STAT[redacted] Sunnyside [redacted] Stati[redacted] River[redacted] MON[redacted] Sep. 19 94

FORM E-15 (7-791)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

# RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

| STATE | COUNTY | RIVER |
|---|---|---|
| Utah | Carbon | |

| TIME (local) OF OBSERVATION | TEMP. | PRECIPITATION | STANDARD TIME IN USE |
|---|---|---|---|
| | 4 Pm | 4 Pm | |

| TYPE OF RIVER GAGE | ELEVATION OF RIVER GAGE ZERO Ft. | FLOOD STAGE Ft. | NORMAL POOL STAGE Ft. |
|---|---|---|---|
| | | | |

| DATE | TEMPERATURE F. 24 HRS. ENDING AT OBSERVATION MAX. | MIN. | AT OBSN. | PRECIPITATION 24-HR AMOUNTS Rain, melted snow, etc. (Ins. and hundredths) | Snow, ice pellets, hail (Ins. and tenths) | At Ob. Snow, ice pellets, hail, ice on ground (Ins.) | WEATHER (Calendar Day) Fog | Ice Pellets | Glaze | Thunder | Hail | Damaging Winds | Time of observation if different from above | RIVER STAGE CONDITION | GAGE READING AT ___ A.M. | TENDENCY | REMARKS (Special observations, etc.,) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 77 | 49 | 75 | | | | | | | | | | | | | | |
| 2 | 81 | 50 | 80 | 1.00 | | | | | | | | | | | | | |
| 3 | (80) | (49) | | | | | | | | | | | | | | | |
| 4 | (75) | (48) | | | | | | | | | | | | | | | |
| 5 | 81 | 49 | 81 | | | | | | | | | | | | | | |
| 6 | 81 | 59 | 63 | | | | | | | | | | | | | | |
| 7 | 81 | 49 | 80 | | | | | | | | | | | | | | |
| 8 | 82 | 54 | 80 | [redacted] | | | | | | | | | | | | | |
| 9 | 81 | 54 | 77 | .03 | | | | | | | | | | | | | |
| 10 | (77) | (49) | | .03 | | | | | | | | | | | | | |
| 11 | (72) | (47) | | .01 | | | | | | | | | | | | | |
| 12 | 76 | 46 | 60 | .05 | | | | | | | | | | | | | |
| 13 | 74 | 51 | 62 | | | | | | | | | | | | | | |
| 14 | 62 | 41 | 59 | TR | | | | | | | | | | | | | |
| 15 | 68 | 37 | 68 | | | | | | | | | | | | | | |
| 16 | 68 | 43 | 68 | | | | | | | | | | | | | | |
| 17 | (72) | (44) | | | | | | | | | | | | | | | |
| 18 | (71) | (49) | | | | | | | | | | | | | | | |
| 19 | 70 | 47 | 61 | | | | | | | | | | | | | | |
| 20 | 67 | 47 | 58 | .15 | | | | | | | | | | | | | |
| 21 | 73 | 41 | 72 | | | | | | | | | | | | | | |
| 22 | 73 | 41 | 68 | | | | | | | | | | | | | | |
| 23 | 84 | 39 | 73 | | | | | | | | | | | | | | |
| 24 | (77) | (47) | | | | | | | | | | | | | | | |
| 25 | (78) | (51) | | | | | | | | | | | | | | | |
| 26 | 82 | 48 | 80 | | | | | | | | | | | | | | |
| 27 | 90 | 50 | 76 | | | | | | | | | | | | | | |
| 28 | 81 | 51 | 80 | | | | | | | | | | | | | | |
| 29 | 80 | 50 | 54 | .05 | | | | | | | | | | | | | |
| 30 | 59 | 42 | 59 | 1.01 | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | |
| SUM | 2273 | 1422 | SUM | 2.33 | | | | | | | | | | | | | |
| | | | | Greatest | | | | | | | | | | | | | |

Draw a straight line (——) through hours precipitation was observed, and a waved line (~~~) through hours precipitation probably occurred unobserved.

A.M. NOON P.M.

Mark 'X' for all types occurring each day.

CONDITION OF RIVER AT GAGE
75.7 47.4

A. Obstructed by rough ice.
B. Frozen, but open at gage.
C. Upper surface of smooth ice.
D. Ice gorge above gage.
E. Ice gorge below gage.
F. Shore ice.
G. Floating ice.
H. Pool stage.

CHECK BAR (For wire-weight) NORMAL CK. BAR

| READING | DATE |
|---|---|
| | |

| Fog | Ice Pel. | Glaze | Thund | Hail | Dam. Winds | SUM |
|---|---|---|---|---|---|---|
| | | | | | | |

OBSERVER Tom Anderson

SUPERVISING OFFICE

STATION INDEX NO. 42 8478 7

STATION (Climatological): Sunnyside (River Station, if different)

MONTH: Oct 1994

STATE: Utah

COUNTY: Carbon

RIVER:

TIME (local) OF OBSERVATION RIVER:

TEMP.: 4 P.M.

PRECIPITATION: 4. P.M.

STANDARD TIME IN USE:

TYPE OF RIVER GAGE:

ELEVATION OF RIVER GAGE ZERO: Ft.

FLOOD STAGE: Ft.

NORMAL POOL STAGE: Ft.

WS FORM E-15 (7-79)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

# RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

| DATE | TEMPERATURE F. 24 HRS. ENDING AT OBSERVATION MAX. | MIN. | AT OBSN. | PRECIPITATION 24-HR AMOUNTS Rain, melted snow, etc. (ins. and hundredths) | Snow, ice pellets, hail (ins. and tenths) | At Ob. Snow, ice pellets, hail, ice on ground (ins.) | WEATHER (Calendar Day) Mark 'X' for all types occurring each day. Fog | Ice Pellets | Glaze | Thunder | Hail | Damaging Winds | Time of observation if different from above | RIVER STAGE CONDITION | GAGE READING AT ___ A.M. | TENDENCY | REMARKS (Special observations, etc.,) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | (59) | (38) | | .63 | | | | | | | | | | | | | |
| 2 | (60) | (38) | | | | | | | | | | | | | | | |
| 3 | 48 | 38 | 42 | .45 | | | | | | | | | | | | | |
| 4 | 58 | 39 | 55 | .13 | | | | | | | | | | | | | |
| 5 | 59 | 49 | 56 | | | | | | | | | | | | | | |
| 6 | 56 | 37 | 52 | | | | | | | | | | | | | | |
| 7 | 56 | 36 | 56 | Tr | | | | | | | | | | | | | |
| 8 | (61) | (38) | | | | | | | | | | | | | | | |
| 9 | (64) | (39) | | | | | | | | | | | | | | | |
| 10 | 65 | 41 | 63 | | | | | | | | | | | | | | |
| 11 | 63 | 42 | 63 | | | | | | | | | | | | | | |
| 12 | 64 | 39 | 63 | | | | | | | | | | | | | | |
| 13 | 66 | 42 | 64 | | | | | | | | | | | | | | |
| 14 | 64 | 42 | 52 | .04 | | | | | | | | | | | | | |
| 15 | 52 | 30 | 38 | .73 | | | | | | | | | | | | | |
| 16 | 40 | 27 | 40 | .70 | 7" | 3" | | | | | | | | | | | |
| 17 | 41 | 29 | 39 | .16 | | 1" | | | | | | | | | | | |
| 18 | 43 | 32 | 41 | Tr. | | | | | | | | | | | | | |
| 19 | 51 | 31 | 50 | | | | | | | | | | | | | | |
| 20 | 55 | 32 | 54 | | | | | | | | | | | | | | |
| 21 | 57 | 36 | 55 | | | | | | | | | | | | | | |
| 22 | (60) | (37) | | | | | | | | | | | | | | | |
| 23 | (63) | (38) | | | | | | | | | | | | | | | |
| 24 | 61 | 39 | 59 | | | | | | | | | | | | | | |
| 25 | 61 | 36 | 60 | | | | | | | | | | | | | | |
| 26 | 60 | 35 | 56 | | | | | | | | | | | | | | |
| 27 | 57 | 34 | 54 | | | | | | | | | | | | | | |
| 28 | (56) | (33) | | | | | | | | | | | | | | | |
| 29 | (57) | (34) | | | | | | | | | | | | | | | |
| 30 | (45) | (33) | | | | | | | | | | | | | | | |
| 31 | 52 | 24 | 44 | | | | | | | | | | | | | | |
| SUM | 1754 | 1118 | SUM | 2.84 | | | | | | | | | | | | | |
| | | | | Greatest | | | | | | | | | | | | | |

Draw a straight line (——) through hours precipitation was observed, and a waved line (~~) through hours precipitation probably occurred unobserved.

A.M. NOON P.M.

CHECK BAR (For wire-weight) NORMAL CK. BAR

| READING | DATE |
|---|---|
| | |

| Fog | Ice Pel. | Glaze | Thund | Hail | Dam. Winds | SUM |
|---|---|---|---|---|---|---|
| | | | | | | |

CONDITION OF RIVER AT GAGE
56.5 36.0

A. Obstructed by rough ice.
B. Frozen, but open at gage.
C. Upper surface of smooth ice.
D. Ice gorge above gage.
E. Ice gorge below gage.
F. Shore ice.
G. Floating ice.
H. Pool stage.

OBSERVER: Tom Anderson

SUPERVISING OFFICE:

STATION INDEX NO.: 42 8478 7

STATION (Climatological) Sunnyside — River Station, if different

MONTH Nov. 19 94

WS FORM E-15 (7-79)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE

# RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

| STATE | COUNTY | RIVER |
|---|---|---|
| Utah | Carbon | |

| TIME (local) OF OBSERVATION RIVER | TEMP. | PRECIPITATION | STANDARD TIME IN USE |
|---|---|---|---|
| | 4 P.M. | 4 P.M. | |

| TYPE OF RIVER GAGE | ELEVATION OF RIVER GAGE ZERO Ft. | FLOOD STAGE Ft. | NORMAL POOL STAGE Ft. |
|---|---|---|---|
| | | | |

| DATE | TEMPERATURE F. 24 HRS. ENDING AT OBSERVATION MAX. | MIN. | AT OBSN. | PRECIPITATION 24-HR AMOUNTS Rain, melted snow, etc. (Ins. and hundredths) | Snow, ice pellets, hail (Ins. and tenths) | At Ob. Snow, ice pellets, hail, ice on ground (Ins.) | WEATHER (Calendar Day) Fog | Ice Pellets | Glaze | Thunder | Hail | Damaging Winds | Time of observation if different from above | RIVER STAGE CONDITION | GAGE READING AT ___ A.M. | TENDENCY | REMARKS (Special observations, etc.,) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48 | 29 | 47 | | | | | | | | | | | | | | |
| 2 | 47 | 30 | 33 | .25 | | | | | | | | | | | | | |
| 3 | 39 | 25 | 35 | .15 | | | | | | | | | | | | | |
| 4 | 38 | 16 | 35 | | | | | | | | | | | | | | |
| 5 | (44) | (23) | | | | | | | | | | | | | | | |
| 6 | (48) | (29) | | | | | | | | | | | | | | | |
| 7 | 54 | 34 | 51 | | | | | | | | | | | | | | |
| 8 | 51 | 34 | 47 | | | | | | | | | | | | | | |
| 9 | 47 | 24 | 45 | | | | | | | | | | | | | | |
| 10 | 51 | 28 | 48 | | | | | | | | | | | | | | |
| 11 | 55 | 34 | 52 | | | | | | | | | | | | | | |
| 12 | (46) | (28) | | | | | | | | | | | | | | | |
| 13 | (30) | (24) | | .11 | | | | | | | | | | | | | |
| 14 | 33 | 14 | 31 | | | | | | | | | | | | | | |
| 15 | 35 | 13 | 31 | | | | | | | | | | | | | | |
| 16 | 35 | 25 | 35 | | | | | | | | | | | | | | |
| 17 | 35 | 10 | 23 | Tr. | | | | | | | | | | | | | |
| 18 | 30 | 21 | 29 | .15 | 2 1/2 | 2 1/2 | | | | | | | | | | | |
| 19 | (41) | (22) | | .05 | 1 | 2 | | | | | | | | | | | |
| 20 | (39) | (17) | | | | | | | | | | | | | | | |
| 21 | 32 | 24 | 30 | | | | | | | | | | | | | | |
| 22 | 36 | 9 | 30 | | | | | | | | | | | | | | |
| 23 | 35 | 10 | 33 | | | | | | | | | | | | | | |
| 24 | (36) | (18) | | | | | | | | | | | | | | | |
| 25 | (37) | (23) | | | | | | | | | | | | | | | |
| 26 | (34) | (23) | | .03 | | | | | | | | | | | | | |
| 27 | (29) | (6) | | | | | | | | | | | | | | | |
| 28 | 26 | 10 | 24 | Tr. | | | | | | | | | | | | | |
| 29 | 27 | 7 | 26 | | | | | | | | | | | | | | |
| 30 | 36 | 13 | 32 | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | |
| 60° | 1174 | 623 | SUM | .74 | 3 1/2 | | | | | | | | | | | | |
| | | | | Greatest | | | | | | | | | | | | | |

Draw a straight line (——) through hours precipitation was observed, and a waved line (~~~) through hours precipitation probably occurred unobserved.

Mark 'X' for all types occurring each day.

CONDITION OF RIVER AT GAGE 39.1 20.7

A. Obstructed by rough ice.
B. Frozen, but open at gage.
C. Upper surface of smooth ice.
D. Ice gorge above gage.
E. Ice gorge below gage.
F. Shore ice.
G. Floating ice.
H. Pool stage.

CHECK BAR (For wire-weight) NORMAL CK. BAR

| READING | DATE |
|---|---|
| | |

| Fog | Ice Pel. | Glaze | Thund | Hail | Dam. Winds | SUM |
|---|---|---|---|---|---|---|
| | | | | | | |

OBSERVER Tom Anderson

SUPERVISING OFFICE

STATION INDEX NO. 42 8478 7

STATION (Climatological) Sunnyside — (River station, if different)

MONTH Dec. 19 94

WS FORM E-13 (7-791)

U.S. DEPARTMENT OF COMMERCE — NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION — NATIONAL WEATHER SERVICE

STATE Utah

COUNTY Carbon

RIVER

TIME (local) OF OBSERVATION RIVER

TEMP. 4 P.M.

PRECIPITATION 4 P.M.

STANDARD TIME IN USE

TYPE OF RIVER GAGE

ELEVATION OF RIVER GAGE ZERO Ft.

FLOOD STAGE Ft.

NORMAL POOL STAGE Ft.

# RECORD OF RIVER AND CLIMATOLOGICAL OBSERVATIONS

| DATE | TEMPERATURE F. 24 HRS. ENDING AT OBSERVATION MAX. | MIN. | AT OBSN. | PRECIPITATION 24-HR AMOUNTS Rain, melted snow, etc. (ins. and hundredths) | Snow, ice pellets, hail (ins. and tenths) | At Ob. Snow, ice pellets, hail, ice on ground (ins.) | WEATHER (Calendar Day) Fog | Ice Pellets | Glaze | Thunder | Hail | Damaging Winds | Time of observation if different from above | RIVER STAGE CONDITION | GAGE READING AT ___ A.M. | TENDENCY | REMARKS (Special observations, etc.,) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 39 | 16 | 35 | | | | | | | | | | | | | | |
| 2 | 39 | 19 | 35 | | | | | | | | | | | | | | |
| 3 | (41) | (23) | | | | | | | | | | | | | | | |
| 4 | (43) | (30) | | .07 | 1" | | | | | | | | | | | | |
| 5 | 35 | 32 | 35 | .10 | 1½ | 1 | | | | | | | | | | | |
| 6 | 35 | 28 | 33 | .01 | | ½ | | | | | | | | | | | |
| 7 | 35 | 24 | 32 | .02 | | – | | | | | | | | | | | |
| 8 | 32 | 5 | 27 | | | | | | | | | | | | | | |
| 9 | 28 | 5 | 27 | | | | | | | | | | | | | | |
| 10 | (26) | (6) | | | | | | | | | | | | | | | |
| 11 | (32) | (12) | | | | | | | | | | | | | | | |
| 12 | 31 | 14 | 30 | | | | | | | | | | | | | | |
| 13 | 30 | 16 | 27 | .07 | 2" | 2 | | | | | | | | | | | |
| 14 | 33 | 9 | 21 | .08 | 3" | 2 | | | | | | | | | | | |
| 15 | 32 | 12 | 31 | .03 | ½" | 2 | | | | | | | | | | | |
| 16 | 33 | 12 | 29 | | | | | | | | | | | | | | |
| 17 | (38) | (16) | | | | | | | | | | | | | | | |
| 18 | (39) | (19) | | | | | | | | | | | | | | | |
| 19 | 40 | 17 | 38 | | | | | | | | | | | | | | |
| 20 | 41 | 18 | 38 | | | | | | | | | | | | | | |
| 21 | 45 | 21 | 43 | | | | | | | | | | | | | | |
| 22 | 45 | 22 | 38 | | | | | | | | | | | | | | |
| 23 | 44 | 29 | 36 | | | | | | | | | | | | | | |
| 24 | (40) | (28) | | .19 | 2 | ½ | | | | | | | | | | | |
| 25 | (39) | (25) | | .14 | | – | | | | | | | | | | | |
| 26 | 45 | 25 | 37 | | | | | | | | | | | | | | |
| 27 | 40 | 22 | 37 | | | | | | | | | | | | | | |
| 28 | 37 | 18 | 28 | | | | | | | | | | | | | | |
| 29 | 33 | 22 | 31 | .02 | ½ | | | | | | | | | | | | |
| 30 | 39 | 19 | 36 | | | | | | | | | | | | | | |
| 31 | (36) | (10) | | | | | | | | | | | | | | | |
| SUM | 1145 | 574 | SUM | .73 | 10½ | | | | | | | | | | | | |
| | | | | Greatest | | | | | | | | | | | | | |

Draw a straight line (——) through hours precipitation was observed, and a waved line (~~) through hours precipitation probably occurred unobserved.

Mark 'X' for all types occurring each day.

CHECK BAR (For wire-weight) NORMAL CK. BAR

| READING | DATE |
|---|---|
| | |

| Fog | Ice Pel. | Glaze | Thund | Hail | Dam. Winds | SUM |
|---|---|---|---|---|---|---|
| | | | | | | |

CONDITION OF RIVER AT GAGE

36.9 18.5

A. Obstructed by rough ice.
B. Frozen, but open at gage.
C. Upper surface of smooth ice.
D. Ice gorge above gage.
E. Ice gorge below gage.
F. Shore ice.
G. Floating ice.
H. Pool stage.

OBSERVER Tom Anderson

SUPERVISING OFFICE

STATION INDEX NO. 42 8478 7

# APPENDIX C

SUNNYSIDE COGENERATION ASSOCIATES
ACT/007/035
QUARTERLY INSPECTION OF IMPOUNDMENTS AND REFUSE PILE

Quarter FIRST (INSPECTED MARCH 16, 1994)
Year 1994
Weather Conditions FAIR

| IMPOUNDMENT | INSTABILITY (Yes/No) | STRUCTURAL WEAKNESS (Yes/No) | HAZARDOUS CONDITIONS (Yes/No) | WATER DEPTH (feet) | WATER ELEVATION (feet) | STORAGE CAPACITY (acre-feet) | *OTHER | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| Clear Water Pond (004) | NO | NO | NO | — | — | 4.9 | NO DISCHARGE | CLEANING IN PROCESS |
| Railcut Sediment Pond (007) | NO | NO | NO | DRY | DRY | 4.8 | NONE | NO CHANGE - DRY |
| Old Coarse Refuse Road Sediment Pond (008) | NO | NO | NO | DRY | DRY | 0.9 | NONE | NO CHANGE - DRY |
| Pasture Sediment Pond (009) | NO | NO | NO | DRY | DRY | 1.0 | NONE | NO CHANGE - DRY |
| New Coarse Refuse Toe Sediment Pond (012) | NO | NO | NO | DRY | DRY | 1.6 | NONE | NO CHANGE - DRY |
| Borrow Area Pond (016) | NO | NO | NO | DRY | DRY | 8.3 | NONE | NO CHANGE - DRY |
| Slurry Pond #1 | NO | NO | NO | — | NA | 16.4 | NONE | INACTIVE - FULL |
| Slurry Pond #2 | NO | NO | NO | — | NA | 15.3 | NONE | INACTIVE |
| East Slurry Cell | NO | NO | NO | — | NA | NA | NONE | INACTIVE |
| West Slurry Cell | NO | NO | NO | — | NA | NA | NONE | INACTIVE |

| Refuse Pile | Instability (Yes/No) | Structural Weakness (Yes/No) | Hazardous Conditions (Yes/No) | *Other | Comments |
|---|---|---|---|---|---|
| Coarse Refuse Pile | NO | NO | NO | FULL TO CAPACITY NO SMOKE VISIBLE | NO CHANGE |

*Other = Any existing or required monitoring procedures, instrumentation, or aspects of the structure affecting stability.

Date 3/16/94
State of Utah No. 170148
Professional Engineer BOYD E. ALANE

LICENSED PROFESSIONAL ENGINEER
No. 170148
STATE OF UTAH

INSPECT.XLS

SUNNYSIDE COGENERATION ASSOCIATES
ACT/007/035
QUARTERLY INSPECTION OF IMPOUNDMENTS AND REFUSE PILE

Quarter SECOND (INSPECTED JUNE 24, 1994)
Year 1994
Weather Conditions FAIR

| IMPOUNDMENT | INSTABILITY (Yes/No) | STRUCTURAL WEAKNESS (Yes/No) | HAZARDOUS CONDITIONS (Yes/No) | WATER DEPTH (feet) | WATER ELEVATION (feet) | STORAGE CAPACITY (acre-feet) | *OTHER | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| Clear Water Pond (004) | No | No | No | -0'- | -0'- | 4.9 | No DISCHARGE | IN-ACTIVE |
| Railcut Sediment Pond (007) | No | No | No | DRY | DRY | 4.8 | NONE | No CHANGE |
| Old Coarse Refuse Road Sediment Pond (008) | No | No | No | DRY | DRY | 0.9 | NONE | No CHANGE |
| Pasture Sediment Pond (009) | No | No | No | DRY | DRY | 1.0 | NONE | No CHANGE |
| New Coarse Refuse Toe Sediment Pond (012) | No | No | No | DRY | DRY | 1.6 | NONE | No CHANGE |
| Borrow Area Pond (016) | No | No | No | DRY | DRY | 8.3 | NONE | No CHANGE |
| Slurry Pond #1 | No | No | No | — | NA | 16.4 | NONE | INACTIVE |
| Slurry Pond #2 | No | No | No | — | NA | 15.3 | NONE | INACTIVE |
| East Slurry Cell | No | No | No | — | NA | NA | NONE | IN ACTIVE |
| West Slurry Cell | No | No | No | — | NA | NA | NONE | IN ACTIVE |

| Refuse Pile | Instability (Yes/No) | Structural Weakness (Yes/No) | Hazardous Conditions (Yes/No) | *Other | Comments |
|---|---|---|---|---|---|
| Coarse Refuse Pile | No | No | No | FULL TO CAPACITY NO SMOKE VISIBLE | No CHANGE / INACTIVE |

*Other = Any existing or required monitoring procedures, instrumentation, or aspects of the structure affecting stability.

Date 6/28/94
State of Utah No. 170148
Professional Engineer ALANE E. BOYD

LICENSED PROFESSIONAL ENGINEER
STATE OF UTAH

INSPECT.XLS

SUNNYSIDE COGENERATION ASSOCIATES
ACT/007/035
QUARTERLY INSPECTION OF IMPOUNDMENTS AND REFUSE PILE

Quarter THIRD (INSPECTED SEPT 29)
Year 1994
Weather Conditions PTLY CLDY

| IMPOUNDMENT | INSTABILITY (Yes/No) | STRUCTURAL WEAKNESS (Yes/No) | HAZARDOUS CONDITIONS (Yes/No) | WATER DEPTH (feet) | WATER ELEVATION (feet) | STORAGE CAPACITY (acre-feet) | *OTHER | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| Clear Water Pond (004) | No | No | No | 0' | 0' | 4.9 | — | IN ACTIVE |
| Railcut Sediment Pond (007) | No | No | No | .60 | 6206.6 | 4.8 | — | NO DISCARGE |
| Old Coarse Refuse Road Sediment Pond (008) | No | No | No | 1.00 | 6395.0 | 0.9 | — | NO DISCHARGE |
| Pasture Sediment Pond (009) | No | No | No | 2.20 | 6486.7 | 1.0 | — | NO DISCHARGE |
| New Coarse Refuse Toe Sediment Pond (012) | No | No | No | 1.80 | 6177.8 | 1.6 | — | NO DISCHARGE |
| Borrow Area Pond (016) | No | No | No | DAMP | — | 8.3 | — | NO DISCHARGE |
| Slurry Pond #1 | No | No | No | — | NA | 16.4 | — | IN ACTIVE |
| Slurry Pond #2 | No | No | No | — | NA | 15.3 | — | IN ACTIVE |
| East Slurry Cell | No | No | No | — | NA | NA | — | IN ACTIVE |
| West Slurry Cell | No | No | No | — | NA | NA | — | IN ACTIVE |

| Refuse Pile | Instability (Yes/No) | Structural Weakness (Yes/No) | Hazardous Conditions (Yes/No) | *Other | Comments |
|---|---|---|---|---|---|
| Coarse Refuse Pile | NO | NO | NO | FULL TO CAPACITY NO SMOKE VISIBLE | IN ACTIVE |

*Other = Any existing or required monitoring procedures, instrumentation, or aspects of the structure affecting stability.

Date_____
State of Utah No._____
Professional Engineer_____

## SUNNYSIDE COGENERATION ASSOCIATES
## ACT/007/035
## QUARTERLY INSPECTION OF IMPOUNDMENTS AND REFUSE PILE

Quarter Fourth (Inspected Dec. 19)
Year 1994
Weather Condition Partly cloudy

| IMPOUNDMENT | INSTABILITY (YES/NO) | STRUCTURAL WEAKNESS (YES/NO) | HAZARDOUS CONDITIONS YES/NO) | WATER DEPTH (FEET) | WATER ELEVATION (FEET) | STORAGE CAPACITY (ACRE-FEET) | *OTHER | COMMENTS |
|---|---|---|---|---|---|---|---|---|
| Clear Water Pond (004) | No | No | No | 0' | 0' | 4.9 | --- | In Active |
| Railcut Sediment Pond (007) | No | No | No | Dry | 0' | 4.8 | --- | Snow Cover |
| Old Coarse Refuse Road Sediment Pond (008) | No | No | No | Dry | 0' | 0.9 | --- | Snow Cover |
| Pasture Sediment Pond (009) | No | No | No | 1' | 6484.5 | 1.0 | No Discharge | Ice/Snow Cover |
| New Coarse Refuse Toe Sediment Pond (012) | No | No | No | 1.8' | 6177.8 | 1.6 | No Discharge | Ice/Snow Cover |
| Borrow Area Pond (016) | No | No | No | Dry | --- | 8.3 | --- | Snow Cover |
| Slurry Pond #1 | No | No | No | --- | NA | 16.4 | --- | In Active |
| Slurry Pond #2 | No | No | No | --- | NA | 15.3 | --- | In Active |
| East Slurry Cell | No | No | No | --- | NA | NA | --- | In Active |
| West Slurry Cell | No | No | No | --- | NA | NA | --- | Coarse Refuse Removal |
| Coal Runoff Sediment Pond (014) | No | No | No | Dry | 0' | 1.5 | --- | Has Been Cleaned Out |

| REFUSE PILE | INSTABILITY (YES/NO) | STRUCTURAL WEAKNESS (YES/NO) | HAZARDOUS CONDITIONS (YES/NO) | *OTHER | COMMENTS |
|---|---|---|---|---|---|
| Coarse Refuse Pile | No | No | No | Full to capacity; no smoke visible. | In Active |
| Excess Spoil Area | No | No | No | --- | Drainage Ditch In Place |

*Other = Any existing or required monitoring procedures, instrumentation, or reports of the structure affecting stability.

Date 12/19/94

State of Utah No. 170148

Professional Engineer Alan E. Boyd

REGISTERED PROFESSIONAL ENGINEER No. 170148 ALAN E. BOYD STATE OF UTAH

C:\WPWIN\SHERRY\COMAS\IMPOUND1.RPT

# APPENDIX D

## Appendix D

**Table D-1: Sunnyside Cogeneration Facility**
**1994 Monthly Quantities of Refuse Mined**

| | Coarse (tons) | Silt (tons) | Total (tons) |
|---|---|---|---|
| January | 22,094 | 7,163 | 29,257 |
| February | 30,003 | 7,893 | 37,896 |
| March | 28,471 | 7,151 | 35,622 |
| April | 21,218 | 6,802 | 28,020 |
| May | 20,099 | 6,603 | 26,702 |
| June | 30,234 | 7,912 | 38,146 |
| July | 27,616 | 7,187 | 34,803 |
| August | 30,662 | 7,991 | 38,653 |
| September | 23,523 | 6,912 | 30,435 |
| October | 18,322 | 6,103 | 24,425 |
| November | 28,879 | 7,263 | 36,142 |
| December | 22,903 | 6,996 | 29,899 |
| Total | 304,024 | 85,976 | 390,000 |

## Appendix D

### Table D-2: Sunnyside Cogeneration Facility 1994 Monthly Summary of Coal Analyses

| | MOISTURE | ASH | SULFUR | B/LB | HVF |
|---|---|---|---|---|---|
| January | 8.43 | 54.3 | 0.81 | 5,006 | 13,483 |
| February | 7.99 | 55.0 | 0.89 | 4,823 | 13,091 |
| March | 7.88 | 63.6 | 0.87 | 5,335 | 13,111 |
| April | 7.23 | 62.4 | 0.82 | 5,645 | 14,027 |
| May | 6.52 | 52.6 | 0.77 | 5,499 | 13,469 |
| June | 7.23 | 51.3 | 0.81 | 5,707 | 13,797 |
| July | 5.78 | 53.1 | 0.85 | 5,594 | 13,598 |
| August | 5.37 | 50.5 | 0.78 | 6,466 | 13,825 |
| September | 5.97 | 49.6 | 0.99 | 5,795 | 13,066 |
| October | 9.03 | 48.7 | 0.75 | 5,727 | 13,543 |
| November | 8.76 | 50.3 | 0.82 | 5,532 | 13,499 |
| December | 8.90 | 50.1 | 0.85 | 5,580 | 13,593 |
| Annual Average | 7.42 | 53.5 | 0.83 | 5,559 | 13,508 |

# APPENDIX E

# STATE OF UTAH
# DEPARTMENT OF COMMERCE
# DIVISION OF CORPORATIONS AND COMMERCIAL CODE

## PROFIT CORPORATION ANNUAL REPORT

The following information is on file in this office. All profit corporations must file their annual reports and corrections within the month o: Their anniversary date. Failure to do so will result in Delinquency, Suspension, then Revocation or Involuntary Dissolution of the corporate charter.

THIS BOX MUST BE COMPLETED

CORPORATE NAME, REGISTERED AGENT, REGISTERED OFFICE, CITY, STATE & ZIP

CORPORATION # 120447
F 04/29/86

1. KAISER POWER OF SUNNYSIDE, INC.
2. C T CORPORATION SYSTEM
3. 50 W BROADWAY 8TH FLOOR
4. SALT LAKE CITY UT 84101-2006

MAKE ALL CORRECTIONS IN THIS COLUMN

(Print New Agent Name) NEW AGENT MUST SIGN ABOVE

NEW REGISTERED STREET ADDRESS REQUIRED

(New City) REGISTERED AGENT MUST BE IN UTAH UTAH (Zip)

**WHEN CHANGING THE REGISTERED AGENT THE NEW AGENT MUST SIGN.**

5. INCORPORATED IN THE STATE AND UNDER THE LAWS OF: DELAWARE

6. ADDRESS OF THE PRINCIPAL OFFICE IN THE HOME STATE.

(Street Address) (State or Country)

(City) (ZIP)

7. BUSINESS PURPOSE: DEPT. OF COMMERCE MISCELLANEOUS

**DOMESTIC, PROFIT CORPORATIONS ARE REQUIRED TO LIST A CORPORATE OFFICER.**

OFFICERS

8. PRESIDENT JOSEPH E CRESCI
   ADDRESS 83 DUCKS HEAD POB 452
   CITY, STATE & ZIP NEW CASTLE NH 03854
9. VICE PRESIDENT DONALD A LIVINGSTON
   ADDRESS 33 MARKET ST
   CITY, STATE & ZIP PORTSMOUTH NH 03801
10. SECRETARY BAYARD R. KRAFT, III
    ADDRESS RR 1 BOX 149
    CITY, STATE & ZIP DORSET VT 05251
11. TREASURER BAYARD R. KRAFT, III
    ADDRESS RR 1 BOX 149
    CITY, STATE & ZIP DORSET VT 05251

8.

9. Donald A. Livingston
79 Daniel Street
Portsmouth, NH 03801

10.

11.

IF YOU HAVE LESS THAN 3 SHAREHOLDERS YOU MAY LIST LESS THAN 3 DIRECTORS. IF YOU HAVE NO DIRECTORS DUE TO SECTION 16-10A-722 YOU MUST STATE SO IN THE BOX BELOW.

DIRECTORS

12. DIRECTOR JOSEPH E CRESCI
    ADDRESS 83 DUCKS HEAD POB 452
    CITY, STATE & ZIP NEW CASTLE NH 03854
13. DIRECTOR
    ADDRESS
    CITY, STATE & ZIP
14. DIRECTOR
    ADDRESS
    CITY, STATE & ZIP

12.

13.

14.

Under penalties of perjury and as an authorized officer, I declare that this annual report and, if applicable, the statement change of registered office and/or agent, has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete.

15. BY [signature] MUST BE SIGNED BY A CORPORATE OFFICER

16. Secretary / Treasurer (Title or Position)

17. March 17 1995 (Date)

IF THERE ARE NO CHANGES FROM THE PREVIOUS YEAR, AND YOU HAVE ALL CORPORATE REQUIREMENTS FILLED PERTAINING TO OFFICER AND DIRECTOR INFORMATION YOU MAY DETACH THE COUPON BELOW, AND RETURN IT IN THE ENCLOSED ENVELOPE WITH YOUR PAYMENT. YOU MAY KEEP THE ABOVE REPORT FOR YOUR RECORDS.

MAKE ALL CORRECTIONS ON THE FORM ABOVE

FORM NDBZ31

**ENVIRONMENTAL POWER CORPORATION**
P.O. BOX 45
MANCHESTER, VERMONT 05254

| EXPLANATION | AMOUNT | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

5-255/110

2038

PAY AMOUNT OF Fifteen & 00/100 DOLLARS

| DATE | TO THE ORDER OF | | CHECK NUMBER |
|---|---|---|---|
| 3/17/95 | State of Utah | KPS, Inc. Annual Report | 2038 |

CHECK AMOUNT $ 15.00

# 120447

WAINWRIGHT BANK & TRUST
BOSTON, MASSACHUSETTS

ENVIRONMENTAL POWER CORPORATION

⑈002038⑈ ⑆011002550⑆ 70 106874 ⑈

# STATE OF UTAH
# DEPARTMENT OF COMMERCE
# DIVISION OF CORPORATIONS AND COMMERCIAL CODE

## PROFIT CORPORATION ANNUAL REPORT

The following information is on file in this office. All profit corporations must file their annual reports and corrections within the month of Their anniversary date. Failure to do so will result in Delinquency, Suspension, then Revocation or Involuntary Dissolution of the corporate charter. THIS BOX MUST BE COMPLETED

CORPORATE NAME, REGISTERED AGENT, REGISTERED OFFICE, CITY, STATE & ZIP

MAKE ALL CORRECTIONS IN THIS COLUMN

CORPORATION # 120455
F 04/25/86

1. KAISER SYSTEMS, INC.
2. C T CORPORATION SYSTEM
3. 50 W BROADWAY 8TH FLOOR
4. SALT LAKE CITY UT 84101-2006

(Print New Agent Name) NEW AGENT MUST SIGN ABOVE

NEW REGISTERED STREET ADDRESS REQUIRED

(New City) UTAH (Zip)
REGISTERED AGENT MUST BE IN UTAH

**WHEN CHANGING THE REGISTERED AGENT THE NEW AGENT MUST SIGN.**

5. INCORPORATED IN THE STATE AND UNDER THE LAWS OF: DELAWARE

6. ADDRESS OF THE PRINCIPAL OFFICE IN THE HOME STATE.

(Street Address) (State or Country)
(City) (ZIP)

7. BUSINESS PURPOSE: DEPT. OF COMMERCE MISCELLANEOUS

**DOMESTIC, PROFIT CORPORATIONS ARE REQUIRED TO LIST A CORPORATE OFFICER.**

OFFICERS

8. PRESIDENT JOSEPH E CRESCI
ADDRESS 83 DUCKS HEAD POB 452
CITY, STATE & ZIP NEW CASTLE NH 03854

9. VICE PRESIDENT DONALD A LIVINGSTON
ADDRESS 33 MARKET ST
CITY, STATE & ZIP PORTSMOUTH NH 03801

10. SECRETARY BAYARD R. KRAFT, III
ADDRESS RR 1 BOX 149
CITY, STATE & ZIP DORSET VT 05251

11. TREASURER BAYARD R KRAFT III
ADDRESS R R 1 BOX 149
CITY, STATE & ZIP DORSET VT 05251

8.

9. Donald A. Livingston
79 Daniel Street
Portsmouth, NH 03801

10.

11.

IF YOU HAVE LESS THEN 3 SHAREHOLDERS YOU MAY LIST LESS THAN 3 DIRECTORS. IF YOU HAVE NO DIRECTORS DUE TO SECTION 16-10A-732 YOU MUST STATE SO IN THE BOX BELOW

DIRECTORS

12. DIRECTOR JOSEPH E CRESCI
ADDRESS 83 DUCKS HEAD POB 452
CITY, STATE & ZIP NEW CASTLE NH 03854

13. DIRECTOR
ADDRESS
CITY, STATE & ZIP

14. DIRECTOR
ADDRESS
CITY, STATE & ZIP

12.

13.

14.

Under penalties of perjury and as an authorized officer, I declare that this annual report and, if applicable, the statement change of registered office and/or agent, has been examined by me and is, to the best of my knowledge and belief, true, correct, and complete.

15. BY [signature] MUST BE SIGNED BY A CORPORATE OFFICER

16. Secretary / Treasurer (Title or Position)

17. MARCH 17 1995 (Date)

IF THERE ARE NO CHANGES FROM THE PREVIOUS YEAR, AND YOU HAVE ALL CORPORATE REQUIREMENTS FILLED PERTAINING TO OFFICER AND DIRECTOR INFORMATION YOU MAY DETACH THE COUPON BELOW, AND RETURN IT IN THE ENCLOSED ENVELOPE WITH YOUR PAYMENT. YOU MAY KEEP THE ABOVE REPORT FOR YOUR RECORDS.

MAKE ALL CORRECTIONS ON THE FORM ABOVE.

FORM NDBZ31

ENVIRONMENTAL POWER CORPORATION
P.O. BOX 45
MANCHESTER, VERMONT 05254

| EXPLANATION | AMOUNT |
|---|---|
| | |
| | |
| | |
| | |

5-255/110

2039

PAY AMOUNT OF Fifteen & 00/100 DOLLARS

CHECK AMOUNT $ 15.00

| DATE | TO THE ORDER OF | | CHECK NUMBER |
|---|---|---|---|
| 3/17/95 | State of Utah | KSI Annual Report | 2039 |

# 120455

WAINWRIGHT BANK & TRUST
BOSTON, MASSACHUSETTS

ENVIRONMENTAL POWER CORPORATION

⑈002039⑈ ⑆011002550⑆ 70 106874 ⑈

# APPENDIX F

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF AIR QUALITY

Michael O. Leavitt
Governor
Dianne R. Nielson, Ph.D.
Executive Director
Russell A. Roberts
Director

150 North 1950 West
Salt Lake City, Utah 84114
(801) 536-4000
(801) 536-4099 Fax
(801) 536-4414 T.D.D.

Reply to: State of Utah
Division of Air Quality
P.O. Box 144820
Salt Lake City, Utah 84114-4820

DAQE-0077-94

February 7, 1994

David R. Pearce
Sunnyside Cogeneration Associates
P.O. Box 58087
Salt Lake City, Utah 84158-0087

Re: Modified Approval Order For Cogeneration Plant, Sunnyside Mine
Carbon County - CDS A1 ATT PSD NSPS Title V Major

Dear Mr. Pearce:

The attached document is an Approval Order for the above referenced project.

Please direct any technical questions you may have on this project to Mr. Doug Jones. He may be reached at (801) 536-4061.

Sincerely,

Russell A. Roberts, Executive Secretary
Utah Air Quality Board

RAR:DJ:dn

cc: EPA Region VIII, Mike Owens
Southeastern Utah District Health Department

Printed on recycled paper

# STATE OF UTAH

## Department of Environmental Quality

### Division of Air Quality

## MODIFIED APPROVAL ORDER FOR COGENERATION PLANT, SUNNYSIDE MINE

Doug Jones, Engineer

APPROVAL ORDER NUMBER
DAQE-0077-94

Date: February 7, 1994

Source

## SUNNYSIDE COGENERATION ASSOCIATES

Russell A. Roberts
Executive Secretary
Utah Air Quality Board

The above-referenced project has been evaluated and found to be consistent with the requirements of the Utah Air Conservation Rules (UACR) and the Utah Air Conservation Act. The Division of Air Quality determined that a public comment period was not required for this project. This air quality AO authorizes the project with the following conditions, and failure to comply with any of the conditions may constitute a violation of this order.

## General Conditions

1. Sunnyside Cogeneration Associates, with a corporate address of P.O. Box 58087, Salt Lake City, Utah, 84158-0087, and power generating facilities at Sunnyside, Carbon County, shall construct and operate the cogeneration facility consisting of one fluidized bed combustion unit fired on waste coal according to the information submitted in the Notice of Intent dated December 20, 1985, and additional information received June 22, 1987; April 24, 1990; September 4, 1990; January 17, 1991; February 8, 1991; and August 30, 1993.

2. This AO shall replace and void the AOs dated June 22, 1988; August 16, 1990; December 28, 1990; February 8, 1991; and March 8, 1991.

3. A copy of this AO shall be posted on site, and shall be available to the employees who operate the air emission producing and emissions control equipment. All employees who operate the air emission producing equipment and emissions control equipment shall receive instruction as to their responsibilities in operating the equipment in compliance with the appropriate and relevant conditions of this order.

4. The approved installations shall consist of the following air emissions producing equipment and auxiliary equipment located at the site:

   A. Coal tailings, handling, and storage

   B. Limestone and ash handling and storage

   C. One boiler (fluidized bed with baghouse)

   D. Pollution control equipment and monitoring equipment

   E. Instrumentation monitoring and control

   F. Other associated equipment

5. Visible emissions from the following emission points shall not exceed the following values:

   A. Fluidized bed boiler stack - 10% opacity at all times, except for one six-minute period per 60-minute period, during which the opacity shall not exceed 27%

   B. Fuel receiving hoppers - 10% opacity

C. Conveying operations - 10% opacity

D. Conveyor transfer points (evacuated to a baghouse) - 7% opacity

E. Bulk storage of coal - 10% opacity

F. Crushing (evacuated to a baghouse) - 7% opacity

G. All baghouses (except for the main boiler stack) - 7% opacity

H. Limestone receiving - 10% opacity

I. Limestone bulk storage - 7% opacity

J. Diesel engine exhaust - 20% opacity

K. All other points - 10% opacity

6. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. Opacity observations of intermittent sources shall use procedures similar to Method 9, but the requirement for observations to be made at 15-second intervals over a six-minute period shall not apply.

7. All unpaved roads and other unpaved operational areas which are used by mobile equipment shall be water sprayed and/or chemically treated to reduce fugitive dust. Control is required at all times (24 hours per day every day) for the duration of the project/operation. The application rate of water shall be a minimum of 0.25 gallons per square yard. Application shall be made at least once every two hours during all times the installation is in use unless daily rainfall exceeds .10 of an inch or unless the road is in a muddy/damp/moist condition or unless it is below freezing. If chemical treatment is to be used, the plan must be approved by the Executive Secretary. Records of water treatment shall be kept for all periods when the plant is in operation. The records shall include the following items:

A. Date
B. Number of treatments made, dilution ratio, and quantity
C. Rainfall received, if any, and approximate amount
D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

8. The sulfur content of any fuel oil burned shall not exceed 0.85 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4239-83. The sulfur content shall be tested if directed by the Executive Secretary.

9. In addition to the requirements of this AO, all provisions of 40 CFR 60 NSPS Subparts A and Db apply to this source.

10. The emission rates/concentrations from the main boiler stack shall not exceed any of the following values:

    A. 0.025 lb particulate per $10^6$ BTU heat input

    B. 0.42 lb $SO_2$ per $10^6$ BTU heat input

    C. 0.25 lb $NO_x$ per $10^6$ BTU heat input

    D. 0.085 lb CO per $10^6$ BTU heat input

11. Stack testing to show compliance with the emission limitations of condition #10 shall be performed as specified below:

| Emission Point | Pollutant | Testing Status | Test Frequency |
|---|---|---|---|
| Boiler stack | $PM_{10}$ | * | Every 5 yrs |
| | $SO_2$ | ** | Continuous |
| | $NO_x$ | *** | Continuous |
| | CO | **** | annually |

Testing Status (To be applied above)

* Initial compliance testing is required. The initial test date shall be within 180 days after the start-up or in accordance with 40 CFR 60.8 and 60.46b, whichever date comes first.

** $SO_2$ emissions compliance shall be demonstrated in accordance with 40 CFR 60.8(b), 8(f) and 60.45b.

*** $NO_x$ emissions compliance shall be demonstrated in accordance with 40 CFR 60.8 and 60.46b.

**** Initial compliance testing is required. The initial test date shall be within 180 days after the start-up or in accordance with 40 CFR 60.8, whichever date comes first.

12. The test methods used shall be as follows:

    A. Particulate - Appropriate methods as described in 40 CFR 60.46b

    B. $SO_2$ - Appropriate method as described in 40 CFR 60, Appendix A, Method 6, 6a, 6b, or 6c at the option of the owner

    C. $NO_x$ - Appropriate method as described in 40 CFR 60.46b

D. CO - Appropriate method as described in 40 CFR 60, Appendix A, Method 10 or 10b

The owner/operator shall comply with 40 CFR 60.46b(b) when conducting compliance testing for particulate, 60.46b(c) and (e) for nitrogen oxides, 60.45b(b) and (c) for sulfur oxides and Condition 12.D for CO.

Notification of the test date shall be provided at least 30 days prior to the test. A pretest conference shall be held. It shall be held at least 30 days prior to the test between the owner/operator, the tester, and the Executive Secretary. The emission points shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, and Occupational Safety and Health Administration (OSHA) approvable access shall be provided to the test locations.

To determine mass emission rates (lbs/hr, etc.), the pollutant concentration as determined by the appropriate methods above, shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary to give the results in the specified units of the emission limitation.

The production rate during all compliance testing shall be no less 52 megawatts or 90% of the production rate at which the facility will be operated. For an existing source/emission point, the production rate during all compliance testing shall be no less than 90% of the maximum production achieved in the previous three years.

13. Total production of electricity shall not exceed 506,700 megawatt-hours per 12-month period (approximately a 58 gross MW plant). Compliance with the annual limitation shall be determined on a rolling 12-month total. Based on the first day of each month, a new 12-month total shall be calculated using the production of the previous 12 months. Records of electricity production shall be kept for all periods when the plant is in operation. Records of electricity production shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years ending with the date of the request. Compliance with the limitation shall be determined by examination of power sales records and electrical meter records. Both shall be kept on a daily basis.

14. For sources which are subject to NSPS, visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the sources to supply these observations to the Executive Secretary. The only emission point at this source which is subject to NSPS is the main boiler stack.

15. The owner/operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring the <u>opacity</u> of emissions discharged to the atmosphere from the main boiler stack and record the output of the system. The monitoring system shall be used for measuring and determining compliance. The continuous monitoring system shall comply with all applicable provisions of 40 CFR 60.48b and 40 CFR 60 Appendix B, Specification 1.

16. The owner/operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring nitrogen oxides emissions discharged to the atmosphere from the main boiler stack and record the output of the system. The monitoring system shall be used for measuring and determining compliance. The continuous monitoring system shall comply with all applicable provisions of 40 CFR 60.48b and 40 CFR 60, Appendix B, Specification 2.

17. The owner/operator shall install, calibrate, maintain, and operate a continuous monitoring system for measuring sulfur dioxide emissions discharged to the atmosphere from the main boiler stack and record the output of the system. The monitoring system shall be used for measuring and determining compliance. The continuous monitoring system shall comply with all applicable provisions of 40 CFR 60, Appendix B, Specification 2 and 40 CFR 60.47b.

18. The owner/operator shall install, maintain, calibrate, and operate a continuous monitoring system for measuring the $CO_2$ or $O_2$ in the main boiler stack. The monitoring system shall comply with the requirements of 40 CFR 60, Appendix B, Specification 3.

19. The owner/operator shall comply with Section 4.6.4, UACR. This regulation addresses breakdown reporting requirements for continuous monitoring systems and quarterly report requirements. Also, the company shall comply with all the reporting and record keeping requirements of 40 CFR 60.49b.

20. All continuous monitoring data shall be recorded and shall be kept by the owner/operator for a minimum period of two years after the date on which the emissions occurred, and shall be made available to the Executive Secretary or his representative upon request.

21. The percent excess air shall not be less than 10%.

22. During the pretest conference the owner/operator shall submit a monitoring plan and a quarterly report format to the Executive Secretary for review and approval/disapproval. The monitoring plan shall include all of the required monitors.

23. The Sunnyside Cogeneration Plant shall perform post construction meteorological monitoring for wind speed, wind direction, temperature, and atmospheric stability.

    A post construction monitoring plan shall be submitted to the Executive Secretary for approval within 30 days of the date of this AO and prior to data collection.

    The monitoring plan shall outline the monitoring program according to requirements contained in the State of Utah "Preparation and Engineering Assessment of a Notice of Intent, A Methodology, Second Edition", and "Ambient and Meteorological Monitoring Requirements for Prevention of Significant Deterioration (PSD) and Workbook Analysis, Utah Division of Air Quality, October 1992. Post construction monitoring shall not commence prior to monitoring plan approval and shall only be terminated after a minimum of one year of approved data is collected.

    Modeling shall be required using approved modeling methods and the approved meteorological data collected. A modeling protocol shall be submitted within 30 days

from the completion of meteorological monitoring. Modeling results shall be submitted within 30 days of approval of the modeling protocol.

24. Eighteen months from the date of this AO the Executive Secretary shall be notified in writing of the status of construction of this project unless the construction is complete and operation has commenced.

25. All installations and facilities authorized by this AO shall be adequately and properly maintained.

26. The Executive Secretary shall be notified in writing upon start-up of the installation as an initial compliance inspection is required.

Any future modifications to the equipment approved by this order must also be approved in accordance with Section 3.1.1, UACR.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the UACR.

Annual emissions for this source (the entire plant) are currently calculated at the following values:

A. 75.00 tons/yr for particulate
B. 66.00 tons/yr for $PM_{10}$
C. 1050.00 tons/yr for $SO_2$
D. 617.00 tons/yr for $NO_x$
E. 32.00 tons/yr for VOC
F. 219.00 tons/yr for CO

These calculations are for the purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and nonattainment area major source requirements of the UACR. They are not to be used for purposes of determining compliance.

Approved By:

Russell A. Roberts, Executive Secretary
Utah Air Quality Board

# APPENDIX G

# Huntingdon

Prepared For:

SUNNYSIDE COGENERATION ASSOCIATES
POST OFFICE BOX 10
EAST CARBON, UTAH 84520

# REPORT OF QUARTERLY AMBIENT AIR MONITORING RESULTS AT THE SUNNYSIDE COGENERATION FACILITY SUNNYSIDE, UTAH OCTOBER - DECEMBER, 1994

Prepared By:

HUNTINGDON ENGINEERING & ENVIRONMENTAL, INC.
1127 WEST 2320 SOUTH, SUITE B
SALT LAKE CITY, UTAH 84119

Huntingdon Project No. 51-104-93

March 31, 1995

SUNNYSIDE COGENERATION ASSOCIATES
Sunnyside Cogeneration Facility
Post Office Box 10
East Carbon, Utah 84520
(801) 888-4476
(801) 888-2538 fax

March 31, 1995

Mr. Rolf Doebbeling
Quality Assurance Coordinator
UDEQ Air Quality Division
150 North 1950 West
Salt Lake City, Utah 84119

SUBJECT: Quarterly Monitoring Report
Monitoring Period: October, November, December, 1994
Ambient Air Monitoring
Sunnyside Cogeneration Facility

Dear Mr. Doebbeling:

This quarterly report presents the meteorological data collected by Huntingdon Engineering & Environmental, Inc., at the Sunnyside Cogeneration Facility, Sunnyside, Utah, for the October, November, and December, 1994, monitoring period. This ambient-air monitoring report for the Sunnyside Cogeneration Facility is in compliance with the Utah Division of Air Quality (UDAQ) Modified Approval Order No. DAQE-0077-94.

The meteorological data has been compiled in DOS ACSII format and also spreadsheet form, as required by the UDAQ. Four computer hard-drive disks containing the meteorological data are also included with this report.

The next quarterly report will be submitted by the end of June, 1995, as per UDAQ requirements. Please contact me at (801) 888-4476, if you have any questions or comments concerning this report and I will place you in contact with the scientists having conducted this work.

Sincerely,

SUNNYSIDE COGENERATION ASSOCIATES

James T. O'Donnell
Acting Plant Manager

JTO/lls

c.c. Mr. Doug Burnham, Babcock & Wilcox
Mr. Bob Evans, NRG Energy, Inc.
Mr. Tom Eckstein, SCA Marketing Manager
Mr. Richard Giraud, Huntingdon Engineering

Enclosures:

Quarterly Air Monitoring Report
Computer disks

# Huntingdon

Huntingdon Engineering & Environmental, Inc.

1127 West 2320 South, Suite B
Salt Lake City, Utah 84119
(801) 972-4787
Fax: (801) 972-4552

March 31, 1995

Sunnyside Cogeneration Associates
P.O. Box 10
East Carbon, Utah 84520

Attention: Jim O'Donnell, Acting Plant Manager

Subject: Quarterly Monitoring Report
Monitoring Period: October, November, December 1994
Ambient Air Monitoring
Sunnyside Cogeneration Facility
Huntingdon Project No.: 51-104-93

Dear Mr. O'Donnell:

This quarterly monitoring report presents the meteorological data collected by Huntingdon Engineering & Environmental, Inc. at the Sunnyside Cogeneration Facility for the October, November, and December 1994 monitoring period. The ambient-air monitoring report is required as part of the Utah Division of Air Quality (UDAQ) Modified Approval Order No. DAQE-0077-94. The meteorological data has been compiled in DOS ASCII format and also spreadsheet form, as required by UDAQ.

The next quarterly report will be submitted by the end of June 1995 as per UDAQ requirements. Please contact myself or Terry Chatwin of Huntingdon at (801) 972-4787 if you have any questions or comments concerning this report.

Sincerely,

**Huntingdon Engineering & Environmental, Inc.**

Ron Gossard

Ron Gossard
Staff Engineer

Enclosure:

Quarterly Ambient Air Monitoring Report

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# 1.0 INTRODUCTION

This report presents the meteorological data collected from October, November, and December 1994 by Huntingdon Engineering & Environmental, Inc. (Huntingdon) at the Sunnyside Cogeneration Facility, Sunnyside, Utah for the Sunnyside Cogeneration Associates in accordance with the Utah Division of Air Quality (UDAQ) Modified Approval Order No. DAQE-0077-94. As per DAQ Modified Approval Order requirements, a meteorological station was installed on SCA property to monitor wind speed, wind direction, and air temperature. The station was installed on September 19 and 20, 1994. The location of the monitoring station is shown in Figure 1.

# 2.0 METEOROLOGICAL DATA

Continuous collection of meteorological data was retrieved from the station from October to December 1994 and continues to be collected until the UDAQ minimum data recovery requirements are achieved. The following sections detail the data recovery procedures, the accepted data values and the data recovery percentage for each parameter, and data recovery problems that occurred during this quarterly monitoring period.

## 2.1 DATA RECOVERY PROCEDURES

Data from the meteorological station was retrieved in the field using a laptop personnel computer. Meteorological data were then downloaded from the laptop computer to the Huntingdon computer network for data reduction. The data were compiled in LOTUS spreadsheets so that hourly and daily values for each month could be reviewed and analyzed. The data were also compiled in DOS compatible ASCII format. The hourly meteorological values for each month are shown in Tables 1 through 12, and the ASCII format data are presented in Appendix A. The ASCII format data are also included on four computer disks that were enclosed with this report.

## 2.2 DATA RESULTS

The meteorological data for temperature in October 1994 met the data screening criteria. None of the temperature values exceeded the record high or low and none of the hourly values changed greater than 9 degrees from the previous hour. Most of the data for wind speed and wind direction met the data screening criteria. However, the wind speed data on October 16 from 0400 to 1000 hours should be considered invalid because the values did not change greater than 0.22 miles per hour (mph) in three consecutive hours. The wind direction data on October 16 from 0400 to 1000 hours should also be considered invalid because values of 0 degrees was observed in three consecutive hours without any change in degrees. Tables 1 through 4 show the meteorological data for October 1994.

The meteorological data for the month of November 1994 were successfully collected from November 1 to November 9 at 1500 hours. The wind speed and wind direction on November

3 from 0400 to 0800 hours did not meet data screening criteria because a 0 value was recorded for four consecutive hours. Data for wind speed, wind direction, temperature, and sigma theta were not collected from November 9 at 1600 hours to November 31 and should be considered invalid because data screening criteria were not met. The reason for the invalid data was due to an electrical power loss in the Campbell CR10 data logger. Because the data logger did not have electrical power, it did not store the various parameter input values. The data logger was sent to MET ONE Instruments for inspection and the station's battery and fuses were replaced. The data logger was fixed by MET ONE personnel, re-calibrated, and again installed onto the station. Continuous collection of meteorological data resumed on December 7 at 1500 hours. Tables 5 through 8 show the meteorological data for November 1994.

Meteorological data for December 1994 was successfully retrieved from December 7 at 1500 hours to the end of the month. The data from December 1 to December 7 at 1400 hours did not meet data screening criteria. However, the data for temperature, wind speed, wind direction, and sigma theta met the data screening criteria for the remainder of the month. Tables 9 through 12 show the meteorological data for December 1994.

## 2.3 MONTHLY AND QUARTERLY PERCENT DATA RECOVERY

The percent data recovery for each parameter in the month of October was above the UDAQ requirement of fifty percent. The wind speed, wind direction, and sigma theta data was ninety-nine percent recovered while one hundred percent of the temperature data was recovered. Due to the data logger's malfunctioning in November, the percent data recovery for each parameter was below the UDAQ requirement of fifty percent. Twenty-seven percent of the wind speed, wind direction, and sigma theta data was recovered and twenty-eight percent of the temperature data was recovered for the month. The percent data recovery for each parameter in the month of December was above the UDAQ requirement of fifty percent. The wind speed, wind direction, temperature, and sigma theta data was seventy-nine percent recovered. The monthly percent data recovery for each parameter are shown in Table 13.

Due to the malfunctioning of the data logger in November, the percent data recovery for the quarter did not meet the UDAQ requirement of seveny-five percent. The percent data recovery for the wind speed, wind direction, and sigma theta parameters was sixty-eight percent while sixty-nine percent of the temperature data was recovered for the quarter. The quarterly percent data recovery for each parameter are shown in Table 13.

The meteorological data collected for October and December met data screening criteria and the monthly percent data recovery requirements and should therefore be considered valid. The November data did not meet data screening criteria nor the monthly percent data recovery requirements. Subsequently, data could be collected by Huntingdon through November 1995 to properly meet UDAQ requirements.

## 3.0 QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance and quality control (QA/QC) procedures were followed to ensure that valid data was collected. QA/QC procedures included proper documentation of instrument calibrations and field activities involving the meteorological station, an independent audit, and quality control checks.

### 3.1 INDEPENDENT AUDIT RESULTS

An audit of the meteorological station was performed on November 1, 1994 by SECOR Environmental Engineering. The audit report entitled "Sunnyside Cogeneration Facility Meteorological Station, Performance Audit, November 1, 1994" was submitted to the UDAQ at the end of March, 1995. The performance audit found that the wind speed and wind direction were within the acceptable limits established by the UDAQ.

The temperature audit results indicated that the comparison of the sensor temperature with the mercury thermometer readings were not within the recommended tolerance set by UDAQ. The average audit error for the temperature sensor was 1.5 degrees Celsius, which was not within the accepted DAQ error limit of 0.5 degrees Celsius. SECOR stated that the difference between these readings can be explained in part by measurement error and the error in the temperature sensor. SECOR personnel recommended that re-calibration of the temperature sensor should be performed to bring the tolerance within the recommended UDAQ limit. The audit results from the SECOR report are included in Appendix B.

The temperature sensor was within calibration specifications prior to shipment from the MET ONE laboratory and during installation on the meteorological station. Based on the audit information, the decision was made to replace the temperature sensor. A new temperature probe was installed on January 26, 1995 by MET ONE and Huntingdon personnel. The new probe was calibrated on-site by MET ONE. Documentation concerning the MET ONE initial equipment calibration of the sensor and the replacement and re-calibration of the new sensor are included in Appendix C.

The temperature sensor data was reviewed for October and December 1994 using the data screening criteria in the Post-Construction Ambient Air Monitoring Plan to determine the validity of the temperature data. None of the temperature values exceeded the record high or low and none of the values changed greater than 9 degrees from the previous hour. Based on the data review, the temperature data for appears to be valid. Due to the malfunctioning of the data logger, the temperature data did not meet data screening criteria for most of November. The temperature data is shown in Tables 3, 7, and 11 of this report.

The temperature data did not indicate any drastic fluctuations in values which might indicate sensor malfunction. Mr. Rolf Doebbeling, UDAQ, was contacted in regard to the temperature sensor data and commented that the temperature data validity will be evaluated after the second audit.

## 3.2 CALIBRATION OF METEOROLOGICAL INSTRUMENTS

A calibration test was performed by MET ONE Instruments on each sensor prior to installation The documentation verifying the sensor calibrations previous to installation is shown in Appendix C. After installation, the instrument sensors and data logger were checked by MET ONE personnel to see if they were responding to changes in wind speed, wind direction, and ambient temperature. On September 29, 1994, data was downloaded via laptop computer from the data logger and compared to known regional wind speed and direction values. Based on the data comparison to known regional wind speed, wind direction, and ambient temperature values, the sensors appeared to be collecting reliable meteorological data at the site.

## 3.3 QUALITY CONTROL CHECKS

Documentation of field activities were written in a hard-bound log book and reviewed for authenticity by SECOR personnel during the independent audit and regularly reviewed by Huntingdon personnel. After the audit report, re-calibration of the temperature probe was discussed and implemented in January 1995. To prevent malfunctioning of the station and to avoid future power loss problems with the station, Huntingdon implemented a weekly station check where SCA personnel would inspect the station for sensor, wiring, solar panel, and data logger damage and power output. The field log book documentation is included in Appendix D of this report.

# 4.0 CONCLUSIONS

The following conclusions were drawn from the October to December 1994 ambient air monitoring period:

- The meteorological data collected for October and December met the UDAQ data screening criteria and monthly percent data recovery requirements.

- The meteorological data collected for November did not meet the UDAQ data screening criteria nor the monthly percent data recovery requirements. Subsequently, data could be collected by Huntingdon through November 1995 to meet the UDAQ requirements.

- Due to the malfunctioning of the data logger in November, the quarterly percent data recovery for the monitoring period was below UDAQ requirements.

- The quarterly monitoring report for January, February, March 1995 will be submitted in June, 1995.

Please contact myself or Terry Chatwin if there are questions or comments concerning this monitoring report.

Respectively submitted,

**Huntingdon Engineering & Environmental, Inc.**

Ron Gossard
Staff Engineer

Terrence D. Chatwin, P.E.
Senior Project Manager

## 5.0 REFERENCES

Huntingdon Engineering & Environmental, Inc., Post-Construction Ambient Air Monitoring Plan, Sunnyside Cogeneration Associates, Sunnyside Cogeneration Facility, Sunnyside, Utah, July, 1994.

Science & Engineering Analysis Corporation (SECOR), Sunnyside Cogeneration Facility Meteorological Station, Performance Audit, November 1, 1994.

# TABLE 1 - MONTHLY WIND SPEED DATA

**OCTOBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 22.31 | 19.93 | 19.85 | 14.40 | 16.80 | 11.52 | 7.63 | 23.17 | 22.27 | 19.18 | 12.83 | 6.47 | 4.44 | 6.86 | 8.91 | 7.96 | 8.99 | 7.57 | 11.35 | 10.12 | 7.48 | 12.16 | 16.19 | 17.73 |
| 2 | 17.74 | 18.93 | 20.22 | 19.63 | 20.59 | 15.86 | 11.75 | 12.42 | 15.59 | 8.87 | 4.27 | 2.15 | 4.79 | 6.61 | 6.84 | 8.61 | 11.65 | 12.02 | 12.73 | 15.70 | 6.99 | 7.89 | 10.92 | 14.47 |
| 3 | 14.43 | 13.56 | 8.11 | 11.22 | 15.23 | 14.94 | 8.59 | 9.79 | 9.71 | 9.44 | 6.44 | 15.46 | 24.20 | 12.60 | 5.76 | 15.18 | 9.48 | 15.20 | 16.55 | 19.42 | 14.24 | 18.61 | 15.37 | 22.29 |
| 4 | 10.66 | 10.23 | 11.50 | 16.70 | 17.16 | 7.68 | 3.12 | 8.37 | 5.19 | 3.27 | 5.31 | 6.73 | 6.31 | 5.16 | 5.20 | 10.36 | 3.78 | 4.88 | 4.84 | 2.49 | 13.95 | 19.36 | 11.86 | 5.01 |
| 5 | 5.61 | 6.82 | 3.18 | 4.16 | 14.33 | 19.97 | 14.65 | 7.93 | 14.35 | 7.50 | 5.12 | 16.63 | 20.87 | 21.75 | 24.34 | 26.34 | 27.46 | 31.18 | 14.77 | 8.41 | 8.40 | 3.39 | 6.42 | 6.70 |
| 6 | 6.13 | 4.20 | 3.08 | 5.28 | 5.98 | 4.32 | 4.05 | 3.53 | 4.36 | 5.60 | 2.55 | 5.51 | 9.52 | 10.75 | 8.80 | 16.09 | 14.80 | 17.24 | 16.25 | 17.11 | 11.78 | 5.62 | 10.98 | 16.72 |
| 7 | 12.76 | 7.70 | 11.77 | 9.55 | 9.66 | 10.97 | 8.26 | 5.56 | 5.96 | 5.99 | 4.57 | 5.25 | 6.76 | 6.37 | 6.19 | 3.51 | 4.68 | 4.57 | 3.50 | 2.97 | 10.98 | 16.56 | 20.41 | 20.52 |
| 8 | 20.51 | 21.83 | 17.14 | 14.13 | 12.62 | 14.30 | 16.64 | 17.84 | 20.27 | 16.98 | 5.12 | 6.75 | 5.16 | 7.62 | 5.46 | 7.03 | 6.21 | 6.77 | 6.03 | 4.81 | 10.60 | 19.77 | 23.09 | 23.06 |
| 9 | 24.39 | 21.53 | 20.01 | 21.88 | 22.77 | 24.36 | 25.05 | 25.03 | 26.45 | 21.25 | 4.31 | 5.49 | 6.85 | 6.39 | 8.28 | 7.57 | 7.74 | 8.56 | 7.32 | 5.39 | 12.93 | 22.04 | 25.27 | 26.83 |
| 10 | 26.04 | 25.12 | 23.53 | 23.78 | 21.73 | 23.14 | 20.18 | 21.99 | 21.87 | 19.49 | 8.64 | 5.30 | 4.84 | 7.91 | 11.28 | 11.64 | 11.06 | 12.70 | 12.49 | 6.57 | 13.24 | 21.70 | 23.70 | 24.79 |
| 11 | 23.67 | 23.08 | 20.64 | 15.92 | 14.59 | 19.00 | 21.61 | 23.13 | 22.34 | 19.30 | 6.62 | 4.31 | 6.50 | 11.51 | 13.42 | 16.77 | 21.41 | 19.53 | 15.66 | 13.45 | 11.83 | 15.85 | 13.64 | 13.29 |
| 12 | 19.52 | 22.34 | 23.78 | 24.00 | 25.11 | 25.91 | 25.12 | 25.98 | 23.46 | 18.78 | 11.76 | 7.67 | 7.86 | 11.17 | 16.22 | 15.17 | 18.00 | 17.61 | 13.82 | 6.27 | 11.46 | 13.35 | 11.85 | 10.15 |
| 13 | 15.52 | 17.65 | 13.07 | 6.86 | 7.82 | 5.95 | 5.41 | 5.33 | 2.90 | 3.62 | 3.79 | 5.52 | 5.58 | 11.20 | 15.39 | 16.83 | 17.52 | 16.95 | 12.25 | 4.50 | 7.68 | 8.33 | 14.26 | 19.13 |
| 14 | 20.86 | 17.15 | 17.79 | 11.56 | 6.90 | 13.55 | 11.03 | 9.62 | 16.14 | 8.36 | 7.91 | 14.43 | 19.20 | 21.50 | 25.40 | 25.84 | 23.30 | 22.38 | 17.00 | 19.63 | 11.40 | 13.92 | 15.27 | 16.16 |
| 15 | 21.70 | 21.42 | 24.61 | 23.15 | 17.23 | 16.07 | 16.89 | 15.03 | 13.46 | 2.31 | 1.80 | 2.14 | 3.62 | 2.73 | 3.24 | 3.61 | 2.82 | 4.92 | 4.16 | 5.69 | 4.32 | 4.21 | 4.37 | 4.53 |
| 16 | 1.99 | 4.00 | 6.86 | 3.49 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.38 | 8.47 | 9.53 | 8.33 | 6.64 | 6.71 | 4.60 | 2.94 | 2.93 | 5.77 | 4.69 | 3.39 | 5.76 |
| 17 | 7.78 | 6.91 | 5.32 | 5.68 | 4.02 | 6.39 | 6.53 | 7.86 | 2.61 | 3.18 | 0.94 | 0.22 | 2.52 | 4.71 | 4.15 | 5.23 | 3.80 | 2.25 | 2.18 | 8.04 | 5.73 | 2.83 | 2.69 | 6.34 |
| 18 | 8.86 | 1.94 | 7.29 | 8.29 | 11.07 | 9.15 | 4.06 | 8.46 | 6.14 | 8.20 | 2.64 | 3.25 | 3.78 | 6.66 | 12.53 | 11.08 | 10.49 | 7.51 | 5.94 | 5.73 | 5.94 | 9.49 | 8.03 | 11.35 |
| 19 | 13.00 | 10.60 | 14.50 | 16.40 | 17.21 | 14.79 | 16.78 | 14.75 | 15.50 | 5.38 | 2.39 | 1.88 | 3.89 | 6.71 | 8.78 | 9.01 | 8.55 | 8.43 | 6.89 | 5.22 | 15.72 | 18.78 | 20.42 | 21.94 |
| 20 | 22.60 | 20.08 | 21.62 | 21.03 | 20.90 | 21.78 | 22.23 | 21.14 | 21.60 | 13.41 | 11.87 | 5.39 | 5.35 | 7.05 | 9.40 | 7.24 | 9.17 | 7.72 | 8.30 | 5.12 | 16.31 | 21.73 | 22.54 | 23.53 |
| 21 | 24.13 | 23.86 | 24.17 | 23.71 | 23.17 | 23.31 | 22.96 | 21.53 | 21.24 | 20.09 | 7.77 | 4.66 | 7.34 | 8.39 | 8.43 | 8.73 | 10.11 | 10.01 | 7.89 | 4.16 | 15.70 | 17.03 | 16.55 | 16.52 |
| 22 | 20.00 | 20.04 | 19.29 | 22.64 | 23.28 | 24.20 | 24.46 | 22.58 | 21.62 | 19.05 | 11.57 | 7.82 | 12.42 | 11.76 | 10.05 | 8.14 | 6.53 | 7.64 | 8.31 | 5.78 | 13.91 | 21.53 | 22.15 | 22.96 |
| 23 | 23.85 | 25.05 | 25.74 | 23.47 | 24.18 | 24.25 | 24.61 | 24.54 | 24.42 | 24.47 | 14.39 | 3.65 | 6.38 | 6.76 | 6.43 | 6.80 | 7.62 | 9.14 | 6.86 | 6.18 | 19.13 | 23.10 | 25.71 | 25.04 |
| 24 | 25.62 | 26.32 | 25.47 | 26.77 | 26.38 | 23.65 | 24.64 | 27.59 | 26.34 | 19.41 | 14.89 | 4.40 | 7.00 | 5.79 | 6.98 | 7.94 | 7.77 | 6.16 | 6.85 | 4.88 | 16.62 | 20.84 | 22.72 | 22.80 |
| 25 | 20.60 | 19.04 | 17.64 | 17.80 | 18.03 | 19.23 | 10.96 | 18.42 | 21.64 | 21.78 | 7.60 | 5.38 | 5.44 | 5.78 | 7.75 | 7.37 | 9.32 | 9.19 | 9.17 | 6.50 | 18.17 | 23.67 | 26.13 | 26.48 |
| 26 | 23.28 | 24.77 | 24.91 | 25.81 | 24.91 | 24.84 | 24.74 | 24.18 | 22.49 | 15.20 | 7.73 | 4.62 | 6.36 | 7.63 | 8.12 | 8.07 | 8.81 | 6.84 | 5.86 | 4.76 | 14.45 | 18.83 | 18.61 | 20.09 |
| 27 | 19.32 | 19.55 | 19.02 | 17.32 | 17.81 | 17.71 | 21.01 | 22.13 | 19.83 | 17.40 | 13.72 | 4.35 | 3.33 | 5.95 | 5.88 | 6.33 | 5.67 | 3.67 | 2.72 | 8.34 | 17.11 | 19.71 | 19.94 | 22.20 |
| 28 | 23.12 | 16.82 | 18.39 | 14.64 | 14.90 | 12.26 | 12.05 | 14.89 | 12.92 | 11.41 | 4.30 | 2.35 | 5.60 | 7.67 | 8.07 | 7.30 | 7.73 | 8.34 | 5.66 | 9.02 | 11.37 | 13.62 | 13.58 | 14.90 |
| 29 | 17.27 | 19.06 | 21.18 | 18.96 | 21.06 | 22.29 | 21.61 | 20.96 | 16.33 | 13.74 | 3.83 | 2.91 | 3.79 | 5.54 | 8.20 | 7.61 | 7.10 | 9.48 | 10.67 | 10.36 | 15.26 | 17.31 | 17.89 | 17.18 |
| 30 | 18.64 | 19.93 | 20.00 | 18.13 | 18.13 | 17.12 | 16.47 | 14.32 | 17.50 | 17.28 | 6.03 | 3.38 | 5.70 | 8.87 | 18.46 | 24.75 | 22.63 | 22.80 | 19.58 | 15.52 | 13.36 | 10.67 | 9.45 | 12.01 |
| 31 | 15.53 | 15.10 | 12.40 | 16.68 | 17.69 | 19.86 | 21.25 | 22.82 | 23.85 | 10.32 | 10.05 | 5.44 | 5.25 | 6.45 | 8.05 | 7.47 | 7.10 | 7.89 | 5.93 | 1.90 | 11.88 | 18.83 | 16.57 | 16.16 |

Values in MPH

# TABLE 2 - MONTHLY WIND DIRECTION DATA

**OCTOBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 48.76 | 50.55 | 48.33 | 2.69 | 46.08 | 38.44 | 62.61 | 48.05 | 48.24 | 48.52 | 46.03 | 298.50 | 233.00 | 276.80 | 252.70 | 246.40 | 244.60 | 28.43 | 48.73 | 53.03 | 358.50 | 45.24 | 45.38 | 46.17 |
| 2 | 46.59 | 46.93 | 47.48 | 47.97 | 48.71 | 49.62 | 53.18 | 57.05 | 51.08 | 58.57 | 0.70 | 31.82 | 191.30 | 224.60 | 224.10 | 203.80 | 200.90 | 210.20 | 200.70 | 191.70 | 185.80 | 216.00 | 185.70 | 171.90 |
| 3 | 170.50 | 195.20 | 330.00 | 56.82 | 55.35 | 51.15 | 10.76 | 76.30 | 163.90 | 352.60 | 189.40 | 209.60 | 179.40 | 205.00 | 293.90 | 335.60 | 339.50 | 7.16 | 64.95 | 47.35 | 54.99 | 38.82 | 70.20 | 46.95 |
| 4 | 29.93 | 75.90 | 49.64 | 56.90 | 47.29 | 127.50 | 145.50 | 68.16 | 51.32 | 318.80 | 331.80 | 293.00 | 265.10 | 269.60 | 224.10 | 206.70 | 306.50 | 142.10 | 237.00 | 298.40 | 47.31 | 50.47 | 127.60 | 184.00 |
| 5 | 173.30 | 209.60 | 295.20 | 227.70 | 172.00 | 169.70 | 196.20 | 203.10 | 182.50 | 210.10 | 234.20 | 187.00 | 181.10 | 179.90 | 177.10 | 184.30 | 215.80 | 310.30 | 321.20 | 71.00 | 351.20 | 43.28 | 13.80 | 12.14 |
| 6 | 353.30 | 272.90 | 5.64 | 198.40 | 172.20 | 167.60 | 112.90 | 142.10 | 182.70 | 161.50 | 112.80 | 304.30 | 316.90 | 310.70 | 270.70 | 308.20 | 314.00 | 310.10 | 311.40 | 312.10 | 338.10 | 36.87 | 62.29 | 48.13 |
| 7 | 49.21 | 86.00 | 49.99 | 45.30 | 36.56 | 46.66 | 53.92 | 19.37 | 22.97 | 77.50 | 281.40 | 242.10 | 221.50 | 209.30 | 191.50 | 156.20 | 120.50 | 311.40 | 250.30 | 7.82 | 42.48 | 50.05 | 45.70 | 43.36 |
| 8 | 42.40 | 44.71 | 47.59 | 47.34 | 43.06 | 41.68 | 38.76 | 45.56 | 42.45 | 49.47 | 183.50 | 224.60 | 221.90 | 225.00 | 271.80 | 232.50 | 245.60 | 271.30 | 256.00 | 257.10 | 51.11 | 48.64 | 49.20 | 50.17 |
| 9 | 50.61 | 50.22 | 50.55 | 48.14 | 49.96 | 49.07 | 50.13 | 49.97 | 49.02 | 50.81 | 195.70 | 216.60 | 216.80 | 215.40 | 228.90 | 248.20 | 206.10 | 228.60 | 232.90 | 243.20 | 55.45 | 48.49 | 49.63 | 49.97 |
| 10 | 49.69 | 48.04 | 48.61 | 47.02 | 47.96 | 48.65 | 49.27 | 47.74 | 47.70 | 48.22 | 62.23 | 239.10 | 230.30 | 218.00 | 220.10 | 216.50 | 208.10 | 211.00 | 214.10 | 234.00 | 46.79 | 48.38 | 48.69 | 49.36 |
| 11 | 49.53 | 50.60 | 51.11 | 53.03 | 52.29 | 49.70 | 49.90 | 48.40 | 48.46 | 46.63 | 9.61 | 281.70 | 219.50 | 210.20 | 207.30 | 186.90 | 184.60 | 178.80 | 179.50 | 170.20 | 174.70 | 200.30 | 110.90 | 59.17 |
| 12 | 49.56 | 49.82 | 49.74 | 50.02 | 49.49 | 50.50 | 49.81 | 50.31 | 49.75 | 48.59 | 75.60 | 204.50 | 209.00 | 220.60 | 197.50 | 192.70 | 198.70 | 200.70 | 188.90 | 192.60 | 60.41 | 67.91 | 107.20 | 83.40 |
| 13 | 57.20 | 50.99 | 53.92 | 123.80 | 140.00 | 163.90 | 152.20 | 212.20 | 333.90 | 232.00 | 248.20 | 211.20 | 212.70 | 213.80 | 184.00 | 183.70 | 166.40 | 181.90 | 166.30 | 124.00 | 310.90 | 5.56 | 52.23 | 163.90 |
| 14 | 139.10 | 95.40 | 161.50 | 196.00 | 60.83 | 46.45 | 91.20 | 135.20 | 134.20 | 197.30 | 218.90 | 188.70 | 181.50 | 192.80 | 193.00 | 181.20 | 175.00 | 181.70 | 182.00 | 175.30 | 170.30 | 175.60 | 176.60 | 175.60 |
| 15 | 178.40 | 182.10 | 179.40 | 185.90 | 185.20 | 182.30 | 180.20 | 182.50 | 267.40 | 348.00 | 196.20 | 175.50 | 301.50 | 308.70 | 329.80 | 266.70 | 243.80 | 227.90 | 249.70 | 227.70 | 244.90 | 327.80 | 310.90 | 311.20 |
| 16 | 331.60 | 218.70 | 202.90 | 183.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 220.80 | 219.00 | 219.80 | 224.40 | 227.90 | 273.00 | 319.30 | 252.30 | 319.00 | 348.40 | 21.33 | 68.27 | 29.01 |
| 17 | 24.76 | 1.30 | 22.39 | 19.64 | 78.60 | 46.44 | 37.22 | 55.22 | 145.40 | 203.70 | 222.50 | 302.00 | 207.70 | 209.70 | 216.90 | 205.10 | 180.00 | 236.30 | 86.50 | 50.83 | 105.20 | 9.78 | 61.46 | 54.78 |
| 18 | 69.32 | 91.60 | 52.41 | 54.44 | 53.03 | 85.40 | 51.09 | 48.13 | 30.12 | 34.97 | 300.50 | 42.58 | 195.80 | 198.90 | 215.10 | 199.70 | 208.50 | 202.30 | 330.20 | 48.70 | 53.51 | 60.63 | 61.99 | 49.48 |
| 19 | 44.79 | 46.76 | 49.00 | 49.45 | 51.25 | 47.22 | 51.20 | 48.12 | 49.38 | 71.00 | 13.79 | 271.80 | 275.70 | 211.90 | 197.30 | 202.80 | 223.20 | 224.70 | 223.70 | 256.00 | 50.55 | 51.91 | 50.58 | 49.69 |
| 20 | 51.01 | 51.39 | 50.06 | 49.69 | 50.10 | 50.63 | 51.16 | 51.95 | 51.96 | 58.63 | 52.80 | 252.70 | 234.40 | 220.60 | 224.40 | 239.60 | 238.80 | 214.20 | 224.40 | 208.50 | 50.68 | 50.61 | 50.95 | 50.19 |
| 21 | 49.80 | 51.39 | 49.99 | 50.24 | 49.64 | 49.22 | 49.64 | 49.96 | 49.46 | 50.09 | 63.88 | 224.30 | 199.10 | 218.30 | 218.70 | 210.90 | 206.60 | 220.50 | 218.00 | 230.30 | 48.82 | 51.60 | 52.50 | 52.74 |
| 22 | 51.14 | 50.35 | 50.68 | 49.68 | 49.27 | 49.07 | 50.40 | 48.01 | 47.74 | 41.81 | 34.78 | 324.00 | 321.40 | 301.90 | 246.30 | 232.30 | 238.50 | 245.50 | 216.90 | 210.20 | 52.21 | 48.67 | 48.92 | 49.13 |
| 23 | 48.98 | 49.24 | 49.47 | 50.56 | 49.22 | 49.22 | 49.04 | 49.53 | 49.04 | 48.82 | 55.81 | 239.90 | 240.90 | 208.40 | 238.00 | 222.90 | 220.40 | 221.00 | 221.50 | 181.30 | 49.68 | 49.13 | 49.95 | 49.68 |
| 24 | 49.07 | 50.21 | 49.94 | 50.70 | 50.73 | 48.93 | 50.20 | 50.41 | 51.21 | 49.95 | 58.06 | 202.10 | 238.70 | 230.40 | 241.00 | 235.80 | 208.70 | 218.50 | 209.80 | 199.90 | 48.42 | 48.42 | 48.34 | 49.11 |
| 25 | 48.33 | 51.61 | 50.09 | 49.76 | 49.61 | 48.35 | 63.01 | 50.30 | 48.92 | 48.02 | 74.40 | 210.80 | 215.00 | 239.20 | 224.80 | 209.30 | 220.00 | 209.20 | 209.40 | 185.80 | 49.46 | 48.71 | 51.07 | 51.59 |
| 26 | 51.29 | 50.34 | 51.14 | 50.33 | 51.36 | 50.10 | 50.82 | 50.09 | 51.32 | 54.38 | 58.22 | 204.40 | 216.80 | 204.00 | 207.30 | 209.70 | 226.40 | 220.60 | 228.40 | 200.50 | 50.32 | 50.07 | 51.52 | 50.61 |
| 27 | 49.23 | 49.64 | 47.96 | 51.01 | 50.80 | 52.49 | 47.76 | 47.44 | 46.63 | 51.64 | 47.18 | 145.60 | 256.50 | 236.30 | 220.50 | 206.40 | 227.80 | 249.10 | 43.67 | 40.88 | 46.42 | 50.50 | 49.85 | 49.69 |
| 28 | 49.83 | 55.29 | 48.54 | 45.84 | 43.86 | 43.12 | 37.02 | 52.06 | 51.96 | 38.88 | 41.86 | 269.90 | 228.60 | 207.00 | 211.00 | 216.00 | 214.40 | 218.80 | 273.80 | 320.40 | 358.80 | 2.94 | 23.15 | 43.65 |
| 29 | 40.37 | 46.50 | 47.94 | 44.29 | 45.60 | 48.05 | 47.24 | 49.43 | 48.06 | 49.58 | 185.70 | 203.80 | 228.50 | 238.40 | 253.70 | 271.00 | 224.80 | 210.40 | 290.00 | 346.90 | 48.16 | 47.77 | 43.11 | 44.42 |
| 30 | 47.27 | 47.74 | 48.67 | 46.90 | 45.96 | 45.85 | 42.18 | 46.33 | 41.36 | 44.73 | 353.40 | 270.70 | 184.10 | 105.10 | 288.00 | 274.50 | 278.90 | 295.80 | 300.90 | 329.30 | 351.80 | 29.06 | 55.91 | 50.28 |
| 31 | 47.86 | 51.03 | 60.49 | 49.99 | 51.79 | 47.86 | 50.09 | 49.67 | 49.40 | 84.70 | 43.69 | 201.70 | 198.70 | 203.40 | 223.50 | 215.30 | 210.90 | 209.90 | 215.40 | 241.60 | 51.11 | 49.06 | 59.77 | 47.88 |

Values in Degrees

# TABLE 3 - MONTHLY TEMPERATURE DATA

**OCTOBER 1994**

HOUR

| DAY | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 46.17 | 46.34 | 46.27 | 46.10 | 44.76 | 45.81 | 44.11 | 42.48 | 42.97 | 43.94 | 45.76 | 48.93 | 50.22 | 51.97 | 53.36 | 54.63 | 53.91 | 53.59 | 52.97 | 53.45 | 53.14 | 50.33 | 48.72 | 47.16 |
| 2 | 46.81 | 46.07 | 45.63 | 45.02 | 44.74 | 46.04 | 47.34 | 47.39 | 46.90 | 46.51 | 48.15 | 51.48 | 53.20 | 53.45 | 54.09 | 56.25 | 58.13 | 58.03 | 58.46 | 57.57 | 56.00 | 56.05 | 57.43 | 57.91 |
| 3 | 58.08 | 57.38 | 54.07 | 52.00 | 50.94 | 50.85 | 51.54 | 52.46 | 54.79 | 48.65 | 47.77 | 47.71 | 48.70 | 49.45 | 46.97 | 45.75 | 41.40 | 42.68 | 44.98 | 45.91 | 46.69 | 48.03 | 47.49 | 47.84 |
| 4 | 45.70 | 45.80 | 45.92 | 46.37 | 47.62 | 45.21 | 44.45 | 47.85 | 46.45 | 47.52 | 49.15 | 49.89 | 51.76 | 53.19 | 54.55 | 56.31 | 56.17 | 58.12 | 59.47 | 57.28 | 55.15 | 54.41 | 61.63 | 57.12 |
| 5 | 54.54 | 58.31 | 56.13 | 55.59 | 58.75 | 59.67 | 56.98 | 54.87 | 56.76 | 54.77 | 53.93 | 55.21 | 55.36 | 56.14 | 56.88 | 57.13 | 56.74 | 48.29 | 45.51 | 44.45 | 45.28 | 44.73 | 44.78 | 45.01 |
| 6 | 45.24 | 44.17 | 43.96 | 43.65 | 43.17 | 42.69 | 43.34 | 43.48 | 42.46 | 43.05 | 45.77 | 46.67 | 47.13 | 48.50 | 49.36 | 50.06 | 50.63 | 50.67 | 50.23 | 48.93 | 46.52 | 45.59 | 43.93 | 42.65 |
| 7 | 44.76 | 46.27 | 47.02 | 46.97 | 47.02 | 46.73 | 46.43 | 45.36 | 45.65 | 46.85 | 47.54 | 49.35 | 51.22 | 52.44 | 52.26 | 54.04 | 56.29 | 56.64 | 56.37 | 55.81 | 53.38 | 51.00 | 48.76 | 48.03 |
| 8 | 46.77 | 46.62 | 46.96 | 47.61 | 46.95 | 48.32 | 47.18 | 46.74 | 45.41 | 46.37 | 49.04 | 49.92 | 52.52 | 53.78 | 56.36 | 57.34 | 59.19 | 60.10 | 60.72 | 59.55 | 55.02 | 51.79 | 50.01 | 49.46 |
| 9 | 49.21 | 49.20 | 47.96 | 46.91 | 47.13 | 46.65 | 46.88 | 47.13 | 46.95 | 48.70 | 52.19 | 54.06 | 55.44 | 58.02 | 59.69 | 61.37 | 62.56 | 62.67 | 63.20 | 61.50 | 56.20 | 52.94 | 51.82 | 51.53 |
| 10 | 51.16 | 50.74 | 50.77 | 50.29 | 50.00 | 50.17 | 49.60 | 48.50 | 48.23 | 49.53 | 53.63 | 56.46 | 58.50 | 60.55 | 61.81 | 62.47 | 63.71 | 64.37 | 64.41 | 62.88 | 57.80 | 54.32 | 52.85 | 52.68 |
| 11 | 52.32 | 52.19 | 52.45 | 53.05 | 52.70 | 51.39 | 50.68 | 49.18 | 48.55 | 49.61 | 53.94 | 55.75 | 57.71 | 59.78 | 61.30 | 62.32 | 62.67 | 63.13 | 63.13 | 61.99 | 61.69 | 60.89 | 57.14 | 56.15 |
| 12 | 53.58 | 51.37 | 50.17 | 50.56 | 49.89 | 49.18 | 48.57 | 48.56 | 48.74 | 50.17 | 53.93 | 54.89 | 56.69 | 59.26 | 60.88 | 61.96 | 62.41 | 62.22 | 61.98 | 60.79 | 57.28 | 55.77 | 59.26 | 56.83 |
| 13 | 54.09 | 54.42 | 55.56 | 57.38 | 58.55 | 57.03 | 57.93 | 56.46 | 53.92 | 54.49 | 54.13 | 56.46 | 59.11 | 61.30 | 62.99 | 62.88 | 64.65 | 64.73 | 63.44 | 61.83 | 58.95 | 58.34 | 58.38 | 61.08 |
| 14 | 55.26 | 52.54 | 51.29 | 46.97 | 49.92 | 50.18 | 51.05 | 51.80 | 52.28 | 53.09 | 52.96 | 54.51 | 55.47 | 55.44 | 56.15 | 54.05 | 52.40 | 51.62 | 51.59 | 50.08 | 48.98 | 49.42 | 48.85 | 48.50 |
| 15 | 47.52 | 45.87 | 45.20 | 43.85 | 41.44 | 41.02 | 39.67 | 39.83 | 36.80 | 34.87 | 34.86 | 35.24 | 35.64 | 35.55 | 37.21 | 37.15 | 38.81 | 39.02 | 39.21 | 38.98 | 38.51 | 38.26 | 38.25 | 38.09 |
| 16 | 38.35 | 38.65 | 37.31 | 34.88 | 34.16 | 33.17 | 32.83 | 33.36 | 33.67 | 34.22 | 35.27 | 35.67 | 36.46 | 36.91 | 39.26 | 40.54 | 39.98 | 41.41 | 39.78 | 39.01 | 38.94 | 39.08 | 39.51 | 39.04 |
| 17 | 38.21 | 38.34 | 39.10 | 38.78 | 38.20 | 38.15 | 38.04 | 37.54 | 36.20 | 35.81 | 36.42 | 38.50 | 39.37 | 38.71 | 39.43 | 40.90 | 42.49 | 45.53 | 44.79 | 43.88 | 43.72 | 43.01 | 42.87 | 43.33 |
| 18 | 44.29 | 43.80 | 43.63 | 44.59 | 44.67 | 44.47 | 43.09 | 44.08 | 43.31 | 44.12 | 44.14 | 46.23 | 49.25 | 50.02 | 49.32 | 49.03 | 48.08 | 47.00 | 47.63 | 46.45 | 46.03 | 45.58 | 45.03 | 45.54 |
| 19 | 45.00 | 45.41 | 44.88 | 44.58 | 44.14 | 44.22 | 43.89 | 43.71 | 43.88 | 44.64 | 45.60 | 47.34 | 50.05 | 51.28 | 52.29 | 53.34 | 54.09 | 55.31 | 55.65 | 52.91 | 48.21 | 46.87 | 46.08 | 45.37 |
| 20 | 45.71 | 45.67 | 44.92 | 45.12 | 44.97 | 45.11 | 45.42 | 45.86 | 45.27 | 45.80 | 47.48 | 52.53 | 53.65 | 55.39 | 56.13 | 57.41 | 58.10 | 59.24 | 58.18 | 56.65 | 51.46 | 49.38 | 48.77 | 48.39 |
| 21 | 48.09 | 47.78 | 47.39 | 47.31 | 46.81 | 46.43 | 46.08 | 46.38 | 46.42 | 46.92 | 50.54 | 53.21 | 53.83 | 55.49 | 57.50 | 59.01 | 59.88 | 60.53 | 60.70 | 58.16 | 54.09 | 52.75 | 52.21 | 51.71 |
| 22 | 51.14 | 50.92 | 50.87 | 49.55 | 48.93 | 48.36 | 48.47 | 47.82 | 48.49 | 50.59 | 54.33 | 57.70 | 58.63 | 59.91 | 60.85 | 61.76 | 62.85 | 63.50 | 63.28 | 61.26 | 56.26 | 52.88 | 51.71 | 50.58 |
| 23 | 49.90 | 49.36 | 49.13 | 48.95 | 48.56 | 48.33 | 48.15 | 48.11 | 47.91 | 48.21 | 52.04 | 55.63 | 56.73 | 58.77 | 61.13 | 62.88 | 64.41 | 64.10 | 64.33 | 60.64 | 55.64 | 53.84 | 52.69 | 52.33 |
| 24 | 51.75 | 51.11 | 50.79 | 50.46 | 50.24 | 49.99 | 49.75 | 50.16 | 49.61 | 50.45 | 53.27 | 56.95 | 58.90 | 59.55 | 61.24 | 61.24 | 60.73 | 60.80 | 59.61 | 55.95 | 53.10 | 51.76 | 50.64 | 50.66 |
| 25 | 50.85 | 50.56 | 50.89 | 51.33 | 51.63 | 50.76 | 50.86 | 49.87 | 48.32 | 48.71 | 52.29 | 55.05 | 56.28 | 58.91 | 60.18 | 61.46 | 61.82 | 62.31 | 61.72 | 58.98 | 53.69 | 51.19 | 50.38 | 49.79 |
| 26 | 49.63 | 48.79 | 48.80 | 48.35 | 48.62 | 48.37 | 48.02 | 47.87 | 47.33 | 48.30 | 51.21 | 54.75 | 56.15 | 56.75 | 58.35 | 59.64 | 59.97 | 60.85 | 60.43 | 57.39 | 54.51 | 53.54 | 53.25 | 52.57 |
| 27 | 52.09 | 51.48 | 51.38 | 50.98 | 50.49 | 50.43 | 49.42 | 48.97 | 49.15 | 49.37 | 51.13 | 53.81 | 55.92 | 55.89 | 57.00 | 58.51 | 57.54 | 55.88 | 55.99 | 55.93 | 53.89 | 53.85 | 52.99 | 52.17 |
| 28 | 52.14 | 51.62 | 50.18 | 49.38 | 48.70 | 48.26 | 48.20 | 47.62 | 47.03 | 48.18 | 51.02 | 54.90 | 55.69 | 57.01 | 59.42 | 61.99 | 63.73 | 64.96 | 63.26 | 60.69 | 59.13 | 58.66 | 57.17 | 54.69 |
| 29 | 52.45 | 50.81 | 48.49 | 48.90 | 47.76 | 47.19 | 46.52 | 46.95 | 47.55 | 48.55 | 50.62 | 51.68 | 53.83 | 56.80 | 57.62 | 58.18 | 59.29 | 59.25 | 57.97 | 55.86 | 52.59 | 50.30 | 49.30 | 49.23 |
| 30 | 47.70 | 46.75 | 45.74 | 45.26 | 45.00 | 44.52 | 43.14 | 41.63 | 41.31 | 40.84 | 42.40 | 45.10 | 47.76 | 49.71 | 49.68 | 49.38 | 49.73 | 49.16 | 47.96 | 44.27 | 41.54 | 39.84 | 38.91 | 37.97 |
| 31 | 36.58 | 36.22 | 36.09 | 35.69 | 36.04 | 36.12 | 35.89 | 35.46 | 35.79 | 36.43 | 38.83 | 41.13 | 43.97 | 45.79 | 46.57 | 47.61 | 50.49 | 49.29 | 48.31 | 46.53 | 45.44 | 43.92 | 43.41 | 42.62 |

Values in Degrees Farenheit

# TABLE 4 - MONTHLY SIGMA THETA

**OCTOBER 1994**

HOUR

| DAY | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.97 | 3.42 | 3.40 | 45.09 | 9.69 | 24.98 | 37.82 | 4.42 | 3.25 | 3.77 | 4.20 | 37.03 | 31.48 | 35.99 | 23.74 | 33.97 | 14.85 | 37.21 | 6.81 | 4.95 | 43.20 | 14.93 | 7.76 | 5.69 |
| 2 | 4.77 | 4.13 | 4.28 | 4.33 | 2.99 | 5.69 | 10.43 | 5.20 | 4.50 | 13.17 | 28.86 | 28.78 | 23.03 | 19.74 | 22.94 | 18.79 | 17.89 | 18.23 | 11.15 | 6.58 | 21.59 | 30.63 | 25.14 | 14.35 |
| 3 | 17.45 | 35.98 | 56.91 | 37.87 | 9.77 | 5.15 | 29.51 | 25.57 | 47.99 | 28.85 | 21.94 | 24.74 | 8.55 | 18.03 | 38.04 | 22.08 | 47.88 | 29.99 | 28.17 | 4.70 | 28.00 | 12.98 | 40.84 | 7.84 |
| 4 | 46.49 | 59.97 | 9.71 | 28.13 | 9.36 | 24.73 | 35.91 | 38.24 | 28.16 | 54.37 | 43.98 | 37.98 | 26.57 | 34.66 | 41.82 | 15.77 | 27.80 | 33.80 | 39.80 | 13.29 | 6.14 | 7.49 | 20.64 | 42.73 |
| 5 | 44.31 | 31.56 | 34.38 | 66.07 | 18.26 | 12.32 | 20.53 | 32.12 | 17.32 | 24.29 | 41.05 | 13.88 | 8.36 | 9.50 | 10.63 | 11.73 | 10.01 | 17.83 | 20.45 | 21.35 | 15.04 | 41.06 | 20.89 | 6.98 |
| 6 | 10.51 | 35.26 | 19.56 | 27.61 | 10.60 | 16.70 | 15.61 | 20.40 | 25.29 | 10.66 | 38.53 | 35.05 | 25.17 | 27.36 | 28.57 | 13.40 | 13.86 | 12.63 | 11.83 | 10.54 | 9.20 | 25.79 | 13.58 | 3.61 |
| 7 | 3.77 | 15.58 | 4.04 | 6.75 | 7.72 | 4.39 | 10.01 | 31.20 | 12.88 | 24.07 | 28.52 | 26.49 | 26.30 | 44.46 | 18.45 | 56.50 | 44.02 | 35.23 | 30.66 | 16.00 | 10.92 | 3.69 | 3.48 | 2.96 |
| 8 | 2.90 | 3.10 | 2.93 | 3.59 | 4.92 | 7.02 | 5.22 | 4.73 | 3.77 | 7.86 | 29.96 | 19.49 | 45.52 | 29.83 | 42.04 | 36.96 | 47.24 | 32.74 | 24.46 | 13.77 | 40.79 | 3.65 | 3.26 | 3.09 |
| 9 | 3.22 | 3.34 | 4.83 | 3.80 | 3.91 | 3.80 | 2.83 | 3.03 | 2.71 | 5.40 | 41.76 | 22.55 | 19.55 | 28.46 | 23.42 | 32.64 | 28.83 | 21.69 | 24.83 | 11.36 | 25.66 | 3.22 | 3.05 | 2.75 |
| 10 | 2.89 | 3.43 | 3.33 | 3.64 | 3.56 | 3.74 | 4.04 | 3.88 | 3.76 | 3.57 | 30.31 | 19.68 | 28.73 | 23.69 | 18.42 | 17.33 | 19.40 | 14.14 | 10.91 | 21.03 | 37.52 | 3.66 | 3.68 | 3.70 |
| 11 | 4.07 | 4.06 | 4.50 | 6.04 | 6.45 | 4.16 | 4.20 | 3.99 | 3.97 | 4.37 | 43.86 | 48.56 | 28.01 | 22.11 | 18.39 | 13.86 | 11.00 | 9.91 | 11.58 | 11.37 | 20.02 | 17.08 | 38.29 | 9.82 |
| 12 | 2.63 | 3.81 | 3.16 | 2.76 | 2.87 | 2.65 | 3.40 | 2.73 | 3.33 | 3.88 | 34.32 | 21.09 | 24.69 | 17.36 | 13.95 | 14.68 | 12.68 | 12.79 | 14.77 | 10.15 | 31.01 | 14.38 | 25.18 | 21.39 |
| 13 | 10.93 | 9.12 | 11.99 | 30.12 | 33.88 | 30.94 | 42.78 | 42.66 | 40.63 | 43.02 | 33.68 | 26.30 | 34.50 | 23.81 | 19.35 | 18.68 | 18.36 | 13.24 | 20.03 | 27.18 | 20.03 | 14.04 | 21.59 | 15.14 |
| 14 | 18.84 | 17.12 | 17.72 | 36.22 | 28.00 | 6.24 | 28.17 | 21.42 | 12.02 | 25.10 | 27.78 | 16.52 | 10.76 | 10.50 | 10.26 | 11.47 | 11.70 | 10.69 | 11.68 | 10.92 | 19.09 | 13.80 | 11.64 | 10.77 |
| 15 | 9.65 | 8.50 | 7.44 | 8.27 | 9.01 | 8.87 | 8.74 | 11.88 | 27.09 | 28.98 | 57.74 | 24.97 | 26.19 | 30.52 | 15.21 | 22.06 | 32.10 | 24.85 | 13.91 | 8.59 | 14.14 | 12.27 | 12.92 | 11.13 |
| 16 | 19.82 | 9.54 | 7.66 | 4.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 12.89 | 14.13 | 11.20 | 14.79 | 14.10 | 18.21 | 15.03 | 17.57 | 15.40 | 8.61 | 26.70 | 18.52 | 5.66 |
| 17 | 6.78 | 10.25 | 22.79 | 14.04 | 28.05 | 12.37 | 11.27 | 8.86 | 15.95 | 7.79 | 7.33 | 8.95 | 26.93 | 11.11 | 21.27 | 14.17 | 18.92 | 46.45 | 35.06 | 6.06 | 20.79 | 21.89 | 15.23 | 6.47 |
| 18 | 10.82 | 38.52 | 5.60 | 8.45 | 5.39 | 26.89 | 55.11 | 11.12 | 10.56 | 12.68 | 26.56 | 52.83 | 50.60 | 29.36 | 18.79 | 12.51 | 13.07 | 12.03 | 23.51 | 10.08 | 19.32 | 10.77 | 12.42 | 9.98 |
| 19 | 7.14 | 7.43 | 5.05 | 3.71 | 4.26 | 5.25 | 2.87 | 5.18 | 3.80 | 44.79 | 32.79 | 18.66 | 27.41 | 36.46 | 25.51 | 15.96 | 23.58 | 21.43 | 18.33 | 33.04 | 3.89 | 3.97 | 2.98 | 3.26 |
| 20 | 4.64 | 5.41 | 3.46 | 3.45 | 3.30 | 2.99 | 2.82 | 3.02 | 3.24 | 12.37 | 5.80 | 30.18 | 30.35 | 29.24 | 21.75 | 43.98 | 18.82 | 26.93 | 15.13 | 42.16 | 5.34 | 3.44 | 3.52 | 3.51 |
| 21 | 2.95 | 3.41 | 3.41 | 3.57 | 3.92 | 3.85 | 3.77 | 3.81 | 3.55 | 3.91 | 47.84 | 27.97 | 18.49 | 20.62 | 21.50 | 21.75 | 13.85 | 13.24 | 12.56 | 28.61 | 4.60 | 4.88 | 6.41 | 5.70 |
| 22 | 4.28 | 4.50 | 5.27 | 3.70 | 3.87 | 3.85 | 4.47 | 5.22 | 4.25 | 5.95 | 13.19 | 26.80 | 20.55 | 33.49 | 25.83 | 34.21 | 41.41 | 35.97 | 22.38 | 22.60 | 17.59 | 3.70 | 4.89 | 3.98 |
| 23 | 4.49 | 3.56 | 3.45 | 3.90 | 3.86 | 3.77 | 3.82 | 3.78 | 3.90 | 3.77 | 12.68 | 20.63 | 21.49 | 21.72 | 27.70 | 33.98 | 22.38 | 20.11 | 14.42 | 28.71 | 3.58 | 3.82 | 3.27 | 2.87 |
| 24 | 2.93 | 3.56 | 3.60 | 3.06 | 3.03 | 4.29 | 3.11 | 2.94 | 3.47 | 4.78 | 29.36 | 23.42 | 27.11 | 32.44 | 24.99 | 20.60 | 17.07 | 18.03 | 11.24 | 8.90 | 3.38 | 3.56 | 3.32 | 3.73 |
| 25 | 3.97 | 4.26 | 3.77 | 2.80 | 2.65 | 3.45 | 13.23 | 3.75 | 3.34 | 3.44 | 19.31 | 23.63 | 22.77 | 29.88 | 28.00 | 26.55 | 22.60 | 23.28 | 13.63 | 30.17 | 4.39 | 3.16 | 2.75 | 2.58 |
| 26 | 3.33 | 3.22 | 3.17 | 2.88 | 3.03 | 2.98 | 3.02 | 3.38 | 3.23 | 6.62 | 16.59 | 26.57 | 21.59 | 17.41 | 20.86 | 25.53 | 19.54 | 21.81 | 18.25 | 39.33 | 3.84 | 3.83 | 4.49 | 3.49 |
| 27 | 4.44 | 3.79 | 4.17 | 5.11 | 5.22 | 5.71 | 4.49 | 3.64 | 4.19 | 5.14 | 6.23 | 20.91 | 22.45 | 28.32 | 27.11 | 20.66 | 16.12 | 22.21 | 27.99 | 7.96 | 4.24 | 4.41 | 4.63 | 3.42 |
| 28 | 3.85 | 9.33 | 4.64 | 5.41 | 5.71 | 7.18 | 7.83 | 15.66 | 11.81 | 9.87 | 18.71 | 36.01 | 23.44 | 20.37 | 20.24 | 25.09 | 24.65 | 29.52 | 21.55 | 13.74 | 9.86 | 7.78 | 9.76 | 7.85 |
| 29 | 8.28 | 6.61 | 3.89 | 5.97 | 3.88 | 2.96 | 3.41 | 3.20 | 3.81 | 3.72 | 21.01 | 24.81 | 25.27 | 42.63 | 23.93 | 34.50 | 33.65 | 26.83 | 21.30 | 13.40 | 6.81 | 4.97 | 3.31 | 3.67 |
| 30 | 4.21 | 3.25 | 4.27 | 4.40 | 3.38 | 3.53 | 5.04 | 7.55 | 3.88 | 4.12 | 44.64 | 21.89 | 36.15 | 43.83 | 16.18 | 10.20 | 11.56 | 13.60 | 10.70 | 13.26 | 11.37 | 11.44 | 13.76 | 9.35 |
| 31 | 4.86 | 4.47 | 7.62 | 4.30 | 4.76 | 4.31 | 2.97 | 3.02 | 3.42 | 27.53 | 46.40 | 16.01 | 24.86 | 23.59 | 19.02 | 21.80 | 35.74 | 18.19 | 15.53 | 10.06 | 4.21 | 3.72 | 13.10 | 5.44 |

Values in Degrees

# TABLE 5 - MONTHLY WIND SPEED DATA

**NOVEMBER 1994**

HOUR

| DAY | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 16.76 | 19.59 | 15.42 | 9.59 | 11.48 | 12.52 | 12.82 | 13.49 | 11.05 | 9.09 | 4.57 | 3.27 | 3.80 | 4.39 | 10.44 | 1.57 | 3.23 | 2.83 | 3.37 | 3.91 | 3.10 | 2.30 | 5.58 | 8.01 |
| 2 | 10.66 | 5.18 | 3.66 | 4.54 | 9.03 | 8.60 | 7.05 | 11.43 | 10.08 | 8.60 | 7.08 | 5.33 | 2.74 | 6.48 | 15.62 | 6.89 | 4.53 | 5.69 | 5.47 | 5.11 | 7.32 | 5.64 | 5.06 | 4.71 |
| 3 | 7.68 | 0.57 | 0.00 | 2.47 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.03 | 3.59 | 4.37 | 2.93 | 4.75 | 2.90 | 5.57 | 10.81 | 13.32 | 19.26 | 22.13 | 19.31 | 19.49 | 18.84 | 16.99 |
| 4 | 18.10 | 15.59 | 15.14 | 14.96 | 13.10 | 17.87 | 16.59 | 17.41 | 17.84 | 10.41 | 4.36 | 6.36 | 7.91 | 7.96 | 6.93 | 6.04 | 5.73 | 4.27 | 4.42 | 2.86 | 9.84 | 14.84 | 14.19 | 13.93 |
| 5 | 12.86 | 11.28 | 11.49 | 7.12 | 8.14 | 7.76 | 4.75 | 1.96 | 1.54 | 2.10 | 3.32 | 4.18 | 3.38 | 5.07 | 4.82 | 9.17 | 10.20 | 8.36 | 3.50 | 12.73 | 14.63 | 17.17 | 18.02 | 15.73 |
| 6 | 14.91 | 14.94 | 12.77 | 8.66 | 11.06 | 9.78 | 11.58 | 9.92 | 8.57 | 3.42 | 2.38 | 3.90 | 3.93 | 6.73 | 7.40 | 2.67 | 3.25 | 1.42 | 8.47 | 13.58 | 11.16 | 9.00 | 8.06 | 6.93 |
| 7 | 8.60 | 7.13 | 9.28 | 5.71 | 4.94 | 2.56 | 8.46 | 7.69 | 9.80 | 5.23 | 2.88 | 6.58 | 11.00 | 14.32 | 14.97 | 14.98 | 13.93 | 8.87 | 2.05 | 5.95 | 8.75 | 9.94 | 10.50 | 7.10 |
| 8 | 8.36 | 5.26 | 15.30 | 18.28 | 7.95 | 7.20 | 6.51 | 7.39 | 12.07 | 17.43 | 5.62 | 10.52 | 12.71 | 19.26 | 17.47 | 16.31 | 19.31 | 15.87 | 12.97 | 9.56 | 14.97 | 15.92 | 21.01 | 19.11 |
| 9 | 18.73 | 21.48 | 23.64 | 17.81 | 17.09 | 18.41 | 15.39 | 14.56 | 13.38 | 8.51 | 4.15 | 5.98 | 8.76 | 17.10 | 17.60 | 19.41 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Values in MPH

# TABLE 6 - MONTHLY WIND DIRECTION DATA

**NOVEMBER 1994**

| DAY \ HOUR | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 47.30 | 47.84 | 55.72 | 63.70 | 42.82 | 44.15 | 52.85 | 50.98 | 49.07 | 58.38 | 79.10 | 251.00 | 265.70 | 254.30 | 356.30 | 0.42 | 258.20 | 306.70 | 34.38 | 3.77 | 321.20 | 291.60 | 48.42 | 113.80 |
| 2 | 164.60 | 201.00 | 200.20 | 208.00 | 200.10 | 202.90 | 200.20 | 198.90 | 201.90 | 209.30 | 217.80 | 301.80 | 226.80 | 327.10 | 313.60 | 1.70 | 1.64 | 45.04 | 55.28 | 106.60 | 87.00 | 16.48 | 92.20 | 165.20 |
| 3 | 174.50 | 200.30 | 0.00 | 61.08 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 159.20 | 204.10 | 193.90 | 170.40 | 200.10 | 284.90 | 225.80 | 39.92 | 28.81 | 45.60 | 46.71 | 49.15 | 50.84 | 44.58 | 42.38 |
| 4 | 44.71 | 44.81 | 49.76 | 45.76 | 46.62 | 50.20 | 49.00 | 45.57 | 49.00 | 58.74 | 198.40 | 202.20 | 213.90 | 228.80 | 245.70 | 225.30 | 210.00 | 218.30 | 178.70 | 71.00 | 46.43 | 52.34 | 52.71 | 52.64 |
| 5 | 53.18 | 51.98 | 52.99 | 51.99 | 48.95 | 52.31 | 73.80 | 232.70 | 200.90 | 250.60 | 249.20 | 331.50 | 245.50 | 218.40 | 335.90 | 215.00 | 222.40 | 219.20 | 232.50 | 52.36 | 50.93 | 51.63 | 50.80 | 54.25 |
| 6 | 53.58 | 53.63 | 53.57 | 56.28 | 60.75 | 61.48 | 56.28 | 64.83 | 62.89 | 86.30 | 274.60 | 274.30 | 257.10 | 227.30 | 205.80 | 241.60 | 263.60 | 271.70 | 39.75 | 50.20 | 55.59 | 53.24 | 51.11 | 49.91 |
| 7 | 51.82 | 67.11 | 73.80 | 48.56 | 42.42 | 59.97 | 54.09 | 48.83 | 54.38 | 91.80 | 234.90 | 220.90 | 210.70 | 201.60 | 200.10 | 199.60 | 205.60 | 227.20 | 339.40 | 49.40 | 65.75 | 140.60 | 163.60 | 166.50 |
| 8 | 161.00 | 107.60 | 52.18 | 57.93 | 101.80 | 51.53 | 51.80 | 159.10 | 58.96 | 45.45 | 7.50 | 290.20 | 264.10 | 277.70 | 299.70 | 304.20 | 301.70 | 310.50 | 334.40 | 34.68 | 46.52 | 49.84 | 49.95 | 51.73 |
| 9 | 50.72 | 49.46 | 50.96 | 51.09 | 50.67 | 49.56 | 52.00 | 53.30 | 56.02 | 59.59 | 246.30 | 223.70 | 208.00 | 207.20 | 207.20 | 209.70 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Values In Degrees

# TABLE 7 - MONTHLY TEMPERATURE DATA

**NOVEMBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 42.39 | 42.23 | 42.36 | 42.19 | 41.38 | 40.95 | 41.11 | 39.95 | 39.64 | 39.61 | 40.66 | 42.39 | 43.88 | 44.22 | 52.42 | 54.94 | 48.14 | 46.80 | 47.25 | 46.96 | 47.37 | 46.86 | 47.25 | 49.62 |
| 2 | 51.13 | 49.45 | 49.18 | 48.38 | 48.64 | 48.49 | 48.21 | 48.25 | 47.42 | 46.37 | 46.04 | 44.60 | 45.71 | 45.23 | 40.87 | 35.41 | 34.19 | 34.48 | 35.62 | 36.77 | 38.60 | 37.94 | 38.21 | 37.43 |
| 3 | 34.63 | 31.66 | 31.55 | 32.77 | 32.21 | 31.61 | 31.04 | 30.15 | 31.12 | 33.55 | 32.99 | 32.69 | 34.43 | 35.80 | 38.89 | 38.88 | 36.89 | 36.87 | 33.87 | 32.11 | 32.08 | 31.60 | 31.06 | 30.53 |
| 4 | 30.10 | 29.54 | 29.59 | 27.87 | 27.36 | 26.96 | 26.29 | 26.09 | 25.20 | 26.98 | 31.16 | 32.10 | 33.56 | 35.12 | 36.74 | 37.86 | 37.99 | 37.35 | 35.91 | 34.39 | 33.64 | 33.45 | 32.95 | 33.12 |
| 5 | 33.53 | 33.58 | 33.93 | 34.11 | 34.35 | 34.76 | 35.05 | 34.72 | 33.96 | 34.59 | 35.14 | 37.30 | 38.75 | 39.50 | 42.86 | 44.27 | 44.11 | 44.08 | 42.02 | 40.00 | 40.28 | 39.77 | 39.77 | 40.40 |
| 6 | 40.31 | 40.11 | 40.28 | 40.34 | 40.55 | 40.89 | 41.08 | 40.34 | 40.95 | 44.12 | 45.41 | 45.65 | 47.08 | 47.90 | 48.19 | 48.59 | 48.03 | 47.08 | 47.18 | 47.96 | 48.36 | 48.22 | 48.05 | 47.95 |
| 7 | 48.37 | 48.30 | 47.52 | 46.99 | 45.44 | 44.60 | 45.43 | 45.65 | 45.95 | 47.55 | 49.82 | 50.02 | 50.48 | 51.75 | 53.59 | 54.24 | 54.66 | 52.84 | 51.40 | 50.43 | 49.90 | 52.77 | 53.10 | 52.26 |
| 8 | 51.84 | 49.06 | 46.15 | 45.14 | 48.13 | 46.33 | 46.44 | 44.95 | 41.95 | 42.17 | 47.35 | 46.75 | 47.91 | 47.08 | 47.00 | 47.09 | 46.25 | 44.70 | 42.21 | 40.93 | 38.84 | 38.15 | 36.77 | 36.49 |
| 9 | 35.49 | 35.14 | 35.06 | 35.43 | 34.58 | 34.28 | 34.81 | 34.78 | 35.44 | 36.54 | 39.01 | 38.61 | 40.07 | 41.51 | 40.46 | 37.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Values in Degrees Farenheit

# TABLE 8 - MONTHLY SIGMA THETA

**NOVEMBER 1994**

HOUR

| DAY | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3.66 | 3.87 | 18.99 | 23.21 | 7.99 | 6.87 | 8.18 | 5.58 | 11.11 | 12.71 | 28.05 | 23.44 | 23.90 | 19.17 | 62.13 | 59.16 | 28.91 | 37.01 | 35.56 | 40.20 | 22.06 | 26.41 | 16.98 | 33.82 |
| 2 | 19.51 | 26.31 | 42.29 | 44.03 | 22.26 | 31.76 | 22.67 | 13.70 | 18.00 | 20.70 | 24.60 | 19.55 | 43.18 | 22.62 | 15.19 | 24.98 | 10.91 | 18.01 | 37.13 | 16.42 | 23.49 | 36.69 | 15.02 | 38.79 |
| 3 | 20.19 | 2.13 | 0.00 | 10.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 25.78 | 49.52 | 25.22 | 30.19 | 22.98 | 52.96 | 27.51 | 13.15 | 8.64 | 5.98 | 5.50 | 5.01 | 4.47 | 7.19 | 9.29 |
| 4 | 6.36 | 5.01 | 5.41 | 5.39 | 7.95 | 5.56 | 6.01 | 6.06 | 5.85 | 18.31 | 22.94 | 25.75 | 20.56 | 23.00 | 39.09 | 28.12 | 25.79 | 16.44 | 16.37 | 26.26 | 6.67 | 4.20 | 6.11 | 5.58 |
| 5 | 5.89 | 6.96 | 6.03 | 8.36 | 5.91 | 9.40 | 19.83 | 14.79 | 24.93 | 17.03 | 29.20 | 37.30 | 28.62 | 39.69 | 51.86 | 22.68 | 13.00 | 17.11 | 32.35 | 5.56 | 5.54 | 5.17 | 4.26 | 4.99 |
| 6 | 5.77 | 6.49 | 6.88 | 9.32 | 7.66 | 8.61 | 6.96 | 9.88 | 9.88 | 27.18 | 34.99 | 19.22 | 27.06 | 22.05 | 19.91 | 37.80 | 16.03 | 13.90 | 9.45 | 6.21 | 7.82 | 9.07 | 10.44 | 20.18 |
| 7 | 9.40 | 16.27 | 18.66 | 21.30 | 23.63 | 23.11 | 8.81 | 11.35 | 8.98 | 27.45 | 20.63 | 19.16 | 15.53 | 14.14 | 12.13 | 12.89 | 10.09 | 9.50 | 26.77 | 13.16 | 12.43 | 21.66 | 17.89 | 15.39 |
| 8 | 13.36 | 23.89 | 5.28 | 18.28 | 39.24 | 29.51 | 21.06 | 43.44 | 32.78 | 7.37 | 37.94 | 15.64 | 16.38 | 15.60 | 17.79 | 20.00 | 12.08 | 11.40 | 8.95 | 11.01 | 4.68 | 4.49 | 2.93 | 4.34 |
| 9 | 3.60 | 2.67 | 3.71 | 4.72 | 4.66 | 4.26 | 7.41 | 6.00 | 6.27 | 8.56 | 36.57 | 20.86 | 21.84 | 10.40 | 12.34 | 12.50 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 16 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 17 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 21 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 27 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 28 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Value In Degrees

# TABLE 9 - MONTHLY WIND SPEED DATA

**DECEMBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 6.33 | 14.16 | 14.25 | 15.82 | 16.33 | 15.65 | 12.26 | 7.63 | 5.94 |
| 8 | 5.21 | 13.27 | 14.47 | 10.87 | 7.73 | 7.11 | 8.66 | 12.89 | 14.20 | 13.35 | 7.89 | 4.72 | 6.46 | 11.51 | 9.63 | 8.57 | 10.63 | 16.46 | 7.57 | 20.40 | 23.67 | 24.71 | 24.30 | 23.76 |
| 9 | 23.49 | 20.64 | 22.13 | 23.10 | 23.54 | 19.33 | 17.00 | 17.02 | 18.34 | 18.22 | 9.68 | 5.30 | 6.29 | 6.64 | 5.65 | 6.86 | 6.38 | 6.60 | 8.64 | 16.94 | 12.01 | 11.89 | 18.70 | 18.75 |
| 10 | 20.24 | 21.37 | 19.82 | 22.10 | 22.34 | 15.89 | 15.44 | 12.67 | 13.81 | 11.95 | 7.21 | 6.77 | 5.20 | 6.96 | 7.16 | 6.84 | 8.42 | 5.93 | 3.92 | 11.73 | 12.53 | 11.13 | 6.09 | 3.27 |
| 11 | 5.04 | 5.46 | 6.01 | 2.96 | 1.96 | 2.47 | 6.96 | 8.70 | 15.83 | 11.56 | 4.49 | 6.02 | 6.95 | 5.42 | 6.29 | 7.72 | 6.39 | 5.63 | 6.92 | 12.14 | 16.98 | 19.38 | 17.65 | 20.14 |
| 12 | 17.02 | 17.56 | 12.77 | 16.19 | 22.23 | 12.48 | 6.40 | 7.00 | 6.57 | 5.58 | 4.23 | 4.58 | 5.83 | 4.51 | 4.08 | 3.91 | 2.88 | 4.14 | 2.31 | 3.91 | 6.24 | 3.36 | 4.05 | 4.28 |
| 13 | 1.95 | 2.46 | 3.25 | 2.62 | 2.36 | 2.17 | 2.56 | 2.08 | 2.85 | 2.68 | 2.93 | 5.22 | 6.54 | 8.00 | 3.26 | 5.60 | 8.01 | 7.66 | 1.86 | 2.52 | 1.43 | 2.14 | 2.36 | 2.73 |
| 14 | 2.01 | 3.04 | 5.21 | 10.07 | 16.06 | 19.67 | 22.02 | 20.79 | 21.92 | 21.72 | 22.36 | 15.33 | 5.70 | 5.44 | 4.47 | 8.17 | 4.52 | 5.47 | 14.71 | 21.19 | 22.02 | 20.95 | 21.42 | 19.15 |
| 15 | 17.11 | 11.56 | 7.12 | 6.63 | 4.67 | 2.58 | 2.55 | 3.57 | 6.00 | 0.99 | 2.50 | 2.69 | 5.30 | 5.12 | 8.37 | 7.15 | 6.52 | 3.31 | 3.42 | 14.60 | 18.74 | 20.74 | 21.59 | 20.89 |
| 16 | 22.61 | 21.49 | 19.39 | 20.96 | 14.29 | 16.67 | 13.45 | 8.45 | 7.29 | 4.18 | 2.01 | 2.99 | 4.27 | 3.78 | 5.14 | 4.51 | 4.39 | 3.27 | 4.81 | 5.79 | 7.83 | 8.31 | 9.50 | 11.75 |
| 17 | 11.80 | 8.53 | 12.12 | 5.97 | 7.45 | 9.32 | 10.07 | 10.83 | 7.11 | 5.77 | 2.38 | 4.64 | 3.65 | 6.22 | 4.64 | 5.33 | 5.44 | 4.00 | 3.24 | 5.68 | 7.19 | 9.27 | 10.86 | 12.35 |
| 18 | 12.08 | 14.45 | 15.68 | 17.02 | 16.16 | 14.03 | 18.33 | 16.79 | 14.60 | 10.75 | 3.97 | 4.05 | 5.97 | 5.78 | 6.01 | 6.96 | 6.51 | 5.65 | 3.51 | 6.38 | 12.03 | 11.06 | 10.51 | 12.19 |
| 19 | 7.83 | 9.98 | 12.62 | 13.20 | 12.07 | 12.95 | 5.22 | 11.58 | 21.32 | 15.51 | 10.23 | 2.42 | 7.77 | 11.41 | 10.94 | 10.04 | 9.08 | 4.89 | 11.94 | 18.11 | 16.06 | 16.70 | 16.56 | 18.39 |
| 20 | 20.84 | 21.27 | 22.60 | 20.66 | 22.16 | 18.80 | 5.64 | 12.20 | 12.20 | 12.49 | 5.59 | 4.26 | 5.49 | 7.51 | 7.26 | 6.67 | 6.35 | 4.11 | 2.90 | 5.91 | 8.88 | 13.06 | 15.91 | 15.43 |
| 21 | 15.84 | 14.04 | 11.08 | 11.21 | 14.01 | 12.64 | 10.28 | 10.50 | 9.94 | 9.86 | 4.30 | 3.24 | 4.45 | 5.01 | 5.67 | 5.73 | 5.83 | 3.07 | 7.92 | 11.58 | 15.33 | 15.19 | 15.20 | 13.18 |
| 22 | 13.50 | 4.91 | 3.80 | 5.17 | 5.66 | 15.13 | 15.09 | 13.45 | 7.22 | 11.27 | 6.62 | 5.33 | 4.86 | 6.58 | 5.53 | 4.59 | 4.30 | 4.43 | 4.63 | 8.37 | 10.04 | 11.96 | 12.07 | 11.11 |
| 23 | 6.78 | 7.45 | 9.75 | 5.88 | 8.53 | 9.07 | 10.12 | 7.97 | 5.65 | 3.31 | 3.69 | 6.83 | 7.40 | 8.74 | 7.46 | 7.12 | 2.78 | 2.24 | 5.86 | 3.78 | 2.40 | 3.37 | 4.18 | 4.88 |
| 24 | 2.53 | 0.00 | 0.00 | 0.00 | 2.20 | 1.85 | 1.69 | 2.04 | 0.00 | 0.00 | 1.72 | 1.85 | 1.80 | 3.05 | 2.25 | 2.51 | 4.04 | 3.81 | 1.49 | 2.72 | 2.32 | 4.11 | 3.96 | 3.95 |
| 25 | 3.59 | 3.31 | 5.82 | 5.76 | 4.76 | 3.36 | 1.14 | 3.21 | 1.88 | 3.35 | 1.52 | 2.09 | 4.02 | 2.67 | 2.68 | 3.64 | 4.02 | 4.47 | 5.56 | 11.08 | 9.55 | 13.02 | 16.39 | 16.50 |
| 26 | 20.69 | 21.81 | 22.03 | 21.26 | 22.55 | 16.91 | 16.58 | 17.45 | 18.36 | 14.81 | 4.58 | 3.45 | 3.35 | 5.06 | 3.74 | 6.72 | 5.82 | 4.97 | 2.79 | 6.67 | 8.90 | 15.33 | 16.47 | 17.42 |
| 27 | 20.13 | 17.96 | 17.10 | 18.99 | 20.20 | 22.46 | 8.04 | 4.57 | 2.17 | 1.30 | 3.40 | 4.94 | 5.77 | 4.82 | 5.84 | 5.73 | 4.66 | 3.55 | 3.64 | 4.85 | 10.08 | 8.76 | 8.90 | 5.30 |
| 28 | 3.53 | 3.12 | 4.88 | 3.01 | 2.03 | 2.29 | 2.34 | 1.51 | 2.43 | 3.45 | 2.21 | 3.43 | 2.72 | 3.68 | 2.11 | 2.04 | 2.62 | 4.54 | 4.37 | 2.91 | 3.68 | 3.42 | 4.02 | 1.96 |
| 29 | 1.97 | 2.06 | 2.72 | 2.37 | 3.98 | 3.64 | 3.26 | 1.53 | 2.60 | 2.00 | 1.70 | 1.96 | 0.79 | 4.38 | 3.35 | 6.38 | 3.83 | 2.39 | 4.98 | 1.22 | 9.69 | 18.52 | 9.56 | 4.49 |
| 30 | 2.99 | 9.02 | 5.11 | 2.58 | 2.34 | 11.01 | 7.07 | 14.03 | 17.29 | 17.03 | 13.85 | 5.05 | 7.32 | 6.05 | 6.74 | 6.26 | 9.67 | 8.14 | 5.58 | 13.06 | 19.97 | 20.04 | 21.46 | 21.71 |
| 31 | 19.40 | 15.97 | 12.92 | 6.51 | 8.96 | 11.43 | 12.03 | 16.89 | 14.37 | 15.13 | 12.24 | 17.70 | 13.20 | 15.98 | 14.69 | 17.62 | 17.78 | 18.49 | 16.13 | 10.12 | 12.40 | 9.95 | 9.83 | 14.59 |

Values in MPH

# TABLE 10 - MONTHLY WIND DIRECTION DATA

**DECEMBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 136.10 | 299.00 | 344.90 | 347.20 | 344.50 | 351.90 | 343.80 | 20.33 | 7.77 |
| 8 | 43.62 | 52.44 | 47.94 | 45.87 | 33.05 | 59.36 | 68.52 | 57.28 | 46.73 | 55.27 | 53.35 | 176.30 | 271.70 | 339.80 | 329.90 | 22.21 | 346.50 | 282.50 | 25.00 | 51.38 | 51.49 | 50.80 | 52.10 | 51.25 |
| 9 | 51.60 | 55.76 | 51.25 | 51.15 | 51.90 | 52.95 | 50.93 | 51.46 | 51.45 | 50.58 | 60.39 | 227.40 | 245.10 | 239.50 | 265.70 | 249.80 | 235.40 | 206.70 | 35.91 | 50.77 | 54.55 | 55.10 | 49.74 | 49.70 |
| 10 | 50.36 | 50.55 | 51.57 | 51.08 | 52.19 | 56.23 | 69.81 | 56.52 | 54.01 | 53.17 | 83.60 | 228.70 | 241.20 | 213.30 | 223.80 | 241.60 | 233.70 | 202.70 | 111.30 | 51.28 | 52.78 | 55.09 | 89.00 | 17.13 |
| 11 | 360.00 | 41.46 | 72.50 | 325.30 | 349.80 | 51.10 | 51.59 | 53.95 | 48.76 | 54.54 | 65.98 | 226.90 | 225.10 | 208.20 | 212.90 | 220.90 | 228.30 | 214.00 | 69.69 | 42.45 | 41.72 | 44.20 | 47.74 | 47.87 |
| 12 | 49.15 | 55.32 | 52.88 | 46.26 | 49.22 | 52.32 | 61.55 | 79.90 | 61.84 | 25.65 | 20.17 | 251.00 | 243.30 | 253.40 | 264.90 | 217.90 | 199.20 | 209.60 | 216.50 | 343.00 | 43.99 | 196.80 | 21.06 | 62.30 |
| 13 | 116.70 | 276.10 | 350.70 | 21.92 | 274.50 | 283.80 | 209.20 | 162.60 | 134.50 | 48.53 | 279.40 | 121.90 | 210.50 | 233.30 | 334.00 | 217.70 | 220.50 | 249.60 | 346.10 | 51.75 | 344.90 | 196.40 | 293.20 | 337.30 |
| 14 | 299.40 | 52.86 | 16.41 | 45.10 | 45.53 | 42.96 | 44.74 | 43.37 | 43.15 | 49.56 | 47.47 | 45.62 | 50.24 | 275.80 | 291.90 | 198.70 | 220.90 | 223.70 | 53.54 | 49.92 | 49.93 | 49.35 | 49.40 | 50.58 |
| 15 | 50.32 | 53.79 | 53.41 | 50.74 | 48.69 | 157.00 | 42.91 | 48.92 | 37.85 | 17.25 | 248.80 | 241.00 | 217.90 | 194.00 | 209.30 | 226.60 | 254.20 | 278.70 | 142.50 | 52.31 | 48.85 | 49.40 | 49.60 | 49.70 |
| 16 | 49.43 | 49.63 | 49.44 | 49.21 | 59.41 | 45.58 | 49.76 | 44.58 | 42.63 | 52.46 | 241.90 | 263.00 | 250.00 | 265.90 | 261.50 | 270.10 | 261.90 | 302.80 | 19.07 | 18.69 | 36.39 | 35.01 | 49.79 | 49.82 |
| 17 | 50.13 | 55.06 | 47.28 | 57.87 | 59.97 | 46.40 | 46.26 | 49.18 | 63.48 | 50.85 | 53.85 | 242.90 | 248.60 | 236.70 | 254.30 | 239.00 | 242.20 | 250.00 | 46.69 | 66.68 | 27.92 | 33.59 | 39.98 | 38.56 |
| 18 | 42.95 | 43.41 | 49.95 | 44.76 | 46.67 | 51.21 | 48.79 | 49.65 | 44.89 | 59.07 | 76.90 | 228.90 | 218.90 | 222.50 | 230.10 | 238.60 | 216.40 | 223.20 | 230.00 | 46.49 | 51.48 | 41.40 | 40.76 | 55.05 |
| 19 | 68.87 | 55.49 | 29.83 | 15.47 | 14.22 | 4.25 | 146.40 | 35.15 | 35.11 | 42.77 | 51.99 | 24.43 | 257.70 | 305.50 | 284.90 | 281.20 | 299.00 | 294.30 | 49.32 | 51.54 | 54.26 | 52.08 | 53.00 | 51.57 |
| 20 | 48.33 | 47.03 | 47.87 | 45.02 | 49.49 | 55.26 | 61.29 | 48.63 | 35.90 | 41.43 | 112.20 | 221.80 | 221.40 | 226.20 | 201.40 | 223.00 | 242.90 | 246.20 | 57.87 | 58.51 | 60.92 | 53.91 | 51.89 | 51.36 |
| 21 | 48.48 | 49.00 | 49.26 | 46.91 | 47.18 | 48.81 | 37.11 | 44.04 | 41.91 | 40.78 | 71.60 | 241.40 | 251.40 | 245.80 | 230.60 | 250.80 | 252.50 | 257.80 | 41.15 | 41.25 | 41.24 | 38.42 | 45.51 | 48.59 |
| 22 | 53.01 | 109.40 | 163.10 | 119.90 | 22.30 | 37.63 | 44.70 | 36.12 | 73.30 | 86.20 | 26.32 | 197.50 | 72.60 | 213.50 | 238.30 | 258.90 | 242.10 | 32.56 | 48.68 | 44.81 | 49.15 | 47.29 | 43.91 | 39.44 |
| 23 | 70.10 | 79.10 | 54.79 | 83.30 | 43.40 | 40.66 | 48.42 | 40.53 | 22.96 | 33.90 | 216.40 | 184.90 | 147.20 | 165.60 | 136.90 | 189.50 | 208.00 | 351.00 | 163.30 | 297.00 | 272.20 | 348.20 | 356.90 | 327.80 |
| 24 | 245.50 | 0.00 | 0.00 | 0.00 | 44.55 | 30.91 | 46.74 | 303.30 | 0.00 | 0.00 | 271.70 | 275.30 | 265.50 | 311.70 | 1.73 | 180.10 | 192.60 | 186.60 | 198.70 | 8.62 | 321.30 | 340.70 | 348.40 | 338.00 |
| 25 | 309.60 | 344.50 | 6.22 | 53.77 | 32.89 | 259.20 | 203.90 | 57.86 | 64.45 | 228.30 | 232.40 | 49.36 | 241.70 | 273.20 | 302.90 | 287.40 | 71.40 | 26.77 | 19.90 | 44.73 | 53.70 | 45.39 | 49.44 | 45.85 |
| 26 | 47.86 | 48.73 | 49.59 | 49.51 | 46.54 | 45.66 | 44.13 | 44.55 | 48.60 | 62.22 | 102.80 | 244.30 | 257.80 | 262.30 | 245.60 | 237.70 | 213.70 | 229.00 | 317.70 | 57.57 | 76.80 | 48.97 | 49.57 | 45.83 |
| 27 | 48.34 | 49.44 | 53.20 | 51.13 | 47.08 | 50.97 | 79.40 | 110.30 | 139.40 | 173.20 | 173.60 | 245.10 | 235.80 | 238.60 | 241.30 | 236.30 | 253.70 | 262.60 | 349.70 | 20.84 | 37.57 | 40.53 | 41.56 | 125.10 |
| 28 | 86.40 | 87.60 | 98.60 | 178.70 | 61.56 | 264.60 | 349.70 | 336.20 | 45.72 | 177.60 | 212.40 | 222.50 | 180.00 | 317.30 | 279.90 | 263.00 | 238.10 | 236.10 | 226.80 | 239.40 | 265.30 | 309.60 | 296.10 | 283.90 |
| 29 | 278.60 | 315.00 | 10.94 | 325.60 | 354.60 | 28.13 | 211.10 | 340.60 | 3.21 | 12.28 | 205.20 | 256.00 | 322.90 | 234.20 | 275.40 | 201.10 | 227.90 | 324.50 | 309.20 | 267.70 | 45.91 | 50.07 | 50.88 | 128.00 |
| 30 | 127.10 | 38.08 | 172.20 | 156.30 | 105.30 | 38.09 | 82.40 | 47.56 | 48.96 | 47.53 | 55.06 | 211.40 | 202.30 | 184.40 | 224.90 | 239.70 | 274.30 | 269.60 | 124.10 | 57.33 | 51.37 | 47.13 | 51.01 | 49.40 |
| 31 | 48.07 | 36.14 | 359.50 | 331.90 | 5.11 | 19.32 | 10.69 | 45.12 | 43.00 | 42.12 | 24.98 | 324.80 | 290.70 | 293.80 | 296.40 | 296.30 | 302.40 | 307.30 | 326.60 | 6.60 | 42.05 | 49.22 | 70.40 | 54.54 |

Values in Degrees

# TABLE 11 - MONTHLY TEMPERATURE DATA

**DECEMBER 1994**

| DAY | HOUR 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8 | 25.79 | 23.79 | 23.08 | 23.63 | 23.59 | 21.55 | 20.84 | 20.10 | 21.29 | 22.20 | 24.75 | 29.17 | 29.69 | 29.92 | 30.84 | 31.53 | 30.85 | 28.02 | 25.08 | 21.52 | 19.72 | 18.75 | 18.28 | 18.02 |
| 9 | 18.21 | 18.34 | 18.15 | 17.80 | 17.32 | 18.21 | 17.91 | 18.30 | 17.70 | 17.29 | 20.77 | 24.01 | 25.07 | 26.54 | 28.65 | 29.77 | 30.75 | 29.36 | 25.58 | 23.17 | 23.78 | 22.86 | 21.46 | 20.86 |
| 10 | 20.74 | 19.62 | 19.02 | 18.49 | 18.48 | 19.04 | 18.82 | 18.12 | 17.58 | 18.98 | 22.37 | 24.02 | 25.78 | 27.77 | 29.08 | 29.91 | 28.74 | 26.57 | 25.39 | 24.71 | 24.53 | 24.20 | 24.17 | 22.77 |
| 11 | 22.23 | 24.99 | 24.59 | 24.58 | 23.97 | 25.30 | 25.12 | 24.56 | 23.45 | 23.42 | 27.26 | 29.86 | 30.00 | 33.44 | 34.50 | 35.69 | 36.18 | 34.48 | 30.67 | 28.57 | 27.07 | 26.49 | 26.64 | 26.34 |
| 12 | 26.34 | 26.01 | 26.04 | 26.02 | 26.37 | 25.96 | 27.07 | 27.64 | 26.65 | 27.39 | 29.26 | 31.70 | 31.74 | 33.32 | 32.06 | 32.26 | 33.32 | 32.28 | 30.30 | 29.22 | 29.75 | 32.09 | 30.61 | 30.21 |
| 13 | 30.58 | 30.17 | 29.47 | 30.39 | 30.79 | 30.45 | 30.08 | 29.43 | 28.54 | 29.21 | 29.58 | 30.31 | 30.95 | 29.36 | 30.42 | 31.53 | 32.43 | 31.09 | 30.49 | 30.94 | 30.56 | 30.09 | 29.83 | 30.03 |
| 14 | 30.15 | 30.13 | 29.90 | 28.44 | 26.80 | 25.28 | 25.38 | 25.75 | 24.72 | 23.87 | 25.04 | 28.97 | 34.63 | 35.72 | 36.78 | 35.94 | 36.46 | 32.04 | 27.70 | 25.54 | 24.93 | 25.23 | 25.78 | 26.63 |
| 15 | 28.12 | 29.10 | 28.88 | 29.02 | 29.43 | 29.12 | 26.99 | 26.03 | 26.84 | 27.68 | 29.93 | 32.31 | 32.17 | 34.59 | 33.79 | 35.22 | 35.69 | 35.70 | 31.41 | 29.60 | 27.89 | 26.54 | 25.75 | 26.12 |
| 16 | 25.51 | 25.29 | 25.73 | 25.72 | 26.42 | 25.57 | 26.31 | 27.19 | 27.29 | 27.89 | 30.31 | 31.41 | 32.60 | 34.54 | 36.06 | 35.64 | 35.65 | 35.70 | 32.39 | 31.95 | 32.14 | 31.99 | 31.79 | 31.20 |
| 17 | 31.77 | 32.01 | 31.83 | 32.20 | 31.98 | 32.17 | 31.82 | 31.20 | 31.61 | 32.20 | 36.22 | 37.29 | 38.48 | 39.86 | 41.63 | 43.06 | 42.48 | 40.96 | 36.79 | 36.65 | 37.23 | 37.33 | 36.87 | 36.29 |
| 18 | 36.16 | 37.10 | 36.20 | 35.59 | 34.62 | 34.30 | 35.16 | 34.42 | 32.15 | 33.90 | 36.65 | 36.27 | 38.52 | 41.17 | 41.71 | 41.81 | 40.62 | 39.74 | 36.52 | 35.53 | 34.94 | 34.77 | 34.82 | 35.74 |
| 19 | 37.11 | 36.76 | 36.95 | 38.21 | 38.10 | 37.44 | 36.72 | 35.56 | 33.75 | 35.20 | 36.61 | 40.98 | 41.75 | 42.54 | 43.20 | 43.42 | 43.36 | 43.68 | 39.03 | 36.92 | 36.06 | 35.56 | 34.66 | 34.09 |
| 20 | 33.56 | 33.34 | 33.13 | 33.74 | 32.82 | 32.58 | 32.99 | 31.37 | 31.55 | 32.13 | 34.93 | 37.98 | 38.61 | 39.96 | 41.20 | 42.79 | 42.60 | 41.46 | 37.35 | 36.88 | 37.25 | 37.39 | 36.54 | 36.63 |
| 21 | 37.24 | 37.61 | 37.71 | 37.93 | 37.37 | 37.87 | 35.22 | 35.38 | 35.39 | 36.41 | 38.33 | 39.78 | 40.83 | 43.08 | 45.50 | 46.44 | 46.63 | 45.06 | 41.33 | 42.73 | 42.68 | 41.99 | 41.87 | 41.52 |
| 22 | 41.25 | 38.67 | 36.08 | 34.73 | 34.35 | 36.11 | 38.32 | 38.58 | 37.70 | 36.21 | 41.71 | 38.04 | 38.53 | 45.97 | 45.82 | 45.34 | 43.15 | 41.49 | 42.16 | 43.73 | 43.30 | 43.08 | 43.31 | 43.01 |
| 23 | 42.36 | 41.91 | 41.99 | 40.11 | 42.76 | 43.01 | 43.60 | 43.11 | 44.05 | 45.26 | 43.90 | 43.42 | 41.08 | 44.27 | 42.89 | 41.50 | 39.75 | 38.74 | 39.78 | 38.43 | 37.22 | 34.81 | 34.96 | 35.66 |
| 24 | 34.43 | 33.94 | 34.24 | 34.88 | 35.97 | 36.02 | 36.53 | 36.42 | 35.88 | 36.04 | 36.21 | 36.23 | 36.46 | 36.63 | 36.98 | 37.68 | 37.53 | 36.91 | 37.22 | 37.37 | 37.32 | 36.97 | 37.31 | 37.69 |
| 25 | 37.31 | 37.29 | 38.24 | 39.15 | 39.14 | 39.22 | 36.96 | 38.66 | 40.34 | 39.55 | 40.11 | 40.98 | 41.76 | 40.69 | 41.66 | 42.02 | 42.60 | 42.68 | 41.18 | 41.83 | 40.81 | 39.62 | 39.68 | 38.70 |
| 26 | 37.51 | 37.30 | 36.82 | 37.44 | 37.76 | 38.34 | 38.77 | 38.22 | 37.71 | 37.81 | 40.92 | 42.65 | 42.10 | 43.43 | 46.81 | 46.99 | 46.67 | 44.54 | 40.47 | 38.96 | 38.72 | 37.75 | 37.81 | 36.75 |
| 27 | 36.63 | 36.59 | 36.87 | 36.04 | 35.23 | 35.45 | 34.59 | 33.73 | 33.23 | 33.53 | 37.17 | 36.58 | 36.85 | 38.13 | 40.78 | 41.65 | 42.74 | 40.63 | 37.64 | 38.22 | 39.15 | 39.37 | 38.45 | 37.81 |
| 28 | 35.56 | 35.42 | 36.11 | 32.87 | 30.00 | 26.84 | 27.37 | 28.63 | 28.62 | 28.60 | 29.64 | 29.70 | 30.57 | 30.66 | 31.47 | 31.66 | 31.86 | 31.63 | 31.29 | 31.18 | 31.15 | 31.09 | 31.05 | 31.15 |
| 29 | 31.26 | 31.37 | 31.48 | 31.48 | 31.56 | 31.70 | 31.61 | 31.50 | 31.65 | 32.07 | 33.17 | 34.21 | 35.72 | 35.45 | 35.34 | 35.50 | 35.17 | 35.16 | 35.05 | 34.80 | 35.33 | 36.10 | 37.19 | 35.97 |
| 30 | 33.62 | 36.93 | 34.16 | 33.15 | 33.13 | 33.98 | 34.46 | 33.38 | 33.05 | 32.50 | 34.04 | 37.58 | 37.24 | 39.37 | 41.35 | 42.49 | 41.80 | 40.57 | 36.59 | 33.63 | 31.34 | 30.05 | 29.20 | 28.90 |
| 31 | 29.07 | 30.53 | 30.81 | 28.64 | 27.37 | 26.32 | 25.86 | 22.85 | 23.49 | 23.51 | 26.69 | 28.37 | 29.88 | 30.68 | 31.00 | 30.97 | 30.51 | 28.87 | 26.11 | 23.94 | 23.16 | 22.55 | 22.59 | 22.54 |

Values In Degrees Farenheit

# TABLE 12 - MONTHLY SIGMA THETA
## DECEMBER 1994

HOUR

| DAY | 0000 | 0100 | 0200 | 0300 | 0400 | 0500 | 0600 | 0700 | 0800 | 0900 | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 | 2100 | 2200 | 2300 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 23.16 | 17.14 | 14.76 | 10.79 | 10.35 | 12.24 | 14.85 | 35.67 | 29.34 |
| 8 | 29.26 | 4.74 | 5.53 | 10.15 | 28.79 | 26.07 | 11.95 | 7.90 | 5.16 | 2.90 | 13.05 | 38.20 | 44.37 | 23.29 | 38.57 | 40.64 | 21.95 | 10.52 | 48.34 | 3.25 | 3.13 | 3.12 | 3.44 | 3.11 |
| 9 | 3.76 | 4.65 | 2.88 | 2.46 | 2.75 | 3.67 | 5.41 | 3.24 | 3.46 | 3.19 | 36.65 | 24.06 | 27.53 | 25.78 | 36.46 | 21.00 | 21.29 | 11.52 | 31.93 | 3.45 | 6.22 | 8.14 | 4.22 | 3.96 |
| 10 | 2.83 | 3.15 | 4.41 | 3.43 | 2.56 | 5.74 | 35.26 | 6.25 | 5.49 | 4.36 | 27.07 | 17.93 | 50.11 | 27.82 | 31.51 | 24.94 | 13.91 | 12.73 | 25.18 | 4.62 | 8.10 | 9.02 | 28.63 | 44.44 |
| 11 | 28.03 | 15.34 | 43.36 | 19.70 | 31.03 | 15.42 | 12.95 | 11.86 | 4.80 | 8.92 | 26.55 | 16.46 | 21.33 | 35.26 | 29.85 | 24.65 | 27.61 | 12.18 | 22.87 | 6.94 | 5.81 | 4.38 | 5.75 | 4.33 |
| 12 | 4.94 | 10.44 | 9.18 | 4.59 | 2.79 | 11.75 | 37.71 | 34.20 | 14.13 | 21.10 | 30.88 | 38.59 | 21.51 | 30.30 | 43.67 | 22.16 | 32.57 | 10.89 | 13.38 | 29.65 | 16.19 | 37.84 | 36.90 | 36.34 |
| 13 | 46.33 | 19.55 | 13.43 | 39.18 | 22.92 | 19.95 | 39.34 | 16.33 | 57.25 | 39.12 | 43.66 | 33.87 | 43.67 | 16.40 | 53.49 | 44.51 | 22.33 | 12.46 | 32.31 | 25.74 | 22.76 | 13.63 | 16.31 | 12.15 |
| 14 | 47.11 | 38.97 | 12.33 | 7.19 | 6.37 | 6.98 | 6.43 | 7.11 | 5.77 | 3.22 | 2.87 | 3.62 | 18.61 | 32.82 | 36.07 | 16.14 | 27.26 | 16.79 | 4.45 | 2.71 | 3.08 | 3.81 | 4.13 | 4.23 |
| 15 | 4.42 | 5.70 | 10.19 | 9.94 | 10.99 | 29.36 | 16.06 | 8.49 | 29.77 | 12.45 | 26.13 | 27.06 | 18.90 | 25.21 | 17.50 | 25.06 | 19.72 | 25.55 | 27.17 | 4.14 | 4.07 | 2.64 | 2.68 | 2.78 |
| 16 | 3.34 | 3.33 | 4.68 | 3.06 | 14.96 | 4.42 | 8.08 | 10.81 | 14.27 | 16.98 | 28.69 | 17.81 | 31.25 | 30.75 | 19.92 | 18.90 | 19.39 | 37.01 | 21.57 | 30.44 | 15.81 | 11.18 | 11.68 | 7.21 |
| 17 | 7.23 | 9.67 | 5.03 | 15.73 | 9.05 | 6.17 | 6.72 | 14.83 | 13.41 | 15.34 | 8.23 | 31.64 | 31.28 | 21.79 | 24.92 | 30.81 | 25.27 | 12.54 | 16.45 | 17.67 | 10.91 | 13.85 | 11.06 | 7.52 |
| 18 | 8.35 | 6.34 | 5.94 | 6.15 | 5.16 | 9.14 | 3.63 | 5.69 | 6.24 | 12.36 | 26.95 | 23.09 | 21.23 | 31.49 | 27.61 | 20.01 | 21.07 | 16.52 | 29.03 | 15.26 | 5.40 | 10.48 | 9.03 | 7.52 |
| 19 | 23.10 | 14.32 | 15.40 | 14.27 | 16.33 | 17.46 | 50.83 | 22.61 | 9.51 | 9.88 | 41.23 | 41.23 | 37.52 | 20.40 | 15.31 | 16.65 | 9.77 | 16.24 | 19.82 | 2.90 | 6.16 | 7.07 | 6.88 | 6.65 |
| 20 | 3.74 | 4.75 | 4.00 | 4.84 | 3.06 | 11.59 | 26.34 | 26.37 | 8.46 | 6.37 | 33.66 | 33.26 | 24.89 | 21.02 | 19.49 | 30.77 | 19.22 | 18.09 | 17.12 | 16.67 | 8.75 | 5.05 | 3.44 | 3.75 |
| 21 | 5.04 | 6.78 | 11.43 | 7.23 | 6.09 | 7.89 | 9.57 | 8.64 | 11.41 | 9.48 | 21.08 | 18.53 | 31.73 | 27.82 | 23.99 | 21.03 | 15.49 | 40.01 | 11.05 | 7.59 | 6.57 | 6.80 | 13.77 | 23.70 |
| 22 | 24.00 | 34.42 | 39.23 | 44.01 | 22.44 | 6.84 | 15.41 | 13.78 | 27.58 | 21.27 | 12.75 | 43.95 | 42.22 | 20.31 | 21.53 | 23.29 | 12.18 | 15.29 | 30.96 | 8.27 | 7.54 | 6.09 | 7.37 | 8.47 |
| 23 | 25.83 | 19.19 | 12.00 | 32.10 | 10.89 | 10.12 | 25.92 | 12.82 | 14.58 | 37.52 | 51.37 | 34.13 | 34.08 | 27.23 | 52.89 | 45.47 | 45.46 | 49.86 | 12.76 | 29.20 | 23.59 | 20.91 | 13.21 | 13.02 |
| 24 | 6.66 | 0.00 | 0.00 | 0.00 | 5.93 | 22.61 | 32.83 | 18.40 | 0.00 | 0.00 | 12.13 | 12.30 | 16.24 | 32.35 | 20.89 | 30.89 | 19.74 | 16.48 | 40.36 | 26.13 | 17.02 | 14.38 | 13.68 | 16.96 |
| 25 | 21.12 | 18.37 | 7.00 | 40.44 | 37.73 | 53.34 | 7.59 | 29.18 | 25.58 | 18.90 | 22.39 | 13.82 | 16.15 | 24.03 | 17.26 | 9.77 | 13.35 | 24.89 | 14.27 | 4.41 | 10.62 | 7.62 | 4.31 | 6.39 |
| 26 | 4.45 | 4.38 | 4.14 | 4.84 | 5.02 | 6.33 | 5.59 | 4.41 | 6.32 | 9.24 | 48.03 | 29.50 | 25.48 | 25.52 | 38.11 | 17.41 | 19.37 | 17.74 | 27.10 | 18.14 | 34.05 | 6.19 | 5.85 | 5.35 |
| 27 | 4.42 | 5.58 | 4.78 | 3.60 | 4.71 | 3.67 | 47.35 | 48.32 | 45.17 | 35.43 | 29.26 | 17.40 | 22.84 | 30.80 | 29.10 | 23.22 | 20.77 | 16.89 | 12.09 | 16.77 | 9.76 | 11.48 | 17.06 | 30.94 |
| 28 | 37.63 | 39.54 | 34.75 | 11.13 | 23.13 | 34.74 | 20.95 | 19.09 | 24.83 | 20.05 | 36.16 | 18.76 | 27.00 | 18.98 | 29.46 | 14.58 | 17.68 | 15.30 | 6.89 | 13.89 | 10.83 | 13.82 | 10.75 | 10.96 |
| 29 | 28.29 | 14.89 | 22.58 | 13.86 | 27.61 | 39.77 | 34.15 | 30.61 | 19.73 | 37.84 | 22.58 | 20.64 | 15.64 | 27.65 | 25.67 | 13.47 | 14.95 | 17.78 | 20.11 | 31.11 | 6.96 | 3.30 | 22.73 | 32.46 |
| 30 | 11.55 | 10.96 | 14.99 | 14.83 | 19.95 | 10.51 | 23.10 | 5.17 | 5.86 | 5.12 | 6.62 | 29.19 | 14.07 | 29.51 | 21.58 | 28.15 | 15.21 | 12.90 | 27.36 | 11.78 | 3.70 | 4.98 | 3.96 | 4.24 |
| 31 | 5.18 | 10.32 | 12.70 | 24.15 | 16.49 | 12.12 | 10.92 | 5.77 | 8.63 | 10.73 | 13.84 | 13.80 | 16.98 | 14.74 | 15.46 | 14.22 | 12.15 | 9.24 | 10.01 | 19.14 | 8.06 | 13.38 | 8.55 | 6.47 |

Values in Degrees

AIRS DATASTRING
INPUT DATA PARAMETERS

## Input Data for Wind Direction

Example of Data Inputs

| Hourly | State | County | Site Number | Wind Direction Parameter | POC | Internal Number | Unit Number | Method Number | Date* | Standard* Hour | Decimal Position | Data** Values | Character @ 80th Position |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 007 | 5001 | 61102 | 1 | 1 | 014 | 020 | 941001 | 00 | 1 | 0225 | I |

## Input Data for Wind Speed

Example of Data Inputs

| Hourly | State | County | Site Number | Wind Direction Parameter | POC | Internal Number | Unit Number | Method Number | Date* | Standard* Hour | Decimal Position | Data** Values | Character @ 80th Position |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 007 | 5001 | 61101 | 1 | 1 | 012 | 020 | 941001 | 00 | 1 | 0225 | I |

## Input Data for Temperature

Example of Data Inputs

| Hourly | State | County | Site Number | Wind Direction Parameter | POC | Internal Number | Unit Number | Method Number | Date* | Standard* Hour | Decimal Position | Data** Values | Character @ 80th Position |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 007 | 5001 | 62101 | 1 | 1 | 015 | 020 | 941001 | 00 | 1 | 0225 | I |

## Input Data for Sigma Theta

Example of Data Inputs

| Hourly | State | County | Site Number | Wind Direction Parameter | POC | Internal Number | Unit Number | Method Number | Date* | Standard* Hour | Decimal Position | Data** Values | Character @ 80th Position |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 49 | 007 | 5001 | 61106 | 1 | 1 | 014 | 020 | 941001 | 00 | 1 | 0225 | I |

* Indicates values change and are not set values

** Data values are four characters long with eight value sets total

File N:\GOSSARD\SCWM\QRT0395D.WK3

AIRS DATA STRING
MONTHLY, WIND SPEED, WIND DIRECTION, TEMPERATURE, SIGMA THETA DATA
FOR OCTOBER 1994

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1490075001611011101202094100100022231 | 1993 | 1985 | 1440 | 1680 | 1152 | 0763 | 2317 |
| 1490075001611011101202094100108222227 | 1918 | 1283 | 0647 | 0444 | 0686 | 0891 | 0796 |
| 1490075001611011101202094100116208899 | 0757 | 1135 | 1012 | 0748 | 1216 | 1619 | 1773 |
| 1490075001611011101202094100200217774 | 1893 | 2022 | 1963 | 2059 | 1586 | 1175 | 1242 |
| 1490075001611011101202094100208215559 | 0887 | 0427 | 0215 | 0479 | 0661 | 0684 | 0861 |
| 1490075001611011101202094100216211165 | 1202 | 1273 | 1570 | 0699 | 0789 | 1092 | 1447 |
| 1490075001611011101202094100300214443 | 1356 | 0811 | 1122 | 1523 | 1494 | 0859 | 0979 |
| 1490075001611011101202094100308209971 | 0944 | 0644 | 1546 | 2420 | 1260 | 0576 | 1518 |
| 1490075001611011101202094100316209948 | 1520 | 1655 | 1942 | 1424 | 1861 | 1537 | 2229 |
| 1490075001611011101202094100400210066 | 1023 | 1150 | 1670 | 1716 | 0768 | 0312 | 0837 |
| 1490075001611011101202094100408205519 | 0327 | 0531 | 0673 | 0631 | 0516 | 0520 | 1036 |
| 1490075001611011101202094100416203778 | 0488 | 0484 | 0249 | 1395 | 1936 | 1186 | 0501 |
| 1490075001611011101202094100500205561 | 0682 | 0318 | 0416 | 1433 | 1997 | 1465 | 0793 |
| 1490075001611011101202094100508214435 | 0750 | 0512 | 1663 | 2087 | 2175 | 2434 | 2634 |
| 1490075001611011101202094100516227746 | 3118 | 1477 | 0841 | 0840 | 0339 | 0642 | 0670 |
| 1490075001611011101202094100600206613 | 0420 | 0308 | 0528 | 0598 | 0432 | 0405 | 0353 |
| 1490075001611011101202094100608204436 | 0560 | 0255 | 0551 | 0952 | 1075 | 0880 | 1609 |
| 1490075001611011101202094100616214480 | 1724 | 1625 | 1711 | 1178 | 0562 | 1098 | 1672 |
| 1490075001611011101202094100700212276 | 0770 | 1177 | 0955 | 0966 | 1097 | 0826 | 0556 |
| 1490075001611011101202094100708205596 | 0599 | 0457 | 0525 | 0676 | 0637 | 0619 | 0351 |
| 1490075001611011101202094100716204468 | 0457 | 0350 | 0297 | 1098 | 1656 | 2041 | 2052 |
| 1490075001611011101202094100800220051 | 2183 | 1714 | 1413 | 1262 | 1430 | 1664 | 1784 |
| 1490075001611011101202094100808220027 | 1698 | 0512 | 0675 | 0516 | 0762 | 0546 | 0703 |
| 1490075001611011101202094100816206621 | 0677 | 0603 | 0481 | 1060 | 1977 | 2309 | 2306 |
| 1490075001611011101202094100900224439 | 2153 | 2001 | 2188 | 2277 | 2436 | 2505 | 2503 |
| 1490075001611011101202094100908226445 | 2125 | 0431 | 0549 | 0685 | 0639 | 0828 | 0757 |
| 1490075001611011101202094100916207774 | 0856 | 0732 | 0539 | 1293 | 2204 | 2527 | 2683 |
| 1490075001611011101202094101000226604 | 2512 | 2353 | 2378 | 2173 | 2314 | 2018 | 2199 |
| 1490075001611011101202094101008221187 | 1949 | 0864 | 0530 | 0484 | 0791 | 1128 | 1164 |
| 1490075001611011101202094101016211106 | 1270 | 1249 | 0657 | 1324 | 2170 | 2370 | 2479 |
| 1490075001611011101202094101100223367 | 2308 | 2064 | 1592 | 1459 | 1900 | 2161 | 2313 |
| 1490075001611011101202094101108222234 | 1930 | 0662 | 0431 | 0650 | 1151 | 1342 | 1677 |
| 1490075001611011101202094101116221141 | 1953 | 1566 | 1345 | 1183 | 1585 | 1364 | 1329 |
| 1490075001611011101202094101200219952 | 2234 | 2378 | 2400 | 2511 | 2591 | 2512 | 2598 |
| 1490075001611011101202094101208223346 | 1878 | 1176 | 0767 | 0786 | 1117 | 1622 | 1517 |
| 1490075001611011101202094101216218000 | 1761 | 1382 | 0627 | 1146 | 1335 | 1185 | 1015 |
| 1490075001611011101202094101300215552 | 1765 | 1307 | 0686 | 0782 | 0595 | 0541 | 0533 |
| 1490075001611011101202094101308202900 | 0362 | 0379 | 0552 | 0558 | 1120 | 1539 | 1683 |
| 1490075001611011101202094101316217752 | 1695 | 1225 | 0450 | 0768 | 0833 | 1426 | 1913 |
| 1490075001611011101202094101400220866 | 1715 | 1779 | 1156 | 0690 | 1355 | 1103 | 0962 |
| 1490075001611011101202094101408216140 | 0836 | 0791 | 1443 | 1920 | 2150 | 2540 | 2584 |
| 1490075001611011101202094101416223300 | 2238 | 1700 | 1963 | 1140 | 1392 | 1527 | 1616 |
| 1490075001611011101202094101500221700 | 2142 | 2461 | 2315 | 1723 | 1607 | 1689 | 1503 |
| 1490075001611011101202094101508213460 | 0231 | 0180 | 0214 | 0362 | 0273 | 0324 | 0361 |
| 1490075001611011101202094101516202820 | 0492 | 0416 | 0569 | 0432 | 0421 | 0437 | 0453 |
| 1490075001611011101202094101600201990 | 0400 | 0686 | 0349 | 0000 | 0000 | 0000 | 0000 |
| 1490075001611011101202094101608200000 | 0000 | 0000 | 0238 | 0847 | 0953 | 0833 | 0664 |
| 1490075001611011101202094101616206710 | 0460 | 0294 | 0293 | 0577 | 0469 | 0339 | 0576 |
| 1490075001611011101202094101700207780 | 0691 | 0532 | 0568 | 0402 | 0639 | 0653 | 0786 |
| 1490075001611011101202094101708202610 | 0318 | 0094 | 0022 | 0252 | 0471 | 0415 | 0523 |
| 1490075001611011101202094101716203800 | 0225 | 0218 | 0804 | 0573 | 0283 | 0269 | 0634 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1490075001611011101202094101800208 86 | 0194 | 0729 | 0829 | 1107 | 0915 | 0406 | 0846 |
| 14900750016110111012020941018082061 4 | 0820 | 0264 | 0325 | 0378 | 0666 | 1253 | 1108 |
| 14900750016110111012020941018162104 9 | 0751 | 0594 | 0573 | 0594 | 0949 | 0803 | 1135 |
| 14900750016110111012020941019002130 0 | 1060 | 1450 | 1640 | 1721 | 1479 | 1678 | 1475 |
| 14900750016110111012020941019082155 0 | 0538 | 0239 | 0188 | 0389 | 0671 | 0878 | 0901 |
| 14900750016110111012020941019162085 5 | 0843 | 0689 | 0522 | 1572 | 1878 | 2042 | 2194 |
| 14900750016110111012020941020002226 0 | 2008 | 2162 | 2103 | 2090 | 2178 | 2223 | 2114 |
| 14900750016110111012020941020082216 0 | 1341 | 1187 | 0539 | 0535 | 0705 | 0940 | 0724 |
| 14900750016110111012020941020162091 7 | 0772 | 0830 | 0512 | 1631 | 2173 | 2254 | 2353 |
| 14900750016110111012020941021002241 3 | 2386 | 2417 | 2371 | 2317 | 2331 | 2296 | 2153 |
| 14900750016110111012020941021082212 4 | 2009 | 0777 | 0466 | 0734 | 0839 | 0843 | 0873 |
| 14900750016110111012020941021162101 1 | 1001 | 0789 | 0416 | 1570 | 1703 | 1655 | 1652 |
| 14900750016110111012020941022002200 0 | 2004 | 1929 | 2264 | 2328 | 2420 | 2446 | 2258 |
| 14900750016110111012020941022082216 2 | 1905 | 1157 | 0782 | 1242 | 1176 | 1005 | 0814 |
| 14900750016110111012020941022162065 3 | 0764 | 0831 | 0578 | 1391 | 2153 | 2215 | 2296 |
| 14900750016110111012020941023002238 5 | 2505 | 2574 | 2347 | 2418 | 2425 | 2461 | 2454 |
| 14900750016110111012020941023082244 2 | 2447 | 1439 | 0365 | 0638 | 0676 | 0643 | 0680 |
| 14900750016110111012020941023162076 2 | 0914 | 0686 | 0618 | 1913 | 2310 | 2571 | 2504 |
| 14900750016110111012020941024002256 2 | 2632 | 2547 | 2677 | 2638 | 2365 | 2464 | 2759 |
| 14900750016110111012020941024082263 4 | 1941 | 1489 | 0440 | 0700 | 0579 | 0698 | 0794 |
| 14900750016110111012020941024162077 7 | 0616 | 0685 | 0488 | 1662 | 2084 | 2272 | 2280 |
| 14900750016110111012020941025002206 0 | 1904 | 1764 | 1780 | 1803 | 1923 | 1096 | 1842 |
| 14900750016110111012020941025082216 4 | 2178 | 0760 | 0538 | 0544 | 0578 | 0775 | 0737 |
| 14900750016110111012020941025162093 2 | 0919 | 0917 | 0650 | 1817 | 2367 | 2613 | 2648 |
| 14900750016110111012020941026002232 8 | 2477 | 2491 | 2581 | 2491 | 2484 | 2474 | 2418 |
| 14900750016110111012020941026082224 9 | 1520 | 0773 | 0462 | 0636 | 0763 | 0812 | 0807 |
| 14900750016110111012020941026162088 1 | 0684 | 0586 | 0476 | 1445 | 1883 | 1861 | 2009 |
| 14900750016110111012020941027002193 2 | 1955 | 1902 | 1732 | 1781 | 1771 | 2101 | 2213 |
| 14900750016110111012020941027082198 3 | 1740 | 1372 | 0435 | 0333 | 0595 | 0588 | 0633 |
| 14900750016110111012020941027162056 7 | 0367 | 0272 | 0834 | 1711 | 1971 | 1994 | 2220 |
| 14900750016110111012020941028002231 2 | 1682 | 1839 | 1464 | 1490 | 1226 | 1205 | 1489 |
| 14900750016110111012020941028082129 2 | 1141 | 0430 | 0235 | 0560 | 0767 | 0807 | 0730 |
| 14900750016110111012020941028162077 3 | 0834 | 0566 | 0902 | 1137 | 1362 | 1358 | 1490 |
| 14900750016110111012020941029002172 7 | 1906 | 2118 | 1896 | 2106 | 2229 | 2161 | 2096 |
| 14900750016110111012020941029082163 3 | 1374 | 0383 | 0291 | 0379 | 0554 | 0820 | 0761 |
| 14900750016110111012020941029162071 0 | 0948 | 1067 | 1036 | 1526 | 1731 | 1789 | 1718 |
| 14900750016110111012020941030002186 4 | 1993 | 2000 | 1813 | 1813 | 1712 | 1647 | 1432 |
| 14900750016110111012020941030082175 0 | 1728 | 0603 | 0338 | 0570 | 0887 | 1846 | 2475 |
| 14900750016110111012020941030162226 3 | 2280 | 1958 | 1552 | 1336 | 1067 | 0945 | 1201 |
| 14900750016110111012020941031002155 3 | 1510 | 1240 | 1668 | 1769 | 1986 | 2125 | 2282 |
| 14900750016110111012020941031082238 5 | 1032 | 1005 | 0544 | 0525 | 0645 | 0805 | 0747 |
| 14900750016110111012020941031162071 0 | 0789 | 0593 | 0190 | 1188 | 1883 | 1657 | 1616 |
| 14900750016110211014020941001001048 8 | 0506 | 0483 | 0027 | 0461 | 0384 | 0626 | 0481 |
| 14900750016110211014020941001081048 2 | 0485 | 0460 | 2985 | 2330 | 2768 | 2527 | 2464 |
| 14900750016110211014020941001161244 6 | 0284 | 0487 | 0530 | 3585 | 0452 | 0454 | 0462 |
| 14900750016110211014020941002001046 6 | 0469 | 0475 | 0480 | 0487 | 0496 | 0532 | 0571 |
| 14900750016110211014020941002081051 1 | 0586 | 0007 | 0318 | 1913 | 2246 | 2241 | 2038 |
| 14900750016110211014020941002161200 9 | 2102 | 2007 | 1917 | 1858 | 2160 | 1857 | 1719 |
| 14900750016110211014020941003001170 5 | 1952 | 3300 | 0568 | 0554 | 0512 | 0108 | 0763 |
| 14900750016110211014020941003081163 9 | 3526 | 1894 | 2096 | 1794 | 2050 | 2939 | 3356 |
| 14900750016110211014020941003161339 5 | 0072 | 0650 | 0474 | 0550 | 0388 | 0702 | 0470 |
| 14900750016110211014020941004001029 9 | 0759 | 0496 | 0569 | 0473 | 1275 | 1455 | 0682 |
| 14900750016110211014020941004081051 3 | 3188 | 3318 | 2930 | 2651 | 2696 | 2241 | 2067 |
| 14900750016110211014020941004161306 5 | 1421 | 2370 | 2984 | 0473 | 0505 | 1276 | 1840 |
| 14900750016110211014020941005001173 3 | 2096 | 2952 | 2277 | 1720 | 1697 | 1962 | 2031 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1490075001611021101402094100508118 25 | 2101 | 2342 | 1870 | 1811 | 1799 | 1771 | 1843 | I |
| 1490075001611021101402094100516121 58 | 3103 | 3212 | 0710 | 3512 | 0433 | 0138 | 0121 | I |
| 1490075001611021101402094100600135 33 | 2729 | 0056 | 1984 | 1722 | 1676 | 1129 | 1421 | I |
| 1490075001611021101402094100608118 27 | 1615 | 1128 | 3043 | 3169 | 3107 | 2707 | 3082 | I |
| 1490075001611021101402094100616131 40 | 3101 | 3114 | 3121 | 3381 | 0369 | 0623 | 0481 | I |
| 1490075001611021101402094100700104 92 | 0860 | 0500 | 0453 | 0366 | 0467 | 0539 | 0194 | I |
| 1490075001611021101402094100708102 30 | 0775 | 2814 | 2421 | 2215 | 2093 | 1915 | 1562 | I |
| 1490075001611021101402094100716112 05 | 3114 | 2503 | 0078 | 0425 | 0501 | 0457 | 0434 | I |
| 1490075001611021101402094100800104 24 | 0447 | 0476 | 0473 | 0431 | 0417 | 0388 | 0456 | I |
| 1490075001611021101402094100808104 25 | 0495 | 1835 | 2246 | 2219 | 2250 | 2718 | 2325 | I |
| 1490075001611021101402094100816124 56 | 2713 | 2560 | 2571 | 0511 | 0486 | 0492 | 0502 | I |
| 1490075001611021101402094100900105 06 | 0502 | 0506 | 0481 | 0500 | 0491 | 0501 | 0500 | I |
| 1490075001611021101402094100908104 90 | 0508 | 1957 | 2166 | 2168 | 2154 | 2289 | 2482 | I |
| 1490075001611021101402094100916120 61 | 2286 | 2329 | 2432 | 0555 | 0485 | 0496 | 0500 | I |
| 1490075001611021101402094101000104 97 | 0480 | 0486 | 0470 | 0480 | 0487 | 0493 | 0477 | I |
| 1490075001611021101402094101008104 77 | 0482 | 0622 | 2391 | 2303 | 2180 | 2201 | 2165 | I |
| 1490075001611021101402094101016120 81 | 2110 | 2141 | 2340 | 0468 | 0484 | 0487 | 0494 | I |
| 1490075001611021101402094101100104 95 | 0506 | 0511 | 0530 | 0523 | 0497 | 0499 | 0484 | I |
| 1490075001611021101402094101108104 85 | 0466 | 0096 | 2817 | 2195 | 2102 | 2073 | 1869 | I |
| 1490075001611021101402094101116118 46 | 1788 | 1795 | 1702 | 1747 | 2003 | 1109 | 0592 | I |
| 1490075001611021101402094101200104 96 | 0498 | 0497 | 0500 | 0495 | 0505 | 0498 | 0503 | I |
| 1490075001611021101402094101208104 98 | 0486 | 0756 | 2045 | 2090 | 2206 | 1975 | 1927 | I |
| 1490075001611021101402094101216119 87 | 2007 | 1889 | 1926 | 0604 | 0679 | 1072 | 0834 | I |
| 1490075001611021101402094101300105 72 | 0510 | 0539 | 1238 | 1400 | 1639 | 1522 | 2122 | I |
| 1490075001611021101402094101308133 39 | 2320 | 2482 | 2112 | 2127 | 2138 | 1840 | 1837 | I |
| 1490075001611021101402094101316116 64 | 1819 | 1663 | 1240 | 3109 | 0056 | 0522 | 1639 | I |
| 1490075001611021101402094101400113 91 | 0954 | 1615 | 1960 | 0608 | 0465 | 0912 | 1352 | I |
| 1490075001611021101402094101408113 42 | 1973 | 2189 | 1887 | 1815 | 1928 | 1930 | 1812 | I |
| 1490075001611021101402094101416117 50 | 1817 | 1820 | 1753 | 1703 | 1756 | 1766 | 1756 | I |
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| 1490075001611021101402094101508126 74 | 3480 | 1962 | 1755 | 3015 | 3087 | 3298 | 2667 | I |
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AIRS DATA STRING
MONTHLY, WIND SPEED, WIND DIRECTION, TEMPERATURE, SIGMA THETA DATA
FOR NOVEMBER 1994

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AIRS DATA STRING
MONTHLY, WIND SPEED, WIND DIRECTION, TEMPERATURE, SIGMA THETA DATA
FOR DECEMBER 1994

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| 14900750016110611014020941212161032 6 | 0109 | 0134 | 0297 | 0162 | 0378 | 0369 | 0363 |
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| 14900750016110611014020941216081014 3 | 0170 | 0287 | 0178 | 0313 | 0308 | 0199 | 0189 |

| | | | | | | | |
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| 1490075001611061101402094121616101 94 | 0370 | 0216 | 0304 | 0158 | 0112 | 0117 | 0072 |
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| 1490075001611061101402094121908100 95 | 0099 | 0412 | 0412 | 0375 | 0204 | 0153 | 0167 |
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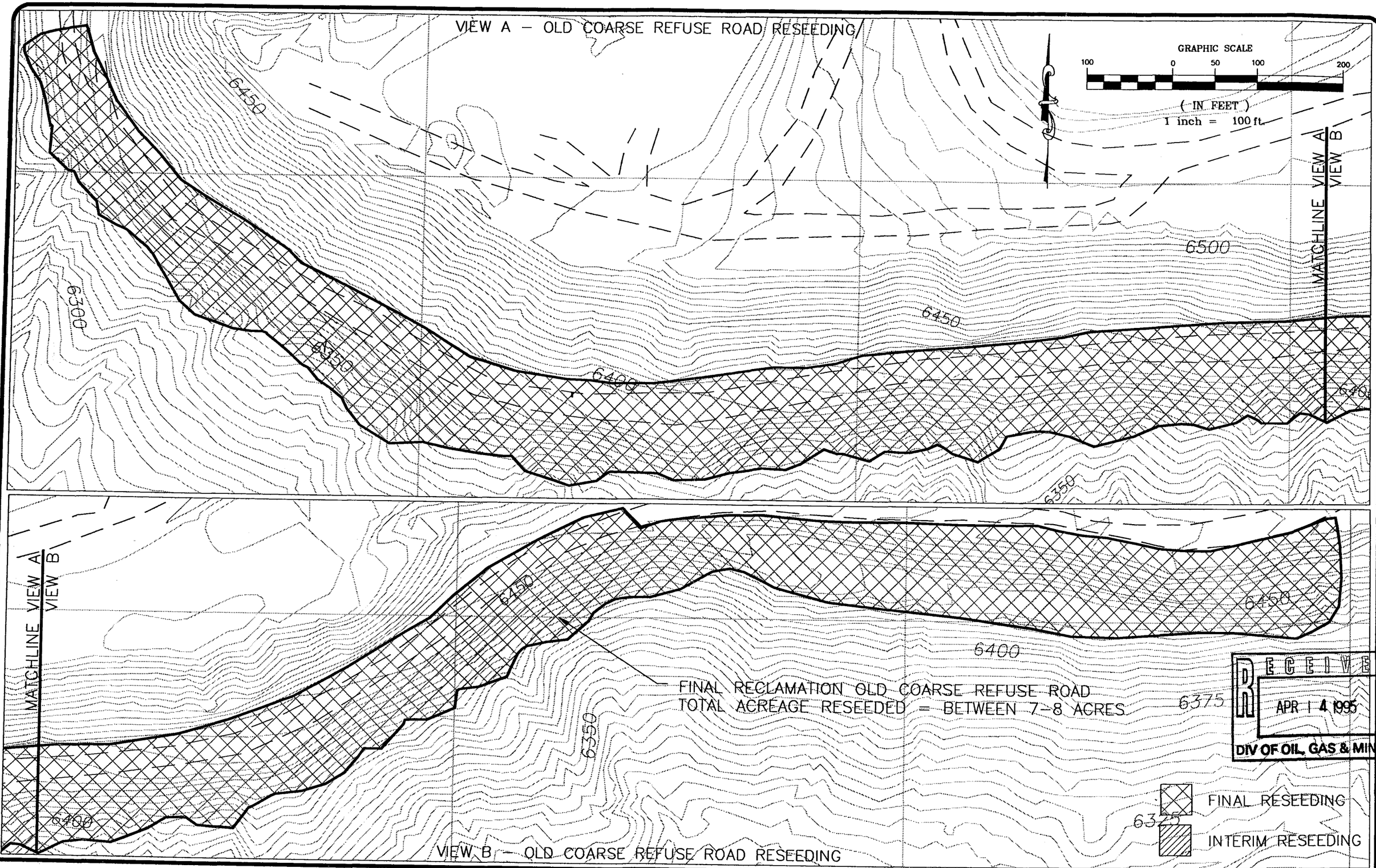
# DRAWINGS

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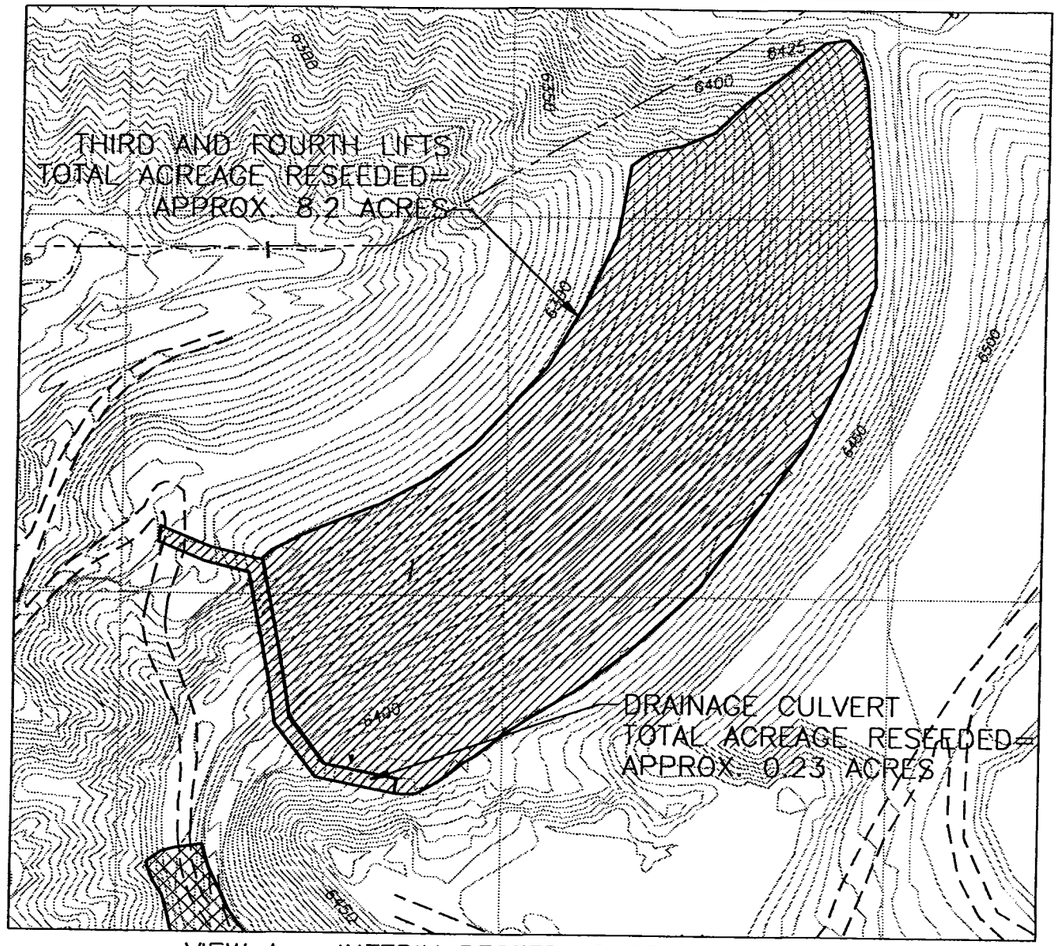
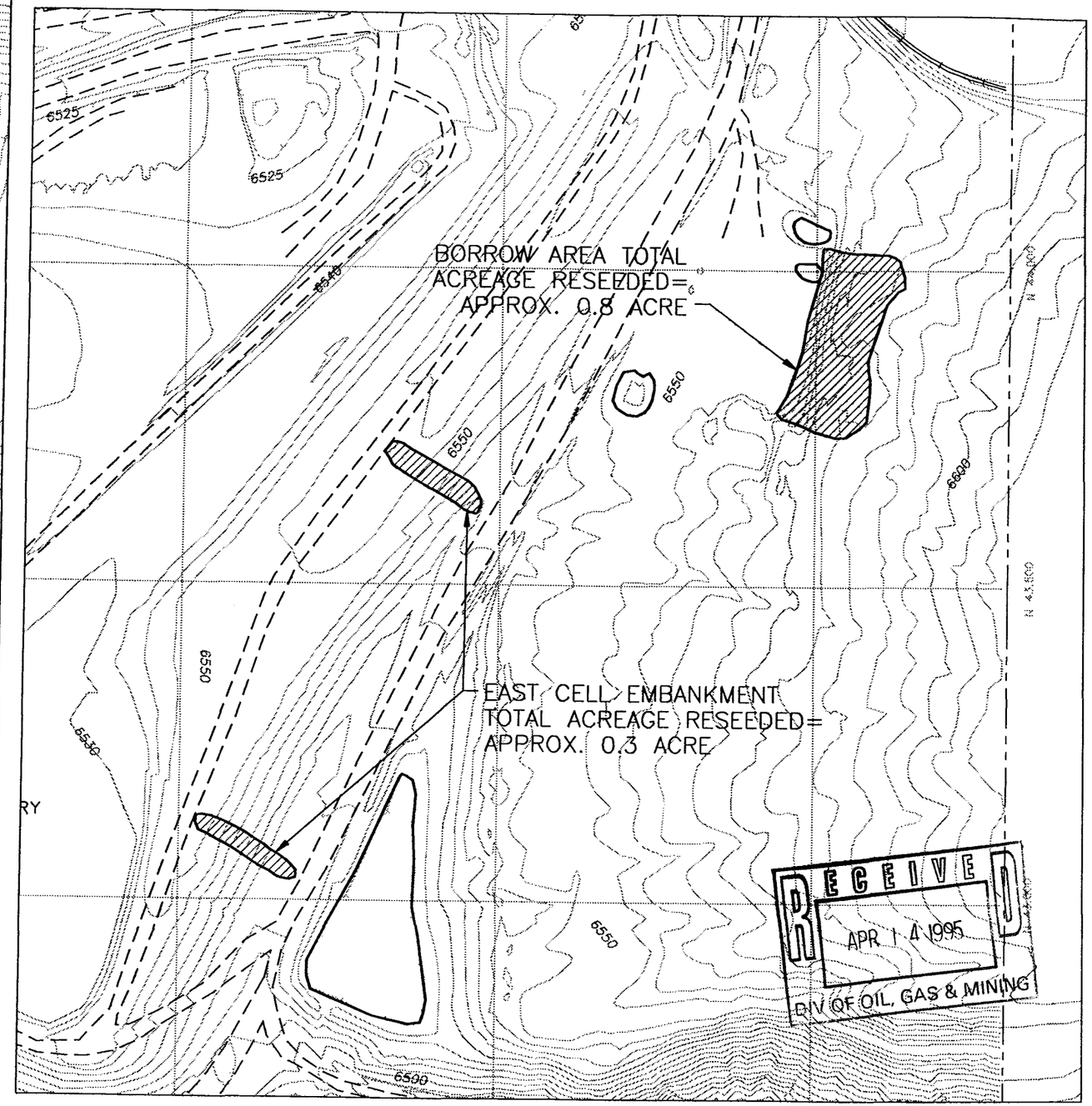
ECKHOFF WATSON AND PREATOR ENGINEERING
ENGINEERS PLANNERS SURVEYORS SALT LAKE CITY

SUNNYSIDE COGENERATION ASSOCIATES
SUNNYSIDE COGENERATION FACILITY, CARBON COUNTY, UTAH
AREAS RESEEDED DURING 1994

DRAWING NO.
A-1




VIEW A – INTERIM RESEEDING OF LIFT AREAS

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VIEW B – INTERIM RESEEDING OF BORROW AREA

FINAL RESEEDING

INTERIM RESEEDING

GRAPHIC SCALE

200 0 100 200 400

( IN FEET )
1 inch = 200 ft.

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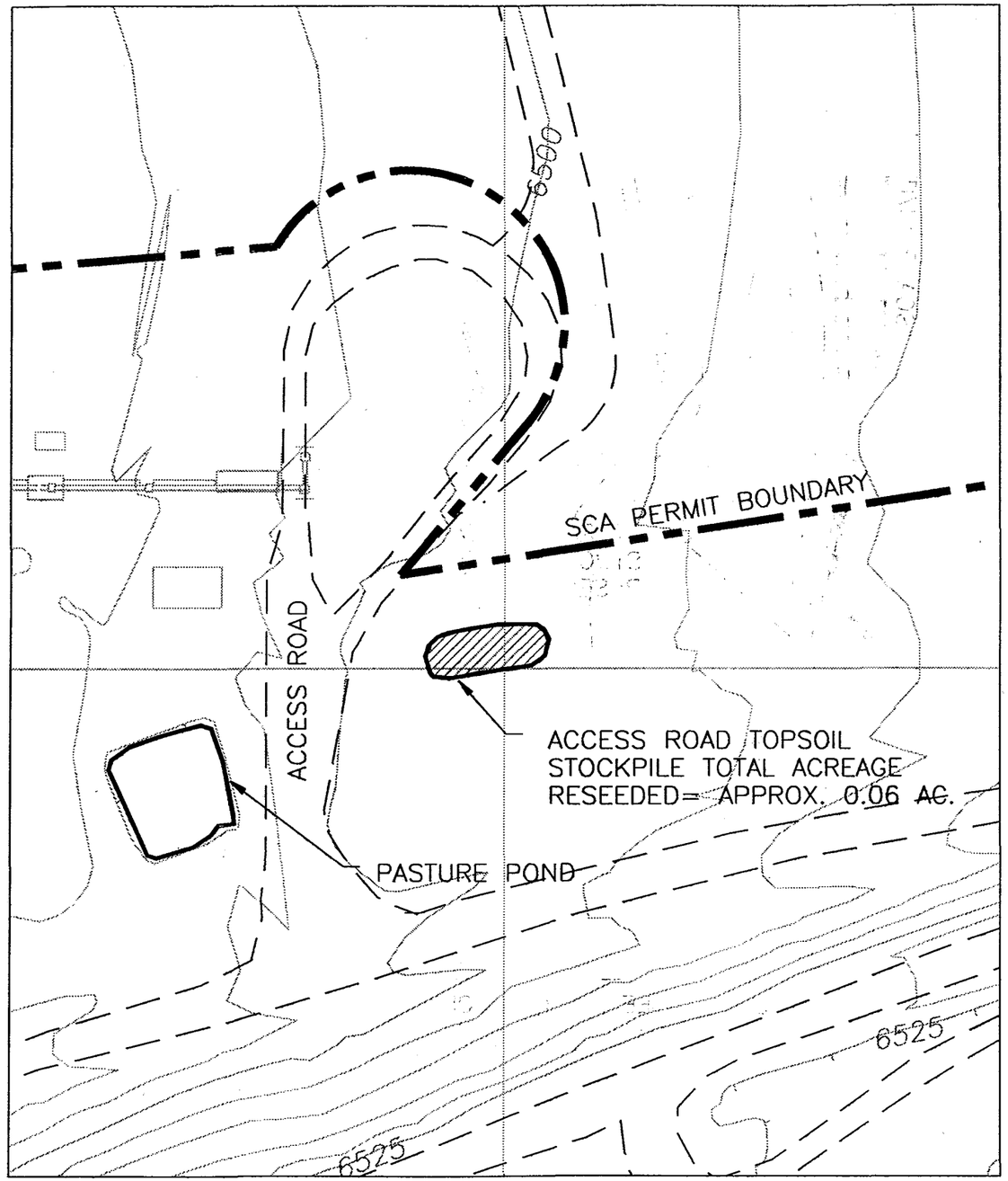
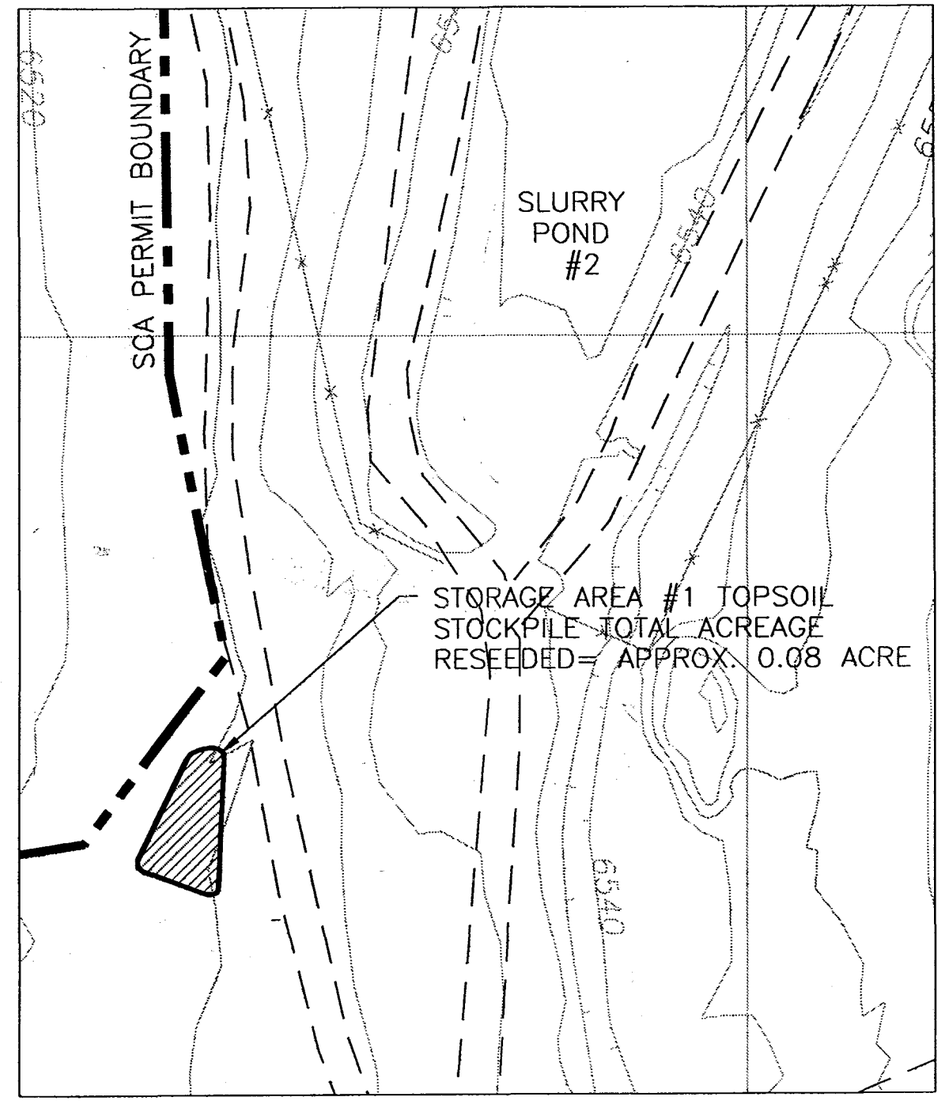
DRAWING NO.
A-2




VIEW A – INTERIM RESEEDING OF ACCESS ROAD AREA




VIEW B – INTERIM RESEEDING OF STORAGE AREA #1

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FINAL RESEEDING

INTERIM RESEEDING

GRAPHIC SCALE

100 0 100 200 200

( IN FEET )
1 inch = 100 ft.

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ENGINEERS PLANNERS SURVEYORS SALT LAKE CITY

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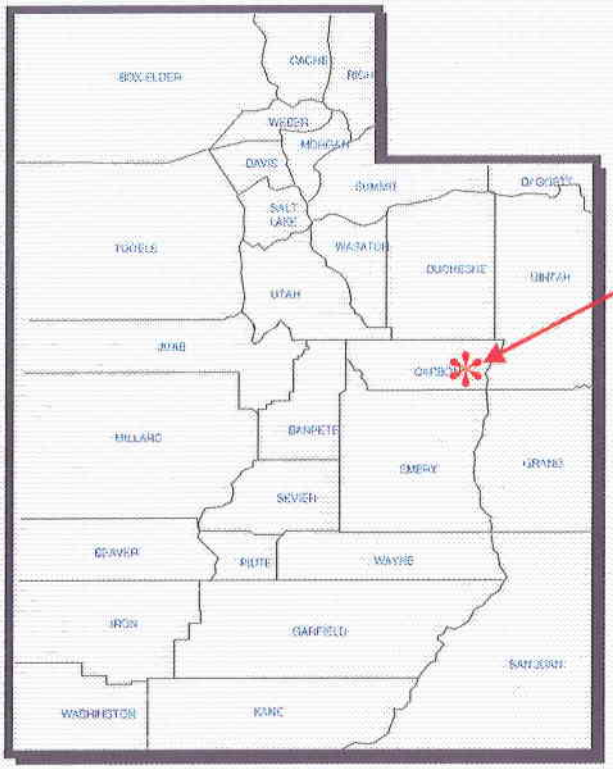
DRAWING NO.
A-3

Eckhoff, Watson and Preator Engineering

# SUNNYSIDE COGENERATION ASSOCIATES
# ANNUAL REPORT
# APRIL 1994

# SUNNYSIDE COGENERATION ASSOCIATES
# ACT/007/035
# ANNUAL REPORT
# 1993




Sunnyside Cogeneration

April 1994


Prepared by:
EWP Engineering
1121 East 3900 South, Suite C-100
Salt Lake City, UT 84124
(801) 261-0090
in conjunction with:
Callister, Duncan & Nebeker
Sunnyside Cogeneration Associates
Environmental Power Corporation

SUNNYSIDE COGENERATION ASSOCIATES
POST OFFICE BOX 58087
SALT LAKE CITY, UTAH 84158-0087

April 15, 1994

Mr. Randy Harden
Division of Oil, Gas and Mining
3 Triad Center - Suite 350
Salt Lake City, UT 84180-1203

RE: Project No. EC450593: Sunnyside Cogeneration Associates - 1993 Annual Report

Dear Randy,

Enclosed are three copies of the Sunnyside Cogeneration Associates (SCA) 1993 Annual Report with the exception of the disks containing water monitoring data and climatalogical data. There is only one (1) copy of each of these disks. The report is comprehensive of the activities that occurred within the SCA Permit Site during 1993. The report also includes information concerning SCA's involvement with the Sunnyside Coal Company.

At this time, the annual report does not include an Updated Mine Sequence Map. When the revised, 1993 guidelines were distributed, SCA did not have adequate time to schedule an aerial survey of the site. Therefore, the Updated Mine Sequence Map could not be completed by the specified date. SCA has scheduled an aerial survey of the site for April, 1994. When the data from the aerial survey is processed, an Updated Mine Sequence Map will be provided to the Division. SCA expects to have the map completed by May 31, 1994.

Please do not hesitate to call if there are any questions.

Sincerely,

AEB

David Pearce
Authorized Member, Management Committee

Alane E. Boyd

Alane E. Boyd, P.E.
Senior Engineer

Enclosure

cc: Brian Burnett, Callister, Duncan & Nebeker
Jim Comas, Eckhoff, Watson & Preator Engineering

AEB:jws
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