.019 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.02 | |
| 26 | 0.7402 | 1189.6 | 1210.7 | 1206.3 | 1.278 | 3.743 | 67.417 | 23.429 | 3.651 | 0.154 | 0.292 | 0.019 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.78 | |
| 27 | 0.7373 | 1187.2 | 1208.2 | 1203.7 | 1.241 | 3.678 | 67.896 | 23.121 | 3.587 | 0.152 | 0.290 | 0.019 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1403.65 | |
| 28 | 0.7296 | 1180.1 | 1201.0 | 1196.5 | 1.157 | 3.511 | 69.032 | 22.578 | 3.292 | 0.135 | 0.261 | 0.017 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1402.65 | |
| 29 | 0.7406 | 1192.1 | 1213.2 | 1208.6 | 1.245 | 3.683 | 67.268 | 23.710 | 3.612 | 0.153 | 0.292 | 0.019 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1406.28 | |
| 30 | 0.7433 | 1195.0 | 1216.2 | 1211.6 | 1.267 | 3.723 | 66.965 | 23.752 | 3.785 | 0.162 | 0.309 | 0.020 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1407.17 | |
| Avg | 0.7308 | 1179.0 | 1200.3 | 1195.8 | 1.140 | 3.694 | 69.095 | 22.029 | 3.569 | 0.149 | 0.287 | 0.019 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.62 | |

Zone 211

Source Daily Summary

September 2017

| | | | | | |
|---------|--------------------------|-------------------|--------|----------------|---|
| Number: | 571 | Pressure Base: | 14.730 | Contract Day: | 1 |
| Name: | WILLISTON BDR-CHARBN STN | Temperature Base: | | Contract Hour: | 9 |

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT | |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--|
| 1 | 0.6784 | 1121.9 | 1141.8 | 1138.5 | 0.763 | 2.848 | 77.308 | 17.000 | 1.873 | 0.059 | 0.127 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.99 | |
| 2 | 0.6778 | 1121.1 | 1141.0 | 1137.7 | 0.762 | 2.841 | 77.432 | 16.875 | 1.883 | 0.059 | 0.126 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.63 | |
| 3 | 0.6774 | 1120.1 | 1139.9 | 1136.6 | 0.772 | 2.846 | 77.535 | 16.761 | 1.880 | 0.059 | 0.125 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.81 | |
| 4 | 0.6765 | 1118.6 | 1138.4 | 1135.2 | 0.775 | 2.849 | 77.667 | 16.664 | 1.847 | 0.058 | 0.121 | 0.009 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1380.89 | |
| 5 | 0.6753 | 1116.8 | 1136.5 | 1133.3 | 0.776 | 2.848 | 77.957 | 16.340 | 1.870 | 0.060 | 0.128 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1379.83 | |
| 6 | 0.6782 | 1122.6 | 1142.5 | 1139.2 | 0.768 | 2.780 | 77.401 | 16.932 | 1.914 | 0.059 | 0.126 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.03 | |
| 7 | 0.6768 | 1120.8 | 1140.6 | 1137.3 | 0.758 | 2.768 | 77.557 | 16.913 | 1.811 | 0.055 | 0.116 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.29 | |
| 8 | 0.6767 | 1120.1 | 1139.9 | 1136.6 | 0.762 | 2.795 | 77.571 | 16.869 | 1.814 | 0.056 | 0.115 | 0.008 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.57 | |
| 9 | 0.6798 | 1123.9 | 1143.8 | 1140.6 | 0.781 | 2.826 | 77.191 | 16.983 | 2.000 | 0.063 | 0.133 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.09 | |
| 10 | 0.6801 | 1124.2 | 1144.1 | 1140.8 | 0.790 | 2.829 | 77.156 | 16.983 | 2.023 | 0.064 | 0.133 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.03 | |
| 11 | 0.6797 | 1123.7 | 1143.6 | 1140.3 | 0.787 | 2.818 | 77.200 | 17.005 | 1.975 | 0.062 | 0.131 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.94 | |
| 12 | 0.6783 | 1120.8 | 1140.6 | 1137.4 | 0.785 | 2.868 | 77.312 | 16.982 | 1.859 | 0.056 | 0.119 | 0.009 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.79 | |
| 13 | 0.6774 | 1120.0 | 1139.9 | 1136.6 | 0.779 | 2.842 | 77.458 | 16.893 | 1.835 | 0.055 | 0.117 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.72 | |
| 14 | 0.6782 | 1121.2 | 1141.0 | 1137.8 | 0.780 | 2.848 | 77.359 | 16.932 | 1.878 | 0.058 | 0.124 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.30 | |
| 15 | 0.6822 | 1128.4 | 1148.4 | 1145.2 | 0.786 | 2.772 | 76.538 | 17.822 | 1.897 | 0.057 | 0.112 | 0.008 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.18 | |
| 16 | 0.6799 | 1124.7 | 1144.6 | 1141.4 | 0.783 | 2.788 | 77.030 | 17.321 | 1.871 | 0.060 | 0.125 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.91 | |
| 17 | 0.6783 | 1120.7 | 1140.6 | 1137.4 | 0.773 | 2.894 | 77.481 | 16.638 | 1.989 | 0.065 | 0.138 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.65 | |
| 18 | 0.6798 | 1123.5 | 1143.4 | 1140.1 | 0.770 | 2.870 | 77.102 | 17.113 | 1.928 | 0.061 | 0.132 | 0.011 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.53 | |
| 19 | 0.6803 | 1125.3 | 1145.2 | 1142.0 | 0.781 | 2.786 | 76.846 | 17.592 | 1.808 | 0.055 | 0.114 | 0.008 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.35 | |
| 20 | 0.6809 | 1126.6 | 1146.6 | 1143.3 | 0.780 | 2.762 | 76.956 | 17.310 | 1.978 | 0.061 | 0.130 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.34 | |
| 21 | 0.6783 | 1122.6 | 1142.5 | 1139.3 | 0.767 | 2.787 | 77.402 | 16.902 | 1.937 | 0.059 | 0.126 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.02 | |
| 22 | 0.6765 | 1119.6 | 1139.4 | 1136.2 | 0.776 | 2.789 | 77.775 | 16.521 | 1.934 | 0.059 | 0.126 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1382.10 | |
| 23 | 0.6756 | 1117.6 | 1137.4 | 1134.2 | 0.783 | 2.812 | 78.041 | 16.157 | 1.993 | 0.062 | 0.131 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1380.58 | |
| 24 | 0.6797 | 1124.3 | 1144.3 | 1141.0 | 0.776 | 2.795 | 77.174 | 17.075 | 1.968 | 0.061 | 0.129 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.74 | |
| 25 | 0.6791 | 1122.8 | 1142.7 | 1139.5 | 0.775 | 2.841 | 77.247 | 16.980 | 1.950 | 0.060 | 0.127 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.37 | |
| 26 | 0.6774 | 1121.1 | 1141.0 | 1137.8 | 0.766 | 2.794 | 77.456 | 16.961 | 1.828 | 0.055 | 0.119 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.07 | |
| 27 | 0.6773 | 1119.2 | 1139.1 | 1135.9 | 0.789 | 2.861 | 77.582 | 16.662 | 1.904 | 0.058 | 0.124 | 0.009 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1380.91 | |
| 28 | 0.6774 | 1119.4 | 1139.2 | 1136.0 | 0.803 | 2.843 | 77.635 | 16.577 | 1.927 | 0.061 | 0.132 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1380.91 | |
| 29 | 0.6778 | 1120.2 | 1140.1 | 1136.9 | 0.800 | 2.835 | 77.515 | 16.718 | 1.925 | 0.059 | 0.126 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.58 | |
| 30 | 0.6816 | 1126.6 | 1146.5 | 1143.3 | 0.798 | 2.806 | 76.743 | 17.529 | 1.919 | 0.059 | 0.125 | 0.009 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.54 | |
| Avg | 0.6784 | 1122.0 | 1141.8 | 1138.6 | 0.778 | 2.821 | 77.354 | 16.934 | 1.907 | 0.059 | 0.125 | 0.010 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.06 | |

Zone 24

Gas Composition and Properties

Effective September 1, 2017 09:00 - January 18, 2038 21:14

Source #: 0602160
Name: FAIRVIEW BORDER

| Component | Mole % | Liquid Content | Mass % | Property | Total Sample | C6 Plus Fraction |
|-----------------------|----------|----------------|----------|------------------------|--------------|------------------|
| Carbon Dioxide, CO2 | 0.9343 | | 2.0086 | Pressure Base | 14.730 | |
| Nitrogen, N2 | 3.2404 | | 4.4344 | Temperature Base | 60.00 | |
| Methane, C1 | 72.2898 | | 56.6522 | HCDP @ Sample Pressure | -37.842 | |
| Ethane, C2 | 20.4728 | 0.0000 | 30.0721 | Cricondentherm | -6.832 | |
| Propane, C3 | 2.7305 | 0.7501 | 5.8817 | HV, Dry @ Base P, T | 1175.48 | |
| iso-Butane, iC4 | 0.1022 | 0.0334 | 0.2902 | HV, Sat @ Base P, T | 1155.03 | |
| n-Butane, nC4 | 0.1949 | 0.0613 | 0.5534 | HV, Sat @ Sample P, T | 1175.48 | |
| iso-Pentane, iC5 | 0.0136 | 0.0050 | 0.0479 | Relative Density | 0.7073 | |
| n-Pentane, nC5 | 0.0131 | 0.0047 | 0.0462 | | | |
| Neo-Pentane, NeoC5 | | | | | | |
| Hexanes Plus, C6+ | 0.0000 | 0.0000 | 0.0000 | | | |
| Water, H2O | | | | | | |
| Hydrogen Sulfide, H2S | | | | | | |
| Oxygen, O2 | 0.0085 | | 0.0133 | | | |
| Carbon Monoxide, CO | | | | | | |
| Hydrogen, H2 | | | | | | |
| Helium, He | | | | | | |
| Argon, Ar | | | | | | |
| | | | | C6+: 100 | | |
| Totals | 100.0001 | 0.8540 | 100.0000 | | | |

Sample

Date: 10/02/2017 Pressure: 255.0
 Type: Composite Temperature: 0.0
 Tech: RR H2O: lbs/mm
 H2S: ppm

Remarks:

Analysis

Date: 10/03/2017 Instrument: WBI- 220
 Cylinder: 404

Tech: MB

Remarks:

Zone 241

Gas Composition and Properties

Effective September 1, 2017 09:00 - January 18, 2038 21:14

Attachment B
Page 4 of 22

Source #: 0602225
Name: WATFORD CITY WEST BORDER

| Component | Mole % | Liquid Content | Mass % | Property | Total Sample | C6 Plus Fraction |
|-----------------------|-----------------|----------------|-----------------|------------------------|--------------|------------------|
| Carbon Dioxide, CO2 | 1.0670 | | 2.2310 | Pressure Base | 14.730 | |
| Nitrogen, N2 | 3.1445 | | 4.1851 | Temperature Base | 60.00 | |
| Methane, C1 | 70.1029 | | 53.4311 | HCDP @ Sample Pressure | | |
| Ethane, C2 | 21.3190 | 5.7064 | 30.4560 | Cricondentherm | | |
| Propane, C3 | 3.6141 | 0.9928 | 7.5715 | HV, Dry @ Base P, T | 1204.79 | |
| iso-Butane, iC4 | 0.2109 | 0.0688 | 0.5824 | HV, Sat @ Base P, T | 1183.82 | |
| n-Butane, nC4 | 0.4516 | 0.1420 | 1.2470 | HV, Sat @ Sample P, T | 1204.79 | |
| iso-Pentane, iC5 | 0.0393 | 0.0143 | 0.1347 | Relative Density | 0.7272 | |
| n-Pentane, nC5 | 0.0403 | 0.0146 | 0.1381 | | | |
| Neo-Pentane, NeoC5 | | | | | | |
| Hexanes Plus, C6+ | 0.0028 | 0.0013 | 0.0115 | | | |
| Water, H2O | | | | | | |
| Hydrogen Sulfide, H2S | | | | | | |
| Oxygen, O2 | 0.0076 | | 0.0116 | | | |
| Carbon Monoxide, CO | | | | | | |
| Hydrogen, H2 | | | | | | |
| Helium, He | | | | | | |
| Argon, Ar | | | | | | |
| | | | | C6+: 100 | | |
| Totals | 100.0000 | 6.9400 | 100.0000 | | | |

| Sample | | |
|------------------|--------------|--------|
| Date: 10/02/2017 | Pressure: | 465.0 |
| Type: Composite | Temperature: | 0.0 |
| Tech: ES | H2O: | lbs/mm |
| | H2S: | ppm |
| Remarks: | | |

| Analysis | | |
|------------------|-------------|----------|
| Date: 10/03/2017 | Instrument: | WBI- 221 |
| | Cylinder: | 316 |
| Tech: MB | | |
| Remarks: | | |

Zone 25

Source Daily Summary

September 2017

| | | | | | |
|---------|-----------------------------|-------------------|--------|----------------|---|
| Number: | 164 | Pressure Base: | 14.730 | Contract Day: | 1 |
| Name: | N TIOGA TRANSFER-NESSON PLT | Temperature Base: | | Contract Hour: | 9 |

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|----|----|----|-----|---------|-----|
| 1 | 0.5823 | 967.1 | 984.2 | | 0.007 | 4.395 | 93.808 | 1.692 | 0.078 | 0.005 | 0.012 | 0.001 | 0.001 | 0.000 | | | | | 1286.82 | |
| 2 | 0.5825 | 968.8 | 985.9 | | 0.007 | 4.316 | 93.769 | 1.813 | 0.077 | 0.005 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1288.77 | |
| 3 | 0.5821 | 967.9 | 985.1 | | 0.007 | 4.327 | 93.858 | 1.710 | 0.080 | 0.005 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1288.13 | |
| 4 | 0.5823 | 967.4 | 984.6 | | 0.007 | 4.377 | 93.802 | 1.717 | 0.079 | 0.005 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1287.24 | |
| 5 | 0.5817 | 966.8 | 983.9 | | 0.007 | 4.358 | 93.927 | 1.613 | 0.076 | 0.005 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1287.09 | |
| 6 | 0.5815 | 966.7 | 983.8 | | 0.007 | 4.344 | 93.974 | 1.581 | 0.077 | 0.005 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1287.19 | |
| 7 | 0.5817 | 967.8 | 985.0 | | 0.007 | 4.292 | 93.947 | 1.659 | 0.078 | 0.004 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1288.48 | |
| 8 | 0.5836 | 969.2 | 986.4 | | 0.007 | 4.389 | 93.542 | 1.962 | 0.082 | 0.004 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1288.18 | |
| 9 | 0.5857 | 971.6 | 988.8 | | 0.007 | 4.446 | 93.096 | 2.350 | 0.083 | 0.004 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1288.98 | |
| 10 | 0.5849 | 970.6 | 987.8 | | 0.007 | 4.429 | 93.276 | 2.174 | 0.094 | 0.005 | 0.012 | 0.001 | 0.001 | 0.000 | | | | | 1288.59 | |
| 11 | 0.5846 | 971.5 | 988.7 | | 0.007 | 4.342 | 93.370 | 2.158 | 0.101 | 0.006 | 0.014 | 0.001 | 0.001 | 0.000 | | | | | 1290.16 | |
| 12 | 0.5838 | 968.5 | 985.7 | | 0.007 | 4.453 | 93.481 | 1.960 | 0.081 | 0.005 | 0.011 | 0.001 | 0.001 | 0.000 | | | | | 1287.03 | |
| 13 | 0.5842 | 968.8 | 985.9 | | 0.007 | 4.473 | 93.404 | 2.016 | 0.081 | 0.005 | 0.012 | 0.001 | 0.001 | 0.000 | | | | | 1286.95 | |
| 14 | 0.5849 | 968.4 | 985.6 | | 0.007 | 4.565 | 93.232 | 2.099 | 0.080 | 0.004 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1285.67 | |
| 15 | 0.5837 | 969.4 | 986.6 | | 0.007 | 4.388 | 93.510 | 2.000 | 0.079 | 0.004 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1288.34 | |
| 16 | 0.5821 | 967.6 | 984.7 | | 0.007 | 4.349 | 93.855 | 1.686 | 0.084 | 0.005 | 0.012 | 0.001 | 0.001 | 0.000 | | | | | 1287.66 | |
| 17 | 0.5818 | 963.7 | 980.7 | | 0.007 | 4.561 | 93.897 | 1.420 | 0.095 | 0.005 | 0.014 | 0.001 | 0.001 | 0.000 | | | | | 1282.78 | |
| 18 | 0.5823 | 966.2 | 983.3 | | 0.007 | 4.446 | 93.855 | 1.551 | 0.115 | 0.007 | 0.017 | 0.001 | 0.001 | 0.000 | | | | | 1285.68 | |
| 19 | 0.5845 | 971.6 | 988.8 | | 0.007 | 4.333 | 93.496 | 1.947 | 0.178 | 0.010 | 0.026 | 0.001 | 0.002 | 0.000 | | | | | 1290.29 | |
| 20 | 0.5854 | 972.9 | 990.2 | | 0.007 | 4.328 | 93.363 | 2.054 | 0.201 | 0.012 | 0.032 | 0.001 | 0.001 | 0.000 | | | | | 1291.17 | |
| 21 | 0.5883 | 974.8 | 992.1 | | 0.007 | 4.486 | 92.855 | 2.328 | 0.251 | 0.028 | 0.037 | 0.002 | 0.002 | 0.004 | | | | | 1290.51 | |
| 22 | 0.5885 | 976.6 | 993.9 | | 0.006 | 4.407 | 92.707 | 2.617 | 0.222 | 0.012 | 0.026 | 0.001 | 0.001 | 0.000 | | | | | 1292.52 | |
| 23 | 0.5859 | 973.0 | 990.2 | | 0.007 | 4.380 | 93.239 | 2.123 | 0.210 | 0.012 | 0.026 | 0.001 | 0.001 | 0.000 | | | | | 1290.58 | |
| 24 | 0.5862 | 971.5 | 988.7 | | 0.007 | 4.500 | 93.167 | 2.065 | 0.218 | 0.012 | 0.028 | 0.002 | 0.001 | 0.000 | | | | | 1288.28 | |
| 25 | 0.5832 | 966.5 | 983.6 | | 0.007 | 4.520 | 93.631 | 1.712 | 0.110 | 0.006 | 0.012 | 0.000 | 0.001 | 0.000 | | | | | 1284.98 | |
| 26 | 0.5826 | 966.6 | 983.7 | | 0.005 | 4.458 | 93.737 | 1.695 | 0.090 | 0.004 | 0.010 | 0.000 | 0.001 | 0.000 | | | | | 1285.82 | |
| 27 | 0.5831 | 969.1 | 986.3 | | 0.007 | 4.351 | 93.644 | 1.889 | 0.092 | 0.005 | 0.010 | 0.000 | 0.000 | 0.000 | | | | | 1288.59 | |
| 28 | 0.5834 | 970.6 | 987.8 | | 0.007 | 4.291 | 93.596 | 1.994 | 0.094 | 0.005 | 0.011 | 0.000 | 0.001 | 0.000 | | | | | 1290.20 | |
| 29 | 0.5843 | 971.7 | 988.9 | | 0.007 | 4.304 | 93.418 | 2.159 | 0.097 | 0.004 | 0.009 | 0.000 | 0.000 | 0.000 | | | | | 1290.70 | |
| 30 | 0.5848 | 971.2 | 988.4 | | 0.007 | 4.379 | 93.308 | 2.196 | 0.095 | 0.004 | 0.010 | 0.000 | 0.000 | 0.000 | | | | | 1289.53 | |
| Avg | 0.5839 | 969.0 | 986.6 | | 0.007 | 4.399 | 93.526 | 1.931 | 0.113 | 0.007 | 0.015 | 0.001 | 0.001 | 0.000 | | | | | 1288.23 | |

Zone 260

Source Daily Summary

September 2017

Number: 601

Pressure Base: 14.730

Contract Day: 1

Name: TIOGA STN-ROBINSON LAKE PLNT

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | 0.7043 | 1154.4 | 1174.9 | 1170.4 | 0.860 | 3.148 | 72.835 | 20.431 | 2.437 | 0.085 | 0.175 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.61 |
| 2 | 0.7049 | 1155.5 | 1176.0 | 1171.4 | 0.868 | 3.130 | 72.742 | 20.519 | 2.437 | 0.088 | 0.186 | 0.014 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.33 |
| 3 | 0.7044 | 1155.1 | 1175.6 | 1171.0 | 0.862 | 3.118 | 72.768 | 20.581 | 2.379 | 0.084 | 0.177 | 0.014 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.28 |
| 4 | 0.7036 | 1152.8 | 1173.2 | 1169.0 | 0.879 | 3.161 | 72.715 | 20.732 | 2.256 | 0.077 | 0.157 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.34 |
| 5 | 0.7035 | 1151.8 | 1172.2 | 1168.0 | 0.898 | 3.178 | 72.801 | 20.607 | 2.238 | 0.080 | 0.170 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.25 |
| 6 | 0.7035 | 1152.5 | 1172.9 | 1168.4 | 0.874 | 3.169 | 72.867 | 20.502 | 2.296 | 0.082 | 0.179 | 0.014 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.11 |
| 7 | 0.7042 | 1153.4 | 1173.8 | 1169.3 | 0.855 | 3.214 | 72.856 | 20.357 | 2.403 | 0.089 | 0.191 | 0.015 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.39 |
| 8 | 0.7062 | 1156.5 | 1177.0 | 1172.6 | 0.895 | 3.151 | 72.355 | 20.963 | 2.361 | 0.082 | 0.169 | 0.011 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.26 |
| 9 | 0.7078 | 1159.1 | 1179.6 | 1175.2 | 0.892 | 3.141 | 72.137 | 21.124 | 2.412 | 0.085 | 0.179 | 0.013 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.85 |
| 10 | 0.7089 | 1161.2 | 1181.8 | 1177.3 | 0.886 | 3.125 | 72.067 | 21.087 | 2.516 | 0.092 | 0.194 | 0.014 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.29 |
| 11 | 0.7077 | 1159.6 | 1180.2 | 1175.7 | 0.885 | 3.121 | 72.159 | 21.107 | 2.428 | 0.088 | 0.184 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.48 |
| 12 | 0.7063 | 1157.9 | 1178.4 | 1173.8 | 0.862 | 3.130 | 72.421 | 20.874 | 2.418 | 0.086 | 0.179 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.68 |
| 13 | 0.7053 | 1155.7 | 1176.2 | 1171.9 | 0.879 | 3.138 | 72.497 | 20.886 | 2.324 | 0.081 | 0.170 | 0.012 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.21 |
| 14 | 0.7042 | 1153.9 | 1174.3 | 1170.1 | 0.884 | 3.139 | 72.674 | 20.747 | 2.287 | 0.079 | 0.165 | 0.012 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.07 |
| 15 | 0.7054 | 1155.9 | 1176.4 | 1172.2 | 0.893 | 3.114 | 72.524 | 20.867 | 2.305 | 0.083 | 0.180 | 0.015 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.32 |
| 16 | 0.7044 | 1154.1 | 1174.5 | 1170.3 | 0.902 | 3.116 | 72.603 | 20.859 | 2.265 | 0.076 | 0.156 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.16 |
| 17 | 0.7048 | 1155.3 | 1175.8 | 1171.5 | 0.898 | 3.085 | 72.506 | 21.014 | 2.234 | 0.076 | 0.161 | 0.011 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.25 |
| 18 | 0.6991 | 1146.6 | 1166.9 | 1162.5 | 0.866 | 3.131 | 73.847 | 19.461 | 2.417 | 0.080 | 0.169 | 0.013 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.25 |
| 19 | 0.7050 | 1155.4 | 1175.8 | 1171.5 | 0.905 | 3.089 | 72.555 | 20.890 | 2.294 | 0.078 | 0.160 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.05 |
| 20 | 0.7061 | 1157.0 | 1177.5 | 1173.1 | 0.900 | 3.105 | 72.382 | 20.993 | 2.343 | 0.081 | 0.168 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.91 |
| 21 | 0.7051 | 1156.4 | 1176.8 | 1172.5 | 0.868 | 3.096 | 72.611 | 20.762 | 2.380 | 0.083 | 0.173 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.17 |
| 22 | 0.7033 | 1153.9 | 1174.3 | 1170.1 | 0.853 | 3.101 | 72.794 | 20.734 | 2.250 | 0.076 | 0.164 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.97 |
| 23 | 0.7040 | 1153.3 | 1173.7 | 1169.5 | 0.895 | 3.141 | 72.691 | 20.735 | 2.280 | 0.076 | 0.158 | 0.011 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.54 |
| 24 | 0.7042 | 1153.5 | 1173.9 | 1169.7 | 0.890 | 3.150 | 72.608 | 20.856 | 2.237 | 0.074 | 0.158 | 0.012 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.65 |
| 25 | 0.7042 | 1153.6 | 1174.0 | 1169.8 | 0.887 | 3.152 | 72.647 | 20.764 | 2.293 | 0.075 | 0.158 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.75 |
| 26 | 0.7023 | 1152.9 | 1173.4 | 1169.1 | 0.815 | 3.120 | 72.828 | 20.823 | 2.171 | 0.072 | 0.149 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.89 |
| 27 | 0.7030 | 1152.3 | 1172.7 | 1168.4 | 0.870 | 3.147 | 72.786 | 20.736 | 2.213 | 0.073 | 0.152 | 0.011 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.31 |
| 28 | 0.7047 | 1154.3 | 1174.7 | 1170.4 | 0.897 | 3.141 | 72.581 | 20.844 | 2.262 | 0.078 | 0.169 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.05 |
| 29 | 0.7052 | 1154.7 | 1175.2 | 1170.8 | 0.906 | 3.148 | 72.479 | 20.940 | 2.248 | 0.079 | 0.171 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.07 |
| 30 | 0.7065 | 1157.0 | 1177.5 | 1173.1 | 0.903 | 3.132 | 72.282 | 21.100 | 2.300 | 0.080 | 0.173 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.58 |
| Avg | 0.7047 | 1155.0 | 1175.3 | 1171.0 | 0.881 | 3.134 | 72.621 | 20.763 | 2.323 | 0.081 | 0.170 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.70 |

Zone 261

Source Daily Summary

September 2017

Number: 091

Pressure Base: 14.730

Contract Day: 1

Name: MNT BRD-PLRMO BRD-BIS STN

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7409 | 1178.7 | 1199.6 | 1195.6 | 0.878 | 5.077 | 67.624 | 21.514 | 4.264 | 0.176 | 0.412 | 0.024 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.22 | |
| 2 | 0.7406 | 1178.7 | 1199.6 | 1195.6 | 0.875 | 5.054 | 67.681 | 21.483 | 4.263 | 0.177 | 0.413 | 0.025 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.52 | |
| 3 | 0.7401 | 1180.2 | 1201.1 | 1197.1 | 0.871 | 4.918 | 67.806 | 21.515 | 4.241 | 0.178 | 0.415 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.79 | |
| 4 | 0.7364 | 1178.0 | 1198.9 | 1195.1 | 0.869 | 4.708 | 68.266 | 21.537 | 4.018 | 0.166 | 0.385 | 0.023 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.70 | |
| 5 | 0.7391 | 1177.8 | 1198.6 | 1194.9 | 0.867 | 4.980 | 67.830 | 21.552 | 4.152 | 0.171 | 0.398 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.88 | |
| 6 | 0.7405 | 1178.3 | 1199.2 | 1195.4 | 0.876 | 5.068 | 67.660 | 21.516 | 4.241 | 0.176 | 0.411 | 0.026 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.17 | |
| 7 | 0.7418 | 1179.1 | 1199.9 | 1196.0 | 0.876 | 5.141 | 67.469 | 21.574 | 4.289 | 0.179 | 0.418 | 0.026 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.81 | |
| 8 | 0.7396 | 1176.1 | 1196.9 | 1193.2 | 0.879 | 5.108 | 67.684 | 21.590 | 4.124 | 0.170 | 0.396 | 0.024 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.48 | |
| 9 | 0.7390 | 1175.6 | 1196.4 | 1192.5 | 0.885 | 5.083 | 67.734 | 21.614 | 4.075 | 0.167 | 0.391 | 0.023 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.35 | |
| 10 | 0.7387 | 1175.0 | 1195.8 | 1191.8 | 0.888 | 5.084 | 67.804 | 21.553 | 4.059 | 0.167 | 0.392 | 0.024 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.92 | |
| 11 | 0.7380 | 1175.3 | 1196.1 | 1192.2 | 0.878 | 5.016 | 67.980 | 21.428 | 4.077 | 0.171 | 0.397 | 0.024 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.92 | |
| 12 | 0.7386 | 1176.8 | 1197.6 | 1193.5 | 0.888 | 4.968 | 67.876 | 21.573 | 4.077 | 0.170 | 0.396 | 0.024 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.10 | |
| 13 | 0.7386 | 1177.0 | 1197.8 | 1194.0 | 0.885 | 4.951 | 67.806 | 21.716 | 4.041 | 0.166 | 0.384 | 0.023 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.47 | |
| 14 | 0.7407 | 1178.7 | 1199.6 | 1196.0 | 0.882 | 5.049 | 67.526 | 21.760 | 4.159 | 0.172 | 0.400 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.52 | |
| 15 | 0.7380 | 1176.5 | 1197.4 | 1193.9 | 0.886 | 4.924 | 67.918 | 21.646 | 4.027 | 0.166 | 0.385 | 0.023 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.46 | |
| 16 | 0.7360 | 1174.8 | 1195.6 | 1192.2 | 0.886 | 4.841 | 68.162 | 21.636 | 3.901 | 0.159 | 0.369 | 0.023 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.32 | |
| 17 | 0.7333 | 1169.2 | 1189.9 | 1186.5 | 0.891 | 4.926 | 68.460 | 21.450 | 3.728 | 0.150 | 0.349 | 0.021 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.19 | |
| 18 | 0.7385 | 1174.3 | 1195.1 | 1191.5 | 0.889 | 5.101 | 67.741 | 21.671 | 4.010 | 0.163 | 0.376 | 0.022 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.39 | |
| 19 | 0.7404 | 1175.8 | 1196.6 | 1193.1 | 0.883 | 5.200 | 67.455 | 21.754 | 4.101 | 0.168 | 0.390 | 0.023 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.36 | |
| 20 | 0.7409 | 1175.3 | 1196.1 | 1192.6 | 0.880 | 5.281 | 67.500 | 21.499 | 4.210 | 0.173 | 0.405 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.28 | |
| 21 | 0.7437 | 1177.0 | 1197.8 | 1194.2 | 0.885 | 5.437 | 67.064 | 21.642 | 4.324 | 0.177 | 0.415 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.56 | |
| 22 | 0.7385 | 1174.2 | 1195.0 | 1191.6 | 0.894 | 5.099 | 67.778 | 21.610 | 4.023 | 0.164 | 0.382 | 0.023 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.27 | |
| 23 | 0.7369 | 1173.1 | 1193.9 | 1190.5 | 0.882 | 5.034 | 67.979 | 21.586 | 3.944 | 0.158 | 0.368 | 0.023 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.49 | |
| 24 | 0.7358 | 1172.3 | 1193.1 | 1189.6 | 0.879 | 4.990 | 68.102 | 21.601 | 3.868 | 0.154 | 0.359 | 0.023 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.49 | |
| 25 | 0.7356 | 1172.0 | 1192.7 | 1189.4 | 0.879 | 4.986 | 68.130 | 21.582 | 3.870 | 0.153 | 0.355 | 0.021 | 0.023 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.40 | |
| 26 | 0.7368 | 1172.6 | 1193.3 | 1189.9 | 0.885 | 5.054 | 67.979 | 21.581 | 3.933 | 0.157 | 0.365 | 0.022 | 0.024 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.91 | |
| 27 | 0.7391 | 1173.0 | 1193.7 | 1190.2 | 0.878 | 5.260 | 67.702 | 21.455 | 4.104 | 0.167 | 0.387 | 0.023 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.19 | |
| 28 | 0.7387 | 1173.6 | 1194.4 | 1190.8 | 0.859 | 5.214 | 67.699 | 21.590 | 4.042 | 0.165 | 0.383 | 0.023 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.30 | |
| 29 | 0.7397 | 1173.8 | 1194.6 | 1191.0 | 0.876 | 5.261 | 67.583 | 21.597 | 4.070 | 0.168 | 0.393 | 0.024 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.68 | |
| 30 | 0.7406 | 1174.0 | 1194.8 | 1191.1 | 0.884 | 5.334 | 67.416 | 21.646 | 4.105 | 0.169 | 0.396 | 0.023 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1384.94 | |
| Avg | 0.7388 | 1176.0 | 1196.4 | 1192.7 | 0.880 | 5.072 | 67.780 | 21.582 | 4.078 | 0.167 | 0.389 | 0.024 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.50 | |

Zone 2b2

Gas Composition and Properties

Effective September 1, 2017 09:00 - January 18, 2038 21:14

Attachment B
Page 9 of 22

Source #: 3002013
Name: EPPING BORDER

| Component | Mole % | Liquid Content | Mass % |
|-----------------------|---------|----------------|---------|
| Carbon Dioxide, CO2 | 0.7289 | | 1.6437 |
| Nitrogen, N2 | 2.8216 | | 4.0501 |
| Methane, C1 | 77.5818 | | 63.7724 |
| Ethane, C2 | 17.0211 | 4.5536 | 26.2246 |
| Propane, C3 | 1.6730 | 0.4596 | 3.7800 |
| iso-Butane, iC4 | 0.0508 | 0.0166 | 0.1513 |
| n-Butane, nC4 | 0.1064 | 0.0335 | 0.3169 |
| iso-Pentane, iC5 | 0.0078 | 0.0028 | 0.0288 |
| n-Pentane, nC5 | 0.0087 | 0.0031 | 0.0322 |
| Neo-Pentane, NeoC5 | | | |
| Hexanes Plus, C6+ | 0.0000 | 0.0000 | 0.0000 |
| Water, H2O | | | |
| Hydrogen Sulfide, H2S | | | |
| Oxygen, O2 | 0.0000 | | 0.0000 |
| Carbon Monoxide, CO | | | |
| Hydrogen, H2 | | | |
| Helium, He | | | |
| Argon, Ar | | | |

| Property | Total Sample | C6 Plus Fraction |
|------------------------|--------------|------------------|
| Pressure Base | 14.730 | |
| Temperature Base | 60.00 | |
| HCDP @ Sample Pressure | | |
| Cricondentherm | | |
| HV, Dry @ Base P, T | 1136.31 | |
| HV, Sat @ Base P, T | 1116.53 | |
| HV, Sat @ Sample P, T | 1136.31 | |
| Relative Density | 0.6744 | |

C6+: 100

Totals 100.0001 5.0700 100.0000

Sample

Date: 10/02/2017 Pressure: 510.0
Type: Composite Temperature: 0.0
Tech: ES H2O: lbs/mm
H2S: ppm

Remarks:

Analysis

Date: 10/03/2017 Instrument: WBI- 222
Cylinder: 353

Tech: MB

Remarks:

Zone 2b4

Source Daily Summary

September 2017

| | | | | | |
|----------------|-----------------------------|--------------------------|--------|-----------------------|---|
| Number: | 603 | Pressure Base: | 14.730 | Contract Day: | 1 |
| Name: | TIOGA STN-COUNTY LINE PLANT | Temperature Base: | | Contract Hour: | 9 |

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7044 | 1154.6 | 1175.0 | 1171.5 | 0.861 | 3.146 | 72.814 | 20.454 | 2.436 | 0.085 | 0.176 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.71 | |
| 2 | 0.7050 | 1155.7 | 1176.1 | 1172.6 | 0.868 | 3.128 | 72.726 | 20.537 | 2.437 | 0.088 | 0.186 | 0.014 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.40 | |
| 3 | 0.7045 | 1155.3 | 1175.8 | 1172.2 | 0.861 | 3.117 | 72.746 | 20.600 | 2.381 | 0.084 | 0.178 | 0.014 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.41 | |
| 4 | 0.7037 | 1152.9 | 1173.3 | 1169.9 | 0.879 | 3.162 | 72.696 | 20.749 | 2.257 | 0.077 | 0.157 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.40 | |
| 5 | 0.7037 | 1152.1 | 1172.5 | 1169.0 | 0.901 | 3.176 | 72.760 | 20.645 | 2.239 | 0.080 | 0.170 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1394.40 | |
| 6 | 0.7035 | 1152.6 | 1173.0 | 1169.4 | 0.875 | 3.171 | 72.860 | 20.508 | 2.296 | 0.082 | 0.179 | 0.014 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.11 | |
| 7 | 0.7046 | 1154.0 | 1174.4 | 1170.8 | 0.859 | 3.212 | 72.785 | 20.422 | 2.404 | 0.090 | 0.192 | 0.015 | 0.020 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.66 | |
| 8 | 0.7063 | 1156.7 | 1177.2 | 1173.7 | 0.896 | 3.150 | 72.329 | 20.990 | 2.361 | 0.081 | 0.169 | 0.011 | 0.013 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.38 | |
| 9 | 0.7079 | 1159.3 | 1179.9 | 1176.3 | 0.893 | 3.140 | 72.112 | 21.147 | 2.413 | 0.085 | 0.180 | 0.013 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.98 | |
| 10 | 0.7090 | 1161.4 | 1182.0 | 1178.4 | 0.886 | 3.124 | 72.046 | 21.109 | 2.516 | 0.092 | 0.194 | 0.014 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1400.40 | |
| 11 | 0.7078 | 1159.8 | 1180.3 | 1176.8 | 0.884 | 3.121 | 72.142 | 21.124 | 2.428 | 0.088 | 0.184 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.58 | |
| 12 | 0.7070 | 1158.7 | 1179.2 | 1175.6 | 0.871 | 3.129 | 72.325 | 20.939 | 2.436 | 0.088 | 0.183 | 0.014 | 0.017 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1399.02 | |
| 13 | 0.7055 | 1156.0 | 1176.5 | 1173.0 | 0.880 | 3.136 | 72.473 | 20.907 | 2.326 | 0.081 | 0.171 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.36 | |
| 14 | 0.7043 | 1154.0 | 1174.4 | 1170.9 | 0.885 | 3.139 | 72.660 | 20.762 | 2.286 | 0.079 | 0.165 | 0.012 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.11 | |
| 15 | 0.7057 | 1156.4 | 1176.8 | 1173.3 | 0.894 | 3.111 | 72.494 | 20.886 | 2.313 | 0.084 | 0.183 | 0.015 | 0.019 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.57 | |
| 16 | 0.7043 | 1154.0 | 1174.4 | 1171.0 | 0.902 | 3.117 | 72.615 | 20.847 | 2.264 | 0.076 | 0.156 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.09 | |
| 17 | 0.7047 | 1155.3 | 1175.7 | 1172.3 | 0.897 | 3.085 | 72.513 | 21.009 | 2.233 | 0.076 | 0.161 | 0.011 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.25 | |
| 18 | 0.6994 | 1147.2 | 1167.5 | 1164.0 | 0.864 | 3.124 | 73.785 | 19.533 | 2.418 | 0.080 | 0.168 | 0.013 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1392.71 | |
| 19 | 0.7051 | 1155.6 | 1176.0 | 1172.5 | 0.905 | 3.089 | 72.532 | 20.910 | 2.295 | 0.079 | 0.162 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.16 | |
| 20 | 0.7061 | 1157.0 | 1177.5 | 1174.0 | 0.900 | 3.105 | 72.388 | 20.987 | 2.343 | 0.081 | 0.168 | 0.012 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.90 | |
| 21 | 0.7053 | 1156.6 | 1177.1 | 1173.6 | 0.871 | 3.098 | 72.572 | 20.791 | 2.383 | 0.083 | 0.173 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1398.21 | |
| 22 | 0.7032 | 1153.7 | 1174.1 | 1170.7 | 0.856 | 3.103 | 72.816 | 20.700 | 2.254 | 0.077 | 0.166 | 0.013 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.80 | |
| 23 | 0.7041 | 1153.4 | 1173.8 | 1170.3 | 0.899 | 3.144 | 72.674 | 20.741 | 2.284 | 0.076 | 0.159 | 0.011 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.49 | |
| 24 | 0.7042 | 1153.5 | 1173.9 | 1170.5 | 0.890 | 3.151 | 72.611 | 20.853 | 2.237 | 0.074 | 0.158 | 0.012 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.64 | |
| 25 | 0.7042 | 1153.6 | 1174.0 | 1170.7 | 0.887 | 3.152 | 72.644 | 20.766 | 2.295 | 0.076 | 0.158 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.77 | |
| 26 | 0.7023 | 1153.1 | 1173.5 | 1170.1 | 0.814 | 3.119 | 72.801 | 20.862 | 2.159 | 0.072 | 0.149 | 0.010 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.99 | |
| 27 | 0.7033 | 1152.5 | 1172.9 | 1169.4 | 0.879 | 3.150 | 72.763 | 20.727 | 2.228 | 0.074 | 0.155 | 0.011 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.23 | |
| 28 | 0.7051 | 1154.9 | 1175.4 | 1171.9 | 0.898 | 3.139 | 72.536 | 20.867 | 2.275 | 0.080 | 0.174 | 0.014 | 0.018 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.40 | |
| 29 | 0.7052 | 1154.8 | 1175.2 | 1171.8 | 0.905 | 3.147 | 72.471 | 20.950 | 2.249 | 0.079 | 0.170 | 0.013 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.13 | |
| 30 | 0.7064 | 1156.9 | 1177.4 | 1173.9 | 0.903 | 3.133 | 72.293 | 21.089 | 2.299 | 0.080 | 0.173 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.50 | |
| Avg | 0.7049 | 1155.0 | 1175.5 | 1172.0 | 0.882 | 3.134 | 72.599 | 20.780 | 2.325 | 0.081 | 0.171 | 0.013 | 0.015 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1396.79 | |

Zone 265

Source Daily Summary

September 2017

Number: 043

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-CLEVELAND STN

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7380 | 1177.3 | 1198.2 | 1193.7 | 0.851 | 4.932 | 68.102 | 21.325 | 4.156 | 0.173 | 0.407 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.25 | |
| 2 | 0.7391 | 1178.0 | 1198.9 | 1194.3 | 0.865 | 4.974 | 67.984 | 21.314 | 4.206 | 0.177 | 0.421 | 0.029 | 0.032 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.98 | |
| 3 | 0.7408 | 1179.5 | 1200.4 | 1195.8 | 0.856 | 5.053 | 67.720 | 21.416 | 4.284 | 0.181 | 0.430 | 0.029 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.17 | |
| 4 | 0.7403 | 1178.1 | 1198.9 | 1194.5 | 0.863 | 5.083 | 67.719 | 21.470 | 4.208 | 0.177 | 0.420 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.97 | |
| 5 | 0.7377 | 1175.5 | 1196.4 | 1191.9 | 0.863 | 4.991 | 68.002 | 21.496 | 4.034 | 0.166 | 0.394 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.49 | |
| 6 | 0.7376 | 1174.8 | 1195.6 | 1191.2 | 0.871 | 5.011 | 68.038 | 21.440 | 4.018 | 0.167 | 0.398 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.74 | |
| 7 | 0.7373 | 1175.0 | 1195.8 | 1191.4 | 0.855 | 5.001 | 68.189 | 21.216 | 4.100 | 0.173 | 0.410 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.20 | |
| 8 | 0.7379 | 1177.2 | 1198.0 | 1193.7 | 0.872 | 4.900 | 68.036 | 21.510 | 4.053 | 0.170 | 0.402 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.16 | |
| 9 | 0.7374 | 1176.6 | 1197.5 | 1193.3 | 0.867 | 4.889 | 68.046 | 21.583 | 4.007 | 0.165 | 0.389 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.08 | |
| 10 | 0.7398 | 1178.9 | 1199.7 | 1195.5 | 0.865 | 4.984 | 67.739 | 21.641 | 4.130 | 0.173 | 0.410 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.37 | |
| 11 | 0.7396 | 1179.1 | 1199.9 | 1195.6 | 0.862 | 4.957 | 67.794 | 21.599 | 4.144 | 0.174 | 0.412 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.82 | |
| 12 | 0.7372 | 1177.1 | 1198.0 | 1193.4 | 0.862 | 4.855 | 68.136 | 21.494 | 4.034 | 0.168 | 0.396 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.73 | |
| 13 | 0.7366 | 1175.7 | 1196.5 | 1192.1 | 0.865 | 4.872 | 68.192 | 21.473 | 3.995 | 0.164 | 0.386 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.74 | |
| 14 | 0.7340 | 1173.6 | 1194.4 | 1190.0 | 0.874 | 4.745 | 68.502 | 21.499 | 3.812 | 0.155 | 0.362 | 0.024 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.68 | |
| 15 | 0.7351 | 1175.0 | 1195.8 | 1191.6 | 0.867 | 4.774 | 68.324 | 21.604 | 3.851 | 0.159 | 0.369 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.30 | |
| 16 | 0.7341 | 1171.0 | 1191.7 | 1187.5 | 0.872 | 4.921 | 68.396 | 21.472 | 3.774 | 0.154 | 0.358 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.42 | |
| 17 | 0.7395 | 1176.1 | 1196.9 | 1192.7 | 0.867 | 5.122 | 67.651 | 21.677 | 4.068 | 0.169 | 0.393 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.44 | |
| 18 | 0.7397 | 1175.1 | 1195.9 | 1191.6 | 0.863 | 5.207 | 67.771 | 21.333 | 4.186 | 0.174 | 0.409 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.04 | |
| 19 | 0.7433 | 1177.9 | 1198.8 | 1194.4 | 0.867 | 5.366 | 67.183 | 21.613 | 4.315 | 0.178 | 0.418 | 0.029 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.98 | |
| 20 | 0.7377 | 1174.6 | 1195.4 | 1191.1 | 0.874 | 5.033 | 67.944 | 21.556 | 3.989 | 0.167 | 0.385 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.34 | |
| 21 | 0.7375 | 1174.6 | 1195.4 | 1191.0 | 0.872 | 5.020 | 67.950 | 21.594 | 3.964 | 0.164 | 0.380 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.49 | |
| 22 | 0.7358 | 1173.1 | 1193.9 | 1189.4 | 0.863 | 4.968 | 68.174 | 21.521 | 3.897 | 0.158 | 0.367 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.33 | |
| 23 | 0.7352 | 1173.0 | 1193.8 | 1189.3 | 0.857 | 4.928 | 68.212 | 21.600 | 3.835 | 0.155 | 0.362 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.76 | |
| 24 | 0.7352 | 1172.7 | 1193.4 | 1188.8 | 0.861 | 4.934 | 68.220 | 21.580 | 3.845 | 0.154 | 0.357 | 0.024 | 0.025 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.48 | |
| 25 | 0.7359 | 1172.8 | 1193.5 | 1189.3 | 0.868 | 4.986 | 68.168 | 21.500 | 3.899 | 0.158 | 0.368 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.87 | |
| 26 | 0.7383 | 1173.4 | 1194.2 | 1190.1 | 0.861 | 5.184 | 67.859 | 21.418 | 4.066 | 0.167 | 0.390 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.38 | |
| 27 | 0.7376 | 1173.6 | 1194.3 | 1190.1 | 0.841 | 5.142 | 67.910 | 21.515 | 3.983 | 0.166 | 0.388 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.16 | |
| 28 | 0.7398 | 1174.3 | 1195.1 | 1190.8 | 0.864 | 5.260 | 67.615 | 21.544 | 4.090 | 0.171 | 0.400 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.08 | |
| 29 | 0.7403 | 1175.8 | 1196.7 | 1192.3 | 0.868 | 5.216 | 67.537 | 21.657 | 4.085 | 0.173 | 0.405 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.30 | |
| 30 | 0.7390 | 1174.7 | 1195.5 | 1191.2 | 0.864 | 5.162 | 67.733 | 21.578 | 4.043 | 0.170 | 0.395 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.28 | |
| Avg | 0.7379 | 1175.0 | 1196.3 | 1191.9 | 0.864 | 5.016 | 67.962 | 21.508 | 4.036 | 0.167 | 0.393 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.17 | |

Zone 271

Source Daily Summary

September 2017

Number: 063

Pressure Base: 14.730

Contract Day: 1

Name: CLEVELAND STN-MAPLETON

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT | |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|----|----|----|-----|-------|---------|--|
| 1 | 0.7350 | 1175.1 | 1195.9 | 1192.4 | 0.859 | 4.775 | 68.427 | 21.421 | 3.924 | 0.162 | 0.374 | 0.027 | 0.030 | 0.000 | | | | | | 1391.46 | |
| 2 | 0.7387 | 1177.1 | 1198.0 | 1194.5 | 0.844 | 5.019 | 67.938 | 21.398 | 4.171 | 0.173 | 0.399 | 0.028 | 0.030 | 0.000 | | | | | | 1390.41 | |
| 3 | 0.7394 | 1176.7 | 1197.6 | 1194.1 | 0.870 | 5.067 | 67.848 | 21.396 | 4.180 | 0.174 | 0.404 | 0.029 | 0.032 | 0.000 | | | | | | 1389.28 | |
| 4 | 0.7415 | 1178.7 | 1199.5 | 1196.0 | 0.869 | 5.148 | 67.563 | 21.478 | 4.278 | 0.180 | 0.421 | 0.030 | 0.033 | 0.000 | | | | | | 1389.53 | |
| 5 | 0.7407 | 1177.4 | 1198.2 | 1194.7 | 0.869 | 5.149 | 67.600 | 21.551 | 4.190 | 0.175 | 0.407 | 0.028 | 0.031 | 0.000 | | | | | | 1388.80 | |
| 6 | 0.7342 | 1176.2 | 1197.0 | 1193.5 | 0.854 | 4.643 | 68.606 | 21.363 | 3.949 | 0.162 | 0.369 | 0.025 | 0.028 | 0.000 | | | | | | 1393.48 | |
| 7 | 0.7386 | 1174.9 | 1195.7 | 1192.2 | 0.875 | 5.098 | 67.832 | 21.535 | 4.047 | 0.168 | 0.389 | 0.027 | 0.029 | 0.000 | | | | | | 1387.84 | |
| 8 | 0.7379 | 1174.5 | 1195.3 | 1191.7 | 0.859 | 5.084 | 68.047 | 21.277 | 4.103 | 0.172 | 0.399 | 0.028 | 0.031 | 0.000 | | | | | | 1387.96 | |
| 9 | 0.7381 | 1176.0 | 1196.8 | 1193.3 | 0.881 | 4.973 | 67.971 | 21.508 | 4.047 | 0.169 | 0.392 | 0.028 | 0.031 | 0.000 | | | | | | 1389.63 | |
| 10 | 0.7381 | 1176.4 | 1197.2 | 1193.8 | 0.877 | 4.958 | 67.886 | 21.657 | 4.020 | 0.165 | 0.381 | 0.026 | 0.029 | 0.000 | | | | | | 1390.12 | |
| 11 | 0.7405 | 1177.7 | 1198.6 | 1195.1 | 0.876 | 5.105 | 67.575 | 21.664 | 4.146 | 0.173 | 0.402 | 0.028 | 0.031 | 0.000 | | | | | | 1389.40 | |
| 12 | 0.7395 | 1178.2 | 1199.0 | 1195.6 | 0.874 | 4.987 | 67.713 | 21.705 | 4.099 | 0.171 | 0.394 | 0.027 | 0.029 | 0.000 | | | | | | 1390.89 | |
| 13 | 0.7384 | 1177.7 | 1198.5 | 1195.0 | 0.870 | 4.920 | 67.953 | 21.537 | 4.098 | 0.171 | 0.393 | 0.027 | 0.030 | 0.000 | | | | | | 1391.27 | |
| 14 | 0.7340 | 1173.0 | 1193.8 | 1190.3 | 0.879 | 4.777 | 68.451 | 21.545 | 3.793 | 0.153 | 0.351 | 0.025 | 0.027 | 0.000 | | | | | | 1389.95 | |
| 15 | 0.7363 | 1175.4 | 1196.2 | 1192.7 | 0.875 | 4.852 | 68.152 | 21.615 | 3.926 | 0.160 | 0.368 | 0.025 | 0.027 | 0.000 | | | | | | 1390.57 | |
| 16 | 0.7330 | 1170.7 | 1191.4 | 1187.9 | 0.881 | 4.822 | 68.579 | 21.436 | 3.728 | 0.152 | 0.349 | 0.025 | 0.027 | 0.000 | | | | | | 1388.10 | |
| 17 | 0.7389 | 1175.3 | 1196.2 | 1192.7 | 0.876 | 5.096 | 67.723 | 21.672 | 4.033 | 0.166 | 0.381 | 0.026 | 0.028 | 0.000 | | | | | | 1388.13 | |
| 18 | 0.7410 | 1176.9 | 1197.7 | 1194.3 | 0.875 | 5.204 | 67.426 | 21.732 | 4.135 | 0.172 | 0.398 | 0.027 | 0.030 | 0.000 | | | | | | 1387.94 | |
| 19 | 0.7395 | 1173.7 | 1194.5 | 1191.1 | 0.868 | 5.262 | 67.792 | 21.256 | 4.189 | 0.173 | 0.402 | 0.028 | 0.030 | 0.000 | | | | | | 1385.65 | |
| 20 | 0.7424 | 1177.3 | 1198.2 | 1194.7 | 0.880 | 5.296 | 67.306 | 21.607 | 4.270 | 0.176 | 0.407 | 0.028 | 0.030 | 0.000 | | | | | | 1387.19 | |
| 21 | 0.7377 | 1174.3 | 1195.1 | 1191.6 | 0.882 | 5.040 | 67.912 | 21.596 | 3.977 | 0.163 | 0.375 | 0.026 | 0.029 | 0.000 | | | | | | 1388.00 | |
| 22 | 0.7371 | 1174.1 | 1194.9 | 1191.4 | 0.871 | 5.015 | 67.997 | 21.568 | 3.963 | 0.161 | 0.371 | 0.026 | 0.028 | 0.000 | | | | | | 1388.28 | |
| 23 | 0.7356 | 1172.6 | 1193.3 | 1189.9 | 0.863 | 4.977 | 68.176 | 21.550 | 3.864 | 0.156 | 0.360 | 0.026 | 0.028 | 0.000 | | | | | | 1387.93 | |
| 24 | 0.7360 | 1172.8 | 1193.6 | 1190.1 | 0.873 | 4.987 | 68.141 | 21.520 | 3.912 | 0.157 | 0.360 | 0.024 | 0.026 | 0.000 | | | | | | 1387.80 | |
| 25 | 0.7351 | 1172.4 | 1193.1 | 1189.7 | 0.869 | 4.938 | 68.205 | 21.601 | 3.835 | 0.152 | 0.350 | 0.024 | 0.025 | 0.000 | | | | | | 1388.14 | |
| 26 | 0.7360 | 1172.6 | 1193.3 | 1189.8 | 0.877 | 4.998 | 68.131 | 21.527 | 3.896 | 0.156 | 0.362 | 0.025 | 0.028 | 0.000 | | | | | | 1387.49 | |
| 27 | 0.7386 | 1173.3 | 1194.1 | 1190.6 | 0.869 | 5.204 | 67.812 | 21.426 | 4.083 | 0.166 | 0.385 | 0.026 | 0.028 | 0.000 | | | | | | 1386.01 | |
| 28 | 0.7389 | 1173.8 | 1194.6 | 1191.1 | 0.857 | 5.227 | 67.716 | 21.537 | 4.052 | 0.168 | 0.388 | 0.027 | 0.029 | 0.000 | | | | | | 1386.21 | |
| 29 | 0.7410 | 1175.4 | 1196.3 | 1192.8 | 0.873 | 5.296 | 67.424 | 21.640 | 4.133 | 0.173 | 0.403 | 0.028 | 0.030 | 0.000 | | | | | | 1386.22 | |
| 30 | 0.7398 | 1175.8 | 1196.6 | 1193.1 | 0.875 | 5.158 | 67.565 | 21.751 | 4.036 | 0.168 | 0.390 | 0.027 | 0.030 | 0.000 | | | | | | 1387.75 | |
| Avg | 0.7381 | 1175.0 | 1196.0 | 1192.5 | 0.871 | 5.036 | 67.916 | 21.536 | 4.036 | 0.166 | 0.384 | 0.027 | 0.029 | 0.000 | | | | | | 1388.71 | |

Zone 222

Source Daily Summary

September 2017

Number: 061 Pressure Base: 14.730 Contract Day: 1
 Name: CLEVELAND STN-GRAFTON BDR Temperature Base: Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7392 | 1178.7 | 1199.6 | 1196.3 | 0.853 | 4.952 | 67.845 | 21.568 | 4.155 | 0.173 | 0.398 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.84 | |
| 2 | 0.7388 | 1177.0 | 1197.9 | 1194.5 | 0.868 | 5.001 | 67.937 | 21.403 | 4.159 | 0.173 | 0.400 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.15 | |
| 3 | 0.7407 | 1179.0 | 1199.9 | 1196.5 | 0.869 | 5.053 | 67.681 | 21.495 | 4.250 | 0.178 | 0.414 | 0.029 | 0.032 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.75 | |
| 4 | 0.7419 | 1179.9 | 1200.8 | 1197.4 | 0.866 | 5.110 | 67.520 | 21.536 | 4.302 | 0.181 | 0.422 | 0.030 | 0.033 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.68 | |
| 5 | 0.7395 | 1176.5 | 1197.3 | 1193.9 | 0.871 | 5.095 | 67.732 | 21.558 | 4.120 | 0.171 | 0.397 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.82 | |
| 6 | 0.7385 | 1175.7 | 1196.5 | 1193.1 | 0.867 | 5.047 | 67.829 | 21.618 | 4.030 | 0.167 | 0.387 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.94 | |
| 7 | 0.7383 | 1174.9 | 1195.7 | 1192.4 | 0.870 | 5.077 | 67.923 | 21.442 | 4.069 | 0.169 | 0.393 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.13 | |
| 8 | 0.7379 | 1176.5 | 1197.3 | 1193.9 | 0.872 | 4.938 | 68.051 | 21.446 | 4.066 | 0.172 | 0.397 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.36 | |
| 9 | 0.7379 | 1177.0 | 1197.8 | 1194.5 | 0.877 | 4.906 | 67.938 | 21.656 | 4.022 | 0.165 | 0.381 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.96 | |
| 10 | 0.7398 | 1177.9 | 1198.7 | 1195.4 | 0.876 | 5.030 | 67.670 | 21.689 | 4.110 | 0.171 | 0.396 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.26 | |
| 11 | 0.7409 | 1179.5 | 1200.4 | 1197.1 | 0.871 | 5.038 | 67.562 | 21.694 | 4.194 | 0.176 | 0.407 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.17 | |
| 12 | 0.7389 | 1177.9 | 1198.8 | 1195.4 | 0.873 | 4.946 | 67.796 | 21.704 | 4.066 | 0.169 | 0.389 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.16 | |
| 13 | 0.7384 | 1177.5 | 1198.3 | 1194.9 | 0.872 | 4.925 | 67.956 | 21.535 | 4.090 | 0.171 | 0.394 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.08 | |
| 14 | 0.7338 | 1172.7 | 1193.5 | 1190.2 | 0.879 | 4.777 | 68.475 | 21.524 | 3.789 | 0.153 | 0.351 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.82 | |
| 15 | 0.7361 | 1175.0 | 1195.8 | 1192.4 | 0.875 | 4.858 | 68.176 | 21.595 | 3.917 | 0.159 | 0.367 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.29 | |
| 16 | 0.7330 | 1170.7 | 1191.5 | 1188.1 | 0.881 | 4.820 | 68.572 | 21.451 | 3.724 | 0.151 | 0.349 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.16 | |
| 17 | 0.7387 | 1174.9 | 1195.7 | 1192.4 | 0.876 | 5.103 | 67.754 | 21.643 | 4.026 | 0.165 | 0.380 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.81 | |
| 18 | 0.7409 | 1176.7 | 1197.5 | 1194.3 | 0.876 | 5.207 | 67.432 | 21.730 | 4.129 | 0.171 | 0.398 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.82 | |
| 19 | 0.7395 | 1173.7 | 1194.5 | 1191.2 | 0.870 | 5.261 | 67.781 | 21.277 | 4.180 | 0.172 | 0.401 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.63 | |
| 20 | 0.7423 | 1177.1 | 1198.0 | 1194.7 | 0.880 | 5.304 | 67.309 | 21.601 | 4.266 | 0.176 | 0.406 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.00 | |
| 21 | 0.7378 | 1174.4 | 1195.2 | 1191.9 | 0.883 | 5.041 | 67.899 | 21.604 | 3.978 | 0.163 | 0.375 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.04 | |
| 22 | 0.7371 | 1173.9 | 1194.7 | 1191.4 | 0.872 | 5.021 | 67.997 | 21.568 | 3.958 | 0.161 | 0.370 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.10 | |
| 23 | 0.7358 | 1172.8 | 1193.6 | 1190.3 | 0.867 | 4.979 | 68.142 | 21.567 | 3.873 | 0.157 | 0.362 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.99 | |
| 24 | 0.7360 | 1172.7 | 1193.5 | 1190.1 | 0.874 | 4.988 | 68.143 | 21.520 | 3.908 | 0.157 | 0.360 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.72 | |
| 25 | 0.7352 | 1172.5 | 1193.3 | 1189.9 | 0.869 | 4.940 | 68.193 | 21.605 | 3.840 | 0.153 | 0.351 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.20 | |
| 26 | 0.7361 | 1172.7 | 1193.5 | 1190.2 | 0.877 | 4.997 | 68.110 | 21.545 | 3.898 | 0.157 | 0.362 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.60 | |
| 27 | 0.7387 | 1173.4 | 1194.2 | 1190.9 | 0.870 | 5.202 | 67.799 | 21.443 | 4.081 | 0.166 | 0.385 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.08 | |
| 28 | 0.7393 | 1174.3 | 1195.1 | 1191.8 | 0.861 | 5.222 | 67.656 | 21.593 | 4.055 | 0.168 | 0.389 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.50 | |
| 29 | 0.7411 | 1175.5 | 1196.3 | 1193.0 | 0.874 | 5.297 | 67.418 | 21.646 | 4.131 | 0.173 | 0.403 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.21 | |
| 30 | 0.7397 | 1175.6 | 1196.4 | 1193.1 | 0.875 | 5.163 | 67.577 | 21.738 | 4.032 | 0.168 | 0.391 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.61 | |
| Avg | 0.7384 | 1176.0 | 1196.4 | 1193.0 | 0.872 | 5.043 | 67.862 | 21.566 | 4.047 | 0.167 | 0.386 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.83 | |

Zone 223

Source Daily Summary

September 2017

Number: 041

Pressure Base: 14.730

Contract Day: 1

Name: BISMARCK STN-GLEN ULLIN STN

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.7379 | 1177.2 | 1198.1 | 1194.0 | 0.850 | 4.933 | 68.107 | 21.327 | 4.149 | 0.172 | 0.406 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.19 | |
| 2 | 0.7390 | 1177.7 | 1198.6 | 1194.5 | 0.864 | 4.980 | 68.003 | 21.296 | 4.201 | 0.177 | 0.420 | 0.029 | 0.032 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.77 | |
| 3 | 0.7407 | 1179.4 | 1200.2 | 1196.1 | 0.856 | 5.047 | 67.745 | 21.405 | 4.278 | 0.180 | 0.429 | 0.029 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.15 | |
| 4 | 0.7404 | 1178.2 | 1199.1 | 1195.1 | 0.862 | 5.082 | 67.716 | 21.467 | 4.215 | 0.178 | 0.421 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.06 | |
| 5 | 0.7377 | 1175.5 | 1196.3 | 1192.2 | 0.864 | 4.994 | 67.999 | 21.490 | 4.037 | 0.167 | 0.395 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.42 | |
| 6 | 0.7374 | 1174.6 | 1195.4 | 1191.1 | 0.870 | 5.012 | 68.060 | 21.419 | 4.016 | 0.167 | 0.398 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.62 | |
| 7 | 0.7373 | 1174.9 | 1195.7 | 1191.5 | 0.854 | 5.007 | 68.193 | 21.209 | 4.098 | 0.173 | 0.409 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.05 | |
| 8 | 0.7377 | 1176.9 | 1197.7 | 1193.6 | 0.872 | 4.901 | 68.065 | 21.486 | 4.047 | 0.170 | 0.402 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.98 | |
| 9 | 0.7372 | 1176.5 | 1197.3 | 1193.1 | 0.867 | 4.885 | 68.064 | 21.576 | 4.001 | 0.165 | 0.388 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.03 | |
| 10 | 0.7397 | 1178.7 | 1199.5 | 1195.4 | 0.865 | 4.989 | 67.749 | 21.627 | 4.128 | 0.173 | 0.410 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.20 | |
| 11 | 0.7397 | 1179.1 | 1200.0 | 1195.7 | 0.862 | 4.963 | 67.792 | 21.584 | 4.152 | 0.175 | 0.414 | 0.027 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.76 | |
| 12 | 0.7372 | 1176.9 | 1197.8 | 1193.5 | 0.862 | 4.861 | 68.139 | 21.489 | 4.028 | 0.168 | 0.396 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.55 | |
| 13 | 0.7366 | 1175.7 | 1196.5 | 1192.5 | 0.865 | 4.873 | 68.196 | 21.464 | 3.997 | 0.165 | 0.387 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.72 | |
| 14 | 0.7337 | 1173.5 | 1194.3 | 1190.3 | 0.874 | 4.728 | 68.541 | 21.490 | 3.799 | 0.154 | 0.361 | 0.024 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.76 | |
| 15 | 0.7351 | 1174.7 | 1195.5 | 1191.7 | 0.866 | 4.790 | 68.328 | 21.582 | 3.853 | 0.159 | 0.370 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1390.99 | |
| 16 | 0.7339 | 1170.5 | 1191.2 | 1187.4 | 0.872 | 4.929 | 68.435 | 21.428 | 3.773 | 0.154 | 0.358 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.09 | |
| 17 | 0.7394 | 1175.9 | 1196.7 | 1192.9 | 0.867 | 5.121 | 67.671 | 21.663 | 4.063 | 0.168 | 0.392 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.33 | |
| 18 | 0.7395 | 1174.7 | 1195.6 | 1191.6 | 0.862 | 5.215 | 67.795 | 21.306 | 4.181 | 0.174 | 0.409 | 0.028 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.76 | |
| 19 | 0.7429 | 1177.4 | 1198.3 | 1194.3 | 0.866 | 5.357 | 67.245 | 21.581 | 4.297 | 0.178 | 0.417 | 0.029 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.82 | |
| 20 | 0.7377 | 1174.6 | 1195.4 | 1191.4 | 0.874 | 5.037 | 67.933 | 21.559 | 3.992 | 0.167 | 0.385 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.33 | |
| 21 | 0.7376 | 1174.6 | 1195.4 | 1191.4 | 0.873 | 5.025 | 67.942 | 21.591 | 3.969 | 0.164 | 0.381 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.44 | |
| 22 | 0.7359 | 1173.2 | 1193.9 | 1190.1 | 0.863 | 4.970 | 68.166 | 21.524 | 3.898 | 0.158 | 0.368 | 0.025 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.33 | |
| 23 | 0.7351 | 1172.7 | 1193.4 | 1189.6 | 0.857 | 4.932 | 68.242 | 21.571 | 3.834 | 0.154 | 0.359 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.55 | |
| 24 | 0.7352 | 1172.7 | 1193.5 | 1189.6 | 0.860 | 4.937 | 68.222 | 21.570 | 3.849 | 0.154 | 0.358 | 0.024 | 0.026 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.47 | |
| 25 | 0.7357 | 1172.5 | 1193.3 | 1189.4 | 0.868 | 4.981 | 68.193 | 21.492 | 3.890 | 0.157 | 0.367 | 0.025 | 0.027 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.80 | |
| 26 | 0.7383 | 1173.2 | 1194.0 | 1190.2 | 0.861 | 5.188 | 67.875 | 21.400 | 4.065 | 0.167 | 0.390 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.21 | |
| 27 | 0.7375 | 1173.2 | 1194.0 | 1189.9 | 0.841 | 5.149 | 67.941 | 21.483 | 3.977 | 0.166 | 0.389 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.88 | |
| 28 | 0.7397 | 1174.2 | 1195.0 | 1191.1 | 0.864 | 5.257 | 67.635 | 21.529 | 4.089 | 0.171 | 0.399 | 0.027 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1386.04 | |
| 29 | 0.7403 | 1175.7 | 1196.6 | 1192.6 | 0.868 | 5.221 | 67.535 | 21.657 | 4.081 | 0.173 | 0.406 | 0.028 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.19 | |
| 30 | 0.7389 | 1174.6 | 1195.4 | 1191.5 | 0.864 | 5.162 | 67.740 | 21.579 | 4.038 | 0.169 | 0.394 | 0.026 | 0.028 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.22 | |
| Avg | 0.7378 | 1175.0 | 1196.1 | 1192.1 | 0.864 | 5.017 | 67.976 | 21.495 | 4.033 | 0.167 | 0.393 | 0.026 | 0.029 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.06 | |

Zone 28

Source Daily Summary

September 2017

Number: 271

Pressure Base: 14.730

Contract Day: 1

Name: DCKSN BRD-BLFD TSF-G.U. STN

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | 0.6408 | 1074.8 | 1093.8 | 1090.3 | 0.830 | 2.083 | 84.423 | 11.270 | 1.245 | 0.042 | 0.094 | 0.006 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1363.21 |
| 2 | 0.6311 | 1063.5 | 1082.3 | 1078.7 | 0.827 | 1.865 | 86.121 | 10.062 | 1.010 | 0.033 | 0.072 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1359.19 |
| 3 | 0.6301 | 1061.4 | 1080.2 | 1076.5 | 0.843 | 1.872 | 86.276 | 9.947 | 0.959 | 0.029 | 0.066 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1357.63 |
| 4 | 0.6305 | 1062.1 | 1081.0 | 1077.5 | 0.839 | 1.867 | 86.198 | 10.029 | 0.963 | 0.030 | 0.066 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1358.20 |
| 5 | 0.6349 | 1066.3 | 1085.2 | 1081.8 | 0.846 | 2.019 | 85.432 | 10.504 | 1.077 | 0.034 | 0.077 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1358.75 |
| 6 | 0.6280 | 1059.8 | 1078.6 | 1075.2 | 0.825 | 1.794 | 86.590 | 9.825 | 0.877 | 0.025 | 0.056 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1357.94 |
| 7 | 0.6273 | 1058.0 | 1076.7 | 1073.1 | 0.832 | 1.831 | 86.675 | 9.748 | 0.833 | 0.023 | 0.051 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1356.34 |
| 8 | 0.6249 | 1055.1 | 1073.8 | 1070.1 | 0.803 | 1.830 | 87.068 | 9.441 | 0.785 | 0.022 | 0.046 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1355.17 |
| 9 | 0.6175 | 1047.3 | 1065.9 | 1062.4 | 0.779 | 1.645 | 88.287 | 8.691 | 0.559 | 0.013 | 0.025 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1353.25 |
| 10 | 0.6118 | 1041.1 | 1059.5 | 1056.2 | 0.802 | 1.456 | 89.328 | 7.975 | 0.416 | 0.008 | 0.013 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1351.37 |
| 11 | 0.6298 | 1061.2 | 1080.0 | 1076.5 | 0.801 | 1.920 | 86.313 | 9.886 | 0.969 | 0.033 | 0.069 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1357.70 |
| 12 | 0.6372 | 1069.4 | 1088.3 | 1084.9 | 0.802 | 2.111 | 85.151 | 10.517 | 1.273 | 0.042 | 0.092 | 0.005 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1360.23 |
| 13 | 0.6623 | 1095.1 | 1114.5 | 1111.1 | 0.815 | 2.886 | 80.839 | 13.246 | 1.945 | 0.073 | 0.172 | 0.011 | 0.012 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.44 |
| 14 | 0.6521 | 1084.6 | 1103.8 | 1100.5 | 0.813 | 2.570 | 82.558 | 12.204 | 1.637 | 0.059 | 0.139 | 0.009 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1363.68 |
| 15 | 0.6514 | 1082.6 | 1101.7 | 1098.6 | 0.821 | 2.615 | 82.686 | 12.037 | 1.623 | 0.059 | 0.139 | 0.009 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1361.88 |
| 16 | 0.6228 | 1052.4 | 1071.0 | 1068.0 | 0.822 | 1.764 | 87.556 | 8.986 | 0.790 | 0.024 | 0.051 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1354.03 |
| 17 | 0.6086 | 1038.2 | 1056.6 | 1053.6 | 0.823 | 1.290 | 90.096 | 7.286 | 0.488 | 0.006 | 0.009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1351.28 |
| 18 | 0.6094 | 1039.3 | 1057.7 | 1054.3 | 0.815 | 1.314 | 89.956 | 7.391 | 0.494 | 0.010 | 0.019 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1351.78 |
| 19 | 0.6188 | 1048.6 | 1067.1 | 1063.8 | 0.821 | 1.628 | 88.306 | 8.435 | 0.740 | 0.021 | 0.045 | 0.001 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1353.38 |
| 20 | 0.6616 | 1112.1 | 1131.8 | 1128.4 | 0.329 | 2.536 | 78.925 | 17.377 | 0.790 | 0.014 | 0.027 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1387.98 |
| 21 | 0.6888 | 1152.2 | 1172.6 | 1169.2 | 0.000 | 3.157 | 72.999 | 22.919 | 0.906 | 0.007 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.59 |
| 22 | 0.6865 | 1146.6 | 1166.9 | 1163.6 | 0.022 | 3.247 | 73.444 | 22.409 | 0.856 | 0.009 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1405.07 |
| 23 | 0.6622 | 1095.1 | 1114.5 | 1111.3 | 0.304 | 3.663 | 79.245 | 15.376 | 1.304 | 0.036 | 0.065 | 0.004 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.35 |
| 24 | 0.6561 | 1085.4 | 1104.6 | 1101.5 | 0.327 | 3.646 | 80.446 | 14.239 | 1.236 | 0.035 | 0.065 | 0.004 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1360.51 |
| 25 | 0.6570 | 1088.1 | 1107.4 | 1104.3 | 0.309 | 3.592 | 80.191 | 14.612 | 1.200 | 0.032 | 0.059 | 0.003 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1363.03 |
| 26 | 0.6620 | 1096.3 | 1115.7 | 1112.5 | 0.310 | 3.567 | 79.202 | 15.594 | 1.232 | 0.033 | 0.060 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1368.01 |
| 27 | 0.6636 | 1098.3 | 1117.8 | 1114.5 | 0.292 | 3.617 | 78.888 | 15.839 | 1.266 | 0.033 | 0.061 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1368.95 |
| 28 | 0.6769 | 1124.7 | 1144.6 | 1141.3 | 0.196 | 3.403 | 75.999 | 19.135 | 1.191 | 0.027 | 0.048 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.05 |
| 29 | 0.6779 | 1126.5 | 1146.5 | 1143.2 | 0.178 | 3.414 | 75.772 | 19.370 | 1.191 | 0.026 | 0.048 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.28 |
| 30 | 0.6824 | 1137.3 | 1157.4 | 1154.0 | 0.097 | 3.308 | 74.578 | 20.936 | 1.033 | 0.017 | 0.031 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1397.89 |
| Avg | 0.6448 | 1081.0 | 1099.9 | 1096.6 | 0.598 | 2.450 | 82.985 | 12.843 | 1.030 | 0.029 | 0.060 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.54 |

Zone 31

Source Daily Summary

September 2017

Number: 051

Pressure Base: 14.730

Contract Day: 1

Name: CABIN CRK STN-BELFIELD TRSFR

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|
| 1 | 0.6410 | 1080.4 | 1099.5 | 1095.7 | 0.875 | 1.689 | 84.274 | 11.959 | 1.083 | 0.040 | 0.070 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1370.11 | |
| 2 | 0.6473 | 1082.6 | 1101.8 | 1097.9 | 0.767 | 2.316 | 82.987 | 12.519 | 1.278 | 0.044 | 0.079 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.31 | |
| 3 | 0.6580 | 1088.6 | 1107.9 | 1103.9 | 0.624 | 3.176 | 80.819 | 13.697 | 1.530 | 0.049 | 0.092 | 0.006 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1362.59 | |
| 4 | 0.6422 | 1078.3 | 1097.4 | 1093.5 | 0.766 | 2.095 | 83.806 | 12.160 | 1.065 | 0.034 | 0.065 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.27 | |
| 5 | 0.6506 | 1083.1 | 1102.3 | 1098.4 | 0.697 | 2.694 | 82.256 | 12.894 | 1.322 | 0.042 | 0.084 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1363.55 | |
| 6 | 0.6381 | 1076.3 | 1095.4 | 1091.5 | 0.806 | 1.774 | 84.607 | 11.753 | 0.961 | 0.032 | 0.059 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1368.02 | |
| 7 | 0.6464 | 1086.9 | 1106.2 | 1102.3 | 0.859 | 1.824 | 83.244 | 12.766 | 1.175 | 0.043 | 0.079 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1372.65 | |
| 8 | 0.6454 | 1084.6 | 1103.8 | 1099.9 | 0.897 | 1.818 | 83.512 | 12.441 | 1.196 | 0.046 | 0.081 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1370.70 | |
| 9 | 0.6375 | 1074.5 | 1093.6 | 1089.8 | 0.850 | 1.753 | 84.824 | 11.486 | 0.979 | 0.036 | 0.063 | 0.005 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.47 | |
| 10 | 0.6352 | 1071.8 | 1090.8 | 1087.0 | 0.858 | 1.691 | 85.248 | 11.169 | 0.934 | 0.034 | 0.059 | 0.004 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1365.49 | |
| 11 | 0.6390 | 1076.8 | 1095.9 | 1092.1 | 0.838 | 1.773 | 84.535 | 11.745 | 0.994 | 0.038 | 0.066 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1367.77 | |
| 12 | 0.6452 | 1085.5 | 1104.8 | 1101.2 | 0.725 | 1.999 | 83.228 | 12.822 | 1.116 | 0.038 | 0.065 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1372.19 | |
| 13 | 0.6602 | 1103.4 | 1123.0 | 1119.3 | 0.898 | 2.053 | 81.039 | 14.174 | 1.628 | 0.068 | 0.125 | 0.008 | 0.008 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1378.85 | |
| 14 | 0.6542 | 1097.2 | 1116.7 | 1113.0 | 0.693 | 2.187 | 81.427 | 14.376 | 1.186 | 0.041 | 0.080 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1377.35 | |
| 15 | 0.6732 | 1121.8 | 1141.6 | 1138.0 | 0.426 | 2.888 | 77.271 | 18.003 | 1.280 | 0.037 | 0.083 | 0.006 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.12 | |
| 16 | 0.6774 | 1129.9 | 1149.9 | 1146.2 | 0.291 | 2.995 | 76.004 | 19.516 | 1.102 | 0.027 | 0.058 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.84 | |
| 17 | 0.6524 | 1098.6 | 1118.1 | 1114.5 | 0.500 | 2.225 | 81.099 | 15.286 | 0.833 | 0.019 | 0.034 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.07 | |
| 18 | 0.6317 | 1070.1 | 1089.0 | 1085.4 | 0.755 | 1.629 | 85.650 | 11.122 | 0.770 | 0.026 | 0.043 | 0.003 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1367.00 | |
| 19 | 0.6349 | 1072.3 | 1091.3 | 1087.6 | 0.686 | 1.902 | 84.869 | 11.700 | 0.775 | 0.021 | 0.041 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1366.36 | |
| 20 | 0.6340 | 1067.9 | 1086.8 | 1083.4 | 0.652 | 2.136 | 85.089 | 11.190 | 0.852 | 0.025 | 0.049 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1361.72 | |
| 21 | 0.6562 | 1096.0 | 1115.4 | 1112.0 | 0.390 | 2.911 | 80.346 | 15.256 | 1.010 | 0.028 | 0.052 | 0.003 | 0.003 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1373.50 | |
| 22 | 0.6552 | 1075.6 | 1094.6 | 1089.9 | 0.451 | 3.964 | 81.156 | 12.699 | 1.573 | 0.051 | 0.094 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1349.13 | |
| 23 | 0.6485 | 1066.2 | 1085.1 | 1081.2 | 0.504 | 3.820 | 82.530 | 11.502 | 1.482 | 0.052 | 0.097 | 0.007 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1344.35 | |
| 24 | 0.6452 | 1062.8 | 1081.7 | 1078.1 | 0.459 | 3.791 | 82.964 | 11.303 | 1.344 | 0.045 | 0.082 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1343.45 | |
| 25 | 0.6555 | 1080.1 | 1099.2 | 1095.6 | 0.599 | 3.493 | 81.495 | 12.550 | 1.661 | 0.067 | 0.120 | 0.008 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1354.47 | |
| 26 | 0.6477 | 1066.7 | 1085.6 | 1082.4 | 0.465 | 3.776 | 82.519 | 11.716 | 1.380 | 0.047 | 0.086 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1345.81 | |
| 27 | 0.6608 | 1085.2 | 1104.4 | 1101.0 | 0.499 | 3.828 | 80.237 | 13.579 | 1.682 | 0.056 | 0.106 | 0.007 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1355.48 | |
| 28 | 0.6614 | 1083.6 | 1102.7 | 1099.0 | 0.502 | 3.983 | 80.108 | 13.540 | 1.685 | 0.058 | 0.110 | 0.007 | 0.007 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1352.79 | |
| 29 | 0.6570 | 1074.6 | 1093.7 | 1090.2 | 0.467 | 4.165 | 80.840 | 12.752 | 1.606 | 0.055 | 0.103 | 0.007 | 0.006 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1346.15 | |
| 30 | 0.6597 | 1082.5 | 1101.6 | 1098.2 | 0.403 | 4.039 | 80.135 | 13.740 | 1.529 | 0.050 | 0.092 | 0.006 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1353.18 | |
| Avg | 0.6497 | 1083.0 | 1102.7 | 1098.9 | 0.640 | 2.680 | 82.271 | 13.047 | 1.234 | 0.042 | 0.077 | 0.005 | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1364.82 | |

Zone 32

Source Daily Summary

September 2017

Number: 111

Pressure Base: 14.730

Contract Day: 1

Name: LITTLE KNIFE PLANT

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | 0.6924 | 1159.7 | 1180.3 | 1176.1 | 0.000 | 3.035 | 72.290 | 23.750 | 0.905 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1415.11 |
| 2 | 0.6918 | 1158.3 | 1178.8 | 1174.6 | 0.000 | 3.060 | 72.412 | 23.609 | 0.899 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.06 |
| 3 | 0.6919 | 1158.9 | 1179.4 | 1175.1 | 0.000 | 3.036 | 72.387 | 23.667 | 0.890 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1414.63 |
| 4 | 0.6908 | 1156.8 | 1177.3 | 1173.0 | 0.000 | 3.058 | 72.565 | 23.512 | 0.845 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.25 |
| 5 | 0.6909 | 1156.7 | 1177.2 | 1172.8 | 0.000 | 3.080 | 72.543 | 23.499 | 0.858 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.94 |
| 6 | 0.6915 | 1157.2 | 1177.7 | 1173.4 | 0.000 | 3.105 | 72.441 | 23.554 | 0.880 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.94 |
| 7 | 0.6910 | 1157.0 | 1177.5 | 1173.2 | 0.000 | 3.071 | 72.540 | 23.493 | 0.877 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.19 |
| 8 | 0.6919 | 1158.2 | 1178.7 | 1174.4 | 0.000 | 3.079 | 72.376 | 23.629 | 0.897 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.81 |
| 9 | 0.6913 | 1157.3 | 1177.8 | 1173.4 | 0.000 | 3.082 | 72.508 | 23.481 | 0.910 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.24 |
| 10 | 0.6912 | 1157.4 | 1177.9 | 1173.5 | 0.000 | 3.063 | 72.523 | 23.494 | 0.901 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.53 |
| 11 | 0.6913 | 1157.6 | 1178.1 | 1173.6 | 0.000 | 3.062 | 72.524 | 23.480 | 0.915 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.61 |
| 12 | 0.6912 | 1157.6 | 1178.1 | 1173.5 | 0.000 | 3.054 | 72.538 | 23.479 | 0.909 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1413.68 |
| 13 | 0.6909 | 1156.7 | 1177.2 | 1172.9 | 0.000 | 3.077 | 72.550 | 23.495 | 0.858 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.96 |
| 14 | 0.6907 | 1156.4 | 1176.9 | 1172.5 | 0.000 | 3.076 | 72.545 | 23.542 | 0.818 | 0.008 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.83 |
| 15 | 0.6904 | 1155.1 | 1175.6 | 1171.0 | 0.000 | 3.127 | 72.574 | 23.484 | 0.795 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.55 |
| 16 | 0.6909 | 1155.9 | 1176.4 | 1172.2 | 0.000 | 3.125 | 72.494 | 23.548 | 0.813 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.02 |
| 17 | 0.6904 | 1155.2 | 1175.7 | 1171.2 | 0.000 | 3.117 | 72.604 | 23.443 | 0.818 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.72 |
| 18 | 0.6904 | 1155.3 | 1175.8 | 1171.4 | 0.000 | 3.115 | 72.597 | 23.451 | 0.820 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.80 |
| 19 | 0.6901 | 1155.6 | 1176.0 | 1171.8 | 0.000 | 3.070 | 72.642 | 23.486 | 0.786 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.42 |
| 20 | 0.6905 | 1155.1 | 1175.5 | 1170.9 | 0.000 | 3.137 | 72.640 | 23.331 | 0.872 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.39 |
| 21 | 0.6908 | 1155.7 | 1176.1 | 1171.8 | 0.000 | 3.137 | 72.499 | 23.533 | 0.814 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.75 |
| 22 | 0.6898 | 1154.3 | 1174.8 | 1170.3 | 0.009 | 3.113 | 72.701 | 23.358 | 0.801 | 0.008 | 0.011 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.13 |
| 23 | 0.6907 | 1155.7 | 1176.1 | 1171.6 | 0.000 | 3.122 | 72.531 | 23.521 | 0.809 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.91 |
| 24 | 0.6902 | 1154.5 | 1175.0 | 1170.5 | 0.000 | 3.140 | 72.626 | 23.416 | 0.799 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.07 |
| 25 | 0.6900 | 1154.8 | 1175.2 | 1170.7 | 0.000 | 3.110 | 72.670 | 23.398 | 0.803 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.53 |
| 26 | 0.6904 | 1155.0 | 1175.4 | 1170.7 | 0.000 | 3.140 | 72.597 | 23.419 | 0.825 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.32 |
| 27 | 0.6907 | 1155.7 | 1176.1 | 1171.6 | 0.000 | 3.127 | 72.565 | 23.437 | 0.853 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.84 |
| 28 | 0.6895 | 1154.4 | 1174.8 | 1170.5 | 0.000 | 3.089 | 72.804 | 23.252 | 0.836 | 0.007 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1411.54 |
| 29 | 0.6899 | 1154.1 | 1174.5 | 1170.4 | 0.000 | 3.145 | 72.702 | 23.309 | 0.825 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.77 |
| 30 | 0.6899 | 1154.1 | 1174.5 | 1170.3 | 0.000 | 3.146 | 72.688 | 23.329 | 0.818 | 0.007 | 0.010 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1410.77 |
| Avg | 0.6908 | 1156.0 | 1176.7 | 1172.3 | 0.000 | 3.097 | 72.556 | 23.480 | 0.848 | 0.008 | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1412.48 |

Zone 33

Gas Composition and Properties

Effective June 1, 2016 09:00 - January 18, 2038 21:14

Attachment B
Page 18 of 22

Source #: 1202160
Name: BOWMAN BORDER

| Component | Mole % | Liquid Content | Mass % |
|-----------------------|---------|----------------|---------|
| Carbon Dioxide, CO2 | 0.2321 | | 0.6048 |
| Nitrogen, N2 | 3.4604 | | 5.7399 |
| Methane, C1 | 94.0188 | | 89.3085 |
| Ethane, C2 | 1.9955 | 0.5321 | 3.5530 |
| Propane, C3 | 0.2261 | 0.0621 | 0.5904 |
| iso-Butane, iC4 | 0.0203 | 0.0066 | 0.5904 |
| n-Butane, nC4 | 0.0216 | 0.0068 | 0.0743 |
| iso-Pentane, iC5 | 0.0028 | 0.0010 | 0.0120 |
| n-Pentane, nC5 | 0.0020 | 0.0007 | 0.0085 |
| Neo-Pentane, NeoC5 | | | |
| Hexanes Plus, C6+ | 0.0000 | 0.0000 | 0.0000 |
| Water, H2O | | | |
| Hydrogen Sulfide, H2S | | | |
| Oxygen, O2 | 0.0204 | | |
| Carbon Monoxide, CO | | | |
| Hydrogen, H2 | | | |
| Helium, He | | | |
| Argon, Ar | | | |

| Property | Total Sample | C6 Plus Fraction |
|------------------------|--------------|------------------|
| Pressure Base | 14.730 | |
| Temperature Base | 60.00 | |
| HCDP @ Sample Pressure | | |
| Cricondentherm | | |
| HV, Dry @ Base P, T | 996.12 | |
| HV, Sat @ Base P, T | 978.78 | |
| HV, Sat @ Sample P, T | 996.12 | |
| Relative Density | 0.5840 | |

C6+: 100

Totals 100.0000 0.6100 100.4818

Sample

Date: 07/01/2016 Pressure: 380.0
Type: Spot Temperature:
Tech: MG H2O: lbs/mm
H2S: ppm

Remarks:

Analysis

Date: 07/05/2016 Instrument: WBI- 447
Cylinder: 100
Tech: MB

Remarks: Inactive

Zone 34

Source Daily Summary

September 2017

Number: 471

Pressure Base: 14.730

Contract Day:

Name: SPRING CREEK I - SAX VALVE I

Temperature Base:

Contract Hour: 9

| Day | Relative Density | Heating Value Wet | Heating Value Dry | Heating Value As Del | CO2 | N2 | C1 | C2 | C3 | IC4 | NC4 | IC5 | NC5 | C6 | C7 | C8 | C9 | C10 | Wobbe | CCT |
|-----|------------------|-------------------|-------------------|----------------------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1 | 0.6807 | 1122.3 | 1142.2 | 1139.2 | 0.996 | 2.697 | 75.451 | 20.185 | 0.668 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.22 |
| 2 | 0.6769 | 1113.8 | 1133.5 | 1130.6 | 1.009 | 2.840 | 75.970 | 19.759 | 0.422 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1374.58 |
| 3 | 0.6807 | 1117.8 | 1137.6 | 1134.6 | 1.006 | 2.962 | 75.507 | 19.759 | 0.761 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1375.59 |
| 4 | 0.6782 | 1115.8 | 1135.6 | 1132.7 | 1.002 | 2.849 | 75.723 | 19.976 | 0.449 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1375.76 |
| 5 | 0.6788 | 1113.9 | 1133.6 | 1130.7 | 1.021 | 2.999 | 75.616 | 19.890 | 0.473 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1372.71 |
| 6 | 0.6808 | 1117.4 | 1137.2 | 1134.3 | 1.011 | 2.991 | 75.176 | 20.364 | 0.457 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1375.00 |
| 7 | 0.6792 | 1114.5 | 1134.3 | 1131.4 | 1.008 | 3.016 | 75.558 | 19.898 | 0.517 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1373.13 |
| 8 | 0.6786 | 1115.3 | 1135.1 | 1132.1 | 1.010 | 2.910 | 75.762 | 19.735 | 0.580 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1374.68 |
| 9 | 0.6814 | 1119.7 | 1139.5 | 1136.5 | 1.010 | 2.909 | 75.333 | 20.020 | 0.723 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1377.18 |
| 10 | 0.6859 | 1126.8 | 1146.8 | 1143.8 | 1.002 | 2.907 | 74.382 | 21.008 | 0.697 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.46 |
| 11 | 0.7114 | 1171.1 | 1191.8 | 1188.7 | 0.947 | 2.670 | 71.963 | 21.140 | 3.059 | 0.093 | 0.126 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1409.55 |
| 12 | 0.6793 | 1119.2 | 1139.0 | 1136.1 | 1.010 | 2.734 | 75.761 | 19.808 | 0.686 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1378.81 |
| 13 | 0.6789 | 1118.0 | 1137.8 | 1134.8 | 1.014 | 2.765 | 75.799 | 19.776 | 0.644 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1377.70 |
| 14 | 0.6790 | 1117.8 | 1137.5 | 1134.6 | 1.014 | 2.792 | 75.771 | 19.771 | 0.650 | 0.002 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1377.28 |
| 15 | 0.6912 | 1137.3 | 1157.4 | 1154.5 | 0.976 | 2.792 | 74.429 | 19.990 | 1.795 | 0.009 | 0.009 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.01 |
| 16 | 0.6978 | 1148.0 | 1168.4 | 1165.4 | 0.976 | 2.760 | 73.808 | 19.936 | 2.480 | 0.020 | 0.022 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1395.41 |
| 17 | 0.6784 | 1115.0 | 1134.8 | 1131.9 | 1.017 | 2.895 | 75.925 | 19.473 | 0.686 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1374.54 |
| 18 | 0.6864 | 1130.2 | 1150.2 | 1147.2 | 0.996 | 2.755 | 74.922 | 20.005 | 1.314 | 0.004 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1385.04 |
| 19 | 0.6907 | 1138.8 | 1159.0 | 1156.0 | 0.990 | 2.642 | 74.366 | 20.362 | 1.636 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1391.26 |
| 20 | 0.6915 | 1136.9 | 1157.0 | 1153.9 | 0.986 | 2.835 | 74.501 | 19.964 | 1.506 | 0.050 | 0.128 | 0.013 | 0.016 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1388.00 |
| 21 | 0.6883 | 1130.6 | 1150.7 | 1147.6 | 0.989 | 2.908 | 74.955 | 19.620 | 1.326 | 0.051 | 0.125 | 0.011 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.56 |
| 22 | 0.6772 | 1112.4 | 1132.1 | 1129.1 | 1.009 | 2.960 | 75.918 | 19.650 | 0.461 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1372.47 |
| 23 | 0.6818 | 1120.3 | 1140.2 | 1137.2 | 1.006 | 2.913 | 75.014 | 20.569 | 0.495 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1377.61 |
| 24 | 0.6774 | 1111.4 | 1131.1 | 1128.1 | 1.030 | 3.005 | 75.783 | 19.833 | 0.349 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1371.09 |
| 25 | 0.6756 | 1106.9 | 1126.5 | 1123.5 | 1.030 | 3.113 | 76.085 | 19.469 | 0.303 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1367.31 |
| 26 | 0.6878 | 1127.5 | 1147.5 | 1144.4 | 0.990 | 3.065 | 73.737 | 21.729 | 0.477 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1380.39 |
| 27 | 0.7108 | 1166.0 | 1186.7 | 1183.5 | 0.950 | 2.923 | 71.100 | 22.502 | 2.497 | 0.014 | 0.014 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1404.28 |
| 28 | 0.6899 | 1131.9 | 1151.9 | 1148.9 | 0.985 | 3.002 | 73.269 | 22.316 | 0.427 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1383.64 |
| 29 | 0.6944 | 1140.2 | 1160.4 | 1157.4 | 0.972 | 2.940 | 72.444 | 23.108 | 0.533 | 0.002 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1389.28 |
| 30 | 0.6945 | 1143.4 | 1163.6 | 1160.6 | 0.955 | 2.780 | 72.337 | 23.493 | 0.434 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1393.07 |
| Avg | 0.6854 | 1127.0 | 1146.6 | 1143.6 | 0.997 | 2.878 | 74.745 | 20.437 | 0.917 | 0.009 | 0.015 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1381.69 |

Zone 43



Alliance Pipeline

DAILY ANALYSIS -- USA
 ND07MD1 -- Hankinson Sales
 September 2017

| DAY | Heating Value (BTU/ft3) | Relative Density | C1 Mol% | C2 Mol% | C3 Mol% | IC4 Mol% | NC4 Mol% | IC5 Mol% | NC5 Mol% | C6+ Mol% | N2 Mol% | CO2 Mol% | Hel Mol% |
|-------------------|-------------------------|------------------|---------|---------|---------|----------|----------|----------|----------|----------|---------|----------|----------|
| 1 | 1,150.558 | 0.6621 | 84.4805 | 8.9476 | 3.7200 | 0.3668 | 0.6405 | 0.0661 | 0.0578 | 0.0326 | 1.2143 | 0.4613 | 0.0125 |
| 2 | 1,149.428 | 0.6613 | 84.5170 | 9.0118 | 3.6603 | 0.3579 | 0.6211 | 0.0643 | 0.0555 | 0.0319 | 1.2103 | 0.4576 | 0.0122 |
| 3 | 1,149.641 | 0.6614 | 84.5489 | 8.9503 | 3.6706 | 0.3619 | 0.6334 | 0.0662 | 0.0570 | 0.0329 | 1.2072 | 0.4594 | 0.0120 |
| 4 | 1,150.898 | 0.6623 | 84.4510 | 8.9683 | 3.7217 | 0.3699 | 0.6441 | 0.0677 | 0.0575 | 0.0316 | 1.2201 | 0.4564 | 0.0117 |
| 5 | 1,149.702 | 0.6620 | 84.4681 | 8.9465 | 3.6926 | 0.3704 | 0.6348 | 0.0683 | 0.0580 | 0.0317 | 1.2615 | 0.4561 | 0.0120 |
| 6 | 1,148.243 | 0.6609 | 84.5734 | 8.9179 | 3.6527 | 0.3596 | 0.6210 | 0.0665 | 0.0567 | 0.0303 | 1.2690 | 0.4408 | 0.0120 |
| 7 | 1,149.660 | 0.6616 | 84.4855 | 8.9588 | 3.7128 | 0.3596 | 0.6269 | 0.0642 | 0.0552 | 0.0307 | 1.2471 | 0.4473 | 0.0121 |
| 8 | 1,148.740 | 0.6607 | 84.6565 | 8.8621 | 3.6487 | 0.3621 | 0.6350 | 0.0669 | 0.0579 | 0.0332 | 1.2268 | 0.4387 | 0.0120 |
| 9 | 1,147.820 | 0.6605 | 84.7237 | 8.7828 | 3.6399 | 0.3616 | 0.6301 | 0.0693 | 0.0597 | 0.0343 | 1.2284 | 0.4585 | 0.0119 |
| 10 | 1,148.693 | 0.6612 | 84.5677 | 8.8991 | 3.6432 | 0.3656 | 0.6418 | 0.0674 | 0.0576 | 0.0330 | 1.2645 | 0.4478 | 0.0122 |
| 11 | 1,147.318 | 0.6607 | 84.6438 | 8.8609 | 3.6163 | 0.3586 | 0.6269 | 0.0671 | 0.0565 | 0.0329 | 1.2435 | 0.4814 | 0.0122 |
| 12 | 1,148.353 | 0.6606 | 84.6514 | 8.9089 | 3.6175 | 0.3596 | 0.6288 | 0.0668 | 0.0566 | 0.0325 | 1.1970 | 0.4687 | 0.0122 |
| 13 | 1,150.609 | 0.6623 | 84.4393 | 8.9780 | 3.7176 | 0.3669 | 0.6435 | 0.0668 | 0.0565 | 0.0306 | 1.2130 | 0.4754 | 0.0122 |
| 14 | 1,151.740 | 0.6633 | 84.3333 | 8.9957 | 3.7659 | 0.3743 | 0.6473 | 0.0700 | 0.0593 | 0.0318 | 1.2320 | 0.4782 | 0.0122 |
| 15 | 1,155.169 | 0.6659 | 84.0890 | 9.0083 | 3.8881 | 0.3946 | 0.7015 | 0.0717 | 0.0615 | 0.0312 | 1.2615 | 0.4803 | 0.0124 |
| 16 | 1,156.100 | 0.6664 | 83.9834 | 9.1228 | 3.8984 | 0.3913 | 0.6922 | 0.0733 | 0.0630 | 0.0309 | 1.2525 | 0.4798 | 0.0124 |
| 17 | 1,155.361 | 0.6656 | 84.0530 | 9.1277 | 3.8632 | 0.3869 | 0.6798 | 0.0729 | 0.0624 | 0.0300 | 1.2449 | 0.4669 | 0.0123 |
| 18 | 1,153.897 | 0.6639 | 84.2197 | 9.1323 | 3.7799 | 0.3779 | 0.6585 | 0.0704 | 0.0605 | 0.0311 | 1.2124 | 0.4447 | 0.0127 |
| 19 | 1,155.305 | 0.6647 | 84.1698 | 9.1473 | 3.7814 | 0.3882 | 0.6882 | 0.0736 | 0.0629 | 0.0325 | 1.1910 | 0.4528 | 0.0125 |
| 20 | 1,152.663 | 0.6623 | 84.4187 | 9.2238 | 3.5190 | 0.3875 | 0.6931 | 0.0735 | 0.0630 | 0.0322 | 1.1267 | 0.4497 | 0.0128 |
| 21 | 1,162.038 | 0.6712 | 83.3531 | 9.4155 | 4.1045 | 0.4115 | 0.7288 | 0.0751 | 0.0631 | 0.0295 | 1.2787 | 0.5272 | 0.0130 |
| 22 | 1,159.515 | 0.6703 | 83.4259 | 9.3869 | 4.0392 | 0.4059 | 0.7098 | 0.0729 | 0.0607 | 0.0274 | 1.2981 | 0.5597 | 0.0133 |
| 23 | 1,161.241 | 0.6699 | 83.5209 | 9.4210 | 4.0079 | 0.4172 | 0.7223 | 0.0737 | 0.0619 | 0.0291 | 1.2154 | 0.5183 | 0.0123 |
| 24 | 1,157.167 | 0.6663 | 83.9936 | 9.2194 | 3.8592 | 0.3973 | 0.6861 | 0.0734 | 0.0640 | 0.0349 | 1.1781 | 0.4814 | 0.0126 |
| 25 | 1,152.966 | 0.6632 | 84.3496 | 9.0673 | 3.7395 | 0.3810 | 0.6581 | 0.0681 | 0.0588 | 0.0312 | 1.1664 | 0.4675 | 0.0124 |
| 26 | 1,153.113 | 0.6632 | 84.3083 | 9.1325 | 3.7337 | 0.3754 | 0.6583 | 0.0664 | 0.0570 | 0.0285 | 1.1667 | 0.4607 | 0.0125 |
| 27 | 1,153.762 | 0.6636 | 84.2901 | 9.0727 | 3.8095 | 0.3748 | 0.6582 | 0.0673 | 0.0571 | 0.0277 | 1.1718 | 0.4584 | 0.0124 |
| 28 | 1,151.489 | 0.6620 | 84.4623 | 9.0435 | 3.7226 | 0.3651 | 0.6288 | 0.0671 | 0.0567 | 0.0281 | 1.1537 | 0.4596 | 0.0125 |
| 29 | 1,154.666 | 0.6644 | 84.2374 | 9.0706 | 3.8066 | 0.3858 | 0.6863 | 0.0699 | 0.0594 | 0.0290 | 1.1765 | 0.4662 | 0.0124 |
| 30 | 1,158.726 | 0.6681 | 83.7529 | 9.2368 | 3.9798 | 0.4015 | 0.7153 | 0.0718 | 0.0609 | 0.0291 | 1.2591 | 0.4804 | 0.0124 |
| Volume | 1,152.559 | 0.6636 | 84.2876 | 9.0440 | 3.7697 | 0.3766 | 0.6581 | 0.0689 | 0.0588 | 0.0310 | 1.2231 | 0.4700 | 0.0123 |
| Weight Avg Energy | 1,152.574 | 0.6636 | 84.2863 | 9.0446 | 3.7702 | 0.3766 | 0.6582 | 0.0689 | 0.0588 | 0.0310 | 1.2231 | 0.4700 | 0.0123 |

Zone
 1000

Sep-17

ZONE 610

Watford City

01325

Watford City West Border

01312

Watford City East Border

Weighted

| Begin Date | End Date | 01325 Watford City West Border | | | 01312 Watford City East Border | | | Weighted AVG BTU | |
|------------|-----------|-----------------------------------|-------|----------------|-----------------------------------|-------|----------------|------------------------|-----------|
| | | MCF | DK | BTU Zone 25 | MCF | DK | BTU Zone 43 | | |
| 9/1/2017 | 9/2/2017 | 62 | 74 | 1.205 | 36 | 41 | 1.142 | 1.182 | 9/1/2017 |
| 9/2/2017 | 9/3/2017 | 33 | 40 | 1.205 | 30 | 34 | 1.134 | 1.171 | 9/2/2017 |
| 9/3/2017 | 9/4/2017 | 51 | 62 | 1.205 | 26 | 30 | 1.138 | 1.182 | 9/3/2017 |
| 9/4/2017 | 9/5/2017 | 75 | 91 | 1.205 | 37 | 42 | 1.136 | 1.182 | 9/4/2017 |
| 9/5/2017 | 9/6/2017 | 111 | 134 | 1.205 | 66 | 75 | 1.134 | 1.179 | 9/5/2017 |
| 9/6/2017 | 9/7/2017 | 100 | 120 | 1.205 | 39 | 44 | 1.137 | 1.186 | 9/6/2017 |
| 9/7/2017 | 9/8/2017 | 93 | 112 | 1.205 | 34 | 38 | 1.134 | 1.186 | 9/7/2017 |
| 9/8/2017 | 9/9/2017 | 68 | 82 | 1.205 | 33 | 37 | 1.135 | 1.182 | 9/8/2017 |
| 9/9/2017 | 9/10/2017 | 55 | 66 | 1.205 | 37 | 42 | 1.140 | 1.179 | 9/9/2017 |
| 9/10/2017 | 9/11/2017 | 79 | 95 | 1.205 | 31 | 35 | 1.147 | 1.189 | 9/10/2017 |
| 9/11/2017 | 9/12/2017 | 87 | 104 | 1.205 | 32 | 38 | 1.192 | 1.202 | 9/11/2017 |
| 9/12/2017 | 9/13/2017 | 96 | 116 | 1.205 | 38 | 43 | 1.139 | 1.186 | 9/12/2017 |
| 9/13/2017 | 9/14/2017 | 91 | 110 | 1.205 | 45 | 51 | 1.138 | 1.183 | 9/13/2017 |
| 9/14/2017 | 9/15/2017 | 144 | 173 | 1.205 | 48 | 54 | 1.138 | 1.188 | 9/14/2017 |
| 9/15/2017 | 9/16/2017 | 265 | 320 | 1.205 | 66 | 76 | 1.157 | 1.195 | 9/15/2017 |
| 9/16/2017 | 9/17/2017 | 284 | 342 | 1.205 | 58 | 68 | 1.168 | 1.199 | 9/16/2017 |
| 9/17/2017 | 9/18/2017 | 192 | 232 | 1.205 | 48 | 55 | 1.135 | 1.191 | 9/17/2017 |
| 9/18/2017 | 9/19/2017 | 110 | 133 | 1.205 | 34 | 39 | 1.150 | 1.192 | 9/18/2017 |
| 9/19/2017 | 9/20/2017 | 198 | 239 | 1.205 | 47 | 54 | 1.159 | 1.196 | 9/19/2017 |
| 9/20/2017 | 9/21/2017 | 174 | 210 | 1.205 | 42 | 49 | 1.157 | 1.196 | 9/20/2017 |
| 9/21/2017 | 9/22/2017 | 182 | 220 | 1.205 | 44 | 50 | 1.151 | 1.194 | 9/21/2017 |
| 9/22/2017 | 9/23/2017 | 263 | 317 | 1.205 | 62 | 70 | 1.132 | 1.191 | 9/22/2017 |
| 9/23/2017 | 9/24/2017 | 256 | 308 | 1.205 | 63 | 72 | 1.140 | 1.192 | 9/23/2017 |
| 9/24/2017 | 9/25/2017 | 285 | 343 | 1.205 | 54 | 62 | 1.131 | 1.193 | 9/24/2017 |
| 9/25/2017 | 9/26/2017 | 278 | 335 | 1.205 | 57 | 65 | 1.127 | 1.192 | 9/25/2017 |
| 9/26/2017 | 9/27/2017 | 254 | 306 | 1.205 | 52 | 60 | 1.148 | 1.195 | 9/26/2017 |
| 9/27/2017 | 9/28/2017 | 187 | 226 | 1.205 | 56 | 67 | 1.187 | 1.201 | 9/27/2017 |
| 9/28/2017 | 9/29/2017 | 167 | 201 | 1.205 | 43 | 49 | 1.152 | 1.194 | 9/28/2017 |
| 9/29/2017 | 9/30/2017 | 140 | 169 | 1.205 | 54 | 62 | 1.160 | 1.192 | 9/29/2017 |
| 9/30/2017 | 10/1/2017 | 113 | 136 | 1.205 | 45 | 53 | 1.164 | 1.193 | 9/30/2017 |
| | | 4,493 | 5,416 | | 1,357 | 1,555 | 1.1467 | 1.1895 | |

| ROW ID | LOCATION DESCRIPTION | GROSS HEATING VALUE (BTU/CF) | SPECIFIC GRAVITY | WOBBL (calc) | CRICONDENTHERM (deg F) | NITROGEN (mole percent) | CARBON DIOXIDE (mole percent) | METHANE (mole percent) | ETHANE (mole percent) | PROPANE (mole percent) | NORMAL BUTANE (mole percent) | ISO BUTANE (mole percent) | PENTANE (mole percent) | ISO PENTANE (mole percent) | NEO PENTANE (mole percent) | HEXANES PLUS (mole percent) | HYDROGEN (mole percent) | HELIUM (mole percent) | PRODUCTION DATE | POSTING DATE | Change timestamp | NOTES |
|--------|----------------------|------------------------------|------------------|--------------|------------------------|-------------------------|-------------------------------|------------------------|-----------------------|------------------------|------------------------------|---------------------------|------------------------|----------------------------|----------------------------|-----------------------------|-------------------------|-----------------------|-----------------|--------------|----------------------|-------|
| 11587 | GLEN ULLIN | 1063.9 | 0.6142 | 1357.5 | -70.1 | 1.4213 | 0.8045 | 88.4319 | 8.5763 | 0.5023 | 0.0098 | 0.0072 | 0.0001 | 0.0003 | 0 | 0 | 0.2286 | 0.0167 | 8/31/2017 | 9/1/2017 | 9/1/2017 3:05:59 PM | |
| 11587 | GLEN ULLIN | 1063.4 | 0.6135 | 1357.6 | -70.3 | 1.3432 | 0.8312 | 88.6589 | 8.4378 | 0.4846 | 0.0125 | 0.0093 | 0.0005 | 0.0011 | 0 | 0.0002 | 0.203 | 0.0174 | 9/1/2017 | 9/2/2017 | 9/2/2017 3:07:03 PM | |
| 11587 | GLEN ULLIN | 1060.4 | 0.6114 | 1356.2 | -72.2 | 1.3192 | 0.8301 | 89.0615 | 8.0902 | 0.4525 | 0.0119 | 0.0086 | 0.0005 | 0.0008 | 0 | 0.0002 | 0.2083 | 0.0158 | 9/2/2017 | 9/3/2017 | 9/3/2017 3:01:58 PM | |
| 11587 | GLEN ULLIN | 1060 | 0.6116 | 1355.4 | -72.8 | 1.345 | 0.8464 | 89.0096 | 8.136 | 0.435 | 0.0082 | 0.0058 | 0 | 0 | 0 | 0 | 0.1971 | 0.0158 | 9/3/2017 | 9/4/2017 | 9/4/2017 2:59:24 PM | |
| 11587 | GLEN ULLIN | 1061.9 | 0.6131 | 1356.2 | -71.4 | 1.3784 | 0.8413 | 88.683 | 8.3932 | 0.4553 | 0.0095 | 0.0069 | 0.0001 | 0.0002 | 0 | 0 | 0.2147 | 0.016 | 9/4/2017 | 9/5/2017 | 9/5/2017 3:04:21 PM | |
| 11587 | GLEN ULLIN | 1060.3 | 0.6119 | 1355.4 | -72.5 | 1.3617 | 0.8426 | 88.9504 | 8.1834 | 0.4361 | 0.0088 | 0.0063 | 0 | 0 | 0 | 0 | 0.1938 | 0.0174 | 9/5/2017 | 9/6/2017 | 9/6/2017 3:01:31 PM | |
| 11587 | GLEN ULLIN | 1061.3 | 0.6121 | 1356.5 | -72.3 | 1.3406 | 0.8281 | 88.9116 | 8.2598 | 0.4375 | 0.0089 | 0.0062 | 0 | 0.0001 | 0 | 0 | 0.1913 | 0.0165 | 9/6/2017 | 9/7/2017 | 9/7/2017 2:59:39 PM | |
| 11587 | GLEN ULLIN | 1061.3 | 0.6121 | 1356.5 | -72.3 | 1.3406 | 0.8281 | 88.9116 | 8.2598 | 0.4375 | 0.0089 | 0.0062 | 0 | 0.0001 | 0 | 0 | 0.1913 | 0.0165 | 9/6/2017 | 9/8/2017 | 9/8/2017 2:59:45 PM | |
| 11587 | GLEN ULLIN | 1061.9 | 0.6143 | 1354.8 | -69.9 | 1.5353 | 0.815 | 88.4729 | 8.4264 | 0.5019 | 0.0146 | 0.0103 | 0.0008 | 0.0013 | 0 | 0.0004 | 0.2034 | 0.0157 | 9/8/2017 | 9/9/2017 | 9/9/2017 2:58:07 PM | |
| 11587 | GLEN ULLIN | 1059.8 | 0.6126 | 1354 | -72.2 | 1.5121 | 0.8062 | 88.7622 | 8.2524 | 0.4423 | 0.0109 | 0.0069 | 0 | 0.0001 | 0 | 0 | 0.1878 | 0.0157 | 9/9/2017 | 9/10/2017 | 9/10/2017 2:56:32 PM | |
| 11587 | GLEN ULLIN | 1058.9 | 0.6118 | 1353.8 | -72.3 | 1.4464 | 0.831 | 89.0245 | 8.0369 | 0.4455 | 0.0134 | 0.0097 | 0.0007 | 0.0011 | 0 | 0.0004 | 0.1737 | 0.0157 | 9/10/2017 | 9/11/2017 | 9/11/2017 3:01:49 PM | |
| 11587 | GLEN ULLIN | 1060.8 | 0.6125 | 1355.5 | -70.6 | 1.4232 | 0.814 | 88.9396 | 8.0449 | 0.5361 | 0.0176 | 0.013 | 0.0008 | 0.0013 | 0 | 0.0003 | 0.1926 | 0.0162 | 9/11/2017 | 9/12/2017 | 9/12/2017 2:56:30 PM | |
| 11587 | GLEN ULLIN | 1054.2 | 0.6079 | 1352.1 | -76.2 | 1.3908 | 0.81 | 89.7453 | 7.4532 | 0.4003 | 0.0077 | 0.0051 | 0 | 0 | 0 | 0 | 0.1714 | 0.0173 | 9/12/2017 | 9/13/2017 | 9/13/2017 2:57:10 PM | |
| 11587 | GLEN ULLIN | 1054.7 | 0.6078 | 1352.8 | -76.1 | 1.3383 | 0.8233 | 89.7031 | 7.5361 | 0.3727 | 0.0082 | 0.0059 | 0 | 0.0001 | 0 | 0 | 0.1956 | 0.0173 | 9/13/2017 | 9/14/2017 | 9/14/2017 2:58:29 PM | |
| 11587 | GLEN ULLIN | 1053.4 | 0.6076 | 1351.4 | -76.6 | 1.3899 | 0.8259 | 89.7474 | 7.453 | 0.3631 | 0.0082 | 0.0058 | 0 | 0.0002 | 0 | 0 | 0.1898 | 0.0173 | 9/14/2017 | 9/15/2017 | 9/15/2017 3:01:56 PM | |
| 11587 | GLEN ULLIN | 1054 | 0.6079 | 1351.8 | -75.9 | 1.3534 | 0.8449 | 89.7785 | 7.3914 | 0.4133 | 0.0097 | 0.007 | 0.0001 | 0.0003 | 0 | 0 | 0.1856 | 0.0167 | 9/15/2017 | 9/16/2017 | 9/16/2017 3:02:06 PM | |
| 11587 | GLEN ULLIN | 1055.8 | 0.6086 | 1353.4 | -74.4 | 1.3035 | 0.8465 | 89.8007 | 7.3157 | 0.5326 | 0.0092 | 0.0069 | 0 | 0.0002 | 0 | 0 | 0.168 | 0.018 | 9/16/2017 | 9/17/2017 | 9/17/2017 2:55:48 PM | |
| 11587 | GLEN ULLIN | 1052.7 | 0.6056 | 1352.7 | -77.5 | 1.2055 | 0.8531 | 90.2982 | 7.0355 | 0.4087 | 0.0089 | 0.0062 | 0 | 0.0001 | 0 | 0 | 0.168 | 0.0188 | 9/17/2017 | 9/18/2017 | 9/18/2017 2:57:50 PM | |
| 11587 | GLEN ULLIN | 1052.1 | 0.605 | 1352.6 | -77.8 | 1.2207 | 0.8302 | 90.381 | 6.9493 | 0.4097 | 0.0095 | 0.0066 | 0 | 0.0002 | 0 | 0 | 0.1775 | 0.0163 | 9/18/2017 | 9/19/2017 | 9/19/2017 2:56:35 PM | |
| 11587 | GLEN ULLIN | 1052.1 | 0.6057 | 1351.9 | -77.6 | 1.2754 | 0.8341 | 90.254 | 7.0449 | 0.396 | 0.0096 | 0.0067 | 0 | 0.0003 | 0 | 0 | 0.1622 | 0.0159 | 9/19/2017 | 9/20/2017 | 9/20/2017 2:57:16 PM | |
| 11587 | GLEN ULLIN | 1055.7 | 0.6087 | 1353.1 | -74.6 | 1.3176 | 0.8424 | 89.7058 | 7.4685 | 0.4552 | 0.0132 | 0.0087 | 0.0007 | 0.001 | 0 | 0.0001 | 0.1208 | 0.0667 | 9/20/2017 | 9/21/2017 | 9/21/2017 2:58:44 PM | |
| 11587 | GLEN ULLIN | 1057.6 | 0.6103 | 1353.7 | -72.7 | 1.3492 | 0.8444 | 89.4655 | 7.6663 | 0.4742 | 0.0193 | 0.0112 | 0.0015 | 0.0017 | 0 | 0.0003 | 0.0988 | 0.0683 | 9/21/2017 | 9/22/2017 | 9/22/2017 2:56:56 PM | |
| 11587 | GLEN ULLIN | 1067.8 | 0.6196 | 1356.5 | -59.6 | 1.5845 | 0.8418 | 87.5567 | 8.9902 | 0.6566 | 0.0361 | 0.028 | 0.0041 | 0.0058 | 0 | 0.0026 | 0.0647 | 0.2286 | 9/22/2017 | 9/23/2017 | 9/23/2017 2:56:39 PM | |
| 11587 | GLEN ULLIN | 1072.6 | 0.6231 | 1358.8 | -52.7 | 1.5792 | 0.8572 | 86.9171 | 9.4742 | 0.7431 | 0.0441 | 0.034 | 0.0049 | 0.0069 | 0 | 0.0045 | 0 | 0.3345 | 9/23/2017 | 9/24/2017 | 9/24/2017 2:55:49 PM | |
| 11587 | GLEN ULLIN | 1081.6 | 0.6288 | 1363.9 | -34.3 | 1.5584 | 0.8605 | 86.2451 | 9.7619 | 1.0204 | 0.0887 | 0.0695 | 0.012 | 0.0164 | 0 | 0.0114 | 0.0016 | 0.3536 | 9/24/2017 | 9/25/2017 | 9/25/2017 2:55:14 PM | |
| 11587 | GLEN ULLIN | 1084 | 0.6284 | 1367.4 | -28.1 | 1.3905 | 0.8645 | 86.6985 | 9.4182 | 1.0986 | 0.1123 | 0.0884 | 0.0155 | 0.0213 | 0 | 0.0154 | 0.007 | 0.27 | 9/25/2017 | 9/26/2017 | 9/26/2017 2:55:12 PM | |
| 11587 | GLEN ULLIN | 1085.7 | 0.6317 | 1366 | -40.2 | 1.6446 | 0.8468 | 85.5531 | 10.5902 | 0.9325 | 0.0707 | 0.0533 | 0.0087 | 0.0116 | 0 | 0.0081 | 0.0679 | 0.2131 | 9/26/2017 | 9/27/2017 | 9/27/2017 2:55:46 PM | |
| 11587 | GLEN ULLIN | 1095.2 | 0.6404 | 1368.6 | -42 | 1.8796 | 0.8407 | 83.7698 | 11.9423 | 1.1053 | 0.0643 | 0.0462 | 0.0071 | 0.0093 | 0 | 0.005 | 0.0532 | 0.2779 | 9/27/2017 | 9/28/2017 | 9/28/2017 2:56:24 PM | |
| 11587 | GLEN ULLIN | 1092.9 | 0.6356 | 1370.8 | -32.6 | 1.6028 | 0.8217 | 85.0543 | 10.846 | 1.1683 | 0.0938 | 0.0713 | 0.0117 | 0.0159 | 0 | 0.0112 | 0.0465 | 0.2575 | 9/28/2017 | 9/29/2017 | 9/29/2017 3:10:46 PM | |
| 11587 | GLEN ULLIN | 1099 | 0.6375 | 1376.5 | -21.9 | 1.3925 | 0.8525 | 85.2181 | 10.698 | 1.312 | 0.132 | 0.1037 | 0.018 | 0.0252 | 0 | 0.0185 | 0.085 | 0.1449 | 9/29/2017 | 9/30/2017 | 9/30/2017 3:10:49 PM | |
| 11587 | GLEN ULLIN | 1084.1 | 0.6279 | 1368.2 | -34.8 | 1.4316 | 0.8271 | 86.5803 | 9.7949 | 0.9635 | 0.0836 | 0.0654 | 0.0115 | 0.0158 | 0 | 0.0117 | 0.1066 | 0.1082 | 9/30/2017 | 10/1/2017 | 10/1/2017 3:10:29 PM | |

31 record(s) retrieved

Zone 802

| NORTH DAKOTA HEATING VALUE ZONES | | |
|---|---------------------------------|--|
| ZONES | MEASURING DEVICE | LOCATION |
| 211 | Chromatograph | Sidney Border |
| 24 | Monthly Sampler | Williston Border |
| 241 | Monthly Sampler | Fairview Border |
| 25 | Monthly Sampler | Watford City West Border |
| 260 | Chromatograph | North Tioga Transfer |
| 261 | Chromatograph | Tioga Comp Station – Robinson Lake Plant |
| 262 | Chromatograph | Minot Border |
| 263 | Monthly Sampler | Lignite Plant |
| 264 | Monthly Sampler | Epping Border |
| 265 | Chromatograph | Tioga Comp Station – County Line Plant |
| 271 | Chromatograph | Bismarck – Cleveland |
| 272 | Chromatograph | Cleveland – Mapleton |
| 273 | Chromatograph | Cleveland – Grafton |
| 28 | Chromatograph | Bismarck Station |
| 31 | Chromatograph | Dickinson Border |
| 32 | Chromatograph | Cabin Creek Station |
| 33 | Chromatograph | Little Knife Plant |
| 34 | Monthly Sampler | Bowman Border |
| 43 | Chromatograph | Spring Creek |
| 600 | Chromatograph | Hankinson Area |
| 610 | Monthly Sampler & Chromatograph | Watford City |
| 802 | Chromatograph | Linton |

MONTANA DAKOTA UTILITIES CO
NORTH DAKOTA
HEATING VALUE DATA

| STATE | ZONE | ZONE BOUNDARY | 12 MONTH AVERAGE | SEPT 17 | AUG 17 | JULY 17 | JUNE 17 | MAY 17 | APRIL 17 | MAR 17 | FEB 17 | JAN 17 | DEC 16 | NOV 16 | OCT 16 | ZONE |
|-------|------|--|------------------|---------|--------|---------|---------|--------|----------|--------|--------|--------|--------|--------|--------|------|
| MT/ND | 211 | Sidney Border - MonDak Tfr - Sidney Plt | 1198 | 1200 | 1204 | 1201 | 1191 | 1206 | 1191 | 1194 | 1195 | 1199 | 1199 | 1200 | 1193 | 211 |
| ND | 24 | Williston Border - Charbonneau Station | 1163 | 1142 | 1142 | 1141 | 1141 | 1148 | 1158 | 1171 | 1173 | 1189 | 1190 | 1187 | 1169 | 24 |
| ND | 25 | Wafford City West Border | 1202 | 1205 | 1202 | 1206 | 1204 | 1204 | 1200 | 1199 | 1202 | 1198 | 1193 | 1200 | 1206 | 25 |
| ND | 28 | Bismarck Station - Glen Ullin Station | 1155 | 1196 | 1195 | 1194 | 1188 | 1191 | 1161 | 1118 | 1121 | 1115 | 1112 | 1122 | 1152 | 28 |
| ND | 31 | Dickinson Brd - Belfield Tfr - G Ullin Str | 1136 | 1100 | 1169 | 1179 | 1171 | 1137 | 1147 | 1118 | 1119 | 1113 | 1110 | 1120 | 1153 | 31 |
| ND/MT | 32 | Cabin Creek Station - Belfied Transfer | 1118 | 1103 | 1136 | 1157 | 1122 | 1097 | 1104 | 1112 | 1114 | 1118 | 1118 | 1099 | 1137 | 32 |
| ND | 33 | Little Knife Plant | 1180 | 1177 | 1181 | 1180 | 1177 | 1177 | 1178 | 1176 | 1177 | 1181 | 1200 | 1179 | 1182 | 33 |
| ND | 34 | Bowman Border | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 996 | 34 |
| ND | 43 | Spring Creek I - Sax Valve I | 1124 | 1147 | 1151 | 1141 | 1126 | 1136 | 1141 | 1102 | 1075 | 1121 | 1122 | 1114 | 1109 | 43 |
| ND/MT | 241 | Fairview Border | 1177 | 1175 | 1169 | 1165 | 1161 | 1168 | 1167 | 1179 | 1181 | 1196 | 1200 | 1193 | 1170 | 241 |
| ND | 260 | North Tioga Transfer - Nesson Plant | | 987 | 993 | 1002 | 1087 | 1090 | 1082 | 0 | | | | | | 260 |
| ND | 261 | Tioga Comp Station - Robinson Lake Plant | 1119 | 1175 | 1177 | 1183 | 1181 | 1176 | 1170 | 1065 | 1089 | 1105 | 1096 | 1034 | 981 | 261 |
| ND | 262 | Minot Bdr - Palermo Bdr - Bismarck Stn | 1175 | 1196 | 1195 | 1193 | 1189 | 1192 | 1189 | 1181 | 1178 | 1152 | 1144 | 1147 | 1141 | 262 |
| ND | 263 | Lignite Plant | 1122 | 1123 | 1143 | 1146 | 1135 | 1115 | 1103 | 1115 | 1112 | 1103 | 1110 | 1138 | 1120 | 263 |
| ND | 264 | Epping Border | 1155 | 1136 | 1133 | 1138 | 1133 | 1145 | 1154 | 1158 | 1172 | 1186 | 1186 | 1158 | 1157 | 264 |
| ND | 265 | Tioga Comp Station - County Line Plant | 1177 | 1176 | 1177 | 1184 | 1181 | 1176 | 1170 | 1174 | 1175 | 1184 | 1170 | 1182 | 1180 | 265 |
| ND | 266 | County Line Plant | | 1189 | 1184 | 1191 | 1183 | 1185 | 1185 | 1173 | 1182 | 0 | | | | 266 |
| ND | 271 | Bismarck Station - Cleveland Station | 1168 | 1196 | 1195 | 1194 | 1188 | 1192 | 1189 | 1163 | 1155 | 1129 | 1127 | 1140 | 1142 | 271 |
| ND | 272 | Cleveland Station - Mapleton | 1167 | 1196 | 1195 | 1193 | 1188 | 1191 | 1187 | 1161 | 1153 | 1128 | 1126 | 1139 | 1142 | 272 |
| ND | 273 | Cleveland Station - Grafton Border | 1167 | 1196 | 1195 | 1194 | 1189 | 1192 | 1187 | 1162 | 1154 | 1128 | 1127 | 1139 | 1142 | 273 |
| ND | 610 | MDU-Wafford City BTU | 1177 | 1190 | 1183 | 1185 | 1176 | 1183 | 1188 | 1171 | 1163 | 1170 | 1162 | 1176 | 1179 | 610 |
| ND | 802 | Linton | 1056 | 1065 | 1062 | 1057 | 1054 | 1063 | 1059 | 1054 | 1052 | 1049 | 1051 | 1058 | 1053 | 802 |
| ND | 903 | Hettinger Propane | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 2549 | 903 |

**THERMAL ZONE VARIANCE
DOCUMENTATION**

September 2017

| ZONE | <i>BTU VARIANCE</i> | <i>REASON</i> |
|-------------|--------------------------------|--------------------------|
| 31 | -69 | Direction of Flow Change |
| 32 | -33 | Direction of Flow Change |
| 263 | -20 | Operational Change |