

MICROMETEOROLOGICAL DATA COLLECTED
BY TEXAS A&M

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This section contains three groups of data collected during Project Prairie Grass. In the first group (Table 8.1) are micrometeorological data collected during the 68 regular and the two special gas releases. These observations covered a period of 20 minutes each, starting 5 minutes before and ending 5 minutes after the 10-minute period during which the gas was released.

The second group (Table 8.2) includes similar observations, but at times other than the 70 gas release times. 177 observational periods are included in this group.

The third group (Table 8.3) contains soil moisture and soil density data on four days during July and August.

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Table 8.1

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBR | |
|-------------------------------------|-------|-------|--------|--------|-------|-------|---------------|--|
| GAS RELEASE NO. | 1 | 2 | 3 | 4 | 5 | 6 | | |
| JULY (1956) | 3 | 3 | 5 | 6 | 6 | 6 | | |
| CST | 1105 | 1505 | 2205 | 0105 | 1405 | 1705 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0080 | .0048 | -- | -- | .0205 | .0120 | | |
| Reflected | -- | -- | -- | -- | -- | -- | | |
| Net Radiation | .0050 | .0029 | -.0013 | -.0010 | .0145 | .0060 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | -- | -- | -- | -- | -- | -- | | |
| 8.00 | 21.68 | 23.78 | 22.41 | 20.09 | 29.18 | 30.19 | | |
| 4.00 | 21.90 | 23.79 | 21.12 | 18.55 | 29.72 | 30.50 | | |
| 2.00 | 22.12 | 23.87 | 19.83 | 17.50 | 30.17 | 30.80 | | |
| 1.00 | 22.32 | 23.99 | 18.45 | 16.75 | 30.71 | 31.09 | | |
| .50 | 22.95 | 24.18 | 17.24 | 16.00 | 31.44 | 31.32 | | |
| .25 | 23.22 | 24.54 | 16.89 | 15.63 | 32.05 | 31.63 | | |
| .12 | 23.84 | 24.85 | 16.55 | 15.33 | -- | 31.82 | | |
| -.03 | 24.06 | 25.39 | -- | -- | -- | -- | | |
| -.06 | 23.11 | 24.63 | -- | -- | -- | -- | | |
| -.12 | 21.71 | 23.20 | -- | -- | -- | -- | | |
| -.25 | 21.61 | 21.58 | -- | -- | -- | -- | | |
| -.50 | 20.53 | 20.38 | -- | -- | -- | -- | | |
| -1.00 | 18.21 | 18.18 | -- | -- | -- | -- | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | -- | -- | -- | -- | -- | -- | | |
| 8.00 | 18.43 | 18.62 | 18.34 | 16.43 | 17.19 | 16.53 | | |
| 4.00 | 18.73 | 18.73 | 18.44 | 16.52 | 17.39 | 16.64 | | |
| 2.00 | 18.86 | 18.88 | 18.46 | 16.53 | 17.73 | 16.88 | | |
| 1.00 | 19.04 | 19.10 | 18.58 | 16.58 | 18.11 | 17.07 | | |
| .50 | 19.51 | 19.38 | 18.58 | 16.64 | 18.46 | 17.24 | | |
| .25 | -- | 19.77 | 18.49 | 16.65 | 18.73 | 17.30 | | |
| .12 | 19.95 | 20.21 | 18.96 | 17.29 | 19.27 | 17.41 | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | -- | -- | -- | -- | -- | -- | | |
| 8.00 | 321 | 233 | 211 | 304 | 703 | 846 | | |
| 4.00 | 289 | 216 | 113 | 202 | 651 | 765 | | |
| 2.00 | 258 | 190 | 44 | 129 | 593 | 680 | | |
| 1.00 | 239 | 174 | 66 | 91 | 515 | 599 | | |
| .50 | 206 | 154 | 39 | 52 | 448 | 523 | | |
| .25 | 173 | 122 | 16 | 17 | 378 | 439 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 150 | 100 | 150 | 200 | 160 | 180 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | -- | 1450 | -- | -- | -- | -- | | |
| Run Time (min) | -- | 29 | -- | -- | -- | -- | | |
| -.03 | -- | -.10 | -- | -- | -- | -- | | |
| -.06 | -- | .00 | -- | -- | -- | -- | | |
| -.12 | -- | .11 | -- | -- | -- | -- | | |
| -.25 | -- | .03 | -- | -- | -- | -- | | |
| -.50 | -- | -.02 | -- | -- | -- | -- | | |
| -1.00 | -- | -.01 | -- | -- | -- | -- | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | O'NEILL, NEBRASKA | |
|-------------------------------------|-------|-------|-------|-------|-------|-------------------|--|
| GAS RELEASE NO. | 7 | 8 | 9 | 10 | 11 | 12 | |
| JULY (1956) | 10 | 10 | 11 | 11 | 14 | 14 | |
| CST | 1405 | 1705 | 1005 | 1205 | 0805 | 1005 | |
| RADIATION (cal/cm ² sec) | | | | | | | |
| Insolation | .0212 | .0115 | .0180 | .0200 | .0105 | .0185 | |
| Reflected | .0039 | .0023 | .0035 | .0040 | -- | -- | |
| Net Radiation | .0128 | .0057 | .0114 | .0128 | .0060 | .0117 | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | |
| Height (m) | | | | | | | |
| 16.00 | 28.71 | 29.90 | 25.76 | 28.42 | -- | -- | |
| 8.00 | 29.04 | 30.15 | 26.25 | 28.98 | 24.16 | 28.83 | |
| 4.00 | 29.46 | 30.57 | 26.61 | 29.58 | 24.64 | 29.25 | |
| 2.00 | 30.27 | 31.10 | 27.39 | 30.45 | 25.01 | 29.67 | |
| 1.00 | 31.21 | 31.47 | 28.19 | 31.47 | 25.42 | 30.53 | |
| .50 | 31.99 | 32.01 | 28.75 | 32.11 | 25.92 | 31.18 | |
| .25 | 33.10 | 32.58 | 29.53 | 33.14 | 26.34 | 31.94 | |
| .12 | 34.23 | 33.06 | 29.82 | 33.78 | 26.68 | 32.65 | |
| -.03 | 34.90 | 33.74 | 26.64 | 31.79 | 24.23 | 28.86 | |
| -.06 | 30.53 | 31.77 | 24.48 | 27.91 | 23.46 | 25.98 | |
| -.12 | 24.23 | 26.77 | 23.14 | 23.93 | 24.25 | 24.16 | |
| -.25 | 21.11 | 21.84 | 22.47 | 22.27 | 24.14 | 23.65 | |
| -.50 | 20.03 | 19.99 | 20.42 | 20.34 | 21.49 | 21.34 | |
| -1.00 | 18.22 | 18.22 | 18.28 | 18.20 | 18.75 | 18.68 | |
| VAPOR PRESSURE (mb) | | | | | | | |
| 16.00 | 12.06 | 13.16 | 20.60 | 22.84 | -- | -- | |
| 8.00 | 12.97 | 13.87 | 20.88 | 23.10 | -- | -- | |
| 4.00 | 13.02 | 13.72 | 20.92 | 23.14 | -- | -- | |
| 2.00 | 13.05 | 13.75 | 21.10 | 23.27 | -- | -- | |
| 1.00 | 13.18 | 13.85 | 21.14 | 23.40 | -- | -- | |
| .50 | 13.50 | 13.98 | 21.20 | 23.43 | -- | -- | |
| .25 | 13.85 | 14.16 | 21.39 | 23.59 | -- | -- | |
| .12 | 14.15 | 14.32 | 21.92 | 23.62 | -- | -- | |
| WIND SPEED (cm/sec) | | | | | | | |
| 16.00 | 560 | 611 | 884 | 579 | -- | -- | |
| 8.00 | 508 | 540 | 842 | 536 | 944 | 973 | |
| 4.00 | 481 | 498 | 769 | 506 | 850 | 892 | |
| 2.00 | 444 | 452 | 700 | 468 | 761 | 799 | |
| 1.00 | 402 | 406 | 611 | 415 | 677 | 721 | |
| .50 | 352 | 350 | 533 | 376 | 579 | 617 | |
| .25 | 295 | 288 | 450 | 312 | 490 | 522 | |
| WIND DIRECTION (deg) | | | | | | | |
| 1.00 | 204 | 171 | 199 | 200 | 185 | 175 | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | |
| Initial Time | 1351 | 1651 | 0950 | 1150 | 0750 | 0950 | |
| Run Time (min) | 27 | 26 | 16 | 26 | 28 | 27 | |
| -.03 | -1.80 | -.76 | 1.01 | .79 | .80 | .23 | |
| -.06 | .53 | -.29 | .59 | .70 | -.16 | .72 | |
| -.12 | .53 | .20 | .06 | .23 | -.08 | .10 | |
| -.25 | .07 | .13 | -.08 | -.03 | -.11 | -.08 | |
| -.50 | .00 | -.03 | -.01 | -.01 | -.03 | -.01 | |
| -1.00 | .00 | .00 | -.01 | .00 | -.01 | -.01 | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBRASKA | |
|-------------------------------------|--------|--------|-------|-------|--------|--------|-------------------|--|
| GAS RELEASE NO. | 13 | 14 | 15 | 16 | 17 | 18 | | |
| JULY (1956) | 22 | 22 | 23 | 23 | 23 | 23 | | |
| CST | 2005 | 2205 | 0805 | 1005 | 2005 | 2205 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0001 | .0000 | .0101 | .0183 | .0001 | .0000 | | |
| Reflected | -- | -- | -- | -- | -- | -- | | |
| Net Radiation | -.0011 | -.0010 | .0050 | .0100 | -.0011 | -.0014 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 22.34 | 21.04 | 20.32 | 24.61 | 27.91 | 25.11 | | |
| 8.00 | 21.64 | 19.76 | 20.51 | 24.82 | 27.83 | 24.30 | | |
| 4.00 | 21.04 | 17.87 | 20.78 | 25.10 | 27.62 | 23.83 | | |
| 2.00 | 20.39 | 16.25 | 21.44 | 25.61 | 27.44 | 23.52 | | |
| 1.00 | 19.56 | 15.31 | 22.05 | 26.67 | 27.32 | 23.23 | | |
| .50 | 18.72 | 14.66 | 22.58 | 27.79 | 27.19 | 23.03 | | |
| .25 | 18.15 | 14.31 | 23.32 | 28.64 | 27.08 | 22.83 | | |
| .12 | 17.76 | 13.99 | 23.95 | 29.63 | 27.00 | 22.66 | | |
| -.03 | 26.48 | 23.10 | 20.75 | 26.71 | 29.49 | 26.39 | | |
| -.06 | 27.02 | 24.62 | 20.48 | 23.55 | 29.53 | 27.08 | | |
| -.12 | 25.50 | 24.95 | 21.44 | 21.62 | 27.26 | 26.51 | | |
| -.25 | 22.17 | 22.60 | 22.12 | 21.79 | 22.96 | 23.20 | | |
| -.50 | 20.36 | 20.48 | 20.72 | 20.68 | 20.32 | 20.28 | | |
| -1.00 | 18.95 | 19.02 | 19.04 | 18.99 | 18.54 | 18.62 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 16.13 | 14.91 | 17.19 | 17.66 | -- | -- | | |
| 8.00 | 16.47 | 14.20 | 17.39 | 18.14 | -- | -- | | |
| 4.00 | 16.74 | 14.21 | 17.41 | 18.21 | -- | -- | | |
| 2.00 | 16.60 | 14.20 | 17.43 | 18.30 | -- | -- | | |
| 1.00 | 16.02 | 14.25 | 17.52 | 18.40 | -- | -- | | |
| .50 | 15.86 | 14.27 | 17.63 | 18.57 | -- | -- | | |
| .25 | 15.71 | 14.32 | 17.65 | 18.81 | -- | -- | | |
| .12 | 15.71 | 14.99 | 17.77 | 19.08 | -- | -- | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 343 | 445 | -- | 378 | 555 | 656 | | |
| 8.00 | 264 | 348 | 378 | 362 | 455 | 488 | | |
| 4.00 | 198 | 225 | 354 | 346 | 402 | 375 | | |
| 2.00 | 146 | 139 | 322 | 331 | 341 | 322 | | |
| 1.00 | 92 | 74 | 290 | 296 | 287 | 268 | | |
| .50 | 46 | 41 | 261 | 265 | 237 | 229 | | |
| .25 | 18 | 16 | 215 | 225 | 209 | 186 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | -- | -- | 193 | 202 | 172 | 188 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1952 | 2150 | 0752 | 0950 | 1950 | 2155 | | |
| Run Time (min) | 25 | 30 | 24 | 27 | 26 | 22 | | |
| -.03 | -1.08 | -.68 | .79 | 1.54 | -.76 | -.83 | | |
| -.06 | -.63 | -.60 | .32 | .92 | -.59 | -.70 | | |
| -.12 | -.07 | -.18 | -.04 | .17 | -.10 | -.25 | | |
| -.25 | .04 | .04 | -.04 | -.02 | .05 | -.07 | | |
| -.50 | -.05 | .04 | 00 | .01 | 00 | -.04 | | |
| -1.00 | -.04 | .02 | 00 | -.02 | 00 | -.01 | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBRASKA | |
|-------------------------------------|--------|--------|--------|--------|--------|---------|-------------------|--|
| GAS RELEASE NO. | 19 | 20 | 21 | 22 | 23 | 24 | | |
| JULY (1956) | 25 | 25 | 25 | 26 | 29 | 29 | | |
| CST | 1105 | 1305 | 2205 | 0005 | 2105 | 2305 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0140 | .0218 | -- | -- | -- | -- | | |
| Reflected | .00290 | .00415 | -- | -- | -- | -- | | |
| Net Radiation | .0081 | .0137 | -.0009 | -.0014 | -.0014 | -.00115 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 27.26 | 30.14 | 28.91 | 26.75 | 23.62 | 22.07 | | |
| 8.00 | 27.77 | 30.88 | 28.84 | 26.70 | 23.52 | 21.99 | | |
| 4.00 | 28.04 | 31.87 | 28.74 | 26.60 | 23.49 | 21.96 | | |
| 2.00 | 28.59 | 32.49 | 28.60 | 26.42 | 23.40 | 21.89 | | |
| 1.00 | 29.28 | 33.34 | 28.50 | 26.32 | 23.31 | 21.83 | | |
| .50 | 29.75 | 34.31 | 28.42 | 26.22 | 23.21 | 21.74 | | |
| .25 | 30.56 | 35.16 | 28.32 | 26.05 | 23.11 | 21.71 | | |
| .12 | 31.06 | 35.98 | 28.19 | 25.93 | 23.04 | 21.63 | | |
| -.03 | 28.52 | 33.60 | 27.70 | 26.32 | 27.92 | 25.85 | | |
| -.06 | 24.91 | 28.89 | 27.65 | 26.57 | 28.14 | 26.38 | | |
| -.12 | 22.80 | 23.92 | 26.76 | 26.11 | 26.83 | 26.16 | | |
| -.25 | 22.74 | 22.56 | 23.90 | 24.06 | 23.98 | 24.10 | | |
| -.50 | 21.21 | 21.12 | 21.14 | 21.17 | 21.63 | 21.65 | | |
| -1.00 | 19.00 | 18.94 | 19.04 | 19.08 | 19.62 | 19.62 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 14.91 | 14.19 | 14.56 | 15.81 | -- | -- | | |
| 8.00 | 15.22 | 14.33 | 14.65 | 15.87 | -- | -- | | |
| 4.00 | 15.24 | 14.39 | 14.66 | 15.81 | -- | -- | | |
| 2.00 | 15.30 | 14.41 | 14.60 | 15.82 | -- | -- | | |
| 1.00 | 15.41 | 14.47 | 14.62 | 15.80 | 20.7* | 20.9* | | |
| .50 | 15.60 | 14.51 | 14.64 | 15.81 | -- | -- | | |
| .25 | 15.60 | 14.57 | 14.65 | 15.77 | -- | -- | | |
| .12 | 15.73 | 14.71 | 14.59 | 15.75 | -- | -- | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 752 | 1211 | 859 | 1041 | 883 | 865 | | |
| 8.00 | 721 | 1130 | 772 | 933 | 784 | 764 | | |
| 4.00 | 627 | 1017 | 675 | 814 | 685 | 662 | | |
| 2.00 | -- | 938 | 611 | 739 | 605 | 586 | | |
| 1.00 | 533 | 826 | 531 | 639 | 537 | 521 | | |
| .50 | 475 | 727 | 462 | 557 | 471 | 461 | | |
| .25 | 393 | 594 | 376 | 454 | 389 | 382 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 162 | 168 | 167 | 170 | 132 | 146 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1050 | 1250 | 2154 | 2350 | 2050 | 2250 | | |
| Run Time (min) | 26 | 27 | 23 | 26 | 26 | 27 | | |
| -.03 | .91 | .67 | -.16 | -.24 | -.53 | -.78 | | |
| -.06 | .96 | .64 | -.20 | -.11 | -.43 | -.77 | | |
| -.12 | .13 | .37 | -.21 | -.11 | -.12 | -.33 | | |
| -.25 | -.04 | -.01 | .02 | .05 | .06 | -.12 | | |
| -.50 | -.02 | -.01 | -.01 | .00 | .00 | .00 | | |
| -1.00 | -.01 | .00 | -.01 | .01 | .00 | -.03 | | |

Precipitation (cm) -- -- -- -- --

* Sling Psychrometer

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBRASKA | |
|-------------------------------------|--------|--------|-------|-------|--------|--------|-------------------|--|
| GAS RELEASE NO. | 25 | 26 | 27 | 28 | 29 | 30 | | |
| AUGUST (1956) | 1 | 2 | 2 | 3 | 3 | 3 | | |
| CST | 1305 | 1205 | 1405 | 0005 | 0205 | 1305 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0092 | .0180 | .0183 | -- | -- | .0202 | | |
| Reflected | .00185 | .00305 | -- | -- | -- | .00329 | | |
| Net Radiation | .0052 | .0126 | .0123 | -- | -.0003 | .0129 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 22.87 | -- | -- | 25.24 | 26.24 | 31.88 | | |
| 8.00 | 22.92 | 27.93 | 30.26 | 24.76 | 25.81 | 32.39 | | |
| 4.00 | 23.26 | 28.57 | 30.84 | 24.38 | 25.72 | 32.96 | | |
| 2.00 | 23.62 | 29.21 | 31.43 | 24.22 | 25.36 | 33.53 | | |
| 1.00 | 24.09 | 29.91 | 31.96 | 24.07 | 25.14 | 34.00 | | |
| .50 | 24.77 | 30.42 | 32.62 | 23.92 | 24.78 | 34.73 | | |
| .25 | 25.32 | 31.15 | 33.45 | 23.72 | 24.58 | 35.42 | | |
| .12 | 25.72 | 31.74 | 34.25 | 23.53 | 24.33 | 36.10 | | |
| -.03 | 27.41 | 27.41 | 29.97 | 23.68 | 22.92 | 33.29 | | |
| -.06 | 25.32 | 25.42 | 27.84 | 24.64 | 23.78 | 30.50 | | |
| -.12 | 22.91 | 22.96 | 23.93 | 25.25 | 24.60 | 25.03 | | |
| -.25 | 22.50 | 22.34 | 22.31 | 23.74 | 23.68 | 22.94 | | |
| -.50 | 21.73 | 21.38 | 21.31 | 21.58 | 21.52 | 21.58 | | |
| -1.00 | 19.82 | 19.70 | 19.65 | 19.82 | 19.82 | 19.71 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | -- | -- | -- | -- | -- | 18.67 | | |
| 8.00 | 22.57 | 22.43 | 21.72 | -- | -- | 19.27 | | |
| 4.00 | 22.40 | 22.69 | 21.86 | -- | -- | 19.48 | | |
| 2.00 | 22.63 | 23.02 | 22.02 | -- | -- | 19.74 | | |
| 1.00 | -- | 23.40 | 22.29 | -- | -- | 20.07 | | |
| .50 | -- | 23.72 | 22.44 | -- | -- | 20.53 | | |
| .25 | 23.28 | 23.92 | 22.57 | -- | -- | 20.65 | | |
| .12 | 23.75 | 24.31 | 22.82 | -- | -- | 21.04 | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 328 | 851 | 849 | 508 | 606 | 885 | | |
| 8.00 | 318 | 775 | 755 | 388 | 529 | 852 | | |
| 4.00 | 297 | 721 | 694 | 321 | 441 | 775 | | |
| 2.00 | 275 | 648 | 613 | 255 | 394 | 697 | | |
| 1.00 | 248 | 568 | 540 | 212 | 340 | 628 | | |
| .50 | 221 | 511 | 483 | 177 | 296 | 540 | | |
| .25 | 173 | 422 | 402 | 154 | 241 | 455 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 183 | 171 | 176 | 167 | 208 | 196 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1252 | 1150 | 1350 | 2357 | 0150 | 1250 | | |
| Run Time (min) | 26 | 27 | 26 | 20 | 27 | 26 | | |
| -.03 | .04 | 1.35 | 1.10 | -.51 | -.21 | .72 | | |
| -.06 | .21 | 1.09 | .69 | -.61 | -.17 | .74 | | |
| -.12 | .07 | .14 | .36 | -.45 | -.10 | .02 | | |
| -.25 | -.04 | -.06 | .11 | -.27 | -.01 | .05 | | |
| -.50 | -.03 | -.07 | .05 | -.20 | .02 | .00 | | |
| -1.00 | -.03 | -.04 | .06 | -.31 | .00 | .02 | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | O'NEILL, NEBRASKA | | |
|-------------------------------------|--------|--------|-------|-------|-------------------|---------|---------|
| GAS RELEASE NO. | 31 | 32 | 33 | 34 | 35s | 35 | 36 |
| AUGUST (1956) | 3 | 6 | 7 | 7 | 7 | 11 | 11 |
| CST | 1505 | 2005 | 1305 | 1505 | 2305 | 2135 | 2335 |
| RADIATION (cal/cm ² sec) | | | | | | | |
| Insolation | .0152 | .0000 | .0164 | .0174 | -- | -- | -- |
| Reflected | .00264 | -- | -- | -- | -- | -- | -- |
| Net Radiation | .0092 | -.0013 | .0109 | .0113 | -.0007 | -.00091 | -.00085 |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | |
| Height (m) | | | | | | | |
| 16.00 | 33.23 | 27.21 | 21.71 | 29.09 | 23.03 | 23.57 | 20.74 |
| 8.00 | 33.44 | 25.33 | 27.88 | 29.21 | 22.68 | 22.30 | 19.81 |
| 4.00 | 33.79 | 23.71 | 28.16 | 29.68 | 22.47 | 21.04 | 19.32 |
| 2.00 | 34.25 | 22.93 | 28.73 | 30.19 | 22.28 | 19.73 | 18.94 |
| 1.00 | 34.85 | 22.45 | 29.16 | 30.99 | 22.17 | 19.13 | 18.63 |
| .50 | 35.37 | 22.06 | 29.64 | 31.45 | 22.05 | 18.47 | 18.10 |
| .25 | 35.81 | 21.66 | 30.07 | 32.13 | 21.94 | 18.34 | 18.19 |
| .12 | 36.11 | 21.38 | 30.61 | 32.62 | 21.79 | 18.21 | 17.98 |
| -.03 | 34.04 | 25.35 | 29.57 | 31.07 | 23.42 | 24.85 | 23.15 |
| -.06 | 32.10 | 26.42 | 27.07 | 28.96 | 24.41 | 26.02 | 24.41 |
| -.12 | 26.80 | 26.18 | 23.43 | 24.86 | 25.22 | 26.27 | 25.49 |
| -.25 | 23.11 | 24.00 | 22.58 | 22.73 | 23.93 | 23.78 | 24.01 |
| -.50 | 21.50 | 22.02 | 21.80 | 21.82 | 21.91 | 21.63 | 21.74 |
| -1.00 | 19.69 | 19.94 | 19.89 | 19.93 | 20.08 | 19.99 | 20.08 |
| VAPOR PRESSURE (mb) | | | | | | | |
| 16.00 | 18.49 | 13.82 | 16.64 | 17.00 | 19.99 | 19.08 | 18.30 |
| 8.00 | 18.65 | 14.39 | 16.97 | 17.21 | 20.12 | 18.93 | 18.43 |
| 4.00 | 18.76 | 15.08 | 17.16 | 17.38 | 20.17 | 19.06 | 18.44 |
| 2.00 | 18.79 | 15.54 | 17.41 | 17.51 | 20.17 | 18.91 | 18.44 |
| 1.00 | 19.07 | 15.85 | 17.62 | 17.76 | 20.23 | 18.84 | 18.52 |
| .50 | 19.20 | 16.01 | 17.77 | 17.97 | 20.27 | 19.32 | 18.83 |
| .25 | 19.34 | 16.09 | 18.09 | 18.10 | 20.27 | 18.59 | 18.59 |
| .12 | 19.33 | 16.12 | 18.36 | 18.28 | 20.33 | 18.59 | 18.83 |
| WIND SPEED (cm/sec) | | | | | | | |
| 16.00 | 1013 | 609 | 1063 | 1214 | 639 | 421 | 464 |
| 8.00 | -- | 412 | -- | 1128 | 520 | 318 | 342 |
| 4.00 | 887 | 288 | 848 | 1052 | 434 | 253 | 243 |
| 2.00 | 787 | 213 | 756 | 920 | 373 | 180 | 186 |
| 1.00 | 691 | 160 | 690 | 846 | 340 | 110 | 137 |
| .50 | 617 | 136 | 580 | 706 | 281 | 88 | 116 |
| .25 | 527 | 95 | 484 | 587 | 231 | 45 | 81 |
| WIND DIRECTION (deg) | | | | | | | |
| 1.00 | 204 | 168 | 171 | 140 | 164 | 97 | 154 |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | |
| Initial Time | 1450 | 1950 | 1250 | 1450 | 2255 | 2120 | 2320 |
| Run Time (min) | 28 | 27 | 27 | 28 | 21 | 26 | 30 |
| -.03 | -.06 | -.70 | .10 | .14 | -.38 | -.47 | -.35 |
| -.06 | .25 | -.55 | .64 | .31 | -.39 | -.42 | -.38 |
| -.12 | .25 | -.09 | .22 | .25 | -.19 | -.12 | -.23 |
| -.25 | .10 | .05 | -.12 | .02 | -.04 | .12 | .00 |
| -.50 | .00 | .01 | -.11 | -.04 | .05 | .04 | .01 |
| -1.00 | .00 | .01 | -.08 | -.03 | -.04 | .04 | .00 |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | -- |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBRAS | |
|-------------------------------------|---------|---------|---------|--------|---------|---------|-----------------|--|
| GAS RELEASE NO. | 37 | 38 | 39 | 40 | 41 | 42 | | |
| AUGUST (1956) | 12 | 12 | 13 | 14 | 14 | 14 | | |
| CST | 0305 | 0505 | 2235 | 0035 | 0305 | 0505 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | -- | -- | -- | -- | -- | -- | | |
| Reflected | -- | -- | -- | -- | -- | -- | | |
| Net Radiation | -.00067 | -.00085 | -.00135 | -.0014 | -.00123 | -.00192 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 21.02 | 20.07 | 23.68 | 21.91 | 21.63 | 21.92 | | |
| 8.00 | 20.90 | 19.93 | 22.39 | 21.11 | 20.82 | 21.68 | | |
| 4.00 | 20.79 | 19.84 | 21.28 | 20.69 | 20.43 | 21.61 | | |
| 2.00 | 20.65 | 19.82 | 20.47 | 20.29 | 20.20 | 21.49 | | |
| 1.00 | 20.55 | 19.65 | 20.01 | 19.96 | 20.03 | 21.30 | | |
| .50 | 20.41 | 19.34 | 19.55 | 19.52 | 19.90 | 21.16 | | |
| .25 | 20.33 | 19.48 | 19.35 | 19.29 | 19.62 | 21.03 | | |
| .12 | 20.22 | 19.37 | 19.06 | 19.08 | 19.43 | 20.90 | | |
| -.03 | 21.68 | 21.59 | 25.09 | 23.54 | 22.26 | 21.92 | | |
| -.06 | 22.69 | 22.37 | 26.52 | 24.88 | 23.53 | 22.82 | | |
| -.12 | 24.21 | 23.62 | 27.42 | 26.41 | 25.28 | 24.56 | | |
| -.25 | 23.83 | 23.62 | 24.63 | 24.89 | 24.80 | 24.47 | | |
| -.50 | 21.80 | 21.81 | 21.87 | 21.92 | 22.06 | 22.06 | | |
| -1.00 | 20.08 | 20.05 | 20.03 | 20.02 | 20.09 | 22.03 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 19.61 | 19.77 | 12.82 | 13.11 | 14.93 | 14.13 | | |
| 8.00 | 19.62 | 19.77 | 12.91 | 13.15 | 15.03 | 14.14 | | |
| 4.00 | 19.63 | 19.82 | 12.92 | 13.18 | 15.06 | 14.19 | | |
| 2.00 | 19.62 | 19.75 | 12.92 | 13.19 | 15.07 | 14.16 | | |
| 1.00 | 19.63 | 19.73 | 12.94 | 13.21 | 15.08 | 14.20 | | |
| .50 | 20.11 | 20.00 | 12.95 | 13.22 | 15.08 | 14.23 | | |
| .25 | 19.68 | 19.72 | 12.93 | 13.23 | 15.09 | 14.22 | | |
| .12 | 19.84 | 19.73 | 12.99 | 13.31 | 15.09 | 14.23 | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 726 | 679 | 542 | 486 | 671 | 828 | | |
| 8.00 | 608 | 585 | 419 | 343 | 550 | 751 | | |
| 4.00 | 528 | 504 | 291 | 250 | 435 | 673 | | |
| 2.00 | 459 | 428 | 229 | 208 | 369 | 594 | | |
| 1.00 | 400 | 370 | 169 | 158 | 316 | 527 | | |
| .50 | 344 | 317 | 152 | 137 | 267 | 452 | | |
| .25 | 281 | 258 | 112 | 99 | 216 | 380 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 176 | 161 | 122 | 166 | 185 | 199 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 0250 | 0450 | 2220 | 0020 | 0250 | 0450 | | |
| Run Time (min) | 30 | 26 | 28 | 28 | 28 | 28 | | |
| -.03 | .06 | -.12 | -.46 | -.27 | -.10 | -.05 | | |
| -.06 | -.13 | -.09 | -.45 | -.30 | -.18 | .01 | | |
| -.12 | -.29 | -.11 | -.25 | -.25 | -.15 | -.14 | | |
| -.25 | -.04 | -.06 | .02 | -.04 | -.03 | -.06 | | |
| -.50 | .00 | -.01 | .00 | .01 | .01 | .01 | | |
| -1.00 | -.01 | -.01 | -.02 | .00 | .02 | .00 | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | O'NEILL, NEBRASKA | | |
|-------------------------------------|-------|-------|--------|--------|--------|-------------------|-------|--------|
| GAS RELEASE NO. | 43 | 44 | 45 | 46 | 47 | 48s | 48s | 48 |
| AUGUST (1956) | 15 | 15 | 15 | 15 | 20 | 20 | 20 | 21 |
| CST | 1205 | 1405 | 1705 | 1850 | 1005 | 1205 | 1255 | 0905 |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0178 | .0164 | .00443 | .00035 | .0187 | .0125 | -- | .0142 |
| Reflected | .0030 | .0028 | .00080 | -- | .00313 | .00215 | -- | .00253 |
| Net Radiation | .0108 | .0097 | .0014 | -.0014 | .0108 | .0070 | -- | .0081 |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 31.63 | 33.92 | 34.59 | 33.12 | 16.81 | 18.55 | 19.29 | 17.18 |
| 8.00 | 32.09 | 34.37 | 34.75 | 33.01 | 17.10 | 18.77 | 19.71 | 17.70 |
| 4.00 | 32.60 | 34.73 | 34.91 | 32.90 | 17.47 | 19.04 | 20.11 | 18.05 |
| 2.00 | 33.05 | 35.43 | 35.04 | 32.74 | 17.73 | 19.45 | 20.72 | 18.40 |
| 1.00 | 34.17 | 36.06 | 35.28 | 32.57 | 18.46 | 19.91 | 21.31 | 18.96 |
| .50 | 34.92 | 36.92 | 35.59 | 32.44 | 19.20 | 20.52 | 22.10 | 19.43 |
| .25 | 35.76 | 37.69 | 35.82 | 32.32 | 20.13 | 21.12 | 23.15 | 19.97 |
| .12 | 36.64 | 38.64 | 35.95 | 32.20 | 21.30 | 22.02 | 24.44 | 20.46 |
| -.03 | 33.60 | 37.31 | 35.56 | 32.59 | 18.27 | 25.66 | -- | 17.12 |
| -.06 | 28.82 | 32.25 | 33.03 | 31.67 | 17.79 | 22.57 | -- | 16.89 |
| -.12 | 24.63 | 26.11 | 27.99 | 28.32 | 18.21 | 19.07 | -- | 18.40 |
| -.25 | 23.75 | 23.72 | 24.11 | 24.49 | 20.24 | 19.87 | -- | 20.52 |
| -.50 | 22.29 | 22.25 | 22.12 | 22.09 | 20.96 | 20.78 | -- | 20.73 |
| -1.00 | 20.13 | 20.11 | 20.08 | 20.05 | 20.28 | 20.13 | -- | 20.04 |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 11.83 | 10.64 | 11.90 | 11.41 | -- | 9.73 | -- | 12.53 |
| 8.00 | 12.28 | 11.17 | 12.17 | 11.51 | -- | 10.09 | -- | 12.78 |
| 4.00 | 12.36 | 11.16 | 12.18 | 11.57 | -- | 10.26 | -- | 12.81 |
| 2.00 | 12.46 | 11.15 | 12.21 | 11.63 | -- | 10.35 | -- | 12.93 |
| 1.00 | 12.50 | 11.19 | 12.26 | 11.64 | -- | 10.49 | -- | 13.03 |
| .50 | 12.61 | 11.30 | 12.31 | 11.64 | -- | 10.58 | -- | 13.17 |
| .25 | 12.74 | 11.33 | 12.39 | 11.68 | -- | 10.86 | -- | 13.27 |
| .12 | 12.95 | 11.41 | 12.34 | 11.70 | -- | 11.33 | -- | 13.38 |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 641 | 760 | 788 | 787 | 394 | 356 | 376 | 1027 |
| 8.00 | 606 | 719 | 735 | 707 | 374 | 347 | 365 | 961 |
| 4.00 | 565 | 680 | 665 | 625 | 356 | 329 | 342 | -- |
| 2.00 | 522 | -- | 602 | 556 | 332 | 307 | 3.21 | 784 |
| 1.00 | 468 | 539 | 531 | 486 | 302 | 277 | 2.94 | 691 |
| .50 | 411 | 468 | 460 | 428 | 270 | 249 | 2.96 | 606 |
| .25 | 343 | 397 | 378 | 364 | -- | 210 | 2.23 | 505 |
| WIND DIRECTION (deg) | | | | | | | | |
| 1 00 | 168 | 156 | 153 | 134 | -- | 216 | -- | 189 |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1150 | 1350 | 1650 | 1835 | 0950 | 1150 | -- | 0850 |
| Run Time (min) | 27 | 28 | 26 | 27 | 26 | 28 | -- | 27 |
| -.03 | .67 | .21 | -.57 | -.77 | 1.87 | .47 | -- | .96 |
| -.06 | .60 | .52 | -.25 | -.40 | .70 | 1.03 | -- | .52 |
| -.12 | .22 | .36 | .13 | -.05 | .03 | .34 | -- | .00 |
| -.25 | -.09 | .03 | .08 | .05 | .03 | -.06 | -- | -.06 |
| -.50 | -.03 | -.02 | -.02 | -.04 | -.04 | -.03 | -- | -.02 |
| -1.00 | -.02 | -.01 | .00 | -.07 | -.04 | -.01 | -- | -.02 |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | -- | -- |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | | O'NEILL, NEBRASKA | |
|-------------------------------------|--------|--------|--------|--------|--------|--------|-------------------|--|
| GAS RELEASE NO. | 49 | 50 | 51 | 52 | 53 | 54 | | |
| AUGUST (1956) | 21 | 21 | 21 | 24 | 24 | 24 | | |
| CST | 1105 | 1405 | 1535 | 1120 | 2005 | 2205 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0209 | .0202 | .0158 | .0204 | -- | -- | | |
| Reflected | .00303 | .00309 | .00259 | .00289 | -- | -- | | |
| Net Radiation | .0129 | .0128 | .0088 | .0110 | -.0015 | -.0017 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 21.45 | 27.14 | 28.36 | 23.17 | 21.32 | 19.56 | | |
| 8.00 | 21.94 | 27.68 | 29.13 | 23.59 | 20.26 | 19.31 | | |
| 4.00 | 22.64 | 27.90 | 29.40 | 24.08 | 18.77 | 18.94 | | |
| 2.00 | 23.29 | 28.64 | 29.80 | 24.96 | 17.39 | 18.68 | | |
| 1.00 | 24.05 | 29.20 | 30.50 | 25.98 | 16.56 | 18.45 | | |
| .50 | 25.00 | 30.05 | 31.07 | 26.74 | 15.76 | 18.25 | | |
| .25 | 25.72 | 31.23 | 31.97 | 27.95 | 15.37 | 18.04 | | |
| .12 | 26.38 | 31.95 | 32.52 | 29.19 | 14.90 | 17.89 | | |
| -.03 | 22.77 | 29.55 | 30.45 | 27.56 | 25.07 | 22.48 | | |
| -.06 | 20.34 | 26.18 | 27.78 | 23.69 | 26.32 | 23.92 | | |
| -.12 | 18.86 | 21.20 | 22.45 | 21.12 | 25.65 | 24.88 | | |
| -.25 | 20.15 | 19.99 | 20.12 | 21.57 | 22.66 | 22.96 | | |
| -.50 | 20.60 | 20.45 | 20.34 | 20.91 | 20.82 | 20.60 | | |
| -1.00 | 19.92 | 19.83 | 19.73 | 19.58 | 19.56 | 19.64 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 14.03 | 14.09 | 12.94 | 9.22 | 10.64 | 11.40 | | |
| 8.00 | 13.84 | 14.35 | 13.21 | 10.72 | 10.79 | 11.42 | | |
| 4.00 | 13.77 | 14.39 | 13.23 | 10.69 | 10.75 | 11.42 | | |
| 2.00 | 13.60 | 14.49 | 13.34 | 10.79 | 10.74 | 11.40 | | |
| 1.00 | 13.47 | 14.58 | 13.53 | 11.19 | 10.78 | 11.42 | | |
| .50 | 13.29 | 14.68 | 13.57 | 11.10 | 10.86 | 11.41 | | |
| .25 | 13.20 | 14.75 | 13.66 | 11.21 | 10.84 | 11.39 | | |
| .12 | 12.87 | 14.93 | 13.92 | 11.49 | 10.84 | 11.42 | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 868 | 819 | 869 | 521 | 594 | 641 | | |
| 8.00 | 802 | 796 | 804 | 508 | 446 | 537 | | |
| 4.00 | 752 | 764 | 766 | 496 | 320 | 464 | | |
| 2.00 | 674 | 673 | 682 | 442 | 228 | 394 | | |
| 1.00 | 603 | 606 | 618 | 404 | 156 | 340 | | |
| .50 | 522 | -- | 547 | -- | 137 | 299 | | |
| .25 | 444 | 448 | 475 | 308 | 101 | 248 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 185 | 197 | 226 | -- | 119 | 147 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1050 | 1350 | 1520 | 1150 | 1950 | 2150 | | |
| Run Time (min) | 28 | 28 | 25 | 26 | 26 | 27 | | |
| -.03 | 1.44 | .56 | -.02 | 1.21 | -.90 | -.35 | | |
| -.06 | .97 | .60 | .20 | .89 | -.61 | -.44 | | |
| -.12 | .22 | .40 | .34 | .20 | -.12 | -.21 | | |
| -.25 | -.06 | .02 | .04 | .08 | .07 | .04 | | |
| -.50 | -.03 | -.02 | -.03 | -.02 | -.01 | .00 | | |
| -1.00 | -.01 | -.03 | -.02 | -.02 | .01 | .00 | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | O'NEILL, NEBRASKA | | |
|-------------------------------------|--------|--------|--------|--------|--------|-------------------|--|--|
| GAS RELEASE NO. | 55 | 56 | 57 | 58 | 59 | 60 | | |
| AUGUST (1956) | 25 | 25 | 25 | 25 | 25 | 26 | | |
| CST | 0105 | 0305 | 1735 | 1935 | 2235 | 0035 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | -- | -- | .0054 | -- | -- | -- | | |
| Reflected | -- | -- | .00087 | -- | -- | -- | | |
| Net Radiation | -.0015 | -.0014 | .0013 | -.0013 | -.0014 | -.0014 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 17.17 | 15.88 | 33.54 | 29.50 | 26.61 | 26.49 | | |
| 8.00 | 17.08 | 15.70 | 33.76 | 28.49 | 25.34 | 26.17 | | |
| 4.00 | 16.90 | 15.47 | 33.91 | 27.16 | 24.31 | 25.91 | | |
| 2.00 | 16.75 | 15.29 | 34.11 | 23.64 | 23.60 | 25.75 | | |
| 1.00 | 16.65 | 15.15 | 34.19 | 25.64 | 23.13 | 25.49 | | |
| .50 | 16.48 | 15.03 | 34.33 | 25.13 | 22.82 | 25.35 | | |
| .25 | 16.37 | 14.91 | 34.52 | 24.82 | 22.58 | 25.11 | | |
| .12 | 16.20 | 14.77 | 34.61 | 24.58 | 22.29 | 24.98 | | |
| -.03 | 20.56 | 19.42 | 31.70 | 28.09 | 24.52 | 23.28 | | |
| -.06 | 21.43 | 20.85 | 29.54 | 27.97 | 25.12 | 23.87 | | |
| -.12 | 23.58 | 22.75 | 25.51 | 25.90 | 25.10 | 24.46 | | |
| -.25 | 23.04 | 22.82 | 22.19 | 22.49 | 22.99 | 23.09 | | |
| -.50 | 21.02 | 21.02 | 20.89 | 20.78 | 20.89 | 20.94 | | |
| -1.00 | 19.71 | 19.68 | 19.46 | 19.51 | 19.59 | 19.60 | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 11.72 | 12.37 | 12.39 | -- | 12.62 | 11.89 | | |
| 8.00 | 11.73 | 12.21 | 12.59 | -- | 12.99 | 11.96 | | |
| 4.00 | 11.73 | 12.29 | 12.55 | -- | 13.05 | 11.97 | | |
| 2.00 | 11.73 | 12.39 | 12.56 | -- | 13.11 | 11.97 | | |
| 1.00 | 11.74 | 12.39 | 12.59 | -- | 13.10 | 12.01 | | |
| .50 | 11.73 | 12.36 | 12.61 | -- | 13.14 | 12.04 | | |
| .25 | 11.73 | 12.36 | 12.63 | -- | 13.15 | 12.06 | | |
| .12 | 11.72 | 12.30 | 12.65 | -- | 13.15 | 12.08 | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 830 | 704 | 989 | 572 | 628 | 723 | | |
| 8.00 | 755 | 619 | 879 | 433 | 462 | 595 | | |
| 4.00 | 679 | 546 | 824 | 311 | 342 | 533 | | |
| 2.00 | 594 | 475 | 720 | 224 | 261 | 457 | | |
| 1.00 | 517 | 415 | 642 | 165 | 202 | 404 | | |
| .50 | 446 | 361 | 556 | 131 | 168 | 349 | | |
| .25 | 374 | 299 | 469 | 103 | 134 | 294 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 143 | 138 | 185 | 158 | 160 | 182 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 0050 | 0250 | 1722 | 1923 | 2227 | 0028 | | |
| Run Time (min) | 26 | 26 | 25 | 25 | 19 | 18 | | |
| -.03 | -.24 | -.21 | -.67 | -.86 | -.39 | -.10 | | |
| -.06 | -.21 | -.22 | -.22 | -.51 | -.24 | -.17 | | |
| -.12 | -.17 | -.22 | .16 | -.03 | -.13 | -.13 | | |
| -.25 | -.01 | -.04 | .08 | .11 | .03 | -.03 | | |
| -.50 | 00 | 00 | .01 | .03 | .01 | 00 | | |
| -1.00 | 00 | -.02 | -.01 | .02 | .01 | 00 | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | | | | O'NEILL, NEBRASKA | | |
|-------------------------------------|-------|--------|--------|--------|--------|-------------------|--|--|
| GAS RELEASE NO. | 61 | 62 | 63 | 64 | 65 | 66 | | |
| AUGUST (1956) | 27 | 27 | 27 | 27 | 29 | 29 | | |
| CST | 1105 | 1405 | 2005 | 2235 | 1930 | 2135 | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | .0190 | .0110 | -- | -- | -- | -- | | |
| Reflected | .0030 | .00174 | -- | -- | -- | -- | | |
| Net Radiation | .0019 | -.0072 | -.0011 | -.0005 | -.0022 | -.0018 | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 29.80 | 29.77 | 29.52 | 26.77 | 25.98 | 22.02 | | |
| 8.00 | 30.41 | 30.00 | 27.27 | 23.85 | 25.61 | 21.22 | | |
| 4.00 | 31.00 | 30.49 | 25.54 | 22.16 | 25.22 | 20.65 | | |
| 2.00 | 31.63 | 30.75 | 24.07 | 20.90 | 24.96 | 20.19 | | |
| 1.00 | 32.29 | 31.15 | 21.41 | 19.60 | 24.76 | 19.88 | | |
| .50 | 33.20 | 31.58 | 19.24 | 18.70 | 24.57 | 19.57 | | |
| .25 | 34.10 | 32.10 | 18.17 | 18.16 | 24.30 | 19.27 | | |
| .12 | 34.61 | 32.35 | 17.57 | 17.83 | 24.04 | 18.99 | | |
| -.03 | 30.12 | 30.02 | 26.64 | 23.49 | -- | -- | | |
| -.06 | 25.86 | 28.56 | 27.33 | 24.68 | -- | -- | | |
| -.12 | 23.60 | 25.44 | 26.30 | 25.54 | -- | -- | | |
| -.25 | 23.19 | 23.01 | 23.77 | 23.98 | -- | -- | | |
| -.50 | 21.49 | 21.39 | 21.55 | 21.59 | -- | -- | | |
| -1.00 | 19.66 | 19.61 | 19.56 | 19.78 | -- | -- | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | 11.64 | 12.41 | 15.09 | 15.33 | -- | -- | | |
| 8.00 | 12.15 | 12.56 | 15.04 | 15.68 | -- | -- | | |
| 4.00 | 12.10 | 12.67 | 14.88 | 15.87 | -- | -- | | |
| 2.00 | 12.20 | 12.83 | 14.13 | 15.58 | -- | -- | | |
| 1.00 | 12.20 | 12.91 | 13.64 | 15.15 | -- | -- | | |
| .50 | 12.28 | 13.13 | 13.20 | 14.86 | -- | -- | | |
| .25 | 12.36 | 13.30 | 12.75 | 14.69 | -- | -- | | |
| .12 | 12.44 | 13.47 | 12.20 | 14.51 | -- | -- | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 980 | 632 | 267 | 307 | 768 | 650 | | |
| 8.00 | 926 | 603 | 195 | 269 | 626 | 506 | | |
| 4.00 | -- | 593 | 139 | 169 | 530 | 392 | | |
| 2.00 | 782 | 518 | 116 | 120 | 455 | 314 | | |
| 1.00 | 700 | 461 | 26 | 46 | 393 | 256 | | |
| .50 | 614 | 405 | -- | 25 | 339 | 217 | | |
| .25 | 520 | 343 | -- | -- | 277 | 177 | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 190 | 189 | -- | -- | 159 | 153 | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | 1050 | 1353 | 1950 | 2220 | -- | -- | | |
| Run Time (min) | 26 | 23 | 27 | 27 | -- | -- | | |
| -.03 | 1.40 | .46 | -.89 | -.24 | -- | -- | | |
| -.06 | .82 | -.27 | -.54 | -.31 | -- | -- | | |
| -.12 | .11 | .15 | -.03 | -.19 | -- | -- | | |
| -.25 | -.08 | .03 | .08 | .01 | -- | -- | | |
| -.50 | -.05 | .01 | .04 | .00 | -- | -- | | |
| -1.00 | -.03 | .00 | .05 | .00 | -- | -- | | |
| Precipitation (cm) | -- | -- | -- | -- | -- | -- | | |

Table 8.1 (Continued)

| HOURLY OBSERVATIONS | | | O'NEILL, NEBRASKA | | | | | |
|-------------------------------------|--------|--------|-------------------|--|--|--|--|--|
| GAS RELEASE NO. | 67 | 68 | | | | | | |
| AUGUST (1956) | 30 | 30 | | | | | | |
| CST | 0035 | 0235 | | | | | | |
| RADIATION (cal/cm ² sec) | | | | | | | | |
| Insolation | -- | -- | | | | | | |
| Reflected | -- | -- | | | | | | |
| Net Radiation | -.0011 | -.0009 | | | | | | |
| AIR and SOIL TEMPERATURES (°C) | | | | | | | | |
| Height (m) | | | | | | | | |
| 16.00 | 21.12 | 21.97 | | | | | | |
| 8.00 | 20.88 | 21.36 | | | | | | |
| 4.00 | 20.66 | 20.94 | | | | | | |
| 2.00 | 20.55 | 20.65 | | | | | | |
| 1.00 | 20.38 | 20.38 | | | | | | |
| .50 | 20.21 | 20.24 | | | | | | |
| .25 | 20.19 | 20.08 | | | | | | |
| .12 | 20.02 | 19.88 | | | | | | |
| -.03 | -- | -- | | | | | | |
| -.06 | -- | -- | | | | | | |
| -.12 | -- | -- | | | | | | |
| -.25 | -- | -- | | | | | | |
| -.50 | -- | -- | | | | | | |
| -1.00 | -- | -- | | | | | | |
| VAPOR PRESSURE (mb) | | | | | | | | |
| 16.00 | -- | -- | | | | | | |
| 8.00 | -- | -- | | | | | | |
| 4.00 | -- | -- | | | | | | |
| 2.00 | -- | -- | | | | | | |
| 1.00 | -- | -- | | | | | | |
| .50 | -- | -- | | | | | | |
| .25 | -- | -- | | | | | | |
| .12 | -- | -- | | | | | | |
| WIND SPEED (cm/sec) | | | | | | | | |
| 16.00 | 748 | 558 | | | | | | |
| 8.00 | 615 | 427 | | | | | | |
| 4.00 | 521 | 331 | | | | | | |
| 2.00 | 444 | 269 | | | | | | |
| 1.00 | 385 | 219 | | | | | | |
| .50 | 336 | 188 | | | | | | |
| .25 | 274 | 149 | | | | | | |
| WIND DIRECTION (deg) | | | | | | | | |
| 1.00 | 168 | 159 | | | | | | |
| SOIL TEMPERATURE CHANGE (°C) | | | | | | | | |
| Initial Time | -- | -- | | | | | | |
| Run Time (min) | -- | -- | | | | | | |
| -.03 | -- | -- | | | | | | |
| -.06 | -- | -- | | | | | | |
| -.12 | -- | -- | | | | | | |
| -.25 | -- | -- | | | | | | |
| -.50 | -- | -- | | | | | | |
| -1.00 | -- | -- | | | | | | |
| Precipitation (cm) | -- | -- | | | | | | |