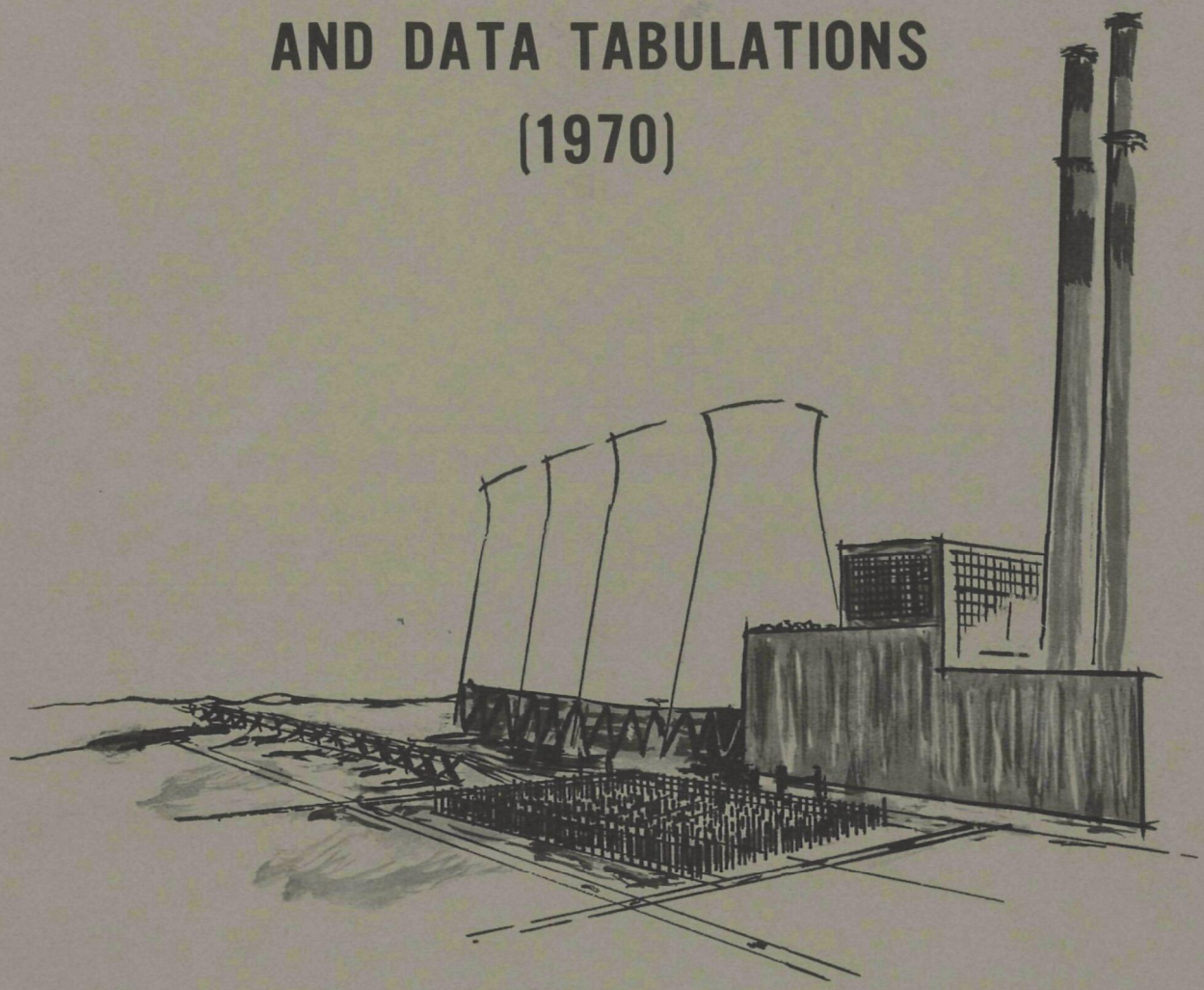
LARGE POWER PLANT EFFLUENT STUDY (LAPPES)

VOLUME 3 - INSTRUMENTATION, PROCEDURES, AND DATA TABULATIONS

(1970)



U. S. ENVIRONMENTAL PROTECTION AGENCY

Plate 1. Homer City plume, April 27, 1970, 0700 EST. Visible plume accomplished by means of intentional, limited fly ash release.

Plate 2. Homer City plume, May 4, 1970, 0838 EST. Visible plume accomplished by means of intentional, limited fly ash release.

Plate 3. Conemaugh plume, October 17, 1970, 0645 EST. Visible plume accomplished by means of intentional, limited fly ash release.

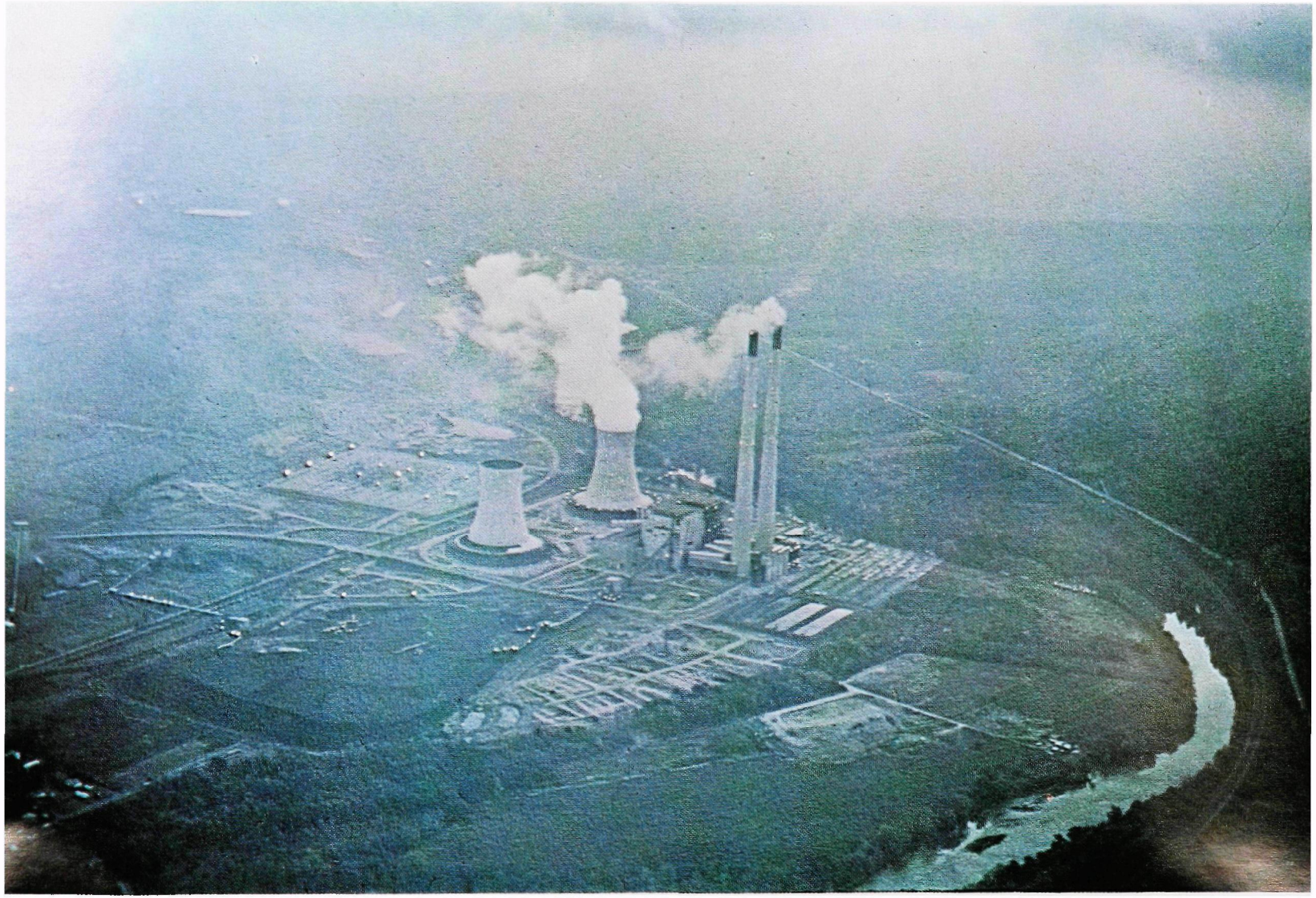


Plate 4. Conemaugh plume, October 20, 1970, 0641 EST. Visible plume accomplished by means of intentional, limited fly ash release.

LARGE POWER PLANT EFFLUENT STUDY (LAPPES) VOLUME 3 – INSTRUMENTATION. PROCEDURES, AND DATA TABULATIONS (1970)

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ABSTRACT

The Large Power Plant Effluent Study (LAPPES) was initiated during 1967 in Western Pennsylvania to evaluate the extent and effects of air pollution resulting from the largest complex of coal-burning generating stations in the United States. During 1970 two series of LAPPES field experiments were conducted in an area surrounding the Homer City and Conemaugh Generating Stations; these experiments consisted of ground-based and airborne plume measurements supported by extensive meteorological observations. Part 1 of this volume describes the topography and climatology of the generating station complex, the sulfur dioxide and meteorological monitoring equipment, and experimental procedures. Part 2 presents tabulations of plant operational parameters and the air quality and meteorological data collected during 1970.

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LARGE POWER PLANT EFFLUENT STUDY (LAPPES) VOLUME 3 – INSTRUMENTATION, PROCEDURES, AND DATA TABULATIONS (1970)

INTRODUCTION

Cognizant of the need for clean air, the electric power industry in many instances has adopted the tall stack in its endeavor to maintain reasonable air quality at ground level surrounding generating stations of ever increasing capacity. Considerable debate is underway, however, on both the national and international scene regarding the effectiveness and performance of these stacks in overall pollution management (Frankenburg and Sporne, 1966; Smith, 1966; Stone and Clarke, 1967). Questions raised by health and air pollution control agencies regarding the potential effects of airborne effluents from these plants cannot be answered in a definitive way by simply extrapolating experience with existing smaller capacity installations. Accordingly, the Environmental Protection Agency (EPA) is conducting a 5-year comprehensive field study to determine the extent and effects of power plant emissions from tall stacks. Specifically, three objectives are being pursued at the Western Pennsylvania site:

1. To develop and validate transport and diffusion models with which to calculate ground-level concentrations of effluents from large power plants with tall stacks.
2. To measure the magnitude, frequency, and spatial distribution of ground-level concentrations from large power plants with tall stacks, singly and in combination, and to compare the observed data with calculated predictions.
3. To evaluate the effects of sulfur compounds and other effluents from a large power plant complex on vegetation in the region of the installations.

The LAPPES Project is sponsored by the Environmental Protection Agency, with field activities conducted by on-site personnel. Office facilities are maintained at Jimmy Stewart Airport in Indiana, Pennsylvania. Also cooperating in the study are the Pennsylvania Electric Company and the Division of Air Pollution Control of the Pennsylvania State Department of Health. During the 1970 field experiments,

additional contract and voluntary participation was provided by Battelle Northwest, Stanford Research Institute, Brookhaven National Laboratory, and the French Meteorological Service Research Laboratories.

LAPPES consists of two complementary efforts, the first concerned with meteorological and air quality measurements and the second with agricultural effects data. The meteorological portion of the study is conducted along three interrelated lines of investigation: (1) determination of plume rise under a variety of atmospheric conditions; (2) determination of plume dispersion, both vertical and horizontal, as a function of downwind distance and atmospheric conditions; (3) determination of the magnitude, areal extent, and occurrence frequency of sulfur dioxide concentrations at ground level after emission from tall stacks. The agricultural segment of LAPPES will attempt to evaluate effects of power plant emissions on the agricultural economy of the adjacent region, which consists largely of Christmas tree plantations.

The purpose of this volume is to present the meteorological and air quality data collected during 1970 in support of the first two LAPPES objectives. Specifically, Part 1 will describe the power station complex and the equipment, procedures, and techniques used in conducting field experiments, in measuring air quality and meteorological parameters, and in reducing and processing data. Part 2 will present tabulations of the basic data and pertinent supplementary data.

This volume is not intended to present analyses of the data, to evaluate existing plume rise and dispersion theories, or to develop new diffusion models; these objectives have been pursued in related papers (Niemeyer et al., 1970; Pooler and Niemeyer, 1970) and will receive additional treatment in future volumes. Previous publications dealing with LAPPES include a general description of the project goals and activities (Niemeyer and Schiermeier, 1969) and two summaries of data collected during similar field studies conducted around the Keystone and Homer City Generating Stations from 1967 through 1969 (Schiermeier and Niemeyer, 1970; Schiermeier, 1970). Interim and final reports have been received from two LAPPES subcontractors who participated during 1970 (Johnson, 1971; Hales et al., 1971).

PART 1. INSTRUMENTATION AND PROCEDURES

POWER PLANT DESCRIPTION

The largest complex of coal-burning generating stations in the United States is presently emerging in the Chestnut Ridge area of Western Pennsylvania shown in Figure 1. Three new mine-mouth stations, Keystone, Homer City, and Conemaugh, are located approximately equidistant along a NW-SE line 39 kilometers long about 80 kilometer ENE of Pittsburgh. These three plants, combined with the nearby Seward and Shawville Stations, form a complex whose total annual production of 47,380,505 megawatt-hours exceeds the total yearly electrical output of all but 11 nations of the world. The five stations, owned by a total of 12 electric utilities, are fed from coal mines located either directly under or close by the station sites.

The subject of LAPPES is the line of sources formed by the Keystone, Homer City, and Conemaugh Stations, whose stacks will emit a combined daily output exceeding 2000 metric tons of sulfur dioxide into the atmosphere. A distinct advantage of this location for the study is that air quality measurements can progress as each stack of each station becomes operational. The 1967 through 1969 LAPPES field studies were conducted in an area surrounding the Keystone and Homer City Generating Stations. The 1970 project area initially encircled only the Homer City Station but was expanded to include the Conemaugh Station after the first unit there became operational.

Keystone Station

The Keystone Generating Station, located just west of Shelocta, was the first of the three new mine-mouth stations to be completed (Figure 2). The station has an hourly generating capacity of 1.55×10^{12} calories (1800 megawatts) produced by two identical cross-compound turbine-generator units. The boilers, which hourly produce 1.81×10^{12} calories, consume 590 metric tons of pulverized coal per hour, supplied by conveyor and truck from nearby mines. Four 99-meter-tall natural-draft cooling towers are used to provide recirculating water for steam condensation. The towers are designed to collectively cool 21.2×10^5 liters of water per minute from 48°C to 32°C with a total evaporation rate of 34,000 to 49,000 liters per minute.

Boiler effluent is fed to the twin 244-meter-tall stacks after passing through two electrostatic precipitators per unit. The precipitators, with an efficiency rating of 99.5 percent, remove a combined total of 83 metric tons of flyash hourly. Each stack includes a 9.5-mm-thick steel liner that maintains a constant outside diameter of 11.0 meters from the base to a height of 27 meters and 8.3 meters from

a height of 58 meters to stack top; the taper from 11.0 to 8.3 meters occurs between 27 and 58 meters above the base. Surrounding the liner is a concrete shell tapering from an outside base diameter of 20.4 meters to 10.4 meters at the top. Separation between stack centers is 61.0 meters, and the inside (exit) diameter at the top is 8.29 meters. Orientation of the stacks is along a line 044°-224° from north.

Unit 1 of the Keystone Station went into commercial operation during August 1967; unit 2 followed in July 1968 (Estrada and Smith, 1964; Penelec, 1969).

Homer City Station

Second in line is the Homer City Station, which is located about 4 kilometers SSW of the Homer City Borough (Figure 3). The station is capable of generating 1.10×10^{12} calories hourly (1280 megawatts) by means of two tandem-compound turbine-generator units. The boilers produce 1.28×10^{12} calories an hour while consuming 420 metric tons of finely ground coal, supplied by conveyor from two nearby mines. Two 119-meter-tall natural-draft cooling towers provide recirculating water to condense the steam back into boiler water. Approximately 15.7×10^5 liters of water are cooled from 49°C to 32°C each minute; total evaporation rate is 30,000 to 42,000 liters per minute.

Boiler effluent reaches the two 244-meter-tall stacks after passing through four electrostatic precipitators that remove a total of 71 metric tons of flyash hourly. Each chimney includes a 6.35-mm-thick steel liner that tapers from 10.0 meters outside diameter at the base to 7.3 meters at a height of 55 meters; the top 189 meters of the liner maintains a constant outside diameter of 7.3 meters. Surrounding the liner is a concrete shell tapering from an outside base diameter of 19.1 meters to 9.5 meters at the top. Separation between stack centers is 53.0 meters, and the inside (exit) diameter at the top is 7.29 meters. Orientation of the stacks is along a line 160°-340° from north.

The Homer City Station is so designed that a third unit with associated stack and cooling tower may be added if required. Unit 1 went into commercial operation during July 1969; unit 2 followed in December 1969 (Penelec, 1969).

Conemaugh Station

The third new generating station, Conemaugh, is situated at the village of Huff on the Conemaugh River (Figure 4). The Conemaugh Station is the near twin of Keystone, with identical boiler production and coal consumption. Also similar is the hourly generating capacity of 1.55×10^{12} calories (1800 megawatts). Because of their larger size and capacity, however, Conemaugh requires only two cooling towers, each 113 meters tall. Approximately 21.2×10^5 liters of water are cooled from 48°C to 32°C each minute to provide recirculating water for steam condensation; total evaporation rate is 34,000 to 49,000 liters per minute.

The Conemaugh Station is similarly equipped with precipitators that will ensure removal of up to 100 metric tons of flyash hourly from the boiler effluent. The two 305-meter stacks are constructed of a 22.2-mm-thick steel liner encased in a tapered concrete shell ranging from an outside base diameter of 25.3 meters to a top diameter of 10.3 meters. The steel liner maintains a constant diameter of 11.0 meters from the base up to a height of 27 meters and 8.3 meters from a height of 58 meters to stack top; the taper from 11.0 to 8.3 meters occurs between 27 and 58 meters above base. Separation between stack centers is 61.9 meters, and the inside (exit) diameter at the top is 8.29 meters. Orientation of the stacks is along a line 101°-281° from north.

Unit 1 of the Conemaugh Station went into commercial operation during May 1970; unit 2 followed in May 1971 (Penelec, 1969).

TOPOGRAPHY AND GENERAL CLIMATOLOGY

As shown by the topographic map in Figure 5, the generating stations are located in the Chestnut Ridge sector of the Allegheny Mountains. Typical of this area of Pennsylvania are numerous creeks and rivers, and rolling hills rising 100 to 200 meters above the valley floors. The land, much of which is tree-covered, slopes generally upward to the east to form the foothills of the Allegheny Mountains. Prominent features include Chestnut Ridge, oriented NE-SW and situated between the Homer City and Conemaugh Stations, and the considerably higher Laurel Ridge immediately southeast of the Conemaugh Station.

The Keystone Station is situated in a shallow rural valley with stack base elevation at 305 meters above mean sea level (MSL). Except for this valley, the surrounding terrain within 5 kilometers is hilly, with the talles peaks attaining approximately midstack height. Influences of large-scale topography are not evident from past ground-level measurements of Keystone emissions, although there may be some subtle effects that could appear during further analyses of the data.

The Homer City Station is located on a plateau with much of the surrounding terrain at approximately the same elevation as stack base at 366 meters MSL. To the east of the plant is a drop of about 100 meters to a valley, on the opposite side of which is Chestnut Ridge, with peaks ranging slightly higher than mid-stack. East of the ridge is a plateau that receives higher SO_2 concentrations at ground level than are found at comparable distances in other directions from the Homer City Station. This effect appears to be caused in part by a lee effect and is not attributable solely to the elevation of the plateau.

The Conemaugh Station is most susceptible to topographic influences. Separating this plant from Johnstown is the Laurel Ridge with some peaks within 10 kilometers ranging up to 200 meters above stack top. Stack base elevation at this

plant is 329 meters MSL. During the October 1970 series, helicopter and ground-based measurements confirmed the unique dispersion characteristics in the area. With flow from the southeast quadrant, the plume was brought to the surface within a very short distance; on one occasion, it appeared to descend onto the generating station itself (Plate 4). The SO_2 concentrations rapidly diminished with distance to the northwest but increased again on the lee side of Chestnut Ridge, about 12 to 14 kilometers from the Conemaugh stacks. In addition to ground-level SO_2 measurements, this downwash on the lee side of Laurel Ridge was confirmed by actual subsidence of pilot balloons in the vicinity of the Conemaugh stacks.

Accompanying this downwash phenomenon was a persistent cloud cover over the Conemaugh Station, caused by upslope action over Laurel Ridge. Observed cloud bases varied between 450 and 650 meters above stack base elevation with amounts ranging from scattered to overcast, although usually broken. This cloud deck frequently extended as far northwest as Chestnut Ridge, with clear skies beyond. The lee downwash appears to be associated with neutral flow because on days when the cloud cover dispersed sufficiently to allow surface heating, the downwash ceased and the plume rose in a normal manner.

With winds from the opposite direction, i.e., the northwest quadrant, the plume rose over Laurel Ridge and apparently mixed through a deep layer in the lee of the ridge, with relatively low concentrations being measured from ground level to the upper limit of sampling imposed by cloud bases. If a lee wave phenomenon exists with northwest winds, it has not been detected by our limited sampling to date.

The area of study has a humid, continental type of climate modified slightly by its nearness to the Atlantic Seaboard and the Great Lakes. Summers are mild but frequently humid because of invasions of air from the Gulf of Mexico. Winters are reasonably brisk with occasional periods of extreme cold; spring and fall months have moderate to cool temperatures. Precipitation is well distributed throughout the year, with appreciable snowfall in winter and the maximum frequency of thunderstorms in early summer.

Surface inversions are relatively frequent during the warmer months of the year; in winter, however, cloudiness persists because of this area's proximity to the track of west-east migratory storms and the frequent showery weather associated with northwest winds across the Great Lakes. Cold air drainage induced by the many hills leads to frequent formations of early morning fog, which may be quite persistent in the deeper valleys during the colder months. The study area is also subject to relatively frequent occurrences of stagnating anticyclones, a condition conducive to high ambient pollution levels because of the resulting poor ventilation.

HELICOPTER INSTRUMENTATION*

The primary source of airborne plume and meteorological measurements was an instrumented Bell Model 47J2 helicopter. The instrument package was designed and fabricated by Sign X Laboratories of Essex, Connecticut, and provided the observer with continuous, near-instantaneous measurements of sulfur dioxide and pressure height on the top recorder, and temperature and wet-bulb depression on the bottom (Figure 6). A description of the system follows (Sign X, 1970):

1. Sulfur dioxide: Electroconductivity method with time constant of 2.0 to 2.5 seconds; four ranges with full scale 1.0, 5.0, 10.0, or 50.0 ppm; flow rate of air sample, 2500 cc/min; flow rate of reagent, 25 cc/min; temperature compensation in analytical cell of 2.0 percent per degree C based on 25°C; sulfur dioxide removal from reagent (distilled water) accomplished by ion exchange resin.

2. Pressure height: Double bourdon cell with time constant of 0.1 second; electrical output linear function of pressure height according to standard atmosphere; four overlapping scales with 200 meters 25.4 mm (1.0 inch) on chart.

3. Temperature: thermistor with time constant of 0.1 to 0.2 second; three overlapping scales with 4°C = 25.4 mm (1.0 inch) on chart.

4. Wet-bulb depression: thirty-junction thermopile with time constant of 0.1 to 0.2 second; one scale with 4°C = 25.4 mm (1.0 inch) on chart.

5. Sulfur dioxide scrubber: manually operated, water- and resin-activated; two identical inline tubes provide equivalent pressure drop whether scrubbing or sampling directly.

6. Recorders: Hewlett Packard Model 7100B; two-channel with plug-in modules; full scale for each pen equivalent to half chart width with 2.54-mm vertical pen displacement to prevent collision in the event of overlap; one minute marker and one event marker on each recorder; chart speed = 25.4 mm (1.0 inch) per minute.

The instrument package was mounted in the left passenger cockpit position, facing the observer, so that continuous monitoring of all four parameters could be maintained (Figure 7). Power was supplied by the aircraft's 24-volt DC power supply, subsequently converted to 115 volts AC by means of a Topaz static inverter contained in the baggage compartment.

The pressure-height sensor, attached to the lower right brace of the instrument package, was connected by means of Teflon tubing to the static line of the helicopter airspeed indicator. The remaining three sensors were externally mounted on the left skid (Figure 8). The temperature and wet-bulb depression sensors were located respectively fore and aft in the 75-mm-diameter cylinder with the reservoir

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*Mention of commercial products or company names does not constitute endorsement by the Environmental Protection Agency.

for the wet-bulb occupying approximately one-fourth the inner volume. The air intake to the SO_2 analyzer was a 3.175-mm-interior-diameter (ID) Teflon tube inserted into the trailing edge of the 1.8-meter-long, 22.2-mm-ID steel pipe attached to the skid.

With an airflow of 2500 cc/min into the analyzer and a Teflon orifice in the probe of 1.19-mm ID, the isokinetic sampling speed for this unit was calculated as 24.3 mps. Actual flights were conducted at 22.4 mps (50 mph) during 1970. Disturbance of air at the sampling inlets by downwash from the helicopter rotor occurs only when the craft is hovering and not during forward flight. Communication between the airborne observer and ground-based sampling teams was provided by means of Motorola Motrac FM two-way radios.

SULFUR DIOXIDE INSTRUMENTATION

Portable Bubblers

The portable bubblers used to measure ground-level SO_2 concentration under the plume were constructed by EPA personnel and designed to obtain six consecutive 30-minute samples (Figure 9). The units are powered by 7.5-volt batteries and maintain an average flow rate of 150 cc/min. Each of the six sampling tubes per bubbler contains 20 ml of West-Gaeke solution through which ambient air is drawn by a 200-cc/min-capacity pump driven by a 6-volt motor. Additional tubes containing glass wool are installed downstream to prevent moisture from entering the pump assembly.

Switching between sampling tubes is accomplished by means of a synchronous timing motor and sequential valve. Because the sampling probe is only 15 cm above ground when operating, Millipore filters are inserted near the inlets to prevent admission of particulate matter. Analysis of bubbler samples is performed on a Technicon AutoAnalyzer.

Technicon AutoAnalyzer

The LAPPES office at Jimmy Stewart Airport is equipped with a Technicon AutoAnalyzer that serves the dual purpose of analyzing bubbler samples and monitoring ambient SO_2 (Figure 10). The SO_2 is measured colorimetrically, using West-Gaeke solution as the absorbing reagent, with sulfamic acid added to depress interference from nitrogen dioxide. Components of the AutoAnalyzer include a sampler, proportioning pump, heating bath, programmer, and colorimeter-recorder.

When this instrument is used for on-stream monitoring, the flow rates of air and West-Gaeke solution through the absorbing column are 1 liter/min and 1.5 cc/min respectively. Ambient air is drawn through Teflon tubing from the intake on the office roof, 12 meters above surface; a Millipore filter is used to screen out airborne particulate matter. When the instrument is used to analyze bubbler

samples, the intake line from the absorbing column is switched to the sampler turntable where bubbler reagent is contained in individual sample cups.

The transmittance of the colored complex is measured at 572 mμ with a 50-mm flow cell in the colorimeter. Calibration curves for data reduction are computed by analyzing standards each time new reagents are prepared (Technicon, 1966).

METEOROLOGICAL INSTRUMENTATION

Fixed Network at Jimmy Stewart Airport

Several meteorological variables are routinely monitored at Jimmy Stewart Airport to provide supplementary data for LAPPES experiments; these include wind speed and direction, temperature, relative humidity, hourly precipitation, and solar radiation (Figure 11). The surface elevation for these observations is 427 meters MSL, which corresponds to mid-height of the Keystone stacks, one-quarter height of the Homer City stacks, and one-third height of the Conemaugh stacks.

The Aerovane wind transmitter is mounted on a 10-meter tower as shown in Figure 11. Because of a nearby active runway, the FAA required that the tower be erected within 25 meters of the two-story office building. Winds from the quadrant centered on 090° may be affected by the obstruction and should be so regarded in the ensuing data summary.

The Aerovane is equipped with a six-bladed impeller whose starting speed is about 0.7 mps; wind direction is sensed by the streamlined vane. Values for the wind speed and direction are electrically transmitted and recorded continuously on a two-channel recorder. Range of wind speed is 0 to 44.7 mps (0 to 100 mph) on one channel; range of wind direction is 540 degrees of azimuth, allowing for crossover, on the other channel. Speed of chart rotation is 76.2 mm (3.0 inches) per hour.

Hourly temperature and relative humidity values were obtained from a standard National Weather Service hygrothermograph positioned in a louvered "cotton-region type" shelter. Maximum and minimum thermometers and a sling psychrometer were used to maintain calibration on the hygrothermograph. Precipitation totals were obtained from a weighing-bucket rain gage with verification provided by a standard 20.32-cm (8-inch) gage.

An Eppley pyranometer provided hourly values of total sun and sky radiation. Measurements are produced as a result of a voltage difference between two exposed concentric rings, one painted with lampblack, the other smoked with magnesium oxide. A continuous record was maintained by means of a Leeds and Northrup Speedomax H recorder. Full pen displacement is equivalent to 2 Langleys per minute, while the speed of chart rotation is 50.8 mm (2.0 inches) per hour.

Special Observations

Radiosonde Releases In support of the airborne plume and meteorological measurements, free radiosondes were released twice daily during selected experimental periods from Jimmy Stewart Airport. A 100-gram pilot balloon inflated to about 1100 grams carried the 403-megacycle package aloft at a rate of about 300 meters/min (Figure 12). Transmissions of temperature and humidity were recorded on a 403-megacycle receiver using a fixed dipole antenna, while visual tracking by theodolite provided winds aloft data (rabal). Both receiver and theodolite monitoring were terminated at 700 millibars.

Pilot Balloon Ascents Winds aloft were routinely measured during experiments at the Homer City and Conemaugh Stations by double-theodolite observations of helium-filled pilot balloons. Inflation of 30-gram sounding balloons to about 45 grams provided an ascension rate of approximately 130 meters/minute through the 1500-meter observational layer. The use of a balanced balloon permitted single-theodolite operation in the event one of the stations lost the balloon in flight or experienced instrument or communication malfunction.

Observations were obtained by means of standard Warren-Knight Model No. 85 theodolites positioned at the ends of baselines ranging in length from 283 to 552 meters. Several baselines were established at each generating station to ensure adequate angular separation between simultaneous instrument readings and minimum steam plume interference for a wide range of wind directions. Except when prematurely obscured by clouds or steam plumes, the balloons were tracked for 10 minutes, with azimuth and elevation angles read at 30-second intervals. Communication between the two theodolite sites was maintained by E. F. Johnson Personal Messenger, all-transistor, battery-operated transceivers.

OPERATING PROCEDURES FOR LAPPES EXPERIMENTS

Airborne measurements of the Homer City and Conemaugh plumes during 1970 were obtained during two separate flight periods designated as the April 1970 and October 1970 series respectively. Unless prevented by plant shutdown, helicopter malfunction, or adverse weather, helicopter flights were conducted every day during these periods. Adverse weather for this type of experiment included ceilings lower than the plume, excessive ground fog, or strong turbulence caused by high winds; rain or snow alone did not curtail the flights. In order to permit visual observation of the plume, Pennsylvania Electric Company personnel reduced precipitator efficiency to allow limited flyash release during periods in which experiments were conducted.

Usually two flights, each lasting about 150 minutes, were made on a series day. The first commenced at dawn while the plume was normally isolated from the ground by stable atmospheric layers near the surface. This flight consisted of three cross sections preceded and followed by a 1000-meter vertical temperature profile just

upwind of the Homer City or Conemaugh stacks. The cross sections were made at 4-, 10-, and 16-kilometer arcs downwind and consisted of successive crosswind flights through the plume at 60-meter vertical intervals; occasionally 30-meter intervals were flown to define the top and bottom edges better. The first traverse of each cross section was made approximately midway between top and bottom, with successively higher traverses until the top was reached; then lower from the center until the bottom was reached. In some cases this procedure was reversed so that the lower half of the plume was flown first. By maintaining a constant forward speed of 50 mph and by indicating surface reference points during plume passage, the observer was able to determine the geometry of the plume.

The second flight of a series day began simultaneously with the normal temperature transition during which the layer in which the plume was imbedded was brought to the ground. In addition to obtaining two or three more temperature profiles, the helicopter was flown parallel and normal to the plume's longitudinal axis near the surface to obtain the x and y dimensions of ground-level SO_2 concentrations. This treetop-level flight was usually continued as long as fuel permitted unless the ground-level concentrations originating from the plume terminated sooner. Occasionally a third flight was executed during the afternoon to measure the effects of a looping plume or the sustained downwash from a limited mixing layer regime. If no ground-level concentrations occurred on a particular day, the second flight was sometimes used to repeat one or more cross sections. All plume cross section and crosswind ground-level traverses were flown in the shape of arcs centered on the Homer City or Conemaugh stacks. Helicopter positions during airborne sampling were monitored and recorded by means of an on-board set of 15-minute-quadrangle topographic maps.

Helicopter measurements of ground-level concentrations were complemented with a series of consecutive 30-minute samples made by six to ten bubblers on the ground beneath the plume. Placement of these portable units was dependent on helicopter location of the plume aloft and usually spanned the expected lateral projection, to the ground, of the plume aloft, ranging from near the plant to as far out as 34 kilometers. On days of drastic plume shift, as determined from helicopter observation prior to inversion breakup, the bubblers which had already been set out were not analyzed when it was obvious they were not influenced by the plume.

Prior to and after the daily airborne operations, radiosondes were released at Jimmy Stewart Airport. Although detailed helicopter temperature measurements revealed the stability through the plume's vertical extent, the radiosondes detected such other pertinent features as subsidence inversions aloft. In addition, these radiosonde releases will provide a means of comparing the climatology of

Pittsburgh with that of the immediate area. Between these two releases, double-theodolite pibals were taken every 30 minutes at the Homer City or Conemaugh Station to provide data on the wind directly affecting plume dispersion.

SELECTED PLUME PHOTOGRAPHS

To assist in the physical interpretation of data contained in Part 2 of this volume, four selected plume photographs are presented in Plates 1 through 4. Vertical stability and wind data for these cases may be found in Tables 8, 9, and 10, and dimensions of the plumes are depicted in Table 3. In all four photographs, a visible plume was produced by means of intentional limited flyash emission.

Plate 1 illustrates dispersion of the Homer City plume from a vantage point 10 kilometers downwind. The combined plume from units 1 and 2, both operating near three-fourths capacity, is contained within a stable layer immediately above the surface inversion. This limited vertical extent combined with extreme width (15.1 kilometers at 10 kilometers downwind) are characteristic of a fanning plume; the horizontal dispersion in this case is further enhanced by light air flow accompanied by oscillating directions. A fairly high particulate background aloft is readily apparent by the dark layer above the Homer City plume.

Plate 2 depicts the Homer City plume during the initial stages of inversion breakup, with units 1 and 2 operating at 63 and 78 percent capacity, respectively. Within one hour after this photograph was taken, helicopter flights out to 33 kilometers detected significant ground-level SO_2 concentrations. The pattern at the surface was extremely wide, however, because of wind shear; a veering of 167 degrees between 350 and 950 meters above stack base elevation was revealed by the pilot balloon immediately preceding the picture. The color difference between the two plumes was caused by intentional limited flyash emission; under normal operating conditions, both plumes would appear as the lighter shade.

Dispersion of the Conemaugh plume across Laurel Ridge under near-neutral stability and moderate wind speeds is shown in Plate 3. Initial bouyancy aided by upslope action provided sufficient lift to enable the plume to clear the ridge, where it subsequently mixed through a deep layer. Although no ground-level helicopter flights were performed on this day, the bubbler samples indicated that near-zero SO_2 concentrations were present at the surface as a result of this vertical mixing; this contention is supported by the relatively weak SO_2 values in the lowest 200 meters of the 10-kilometer cross section. When this photograph was taken, unit 1 at the Conemaugh Station was operating near 85 percent capacity.

Plate 4 depicts Conemaugh plume behavior under the influence of Laurel Ridge lee-wave phenomena. Pilot balloons released near the plant revealed a counterflow

in the lower levels with strong southeast winds found only above stack top elevation. Near-neutral stability existed below an inversion based about 500 meters above stack base elevation. This photograph illustrates a plume element beginning its descent; within a minute the effluent had reached the surface near the base of the stacks. The cloud base at this time was 760 meters above stack base elevation, and unit 1 was operating at 75 percent of capacity. Subsequent helicopter flights and bubbler sampling on this day recorded high ground-level SO_2 concentrations close to the station.

CONTRACT AND VOLUNTARY PARTICIPATION IN LAPPES PROJECT

In addition to observations by EPA personnel, three subcontractors and one voluntary participant in the LAPPES Project during 1970 provided data of interest. As a voluntary participant, Mr. L. Facy, Director of the Research Laboratories of the French Meteorological Services, initiated a model study of Conemaugh plume dispersion. Using water-tunnel facilities located in his Paris laboratories, Mr. Facy will construct a model to duplicate the moderate-to-high wind, neutral stability conditions under which the Conemaugh plume traverses Laurel Ridge and Conemaugh Gorge. If the program is successful, its scope will be broadened to include a study of the plume's behavior under gravity-wave action in stratified layers over the ridge.

Under contract to EPA, personnel from the Pacific Northwest Laboratories of Battelle Memorial Institute collected and analyzed snowfall and rainfall samples under the Keystone plume during February, April, and May, 1970. The purposes of the field operations were to determine the scavenging efficiency by natural precipitation of airborne contaminants and to identify the chemical composition of surface-collected rainfall. Precipitation samples were obtained by arranging collectors in three arcs under the plume at approximate distances of 2, 4, and 6.5 kilometers. Subsequent laboratory analyses of the samples yielded measurements of acidity and of various sulfur and nitrogen compounds. Supplementary data obtained during the experiments included airborne and surface SO_2 and particulate measurements upwind and in the plume; rainfall rate and raindrop size and electric charge spectra; adsorption of SO_2 on flyash collected by means of an electrostatic precipitator; and vertical profiles of wind speed and direction, temperature, and humidity. A final report has been submitted (Hales et al., 1971).

Also under contract to EPA, a team of scientists from Stanford Research Instute used a Mark VIII ruby lidar to measure plume rise, plume geometry, and plume particulate distributions at successive distances from the Homer City stacks and under various meteorological conditions during the April 1970 series. This was accomplished by a vertical scanning technique with increments of 1 to 10 degrees, depending on the plume's vertical extent. Such scans were obtained by locating to

the side of the plume and scanning perpendicular to its mean centerline and at 45 degrees on either side of the perpendicular, thus obtaining three cross sections from a single location. The lidar was also used to check plume continuity by procuring cross sections at fixed distances downwind and at given time intervals (as frequent as 5 minutes) during an entire day, beginning with the morning stable period and ending with the onset of evening stability. An interim report has been submitted (Johnson, 1971).

The third contractor was Brookhaven National Laboratory. During October and December 1970, Brookhaven personnel used a fixed-wing aircraft to procure measurements pertaining to plume geometry and plume chemistry. By means of an on-board densitometer using right-angle scattering with maximum sensitivity at 0.6 microns, flyash particles in the 0.01- to 10-micron diameter range were detected during successive crosswind flights downwind, thus providing a means of defining plume geometry. In support of efforts to determine SO_2 reactions in the plume aloft, controlled amounts of sulfur hexaflouride (SF_6) were released into the stack effluent. Evacuated flasks fitted with critical orifices were used for airborne collection. In order to obtain crosswind integrated values of SF_6, one continuous sample was obtained during each horizontal plume traverse. Subsequent gas chromatograph analyses of the samples will provide data with which simultaneous airborne SO_2 measurements can be compared and chemical reactions determined.

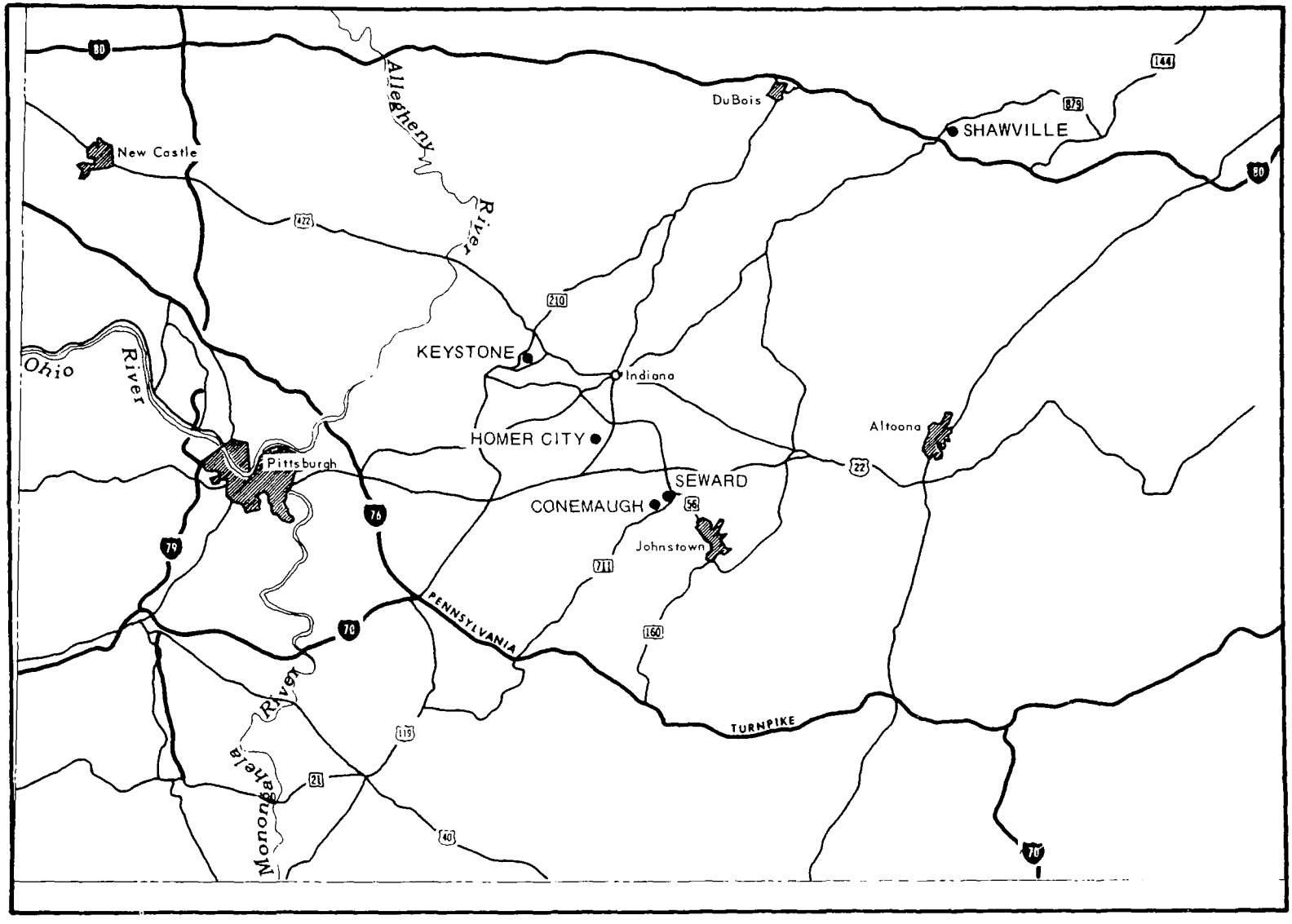


Figure 1. Locations of generating stations.

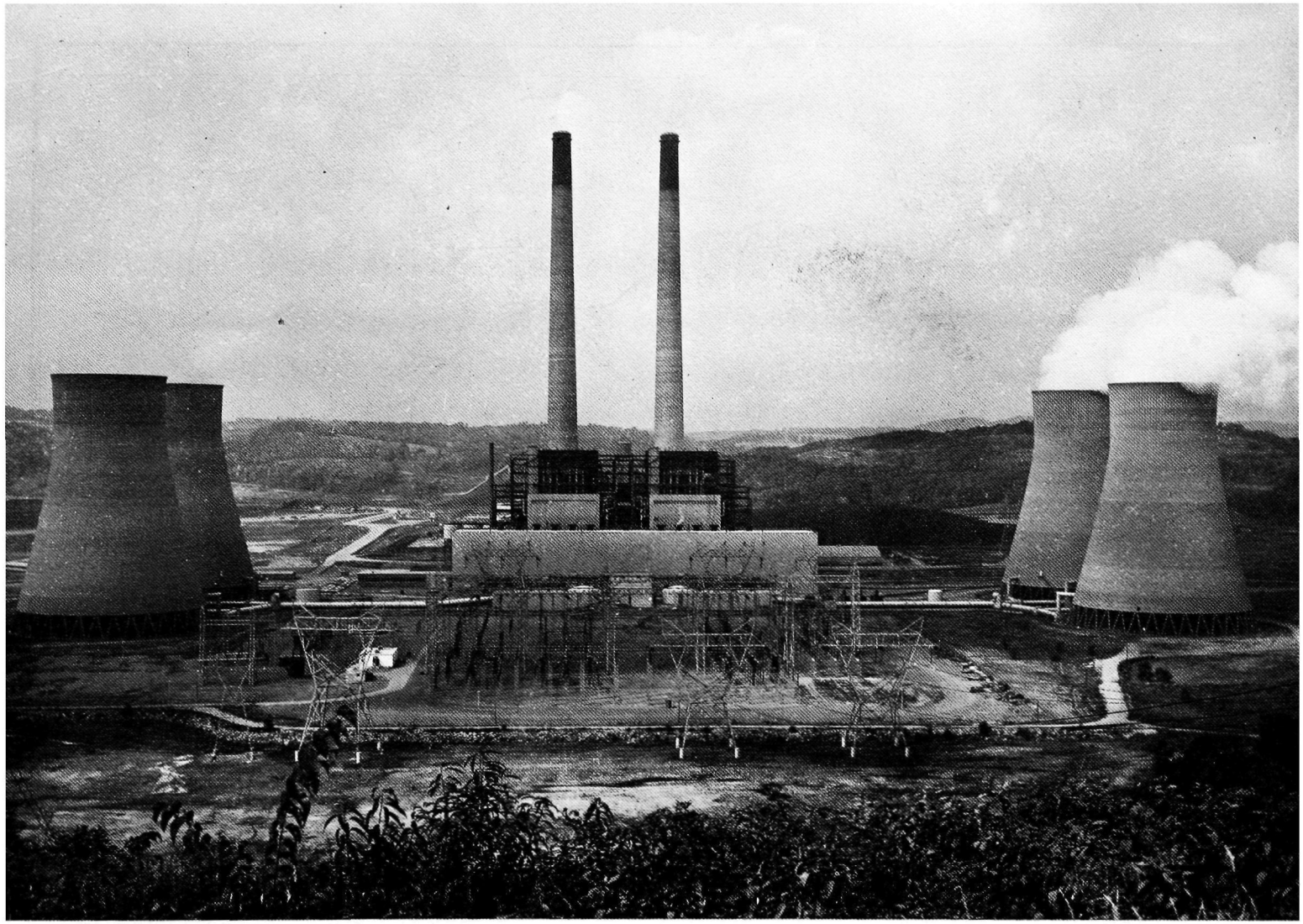


Figure 2. Keystone Generating Station.

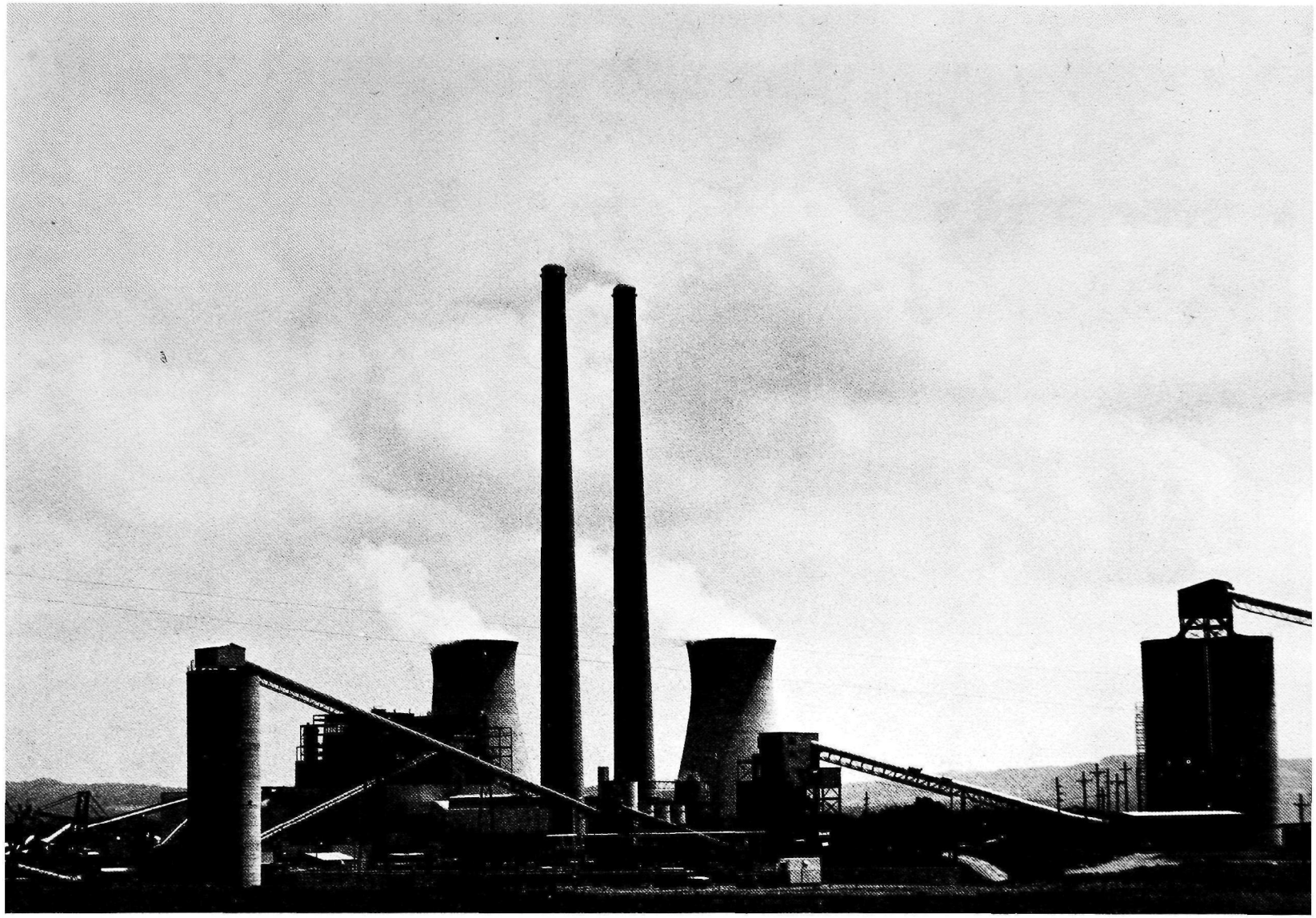


Figure 3. Homer City Generating Station.

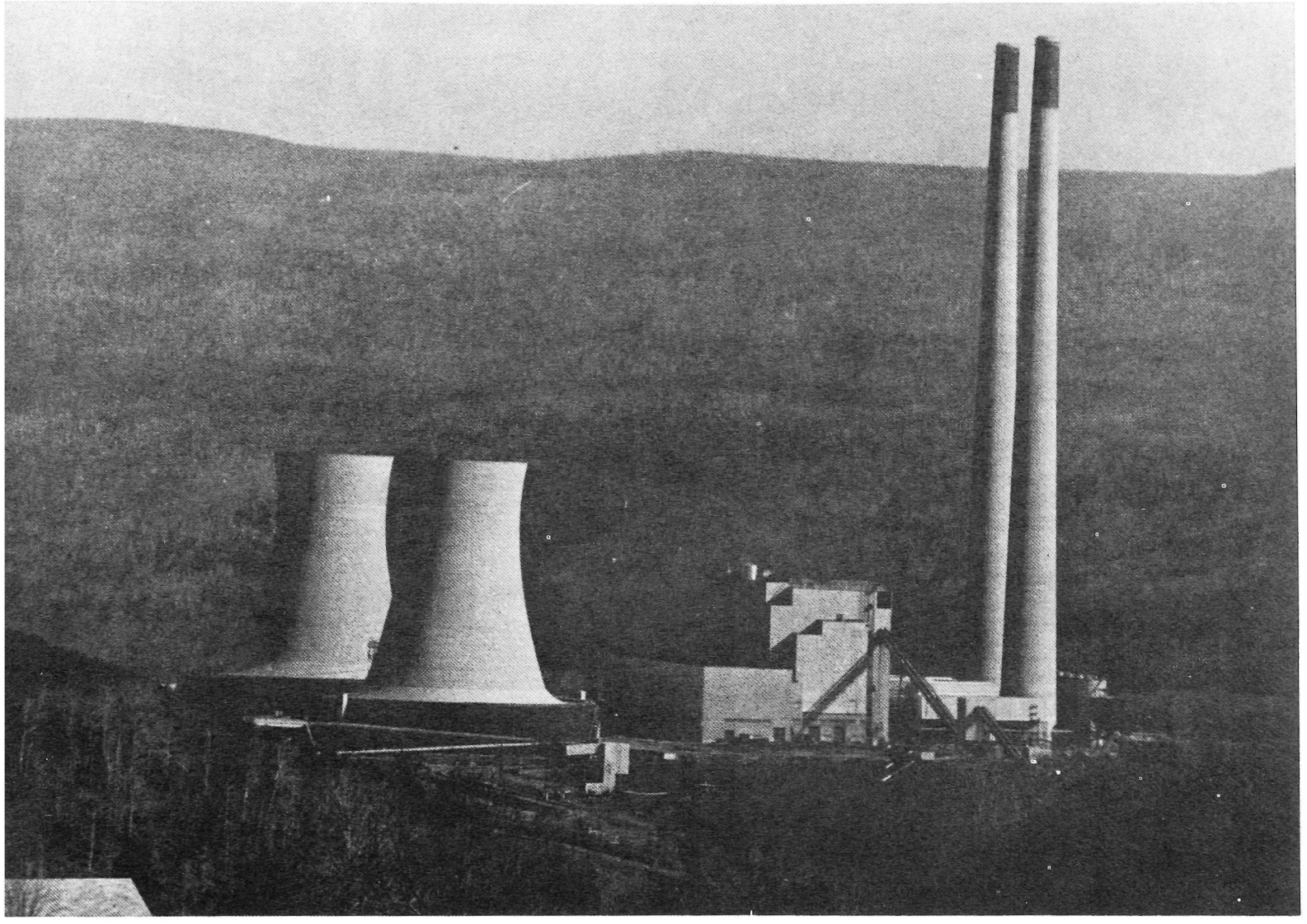


Figure 4. Conemaugh Generating Station.

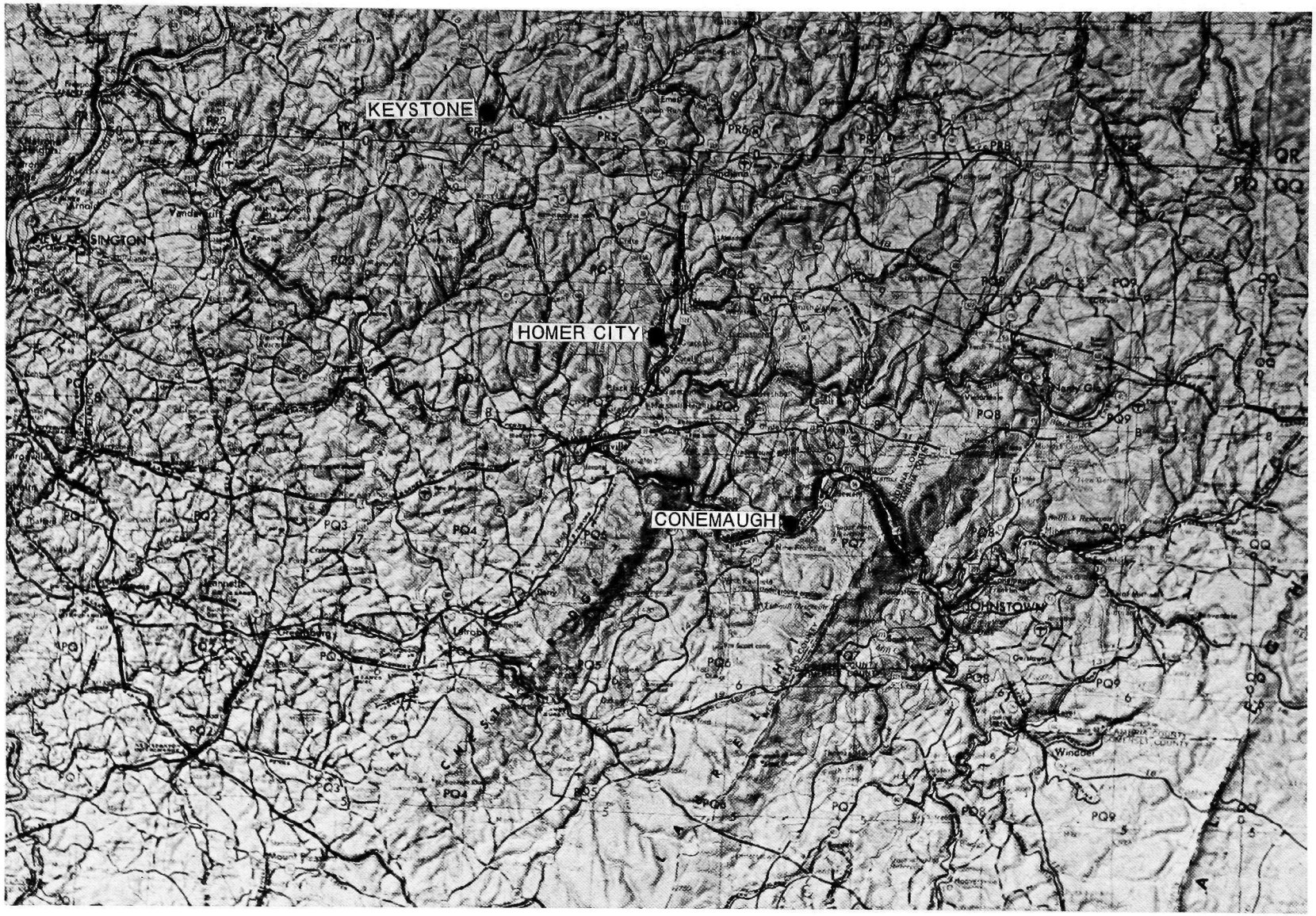


Figure 5. Topography of generating station complex.

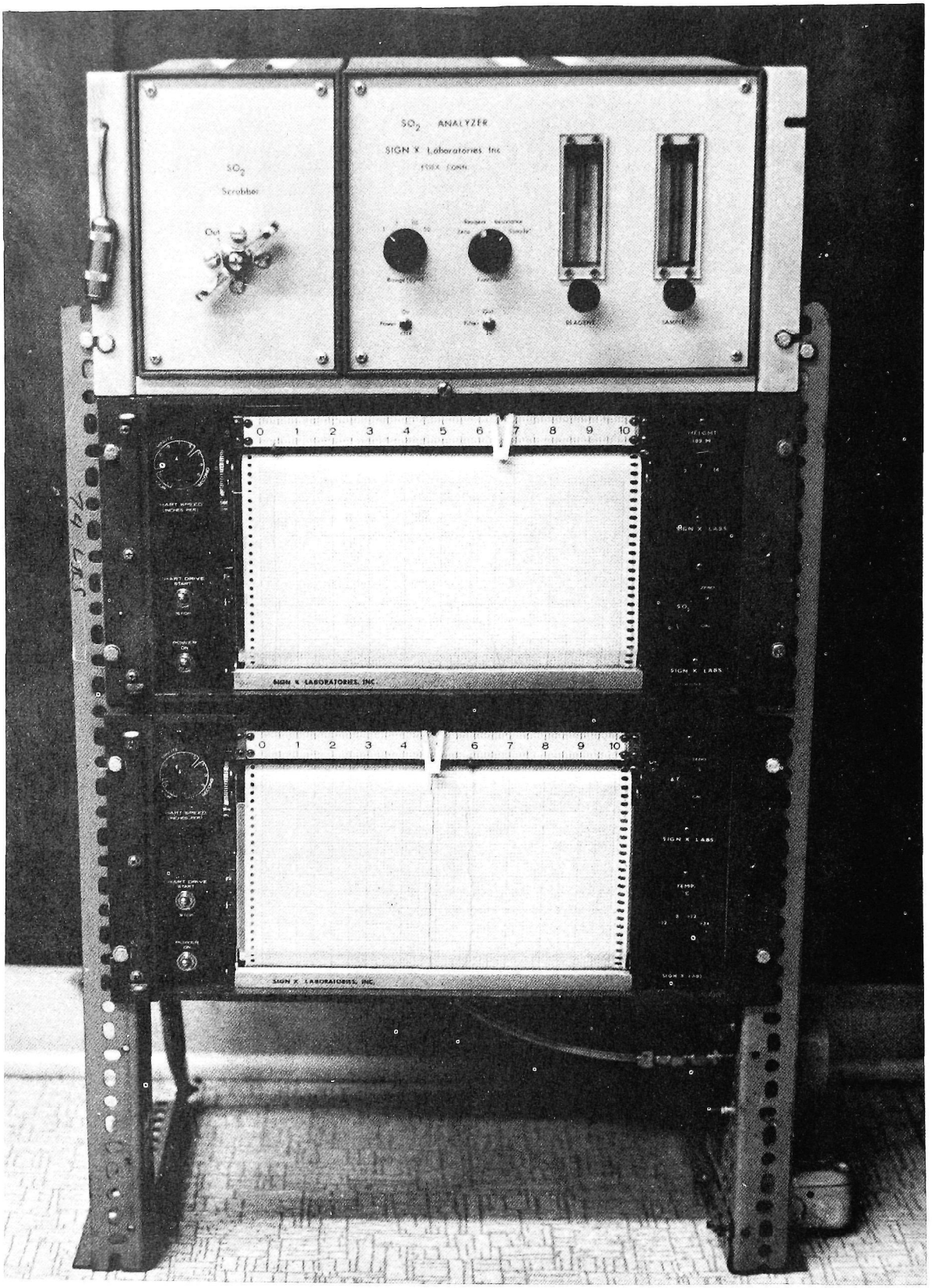


Figure 6. Helicopter instrument package.

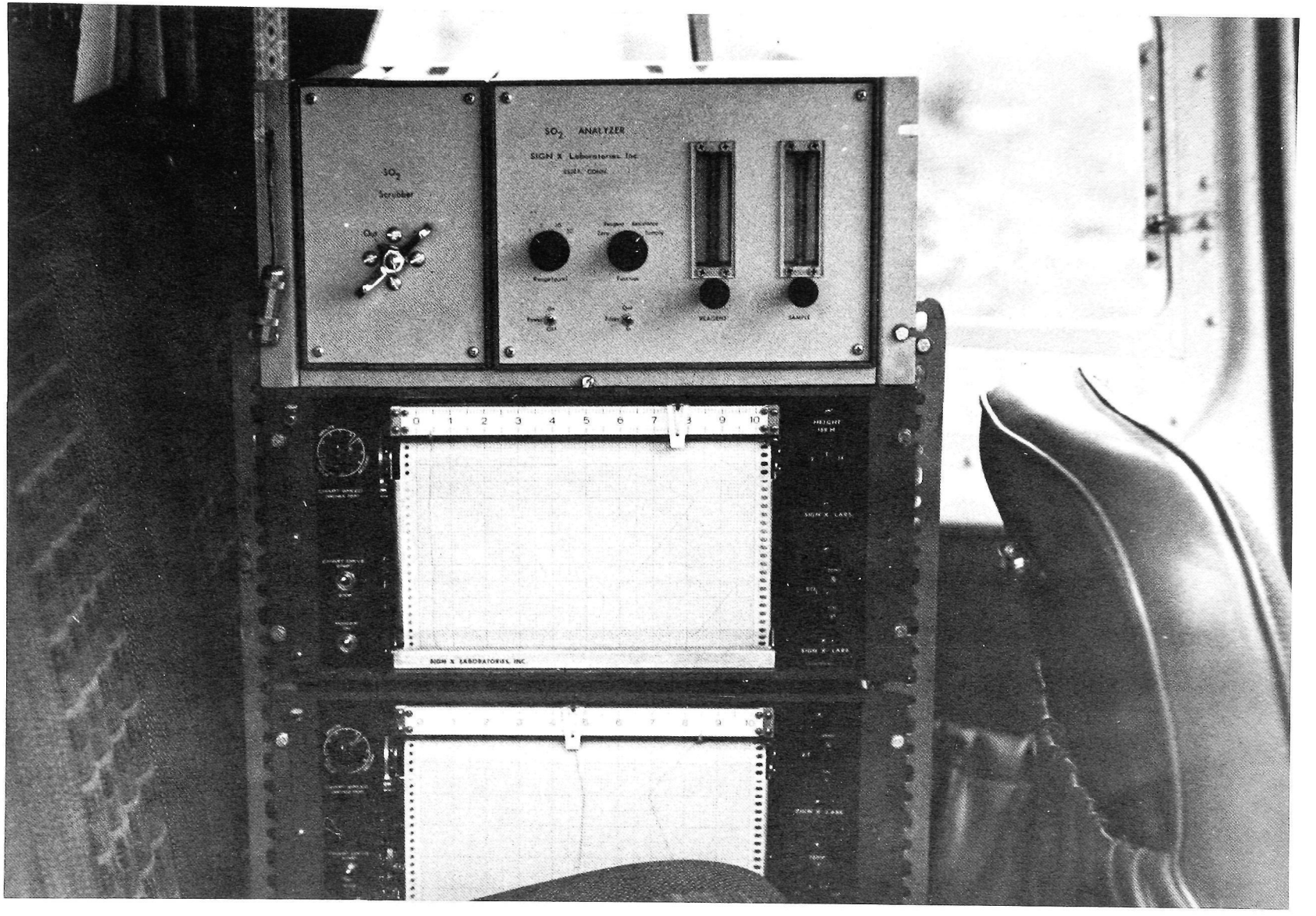


Figure 7. Interior of instrumented helicopter.

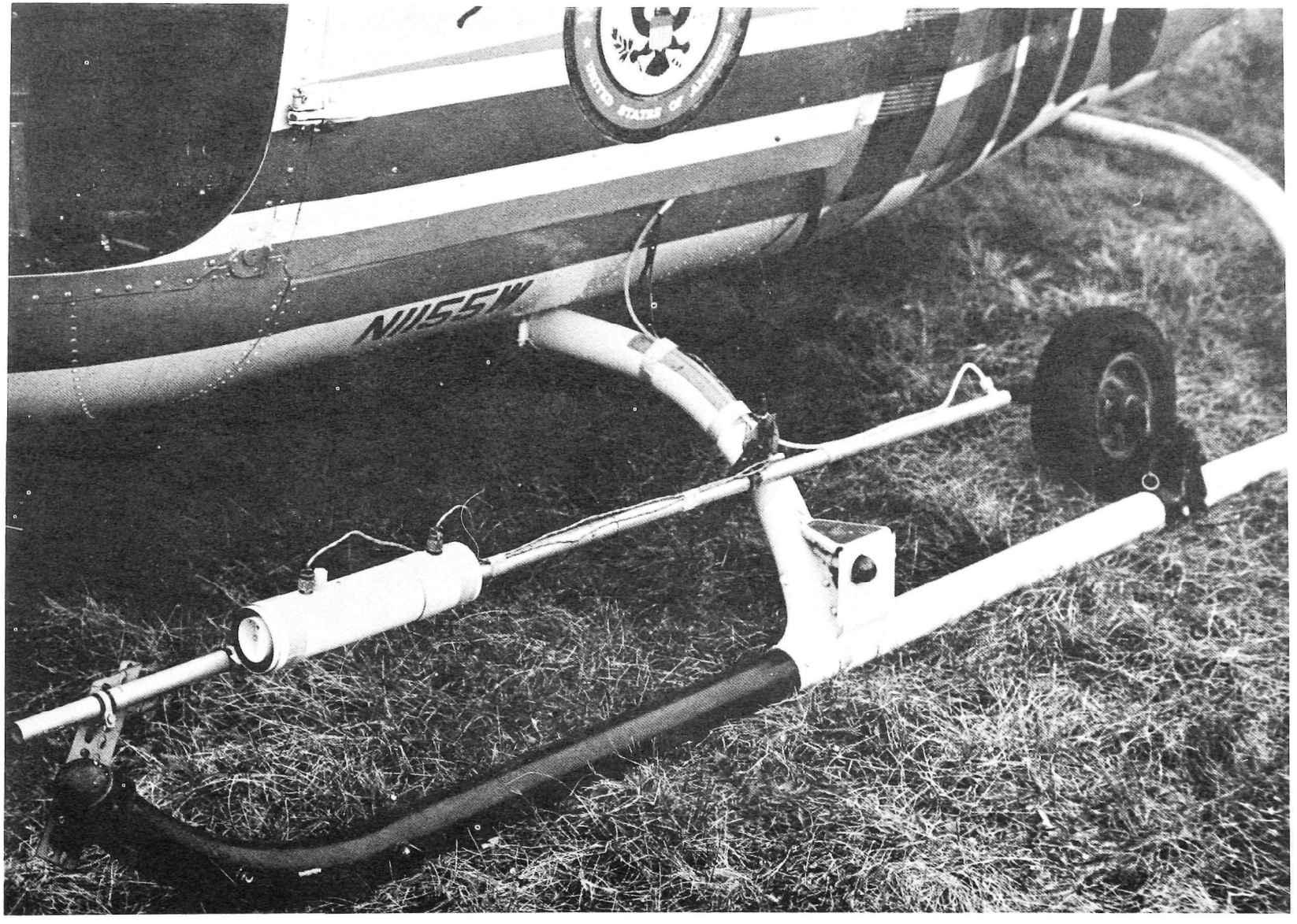


Figure 8. External helicopter probe.

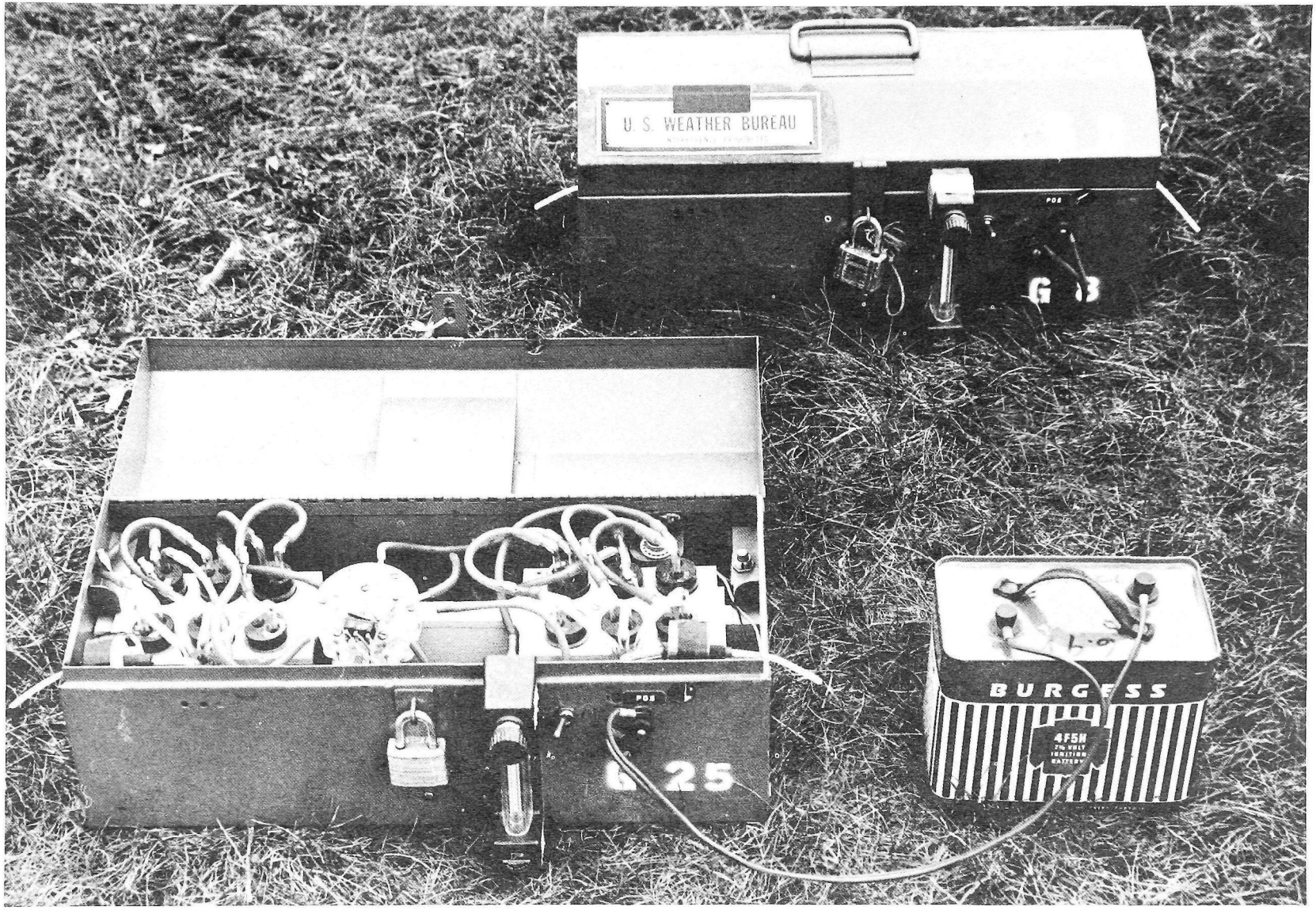


Figure 9. Portable SO_2 bubbler.

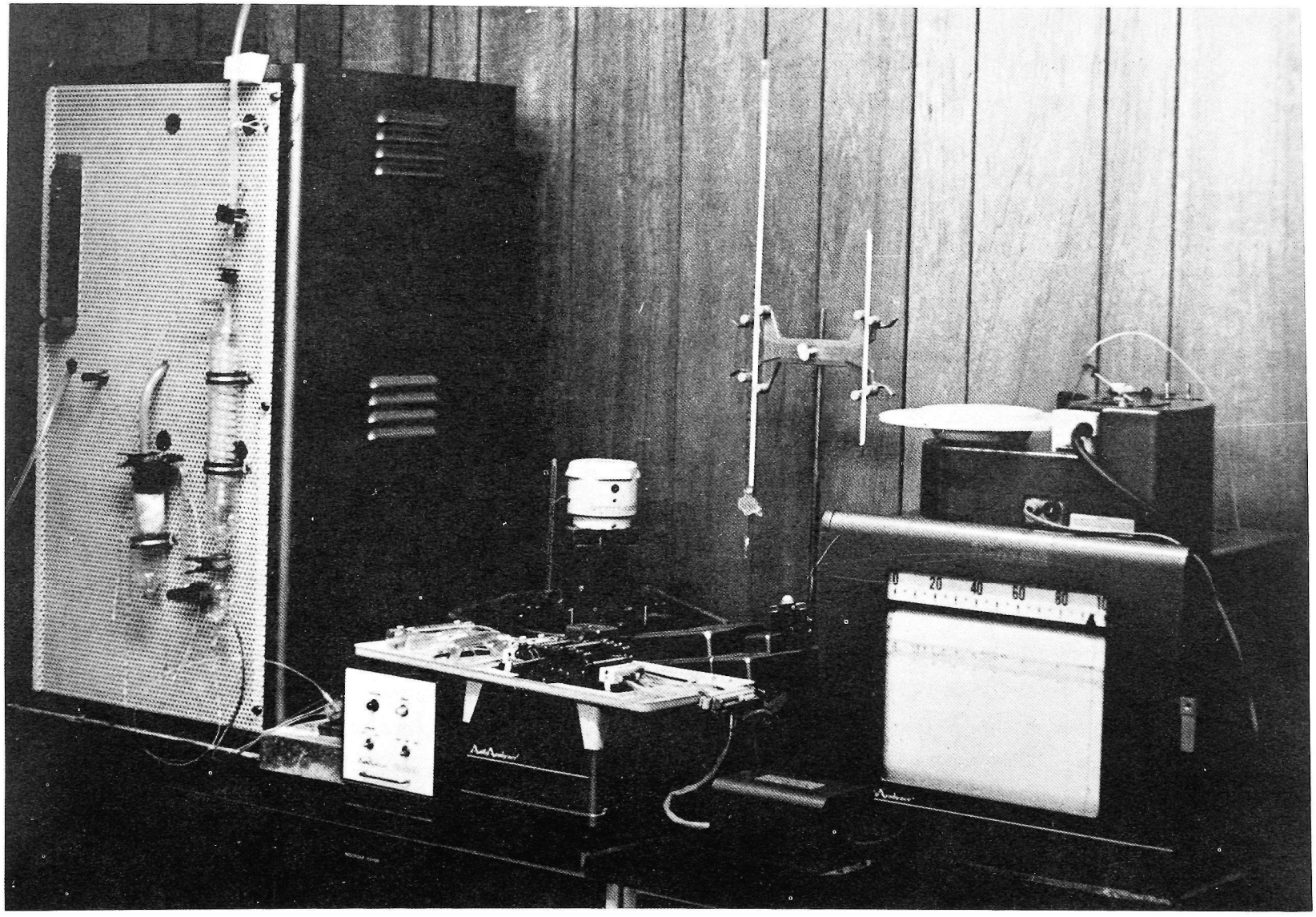


Figure 10. Technicon AutoAnalyzer.

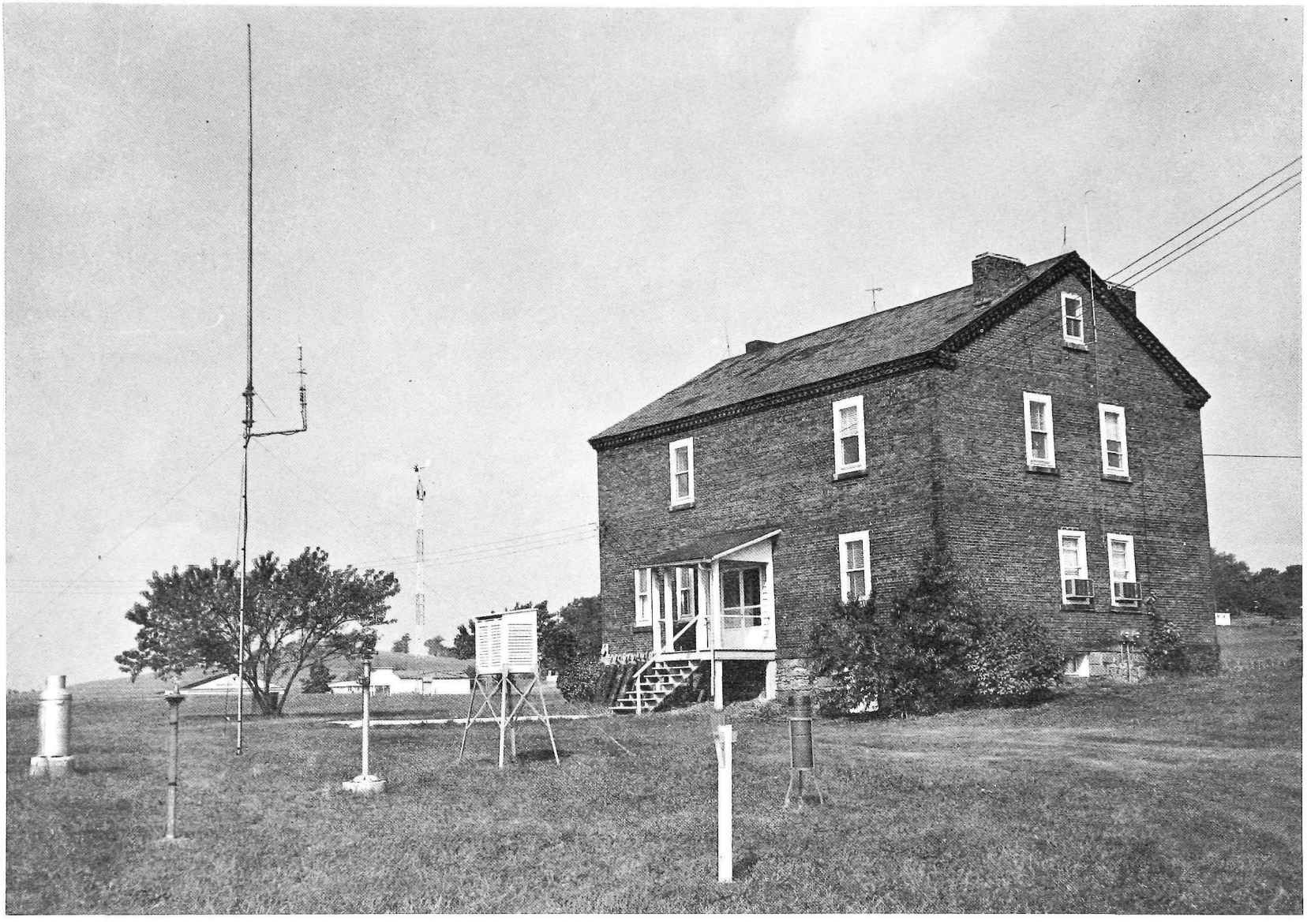


Figure 11. Surface meteorological instrumentation at Jimmy Stewart Airport.

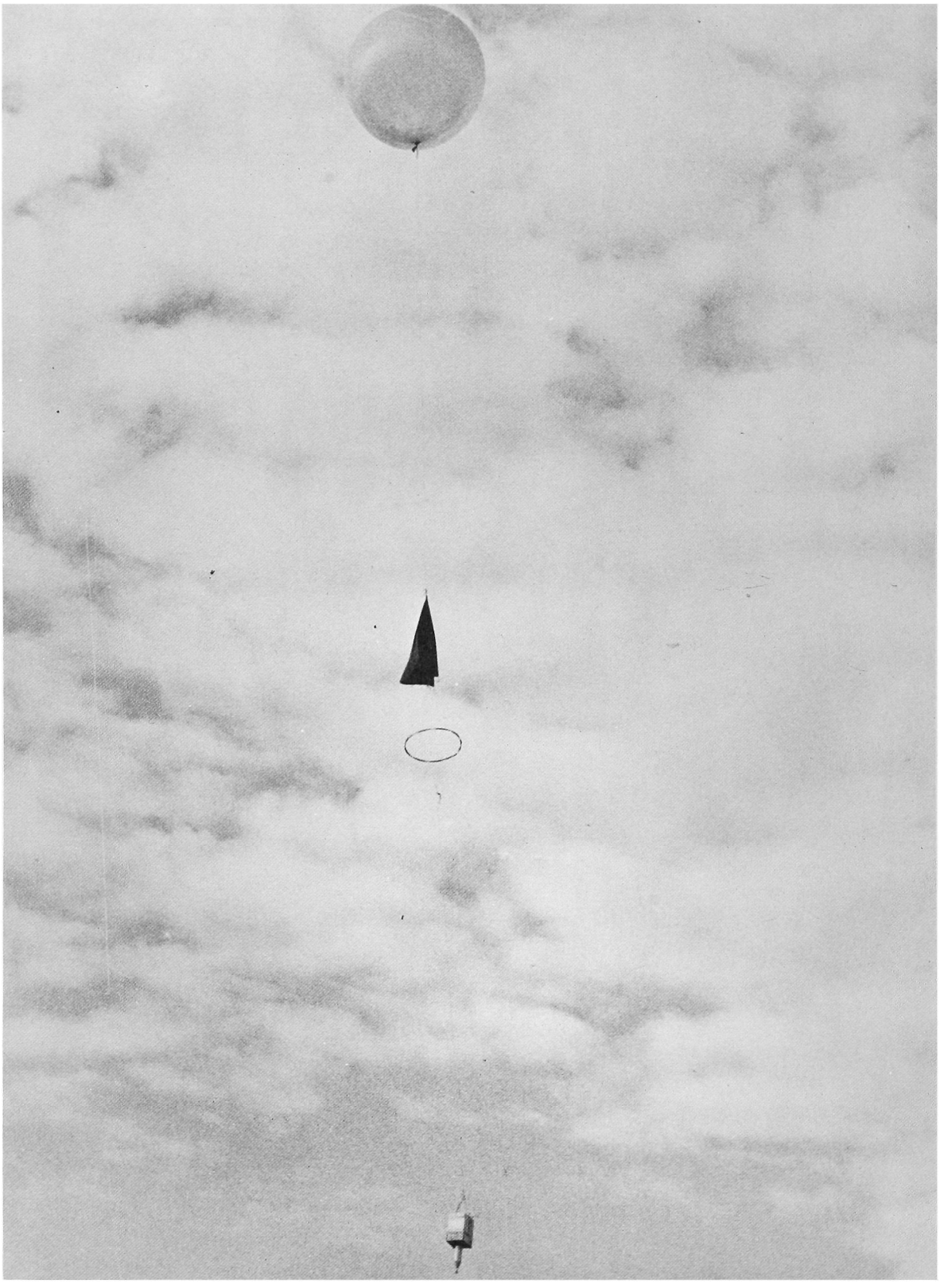


Figure 12. Radiosonde ascent.

PART 2. DATA TABULATIONS

INTRODUCTION

Part 2 presents in tabulated form the specialized air quality and meteorological measurements as well as the plant operational data collected during two 1970 LAPPES series. Supplementary data that may assist in analyzing plume dispersion are also included. These consist of surface meteorological and SO_2 measurements obtained at Jimmy Stewart Airport and surface and 500-millibar charts for each series day. An introduction to each set of tables describes the data and format and gives other pertinent information.

The specialized air quality and meteorological measurements and plant operational data contained in Part 2 of this volume were collected during the following periods:

April 1970 LAPPES Series	:	20 April 15 May 1970
October 1970 LAPPES Series	:	14 October 16 November 1970

Supplementary data are included in Tables 1 and 2 for the above two LAPPES series as well as for specific days during the following contractor experiment periods:

Battelle SO_2 Washout Study	:	3 14 February 1970
Battelle SO_2 Washout Study	:	13 April 2 May 1970
SRI Lidar Experiment	:	3 15 May 1970
Brookhaven Plume Tracking	:	1 October and 15 December 1970

Additional helicopter temperature profiles, pilot balloon and radiosonde runs, and plant operational data are contained in Part 2 for 5 days during the April 1970 series on which normal LAPPES activities were suspended, but SRI lidar experiments were conducted.

All data are presented in metric units because the adoption of a single consistent set of units allows more direct utilization of the data. This required conversion of the following measurements: Aerovane wind speed, surface temperature and precipitation, and all plant operational data. In performing these conversions, care was exercised that neither a sacrifice nor an implied gain of accuracy was effected.

Both polar and rectangular coordinate systems are utilized in this data summary. With the Homer City or Conemaugh stacks as origin, the polar coordinates locate specific points such as cross section reference points and bubbler sites.

On the other hand, right-hand rectangular coordinates are primarily used to indicate directions and have no fixed origin. The rectangular system is oriented so that plus x points downwind, and plus y indicates a counterclockwise direction around the source.

DAILY EXPERIMENT SUMMARY

An experiment summary page is presented in Table 1 for each day during 1970 on which flights were made by the LAPPES helicopter or on which data were collected by LAPPES contractors. Although hourly plant operational data are listed in Table 12, the headings in the experiment summary identify the generating station being sampled and designate the units in operation.

The summary sheets also enumerate the types of air quality and meteorological measurements collected each day by APCO personnel. Although data from contractors' activities are not included in this volume, their participation is noted on specific days. Also included is a commentary in which deviations from normal experiment procedures are explained and items of relevant information are presented. During both 1970 series, the Homer City and Conemaugh plumes occasionally traversed Chestnut Ridge and/or Laurel Ridge; this fact is mentioned in the commentary on appropriate days to alert the reader that surface elevations under the plumes were considerably higher than stack base elevations.

The final section of each daily experiment summary consists of a brief description of the existing synoptic situation and the 0700 EST surface and 500-millibar charts from the Daily Weather Map (NOAA, 1970). The plume wind included in the synoptic description is intended only to furnish a general indication of plume direction and speed; complete wind profiles are presented in Tables 9 and 10 of this volume.

Actual terrain elevations under plume cross sections (Table 3) and ground-level helicopter flights (Tables 4 and 5) may be obtained by referring to 15-minute-quadrangle topographic maps published by the U.S. Geological Survey (USGS, 1970).

Table 1. DAILY EXPERIMENT SUMMARY

Legend

GLC	:	Ground-level SO_2 concentration.
Regional	:	Description of daily weather-map surface and 500-mb features over eastern half U.S., and surface and 500-mb winds at Pittsburgh.
Local	:	Meteorological conditions in vicinity of source generating station at beginning and end of daily sampling periods. Because of topographical influences near the Conemaugh and Homer City Stations, these local observations do not necessarily reflect conditions downwind.
Low clouds	:	Cloud base lower than 2000 meters above stack base elevation.
Middle clouds	:	Cloud base between 2000 and 6000 meters above stack base elevation.
High clouds	:	Cloud base higher than 6000 meters above stack base elevation.
Plume wind	:	Pilot balloon wind at 250 meters above stack base elevation at Homer City or 300 meters above stack base elevation at Conemaugh. If pilot balloon not available, plume wind determined from radiosonde and so indicated.
Mps	:	Meters per second.

Table 1. DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 3 February 1970 Keystone Plume Unit 1

SO_2 Measurements

None

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (snow samples collected under Keystone plume)

Commentary

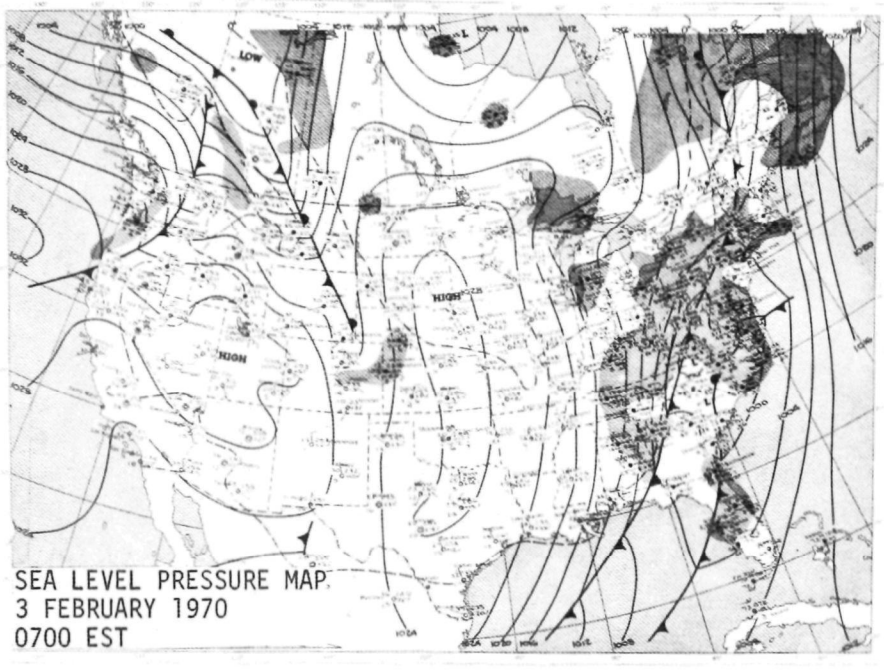
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

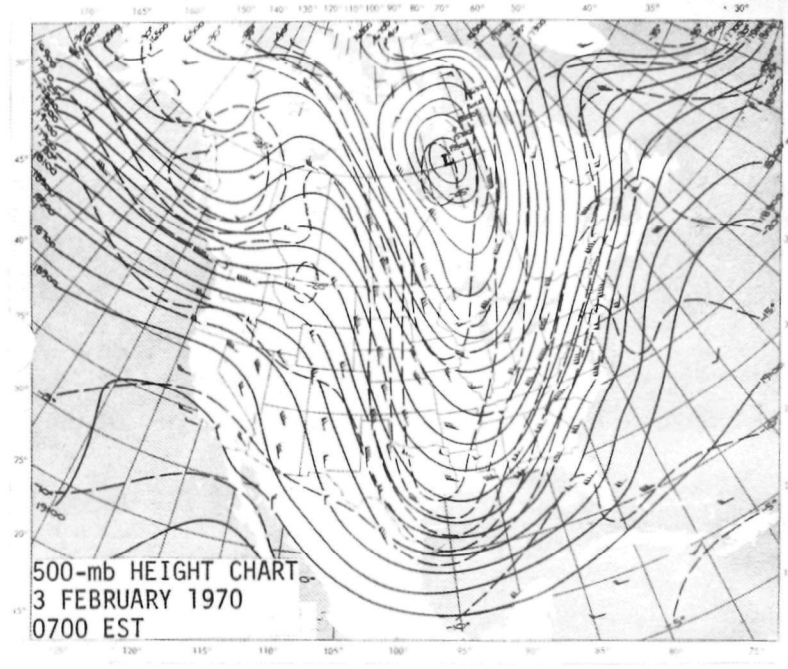
Regional - Low over eastern Quebec with cold front southwestward through Pennsylvania to Gulf of Mexico; N-S ridge over central U.S. Surface wind NNW 5 mps. Eastern U.S. dominated by leading edge of long-wave 500-mb trough; closed low over Hudson Bay. Wind at 500 mb SW 40 mps.

Local - Noon low overcast with moderate snow. 3 PM low broken clouds. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
3 FEBRUARY 1970
0700 EST



500-mb HEIGHT CHART
3 FEBRUARY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 9 February 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (snow samples collected under Keystone plume)

Commentary

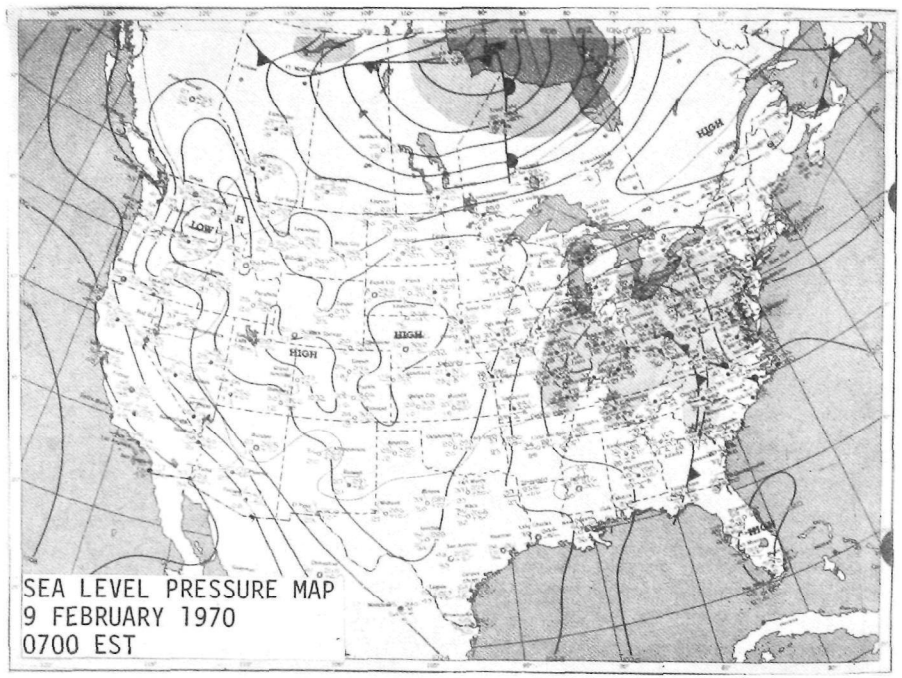
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

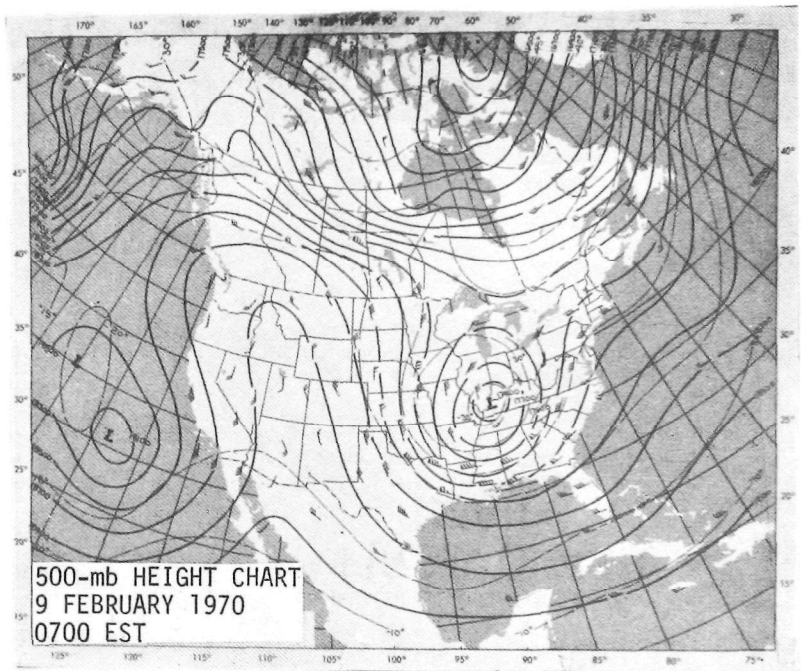
Regional - Weak low over southern Ohio with front southward to Florida Gulf coast; ridge along New England coast. Surface wind light easterly. Eastern U.S. dominated by leading edge of long-wave 500-mb trough; closed low over Illinois-Kentucky border. Wind at 500 mb SSW 13 mps.

Local - 10 AM low overcast with snow and rain mixed. 2 PM low overcast with snow and rain mixed. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
9 FEBRUARY 1970
0700 EST



500-mb HEIGHT CHART
9 FEBRUARY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 10 February 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (snow samples collected under Keystone plume)

Commentary

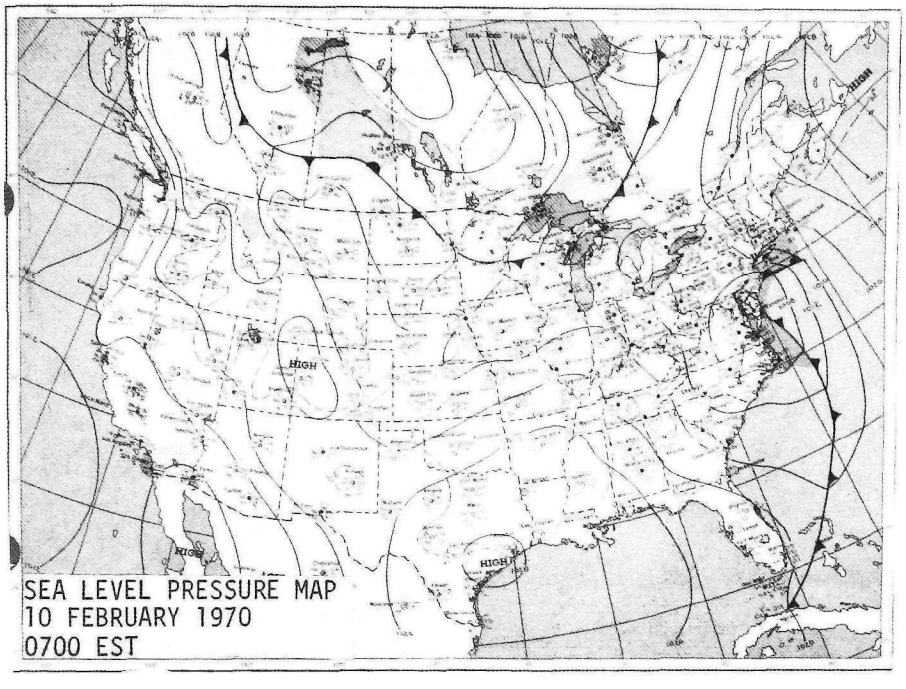
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

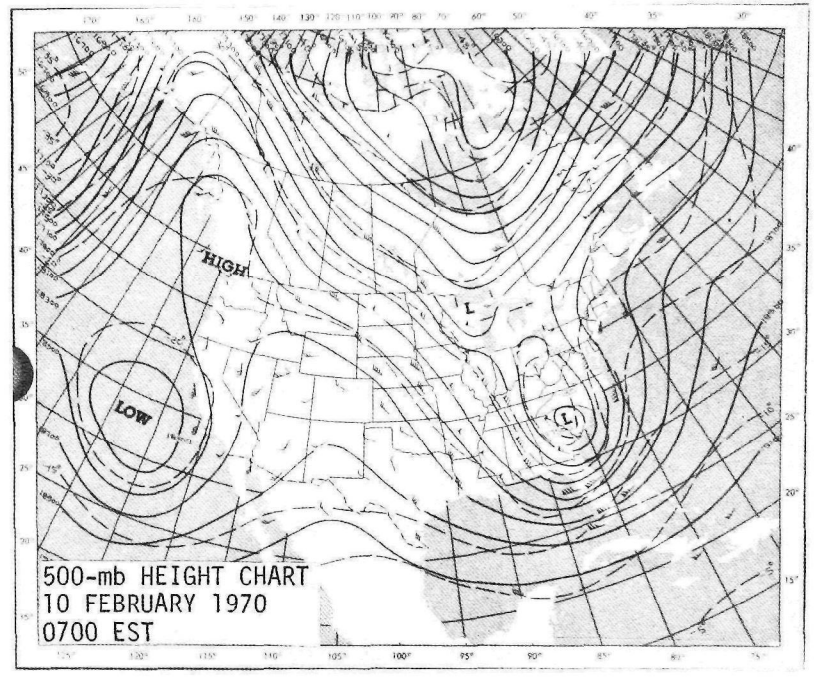
Regional - Closed low over Maryland with frontal trough southwestward to Havana; ridge from Texas Gulf coast to Lake Erie. Surface wind light northerly. Deep 500-mb trough dominating eastern half U.S. with closed low over South Carolina. Wind at 500 mb S 25 mps.

Local - 10 AM low overcast with snow. 4 PM low overcast with snow. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
10 FEBRUARY 1970
0700 EST



500-mb HEIGHT CHART
10 FEBRUARY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 14 February 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (snow samples collected under Keystone plume)

Commentary

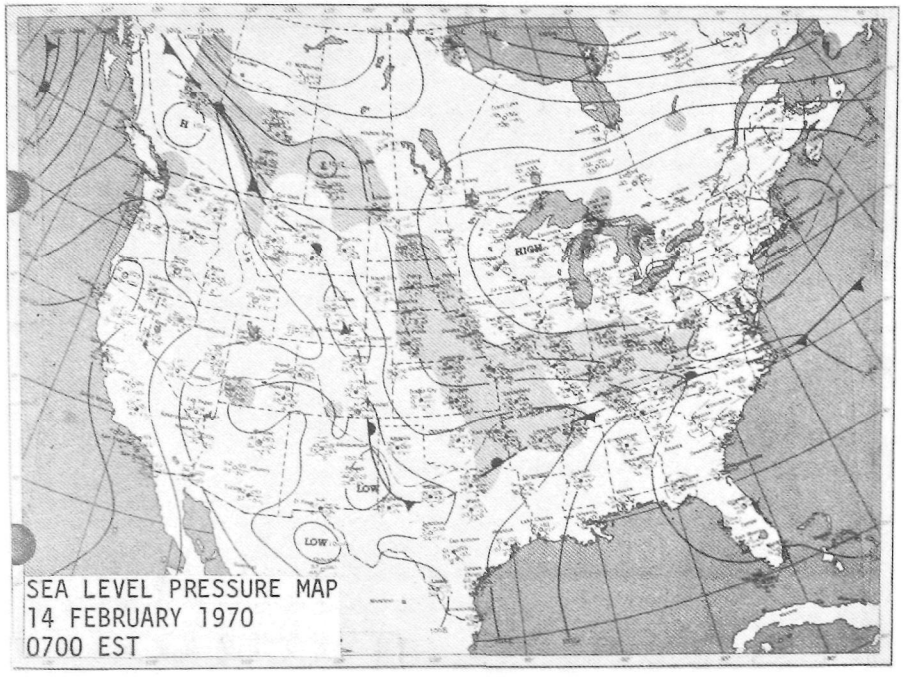
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

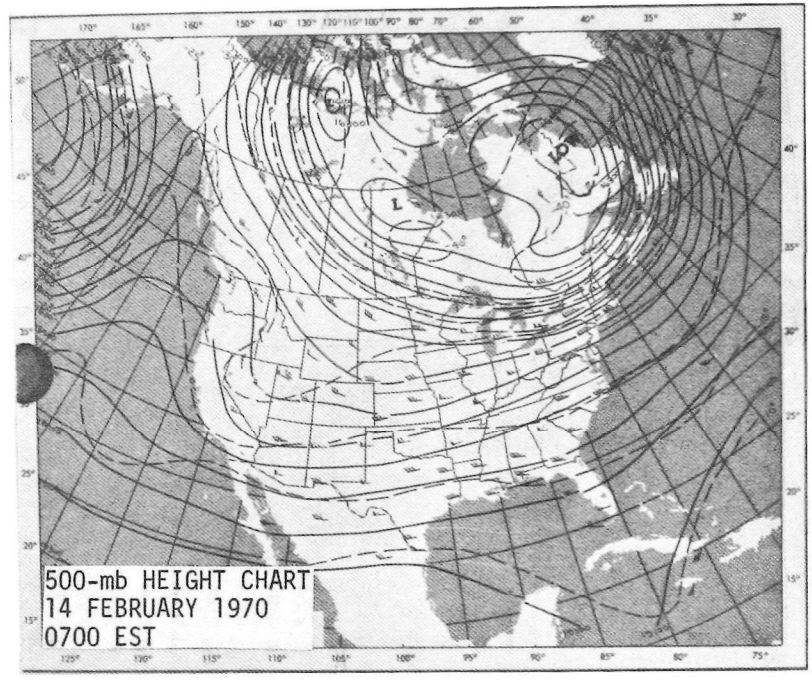
Regional - Ridge oriented E-W over northeastern U.S. with high centers over Wisconsin and New York Atlantic coast; stationary front from Texas through North Carolina. Surface wind light northeasterly. Eastern half U.S. under strong 500-mb zonal flow. Wind at 500 mb W 35 mps.

Local - 6 PM low overcast with light snow showers. 10 PM low broken clouds with intermittent light snow showers. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
14 FEBRUARY 1970
0700 EST



500-mb HEIGHT CHART
14 FEBRUARY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 13 April 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

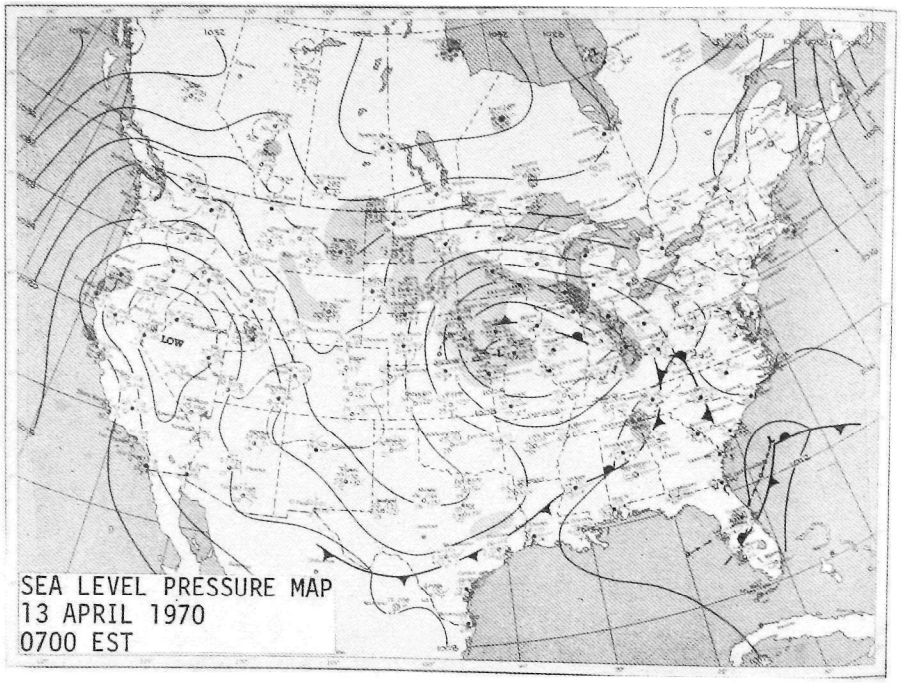
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

Regional - Surface ridge from western Ontario to central Atlantic coast; closed low over northern Missouri. Surface wind NE 5 mps. 500-mb ridge from North Carolina to high center over southern Ontario; closed low over Iowa-Missouri border. Wind at 500 mb W 8 mps.

Local - 2 PM low broken clouds. 5 PM low broken clouds with light rain showers. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



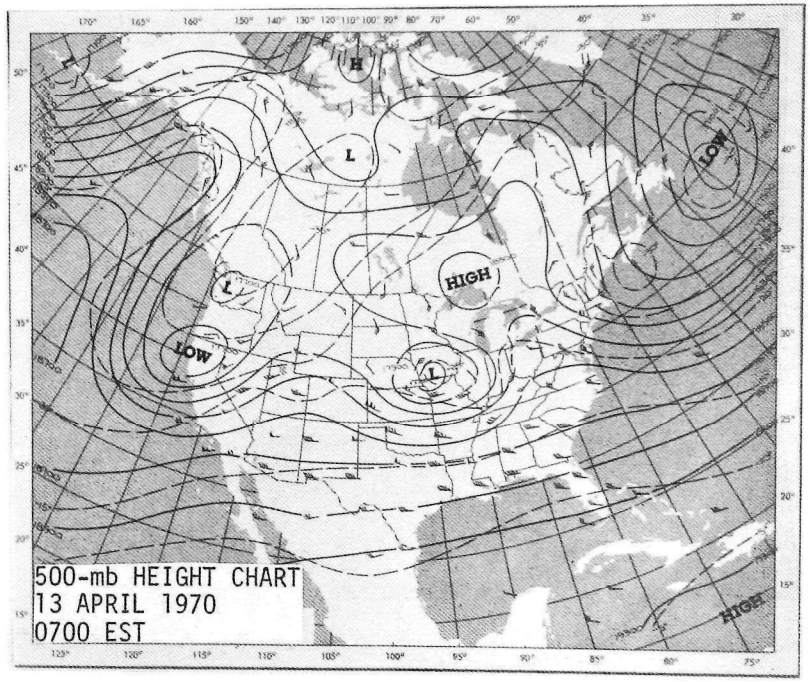


Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 14 April 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

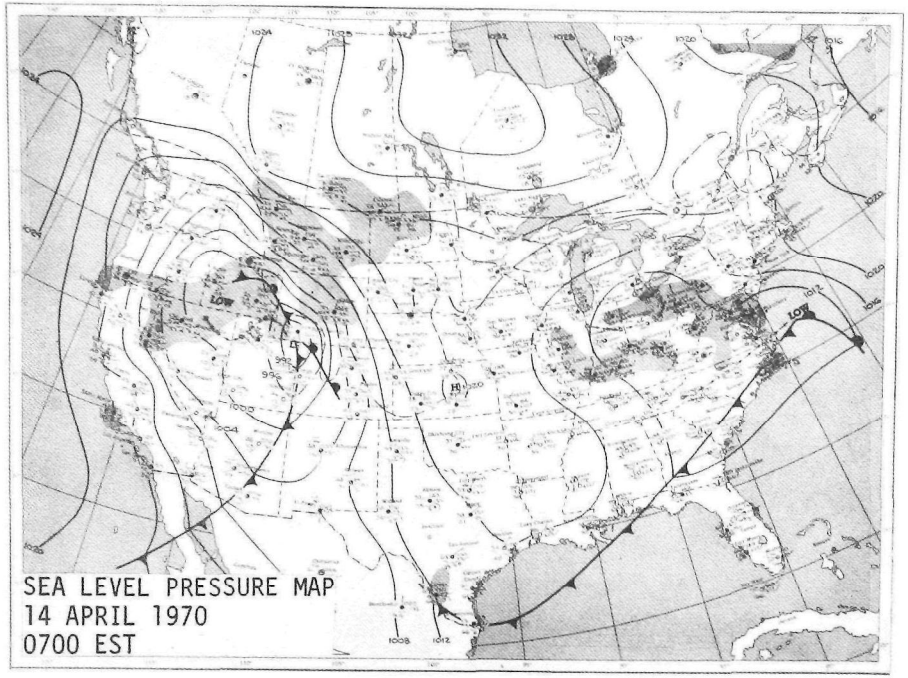
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

Regional - Low off Virginia coast with cold front southwestward to southern Texas; ridge from northern Virginia to southern Nova Scotia. Surface wind SE 5 mps. Closed 500-mb low over Ohio-Kentucky border; ridge through New England states. Wind at 500 mb SE 5 mps.

Local - 9 AM low overcast with light rain. 2 PM low overcast with light rain. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



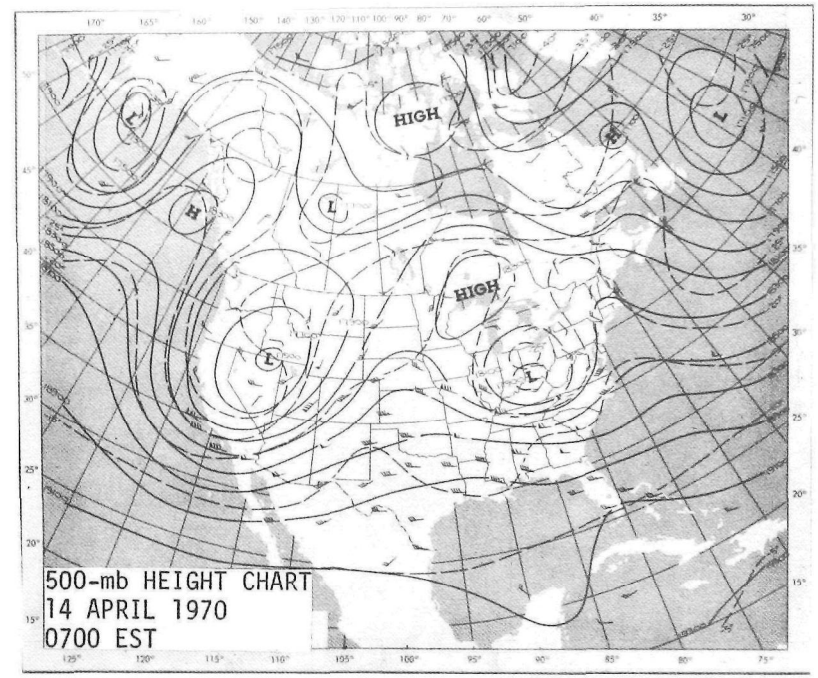


Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 19 April 1970 Keystone Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

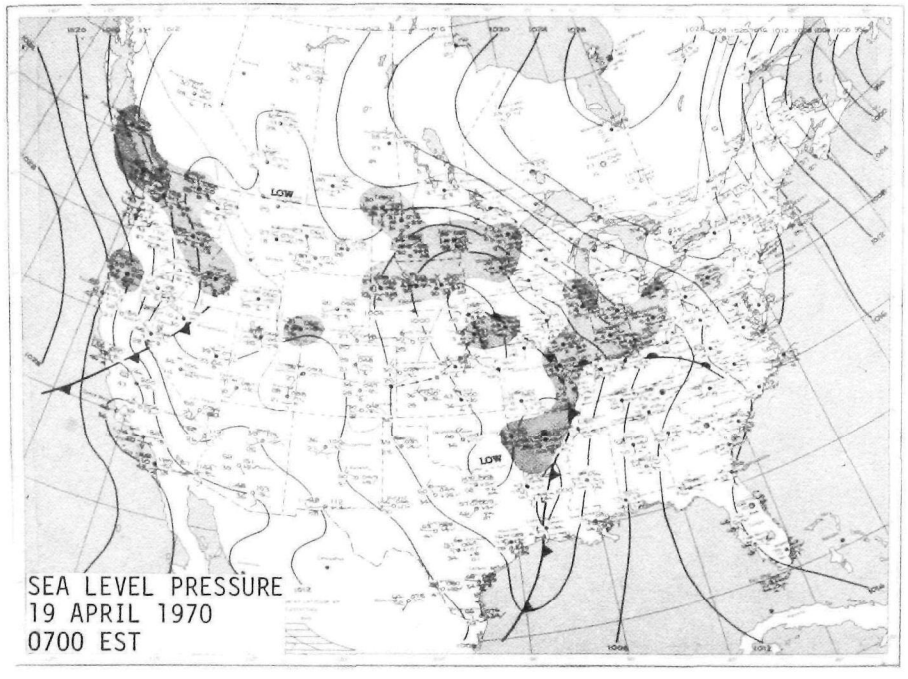
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Battelle activities.

Synoptic Situation

Regional - Ridge from James Bay to North Carolina coast; warm front from eastern Missouri to central North Carolina. Surface wind ENE 8 mps. 500-mb ridge from Georgia to Manitoba; closed low over New Brunswick. Wind at 500 mb WNW 20 mps.

Local - 1 PM low overcast with light rain. 5 PM low overcast. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



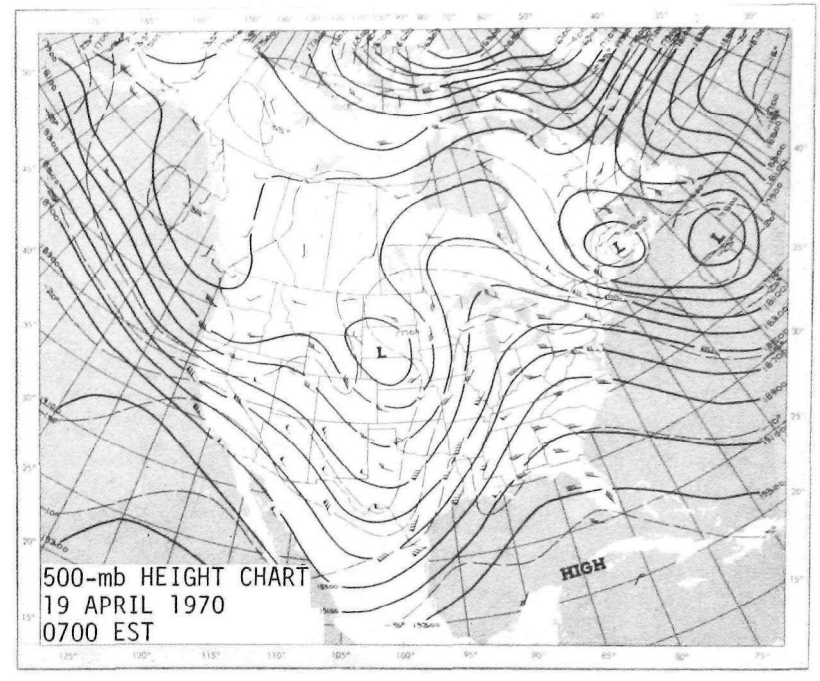


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 20 April 1970 Homer City Plume Unit 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

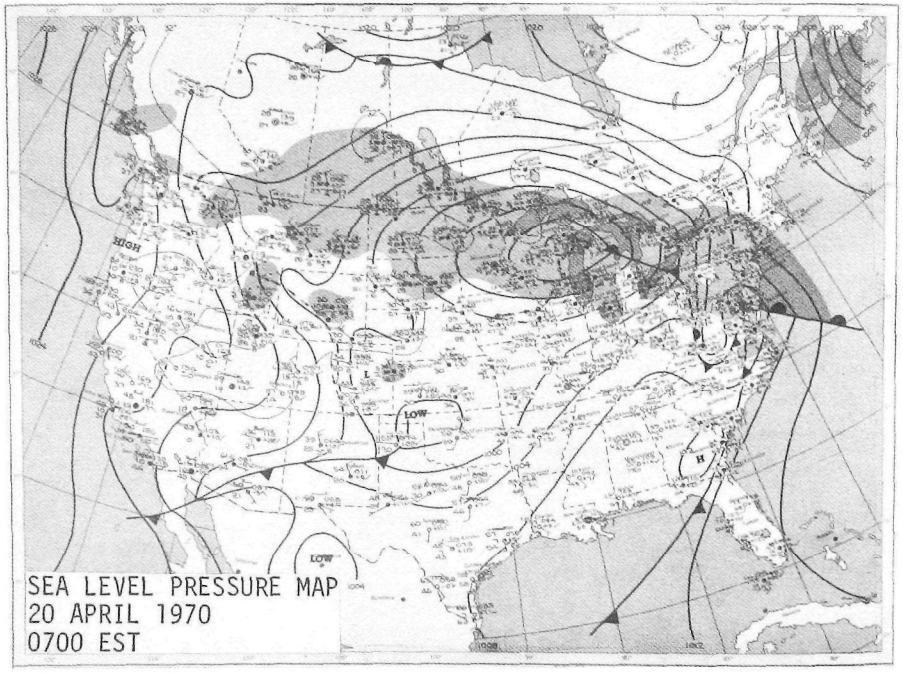
No 16-km cross section attempted because of low fuel supply. Partial coverage of GLC by helicopter; sparse coverage by bubblers caused by plume shift. Afternoon ground-level flights discontinued because of strong low-level turbulence. AutoAnalyzer at airport office measured GLC during late-morning wind shift, after which plume headed across Chestnut Ridge. Morning radiosonde not available.

Synoptic Situation

Regional - Closed low over northern Michigan; secondary low over Maryland. Ridge from Connecticut to high over southern Georgia. Surface wind SW 8 mps. Closed 500-mb low from Dakotas to Lake Superior; NW-SE ridge from Hudson Bay through Connecticut. Wind at 500 mb SSW 30 mps.

Local - Sunrise low overcast. Inversion layers 150-600 meters; stable below and above to 925 meters. Plume wind S 10 mps. 2 PM broken low clouds. Neutral to 960 meters. Plume wind WSW 12 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



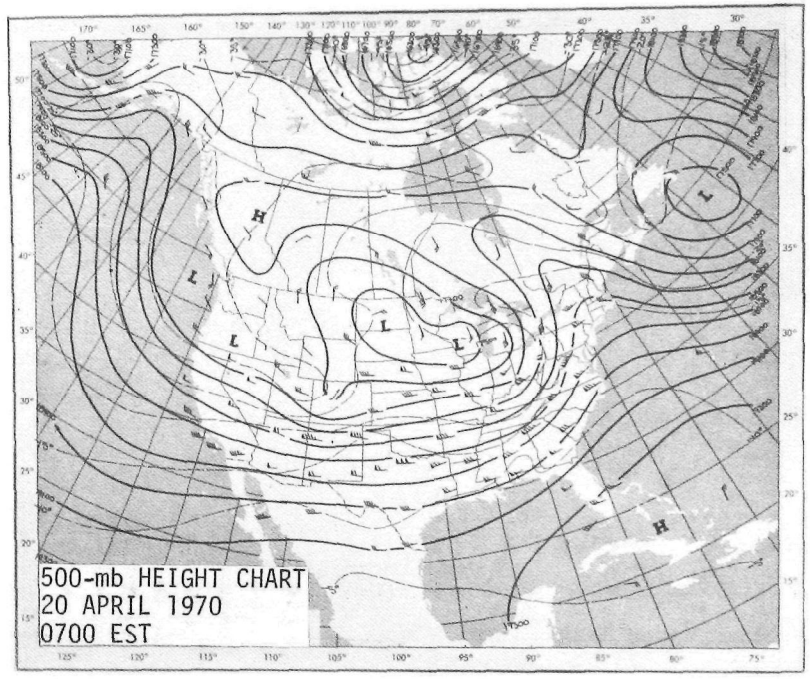


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 21 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

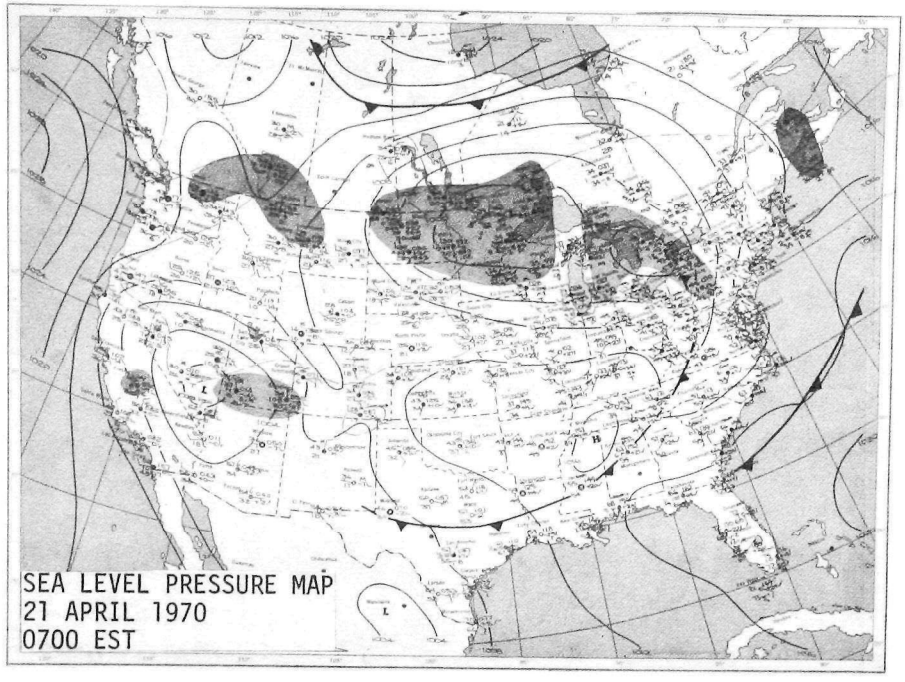
No 16-km cross section attempted because of extreme plume width. 10-km cross section unusually high; also reflects shifting wind direction. Partial coverage of high wind, neutral GLC by helicopter; good coverage by bubblers. Ground-level flights discontinued because of extreme low-level turbulence. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Closed low over southern Ontario with associated cold front through western Pennsylvania and Alabama to southeastern New Mexico. Surface wind SW 10 mps. Closed 500-mb low over Minnesota with near-zonal flow over eastern U.S. Wind at 500 mb WSW 35 mps.

Local - Sunrise low overcast; thunderstorm at 6 AM. Inversion layers 5 to 35 and 500 to 530 meters; lapse between and above to 940 meters. Plume wind SW 15 mps. 11 AM scattered low clouds. Neutral to 1030 meters. Plume wind WSW 16 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



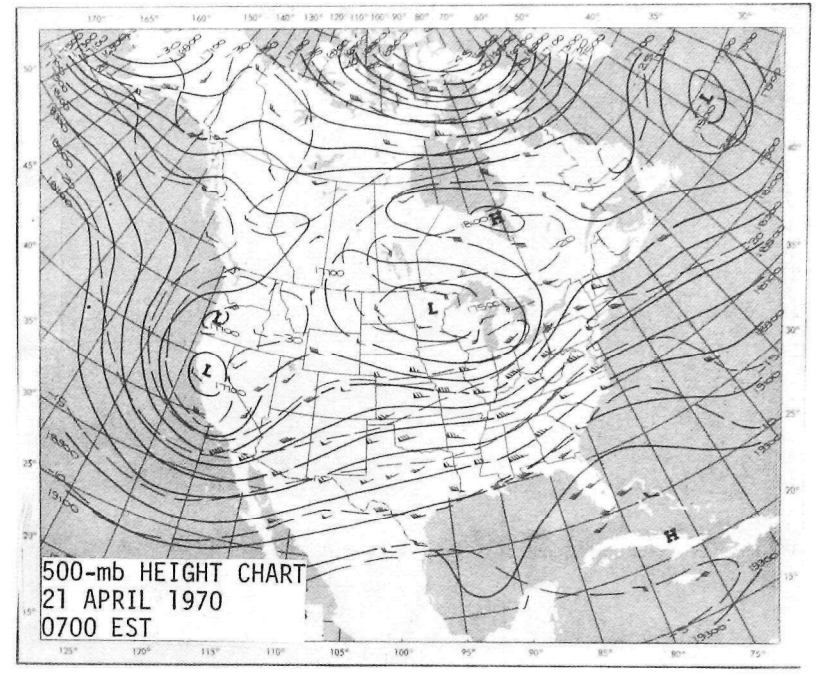


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 22 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

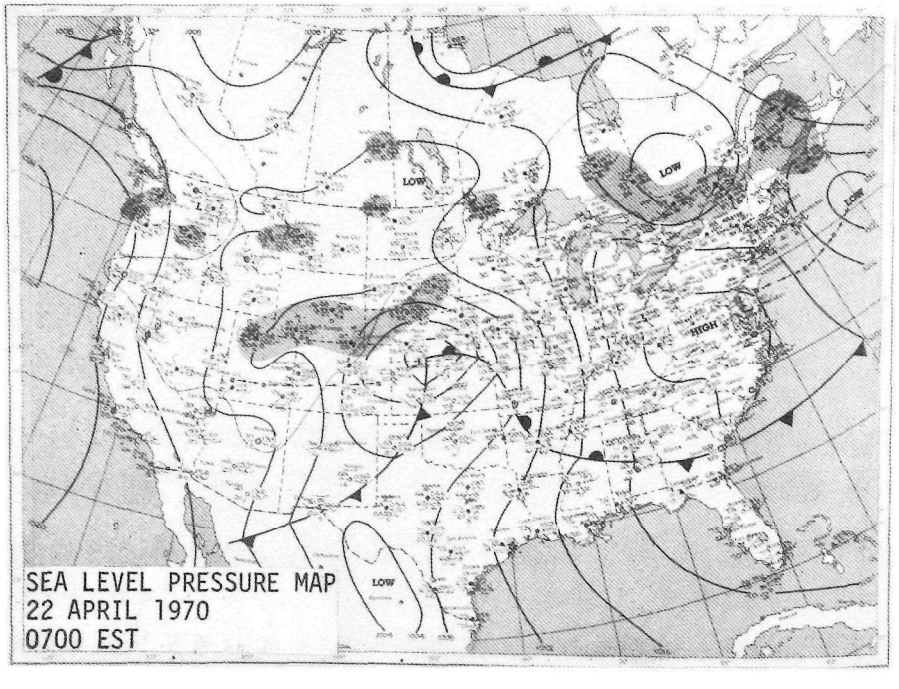
High SO_2 background aloft. Extremely wide plume. No 16-km cross section attempted to allow more time to measure GLC. Good coverage of GLC by helicopter and bubblers. AutoAnalyzer at airport office measured high ambient GLC. Plume heading across Chestnut Ridge.

Synoptic Situation

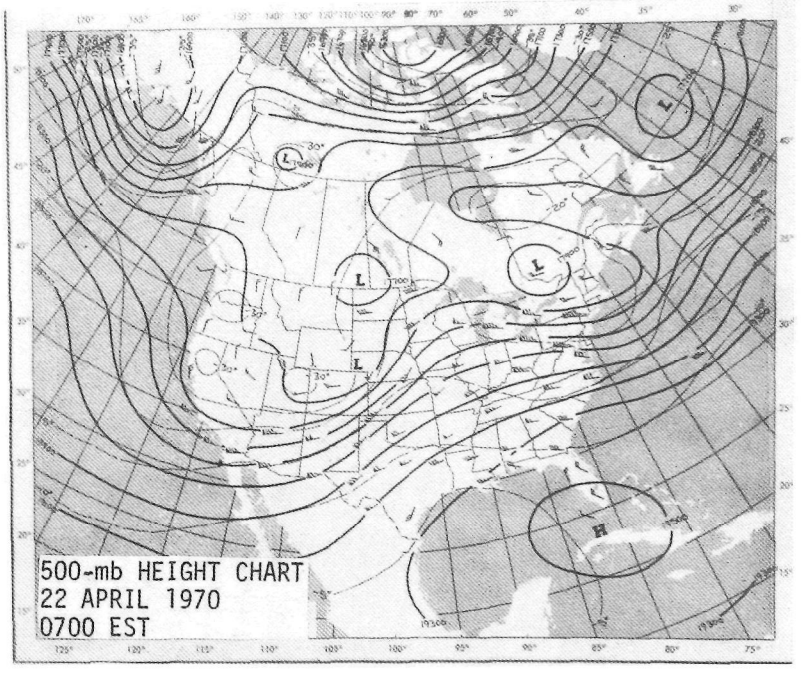
Regional - Eastern third U.S. under influence of high centered over West Virginia; closed low over southwestern Quebec. Surface wind light westerly. Closed 500-mb low over southwestern Quebec with near-zonal flow over eastern third U.S. Wind at 500-mb WNW 50 mps.

Local - Scattered middle clouds with haze. Surface inversion to 300 meters; lapse above to 945 meters. Plume wind WSW 10 mps. 2 PM broken low clouds. Neutral to 985 meters. Plume wind W 13 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
22 APRIL 1970
0700 EST



500-mb HEIGHT CHART
22 APRIL 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and Battelle SO_2 Washout Study 23 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

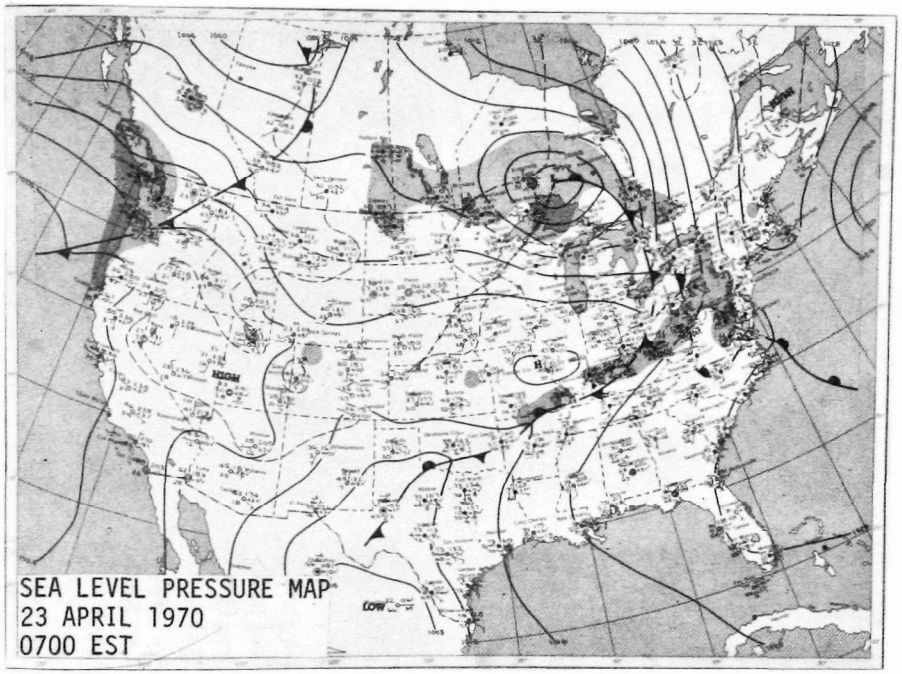
Extremely wide plume. Tops of all three cross sections incomplete because of low clouds. Ground-level flights discontinued because of deteriorating weather conditions. Bubblers were not set out and afternoon radiosonde not released. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Closed low north of Lake Superior with associated fronts extending south and southeast; ridge along northern New England coast. Surface wind SW 5 mps. NE-SW 500-mb ridge from Florida to eastern Quebec. Wind at 500 mb W 35 mps.

Local - 10 AM low overcast; thunderstorm at 6 AM. Lapse to 500 meters. Plume wind SW 7 mps. 1 PM broken low clouds, middle overcast. Neutral to 450 meters; stable with inversions above to 935 meters. Plume wind SW 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



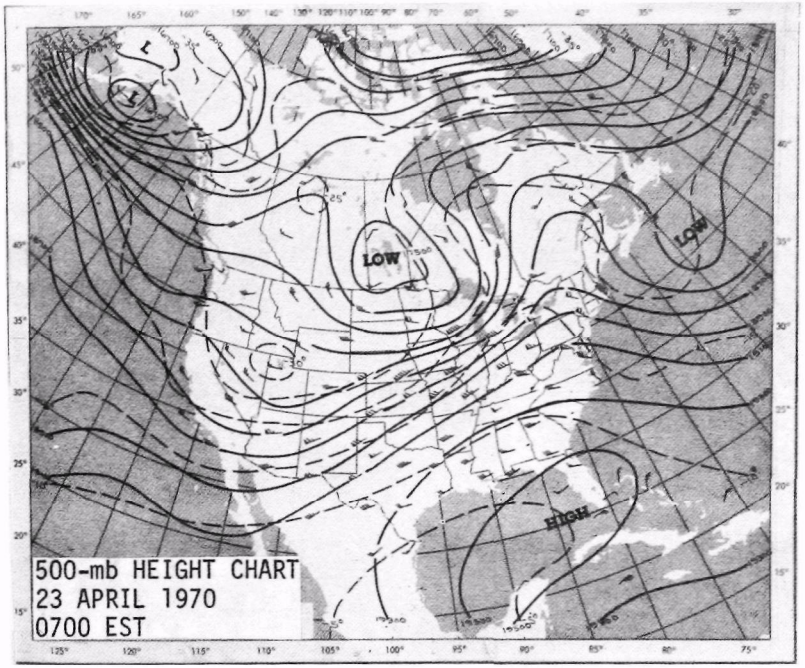


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and Battelle SO_2 Washout Study 24 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections

On-stream AutoAnalyzer GLC

Meteorological Measurements

Helicopter Temperature Profile
Pilot Balloons

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

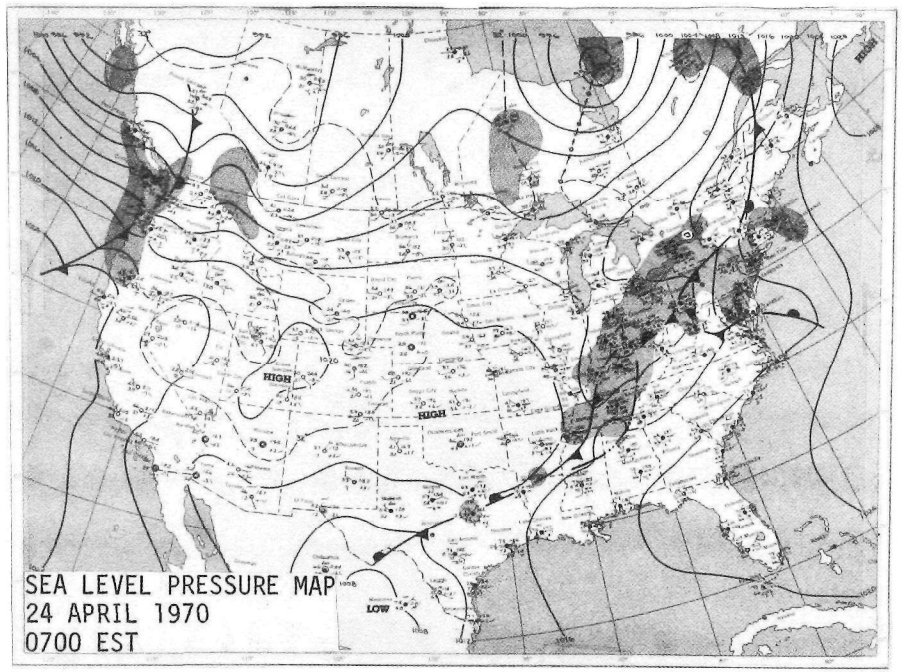
Extremely wide plume. 4- and 16-km cross sections flown during light rain. Flights terminated after cross sections because of low clouds and increased rainfall. Bubblers were not set out. Radiosondes not available because of receiver malfunction.

Synoptic Situation

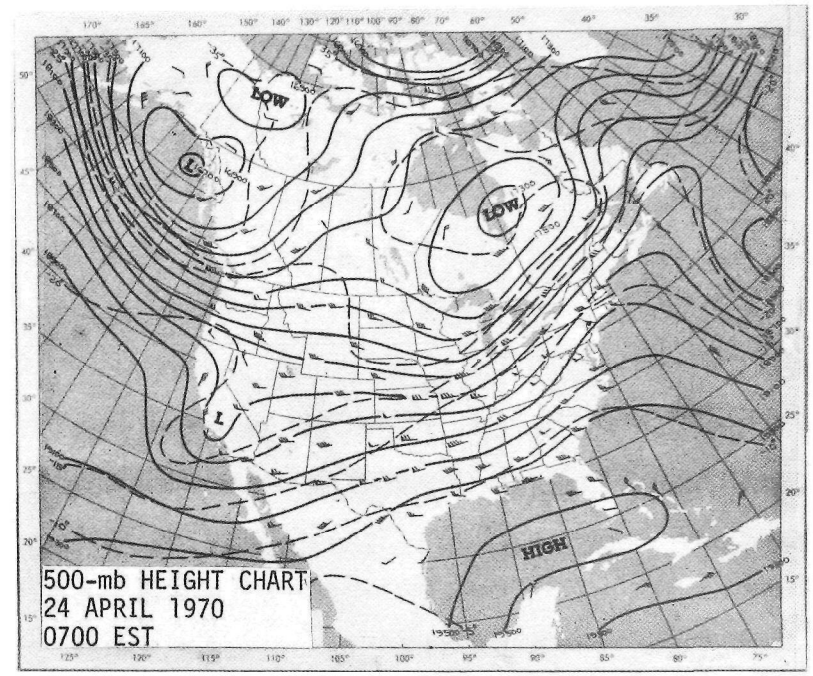
Regional - Closed low over northern Kentucky with fronts northeast through eastern Quebec and southwestward to Texas. Surface wind light southeasterly. Closed 500-mb low over James Bay with trough to Gulf coast. Wind at 500 mb WSW 30 mps.

Local - Sunrise low overcast with moderate rain becoming light rain by 7 AM. Stable with inversions to 975 meters. Plume wind SSW 13 mps. 9 AM low overcast with light rain. No mid-morning helicopter temperature profile available. Plume wind SW 12 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
24 APRIL 1970
0700 EST



500-mb HEIGHT CHART
24 APRIL 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 25 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

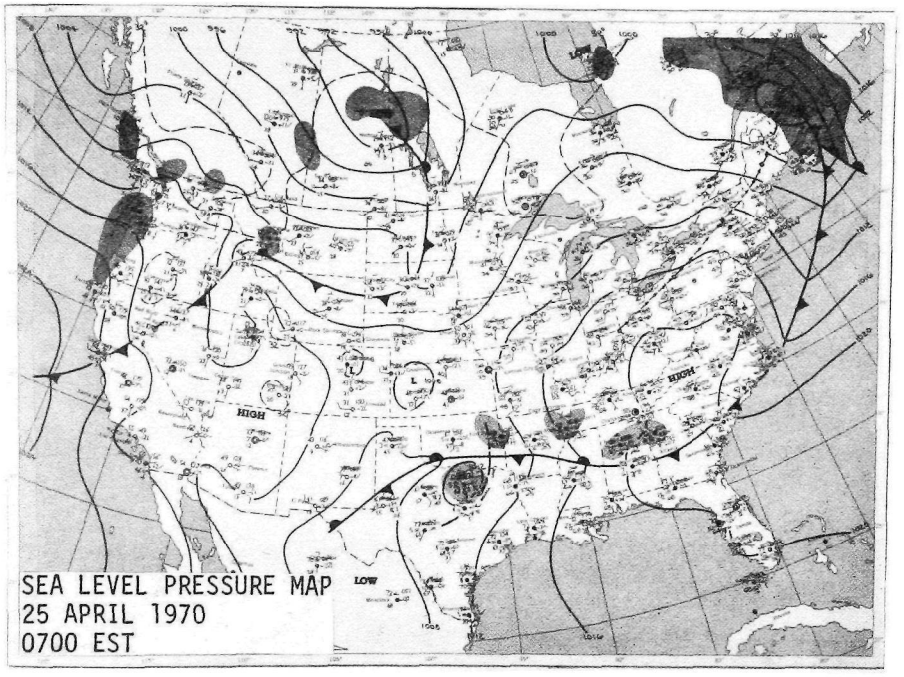
High SO_2 background aloft. Extremely wide plume. No 16-km cross section attempted to allow more time to measure GLC. Good coverage of GLC by helicopter and bubblers. Afternoon ground-level flights not attempted and bubblers picked up early because of deteriorating weather conditions. All pilot balloons tracked by single theodolite. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Eastern third U.S. under influence of high centered over southeastern states; closed low over Gulf of St. Lawrence. Surface wind SW 5 mps. Closed 500-mb low over northern Quebec; zonal flow over eastern half U.S. Wind at 500 mb W 30 mps.

Local - Sunrise low obscuration with fog. Stable with inversions 300 to 480 meters; lapse below and above to 960 meters. Plume wind SW 9 mps. Noon low broken clouds with haze. Slight inversion 130 to 150 meters; neutral below and above to 930 meters. Plume wind WSW 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



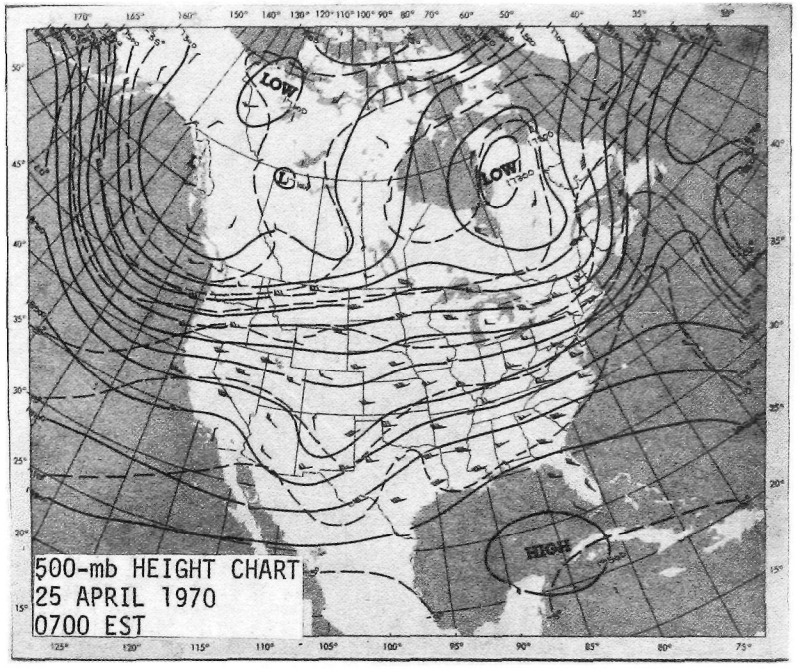


Table 1. (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 27 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC

Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

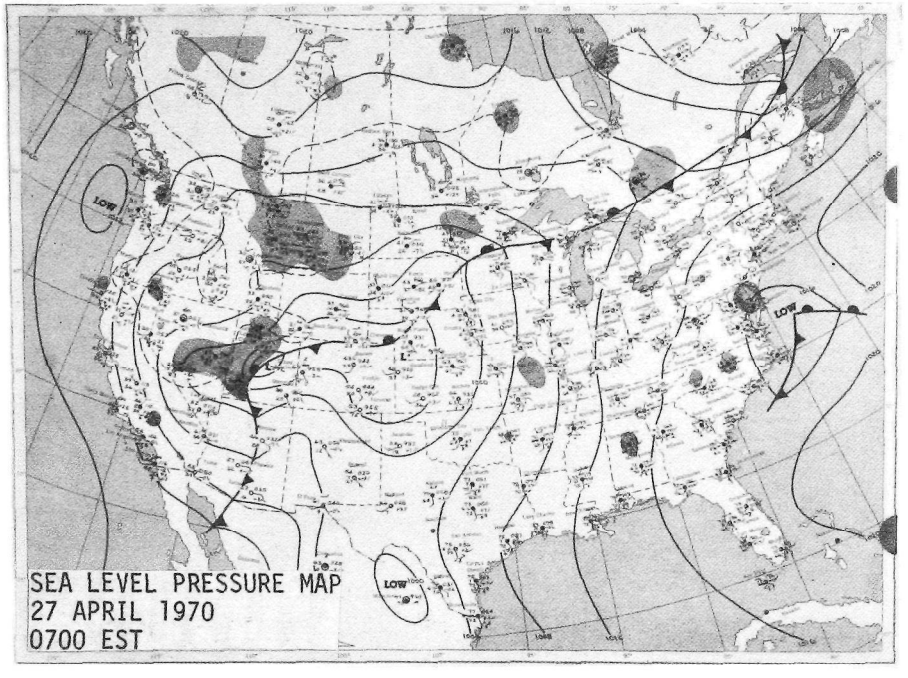
Extremely wide plume. No 16-km cross section attempted to allow more time to measure GLC. Good coverage of GLC by helicopter and some bubblers. GLC pattern at 4 km covered arc of 104°. All pilot balloons tracked by single theodolite. AutoAnalyzer at airport office measured plume GLC during late-morning wind shift. Plume originally heading across Chestnut Ridge but shifted from east to northwest to northeast during sampling period.

Synoptic Situation

Regional - Closed low off Virginia coast; weak gradient over eastern U.S. Surface wind light southeasterly. Weak N-S 500-mb gradient over eastern U.S. Wind at 500 mb NW 10 mps.

Local - Sunrise clear with ground fog. Surface inversion to 370 meters; stable above to 975 meters. Plume wind SSE 2 mps. 1 PM scattered low clouds. Neutral to 950 meters. Plume wind WNW 1 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



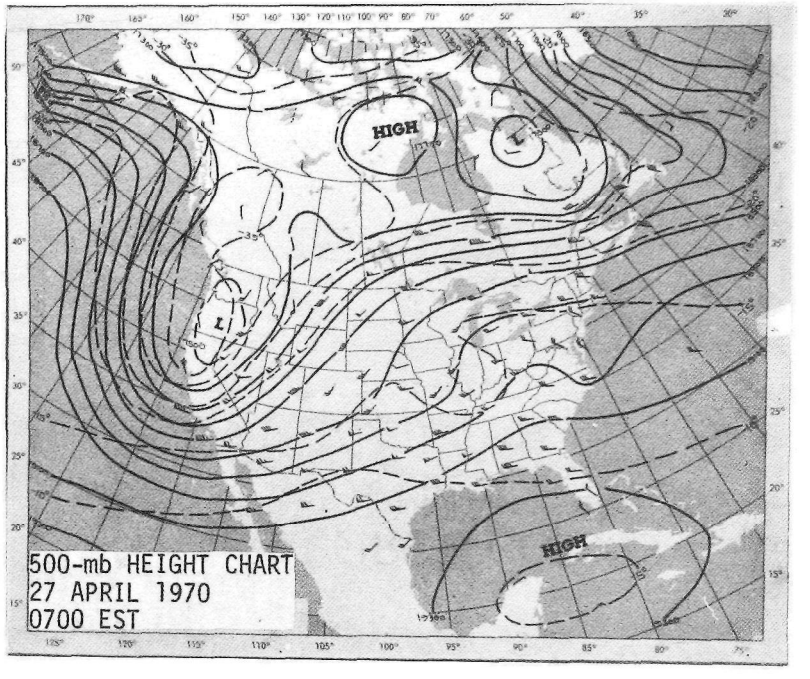


Table 1 (continued), DAILY EXPERIMENT SUMMARY

April 1970 Series 28 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

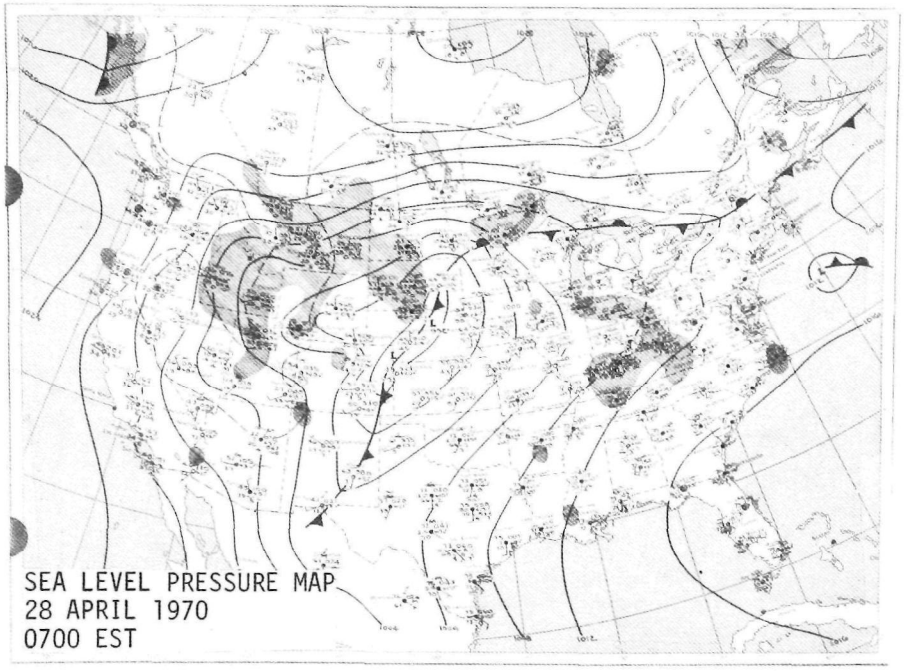
4- and 10-km cross sections repeated to document plume continuity. Tops of first 10- and 16-km cross sections ill-defined because of high background SO_2 aloft. Good coverage of inversion breakup GLC by helicopter out to 47 km; coverage by bubblers partial because of placement too far northwest. AutoAnalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - Frontal trough through Great Lakes to Nova Scotia; secondary E-W trough from Nebraska through Virginia. Surface wind light southeasterly. Near-zonal 500-mb flow over eastern third U.S. Wind at 500 mb WNW 20 mps.

Local - Sunrise broken high clouds. Stable with inversions to 940 meters. Plume wind SW 7 mps. 11 AM scattered low clouds, broken high clouds. Near-neutral to 945 meters. Plume wind SW 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



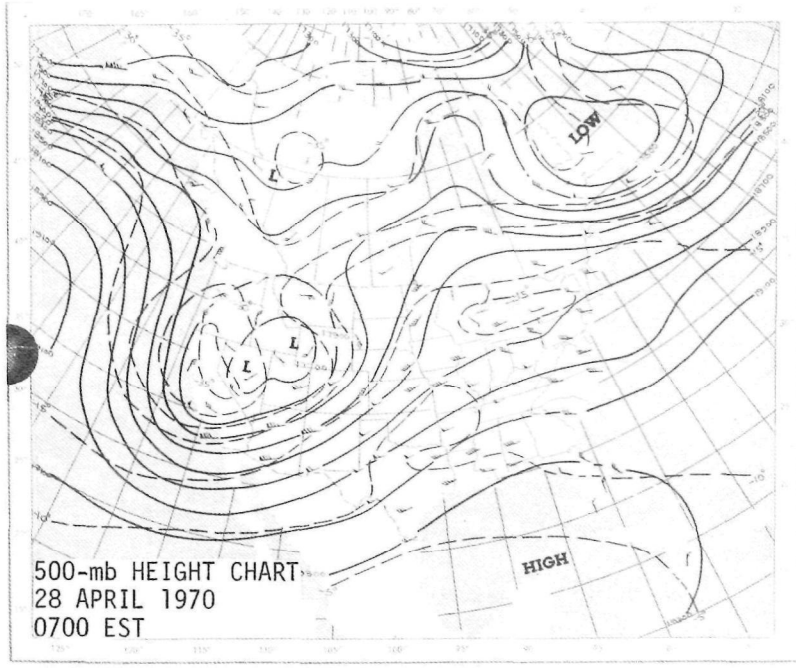


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and Battelle SO_2 Washout Study 29 April 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profile
Pilot Balloon
Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

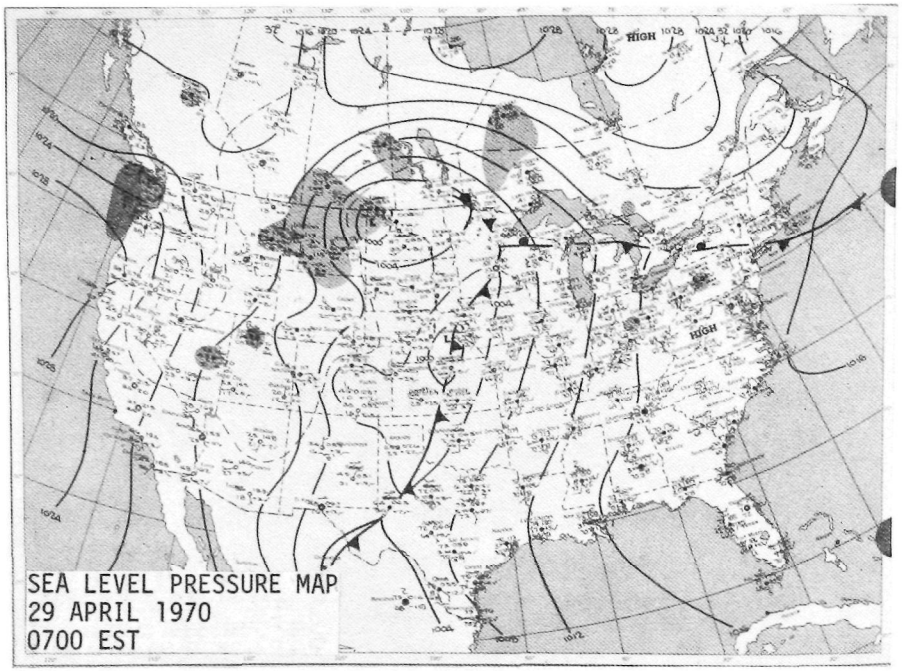
Very high SO_2 background aloft. Flights terminated after temperature profile because of low clouds and thunderstorms. Bubblers were not set out. High air pollution potential alert in effect to within 145 km south of Indiana, Pa.

Synoptic Situation

Regional - Stationary front from Minnesota through Connecticut; high over southeast U.S. Surface wind light southwesterly. N-S 500-mb ridge from Gulf coast to James Bay. Wind at 500 mb NW 20 mps.

Local - Sunrise low overcast with light rain showers; thunderstorm at 7 AM. Stable to 830 meters. Plume wind SW 5 mps. Noon scattered to broken low clouds with light rain showers. No noon helicopter temperature profile available. Plume wind (from radiosonde) WSW 3 mps.

Table 1 (continued) DAILY EXPERIMENT SUMMARY



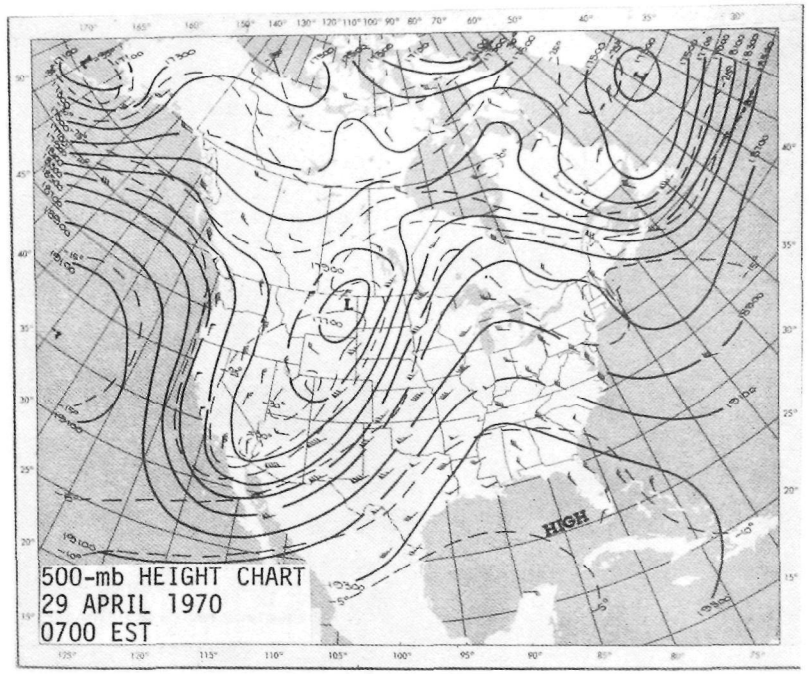


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 30 April 1970 Homer City Plume Units 1 and 2

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

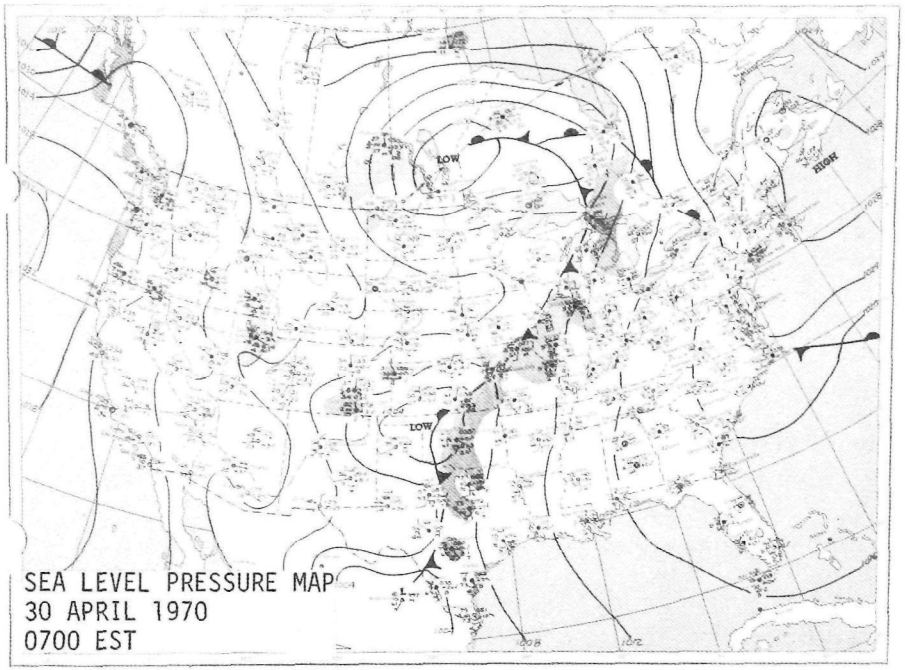
Three cross sections flown. Good coverage of GLC by helicopter and bubblers out to 28 km.

Synoptic Situation

Regional - High centered over Nova Scotia with ridge southwestward along Atlantic coast; warm front from central Ontario to Lake Ontario. Surface wind light southeasterly. 500-mb ridge from Gulf of Mexico to Quebec. Wind at 500 mb NW 13 mps.

Local - Sunrise broken high clouds with ground fog in valleys. Stable with inversions to 940 meters. Plume wind S 7 mps. 1 PM broken low clouds, high overcast. Neutral to 940 meters. Plume wind S 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



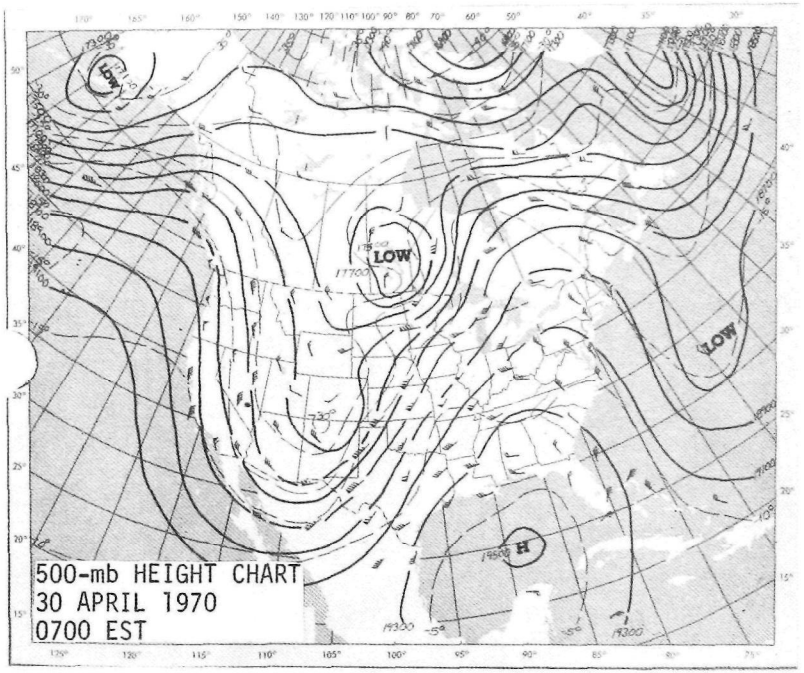


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 1 May 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

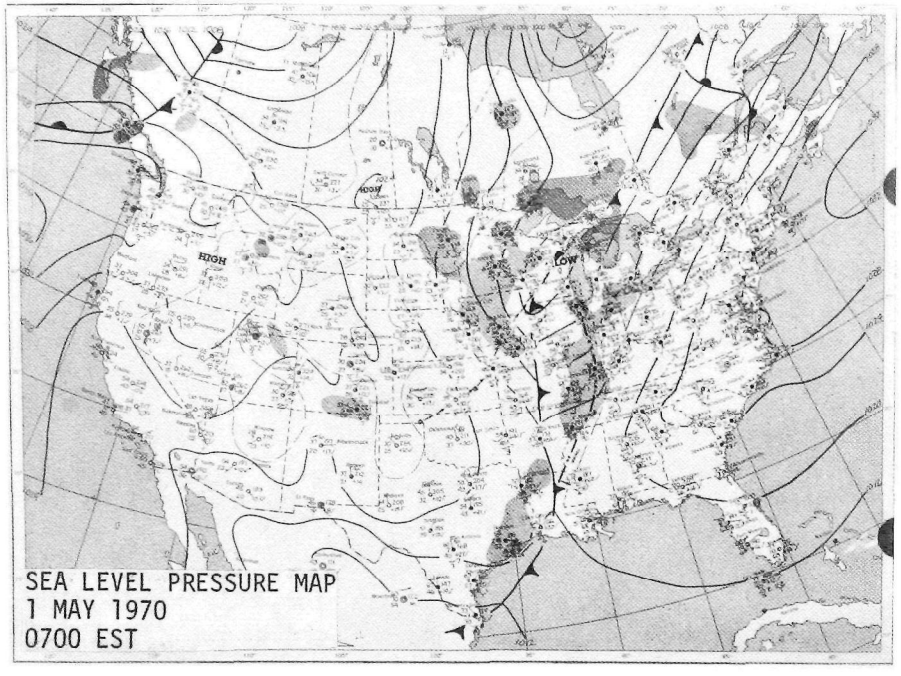
Three cross sections flown. Good coverage of GLC by helicopter and bubblers out to 25 km. AutoAnalyzer at airport office measured plume GLC during late-morning wind shift.

Synoptic Situation

Regional - NE-SW ridge along New England coast to Gulf of Mexico; closed low over eastern Wisconsin. Surface wind light southerly. 500-mb ridge along Atlantic coast; long-wave trough over central U.S. Wind at 500 mb WSW 20 mps.

Local - Sunrise scattered high clouds. Stable with inversions to 935 meters. Plume wind S 9 mps. 11 AM scattered middle and high clouds. Neutral to base of inversion at 880 meters. Plume wind SSW 13 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



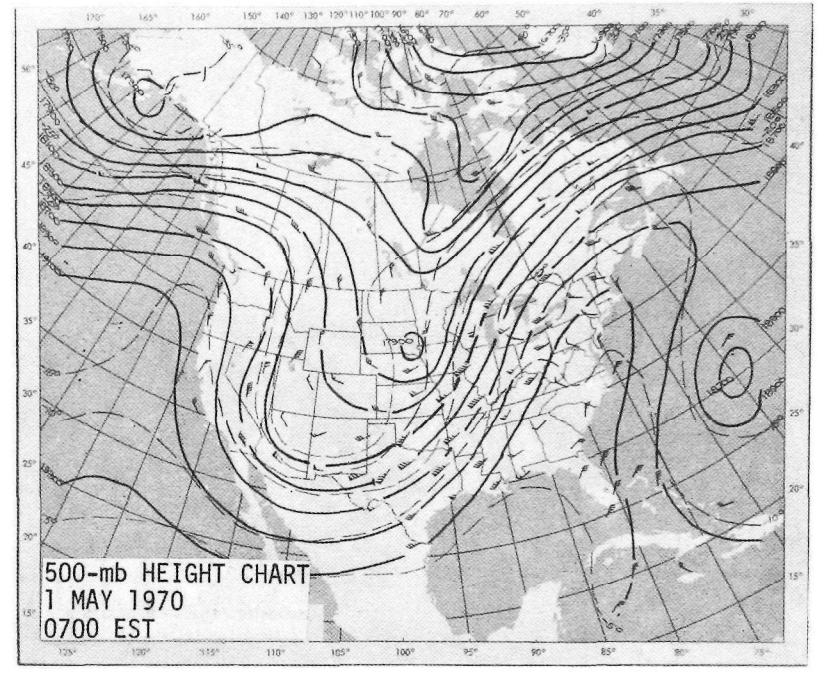


Table 1 (continued). DAILY EXPERIMENT SUMMARY

Battelle SO_2 Washout Study 2 May 1970 Keystone Plume Units 1 and 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Pilot Balloon

Airport Surface Data

Other Participants

Battelle Northwest (rain samples collected under Keystone plume)

Commentary

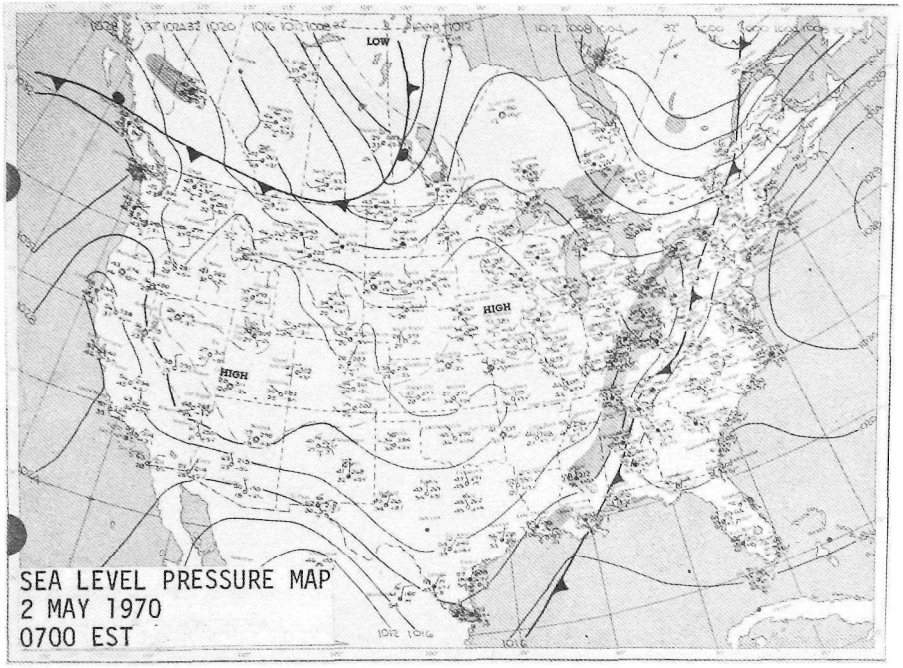
Helicopter flights prevented by low ceiling. Bubblers were not set out. Morning radiosonde and pilot balloon released in support of Battelle activities.

Synoptic Situation

Regional - NE-SW frontal trough from eastern Quebec through Pennsylvania to Gulf of Mexico; high pressure area over western two-thirds U.S. Surface wind N 5 mps. Eastern third U.S. under leading edge of long-wave 500-mb trough. Wind at 500 mb SW 25 mps.

Local - 3 PM low overcast with light rain. 7 PM low overcast with light rain. No afternoon helicopter temperature profiles or plume winds available.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



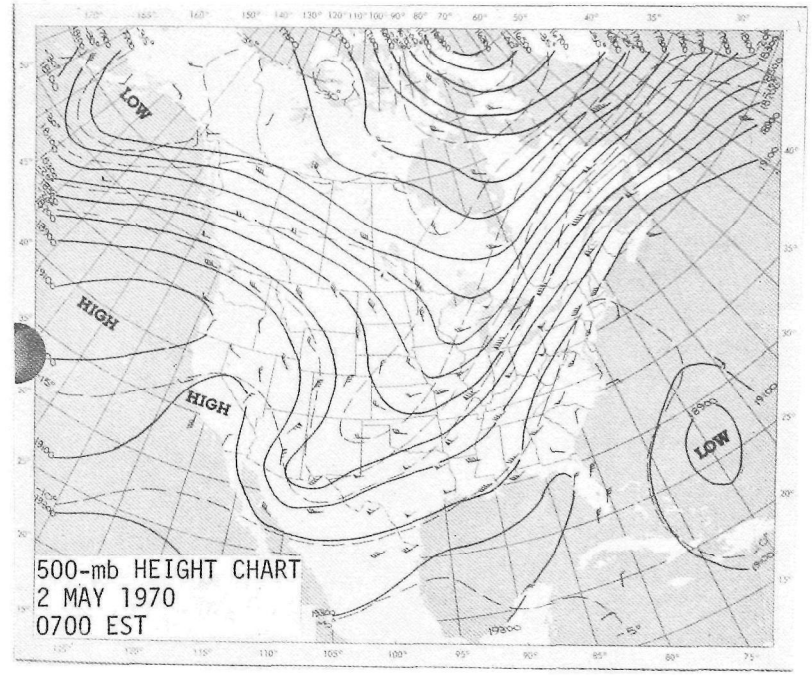


Table 1 (continued). DAILY EXPERIMENT SUMMARY

SRI Lidar Experiment 3 May 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume rise measurements of Homer City plume)

Commentary

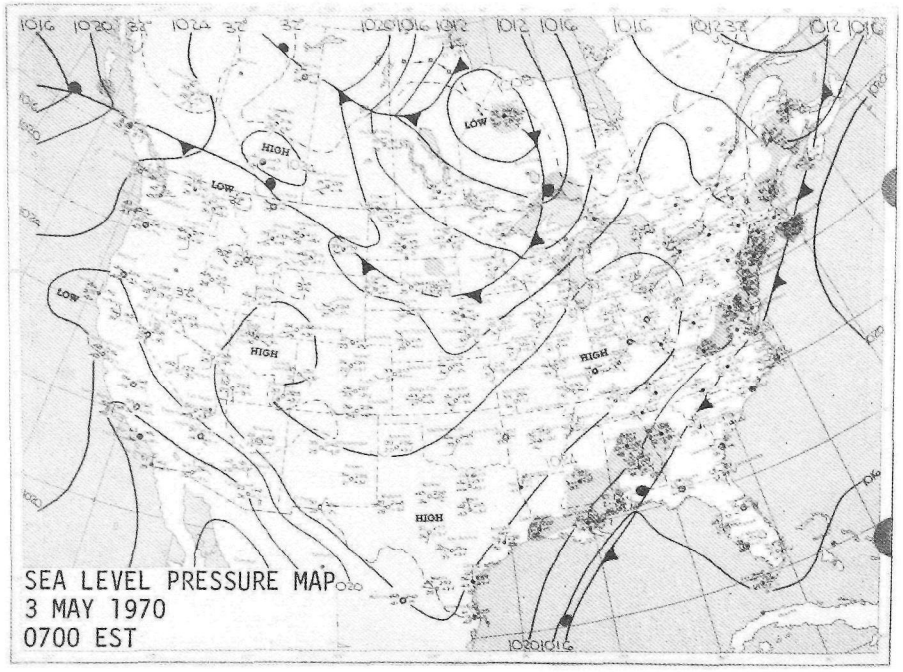
LAPPES series activities suspended for one day. No upper air wind or temperature measurements obtained by APCO personnel in support of SRI activities. AutoAnalyzer at airport office measured GLC from Keystone plume.

Synoptic Situation

Regional - NE-SW frontal trough along New England coast to Gulf of Mexico; high centered over Indiana. Surface wind light northwesterly. Eastern third U.S. under leading edge of long-wave 500-mb trough. Wind at 500 mb SW 40 mps.

Local - 5 PM broken low clouds. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



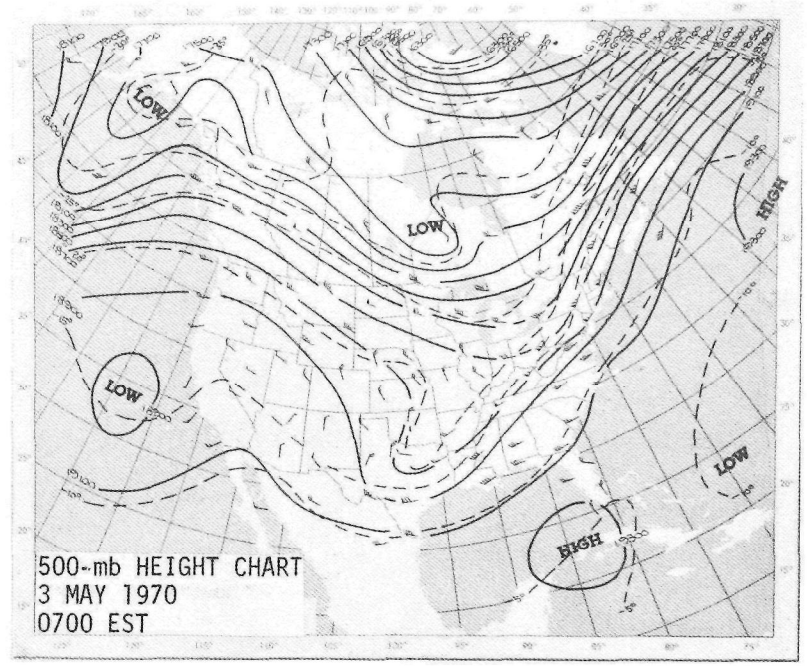


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 4 May 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

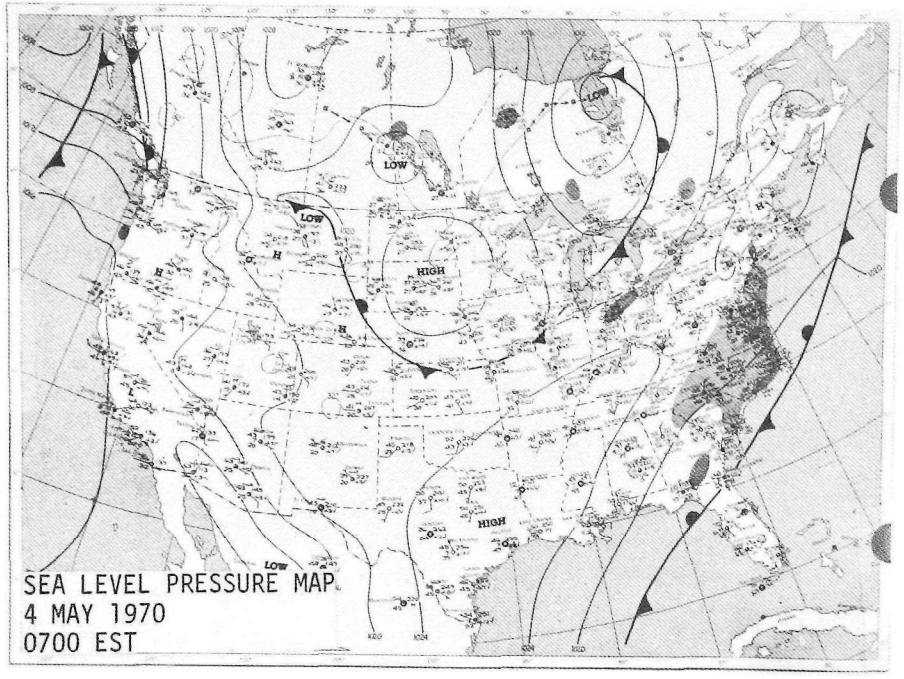
Very high SO_2 and particulate background aloft. Top of 16-km cross section incomplete because of low fuel supply. Good coverage of inversion breakup GLC by helicopter out to 33 km and by bubblers out to 25 km. AutoAnalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - NE-SW ridge from Gulf of St. Lawrence to Texas; closed low over James Bay with front through Great Lakes. Surface wind light westerly. 500-mb trough from Hudson Bay to Gulf of Mexico. Wind at 500 mb WNW 8 mps.

Local - Sunrise scattered high clouds with ground fog and haze. Stable with inversions to 1050 meters. Plume wind SW 2 mps. 1 PM scattered high clouds with haze. Neutral to 940 meters. Plume wind S 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



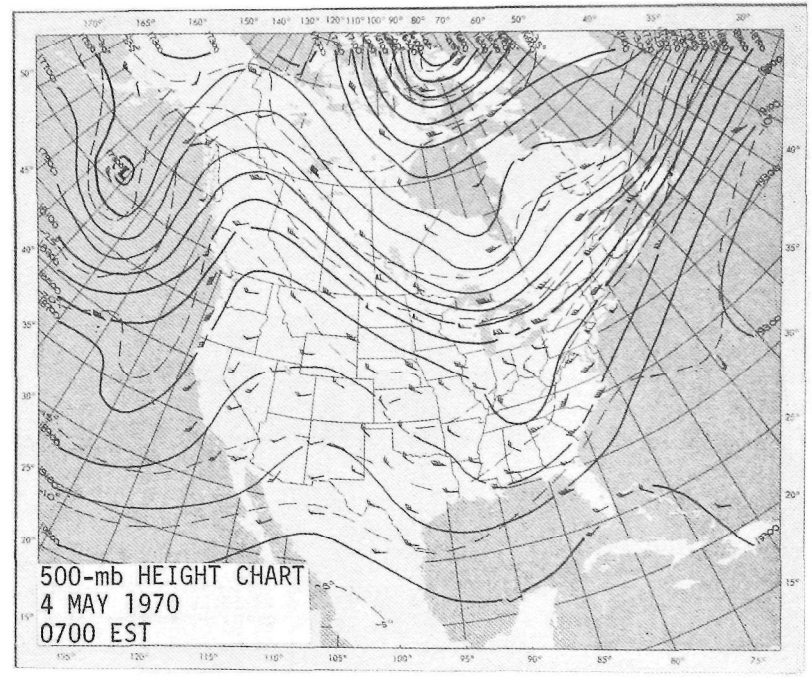


Table 1 (continued) DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 5 May 1970 Homer City Plume Units 1 and 2

SO_2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

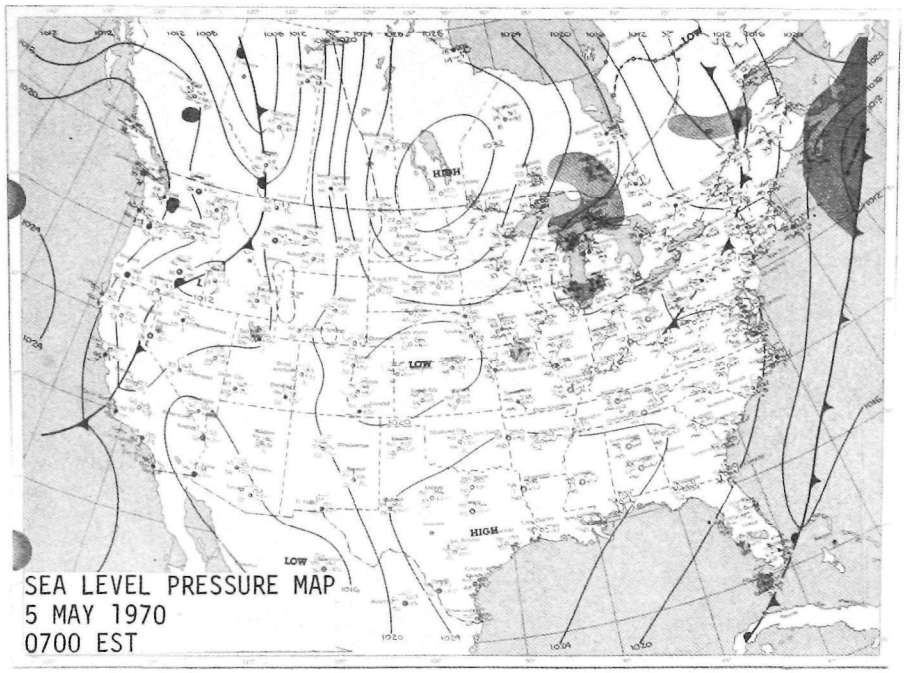
Very high SO_2 and particulate background aloft. No plume cross sections attempted because of near-zero visibility at plume height. Good coverage of GLC by helicopter and bubblers. Afternoon ground-level flights not attempted because of strong low-level turbulence. Low-altitude termination of pilot balloon runs caused by low clouds. Plume heading across Chestnut Ridge.

Synoptic Situation

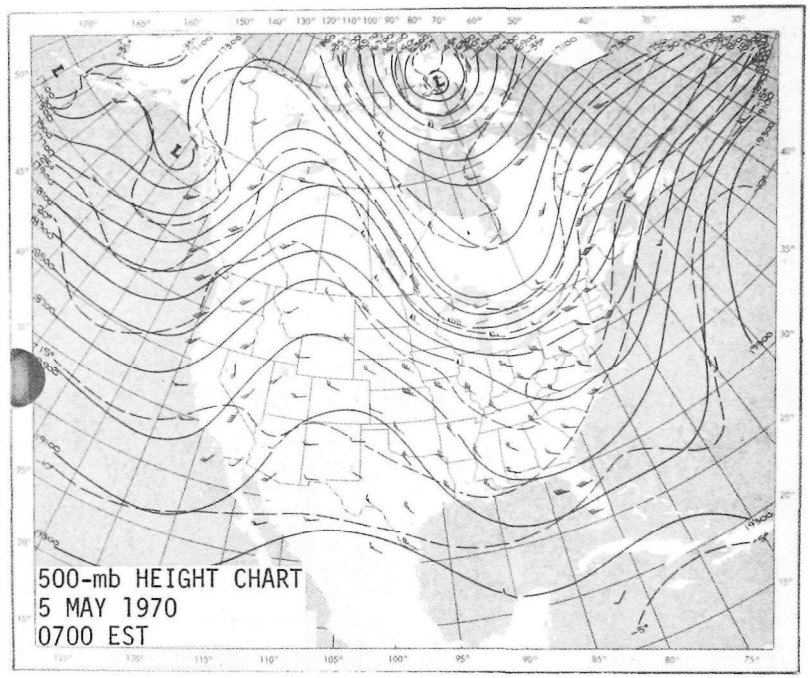
Regional - Frontal trough from eastern Quebec through Vermont to southern Ohio; low over Michigan. Surface wind NW 5 mps. Long-wave 500-mb trough over eastern U.S. Wind at 500 mb WNW 20 mps.

Local - Sunrise clear with ground fog, haze, and smoke. Stable with inversions to 950 meters. Plume wind SW 8 mps. 11 AM clear with haze. Neutral to 950 meters. Plume wind W 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
5 MAY 1970
0700 EST



500-mb HEIGHT CHART
5 MAY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

SRI Lidar Experiment 6 May 1970 Homer City Plume Unit 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

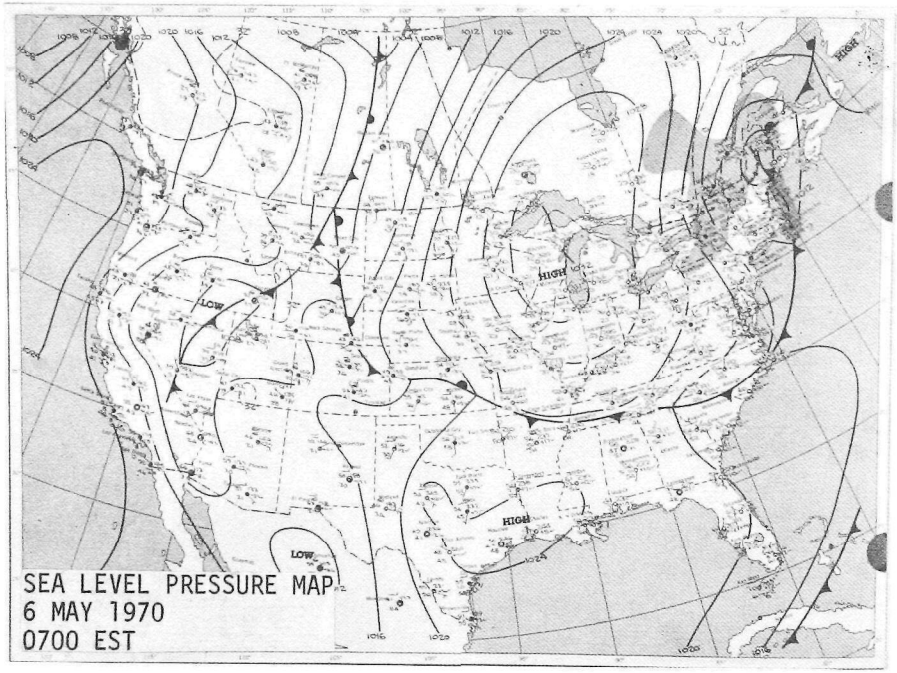
No plume cross sections or ground-level flights attempted because of low ceilings and snow showers. Bubblers were not set out. Radiosonde, pilot balloons, and temperature profiles obtained in support of SRI activities.

Synoptic Situation

Regional - Closed low over Maine with front through North Carolina and Kansas; high centered over Wisconsin. Surface wind NW 5 mps. 500-mb trough from Quebec southward to Bahamas. Wind at 500 mb NW 35 mps.

Local - 9 AM scattered to broken low clouds with light snow showers. Near-neutral to 950 meters. Plume wind NW 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



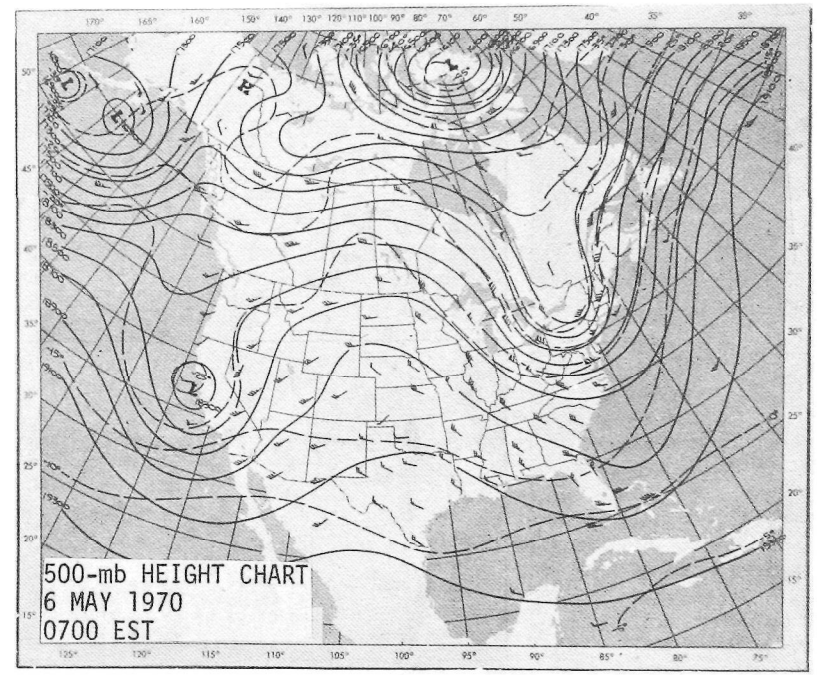


Table 1 (continued). DAILY EXPERIMENT SUMMARY

SRI Lidar Experiment 7 May 1970 Homer City Plume Unit 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profile
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

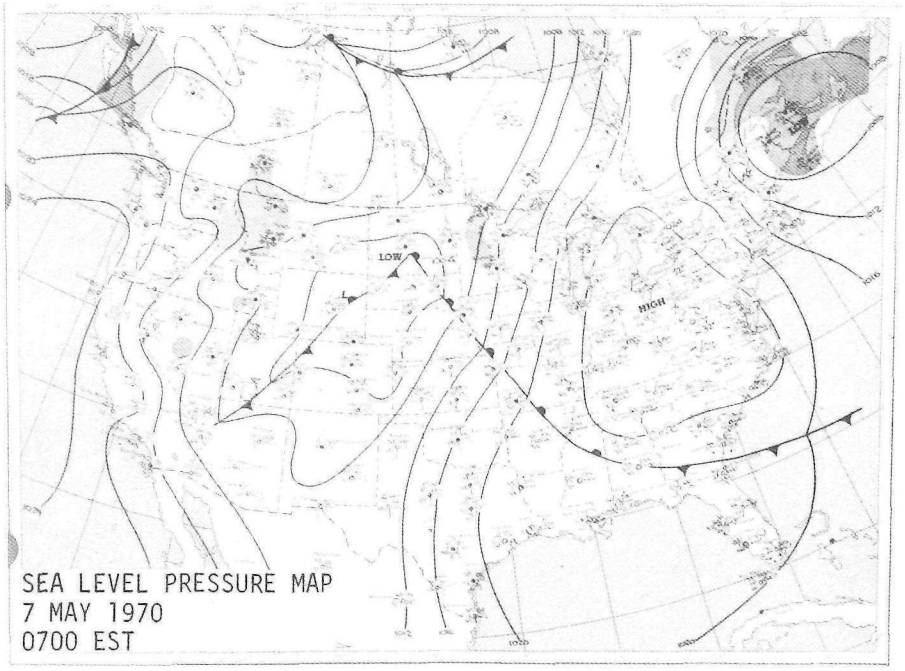
No plume cross sections or ground-level flights attempted because of Meteorology Advisory Committee meeting in Indiana, Pa. Bubblers were not set out. Radiosonde, pilot balloons, and temperature profile obtained in support of SRI activities. AutoAnalyzer at airport office measured GLC from Keystone plume.

Synoptic Situation

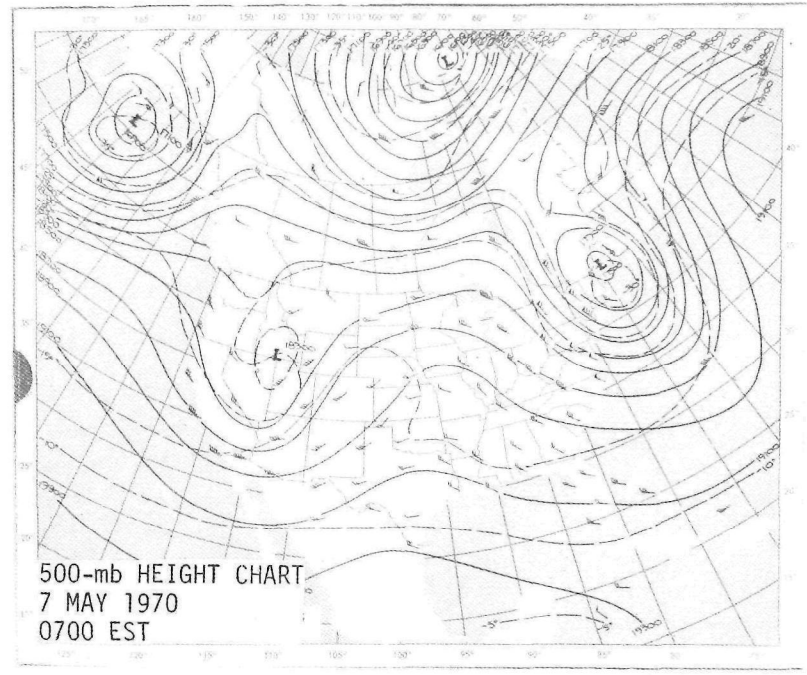
Regional - High centered over Ohio dominating eastern third U.S. Closed low over New Brunswick. Surface wind light northwesterly. Northeast U.S. under trailing edge of long-wave 500-mb trough; closed low over Maine. Wind at 500 mb NW 30 mps.

Local - Sunrise clear. Stable with inversions to 400 meters; lapse above to 925 meters. Plume wind S 3 mps. Noon scattered low clouds. No noon helicopter temperature profile available. Plume wind S 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
7 MAY 1970
0700 EST



500-mb HEIGHT CHART
7 MAY 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series 8 May 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

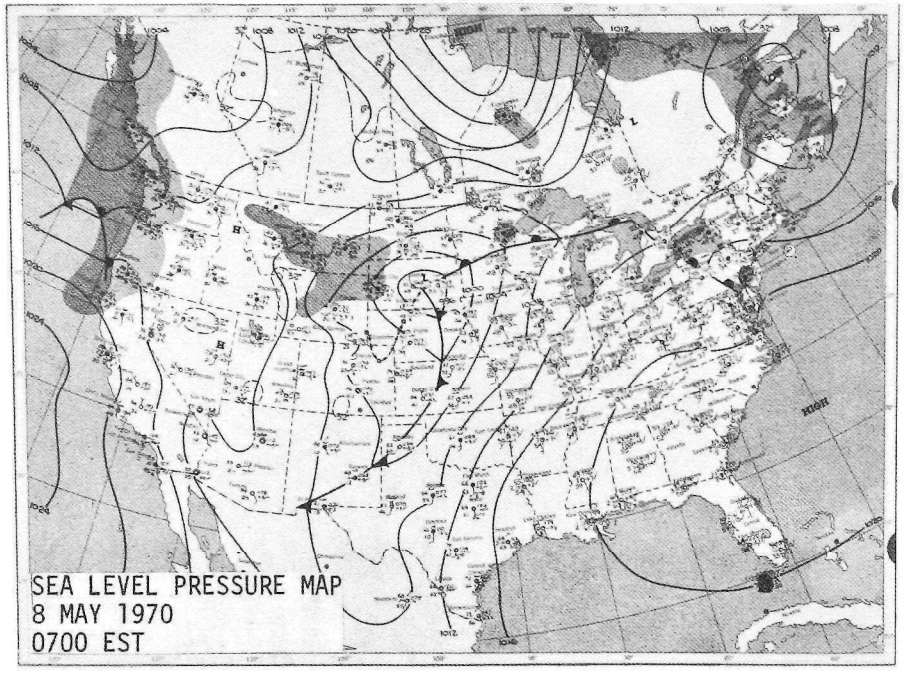
Extremely wide plume. Three cross sections flown. Partial coverage of GLC by helicopter; good coverage by bubblers. Ground-level flights discontinued because of strong low-level turbulence. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Warm front from South Dakota through Lake Huron to Maryland; high centered off Carolina coast dominating southeast U.S. Surface wind WSW 5 mps. Closed 500-mb low over Nova Scotia with trough southwestward; ridge over Ohio Valley. Wind at 500 mb NW 25 mps.

Local - Sunrise broken low clouds. Stable with inversions to 650 meters; lapse above to 970 meters. Plume wind WSW 12 mps. Noon scattered low clouds. Neutral to 940 meters. Plume wind WSW 11 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



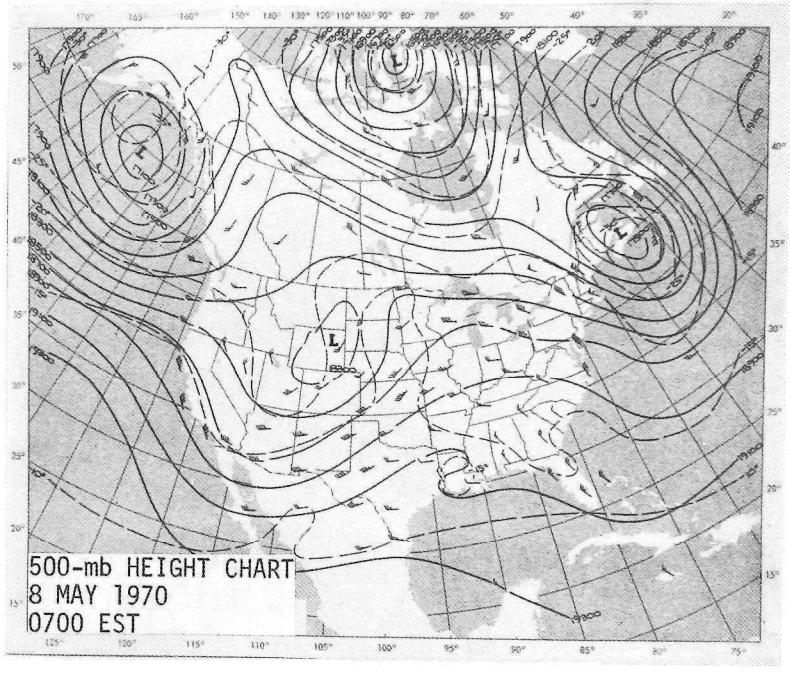


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 9 May 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

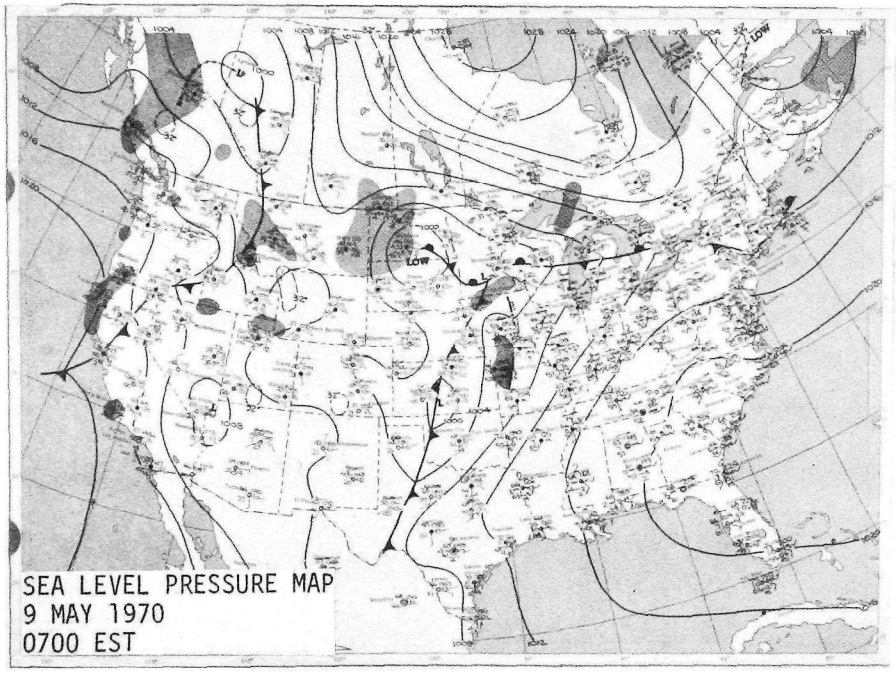
Three cross sections flown. Good coverage of GLC by helicopter out to 32 km and by bubblers out to 23 km. Ground-level flights discontinued because of strong low-level turbulence. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Stationary front through Great Lakes to Massachusetts; high pressure over southeastern U.S. Surface wind SW 5 mps. 500-mb ridge from Florida to western Ontario; closed low over the Dakotas. Wind at 500 mb WNW 20 mps.

Local - Sunrise scattered low and high clouds with haze. Surface inversion to 410 meters; lapse above to 950 meters. Plume wind WSW 13 mps. 11 AM scattered low clouds. Neutral to 950 meters. Plume wind WSW 15 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



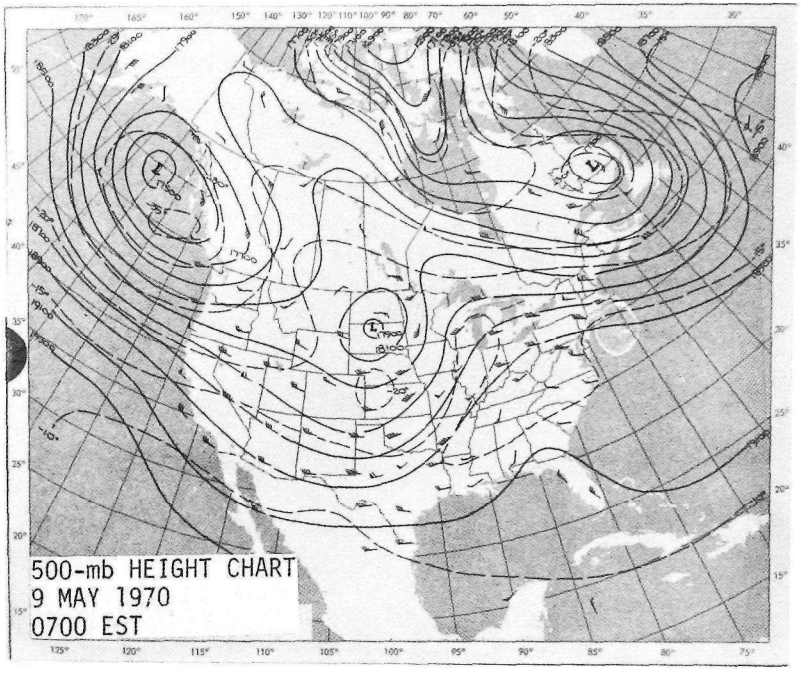


Table 1 (continued). DAILY EXPERIMENT SUMMARY

SRI Lidar Experiment 10 May 1970 Homer City Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

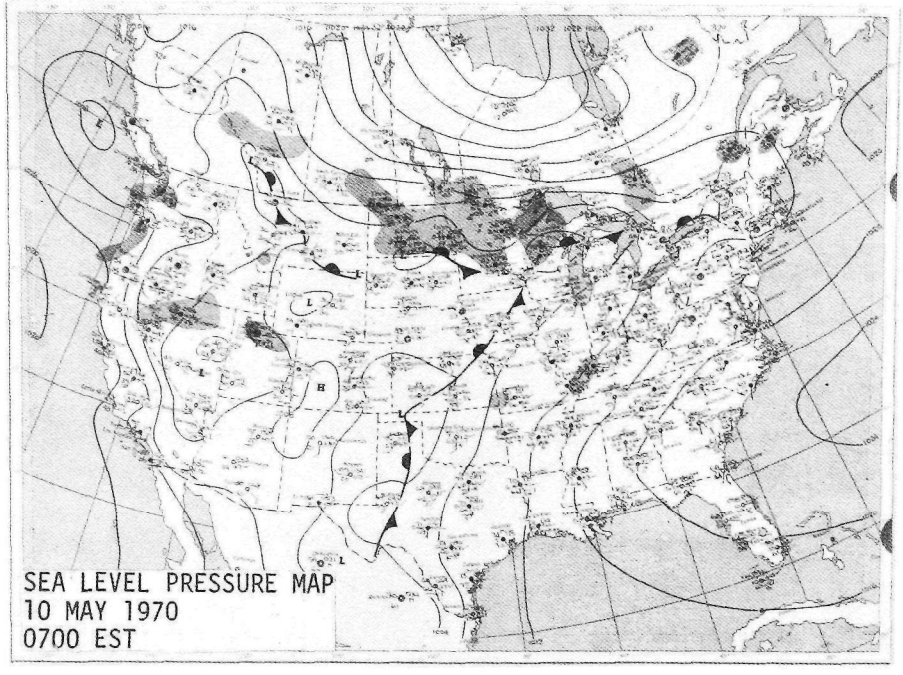
LAPPES series activities suspended for one day. No upper-air wind or temperature measurements obtained by APCO personnel in support of SRI activities.

Synoptic Situation

Regional - Closed low over Wisconsin with frontal trough eastward to New England coast; high pressure over remaining eastern third U.S. Surface wind light southerly. Flat 500-mb trough over Mississippi Valley; flat ridge over New England. Wind at 500 mb SW 20 mps.

Local - Sunrise broken high clouds. 1 PM broken low clouds with light rain showers. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



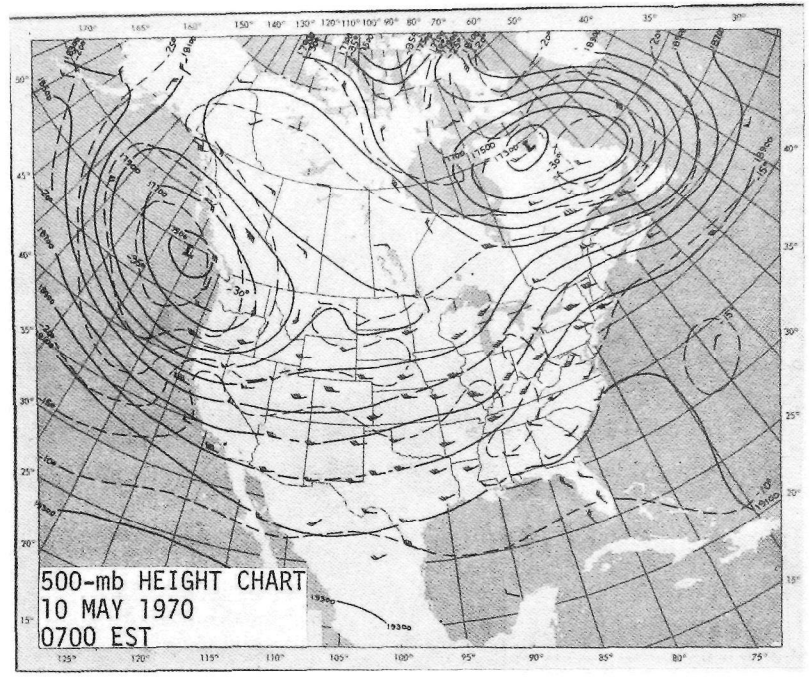


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 11 May 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

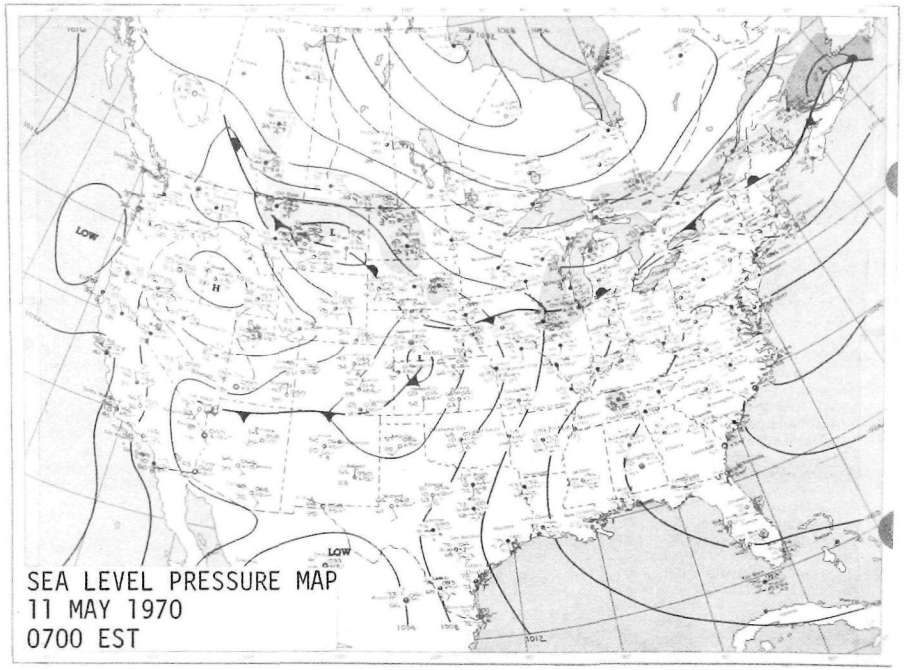
High SO_2 background aloft. Extremely wide plume. Tops of 4- and 10-km cross sections incomplete because of low clouds; no 16-km cross section attempted. Good coverage of looping plume GLC by helicopter; partial coverage by bubblers. Low-altitude termination of pilot balloon runs caused by low clouds. AutoAnalyzer at airport office measured plume GLC. Plume heading across Chestnut Ridge.

Synoptic Situation

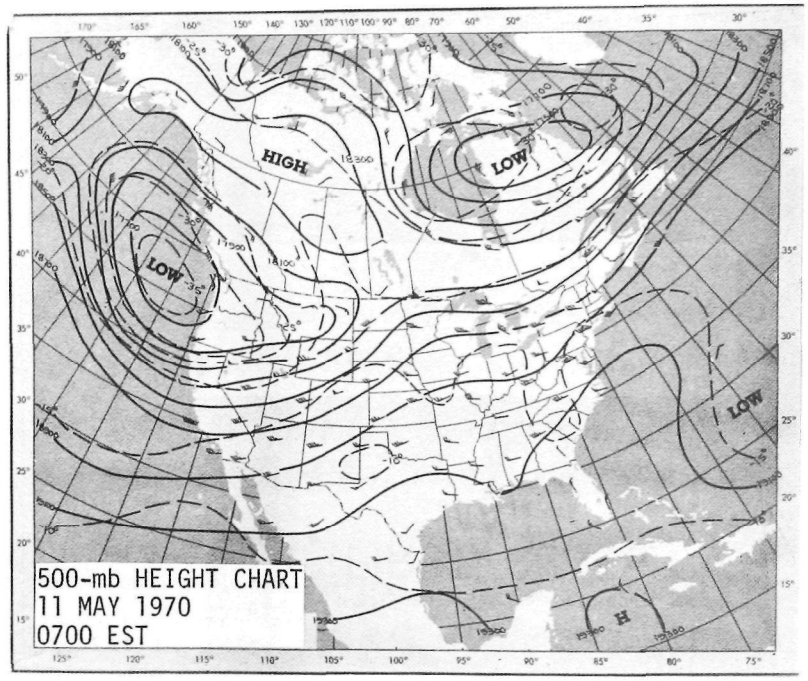
Regional - Stationary front from closed low over Gulf of St. Lawrence southwestward through Nebraska; high pressure over southeastern U.S. Surface wind light westerly. Near-zonal 500-mb flow over eastern half U.S.; closed low over northern Quebec. Wind at 500 mb W 13 mps.

Local - Sunrise broken low clouds with fog and haze. Surface inversion to 150 meters; lapse above to 950 meters. Plume wind SW 7 mps. 1 PM broken low clouds. Neutral to 970 meters. Plume wind SSW 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
11 MAY 1970
0700 EST



500-mb HEIGHT CHART
11 MAY 1970
0700 EST

Table 1 (continued) DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 12 May 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

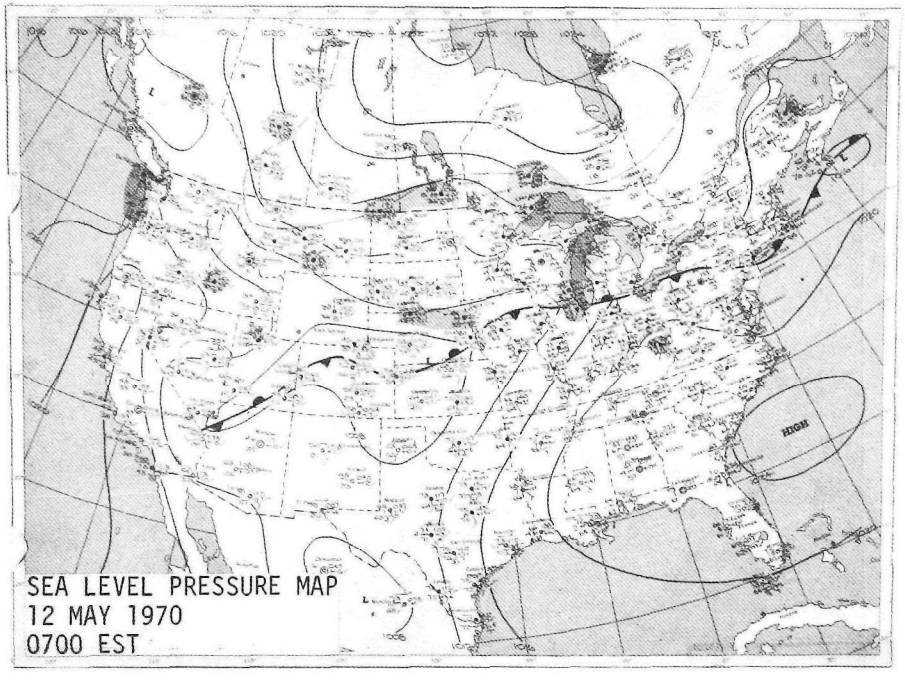
Very high SO_2 background aloft. Tops of both 4-km cross sections incomplete because of low clouds; no other cross sections attempted because of low stratus over ridges. Good coverage of looping plume GLC by helicopter; partial coverage by bubblers. Bubblers picked up after two hours to facilitate analysis. Low-altitude termination of pilot balloon runs caused by low clouds. AutoAnalyzer at airport office measured plume GLC.

Synoptic Situation

Regional - Stationary front from closed low south of Nova Scotia through Pennsylvania to Kansas; high pressure over southeastern U.S. Surface wind light southwesterly. Flat 500-mb ridge over eastern half U.S.; closed low over northeastern Quebec. Wind at 500 mb WNW 8 mps.

Local - Sunrise low obscuration with fog. Stable to 950 meters. Plume wind SW 9 mps. Noon broken low clouds. Neutral to 840 meters. Plume wind SW 3 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



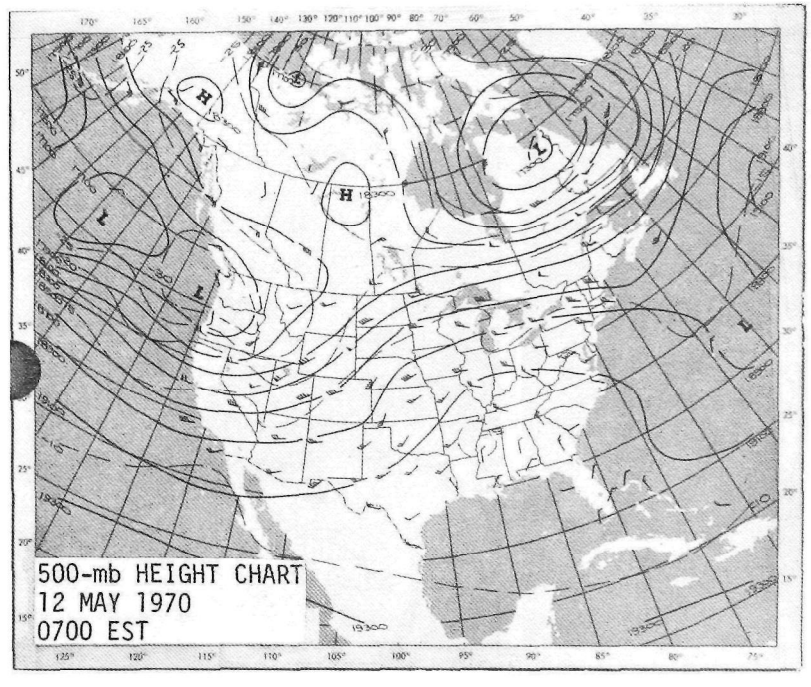


Table 1 (continued). DAILY EXPERIMENT SUMMARY

SRI Lidar Experiment 13 May 1970 Homer City Plume Unit 1

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

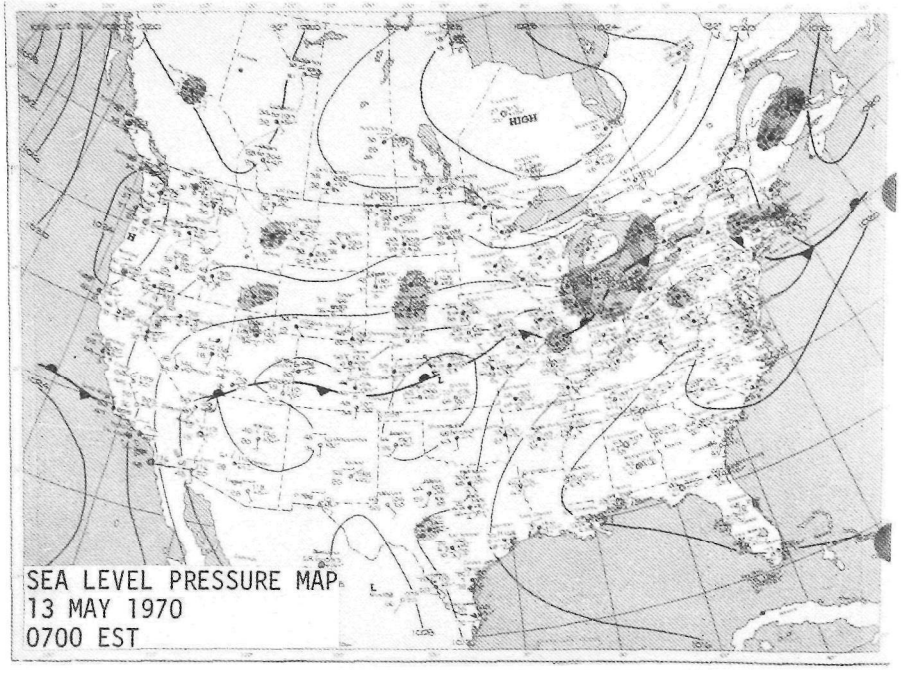
No plume cross sections or ground-level flights attempted because of low clouds. Bubblers were not set out. Radiosondes, pilot balloons, and temperature profiles obtained in support of SRI activities.

Synoptic Situation

Regional - Stationary front from low in Kansas through Lake Ontario and New York coast; NE-SW ridge over Pennsylvania. Surface wind SW 5 mps. Light near-zonal 500-mb flow over eastern half U.S. Wind at 500 mb W 15 mps.

Local - Sunrise low overcast with light rain showers. Lapse to 345 meters. Plume wind SW 9 mps. 11 AM low overcast. Near-neutral to 590 meters. Plume wind SSW 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



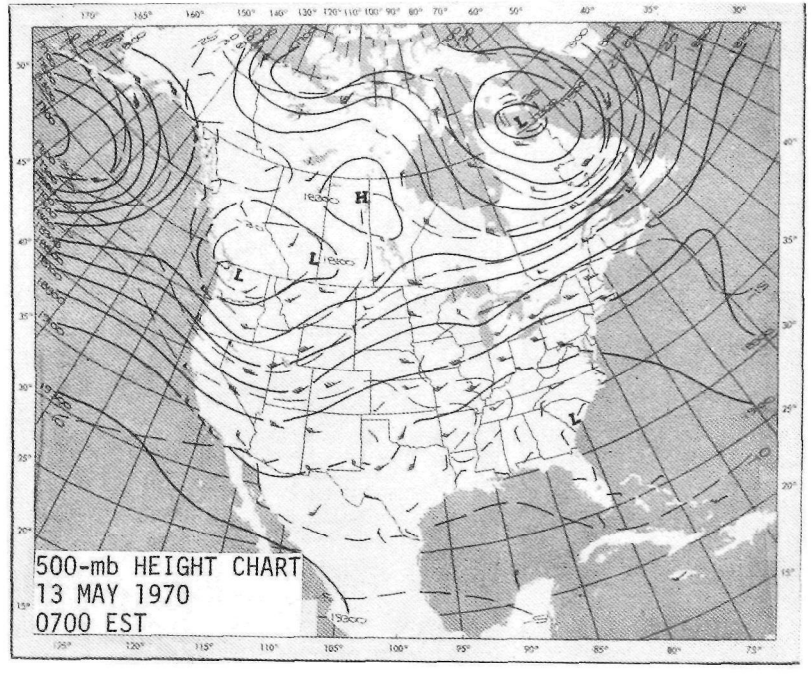


Table 1 (continued). DAILY EXPERIMENT SUMMARY

April 1970 Series and SRI Lidar Experiment 15 May 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

Stanford Research Institute (lidar cross sections and plume-rise measurements of Homer City plume)

Commentary

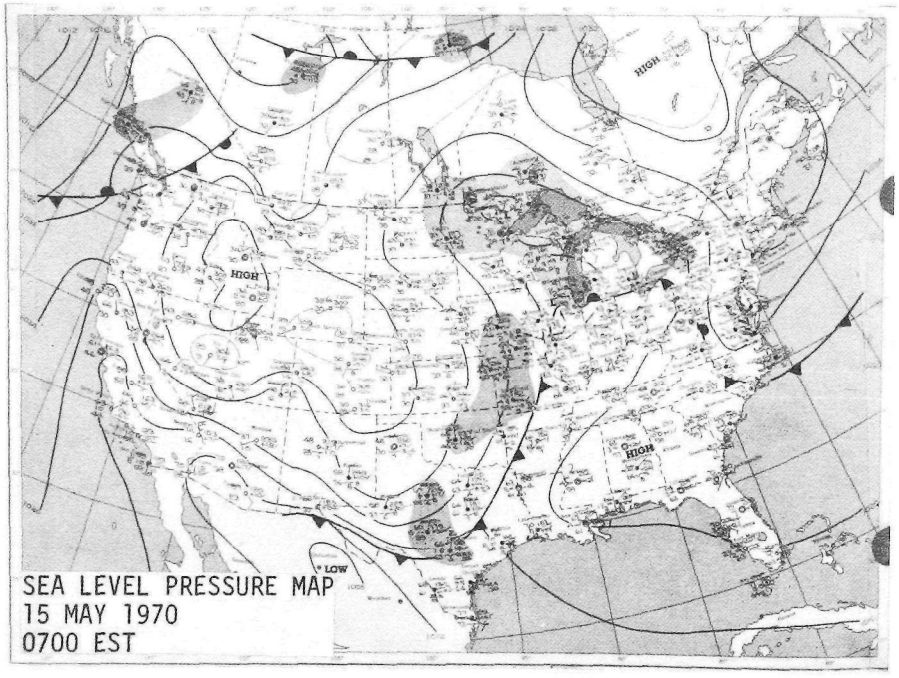
Early morning 4-km cross section flown before thunderstorm; plume shifted 360° during storm passage. Mid-morning 4- and 10-km cross sections completed after thunderstorm. Flights terminated after cross sections because of inverter malfunction. Bubblers were not set out.

Synoptic Situation

Regional - High centered over northern Quebec with associated ridge southward along northern U.S. Atlantic coast; closed low over southern Wisconsin. Surface wind light southeasterly. 500-mb ridge from Carolinas to Hudson Bay; trough from Dakotas to Texas Gulf coast. Wind at 500 mb WNW 13 mps.

Local - Sunrise low overcast with fog; thunderstorm at 7 AM. Stable with inversions 200 to 750 meters; lapse below and above to 935 meters. Plume wind SE 9 mps. Noon broken low clouds with fog and haze. No noon helicopter temperature profile available. Plume wind SSE 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



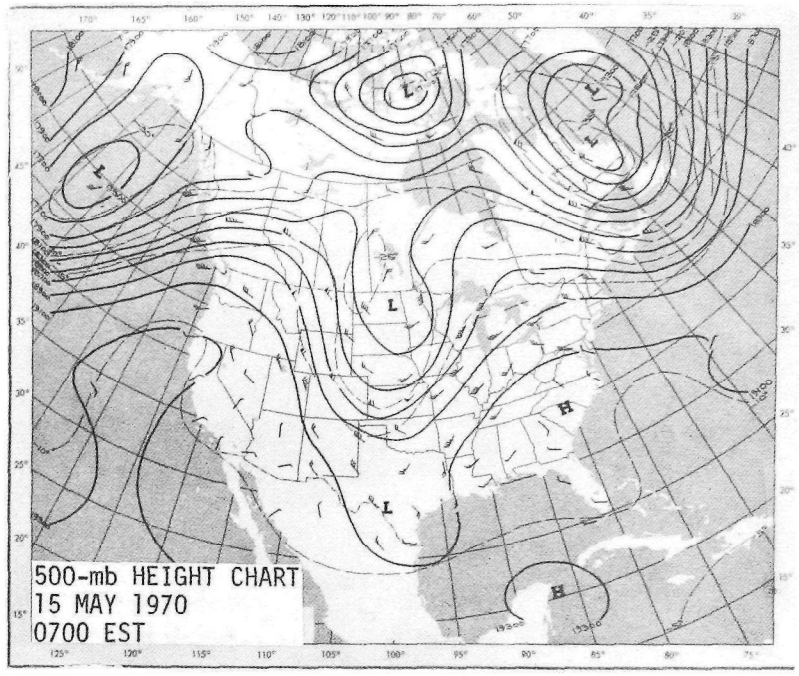


Table 1 (continued). DAILY EXPERIMENT SUMMARY

Brookhaven Plume Tracking Study 1 October 1970 Keystone Plume Unit 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Brookhaven National Laboratory (airborne densitometer detection of Keystone plume)

Commentary

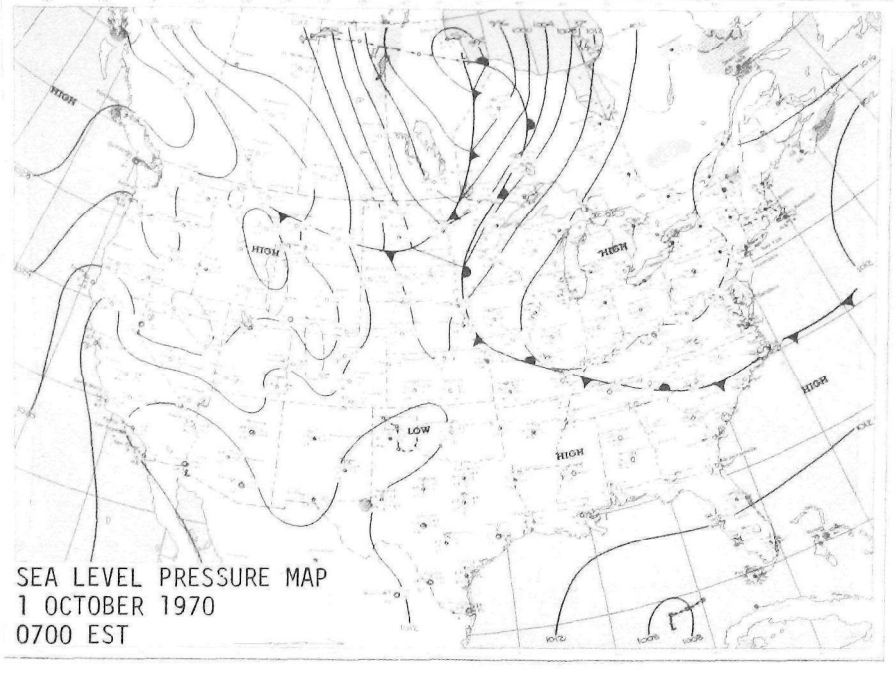
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Brookhaven activities.

Synoptic Situation

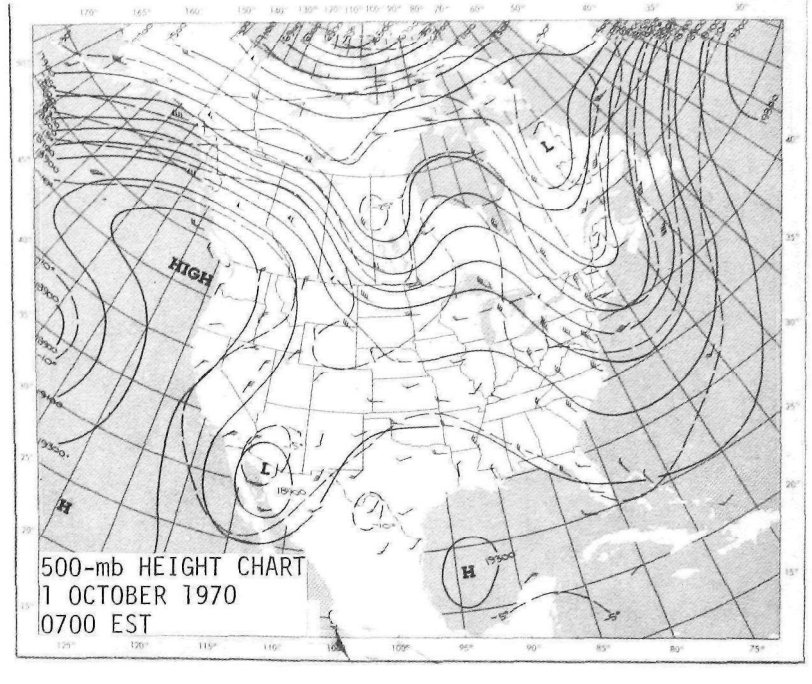
Regional - Eastern third U.S. dominated by weak high pressure; stationary front through central Atlantic states. Surface wind light northeasterly. 500-mb trough along Atlantic coast; ridge from Ohio Valley to Hudson Bay. Wind at 500 mb NNW 23 mps.

Local - Sunrise scattered low clouds. 10 AM scattered low clouds. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
1 OCTOBER 1970
0700 EST



500-mb HEIGHT CHART
1 OCTOBER 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 14 October 1970 Conemaugh Plume Unit 1

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

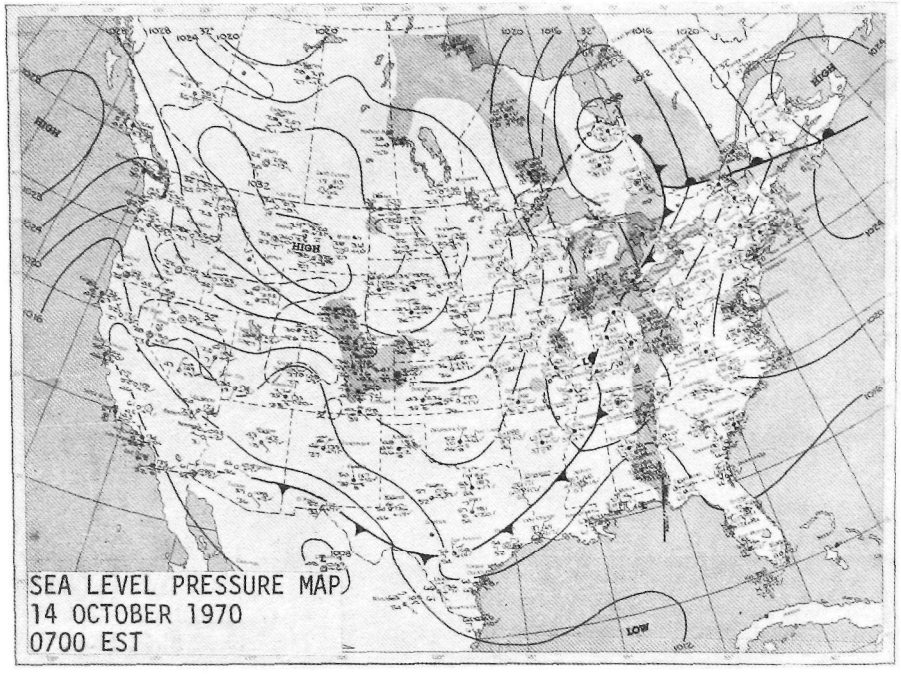
Three cross sections flown. GLC measured by helicopter and bubblers during wind shift. Afternoon ground-level flights not attempted because of low clouds and rain showers. AutoAnalyzer at airport office measured GLC from Homer City plume during mid-morning wind shift.

Synoptic Situation

Regional - Closed low over James Bay with fronts southwestward to Texas and eastward through Nova Scotia; ridge along Atlantic coast. Surface wind light southwesterly. NW-SE 500-mb trough over eastern U.S. Wind at 500 mb SW 30 mps.

Local - Sunrise scattered middle clouds, broken high clouds. Stable with inversions to 1085 meters. Plume wind SSW 7 mps. 11 AM scattered low clouds, broken high clouds with haze; light rain beginning at noon. Near-neutral to 940 meters. Plume wind WSW 12 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



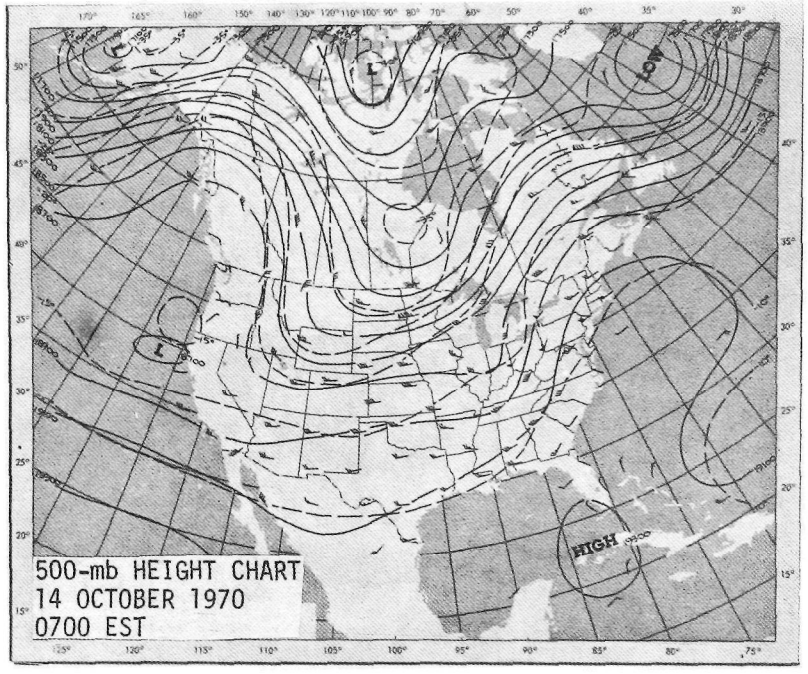


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 16 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

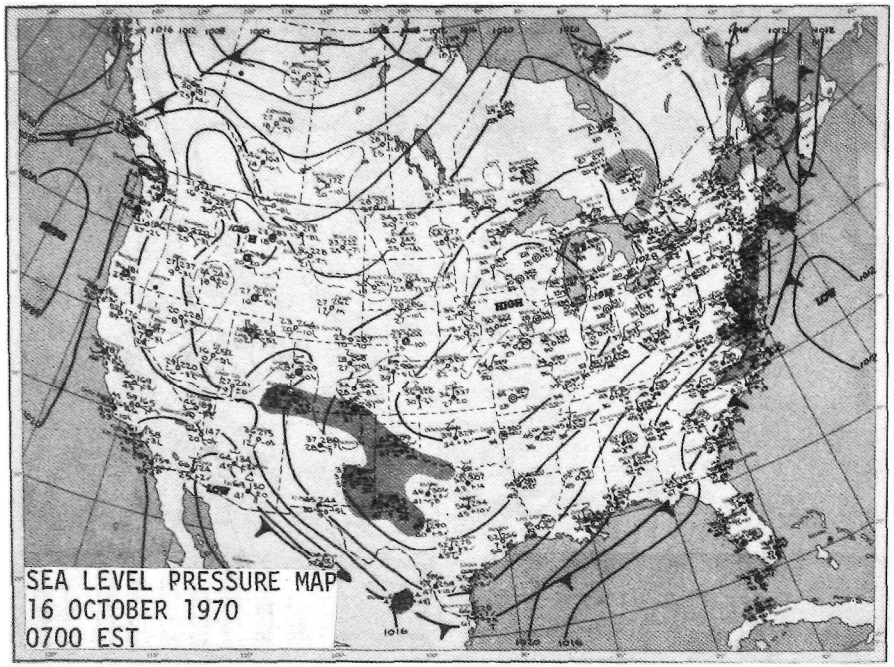
During first flight, 10- and 16-km cross sections attempted but tops incomplete because of low clouds. During second flight, 4- and 10-km cross sections attempted but top of 4-km section incomplete because of low clouds. Near-uniform vertical mixing of plume from cloud base to surface in lee of ridge. Partial coverage of GLC by helicopter and bublers. Ground-level flights discontinued because of strong low-level turbulence. Low-altitude termination of pilot balloon runs caused by low clouds. Plume heading across Laurel Ridge.

Synoptic Situation

Regional - Cold front along Atlantic coast; high centered over Iowa dominating eastern half U.S. Surface wind NW 5 mps. Closed 500-mb low over northern Hudson Bay with trough southward to Gulf coast. Wind at 500 mb SW 30 mps.

Local - Sunrise low overcast. Near-neutral to 1070 meters. Plume wind NW 7 mps. Noon broken low clouds. Near-neutral to 1085 meters. Plume wind NNW 8 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



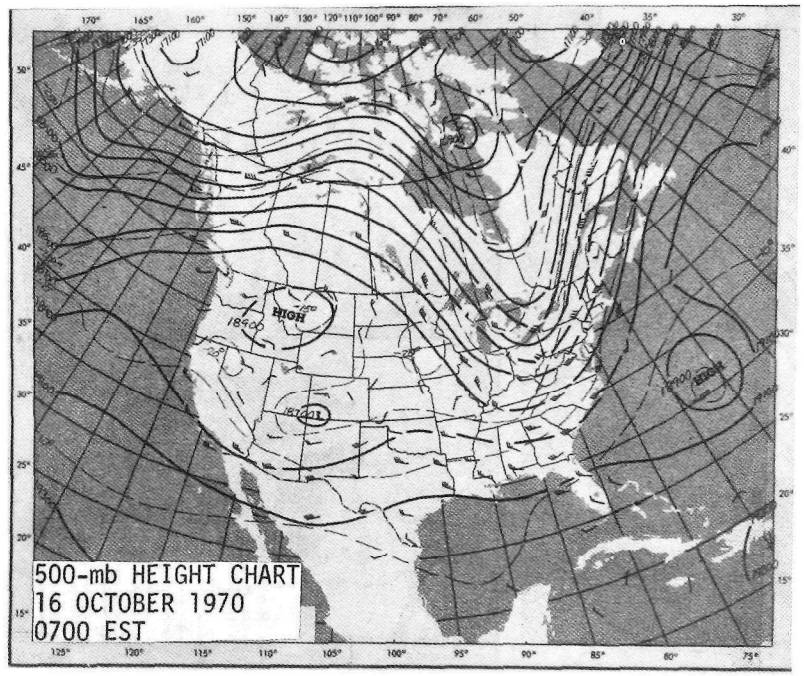


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 17 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Portable Bubbler GLC

On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles

Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

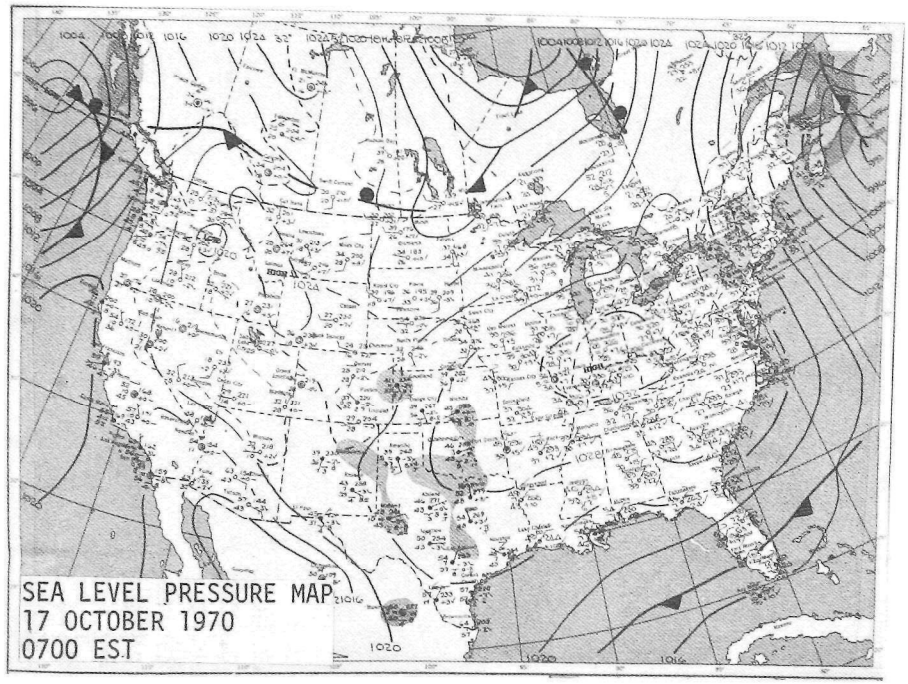
Extremely wide plume. No 16-km cross section attempted because of marginal weather conditions in vicinity of Johnstown Airport. Good coverage of GLC by bubblers. Ground-level flights prevented by malfunctions of SO_2 analyzer, inverter, and helicopter engine. Low-altitude termination of pilot balloon runs caused by low clouds. Plume heading across Laurel Ridge.

Synoptic Situation

Regional - Eastern half U.S. under influence of high centered over Indiana. Surface wind light westerly. Closed 500-mb low over Vermont with trough southward along Atlantic coast to Florida. Wind at 500 mb NW 40 mps.

Local - Sunrise broken low clouds. Lapse to 1080 meters. Plume wind WNW 7 mps. 10 AM low overcast; light rain showers beginning at 11 AM. Stable with inversions 620-900 meters; near-neutral below and above to 1090 meters. Plume wind W 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



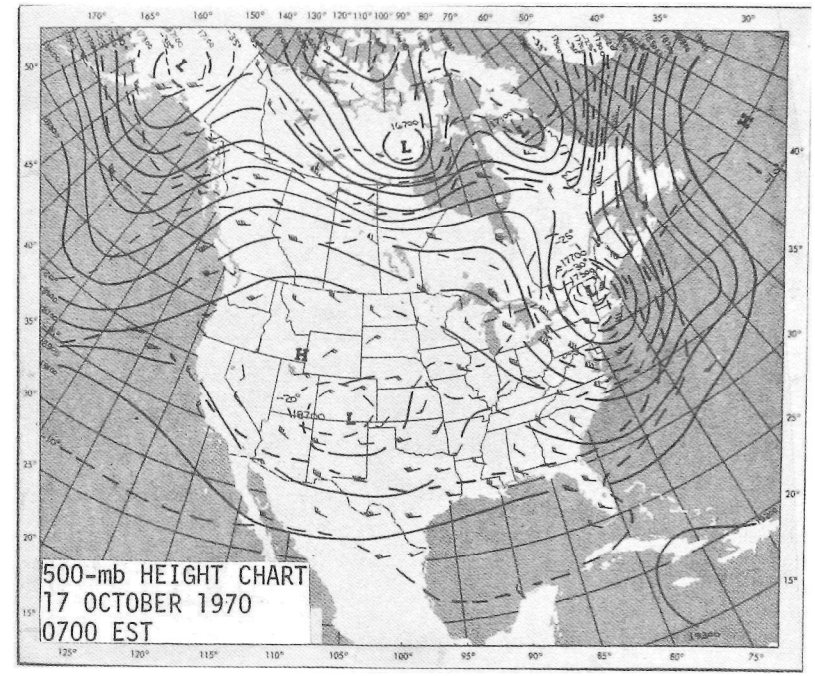


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 20 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

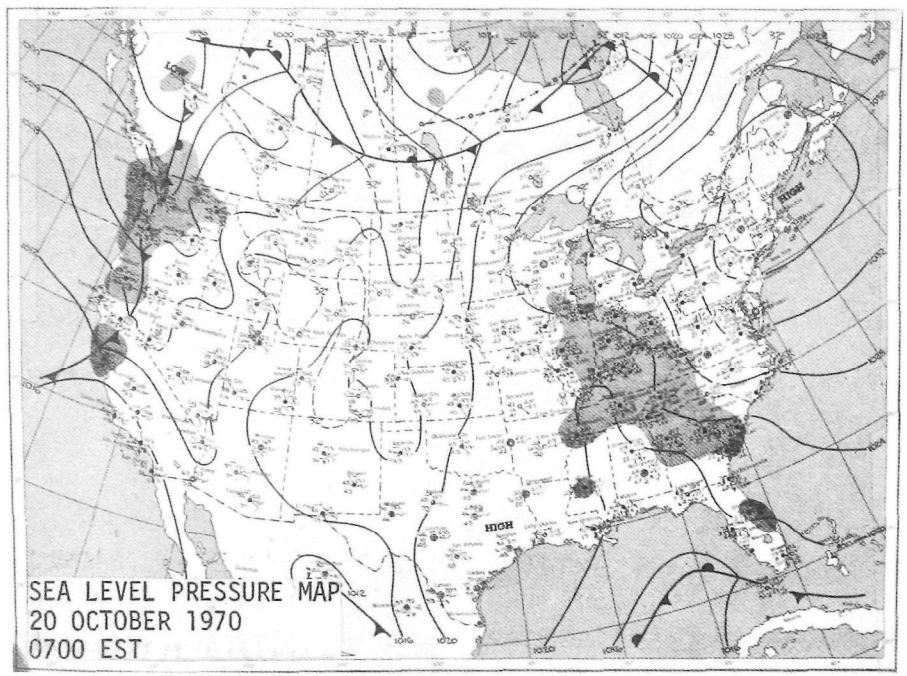
Tops of 4- and 10-km cross sections incomplete because of low clouds; no 16-km cross section attempted. Near-uniform vertical mixing of plume from cloud base to surface. Good coverage by helicopter and bubblers of GLC due to lee-side flow off Laurel Ridge under high wind, neutral conditions. Low-altitude termination of pilot balloon runs caused by low clouds; morning radiosonde not available.

Synoptic Situation

Regional - High centered over Maine coast with ridges southwestward to Alabama and westward to Minnesota. Surface wind light easterly. 500-mb low over northern Iowa with trough to Bahamas; NW-SE ridge through Pennsylvania. Wind at 500 mb SW 10 mps.

Local - Sunrise broken low clouds. Stable with inversions to 1110 meters. Plume wind SSE 2 mps. Noon low overcast with haze. Near-neutral to base of inversion at 840 meters. Plume wind S 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



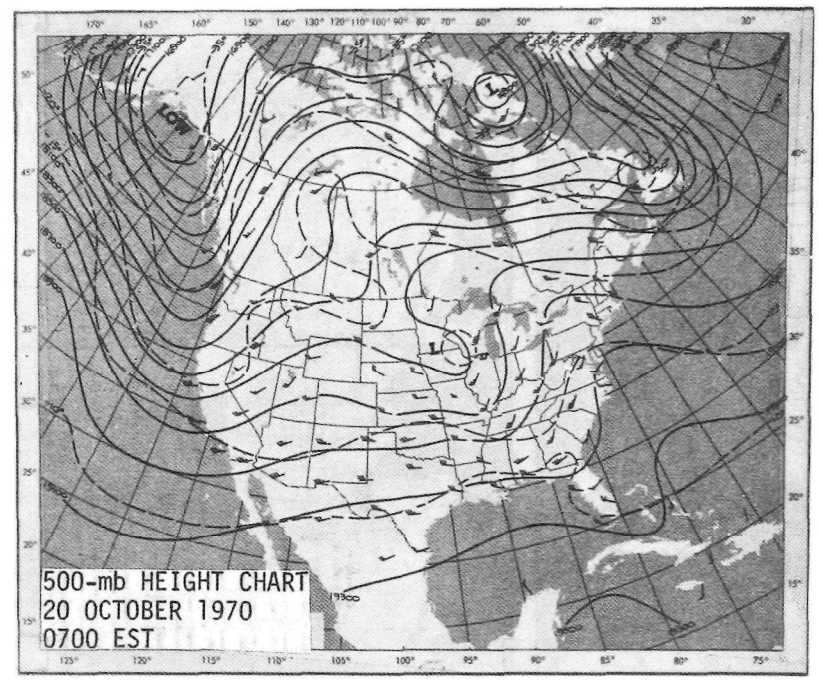


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 26 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Section
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

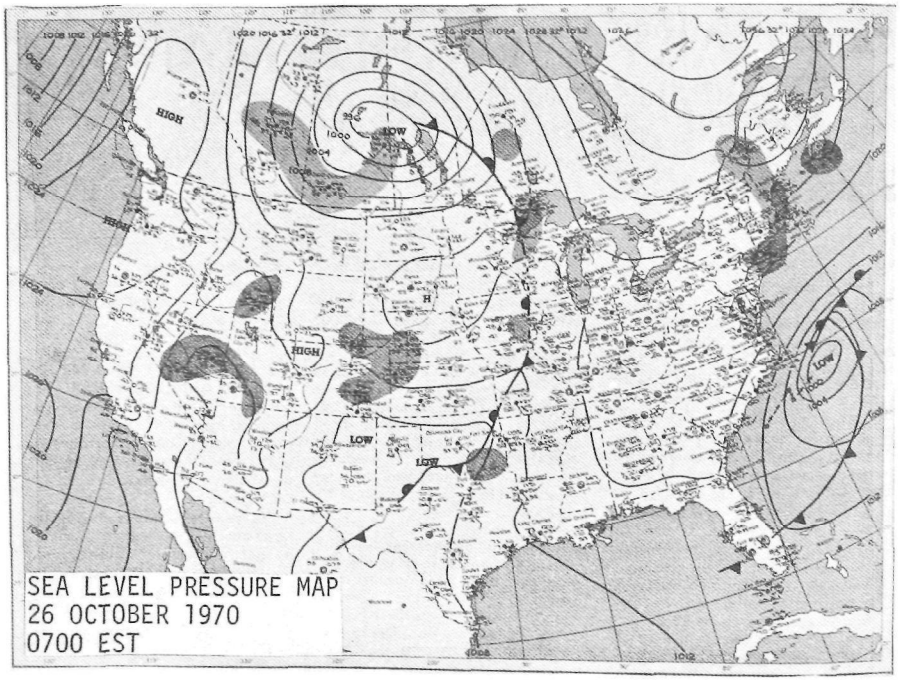
Top of 4-km cross section incomplete because of low clouds; no 10- or 16-km cross sections attempted. Near-uniform vertical mixing of plume from cloud base to surface. Good coverage of GLC by helicopter out to 32 km and by bubblers out to 34 km. GLC within about 8 km caused by lee-side flow off Laurel Ridge under neutral conditions; past this distance, GLC were result of inversion breakup and lee-side flow off Chestnut Ridge. Low-altitude termination of pilot balloon runs and temperature profiles caused by low clouds. Area under high air pollution potential alert.

Synoptic Situation

Regional - Ridge from northern Quebec through New England to Texas Gulf coast; deep low off Carolina coast. Surface wind calm. 500-mb ridge from Gulf of Mexico through Great Lakes to Hudson Bay; closed low off Carolina coast. Wind at 500 mb NW 8 mps.

Local - Sunrise broken low clouds with ground fog. Stable with inversions to 620 meters. Morning plume wind not available. Noon broken low clouds with haze. Near-neutral to 1070 meters. Plume wind SSE 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



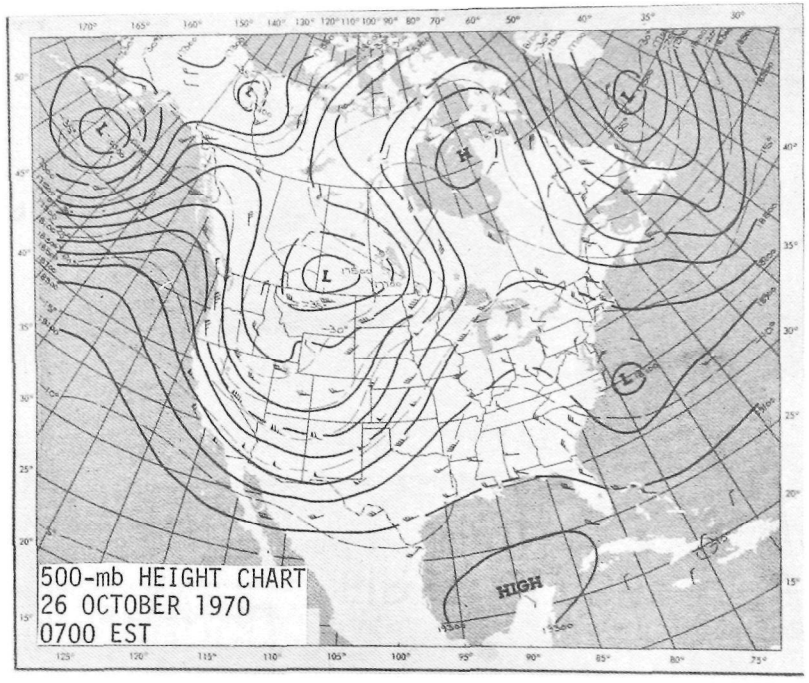


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 27 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

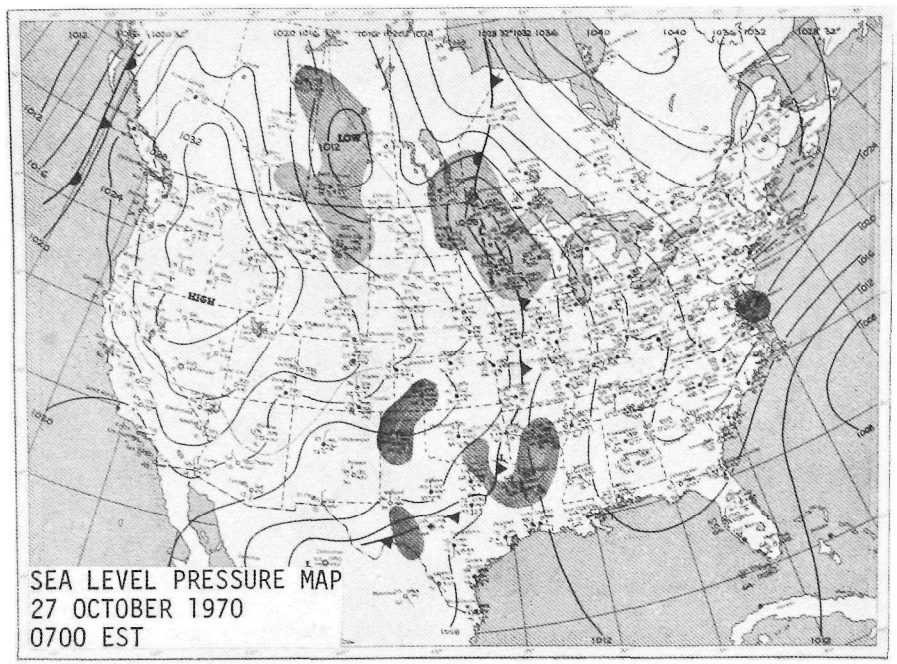
Tops of all three cross sections incomplete because of low clouds. Partial coverage of GLC by helicopter; good coverage by bubblers. Ground-level flights discontinued because of strong low-level turbulence. Low-altitude termination of pilot balloon runs caused by low clouds; morning radiosonde not available. Plume heading across Chestnut Ridge. Area under high air pollution potential alert.

Synoptic Situation

Regional - Ridge from northern Quebec through Pennsylvania to Gulf coast. Surface wind light easterly. Weak 500-mb ridge from Gulf of Mexico northward through Hudson Bay. Wind at 500 mb NW 8 mps.

Local - Sunrise broken low clouds with haze. Near-neutral to 515 meters. Plume wind SE 7 mps. Noon broken low clouds. Stable with inversions to 1090 meters. Plume wind ESE 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



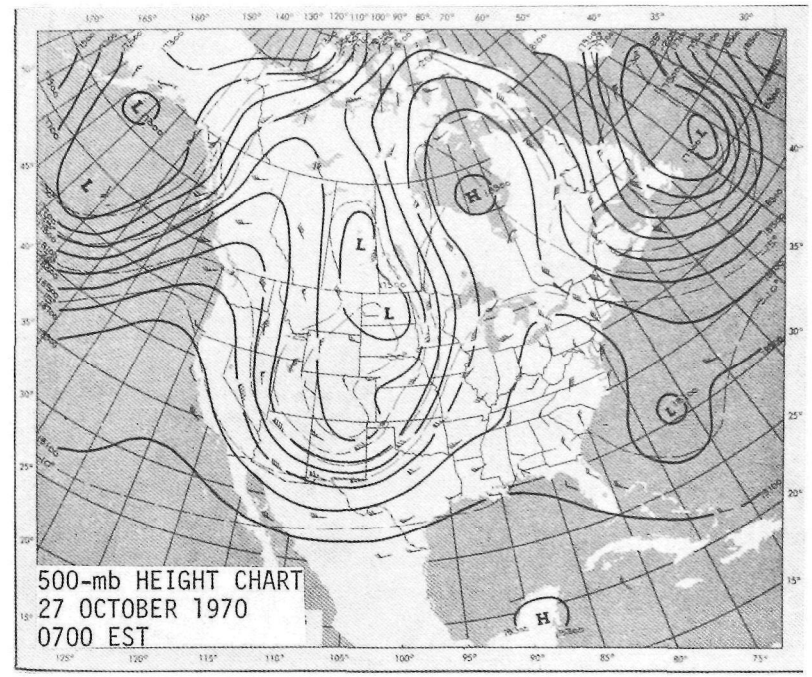


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 28 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

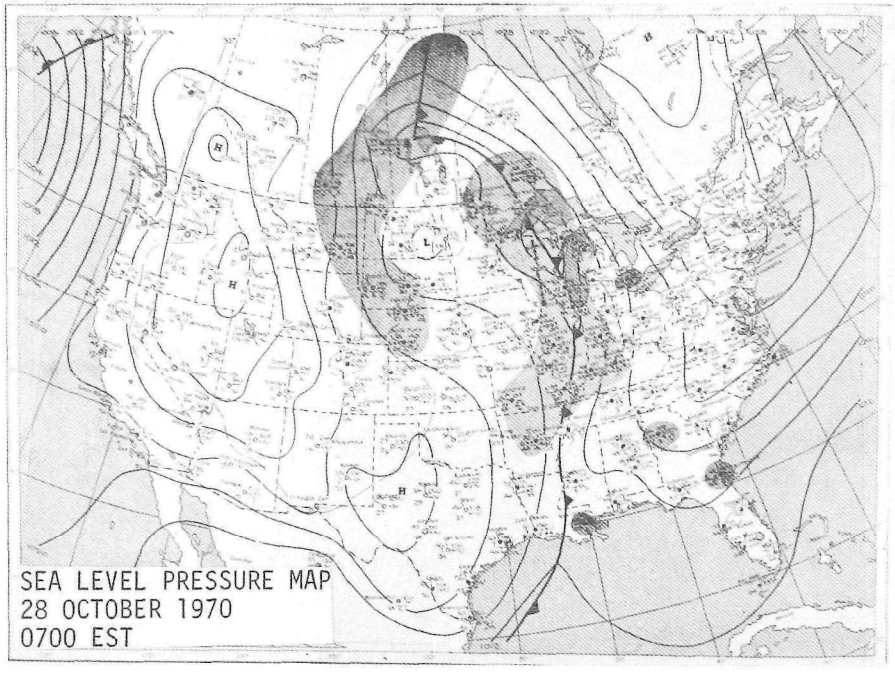
Tops of 4- and 10-km cross sections incomplete because of low clouds; no 16-km cross section attempted. Good coverage by helicopter and bubblers of GLC due to lee-side flow off Laurel Ridge under neutral conditions. Decrease in helicopter-measured GLC between 8 and 10 AM caused by temporary break in cloud cover. Low-altitude termination of pilot balloon runs caused by low clouds. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Ridge from northern Quebec through New England to Gulf of Mexico; frontal trough from closed low over Wisconsin through Louisiana. Surface wind light easterly. 500-mb ridge from Florida Gulf coast northward through Hudson Bay; closed high over Carolinas. Wind at 500 mb W 5 mps.

Local - Sunrise scattered low clouds, broken high clouds. Stable with inversions to 1245 meters. Plume wind SSE 4 mps. Noon low overcast. Near-neutral to 925 meters. Plume wind SSE 5 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



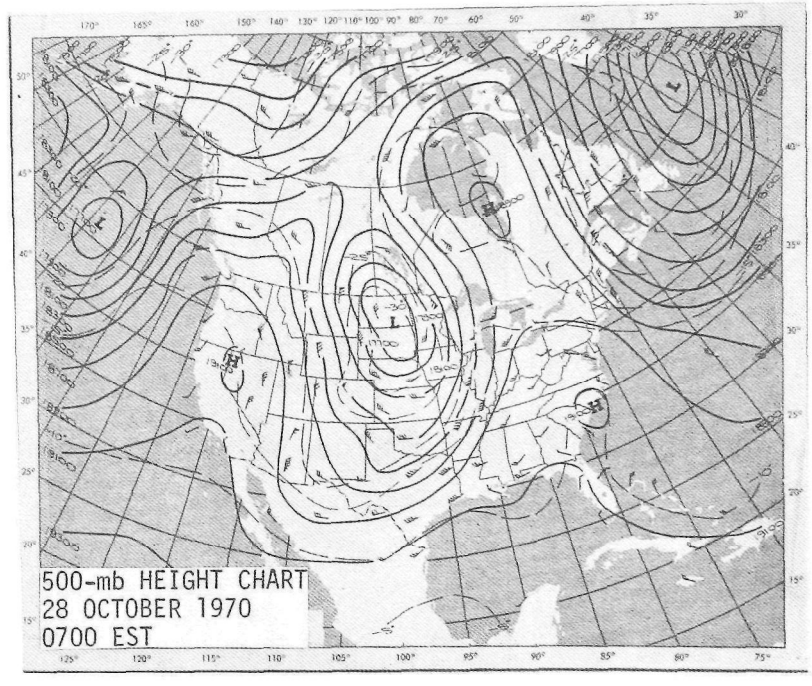


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 29 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

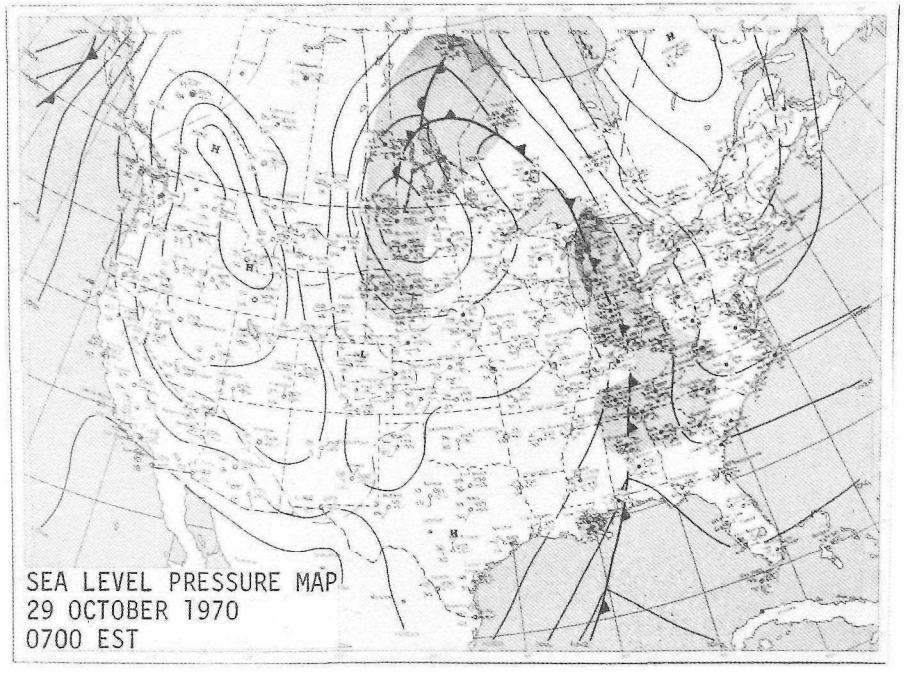
No plume cross sections attempted because of low clouds. Good coverage by helicopter and bubblers of GLC due to lee-side flow off Laurel Ridge under high wind, neutral conditions. Low-altitude termination of pilot balloon runs and some temperature profiles caused by low clouds. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Ridge from northern Quebec along Atlantic coast to Florida; cold front from central Manitoba through Michigan to Alabama Gulf coast. Surface wind light easterly. 500-mb ridge from Bahamas through northern Quebec; closed low over Dakotas. Wind at 500 mb SW 10 mps.

Local - Sunrise broken low and high clouds with haze. Stable with inversions 400 to 1230 meters; near-neutral below. Plume wind ESE 2 mps. Noon broken low and high clouds. Stable with inversions 550 to 1140 meters; near-neutral below. Plume wind SSE 7 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



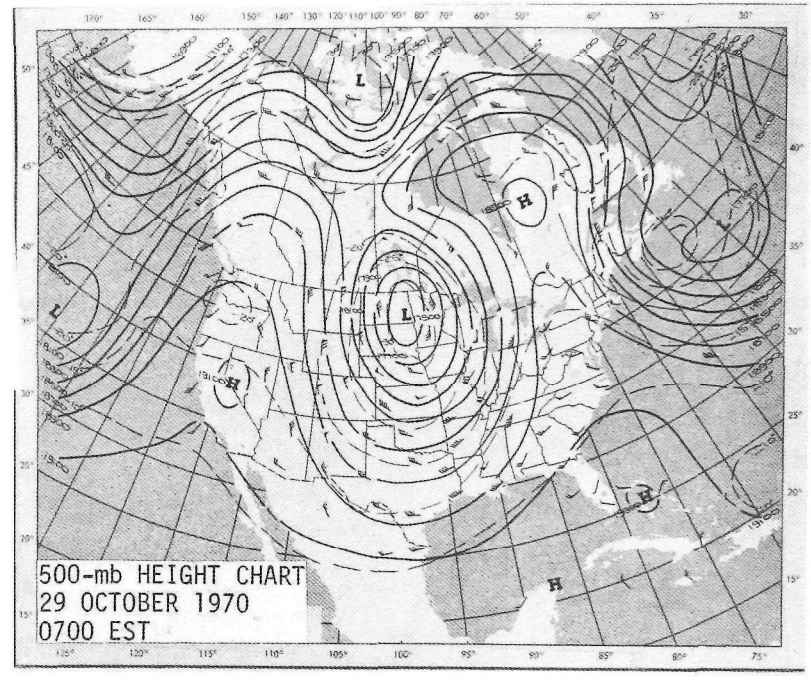


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 30 October 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profile
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

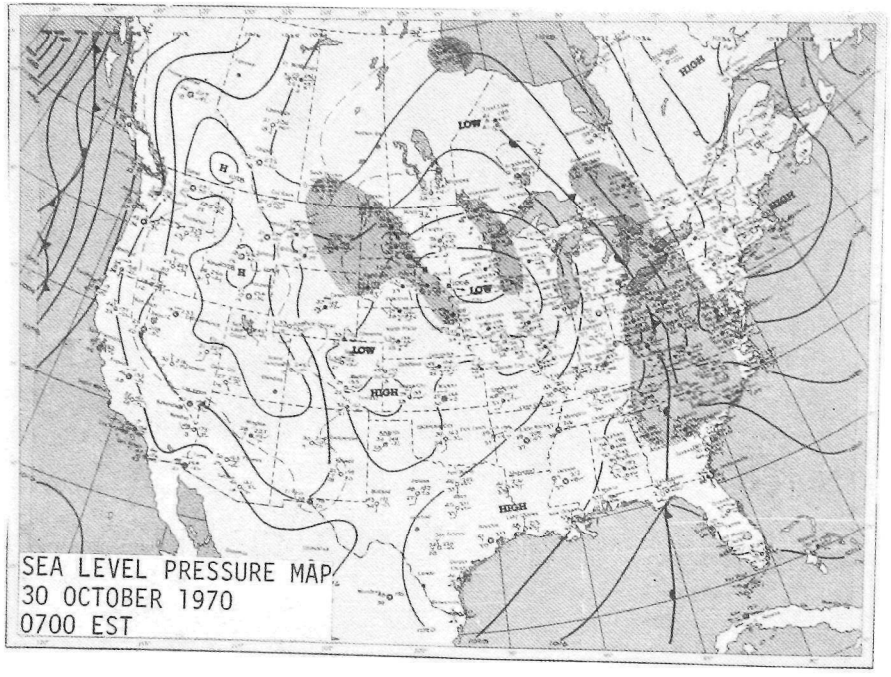
No plume cross sections attempted because of low clouds and rain showers. Ground-level flights discontinued because of strong low-level turbulence. During rain partial coverage by bubblers of GLC due to lee-side flow off Laurel Ridge under high wind, neutral conditions. Low-altitude termination of pilot balloon runs and temperature profile caused by low clouds; afternoon radiosonde not released.

Synoptic Situation

Regional - Ridge through New England states to South Carolina; stationary front from western Ontario through Ohio to Florida Gulf coast. Surface wind light southeasterly. 500-mb ridge from Carolina coast to northern Quebec; deep low over Dakotas. Wind at 500 mb SW 25 mps.

Local - Sunrise low overcast with light rain. Lapse to 450 meters. Plume wind not available. 11 AM low overcast with moderate rain. No late-morning helicopter temperature profile available. Plume wind ESE 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



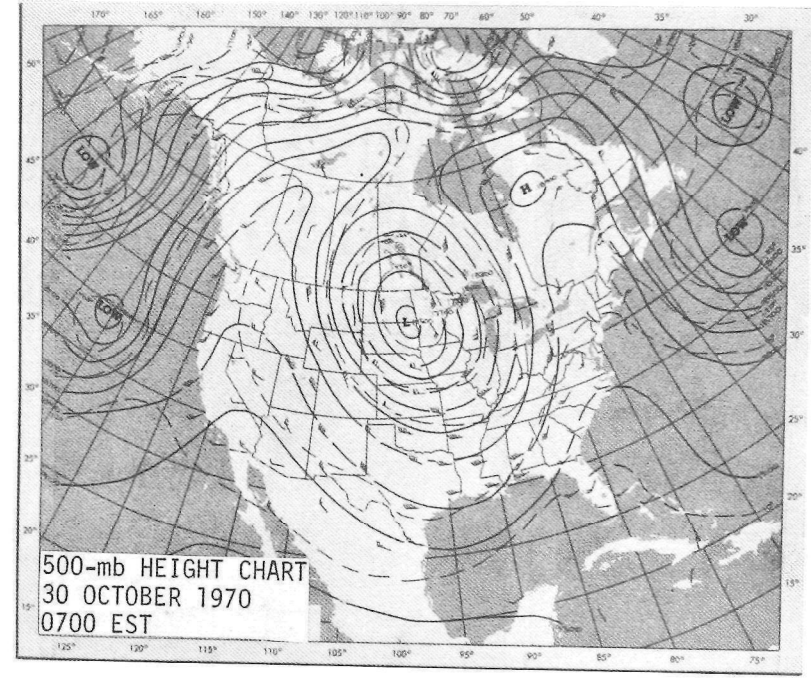


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 2 November 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

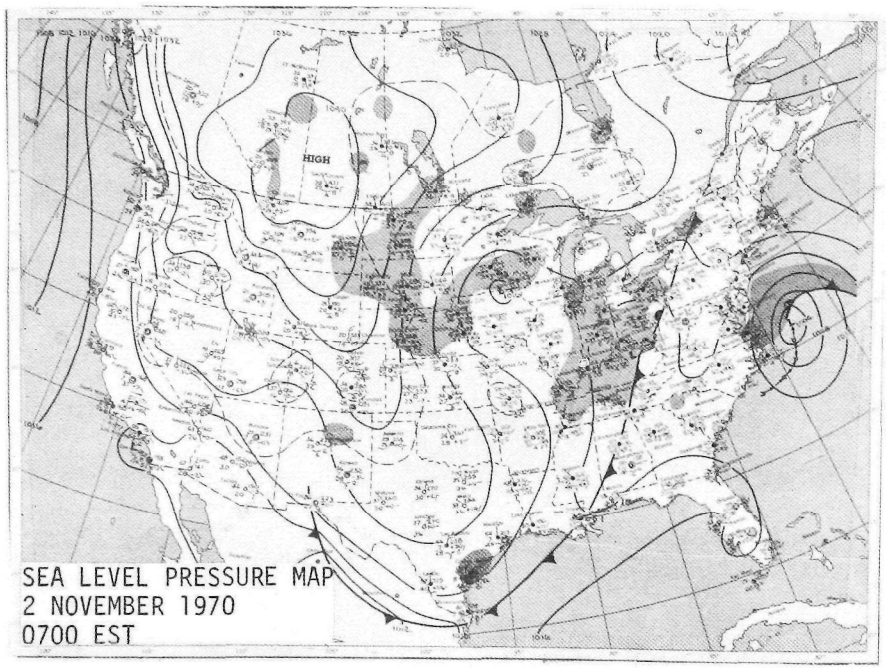
Tops of 4- and 10-km cross sections incomplete because of low clouds; bifurcation appeared in upper half of 16-km cross section. Good coverage of GLC by helicopter out to 34 km; partial coverage by bubblers out to 22 km. GLC within about 8 km caused by lee-side flow off Laurel Ridge under neutral conditions; past this distance, GLC were result of inversion breakup and lee-side flow off Chestnut Ridge. Low-altitude termination of pilot balloon runs caused by low clouds.

Synoptic Situation

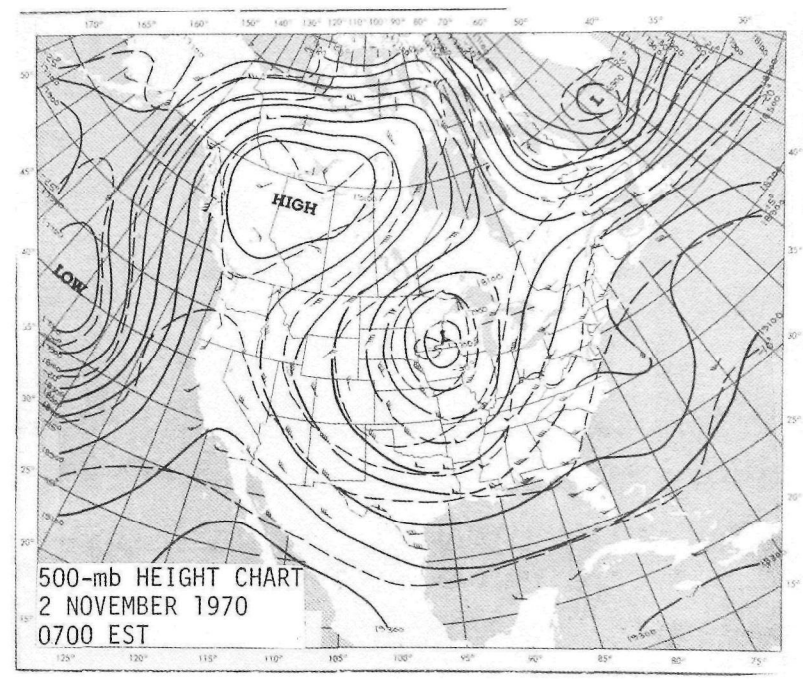
Regional - Frontal trough from Lake Ontario to Louisiana Gulf coast; closed lows over Minnesota-Iowa border and off Virginia coast. Surface wind light southeasterly. Eastern two-thirds U.S. under influence of long-wave 500-mb trough; closed low over Minnesota-Iowa border. Wind at 500 mb SW 13 mps.

Local - Sunrise low overcast. Stable with inversions to 150 meters; lapse above to 660 meters. Plume wind ESE 4 mps. Noon broken middle clouds. Stable with inversions 725-1110 meters; neutral below. Plume wind SE 4 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
2 NOVEMBER 1970
0700 EST



500-mb HEIGHT CHART
2 NOVEMBER 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 5 November 1970 Conemaugh Plume Unit 1

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

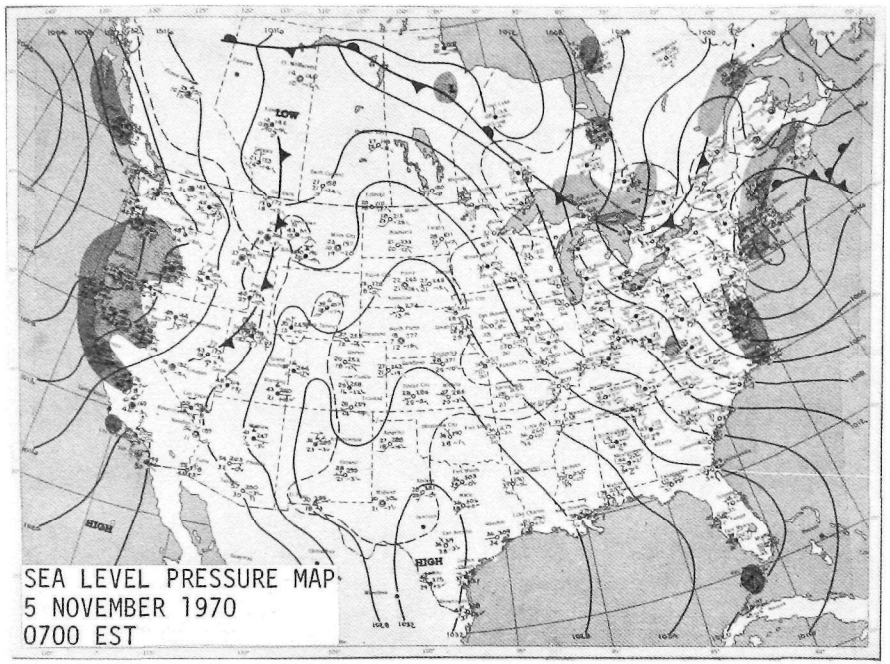
Tops of all three cross sections incomplete because of low clouds. Partial coverage of high-wind, neutral GLC by helicopter, including flight through Conemaugh Gorge; good coverage by bubblers. Ground-level flights terminated because of extreme low-level turbulence. Low-altitude termination of pilot balloon runs and temperature profiles caused by low clouds. Plume heading across Laurel Ridge.

Synoptic Situation

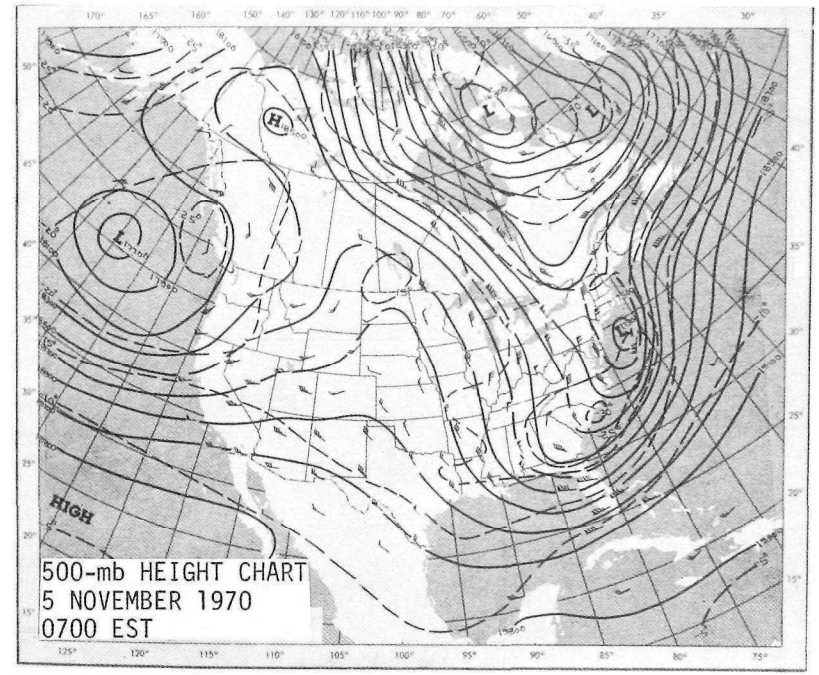
Regional - NE-SW ridges and trough dominating eastern third U.S.; closed low off Rhode Island coast. Surface wind NW 8 mps. Eastern U.S. under trailing edge of long-wave 500-mb trough; closed low off New Jersey coast. Wind at 500 mb N 30 mps.

Local - Sunrise low overcast. Near-neutral to 700 meters. Plume wind W 11 mps. 11 AM low overcast with light rain showers. Lapse to 660 meters. Plume wind W 13 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
5 NOVEMBER 1970
0700 EST



500-mb HEIGHT CHART
5 NOVEMBER 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 6 November 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
On-stream AutoAnalyzer GLC
Helicopter Instantaneous GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

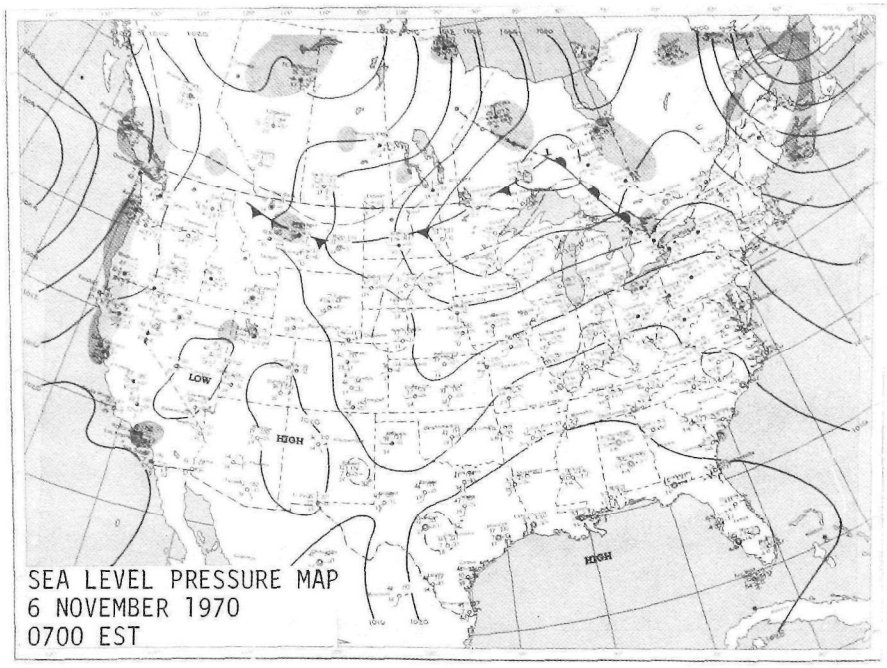
Tops of 4- and 10-km cross sections incomplete because of low clouds; no 16-km cross section attempted. Ground-level flights discontinued because of strong low-level turbulence. Bubblers were not set out. Low-altitude termination of pilot balloon runs caused by low clouds; afternoon radiosonde not available. Plume heading across Laurel Ridge.

Synoptic Situation

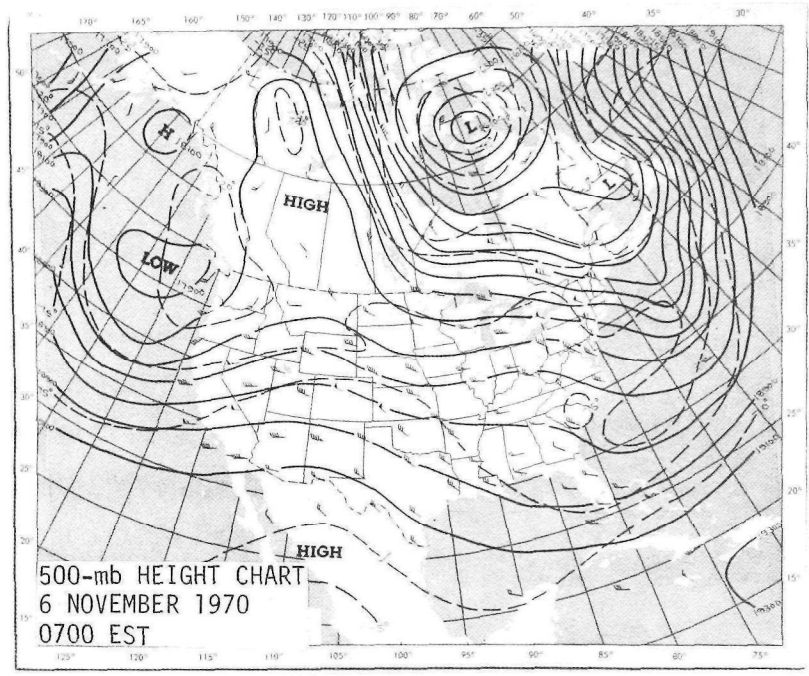
Regional - Ridge from Gulf of Mexico through Pennsylvania to southern Quebec; warm front from low in central Ontario to Lake Huron. Surface wind SW 5 mps. 500-mb short waves over eastern half U.S. Wind at 500 mb NW 20 mps.

Local - Sunrise low overcast with fog. Inversion layers surface to 50 meters and 500 to 525 meters; lapse between and above to 1170 meters. Plume wind WSW 9 mps. 9 AM low overcast. Near-neutral to 1080 meters. Plume wind WSW 9 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
6 NOVEMBER 1970
0700 EST



500-mb HEIGHT CHART
6 NOVEMBER 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 9 November 1970 Homer City Plume Unit 1

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

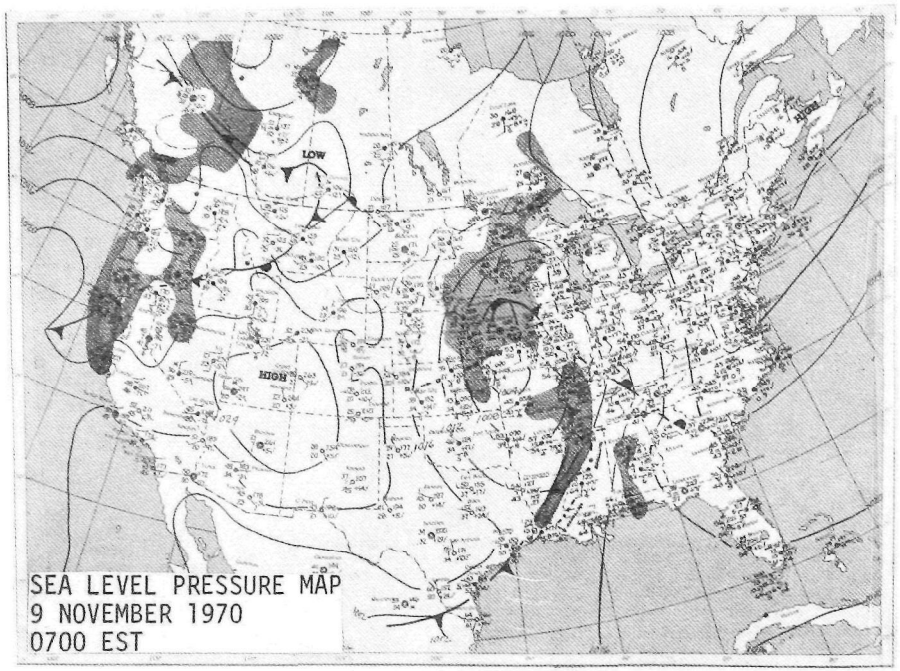
Extremely wide plume. Three cross sections completed. Good coverage of looping plume GLC by helicopter; partial coverage by bubblers. Bubblers picked up after two hours because of low GLC past 13 km.

Synoptic Situation

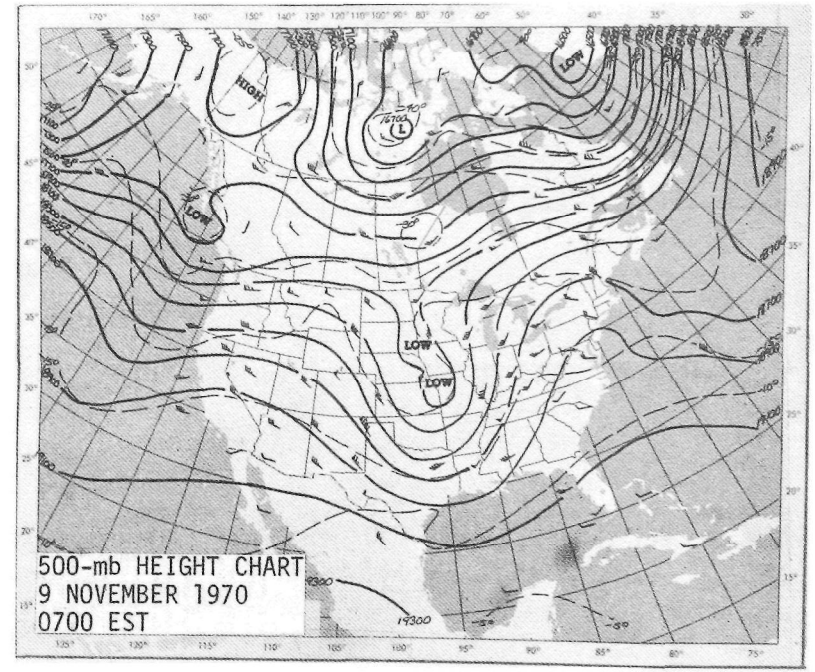
Regional - High over New Brunswick with ridge southwestward to Florida; closed low over Iowa and Missouri. Surface wind light southeasterly. Weak 500-mb ridge along Atlantic coast; long-wave trough over central U.S. Wind at 500 mb W 10 mps.

Local - Sunrise scattered high clouds. Stable with inversions 340 to 900 meters; lapse below and above to 1090 meters. Plume wind SSE 10 mps. Noon scattered middle clouds, broken high clouds with haze. Stable layer 625 to 850 meters; neutral below and lapse above to 1090 meters. Plume wind SE 13 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



SEA LEVEL PRESSURE MAP
9 NOVEMBER 1970
0700 EST



500-mb HEIGHT CHART
9 NOVEMBER 1970
0700 EST

Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 10 November 1970 Conemaugh Plume Unit 1

SO_2 Measurements

Helicopter Peak GLC
Helicopter Instantaneous GLC
Portable Bubbler GLC
On-stream AutoAnalyzer GLC

Meteorological Measurements

Radiosondes
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

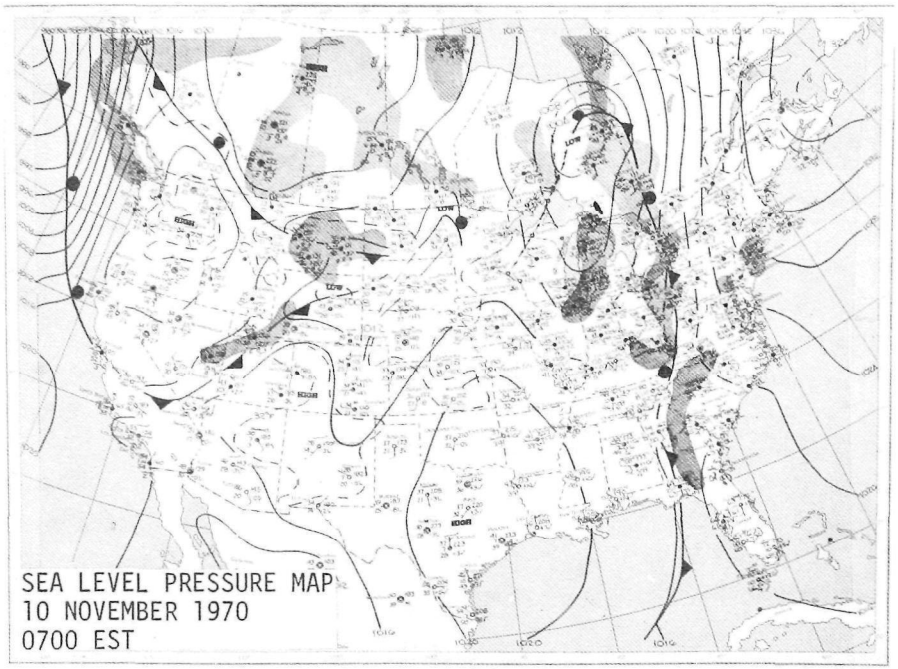
No plume cross sections attempted because of low clouds. Good coverage by helicopter and bubblers of GLC due to lee-side flow off Laurel Ridge under neutral conditions. Afternoon ground-level flight not attempted because of low ceiling and increased rainfall. Low-altitude termination of pilot balloon runs caused by low clouds.

Synoptic Situation

Regional - Closed low over eastern Ontario with stationary front southward through Florida Gulf coast; weak ridge along New England coast. Surface wind light easterly. Eastern U.S. under leading edge of long-wave 500-mb trough. Wind at 500 mb SW 25 mps.

Local - Sunrise low overcast with fog and haze. Stable with inversions 650 to 1135 meters; near-neutral below. Plume. wind SSW 2 mps. Noon low overcast with light rain showers. inversion layer 450 to 700 meters; near-neutral below and lapse above to 1085 meters. Plume wind SSE 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



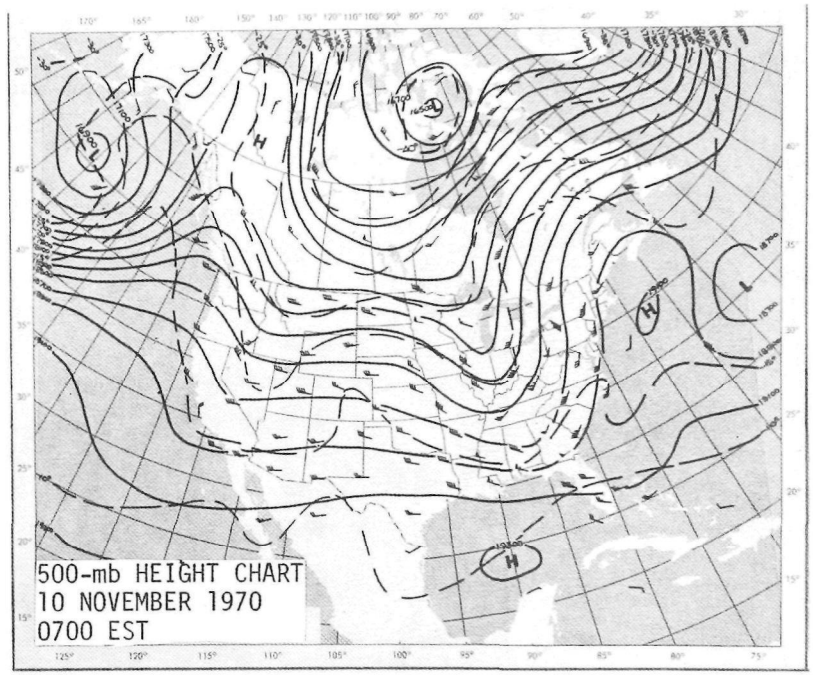


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 11 November 1970 Conemaugh Plume Unit 1

SO2 Measurements

Plume Cross Sections
Helicopter Peak GLC
On-stream AutoAnalyzer GLC
Helicopter Instantaneous GLC

Meteorological Measurements

Radiosonde
Helicopter Temperature Profiles
Pilot Balloons
Airport Surface Data

Other Participants

None

Commentary

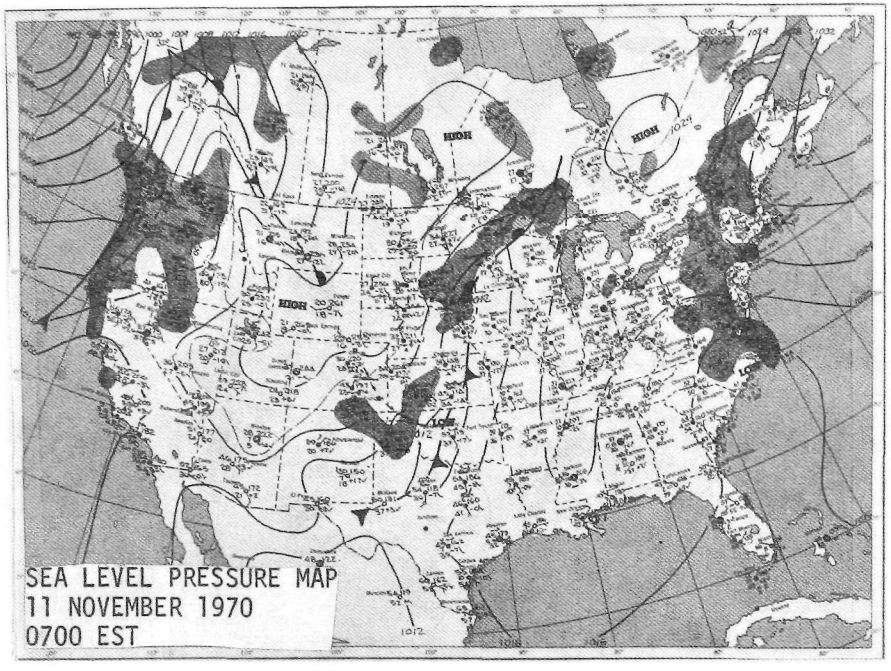
Extremely wide plume. Tops of all three cross sections incomplete because of low clouds; 16-km cross section flown during light rain. Partial coverage of GLC by helicopter; bubblers were not set out. Ground-level flights discontinued because of increased rainfall. GLC pattern at 4-km covered arc of 134°. Low-altitude termination of pilot balloon runs caused by low clouds; afternoon radiosonde not released. Plume heading across Chestnut Ridge.

Synoptic Situation

Regional - High over western Quebec with ridge through Louisiana Gulf coast; secondary ridge from Nova Scotia to New York. Surface wind N 5 mps. Weak NW-SE 500-mb trough over central Atlantic states. Wind at 500 mb light southeasterly.

Local - Sunrise low overcast. Stable with inversions surface to 200 meters and 670 to 800 meters; lapse between and above to 1070 meters. Plume wind ENE 2 mps. 11 AM low overcast with light rain showers. Near-neutral to 1090 meters. Plume wind ENE 2 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



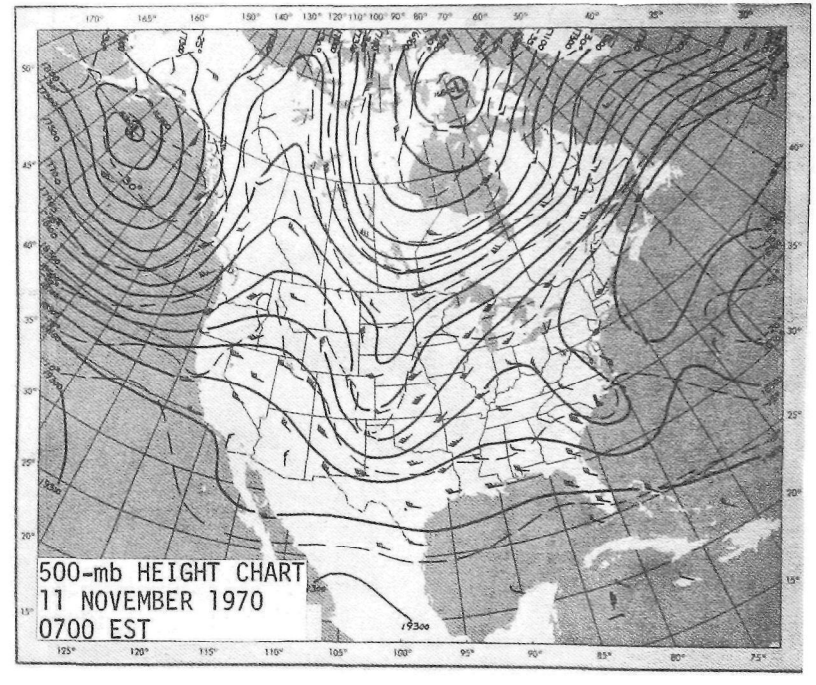


Table 1 (continued). DAILY EXPERIMENT SUMMARY

October 1970 Series 16 November 1970 Conemaugh Plume Unit 1 and Homer City Plume Unit 2

SO_2 Measurements

Plume Cross Sections
Helicopter Peak GLC

On-stream AutoAnalyzer GLC
Helicopter Instantaneous GLC

Meteorological Measurements

Helicopter Temperature Profiles
Pilot Balloons

Airport Surface Data

Other Participants

None

Commentary

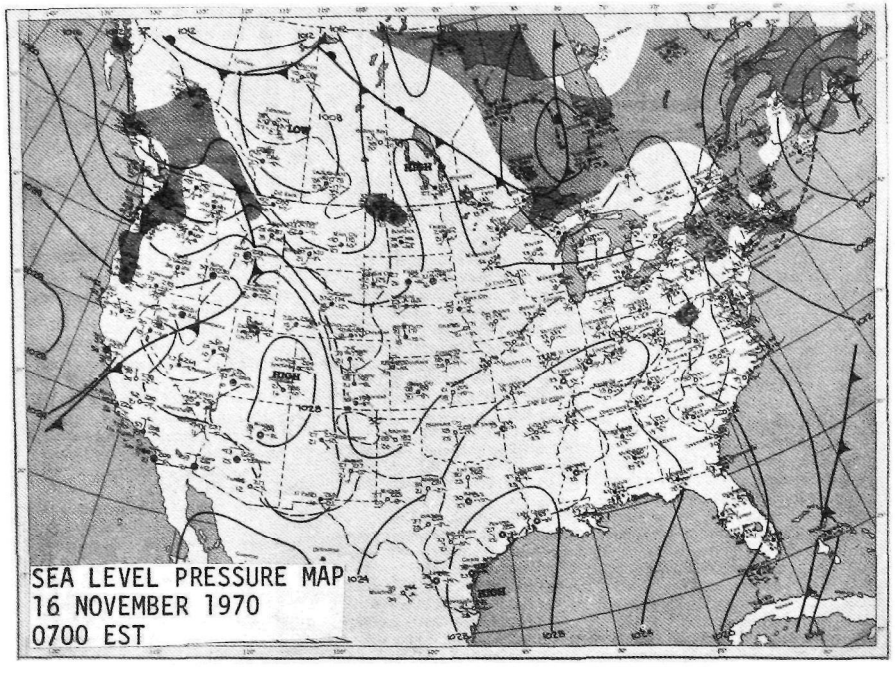
No plume cross sections attempted at Conemaugh because of low clouds and snow. Tops of all three cross sections at Homer City incomplete because of clouds. 10- and 16-km cross sections flown at 120-meter vertical intervals because of low fuel supply; 16-km cross section flown during light snow. Partial coverage of GLC by helicopter at Conemaugh and Homer City. Bubblers were not set out and no radiosonde released. Conemaugh plume heading across Laurel Ridge; Homer City plume heading across Chestnut Ridge.

Synoptic Situation

Regional - Weak ridge over eastern half U.S.; closed lows over central Ontario and Newfoundland. Surface wind light westerly. Eastern half U.S. under influence of long-wave 500-mb trough; closed low over Hudson and James Bays. Wind at 500 mb NW 20 mps.

Local - Sunrise at Conemaugh: broken low clouds; near-neutral to 1085 meters; plume wind WSW 5 mps. 1 PM at Homer City: broken low clouds with light snow showers; near-neutral to 1200 meters; plume wind W 6 mps.

Table 1 (continued). DAILY EXPERIMENT SUMMARY



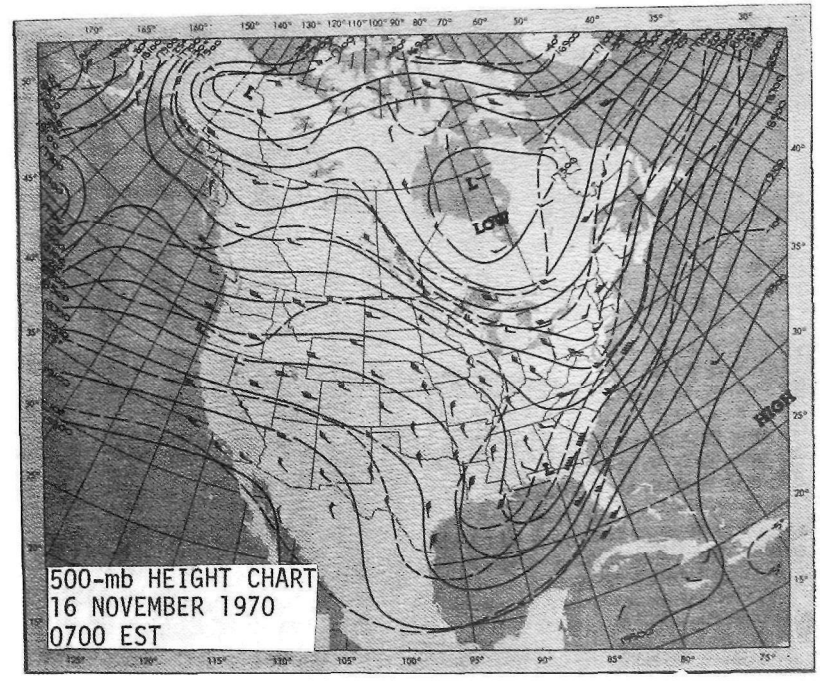


Table 1 (continued). DAILY EXPERIMENT SUMMARY

Brookhaven Plume Tracking Study 15 December 1970 Keystone Plume Unit 2

SO_2 Measurements

On-stream AutoAnalyzer GLC

Meteorological Measurements

Airport Surface Data

Other Participants

Brookhaven National Laboratory (airborne densitometer detection and sulfur hexaflouride tracking of Keystone plume)

Commentary

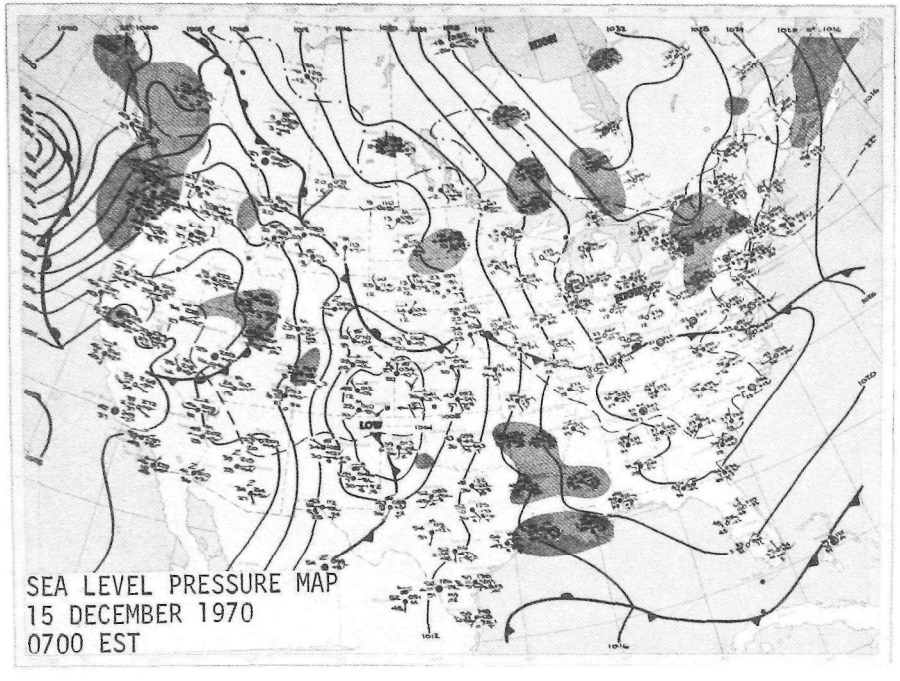
LAPPES series not in progress. No upper-air wind or temperature measurements obtained by APCO personnel in support of Brookhaven activities.

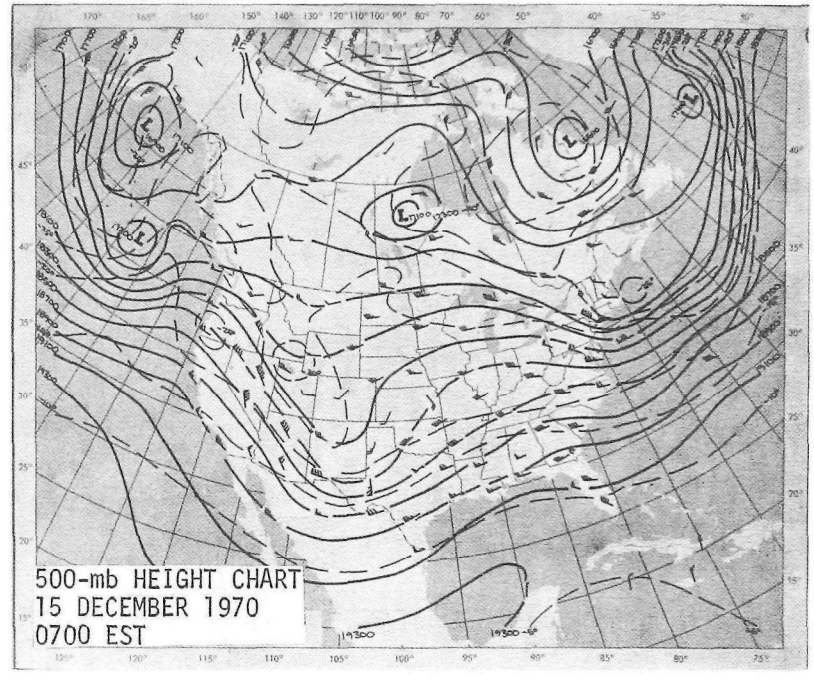
Synoptic Situation

Regional - Eastern third U.S. dominated by high pressure area; weak stationary front from Nebraska eastward through Virginia. Surface wind light northwesterly. Long-wave 500-mb trough along Atlantic coast; ridge over Mississippi Valley. Wind at 500 mb NW 25 mps.

Local - Sunrise clear. 10 AM clear. No helicopter temperature profiles or plume winds available; airport surface data listed in Table 2.

Table 1 (continued). DAILY EXPERIMENT SUMMARY





SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

Table 2 presents hourly meteorological and SO_2 measurements obtained at Jimmy Stewart Airport for each day during 1970 on which flights were made by the LAPPES helicopter or on which data were collected by LAPPES contractors. Although experimental activities lasted less than 12 hours in most instances, values for the entire 24 hours are included. Daily resultant winds, precipitation totals, average and peak SO_2 concentrations, and total radiation are also presented.

For the majority of days, SO_2 concentrations are not available for a few hours during the afternoon. This loss of data occurred while the Technicon AutoAnalyzer was switched from on-stream monitoring to bubbler analysis.

In relating the surface meteorological measurements obtained at the airport to plume dispersion at the Conemaugh Generating Station, the topographical effect of Laurel Ridge, mentioned in Part 1 under Topography and General Climatology, must be considered. Airport measurements of temperature, relative humidity, precipitation, and total radiation will not be representative of conditions existing at Conemaugh under the mechanically-induced cloud cover. Similarly, surface-wind directions and speeds in the proximity of Laurel Ridge may not resemble those measured at the airport.

Table 2. SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

Legend

Time, EST	:	Hour designating preceding 60 minutes.
Dir, deg	:	Hourly average surface wind direction in whole degrees of azimuth.
Speed, mps	:	Hourly average surface wind speed in meters per second to nearest tenth.
Temp, °C	:	Hourly average temperature in degrees centigrade to nearest tenth.
RH, %	:	Hourly average relative humidity in whole percent.
P, cm	:	Hourly total precipitation in centimeters to nearest hundredth.
SO_2, Avg	:	Hourly average SO_2 concentration in whole parts per hundred million by volume.
SO_2, Peak	:	Hourly peak SO_2 concentration in whole parts per hundred million by volume.
Ly/min	:	Total sun and sky radiation in Langleys per minute to nearest hundredth.
Day	:	1. Daily resultant wind direction in whole degrees of azimuth and wind speed in meters per second to nearest tenth. 2. Daily total precipitation in centimeters to nearest hundredth. 3. Daily average SO_2 concentration in whole parts per hundred million. Daily average not computed if more than 6 hours' data were missing. 4. Daily peak SO_2 concentration in whole parts per hundred million. Daily peak not listed if more than 6 hours' data were missing. 5. Daily total sun and sky radiation in whole Langleys.
Var	:	Surface wind direction variable.
Calm	:	Surface wind speed less than threshold of Aerovane sensor.
---	:	Missing data.

Table 2. SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

3 February 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	267	3.0	1.6	98				
0200	242	2.9	1.1	98				
0300	254	2.8	1.1	98				
0400	265	2.3	0.5	98				
0500	330	3.5	1.1	98				
0600	323	3.6	3.3	98	0.05			
0700	310	2.9	4.4	98	0.05			
0800	325	3.3	5.5	98	0.03			
0900	301	4.0	6.6	97	0.10			0.03
1000	292	5.0	7.7	97	0.08			0.05
1100	285	5.0	8.3	95	0.10			0.12
1200	288	5.5	7.7	95	0.08			0.14
1300	291	4.8	8.8	94	0.03			0.18
1400	294	4.3	9.4	87	0.03			0.28
1500	313	3.5	9.4	87	0.03			0.00
1600	279	6.6	-10.0	83				0.24
1700	277	7.0	-10.5	77				0.11
1800	285	6.2	-11.6	77				0.05
1900	290	6.2	-12.7	84				
2000	283	5.6	-13.8	78				
2100	292	4.9	-14.4	73				
2200	284	5.1	-14.4	86				
2300	279	5.2	-14.9	87				
2400	273	6.4	-15.5	88				
Day	288	4.3			0.58			72

9 February 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	109	3.3	1.1	89		3	3	
0200	102	3.2	1.1	91		3	3	
0300	106	3.7	0.5	93		2	3	
0400	096	3.6	0.5	97		2	2	
0500	108	3.6	0.5	98		2	2	
0600	108	4.2	0.5	98	0.03	2	2	
0700	099	3.6	0.5	98	0.03	1	2	
0800	112	3.7	1.1	91		2	2	
0900	112	3.9	1.1	91	0.03	1	1	0.03
1000	113	4.6	0.5	98	0.10	1	1	0.05
1100	112	4.1	0.5	98	0.15	0	0	0.09
1200	120	5.1	1.1	98	0.10	0	0	0.10
1300	114	6.1	2.2	97		0	0	0.14
1400	119	6.9	2.7	85		0	0	0.20
1500	129	6.2	2.7	87		0	0	0.16
1600	140	6.1	2.2	93		0	0	0.07
1700	108	3.6	2.2	95		0	0	0.03
1800	089	3.0	2.2	94		0	1	0.04
1900	100	3.2	1.6	93		1	1	
2000	083	2.9	1.6	92		0	1	
2100	104	4.1	1.1	92		1	2	
2200	085	3.6	1.1	94		2	2	
2300	081	3.5	0.5	98		2	2	
2400	075	2.9	0.5	98		2	2	
Day	108	4.0			0.44	1	3	55

10 February 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	059	2.6	0.5	98		2	2	
0200	069	2.9	0.5	98		1	2	
0300	088	2.1	0.5	98		1	1	
0400	046	2.3	0.5	98		1	1	
0500	039	2.6	0.5	98		1	1	
0600	060	3.3	0.0	98		1	1	
0700	027	0.6	0.0	98		1	1	
0800	335	1.2	0.0	98	0.05	1	2	
0900		Calm	0.0	98	0.10	1	2	0.02
1000	242	1.6	0.5	98	0.18	1	2	0.07
1100	269	2.5	0.5	98	0.05	1	2	0.13
1200	251	2.9	0.5	98	0.08	1	2	0.14
1300	262	3.6	0.5	98	0.08	3	3	0.21
1400	269	4.6	0.5	98	0.05	1	2	0.21
1500	274	5.9	0.5	98	0.03	1	2	0.17
1600	274	5.7	0.0	98	0.03	3	4	0.10
1700	274	6.5	0.0	98	0.03	4	4	0.05
1800	275	6.5	-0.5	98	0.03	4	4	0.02
1900	272	7.0	-0.5	98	0.03	5	5	
2000	274	7.2	-1.1	98		4	5	
2100	278	8.2	-1.1	98	0.03	6	7	
2200	274	8.2	-1.6	98	0.03	7	7	
2300	273	8.4	-2.2	98	0.03	7	8	
2400	265	9.2	-2.7	98	0.03	8	11	
Day	278	3.1			0.86	3	11	67

14 February 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	078	0.9	-20.0	95		5	6	
0200	074	1.6	-20.0	95		5	5	
0300	085	1.6	-21.1	95		6	8	
0400	079	1.5	-21.1	95		6	7	
0500	075	1.8	-20.5	95		6	7	
0600	070	1.8	-19.4	95		6	7	
0700	080	1.3	-18.3	95		7	8	
0800	087	1.2	-16.6	95		7	8	0.03
0900	088	1.3	-14.4	83		6	6	0.10
1000	086	3.1	-12.2	73		6	7	0.14
1100	091	2.7	-10.5	67		7	9	0.24
1200	079	2.7	8.8	87		6	6	0.41
1300	090	3.0	7.7	85		5	5	0.44
1400	098	3.5	7.2	82		6	7	0.46
1500	088	3.6	7.2	79		5	5	0.31
1600	090	4.2	7.7	77		4	5	0.18
1700	097	4.6	8.3	77		4	4	0.09
1800	091	4.5	8.8	84		4	4	0.03
1900	094	4.9	8.8	83		4	5	
2000	102	4.6	8.8	89		4	6	
2100	104	4.4	8.3	91		3	3	
2200	107	4.4	8.3	89		3	3	
2300	104	4.5	8.3	93		3	3	
2400	108	4.5	8.3	91		4	4	
Day	093	3.0			0.00	5	9	146

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

13 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	084	3.1	3.3	51		1	1	
0200	066	4.9	2.7	53		1	1	
0300	066	4.8	2.7	56		1	1	
0400	068	5.1	2.7	59		1	1	
0500	074	6.0	2.7	62		1	1	
0600	068	5.1	3.3	62		1	1	
0700	074	5.1	4.4	61		1	1	0.07
0800	092	4.9	6.6	55		1	1	0.34
0900	102	4.6	9.4	50		1	1	0.57
1000	116	4.9	10.5	45		1	1	0.63
1100	109	5.2	12.2	44		1	1	0.73
1200	109	5.4	12.2	43		2	2	0.74
1300	115	5.4	12.7	44		1	1	0.69
1400	114	4.2	12.7	44		1	1	0.40
1500	127	3.9	12.7	44		2	2	0.17
1600	141	4.0	12.7	46		2	3	0.10
1700	099	3.7	11.6	53		2	2	0.07
1800	098	4.3	11.6	53		2	2	0.14
1900	106	5.0	10.0	59		2	2	0.07
2000	120	4.1	8.3	77		2	2	
2100	108	2.7	7.2	83		1	2	
2200	077	2.9	6.6	91		1	1	
2300	091	2.5	6.6	93		0	1	
2400	107	3.1	6.6	93		0	0	
Day	096	4.1			0.00	1	3	283

14 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	091	2.9	6.1	98		1	1	
0200	096	3.2	6.1	98		1	1	
0300	101	3.4	6.6	97		1	1	
0400	095	2.4	6.6	97		1	1	
0500	098	3.6	6.1	97		0	1	
0600	097	3.5	5.5	98	0.03	1	1	
0700	082	3.2	5.0	98	0.25	1	1	
0800	090	3.8	4.4	98	0.38	0	0	0.04
0900	083	4.5	4.4	98	0.25	0	0	0.06
1000	086	4.7	4.4	98	0.25	1	1	0.09
1100	074	4.5	4.4	98	0.18	1	1	0.14
1200	080	3.4	4.4	98	0.08	1	1	0.16
1300	079	4.4	5.0	98	0.08	0	1	0.20
1400	079	4.5	5.0	98	0.18	0	0	0.25
1500	084	4.6	5.5	98	0.13	0	0	0.33
1600	076	3.5	5.5	98	0.05	0	0	0.23
1700	059	3.2	5.0	98	0.13	0	0	0.12
1800	064	3.0	5.0	98	0.03	1	1	0.08
1900	051	2.1	5.0	98	0.03	1	1	0.03
2000	037	0.9	5.0	98	0.03	1	1	
2100	033	2.2	5.0	96		1	1	
2200	025	1.7	4.4	98		1	2	
2300	021	2.1	4.4	98		1	2	
2400	036	3.0	5.0	98		1	1	
Day	077	3.1			2.08	1	2	104

19 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	078	4.3	4.4	67		4	4	
0200	060	5.8	4.4	69		2	3	
0300	081	4.4	4.4	68		1	1	
0400	087	4.1	4.4	69		0	1	
0500	080	4.1	4.4	68		0	0	
0600	088	5.2	4.4	65		0	0	
0700	085	4.7	4.4	69		0	0	
0800	083	5.5	4.4	69		0	0	0.07
0900	090	4.5	4.4	67		0	0	0.08
1000	094	3.8	5.0	65		0	0	0.10
1100	085	4.3	4.4	79	0.10	0	0	0.18
1200	099	3.6	4.4	97	0.08	0	0	0.23
1300	107	4.2	4.4	97	0.10	0	0	0.21
1400	105	4.6	5.0	97	0.08	0	0	0.34
1500	107	4.9	5.0	95	0.03	0	0	0.23
1600	111	5.6	5.5	89		0	0	0.23
1700	107	5.9	5.5	89		0	0	0.23
1800	105	5.1	5.5	89		1	1	0.10
1900	093	5.7	5.0	95		1	1	0.03
2000	104	4.4	5.0	95		1	1	
2100	104	5.1	5.0	91		1	1	
2200	103	4.2	5.5	91		1	1	
2300	103	5.5	5.5	89		1	1	
2400	104	6.7	5.5	87		2	2	
Day	095	4.7			0.39	1	4	122

20 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	101	6.2	5.5	97		1	2	
0200	104	5.6	5.0	97	0.10	1	1	
0300	109	8.8	5.0	97	0.18	1	1	
0400	115	9.0	5.5	97	0.13	1	1	
0500	134	6.3	6.1	95	0.03	1	1	
0600	133	7.2	6.1	91		1	1	
0700	136	7.0	6.1	89		0	1	0.05
0800	138	6.0	6.1	91		0	1	0.14
0900	140	5.5	7.7	97		0	1	0.51
1000	146	4.1	11.1	83		1	2	0.75
1100	146	4.3	12.2	85		1	2	0.82
1200	162	3.9	13.3	66		2	2	0.67
1300	226	11.0	15.5	43		1	2	1.00
1400	232	9.2	17.2	41		1	1	0.75
1500	235	9.7	17.7	36				0.78
1600	244	10.5	17.7	33				0.57
1700	238	10.5	17.7	33				0.41
1800	241	9.0	16.6	36				0.21
1900	232	5.5	15.5	39		1	1	0.07
2000	212	1.2	13.3	41		1	1	
2100	184	1.7	13.8	45		4	6	
2200	219	8.7	13.8	59		1	3	
2300	Var	2.6	13.8	79		0	1	
2400	089	1.2	10.5	95		0	0	
Day	182	3.7			0.44	1	6	404

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

21 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	089	1.3	10.0	97		0	1	
0200	103	2.2	11.1	83		1	1	
0300	104	3.6	12.2	67		1	1	
0400	132	5.6	12.2	71		1	1	
0500	124	3.6	11.6	85		1	2	
0600	127	4.9	11.6	87		1	1	
0700	147	5.3	13.3	69		1	1	0.05
0800	211	6.0	14.4	65		1	1	0.08
0900	224	9.6	14.9	61		1	2	0.41
1000	244	10.1	14.4	67	0.10	1	2	0.72
1100	254	11.9	14.4	53		1	1	0.85
1200	251	11.5	13.8	50		1	1	0.87
1300	253	10.6	13.8	50		1	1	0.80
1400	251	10.2	13.3	50		1	1	0.81
1500	265	10.6	12.7	48				0.65
1600	267	10.4	12.2	47				0.24
1700	263	9.1	12.2	47				0.39
1800	258	8.4	11.6	48				0.24
1900	263	6.0	11.1	50		1	1	0.05
2000	276	5.3	10.5	53		1	1	
2100	294	4.8	9.4	59		0	0	
2200	283	7.6	8.8	57		0	0	
2300	273	7.1	7.7	61		0	0	
2400	264	6.2	7.7	63		4	6	
Day	248	5.1			0.10	1	6	370

22 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	264	5.7	6.6	65		3	5	
0200	252	4.2	4.4	73		3	5	
0300	239	4.5	6.1	73		1	1	
0400	230	4.5	5.5	71		3	3	
0500	234	3.9	4.4	77		3	4	
0600	253	1.7	3.3	79		3	3	
0700	224	1.5	5.5	89		4	5	0.20
0800	228	3.6	8.8	69		6	9	0.43
0900	245	6.2	11.6	55		5	6	0.64
1000	264	7.8	13.3	50		3	4	0.71
1100	272	8.0	14.9	45		5	8	0.98
1200	261	7.2	15.5	42		5	8	1.04
1300	266	6.1	16.6	39		5	6	1.06
1400	273	5.1	17.7	38		5	8	0.99
1500	272	5.2	16.6	37		6	9	0.54
1600	264	4.5	16.6	37		6	9	0.32
1700	258	3.8	16.6	37		6	11	0.20
1800	292	1.5	16.1	37				0.15
1900	100	0.7	14.4	39				0.02
2000	085	0.9	12.2	50		-	-	
2100	086	1.7	11.6	51				
2200	109	2.2	13.3	50		3	5	
2300	090	3.4	13.8	44		3	3	
2400	101	2.9	14.4	41		3	5	
Day	254	2.9			0.00	3	11	437

23 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	131	4.9	15.5	41		1	2	
0200	137	5.2	15.5	41		1	2	
0300	135	3.8	15.5	43	0.03	2	2	
0400	144	2.5	14.9	53		1	2	
0500	118	3.2	12.2	97	0.41	1	2	
0600	125	2.7	12.7	98	0.20	1	1	
0700	176	3.5	13.3	98	0.03	1	2	
0800	200	5.0	14.9	98		2	4	0.06
0900	199	4.6	16.1	98		3	5	0.17
1000	210	4.2	16.6	98		2	2	0.30
1100	202	4.1	17.7	98		2	2	0.18
1200	200	4.0	18.8	97		1	1	0.25
1300	204	5.6	19.4	91		3	5	0.36
1400	205	6.1	20.0	87		2	3	0.52
1500	197	6.3	20.0	87		2	3	0.39
1600	199	6.0	20.0	87				0.33
1700	205	6.2	19.4	85		2	2	0.28
1800	208	6.8	18.8	84		2	5	0.14
1900	215	6.2	17.7	85		2	2	0.05
2000	210	3.9	16.6	97		1	1	
2100	199	3.0	14.9	97		1	2	
2200	199	3.4	13.8	97		1	2	
2300	220	2.0	13.3	97		0	0	
2400	149	1.9	13.3	97		1	2	
Day	189	3.8			0.67	1	5	182

24 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	201	1.0	13.3	97		2	3	
0200	197	1.8	13.8	97	0.10	1	3	
0300	199	3.5	13.8	97	0.10	2	3	
0400	143	2.5	13.8	97	0.05	1	2	
0500	137	2.5	13.8	97	0.25	0	0	
0600	146	2.7	13.8	97	0.25	0	0	
0700	112	2.8	14.4	97		0	0	0.06
0800	139	5.3	14.9	96		0	0	0.09
0900	177	4.7	16.6	89		1	1	0.07
1000	236	2.5	16.6	97	0.20	0	1	0.07
1100	171	3.0	16.6	97	0.03	1	2	0.12
1200	222	7.7	18.3	90		1	1	0.20
1300	221	6.9	18.8	69		0	1	0.32
1400	237	10.8	18.3	63		0	1	0.26
1500	235	10.8	16.6	79	0.05	1	1	0.12
1600	239	8.9	15.5	97	0.08	0	1	0.10
1700	285	8.9	11.1	97	0.13	0	1	0.07
1800	309	6.1	9.4	89		1	1	0.13
1900	297	4.2	7.7	93		1	1	0.09
2000	284	4.0	7.2	97		0	0	
2100	262	3.1	6.6	97		1	2	
2200	239	3.0	5.5	97		1	1	
2300	224	3.4	5.5	97		0	1	
2400	227	2.8	5.0	97		1	1	
Day	229	3.2			1.24	1	3	102

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

25 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	234	1.8	4.4	97		1	1	
0200	226	2.3	4.4	97		2	3	
0300	229	1.6	4.4	97		3	4	
0400	228	2.0	4.4	97		2	3	
0500	219	2.2	5.0	97		3	3	
0600	216	1.9	5.5	97		3	3	
0700	214	2.4	6.1	97		2	3	0.08
0800	217	2.7	7.7	97		4	4	0.25
0900	216	3.7	10.0	89		5	6	0.63
1000	222	4.4	14.4	59		5	6	0.83
1100	236	5.7	16.1	45		5	6	0.94
1200	248	7.8	16.6	39		3	4	0.75
1300	262	6.2	16.6	34		2	3	0.80
1400	264	6.6	17.7	31		1	2	1.16
1500	267	5.8	17.2	31				0.71
1600	267	4.4	17.2	31				0.40
1700	245	4.4	17.2	31				0.40
1800	236	3.5	16.1	33		1	2	0.14
1900	230	2.4	13.8	39		1	2	0.06
2000	195	0.8	11.1	47		1	1	
2100	208	1.0	10.0	53		3	6	
2200		Calm	9.4	55		4	6	
2300	088	0.6	7.7	69		2	3	
2400	079	0.8	7.2	79		1	1	
Day	240	2.8			0.00	2	6	429

27 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	058	0.6	11.1	97		0	1	
0200	119	1.1	10.5	97		1	1	
0300	112	0.6	8.8	97		1	1	
0400	078	1.1	7.7	97		1	1	
0500	071	1.2	7.7	97		1	1	
0600	076	2.0	7.7	97		1	1	
0700	078	2.3	10.0	98		1	1	0.21
0800	074	2.4	12.2	87		1	2	0.43
0900	084	1.4	16.6	67		1	2	0.66
1000	Var	1.1	19.4	53		4	9	0.84
1100	Var	1.3	21.6	47		7	8	0.95
1200	281	1.3	22.2	31		4	5	1.03
1300	Var	1.6	22.7	30		3	4	1.04
1400	Var	1.8	23.8	28		3	3	1.01
1500	Var	1.5	23.8	28		-		0.88
1600	300	1.6	23.3	29				0.65
1700	257	2.4	22.2	35		2	2	0.45
1800	262	2.4	20.5	41		1	2	0.20
1900	287	1.5	17.7	57		1	1	0.06
2000	097	1.0	16.1	61		1	1	
2100	108	1.6	17.7	53		1	1	
2200	144	4.4	17.2	56		1	1	
2300	152	4.2	17.2	57		1	1	
2400	160	4.3	16.6	56		0	1	
Day	128	0.6			0.00	2	9	505

28 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	173	3.0	16.1	55		1	1	
0200	172	2.7	16.1	53		1	1	
0300	154	2.6	15.5	51		1	2	
0400	202	2.1	14.4	53		2	2	
0500	064	1.1	12.7	63		1	2	
0600	083	0.9	13.8	63		1	1	
0700	118	0.4	15.5	63		1	1	0.12
0800	112	1.1	16.6	55		1	1	0.19
0900	123	0.8	18.3	53		2	4	0.27
1000	187	1.3	18.8	62		4	6	0.31
1100	226	3.0	20.5	59		2	3	0.35
1200	229	2.8	21.1	53		7	10	0.79
1300	217	2.7	21.6	59		6	10	0.61
1400	222	5.3	22.2	61		5	11	0.64
1500	238	3.7	22.7	59				0.79
1600	237	3.5	22.7	59				0.54
1700	232	3.4	22.7	55		-		0.50
1800	236	2.7	21.6	57			-	0.28
1900	215	2.6	20.0	65		0	0	0.08
2000	236	1.0	17.7	79		0	0	
2100	195	1.4	16.6	85		0	0	
2200	203	0.8	15.5	93		3	5	
2300	118	0.6	14.9	95		6	9	
2400		Calm	14.4	98		3	5	
Day	207	1.6			0.00	2	11	328

29 April 1970

Time, EST	Dir. deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	100	0.6	14.4	98	0.05	2	2	
0200	168	0.7	14.4	98		2	3	
0300	216	1.6	14.9	97		5	8	
0400	256	1.5	15.5	97		2	2	
0500	084	1.6	15.5	97		4	4	
0600	112	0.9	15.5	98	0.03	3	3	
0700	098	1.0	15.5	98	0.08	3	4	0.05
0800	089	2.1	14.9	98		2	3	0.07
0900	137	2.2	16.1	98		1	2	0.13
1000	165	2.2	17.7	79		2	2	0.32
1100	210	3.6	21.1	75		6	8	0.84
1200	238	3.7	21.6	75		5	8	0.66
1300	238	4.1	23.3	67		3	4	0.89
1400	236	3.4	23.8	59		2	2	0.75
1500	215	3.7	23.8	59		3	3	0.60
1600	229	3.4	24.4	55		2	3	0.58
1700	224	3.4	23.8	57		2	2	0.37
1800	224	2.1	23.8	57		2	2	0.23
1900	216	2.0	22.2	69		1	2	0.07
2000		Calm	20.0	83		1	1	
2100	079	0.5	17.7	93		1	3	
2200	092	0.8	16.6	97		2	2	
2300	082	0.7	16.1	97		2	2	
2400	083	1.2	15.5	97		2	2	
Day	203	1.2			0.16	3	8	334

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

30 April 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	068	0.5	15.5	98		2	2	
0200	108	2.5	15.5	98		1	2	
0300	Var	1.3	16.1	89		1	1	
0400	Var	0.7	15.5	95		1	1	
0500	118	2.1	15.5	85		1	2	
0600	121	2.8	17.2	83		0	0	
0700	Var	0.9	17.7	73		1	1	0.20
0800	154	2.7	19.4	67		1	2	0.35
0900	146	3.7	21.6	67		2	5	0.64
1000	147	4.1	23.3	59		2	5	0.72
1100	149	4.0	24.4	53		2	4	0.81
1200	151	4.0	24.9	50		1	1	0.67
1300	149	4.9	26.6	45		2	3	0.98
1400	159	3.8	26.6	45		2	2	0.49
1500	167	3.1	27.2	45				0.50
1600	208	2.9	26.6	44				0.53
1700	196	4.1	27.7	43				0.43
1800	163	5.5	27.2	41				0.15
1900	152	4.0	25.5	47		1	2	0.05
2000	152	4.3	24.9	50		2	3	
2100	143	3.7	23.3	61		0	0	
2200	137	4.5	22.7	61		0	0	
2300	146	5.5	22.2	61		0	0	
2400	164	4.4	21.6	61		1	1	
Day	152	3.0			0.00	1	5	391

1 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	156	4.4	21.1	61		1	1	
0200	149	4.5	20.0	61		1	1	
0300	144	5.6	19.4	63		0	0	
0400	142	5.1	18.8	63		0	1	
0500	142	4.7	18.3	67		0	0	
0600	142	4.2	17.7	68		0	1	
0700	141	4.3	18.8	67		0	1	0.20
0800	160	4.2	21.1	58	0.08	1	1	0.45
0900	184	5.0	22.7	53	0.03	1	2	0.54
1000	209	6.1	24.4	50		5	11	0.74
1100	203	6.7	24.9	47		0	0	0.67
1200	204	6.5	26.1	48		4	8	1.03
1300	228	6.7	28.3	46				0.85
1400	214	6.6	28.3	46		-	-	0.85
1500	213	5.9	28.3	46				0.75
1600	222	7.0	28.8	45				0.56
1700	206	5.9	27.7	45				0.48
1800	209	5.8	26.6	47		0	1	0.18
1900	187	4.7	25.5	50		2	3	0.09
2000	214	3.6	22.2	59		1	2	
2100	192	2.1	21.1	63		2	4	
2200	155	2.6	21.1	55		2	3	
2300	150	3.0	20.5	59		1	1	
2400	175	1.3	20.0	64		2	2	
Day	186	4.2			0.11	1	11	443

2 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	246	1.6	18.8	75		1	1	
0200	249	1.0	18.8	83		1	2	
0300	275	1.1	18.8	86	0.03	2	2	
0400	288	2.8	18.3	91		1	2	
0500	264	2.3	17.7	95		1	1	
0600	318	3.3	15.5	84	0.03	1	1	
0700	332	2.7	14.9	81		1	1	0.07
0800	325	2.9	14.4	81		1	1	0.09
0900	312	2.5	14.4	81		1	1	0.10
1000	316	2.5	14.4	80		1	1	0.16
1100	316	2.9	13.8	80		1	1	0.19
1200	310	2.1	13.3	82		1	1	0.18
1300	319	2.4	12.7	83		1	1	0.18
1400	309	2.5	12.7	83		1	1	0.22
1500	313	2.6	11.6	89	0.03	1	1	0.13
1600	306	1.9	10.5	97	0.05	1	1	0.08
1700	284	2.6	10.0	97	0.05	1	1	0.07
1800	287	2.3	8.8	97	0.05	1	1	0.04
1900	286	2.3	8.3	97	0.10	1	1	0.03
2000	305	2.2	7.7	97	0.05	0	1	
2100	316	3.0	7.2	97	0.08	2	2	
2200	326	2.5	7.2	97	0.03	1	1	
2300	327	1.2	6.6	97		1	1	
2400	301	0.8	6.6	97		1	1	
Day	305	2.1			0.50	1	2	92

3 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	279	0.8	6.6	98		1	1	
0200	286	1.4	6.1	98		1	2	
0300	288	1.4	6.1	98		2	2	
0400	287	1.7	6.1	98		2	2	
0500	285	1.7	5.5	97		2	2	
0600	298	0.9	5.5	98		2	2	
0700	289	1.8	7.2	87		2	3	
0800	296	2.4	8.3	75		3	3	
0900	319	2.6	9.4	59		2	3	0.10
1000	319	2.4	10.5	59		2	2	0.26
1100	261	3.3	11.1	54		6	9	0.41
1200	256	3.6	11.6	51		8	13	0.59
1300	286	3.3	13.3	47		6	9	0.60
1400	263	3.6	13.3	46		5	7	0.83
1500	266	3.2	13.3	45		6	8	0.50
1600	274	3.4	12.2	46		7	8	0.26
1700	267	2.9	11.6	50		7	9	
1800	290	2.2	11.1	50		4	6	
1900	295	1.0	10.0	53		2	3	
2000		Calm	7.7	81		2	2	
2100		Calm	6.6	87		2	3	
2200		Calm	6.6	91		3	4	
2300	072	0.5	6.1	98		5	7	
2400		Calm	5.5	98		6	8	
Day	281	1.7			0.00	4	13	213

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

4 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100		Calm	5.5	100		5	6	
0200		Calm	5.0	100		5	5	
0300	101	0.7	4.4	100		3	5	
0400	095	0.7	3.3	100		2	3	
0500	096	0.9	2.7	100		2	3	
0600	102	0.8	3.3	100		1	2	
0700		Calm	6.6	100		2	4	0.22
0800	207	0.4	10.0	83		2	3	0.39
0900	196	2.5	12.2	59		4	8	0.70
1000	236	2.7	13.8	48		7	10	0.82
1100	205	1.8	15.5	45		8	9	0.90
1200	216	2.1	17.2	37		9	10	1.03
1300	222	2.3	18.3	36		5	7	0.99
1400	235	2.8	18.8	36		7	7	0.96
1500	246	3.8	18.8	35				0.76
1600	240	3.4	18.8	37				0.53
1700	243	3.6	18.3	39				0.30
1800	209	4.2	17.2	41		7	9	0.25
1900	199	5.0	16.6	43		6	10	0.10
2000	216	3.2	15.5	47		2	3	
2100	344	5.3	11.6	97	0.08	1	2	
2200	076	1.0	11.1	100		0	1	
2300	194	2.2	11.1	100		1	2	
2400	169	1.2	10.0	100		3	5	
Day	221	1.4			0.08	3	10	477

5 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	222	1.3	9.4	100		2	4	
0200	211	1.5	8.8	100		2	2	
0300	197	0.4	8.3	100		1	1	
0400		Calm	7.7	100		1	1	
0500	185	0.6	6.6	100		2	4	
0600	212	1.1	7.2	100		3	4	0.06
0700	215	1.7	9.4	100		3	3	0.21
0800	209	4.3	11.1	100		3	5	0.42
0900	234	4.2	12.2	95		7	8	0.52
1000	236	6.8	14.4	61		8	8	0.88
1100	254	6.8	16.6	45		6	8	1.01
1200	248	6.5	17.2	33		3	4	1.09
1300	242	6.1	19.8	31		4	4	1.09
1400	247	6.9	19.4	29		3	4	1.07
1500	253	7.7	20.0	29				0.94
1600	246	8.1	17.7	30				0.15
1700	264	7.4	16.6	31	0.03			0.05
1800	278	9.6	12.2	65	0.08			0.05
1900	280	7.8	10.0	98	0.10		-	0.02
2000	306	3.8	8.8	97	0.03	1	1	
2100	310	3.9	7.2	75		1	1	
2200	312	4.7	5.5	71		1	2	
2300	306	3.4	3.8	79		0	0	
2400	305	2.6	3.8	80		0	0	
Day	259	3.9			0.24	2	8	454

6 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	315	3.0	3.8	75		0	0	
0200	313	2.5	3.3	75		1	1	
0300	296	3.2	2.7	87		2	2	
0400	309	1.5	1.1	91		1	1	
0500	284	1.5	0.0	100		1	2	
0600	287	2.3	1.1	100		2	2	0.04
0700	266	3.8	1.6	100		2	2	0.12
0800	284	5.1	2.7	85		1	1	0.35
0900	308	4.2	2.2	89		1	1	0.14
1000	298	5.3	3.3	65		1	1	0.26
1100	303	4.7	5.0	69		1	1	0.66
1200	301	6.0	5.5	47		1	1	0.88
1300	298	7.0	6.6	41		1	1	1.00
1400	307	6.8	7.2	39		1	1	1.00
1500	305	6.7	7.2	38		1	1	0.84
1600	311	6.1	6.1	37		0	0	0.87
1700	307	5.9	7.2	35		0	1	0.59
1800	307	5.2	6.1	35		0	1	0.36
1900	302	4.7	5.0	37		1	1	0.13
2000	289	4.5	3.3	42		1	1	
2100	290	2.8	1.1	51		1	1	
2200	288	2.3	0.5	65		1	1	
2300	283	2.0	-1.1	73		2	2	
2400	289	1.1	-1.6	81		2	2	
Day	299	4.0			0.00	1	2	434

7 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	279	0.6	2.7	97		1	1	
0200		Calm	3.8	98		1	2	
0300		Calm	4.4	98		2	2	
0400	232	0.6	4.4	98		1	1	
0500		Calm	5.0	98		1	1	
0600	239	0.5	3.8	98		1	1	0.12
0700	231	1.5	1.1	97		1	1	0.31
0800	233	2.5	2.2	73		2	2	0.44
0900	237	2.3	4.4	50		2	2	0.73
1000	269	2.8	6.6	36		1	1	0.88
1100	261	3.4	8.3	33		1	2	1.04
1200	270	3.5	10.0	31		3	6	1.10
1300	269	4.2	11.1	29		3	4	1.13
1400	264	4.5	12.2	27		6	8	1.07
1500	275	4.9	13.3	25		7	10	0.95
1600	267	5.9	13.3	25		8	11	0.76
1700	271	5.5	13.8	23		8	10	0.54
1800	264	4.4	12.7	23		5	9	0.25
1900	278	2.7	10.5	27		5	6	0.07
2000	244	0.7	7.2	39		4	4	
2100	217	1.5	5.5	50		5	6	
2200	215	1.4	5.5	51		6	6	
2300	216	1.7	7.2	51		5	6	
2400	233	0.7	7.7	53		4	5	
Day	259	2.2			0.00	3	11	563

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

8 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	229	0.8	7.7	63		5	5	
0200	220	2.5	7.7	53		5	7	
0300	214	2.6	7.7	53		4	4	
0400	204	0.9	7.7	51		4	5	
0500	228	1.7	8.3	51		5	5	
0600	217	2.1	10.0	48		5	5	0.04
0700	221	2.7	11.1	46		4	4	0.12
0800	213	3.8	13.3	45		4	5	0.38
0900	224	5.0	16.6	45		5	6	0.52
1000	233	6.6	18.8	45		7	8	0.79
1100	232	6.3	21.6	43		7	8	0.91
1200	238	7.4	23.3	41		5	6	1.03
1300	243	8.8	23.3	40		3	5	0.82
1400	244	8.1	24.4	39		3	3	0.81
1500	245	8.9	24.4	37				0.67
1600	237	8.8	24.4	36				0.71
1700	240	8.7	23.8	35				0.46
1800	247	7.6	23.3	36				0.23
1900	246	5.1	22.2	41				0.11
2000	239	3.8	20.0	45				
2100	240	3.3	17.7	51		1	2	
2200	243	3.4	17.7	53		2	2	
2300	217	1.4	15.5	63		2	3	
2400	218	0.5	13.3	79		1	2	
Day	236	4.5			0.00	3	8	456

9 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	218	1.6	12.7	89		3	4	
0200	205	3.1	12.7	91		2	3	
0300	212	2.3	12.2	92		2	3	
0400	216	2.0	12.2	89		1	1	
0500	214	1.6	11.6	93		1	2	
0600	220	1.1	12.2	95		2	2	0.08
0700	210	2.6	15.5	89		2	3	0.24
0800	219	4.6	18.8	69		3	4	0.45
0900	238	6.9	21.1	57		5	5	0.67
1000	236	7.0	23.3	50		3	4	0.84
1100	239	7.7	24.4	43		3	4	0.90
1200	248	8.8	24.9	41		2	2	0.84
1300	256	7.2	25.5	40		2	2	0.78
1400	235	8.8	25.5	39				0.76
1500	242	8.4	26.6	37				0.80
1600	219	6.9	26.6	37				0.60
1700	228	7.0	26.6	37				0.48
1800	226	6.3	25.5	38		1	1	0.24
1900	224	4.8	23.8	40		1	1	0.09
2000	234	2.6	20.5	40		1	1	
2100	214	1.3	18.3	65		1	1	
2200	222	1.0	17.7	69		2	3	
2300	223	1.2	16.6	71		5	8	
2400	243	1.2	14.9	83		2	7	
Day	232	4.3			0.00	2	8	466

10 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	182	0.8	13.8	93		3	3	
0200		Calm	13.3	95		5	6	
0300		Calm	13.3	97		4	4	
0400	212	1.9	13.3	93		6	9	
0500	210	1.8	12.7	94		10	13	
0600	208	1.8	13.3	97		6	9	0.07
0700	208	2.5	17.2	79		7	9	0.24
0800	209	3.8	20.0	59		6	6	0.49
0900	205	4.7	22.7	55		5	6	0.59
1000	218	6.2	24.4	43		3	5	0.84
1100	224	7.8	25.5	39		1	1	1.04
1200	215	7.9	26.1	39		0	0	1.00
1300	207	7.9	25.5	37	0.03	1	2	1.12
1400	213	5.8	19.4	93	0.10	0	1	0.25
1500	203	4.2	23.3	69		1	6	0.82
1600	202	4.7	24.4	55		0	0	0.60
1700	196	4.2	24.4	57		1	3	0.40
1800	Var	6.2	21.6	55		3	6	0.15
1900	279	4.4	18.8	75		1	2	0.04
2000	214	2.3	17.7	87		2	3	
2100	236	2.6	17.7	89		2	2	
2200	207	2.7	17.2	91		2	3	
2300	212	2.1	16.1	97		1	2	
2400	210	2.9	15.5	98		2	2	
Day	214	3.3			0.13	3	13	459

11 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	220	3.0	14.9	98		3	5	
0200	236	2.8	14.9	98		3	5	
0300	256	1.7	14.4	100		2	2	
0400	209	1.7	13.3	100		2	3	
0500	224	0.8	13.3	100		2	3	
0600	202	1.7	13.8	100		5	7	0.04
0700	209	2.8	14.9	100		5	6	0.06
0800	205	2.9	15.5	97		4	5	0.12
0900	205	3.0	17.2	89		5	6	0.21
1000	217	3.1	18.8	85		6	6	0.70
1100	205	3.1	21.1	69		4	5	0.81
1200	206	3.6	22.7	59		5	8	0.86
1300	210	4.2	24.4	50		2	5	0.82
1400	237	4.8	24.9	50		0	0	0.95
1500	229	4.5	24.4	47		-	-	0.91
1600	234	4.4	24.9	50				0.52
1700	236	4.5	24.4	55				0.50
1800	214	2.8	22.7	67				0.19
1900	217	3.4	21.1	81		2	2	0.08
2000	226	0.9	18.8	91		1	1	
2100		Calm	16.6	97		1	1	
2200	099	1.0	15.5	98		1	2	
2300	087	0.8	15.5	98		1	1	
2400	082	0.9	15.5	98		1	1	
Day	218	2.3			0.00	2	8	406

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

12 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	216	3.6	16.1	97	0.30	0	1	
0200	243	1.4	16.1	98	0.13	0	0	
0300	187	1.7	16.1	98	0.23	1	1	
0400	176	0.8	15.5	98		2	2	
0500	254	0.4	14.9	98		2	2	
0600	122	0.6	14.9	98		2	2	0.04
0700	197	1.2	16.6	98		2	3	0.14
0800	205	3.5	17.2	98		2	2	0.23
0900	223	3.6	17.7	97		2	2	0.22
1000	206	3.2	20.0	89		2	5	0.61
1100	219	3.3	21.6	69		6	10	0.86
1200	202	2.9	23.3	63		2	4	1.10
1300	232	3.5	23.3	62		1	2	0.87
1400	216	3.9	23.8	61		1	2	0.81
1500	229	4.8	24.4	59				0.67
1600	242	5.1	24.4	53				0.65
1700	225	5.0	23.3	61				0.30
1800	225	4.3	22.7	71	0.03			0.20
1900	235	4.4	22.2	73	0.03	2	2	0.09
2000	231	5.1	20.0	79	0.03	2	2	
2100	212	2.6	18.8	97	0.08	3	3	
2200	185	5.5	18.8	92		4	5	
2300	212	4.4	17.7	92		3	5	
2400	224	2.3	16.6	95		1	1	
Day	218	3.1			0.83	2	10	407

13 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	207	2.7	16.1	98		2	3	
0200	214	2.9	15.5	98		4	4	
0300	219	2.6	14.9	98		4	4	
0400	215	2.7	14.9	98		4	4	
0500	219	2.2	14.9	98		2	3	
0600	218	2.6	15.5	98		2	2	0.03
0700	215	4.8	16.1	98		2	2	0.07
0800	207	3.5	16.1	98		3	3	0.07
0900	220	5.2	16.6	98		3	4	0.23
1000	216	5.1	18.8	92		1	2	0.51
1100	214	4.4	20.0	83		1	1	0.61
1200	207	4.6	21.1	85		3	6	0.51
1300	204	4.5	20.5	87		3	5	0.40
1400	217	4.6	20.5	95		3	6	0.41
1500	218	3.0	22.2	89		2	2	0.50
1600	217	5.5	17.7	98	0.30	1	2	0.06
1700	194	3.9	17.7	98	0.05	1	1	0.18
1800	194	2.7	17.7	98		1	2	0.21
1900	232	2.4	17.2	98	0.30	1	1	
2000	165	1.7	16.6	98	0.10	1	2	
2100	186	0.9	16.6	98	0.05	1	1	
2200	172	1.0	16.1	98		0	1	
2300		Calm	16.1	98	0.05	0	0	
2400		Calm	15.5	98		0	1	
Day	211	3.0			0.85	2	6	227

15 May 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	092	1.9	14.9	98		0	0	
0200	108	2.3	15.5	97		0	0	
0300	117	2.7	14.9	97		1	1	
0400	108	3.2	14.9	97		1	1	
0500	118	3.8	14.9	97		2	2	
0600	128	5.1	15.5	97		2	2	0.04
0700	136	4.9	14.9	98	0.15	2	2	0.04
0800	095	3.7	14.9	98	0.76	1	2	0.05
0900	121	4.5	16.1	97	0.03	2	2	0.35
1000	138	5.1	17.7	86		2	3	0.66
1100	145	5.0	19.4	79		3	4	0.84
1200	154	5.5	20.5	75		4	6	1.00
1300	145	4.6	22.2	71		5	6	1.05
1400	155	4.3	23.3	67		5	6	0.98
1500	129	4.0	23.3	67		4	5	0.87
1600	130	4.6	22.2	71		3	4	0.68
1700	129	4.5	20.0	75		2	3	0.48
1800	118	4.0	18.3	84		1	2	0.28
1900	122	4.9	16.1	91		1	2	0.11
2000	109	4.4	15.5	96		1	2	
2100	111	4.3	15.5	97		2	2	
2200	121	5.5	15.5	97		1	1	
2300	130	5.5	15.5	98		1	1	
2400	137	7.9	15.5	98		1	1	
Day	128	4.3			0.94	2	6	446

1 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100		Calm	5.5	100		0	0	
0200		Calm	5.0	100		0	0	
0300	082	0.5	4.4	100		0	0	
0400	077	0.7	4.4	100		0	0	
0500	064	0.7	4.4	100		0	0	
0600	037	0.6	3.8	100		0	0	
0700	034	0.7	4.4	100		0	0	0.06
0800	089	0.7	6.1	100		0	1	0.23
0900	111	0.6	9.4	100		0	0	0.50
1000	089	1.0	12.7	68		0	0	0.86
1100	Var	1.1	14.4	53		0	0	1.00
1200	Var	1.2	14.4	52		0	0	1.00
1300	034	1.7	13.8	52		0	0	0.95
1400	Var	1.3	14.4	51		0	0	0.90
1500	Var	0.8	15.5	51		0	1	0.66
1600	Var	0.7	15.5	50		1	1	0.63
1700	330	1.6	13.3	55		0	1	0.31
1800	007	1.6	10.5	69		0	0	0.10
1900	Var	0.8	7.7	95		0	0	
2000	090	1.1	7.2	98		0	1	
2100	Var	0.8	6.1	100		0	0	
2200	085	0.8	6.1	100		0	0	
2300	105	1.9	6.6	100		0	0	
2400	067	0.5	6.6	100		1	1	
Day	060	0.4			0.00	0	1	432

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

14 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	160	3.3	18.3	85		1	1	
0200	163	2.3	17.2	91		3	6	
0300	144	4.4	17.2	90		2	3	
0400	160	2.7	17.2	89		2	3	
0500	142	4.6	17.2	87		1	2	
0600	141	4.6	17.2	85		1	3	
0700	142	4.9	17.2	85		1	2	0.04
0800	147	3.0	18.3	75		3	5	0.21
0900	160	3.1	20.5	67		6	10	0.43
1000	164	3.5	22.2	63		2	3	0.57
1100	242	6.6	21.1	61		1	2	0.75
1200	236	5.6	20.5	67		1	1	0.52
1300	249	5.0	18.8	81		2	3	0.17
1400	229	2.4	19.4	91		1	2	0.21
1500	219	2.5	19.4	83				0.24
1600	252	3.1	17.7	100	0.05			0.07
1700	217	2.1	17.2	100	0.23			0.04
1800	186	1.5	16.6	100	0.03	0	1	0.02
1900	234	0.8	16.6	100	0.03	1	1	
2000	186	0.4	16.6	100	0.03	1	1	
2100	202	0.5	16.6	100	0.30	1	2	
2200	208	2.6	16.6	100	0.13	2	4	
2300	214	2.6	16.1	100		2	3	
2400	213	1.4	16.1	100		1	1	
Day	190	2.3			0.80	1	10	196

16 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	310	2.1	7.2	100		1	1	
0200	324	2.5	6.6	93		1	1	
0300	337	3.0	6.1	87		0	0	
0400	329	1.7	5.0	95		0	0	
0500	305	1.7	4.4	97		0	0	
0600	298	2.1	5.0	95		1	1	
0700	319	2.7	4.4	95		1	1	0.04
0800	311	1.5	5.5	95		0	0	0.15
0900	329	2.9	5.5	79		0	0	0.30
1000	329	3.3	6.1	69		0	0	0.22
1100	333	3.6	6.1	61		0	0	0.43
1200	315	3.6	6.6	57		0	0	0.33
1300	315	4.2	6.6	55		0	0	0.40
1400	325	4.3	6.6	56		0	0	0.33
1500	321	3.8	5.5	69				0.33
1600	307	3.7	3.3	95	0.03			0.43
1700	290	3.8	2.7	95	0.08			0.07
1800	306	3.6	2.2	100	0.03			0.03
1900	306	2.2	2.2	100				
2000	302	3.0	1.6	97				
2100	289	2.4	0.5	100		0	1	
2200	279	2.0	0.0	100		0	0	
2300	284	1.5	-0.5	100		0	0	
2400	274	2.1	-1.1	100		1	1	
Day	312	2.7			0.14	0	1	184

17 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	264	0.5	-1.6	100		1	1	
0200	262	0.6	-1.6	100		1	1	
0300	259	1.8	-1.1	100		1	1	
0400	275	1.2	-1.1	100		1	2	
0500	259	1.3	-0.5	100		2	2	
0600	272	0.5	-0.5	100		1	1	
0700	Var	0.6	0.5	100		1	1	0.04
0800	217	1.5	1.1	100		1	1	0.13
0900	246	1.9	2.7	97		1	1	0.14
1000	261	3.8	3.8	83		1	2	0.21
1100	269	3.4	5.0	81		2	2	0.29
1200	286	4.7	5.5	81		1	2	0.23
1300	274	3.8	6.1	81		1	1	0.18
1400	284	3.6	7.7	81		2	2	0.23
1500	271	4.5	7.7	75		1	1	0.36
1600	260	4.7	7.7	69		2	2	0.20
1700	264	5.2	7.7	69				0.07
1800	259	3.9	5.5	80				0.03
1900	248	3.0	5.0	82				
2000	252	3.1	5.0	82		1	1	
2100	255	4.2	6.6	68		1	1	
2200	251	4.2	6.1	69		1	1	
2300	238	3.2	5.0	79		1	2	
2400	218	2.3	3.8	90		3	5	
Day	260	2.7			0.00	1	5	127

20 October 1970

Time, EST	Dir. deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	105	2.7	9.4	81		1	1	
0200	126	4.8	10.0	72		1	2	
0300	130	4.5	10.0	72		2	2	
0400	137	5.6	9.4	72		3	3	
0500	130	5.5	9.4	75		2	2	
0600	131	3.4	8.8	83		1	2	
0700	114	2.4	8.8	83		1	1	0.03
0800	125	2.9	9.4	85		1	1	0.10
0900	148	3.4	10.5	83		2	2	0.22
1000	158	5.7	11.6	79		1	1	0.40
1100	158	5.6	12.7	77		1	1	0.38
1200	154	5.9	12.7	72		1	1	0.39
1300	142	4.9	12.7	72		-		0.32
1400	121	4.3	13.3	69				0.45
1500	116	4.9	13.3	71				0.39
1600	136	4.6	12.2	71				0.09
1700	144	5.2	11.6	71				0.04
1800	124	3.5	11.1	71		1	2	
1900	118	4.6	9.4	95		1	1	
2000	111	4.2	9.4	95		1	1	
2100	116	5.3	10.5	89		1	1	
2200	134	3.6	10.5	92		1	1	
2300	116	5.7	11.1	91		1	1	
2400	131	5.5	11.1	93		0	0	
Day	132	4.4			0.00	1	3	169

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

26 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	112	1.4	10.0	97		2	2	
0200	096	1.5	10.5	100		1	2	
0300	089	1.2	11.1	100		2	2	
0400	097	1.1	11.1	100		2	2	
0500	092	1.1	10.5	100		2	2	
0600	103	0.8	10.0	100		2	2	
0700	093	1.6	10.5	100		2	3	
0800	087	1.7	11.6	100		2	2	0.09
0900	097	2.0	13.8	100		2	2	0.18
1000	119	1.9	14.4	89		1	1	0.17
1100	142	2.9	15.5	85		2	2	0.38
1200	136	3.3	16.1	71		1	2	0.40
1300	128	3.4	17.2	57		1	2	0.70
1400	158	3.4	17.2	57		1	1	0.63
1500	086	4.2	15.5	65		1		0.30
1600	095	3.5	14.9	68				0.17
1700	086	3.0	13.3	77				0.07
1800	090	2.9	11.6	85				
1900	082	2.5	10.5	90				
2000	079	2.6	10.0	93				
2100	082	2.2	9.4	96				
2200	071	2.3	8.3	100				
2300	085	2.1	8.3	100				
2400	090	2.5	8.8	98		0	0	
Day	101	2.1			0.00			185

27 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	085	2.8	8.3	97		0	0	
0200	080	2.1	8.3	97		0	0	
0300	082	2.7	8.8	97		0	0	
0400	090	2.3	8.3	98		0	0	
0500	094	2.1	8.3	98		0	0	
0600	075	2.4	7.7	100		0	0	
0700	080	2.3	8.3	100		0	0	
0800	096	2.3	10.0	83		0	0	0.18
0900	109	3.6	11.1	81		0	0	0.42
1000	114	4.4	12.2	71		0	0	0.63
1100	110	4.6	12.2	67		0	0	0.75
1200	095	4.6	10.0	79		1	1	0.42
1300	104	4.6	11.1	73		1	1	0.75
1400	099	3.9	11.1	71		1	1	0.37
1500	099	4.1	11.1	71				0.47
1600	108	3.6	10.5	69				0.30
1700	103	3.3	10.0	69				0.06
1800	104	4.0	8.3	73				
1900	090	3.8	7.7	81		0	0	
2000	092	3.3	7.2	84		0	0	
2100	095	3.3	6.1	87		0	0	
2200	097	2.7	6.1	89		0	0	
2300	105	2.9	6.1	90		0	1	
2400	109	4.2	6.6	89		1	1	
Day	098	3.3			0.00	0	1	261

28 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	109	3.7	6.1	90		1	1	
0200	104	3.0	6.1	91		1	1	
0300	112	4.0	6.1	91		1	1	
0400	111	3.5	6.1	91		1	1	
0500	112	3.4	6.1	92		1	1	
0600	111	3.9	6.1	91		1	1	
0700	107	3.0	5.5	93		1	1	
0800	109	3.2	7.2	86		1	1	0.17
0900	118	5.4	8.8	77		1	1	0.41
1000	119	5.7	8.8	73		1	1	0.66
1100	116	4.8	7.7	77		1	1	0.52
1200	125	4.0	8.3	75		0	1	0.19
1300	141	4.2	8.8	72		0	0	0.20
1400	140	5.6	8.8	66		0	0	0.23
1500	133	5.1	8.8	65				0.23
1600	133	4.5	8.3	65				0.12
1700	132	3.6	8.3	67				0.04
1800	118	3.2	8.3	69				
1900	122	3.0	8.3	72		0	0	
2000	134	3.4	7.7	75		0	0	
2100	130	3.0	7.7	77		0	0	
2200	115	3.0	7.2	82		0	0	
2300	121	2.8	7.7	83		1	2	
2400	132	2.7	7.7	83		2	2	
Day	122	3.7			0.00	1	2	166

29 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	148	2.1	7.7	85		2	2	
0200	142	2.4	8.3	87		1	1	
0300	132	3.3	8.3	89		1	1	
0400	122	4.0	8.3	90		2	2	
0500	124	3.3	8.3	92		1	2	
0600	127	3.8	8.3	95		1	2	
0700	112	4.0	8.3	97		1	2	
0800	118	4.0	8.3	97		1	1	0.08
0900	131	4.4	9.4	90		0	0	0.39
1000	131	4.3	10.5	87		1	1	0.53
1100	131	5.8	10.5	88		1	1	0.60
1200	122	5.8	11.6	85		1	1	0.67
1300	128	5.8	10.5	85		1	1	0.57
1400	120	5.5	9.4	90		1	1	0.32
1500	114	5.0	8.8	100				0.12
1600	114	4.1	8.3	100	0.03			0.07
1700	111	4.1	8.3	100	0.03			0.04
1800	114	3.7	8.3	100	0.25			
1900	120	5.1	8.3	100	0.48	0	0	
2000	124	5.5	8.3	100	0.18	1	1	
2100	123	5.8	8.3	100	0.08	0	1	
2200	115	5.0	8.3	100	0.03	0	0	
2300	121	3.7	8.8	100	0.03	0	1	
2400	118	4.5	8.8	100	0.03	1	1	
Day	123	4.3			1.14	1	2	203

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

30 October 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	118	3.3	8.8	100		0	0	
0200	119	2.9	8.8	100	0.03	0	0	
0300	114	4.1	9.4	98		0	0	
0400	117	3.3	9.4	95	0.03	0	0	
0500	120	3.7	9.4	97	0.03	0	0	
0600	122	6.2	9.4	100	0.13	0	0	
0700	124	4.5	9.4	100	0.18	0	0	
0800	120	5.9	9.4	100	0.30	0	0	0.02
0900	126	4.5	9.4	100	0.18	0	0	0.05
1000	126	5.3	10.0	100	0.20	0	0	0.07
1100	117	5.5	10.0	100	0.08	0	0	0.10
1200	112	6.9	10.5	100	0.10	0	0	0.12
1300	141	3.6	10.5	98	0.03	0	0	0.07
1400	119	3.5	10.5	100	0.03	0	0	0.05
1500	112	1.1	10.5	100				0.02
1600	101	2.3	10.5	100				0.02
1700	103	2.8	10.5	98				0.02
1800	106	2.8	10.5	95				
1900	099	3.4	10.0	97	0.05	0	0	
2000	104	3.1	10.0	100	0.03	0	0	
2100	104	3.1	10.5	100	0.10	0	0	
2200	105	4.6	10.5	100	0.10	0	0	
2300	115	3.8	10.5	100	0.10	0	0	
2400	120	3.0	10.5	100	0.03	0	0	
Day	116	3.8			1.73	0	0	32

2 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	103	2.0	11.1	95		0	1	
0200	106	2.2	11.1	95		0	0	
0300	096	2.1	10.0	97		1	1	
0400	090	2.2	9.4	100		1	2	
0500	092	2.3	8.8	100		2	2	
0600	103	2.1	8.3	100		1	2	
0700	088	2.8	8.8	100		1	1	
0800	105	2.4	10.5	100		1	1	0.12
0900	103	3.3	11.1	89		1	1	0.23
1000	105	3.3	11.6	85		0	1	0.37
1100	086	3.6	13.8	79		0	0	0.64
1200	103	3.6	14.9	57		0	0	0.57
1300	101	3.4	13.3	56		0	0	0.78
1400	100	3.1	16.1	54		0	0	0.64
1500	103	3.3	14.4	59				0.51
1600	106	3.4	13.8	69				0.21
1700	103	2.8	12.7	81				0.08
1800	087	2.2	12.7	84				
1900	106	2.5	12.2	84				
2000	099	3.4	10.0	97		0	0	
2100	084	4.0	10.5	97		0	0	
2200	074	2.5	10.5	98		0	0	
2300	Var	2.6	10.5	98		0	0	
2400	077	1.4	10.5	100		0	0	
Day	097	2.6			0.00	0	2	249

5 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	325	5.0	5.0	83		0	0	
0200	312	3.8	5.0	85		1	1	
0300	299	4.6	5.0	86		1	1	
0400	296	5.3	4.4	87		1	2	
0500	288	5.5	4.4	88		0	1	
0600	272	5.2	4.4	93		0	1	
0700	258	5.3	4.4	95		1	1	
0800	262	6.5	5.0	92		2	3	0.05
0900	261	7.5	4.4	91		2	2	0.07
1000	243	7.8	5.5	88		2	2	0.24
1100	251	8.0	4.4	89		2	2	0.07
1200	256	7.8	4.4	100		2	2	0.09
1300	260	8.0	5.0	100	0.03	2	2	0.05
1400	262	8.9	5.0	100	0.10	2	2	0.07
1500	266	9.0	5.0	100	0.03	1	1	0.12
1600	272	7.9	5.0	100	0.10			0.04
1700	276	6.3	5.0	100	0.13			0.02
1800	284	5.5	5.0	100	0.03	-		
1900	287	6.8	5.0	97				
2000	293	6.2	4.4	91				
2100	276	5.3	3.8	96				
2200	284	4.6	3.8	96				
2300	282	6.5	3.8	100				
2400	282	4.9	3.3	100		0	0	
Day	274	6.0			0.42			49

6 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	277	3.9	3.3	100		0	0	
0200	264	3.9	3.3	100		0	0	
0300	261	3.2	3.3	100		0	0	
0400	236	2.3	3.3	100		1	1	
0500	225	2.4	3.3	100		1	2	
0600	230	3.0	3.3	100		1	2	
0700	225	4.3	3.8	100		2	2	
0800	231	4.6	5.0	100		3	4	0.05
0900	232	4.5	5.0	97		3	4	0.09
1000	232	5.1	5.0	94		5	5	0.09
1100	233	5.5	5.5	87		3	4	0.12
1200	227	5.4	6.6	85		3	3	0.21
1300	220	5.6	7.2	81		2	2	0.27
1400	220	6.1	8.3	75		2	2	----
1500	220	5.6	9.4	67		2	3	----
1600	214	5.6	8.8	65		3	5	0.32
1700	209	4.4	6.6	71		3	5	0.10
1800	208	2.6	5.5	80		2	3	
1900	208	2.5	5.0	89		3	4	
2000	217	4.0	6.1	83		2	2	
2100	204	3.1	3.8	89		3	3	
2200	229	0.7	2.7	96		2	2	
2300	222	2.3	3.8	97		4	6	
2400	219	3.3	3.3	89		3	6	
Day	227	3.8			0.00	2	6	---

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

9 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	157	2.5	8.8	75		2	3	
0200	163	4.1	8.8	75		2	2	
0300	163	3.9	8.3	77		2	2	
0400	157	3.9	8.8	78		3	3	
0500	159	4.1	8.3	80		4	4	
0600	129	3.5	8.3	82		3	4	
0700	135	4.4	8.3	87		3	3	
0800	133	4.1	8.8	87		3	3	0.06
0900	137	6.3	9.4	83		2	3	0.18
1000	145	7.1	10.5	77		2	2	0.36
1100	148	6.4	11.6	75		2	3	0.53
1200	155	6.2	11.6	69		2	2	0.67
1300	141	6.6	12.2	68		2	2	0.54
1400	141	5.5	13.3	63		2	2	0.51
1500	136	6.5	13.8	64				0.51
1600	128	6.2	12.7	64				0.16
1700	124	6.6	11.6	69				0.05
1800	124	8.0	11.6	79				
1900	124	7.1	11.6	81		1	1	
2000	131	8.1	11.6	81		1	1	
2100	133	7.8	11.6	81		1	1	
2200	137	7.0	11.6	81		0	1	
2300	135	6.6	11.6	81		0	0	
2400	138	7.3	11.6	81		0	0	
Day	139	5.7			0.00	2	4	214

10 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	154	6.4	11.6	83		0	0	
0200	150	6.2	11.6	83		0	0	
0300	141	7.2	11.6	85		0	0	
0400	142	7.1	11.6	86		0	0	
0500	133	5.9	11.6	86		0	1	
0600	132	6.3	11.6	93		0	0	
0700	138	5.8	11.1	95		0	0	
0800	143	6.0	11.1	96		0	1	0.03
0900	149	4.1	11.6	96		0	0	0.07
1000	136	3.7	12.7	95		0	0	0.17
1100	135	4.8	13.3	93		0	0	0.29
1200	153	5.3	12.7	100	0.05	0	0	0.21
1300	146	3.8	12.7	100	0.05	0	0	0.13
1400	122	1.6	12.7	100		1	1	0.15
1500	156	2.7	12.7	100		0	1	0.05
1600	132	4.0	12.2	100				0.04
1700	132	3.9	12.2	100				
1800	140	3.8	12.2	100				
1900	142	3.8	12.2	100				
2000	138	3.9	12.2	100		1	1	
2100	118	1.8	12.2	100		2	2	
2200	106	1.3	12.2	100		1	1	
2300	079	1.6	11.6	100		1	2	
2400	077	1.4	11.6	100		0	1	
Day	139	4.1			0.10	0	2	68

11 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	065	1.0	11.6	100		0	0	
0200	038	1.2	11.6	100		0	0	
0300	049	1.3	11.6	100		0	0	
0400	037	1.7	11.6	100	0.03	0	0	
0500	066	1.3	11.6	100		0	0	
0600	076	1.9	11.6	100		0	0	
0700	041	1.3	11.6	100		0	0	
0800	019	1.3	11.6	100		0	0	0.03
0900	058	1.5	12.7	100		0	0	0.04
1000	037	1.5	13.3	100		0	0	0.14
1100	046	1.6	13.8	100		0	0	0.17
1200	064	2.0	14.4	100		0	0	0.19
1300	093	2.5	14.9	97		0	0	0.25
1400	090	2.0	14.4	97		0	0	0.14
1500	081	2.1	13.8	100		0	0	0.10
1600	075	2.2	13.8	100		0	0	0.10
1700	075	2.4	13.8	100	0.03	0	0	0.04
1800	062	2.0	13.3	100	0.03	0	0	
1900	074	2.3	12.7	100	0.03	0	0	
2000	062	2.3	12.7	100	0.03	0	0	
2100	052	1.1	12.7	100		0	0	
2200	026	1.3	12.7	100		0	0	
2300	041	1.2	12.7	100	0.03	0	0	
2400	038	1.1	12.7	100		0	0	
Day	061	1.6			0.18	0	0	72

16 November 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	272	6.6	0.5	100		1	1	
0200	279	5.9	0.5	97		0	0	
0300	285	5.2	0.5	95		1	1	
0400	289	5.6	0.0	83		0	1	
0500	299	5.4	0.0	81		0	0	
0600	282	5.0	-0.5	83		0	0	
0700	272	5.5	-1.1	81		0	0	
0800	262	4.6	-1.1	77		0	0	
0900	257	4.5	-0.5	73		1	2	0.15
1000	242	5.4	0.0	75		2	3	0.25
1100	246	5.9	0.0	75		3	4	0.20
1200	248	5.4	0.5	73		4	5	0.16
1300	251	6.6	0.5	72		2	3	0.28
1400	247	6.0	0.5	67		2	3	0.24
1500	247	6.1	0.5	68		3	3	0.12
1600	248	5.5	0.5	68		2	3	0.05
1700	---	5.0	0.5	71		4	4	0.01
1800	---	4.3	0.0	73		4	4	
1900	---	3.3	0.0	78		3	4	
2000	---	2.8	0.0	79		2	2	
2100	---	3.1	0.0	81		3	3	
2200	---	3.5	0.0	82		5	5	
2300	---	2.9	0.0	84		5	5	
2400	---	2.9	0.0	85		5	5	
Day	---	---			0.00	2	5	88

Table 2 (continued). SURFACE WEATHER AND SO_2 OBSERVATIONS AT JIMMY STEWART AIRPORT

15 December 1970

Time, EST	Dir, deg	Speed, mps	Temp, °C	RH, %	P, cm	SO_2, pphm Avg	SO_2, pphm Peak	Ly/min
0100	285	6.4	-1.6	77		1	1	
0200	282	6.5	-2.7	85		1	1	
0300	289	4.7	-3.8	84		1	1	
0400	292	3.5	-5.5	87		1	1	
0500	263	1.4	-5.5	95		0	1	
0600	234	1.6	-4.4	96		1	1	
0700	252	2.5	-4.4	95		2	2	
0800	236	2.3	-3.8	95		2	2	
0900	215	1.5	-3.8	95		1	1	0.05
1000	226	0.8	-3.3	89		2	3	0.18
1100	206	1.7	-2.2	87		2	3	0.27
1200	214	1.4	-0.5	79		3	3	0.47
1300	149	1.3	0.0	67		3	3	0.54
1400	Var	1.2	0.0	65		1	2	0.49
1500	Var	0.9	1.6	62		1	2	0.42
1600	Var	0.5	1.1	59		2	2	0.22
1700	045	1.0	-1.1	67		1	2	0.03
1800	057	1.6	-2.7	79		1	2	
1900	080	2.5	-2.7	91		1	1	
2000	076	3.7	-3.3	91		1	1	
2100	095	3.1	-3.3	92		2	2	
2200	106	3.3	-3.3	90		1	2	
2300	101	3.1	-2.7	90		1	1	
2400	110	3.1	-2.7	81		1	1	
Day	252	0.4			0.00	1	3	160

PLUME CROSS SECTIONS

Cross sections of the Homer City and Conemaugh plumes obtained by the LAPPES helicopter are presented in Table 3. The orientation is such that the reader is looking downwind with the plume top to his right. The height of each traverse above the source generating station's stack base elevation is indicated over the particular column of data with increasing altitude from left to right. The relative order in which the traverses were flown is shown at the base of each column.

The plume can be physically located by means of radial directions listed in the second column for each data point. These were determined by computing clockwise and/or counterclockwise from the given reference point in increments based on the arc distance of the particular cross section. For the 4-, 10-, and 16-kilometer cross sections, the radial increments between each data point are 1.92°, 0.96°, and 0.48°, respectively.

The first column of each cross section lists the cumulative distance across the plume beginning with zero at the left edge looking downwind. The corresponding SO_2 concentrations in pphm by volume are instantaneous readings taken at 6-second intervals; this corresponds to a crosswind distance increment of 134.1 meters (50 mph). The peak concentration in each traverse is shown at the bottom with the data point nearest the peak's location indicated by an asterisk in the column above. All instantaneous and peak SO_2 concentrations are net plume values, i.e., the ambient SO_2 and CO_2 backgrounds have been subtracted.

When the data are presented in this manner, the horizontal distance across the plume is scaled correctly whereas the vertical is not. To achieve a true physical reproduction of the plume, the distance between the columns would have to be scaled according to the respective traverse heights. Although completely zero traverses are shown as terminating at the plume edge, these flights were normally extended well beyond to confirm the absence of SO_2. Finally, crosswind and vertical integrated concentrations are listed at the bottom and side of each cross section.

Crosswind integrated concentrations (CIC) in grams per square meter for each plume traverse were calculated as follows:

$$CIC_j = 2.67 \times 10^{-6} \times \sum_i X_{ij}\, dy_i$$

where 2.67×10^{-6} = conversion factor from ppb to grams/m^3 based on a mean temperature aloft of 4° C and a mean altitude of 425 meters MSL.

X_{ij} = SO_2 concentration in ppb of the i-th data point in the j-th traverse.

dy_i = cross-plume interval at which readings were made (134.1 meters).

Vertical integrated concentrations (VIC) in grams per square meter for each data point were obtained from the properly aligned traverses by means of this equation:

$$VIC_i = 2.67 \times 10^{-6} \times \sum_j X_{ij}\, dz_j$$

where 2.67×10^{-6} = conversion factor defined above.

X_{ij} = SO_2 concentration in ppb of the i-th data point in the j-th traverse.

dz_j = one-half the difference between the next higher and the next lower pass for interior traverses. For the highest (lowest) traverse, dz_j is the height difference between the traverse and the next lower (higher).

The crosswind and vertical integrated concentrations were computed on the basis of ppb SO_2 during cross-section reduction and may differ slightly from the result obtained by using the SO_2 values rounded to pphm, as presented in Table 3.

Table 3. PLUME CROSS SECTIONS

Legend

Ref pt	:	Direction of cross section reference point from Homer City or Conemaugh stacks in whole degrees of azimuth.
Cum y, m	:	Cumulative distance across plume in whole meters.
Dir, deg	:	Direction of each data point from Homer City or Conemaugh stacks in degrees of azimuth to nearest tenth.
Height, m	:	Height of each traverse above Homer City or Conemaugh stack base elevation in whole meters.
VIC	:	Vertical integrated concentration in grams per square meter x 10^{-3}.
CIC	:	Crosswind integrated concentration in grams per square meter x 10^{-3}.
Peak	:	Peak SO_2 concentration per traverse in whole parts per hundred million by volume.
Pass	:	Numerical order in which traverses were flown.
*	:	Designation of data point nearest peak concentration location in each traverse.
-	:	Missing data.

Table 3. PLUME CROSS SECTIONS

Homer City 326 — Arc 16.0 km
4 May 1970 — Ref pt 032°
0711 to 0755 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 532	592	663	725	779	842	928	992	VIC
0	020.5	0								0
134	021.0	1								2
268	021.4	1			0					2
402	021.9	1			2					5
536	022.4	1			1			0		3
671	022.9	1			2			3	0	11
805	023.4	1			4		0	3	1	16
939	023.8	1		0	17		1	7	7	56
1073	024.3	1		1	42	0	1	17	16	132
1207	024.8	2		1	47	5	1	25	13	160
1341	025.3	1		1	166	23	1	*33	11	383
1475	025.8	1		1	141	41	2	21	13	354
1609	026.2	1		1	160	*150	1	3	14	516
1743	026.7	1	0	0	229	60	2	12	6	488
1878	027.2	1	2	0	185	11	5	19	1	358
2012	027.7	1	2	0	218	82	2	18	1	512
2146	028.2	1	3	0	*208	34	4	18	0	426
2280	028.6	1	*3	1	185	19	10	15	4	381
2414	029.1	1	3	1	165	10	*114	16	12	558
2548	029.6	1	3	1	156	4	98	15	13	502
2682	030.1	1	2	0	121	21	39	11	*16	352
2816	030.6	1	2	0	167	39	10	9	13	384
2950	031.0	0	1	1	165	27	14	11	0	351
3085	031.5	*2	1	20	139	15	9	9	3	320
3219	032.0	2	1	52	99	21	5	10	4	319
3353	032.5	1	1	*54	93	16	4	9	5	302
3487	033.0	1	0	17	85	15	2	8	2	210
3621	033.4	1	0	29	52	11	2	9	2	176
3755	033.9	0	0	16	35	12	3	10	2	130
3889	034.4	0	1	38	28	15	4	12	0	167
4023	034.9	1	2	46	31	14	7	14		198
4157	035.4	1	2	23	16	11	6	16		131
4292	035.8	1	2	26	16	6	6	16		129
4426	036.3	0	2	13	19	3	6	14		100
4560	036.8	0	3	8	9	4	6	13		77
4694	037.3	0	2	4	6	3	5	12		58
4828	037.8	0	1	2	7	3	5	10		51
4962	038.2	1	2	1	16	3	5	9		64
5096	038.7	1	2	1	8	3	5	7		48
5230	039.2	1	2	0	7	2	5	4		37
5364	039.7	1	3		2	2	6	4		33
5499	040.2	0	2		0	1	7	3		25
5633	040.6		2			0	8	2		23
5767	041.1		2				7	2		21
5901	041.6		2				5	2		17
6035	042.1		1				5	1		14
6169	042.6		0				6	1		14
6303	043.0						6	1		14
6437	043.5						5	0		10
6571	044.0						6			12
6706	044.5						7			14
6840	045.0						6			12
6974	045.4						5			10
7108	045.9						6			12
7242	046.4						5			10
7376	046.9						4			8
7510	047.4						3			6
7644	047.8						3			6
7778	048.3						2			4
7913	048.8						0			0
8047	049.3						0			0
8181	049.8						0			0
8315	050.2						1			2
8449	050.7						2			4
8583	051.2						0			0
CIC		129	204	1286	10922	2457	1773	1626	570	
Peak		3	4	56	231	162	123	38	17	
Pass		8	7	1	2	3	4	5	6	

Homer City 327 — Arc 4.0 km
8 May 1970 — Ref pt 058°
0600 to 0615 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 202	235	263	324	390	443	480	510	VIC
0	042.6			0	0					0
134	044.6			5	1					8
268	046.5	0	0	2	*12					23
402	048.4	0	1	1	8					15
536	050.3	0	*2	*7	4					17
671	052.2	0	1	2	*7					15
805	054.2	0	1	0	0	0				1
939	056.1	0	0			2				3
1073	058.0					15				24
1207	059.9					4				6
1341	061.8					12	0			19
1475	063.8					*35	29	0		90
1609	065.7					33	68	1	0	135
1743	067.6					20	65	8	0	117
1878	069.5					2	*80	2	0	101
2012	071.4					0	18	5	0	26
2146	073.4						0	*24	0	21
2280	075.3						4	15	0	18
2414	077.2						2	4	0	6
2548	079.1						0	0	0	0
CIC		0	18	61	115	441	953	211	0	
Peak		0	7	14	12	45	86	27	0	
Pass		7	8	6	5	4	2	3	1	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 328 — Arc 10.0 km
8 May 1970 — Ref pt 072°
0620 to 0653 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 223	255	325	390	449	510	574	VIC
0	050.5				0				0
134	051.3				2				3
268	052.0				2				3
402	052.8				2				3
536	053.6				2				3
671	054.3				4				7
805	055.1				3				5
939	055.9				3				5
1073	056.6				4				7
1207	057.4			0	8				13
1341	058.2			1	10				18
1475	058.9			1	6				12
1609	059.7		0	1	6				12
1743	060.5		1	3	7				18
1878	061.2		1	2	8				18
2012	062.0	0	1	2	9				20
2146	062.8	1	0	4	13				30
2280	063.5	1	1	2	16				32
2414	064.3	1	0	1	16				29
2548	065.1	*1	1	1	20	0			37
2682	065.9	1	1	1	10	1			22
2816	066.6	1	1	3	13	0			29
2950	067.4	1	1	*4	32	1			64
3085	068.2	1	0	2	*35	2			66
3219	068.9	1	0	2	29	4			59
3353	069.7	1	1	2	24	5	0	0	54
3487	070.5	1	0	3	29	2	1	0	59
3621	071.2	0	0	3	25	5	1	0	56
3755	072.0		0	2	18	14	1	0	57
3889	072.8		1	0	14	17	1	0	53
4023	073.5		1	0	9	10	1	0	34
4157	074.3		1	0	24	3	0	0	46
4292	075.1		*2	1	15	0	0	0	29
4426	075.8		1	1	28	0	0	0	50
4560	076.6		0	0	17	0	0	0	28
4694	077.4			0	2	0	0	0	3
4828	078.1			0	1	0	0	0	2
4962	078.9			1	1	*20	1	0	37
5096	079.7			1	1	19	0	0	34
5230	080.5			0	1	14	0	0	24
5364	081.2				1	10	0	0	18
5499	082.0				1	10	2	0	21
5633	082.8				1	5	4	0	16
5767	083.5				1	4	7	0	20
5901	084.3				1	4	*1	0	10
6035	085.1				1	5	3	0	15
6169	085.8				1	2	5	0	13
6303	086.6				1	2	*10	0	21
6437	087.4				0	0	0	0	0
6571	088.1					1	3	0	7
6706	088.9					0	5	0	8
6840	089.7						1	0	2
6974	090.4						0	0	0
CIC		39	54	158	1709	573	168	0	
Peak		2	2	6	37	23	11	0	
Pass		7	6	5	1	2	3	4	

Homer City 330 — Arc 4.0 km
9 May 1970 — Ref pt 068°
0600 to 0610 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 230	262	319	382	442	480	VIC
0	056.5	0	0					0
134	058.4	0	1		0			1
268	060.3	0	*2		8			15
402	062.2	0	0	0	42		0	68
536	064.2	0		29	29	0	0	94
671	066.1	0		43	*41	*20	0	162
805	068.0			*49	0	0	0	79
939	069.9			16		5	0	32
1073	071.8			20		0	0	32
1207	073.8			0			0	0
CIC		0	11	562	430	90	0	
Peak		0	8	56	54	62	0	
Pass		6	5	4	3	1	2	

Homer City 329 — Arc 16.0 km
8 May 1970 — Ref pt 074°
0659 to 0732 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 198	254	323	390	450	510	579	600	638	VIC
0	059.1	0									0
134	059.6	1									1
268	060.1	1									1
402	060.6	1									1
536	061.0	1									1
671	061.5	1									1
805	062.0	1		0							1
939	062.5	1		2							5
1073	063.0	1		2							5
1207	063.4	2		2							7
1341	063.9	2		2							7
1475	064.4	2		2							7
1609	064.9	1		2							5
1743	065.4	2	0	2							7
1878	065.8	2	1	2							8
2012	066.3	2	1	1							6
2146	066.8	1	1	1							5
2280	067.3	2	1	1							6
2414	067.8	*3	2	2							11
2548	068.2	*3	2	3							13
2682	068.7	1	2	3							10
2816	069.2	1	2	2							8
2950	069.7	2	4	3	0						15
3085	070.2	1	*5	3	2						19
3219	070.6	0	0	4	4	0					14
3353	071.1	1	3	5	3	1					22
3487	071.6	0	2	5	3	1					19
3621	072.1		2	5	3	0					17
3755	072.6		2	*5	3	0					17
3889	073.0		1	5	3	0					16
4023	073.5		1	5	3	2					19
4157	074.0		1	4	7	6					30
4292	074.5		1	4	*9	3					29
4426	075.0		1	1	5	7					23
4560	075.4		0	0	4	8					20
4694	075.9				4	10					23
4828	076.4				3	*11					23
4962	076.9				4	6	0				16
5096	077.4				0	4	1	0			8
5230	077.8				0	2	1	1			6
5364	078.3				0	3	3	2			12
5499	078.8				0	6	2	*4			18
5633	079.3				0	5	1	4			15
5767	079.8				0	6	*8	2			26
5901	080.2				0	3	3	0	0	0	10
6035	080.7				1	1	1	1	1	0	7
6169	081.2				0	2	5	2	1	0	15
6303	081.7					1	6	2	1	0	15
6437	082.2					1	8	1	1	0	17
6571	082.6					1	4	2	1	0	12
6706	083.1					1	7	2	2	0	18
6840	083.6					0	3	1	2	0	8
6974	084.1						4	1	3	0	10
7108	084.6						4	1	3	0	10
7242	085.0						5	0	3	0	11
7376	085.5						5	2	*4	0	14
7510	086.0						3	1	3	0	9
7644	086.5						2	1	4	0	8
7778	087.0						1	0	3	0	4
7913	087.4						1		3	0	4
8047	087.9						1		3	0	4
8181	088.4						1		2	0	3
8315	088.9						1		2	0	3
8449	089.4						1		2	0	3
8583	089.8						0		1	0	1
8717	090.3								0	0	0
CIC		129	125	279	21.	326	294	107	161	0	
Peak		3	7	6	9	13	9	5	5	0	
Pass		9	8	7	1	2	3	4	5	6	

Homer City 331 — Arc 10.0 km
9 May 1970 — Ref pt 072°
0613 to 0629 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 230	253	322	387	450	480	VIC
0	058.2			0				0
134	058.9			1				2
268	059.7			1				2
402	060.5			1				2
536	061.2		0	3				5
671	062.0	0	1	3				7
805	062.8	1	1	3				7
939	063.5	1	1	5				11
1073	064.3	1	1	8				16
1207	065.1	*1	2	11				23
1341	065.9	0	3	11				23
1475	066.6	0	2	16	0			31
1609	067.4	0	*5	20	6			52
1743	068.2	1	2	24	4			53
1878	068.9	0	3	24	11			65
2012	069.7		1	29	17			82
2146	070.5		2	28	12			73
2280	071.2		1	*36	17			94
2414	072.0		0	50	19			122
2548	072.8		0	27	32			103
2682	073.5		0	15	33			83
2816	074.3		0	15	*33			83
2950	075.1		1	8	19			48
3085	075.8		1	0	4			8
3219	076.6		1		0			1
3353	077.4		0				0	0
3487	078.1					0	0	0
3621	078.9					2	0	2
3755	079.7					0	0	0
3889	080.5					*7	0	9
4023	081.2					1	0	1
4157	082.0					7	0	9
4292	082.8					1	0	1
4426	083.5					0	0	0
CIC		18	100	1214	742	64	0	
Peak		2	6	56	37	10	0	
Pass		6	5	4	1	2	3	

Homer City 332 — Arc 16.0 km
9 May 1970 — Ref pt 075°
0633 to 0655 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 167	197	258	320	385	448	510	VIC
0	061.6		0						0
134	062.0		1						1
268	062.5		0						0
402	063.0		0						0
536	063.5		0						0
671	064.0		0		0				0
805	064.4	0	2		1				4
939	064.9	1	3		1				6
1073	065.4	1	3	0	0				4
1207	065.9	2	3	1	4				14
1341	066.4	2	*3	2	3				14
1475	066.8	3	2	2	2				11
1609	067.3	1	3	4	6				21
1743	067.8	2	1	5	9				26
1878	068.3	1	1	7	8				27
2012	068.8	2	2	*7	10				32
2146	069.2	*1	0	5	15				34
2280	069.7	1	2	6	13				35
2414	070.2	1	0	3	*18				36
2548	070.7	0		5	17				37
2682	071.2			3	10				22
2816	071.6			1	5				10
2950	072.1			1	2				5
3085	072.6			0	2	0			3
3219	073.1			0	1	1			3
3353	073.6			1	0	0	0		2
3487	074.0			0	2	6	2		17
3621	074.5				1	6	0		12
3755	075.0				0	8	1		15
3889	075.5					19	1		34
4023	076.0					*29	2		53
4157	076.4					16	7	0	39
4292	076.9					8	13	*2	39
4426	077.4					2	18	0	33
4560	077.9					1	20	0	35
4694	078.4					1	6	0	12
4828	078.8					0	*21	1	36
4962	079.3						17	1	30
5096	079.8						8	1	15
5230	080.3						11	1	20
5364	080.8						6	*1	12
5499	081.2						3	0	5
5633	081.7						0	0	0
5767	082.2							0	0
5901	082.7							0	0
6035	083.2							1	2
6169	083.6							*2	3
6303	084.1							0	0
CIC		64	93	190	466	347	487	36	
Peak		5	4	8	18	30	22	2	
Pass		7	6	5	4	1	2	3	

Homer City 333 — Arc 4.0 km
11 May 1970 — Ref pt 068°
0839 to 0858 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 200	261	326	386	448	511	570	609	635	VIC
0	039.2			0							0
134	041.1			4							7
268	043.0			4							7
402	044.9			4							7
536	046.9			4							7
671	048.8			4	0						7
805	050.7			4	2						10
939	052.6	0		6	4	0					16
1073	054.6	0	0	6	6	1					21
1207	056.5	0	6	*19	4	2					51
1341	058.4	0	4	2	7	14					45
1475	060.3	0	2	1	13	4					33
1609	062.2	0	*6	1	13	21					68
1743	064.2	0	4	5	18	*53	0				132
1878	066.1	0	2	0	37	46	22				176
2012	068.0	0	0		*44	58	102				334
2146	069.9	0			14	20	*166				326
2280	071.8				7	25	114				239
2414	073.8				5	7	93		0		171
2548	075.7				2	2	67	0	*43		152
2682	077.6				0	4	13	14	11		56
2816	079.5					0	0	*42	0	0	55
2950	081.4							21		*22	43
3085	083.4							11		7	19
3219	085.3							0		0	0
CIC		0	86	229	630	921	2067	315	193	104	
Peak		0	11	21	47	76	175	48	45	22	
Pass		9	8	7	6	5	1	2	3	4	

Homer City 334 — Arc 10.0 km
11 May 1970 — Ref pt 072°
0906 to 0953 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 166	260	326	386	454	513	576	636	694	VIC
0	033.6					0					0
134	034.3					2					3
268	035.1	0				2					3
402	035.9	2		0	0	1					7
536	036.7	3		2	1	1					14
671	037.4	2		3	2	1					15
805	038.2	3		4	4	3					26
939	039.0	4		4	4	2					27
1073	039.7	3		5	3	2					24
1207	040.5	5		5	5	2					33
1341	041.3	6		5	5	2					35
1475	042.0	5	0	5	5	0					30
1609	042.8	5	2	5	6	3					41
1743	043.6	5	3	5	6	3					43
1878	044.3	6	3	3	6	1					38
2012	045.1	7	4	4	6	3					48
2146	045.9	5	3	4	6	3					41
2280	046.6	6	3	3	6	2					40
2414	047.4	6	3	3	4	3					38
2548	048.2	5	2	3	3	4					34
2682	048.9	6	4	4	5	4					46
2816	049.7	6	4	5	6	4					49
2950	050.5	5	4	6	6	2					45
3085	051.3	6	3	2	5	0					33
3219	052.0	7	3	1	5	0					34
3353	052.8	5	3	3	5	3					38
3487	053.6	6	5	5	3	0					39
3621	054.3	4	6	3	3	4					40
3755	055.1	1	5	0	3	6					28
3889	055.9	4	3	3	2	4					32
4023	056.6	5	6	3	1	5					41
4157	057.4	5	5	5	4	6					49
4292	058.2	5	3	5	5	0					36
4426	058.9	3	4	5	1	5					35
4560	059.7	5	2	3	1	6					34
4694	060.5	5	5	7	3	5					49
4828	061.2	3	4	10	7	4					52
4962	062.0	3	5	11	2	2					44
5096	062.8	3	6	9	13	1					59
5230	063.5	3	2	2	8	1					31
5364	064.3	6	5	12	7	0					58
5499	065.1	10	3	2	1	0					37
5633	065.9	14	1	3	7	0					54
5767	066.6	*12	6	10	7	0					72
5901	067.4	11	5	*12	7	4					77
6035	068.2	6	0	6	3	0					30
6169	068.9	0	3	3	7	0					23
6303	069.7		*7	5	10	0					40
6437	070.5		5	4	16	0					45
6571	071.2		3	2	5	1					20
6706	072.0		1	1	7	3					21
6840	072.8		1	1	4	17				0	39
6974	073.5		0	1	6	36		0		1	74
7108	074.3			0	*20	*40		2	0	2	108
7242	075.1				1	26		2	2	1	53
7376	075.8				1	7		4	0	1	22
7510	076.6				1	5		*18	0	2	43
7644	077.4				0	4		14	2	*3	37
7778	078.1					1	0	0	1	3	8
7913	078.9					2	11	9	0	1	38
8047	079.7					2	*24	1	4	0	50
8181	080.5					2	16	2	24		71
8315	081.2					1	12	1	*27		65
8449	082.0					0	17	1	12		48
8583	082.8					0	12	4	8		39
8717	083.5					0	6	0	10		26
8851	084.3					0	0		2		3
8985	085.1					1			0		2
9120	085.8					1					2
9254	086.6					1					2
9388	087.4					0					0
CIC		813	519	777	967	917	351	208	330	50	
Peak		17	11	16	26	41	25	21	29	4	
Pass		9	8	7	5	6	1	2	3	4	

Homer City 335 — Arc 4.0 km
12 May 1970 — Ref pt 034°
0649 to 0704 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 333	398	442	510	580	633	VIC
0	016.7			0	0			0
134	018.6			19	14			54
268	020.6			*125	36			253
402	022.5	0		141	41	0		286
536	024.4	0		94	85	4		304
671	026.3	0		49	105	12		286
805	028.2	0		14	*113	*54		317
939	030.2	0	0	0	93	34		227
1073	032.1	0	*59		74	18	0	251
1207	034.0	0	24		22	16	*5	108
1341	035.9	0	20		9	7	*5	64
1475	037.8	0	6		5	6	*5	35
1609	039.8		0		5	0	0	9
1743	041.7				9			17
1878	043.6				6			11
2012	045.5				0			0
CIC		0	390	1583	2210	541	54	
Peak		0	72	153	119	59	5	
Pass		6	5	4	1	2	3	

Homer City 336 — Arc 4.0 km
12 May 1970 — Ref pt 034°
1030 to 1045 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 30	130	198	240	317	383	445	VIC
0	020.6							0	0
134	022.5							1	2
268	024.4					0		15	25
402	026.3					5		*25	51
536	028.2					*6		25	53
671	030.2	0		0	0	18		1	36
805	032.1	*1		6	2	4	0	0	22
939	034.0	0		5	*0	2	4		18
1073	035.9		0	*11	0	1	*15		44
1207	037.8		1	0	0	0	7		14
1341	039.8		*5	2	0		1		16
1475	041.7		1	0	4		0		9
1609	043.6		0		0				0
CIC		4	25	86	21	129	97	240	
Peak		1	9	13	5	25	18	39	
Pass		7	6	5	4	3	2	1	

Homer City 337 — Arc 4.0 km
15 May 1970 — Ref pt 031°
0612 to 0629 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 171	210	231	258	327	376	438	481	VIC
0	029.1	0	0	0		0				0
134	031.0	0	1	*7		5				13
268	032.9	0	*4	0	0	13				24
402	034.8	0	5		2	15				30
536	036.8	0	2		*13	*19				48
671	038.7	0	0		7	15	0			33
805	040.6				0	9	20			44
939	042.5					18	26			67
1073	044.4					11	27			57
1207	046.4					7	38			67
1341	048.3					5	56	0	0	90
1475	050.2					0	51	4	0	80
1609	052.1						68	4	0	105
1743	054.1						*81	16	0	141
1878	056.0						27	26	0	76
2012	057.9						0	33	0	46
2146	059.8							*79	0	110
2280	061.7							28	0	39
2414	063.7							0	0	0
CIC		0	43	25	79	419	1411	681	0	
Peak		0	8	7	17	24	94	148	0	
		8	7	6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 338 — Arc 4.0 km
15 May 1970 — Ref pt 031°
0810 to 0837 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 196	260	317	378	439	508	567	620	682	721	VIC
0	011.8	0										0
134	013.7	1										2
268	015.6	1										2
402	017.6	*5										9
536	019.5	0										0
671	021.4			0								0
805	023.3			4								6
939	025.2			7								11
1073	027.2		0	14								22
1207	029.1		6	17								36
1341	031.0		8	*24								51
1475	032.9		8	0	0							13
1609	034.8		7		7							23
1743	036.8		*17		0			0				27
1878	038.7		2		6	0		5				20
2012	040.6		0		*15	42		14	0			118
2146	042.5				18	*69		29	18			220
2280	044.4				*20	54		40	5			194
2414	046.4				15	9		*41	0			101
2548	048.3				1	28	0	14	6		0	80
2682	050.2				0	19	6	18	0		0	70
2816	052.1					11	38	15	7	0	0	117
2950	054.1					0	*63	6	*21	*6	0	157
3085	056.0						18	6	14	4	0	66
3219	057.9						51	6	6	0	0	105
3353	059.8						20	0	6		0	43
3487	061.7						7		7		0	23
3621	063.7						0		4			6
3755	065.6								0			0
CIC		25	172	236	294	831	727	695	337	36	0	
Peak		8	21	28	20	78	80	52	22	9	0	
Pass		10	9	8	7	6	1	2	3	4	5	

Homer City 339 — Arc 10.0 km
15 May 1970 — Ref pt 039°
0844 to 0910 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 257	319	382	442	514	572	600	630	VIC
0	025.2		0							0
134	025.9		1							2
268	026.7	0	3							5
402	027.5	*5	7							20
536	028.2	2	6							13
671	029.0	1	10							18
805	029.8	0	9							15
939	030.5	0	8							13
1073	031.3	2	8							17
1207	032.1	4	3							12
1341	032.9	3	5							13
1475	033.6	2	5							12
1609	034.4	2	5							12
1743	035.2	2	8	0						17
1878	035.9	*2	7	1						17
2012	036.7	4	4	1						15
2146	037.5	1	4	0						8
2280	038.2	0	10	1						18
2414	039.0		20	1						35
2548	039.8		23	4						45
2682	040.5		*27	8						58
2816	041.3		21	11						53
2950	042.1		5	8						21
3085	042.8		0	4						7
3219	043.6			6		0				10
3353	044.4			6		4				17
3487	045.1			6		7				22
3621	045.9			7	0	19				44
3755	046.7			10	1	32				74
3889	047.5			14	2	*29				77
4023	048.2			24	3	24				86
4157	049.0			*31	6	8	0			75
4292	049.8			22	7	3	2			56
4426	050.5			11	7	1	2			34
4560	051.3			5	6	2	3			26
4694	052.1			4	8	4	3			31
4828	052.8			0	6	4	3			21
4962	053.6				7	3	1			19
5096	054.4				7	2	5		0	22
5230	055.1				10	1	*6		0	26
5364	055.9				11	0	0		0	19
5499	056.7				*14		1	0	0	26
5633	057.4				5		2	1	0	12
5767	058.2				6		1	1	0	13
5901	059.0				8		0	4	0	17
6035	059.7				13		1	3	0	26
6169	060.5				4		0	4	0	10
6303	061.3				4			*5	0	11
6437	062.1				0			4	0	3
6571	062.8							1	0	1
6706	063.6							1	0	1
6840	064.4							2	0	2
6974	065.1							0	0	0
CIC		107	713	663	484	512	107	93	0	
Peak		5	30	32	18	37	8	6	0	
Pass		8	7	6	5	1	2	4	3	

Conemaugh 341 — Arc 10.0 km
14 October 1970 — Ref pt 011°
0707 to 0727 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 325	382	446	507	568	592	VIC
0	004.1			0				0
134	004.9			11				18
268	005.6			42				70
402	006.4	0		46				76
536	007.2	*1		51				86
671	007.9	1	0	62				104
805	008.7	0	7	45				86
939	009.5		*14	54				112
1073	010.2		8	66	0			122
1207	011.0		7	*67	10			138
1341	011.8		3	24	5			53
1475	012.5		1	0	11		0	20
1609	013.3		0		25		0	41
1743	014.1				35		0	57
1878	014.8				48		0	78
2012	015.6				37		0	60
2146	016.4				8		0	13
2280	017.1				30		0	49
2414	017.9				*61		0	99
2548	018.7				34	0	0	55
2682	019.5				7	7	0	19
2816	020.2				0	*38	0	43
2950	021.0					24	0	27
3085	021.8					26	0	29
3219	022.5					14	0	16
3353	023.3					0	0	0
CIC		7	143	1676	1114	390	0	
Peak		2	14	74	62	44	0	
Pass		6	5	4	1	2	3	

Conemaugh 340 — Arc 4.0 km
14 October 1970 — Ref pt 012°
0643 to 0702 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 292	318	389	442	512	557	592	620	VIC
0	356.6			0		0				0
134	358.6			12		17				46
268	000.5	0		*63		71				212
402	002.4	0		13		58	0			110
536	004.3	0		4	0	72	*55		0	175
671	006.2	0		6	19	51	47		0	169
805	008.2	0		0	44	109	83		0	326
939	010.1	0	0		47	112	80		0	333
1073	012.0	0	1		41	*169	43		0	371
1207	013.9	0	*1		41	114	0		0	242
1341	015.8	0	0		*54	97			0	236
1475	017.8	0			0	57		*0	0	87
1609	019.7					0		0	0	0
CIC		0	7	351	881	3321	1103	0	0	
Peak		0	2	64	191	173	118	4	0	
Pass		8	7	6	5	4	2	3	1	

Conemaugh 342 — Arc 16.0 km
14 October 1970 — Ref pt 007°
0749 to 0826 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 252	310	372	429	493	552	612	647	668	VIC
0	355.0	0									0
134	355.5	3									5
268	356.0	4									6
402	356.4	4									5
536	356.9	3									5
671	357.4	2									3
805	357.9	3									5
939	358.4	3									5
1073	358.8	4									6
1207	359.3	5									8
1341	359.8	4									6
1475	000.3	3									5
1609	000.8	4									6
1743	001.2	3									5
1878	001.7	3									5
2012	002.2	4									6
2146	002.7	3									5
2280	003.2	3									5
2414	003.6	1									2
2548	004.1	2									3
2682	004.6	2									3
2816	005.1	2	0								3
2950	005.6	4	1								8
3085	006.0	5	0								8
3219	006.5	*6	1			0					11
3353	007.0	2	2			3					11
3487	007.5	4	6			6					26
3621	008.0	5	7			2					22
3755	008.4	1	11			0					19
3889	008.9	2	3			0					8
4023	009.4	0	11			0					18
4157	009.9	0	12		0	0					19
4292	010.4	1	5		5	0					18
4426	010.8	0	*11		7	0					29
4560	011.3		18	0	5	0					37
4694	011.8		9	6	6	0					33
4828	012.3		6	30	10	0					73
4962	012.8		4	*47	*20	0					113
5096	013.2		3	19	7	0					46
5230	013.7		5	10	0	0					24
5364	014.2		2	3	4	0					14
5499	014.7		2	1	0	0					5
5633	015.2		1	0		0					2
5767	015.6		1			0	0				2
5901	016.1		0			1	1				3
6035	016.6					6	1				11
6169	017.1					14	2				26
6303	017.6					*22	4				42
6437	018.0					7	5				19
6571	018.5					0	5	0			8
6706	019.0						6	1			11
6840	019.5						9	6		0	22
6974	020.0						19	1		0	31
7108	020.4						20	4		0	37
7242	020.9						18	10		0	41
7376	021.4						*20	20		0	57
7510	021.9						18	*26		0	61
7644	022.4						13	23		0	49
7778	022.8						12	14	0	0	36
7913	023.3						10	6	1	0	24
8047	023.8						5	2	*2	0	12
8181	024.3						4	4	2	0	13
8315	024.8						5	2	1	0	11
8449	025.2						5	0	0	0	8
8583	025.7						2		1	0	4
8717	026.2						0		0	0	0
CIC		340	433	416	229	219	659	426	25	0	
Peak		7	22	54	20	27	21	28	3	0	
Pass		9	8	7	2	1	3	4	6	5	

Conemaugh 343 — Arc 10.0 km
16 October 1970 — Ref pt 141°
0703 to 0714 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 363	442	493	VIC
0	135.6	0			0
134	136.4	1			2
268	137.2	1		0	2
402	137.9	1		3	6
536	138.7	1		0	2
671	139.5	1		0	2
805	140.2	1	0	0	2
939	141.0	2	1	1	7
1073	141.8	*2	0	1	6
1207	142.5	2	2	0	8
1341	143.3	1	2	1	7
1475	144.1	2	2	2	10
1609	144.8	1	3	4	13
1743	145.6	1	3	8	18
1878	146.4	0	3	9	17
2012	147.1		2	8	14
2146	147.9		3	8	16
2280	148.7		2	7	13
2414	149.5		4	9	19
2548	150.2		*6	*11	25
2682	151.0		3	8	16
2816	151.8		2	2	6
2950	152.5		1	2	4
3085	153.3		1	1	3
3219	154.1		0	1	1
3353	154.8			0	0
3487	155.6			1	1
3621	156.4			0	0
CIC		61	143	312	
Peak		3	7	13	
Pass		1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 344 — Arc 16.0 km
16 October 1970 — Ref pt 150°
0719 to 0754 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 305	365	428	493	553	613	VIC
0	140.9			0				0
134	141.4			1				2
268	141.8			1				2
402	142.3			0				0
536	142.8			1				2
671	143.3			1				2
805	143.8			1	0			2
939	144.2			2	1			5
1073	144.7	0		2	1			5
1207	145.2	1		2	1			7
1341	145.7	0		3	1			7
1475	146.2	0		3	2			8
1609	146.6	1		4	2			12
1743	147.1	0		4	2		0	10
1878	147.6	0		4	3		1	13
2012	148.1	1		5	4		0	17
2146	148.6	1		4	2		0	12
2280	149.0	2		*5	1	0	1	15
2414	149.5	3		4	3	1	1	20
2548	150.0	3		4	4	0	1	20
2682	150.5	3	0	4	3	0	2	20
2816	151.0	4	1	4	3	0	3	25
2950	151.4	4	2	4	3	1	3	28
3085	151.9	3	2	3	4	1	3	26
3219	152.4	*4	0	3	5	0	4	26
3353	152.9	4	2	3	5	1	5	33
3487	153.4	4	1	3	6	2	4	33
3621	153.8	4	3	3	6	3	6	41
3755	154.3	4	4	2	6	4	6	42
3889	154.8	4	4	2	*6	3	6	41
4023	155.3	3	3	2	6	3	4	34
4157	155.8	3	3	2	4	3	5	33
4292	156.2	3	*5	3	4	2	5	36
4426	156.7	3	5	3	3	3	6	37
4560	157.2	1	4	3	2	3	6	31
4694	157.7	2	3	2	2	2	4	24
4828	158.2	1	4	1	2	4	5	28
4962	158.6	1	5	1	2	7	*6	36
5096	159.1	1	5	2	2	6	5	34
5230	159.6	1	6	1	2	7	5	36
5364	160.1	0	4	0	1	10	3	29
5499	160.6		4	1	1	*10	2	29
5633	161.0		3	1	1	10	1	26
5767	161.5		2	2	1	4	0	15
5901	162.0		2	1	2	3		13
6035	162.5		0	2	0	2		7
6169	163.0			1		1		3
6303	163.4			1		1		3
6437	163.9			1		0		2
6571	164.4			1				2
6706	164.9			0				0
CIC		247	276	405	390	347	369	
Peak		5	8	6	7	11	7	
Pass		6	5	2	1	3	4	

Conemaugh 345 — Arc 4.0 km
16 October 1970 — Ref pt 158°
1021 to 1043 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 546	576	636	696	756	819	872	VIC
0	136.9				0				0
134	138.8	0	0		17				27
268	140.7	0	2		73				119
402	142.6	0	1	0	*118				190
536	144.6	0	2	12	50				102
671	146.5	0	5	*25	100				206
805	148.4	0	8	8	95				175
939	150.3	0	12	2	49		0		96
1073	152.2	0	*6	4	0		9		28
1207	154.2	0	0	0		0	64		99
1341	156.1					46	*43		142
1475	158.0					*146	35	0	292
1609	159.9					149	75	13	377
1743	161.8					94	12	31	216
1878	163.8					22	8	45	112
2012	165.7					0	0	*84	119
2146	167.6							14	20
2280	169.5							6	8
2414	171.4							0	0
CIC		0	129	183	1798	1637	881	691	
Peak		0	18	28	120	162	109	106	
Pass		7	6	1	2	3	4	5	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 346 — Arc 10.0 km
16 October 1970 — Ref pt 159°
1047 to 1120 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 513	588	624	684	750	809	866	922	VIC
0	132.1				0					0
134	132.9				1					2
268	133.6				0					0
402	134.4				2					3
536	135.2				1					2
671	135.9				0					0
805	136.7				4					7
939	137.5				2					3
1073	138.3				3					5
1207	139.0				3					5
1341	139.8	0			8					13
1475	140.6	1	0		*9	0				17
1609	141.3	*1	*1		9	1				20
1743	142.1	1	0		6	1				14
1878	142.9	1			2	0	0			5
2012	143.6	0			0	0	1			2
2146	144.4	1				2	1			7
2280	145.2	1		0		4	1			10
2414	145.9	2		1		11	2	0		27
2548	146 7	1		2		11	2	1		27
2682	147.5	1		0		9	3	1		23
2816	148.2	2		0		9	2	1		24
2950	149.0	0		0		6	3	1		16
3085	149.8	1		2		11	3	2	0	30
3219	150.5	1		3		11	3	2	1	33
3353	151.3	0		*3		11	2	1	3	31
3487	152.1			1		12	2	1	*3	30
3621	152.9			0		5	4	3	2	22
3755	153.6					*27	4	3	2	58
3889	154.4					8	7	3	1	30
4023	155.2					7	7	2	2	28
4157	155.9					2	9	6	1	28
4292	156.7					8	13	9	1	48
4426	157.5					3	11	10	1	38
4560	158.2					8	14	15	1	59
4694	159.0					5	*14	*21	1	63
4828	159.8					10	11	12	1	53
4962	160.5					9	3	5	0	27
5096	161.3					23	3	4		49
5230	162.1					10	1	4		24
5364	162.8					16	3	2		34
5499	163.6					10	5	1		26
5633	164.4					14	3	1		29
5767	165.1					2	0	1		5
5901	165.9					1	1	0		3
6035	166.7					0	1			2
6169	167.5						0			0
CIC		50	4	43	179	956	498	401	72	
Peak		3	2	4	11	30	16	22	5	
Pass		1	2	3	4	5	6	7	8	

Conemaugh 347 — Arc 4.0 km
17 October 1970 — Ref pt 138°
0659 to 0726 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 465	497	553	612	674	729	792	844	908	960	VIC
0	116.9							0				0
134	118.8					0		15			0	23
268	120.7			0		13		21		0	0	52
402	122.6			1	0	20	0	55		8	0	129
536	124.6	0		*1	2	16	4	*98		2	0	188
671	126.5	0		0	0	*118	*49	94		9	0	417
805	128.4	0			0	20	21	38		15	0	145
939	130.3	0			1	9	9	0	0	14	0	51
1073	132.2	0	0		*21	0	14		52	9	0	150
1207	134.2	0	*38		72		0		88	11	0	313
1341	136.1	0	0		8				*141	11	0	248
1475	138.0	0			0				73	21	0	146
1609	139.9	0							58	24	0	127
1743	141.8								66	*29	0	147
1878	143.8								79	28	0	166
2012	145.7								76	8	0	130
2146	147.6								66	11	0	119
2280	149.5								74	15	0	138
2414	151.4								27	12	0	60
2548	153.4								12	0	0	19
2682	155.3								19		0	29
2816	157.2								0			0
CIC		0	136	7	373	702	347	1150	2977	813	0	
Peak		0	49	4	102	141	59	130	152	33	0	
Pass		2	1	3	4	5	6	7	8	9	10	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 348 — Arc 10.0 km
17 October 1970 — Ref pt 136°
0728 to 0813 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 357	426	485	545	602	665	722	784	844	876	902	932	VIC
0	105.3					0								0
134	106.0					2								3
268	106.8					3								5
402	107.6					3								5
536	108.3					2								3
671	109.1		0			2								3
805	109.9		1			2	0							5
939	110.6		1		0	2	3							10
1073	111.4		0		2	2	3							11
1207	112.2		1		3	2	3							14
1341	112.9	0	1		2	2	5							16
1475	113.7	1	1		3	2	8							24
1609	114.5	1	1		5	3	8							29
1743	115.3	2	2		12	3	28							75
1878	116.0	1	*2	0	*32	2	44							129
2012	116.8	2	1	1	12	5	55							122
2146	117.6	2	1	1	13	2	48							107
2280	118.3	3	0	2	8	10	38							98
2414	119.1	4	1	2	24	11	30							115
2548	119.9	*5	0	4	32	6	24							113
2682	120.6	2	0	*11	8	5	24							80
2816	121.4	1	1	4	11	5	25							75
2950	122.2	0	0	1	1	16	27							72
3085	122.9			0	0	26	35	0						98
3219	123.7				0	26	82	2						176
3353	124.5				1	21	75	4						162
3487	125.2				0	36	81	5						195
3621	126.0				1	18	56	6						130
3755	126.8				1	*41	78	6						202
3889	127.5				2	83	*85	9						287
4023	128.3				0	10	78	18	0					169
4157	129.1					5	38	25	1					110
4292	129.9					3	23	*82	1					173
4426	130.6					0	7	67	4					123
4560	131.4						6	42	5					84
4694	132.2						4	45	2					81
4828	132.9						7	32	6	0				71
4962	133.7						2	27	*12	3				69
5096	134.5						0	23	9	1				52
5230	135.2						1	26	4	*3				53
5364	136.0						0	22	4	1				43
5499	136.8							14	5	0				30
5633	137.5							13	0	0	0			21
5767	138.3							13	0	1	1			23
5901	139.1							9	0	0	0	0		14
6035	139.8							10	1		*3	1		21
6169	140.6							8	5		2	1		23
6303	141.4							6	4		2	2	0	19
6437	142.1							3	1		2	3	1	11
6571	142.9							4	0		0	1	0	7
6706	143.7							1	0		1	2	0	4
6840	144.5							0	2		0	*3	1	6
6974	145.2								1			1	1	3
7108	146.0								2			0	*1	4
7242	146.8								2				0	3
7376	147.5								1				1	2
7510	148.3								0				0	0
CIC		86	50	93	620	1293	3693	1870	258	32	39	50	18	
Peak		5	4	20	36	115	95	90	15	4	4	4	2	
Pass		12	11	10	9	8	7	6	1	2	3	4	5	

Conemaugh 349 — Arc 4.0 km
20 October 1970 — Ref pt 342°
0647 to 0713 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 308	358	433	498	546	613	658	714	VIC
0	322.8		0		0		0		0	0
134	324.7		2		1		8		5	24
268	326.6		6		7		11		5	44
402	328.6		2		8		8		0	27
536	330.5		4		11		4		0	29
671	332.4		4		9		6		0	29
805	334.3		4	0	13		6		0	35
939	336.2	0	5	1	13	0	8		5	49
1073	338.2	2	5	2	8	1	5		5	43
1207	340.1	2	5	7	*9	2	1		*5	50
1341	342.0	2	*6	9	13	1	9	0	2	67
1475	343.9	*2	5	8	8	4	*12	*1	2	66
1609	345.8	4	6	8	9	5	7	2	5	72
1743	347.8	0	5	*12	7	*5	1	0	0	50
1878	349.7	0	1	2	4	6	0	0	0	21
2012	351.6	0	0	8	1	4		0	0	23
2146	353.5	0		8	0	2		1	4	25
2280	355.4	0		6		2		2	0	17
2414	357.4	2		0		0		1		4
2548	359.3	2				1		1		6
2682	001.2	0				0		0		0
CIC		57	215	254	433	118	308	29	136	
Peak		7	9	15	24	12	13	5	12	
Pass		8	7	6	5	4	1	2	3	

Conemaugh 350 — Arc 10.0 km
20 October 1970 — Ref pt 339°
0720 to 0750 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 273	426	498	548	610	664	731	VIC
0	330.5			0			0		0
134	331.3			2			2		6
268	332.1			3			2		8
402	332.9			2			3		8
536	333.6			2	0		4		10
671	334.4	0		3	1	0	3		11
805	335.2	1		4	2	1	3		20
939	335.9	1	0	4	2	2	4	0	23
1073	336.7	0	1	2	3	2	4	1	22
1207	337.5	2	1	6	4	2	3	1	37
1341	338.2	4	1	*7	3	2	3	1	45
1475	339.0	*4	2	6	4	3	4	3	55
1609	339.8	4	3	6	5	3	*7	3	64
1743	340.5	4	4	5	*6	4	7	1	65
1878	341.3	4	5	3	5	4	7	3	66
2012	342.1	3	5	2	5	4	7	*6	66
2146	342.8	1	5	2	5	4	5	4	51
2280	343.6	0	4	2	4	7	6	5	51
2414	344.4	1	5	3	4	8	6	*5	61
2548	345.1	0	5	1	3	*10	4	5	52
2682	345.9		*5	1	1	*10	2	3	42
2816	346.7		4	1	0	*10	2	2	36
2950	347.5		2	0		9	1	2	25
3085	348.2		1			5	2	2	18
3219	349.0		0			3	1	1	8
3353	349.8					5	1	2	13
3487	350.5					3	1	3	12
3621	351.3					1	0	3	7
3755	352.1					1		2	5
3889	352.8					0		3	5
4023	353.6							2	4
4157	354.4							1	2
4292	355.1							0	0
CIC		104	190	240	204	369	337	229	
Peak		5	6	8	7	10	8	6	
Pass		7	6	5	1	2	3	4	

Conemaugh 352 — Arc 4.0 km
27 October 1970 — Ref pt 320°
0713 to 0730 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 185	255	321	372	435	489	VIC
0	289.3	0						0
134	291.2	1						2
268	293.1	4			0			7
402	295.0	4			2			11
536	296.9	*10			3			23
671	298.9	8			1		0	16
805	300.8	7	0		3		1	19
939	302.7	9	1	0	7		5	37
1073	304.6	6	3	1	11	0	9	48
1207	306.6	2	2	1	13	2	12	49
1341	308.5	0	2	11	11	1	15	61
1475	310.4		4	20	9	1	29	95
1609	312.3		*4	16	13	2	*39	111
1743	314.2		5	23	17	0	5	78
1878	316.2		3	*39	*23	4	12	124
2012	318.1		1	28	4	*23	0	87
2146	320.0		0	13	0	19		50
2280	321.9			9	2	22		51
2414	323.8			4	1	10		23
2548	325.8			2	0	5		11
2682	327.7			1		2		5
2816	329.6			0		0		0
CIC		183	90	602	430	326	455	
Peak		12	6	44	25	27	40	
Pass		6	5	1	2	3	4	

Conemaugh 351 — Arc 4.0 km
26 October 1970 — Ref pt 342°
0702 to 0713 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 252	287	317	372	432	VIC
0	320.9	0					0
134	322.8	2					2
268	324.7	*6					6
402	326.6	4					4
536	328.6	*2			0		2
671	330.5	4			5		11
805	332.4	0	0	0	7		11
939	334.3		4	2	*5	0	13
1073	336.2		*7	6	1	1	16
1207	338.2		4	*4	2	1	13
1341	340.1		0	2	4	5	16
1475	342.0		1	0	0	1	2
1609	343.9		0	1		*4	8
1743	345.8			0		1	2
1878	347.8					0	0
CIC		64	57	54	86	47	
Peak		6	14	9	11	7	
Pass		2	3	1	4	5	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 353 — Arc 10.0 km
27 October 1970 — Ref pt 308°
0737 to 0749 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 345	365	435	497	VIC
0	297.2	0				0
134	298.0	1				1
268	298.8	2				1
402	299.5	1				1
536	300.3	1				1
671	301.1	1		0	0	1
805	301.9	2		1	1	4
939	302.6	2		1	1	4
1073	303.4	3		0	2	5
1207	304.2	4	0	2	3	11
1341	304.9	4	1	4	3	15
1475	305.7	4	2	4	3	17
1609	306.5	4	2	3	2	13
1743	307.2	*5	3	4	3	18
1878	308.0	4	4	4	6	24
2012	308.8	4	4	3	5	21
2146	309.5	2	5	5	6	26
2280	310.3	1	*6	*6	*8	32
2414	311.1	2	4	4	5	21
2548	311.8	1	1	2	5	14
2682	312.6	1	3	2	7	19
2816	313.4	0	1	3	6	16
2950	314.1		1	4	3	13
3085	314.9		0	3	5	14
3219	315.7			1	2	5
3353	316.5			0	0	0
3487	317.2			1		2
3621	318.0			1		2
3755	318.8			0		0
3889	319.5			0		0
4023	320.3			1		2
4157	321.1			0		0
CIC		176	133	211	272	
Peak		6	7	7	8	
Pass		2	1	3	4	

Conemaugh 354 — Arc 16.0 km
27 October 1970 — Ref pt 314°
0757 to 0840 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 185	258	305	374	425	557	609	VIC
0	307.3		0						0
134	307.8	0	1			0			2
268	308.2	1	3	0		2			12
402	308.7	1	2	1		1			9
536	309.2	1	2	2		0			8
671	309.7	2	1	3		2			15
805	310.2	0	2	3	0	0			8
939	310.6	1	2	3	1	2			16
1073	311.1	1	4	4	4	3			28
1207	311.6	2	4	4	1	2			23
1341	312.1	1	2	2	2	2			16
1475	312.6	2	2	4	4	4			29
1609	313.0	2	2	4	2	7			34
1743	313.5	3	2	3	4	7			37
1878	314.0	3	3	2	2	8			36
2012	314.5	2	3	4	6	8	0		44
2146	315.0	3	3	4	8	7	1		49
2280	315.4	2	3	5	12	6	3		58
2414	315.9	2	3	3	11	8	7		68
2548	316.4	2	3	4	13	6	8		70
2682	316.9	1	4	6	6	5	7		57
2816	317.4	3	6	4	11	6	2		59
2950	317.8	*6	3	4	17	7	1		69
3085	318.3	4	4	7	17	5	1		67
3219	318.8	3	4	9	16	5	1		66
3353	319.3	2	5	5	*19	7	0		67
3487	319.8	4	5	4	16	8	0		67
3621	320.2	3	5	5	12	7	1		60
3755	320.7	2	7	6	7	6	1		53
3889	321.2	3	9	6	14	9	0		74
4023	321.7	2	4	8	13	7	1		63
4157	322.2	2	3	9	13	12	3		80
4292	322.6	2	*7	12	1	*15	8		91
4426	323.1	*5	2	9	2	6	*15		82
4560	323.6	3	2	13	0	4	10		63
4694	324.1	4	1	*10	1	3	7		51
4828	324.6	3	0	8	1	3	8		47
4962	325.0	4		9	0	3	6		44
5096	325.5	4		10		2	1		31
5230	326.0	2		10		3	0		27
5364	326.5	2		6		4	1		25
5499	327.0	0		3		3	2	0	17
5633	327.4			3		3	0	2	15
5767	327.9			4		2	0	3	15
5901	328.4			3		3	0	2	15
6035	328.9			3		2	0	3	14
6169	329.4			3		0	0	3	9
6303	329.8			3			0	*4	10
6437	330.3			3			2	3	14
6571	330.8			1			3	4	14
6706	331.3			0			1	2	5
6840	331.8						0	3	4
6974	332.2							3	4
7108	332.7							4	6
7242	333.2							3	4
7376	333.7							3	4
7510	334.2							3	4
7644	334.6							3	4
7778	335.1							1	1
7913	335.6							0	0
CIC		340	423	863	845	770	362	176	
Peak		6	11	15	21	16	17	5	
Pass		7	6	5	4	1	2	3	

Conemaugh 355 — Arc 4.0 km
28 October 1970 — Ref pt 328°
0714 to 0734 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 200	250	315	372	435	493	560	VIC
0	293.4		0						0
134	295.3		1					0	2
268	297.3	0	0					2	4
402	299.2	1	2		0			5	13
536	301.1	3	4		1			14	37
671	303.0	3	6		2	0		14	41
805	304.9	5	12	0	9	2		5	52
939	306.9	7	10	1	*14	1	0	17	81
1073	308.8	14	6	0	12	1	1	33	109
1207	310.7	18	13	4	9	8	2	28	131
1341	312.6	*18	*14	*15	9	10	1	34	163
1475	314.6	10	6	11	6	4	1	25	103
1609	316.5	5	5	11	3	15	8	50	164
1743	318.4	6	0	11	7	14	14	*40	154
1878	320.3	2	1	5	0	26	12	35	137
2012	322.2	1	2	6	1	*32	10	3	89
2146	324.2	3	0	3	0	20	16	10	85
2280	326.1	1		11		7	*28	1	79
2414	328.0	0		6		4	29	1	66
2548	329.9			5		4	17	2	46
2682	331.8			3		3	3	0	15
2816	333.8			2		2	2		10
2950	335.7			1		0	0		2
3085	337.6			0					0
CIC		347	294	340	261	548	516	1143	
Peak		27	16	15	15	35	32	58	
Pass		7	6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 356 — Arc 10.0 km
28 October 1970 — Ref pt 316°
0746 to 0819 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 315	370	433	497	560	610	VIC
0	303.7			0				0
134	304.5			1				2
268	305.2			2				3
402	306.0	0		1				2
536	306.8	1		2				5
671	307.5	1		4		0		8
805	308.3	2		3	0	1		9
939	309.1	4	0	3	1	1		14
1073	309.9	5	1	3	1	2		19
1207	310.6	5	1	6	1	1	0	22
1341	311.4	6	2	6	1	2	1	28
1475	312.2	*8	2	7	1	2	0	31
1609	312.9	7	4	9	1	2	0	36
1743	313.7	*8	4	10	5	2	0	46
1878	314.5	7	7	9	5	4	1	52
2012	315.2	6	7	*10	8	4	0	56
2146	316.0	5	8	10	*8	5	1	59
2280	316.8	3	8	10	7	6	3	59
2414	317.5	2	6	4	8	7	4	48
2548	318.3	1	8	3	6	10	7	54
2682	319.1	0	*7	1	6	12	7	50
2816	319.8	1	6	3	6	15	11	63
2950	320.6	2	5	4	*9	14	12	70
3085	321.4	1	3	9	7	*17	13	76
3219	322.1	1	2	6	7	10	*18	65
3353	322.9	1	4	0	5	11	11	47
3487	323.7	0	3	1	2	7	3	24
3621	324.5	0	1	1	1	2	5	15
3755	325.2	0	1	0	2	1	11	21
3889	326.0	0	0	2	1	2	4	13
4023	326.8	1	1	3	0	1	4	15
4157	327.5	1	1	2	2	1	6	19
4292	328.3	3	2	1	3	0	6	22
4426	329.1	3	1	2	2	0	2	15
4560	329.8	5	0	2	3	1	0	17
4694	330.6	5		4	3	2		22
4828	331.4	6		4	3	2		24
4962	332.1	*7		8	3	1		30
5096	332.9	5		3	2	0		16
5230	333.7	4		3	1	2		16
5364	334.4	3		3	1	2		14
5499	335.2	2		1	2	2		11
5633	336.0	2		0	3	1		9
5767	336.7	0			4	0		7
5901	337.5	1			3			7
6035	338.3	0			1			2
6169	339.1	1			1			3
6303	339.8	0			1			2
6437	340.6				0			0
CIC		451	340	595	491	555	466	
Peak		8	9	11	9	19	18	
Pass		6	5	4	1	2	3	

Conemaugh 357 — Arc 4.0 km
2 November 1970 — Ref pt 314°
0720 to 0735 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 332	370	432	489	552	611	VIC
0	279.4	0						0
134	281.3	1						1
268	283.3	*5						5
402	285.2	0						0
536	287.1							0
671	289.0			0				0
805	290.9			6				9
939	292.9			8				13
1073	294.8			4			0	6
1207	296.7			14	0		15	46
1341	298.6		0	7	22		8	59
1475	300.6		*2	*13	20		20	87
1609	302.5		0	5	32	0	56	147
1743	304.4		0	2	28	52	*102	294
1878	306.3		1	0	6	15	47	109
2012	308.2		0		29	9	7	72
2146	310.2				*43	35	2	129
2280	312.1				15	45	0	97
2414	314.0				0	*9		15
2548	315.9					0		0
CIC		21	11	211	699	591	921	
Peak		6	6	24	54	53	118	
Pass		6	5	4	3	1	2	

Conemaugh 358 — Arc 10.0 km
2 November 1970 — Ref pt 308°
0740 to 0806 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 373	432	491	559	606	642	VIC
0	295.7		0					0
134	296.5		1					2
268	297.2		1					2
402	298.0	0	0					0
536	298.8	1	0		0		0	2
671	299.5	1	1		2		10	16
805	300.3	1	1		4		*33	41
939	301.1	1	*5		5		33	49
1073	301.9	0	0		*13		24	43
1207	302.6	0	0		23		26	60
1341	303.4	0	1	0	15	0	25	48
1475	304.2	1	0	2	9	6	17	42
1609	304.9	2	0	6	13	6	10	49
1743	305.7	3	1	10	20	18	22	94
1878	306.5	2	2	2	14	*29	25	87
2012	307.2	2	0	10	14	27	27	97
2146	308.0	3	0	16	5	26	29	96
2280	308.8	4	1	15	2	15	31	82
2414	309.5	4	1	*12	3	8	29	69
2548	310.3	4	1	11	2	4	26	59
2682	311.1	4	2	4	1	3	27	47
2816	311.8	5	2	1	0	13	22	48
2950	312.6	*4	2	1		2	12	25
3085	313.4	4	2	1		2	8	21
3219	314.1	4	4	0		2	5	20
3353	314.9	3	3	1		5	0	17
3487	315.7	2	3	1		0		10
3621	316.5	1	1	1				5
3755	317.2	1	0	3				7
3889	318.0	1		2				5
4023	318.8	0		5				8
4157	319.5	1		4				8
4292	320.3	1		5				10
4426	321.1	0		2				3
4560	321.8			3				5
4694	322.6			2				3
4828	323.4			0				0
CIC		215	125	430	519	595	1580	
Peak		6	7	17	25	30	34	
Pass		3	2	1	4	5	6	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 359 — Arc 16.0 km
2 November 1970 — Ref pt 314°
0814 to 0900 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 249	302	362	437	490	550	622	658	705	VIC
0	286.6		0								0
134	287.1		1								1
268	287.6		2								3
402	288.1		2								3
536	288.5		1								1
671	289.0		2								3
805	289.5		*3								4
939	290.0		2								3
1073	290.5		1		0						1
1207	290.9	0	1		2						5
1341	291.4	1	2		3						10
1475	291.9	1	4	0	2						11
1609	292.4	2	3	4	4						21
1743	292.9	1	4	4	3						20
1878	293.3	2	2	4	5						22
2012	293.8	3	2	5	7						28
2146	294.3	2	3	5	6						27
2280	294.8	1	3	5	3						20
2414	295.3	1	3	4	3						18
2548	295.7	2	3	5	4						23
2682	296.2	2	3	3	4						20
2816	296.7	1	2	5	4						20
2950	297.2	1	3	3	4						18
3085	297.7	2	3	6	6						28
3219	298.2	2	3	4	6						25
3353	298.6	2	3	4	7						26
3487	299.1	2	2	5	6						25
3621	299.6	2	3	4	7						26
3755	300.1	*2	3	5	9						32
3889	300.6	2	3	5	7						28
4023	301.0	2	3	5	7	0					28
4157	301.5	2	2	5	7	8					39
4292	302.0	1	4	6	7	9	0				44
4426	302.5	2	3	*5	8	20	1				62
4560	303.0	3	1	4	9	26	0				67
4694	303.4	2	2	6	6	33	2				80
4828	303.9	2	1	6	5	36	32	0			134
4962	304.4	1	1	5	6	*45	*43	12			183
5096	304.9	2	2	4	8	26	26	41			171
5230	305.4	2	2	2	5	15	20	*44			139
5364	305.8	1	3	3	5	16	15	32			116
5499	306.3	0	4	3	7	7	9	5			57
5633	306.8	0	2	3	5	8	6	2			42
5767	307.3	2	1	5	6	17	8	4		0	69
5901	307.8	1	1	3	10	13	8	15		0	81
6035	308.2	1	1	2	2	4	12	43		0	99
6169	308.7	2	0	1	3	2	15	35		0	90
6303	309.2	1	1	3	5	1	25	24		0	97
6437	309.7	1	1	2	5	2	26	28		0	104
6571	310.2	0	0	2	*10	3	30	18		0	104
6706	310.6			3	4	11	24	7		0	81
6840	311.1			2	0	16	22	2		0	69
6974	311.6			0	1	7	12	5		0	41
7108	312.1				1	19	4	18		0	63
7242	312.6				2	17	4	35	0	0	86
7376	313.0				1	17	3	27	2	0	74
7510	313.5				0	4	0	5	*7	0	21
7644	314.0					0		1	1	0	3
7778	314.5							0	3	0	3
7913	315.0								1	0	1
8047	315.4								0	0	0
8181	315.9								0	0	0
8315	316.4								0	0	0
8449	316.9								1	0	1
8583	317.4								1	0	1
8717	317.8								0	0	0
CIC		222	383	573	849	1368	1243	1444	57	0	
Peak		4	5	7	11	46	45	48	8	0	
Pass		9	8	7	6	5	1	2	3	4	

Conemaugh 360 — Arc 4.0 km
5 November 1970 — Ref pt 073°
0717 to 0732 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 174	262	280	355	404	484	532	VIC
0	069.2	0							0
134	071.1	1							2
268	073.0	3							7
402	074.9	*5		0				0	12
536	076.8	1	0	3				6	14
671	078.8	2	2	2			0	19	34
805	080.7	2	8	4	0	0	3	22	54
939	082.6	0	6	*16	4	*3	3	10	58
1073	084.5		11	0	6	3	2	15	53
1207	086.4		*16		*36	2	2	*14	107
1341	088.4		9		6	3	9	18	66
1475	090.3		6		0	0	10	0	26
1609	092.2		0				*16		27
1743	094.1						6		10
1878	096.1						3		5
2012	098.0						3		5
2146	099.9						0		0
CIC		50	208	90	186	39	204	373	
Peak		6	17	18	38	5	24	35	
Pass		7	6	5	4	1	2	3	

Conemaugh 361 — Arc 10.0 km
5 November 1970 — Ref pt 104°
0747 to 0807 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 250	280	350	410	475	526	VIC
0	085.6			0				0
134	086.3			1				2
268	087.1			3		0		5
402	087.9			2		2		7
536	088.6	0		3		0		5
671	089.4	1		5		1		11
805	090.2	2		7		3	0	18
939	090.9	4	0	4		4	3	20
1073	091.7	2	1	8		*11	3	38
1207	092.5	3	2	9		9	1	36
1341	093.2	4	4	*16		*10	7	61
1475	094.0	4	5	11		7	6	48
1609	094.8	4	8	11	0	8	7	55
1743	095.5	*6	10	9	4	5	7	58
1878	096.3	6	11	9	2	3	4	49
2012	097.1	3	8	6	3	2	*5	38
2146	097.9	2	6	7	3	3	7	41
2280	098.6	3	6	6	3	2	5	36
2414	099.4	3	*9	5	*8	3	5	48
2548	100.2	3	11	1	7	3	4	41
2682	100.9	4	4	2	3	3	2	24
2816	101.7	3	5	2	5	1	1	24
2950	102.5	3	5	2	4	0	1	21
3085	103.2	2	3	0	3		2	13
3219	104.0	2	3		2		3	13
3353	104.8	2	3		4		1	14
3487	105.5	0	4		1		1	8
3621	106.3		2		0		0	3
3755	107.1		1					1
3889	107.8		1					1
4023	108.6		0					0
CIC		236	401	462	186	287	269	
Peak		7	13	18	9	11	9	
Pass		6	5	4	3	2	1	

Conemaugh 362 — Arc 16.0 km
5 November 1970 — Ref pt 095°
0859 to 0922 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 300	350	410	470	526	590	VIC
0	090.7	0						0
134	091.2	1				0		1
268	091.6	1				2		5
402	092.1	2				2		6
536	092.6	3		0		2		7
671	093.1	4		1	0	5		15
805	093.6	7		0	2	4		19
939	094.0	6	0	1	4	6		25
1073	094.5	6	1	4	0	5	0	24
1207	095.0	6	1	5	2	6	2	34
1341	095.5	6	2	4	3	6	1	33
1475	096.0	7	2	4	5	7	3	43
1609	096.4	*7	4	4	*5	*8	2	46
1743	096.9	6	5	5	2	5	2	38
1878	097.4	5	4	*5	0	5	3	34
2012	097.9	5	9	4	3	5	*5	48
2146	098.4	4	*9	5	4	5	4	48
2280	098.8	4	7	3	5	3	5	42
2414	099.3	3	6	2	5	4	5	39
2548	099.8	2	5	2	4	3	5	33
2682	100.3	1	6	1	4	3	3	28
2816	100.8	3	6	2	3	2	5	32
2950	101.2	1	5	1	2	2	5	25
3085	101.7	1	4	1	2	2	3	20
3219	102.2	1	3	0	3	1	3	17
3353	102.7	0	3	1	3	0	3	16
3487	103.2	0	2	1	3		3	14
3621	103.6	1	3	1	2		3	16
3755	104.1	0	1	0	1		2	6
3889	104.6		1		1		2	6
4023	105.1		1		2		1	6
4157	105.6		1		0		0	1
4192	106.0		1					1
4426	106.5		0					0
CIC		333	330	204	251	333	251	
Peak		8	10	6	6	8	7	
Pass		6	5	4	1	2	3	

Conemaugh 363 — Arc 4.0 km
6 November 1970 — Ref pt 073°
0826 to 0844 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 313	381	442	498	563	615	675	735	VIC
0	059.6	0								0
134	061.5	*2			0					4
268	063.4	0	0		26				0	42
402	065.3		1		56				*2	95
536	067.2		2		25		0		3	48
671	069.2		2	0	*101	0	15		0	188
805	071.1		*12	*17	125	1	*122			431
939	073.0		2	3	2	7	0			22
1073	074.9		0	8	0	7		0		23
1207	076.8			4		120		63		293
1341	078.8			0		*160		*149		487
1475	080.7					55		26		127
1609	082.6					0		0		0
CIC		7	68	115	1200	1254	491	853	18	
Peak		2	16	22	132	196	126	175	4	
Pass		8	7	1	2	3	4	5	6	

Conemaugh 364 — Arc 10.0 km
6 November 1970 — Ref pt 076°
0847 to 0900 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 443	502	565	610	VIC
0	066.8	0				0
134	067.5	2	0			3
268	068.3	3	1			6
402	069.1	*2	2	0	0	6
536	069.9	2	2	1	2	10
671	070.6	2	3	2	0	11
805	071.4	4	2	3	0	14
939	072.2	2	2	4	1	13
1073	072.9	2	6	*5	5	26
1207	073.7	1	*6	2	*11	27
1341	074.5	2	4	2	11	26
1475	075.2	2	4	0	8	19
1609	076.0	1	1		6	10
1743	076.8	2	4		5	16
1878	077.5	0	2		2	6
2012	078.3		1		1	3
2146	079.1		2		1	4
2280	079.8		1		2	4
2414	080.6		0		0	0
CIC		97	154	68	197	
Peak		6	8	5	13	
Pass		4	1	2	3	

Homer City 365 — Arc 4.0 km
9 November 1970 — Ref pt 348°
0709 to 0729 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 87	120	198	255	310	377	430	497	530	VIC
0	319.2				0		0				0
134	321.1	0			3		13				25
268	323.0	1		0	2	0	9				18
402	324.9	3	0	1	12	5	9			0	45
536	326.9	*12	*1	5	16	8	25			0	98
671	328.8	1	0	*13	*19	34	20			0	140
805	330.7	0	*1	10	17	*73	*40			0	228
939	332.6	2	0	6	2	55	25			0	145
1073	334.6	1		1	0	4	4			0	16
1207	336.5	0		0		0	0	0		0	0
1341	338.4							11	0	0	18
1475	340.3							*7	*3	0	15
1609	342.2							2	*3	0	7
1743	344.2							1	0	0	2
1878	346.1							1		0	2
2012	348.0							0			0
CIC		72	7	129	254	641	519	79	21	0	
Peak		14	1	18	21	93	42	12	3	0	
Pass		9	8	7	6	5	4	1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 366 — Arc 10.0 km
9 November 1970 — Ref pt 334°
0737 to 0805 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 124	190	250	307	370	430	462	490	VIC
0	311.7		0							0
134	312.5	0	1							2
268	313.3	1	1							3
402	314.0	0	1							2
536	314.8	*2	0							4
671	315.6	0	0							0
805	316.3	1	0							2
939	317.1	1	2							5
1073	317.9	1	1		0					3
1207	318.6	1	*1	0	2					7
1341	319.4	1	2	2	3					13
1475	320.2	1	2	0	3					10
1609	320.9	*1	2	4	5					19
1743	321.7	1	1	6	4					19
1878	322.5	1	1	4	9					24
2012	323.2	1	2	5	14					35
2146	324.0	1	1	6	*15	0				37
2280	324.8	0	1	4	13	3				34
2414	325.5		1	5	10	7				37
2548	326.3		0	3	7	8				29
2682	327.1			*7	6	12				40
2816	327.9			3	1	15	0			31
2950	328.6			2	2	23	4			49
3085	329.4			4	1	*19	2			41
3219	330.2			2	1	20	0			37
3353	330.9			0	1	13	9		0	34
3487	331.7				1	8	14		0	32
3621	332.5				4	6	13		0	32
3755	333.2				1	0	*19		0	25
3889	334.0				0	2	15		0	22
4023	334.8					3	11		0	18
4157	335.5					0	9		0	11
4292	336.3						8	0	0	10
4426	337.1						8	1	0	11
4560	337.8						6	2	0	9
4694	338.6						11	1	0	14
4828	339.4						5	1	0	7
4962	340.1						5	*2	0	8
5096	340.9						7	3	0	11
5230	341.7						8	0	0	10
5364	342.5						0	0	0	0
5499	343.2							3	0	2
5633	344.0							1	0	1
5767	344.8							1	0	1
5901	345.5							2	0	2
6035	346.3							1	0	1
6169	347.1							0	0	0
CIC		50	72	204	369	498	552	64	0	
Peak		2	3	9	17	25	21	6	0	
Pass		8	7	6	5	1	2	4	3	

Homer City 367 — Arc 16.0 km
9 November 1970 — Ref pt 335°
0811 to 0836 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 190	248	310	370	435	448	490	VIC
0	314.3	0							0
134	314.8	2							3
268	315.3	1							2
402	315.8	2							3
536	316.3	2	0						3
671	316.8	1	1						3
805	317.2	2	2						6
939	317.7	2	3						8
1073	318.2	2	2						6
1207	318.7	2	2						6
1341	319.2	2	2						6
1475	319.6	1	2	0					5
1609	320.1	2	3	1					10
1743	320.6	*3	3	1					11
1878	321.1	1	3	1					8
2012	321.6	1	6	2					14
2146	322.0	1	5	4					16
2280	322.5	*2	*6	6					22
2414	323.0	0	5	7					19
2548	323.5	0	4	7					18
2682	324.0	0	3	7					16
2816	324.4	0	3	7					16
2950	324.9	0	3	6					15
3085	325.4	2	3	*6					18
3219	325.9	1	2	6					15
3353	326.4	0	3	2					8
3487	326.8		2	2					6
3621	327.3		2	3					8
3755	327.8		1	3	0				6
3889	328.3		3	4	4				18
4023	328.8		2	1	1				6
4157	329.2		3	1	6				16
4292	329.7		3	2	4				15
4426	330.2		1	3	3				11
4560	330.7		2	0	3				8
4694	331.2		1		3				7
4828	331.6		1		4				8
4962	332.1		1		5				10
5096	332.6		2		6				13
5230	333.1		1		3.				7
5364	333.6		0		8				13
5499	334.0				3				5
5633	334.5				6				10
5767	335.0				4			0	7
5901	335.5				6			0	10
6035	336.0				*8			0	13
6169	336.4				9			0	15
6303	336.9				2			0	3
6437	337.4				4			0	7
6571	337.9				2	0		0	3
6706	338.4				0	5		0	5
6840	338.8					10		0	10
6974	339.3					*13		0	14
7108	339.8					9		0	9
7242	340.3					6		0	6
7376	340.8					4		0	4
7510	341.2					1	0	0	1
7644	341.7					0	1	0	1
7778	342.2						1	0	1
7913	342.7						*1	0	1
8047	343.2						0	0	0
CIC		115	326	294	337	172	11	0	
Peak		3	7	8	15	14	2	0	
Pass		7	6	5	1	2	4	3	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 368 — Arc 4.0 km
11 November 1970 — Ref pt 292°
0724 to 0753 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 132	190	258	307	368	435	494	VIC
0	228.6	0							0
134	230.5	3							5
268	232.4	3							5
402	234.4	4							6
536	236.3	2							3
671	238.2	4							6
805	240.1	4	0						6
939	242.1	4	1						8
1073	244.0	5	2						11
1207	245.9	4	2	0					10
1341	247.8	7	2	1					16
1475	249.7	7	2	1					16
1609	251.7	8	2	1					17
1743	253.6	7	2	2					17
1878	255.5	7	4	3				0	22
2012	257.4	7	3	5				2	27
2146	259.3	8	4	4		0		3	30
2280	261.3	9	10	4		1		3	43
2414	263.2	9	7	3		3		2	39
2548	265.1	9	8	4	0	1		3	40
2682	267.0	10	8	9	1	1		3	51
2816	268.9	9	9	8	2	0		2	48
2950	270.9	10	10	8	3	1		1	52
3085	272.8	*11	9	5	4	2		2	52
3219	274.7	8	8	6	4	3		6	56
3353	276.6	8	9	8	5	5		12	75
3487	278.6	5	9	8	9	9		15	88
3621	280.5	5	12	6	6	13		11	86
3755	282.4	5	*11	6	9	17	0	9	92
3889	284.3	5	8	*10	14	25	1	9	116
4023	286.2	4	9	8	20	*30	5	20	154
4157	288.2	4	9	6	22	30	8	17	154
4292	290.1	4	8	9	19	15	19	16	144
4426	292.0	3	4	8	15	14	21	11	122
4560	293.9	2	3	5	13	14	27	29	150
4694	295.8	2	5	5	10	11	24	59	186
4828	297.8	2	3	2	15	11	24	*59	185
4962	299.7	1	1	1	6	9	*27	20	106
5096	301.6	1	2	1	*21	5	20	35	135
5230	303.5	0	0	2	6	3	25	2	62
5364	305.4		1	1	5	3	8	12	48
5499	307.4		1	3	6	3	5	0	29
5633	309.3		0	2	5	3	5		24
5767	311.2			2	2	2	5		18
5901	313.1			1	3	2	4		16
6035	315.1			0	2	2	3		11
6169	317.0				1	3	2		10
6303	318.9				2	3	3		13
6437	320.8				1	0	1		3
6571	322.7				2		2		6
6706	324.7				3		2		8
6840	326.6				4		3		11
6974	328.5				0		4		7
7108	330.4						2		3
7242	332.3						0		0
CIC		752	673	566	860	874	896	1300	
Peak		11	14	18	24	34	29	61	
Pass		7	6	5	4	1	2	3	

Conemaugh 369 — Arc 10.0 km
11 November 1970 — Ref pt 300°
0819 to 0848 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 314	372	430	490	VIC
0	251.6	0				0
134	252.4	2				3
268	253.1	1				2
402	253.9	1				2
536	254.7	2				3
671	255.4	1				2
805	256.2	3				5
939	257.0	3				5
1073	257.7	3				5
1207	258.5	3				5
1341	259.3	4				6
1475	260.0	5				8
1609	260.8	3	0			5
1743	261.6	3	2			8
1878	262.3	3	1			6
2012	263.1	3	2			8
2146	263.9	3	2			8
2280	264.7	2	0	0		3
2414	265.4	2	2	1		8
2548	266.2	1	2	1		6
2682	267.0	1	2	1		6
2816	267.7	2	2	1		8
2950	268.5	2	2	1		8
3085	269.3	2	2	2		9
3219	270.0	3	2	1		9
3353	270.8	1	2	1		6
3487	271.6	2	2	1		8
3621	272.3	3	2	1		9
3755	273.1	4	2	0		9
3889	273.9	3	3	0		9
4023	274.6	3	4	0		11
4157	275.4	6	4	2		19
4292	276.2	7	3	2		19
4426	276.9	4	2	3		14
4560	277.7	7	4	3		22
4694	278.5	6	4	2		19
4828	279.3	5	6	1		19
4962	280.0	4	5	2		17
5096	280.8	6	5	1		19
5230	281.6	7	5	2		22
5364	282.3	*7	7	1		23
5499	283.1	*8	7	2		26
5633	283.9	6	7	2		23
5767	284.6	7	8	2		26
5901	285.4	*8	*9	2		29
6035	286.2	6	8	2		25
6169	286.9	5	8	3		25
6303	287.7	5	7	4		25
6437	288.5	2	7	3	0	19
6571	289.2	4	6	4	1	23
6706	290.0	4	4	5	4	27
6840	290.8	4	5	3	6	28
6974	291.5	4	6	3	7	31
7108	292.3	3	3	3	8	27
7242	293.1	6	2	4	*9	33
7376	293.9	6	1	3	9	30
7510	294.6	7	0	5	5	27
7644	295.4	5		*6	9	32
7778	296.2	3		7	6	25
7913	296.9	5		6	4	24
8047	297.7	3		4	5	19
8181	298.5	2		3	5	16
8315	299.2	2		2	3	11
8449	300.0	2		2	3	11
8583	300.8	2		1	3	9
8717	301.5	3		1	2	9
8851	302.3	4		2	2	13
8985	303.1	4		2	2	13
9120	303.8	4		6	1	17
9254	304.6	4		3	3	16
9388	305.4	3		0	1	6
9522	306.1	3			1	6
9656	306.9	2			0	3
9790	307.7	2			1	5
9924	308.5	2			1	5
10058	309.2	2			0	3
10192	310.0	2				3
10327	310.8	1				2
10461	311.5	0				0
CIC		996	605	448	362	
Peak		8	10	8	10	
Pass		3	2	1	4	

Table 3 (continued). PLUME CROSS SECTIONS

Conemaugh 370 — Arc 16.0 km
11 November 1970 — Ref pt 288°
0958 to 1035 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 129	202	265	314	381	447	VIC
0	266.9	0						0
134	267.3	1						2
268	267.8	1						2
402	268.3	1						2
536	268.8	1						2
671	269.3	1						2
805	269.8	2						4
939	270.2	1		0		0		2
1073	270.7	1	0	1	0	1		5
1207	271.2	1	2	0	1	0		7
1341	271.7	1	2	1	2	2		14
1475	272.2	1	1	1	2	1		10
1609	272.6	1	1	1	3	1		12
1743	273.1	1	2	1	2	3		15
1878	273.6	1	2	1	2	1		12
2012	274.1	2	2	1	2	2		16
2146	274.6	2	2	1	3	2		17
2280	275.0	3	2	1	3	2		19
2414	275.5	2	2	0	2	2		14
2548	276.0	3	2	1	2	3		19
2682	276.5	2	2	2	3	2		19
2816	277.0	2	3	1	3	1		17
2950	277.4	3	2	1	2	3		19
3085	277.9	3	3	1	3	3		23
3219	278.4	3	3	1	2	3		21
3353	278.9	3	2	2	3	2	0	21
3487	279.4	3	3	1	3	1	1	21
3621	279.8	*3	*3	2	3	3	1	26
3755	280.3	3	1	2	3	2	2	22
3889	280.8	2	2	3	4	1	2	24
4023	281.3	1	1	2	5	2	3	23
4157	281.8	0	1	3	6	1	2	21
4292	282.2	3	1	3	6	1	2	27
4426	282.7	2	1	3	4	1	1	20
4560	283.2	1	2	4	5	2	1	25
4694	283.7	1	1	4	5	2	3	26
4828	284.2	1	2	4	5	3	3	30
4962	284.6	1	3	3	6	4	4	35
5096	285.1	0	3	3	3	4	2	25
5230	285.6		3	4	5	6	2	33
5364	286.1		2	6	6	7	2	38
5499	286.6		4	3	5	4	2	30
5633	287.0		2	4	6	6	2	33
5767	287.5		1	5	5	5	2	29
5901	288.0		1	4	6	6	2	31
6035	288.5		1	*6	6	6	3	36
6169	289.0		0	5	6	6	3	33
6303	289.4		1	6	7	6	2	36
6437	289.9		0	4	6	6	2	29
6571	290.4			4	*7	5	3	31
6706	290.9			4	7	*6	3	33
6840	291.4			2	6	6	4	30
6974	291.8			3	2	6	4	25
7108	292.3			1	1	5	5	21
7242	292.8			1	1	7	4	22
7376	293.3			2	0	8	5	26
7510	293.8			1		8	5	24
7644	294.2			0		4	7	19
7778	294.7					2	7	16
7913	295.2					2	*7	16
8047	295.7					1	5	11
8181	296.2					1	4	9
8315	296.6					1	5	11
8449	297.1					1	3	7
8583	297.6					0	4	7
8717	298.1						4	7
8851	298.6						3	5
8985	299.0						1	2
9120	299.5						3	5
9254	300.0						0	0
CIC		229	265	430	645	652	484	
Peak		5	5	7	9	9	9	
Pass		6	5	4	3	2	1	

Homer City 371 — Arc 4.0 km
16 November 1970 — Ref pt 076°
1054 to 1122 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 197	270	317	387	437	510	562	617	684	735	VIC
0	058.7	0				0		0		0		0
134	060.6	1				2		1		3		11
268	062.6	5				4		4		12		41
402	064.5	*12		0		1		1		8		39
536	066.4	8	0	2		3	0	3		10		44
671	068.3	5	1	6		9	5	15		13		85
805	070.2	2	1	5		5	*40	10		9		116
939	072.2	4	2	4		12	13	3		13	0	83
1073	074.1	2	1	*6	0	12	4	1	0	18	19	97
1207	076.0	0	1	5	1	*21	6	3	2	*22	*48	163
1341	077.9		5	0	*2	4	5	3	9	4	19	77
1475	079.8		2		1	0	3	*22	4	5	17	78
1609	081.8		1		0		1	2	6	6	5	32
1743	083.7		1		2		0	0	10	5	0	29
1878	085.6		*15		1				*13	2		50
2012	087.5		11		0				15	0		42
2146	089.4		7						11			29
2280	091.4		1						7			13
2414	093.3		0						7			11
2548	095.2								0			0
CIC		140	176	100	25	261	276	244	301	466	387	
Peak		14	18	8	4	27	43	25	17	25	58	
Pass		10	9	8	7	6	1	2	3	4	5	

Homer City 372 — Arc 10.0 km
16 November 1970 — Ref pt 072°
1129 to 1156 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 143	264	385	505	617	737	VIC
0	075.1			0				0
134	075.8	0	0	1				3
268	076.6	1	1	1				10
402	077.4	2	1	2				16
536	078.1	3	1	4				26
671	078.9	0	1	4	0			16
805	079.7	2	0	*5	1	0		26
939	080.5	*3	*2	3	1	1		32
1073	081.2	3	1	4	6	3		54
1207	082.0	1	0	2	4	2		28
1341	082.8	3	1	3	2	1	0	32
1475	083.5	1	1	2	2	1	1	25
1609	084.3	1	2	2	*5	4	2	50
1743	085.1	0	1	1	4	6	2	44
1878	085.8		1	0	5	4	2	38
2012	086.6		2		6	1	3	38
2146	087.4		2		5	6	0	41
2280	088.1		1		2	9	2	44
2414	088.9		1		2	*9	1	41
2548	089.7		0		1	7	2	31
2682	090.4				0	0	2	6
2816	091.2					5	1	19
2950	092.0					7	1	25
3085	092.7					0	3	10
3219	093.5						*3	10
3353	094.3						2	6
3487	095.1						0	0
CIC		72	68	122	165	236	97	
Peak		5	3	5	8	10	4	
Pass		6	5	4	1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 373 — Arc 16.0 km
16 November 1970 — Ref pt 087°
1200 to 1220 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 267	377	507	627	745	VIC
0	078.4	0					0
134	078.8	1		0			3
268	079.3	2		0			9
402	079.8	2		0			6
536	080.3	1	0	1			6
671	080.8	1	1	2			13
805	081.2	1	2	1			13
939	081.7	1	3	1			16
1073	082.2	1	5	0			19
1207	082.7	1	4	0			16
1341	083.2	1	5	1			22
1475	083.6	1	*5	1		0	22
1609	084.1	1	3	0		1	16
1743	084.6	2	3	0		1	19
1878	085.1	1	2	1		2	19
2012	085.6	1	1	1		2	16
2146	086.0	1	3	2		*3	29
2280	086.5	2	2	*2		2	25
2414	087.0	2	2	2		1	22
2548	087.5	*2	2	1	0	1	22
2682	088.0	2	3	1	1	2	28
2816	088.4	0	2	0	2	*2	19
2950	088.9	1	1		2	2	19
3085	089.4	0	2		1	0	10
3219	089.9		1		2	1	13
3353	090.4		0		*3	1	13
3487	090.8				3	1	13
3621	091.3				3	0	10
3755	091.8				0	1	3
3889	092.3				0	0	0
4023	092.8				1		3
4157	093.2				4		13
4292	093.7				0		0
CIC		100	186	64	79	86	
Peak		3	6	3	5	3	
Pass		5	4	1	2	3	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 297 — Arc 4.0 km
20 April 1970 — Ref pt 004°
0650 to 0722 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 253	283	314	336	365	425	464	545	590	605	653	VIC
0	350.6	0		0									0
134	352.5	1	0	3									3
268	354.4	1	1	1									2
402	356.3	1	1	*5									5
536	358.2	1	1	1									2
671	000.2	*1	5	0	0								5
805	002.1	0	6		7	0							9
939	004.0		*14		1	1							13
1073	005.9		7		0	2		0	0				8
1207	007.8		2		3	1	0	6	*1				16
1341	009.8		1		13	15	29	13	2				89
1475	011.7		0		14	41	25	*34	0	0			145
1609	013.6				11	*37	*61	13		2		0	153
1743	015.5				9	5	1	25		*12		0	63
1878	017.4				9	0	0	3		10		0	19
2012	019.4				*25			4		0	0	0	23
2146	021.3				4			0			3	0	5
2280	023.2				0			1			*8	0	8
2414	025.1							4			0	0	6
2548	027.1							0				0	0
CIC		18	136	36	344	365	416	369	11	86	39	0	
Peak		2	15	6	36	72	72	34	3	14	11	0	
Pass		10	11	8	9	7	6	1	2	3	4	5	

Homer City 299 — Arc 4.0 km
21 April 1970 — Ref pt 034°
0703 to 0720 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 215	255	307	385	430	493	535	VIC
0	022.5				0				0
134	024.4	0	0		23				37
268	026.3	0	*1		*47				78
402	028.2	0	1		55				91
536	030.2	0	2		46			0	77
671	032.1	0	0	0	28	0	0	0	46
805	034.0			13	0	70	14	0	143
939	035.9			*9		86	37	0	191
1073	037.8			2		*69	*18	0	128
1207	039.8			12		22	42	0	111
1341	041.7			0		0	4	0	6
1475	043.6						1	0	1
1609	045.5						0	0	0
CIC		0	14	129	713	885	416	0	
Peak		0	6	34	76	95	55	0	
Pass		7	6	5	4	3	1	2	

Homer City 298 — Arc 10.0 km
20 April 1970 — Ref pt 005°
0729 to 0823 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 245	278	313	357	426	495	521	545	578	643	665	712	755	VIC
0	349.6	0	0												0
134	350.4	0	1												1
268	351.2	0	1												1
402	351.9	0	2												2
536	352.7	0	2												2
671	353.5	0	2												2
805	354.2	0	2												2
939	355.0	0	2												2
1073	355.8	0	3	0											3
1207	356.5	0	*3	1											4
1341	357.3	0	3	2											5
1475	358.1	0	3	8											11
1609	358.9	0	3	6											9
1743	359.6	0	3	13											16
1878	000.4	0	3	17											20
2012	001.2	0	2	16											18
2146	001.9	0	3	4											7
2280	002.7	0	2	2											4
2414	003.5	0	2	1											3
2548	004.2	0	2	1			0								3
2682	005.0	0	0	1	0		4								6
2816	005.8			1	2		5								10
2950	006.5			1	3		3								9
3085	007.3			1	1	0	2								5
3219	008.1			1	10	2	1								21
3353	008.8			4	4	3	2								18
3487	009.6			11	5	7	1								33
3621	010.4			10	3	8	2								32
3755	011.1			12	22	15	3								77
3889	011.9			*19	14	13	4								70
4023	012.7			19	16	12	4								71
4157	013.5			10	*45	11	10								111
4292	014.2			0	24	15	4								69
4426	015.0				12	16	3								51
4560	015.8				8	11	12								47
4694	016.5				16	12	3	0							50
4828	017.3				3	14	5	*15							47
4962	018.1				2	20	4	13						0	54
5096	018.8				1	*31	2	7						0	66
5230	019.6				1	22	4	13						0	56
5364	020.4				2	15	5	7		0	0			0	42
5499	021.1				2	23	12	6		2	1			0	68
5633	021.9				1	16	*24	5		1	*2			0	68
5767	022.7				1	12	16	4	0	*12	2			0	65
5901	023.4				0	4	23	3	1	7	1			0	50
6035	024.2					4	16	0	0	0	0	0		0	27

Homer City 298 (continued)

Cum y, m	Dir, deg	Traverse height, m 245	278	313	357	426	495	521	545	578	643	665	712	755	VIC
6169	025.0					1	12		2		1	2		0	21
6303	025.7					1	11		*4		0	5	0	0	23
6437	026.5					0	0		4			*5	1	0	9
6571	027.3								3			2	*2	0	7
6706	028.1								2			0	1	0	3
6840	028.8								0				0	0	0
CIC		0	158	577	709	1032	706	261	57	79	25	50	14	0	
Peak		0	4	23	48	33	26	18	7	16	4	7	3	0	
Pass		12	13	11	10	9	1	3	2	4	5	6	8	7	

Homer City 300 Arc 10.0 km
21 April 1970 Ref pt 031°
0724 to 0835 EST SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 183	255	295	362	436	490	563	615	659	720	818	875	955	977	VIC
0	029.5					0										0
134	030.2					3										5
268	031.0					1										2
402	031.8					1	0									2
536	032.5					6	2									14
671	033.3					24	1									43
805	034.1					*32	0									55
939	034.8					12	*20									54
1073	035.6					3	13									27
1207	036.4					1	17	0								30
1341	037.1					0	6	1	0							12
1475	037.9						10	2	2							23
1609	038.7						12	2	1							25
1743	039.5						14	10	3							44
1878	040.2						8	10	4							35
2012	041.0						3	8	9	0	0					30
2146	041.8						7	5	10	1	4					43
2280	042.5						10	4	9	1	*16					70
2414	043.3						2	7	*7	2	11					50
2548	044.1						1	3	3	2	2					17
2682	044.8						2	4	2	7	7					37
2816	045.6						3	8	0	9	15					62
2950	046.4						3	*16		8	8					60
3085	047.1						4	14		6	11					61
3219	047.9						5	16		11	15		0			82
3353	048.7						3	14		15	8		2			70
3487	049.4		0				1	15		*15	13		9			91
3621	050.2		1				0	12		15	3	0	10			67
3755	051.0		1					0		8	0	3	*16			48
3889	051.7	0	1							6		4	11			38
4023	052.5	1	1							0		10	11			44
4157	053.3	1	2	0								8	9			38
4292	054.1	1	2	1								5	3			22
4426	054.8	1	*2	3								11	3			37
4560	055.6	1	*3	2								*13	2	0		40
4694	056.4	*1	2	*6								4	1	2		26
4828	057.1	1	2	5								1	3	4		25
4962	057.9	1	0	2								1	2	4	0	16
5096	058.7	0	0	2								0	9	3	*1	24
5230	059.4		1	3									2	2	0	12
5364	060.2		0	4									2	1	0	11
5499	061.0		1	2									3	1	0	11
5633	061.7		0	1									4	0	0	9
5767	062.5			1									5	0	*1	11
5901	063.3			0									7	1	0	14
6035	064.0												2	1	0	5
6169	064.8				0								3	2	0	8
6303	065.6				1								2	5	0	12
6437	066.3				0								0	2	*1	3
6571	067.1				0									7	0	10
6706	067.9				0									*6		8
6840	068.7				0									3		4
6974	069.4				2									0		4
7108	070.2				3											6
7242	071.0				*3											6
7376	071.7				3											6
7510	072.5				2											4
7644	073.3				1											2
7778	074.0				1											2
7913	074.8				0											0
CIC		29	68	115	57	297	527	541	179	380	405	215	433	158	11	
Peak		2	3	7	5	41	21	18	13	16	22	14	18	10	1	
Pass		14	13	12	11	1	2	3	4	5	6	7	8	9	10	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 301 — Arc 4.0 km
22 April 1970 — Ref pt 081°
0657 to 0716 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 222	287	347	407	444	484	505	537	VIC
0	063.7	0	0							0
134	065.6	0	4							7
268	067.6	0	4							7
402	069.5	0	8							13
536	071.4	0	5	0						8
671	073.3	0	8	7						24
805	075.2	0	8	15						37
939	077.2	0	11	21					0	52
1073	079.1	0	5	68				0	0	117
1207	081.0	0	11	76	0			11	0	148
1341	082.9	0	*20	*145	53	0	0	*104	0	408
1475	084.8	0	16	0	94	*11	*18	6	0	179
1609	086.8	0	13		110	0	0	0	0	163
1743	088.7	0	0		*159				0	204
1878	090.6				12					15
2012	092.5				0					0
CIC		0	405	1189	1533	39	64	433	0	
Peak		0	40	163	172	13	22	110	0	
Pass		8	7	6	5	3	4	1	2	

Homer City 302 — Arc 10.0 km
22 April 1970 — Ref pt 080°
0724 to 0804 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 187	254	309	370	443	507	539	567	VIC
0	058.5			0						0
134	059.3			1						2
268	060.0			3						5
402	060.8			4						6
536	061.6		0	4						6
671	062.3		4	3						11
805	063.1		4	3						11
939	063.9		5	3						13
1073	064.6		5	4						14
1207	065.4		6	4						16
1341	066.2		4	4						13
1475	066.9		5	3						13
1609	067.7		5	3						13
1743	068.5		6	4						16
1878	069.2		5	4						14
2012	070.0	0	4	3						11
2146	070.8	3	4	2						15
2280	071.5	3	5	3						18
2414	072.3	3	8	3						23
2548	073.1	5	8	5						30
2682	073.9	4	6	3						22
2816	074.6	5	9	5						31
2950	075.4	5	10	3						30
3085	076.2	6	12	2	0					33
3219	076.9	4	13	2	2					35
3353	077.7	5	10	2	2					32
3487	078.5	6	13	3	2					40
3621	079.2	8	13	5	3					49
3755	080.0	11	15	6	4					61
3889	080.8	11	14	7	1					55
4023	081.5	13	16	5	1					59
4157	082.3	11	19	9	4					72
4292	083.1	13	23	5	7					81
4426	083.8	*16	*31	3	1					86
4560	084.6	15	12	10	0					62
4694	085.4	12	13	12	4					68
4828	086.1	10	7	24	2					70
4962	086.9	8	3	*28	1					64
5096	087.7	9	3	22	5					64
5230	088.5	8	2	12	4					43
5364	089.2	6	2	12	10					50
5499	090.0	5	3	13	5					43
5633	090.8	13	3	27	11					90
5767	091.5	10	2	10	10					55
5901	092.3	4	2	20	1	0				43
6035	093.1	0	3	3	7	2				26
6169	093.8		3	2	28	0				58
6303	094.6		2	4	23	0			0	51
6437	095.4		2	3	*42	48			0	170
6571	096.1		1	1	35	*81	0		0	213
6706	096.9		3	2	14	24	1	0	0	78
6840	097.7		3	2	22	25	*33	*18	0	149
6974	098.4		2	2	15	0	2	0	0	36
7108	099.2		2	2	0		8		0	17
7242	100.0		2	3			0		0	8
7376	100.7		2	2					0	6
7510	101.5		2	1					0	5
7644	102.3		0	1						2
7778	103.1			0						0
CIC		831	1293	1222	953	645	158	64	0	
Peak		19	34	29	46	85	33	18	0	
Pass		8	7	6	5	1	2	4	3	

Homer City 303 — Arc 4.0 km
23 April 1970 — Ref pt 054°
1037 to 1053 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 75	155	202	260	335	402	454	VIC
0	030.9					0			0
134	032.9					7			13
268	034.8					9			17
402	036.7	0				9			17
536	038.6	*9				15			48
671	040.6	4				*31			67
805	042.5	2	0	0	0	31			63
939	044.4	0	6	7	1	9			39
1073	046.3		6	5	9	27	0		84
1207	048.2		7	*5	8	5	9		57
1341	050.2		8	2	6	8	11	0	60
1475	052.1		*11	6	5	5	12	9	77
1609	054.0		0	0	8	9	*29	41	134
1743	055.9				12	0	5	*69	125
1878	057.8				*18		4	39	92
2012	059.8				5		12	29	68
2146	061.7				0		14	13	40
2280	063.6						18	9	41
2414	065.5						0	0	0
CIC		54	136	90	258	591	408	749	
Peak		9	14	8	24	39	34	82	
Pass		7	6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 304 — Arc 10.0 km
23 April 1970 — Ref pt 049°
1100 to 1125 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 155	215	267	325	395	465	VIC
0	031.3	0						0
134	032.1	1						2
268	032.9	1		0				2
402	033.6	2	0	2				6
536	034.4	2	1	2				8
671	035.2	1	2	2				8
805	035.9	2	1	3				9
939	036.7	3	1	4				12
1073	037.5	*4	1	5				15
1207	038.2	*4	1	7				18
1341	039.0	*4	2	7				20
1475	039.8	3	0	6	0			14
1609	040.5	2	3	8	1			21
1743	041.3	*3	3	8	4			28
1878	042.1	2	3	8	2			23
2012	042.9	1	4	6	6		0	27
2146	043.6	1	3	8	7		3	35
2280	044.4	1	4	7	4		6	36
2414	045.2	1	4	10	6		6	44
2548	045.9	1	3	*18	5	0	4	49
2682	046.7	2	4	15	8	6	8	71
2816	047.5	1	5	11	*11	6	13	80
2950	048.2	2	*8	3	8	3	12	61
3085	049.0	3	6	5	10	2	11	63
3219	049.8	1	4	2	9	2	10	48
3353	050.5	1	3	5	7	3	10	50
3487	051.3	1	1	5	5	3	8	40
3621	052.1	1	1	2	6	2	16	50
3755	052.8	0	3	0	8	4	13	50
3889	053.6		1		3	4	10	33
4023	054.4		1		3	5	9	33
4157	055.1		0		2	9	6	31
4292	055.9		1		0	22	9	59
4426	056.7		0		1	*21	9	58
4560	057.5				0	21	10	58
4694	058.2					10	12	41
4828	059.0					6	8	26
4962	059.8					8	*15	43
5096	060.5					11	13	45
5230	061.3					13	1	26
5364	062.1					12	0	22
5499	062.8					15	2	32
5633	063.6					7	0	13
5767	064.4					4	2	11
5901	065.1					3	2	9
6035	065.9					4	2	11
6169	066.7					1	0	2
6303	067.4					0		0
CIC		183	265	570	416	742	824	
Peak		4	9	19	11	25	18	
Pass		6	5	4	3	1	2	

Homer City 306 — Arc 4.0 km
24 April 1970 — Ref pt 357°
0703 to 0724 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 184	248	305	363	418	508	542	577	609	VIC
0	353.2	0		0							0
134	355.1	*6		5			0				18
268	357.0	0		12			55				109
402	358.9			*29			*59				142
536	000.8		0	2		0	8				16
671	002.8		2	16		16	35				116
805	004.7		2	0	0	70	45			0	212
939	006.6		8		8	*84	35	0		0	244
1073	008.5		*4		*46	0	18	6		0	110
1207	010.4		0		42		12	*62	*0	0	139
1341	012.4				7		0	66	0	0	70
1475	014.3				30			0		0	45
1609	016.2				29					0	43
1743	018.1				23						34
1878	020.1				7						10
2012	022.0				0						0
CIC		21	57	229	688	609	956	480	0	0	
Peak		7	12	32	63	90	66	81	5	0	
Pass		9	8	7	6	5	1	2	4	3	

Homer City 305 — Arc 16.0 km
23 April 1970 — Ref pt 050°
1134 to 1206 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 163	228	275	335	399	VIC
0	036.6			0			0
134	037.0			1			1
268	037.5			1			1
402	038.0			1			1
536	038.5	0	0	1			1
671	039.0	0	1	0			1
805	039.4	0	1	1			3
939	039.9	0	1	2			4
1073	040.4	0	1	2	0		4
1207	040.9	0	2	1	1		6
1341	041.4	0	1	1	2		6
1475	041.8	0	1	1	2		6
1609	042.3	0	2	2	3		11
1743	042.8	0	2	2	2		9
1878	043.3	0	2	2	*4		12
2012	043.8	0	2	2	*4		12
2146	044.2	0	1	3	2		9
2280	044.7	0	2	*4	2		12
2414	045.2	0	1	*4	3	0	12
2548	045.7	0	1	3	3	1	12
2682	046.2	0	1	2	1	0	6
2816	046.6	0	1	2	3	4	16
2950	047.1	0	2	*4	3	5	22
3085	047.6	0	2	3	3	5	21
3219	048.1	0	3	3	*3	2	17
3353	048.6	0	2	3	2	2	14
3487	049.0	0	2	3	1	1	11
3621	049.5	0	4	*4	1	1	15
3755	050.0	0	2	3	2	3	16
3889	050.5	0	3	3	1	3	16
4023	051.0	0	3	2	1	3	14
4157	051.4	0	3	2	1	3	14
4292	051.9	0	2	2	1	2	11
4426	052.4	0	1	1	1	2	8
4560	052.9	0	2	2	2	1	11
4694	053.4	0	1	2	1	1	8
4828	053.8	0	1	2	1	2	9
4962	054.3	0	2	3	1	3	14
5096	054.8	0	*4	2	1	3	16
5230	055.3	0	3	2	0	1	9
5364	055.8	0	4	2	0	4	16
5499	056.2	0	1	2	0	2	8
5633	056.7	0	1	1	0	2	6
5767	057.2	0	1	1	0	5	11
5901	057.7	0	1	0	1	*4	10
6035	058.2	0	1	3	0	1	7
6169	058.6	0	1	2		2	8
6303	059.1	0	0	1		2	5
6437	059.6	0	1	0		4	8
6571	060.1	0	1	0		3	7
6706	060.6	0	0	0		2	3
6840	061.0			2		3	8
6974	061.5			2		1	5
7108	062.0			0		1	2
7242	062.5			0		2	3
7376	063.0			1		1	3
7510	063.4			0		1	2
7644	063.9			2		1	5
7778	064.4			1		0	1
7913	064.9			0		1	2
8047	065.4					2	3
8181	065.8					2	3
8315	066.3					4	7
8449	066.8					1	2
8583	067.3					0	0
8717	067.8					1	2
8851	068.2					0	0
CIC		0	276	373	211	358	
Peak		0	5	4	4	6	
Pass		5	4	3	2	1	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 307
24 April 1970
0729 to 0814 EST

Arc 10.0 km
Ref pt 016°
SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 125	179	245	310	377	434	502	550	616	668	750	788	VIC
0	002.9						0							0
134	003.7						2							3
268	004.5						0							0
402	005.2						0							0
536	006.0						0			0				0
671	006.8						2			1				5
805	007.5						0	0		4				6
939	008.3						1	12		6				30
1073	009.1	0				0	0	18		3				33
1207	009.9	1				2	0	7		1				17
1341	010.6	1				3	0	15		2				33
1475	011.4	*1		0		5	1	16		13				57
1609	012.2	1		1		3	0	11		3				30
1743	012.9	0	0	*3		4	1	7		1				26
1878	013.7		1	3	0	*8	0	10		4				42
2012	014.5		1	3	1	6	0	11	0	18				64
2146	015.2		2	1	2	7	0	*22	5	*23				98
2280	016.0		*2	2	5	0	0	14	*16	18				90
2414	016.8		1	1	6	1	0	11	6	13	0			62
2548	017.5		0	1	3	0	1	7	11	12	1			57
2682	018.3		0	1	4		11	10	11	6	6			79
2816	019.1		0	0	4		14	6	8	10	5	0		76
2950	019.8		0		10		*14	1	8	8	3	1		74
3085	020.6		0		*12		5	0	6	3	1	1		47
3219	021.4		0		6		8		5	2	1	1		38
3353	022.1		1		13		11		4	1	2	1		56
3487	022.9		1		5		12		0	0	4	0		37
3621	023.7		1		2		6			1	*8	0		31
3755	024.5		0		2		6			1	7	0		28
3889	025.2				0		2			1	2	1		10
4023	026.0						1			2	0	0		5
4157	026.8						0			0		0	0	0
4292	027.5											0	1	1
4426	028.3											0	*3	3
4560	029.1											0	5	5
4694	029.8											2	2	5
4828	030.6											0	0	0
4962	031.4											0		0
5096	032.1											*2		3
5230	032.9											2		3
5364	033.7											0		0
CIC		14	36	57	269	140	351	638	287	562	143	39	39	
Peak		2	6	5	14	10	15	26	26	25	10	4	7	
Pass		12	11	10	9	8	1	2	3	4	5	6	7	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 308
24 April 1970
0819 to 0901 EST

Arc 4.0 km
Ref pt 022°
SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 469	494	555	610	670	703	780	VIC
0	006.6	0	0						0
134	008.6	0	1						1
268	010.5	0	1						1
402	012.4	0	1						1
536	014.3	0	1						1
671	016.2	0	1						1
805	018.2	0	3						3
939	020.1	0	4						5
1073	022.0	0	6						7
1207	023.9	0	7						8
1341	025.8	0	11						13
1475	027.8	0	10						11
1609	029.7	0	8						9
1743	031.6	0	7						8
1878	033.5	0	7						8
2012	035.4	0	6						7
2146	037.4	0	5						6
2280	039.3	0	5						6
2414	041.2	0	7						8
2548	043.1	0	5	0					6
2682	045.1	0	4	1					6
2816	047.0	0	5	2					9
2950	048.9	0	5	2					9
3085	050.8	0	7	2					11
3219	052.7	0	5	7					17
3353	054.7	0	6	5					15
3487	056.6	0	5	5					13
3621	058.5	0	4	5					12
3755	060.4	0	5	3					10
3889	062.3	0	3	5					11
4023	064.3	0	4	4	0				11
4157	066.2	0	5	4	3				17
4292	068.1	0	6	4	7	0			24
4426	070.0	0	6	5	6	1			25
4560	071.9	0	*10	5	3	0			24
4694	073.9	0	11	*7	4	2	0		32
4828	075.8	0	9	5	2	1	3		27
4962	077.7	0	7	6	2	1	3		26
5096	079.6	0	9	6	2	2	3	0	30
5230	081.6	0	6	4	2	*3	4	1	28
5364	083.5	0	8	2	5	3	2	1	29
5499	085.4	0	8	1	2	3	5	1	27
5633	087.3	0	4	2	5	2	4	1	26
5767	089.2	0	4	2	*8	1	4	1	29
5901	091.2	0	0	1	5	2	3	0	16
6035	093.1	0	2	2	5	1	5	0	22
6169	095.0	0	1	3	3	1	5	0	19
6303	096.9	0	1	1	5	0	11	0	26
6437	098.8	0	3	2	4		*15	0	35
6571	100.8	0	0	1	3		7	0	16
6706	102.7			2	3		8	0	19
6840	104.6			2	4		6	0	18
6974	106.5			2	2		3	0	11
7108	108.4			1	1		1	0	5
7242	110.4			0	1		3	1	8
7376	112.3				1		4	1	9
7510	114.2				1		3	1	8
7644	116.1				0		1	0	1
7778	118.1						0	0	0
7913	120.0						1	0	1
8047	121.9						2	0	3
8181	123.8						2	1	5
8315	125.7						1	1	4
8449	127.7						1	0	1
8583	129.6						1	0	1
8717	131.5						2	0	3
8851	133.4						1	0	1
8985	135.3						2	1	5
9120	137.3						2	1	5
9254	139.2						4	2	10
9388	141.1						2	2	7
9522	143.0						3	*2	9
9656	144.9						5	2	11
9790	146.9						3	2	9
9924	148.8						1	2	6
10058	150.7						1	1	4
10192	152.6						0	1	2
10327	154.5							0	0
10461	156.5							2	4
10595	158.4							1	2
10729	160.3							0	0
CIC		0	892	398	319	82	491	104	
Peak		0	12	8	8	4	16	4	
Pass		7	1	2	3	4	5	6	

Homer City 309
25 April 1970
0809 to 0830 EST

Arc 4.0 km
Ref pt 068°
SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 226	260	320	384	446	510	540	VIC
0	035.3		0						0
134	037.3		5						6
268	039.2		5	0					6
402	041.1		2	8					16
536	043.0		6	17					36
671	044.9		4	19					36
805	046.9	0	4	17					33
939	048.8	5	5	21					46
1073	050.7	7	5	25					54
1207	052.6	5	7	37	0				75
1341	054.6	*6	*15	*44	4				104
1475	056.5	0	12	42	5			0	93
1609	058.4		2	0	8		0	0	16
1743	060.3		0		13	0	6	0	29
1878	062.2				1	6	6	0	19
2012	064.2				12	6	4	0	35
2146	066.1				27	4	6	0	60
2280	068.0				46	9	7	0	101
2414	069.9				89	77	2	0	282
2548	071.8				122	94	7	0	372
2682	073.8				119	*64	4	0	313
2816	075.7				*173	30	7	0	350
2950	077.6				60	7	5	0	119
3085	079.5				21	0	*6	0	43
3219	081.4				5		4	0	13
3353	083.4				0		2	0	3
3487	085.3						5	0	6
3621	087.2						5	0	6
3755	089.1						5	0	6
3889	0 1.1						4	0	5
4023	093.0						4	0	5
4157	094.9						0	0	0
CIC		82	258	824	2525	1064	319	0	
Peak		11	20	50	182	121	11	0	
Pass		7	6	5	4	3	1	2	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 310 — Arc 10.0 km
25 April 1970 — Ref pt 049 °
0833 to 0915 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 259	317	380	450	514	540	VIC
0	030.6			0				0
134	031.3			3				5
268	032.1			4				7
402	032.9			5				9
536	033.6			4				7
671	034.4			3				5
805	035.2			5				9
939	035.9			4				7
1073	036.9			5				9
1207	037.5			4				7
1341	038.2	0		4				7
1475	039.0	2		6				14
1609	039.8	3		5				13
1743	040.5	3		5				13
1878	041.3	4		7				19
2012	042.1	5		6	0			18
2146	042.9	5		5	3			22
2280	043.6	3	0	5	3			19
2414	044.4	5	1	5	3			24
2548	045.2	4	1	6	1			20
2682	045.9	6	3	7	3			32
2816	046.7	5	0	6	4			25
2950	047.5	3	1	5	1			17
3085	048.2	3	2	3	1			15
3219	049.0	3	2	6	1			20
3353	049.8	3	3	5	1			20
3487	050.5	4	2	4	1			18
3621	051.3	3	1	3	2			15
3755	052.1	4	0	3	1			13
3889	052.8	2	2	4	7			26
4023	053.6	4	3	5	10			38
4157	054.4	4	4	5	9			38
4292	055.1	5	2	4	5			27
4426	055.9	4	2	6	8			34
4560	056.7	4	3	5	9			36
4694	057.5	4	3	4	8			32
4828	058.2	6	2	7	9			41
4962	059.0	7	3	10	7			46
5096	059.8	6	3	9	8			44
5230	060.5	5	2	10	5			38
5364	061.3	5	5	10	5			42
5499	062.1	7	6	10	3			43
5633	062.8	8	7	10	1		0	43
5767	063.6	8	7	8	1		1	40
5901	064.4	9	9	9	1	0	0	46
6035	065.1	*11	8	8	2	1	0	49
6169	065.9	13	11	10	5	1	1	66
6303	066.7	13	11	13	1	1	1	64
6437	067.4	12	8	15	1	2	1	63
6571	068.2	9	11	15	2	2	4	67
6706	069.0	8	15	8	1	1	6	58
6840	069.7	10	15	14	1	3	9	76
6974	070.5	9	14	12	1	4	8	70
7108	071.3	5	10	9	1	5	10	54
7242	072.1	6	8	12	1	*6	9	59
7376	072.8	8	11	18	2	5	4	74
7510	073.6	4	11	22	2	2	2	70
7644	074.4	1	9	19	2	1	0	54
7778	075.1	1	12	9	4	1	0	45
7913	075.9	5	13	12	5	2	1	62
8047	076.7	3	*22	14	7	2	0	80
8181	077.4	1	12	12	16	3	0	74
8315	078.2	1	7	*26	*24	5	0	108
8449	079.0	1	2	10	6	6	0	40
8583	079.7	1	5	6	4	4	0	32
8717	080.5	0	3	4	3	2	2	20
8851	081.3		1	4	2	3	0	16
8985	082.0		0	7	1	3	0	18
9120	082.8			3	3	4	0	15
9254	083.6			3	2	3	0	12
9388	084.3			3	2	3	0	12
9522	085.1			3	1	3	0	11
9656	085.9			3	0	3	0	9
9790	086.7			3		2	0	8
9924	087.4			3		2	*9	12

Homer City 310 (continued)

Cum y, m	Dir, deg	Traverse height, m 259	317	380	450	514	540	VIC
10058	088.2			1		2	1	5
10192	089.0			3		2	0	8
10327	089.7			3		2		8
10461	090.5			2		2		6
10595	091.3			4		2		9
10729	092.0			3		2		8
10863	092.8			2		2		6
10997	093.6			0		2		2
11131	094.3			1		2		4
11265	095.1			3		2		8
11399	095.9			3		2		8
11534	096.6			0		2		2
11668	097.4					2		2
11802	098.2					3		4
11936	098.9					2		2
12070	099.7					3		4
12204	100.5					3		4
12338	101.3					2		2
12472	102.0					2		2
12606	102.8					2		2
12741	103.6					2		2
12875	104.3					1		1
13009	105.1					1		1
13143	105.9					0		0
CIC		996	1067	2053	799	473	240	
Peak		15	25	28	27	8	11	
Pass		6	5	4	1	2	3	

Homer City 311 — Arc 4.0 km
27 April 1970 — Ref pt 072°
0617 to 0640 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 321	375	450	510	574	629	647	696	VIC
0	036.4		0							0
134	038.3		5							9
268	040.2	0	9							15
402	042.2	2	15							29
536	044.1	2	27							49
671	046.0	*7	36							72
805	048.9	2	*59							104
939	050.9	0	50							85
1073	052.8		27		0					46
1207	054.7		6		21					45
1341	056.6		15		55					117
1475	058.6		7	0	123					216
1609	060.5		0	64	212					466
1743	062.4			125	293					709
1878	064.3			*172	*332					858
2012	066.2			153	262	0				708
2146	068.2			137	73	15				390
2280	070.1			80	120	105	0			507
2414	072.0			27	0	186	19			360
2548	073.9			0		*369	50	0	0	630
2682	075.8					357	93	22	0	671
2816	077.8					266	101	48	0	559
2950	079.7					252	137	30	0	555
3085	081.6					227	*158	22	0	529
3219	083.5					182	117	49	0	443
3353	085.4					107	125	*57	0	339
3487	087.4					35	67	42	0	157
3621	089.3					0	67	9	0	72
3755	091.2						26	1	0	26
3889	093.1						7	5	0	11
4023	095.1						0	0	0	0
CIC		47	917	2715	5341	7526	3464	1021	0	
Peak		11	69	200	332	385	165	64	0	
Pass		8	7	6	1	2	3	5	4	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 312 — Arc 10.0 km
27 April 1970 — Ref pt 072°
0651 to 0725 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 382	447	513	573	631	693	VIC
0	045.9	0						0
134	046.6	1						2
268	047.4	1						2
402	048.2	0						0
536	048.9	0						0
671	049.7	2						3
805	050.5	0						0
939	051.3	0						0
1073	052.0	5						9
1207	052.8	4						7
1341	053.6	*9						16
1475	054.3	0						0
1609	055.1							0
1743	055.9							0
1878	056.6							0
2012	057.4		0					0
2146	058.2		1					2
2280	058.9		5					9
2414	059.7		0					0
2548	060.5		19					33
2682	061.2		20					35
2816	062.0		21					36
2950	062.8		12					21
3085	063.5		6					10
3219	064.3		5					9
3353	065.1		18					31
3487	065.9		15					26
3621	066.6		*40					69
3755	067.4		9					16
3889	068.2		4					7
4023	068.9		4					7
4157	069.7		0					0
4292	070.5							0
4426	071.2							0
4560	072.0							0
4694	072.8			0				0
4828	073.5			59	0			99
4962	074.3			204	9	0		357
5096	075.1			220	14	5		400
5230	075.8			241	25	9		459
5364	076.6			302	40	6		581
5499	077.4			*339	60	8		678
5633	078.1			322	96	12		712
5767	078.9			32	108	4		230
5901	079.7			75	94	9		289
6035	080.5			28	122	11		257
6169	081.2			46	112	2		257
6303	082.0			43	130	8		290
6437	082.8			0	112	14	0	199
6571	083.5				*172	12	1	292
6706	084.3				143	20	1	259
6840	085.1				137	27	1	261
6974	085.8				135	14	0	235
7108	086.6				127	8	1	215
7242	087.4				129	16	5	237
7376	088.1				87	19	8	181
7510	088.9				37	16	8	97
7644	089.7				79	*35	7	192
7778	090.4				144	25	9	282
7913	091.2				84	15	7	168
8047	092.0				114	5	0	188
8181	092.7				49	2	5	89
8315	093.5				21	2	8	50
8449	094.3				98	2	8	171
8583	095.1				71	4	9	133
8717	095.8				18	7	9	54
8851	096.6				20	14	9	69
8985	097.4				9	14	9	52
9120	098.1				12	2	9	37
9254	098.9				2	6	9	28
9388	099.7				2	8	9	31
9522	100.4				2	9	9	32
9656	101.2				4	8	*8	32
9790	102.0				11	5	8	39
9924	102.7				1	5	8	23

Homer City 312 (continued)

Cum y, m	Dir, deg	Traverse height, m 382	447	513	573	631	693	VIC
10058	103.5				0	6	4	16
10192	104.3					18	4	35
10327	105.0					13	0	21
10461	105.8					13	2	24
10595	106.6					18	2	32
10729	107.3					22	1	37
10863	108.1					27	1	45
10997	108.9					26	2	45
11131	109.7					24	2	42
11265	110.4					24	2	42
11399	111.2					20	2	35
11534	112.0					12	2	23
11668	112.7					7	0	11
11802	113.5					0	0	0
11936	114.3					2	0	3
12070	115.0					1	0	2
12204	115.8					0	0	0
12338	116.6						0	0
12472	117.3						0	0
12606	118.1						0	0
12741	118.9						2	3
12875	119.6						2	3
13009	120.4						2	3
13143	121.2						2	3
13277	121.9						5	8
13411	122.7						5	8
13545	123.5						5	8
13679	124.3						5	8
13813	125.0						6	10
13948	125.8						6	10
14082	126.6						8	13
14216	127.3						5	8
14350	128.1						4	7
14484	128.9						4	7
14618	129.6						4	7
14752	130.4						4	7
14886	131.2						4	7
15020	131.9						2	3
15155	132.7						0	0
CIC		79	641	6845	9421	2225	946	
Peak		15	47	339	184	43	14	
Pass		6	5	1	2	3	4	

Homer City 313 — Arc 4.0 km
28 April 1970 — Ref pt 033°
0606 to 0625 EST — SO_2, pphm

Cum y, m	Dir deg	Traverse height, m 255	323	377	437	502	557	612	649	673	VIC
0	027.2	0		0		0					0
134	029.2	*6		43		69					187
268	031.1	0	0	28		*141		0			269
402	033.0		*18	35	0	116	0	22			296
536	034.9		40	*59	19	93	35	*125		0	541
671	036.8		5	2	56	0	84	60		0	301
805	038.8		0	8	*100		*131	46	0	0	427
939	040.7		0	2	56		100	0	14	0	254
1073	042.6		0	0	45		14		*67	0	149
1207	044.5		5		63		0		0	0	112
1341	046.4		0		18					0	30
1475	048.4				0						0
CIC		21	244	634	1279	1501	1304	906	290	0	
Peak		6	71	66	135	180	150	134	72	0	
Pass		9	8	7	6	1	2	3	5	4	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 314 — Arc 10.0 km
28 April 1970 — Ref pt 042°
0638 to 0708 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 221	257	312	374	437	501	557	617	VIC
0	022.8								0	0
134	023.6								3	5
268	024.3								4	6
402	025.1								5	8
536	025.9								4	6
671	026.6	0							5	8
805	027.4	0							8	13
939	028.2	0	0						8	13
1073	028.9	0	1						9	16
1207	029.7	0	1						9	16
1341	030.5	0	1						*8	14
1475	031.2	0	2						7	14
1609	032.0	0	2						6	12
1743	032.8	0	2						4	9
1878	033.5	0	1						4	8
2012	034.3	0	1					0	2	4
2146	035.1	0	3				0	1	2	8
2280	035.9	0	*3	0			1	1	2	10
2414	036.6	0	2	2			2	0	3	14
2548	037.4	0	2	6			2	2	3	23
2682	038.2	0	0	3			2	2	3	16
2816	038.9			1	0		3	2	3	14
2950	039.7			1	3		3	2	4	21
3085	040.5			3	19		3	2	4	50
3219	041.2			2	21		3	2	4	52
3353	042.0			6	34		5	2	2	80
3487	042.8			*10	*44	0	8	2	2	107
3621	043.5			10	2	54	49	1	2	193
3755	044.3			3	0	24	91	1	2	196
3889	045.1			7	0	26	*221	2	2	415
4023	045.8			4	0	109	212	1	4	537
4157	046.6			4	2	*219	100	1	4	546
4292	047.4			0	1	159	71	1	4	391
4426	048.1			1	1	159	65	1	4	383
4560	048.9			3	1	91	1	1	5	171
4694	049.7			0	0	49	2	1	3	92
4828	050.5				1	13	2	*28	1	72
4962	051.2				1	4	2	9	2	29
5096	052.0				0	2	2	4	3	18
5230	052.8				1	1	0	7	3	19
5364	053.5				0	1	2	1	2	10
5499	054.3					2	2	1	1	10
5633	055.1					2	2	1	2	11
5767	055.8					2	1	1	2	10
5901	056.6					2	2	1	1	10
6035	057.4					1	1	1	1	6
6169	058.1					1	0	1	0	3
6303	058.9					1		0		2
6437	059.7					1				2
6571	060.4					1				2
6706	061.2					1				2
6840	062.0					1				2
6974	062.7					1				2
7108	063.5					1				2
7242	064.3					0				0
CIC		0	75	236	469	3324	3081	297	595	
Peak		0	4	11	46	220	221	29	10	
Pass		8	7	6	5	4	1	2	3	

Homer City 315 — Arc 16.0 km
28 April 1970 — Ref pt 039°
0713 to 0737 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 312	387	441	509	561	627	VIC
0	023.2	0						0
134	023.6	1						2
268	024.1	2						4
402	024.6	1						2
536	025.1	1						2
671	025.6	1						2
805	026.0	*1						2
939	026.5	2						4
1073	027.0	1						2
1207	027.5	2						4
1341	028.0	1					0	2
1475	028.4	0	0				2	4
1609	028.9	1	1				2	7
1743	029.4	1	1				2	7
1878	029.9	1	0				3	7
2012	030.4	0	7				3	17
2146	030.8		12				3	26
2280	031.3		14				4	31
2414	031.8		*15				4	33
2548	032.3		8				4	21
2682	032.8		8				3	19
2816	033.2		2				4	10
2950	033.7		1				3	7
3085	034.2		1			0	2	5
3219	034.7		0			9	4	21
3353	035.2					17	4	34
3487	035.6					17	4	34
3621	036.1				0	18	5	37
3755	036.6				1	22	5	45
3889	037.1			0	2	18	4	39
4023	037.6			34	2	6	4	75
4157	038.0			140	7	3	2	248
4292	038.5			194	6	2	1	331
4426	039.0			*191	25	7	2	366
4560	039.5			139	46	5	*3	313
4694	040.0			68	*57	3	3	212
4828	040.4			27	47	2	1	124
4962	040.9			9	22	1	2	55
5096	041.4			5	13	1	2	34
5230	041.9			4	9	1	2	26
5364	042.4			3	42	3	3	82
5499	042.8			0	42	2	4	78
5633	043.3			1	52	3	3	95
5767	043.8			1	48	2	3	87
5901	044.3			1	24	*22	2	78
6035	044.8			1	26	5	3	56
6169	045.2			1	5	18	3	43
6303	045.7			4	0	5	3	20
6437	046.2			0		9	3	19
6571	046.7					13	3	26
6706	047.2					9	3	19
6840	047.6					2	3	8
6974	048.1					1	3	7
7108	048.6					2	3	8
7242	049.1					2	3	8
7376	049.6					1	3	7
7510	050.0					5	3	13
7644	050.5					3	0	5
7778	051.0					1		2
7913	051.5					1		2
8047	052.0					0		0
CIC		57	251	2948	1705	863	494	
Peak		3	18	197	60	26	7	
Pass		6	5	1	2	3	4	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 316 — Arc 4.0 km
28 April 1970 — Ref pt 033°
0853 to 0913 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 247	286	313	379	432	494	560	620	654	VIC
0	011.9								0	0	0
134	013.8								5	0	6
268	015.7								16	0	20
402	017.6						0		19	0	24
536	019.6			0			117	0	*52	0	265
671	021.5	0		5		0	221	104	5	0	565
805	023.4	0	0	6		7	*278	204	0	0	837
939	025.3	0	2	20		46	153	237			757
1073	027.2	0	2	*20	0	*36	150	*343			915
1207	029.2	0	4	26	6	5	36	237			513
1341	031.1	0	4	0	18	0	0	105			209
1475	033.0	0	*7		23			120			244
1609	034.9		0		*20			109			215
1743	036.8				7			27			56
1878	038.8				0			16			27
2012	040.7							0			0
CIC		0	68	276	265	337	3421	5380	347	0	
Peak		0	14	32	29	59	333	382	105	0	
Pass		8	9	7	6	5	1	2	3	4	

Homer City 318 — Arc 4.0 km
30 April 1970 — Ref pt 001°
0550 to 0608 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 280	313	374	436	508	560	626	681	VIC
0	339.9	0	0							0
134	341.8	2	4							7
268	343.7	2	5							8
402	345.6	*2	2							4
536	347.6	0	1	0						1
671	349.5	1	2	12						23
805	351.4	0	4	*94						158
939	353.3		*1	69						114
1073	355.2		4	12						25
1207	357.2		0	0						0
1341	359.1									0
1475	001.0									0
1609	002.9				0					0
1743	004.8				76	0	0			136
1878	006.8				233	19	22	0		483
2012	008.7				335	*63	*89	40		908
2146	010.6				*412	21	0	163	0	1033
2280	012.5				73	0		*292	*21	629
2414	014.4				0			46	0	74
2548	016.4							0		0
CIC		25	82	670	4044	369	398	1938	75	
Peak		6	8	106	435	69	96	301	21	
Pass		8	7	6	5	4	1	2	3	

Homer City 317 — Arc 10.0 km
28 April 1970 — Ref pt 037°
0925 to 0955 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 306	373	441	495	559	620	674	746	816	VIC
0	017.8							0	0		0
134	018.6							12	35		87
268	019.3							16	71		162
402	020.1							5	42		88
536	020.9							5	53		109
671	021.6							13	43		103
805	022.4							45	36		144
939	023.2							95	28		213
1073	023.9							32	16		84
1207	024.7							105	23		220
1341	025.5							100	52	0	267
1475	026.2				0			97	*70	7	309
1609	027.0				4	0		15	66	*16	187
1743	027.8				4	19		26	11	11	123
1878	028.5				5	104	0	94	5	0	348
2012	029.3				5	213	33	105	2		591
2146	030.1				5	150	98	*110	2		594
2280	030.9				5	*253	128	103	1		797
2414	031.6				4	251	115	107	5		787
2548	032.4				4	183	13	77	11		480
2682	033.2			0	2	145	272	14	0		681
2816	033.9			11	4	112	286	2			648
2950	034.7			5	0	115	*288	7			649
3085	035.5			*32	1	42	194	0			419
3219	036.2	0		20	1	13	95				200
3353	037.0	2		7	1	28	22				96
3487	037.8	6		2	1	2	19				48
3621	038.5	*9	0	0	5	7	0				36
3755	039.3	7	*14		*14	0					60
3889	040.1	5	4		8						29
4023	040.8	0	1		22						36
4157	041.6	4	1		9						23
4292	042.4	5	4		0						16
4426	043.1	5	9								25
4560	043.9	4	7								20
4694	044.7	4	4								14
4828	045.5	5	0								9
4962	046.2	0									0
CIC		201	158	276	373	5864	5599	4245	2049	122	
Peak		15	16	39	27	259	301	136	76	19	
Pass		9	8	7	6	1	2	3	4	5	

Homer City 319 — Arc 10.0 km
30 April 1970 — Ref pt 014°
0615 to 0641 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 258	333	377	446	510	574	602	620	VIC
0	354.8	0	0							0
134	355.6	0	2							3
268	356.3	0	5							8
402	357.1	0	8							13
536	357.9	0	11							17
671	358.6	0	12							19
805	359.4	0	8							13
939	000.2	0	*12	0						19
1073	000.9	0	13	2						23
1207	001.7	0	5	0						8
1341	002.5		6	1						11
1475	003.2		4	1						8
1609	004.0		0	7						10
1743	004.8			*12	0					18
1878	005.5			9	6					24
2012	006.3			6	14					34
2146	007.1			7	75					143
2280	007.9			6	74					139
2414	008.6			7	26					56
2548	009.4			2	13					26
2682	010.2			0	95					167
2816	010.9				147					259
2950	011.7				*161					284
3085	012.5				161					284
3219	013.2				146					257
3353	014.0				12				0	21
3487	014.8				6	0			0	11
3621	015.5				0	6			0	10
3755	016.3					2		0	0	3
3889	017.1					2		*6	0	7
4023	017.8					4		5	0	10
4157	018.6					2	0	0	0	3
4292	019.4					22	12		0	52
4426	020.1					*46	*12		0	93
4560	020.9					25	0			43
4694	021.7					13				22
4828	022.5					6				10
4962	023.2					0				0
CIC		0	308	215	3353	459	86	39	0	
Peak		0	18	14	174	61	36	11	0	
Pass		8	7	6	5	1	2	4	3	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 320 — Arc 16.0 km
30 April 1970 — Ref pt 016°
0646 to 0738 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 258	316	375	440	506	578	628	684	745	829	898	958	VIC
0	353.9	0												0
134	354.4	2												3
268	354.9	2												3
402	355.3	2												3
536	355.8	2												3
671	356.3	2												3
805	356.8	0												0
939	357.3	1												2
1073	357.8	1												2
1207	358.2	1	0											2
1341	358.7	1	1											3
1475	359.2	1	1											3
1609	359.7	1	1											3
1743	000.2	2	3											8
1878	000.6	1	2											5
2012	001.1	1	5											9
2146	001.6	*2	3	0										8
2280	002.1	2	6	1										14
2414	002.6	3	3	3										14
2548	003.0	3	3	1										11
2682	003.5	2	0	3										8
2816	004.0	2	0	4										10
2950	004.5	1	0	5										10
3085	005.0	2	0	6										13
3219	005.4	2	0	8										16
3353	005.9	1	1	3										8
3487	006.4	1	1	1										5
3621	006.9	1	0	1										3
3755	007.4	0	13	1										22
3889	007.8		19	6										39
4023	008.3		*36	*29										104
4157	008.8		13	15										45
4292	009.3		8	1										14
4426	009.8		1	8										15
4560	010.2		2	10										20
4694	010.7		3	20										38
4828	011.2		2	3										8
4962	011.7		2	1										5
5096	012.2		2	0										3
5230	012.6		1											2
5364	013.1		1											2
5499	013.6		0											0
5633	014.1													0
5767	014.6													0
5901	015.0					0								0
6035	015.5					2								4
6169	016.0				0	5								9
6303	016.5				5	2								12
6437	017.0				70	0							0	122
6571	017.4				141	0							0	245
6706	017.9				*217	0						0	0	377
6840	018.4				179	1	0					1	0	314
6974	018.9				114	15	4		0			7	0	244
7108	019.4				28	52	19		4	0	0	13	0	204
7242	019.8				0	*83	35		3	1	3	18	0	253
7376	020.3					50	108		3	1	6	12	0	307
7510	020.8					8	*66		5	5	20	12	0	201
7644	021.3					0	80		6	20	21	14	0	245
7778	021.8						49		39	34	22	19	0	283
7913	022.2						12	0	34	21	25	24	0	204
8047	022.7						2	4	81	17	36	*25	0	283
8181	023.2						0	23	102	7	*47	14	0	323
8315	023.7							93	107	38	48	13	0	490
8449	024.2							*94	*109	38	48	8	0	486
8583	024.6							83	96	37	45	9	0	444
8717	025.1							13	29	72	48	6	0	309
8851	025.6							0	0	78	31	9	0	228
8985	026.1									80	18	11	0	209
9120	026.6									96	14	4	0	220
9254	027.0									*100	13	2	0	222
9388	027.5									*100	2	1	0	198
9522	028.0									90	0	0	0	173
9656	028.5									79			0	152
9790	029.0									72			0	138
9924	029.4									15				29
10058	029.9									0				0
CIC		150	476	466	2701	781	1343	1110	2214	3586	1601	795	0	
Peak		4	42	29	217	83	109	116	111	100	51	27	0	
Pass		12	11	10	9	1	2	3	4	5	6	7	8	

Table 3 (continued). PLUME CROSS SECTIONS

Homer City 321 — Arc 4.0 km
1 May 1970 — Ref pt 018°
0558 to 0618 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 164	192	251	314	380	440	500	560	595	618	653	VIC
0	008.4	0		0		0							0
134	010.3	*4		7		39							80
268	012.2	0		*20		104							208
402	014.2		0	2		*109							187
536	016.1		*1	19	0	69	0	0					148
671	018.0		2	0	61	42	7	59					283
805	019.9		0		50	13	83	*115					425
939	021.8				*79	0	120	94					478
1073	023.8				11		*184	93	0	0			463
1207	025.7				4		47	39	*35	*79			250
1341	027.6				37		0	0	0	34			90
1475	029.5				25				2	4	0	0	48
1609	031.4				0				0	0	*6	0	5
1743	033.4										0	0	0
CIC		14	11	172	956	1347	1580	1433	133	419	21	0	
Peak		4	6	28	86	137	198	125	35	79	6	0	
Pass		11	10	9	8	7	6	1	2	3	5	4	

Homer City 322 — Arc 10.0 km
1 May 1970 — Ref pt 023°
0624 to 0643 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 258	314	377	440	505	567	628	VIC
0	015.3	0	0						0
134	016.1	0	2						3
268	016.9	0	2		0				3
402	017.6	0	6		6				20
536	018.4	0	9	0	22				52
671	019.2	0	13	4	22				65
805	019.9	0	9	6	*23				64
939	020.7	0	13	7	22		0		70
1073	021.5	0	*16	14	22	0	4		93
1207	022.2	0	12	22	21	4	2		102
1341	023.0	0	12	25	13	11	19		133
1475	023.8	0	5	*32	9	*32	5		139
1609	024.5		0	27	12	14	18		119
1743	025.3		2	29	12	23	*26		154
1878	026.1		0	21	25	25	25		161
2012	026.8			12	8	21	13		90
2146	027.6			13	6	21	4		74
2280	028.4			8	0	19	5		54
2414	029.1			9		11	18		63
2548	029.9			6		0	13	0	31
2682	030.7			2			13	1	26
2816	031.5			0			5	*1	10
2950	032.2						2	0	3
3085	033.0						5		8
3219	033.8						2		3
3353	034.5						2		3
3487	035.3						0		0
CIC		0	362	849	799	648	648	7	
Peak		0	22	39	30	32	32	7	
Pass		7	6	5	4	1	2	3	

Homer City 323 — Arc 16.0 km
1 May 1970 — Ref pt 025°
0702 to 0733 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 263	325	382	448	512	574	635	696	VIC
0	015.9	0								0
134	016.4	1								2
268	016.8	2	0							3
402	017.3	1	1							3
536	017.8	1	1		0					3
671	018.3	1	1		2					7
805	018.8	1	3	0	1					8
939	019.2	*2	3	1	2					13
1073	019.7	2	4	1	2					15
1207	020.2	1	3	1	3					13
1341	020.7	1	3	0	4					13
1475	021.2	1	2	1	4					13
1609	021.6	0	3	2	6					18
1743	022.1	0	1	3	3					12
1878	022.6	1	2	4	5					20
2012	023.1	0	1	7	6	0				23
2146	023.6	0	4	8	8	1				35
2280	024.0	0	1	9	12	0				37
2414	024.5	1	1	14	12	0	0			47
2548	025.0	0	1	11	17	3	1			56
2682	025.5	0	*5	15	20	5	1			77
2816	026.0	2	6	21	22	4	1			94
2950	026.4	0	1	*24	20	15	3			106
3085	026.9		3	15	22	*10	9			99
3219	027.4		0	14	23	10	7	0		91
3353	027.9		1	12	*25	12	8	3		103
3487	028.4		1	8	21	10	2	2		74
3621	028.8		0	4	12	9	5	0		51
3755	029.3			6	11	7	6	1		52
3889	029.8			2	13	7	9	0		52
4023	030.3			0	10	5	11	3		49
4157	030.8			3	9	6	12	2		53
4292	031.2			2	5	3	*12	3		41
4426	031.7			1	5	2	10	1		32
4560	032.2			1	3	5	7	0		27
4694	032.7			1	1	4	4	2		20
4828	033.2			0	3	2	5	2	0	20
4962	033.6				0	1	8	2	1	20
5096	034.1					1	7	1	0	15
5230	034.6					0	5	3	2	16
5364	035.1						3	3	*2	13
5499	035.6						3	3	1	11
5633	036.0						3	*4	0	11
5767	036.5						3	4	1	13
5901	037.0						1	1	1	5
6035	037.5						1	0	0	2
6169	038.0						1			2
6303	038.4						0			0
CIC		64	186	684	1118	437	530	143	29	
Peak		3	8	24	27	19	14	5	3	
Pass		8	7	6	5	1	2	3	4	

Homer City 324 — Arc 4.0 km
4 May 1970 — Ref pt 041°
0559 to 0631 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 324	361	419	478	532	604	660	718	772	813	848	VIC
0	014.1		0										0
134	016.0		1										1
268	017.9		1		0								1
402	019.9		2		4		0						8
536	021.8		*5		7		5						25
671	023.7	0	1	0	15		7		0				36
805	025.6	1	0	7	*13		9		2				50
939	027.6	*4	1	*12	1		7		2				40
1073	029.5	2	0	2	0		5		22				47
1207	031.4	0		0			7		91				148
1341	033.3						7		162				254
1475	035.2						7	0	89				145
1609	037.2						12	74	127				323
1743	039.1					0	54	27	183				407
1878	041.0					11	91	9	220				517
2012	042.9					13	108	33	219				584
2146	044.8					*34	110	100	*236				750
2280	046.8					32	*120	115	57	0		0	519
2414	048.7					22	7	*169	21	11	0	0	352
2548	050.6					24	2	138	21	*6	*9	0	302
2682	052.5					2	2	79	21	6	2	0	168
2816	054.4					1	5	114	4	5	5	0	201
2950	056.4					1	6	23	0	1	0	0	48
3085	058.3					0	13	11		5	2	0	47
3219	060.2						2	7		4	0	0	19
3353	062.1						0	5		2		0	10
3487	064.1							2		0			3
3621	066.0							4					6
3755	067.9							5					8
3889	069.8							0					0
CIC		25	39	75	143	501	2099	3278	5291	143	64	0	
Peak		4	7	13	21	44	130	169	265	22	13	0	
Pass		11	10	9	8	1	2	3	4	5	6	7	

Homer City 325 — Arc 10.0 km
4 May 1970 — Ref pt 041°
0637 to 0708 EST — SO_2, pphm

Cum y, m	Dir, deg	Traverse height, m 505	534	592	660	719	777	846	902	VIC
0	023.4			0						0
134	024.1			6		0				10
268	024.9			35		1			0	60
402	025.6		0	27		5		0	0	53
536	026.4		6	32		13		2	0	84
671	027.2	0	*9	*45		38		4	0	152
805	027.9	*7	7	41		76		2	0	204
939	028.7	5	4	44		122		0	0	272
1073	029.5	5	0	34		200		1	0	373
1207	030.2	5	0	19	0	*216		4	0	377
1341	031.0	0	0	6	1	188		*16	0	330
1475	031.8		0	0	1	135		16	0	237
1609	032.5		0		1	92		4	0	151
1743	033.3		0		32	78		0	0	175
1878	034.1		2		20	51		0	0	115
2012	034.9		2		87	24		2	0	189
2146	035.6		2		100	8		6	0	193
2280	036.4		2		120	4	0	2	0	214
2414	037.2		4		*152	1	2	6	0	275
2548	037.9		5		115	0	0	4	0	206
2682	038.7		0		83	0	0	2	0	143
2816	039.5				134	0	12	0	0	246
2950	040.2				140	0	*21		0	271
3085	041.0				63	0	18			136
3219	041.8				46	1	14			103
3353	042.5				29	1	12			71
3487	043.3				24	1	12			62
3621	044.1				9	1	7			28
3755	044.8				14	1	4			32
3889	045.6				6	5	5			26
4023	046.4				4	5	5			23
4157	047.1				0	5	4			14
4292	047.9					1	2			5
4426	048.7					1	2			5
4560	049.5					0	2			3
4694	050.2						0			0
CIC		79	154	1035	4230	4564	437	254	0	
Peak		8	9	50	157	226	26	20	0	
Pass		8	7	6	1	2	3	4	5	

GROUND-LEVEL SO_2 CONCENTRATIONS – HELICOPTER

Table 4 presents the peak ground-level SO_2 concentrations measured during lengthwise flights under the plume. Each value is the maximum concentration in an interval of one kilometer, centered on the designated kilometer. The individual flights are identified by beginning and ending times and locations, with corresponding SO_2 concentrations arranged under their respective distances downwind.

Table 5 summarizes the ground-level SO_2 concentrations obtained during crosswind flights under the plume. Although each arc distance from the plant is specified, most of the traverses were executed at distances corresponding to the cross sections. Each flight is identified by beginning and ending times and a rectangular origin near the plume center. The data are then listed in the plus y and negative y directions with the concentration at the origin repeated for both segments; actual flights, however, were continuous across the plume.

The values shown in Table 5 are instantaneous readings reduced at 6-second intervals. This corresponds to a crosswind distance increment of 134.1 meters. Occasionally, only plus y or negative y segments are presented; this occurs if the origin was established outside the plume or if restrictions prevented a complete crosswind flight. Incomplete flights are recognizable by the absence of a zero at the end of one or both segments.

In Tables 4 and 5, the SO_2 concentrations are net plume values obtained by subtracting the ambient SO_2 and CO_2 background. Completely zero flights are included in both tables to indicate the absence of ground-level concentrations at that particular time and location.

Table 4. PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER

Legend

EST	:	Time of beginning and end of each flight.
Begin	:	Location of flight beginning in whole degrees of azimuth and kilometers to nearest tenth from Homer City or Conemaugh stacks.
End	:	Location of flight terminus in whole degrees of azimuth and kilometers to nearest tenth from Homer City or Conemaugh stacks.
Distance, etc.	:	Successive one-kilometer intervals downwind from plant centered on designated whole kilometer.
SO_2, pphm	:	Peak SO_2 concentration per kilometer interval in whole parts per hundred million by volume.
*	:	Indicates that SO_2 concentrations beyond 25 kilometers are continued on last page of table.
>	:	Indicates full-scale SO_2 concentration; actual concentration was greater by an undetermined amount. Occurs on 20 and 29 October and 9 November.

Table 4. PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
							Homer City Plume 20 April 1970																				
0826-0833	005°/10.0	005°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0918-0925	020°/10.0	020°/ 0.5	0	0	0	0	1	4	4	4	2	2															
0952-0955	027°/ 4.0	027°/ 0.5	0	0	0	0																					
0955-1001	011°/ 0.5	011°/10.0	3	0	0	0	0	0	0	0	2	5															
1013-1019	020°/10.0	020°/ 0.5	0	1	1	0	1	1	1	2	2	2															
1312-1320	053°/10.0	053°/ 0.5	0	1	5	7	21	39	14	0	4	10															
1320-1330	053°/ 0.5	053°/20.0	0	0	0	17	0	1	7	7	8	6	5	5	4	5	5	4	2	2	1	0					
1330-1349	053°/20.0	053°/ 0.5	30	127	90	45	59	6	2	2	4	6	6	5	2	2	1	2	1	1	1	1					
1352-1358	053°/ 7.0	053°/ 0.5	1	125	0	1	2	0	3																		
							Homer City Plume 21 April 1970																				
0836-0845	064°/10.0	064°/ 0.5	1	9	46	15	11	16	4	0	0	0															
0951-1002	064°/10.0	064°/ 0.5	0	6	45	58	6	0	0	4	0	1															
1004-1006	064°/ 0.5	064°/ 6.0	10	67	101	26	1	1																			
							Homer City Plume 22 April 1970																				
0808-0810	085°/10.0	085°/ 6.0						5	7	7	9	11															
0810-0822	085°/ 6.0	085°/25.0						5	6	7	7	7	9	10	10	12	12	12	12	14	9	6	5	3	1	1	1
0822-0840	085°/25.0	085°/ 0.5	30	7	4	4	5	3	7	9	6	5	5	6	5	4	4	4	3	2	4	1	1	1	1	1	0
1011-1016	085°/ 0.5	085°/10.0	1	20	6	11	10	19	6	4	0	0															
1024-1028	096°/10.0	096°/ 4.0				4	12	9	5	5	2	1															
1034-1036	074°/ 4.0	074°/ 0.5	124	1	4	4																					
1036-1046	074°/ 0.5	074°/16.0	4	34	0	1	1	4	4	2	4	1	0	0	0	0	0	0									
1058-1109	085°/16.0	085°/ 0.5	5	22	40	2	35	4	0	2	5	6	6	1	0	1	0	0									
1109-1115	085°/ 0.5	085°/10.0	1	1	11	29	16	2	2	1	1	0															
1115-1123	085°/10.0	085°/ 0.5	81	4	5	6	7	9	2	0	0	0															
1123-1126	085°/ 0.5	085°/ 6.0	4	71	81	2	1	1																			
1126-1130	085°/ 6.0	085°/ 0.5	25	60	11	20	4	0																			
1345-1349	096°/10.0	096°/ 4.0				4	12	7	8	10	10	5															
1354-1357	085°/ 4.0	085°/ 0.5	6	17	5	6																					
1357-1403	085°/ 0.5	085°/10.0	2	16	49	49	6	4	5	3	1	3															
1403-1410	085°/10.0	085°/ 0.5	7	2	9	15	8	6	1	1	2	3															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

			Distance downwind from plant, km																							
EST	Begin	End	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
							Homer City Plume 23 April 1970																				
1206-1217	041°/10.0	041°/ 0.5	4	9	1	4	5	4	4	3	2	2															
							Homer City Plume 25 April 1970																				
0935-0939	073°/10.0	073°/ 6.0						7	9	10	11	9															
0939-0945	073°/ 6.0	073°/16.0						5	7	9	15	6	5	6	9	9	8	7									
0955-1004	073°/16.0	073°/ 4.0				0	10	15	12	6	4	4	10	9	4	7	5	5									
1007-1010	050°/ 4.0	050°/ 0.5	0	2	9	15																					
1106-1110	080°/10.0	080°/16.0										5	5	5	5	4	5	4									
1120-1129	080°/16.0	080°/ 4.0				2	8	5	9	10	6	6	5	2	3	1	1	2									
1133-1136	080°/ 4.0	080°/ 0.5	4	17	6	2																					
1147-1155	080°/ 0.5	080°/16.0	5	1	5	33	19	2	3	9	11	11	10	5	1	1	0	0									
1155-1206	080°/16.0	080°/ 0.5	0	0	9	14	6	9	1	2	2	4	5	5	1	0	4	0									
							Homer City Plume 27 April 1970																				
0757-0804	072°/10.0	072°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0815-0823	051°/ 0.5	051°/16.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0831-0835	072°/16.0	072°/10.0										0	0	0	0	0	0	0									
0844-0848	033°/10.0	033°/16.0										1	1	0	0	0	0	0									
0853-0903	045°/16.0	045°/ 0.5	1	0	0	0	1	1	1	1	4	3	4	2	12	6	5	4									
0923-0926	317°/10.0	317°/ 4.0				1	6	6	1	0	0	0															
0929-0932	275°/ 4.0	275°/ 0.5	1	0	0	0																					
0932-0934	014°/ 0.5	014°/ 4.0	2	1	1	4																					
0939-0943	351°/ 4.0	351°/10.0				12	7	7	17	27	14	3															
0945-0952	351°/10.0	351°/ 0.5	15	9	9	12	15	6	7	7	31	4															
0952-1003	351°/ 0.5	351°/16.0	16	11	12	4	5	6	20	18	31	30	30	30	1	0	0	0									
1003-1014	351°/16.0	351°/ 0.5	9	9	5	6	6	8	19	27	20	20	20	4	4	0	0	0									
1243-1247	051°/ 4.0	051°/10.0				4	10	15	16	15	4	4															
1301-1308	020°/10.0	020°/ 0.5	11	22	15	10	10	9	8	10	7	9															
1308-1317	020°/ 0.5	020°/16.0	1	6	27	44	21	9	16	20	17	14	10	9	16	8	7	4									
							Homer City Plume 28 April 1970																				
0739-0748	024°/16.0	024°/ 0.5	0	0	1	0	0	1	2	2	1	0	1	1	0	0	0	2									
0832-0841	030°/16.0	030°/ 0.5	0	0	0	0	0	0	0	1	1	0	1	1	2	1	2	1									
1001-1006	050°/10.0	050°/ 4.0				1	2	2	2	3	4	5															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Homer City Plume 28 April 1970 (continued)																											
1009-1011	050°/ 4.0	050°/ 0.5	1	1	2	1																					
1023-1053	042°/ 0.5	042°/47.0	2	4	6	8	14	12	9	10	11	11	16	15	9	10	11	16	15	10	7	3	2	7	5	6	7*
1053-1110	042°/47.0	042°/16.0																5	5	5	5	5	7	6	8	7	8*
Homer City Plume 30 April 1970																											
0817-0828	006°/16.0	006°/ 0.5	0	0	0	0	0	0	0	0	1	2	3	4	3	4	4	4									
0839-0845	002°/ 0.5	002°/10.0	1	0	0	1	0	0	0	0	1	1															
0848-0851	353°/10.0	353°/ 6.0						0	1	0	2	3															
0851-0858	353°/ 6.0	353°/18.0						0	2	4	3	5	1	2	3	4	5	6	6	6							
0858-0902	353°/18.0	353°/24.0																		6	5	5	5	5	7	5	
0902-0907	353°/24.0	353°/16.0																3	4	4	4	4	4	4	4	5	
0913-0923	002°/16.0	002°/ 0.5	0	1	1	0	0	1	1	2	9	14	5	3	6	8	5	5									
0932-0940	353°/ 0.5	353°/16.0	2	0	2	0	2	2	0	1	1	1	0	1	2	2	5	5									
0952-0956	002°/16.0	002°/25.0																4	4	5	6	6	6	5	5	4	5
0956-1011	002°/25.0	002°/ 0.5	4	0	4	2	10	11	14	12	6	5	6	6	7	5	5	3	3	4	4	5	5	4	4	4	4
1023-1028	002°/ 0.5	002°/10.0	5	0	0	0	0	14	6	2	7	5															
1245-1249	006°/16.0	006°/10.0										7	6	3	3	5	6	4									
1255-1301	002°/10.0	002°/ 0.5	1	31	4	1	0	0	0	5	3	2															
Homer City Plume 1 May 1970																											
0644-0651	021°/10.0	021°/ 0.5	0	0	0	0	0	0	0	0	0	0															
0822-0828	019°/16.0	019°/25.0																7	7	6	5	5	5	5	4	2	1
0828-0848	019°/25.0	019°/ 0.5	5	30	21	29	38	12	19	20	15	17	19	20	11	9	7	7	5	6	6	5	4	5	4	2	1
0900-0913	021°/ 0.5	021°/25.0	0	1	4	6	15	17	12	14	14	12	11	11	11	9	11	11	10	9	8	6	6	8	5	5	4
0913-0921	021°/25.0	021°/16.0																7	9	9	9	7	6	6	5	5	4
0928-0933	035°/16.0	035°/25.0																11	12	11	10	10	10	9	8	7	6
0933-0945	035°/25.0	035°/10.0										21	15	12	10	11	11	11	11	12	11	14	10	9	8	7	6
0951-0957	037°/10.0	037°/ 4.0				10	41	24	16	19	12	10															
1000-1003	037°/ 4.0	037°/ 0.5	1	40	4	1																					
1003-1008	037°/ 0.5	037°/10.0	1	1	0	29	15	4	6	6	6	4															
1008-1015	037°/10.0	037°/ 0.5	7	12	11	14	32	3	5	5	6	5															
1015-1020	037°/ 0.5	037°/10.0	2	1	6	21	22	52	22	20	7	7															
1020-1026	037°/10.0	037°/ 0.5	11	57	76	14	6	31	64	32	17	12															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
												Homer City Plume 4 May 1970															
0840-0850	036°/ 0.5	036°/16.0	0	1	0	0	1	6	12	26	7	6	4	2	3	2	0	0									
0900-0912	045°/16.0	045°/33.0																7	38	38	50	14	9	15	17	19	24*
0912-0934	045°/33.0	045°/ 0.5	6	6	24	21	9	8	14	56	69	46	45	28	7	5	4	3	2	2	5	6	12	46	49	38	30*
0934-0950	045°/ 0.5	045°/25.0	7	7	11	34	11	12	12	6	14	54	35	22	16	15	11	10	7	6	3	1	2	1	1	4	3
0950-0958	045°/25.0	045°/16.0																11	10	7	7	6	1	1	1	2	2
1007-1011	051°/16.0	051°/10.0										25	20	22	24	20	17	15									
1022-1025	051°/10.0	051°/ 4.0				11	3	3	3	4	4	5															
1032-1035	016°/ 4.0	016°/ 0.5	3	20	57	42																					
1035-1039	016°/ 0.5	016°/ 8.0	5	6	36	45	50	39	39	12																	
1039-1044	016°/ 8.0	016°/ 0.5	10	49	52	52	45	38	39	20																	
1219-1226	003°/16.0	003°/ 4.0				0	1	2	1	1	1	0	0	0	0	1	2	2									
1234-1238	086°/ 4.0	086°/10.0				4	15	17	24	17	21	21															
1250-1255	071°/10.0	071°/20.0										22	19	17	15	11	7	7	6	4	1	0					
1255-1308	071°/20.0	071°/ 0.5	0	0	2	33	24	9	10	12	17	18	22	15	15	11	7	6	5	1	0	0					
												Homer City Plume 5 May 1970															
0830-0836	050°/10.0	050°/ 0.5	0	2	1	4	4	4	19	11	5	5															
0849-0858	050°/ 0.5	050°/16.0	0	0	0	0	0	0	0	0	1	1	1	2	0	0	0	0									
0904-0909	066°/16.0	066°/25.0																11	12	12	10	6	6	5	4	4	7
0917-0936	070°/25.0	070°/ 0.5	3	43	22	10	17	12	13	11	12	11	11	14	14	15	17	16	14	7	6	6	7	7	6	6	5
0936-0946	066°/ 0.5	006°/18.0	3	2	23	30	43	11	14	11	14	11	5	4	6	5	4	3	2	0							
0946-0954	066°/18.0	066°/10.0										10	0	1	0	2	0	0	0	0							
1000-1007	079°/10.0	079°/ 0.5	7	3	2	5	9	16	24	16	24	30															
												Homer City Plume 8 May 1970															
0733-0746	065°/16.0	065°/ 0.5	0	0	0	0	0	0	4	2	3	3	4	4	4	5	4	3									
0859-0907	065°/10.0	065°/ 0.5	4	4	3	0	0	0	3	5	6	6															
0920-0929	065°/ 0.5	065°/16.0	8	2	1	2	2	4	5	2	4	7	12	7	6	2	4	4									
0932-0936	071°/16.0	071°/22.0																5	5	4	4	3	3	3			
0936-0955	071°/22.0	071°/ 0.5	7	39	20	4	11	1	7	5	6	3	4	4	3	5	5	2	3	3	5	4	5	5			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
												Homer City Plume 9 May 1970															
0656-0706	067°/16.0	067°/ 0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
0806-0816	067°/16.0	067°/32.0																10	9	9	9	9	7	6	5	4	4*
0816-0828	078°/32.0	078°/16.0																0	0	0	0	0	0	1	1	1	2*
0833-0837	067°/16.0	067°/10.0										6	5	4	4	5	5	5									
0842-0847	067°/10.0	067°/ 4.0				0	5	1	1	2	2	2															
0850-0853	067°/ 4.0	067°/ 0.5	0	10	1	6																					
0907-0918	067°/ 0.5	067°/22.0	0	0	1	5	3	2	4	3	4	6	5	5	5	6	6	6	1	1	1	1	2	1			
0918-0934	067°/22.0	067°/ 0.5	1	26	31	6	22	1	0	1	0	1	1	1	0	0	1	2	1	1	2	2	2	1			
0934-0938	067°/ 0.5	067°/ 8.0	1	2	2	10	15	14	8	2																	
0938-0944	067°/ 8.0	067°/ 0.5	2	1	4	2	6	7	0	1																	
0944-0948	067°/ 0.5	067°/ 8.0	0	0	0	0	7	8	5	0																	
0948-0954	067°/ 8.0	067°/ 0.5	0	0	0	0	0	5	0	0																	
0956-0959	067°/ 0.5	067°/ 5.0	3	0	0	0	4																				
												Homer City Plume 11 May 1970															
0958-1001	067°/10.0	067°/16.0										10	10	11	16	12	4	3									
1007-1017	067°/16.0	067°/ 4.0				1	4	2	2	10	12	4	3	5	6	9	6	4									
1020-1022	042°/ 4.0	042°/ 0.5	5	11	13	14																					
1022-1026	042°/ 0.5	042°/ 6.0	4	8	9	10	19	12																			
1026-1030	042°/ 6.0	042°/ 0.5	14	6	13	12	7	6																			
1218-1225	042°/10.0	042°/ 0.5	0	0	1	3	11	7	11	10	5	2															
1225-1230	042°/ 0.5	042°/ 8.0	0	0	0	3	8	12	10	7																	
1230-1235	042°/ 8.0	042°/ 0.5	4	27	10	5	6	8	7	6																	
1235-1240	042°/ 0.5	042°/ 8.0	0	2	2	6	5	4	6	5																	
1240-1245	042°/ 8.0	042°/ 0.5	74	36	10	5	4	5	5	3																	
1245-1249	042°/ 0.5	042°/ 6.0	2	59	52	30	5	1																			
1249-1253	042°/ 6.0	042°/ 0.5	17	9	16	24	21	1																			
1309-1312	042°/ 0.5	042°/ 6.0	1	96	42	19	23	9																			
1312-1316	042°/ 6.0	042°/ 0.5	5	25	34	21	20	4																			
1316-1322	042°/ 0.5	042°/10.0	1	4	14	24	26	13	7	4	4	1															
												Homer City Plume 12 May 1970															
1046-1048	037°/ 4.0	037°/ 0.5	1	12	8	4																					
1048-1055	037°/ 0.5	037°/10.0	5	7	2	6	9	7	8	10	9	3															
1102-1109	037°/10.0	037°/ 0.5	22	27	11	25	7	11	4	7	7	4															

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Homer City Plume 12 May 1970 (continued)																											
1115-1120	037°/ 0.5	037°/ 8.0	2	51	12	4	15	17	11	8																	
1120-1125	037°/ 8.0	037°/ 0.5	21	19	10	9	10	19	10	8																	
1125-1134	037°/ 0.5	037°/16.0	21	10	11	3	12	11	11	11	10	7	7	4	5	5	4	4									
1134-1145	037°/16.0	037°/ 0.5	18	17	34	24	21	10	10	11	9	9	4	3	4	4	4	4									
1145-1150	037°/ 0.5	037°/ 8.0	6	9	14	25	21	16	19	4																	
1150-1155	037°/ 8.0	037°/ 0.5	10	7	0	16	21	14	10	5																	
1155-1200	037°/ 0.5	037°/ 8.0	4	52	29	2	3	10	11	6																	
1200-1205	037°/ 8.0	037°/ 0.5	9	42	7	11	5	9	11	9																	
Conemaugh Plume 14 October 1970																											
0728-0735	006°/10.0	006°/ 0.5	0	4	2	1	2	3	1	1	3	1															
0832-0837	002°/16.0	002°/25.0																3	3	4	3	4	4	4	5	6	3
0910-0921	004°/25.0	004°/10.0										1	5	1	2	3	4	3	3	4	5	5	6	5	4	4	3
0925-0931	035°/10.0	035°/ 0.5	1	1	1	3	2	0	0	0	0	0															
0956-1003	027°/10.0	027°/22.0										5	6	6	6	6	6	6	6	6	7	4	3	2			
1017-1031	032°/22.0	032°/ 0.5	0	2	9	6	5	5	4	4	4	6	5	7	7	9	9	8	7	6	5	4	3	3			
1042-1056	040°/ 0.5	040°/22.0	0	0	0	1	5	5	5	4	6	8	8	6	4	3	3	1	1	2	3	3	1	1			
Conemaugh Plume 16 October 1970																											
1124-1132	150°/12.0	150°/ 2.0		0	0	6	17	21	9	9	14	17	11	11													
1132-1142	150°/ 2.0	150°/19.0		0	0	0	4	6	12	4	1	1	0	1	4	5	4	5	6	6	2						
1142-1156	150°/19.0	150°/ 0.5	5	2	6	0	0	5	1	2	6	5	4	6	6	7	6	4	6	6	3						
Conemaugh Plume 20 October 1970																											
0752-0759	340°/10.0	340°/ 0.5	113	122	38	7	14	11	14	9	5	1															
0759-0800	350°/ 0.6	350°/ 0.6	78																								
0800-0801	350°/ 0.6	350°/ 0.6	78																								
0801-0802	350°/ 0.6	350°/ 0.6	>221																								
0802-0803	350°/ 0.6	350°/ 0.6	192																								
0803-0804	350°/ 0.6	350°/ 0.6	144																								
0804-0805	350°/ 0.6	350°/ 0.6	54																								
0805-0806	350°/ 0.6	350°/ 0.6	57																								
0806-0807	350°/ 0.6	350°/ 0.6	86																								
0807-0808	350°/ 0.6	350°/ 0.6	11																								

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Conemaugh Plume 20 October 1970 (continued)																											
0809-0815	340°/ 0.5	340°/10.0	12	38	100	35	7	14	10	6	1	2															
0815-0822	340°/10.0	340°/ 0.5	30	32	17	15	22	21	9	10	6	5															
0832-0840	340°/ 0.5	340°/16.0	44	68	21	-	11	14	14	12	10	11	10	6	11	6	4	3									
0911-0922	350°/25.0	350°/10.0										1	3	3	4	3	4	3	3	2	1	1	0	0	0	0	0
0927-0932	340°/10.0	340°/ 4.0				10	10	12	14	14	14	20															
0938-0940	340°/ 4.0	340°/ 1.5		52	35	31																					
1041-1058	340°/20.0	340°/ 0.5	2	22	26	14	12	6	6	5	7	9	7	11	12	11	11	11	11	10	9	7					
1058-1103	340°/ 0.5	340°/10.0	0	2	31	19	9	9	16	15	10	6															
1111-1115	340°/10.0	340°/ 4.0				22	9	6	2	6	2	12															
1120-1122	340°/ 4.0	340°/ 0.5	26	19	19	10																					
1122-1128	340°/ 0.5	340°/10.0	14	45	39	40	10	1	4	5	9	9															
1128-1135	340°/10.0	340°/ 0.5	22	60	22	15	7	7	5	5	10	11															
1135-1138	340°/ 0.5	340°/ 6.0	4	36	36	26	16	2																			
1138-1142	340°/ 6.0	340°/ 0.5	21	49	24	21	17	2																			
1142-1145	340°/ 0.5	340°/ 6.0	4	19	31	30	19	10																			
1145-1150	340°/ 6.0	340°/ 0.5	48	60	27	30	19	6																			
1202-1205	340°/ 0.5	340°/ 6.0	12	42	30	22	19	12																			
1205-1208	340°/ 6.0	340°/ 0.5	57	56	31	26	15	11																			
1208-1221	333°/ 0.5	333°/25.0	14	58	43	29	24	17	14	16	19	12	12	11	10	9	7	7	7	7	7	6	4	4	4	4	3
Conemaugh Plume 26 October 1970																											
0833-0843	333°/16.0	333°/30.0																9	7	7	5	4	5	4	3	4	4*
0843-0902	333°/30.0	333°/ 4.0				4	4	1	0	4	6	8	9	6	6	9	9	11	7	6	6	3	1	1	1	1	2*
0906-0909	333°/ 4.0	333°/ 0.5	40	38	30	6																					
0917-0934	333°/ 0.5	333°/28.0	3	25	44	22	30	20	10	10	12	15	10	10	11	6	5	7	6	5	6	17	19	19	19	14	11*
0934-0956	333°/28.0	333°/ 0.5	15	35	43	21	21	20	24	25	16	12	14	14	14	14	15	15	10	11	5	6	7	6	7	7	12*
0956-1000	333°/ 0.5	333°/ 6.0	5	51	25	9	3	2																			
1000-1005	333°/ 6.0	333°/ 0.5	80	39	16	6	5	3																			
1005-1009	333°/ 0.5	333°/ 6.0	21	70	41	9	16	7																			
1009-1013	333°/ 6.0	333°/ 0.5	9	30	26	12	17	15																			
1025-1043	333°/ 0.5	333°/32.0	0	14	12	0	3	2	6	3	1	2	3	2	5	1	3	2	4	4	10	14	14	13	12	14	14*
1127-1137	333°/30.0	333°/16.0																4	4	4	4	5	7	7	9	7	7*
1143-1148	333°/16.0	333°/10.0										9	10	7	15	6	5	5									
1154-1158	333°/10.0	333°/ 4.0				0	0	1	1	5	12	11															
1201-1204	333°/ 4.0	333°/ 0.5	0	0	0	0																					

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Conemaugh Plume 26 October 1970 (continued)																											
1217-1221	333°/ 0.5	333°/ 7.0	0	0	0	0	0	0	0																		
1221-1226	333°/ 7.0	333°/ 0.5	1	1	1	1	0	0	0																		
1226-1243	333°/ 0.5	333°/28.0	1	0	0	0	0	0	0	1	2	4	2	1	4	3	4	4	3	2	2	3	2	4	5	5	4*
Conemaugh Plume 27 October 1970																											
0842-0852	317°/16.0	317°/ 4.0				5	5	4	3	5	6	4	4	9	4	4	4	5									
0857-0900	317°/ 4.0	317°/ 0.5	1	2	2	2																					
0917-0926	317°/ 0.5	317°/16.0	1	1	1	1	1	1	1	1	1	5	3	2	2	2	5	3									
1053-1058	325°/10.0	325°/ 4.0				0	4	2	4	4	4	3															
1103-1106	309°/ 4.0	309°/ 0.5	0	2	1	1																					
1118-1127	317°/ 0.5	317°/16.0	1	0	0	0	2	1	1	1	1	1	4	4	3	2	1	1									
1134-1147	317°/16.0	317°/ 0.5	0	25	21	1	1	1	0	1	1	1	0	0	0	1	1	1									
1147-1149	317°/ 0.5	317°/ 4.0	1	0	0	0																					
1149-1152	317°/ 4.0	317°/ 0.5	1	0	0	1																					
Conemaugh Plume 28 October 1970																											
0736-0739	311°/ 4.0	311°/ 0.5	21	27	25	12																					
0739-0744	311°/ 0.5	311°/10.0	5	45	46	25	16	16	15	14	10	6															
0820-0827	311°/10.0	311°/ 0.5	1	3	27	15	16	10	10	7	7	7															
0827-0834	311°/ 0.5	311°/10.0	1	0	5	5	7	9	6	4	3	4															
0834-0841	311°/10.0	311°/ 0.5	1	1	3	5	4	5	6	7	7	6															
0859-0907	311°/ 0.5	311°/16.0	1	1	1	1	1	4	1	2	1	0	0	1	1	1	1	2									
1046-1053	311°/10.0	311°/ 0.5	18	16	16	10	9	9	15	14	6	6															
1104-1113	311°/ 0.5	311°/16.0	70	56	30	38	15	6	4	0	0	0	1	1	2	3	5	5									
1122-1124	311°/16.0	311°/20.0																3	2	2	1	0					
1124-1135	311°/20.0	311°/ 4.0				2	5	2	0	1	1	2	4	2	1	1	1	2	2	2	4	1					
1139-1142	311°/ 4.0	311°/ 0.5	34	62	36	4																					
1142-1146	311°/ 0.5	311°/ 6.0	22	52	40	40	21	6																			
1146-1150	311°/ 6.0	311°/ 0.5	48	12	30	17	9	5																			
1150-1154	311°/ 0.5	311°/ 6.0	46	75	9	12	9	0																			
1154-1158	311°/ 6.0	311°/ 0.5	22	9	8	4	1	1																			
1158-1202	311°/ 0.5	311°/ 6.0	21	9	2	1	2	0																			
1202-1207	311°/ 6.0	311°/ 0.5	24	39	0	0	1	0																			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Conemaugh Plume 28 October 1970 (continued)																											
1207-1211	311°/ 0.5	311°/ 6.0	1	17	22	11	10	7																			
1211-1215	311°/ 6.0	311°/ 0.5	11	6	12	4	6	11																			
1215-1219	311°/ 0.5	311°/ 6.0	0	0	0	0	1	0																			
1219-1224	311°/ 6.0	311°/ 0.5	6	11	12	1	1	1																			
Conemaugh Plume 29 October 1970																											
0655-0702	326°/10.0	326°/ 0.5	92	140	69	7	4	6	12	14	15	15															
0702-0708	315°/ 0.5	315°/10.0	11	67	91	95	41	33	41	40	36	22															
0708-0715	315°/10.0	315°/ 0.5	52	80	45	12	21	15	15	11	11	9															
0731-0737	315°/ 0.5	315°/10.0	41	33	55	55	46	35	22	8	6	5															
0741-0746	326°/10.0	326°/ 4.0				2	5	5	1	2	7	8															
0750-0753	315°/ 4.0	315°/ 0.5	60	56	52	39																					
0753-0759	315°/ 0.5	315°/10.0	72	102	87	72	36	26	26	24	2	1															
0759-0805	315°/10.0	315°/ 0.5	89	78	14	11	12	12	11	2	1	0															
0805-0809	315°/ 0.5	315°/ 6.0	>229	68	87	56	7	7																			
0809-0814	315°/ 6.0	315°/ 0.5	12	33	31	40	27	21																			
0814-0818	315°/ 0.5	315°/ 6.0	1	12	25	72	12	7																			
0818-0822	315°/ 6.0	315°/ 0.5	60	22	24	25	24	6																			
0822-0826	315°/ 0.5	315°/ 6.0	4	83	24	16	14	11																			
0826-0827	315°/ 6.0	315°/ 4.0				7	12	8																			
0831-0833	326°/ 4.0	326°/ 0.5	70	70	48	76																					
0833-0837	326°/ 0.5	326°/ 6.0	22	75	46	37	36	32																			
0837-0841	326°/ 6.0	326°/ 0.5	29	55	50	29	28	14																			
0841-0845	326°/ 0.5	326°/ 6.0	32	30	32	37	33	5																			
0845-0849	326°/ 6.0	326°/ 0.5	65	89	32	29	6	11																			
0857-0906	326°/ 0.5	326°/16.0	21	46	35	40	33	28	25	32	26	29	21	11	5	4	7	6									
1031-1041	326°/16.0	326°/ 4.0				10	21	19	12	13	13	15	10	9	6	7	10	11									
1045-1048	326°/ 4.0	326°/ 0.5	132	46	19	11																					
1048-1051	326°/ 0.5	326°/ 6.0	21	37	32	25	20	1																			
1051-1056	326°/ 6.0	326°/ 0.5	77	50	35	35	14	6																			
1058-1059	326°/ 0.5	326°/ 2.0	31	31																							
1059-1100	326°/ 2.0	326°/ 0.5	30	84																							
1105-1111	326°/ 0.5	326°/10.0	56	108	19	24	31	39	14	20	22	16															
1117-1124	326°/10.0	326°/ 0.5	30	49	20	30	29	35	40	16	17	20															
1124-1128	326°/ 0.5	326°/ 6.0	2	46	7	7	2	4																			
1128-1133	326°/ 6.0	326°/ 0.5	58	45	37	4	5	3																			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Conemaugh Plume 29 October 1970 (continued)																											
1133-1144	326°/ 0.5	326°/20.0	27	84	61	9	9	6	1	1	0	4	14	19	17	20	12	10	9	7	7	6					
1144-1200	326°/20.0	326°/ 0.5	35	38	6	6	6	15	11	11	6	2	2	10	9	11	9	10	7	7	6	6					
1200-1204	326°/ 0.5	326°/ 6.0	107	26	36	22	2	0																			
1204-1208	326°/ 6.0	326°/ 0.5	29	87	12	16	2	5																			
1215-1225	326°/ 0.5	326°/18.0	31	46	24	12	26	2	1	0	1	12	9	11	12	9	9	7	7	5							
Conemaugh Plume 30 October 1970																											
0902-0907	328°/10.0	328°/ 4.0				12	15	14	10	10	7	6															
0913-0916	328°/ 4.0	328°/ 0.5	21	53	38	17																					
Conemaugh Plume 2 November 1970																											
1000-1011	303°/16.0	303°/34.0																5	7	8	7	9	6	7	7	8	10*
1011-1024	303°/34.0	313°/16.0																2	5	10	4	5	6	6	1	0	2*
1045-1049	299°/16.0	299°/10.0										26	26	25	26	20	20	24									
1049-1059	299°/10.0	299°/28.0										27	30	30	24	27	25	14	12	9	15	10	9	9	10	9	8*
1059-1113	299°/28.0	299°/10.0										16	20	16	17	17	14	15	11	20	11	7	7	10	9	8	8*
1121-1125	305°/10.0	305°/ 4.0				19	21	17	10	11	11	12															
1129-1131	305°/ 4.0	305°/ 0.5	0	0	4	14																					
1131-1140	305°/ 0.5	305°/16.0	0	0	1	1	1	5	10	16	11	11	15	15	14	9	9	11									
1140-1151	305°/16.0	305°/ 0.5	9	9	14	20	29	25	14	15	9	10	15	11	12	14	14	9									
1201-1209	303°/ 0.5	303°/16.0	0	0	1	2	4	14	20	31	30	22	24	20	17	19	19	20									
1209-1217	303°/16.0	303°/ 4.0				12	40	36	25	30	25	20	20	17	17	22	17	21									
1217-1226	303°/ 4.0	303°/18.0				46	51	20	33	33	20	20	19	20	16	19	17	15	6	6							
1434-1438	322°/16.0	322°/10.0										10	11	9	10	6	6	5									
1445-1450	314°/10.0	314°/ 4.0				5	16	4	14	19	14	10															
1453-1456	314°/ 4.0	314°/ 0.5	0	0	7	5																					
1506-1509	305°/ 0.5	305°/ 4.0	23	61	5	5																					
Conemaugh Plume 5 November 1970																											
0924-0936	097°/16.0	097°/ 0.5	0	0	0	0	0	6	5	5	4	7	2	4	5	7	11	11									
1047-1051	080°/ 4.0	080°/10.0				1	0	1	3	5	4	1															
1056-1059	093°/10.0	093°/16.0										1	3	2	1	1	1	1									
1059-1104	097°/16.0	097°/10.0										2	3	2	2	1	1	1									

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
							Conemaugh Plume 6 November 1970																				
0904-0910	068°/10.0	068°/ 0.5	0	9	0	0	1	0	1	1	1	1															
							Homer City Plume 9 November 1970																				
0838-0851	326°/16.0	326°/ 0.5	0	0	0	3	0	0	0	0	0	0	2	0	0	2	1	2									
1027-1032	326°/10.0	326°/20.0										4	3	2	4	3	2	2	2	1	1	1					
1035-1051	326°/20.0	326°/ 0.5	35	99	4	14	10	5	9	4	4	4	3	3	3	3	2	1	2	1	1	1					
1051-1057	326°/ 0.5	326°/10.0	19	26	24	6	7	9	8	5	3	3															
1057-1102	326°/10.0	326°/ 4.0				14	11	12	9	6	5	5															
1106-1109	326°/ 4.0	326°/ 0.5	>226	94	65	11																					
1109-1112	326°/ 0.5	326°/ 4.0	24	87	30	15																					
1112-1115	326°/ 4.0	326°/ 0.5	9	12	14	3																					
1115-1121	326°/ 0.5	326°/10.0	1	106	49	6	9	7	7	5	1	1															
1123-1130	326°/10.0	326°/ 0.5	106	28	11	15	5	4	7	3	3	3															
1143-1155	326°/ 0.5	326°/20.0	2	11	17	22	7	6	6	6	5	5	5	5	4	2	1	1	3	3	3	1					
1155-1211	326°/20.0	326°/ 0.5	15	7	10	11	7	5	3	3	1	1	2	1	1	1	1	1	1	0	0	0					
1211-1213	326°/ 0.5	326°/ 4.0	2	4	7	5																					
1213-1216	326°/ 4.0	326°/ 0.5	99	20	12	11																					
							Conemaugh Plume 10 November 1970																				
0739-0741	333°/ 4.0	333°/ 0.5	85	68	27	17																					
0741-0744	333°/ 0.5	333°/ 4.0	64	119	53	21																					
0744-0747	333°/ 4.0	333°/ 0.5	78	52	27	20																					
0747-0753	333°/ 0.5	333°/10.0	52	45	58	68	45	33	16	10	7	5															
0800-0804	333°/ 7.0	333°/ 0.5	49	47	45	25	10	14	12																		
0808-0811	333°/ 0.5	333°/ 4.0	7	4	5	2																					
0813-0816	343°/ 4.0	343°/ 0.5	15	11	11	14																					
0816-0819	343°/ 0.5	343°/ 4.0	14	10	7	6																					
0819-0821	343°/ 4.0	343°/ 0.5	11	10	10	9																					
0821-0824	343°/ 0.5	343°/ 4.0	10	16	7	2																					
0830-0832	343°/ 4.0	343°/ 0.5	41	53	37	21																					
0832-0840	343°/ 0.5	343°/16.0	14	33	27	21	17	15	11	14	14	11	9	9	10	10	7	6									
0845-0850	343°/16.0	343°/10.0										6	5	7	6	6	6	6									
0858-0904	343°/10.0	343°/ 0.5	31	45	42	32	19	9	9	7	10	8															
0904-0908	343°/ 0.5	343°/ 6.0	14	40	38	38	30	24																			
0908-0912	343°/ 6.0	343°/ 0.5	9	36	43	30	26	20																			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																							
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Conemaugh Plume 10 November 1970 (continued)																											
0915-0926	343°/ 0.5	343°/20.0	79	72	70	48	31	16	15	9	7	12	12	7	6	7	7	7	5	6	6	5					
1012-1026	343°/20.0	343°/ 0.5	31	33	26	19	15	10	12	17	15	14	14	11	11	9	9	8	7	6	5	5					
1038-1047	343°/ 0.5	343°/16.0	57	36	31	16	15	19	14	12	11	10	9	10	9	9	9	9									
1102-1106	343°/10.0	343°/ 4.0				14	15	9	7	6	9	8															
1111-1114	343°/ 4.0	343°/ 0.5	62	34	53	45																					
1114-1123	343°/ 0.5	343°/16.0	2	9	11	22	39	35	21	21	15	15	10	9	7	9	7	7									
1123-1136	343°/16.0	343°/ 0.5	183	58	51	35	19	10	11	12	12	11	12	9	10	6	6	6									
1136-1141	343°/ 0.5	343°/ 8.0	105	98	42	41	41	27	19	9																	
1141-1146	343°/ 8.0	343°/ 0.5	16	41	26	24	31	26	12	8																	
1146-1151	343°/ 0.5	343°/ 8.0	5	51	63	25	7	4	9	14																	
1151-1157	343°/ 8.0	343°/ 0.5	77	49	19	16	14	7	14	15																	
1157-1201	343°/ 0.5	343°/ 6.0	76	93	27	30	21	17																			
1201-1205	343°/ 6.0	343°/ 0.5	56	61	41	24	19	14																			
1216-1226	343°/ 0.5	343°/20.0	27	20	19	15	2	6	10	11	9	7	4	2	4	4	2	1	1	4	5	4					
Conemaugh Plume 11 November 1970																											
0802-0805	285°/ 4.0	285°/ 0.5	11	9	26	22																					
0808-0815	285°/ 0.5	285°/10.0	9	6	18	22	11	4	6	1	3	4															
0851-0855	285°/ 7.0	285°/ 0.5	4	6	7	16	5	2	1																		
0855-0857	285°/ 0.5	285°/ 4.0	2	4	5	5																					
0857-0900	285°/ 4.0	285°/ 0.5	14	4	5	6																					
1037-1048	285°/16.0	285°/ 0.5	10	9	5	4	5	4	3	2	2	2	2	5	5	5	5	1									
Conemaugh Plume 16 November 1970																											
0917-0925	092°/10.0	092°/ 0.5	0	0	5	9	0	1	2	9	0	1															
0925-0934	092°/ 0.5	092°/16.0	0	0	0	11	12	10	6	5	4	1	5	1	1	4	2	1									
0934-0946	092°/16.0	092°/ 0.5	2	2	2	2	5	9	9	4	6	5	6	6	6	5	2	1									
Homer City Plume 16 November 1970																											
1222-1226	082°/16.0	082°/10.0										0	1	1	6	2	2	3									
1230-1235	082°/10.0	082°/ 4.0				2	7	7	6	0	2	1															
1237-1239	073°/ 4.0	073°/ 0.5	0	0	0	0																					
1239-1243	073°/ 0.5	073°/ 6.0	0	0	5	0	1	1																			
1243-1247	073°/ 6.0	073°/ 0.5	0	0	2	1	5	1																			

Table 4 (continued). PEAK GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Begin	End	Distance downwind from plant, km																								
			26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Homer City Plume 28 April 1970																											
1023-1053	042°/ 0.5	042°/47.0	* 8	11	10	10	14	14	16	19	22	25	36	35	24	27	22	19	21	11	14	16	10	2			
1053-1110	042°/47.0	042°/16.0	* 9	10	11	11	9	11	11	14	16	20	21	22	5	21	10	7	9	8	2	2	1	2			
Homer City Plume 4 May 1970																											
0900-0912	045°/16.0	045°/33.0	*26	24	14	5	6	5	4	4																	
0912-0934	045°/33.0	045°/ 0.5	*14	14	9	6	6	5	6	4																	
Homer City Plume 9 May 1970																											
0806-0816	067°/16.0	067°/32.0	* 5	5	5	4	3	3	3																		
0816-0828	078°/32.0	078°/16.0	* 2	4	4	4	4	4	3																		
Conemaugh Plume 26 October 1970																											
0833-0843	333°/16.0	333°/30.0	* 3	3	3	2	1																				
0843-0902	333°/30.0	333°/ 4.0	* 2	3	3	3	1																				
0917-0934	333°/ 0.5	333°/28.0	*10	10	9																						
0934-0956	333°/28.0	333°/ 0.5	* 7	8	10																						
1025-1043	333°/ 0.5	333°/32.0	*14	12	10	10	9	7	6																		
1127-1137	333°/30.0	333°/16.0	* 9	8	6	6	6																				
1226-1243	333°/ 0.5	333°/28.0	* 4	2	2																						
Conemaugh Plume 2 November 1970																											
1000-1011	303°/16.0	303°/34.0	* 7	7	7	8	7	7	7	4	4																
1011-1024	303°/34.0	313°/16.0	* 1	1	1	1	1	2	2	3	3																
1049-1059	299°/10.0	299°/28.0	* 7	8	7																						
1059-1113	299°/28.0	299°/10.0	* 9	7	6																						

Table 5. INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER

Legend

EST	:	Time of beginning and end of each flight.
Origin	:	Location of rectangular origin in whole degrees of azimuth and kilometers to nearest tenth from Homer City or Conemaugh stacks.
Dir	:	+y indicates counterclockwise direction around stacks from origin; -y indicates clockwise direction.
Distance, etc.	:	Cumulative distance across plume from origin in whole meters. Thousands digit is not indicated.
SO_2, pphm	:	Instantaneous SO_2 concentration per 6-second flight interval in whole parts per hundred million by volume.
*	:	Indicates that SO_2 concentrations beyond 3353 meters are continued on last page of table.

Table 5. INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
													Homer City Plume 20 April 1970															
0946-0948	027°/ 4.0	-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
		+y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0											
1003-1006	020°/10.0	+y	2	2	2	2	2	2	2	2	1	0																
		-y	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	0									
1306-1310	053°/10.0	+y	4	4	5	4	5	4	5	6	1	2	4	4	2	1	2	2	1	2	0							
		-y	4	4	5	7	8	7	7	7	6	5	3	3	1	1	1	1	0									
													Homer City Plume 22 April 1970															
1019-1021	096°/10.0	+y	1	1	1	1	2	1	1	0																		
		-y	1	1	1	2	1	1	1	1	0																	
1031-1032	074°/ 4.0	-y	31	36	44	36	5	1	0																			
		+y	31	19	9	2	1	5	4	0																		
1050-1053	085°/16.0	+y	2	2	2	2	2	3	3	4	4	3	3	2	2	1	1	1	1	1	1	1	0					
		-y	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	0									
1340-1343	096°/10.0	+y	5	6	5	4	4	4	5	5	5	4	5	5	6	5	5	4	2	0								
		-y	5	6	7	7	6	6	12	9	8	6	5	0														
1350-1352	085°/ 4.0	-y	11	10	4	4	4	4	2	0																		
		+y	11	9	4	3	5	4	4	4	4	2	2	1	0													
													Homer City Plume 25 April 1970															
0928-0933	073°/10.0	+y	3	4	4	4	3	3	3	3	4	3	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3*
		-y	3	4	4	4	5	6	7	7	11	10	10	16	11	11	7	6	4	4	4	6	4	2	1	0	0	1*
0948-0952	073°/16.0	+y	6	6	5	5	5	6	6	7	6	6	5	5	5	5	4	4	4	4	4	4	4	3	3	3	3	2*
		-y	6	5	6	7	7	6	5	5	4	6	5	4	4	1	1	1	1	1	0							
1004-1006	050°/ 4.0	-y	6	7	6	6	3	3	4	1	0																	
		+y	6	7	7	7	1	1	0																			
1100-1104	080°/10.0	+y	5	3	2	2	2	2	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	2	2	2	1	0
		-y	5	5	5	5	6	6	6	5	4	3	4	4	4	4	3	3	3	2	2	2	1	0				
1113-1117	080°/16.0	+y	2	2	2	2	3	4	4	3	3	3	2	2	2	1	1	2	2	2	2	2	1	1	1	1	1	0
		-y	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	0			
1130-1132	080°/ 4.0	-y	3	1	1	0	1	1	1	1	1	0																
		+y	3	5	1	1	1	1	1	1	0																	

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
													Homer City Plume 27 April 1970															
0824-0828	072°/16.0	+y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
		-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
0841-0842	033°/10.0	-y	2	2	1	1	0																					
		+y	2	2	2	1	1	1	0																			
0850-0851	045°/16.0	+y	1	1	1	1	2	1	0																			
		-y	1	1	1	1	1	1	1	1	1	1	1	0														
0920-0922	317°/10.0	-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		+y	0																									
0927-0929	275°/ 4.0	-y	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
		+y	0																									
0935-0937	351°/ 4.0	-y	11	9	5	5	5	4	3	4	3	2	0															
		+y	11	12	12	12	14	12	9	6	4	3	2	2	2	2	0											
0943-0944	351°/10.0	+y	11	7	2	1	1	1	0																			
		-y	11	4	2	1	0																					
1234-1239	051°/ 4.0	-y	5	12	5	5	6	6	6	7	7	7	6	6	5	8	6	7	6	6	6	7	4	2	1	1	1	1*
		+y	5	10	9	7	7	11	10	9	9	7	5	9	9	12	12	12	12	12	12	12	11	10	4	2	1	1*
1247-1256	020°/10.0	-y	5	9	10	14	9	5	4	4	3	2	3	3	3	2	4	4	4	5	4	4	5	6	6	5	5	5*
		+y	5	7	9	7	9	9	9	9	10	9	9	9	9	9	9	9	9	7	7	7	7	7	7	7	8	8*
													Homer City Plume 28 April 1970															
0958-1000	050°/10.0	+y	1	1	1	1	1	2	0																			
		-y	1	2	4	4	4	5	4	1	1	0																
1007-1008	050°/ 4.0	-y	0	0	0	0	0	0	0																			
		+y	0	0	0	0	0	0	0																			
													Homer City Plume 30 April 1970															
0811-0815	006°/16.0	-y	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	3	2	1	0			
		+y	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3	1	0					
0845-0846	353°/10.0	-y	3	3	2	1	1	1	1	0																		
		+y	3	1	1	3	0																					
0908-0910	002°/16.0	+y	4	5	5	5	5	5	4	5	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	3	3	
		-y	4	4	5	4	4	3	3	3	3	3	3	3	3	3	3	3										
0943-0950	002°/16.0	+y	5	5	4	4	4	4	3	3	2	2	2	2	3	3	4	3	3	3	3	3	3	3	3	3	3	3*
		-y	5	5	4	4	4	4	3	3	4	4	4	4	4	5	4	4	4	5	5	5	5	5	5	4	4	4*

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																										
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Homer City Plume 30 April 1970 (continued)																													
1238-1242	006°/10.0	-y	1	1	1	1	1	3	3	3	2	2	2	3	3	4	4	2	2	3	1	1	1	0					
		+y	1	2	3	3	2	2	1	0	0	0	1	3	3	3	3	2	2	2	1	0							
1252-1253	002°/10.0	-y	4	3	4	4	5	4	0																				
		+y	4	5	6	5	1	1	2	0																			
Homer City Plume 1 May 1970																													
0818-0821	019°/16.0	-y	7	6	6	5	4	4	4	5	4	4	3	2	1	0													
		+y	7	6	6	7	6	6	6	5	5	4	3	2	0														
0923-0926	035°/16.0	+y	10	8	7	7	7	5	5	4	5	5	5	5	4	5	4	3	2	1	0								
		-y	10	9	10	12	15	13	11	10	9	6	5	5	4	3	2	0											
0947-0949	037°/10.0	-y	13	14	9	10	11	11	6	6	7	5	4	2	1	0													
		+y	13	13	11	10	9	6	4	5	4	2	2	0															
0959-1000	037°/ 4.0	-y	15	6	2	0																							
		+y	15	10	7	4	0																						
Homer City Plume 4 May 1970																													
0851-0856	045°/16.0	+y	7	3	3	3	3	3	2	2	1	3	3	5	1	1	1	2	3	2	1	2	3	1	2	3	2	0	
		-y	7	5	7	4	5	6	5	4	3	5	3	1	3	2	4	4	4	3	3	2	1	1	0				
1001-1005	051°/16.0	+y	16	20	21	21	20	18	18	19	19	20	17	17	16	14	3	3	3	4	4	3	2	1	1	0			
		-y	16	17	17	18	18	17	17	18	19	10	10	10	8	9	7	7	7	7	4	3	3	2	1	0			
1015-1020	051°/10.0	+y	9	10	11	11	12	12	12	12	11	10	10	10	9	10	7	6	7	7	6	5	3	1	1	1	1	0	
		-y	9	10	9	7	6	6	6	6	7	7	7	7	6	6	6	5	6	6	5	5	5	4	4	2	0		
1027-1031	016°/ 4.0	-y	5	6	6	7	7	6	5	6	8	7	5	5	4	5	8	12	16	7	5	3	0						
		+y	5	5	11	6	29	29	30	31	44	25	28	12	10	9	6	6	4	4	3	2	0						
1228-1232	086°/ 4.0	+y	20	12	11	14	11	10	12	14	16	15	11	10	6	3	4	6	6	6	6	5	1	0					
		-y	20	14	11	10	7	6	11	9	7	6	6	7	7	8	14	5	5	3	0								
1240-1246	071°/10.0	+y	19	17	17	16	17	18	19	19	19	17	16	16	15	14	10	11	11	12	11	10	9	9	9	9	9	8*	
		-y	19	16	15	16	14	11	8	7	9	7	7	7	7	7	6	8	8	6	6	6	7	7	4	5	5	4*	
Homer City Plume 5 May 1970																													
0826-0827	050°/10.0	+y	6	6	6	6	5	4	3	0																			
		-y	6	5	5	6	5	5	3	1	0																		
0859-0902	066°/16.0	+y	8	9	10	10	9	9	9	7	5	4	3	3	3	5	4	1	1	2	2	0							
		-y	8	7	7	8	8	8	9	7	8	6	5	4	3	2	0												

Table 5 (continued). **INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm**

EST	Origin	Dir	Distance across plume, m																								
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Homer City Plume 5 May 1970 (continued)																												
0910-0914	070°/26.0	+y	4	4	3	3	3	4	4	4	3	3	4	3	3	3	3	4	3	3	4	4	4	3	2	0		
		-y	4	3	4	4	4	4	4	4	3	1	2	3	3	3	2	0										
0956-0958	079°/10.0	+y	9	9	9	10	11	6	5	3	3	3	1	0														
		-y	9	10	6	4	3	3	3	3	5	3	0															
Homer City Plume 8 May 1970																												
0856-0857	065°/10.0	+y	4	5	5	4	3	3	2	0																		
		-y	4	3	3	3	3	3	4	2	1	0																
0930-0932	071°/16.0	+y	4	4	4	4	3	3	2	1	2	2	2	2	2	0												
		-y	4	5	5	5	4	5	5	5	5	4	3	1	0													
Homer City Plume 9 May 1970																												
0803-0805	067°/16.0	+y	9	10	10	9	6	3	2	0																		
		-y	9	7	6	6	5	5	4	3	3	3	1	0														
0830-0832	067°/16.0	-y	5	5	5	5	5	4	2	1	1	1	0															
		+y	5	5	5	4	4	4	4	4	5	2	2	1	0													
0839-0840	067°/10.0	-y	2	4	4	2	1	0																				
		+y	2	1	1	1	1	1	1	0																		
0848-0849	067°/ 4.0	-y	0	0	0	0	0	0	0	0	0																	
		+y	0	0	0	0	0	0	0	0	0																	
Homer City Plume 11 May 1970																												
1003-1006	067°/16.0	+y	5	5	4	4	2	4	4	4	3	4	4	4	3	2	0											
		-y	5	5	5	4	4	3	2	3	2	4	2	1	1	0												
1019-1020	042°/ 4.0	-y	0																									
		+y	0	0	1	1	1	1	1	1	1																	
1215-1217	042°/10.0	+y	5	3	2	2	2	4	5	5	4	0																
		-y	5	5	3	2	2	1	0																			
Homer City Plume 12 May 1970																												
1057-1059	037°/10.0	+y	6	6	7	8	10	9	7	3	4	4	4	4	2	2	2	1	0									
		-y	6	6	5	4	4	4	4	3	3	3	2	1	0													

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - **HELICOPTER, pphm**

EST	Origin	Dir	Distance across plume, m																								
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
												Conemaugh Plume 14 October 1970																
0828-0831	022°/16.0	+y	4	3	3	1	1	1	3	3	4	4	3	3	2	3	2	2	2	1	0							
		-y	4	5	4	5	4	4	4	3	2	2	1	2	1	1	1	0										
0903-0907	004°/25.0	+y	4	4	4	3	3	3	3	3	3	3	4	4	3	3	4	3	4	4	3	3	3	4	3	3	4	
		-y	4	4	4	4	4	3	3	3	3	2	2	2	3	3	3	2	1	1	0							
0951-0954	027°/10.0	+y	5	5	5	4	5	4	4	4	3	3	3	4	4	4	4	4	3	3	3	3	2	0				
		-y	5	6	5	5	5	5	4	5	3	3	3	3	2	2	4											
1010-1015	032°/22.0	+y	3	4	3	3	4	4	3	3	2	3	3	3	3	3	2	2	2	3	2	2	2	1	1	1	0	
		-y	3	4	4	4	3	3	3	3	3	3	4	4	3	3	4	3	3	2	1	1	0					
												Conemaugh Plume 20 October 1970																
0924-0926	340°/10.0	-y	14	13	11	10	9	6	5	1	1	2	0															
		+y	14	6	7	6	7	5	4	3	1	1	1	0														
0934-0937	340°/ 4.0	-y	15	24	21	10	9	6	3	4	3	4	1	1	5	5	4	3	1	0								
		+y	15	9	4	1	1	0																				
1105-1108	340°/10.0	+y	15	15	16	15	16	12	6	5	6	5	2	1	0													
		-y	15	14	7	3	2	6	4	4	2	1	2	2	1	0												
1116-1119	340°/ 4.0	-y	9	6	17	16	15	15	11	7	5	1	3	4	3	2	2	3	0									
		+y	9	12	16	13	4	1	1	1	1	0																
												Conemaugh Plume 26 October 1970																
0827-0830	333°/16.0	-y	4	5	5	6	6	6	5	4	5	4	3	0														
		+y	4	5	4	4	4	4	4	3	3	3	3	3	2	2	2	1	2	1	1	0						
0904-0905	333°/ 4.0	-y	11	7	3	0																						
		+y	11	12	19	7	5	4	1	0																		
1139-1141	333°/16.0	+y	4	4	5	4	5	5	5	4	3	2	0															
		-y	4	4	4	4	3	3	3	3	2	2	0															
1150-1152	333°/10.0	+y	9	8	7	6	6	6	7	6	5	4	3	3	2	2	0											
		-y	9	9	9	7	3	3	3	3	5	3	2	0														
1158-1200	333°/ 4.0	-y	0	0	0	0	0	0	0	0	0	0	0															
		+y	0	0	0	0	0	0	0	0	0	0																

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
												Conemaugh Plume 27 October 1970																
0854-0856	317°/ 4.0	-y	1	1	1	1	1	2	2	2	1	0																
		+y	1	1	1	1	1	1	1	2	1	2	2	1	1	0												
1049-1052	325°/10.0	-y	5	3	2	1	2	2	2	1	2	2	2	1	0													
		+y	5	5	4	2	2	1	1	1	1	1	0															
1100-1101	309°/ 4.0	-y	1	0																								
		+y	1	1	1	0																						
1130-1132	317°/16.0	-y	4	3	4	3	4	2	3	2	2	2	2	2	1	0												
		+y	4	4	5	5	4	3	2	0																		
												Conemaugh Plume 28 October 1970																
1039-1044	311°/10.0	-y	5	5	5	4	3	4	1	1	3	4	1	1	2	2	3	4	4	4	4	4	3	3	3	3	4	3*
		+y	5	7	7	7	9	7	5	5	5	4	4	3	2	3	2	2	2	1	1	1	0					
1115-1118	311°/16.0	+y	3	5	4	4	5	5	4	2	0																	
		-y	3	2	4	5	4	4	4	3	4	4	4	5	5	3	4	3	3	3	2	3	2	2	2	2	1	0
1137-1138	311°/ 4.0	+y	6	4	2	2	0	1	0																			
		-y	6	3	1	1	0	1	0																			
												Conemaugh Plume 29 October 1970																
0651-0653	326°/10.0	-y	12	17	16	7	4	1	1	0																		
		+y	12	6	7	5	2	2	2	1	1	0																
0738-0740	326°/10.0	+y	7	5	3	3	2	2	1	0																		
		-y	7	9	9	8	6	2	1	0																		
0747-0749	315°/ 4.0	-y	3	5	2	4	0																					
		+y	3	15	41	44	33	25	19	15	5	0																
0829-0830	326°/ 4.0	+y	21	15	14	9	10	5	0																			
		-y	21	22	12	5	1	0																				
1023-1028	326°/16.0	+y	6	6	6	7	9	6	7	8	8	9	10	9	9	9	7	6	5	4	3	3	1	1	1	0		
		-y	6	6	5	5	5	4	4	4	4	4	4	3	3	3	2	2	2	2	2	1	2	1	1	1	1	0
1043-1044	326°/ 4.0	+y	17	7	8	9	10	6	0																			
		-y	17	11	2	3	0																					
1113-1115	326°/10.0	+y	17	10	10	6	6	5	3	2	1	0																
		-y	17	19	15	16	17	16	13	9	4	2	0															

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																								
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
											Conemaugh Plume 30 October 1970																	
0857-0859	328°/10.0	-y	3	3	4	4	4	4	3	2	2	0																
		+y	3	5	4	4	4	4	4	2	2	2	1	1	1	0											
0910-0912	328°/ 4.0	-y	13	24	29	16	11	8	9	9	6	4	2	2	0												
		+y	13	15	11	6	5	6	6	5	4	4	3	2	2	0											
											Conemaugh Plume 2 November 1970																	
0956-0958	303°/16.0	-y	7	6	5	5	4	4	4	3	2	0																
		+y	7	6	6	6	5	5	5	5	5	5	4	3	3	1	0											
1040-1043	299°/16.0	-y	22	25	7	7	7	7	7	8	7	7	7	7	8	9	9	9	9	7	6	4	0					
		+y	22	20	12	6	4	3	2	1	0																	
1115-1118	305°/10.0	-y	15	6	6	5	6	6	5	5	5	4	4	3	2	2	2	0										
		+y	15	37	33	38	39	33	16	13	12	11	12	10	9	6	4	3	2	1	0							
1126-1127	305°/ 4.0	-y	1	10	1	0																						
		+y	1	2	0																							
1427-1430	322°/16.0	-y	6	5	5	5	5	5	6	5	5	5	5	5	4	4	5	4	3	2	2	1	1	0				
		+y	6	5	5	4	2	1	0																			
1440-1443	314°/10.0	-y	7	6	5	6	5	3	4	4	4	4	2	2	2	1	0											
		+y	7	7	7	7	8	9	7	6	5	4	4	3	2	1	0											
1451-1453	314°/ 4.0	-y	0	0	0	0	0	0	0	0	0																	
		+y	0	0	0	0	0	0	0	0	0																	
											Conemaugh Plume 5 November 1970																	
0841-0845	082°/ 7.5	+y	1	1	2	4	6	9	8	9	7	6	5	4	2	1	1	1	1	0	0	1	1	0				
		-y	1	1	1	1	1	2	3	4	6	6	6	4	6	7	6	5	5	5	5	5	4	4				
			Above ground-level flight was made through Conemaugh Gorge.																									
1051-1053	093°/10.0	+y	9	12	14	13	11	7	4	2	2	1	0															
		-y	9	7	6	5	4	4	2	2	2	2	2	3	4	3	2	2	2	0								
											Conemaugh Plume 6 November 1970																	
0901-0904	068°/10.0	+y	1	0	0	0	0	0	0	0	0	0	0	1	2	1	0											
		-y	1	0	0	1	1	1	1	2	2	2	1	0														

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																									
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
								Conemaugh Plume 9 November 1970																				
1023-1025	326°/10.0	+y	1	2	1	1	1	1	0																			
		-y	1	1	1	2	1	1	1	1	1	1	0															
1104-1105	326°/ 4.0	-y	5	1	1	1	1	0																				
		+y	5	5	4	3	4	2	0																			
1121-1122	326°/10.0	-y	4	2	0																							
		+y	4	4	3	1	0																					
								Conemaugh Plume 10 November 1970																				
0736-0738	333°/ 4.0	+y	10	3	5	5	6	0																				
		-y	10	17	21	19	11	7	5	5	2	2	1	0														
0754-0756	333°/10.0	+y	4	2	2	1	0																					
		-y	4	6	9	7	7	5	4	3	2	1	0															
0811-0812	343°/ 4.0	+y	14	10	8	7	5	2	0																			
		-y	14	20	15	9	10	7	4	2	0																	
0827-0829	343°/ 4.0	-y	27	21	22	6	4	2	2	0																		
		+y	27	13	11	12	11	4	2	1	0																	
0842-0844	343°/16.0	-y	4	4	3	4	3	2	2	2	1	0																
		+y	4	5	5	5	6	5	5	4	3	2	1	0														
0854-0856	343°/10.0	-y	7	7	5	5	5	5	3	2	1	1	1	0														
		+y	7	7	7	6	6	5	6	6	6	6	5	3	1	1	1	0										
1049-1051	343°/16.0	-y	5	5	4	4	2	2	2	1	1	1	0															
		+y	5	5	5	5	5	4	2	2	2	1	0															
1059-1101	343°/10.0	-y	7	10	6	4	1	2	1	2	2	1	1	0														
		+y	7	6	4	2	4	2	1	1	1	1	0															
1108-1110	343°/ 4.0	-y	25	29	22	17	10	7	6	2	1	1	3	2	1	1	0											
		+y	25	21	16	11	7	4	3	2	1	0																
								Conemaugh Plume 11 November 1970																				
0756-0800	285°/ 4.0	+y	11	16	12	5	5	5	5	5	4	5	5	5	6	6	5	6	7	7	6	5	5	4	5	5	4	4*
		-y	11	16	10	9	7	10	5	4	4	4	4	4	5	3	2	1	0									
								Conemaugh Plume 16 November 1970																				
0914-0915	092°/10.0	-y	4	6	5	1	1	1	1	1	0																	
		+y	4	2	1	0																						

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																							
			0	134	268	402	536	671	805	939	073	207	341	475	609	743	877	012	146	280	414	548	682	816	950	084	218	353
Homer City Plume 16 November 1970																												
1227-1228	082°/10.0	-y	0	0	0	0	0	0	0																			
		+y	0	0	0	0	0	0	0	0																		
1236-1237	073°/ 4.0	+y	1	2	2	0																						
		-y	1	1	0																							

Table 5 (continued). INSTANTANEOUS GROUND-LEVEL SO_2 CONCENTRATIONS - HELICOPTER, pphm

EST	Origin	Dir	Distance across plume, m																								
			487	621	755	889	023	157	291	425	559	694	828	962	096	230	364	498	632	766	900	035	169	303	437	571	705	839
												Homer City Plume 25 April 1970															
0928-0933	073°/10.0	+y	* 3	2	0																						
		-y	* 0																								
0948-0952	073°/16.0	+y	* 2	2	1	0																					
												Homer City Plume 27 April 1970															
1234-1239	051°/ 4.0	-y	* 1	1	0																						
		+y	* 0																								
1247-1256	020°/10.0	-y	* 5	5	5	4	4	4	5	5	5	4	5	5	5	5	4	4	4	4	4	4	3	2	0		
		+y	* 8	7	8	8	9	8	7	8	9	9	9	9	9	8	8	8	7	6	6	5	4	2	0		
												Homer City Plume 30 April 1970															
0943-0950	002°/16.0	+y	* 3	4	4	4	4	3	4	2	1	1	1	0													
		-y	* 4	4	4	4	3	2	3																		
												Homer City Plume 4 May 1970															
1240-1246	071°/10.0	+y	* 7	7	7	7	9	9	11	9	9																
		-y	* 2	1	0																						
												Conemaugh Plume 28 October 1970															
1039-1044	311°/10.0	-y	* 2	1	1	0																					
												Conemaugh Plume 11 November 1970															
0756-0800	285°/ 4.0	+y	* 4	4	2	0																					

GROUND-LEVEL SO_2 CONCENTRATIONS – BUBBLERS

The ground-level SO_2 concentrations measured by portable bubblers are summarized in Table 7. Data are arranged by series day with each bubbler heading containing its identification, coordinates, and height above or below the source generating stations stack base elevation. Also included in the heading is a three-letter code describing the terrain, vegetation, and ground cover in the vicinity of the sampling site. Descriptions corresponding to this code are presented in Table 6.

Due to occasional malfunctions, some sampling periods may be shorter or longer than 30 minutes; this was considered in the reduction and actual sampling times are listed as such. Caution should be exercised in interpreting the bubbler concentrations, since no compensation was made for background SO_2 levels.

Table 6. BUBBLER SITE DESCRIPTION

Terrain

A - Ridgetop perpendicular to plume

B - Hillside perpendicular to plume - windward side

C - Hillside perpendicular to plume - leeward side

D - Valley floor perpendicular to plume

E - Ridgetop parallel to plume

F - Hillside parallel to plume

G - Valley floor parallel to plume

H - Flatland

Ground Cover

M - Clear - no trees

N - Trees overhead with leaves

O Trees overhead without leaves

P - Tall grass or bushes - more than 8 inches high

Q - Short grass - less than 8 inches high

R Dirt or sand

S - Rocks

T - Snow

Table 7. AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Legend

Bubbler heading : 1. Individual bubbler identification.

2. Height of bubbler sampling site above or below Homer City or Conemaugh stack base elevation (SBE) in whole meters.

3. Description of terrain, vegetation, and ground-cover in the vicinity of sampling site.

4. Location of bubbler in whole degrees of azimuth and kilometers to nearest tenth from Homer City or Conemaugh stacks.

EST : Time of beginning and end of each sample.

pphm : Average SO_2 concentration during sampling period in whole parts per hundred million by volume.

: Missing data.

Table 7. AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 20 April 1970

G-6 -50 SBE DMQ 047/1.9		G-26 -55 SBE DMQ 017/2.7		G-35 -10 SBE EMQ 356/2.6		G-36 -40 SBE BMR 008/4.7		G-27 45 SBE EMQ 008/8.6		G-20 45 SBE FMQ 002/11.0		G-1 -5 SBE AMQ 021/9.7		G-8 10 SBE FMQ 034/8.2		G-16 10 SBE CMQ 022/10.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0940-10	0	0947-17	0	0955-25	0	1006-36	0	1018-48	0	1030-00	0	1040-10	0	1050-20	1	1100-30	0
1010-40	0	1017-47	1	1025-55	1	1036-06	0	1048-18	0	1100-30	0	1110-40	1	1120-50	1	1130-00	0
1040-10	-	1047-17	0	1055-25	0	1106-36	0	1118-48	0	1130-00	0	1140-10	0	1150-20	0	1200-30	0
1110-40	2	1117-47	0	1125-55	0	1136-06	0	1148-18	0	1200-30	0	1210-40	0	1220-50	0	1230-00	0
1140-10	0	1147-17	0	1155-25	0	1206-36	0	1218-48	2	1230-00	0	1240-10	0	1250-20	0	1300-30	0
1210-40	1	1217-47	0	1225-55	0	1236-06	0	1248-18	0	1300-30	0	1310-40	0	1320-50	0	1330-00	0

Homer City Plume 21 April 1970

G-27 -50 SBE DMQ 052/1.9		G-1 -60 SBE DMQ 085/2.1		G-6 -20 SBE BMQ 062/3.7		G-20 35 SBE FOQ 080/3.8		G-35 -20 SBE AMQ 053/4.3		G-16 80 SBE AMQ 078/10.4		G-26 90 SBE AMQ 070/11.2		G-8 115 SBE EMQ 063/11.4		G-36 105 SBE GMQ 058/11.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1003-33	0	1008-38	1	1022-52	1	1027-57	8	1037-07	0	1048-18	2	1057-27	0	1103-33	0	1108-38	2
1033-03	1	1038-08	1	1052-22	2	1057-27	2	1107-37	0	1118-48	1	1127-57	0	1133-03	1	1138-08	0
1103-33	0	1108-38	0	1122-52	-	1127-57	1	1137-07	0	1148-18	1	1157-27	1	1203-33	0	1208-38	0
1133-03	1	1138-08	0	1152-22	2	1157-27	1	1207-37	0	1218-48	2	1227-57	0	1233-03	0	1238-08	0
1203-33	0	1208-38	0	1222-52	3	1227-57	5	1237-07	4	1248-18	4	1257-27	0	1303-33	1	1308-38	0
1233-03	0	1238-08	0	1252-22	2	1257-27	2	1307-37	0	1318-48	1	1327-57	0	1333-03	0	1338-08	2

Homer City Plume 22 April 1970

G-16 90 SBE EMQ 070/11.1		G-26 85 SBE EMQ 080/10.5		G-8 80 SBE CMQ 095/9.4		G-36 125 SBE FMQ 105/9.3		G-6 70 SBE GMQ 083/13.1		G-35 180 SBE EMQ 087/15.3		G-27 90 SBE FMQ 075/14.4		G-20 -40 SBE DMQ 108/2.5		G-1 -50 SBE DMQ 051/1.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0935-05	0	0944-14	0	0958-28	4	1006-36	3	1021-51	1	1032-02	3	1047-17	1	1106-36	3	1115-45	4
1005-35	1	1014-44	0	1028-58	4	1036-06	3	1051-21	1	1102-32	3	1117-47	2	1136-06	3	1145-15	4
1035-05	1	1044-14	0	1058-28	4	1106-36	2	1121-51	-	1132-02	4	1147-17	2	1206-36	0	1215-45	6
1105-35	1	1114-44	2	1128-58	4	1136-06	4	1151-21	3	1202-32	2	1217-47	1	1236-06	4	1245-15	3
1135-05	2	1144-14	2	1158-28	4	1206-36	5	1221-51	2	1232-02	3	1247-17	3	1306-36	4	1315-45	7
1205-35	3	1214-44	3	1228-58	5	1236-06	6	1251-21	3	1302-32	3	1317-47	3	1336-06	2	1345-15	13

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 25 April 1970

G-35 105 SBE GMQ 058/11.6		G-6 110 SBE BMQ 063/11.2		G-16 85 SBE EMQ 070/11.2		G-36 80 SBE AMQ 078/10.9		G-25 75 SBE BMQ 088/9.8		G-8 85 SBE CMQ 095/9.4		G-20 110 SBE BMQ 072/8.9		G-1 85 SBE FMQ 074/13.4		G-27 115 SBE AMQ 080/15.8		G-26 65 SBE GMQ 082/13.2	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0953-23	1	0958-28	2	1003-33	6	1010-40	3	1018-48	2	1026-56	0	1036-06	4	1050-20	1	1058-28	1	1108-38	0
1023-53	1	1028-58	3	1033-03	4	1040-10	3	1048-18	3	1056-26	1	1106-36	4	1120-50	4	1128-58	2	1138-08	0
1053-23	1	1058-28	2	1103-33	2	1110-40	4	1118-48	3	1126-56	0	1136-06	1	1150-20	1	1158-28	2	1208-38	0
1123-53	0	1128-58	1	1133-03	2	1140-10	2	1148-18	1	1156-26	2	1206-36	1	1220-50	0	1228-58	1	1238-08	3

Homer City Plume 27 April 1970

G-8 115 SBE EMQ 062/11.2		G-20 85 SBE EMQ 070/11.2		G-27 80 SBE AMQ 078/10.9		G-1 80 SBE AMQ 085/10.3		G-35 90 SBE CMQ 096/9.5		G-6 10 SBE BMQ 009/10.0		G-16 50 SBE BMQ 359/10.8		G-36 30 SBE BMQ 351/10.2		G-26 30 SBE DMQ 344/9.7		G-25 30 SBE BMQ 332/9.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0810-40	0	0816-46	1	0824-54	0	0830-00	0	0840-10	0	1034-04	1	1039-09	11	1046-16	6	1052-22	-	1100-30	3
0840-10	1	0846-16	0	0854-24	0	0900-30	0	0910-40	0	1104-34	2	1109-39	9	1116-46	8	1122-52	-	1130-00	4
0910-40	0	0916-46	1	0924-54	0	0930-00	0	0940-10	3	1134-04	3	1139-09	7	1146-16	4	1152-22	2	1200-30	4
										1204-34	3	1209-39	4	1216-46	8	1222-52	5	1230-00	4

Homer City Plume 28 April 1970

G-25 60 SBE HMQ 030/15.8		G-8 -5 SBE GMQ 015/15.5		G-20 -10 SBE BMQ 010/17.1		G-1 -10 SBE DOQ 013/18.4		G-6 -15 SBE DOQ 017/18.4		G-27 50 SBE CMQ 024/17.1		G-35 10 SBE DMQ 029/19.3		G-16 -5 SBE CMQ 035/20.3		G-26 45 SBE DMQ 036/16.6		G-36 80 SBE AMQ 036/14.1	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0820-50	0	0843-13	0	0840-10	1	0856-26	0	0902-32	3	0913-43	0	0925-55	-	0935-05	3	0948-18	0	0957-27	2
0850-20	1	0913-43	1	0910-40	0	0926-56	0	0932-02	0	0943-13	0	0955-25	1	1005-35	2	1018-48	1	1027-57	1
0920-50	1	0943-13	1	0940-10	1	0956-26	1	1002-32	1	1013-43	0	1025-55	1	1035-05	1	1048-18	0	1057-27	4
0950-20	0	1013-43	0	1010-40	1	1026-56	0	1032-02	0	1043-13	0	1055-25	1	1105-35	4	1118-48	2	1127-57	2
1020-50	0	1043-13	0	1040-10	0	1056-26	0	1102-32	1	1113-43	2	1125-55	4	1135-05	5	1148-18	4	1157-27	2
1050-20	1	1113-43	2	1110-40	0	1126-56	0	1132-02	3	1143-13	3	1155-25	-	1205-35	4	1218-48	3	1227-57	2

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 30 April 1970

G-6 70 SBE CMQ 358/16.1		G-1 45 SBE CMQ 008/16.4		G-20 -10 SBE DMQ 011/18.6		G-25 -15 SBE DMQ 017/18.3		G-8 50 SBE GMQ 023/21.1		G-16 -25 SBE GMQ 017/24.4		G-36 25 SBE DMQ 023/27.4		G-27 5 SBE BMQ 019/27.6		G-35 15 SBE CMQ 011/25.5		G-26 -30 SBE DMQ 004/25.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0819-49	0	0829-59	2	0838-08	2	0845-15	1	0855-25	1	0908-38	1	0916-46	1	0927-57	0	0940-10	1	0950-20	0
0849-19	3	0859-29	2	0908-38	3	0915-45	3	0925-55	1	0938-08	1	0946-16	1	0957-27	1	1010-40	2	1020-50	1
0919-49	3	0929-59	2	0938-08	3	0945-15	1	0955-25	2	1008-38	3	1016-46	1	1027-57	1	1040-10	2	1050-20	1
0949-19	3	0959-29	1	1008-38	3	1015-45	1	1025-55	2	1038-08	3	1046-16	1	1057-27	0	1110-40	2	1120-50	1
1019-49	2	1029-59	1	1038-08	4	1045-15	2	1055-25	2	1108-38	4	1116-46	1	1127-57	0	1140-10	1	1150-20	2
1049-19	3	1059-29	1	1108-38	4	1115-45	2	1125-55	1	1138-08	3	1146-16	1	1157-27	0	1210-40	-	1220-50	2

Homer City Plume 1 May 1970

G-1 45 SBE GMQ 026/14.9		G-6 80 SBE AMQ 027/17.3		G-20 15 SBE DMQ 017/18.4		G-25 50 SBE BMQ 019/21.4		G-27 -25 SBE DMQ 021/24.7		G-8 -20 SBE DMQ 029/24.7		G-26 15 SBE DMQ 034/22.5		G-36 50 SBE DMQ 028/21.9		G-16 -5 SBE CMQ 035/20.3		G-35 55 SBE DMQ 034/16.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0751-21	0	0817-47	1	0828-58	1	0836-06	1	0847-17	1	0857-27	2	0908-38	2	0923-53	3	0931-01	4	0946-16	1
0821-51	3	0847-17	3	0858-28	0	0906-36	0	0917-47	2	0927-57	2	0938-08	1	0953-23	0	1001-31	1	1016-46	5
0851-21	3	0917-47	3	0928-58	0	0936-06	0	0947-17	0	0957-27	1	1008-38	0	1023-53	0	1031-01	4	1046-16	5
0921-51	0	0947-17	0	0958-28	0	1006-36	4	1017-47	0	1027-57	0	1038-08	0	1053-23	0	1101-31	4	1116-46	2
0951-21	0	1017-47	0	1028-58	0	1036-06	0	1047-17	0	1057-27	0	1108-38	2	1123-53	1	1131-01	4	1146-16	2
1021-51	0	1047-17	1	1058-28	0	1106-36	0	1117-47	0	1127-57	0	1138-08	4	1153-23	0	1201-31	0	1216-46	0

Homer City Plume 4 May 1970

G-27 180 SBE BMQ 046/19.8		G-6 220 SBE AMQ 043/21.8		G-25 240 SBE ANP 042/23.5		G-26 205 SBE AMQ 038/24.3		G-1 105 SBE BNQ 033/24.9		G-36 75 SBE FMQ 034/21.4		G-35 105 SBE AMR 038/19.3		G-20 25 SBE DMQ 039/16.7		G-8 75 SBE AMQ 035/18.1		G-16 130 SBE FNQ 029/17.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0836-06	5	0846-16	3	0852-22	6	0900-30	0	0910-40	13	0922-52	3	0930-00	2	0944-14	3	0952-22	2	0957-27	4
0906-36	7	0916-46	5	0922-52	13	0930-00	1	0940-10	3	0952-22	4	1000-30	0	1014-44	5	1022-52	3	1027-57	4
0936-06	5	0946-16	5	0952-22	4	1000-30	1	1010-40	3	1022-52	4	1030-00	0	1044-14	5	1052-22	3	1057-27	5
1006-36	10	1016-46	8	1022-52	4	1030-00	1	1040-10	2	1052-22	3	1100-30	3	1114-44	5	1122-52	2	1127-57	8
1036-06	15	1046-16	8	1052-22	5	1100-30	2	1110-40	2	1122-52	4	1130-00	2	1144-14	5	1152-22	7	1157-27	8
1106-36	9	1116-46	9	1122-52	7	1130-00	3	1140-10	1	1152-22	5	1200-30	4	1214-44	12	1222-52	6	1227-57	8

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 5 May 1970

G-27 220 SBE AMQ 071/21.3		G-25 240 SBE ANP 070/23.5		G-1 225 SBE AMQ 066/23.8		G-20 25 SBE FMQ 061/21.4		G-6 105 SBE AMR 066/19.4		G-26 80 SBE FMQ 060/17.6		G-35 25 SBE DMQ 067/16.8		G-8 30 SBE GMQ 065/14.3		G-36 60 SBE BMQ 073/11.2		G-16 115 SBE FMQ 063/11.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0815-45	0	0821-51	3	0828-58	2	0846-16	3	0854-24	2	0906-36	0	0916-46	2	0933-03	2	0945-15	6	0952-22	2
0845-15	2	0851-21	4	0858-28	2	0916-46	3	0924-54	2	0936-06	1	0946-16	0	1003-33	2	1015-45	6	1022-52	1
0915-45	5	0921-51	3	0928-58	2	0946-16	3	0954-24	2	1006-36	0	1016-46	3	1033-03	1	1045-15	3	1052-22	2
0945-15	1	0951-21	1	0958-28	2	1016-46	2	1024-54	1	1036-06	2	1046-16	1	1103-33	1	1115-45	3	1122-52	2
1015-45	1	1021-51	3	1028-58	2	1046-16	2	1054-24	2	1106-36	2	1116-46	-	1133-03	1	1145-15	3	1152-22	1
1045-15	0	1051-21	1	1058-28	2	1116-46	3	1124-54	0	1136-06	2	1146-16	-	1203-33	0	1215-45	5	1222-52	2

Homer City Plume 8 May 1970

G-6 115 SBE BMQ 062/11.2		G-1 85 SBE EMQ 080/10.5		G-25 80 SBE BMQ 074/13.3		G-35 120 SBE FMQ 080/15.8		G-20 25 SBE DMQ 066/16.7		G-8 125 SBE BMQ 072/7.0		G-16 -20 SBE FMQ 063/3.7		G-27 20 SBE BMQ 075/3.7		G-36 -55 SBE DMQ 079/1.9		G-26 -50 SBE DMQ 052/1.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0847-17	3	0857-27	2	0905-35	1	0914-44	2	0925-55	3	0942-12	0	0955-25	4	1000-30	0	1014-44	2	1018-48	0
0917-47	4	0927-57	2	0935-05	3	0944-14	2	0955-25	4	1012-42	4	1025-55	6	1030-00	1	1044-14	3	1048-18	0
0947-17	4	0957-27	2	1005-35	4	1014-44	3	1025-55	4	1042-12	5	1055-25	14	1100-30	4	1114-44	2	1118-48	2
1017-47	3	1027-57	0	1035-05	3	1044-14	2	1055-25	3	1112-42	5	1125-55	10	1130-00	1	1144-14	0	1148-18	2
1047-17	3	1057-27	0	1105-35	3	1114-44	2	1125-55	3	1142-12	3	1155-25	4	1200-30	3	1214-44	3	1218-48	2
1117-47	3	1127-57	0	1135-05	2	1144-14	0	1155-25	3	1212-42	2	1225-55	4	1230-00	1	1244-14	2	1248-18	2

Homer City Plume 9 May 1970

G-35 195 SBE AMQ 074/21.3		G-1 210 SBE AMQ 079/23.4		G-16 240 SBE AOQ 070/22.8		G-6 225 SBE AMQ 066/23.3		G-25 100 SBE AMR 066/19.4		G-8 150 SBE AMQ 076/18.2		G-20 30 SBE BMQ 067/16.8		G-26 -15 SBE BMQ 064/3.7		G-27 -50 SBE DMQ 100/2.5		G-36 -45 SBE DMQ 053/2.0	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0805-35	0	0813-43	0	0824-54	4	0832-02	3	0850-20	1	0903-33	2	0913-43	0	0928-58	0	0945-15	0	0952-22	0
0835-05	0	0843-13	0	0854-24	3	0902-32	1	0920-50	0	0933-03	2	0943-13	0	0958-28	0	1015-45	0	1022-52	0
0905-35	3	0913-43	1	0924-54	1	0932-02	1	0950-20	0	1003-33	1	1013-43	0	1028-58	0	1045-15	0	1052-22	0
0935-05	0	0943-13	0	0954-24	0	1002-32	0	1020-50	0	1033-03	2	1043-13	0	1058-28	1	1115-45	0	1122-52	0
1005-35	0	1013-43	0	1024-54	1	1032-02	0	1050-20	0	1103-33	2	1113-43	0	1128-58	0	1145-15	0	1152-22	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Homer City Plume 11 May 1970

G-25 -50 SBE DMQ 028/2.7		G-16 -45 SBE BMQ 034/3.7		G-20 -50 SBE DMQ 052/1.9		G-6 -55 SBE DMQ 078/1.9		G-26 -50 SBE DMQ 058/2.8		G-1 -60 SBE DMQ 047/3.5		G-8 -20 SBE BMQ 063/3.7		G-36 -20 SBE BMQ 053/4.3		G-27 -45 SBE DMQ 035/5.6		G-35 -45 SBE DMQ 044/5.2	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1043-13	3	1047-17	6	1053-23	0	1057-27	0	1107-37	0	1116-46	0	1123-53	0	1128-58	0	1140-10	2	1147-17	0
1113-43	5	1117-47	13	1123-53	0	1127-57	0	1137-07	0	1146-16	0	1153-23	0	1158-28	0	1210-40	1	1217-47	4
1143-13	5	1147-17	4	1153-23	0	1157-27	0	1207-37	0	1216-46	0	1223-53	0	1228-58	2	1240-10	0	1247-17	4
1213-43	0	1217-47	0	1223-53	0	1227-57	0	1237-07	4	1246-16	3	1253-23	2	1258-28	1	1310-40	1	1317-47	1
1243-13	1	1247-17	3	1253-23	1	1257-27	0	1307-37	-	1316-46	3	1323-53	4	1328-58	3	1340-10	0	1347-17	-

Homer City Plume 12 May 1970

G-20 -50 SBE DMQ 052/2.0		G-16 -35 SBE BMQ 042/2.3		G-26 -35 SBE BMQ 034/2.9		G-25 -60 SBE DMQ 027/2.7		G-1 -45 SBE BMQ 033/3.7		G-36 -60 SBE DMQ 047/3.5		G-8 -60 SBE DMQ 042/3.7		G-27 -40 SBE DMR 043/5.2		G-6 -40 SBE DMR 038/5.8		G-35 -45 SBE DMQ 035/5.7	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1123-53	0	1127-57	2	1131-01	2	1135-05	2	1140-10	4	1148-18	0	1153-23	5	1200-30	3	1208-38	3	1214-44	2
1153-23	0	1157-27	4	1201-31	2	1205-35	2	1210-40	3	1218-48	1	1223-53	5	1230-00	2	1238-08	3	1244-14	3
1223-53	0	1227-57	4	1231-01	2	1235-05	1	1240-10	3	1248-18	0	1253-23	2	1300-30	2	1308-38	3	1314-44	1
1253-23	0	1257-27	2	1301-31	2	1305-35	0	1310-40	1	1318-48	0	1323-53	1	1330-00	0	1338-08	0	1344-14	0

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G-26 150 SBE BMQ 357/24.9		G-6 200 SBE BOQ 001/24.6		G-36 190 SBE FMQ 005/24.6		G-25 130 SBE CMQ 009/24.0		G-8 85 SBE BMQ 004/22.2		G-16 70 SBE GMQ 012/22.4		G-27 190 SBE FMQ 018/22.1		G-35 240 SBE EMQ 022/22.4		G-1 185 SBE BMQ 017/19.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0914-44	1	0920-50	0	0931-01	0	0938-08	1	0945-15	1	0955-25	1	1003-33	1	1009-		1028-58	0
0944-14	0	0950-20	0	1001-31	0	1008-38	1	1015-45	1	1025-55	1	1033-03	3	1239	1	1058-28	2
1014-44	0	1020-50	0	1031-01	1	1038-08	3	1045-15	2	1055-25	2	1103-33	0			1128-58	1
1044-14	-	1050-20	3	1101-31	1	1108-38	1	1115-45	2	1125-55	1	1133-03	0			1158-28	0
1114-44	-	1120-50	2	1131-01	2	1138-08	0	1145-15	2	1155-25	0	1203-33	0			1228-58	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Conemaugh Plume 16 October 1970

G-35 90 SBE EMQ 331/2.3		G-26 65 SBE BMQ 158/2.1		G-6 145 SBE BMQ 121/2.8		G-8 165 SBE CNQ 141/10.6		G-16 30[illegible] SBE CMS 151/9.6		G-25 280 SBE CMR 160/11.1		G-36 355 SBE CNQ 170/11.0		G-1 495 SBE EOQ 178/12.0		G-27 130 SBE COQ 158/13.8		G-20 165 SBE FNQ 165/15.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0829-59	1	0848-18	0	0900-30	0	0946-16	1	0955-25	2	1004-34	0	1010-40	0	1017-47	0	1043-13	1	1055-1355	1
0859-29	0	0918-48	0	0930-00	0	1016-46	1	1025-55	0	1034-04	0	1040-10	0	1047-17	0	1113-43	0		
0929-59	0	0948-18	0	1000-30	0	1046-16	0	1055-25	2	1104-34	1	1110-40	2	1117-47	0	1143-13	0		
0959-29	0	1018-48	0	1030-00	0	1116-46	0	1125-55	0	1134-04	0	1140-10	0	1147-17	1	1213-43	1		
1029-59	0	1048-18	0	1100-30	0	1146-16	0	1155-25	1	1204-34	0	1210-40	0	1217-47	0	1243-13	0		
1059-29	1	1118-48	0	1130-00	1	1216-46	3	1225-55	2	1234-04	1	1240-10	0	1247-17	0	1313-43	1		

Conemaugh Plume 17 October 1970

G-8 0 SBE GMR 295/1.8		G-6 145 SBE BMQ 121/2.8		G-26 155 SBE BNR 105/3.5		G-25 65 SBE CMQ 103/9.1		G-27 135 SBE CNQ 117/9.6		G-36 130 SBE CNQ 129/9.7		G-35 195 SBE AMQ 122/10.7		G-16 140 SBE AMQ 118/11.8		G-1 175 SBE CMQ 124/13.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0835-05	0	0854-24	0	0905-35	5	0930-00	0	0951-21	0	1002-32	0	1025-55	0	1057-27	2	1115-45	0
0905-35	0	0924-54	0	0935-05	0	1000-30	1	1021-51	0	1032-02	1	1055-25	0	1127-57	0	1145-15	0
0935-05	0	0954-24	0	1005-35	0	1030-00	0	1051-21	2	1102-32	0	1125-55	1	1157-27	0	1215-45	0
1005-35	0	1024-54	0	1035-05	0	1100-30	0	1121-51	0	1132-02	0	1155-25	0	1227-57	0	1245-15	0
1035-05	0	1054-24	2	1105-35	0	1130-00	0	1151-21	0	1202-32	0	1225-55	1	1257-27	0	1315-45	0
1105-35	0	1124-54	1	1135-05	1	1200-30	1	1221-51	1	1232-02	0	1255-25	0	1327-57	0	1345-15	0

Conemaugh Plume 20 October 1970

G-6 5 SBE GMQ 343/0.8		G-16 40 SBE BMQ 346/2.1		G-26 125 SBE EMQ 353/3.4		G-1 155 SBE AMQ 345/4.1		G-36 140 SBE BMQ 326/3.8		G-8 220 SBE AMQ 348/7.3		G-25 220 SBE ENQ 342/7.4		G-27 205 SBE AMQ 332/7.8		G-35 75 SBE CMQ 342/9.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0813-43	13	0818-48	5	0829-59	3	0831-01	4	0844-14	1	0856-26	1	0903-33	3	0912-42	1	0920-50	2
0843-13	28	0848-18	9	0859-29	2	0901-31	5	0914-44	1	0926-56	1	0933-03	3	0942-12	2	0950-20	1
0913-43	23	0918-48	5	0929-59	5	0931-01	6	0944-14	1	0956-26	0	1003-33	2	1012-42	4	1020-50	1
0943-13	21	0948-18	11	0959-29	3	1001-31	1	1014-44	1	1026-56	2	1033-03	4	1042-12	1	1050-20	4
1013-43	9	1018-48	14	1029-59	-	1031-01	2	1044-14	1	1056-26	2	1103-33	1	1112-42	2	1120-50	2
1043-13	4	1048-18	14	1059-29	-	1101-31	5	1114-44	0	1126-56	6	1133-03	5	1142-12	3	1150-20	1

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Conemaugh Plume 26 October 1970

G-26 35 SBE BMQ 341/30.1		G-8 -5 SBE BMQ 338/34.5		G-1 -15 SBE DMQ 334/34.4		G-20 30 SBE CMQ 335/31.0		G-16 90 SBE AMQ 334/28.9		G-35 85 SBE CMQ 335/26.6		G-36 50 SBE EMQ 337/24.4		G-25 205 SBE AMQ 332/7.8		G-6 140 SBE BMQ 326/3.8		G-27 90 SBE EMQ 331/2.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0830-00	2	0841-11	1	0850-20	2	0904-34	3	0915-45	3	0932-02	1	0941-11	3	1032-02	2	1043-13	1	1055-25	1
0900-30	0	0911-41	0	0920-50	3	0934-04	2	0945-15	2	1002-32	1	1011-41	3	1102-32	2	1113-43	2	1125-55	2
0930-00	0	0941-11	0	0950-20	5	1004-34	3	1015-45	4	1032-02	1	1041-11	4	1132-02	2	1143-13	1	1155-25	2
1000-30	0	1011-41	2	1020-50	6	1034-04	2	1045-15	4	1102-32	2	1111-41	4	1202-32	1	1213-43	3	1225-55	3
1030-00	0	1041-11	2	1050-20	7	1104-34	2	1115-45	5	1132-02	4	1141-11	4	1232-02	1	1243-13	3	1255-25	3
1100-30	1	1111-41	1	1120-50	10	1134-04	3	1145-15	5	1202-32	4	1211-41	4	1302-32	2	1313-43	3	1325-55	3

Conemaugh Plume 27 October 1970

G-6 90 SBE EMQ 331/2.3		G-36 140 SBE BMQ 326/3.8		G-26 220 SBE AMQ 328/6.3		G-35 105 SBE CMQ 316/6.8		G-8 160 SBE BMQ 322/8.5		G-25 205 SBE AMQ 332/7.8		G-1 225 SBE AMR 310/10.8		G-27 290 SBE BOQ 316/10.0		G-16 -20 SBE DMQ 320/15.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0913-43	0	0922-52	2	0936-06	2	0947-17	1	0955-25	1	1008-38	2	1022-52	2	1031-01	3	1059-29	2
0943-13	0	0952-22	1	1006-36	2	1017-47	1	1025-55	2	1038-08	2	1052-22	2	1101-31	3	1129-59	3
1013-43	1	1022-52	0	1036-06	2	1047-17	1	1055-25	2	1108-38	4	1122-52	2	1131-01	2	1159-29	3
1043-13	1	1052-22	0	1106-36	0	1117-47	1	1125-55	2	1138-08	0	1152-22	1	1201-31	1	1229-59	4
1113-43	2	1122-52	2	1136-06	2	1147-17	0	1155-25	2	1208-38	0	1222-52	1	1231-01	1	1259-29	4
1143-13	0	1152-22	2	1206-36	-	1217-47	2	1225-55	1	1238-08	2	1252-22	1	1301-31	1	1329-59	3

Conemaugh Plume 28 October 1970

G-26 85 SBE EMQ 324/1.4		G-36 140 SBE BMQ 326/3.8		G-8 135 SBE CMQ 313/4.0		G-25 105 SBE CMQ 316/6.8		G-16 220 SBE AMQ 328/6.3		G-35 160 SBE BMQ 322/8.5		G-6 225 SBE AMR 310/10.8		G-1 290 SBE BOQ 316/10.0		G-27 -20 SBE DMS 314/15.9	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0913-43	3	0924-54	0	0930-00	7	0943-13	3	0952-22	1	1000-30	1	1012-42	3	1021-51	0	1036-06	2
0943-13	0	0954-24	0	1000-30	4	1013-43	4	1022-52	1	1030-00	0	1042-12	5	1051-21	0	1106-36	2
1013-43	0	1024-54	0	1030-00	8	1043-13	5	1052-22	1	1100-30	0	1112-42	3	1121-51	0	1136-06	1
1043-13	1	1054-24	0	1100-30	4	1113-43	2	1122-52	2	1130-00	1	1142-12	1	1151-21	0	1206-36	1
1113-43	1	1124-54	0	1130-00	2	1143-13	0	1152-22	3	1200-30	1	1212-42	1	1221-51	0	1236-06	0
1143-13	7	1154-24	3	1200-30	1	1213-43	3	1222-52	2	1230-00	1	1242-12	0	1251-21	0	1306-36	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Conemaugh Plume 29 October 1970

G-35 5 SBE GMQ 343/0.8		G-6 85 SBE EMQ 324/1.4		G-8 90 SBE EMQ 331/2.3		G-16 140 SBE BMQ 326/3.8		G-20 135 SBE CMQ 313/4.0		G-26 105 SBE CMQ 316/6.8		G-36 220 SBE AMQ 328/6.3		G-27 160 SBE BMQ 322/8.5		G-25 205 SBE AMQ 332/7.8		G-1 200 SBE AMQ 341/7.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0858-28	2	0910-40	18	0916-46	3	0925-55	8	0931-01	2	0941-11	0	0948-18	4	0955-25	4	1003-33	0	1015-45	0
0928-58	1	0940-10	21	0946-16	2	0955-25	7	1001-31	2	1011-41	0	1018-48	9	1025-55	4	1033-03	1	1045-15	0
0958-28	-	1010-40	14	1016-46	1	1025-55	5	1031-01	1	1041-11	0	1048-18	4	1055-25	3	1103-33	1	1115-45	0
1028-58	1	1040-10	14	1046-16	6	1055-25	6	1101-31	2	1111-41	0	1118-48	9	1125-55	0	1133-03	0	1145-15	0
1058-28	1	1110-40	17	1116-46	4	1125-55	10	1131-01	2	1141-11	0	1148-18	4	1155-25	3	1203-33	0	1215-45	0
1128-58	0	1140-10	17	1146-16	5	1155-25	8	1201-31	4	1211-41	0	1218-48	2	1225-55	4	1233-03	0	1245-15	1

Conemaugh Plume 30 October 1970

G-8 5 SBE GMQ 343/0.8		G-6 85 SBE EMQ 324/1.4		G-36 90 SBE EMQ 331/2.3		G-26 140 SBE BMQ 326/3.8		G-16 135 SBE CMQ 313/4.0		G-35 105 SBE CMQ 316/6.8		G-27 220 SBE AMQ 328/6.3		G-25 160 SBE BMQ 322/8.5		G-1 205 SBE AMQ 332/7.8	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0928-58	2	0940-10	10	0948-18	0	0956-26	0	1000-30	3	1009-39	1	1017-47	0	1025-55	1	1033-03	0
0958-28	1	1010-40	4	1018-48	0	1026-56	1	1030-00	4	1039-09	1	1047-17	0	1055-25	2	1103-33	0
1028-58	0	1040-10	4	1048-18	0	1056-26	0	1100-30	2	1109-39	0	1117-47	0	1125-55	1	1133-03	0
1058-28	3	1110-40	3	1118-48	0	1126-56	0	1130-00	5	1139-09	0	1147-17	0	1155-25	0	1203-33	0
1128-58	0	1140-10	4	1148-18	0	1156-26	0	1200-30	2	1209-39	0	1217-47	0	1225-55	0	1233-03	0
1158-28	1	1210-40	3	1218-48	1	1226-56	1	1230-00	4	1239-09	1	1247-17	2	1255-25	2	1303-33	0

Conemaugh Plume 2 November 1970

G-8 -20 SBE DMQ 320/15.9		G-35 -20 SBE DMS 314/15.9		G-16 20 SBE BMQ 309/17.0		G-6 10 SBE AMQ 306/16.1		G-26 10 SBE BMQ 298/16.8		G-27 10 SBE CMQ 293/18.3		G-1 -30 SBE GMQ 296/20.4		G-25 -20 SBE DMQ 301/19.9		G-36 -20 SBE BMQ 303/21.6	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0957-27	0	1002-32	0	1011-41	0	1021-51	3	1030-00	1	1042-12	0	1055-25	0	1105-35	2	1115-45	1
1027-57	0	1032-02	0	1041-11	0	1051-21	4	1100-30	0	1112-42	0	1125-55	0	1135-05	3	1145-15	4
1057-27	0	1102-32	1	1111-41	1	1121-51	7	1130-00	1	1142-12	0	1155-25	0	1205-35	5	1215-45	4
1127-57	0	1132-02	0	1141-11	1	1151-21	4	1200-30	0	1212-42	0	1225-55	0	1235-05	0	1245-15	0
1157-27	0	1202-32	0	1211-41	2	1221-51	8	1230-00	0	1242-12	0	1255-25	0	1305-35	0	1315-45	0
1227-57	0	1232-02	0	1241-11	6	1251-21	3	1300-30	0	1312-42	0	1325-55	0	1335-05	1	1345-15	0

Table 7 (continued). AVERAGE GROUND-LEVEL SO_2 CONCENTRATIONS - BUBBLERS

Conemaugh Plume 5 November 1970

G-6 0 SBE GMR 295/1.8		G-27 80 SBE COQ 090/3.3		G-8 40 SBE CMQ 077/3.3		G-1 60 SBE CMQ 067/6.7		G-25 60 SBE CMQ 086/7.6		G-35 65 SBE CMQ 103/9.1		G-20 175 SBE AMQ 102/12.0		G-26 60 SBE CMQ 096/11.4		G-36 185 SBE BNQ 085/11.8		G-16 325 SBE EMQ 078/12.5	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0839-09	1	0858-28	2	0907-37	0	0921-51	1	0940-10	1	0933-03	1	1010-40	2	1022-52	2	1030-00	0	1035-05	1
0909-39	1	0928-58	3	0937-07	0	0951-21	1	1010-40	2	1003-		1040-10	3	1052-22	2	1100-30	1	1105-35	0
0939-09	2	0958-28	2	1007-37	1	1021-51	1	1040-10	1	1233	0	1110-40	1	1122-52	1	1130-00	1	1135-05	0
1009-39	1	1028-58	2	1037-07	1	1051-21	0	1110-40	1			1140-10	0	1152-22	1	1200-30	0	1205-35	0
1039-09	3	1058-28	2	1107-37	1	1121-51	1	1140-10	0			1210-40	0	1222-52	1	1230-00	0	1235-05	1
1109-39	1	1128-58	2	1137-07	2	1151-21	0	1210-40	1			1240-10	1	1252-22	4	1300-30	1	1305-35	0

Homer City Plume 9 November 1970

G-8 10 SBE CMQ 336/13.1		G-27 -10 SBE CMQ 328/13.6		G-20 10 SBE GMQ 324/14.6		G-6 40 SBE AMQ 320/15.4		G-1 10 SBE AMQ 316/16.2		G-35 20 SBE EMQ 323/17.0		G-36 -25 SBE BMQ 322/18.8		G-16 -60 SBE CMQ 317/19.6		G-25 -50 SBE CMQ 329/18.6		G-26 40 SBE AMQ 331/16.2	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
0951-21	0	0958-28	0	1003-33	2	1013-43	1	1020-50	0	1030-00	0	1042-12	0	1051-21	1	1058-28	2	1110-40	2
1021-51	0	1028-58	2	1033-03	1	1043-13	2	1050-20	0	1100-30	0	1112-42	2	1121-51	1	1128-58	1	1140-10	2
1051-21	0	1058-28	2	1103-33	2	1113-43	2	1120-50	1	1130-00	0	1142-12	2	1151-21	0	1158-28	3	1210-40	0
1121-51	1	1128-58	0	1133-03	1	1143-13	0	1150-20	0	1200-30	0	1212-42	1	1221-51	1	1228-58	1	1240-10	0

Conemaugh Plume 10 November 1970

G-20 5 SBE GMQ 343/0.8		G-8 25 SBE GMQ 345/1.6		G-27 40 SBE BMQ 346/2.1		G-36 125 SBE EMQ 353/3.4		G-26 155 SBE AMQ 347/4.3		G-25 135 SBE AMQ 342/3.8		G-35 90 SBE EMQ 331/2.3		G-6 85 SBE EMQ 324/1.4		G-16 220 SBE AMQ 348/7.3		G-1 200 SBE AMQ 341/7.3	
EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm	EST	pphm
1021-51	9	1026-56	2	1030-00	4	1038-08	4	1046-16	4	1052-22	6	1057-27	5	1103-33	9	1116-46	4	1122-52	3
1051-21	4	1056-26	6	1100-30	7	1108-38	4	1116-46	5	1122-52	9	1127-57	8	1133-03	14	1146-16	3	1152-22	1
1121-51	9	1126-56	4	1130-00	4	1138-08	3	1146-16	4	1152-22	5	1157-27	4	1203-33	24	1216-46	2	1222-52	0
1151-21	0	1156-26	9	1200-30	3	1208-38	0	1216-46	2	1222-52	3	1227-57	4	1233-03	4	1246-16	2	1252-22	0
1221-51	3	1226-56	2	1230-00	4	1238-08	1	1246-16	1	1252-22	3	1257-27	4	1303-33	3	1316-46	2	1322-52	0
1251-21	2	1256-26	3	1300-30	2	1308-38	1	1316-46	2	1322-52	3	1327-57	7	1333-03	3	1346-16	2	1352-22	0

HELICOPTER TEMPERATURE PROFILES

Table 8 lists the helicopter temperature profiles obtained during spiral ascents just upwind of the Homer City and Conemaugh Stations. Dry-bulb and wet-bulb temperatures are listed for 50-meter intervals above the applicable stack base elevation, plus additional levels and such bases and tops of inversions. Wet-bulb values are occasionally missing because the sensor froze.

On most profiles, surface dry-bulb and wet-bulb values are included. These temperatures were measured within 1 meter of the surface during 30-mph or greater forward speeds so that no downwash interfered with the readings. To allow for changing pressure patterns during an experiment, the helicopter landed before each profile so the indicated surface height from the pressure transducer could be recorded. A flight time of approximately 5 to 7 minutes was required to complete a 1000-meter profile.

During the October 1970 series, two temperature profiles (497 and 534) were flown on the Johnstown side of Laurel Ridge in support of the Conemaugh water tunnel experiment, described in Part 1 under Contract and Voluntary Participation in LAPPES Project. In addition, four profiles (522, 525, 528, and 529) were originated on the west side of Chestnut Ridge in order to rise above the localized cloud cover over the Conemaugh Plant. Origins for these six profiles are listed in the subsequent legend.

Table 8. HELICOPTER TEMPERATURE PROFILES

Legend

Ascn	:	Individual ascension or profile designation.
EST	:	Beginning time of profile.
Homer City	:	Profile origin immediately upwind of Homer City stacks.
Conemaugh	:	Profile origin immediately upwind of Conemaugh stacks.
Conemaugh C-2	:	Profile origin 324°/18.2 kilometers from Conemaugh stacks.
Conemaugh C-4	:	Profile origin 139°/15.2 kilometers from Conemaugh stacks.
Conemaugh C-6	:	Profile origin 094°/14.8 kilometers from Conemaugh stacks.
Z, m	:	Height above Homer City or Conemaugh stack base elevation in whole meters.
WB, °C	:	Wet-bulb temperature in degrees centigrade to nearest tenth.
T, °C	:	Dry-bulb temperature in degrees centigrade to nearest tenth.
Sfc	:	Temperatures measured within one meter of Homer City or Conemaugh stack base elevation.
---	:	Missing data.

Table 8. HELICOPTER TEMPERATURE PROFILES

Ascn 423 20 Apr 70 0635 EST Homer City			Ascn 424 20 Apr 70 0834 EST Homer City			Ascn 425 20 Apr 70 0927 EST Homer City			Ascn 426 20 Apr 70 1021 EST Homer City			Ascn 427 20 Apr 70 1401 EST Homer City			Ascn 428 21 Apr 70 0647 EST Homer City			Ascn 429 21 Apr 70 0850 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	8.6	9.6	Sfc	9.0	10.2	Sfc	11.4	13.4	Sfc	12.3	15.4	Sfc	---	19.0	Sfc	14.4	17.8	Sfc	13.6	17.0
50	8.4	9.4	50	8.8	9.9	50	11.0	12.8	50	12.2	15.2	50	---	17.6	5	13.9	16.9	15	13.6	17.2
100	8.1	9.0	100	8.5	9.5	60	11.2	13.1	100	11.8	14.8	100	---	16.5	35	13.9	17.7	50	13.5	17.0
150	7.9	8.8	150	8.2	9.1	100	10.9	12.6	150	11.4	14.4	150	---	16.0	50	14.0	17.4	100	13.0	16.4
200	8.2	9.2	200	8.1	9.0	150	10.6	12.2	200	11.1	14.1	200	---	15.4	100	13.7	17.0	150	12.7	16.0
250	7.5	8.8	250	7.7	8.5	200	10.3	11.7	250	11.0	13.8	250	---	14.8	150	13.6	16.8	200	12.4	15.4
255	9.0	10.2	270	8.0	8.9	250	9.8	11.2	300	10.6	13.3	300	---	14.4	200	13.2	16.5	250	11.9	14.9
300	9.1	10.3	300	7.8	8.7	300	9.5	10.7	350	10.3	12.9	350	---	13.7	250	13.0	16.4	300	11.6	14.4
350	8.8	9.8	350	7.7	8.4	350	9.3	10.4	400	10.0	12.4	400	---	13.1	300	12.7	15.8	350	11.8	14.3
400	9.0	10.1	400	7.7	8.3	400	9.0	10.0	450	9.9	12.1	450	---	12.8	350	12.4	15.4	400	11.2	13.6
450	9.3	10.4	450	7.5	8.2	450	8.6	9.5	500	9.8	11.4	500	---	12.3	400	12.1	14.9	450	11.1	13.2
500	9.2	10.3	500	7.4	8.0	500	8.5	9.4	550	9.6	10.8	550	---	11.8	450	11.8	14.8	500	10.5	12.6
550	8.9	9.8	550	7.4	8.1	550	8.1	9.0	600	9.2	10.8	600	---	11.4	500	11.2	13.8	550	10.1	12.1
600	9.1	10.0	600	7.2	8.2	600	7.5	8.2	650	8.6	9.6	650	---	10.6	530	11.2	14.1	600	10.0	11.8
650	9.2	10.0	650	7.1	8.3	630	7.4	8.1	700	8.4	9.2	700	---	10.6	550	11.0	13.8	650	9.6	11.3
700	9.0	9.8	700	6.6	7.8	635	7.6	8.6	750	8.2	9.4	750	---	10.2	600	10.7	13.4	700	9.0	10.5
750	8.9	9.5	735	6.5	7.6	650	7.4	8.4	800	7.6	8.8	800	---	9.3	650	10.7	13.3	750	8.7	10.1
800	8.7	9.1	750	6.4	7.6	700	7.0	7.8	850	7.4	8.4	850	---	8.8	700	10.4	12.9	800	8.4	9.7
850	8.4	8.8	800	6.3	7.5	750	6.9	7.6	900	7.0	8.0	900	---	8.4	750	10.0	12.4	850	8.1	9.2
900	8.4	8.7	850	5.9	7.1	800	6.5	7.3	935	6.6	7.7	950	---	8.2	800	9.6	11.8	900	7.7	8.7
925	8.0	8.4	900	5.4	6.6	850	6.4	7.0				960	---	8.0	850	9.3	11.3	950	7.3	8.2
			950	5.1	6.2	900	5.9	6.5							900	9.0	10.8	980	7.1	8.0
						950	5.4	6.0							940	8.7	10.3			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 430 21 Apr 70 1017 EST Homer City			Ascn 431 22 Apr 70 0646 EST Homer City			Ascn 432 22 Apr 70 0842 EST Homer City			Ascn 433 22 Apr 70 1000 EST Homer City			Ascn 434 22 Apr 70 1132 EST Homer City			Ascn 435 22 Apr 70 1412 EST Homer City			Ascn 436 23 Apr 70 1028 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	12.8	15.8	Sfc	6.0	7.4	Sfc	9.4	12.8	Sfc	11.4	15.4	Sfc	11.6	16.2	Sfc	---	18.6	Sfc	17.8	19.0
50	11.5	14.6	25	5.5	6.7	50	8.8	11.6	50	10.5	14.1	50	10.9	15.3	50	---	17.3	50	17.7	18.9
100	11.2	14.2	50	5.6	7.0	100	8.2	11.0	100	9.6	13.0	100	10.3	14.5	100	---	17.0	100	17.5	18.6
150	11.0	13.8	100	5.6	7.0	150	7.9	10.5	150	9.0	12.2	150	10.0	14.1	150	---	16.3	150	17.1	18.0
200	10.5	13.1	150	5.6	7.1	200	7.6	10.0	200	8.8	11.8	200	9.7	13.6	200	---	16.0	200	16.7	17.4
250	10.2	12.7	200	5.6	7.3	250	7.2	9.4	250	8.4	11.2	250	9.3	13.0	250	---	15.5	250	16.6	17.2
300	9.6	12.0	250	5.9	7.8	300	6.8	9.2	300	8.1	10.8	300	8.9	12.5	300	---	15.0	300	16.2	16.8
350	9.4	11.6	300	5.9	7.9	350	6.5	8.8	350	7.6	10.3	350	8.8	12.2	350	---	14.8	350	16.0	16.4
400	9.1	11.0	350	5.9	7.8	400	6.0	8.3	400	7.3	9.9	400	8.4	11.8	400	---	14.3	400	15.7	16.0
450	9.1	10.9	400	5.7	7.7	450	5.8	7.8	450	6.7	9.2	450	7.8	11.0	450	---	14.0	450	15.4	15.6
460	9.2	10.7	450	5.4	7.4	500	5.4	7.2	500	6.3	8.6	500	7.5	10.5	500	---	13.3	500	15.3	15.4
500	8.5	10.0	500	5.2	7.0	535	5.4	7.4	550	5.8	8.1	550	7.1	10.2	550	---	12.6			
550	8.0	9.6	550	4.7	6.5	550	5.2	7.2	600	5.5	7.7	600	6.6	9.6	600	---	12.2			
600	7.7	9.2	600	4.5	6.3	600	4.9	6.7	650	5.2	7.3	650	6.2	9.0	650	---	11.6			
650	7.2	8.5	650	4.3	5.9	650	4.5	6.1	700	4.8	6.8	700	5.8	8.4	700	---	11.1			
700	6.7	7.9	700	4.0	5.5	700	4.2	5.8	750	4.4	6.2	750	5.6	8.2	750	---	10.8			
750	6.6	7.8	750	3.6	5.0	750	3.9	5.5	800	4.1	5.8	800	5.1	7.7	800	---	10.3			
800	6.2	7.2	800	3.0	4.4	800	3.4	4.8	850	3.8	5.4	850	4.7	7.1	850	---	9.8			
850	5.9	6.8	850	2.8	4.0	850	3.1	4.3	900	3.5	5.0	900	4.2	6.6	900	---	9.1			
900	5.6	6.4	900	2.5	3.6	900	2.9	4.2	950	3.3	4.7				950	---	8.8			
950	5.4	6.0	945	2.1	3.2	950	2.5	3.8							985	---	8.9			
1000	4.7	5.2																		
1030	4.2	5.0																		

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 437 23 Apr 70 1219 EST Homer City			Ascn 438 24 Apr 70 0648 EST Homer City			Ascn 439 25 Apr 70 0800 EST Homer City			Ascn 440 25 Apr 70 1012 EST Homer City			Ascn 441 25 Apr 70 1137 EST Homer City			Ascn 442 27 Apr 70 0609 EST Homer City			Ascn 443 27 Apr 70 0805 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	19.0	20.5	Sfc	16.1	16.7	Sfc	9.9	10.6	Sfc	13.2	16.0	Sfc	13.8	18.2	Sfc	11.4	11.6	Sfc	13.5	15.4
50	18.6	20.0	50	16.0	17.0	50	9.3	9.9	50	12.0	14.8	50	13.1	17.7	30	10.8	11.2	50	13.3	15.1
100	18.4	19.6	100	16.2	17.4	100	9.2	9.7	100	11.8	14.5	100	12.6	17.0	50	11.4	12.1	100	13.2	15.0
150	17.9	18.9	150	15.8	17.0	150	8.8	9.3	150	11.4	14.0	130	12.4	16.8	100	11.2	12.0	150	13.0	14.6
200	17.6	18.4	190	15.6	16.6	200	8.6	8.9	200	10.9	13.3	150	12.8	17.2	150	11.8	13.1	175	12.6	14.2
250	17.2	17.9	200	15.7	16.7	250	8.2	8.6	250	10.5	12.8	200	12.2	16.0	200	12.2	14.2	200	12.8	14.6
300	16.8	17.3	250	16.1	17.6	300	7.8	8.0	300	10.2	12.4	250	11.9	15.5	250	12.4	14.6	250	12.7	14.3
350	16.4	16.8	300	16.0	17.4	325	7.7	8.2	350	9.8	12.0	300	11.4	14.9	300	12.8	15.1	300	12.6	14.1
400	16.3	16.6	350	15.6	17.0	350	7.6	8.1	400	9.4	11.6	350	11.3	14.8	350	13.0	15.1	335	12.7	14.2
450	15.8	16.0	400	15.3	16.5	365	7.7	9.0	450	9.0	11.2	400	10.7	14.3	370	13.2	15.2	350	12.7	14.1
500	15.5	16.0	450	15.3	16.5	400	7.4	8.4	500	8.6	10.6	450	10.3	13.8	400	13.3	15.1	400	12.6	13.9
550	14.8	15.6	500	15.3	16.6	430	7.3	10.5	550	8.2	10.2	500	9.9	13.1	450	13.3	15.0	450	12.5	13.7
575	14.7	15.8	550	15.0	16.2	450	7.3	10.5	600	8.0	9.9	550	9.3	12.6	500	13.0	14.8	500	12.4	13.6
600	14.4	15.6	600	14.7	15.8	480	7.0	10.5	650	7.5	9.3	600	8.8	12.0	550	12.6	14.7	535	12.4	13.6
625	14.3	15.3	650	14.7	15.7	500	6.9	10.3	700	7.2	8.8	650	8.5	11.5	600	12.0	14.6	550	12.5	13.8
650	13.6	16.0	700	14.3	15.1	550	6.7	10.1	750	6.9	8.7	700	8.1	11.1	650	11.6	14.2	560	12.3	14.3
700	12.5	16.7	750	14.0	14.6	600	6.4	9.8	800	6.5	8.0	750	7.9	10.6	700	11.2	13.8	600	11.9	14.4
730	11.8	17.0	800	13.6	14.0	650	6.4	9.7	850	6.2	7.6	800	7.9	10.1	750	11.0	13.4	650	11.4	14.3
750	11.5	16.7	850	14.3	15.2	700	6.2	9.4	900	5.8	7.4	850	7.3	9.8	800	11.1	13.3	700	11.0	14.0
800	10.9	16.3	880	14.5	15.6	750	6.1	9.1	950	5.3	7.3	900	6.9	9.1	850	10.7	12.8	750	10.9	13.6
850	10.3	15.9	900	14.4	15.4	800	6.1	8.9				930	6.8	8.8	900	10.5	12.6	800	10.9	13.4
900	10.2	15.8	950	13.8	14.5	850	5.9	8.6							950	10.2	12.2	850	10.6	13.0
935	10.0	15.6	975	13.7	14.3	900	5.7	8.4							975	10.0	12.0	900	10.2	12.8
						950	5.4	7.9										950	9.8	12.4
						960	5.3	7.8												

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 444 27 Apr 70 0906 EST Homer City			Ascn 445 27 Apr 70 1015 EST Homer City			Ascn 446 27 Apr 70 1222 EST Homer City			Ascn 447 28 Apr 70 0554 EST Homer City			Ascn 448 28 Apr 70 0750 EST Homer City			Ascn 449 28 Apr 70 0842 EST Homer City			Ascn 450 28 Apr 70 1013 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	16.7	18.4	Sfc	17.2	20.6	Sfc	17.2	23.2	Sfc	13.5	16.2	Sfc	15.3	18.5	Sfc	15.6	19.4	Sfc	17.4	20.7
50	15.4	17.6	50	16.7	19.9	50	16.3	22.1	50	14.2	18.2	50	14.8	18.4	50	15.4	19.3	50	16.8	20.0
100	---	---	100	16.4	19.6	100	16.1	21.7	100	14.7	18.9	100	15.0	18.6	100	15.2	19.0	100	16.3	19.5
150	---	---	150	16.0	19.2	150	15.6	21.6	150	14.6	18.6	150	15.3	18.3	150	15.1	18.6	150	16.0	19.0
200	---	---	200	15.8	19.1	200	15.4	21.0	200	14.6	18.4	200	15.3	18.0	200	15.4	18.1	200	15.8	18.7
250	---	---	250	15.2	18.4	250	15.2	20.7	250	14.4	18.0	250	15.1	17.6	250	15.3	17.6	250	15.5	18.2
300	---	---	300	14.8	17.9	300	15.0	20.4	300	14.2	17.6	300	15.2	17.2	300	15.3	17.3	300	15.3	17.8
350	13.5	15.2	350	14.5	17.4	350	14.3	19.5	350	14.0	17.2	350	15.2	17.1	350	15.2	17.0	350	15.0	17.4
400	13.2	14.8	400	14.2	16.9	400	14.0	19.1	400	14.0	16.8	400	15.0	17.0	400	14.9	16.7	400	14.7	17.0
450	12.8	14.8	450	13.9	16.9	450	13.5	18.5	450	13.9	16.3	450	14.8	17.0	450	14.7	16.3	450	14.4	16.7
490	12.6	15.4	500	13.5	16.5	500	13.0	17.8	500	12.8	14.8	500	14.5	16.8	500	14.5	16.1	500	14.2	16.5
500	12.5	15.4	550	13.3	16.0	550	12.8	17.4	550	13.6	15.4	550	14.2	16.4	530	14.5	16.1	550	13.9	16.2
550	12.1	15.3	600	12.7	15.5	600	12.4	16.8	600	13.4	15.2	600	14.0	16.2	540	14.4	16.2	600	13.6	15.8
600	11.6	15.1	650	12.1	15.1	650	12.2	16.4	650	13.1	15.1	650	13.7	16.2	550	14.4	16.2	650	13.2	15.2
650	11.4	14.8	700	12.1	14.5	700	11.8	15.9	700	12.8	15.1	675	13.2	16.4	600	14.0	16.0	700	12.4	14.7
700	11.3	14.5	750	11.4	14.2	750	11.3	15.3	750	12.4	15.0	700	13.0	16.4	650	13.8	15.8	750	12.7	14.5
750	11.2	14.0	800	11.3	13.8	800	10.9	14.7	800	12.2	15.0	750	12.8	16.2	700	13.4	15.4	800	12.6	14.4
800	10.8	13.6	850	10.8	13.6	850	10.7	14.3	830	12.2	15.2	800	12.6	16.0	750	13.0	15.0	850	12.2	14.0
850	10.8	13.4	900	10.3	13.5	900	10.3	13.8	850	12.0	15.0	850	12.3	15.8	800	12.8	14.8	900	12.0	13.6
900	10.2	13.0	940	10.0	13.0	950	10.3	13.7	900	11.9	14.8	900	11.8	15.4	850	12.2	14.6	945	11.9	13.5
935	10.2	13.0							940	11.9	14.8	950	11.7	15.3	900	12.0	14.6			
															950	11.7	14.5			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 451 29 Apr 70 0544 EST Homer City			Ascn 452 30 Apr 70 0540 EST Homer City			Ascn 453 30 Apr 70 0829 EST Homer City			Ascn 454 30 Apr 70 0924 EST Homer City			Ascn 455 30 Apr 70 1013 EST Homer City			Ascn 456 30 Apr 70 1303 EST Homer City			Ascn 457 1 May 70 0544 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	16.6	17.6	Sfc	18.9	21.3	Sfc	19.8	24.2	Sfc	---	---	Sfc	21.3	26.1	Sfc	23.2	29.4	Sfc	17.4	20.2
50	16.6	18.0	50	18.2	21.4	10	19.7	24.4	15	20.8	25.6	50	20.3	25.8	50	21.8	28.5	50	17.4	21.8
100	16.4	17.9	100	18.2	21.3	50	19.2	23.8	50	19.9	24.9	100	20.0	25.4	100	21.4	28.1	70	17.7	22.3
150	16.2	17.6	150	18.2	21.4	100	18.9	23.4	100	19.6	24.3	150	19.7	24.8	150	21.1	27.6	100	17.7	22.1
200	16.2	17.5	200	18.0	21.4	150	18.8	22.9	150	19.2	23.8	200	19.4	24.5	200	20.9	27.2	150	17.7	22.4
250	16.1	17.4	250	18.0	21.6	200	18.3	22.4	200	18.9	23.3	250	19.2	24.0	250	20.5	26.6	165	17.7	22.6
300	16.2	17.4	300	17.8	23.0	250	18.1	22.0	250	18.5	22.8	300	18.9	23.7	300	20.3	26.1	200	17.6	22.2
350	16.1	17.2	320	18.0	22.0	300	17.6	21.6	300	18.1	22.3	350	18.7	23.3	350	20.0	25.6	250	17.4	22.0
400	16.0	17.0	350	17.9	22.8	350	17.3	21.2	350	17.9	21.8	400	18.5	22.9	400	19.7	25.1	300	17.0	21.4
450	15.9	16.6	400	17.5	23.1	400	17.0	21.0	400	17.6	21.6	450	17.8	22.2	450	19.4	24.6	350	16.9	21.4
500	15.8	16.3	425	17.3	23.2	450	16.9	20.9	450	17.3	21.1	500	17.5	21.5	500	19.0	24.2	400	16.7	21.1
550	15.6	16.0	450	17.1	23.1	500	16.6	22.0	500	16.8	20.9	550	17.2	21.0	550	18.6	23.6	450	16.3	20.6
600	15.3	15.6	500	16.8	23.0	520	16.6	22.1	550	16.5	20.8	600	16.9	20.6	600	18.3	23.0	500	16.1	20.4
650	15.1	15.4	550	16.5	22.6	550	16.2	21.8	600	16.3	20.5	650	16.6	20.1	650	18.1	22.6	550	16.0	20.2
700	15.0	15.2	600	16.2	22.2	600	16.0	21.5	630	16.1	20.8	700	16.3	19.5	700	17.7	22.1	600	15.8	19.8
750	14.8	15.0	650	15.8	21.8	650	15.6	21.1	650	15.9	20.4	750	15.9	19.2	750	17.3	21.6	650	15.7	19.5
800	14.6	14.7	700	15.6	21.4	700	15.3	20.8				800	15.5	19.0	800	17.1	21.0	700	15.6	19.2
830	14.4	14.4	750	15.2	21.0	750	15.0	20.4				850	15.0	18.8	850	16.7	20.5	750	15.8	19.3
			800	14.4	21.0	800	14.6	20.0				900	14.8	18.4	900	16.3	20.1	770	15.7	19.2
			850	13.9	21.0	850	14.8	19.8				950	14.4	18.6	940	16.1	19.7	800	16.1	19.4
			900	13.2	20.6	900	14.6	19.3										850	16.4	19.6
			940	13.7	20.2	935	14.5	18.9										900	16.0	19.1
																		935	15.9	19.0

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 458 1 May 70 0652 EST Homer City			Ascn 459 1 May 70 0849 EST Homer City			Ascn 460 1 May 70 1029 EST Homer City			Ascn 461 4 May 70 0548 EST Homer City			Ascn 462 4 May 70 0830 EST Homer City			Ascn 463 4 May 70 1046 EST Homer City			Ascn 464 4 May 70 1310 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	17.7	21.2	Sfc	19.7	24.8	Sfc	21.8	27.4	Sfc	7.6	8.3	Sfc	9.2	11.0	Sfc	11.3	15.7	Sfc	13.3	18.7
15	17.4	21.0	50	18.8	24.4	50	20.2	26.4	10	6.4	6.6	50	8.3	9.8	50	10.4	14.4	50	12.9	18.0
50	17.2	21.5	100	18.7	24.2	100	20.0	26.0	20	6.2	6.6	100	8.1	9.6	100	10.3	14.1	100	12.0	17.0
100	17.2	21.7	150	18.4	23.6	150	19.6	25.4	50	6.6	7.6	150	7.7	9.3	150	9.9	13.5	150	11.6	16.6
150	17.1	21.7	200	18.2	23.2	200	19.1	24.8	100	7.1	9.0	165	7.6	9.9	200	9.8	13.2	200	11.2	16.0
170	17.4	22.2	250	17.8	23.0	250	19.0	24.4	130	7.4	9.4	200	7.4	9.8	250	9.7	12.7	250	10.6	15.4
200	17.1	21.9	300	17.5	22.5	300	18.6	23.9	150	7.4	9.4	250	7.1	9.5	300	9.0	12.0	300	10.4	15.1
250	16.9	21.6	350	17.3	22.2	350	18.4	23.4	200	7.4	9.3	300	6.7	9.1	350	8.5	11.3	350	9.9	14.4
300	16.7	21.2	400	17.1	21.8	400	18.1	23.1	250	7.4	9.9	350	6.5	8.8	400	8.1	10.9	400	9.6	14.0
350	16.5	21.0	450	16.7	21.3	450	17.7	22.4	300	7.2	9.6	400	6.1	8.4	450	7.7	10.5	450	9.4	13.6
400	16.2	20.4	500	16.4	20.7	500	17.4	21.9	350	7.0	9.4	450	5.9	8.1	500	7.6	9.9	500	9.3	13.3
450	16.0	20.2	550	16.1	20.3	550	17.0	21.3	400	6.8	9.1	500	5.7	7.8	550	7.5	9.5	550	8.9	12.7
500	15.7	19.8	600	15.9	20.0	600	16.8	21.0	450	6.6	8.7	550	5.5	7.4	600	6.9	9.3	600	8.7	12.4
550	15.4	19.4	650	15.6	19.6	650	16.5	20.4	500	6.3	8.3	600	5.1	7.0	650	6.7	8.5	650	8.3	11.8
600	15.3	19.2	700	15.3	19.3	700	16.1	19.8	550	6.0	7.8	650	4.7	7.0	700	6.0	8.4	700	7.8	11.1
650	15.2	19.0	750	15.3	19.3	750	15.7	19.2	600	5.6	7.5	700	4.2	7.4	740	5.8	7.7	750	7.7	10.8
660	15.2	18.9	800	15.1	18.9	800	15.4	18.7	650	5.1	7.3	750	3.5	7.5	750	5.8	7.8	800	7.3	10.3
			850	14.9	18.6	850	15.2	18.3	700	4.9	6.9	770	3.3	7.5	765	5.0	9.0	850	7.1	9.8
			900	14.9	18.5	880	15.1	18.1	750	4.8	6.6	800	3.4	7.9	800	4.7	9.1	900	6.8	9.4
			930	14.8	18.4	900	15.3	19.0	800	4.3	6.4	850	3.2	7.8	850	4.8	9.0	940	6.4	9.1
						940	15.2	19.2	850	3.9	6.5	900	3.1	7.5	900	4.5	8.7			
									900	3.6	7.0	950	2.8	7.4	950	4.3	8.3			
									920	3.4	7.4									
									950	3.4	7.5									
									1000	3.2	7.5									
									1050	3.0	7.4									

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 465 5 May 70 0612 EST Homer City			Ascn 466 5 May 70 0659 EST Homer City			Ascn 467 5 May 70 0838 EST Homer City			Ascn 468 5 May 70 1012 EST Homer City			Ascn 469 6 May 70 0545 EST Homer City			Ascn 470 6 May 70 0835 EST Homer City			Ascn 471 7 May 70 0600 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	9.9	9.9	Sfc	10.5	10.9	Sfc	13.2	14.4	Sfc	14.2	18.2	Sfc	2.4	2.7	Sfc	3.1	3.9	Sfc	---	0.0
10	9.1	9.2	50	10.1	10.5	50	12.0	13.2	50	12.4	16.3	50	2.1	2.4	50	2.6	3.4	25	---	-0.8
50	9.6	10.0	100	10.2	10.9	100	12.0	13.2	100	11.5	15.1	100	1.9	2.1	100	2.4	3.2	50	---	-0.6
100	10.3	11.0	150	10.5	11.3	150	11.7	12.8	150	10.9	14.7	150	1.7	1.9	150	2.1	2.7	100	---	0.2
150	10.6	11.4	200	10.2	11.0	200	11.2	12.3	200	10.6	14.2	200	1.5	1.6	200	1.6	2.2	150	---	0.2
175	10.7	11.5	250	10.1	10.7	250	11.1	12.0	250	10.2	13.8	250	1.3	1.3	250	1.4	1.9	200	---	-0.1
200	10.6	11.4	300	9.8	10.4	300	10.7	11.4	300	10.1	13.5	300	1.2	1.2	300	1.0	1.4	250	---	-0.6
250	10.3	11.0	350	9.7	10.2	350	10.4	11.1	350	9.7	12.9	350	0.8	0.8	350	0.7	0.9	300	---	-1.0
300	10.1	10.7	400	9.6	10.0	400	10.1	10.6	400	9.5	12.4	400	0.5	0.5	400	0.5	0.5	350	---	-0.2
350	10.0	10.5	430	9.5	10.0	450	9.9	10.3	450	9.3	12.1	420	0.4	0.4	450	0.2	0.2	370	---	-0.3
400	10.0	10.4	450	9.5	10.6	500	9.6	10.0	500	9.0	11.6				500	---	-0.4	390	---	0.4
450	9.7	10.0	500	9.4	11.3	530	9.2	9.3	550	8.6	11.0				550	---	-0.9	400	---	0.4
500	9.3	9.6	550	9.3	11.5	550	8.9	9.5	600	8.4	10.6				600	---	-1.3	450	---	0.2
550	9.2	9.6	600	9.2	11.4	560	8.6	9.8	650	8.0	10.0				650	---	-1.8	500	---	-0.2
600	9.0	9.7	650	9.0	11.1	600	8.1	9.5	700	7.6	9.6				700	---	-2.0	550	---	-0.6
625	8.9	9.7	670	8.8	11.0	650	7.6	9.6	750	7.2	9.4				750	---	-2.4	600	---	-0.8
650	8.9	10.3				700	6.7	10.2	800	6.6	8.7				800	---	-2.8	650	---	-1.2
700	8.9	11.3				750	6.1	9.9	850	6.5	8.2				850	---	-3.2	700	---	-1.6
750	8.5	11.3				800	5.7	9.5	900	6.3	7.8				900	---	-3.5	750	---	-1.8
800	8.3	11.1				850	5.4	9.2	950	6.0	7.3				950	---	-3.6	800	---	-2.2
850	7.9	10.5				900	5.1	8.6										850	---	-2.7
900	7.6	10.2				945	4.9	8.3										900	---	-3.1
950	7.3	9.8																925	---	-3.2

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 472 8 May 70 0548 EST Homer City			Ascn 473 8 May 70 0749 EST Homer City			Ascn 474 8 May 70 0909 EST Homer City			Ascn 475 8 May 70 0957 EST Homer City			Ascn 476 8 May 70 1217 EST Homer City			Ascn 477 9 May 70 0545 EST Homer City			Ascn 478 9 May 70 0708 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	9.0	12.2	Sfc	11.2	14.8	Sfc	14.0	18.2	Sfc	16.9	21.8	Sfc	18.4	23.8	Sfc	14.6	16.0	Sfc	16.5	18.9
10	8.9	12.1	50	10.4	14.0	50	13.5	17.6	50	15.7	19.9	50	17.9	23.4	50	14.9	17.3	50	16.2	18.8
50	9.0	12.8	100	10.1	13.5	100	13.1	17.1	100	14.9	19.1	100	17.3	22.3	100	15.2	18.0	100	15.9	18.6
100	9.0	13.0	150	10.0	13.4	150	12.9	16.6	150	14.9	18.9	150	17.0	21.9	150	15.5	18.6	150	15.7	18.3
150	8.9	12.9	200	10.1	13.5	200	12.7	16.3	200	14.4	18.2	200	16.6	21.6	200	15.7	18.9	200	15.7	18.6
200	8.8	12.8	250	9.9	13.2	250	12.4	15.8	250	13.9	17.5	250	16.4	21.0	250	15.8	19.0	250	15.6	18.4
250	8.7	12.7	300	9.5	12.7	300	12.1	15.3	300	13.7	17.2	300	16.2	20.4	300	15.8	19.0	300	15.6	18.2
300	8.6	12.5	350	9.2	12.4	350	12.0	15.1	350	13.1	16.6	350	15.9	20.0	350	16.2	19.4	320	15.5	18.2
350	8.7	12.6	360	10.0	13.2	400	12.1	15.0	400	13.2	16.3	400	15.6	19.5	400	16.4	19.9	350	15.8	18.6
400	8.9	12.7	400	9.9	12.8	450	12.2	15.0	450	12.8	15.8	450	15.3	19.1	410	16.4	20.0	400	16.1	19.3
430	9.0	12.8	430	10.9	13.8	500	12.1	14.8	500	12.9	15.6	500	14.9	18.4	450	16.3	19.9	450	15.9	19.3
450	9.8	13.8	450	10.5	13.4	550	12.0	14.5	520	12.3	15.0	550	14.6	18.0	500	16.1	19.6	500	15.5	18.9
500	10.5	14.4	500	11.3	14.1	600	11.8	14.1	550	12.6	15.2	600	14.2	17.4	550	15.8	19.4	550	15.3	18.8
550	11.0	14.8	550	10.1	13.0	615	11.6	13.9	600	12.9	15.4	650	14.0	17.0	600	15.5	19.0	600	15.0	18.4
600	11.8	15.0	600	12.6	15.4	650	12.9	15.1	650	12.3	14.5	700	13.8	16.6	650	15.1	18.5	650	14.6	18.0
650	12.4	15.0	650	12.7	15.2	700	13.0	15.1	700	12.0	14.0	750	13.3	16.1	700	14.8	18.1	700	14.4	17.7
700	12.5	14.9	700	12.7	15.0	750	12.7	14.6	750	11.6	13.5	800	13.1	15.6	750	14.6	17.8	750	14.0	17.2
750	12.3	14.7	750	12.3	14.4	800	12.5	14.3	780	11.6	13.4	850	12.6	15.2	800	14.2	17.1	800	13.8	16.8
800	12.1	14.5	800	12.2	14.1	850	12.3	14.1	800	11.8	13.8	900	12.1	14.6	850	13.6	16.8	850	13.4	16.3
850	11.9	14.3	850	11.9	13.6	900	12.1	13.9	820	12.3	14.4	940	11.8	14.2	900	13.4	16.4	900	13.1	15.9
900	11.7	14.0	900	11.7	13.3	950	11.8	13.5	850	12.2	14.2				950	13.0	16.0	945	12.8	15.6
950	11.3	13.5	950	11.4	12.9				900	12.0	13.9									
970	11.3	13.4	960	11.4	12.8				950	11.8	13.6									

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 479 9 May 70 0856 EST Homer City			Ascn 480 9 May 70 1004 EST Homer City			Ascn 481 11 May 70 0547 EST Homer City			Ascn 482 11 May 70 0830 EST Homer City			Ascn 483 11 May 70 1036 EST Homer City			Ascn 484 11 May 70 1255 EST Homer City			Ascn 485 12 May 70 0636 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	19.3	23.5	Sfc	20.0	24.4	Sfc	15.5	16.0	Sfc	16.4	17.7	Sfc	19.4	22.2	Sfc	20.3	24.4	Sfc	16.6	17.0
50	18.2	22.1	50	18.8	23.6	15	15.1	15.6	50	16.1	17.5	50	17.9	20.5	50	18.7	22.5	50	16.6	16.8
100	17.7	21.4	100	18.6	23.1	50	15.3	16.3	100	15.8	17.1	100	17.6	20.1	100	18.5	22.2	100	16.4	16.7
150	17.4	21.0	150	17.9	22.3	100	15.3	16.6	150	15.6	16.8	150	17.3	19.6	150	18.2	21.8	150	16.3	16.7
200	17.0	20.4	200	17.8	21.8	150	15.2	16.6	200	15.1	16.3	200	17.1	19.2	200	18.2	21.4	200	16.1	16.5
250	16.7	19.9	250	17.5	21.4	200	15.1	16.3	250	15.0	16.0	250	16.8	18.6	250	18.0	21.0	250	16.0	16.4
300	16.4	19.4	300	17.2	20.8	250	14.9	15.9	300	14.7	15.5	300	16.4	18.2	300	17.3	20.2	300	15.8	16.3
350	16.1	18.9	350	16.8	20.3	300	14.7	15.5	350	14.5	15.3	350	16.1	17.7	350	16.9	19.6	350	15.6	16.1
400	15.7	18.8	400	16.6	19.9	350	14.6	15.3	400	14.4	15.0	400	15.9	17.4	400	16.7	19.3	400	15.4	15.8
450	15.4	18.6	450	16.2	19.3	400	14.3	14.9	450	14.3	15.0	450	15.5	16.9	450	16.3	18.7	450	15.2	15.6
500	15.1	18.3	500	15.9	18.7	450	14.1	14.6	500	14.2	14.8	500	15.1	16.4	500	15.9	18.3	500	14.9	15.4
535	14.8	17.6	550	15.5	18.2	500	13.9	14.3	550	13.9	14.4	550	14.7	15.8	550	15.9	17.9	550	14.5	15.2
550	14.9	18.4	600	15.1	17.8	550	13.5	13.8	600	13.6	14.0	600	14.4	15.4	600	15.7	17.4	600	14.0	15.2
600	14.6	17.9	650	14.7	17.2	600	13.4	13.6	650	13.3	13.5	650	14.1	14.9	650	15.1	16.9	650	13.8	15.2
650	---	---	700	14.3	16.7	650	13.1	13.3	700	13.1	13.2	700	13.7	14.3	700	14.5	16.1	700	13.6	15.0
700	---	---	750	14.1	16.1	700	13.1	13.2	735	12.9	13.0	750	13.3	14.2	750	14.3	16.1	750	13.3	14.7
750	---	---	800	13.6	15.8	750	12.9	13.1				800	12.9	13.6	800	13.9	15.5	800	12.9	14.3
800	---	---	850	13.5	15.3	800	12.8	13.1				850	12.6	13.4	850	14.0	15.0	850	12.6	14.0
850	12.7	15.6	900	13.0	14.9	850	12.6	12.8				900	12.5	13.0	900	13.7	14.5	900	12.3	14.0
900	12.4	15.2	950	12.6	14.4	900	12.2	12.4				950	12.0	12.6	950	13.6	14.3	950	11.9	13.7
935	12.2	14.8				950	11.9	12.1							970	13.5	14.1			

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 486 12 May 70 1013 EST Homer City			Ascn 487 12 May 70 1208 EST Homer City			Ascn 488 13 May 70 0558 EST Homer City			Ascn 489 13 May 70 1023 EST Homer City			Ascn 490 15 May 70 0555 EST Homer City			Ascn 491 15 May 70 0800 EST Homer City			Ascn 492 14 Oct 70 0633 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	18.1	19.7	Sfc	20.1	23.6	Sfc	16.8	17.4	Sfc	18.6	20.2	Sfc	15.9	17.0	Sfc	16.7	16.9	Sfc	17.9	18.1
50	17.6	19.2	50	19.0	22.0	50	16.3	17.0	50	17.7	19.3	50	15.5	16.7	50	15.9	16.3	50	19.1	19.7
100	17.5	19.1	100	18.7	21.6	100	16.2	16.9	100	17.5	19.0	100	15.4	16.5	100	15.6	16.1	60	20.3	21.4
150	17.0	18.4	150	18.4	21.0	150	16.0	16.6	150	17.2	18.4	150	15.2	16.3	150	15.3	15.8	100	19.7	21.7
200	16.5	17.9	200	17.9	20.3	200	15.7	16.2	200	16.8	17.9	200	15.0	16.0	200	15.3	15.8	150	19.6	21.8
250	16.2	17.2	250	17.8	20.0	250	15.5	15.8	250	16.4	17.3	250	15.0	16.2	250	15.2	15.9	200	19.7	22.0
300	16.0	17.0	300	17.3	19.5	300	15.3	15.5	300	16.1	16.9	300	14.6	16.0	275	15.7	16.5	250	19.3	21.6
350	15.4	16.4	350	16.7	18.9	345	15.2	15.2	350	15.8	16.4	350	14.9	16.4	300	15.3	16.1	300	19.2	21.4
400	15.3	16.2	400	16.6	18.5				400	15.6	16.0	365	15.2	17.1	350	15.2	16.2	350	18.9	21.0
450	14.9	15.7	450	16.1	18.0				450	15.3	15.6	400	15.2	17.0	400	15.1	16.1	400	18.7	20.8
500	14.6	15.3	500	16.0	17.5				500	15.1	15.2	450	14.9	16.6	450	15.0	16.1	450	18.4	20.5
550	14.2	14.8	550	15.8	17.2				550	14.8	14.9	500	14.8	16.4	500	14.8	15.9	500	18.3	20.6
600	13.7	15.3	600	15.5	16.8				590	14.8	14.8	550	14.7	16.5	550	14.5	15.3	530	18.3	20.6
650	13.3	14.9	650	15.1	16.2							565	14.8	16.8	560	14.4	15.4	550	18.7	21.8
700	13.0	14.7	700	14.8	15.7							600	14.6	16.4	600	15.2	17.2	600	18.6	21.6
720	13.1	15.0	750	14.4	15.1							650	14.3	16.1	650	14.3	15.6	650	18.2	21.2
750	12.8	14.5	775	14.2	14.8							700	14.8	17.2	670	14.2	15.4	700	18.0	21.0
800	12.6	14.2	800	13.8	14.6							750	15.0	17.4	690	14.5	16.3	750	17.7	20.5
850	12.3	14.2	840	13.7	14.3							800	15.0	17.3	700	14.4	16.1	800	17.7	20.7
900	12.0	14.0										850	15.0	17.0	750	14.4	16.2	850	17.3	20.5
950	11.7	13.5										900	15.2	16.8	800	14.2	16.0	900	17.1	20.3
												935	15.1	16.5	820	14.4	16.3	950	16.8	19.8
															850	14.4	16.2	1000	16.7	19.5
															900	14.2	15.8	1050	16.5	19.1
															935	14.3	15.5	1085	16.3	19.0

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 493 14 Oct 70 0736 EST Conemaugh			Ascn 494 14 Oct 70 0933 EST Conemaugh			Ascn 495 14 Oct 70 1032 EST Conemaugh			Ascn 496 16 Oct 70 0635 EST Conemaugh			Ascn 497 16 Oct 70 0756 EST Conemaugh C-4			Ascn 498 16 Oct 70 0820 EST Conemaugh			Ascn 499 16 Oct 70 1010 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	18.6	19.3	Sfc	21.5	24.3	Sfc	22.6	26.5	Sfc	8.8	9.3	Sfc	---	---	Sfc	8.5	9.1	Sfc	8.6	9.8
30	17.1	17.4	50	21.2	23.9	50	22.4	26.2	50	8.5	9.2	50	---	---	50	7.9	8.7	50	8.0	9.3
50	17.4	17.8	100	20.8	23.4	100	22.0	25.8	100	8.2	8.9	60	7.8	9.0	100	7.6	8.4	100	7.6	8.8
100	17.6	18.2	150	20.5	23.1	150	21.4	25.2	150	8.0	8.6	100	7.7	8.8	150	7.3	8.0	150	7.2	8.4
150	19.0	21.0	200	20.3	22.9	200	21.2	24.8	200	7.7	8.3	150	7.5	8.5	200	7.1	7.7	200	6.8	8.0
200	18.8	21.0	250	20.1	22.7	250	20.7	24.3	250	7.4	7.9	200	7.0	7.9	250	6.7	7.2	250	6.3	7.5
240	18.9	21.2	300	19.9	22.7	300	20.5	23.9	300	7.1	7.5	250	6.8	7.5	300	6.3	6.7	300	5.9	7.0
250	18.7	21.0	350	19.6	22.4	350	20.0	23.2	350	6.8	7.2	300	6.6	7.3	350	6.0	6.2	350	5.5	6.5
300	18.6	20.8	400	19.4	22.2	400	19.6	22.8	400	6.5	6.8	350	6.1	6.7	400	5.6	5.8	400	5.4	6.2
350	18.2	20.3	450	19.0	21.8	450	19.4	22.4	450	6.2	6.4	400	5.9	6.3	450	5.3	5.4	450	5.0	5.8
400	18.2	20.3	500	18.8	21.6	500	18.8	21.8	500	5.9	6.0	450	5.6	6.0	500	5.0	5.0	500	4.8	5.4
450	18.0	20.2	550	18.4	21.2	550	18.6	21.3	550	5.6	5.7	500	5.3	5.5	550	4.5	4.5	550	4.3	4.8
490	18.0	20.4	600	18.4	21.3	600	18.3	20.9	600	5.3	5.3	550	4.8	5.0	585	4.2	4.2	600	4.0	4.4
500	17.9	20.2	650	18.0	20.7	650	18.0	20.5	650	5.0	5.0	580	4.7	5.1				650	3.9	4.2
550	17.6	19.9	700	17.5	20.1	700	17.6	20.0	700	4.8	4.9	600	4.5	4.8				700	3.5	3.7
600	17.4	19.7	740	17.3	19.6	750	17.3	19.5	750	4.5	4.6	650	4.3	4.3				750	3.3	3.3
650	17.3	19.6	750	17.4	19.7	800	17.1	19.1	800	4.3	4.3	700	3.9	3.9				800	---	2.8
700	17.0	19.2	800	17.4	19.8	850	16.8	18.7	850	4.1	4.1	735	3.7	3.8				850	---	2.6
750	16.9	19.2	820	17.4	19.9	900	16.5	18.3	860	4.0	4.2							900	---	2.0
780	17.0	19.8	850	17.2	19.6	940	16.2	18.0	900	3.7	3.7							950	---	1.6
800	17.0	19.8	900	17.1	19.4				950	---	3.3							1000	---	1.5
840	17.0	20.0	950	16.9	19.0				1000	---	2.9							1050	---	1.0
850	17.0	20.0	1000	16.6	18.6				1050	---	2.6							1095	---	0.4
900	16.7	19.8	1050	16.3	18.1				1070	---	2.4									
950	16.4	19.4	1090	15.9	17.6															
1000	16.0	19.0																		
1050	15.7	18.8																		
1090	15.4	18.4																		

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 500 16 Oct 70 1200 EST Conemaugh			Ascn 501 17 Oct 70 0648 EST Conemaugh			Ascn 502 17 Oct 70 0827 EST Conemaugh			Ascn 503 17 Oct 70 0952 EST Conemaugh			Ascn 504 20 Oct 70 0632 EST Conemaugh			Ascn 505 20 Oct 70 0822 EST Conemaugh			Ascn 506 20 Oct 70 0943 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	7.9	10.2	Sfc	3.3	4.2	Sfc	3.7	5.2	Sfc	4.7	6.5	Sfc	11.9	13.8	Sfc	12.4	14.0	Sfc	13.2	15.4
20	8.2	10.4	50	3.4	4.1	50	3.4	4.4	50	4.7	6.2	50	11.5	13.4	50	11.8	13.6	50	12.4	14.4
50	8.2	10.2	100	3.2	3.8	100	3.2	4.0	100	4.3	5.7	100	11.4	13.2	100	11.5	13.1	100	12.3	14.1
100	7.3	9.3	150	3.1	3.6	150	2.9	3.6	150	4.2	5.4	150	11.1	12.9	150	11.2	12.7	150	11.9	13.6
150	6.9	8.8	200	2.9	3.3	200	2.7	3.3	200	3.8	4.9	200	10.8	12.6	200	11.0	12.4	200	11.8	13.4
200	6.5	8.3	250	2.8	3.0	250	2.3	2.9	250	3.5	4.5	250	10.6	12.4	250	10.8	12.2	250	11.4	13.0
250	6.3	8.0	300	2.5	2.6	300	2.0	2.5	300	3.1	4.0	285	10.4	11.6	300	10.7	11.9	300	11.1	12.5
300	5.9	7.5	350	2.2	2.2	350	1.8	2.1	350	2.7	3.5	300	10.6	12.4	350	10.0	11.6	350	10.8	12.0
350	5.5	7.0	400	1.7	1.8	400	1.6	1.7	400	2.4	3.0	350	10.1	11.8	400	10.2	11.3	400	10.6	11.6
400	5.1	6.5	450	1.4	1.6	450	1.3	1.3	450	2.1	2.7	400	9.8	10.7	450	9.8	10.6	450	10.3	11.1
450	4.7	6.0	500	1.0	1.1	500	---	0.8	500	1.9	2.3	450	9.6	11.0	500	9.7	10.4	500	9.8	10.6
500	4.3	5.5	550	0.8	0.7	550	---	0.6	550	1.8	2.0	460	9.3	10.2	550	9.4	10.0	550	9.6	10.2
550	4.0	5.0	600	0.4	0.4	600	---	0.3	600	1.8	1.8	470	9.5	10.7	600	9.1	9.6	600	9.2	9.7
600	3.6	4.6	650	---	0.0	650	---	-0.1	620	---	1.3	490	9.1	10.2	650	8.8	9.2	650	8.9	9.2
650	3.4	4.2	700	---	-0.3	700	---	-0.5	650	---	1.6	500	9.5	10.7	680	8.7	9.5	700	8.8	9.0
700	3.3	3.8	750	---	-0.6	750	---	-0.8	700	---	1.0	550	9.8	12.8	700	8.5	9.1	750	8.5	9.4
750	3.0	3.4	800	---	-0.9	800	---	-1.0	750	---	0.2	570	9.2	12.0	730	8.3	8.6	760	8.3	9.8
800	2.7	2.9	850	---	-1.2	850	---	-1.4	800	---	-0.3	600	9.0	11.8	750	8.4	8.8			
850	2.5	2.5	900	---	-1.4	900	---	-1.2	820	---	0.1	650	8.5	9.6	770	8.5	10.5			
900	---	2.0	950	---	-1.8	920	---	-1.0	850	---	0.0	700	8.7	10.9	800	8.4	10.4			
950	---	1.4	1000	---	-1.7	950	---	-1.3	900	---	0.1	750	8.5	10.7	850	8.2	10.3			
1000	---	1.0	1050	---	-1.9	1000	---	-1.5	950	---	-0.2	800	8.4	10.6	900	7.9	9.9			
1050	---	0.6	1080	---	-2.0	1050	---	-1.7	1000	---	-0.6	850	8.2	10.2	930	7.9	9.8			
1085	---	0.4				1075	---	-1.8	1050	---	-1.0	900	8.1	10.1						
									1090	---	-1.2	950	7.6	9.4						
												1000	7.4	9.4						
												1050	7.4	9.4						
												1100	7.4	10.0						
												1110	7.5	12.9						

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 507
20 Oct 70
1150 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	12.9	15.9
50	13.0	15.6
100	12.7	15.2
150	12.5	14.9
200	12.2	14.4
250	11.9	14.1
300	11.7	13.7
350	11.4	13.2
400	11.1	12.7
450	10.8	12.3
500	10.5	11.8
550	10.0	11.2
600	9.7	10.7
650	9.5	10.3
700	9.1	9.8
750	9.0	9.6
800	8.6	9.0
840	8.4	8.8
850	8.6	9.2
890	9.2	11.8

Ascn 508
26 Oct 70
0652 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	12.3	12.3
15	12.0	12.0
50	13.5	14.5
100	14.3	15.6
150	14.4	15.8
200	14.3	15.5
250	14.2	15.2
300	13.9	14.8
350	13.7	14.5
400	13.5	14.2
450	13.4	14.0
500	13.2	14.0
550	13.0	13.8
600	12.8	13.7
620	12.6	13.6

Ascn 509
26 Oct 70
0909 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	16.0	17.6
50	15.5	17.2
100	15.4	16.8
150	15.1	16.4
200	14.7	15.8
250	14.6	15.6
300	14.3	15.1
350	14.0	14.7
400	13.8	14.3
450	13.4	13.8
500	13.0	13.3
520	13.0	13.2

Ascn 510
26 Oct 70
1014 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	16.4	18.6
50	15.8	18.1
100	15.6	17.8
150	15.4	17.6
200	15.1	17.0
250	14.7	16.7
300	14.6	16.2
350	14.3	15.8
400	13.9	15.3
450	13.6	14.8
500	13.1	14.4
550	13.0	13.9
600	12.8	13.6
650	12.3	13.4
700	11.8	13.0
750	11.5	12.8
800	11.1	12.3
850	10.9	11.9
860	10.8	11.8

Ascn 511
26 Oct 70
1205 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	16.0	18.8
50	15.8	18.6
100	15.5	18.2
150	15.1	17.6
200	14.8	17.0
250	14.6	16.6
300	14.2	16.2
350	14.0	15.8
400	13.6	15.4
450	13.2	14.8
500	12.8	14.4
550	12.7	14.3
600	12.4	14.0
650	12.2	13.7
700	12.0	13.2
750	11.6	12.6
800	11.4	12.3
850	11.1	12.0
900	10.6	11.6
950	10.3	11.2
1000	10.1	10.9
1050	9.7	10.4
1070	9.6	10.2

Ascn 512
27 Oct 70
0705 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	12.2	13.4
35	12.2	13.7
50	12.0	13.5
100	11.8	13.2
150	11.6	12.8
200	11.4	12.5
250	11.2	12.1
300	10.9	11.6
350	10.5	11.1
400	10.3	10.7
450	10.0	10.4
500	9.7	10.0
515	9.6	9.8

Ascn 513
27 Oct 70
0906 EST
Conemaugh

Z, m	WB,°C	T,°C
Sfc	13.0	14.6
50	12.0	13.8
100	11.7	13.3
150	11.3	12.8
200	11.0	12.4
250	10.8	12.0
300	10.2	11.4
350	10.0	11.0
370	9.9	11.0
390	10.4	12.4
400	9.9	11.2
410	9.8	10.8
450	10.0	11.8
480	10.0	12.0
500	9.6	11.0
550	9.3	10.6
560	9.8	11.8
600	9.2	11.2
650	9.1	10.8
700	8.7	10.5
750	8.4	9.8
800	8.2	9.5
850	7.9	8.9
900	7.7	8.6
950	7.3	8.2
1000	6.8	7.6
1050	6.7	7.1
1080	6.5	6.9

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 514 27 Oct 70 1106 EST Conemaugh			Ascn 515 27 Oct 70 1152 EST Conemaugh			Ascn 516 28 Oct 70 0702 EST Conemaugh			Ascn 517 28 Oct 70 0843 EST Conemaugh			Ascn 518 28 Oct 70 1055 EST Conemaugh			Ascn 519 28 Oct 70 1225 EST Conemaugh			Ascn 520 29 Oct 70 0715 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	12.2	14.6	Sfc	12.2	14.6	Sfc	9.3	10.5	Sfc	9.4	10.6	Sfc	9.4	11.2	Sfc	9.8	12.2	Sfc	11.4	12.6
50	11.8	14.0	50	11.7	13.5	50	9.2	10.7	50	8.8	10.4	50	9.2	11.0	50	9.4	11.8	50	10.9	12.1
100	11.5	13.4	100	11.5	13.4	100	9.0	10.2	100	8.7	10.1	100	9.0	10.7	100	9.2	11.4	100	10.5	11.5
150	11.0	12.6	110	11.5	13.5	150	8.8	10.0	150	8.5	9.7	150	8.8	10.4	150	8.9	11.0	150	10.5	11.4
200	11.2	13.0	150	11.3	13.2	200	8.7	9.8	200	8.2	9.4	200	8.4	10.0	200	8.8	10.7	200	10.2	11.0
250	10.2	11.5	200	10.8	12.2	250	8.4	9.4	250	8.0	9.1	250	8.1	9.5	250	8.5	10.3	250	9.9	10.6
300	10.2	11.4	250	10.3	11.6	300	8.1	8.9	300	7.8	8.7	300	7.9	9.1	300	8.0	9.6	300	9.6	10.2
350	9.9	11.1	300	9.9	11.1	350	8.0	8.7	350	7.5	8.3	350	7.6	8.7	350	7.8	9.2	350	9.4	9.8
400	9.7	10.7	350	9.9	10.9	400	7.6	8.6	400	7.2	7.8	400	7.2	8.2	400	7.6	8.8	400	9.2	9.6
450	9.3	10.5	400	9.5	10.6	450	7.4	8.2	450	7.0	7.4	450	6.8	7.7	450	7.4	8.4	430	9.7	10.5
500	9.0	10.0	440	10.1	11.2	500	7.3	8.2	500	6.6	7.0	500	6.5	7.3	500	7.0	8.0	450	8.9	9.5
550	8.5	9.1	450	9.6	11.6	520	7.2	8.4	550	6.5	6.9	550	6.3	6.9	550	6.6	7.4	470	8.9	9.3
600	8.2	8.7	500	9.0	10.2	550	6.8	7.6	600	6.2	6.6	600	6.0	6.6	600	6.3	7.0	500	9.8	10.9
625	8.6	9.6	550	8.5	9.5	570	7.0	8.1	650	6.0	6.6	650	5.7	6.1	650	6.0	6.6	550	9.3	10.1
650	8.4	9.4	600	8.3	8.6	600	6.8	7.8	680	6.3	7.4	700	5.2	5.6	700	5.9	6.3	600	9.2	10.2
665	8.0	8.6	650	8.1	9.0	650	6.5	7.5	700	5.8	6.4	750	4.8	5.0	750	5.4	5.8	650	9.1	9.8
680	8.2	9.4	700	8.2	9.3	700	6.3	7.0	750	5.4	5.9	800	4.7	4.9	800	5.1	5.4	675	8.8	9.4
690	8.0	8.5	750	7.9	9.0	750	6.4	7.7	800	5.2	5.6	810	4.5	4.7	850	4.8	5.0	700	9.3	10.3
700	8.2	9.0	800	7.8	8.8	800	6.1	7.2	850	5.0	5.4				900	4.4	4.7	750	9.0	9.9
750	8.2	9.6	850	7.5	8.6	850	5.7	6.5	875	5.1	6.0				925	4.2	4.4	800	8.6	9.3
800	7.9	9.3	890	7.2	7.9	900	5.5	6.2	900	4.8	5.6							850	8.5	9.1
840	7.9	9.4	900	7.2	8.0	950	5.2	6.0	935	4.8	5.6							900	8.2	8.7
850	7.2	8.6	930	7.1	8.3	1000	5.0	5.6	950	4.3	4.5							950	8.0	8.4
900	6.9	7.8	950	7.0	8.1	1050	4.7	5.1	975	4.1	4.2							1000	8.0	8.4
920	7.3	8.3	1000	6.7	7.5	1100	4.4	4.5	1000	4.2	4.6							1050	8.5	9.4
950	7.2	8.1	1050	6.5	7.2	1115	4.4	4.9	1050	4.0	4.4							1100	9.2	10.8
1000	7.0	7.8	1090	6.2	6.7	1150	4.1	4.8	1090	3.8	4.1							1150	8.3	11.2
1050	6.7	7.4				1170	4.0	4.6										1200	7.8	11.2
1085	6.4	7.1				1180	4.0	4.8										1230	7.5	11.3
						1200	3.9	4.7												
						1245	3.7	4.2												

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 521 29 Oct 70 0851 EST Conemaugh			Ascn 522 29 Oct 70 1010 EST Conemaugh C-2			Ascn 523 29 Oct 70 1100 EST Conemaugh			Ascn 524 29 Oct 70 1208 EST Conemaugh			Ascn 525 29 Oct 70 1225 EST Conemaugh C-2			Ascn 526 30 Oct 70 0947 EST Conemaugh			Ascn 527 2 Nov 70 0709 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	11.5	12.8	Sfc	---	---	Sfc	12.5	14.1	Sfc	12.1	13.7	Sfc	---	---	Sfc	12.8	13.4	Sfc	12.7	13.7
50	11.1	12.4	50	12.0	13.8	50	11.7	13.2	50	11.7	13.2	50	12.8	14.4	50	12.6	13.4	50	12.6	13.8
100	10.9	12.1	100	11.6	13.0	100	11.6	13.0	100	11.6	12.9	100	11.9	13.6	100	12.3	13.2	80	12.8	14.2
150	10.7	11.8	150	11.5	12.7	150	11.3	12.5	150	11.1	12.2	150	11.7	13.2	150	12.1	13.0	100	12.6	14.0
200	10.4	11.4	200	11.2	12.3	200	10.8	11.8	200	10.8	11.8	200	11.4	12.8	200	11.8	12.6	130	12.4	13.5
250	10.1	10.9	250	11.0	12.0	250	10.6	11.5	250	10.6	11.5	250	11.0	12.2	250	11.5	12.2	150	12.6	13.9
300	9.9	10.5	300	10.6	11.5	300	10.2	10.9	300	10.2	10.9	300	10.9	12.0	300	11.2	11.8	200	12.3	13.7
350	9.5	9.9	350	10.2	10.9	350	9.9	10.4	350	10.0	10.6	350	10.8	11.8	350	10.9	11.4	250	12.2	13.4
400	9.2	9.6	400	10.0	10.6	400	9.6	10.0	400	9.7	10.2	400	10.4	11.2	400	10.6	11.0	300	11.8	13.0
450	8.9	9.2	420	9.8	10.4	425	9.9	10.5	450	9.4	9.8	450	10.2	11.0	450	10.4	10.7	350	11.5	12.6
470	8.9	9.2	450	10.6	11.8	435	9.7	10.1	500	9.4	10.0	500	9.7	10.3				400	11.4	12.4
			500	9.3	9.6	450	10.0	10.6				550	9.5	10.0				450	11.0	11.8
			550	10.5	11.3	470	10.4	11.4				600	9.8	10.4				500	10.7	11.5
			600	9.9	10.7	500	9.5	9.9				650	10.0	10.8				550	10.4	11.0
			650	9.9	10.8	540	9.6	10.0				700	9.8	10.5				600	10.1	10.6
			700	9.7	10.5							750	9.8	10.5				650	9.9	10.3
			750	9.6	10.2							800	9.6	10.2				660	9.8	10.2
			800	9.5	10.0							850	9.4	9.9						
			850	9.3	9.8							900	9.2	9.6						
			900	9.1	9.7							925	9.0	9.4						
			920	9.9	11.1							950	9.8	10.5						
			950	10.0	11.2							1000	10.5	11.6						
			1000	10.2	11.4							1050	10.7	11.9						
			1040	10.5	11.7							1100	10.8	11.7						
			1050	10.4	11.6							1140	10.7	11.4						
			1100	10.5	11.4															
			1150	10.4	11.0															

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 528 2 Nov 70 0904 EST Conemaugh C-2			Ascn 529 2 Nov 70 1028 EST Conemaugh C-2			Ascn 530 2 Nov 70 1150 EST Conemaugh			Ascn 531 2 Nov 70 1457 EST Conemaugh			Ascn 532 5 Nov 70 0708 EST Conemaugh			Ascn 533 5 Nov 70 0834 EST Conemaugh			Ascn 534 5 Nov 70 0849 EST Conemaugh C-6		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	---	---	Sfc	---	---	Sfc	14.0	17.4	Sfc	15.1	18.0	Sfc	7.9	9.1	Sfc	7.8	8.8	Sfc	---	---
50	12.8	14.4	50	14.0	16.6	50	13.3	16.9	50	14.6	17.8	40	7.8	9.2	50	7.1	8.5	50	---	---
100	12.2	14.0	100	13.2	15.4	100	12.8	16.2	100	14.5	17.6	50	7.7	9.1	100	7.0	8.2	100	---	---
150	11.9	13.7	150	12.6	14.5	150	12.4	15.8	150	14.2	17.2	100	7.5	8.8	150	6.7	7.8	135	6.4	7.8
200	11.8	13.4	200	12.4	14.3	200	12.2	15.4	200	14.2	17.0	150	7.3	8.4	200	6.4	7.4	150	6.4	7.7
250	11.5	12.9	250	11.9	13.7	250	11.7	14.8	250	13.8	16.4	200	7.1	8.1	250	6.2	7.0	200	6.2	7.4
300	11.2	12.4	300	11.4	13.4	300	11.6	14.5	300	13.5	16.0	250	6.6	7.5	300	5.9	6.5	250	6.0	7.0
350	10.9	12.0	350	11.2	12.7	350	11.2	13.9	350	13.2	15.4	300	6.4	7.1	350	5.5	6.1	300	5.7	6.5
400	10.5	11.5	400	11.0	12.4	400	10.7	13.4	400	12.8	14.8	350	6.1	6.7	400	5.2	5.6	350	5.4	6.2
450	10.2	11.0	450	10.7	12.0	450	10.5	13.1	450	12.4	14.3	400	5.8	6.3	450	5.0	5.3	400	5.1	5.7
500	9.9	10.6	500	10.4	11.6	500	10.2	12.6				450	5.5	5.9	500	4.8	4.9	450	4.9	5.3
550	9.6	10.2	550	9.9	11.0	550	9.8	12.1				500	5.2	5.6	550	4.3	4.4	500	4.4	4.8
600	9.2	9.8	600	9.6	10.6	600	9.5	11.6				550	4.8	5.0	600	4.1	4.1	550	4.2	4.5
625	9.3	9.8	650	9.2	10.1	650	9.2	11.0				600	4.6	4.7	620	3.9	3.9	600	3.8	4.0
650	9.3	10.0	700	9.1	9.8	700	8.6	10.8				650	4.3	4.3				650	3.7	3.7
680	9.1	10.0	730	9.1	10.4	725	8.6	10.5				700	3.9	3.9				680	3.4	3.4
700	9.6	11.4	750	8.8	9.6	750	8.1	11.1												
740	9.6	12.4	800	8.7	11.5	800	7.5	10.5												
750	9.5	12.3	820	9.3	12.1	850	7.3	9.8												
800	9.9	12.1	850	9.2	11.8	900	6.7	9.5												
850	9.8	11.9	900	9.4	11.8	935	7.2	8.6												
900	9.7	11.7	950	9.1	11.9	950	6.8	10.8												
950	8.8	12.0	1000	8.6	12.2	1000	7.2	11.6												
1000	8.4	11.8	1050	7.8	12.4	1050	7.3	11.2												
1050	8.2	12.0	1080	8.0	12.4	1100	6.9	11.0												
1100	7.5	11.8				1110	7.1	10.8												
1110	7.5	11.8																		

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 535 5 Nov 70 1037 EST Conemaugh			Ascn 536 6 Nov 70 0702 EST Conemaugh			Ascn 537 6 Nov 70 0816 EST Conemaugh			Ascn 538 9 Nov 70 0655 EST Homer City			Ascn 539 9 Nov 70 0852 EST Homer City			Ascn 540 9 Nov 70 1009 EST Homer City			Ascn 541 9 Nov 70 1132 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	7.3	8.7	Sfc	8.5	9.4	Sfc	8.9	9.6	Sfc	12.0	13.6	Sfc	11.8	13.4	Sfc	12.6	14.7	Sfc	13.2	15.6
50	7.0	8.5	50	8.4	9.5	50	8.2	9.3	50	11.5	13.4	50	11.3	13.0	50	11.9	14.1	50	12.5	15.0
100	6.8	8.2	100	8.1	9.1	100	7.9	9.0	100	11.3	13.0	100	11.1	12.7	100	11.7	13.7	100	12.1	14.3
150	6.6	7.8	150	7.8	8.7	150	7.6	8.6	150	11.0	12.7	150	10.7	12.2	150	11.4	13.2	150	11.8	13.8
200	6.3	7.4	200	7.6	8.4	200	7.4	8.2	200	11.1	12.5	200	10.5	11.8	200	11.3	13.0	200	11.6	13.5
250	6.0	7.0	250	7.4	8.1	250	7.1	7.8	250	10.6	11.8	250	10.2	11.4	250	11.0	12.5	250	11.2	13.0
300	5.7	6.5	300	7.1	7.7	300	6.8	7.5	300	10.4	11.6	300	10.1	11.2	300	10.7	12.0	300	11.0	12.6
350	5.3	6.0	350	6.8	7.3	350	6.5	7.2	340	10.1	11.2	350	10.0	11.0	350	10.3	11.5	350	10.8	12.2
400	5.0	5.6	400	6.5	6.8	400	6.1	6.7	350	10.5	12.2	400	9.7	10.8	400	10.0	11.1	400	10.4	11.7
450	4.7	5.3	450	6.2	6.5	450	5.8	6.4	360	10.2	11.4	450	10.1	12.1	450	9.8	10.7	450	10.3	11.4
500	4.4	4.8	500	5.9	6.2	500	5.5	6.1	380	10.1	11.1	500	10.4	13.0	500	9.6	10.4	500	9.9	10.9
550	4.2	4.5	525	5.8	6.6	550	5.3	5.9	400	10.2	11.6	540	10.8	14.3	550	9.2	10.0	550	9.6	10.6
600	3.8	4.0	550	5.4	6.1	600	4.8	5.5	430	10.2	11.8	550	10.7	14.2	600	9.0	9.6	600	9.3	10.2
650	3.4	3.5	600	5.2	5.7	650	4.5	5.1	440	10.7	13.2	600	10.8	14.2	615	9.3	10.8	625	9.3	10.1
660	3.3	3.4	650	4.9	5.4	700	4.0	4.6	450	10.2	11.8	650	10.4	13.8	650	9.0	10.5	650	9.9	12.6
			700	4.5	5.3	750	3.8	4.2	500	10.4	12.6	700	10.3	13.6	690	8.5	9.1	700	9.7	12.6
			750	4.2	4.5	800	3.3	3.7	550	10.6	12.9	750	10.1	13.3	700	8.7	10.3	750	9.6	12.4
			800	3.9	4.3	850	3.1	3.2	600	10.5	13.5	800	10.0	13.0	750	9.0	10.8	800	9.3	12.2
			850	3.4	4.0	900	2.8	2.8	650	10.5	13.1	850	9.8	12.5	765	9.3	12.2	850	9.3	12.6
			900	3.1	3.5	950	2.3	2.3	700	10.2	13.2	900	9.6	12.1	800	8.9	11.3	900	9.1	12.2
			950	2.8	3.1	1000	---	1.8	750	10.0	13.0	950	9.3	11.9	850	8.8	11.2	950	8.7	11.8
			1000	2.4	2.5	1050	---	1.4	800	10.0	13.1	1000	8.9	11.6	900	8.5	11.3	1000	8.6	11.6
			1050	2.0	2.1	1080	---	1.0	850	9.6	12.6	1050	8.7	11.1	950	8.5	11.1	1050	8.3	11.3
			1100	1.5	1.5				870	9.5	12.3	1095	8.1	10.5	1000	8.2	10.8	1090	7.9	10.7
			1150	---	1.1				900	9.5	12.6				1020	8.3	11.3			
			1170	---	0.9				950	9.2	12.2				1050	8.2	11.0			
									1000	8.9	11.9				1090	7.9	10.7			
									1050	8.8	11.5									
									1090	8.6	11.2									

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 542 10 Nov 70 0722 EST Conemaugh			Ascn 543 10 Nov 70 1026 EST Conemaugh			Ascn 544 10 Nov 70 1205 EST Conemaugh			Ascn 545 11 Nov 70 0705 EST Conemaugh			Ascn 546 11 Nov 70 0903 EST Conemaugh			Ascn 547 11 Nov 70 1049 EST Conemaugh			Ascn 548 16 Nov 70 0853 EST Conemaugh		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	13.6	14.9	Sfc	14.2	15.9	Sfc	14.9	16.5	Sfc	15.1	15.7	Sfc	15.9	16.5	Sfc	16.5	17.4	Sfc	1.3	2.3
50	13.2	14.7	50	13.8	15.6	50	14.4	16.0	20	15.5	16.6	50	15.4	16.4	50	15.9	17.0	50	1.0	1.9
100	13.1	14.5	100	13.6	15.3	100	14.1	15.6	35	15.6	17.0	100	15.2	16.2	100	15.7	16.7	100	0.7	1.4
150	12.9	14.0	150	13.4	14.9	150	13.8	15.1	50	15.4	16.8	150	15.0	16.0	150	15.5	16.4	150	0.4	1.0
200	12.4	13.4	200	13.0	14.4	200	13.6	14.7	80	15.0	16.4	200	14.7	15.6	200	15.2	16.0	200	0.1	0.6
250	12.3	13.1	250	12.9	14.1	250	13.2	14.2	100	14.8	15.7	250	14.4	15.1	250	15.0	15.7	250	-0.3	0.1
300	12.0	12.7	300	12.6	13.6	300	13.0	13.9	150	14.9	15.8	300	14.1	14.7	300	14.6	15.3	300	-0.5	-0.5
350	11.7	12.2	350	12.2	13.1	350	12.8	13.6	200	14.8	15.8	350	13.9	14.3	350	14.4	15.0	350	---	-0.9
400	11.4	11.8	400	12.2	13.0	400	12.6	13.3	250	14.6	15.4	400	13.6	14.0	400	14.2	14.6	400	---	-1.3
450	11.1	11.4	450	11.9	12.6	450	12.2	12.8	300	14.2	15.0	450	13.4	13.7	450	13.9	14.2	450	---	-1.8
500	11.1	11.3	500	11.4	12.0	500	12.4	13.0	350	14.0	14.7	500	13.4	13.6	500	13.7	14.0	500	---	-2.4
550	10.9	11.0	550	11.2	11.6	550	12.3	13.0	400	13.6	14.2				550	13.5	13.7	550	---	-2.7
600	10.7	10.8	600	11.0	11.3	600	12.8	13.8	450	13.4	13.8				600	13.3	13.4	600	---	-3.1
650	10.6	10.6	650	10.6	10.8	650	12.9	14.7	500	13.2	13.6				650	13.1	13.2	650	---	-3.7
700	10.8	10.9	700	10.7	11.0	700	12.8	15.1	550	13.1	13.5				700	12.8	12.9	700	---	-4.2
750	11.0	11.5	750	10.8	11.0	750	12.7	14.9	600	13.0	13.3				750	12.5	12.7	750	---	-4.6
800	11.3	12.3	800	10.8	11.0	800	12.4	14.6	650	12.7	13.1				800	12.2	12.5	800	---	-5.0
850	11.5	12.8	830	10.7	11.0	850	12.0	14.4	670	12.6	13.0				850	12.0	12.3	850	---	-5.4
900	11.2	12.8	850	11.2	11.7	900	11.7	14.0	700	12.8	13.4				900	11.8	12.2	900	---	-5.8
950	10.9	12.6	900	11.6	13.0	950	11.2	13.8	750	12.7	13.7				950	11.5	12.0	950	---	-6.3
1000	10.8	12.6	950	11.1	12.9	1000	10.8	13.8	800	12.5	13.9				1000	11.1	11.8	1000	---	-6.6
1050	10.7	12.7	1000	10.8	12.6	1050	10.5	13.5	850	12.3	13.8				1050	10.9	11.6	1050	---	-7.0
1100	10.5	12.6	1050	10.8	12.7	1085	10.2	13.2	900	11.9	13.5				1090	10.6	11.4	1085	---	-7.2
1135	10.3	12.0	1100	10.3	12.6				950	11.8	13.3									
			1150	10.0	12.3				1000	11.6	13.0									
			1165	10.0	12.2				1050	11.3	12.7									
									1070	11.1	12.5									

Table 8 (continued). HELICOPTER TEMPERATURE PROFILES

Ascn 549 16 Nov 70 1041 EST Homer City			Ascn 550 16 Nov 70 1248 EST Homer City		
Z, m	WB,°C	T,°C	Z, m	WB,°C	T,°C
Sfc	1.8	2.4	Sfc	2.3	2.9
50	1.3	1.7	50	1.9	2.2
100	1.0	1.3	100	1.3	1.5
150	0.6	0.8	150	0.9	1.1
200	0.6	0.8	200	0.4	0.6
250	0.0	0.0	250	0.1	0.2
300	---	-0.5	300	-0.3	-0.3
350	---	-0.9	350	---	-0.8
400	---	-1.4	400	---	-1.3
450	---	-1.9	450	---	-1.7
500	---	-2.4	500	---	-2.1
550	---	-2.9	550	---	-2.5
600	---	-3.4	600	---	-3.1
650	---	-3.8	650	---	-3.5
700	---	-4.2	700	---	-3.9
750	---	-4.7	750	---	-4.4
800	---	-5.3	800	---	-4.9
850	---	-5.7	850	---	-5.6
900	---	-6.0	900	---	-5.9
950	---	-6.5	950	---	-6.4
1000	---	-6.8	1000	---	-6.7
1050	---	-7.2	1050	---	-7.2
1080	---	-7.6	1100	---	-7.5
			1150	---	-8.0
			1200	---	-8.5

PILOT BALLOON MEASUREMENTS

Pilot balloon measurements of winds aloft were made at the Homer City or Conemaugh Station during nearly all experiments. Depending on prevailing meteorological conditions and the length of flights, as few as one and as many as eleven ascensions per series day were made, usually at 30-minute intervals. Most of the pilot balloons were tracked using the double-theodolite technique; when fog prevented visibility between sites, single-theodolite releases were made. Similarly, when one theodolite lost the balloon prematurely, the computer calculated the remaining portion of the run as a single using the previously determined ascension rate.

Table 9 lists the winds aloft in increments of 50 meters above Homer City or Conemaugh stack base elevation, up to a maximum height of 1500 meters. The wind speed and direction for each level were obtained from the original data by interpolating between the 30-second readings.

Table 9. PILOT BALLOON MEASUREMENTS

Legend

Ascn	:	Letter designates release point, i.e., H = Homer City; C = Conemaugh. Ascensions consecutively numbered beginning with 1 each day.
EST	:	Release time of pilot balloon.
Single	:	Balloon tracked by one theodolite; standard ascension rate.
Double	:	Balloon tracked by two theodolites; calculated ascension rate.
Combined	:	Ascension started as double but terminated as single; calculated ascension rate for double portion extrapolated for single portion.
Z, m	:	Height above Homer City or Conemaugh stack base elevation in whole meters.
D, deg	:	Wind direction in degrees of azimuth to nearest tenth.
S, mps	:	Wind speed in meters per second to nearest tenth.
Sfc	:	Surface wind direction and speed determined by hand-held anemometer.

Table 9. PILOT BALLOON MEASUREMENTS

	Ascn H-1 20 Apr 70 0708 EST Double		Ascn H-2 20 Apr 70 0730 EST Double		Ascn H-3 20 Apr 70 0800 EST Double		Ascn H-4 20 Apr 70 0830 EST Double		Ascn H-5 20 Apr 70 0900 EST Double		Ascn H-6 20 Apr 70 0930 EST Double		Ascn H-7 20 Apr 70 1000 EST Double		Ascn H-8 20 Apr 70 1030 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	140.0	2.2	140.0	2.2	130.0	3.5	150.0	1.3	160.0	3.1	150.0	2.2	140.0	1.3	240.0	5.8	Sfc
50	145.8	4.3	147.7	5.9	146.0	4.0	171.6	6.9	169.9	6.1	184.3	5.7	167.6	5.3	257.7	8.3	50
100	157.8	5.8	156.4	7.5	161.7	5.9	171.0	7.6	170.3	6.7	180.4	5.9	180.1	5.5	262.1	9.0	100
150	167.0	7.3	162.8	9.0	169.0	8.1	174.3	7.6	175.0	6.8	178.7	6.1	191.4	5.1	262.2	9.1	150
200	174.6	8.5	166.7	9.9	169.8	8.4	181.4	7.4	195.5	5.9	180.8	6.0	203.4	5.1	261.6	9.1	200
250	181.7	9.6	170.8	10.6	172.4	8.7	193.0	7.6	197.2	7.1	190.7	6.4	213.4	5.6	258.7	8.8	250
300	185.9	10.6	186.4	8.9	176.6	8.8	214.5	7.6	203.8	7.6	199.9	7.1	221.5	6.3	255.7	8.6	300
350	188.3	11.6	197.2	8.8	191.6	8.0	217.0	10.1	212.2	7.9	208.2	7.9	226.1	7.1	251.8	8.8	350
400	194.0	12.0	196.2	10.0	200.5	8.6	204.3	15.2	220.1	9.0	215.4	8.8	229.4	8.0	247.4	9.5	400
450	200.2	12.5	202.0	11.2	198.2	10.5	214.9	13.6	227.4	10.6	221.4	9.8	232.0	8.9	243.6	10.3	450
500	205.3	14.5	206.3	12.8	202.1	11.3	226.4	12.8	234.5	11.1	231.4	10.9	235.5	9.4	240.8	10.8	500
550	209.4	16.5	208.8	14.9	207.5	12.2	230.6	13.7	239.6	12.2	238.8	12.0	239.5	9.6	238.7	10.8	550
600	216.2	16.4	214.0	15.5	212.0	13.9	232.5	14.8	239.7	13.7	241.5	12.2	243.4	10.0	236.8	10.9	600
650	221.4	17.7	223.3	14.7	217.1	14.6	232.6	16.2	240.9	14.8	242.8	12.2	245.1	10.1	235.9	11.3	650
700	224.4	20.2	223.8	16.6	220.6	15.7	236.1	16.0	242.6	15.6	243.1	12.2	246.3	10.1	235.1	11.3	700
750	230.0	19.7	221.9	19.2	222.7	16.8	239.2	16.1	244.7	16.0	244.1	12.2	246.8	10.3	234.4	11.1	750
800	234.7	19.5	221.7	19.5			241.4	16.6	244.6	16.6	246.9	12.4	247.1	10.6	234.6	10.9	800
850	236.0	20.1					244.1	15.9	243.9	17.8	253.1	13.1	246.1	11.3	234.9	10.7	850
900	239.1	20.1					246.2	15.4	243.4	19.7	252.0	13.7	245.0	12.1	235.4	11.6	900
950							246.4	15.8	244.8	18.7	250.8	14.0	244.1	13.6	235.9	12.5	950
1000							241.9	20.0	245.7	17.3			243.4	15.3	236.0	12.7	1000
1050							239.5	23.9					244.0	16.4			1050
1100							240.8	24.3					246.9	16.5			1100
1150							241.3	24.1					248.2	17.4			1150
1200							241.2	23.4					247.9	18.0			1200
1250													244.5	18.4			1250
1300													242.5	19.7			1300
1350													242.6	19.7			1350
1400													242.6	19.7			1400

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-9 20 Apr 70 1100 EST Double		Ascn H-1 21 Apr 70 0750 EST Double		Ascn H-2 21 Apr 70 0805 EST Double		Ascn H-3 21 Apr 70 0830 EST Double		Ascn H-4 21 Apr 70 0930 EST Double		Ascn H-5 21 Apr 70 1000 EST Combined		Ascn H-6 21 Apr 70 1030 EST Double		Ascn H-1 22 Apr 70 0700 EST Combined		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	230.0	8.9	210.0	5.3	190.0	6.2	210.0	9.3	210.0	6.2	230.0	12.0	210.0	8.4		0.0	Sfc
50	248.4	9.7	224.9	10.6	217.0	10.1	221.1	10.5	246.6	6.3	262.4	17.1	247.4	15.1	216.9	2.6	50
100	247.9	10.6	226.1	11.6	230.8	12.0	227.9	11.9	254.6	6.8	262.2	16.7	239.7	15.6	224.4	4.0	100
150	242.4	11.7	227.6	12.5	231.4	12.0	230.3	13.5	252.8	7.3	258.8	16.9	240.3	16.1	232.3	6.1	150
200	243.3	12.1	229.2	13.4	232.0	11.9	232.3	15.1	252.2	7.9	254.7	17.2	241.0	16.1	241.0	8.7	200
250	244.7	12.3	230.8	14.7	233.8	12.2	233.5	15.0	254.3	8.6	251.3	17.1	240.8	15.7	256.0	10.3	250
300	244.8	12.4	232.4	16.7	237.4	13.1	235.0	15.0	255.9	9.4	247.9	16.9	240.2	15.8	269.9	10.8	300
350	244.9	12.6	234.0	18.2	240.5	14.0	236.6	15.0	256.8	10.3	249.7	17.7	239.2	16.1	277.1	11.2	350
400	246.0	12.1	235.9	18.6	241.6	15.0	237.2	14.4	259.2	10.7	251.5	18.6	238.9	16.2	280.4	12.1	400
450	247.2	11.6	235.8	18.8	240.0	16.1	236.7	13.4	262.5	11.2	251.6	20.5			285.4	12.0	450
500	245.9	11.2	235.2	19.4	238.8	17.0	237.1	14.6	264.5	12.5	253.3	24.1			282.0	12.5	500
550	244.1	10.7	234.7	20.8	238.8	16.5	237.9	15.8	268.0	12.9	254.2	21.6			283.3	12.6	550
600	241.2	10.2	237.3	19.6	238.7	17.0	235.7	15.5	265.6	14.5	252.7	18.2			289.2	12.3	600
650	237.7	9.5	237.7	20.2	238.5	17.9	233.6	15.7	267.8	15.2	248.9	14.9			284.9	12.4	650
700	232.9	8.6	236.2	22.3	238.4	17.4	234.3	16.8	264.7	16.8	249.4	19.1			282.9	13.2	700
750	232.1	9.4	236.6	22.4	237.2	16.4	237.7	14.6	260.4	15.2	249.2	19.1			283.0	12.4	750
800	232.9	10.9	239.2	21.3	239.0	16.8	238.1	15.5	256.0	13.8	248.6	16.1			282.0	12.3	800
850	234.6	11.2	241.3	21.8	241.0	17.7	240.8	16.0	255.0	16.2	250.1	17.7			281.6	12.7	850
900	237.2	11.3	240.5	21.1	238.6	17.1	239.8	16.4	255.8	17.0	250.3	16.3			282.6	12.7	900
950	240.6	11.6	243.7	14.5	238.9	16.4	237.0	16.7	257.2	17.3	249.1	12.4			284.0	12.0	950
1000	241.2	11.0			240.5	15.6					244.7	12.0			284.1	13.5	1000
1050	239.4	9.5			243.5	15.3					237.9	8.9			283.8	14.1	1050
1100	236.0	11.7			245.7	15.5					204.5	3.4			283.3	14.5	1100
1150	235.6	12.9			245.5	17.2									282.1	15.6	1150
1200	238.7	12.6			245.3	18.5									280.3	17.6	1200
1250	241.9	12.3			244.3	18.2											1250
1300	243.7	13.0			243.2	17.8											1300
1350	245.0	14.0			242.5	19.5											1350
1400	245.7	14.6			242.0	21.2											1400
1450	244.4	14.4			242.8	16.6											1450
1500	243.1	14.2			244.1	12.2											1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-2 22 Apr 70 0730 EST Double		Ascn H-3 22 Apr 70 0800 EST Double		Ascn H-4 22 Apr 70 0830 EST Double		Ascn H-5 22 Apr 70 0900 EST Double		Ascn H-6 22 Apr 70 0930 EST Double		Ascn H-7 22 Apr 70 1000 EST Double		Ascn H-8 22 Apr 70 1030 EST Double		Ascn H-9 22 Apr 70 1100 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	210.0	1.7	255.0	3.5	230.0	2.2	240.0	5.3	230.0	6.7	240.0	5.8	240.0	4.0	240.0	6.7	Sfc
50	226.2	3.5	247.9	4.5	237.8	5.6	255.3	6.7	270.4	8.3	295.4	7.7	261.9	6.1	249.0	9.2	50
100	230.9	3.7	247.1	4.9	237.8	5.2	256.1	7.1	280.2	9.2	284.8	7.6	273.8	7.8	250.6	9.4	100
150	241.0	4.9	247.1	5.2	239.0	4.9	256.3	7.3	283.2	10.0	274.2	7.7	275.5	9.0	252.4	9.1	150
200	248.4	6.7	256.4	6.5	244.0	5.7	260.2	7.4	280.6	10.9	265.4	8.4	276.9	10.2	255.2	8.7	200
250	257.9	8.4	265.1	8.3	249.0	6.3	260.3	7.8	282.0	11.6	258.7	9.4	279.5	10.3	255.6	8.3	250
300	265.0	10.2	269.4	9.6	253.4	6.9	258.2	8.1	279.7	12.8	253.3	10.5	280.5	10.4	256.2	8.0	300
350	271.3	11.2	271.8	10.6	262.2	7.3	256.1	8.2	291.4	10.8	251.0	10.8	279.0	10.4	257.4	7.7	350
400	275.7	12.2	272.0	11.0	269.8	7.9	255.1	8.3	284.0	8.8	249.5	10.8	278.1	10.5	265.9	8.4	400
450	277.5	12.1	277.7	11.2	272.1	8.9	256.1	7.6	278.9	10.0	249.5	11.0	277.7	10.7	267.5	9.0	450
500	278.4	12.0	281.3	12.1	273.1	10.0	259.0	7.2	276.7	9.9	253.0	11.5	275.6	10.6	265.5	8.6	500
550	279.2	12.0	282.5	12.9	275.6	10.6	264.1	7.3	275.6	8.9	255.7	11.9	273.1	10.6	266.4	7.5	550
600	280.2	12.3	282.8	12.9	278.9	10.9	266.6	7.8			256.0	11.7	269.9	12.2	268.7	6.9	600
650	279.9	13.1	280.8	13.3	282.4	12.3	265.2	9.0			256.4	11.4	272.2	7.6	265.5	6.8	650
700	279.7	12.5	281.6	14.1	283.3	12.8	264.4	10.2			255.6	10.7	275.9	11.4	261.7	7.6	700
750	278.3	14.4	282.8	14.8	285.7	13.1	265.8	11.5			254.7	10.0	277.5	11.7	258.9	8.9	750
800	279.7	14.1	283.2	15.1	279.7	16.5	266.9	12.8			256.1	10.1	278.2	11.4	257.6	7.7	800
850	284.2	12.0	284.1	13.8	280.9	15.2	271.2	13.7			258.4	10.5	275.6	8.9	256.1	6.2	850
900	283.0	14.7	282.2	17.1	281.1	13.0	275.5	14.6			260.8	10.8	277.7	7.5	258.1	6.4	900
950	283.6	14.8	280.8	21.0	279.5	17.3	284.3	14.3			264.4	10.7			260.6	6.5	950
1000	284.8	12.9	283.1	16.2	280.0	15.8	288.5	14.1			267.4	10.9			265.6	6.6	1000
1050	283.1	15.2	285.3	13.8	281.6	14.5	284.6	13.5			268.0	12.0			270.5	6.7	1050
1100	281.5	18.2	285.7	14.8	283.2	14.8	283.2	14.7			270.5	12.8			278.1	5.9	1100
1150	280.6	20.8	286.5	15.3	283.3	13.0	285.4	14.6			273.2	12.7			289.1	5.0	1150
1200	284.1	14.5	287.3	13.2	281.9	15.3	286.2	16.4			274.4	9.3			296.3	4.9	1200
1250	283.2	15.5			282.3	15.1	286.9	15.1			283.5	9.1			289.9	6.1	1250
1300	281.4	18.5					287.8	16.2			290.0	11.0			286.7	7.0	1300
1350							285.3	17.8			287.1	14.4			288.4	6.5	1350
1400											292.3	10.9					1400
1450											293.4	10.5					1450
1500											287.9	14.6					1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-10 22 Apr 70 1130 EST Double		Ascn H-1 23 Apr 70 1030 EST Double		Ascn H-2 23 Apr 70 1100 EST Double		Ascn H-3 23 Apr 70 1130 EST Double		Ascn H-1 24 Apr 70 0730 EST Double		Ascn H-2 24 Apr 70 0800 EST Double		Ascn H-3 24 Apr 70 0830 EST Double		Ascn H-4 24 Apr 70 0900 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	240.0	4.4		0.0	190.0	3.5	180.0	1.7		0.0	140.0	4.9	160.0	5.8	190.0	5.3	Sfc
50	265.7	8.7	227.3	4.4	225.8	3.9	226.9	3.9	162.2	4.3	179.3	8.4	189.1	7.6	224.6	8.4	50
100	271.6	9.1	221.5	5.2	223.5	4.4	226.9	4.0	177.2	6.7	198.8	10.4	199.9	9.7	225.7	8.9	100
150	265.7	11.5	220.8	5.8	220.8	5.0	226.6	4.5	184.2	9.2	204.4	11.4	202.4	12.0	226.6	9.7	150
200	259.2	15.0	228.8	6.2	228.3	5.3	226.1	5.3	188.5	11.1	205.9	12.3	204.1	14.2	227.6	10.9	200
250	267.1	12.5	231.2	6.9	230.5	6.4	222.4	6.6	191.6	12.7	200.4	12.6	205.9	15.2	225.0	12.4	250
300	341.7	7.8	235.7	7.7	231.2	7.4	225.5	7.6	194.5	13.7	197.1	13.4	207.6	16.1	223.9	13.7	300
350	316.3	7.0	244.5	8.9	232.6	8.0	233.7	8.6	194.0	14.9	200.5	14.9	212.1	16.9	224.8	14.5	350
400			246.1	8.8	235.7	8.7	236.9	8.2	193.8	15.9	203.2	16.4	218.9	17.7	226.2	14.9	400
450			248.4	8.3	245.0	8.9	240.2	8.4	197.8	16.3	206.5	17.7	222.5	18.9	226.4	15.7	450
500			249.6	8.0	249.4	9.2	243.0	9.0	201.8	17.5	209.5	18.9	224.0	20.4	226.1	16.7	500
550					254.5	9.2			205.4	19.2	210.9	20.2	225.0	21.5	226.2	17.2	550
600					258.0	10.0			207.4	20.6	212.4	21.5	225.7	22.2	226.8	17.8	600
650					259.1	11.1			209.1	21.9	216.7	22.9	226.5	22.9	227.7	18.3	650
700									213.1	22.8	220.6	24.4	227.3	23.7	227.3	18.3	700
750									217.0	23.2	221.8	24.9	228.1	24.6	227.3	18.4	750
800									221.9	21.7			230.5	23.2	232.1	20.8	800
850									221.2	24.0			233.8	21.4	234.0	22.3	850
900									221.8	25.1					234.5	22.9	900
950									224.4	24.4							950
1000									224.7	24.5							1000
1050									225.5	24.3							1050
1100									227.0	23.7							1100

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-1 25 Apr 70 0730 EST Single		Ascn H-2 25 Apr 70 0800 EST Single		Ascn H-3 25 Apr 70 0830 EST Single		Ascn H-4 25 Apr 70 0900 EST Single		Ascn H-5 25 Apr 70 0930 EST Single		Ascn H-6 25 Apr 70 1000 EST Single		Ascn H-7 25 Apr 70 1030 EST Single		Ascn H-8 25 Apr 70 1100 EST Single		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	190.0	2.2	220.0	1.3	240.0	1.7	250.0	1.7	230.0	3.1	250.0	4.9	240.0	2.6	240.0	2.2	Sfc
50	213.3	4.6	218.4	3.2	244.1	4.9	228.6	3.5	232.6	6.3	233.3	6.1	245.4	4.7	261.1	3.6	50
100	216.9	5.2	217.0	3.7	237.0	4.6	229.6	5.0	226.9	5.1	243.6	4.5	237.0	4.8	263.3	5.7	100
150	222.4	6.3	220.8	4.6	227.5	4.5	230.4	6.0	226.5	4.7	250.0	3.9	232.1	4.9	265.6	7.6	150
200	227.8	7.9	226.2	6.0	216.9	4.7	231.2	6.4	232.4	5.0	247.1	4.0	230.2	5.0	268.0	9.6	200
250	236.1	9.4	244.6	7.3	226.6	6.5	236.5	6.2	239.7	5.1	243.7	4.6	239.3	4.1	268.5	9.3	250
300	246.4	10.6	256.7	9.0	236.9	8.0	242.8	6.6	245.2	5.3	247.2	5.4	249.3	3.5	268.5	8.9	300
350	263.2	11.7	261.6	10.9	253.4	8.7	247.3	8.6	246.2	5.9	260.8	6.8	248.3	3.3	267.9	8.8	350
400	270.7	11.9	265.3	10.5	263.3	9.5	253.1	9.8	255.4	7.0	265.3	8.3	257.8	4.1	265.3	9.4	400
450	274.7	11.6	268.6	9.7	270.1	10.1	259.7	10.7	264.4	8.4	267.0	9.6	265.6	5.3	263.0	9.9	450
500	274.0	11.3	267.5	10.5	274.7	10.5	269.0	11.1	271.5	9.9	267.7	10.3	269.9	5.9	263.4	9.5	500
550	274.2	10.7	267.2	10.8	276.4	11.1	275.0	11.4	275.2	10.8	271.3	11.0	270.0	6.9	265.4	9.6	550
600	274.8	10.1			277.0	11.7	279.3	11.6	277.1	11.6	275.2	11.8	269.2	7.8	268.1	9.8	600
650					278.3	11.5	282.2	11.5	276.2	13.1	276.1	12.6	270.0	7.2	271.1	8.9	650
700					282.2	11.7	284.2	12.1	277.8	14.7	277.6	12.9	273.5	7.7	275.4	8.4	700
750					285.8	12.1	285.3	12.9	279.6	15.8	279.6	13.0	278.7	8.4	276.9	9.3	750
800					287.2	12.8	285.7	13.2	280.5	15.8	282.0	13.1	286.8	8.8	273.2	12.7	800
850					286.9	14.0	285.4	14.4	281.2	15.9	284.6	12.7	292.8	9.2	276.3	14.6	850
900					287.0	15.3	285.8	15.4	282.1	15.8	286.7	12.2	296.1	9.6	279.2	15.4	900
950					287.7	16.3	286.9	16.0	283.3	15.4	288.2	11.8	296.8	10.1	281.7	15.1	950
1000					289.7	16.4	287.7	16.5	284.9	15.8	289.3	12.3	294.3	11.3	282.1	15.4	1000
1050					290.7	16.6	288.8	16.9	286.5	15.4	288.7	12.7	293.7	12.1	277.9	16.6	1050
1100					291.7	16.5	289.2	17.4	287.9	14.7	288.9	12.9	293.5	12.8	277.9	16.8	1100
1150					293.6	15.7	288.1	18.4	288.7	14.4	292.7	12.7	292.6	14.2	293.9	14.0	1150
1200					294.4	16.2	290.4	17.6	288.4	14.7	292.8	13.8			294.0	10.8	1200
1250					296.0	16.3	291.7	16.9	288.8	15.2	292.4	15.2			297.0	8.1	1250
1300					298.4	16.0	291.6	16.4	289.8	15.6	292.2	16.6			308.6	6.5	1300
1350					299.4	15.2	292.6	17.0	291.1	14.8	293.4	16.4			314.8	5.4	1350
1400					298.9	16.1	294.5	16.6	292.2	14.9	293.2	16.8			318.9	5.0	1400
1450					298.3	17.3	296.2	16.1	292.9	15.1	292.7	17.2			320.6	4.9	1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-9 25 Apr 70 1130 EST Single		Ascn H-1 27 Apr 70 0635 EST Single		Ascn H-2 27 Apr 70 0700 EST Single		Ascn H-3 27 Apr 70 0730 EST Single		Ascn H-4 27 Apr 70 0800 EST Single		Ascn H-5 27 Apr 70 0830 EST Single		Ascn H-6 27 Apr 70 0900 EST Single		Ascn H-7 27 Apr 70 0930 EST Single		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	220.0	6.2		0.0		0.0		0.0		0.0		0.0	180.0	0.8		0.0	Sfc
50	246.5	6.4	070.5	3.4	081.8	2.6	066.9	1.5	073.9	2.0	099.5	1.9	162.6	1.9	176.2	1.3	50
100	251.6	8.6	106.0	3.1	105.0	2.7	102.2	1.8	093.5	2.0	097.9	2.0	183.9	2.2	201.7	1.3	100
150	254.2	10.0	123.2	3.1	128.4	2.4	133.0	1.8	121.9	1.7	106.4	2.2	196.3	2.4	212.7	1.6	150
200	255.9	10.6	127.0	2.5	167.7	2.1	172.8	2.0	174.5	1.7	120.4	2.6	205.7	2.3	212.9	1.9	200
250	254.1	9.4	152.2	2.2	190.7	2.7	198.3	3.0	197.8	2.3	148.2	2.1	206.4	2.2	197.6	1.7	250
300	252.7	8.4	181.5	2.5	204.0	3.6	211.4	4.1	212.5	3.2	185.3	2.1	204.7	2.2	179.8	1.7	300
350	254.6	8.1	203.5	3.4	215.2	4.3	220.9	5.1	223.7	4.5	213.6	2.5	201.2	2.8	164.3	1.6	350
400	254.3	8.5	220.0	4.4	224.6	4.5	226.6	5.6	228.4	5.4	216.3	2.4	196.6	3.1	164.2	1.5	400
450	254.4	8.7	230.7	5.2	234.0	4.2	231.0	5.5	230.8	5.7	209.5	1.9	191.4	3.3	166.8	1.4	450
500	260.5	6.9	239.3	4.0	247.1	2.7	234.3	3.6	230.1	4.5	192.9	1.5	184.1	3.0	154.2	1.7	500
550	259.7	6.6	242.1	3.1	244.8	1.7	233.0	2.3	227.7	2.9	149.9	1.2	179.3	2.2	161.3	1.8	550
600	257.2	6.7	239.3	2.3	224.7	1.2	223.1	1.3	218.0	1.4	111.4	1.7	164.3	1.3	163.5	1.9	600
650	264.9	5.7	233.6	1.7	232.7	1.0	212.0	0.9	188.0	0.9	095.7	1.8	119.6	1.7	124.3	2.5	650
700	264.5	5.6	235.0	1.4	237.5	0.8	198.0	0.7	134.7	0.8	091.7	2.0	108.1	2.2	114.7	2.9	700
750	261.8	5.8	239.6	1.3	244.0	0.5	178.1	0.5	108.3	1.1	090.1	2.0	106.2	2.6	112.2	3.0	750
800	261.4	6.0	242.6	1.1	281.6	0.1	127.9	0.3	112.5	1.1	084.7	1.8	109.1	2.5	113.3	2.9	800
850	265.7	4.7	248.5	0.7	012.4	0.4	107.8	0.3	111.9	0.9	069.3	1.9	105.1	2.4	102.3	2.3	850
900	276.4	4.2	275.7	0.3	016.7	0.8	079.6	0.2	101.7	0.7	059.4	2.3	102.3	1.9	089.1	2.0	900
950	287.8	4.6	330.1	0.4	011.7	0.9	013.1	0.2	065.3	0.5	055.4	2.7	093.5	1.1	080.6	2.0	950
1000	298.1	3.5	352.9	0.8	000.8	0.8	344.7	0.4	022.0	1.1	055.4	3.0	072.2	3.0	075.8	1.6	1000
1050	285.7	4.4	000.4	1.0	348.7	1.1	342.9	1.1	021.2	1.7	052.4	2.7	069.4	2.9	064.6	1.2	1050
1100	276.7	7.0	002.4	1.1	343.8	1.7	345.7	1.9	021.9	2.1	044.8	2.2	065.3	1.8	049.8	0.9	1100
1150	276.7	10.7	356.5	1.1	343.2	2.5	352.0	2.2	015.2	1.9	029.8	1.9	042.4	0.7	042.3	0.7	1150
1200	276.4	11.2	345.1	2.0	348.2	2.8	355.8	2.4	001.6	1.9	017.8	1.7	036.9	1.6	060.5	0.9	1200
1250	278.3	11.1	343.0	2.7	353.6	3.0	354.5	2.4	352.6	1.9	015.8	1.6	039.4	1.8	076.1	1.1	1250
1300	282.2	10.8	344.7	3.1	358.6	2.9	347.7	2.1	350.2	1.7	026.2	1.6	050.1	1.1	093.6	1.1	1300
1350	283.6	10.7	349.0	3.3	352.1	2.9	339.3	2.1	009.0	1.6	042.6	1.9	064.4	1.4	102.6	1.5	1350
1400	285.8	9.5			349.6	2.7	341.1	1.9	014.1	1.6	053.4	2.1	070.9	1.6	097.7	1.4	1400
1450	288.1	8.4			349.1	2.6	346.0	1.8	013.7	1.6	059.2	2.3	074.1	1.7	089.6	1.3	1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-8 27 Apr 70 1000 EST Single		Ascn H-9 27 Apr 70 1030 EST Single		Ascn H-10 27 Apr 70 1100 EST Single		Ascn H-1 28 Apr 70 0630 EST Double		Ascn H-2 28 Apr 70 0700 EST Double		Ascn H-3 28 Apr 70 0730 EST Double		Ascn H-4 28 Apr 70 0800 EST Double		Ascn H-5 28 Apr 70 0830 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	068.4	0.7	236.6	0.5	268.7	1.6	199.4	1.8	181.5	2.3	149.6	1.8	124.1	1.1	133.6	0.6	50
100	072.5	0.5	224.3	1.4	261.5	1.2	203.6	3.7	193.6	4.1	159.6	3.1	145.0	1.5	174.2	1.2	100
150	033.1	1.2	222.5	2.0	256.1	0.8	206.8	5.7	201.0	4.7	172.8	3.9	162.2	2.0	212.3	1.9	150
200	021.8	3.0	222.3	2.4	253.2	0.3	214.0	6.7	209.1	5.4	183.0	4.3	174.7	2.7	217.2	2.9	200
250	248.6	2.0	212.9	1.9	281.6	0.5	220.7	7.3	213.9	6.2	192.0	4.7	185.9	3.6	216.5	3.7	250
300	229.7	5.0	194.7	1.5	279.5	0.6	225.5	7.4	214.7	6.8	199.3	5.0	193.8	4.2	217.5	4.4	300
350	232.7	2.4	176.6	1.8	230.3	0.5	229.7	7.2	219.8	6.1	206.0	4.8	198.9	4.5	221.7	5.2	350
400	192.7	0.8	180.5	2.6	212.3	1.0	230.0	8.0	213.5	6.4	206.3	5.6	205.5	4.4	220.5	5.2	400
450	116.4	1.5	184.3	3.5	208.5	1.4	228.6	7.8	212.3	5.8	206.4	4.9	213.3	4.2	218.8	5.0	450
500	107.0	2.3	178.9	3.6	197.7	1.3	230.5	7.7	214.5	5.2	204.7	4.1	200.0	4.2	218.2	4.8	500
550	108.0	2.6	175.8	3.2	179.5	1.1	231.8	7.4	218.3	5.1	203.8	3.5	203.1	3.1	219.6	4.6	550
600	111.1	2.7	169.8	2.4	159.6	1.1	235.0	6.4	223.4	4.8	203.4	2.9	195.6	2.5	213.5	5.2	600
650	111.4	2.8	141.8	1.8	155.7	1.0	241.1	5.2	229.4	4.2	198.1	2.4	176.5	2.1	214.9	3.8	650
700	117.9	2.6	120.2	1.9	146.4	1.1	242.0	5.0	233.1	3.3	191.0	2.3	160.8	2.6	216.4	2.2	700
750	127.3	2.3	111.4	2.2	148.6	1.3	233.4	4.3	228.6	2.4	174.9	3.2	159.9	3.7	194.9	2.4	750
800	134.5	2.2	110.6	2.2	175.2	1.3	219.2	3.7	213.2	2.1	165.3	4.4	161.5	4.9	169.3	2.3	800
850	118.1	2.0	115.5	1.9	163.0	1.2	210.2	3.1	201.4	2.6	161.2	4.8	159.9	5.3	158.0	3.0	850
900	105.3	1.8	116.7	1.8	158.5	0.9	204.6	2.5	188.4	2.8	161.3	5.3	160.3	5.4	154.9	3.8	900
950	097.7	1.5	112.4	1.9	185.0	0.4	197.4	2.2	166.4	3.4	163.2	6.4	162.2	6.0	154.6	4.3	950
1000	076.7	1.0	101.2	1.7	242.5	0.6	169.6	2.3			162.3	5.5	163.9	6.6	148.8	4.4	1000
1050	058.9	0.7	092.6	1.7	251.5	0.9	164.4	3.2			160.8	5.9	162.3	5.9	155.4	5.2	1050
1100	049.8	0.5	088.9	1.7	252.7	1.0	158.0	3.4			158.1	5.9	162.6	6.2	158.1	5.8	1100
1150	058.3	0.3	091.3	1.5	255.0	1.3	153.0	3.4			154.4	5.7	162.4	6.4	154.7	5.5	1150
1200	105.7	1.0	085.2	1.5	260.3	1.3	157.8	3.8			151.7	5.9	160.6	6.2	156.7	6.0	1200
1250	113.4	1.4	090.9	1.1	262.7	1.4							154.2	5.3	154.1	6.2	1250
1300	117.3	1.3	133.5	0.6	262.3	1.4									150.5	6.3	1300
1350	112.3	1.1	159.2	0.5	260.6	1.4											1350
1400	115.6	0.4	147.3	0.5	262.3	1.4											1400
1450	270.5	0.2	125.8	0.5	264.6	1.4											1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-6 28 Apr 70 0900 EST Double		Ascn H-7 28 Apr 70 0930 EST Double		Ascn H-8 28 Apr 70 1000 EST Double		Ascn H-9 28 Apr 70 1030 EST Double		Ascn H-1 29 Apr 70 0800 EST Single		Ascn H-1 30 Apr 70 0630 EST Double		Ascn H-2 30 Apr 70 0700 EST Double		Ascn H-3 30 Apr 70 0730 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	Sfc
50	174.6	1.2	245.3	2.1	240.4	2.5	253.0	4.3	186.3	2.6	137.6	4.3	121.6	2.3	117.6	2.5	50
100	193.9	1.4	245.6	2.0	246.8	2.5	250.9	4.4	190.7	3.5	151.4	4.3	145.5	3.9	132.9	3.1	100
150	200.7	1.9	236.4	2.1	250.5	2.8	245.9	3.8	197.4	4.0	164.2	4.5	158.6	4.1	144.6	3.8	150
200	206.2	2.6	213.6	2.5	250.5	3.5	209.9	5.4	206.6	4.3	174.4	5.1	164.9	5.3	155.9	4.8	200
250	214.0	3.5	223.4	3.2	243.0	4.8	218.6	5.0	216.5	5.0	178.0	6.9	169.2	5.4	162.6	5.0	250
300	220.8	3.8	220.0	3.8	237.0	5.8	223.5	4.9	223.2	5.6	183.2	7.2	179.6	5.7	172.3	4.9	300
350	217.9	4.4	218.8	4.3	231.3	6.5	224.2	5.0	226.7	6.0	189.9	7.2	190.1	6.0	188.9	5.1	350
400	214.0	4.9	216.4	4.9	226.8	7.3	222.8	5.0	233.1	6.1	197.7	7.2	199.1	6.5	197.1	5.8	400
450	212.6	5.1	213.3	5.5	224.4	8.1	211.9	4.8	240.4	5.9	199.4	6.7	205.6	7.4	204.8	6.9	450
500	214.7	5.7	214.2	5.8	221.1	8.1	201.9	5.0	247.7	5.1	205.5	5.9	211.0	8.4	212.0	7.4	500
550	211.7	5.5	216.0	6.3	217.2	7 9	200.6	5.4	252.8	5.0	207.0	5.6	217.4	6.8	222.1	6.8	550
600	207.3	5.0	216.5	6.6	212.5	7.6	204.8	5.9	256.0	4.8	205.0	5.6	216.6	6.8	224.4	6.3	600
650	203.9	4.7	214.1	6.1	208.3	7.4	210.6	6.5	265.8	2.5	207.5	5.2	216.3	6.6	224.0	6.0	650
700	202.6	5.1	211.5	3.9	204.8	7.1	214.9	7.3			215.9	4.0	217.2	6.1	222.5	5.8	700
750	200.1	4.0	203.3	2.4	204.9	7.5	214.5	7.7			203.9	4.9	213.2	6.2	220.9	5.7	750
800	196.3	2.8	197.4	6.3	206.7	7.7	215.5	8.2			201.2	4.1	213.7	5.6	218.3	4.8	800
850			196.2	10.0	208.4	7.9	209.6	7.0			200.6	3.2	213.7	4.9	212.8	4.4	850
900			194.6	7.7	208.4	8.1	204.7	6.7			202.4	2.7	214.0	4.1	209.9	3.8	900
950			191.7	5.4	202.9	6.3	200.4	6.3			214.3	2.1	216.3	3.2	213.5	2.7	950
1000			187.1	5.0	197.6	5.4	195.8	6.0			248.4	1.3	219.8	2.8	217.9	1.9	1000
1050			185.0	5.2	199.5	6.1	196.5	7.3			272.5	1.3	223.5	2.2	228.4	1.3	1050
1100			185.7	5.8	200.4	6.3	195.1	7.5			274.2	1.3	252.6	1.6	228.6	1.1	1100
1150			183.1	6.5	198.0	5.8	193.4	7.3			280.8	1.1	283.5	1.5	212.6	1.1	1150
1200			181.2	6.7	196.6	6.4	191.2	6.6			306.0	1.2	274.5	1.1	206.1	0.7	1200
1250			179.9	6.6	196.4	7.8	190.2	8.1			309.0	1.3	308.1	1.0	213.5	0.2	1250
1300			180.7	6.7	194.5	8.1	189.9	8.6			308.1	1.4			224.6	0.3	1300
1350			183.3	8.1	189.8	7.0									209.0	1.0	1350
1200			184.7	9.2													1400

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-4 30 Apr 70 0800 EST Double		Ascn H-5 30 Apr 70 0830 EST Double		Ascn H-6 30 Apr 70 0900 EST Double		Ascn H-7 30 Apr 70 0930 EST Double		Ascn H-8 30 Apr 70 1000 EST Double		Ascn H-9 30 Apr 70 1030 EST Double		Ascn H-1 1 May 70 0612 EST Double		Ascn H-2 1 May 70 0630 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0	170.0	1.7	170.0	2.2	180.0	2.2		0.0		0.0		0.0	Sfc
50	120.9	3.4	146.4	4.8	137.2	6.9	156.3	5.1	160.1	4.8	203.2	1.5	181.7	3.4	183.8	3.7	50
100	130.2	3.5	158.6	4.5	138.9	5.8	160.4	4.5	162.9	5.1	197.0	1.7	190.6	5.3	194.9	5.6	100
150	140.8	3.7	169.1	4.4	143.6	4.9	167.4	4.4	165.4	5.4	191.5	1.9	191.4	6.7	197.1	7.3	150
200	153.6	4.3	166.2	4.7	151.8	4.3	178.3	4.6	168.9	5.2	183.3	1.8	190.4	8.0	197.1	8.7	200
250	160.1	4.9	165.9	4.8	155.3	4.9	185.0	4.9	172.6	5.0	173.7	1.7	190.7	9.0	200.4	10.3	250
300	165.3	5.5	167.3	4.9	166.3	5.2	179.9	6.6	176.3	4.8	164.3	1.8	191.1	9.9	201.9	11.7	300
350	171.9	6.0	166.1	4.6	174.6	5.8	189.6	5.6	178.9	4.8	156.3	2.0	194.8	11.0	200.3	12.5	350
400	189.0	6.2	177.7	5.6	181.1	5.7	192.3	5.0	181.3	4.9	161.8	2.4	198.5	12.1	201.7	12.8	400
450	204.0	6.6	194.5	6.5	198.2	4.4	191.0	4.9	184.9	4.4	168.0	2.7	206.4	12.2	203.8	12.8	450
500	215.5	6.6	207.6	6.5	203.1	4.2	197.3	5.2	189.4	4.0	171.0	2.8	209.2	13.5	207.6	13.8	500
550	224.5	5.8	212.0	5.8	203.4	4.3	206.3	5.6	187.0	4.4	173.3	2.7	213.3	15.4	212.2	15.7	550
600	222.1	6.0	211.6	5.5	199.3	4.6	211.8	6.5	183.0	5.2	176.4	3.3	219.3	16.1	216.3	17.4	600
650	222.0	5.8	210.3	5.3	197.8	4.7	221.6	6.8	193.7	6.3	178.6	4.3	226.2	16.3	222.4	17.1	650
700	223.3	5.4	207.3	5.0	197.5	4.7	228.7	6.8	206.5	6.8	183.8	4.4	234.6	16.3	235.6	14.3	700
750	225.1	4.8	202.4	4.8	195.9	4.8	229.9	6.4	215.3	7.2	195.7	4.9	238.9	17.2	229.5	21.1	750
800			198.4	4.5	192.9	4.8	226.3	6.5	210.7	7.8	216.0	6.8	240.5	17.7			800
850			197.4	3.9	189.8	4.9	221.7	7.2	208.0	7.9	217.7	7.2	247.9	15.6			850
900			204.6	3.0	186.4	4.7	218.3	7.2	207.5	7.4	219.9	8.0	244.5	17.8			900
950			208.1	2.9	182.7	4.6	217.4	6.7	203.9	6.8	220.5	7.8	242.5	19.4			950
1000			210.9	2.8	183.7	4.0	216.8	5.8	201.7	5.9	217.8	7.9					1000
1050			211.4	2.7	185.2	3.4	211.3	5.2	201.3	5.6	215.2	7.9					1050
1100			208.0	3.0	190.3	3.1	204.9	5.2	201.4	5.4	214.6	7.4					1100
1150			203.4	3.4	194.8	2.8			200.2	4.9	213.7	7.1					1150
1200			212.3	2.0	192.0	2.6			199.6	4.5	210.4	7.3					1200
1250			201.8	2.8	185.3	2.7			197.6	4.3	208.2	6.5					1250
1300					178.4	3.2			196.3	4.2	206.3	5.6					1300
1350					189.2	2.7			200.4	3.9	205.2	5.5					1350
1400					203.0	2.6			199.7	5.0	204.7	4.7					1400
1450					206.5	3.3					203.7	5.1					1450
1500					215.6	3.3					203.1	5.7					1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-3 1 May 70 0700 EST Double		Ascn H-4 1 May 70 0730 EST Single		Ascn H-5 1 May 70 0800 EST Combined		Ascn H-6 1 May 70 0830 EST Double		Ascn H-7 1 May 70 0900 EST Single		Ascn H-8 1 May 70 0930 EST Double		Ascn H-9 1 May 70 1000 EST Single		Ascn H-10 1 May 70 1030 EST Single		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0	310.0	6.2	225.0	1.7	265.0	1.3	235.0	3.5	235.0	10.2	235.0	7.1	Sfc
50	161.0	3.0	128.9	0.3	199.4	6.5	195.5	4.7	131.5	0.3	231.1	7.2	141.7	1.7	135.6	1.0	50
100	183.1	4.0	141.3	2.4	203.2	7.4	199.2	6.3	143.2	2.3	226.3	8.3	172.1	12.1	159.6	7.5	100
150	193.2	5.6	200.3	4.2	203.4	8.1	201.3	7.4	216.1	3.7	223.5	8.7	202.9	17.4	193.9	11.4	150
200	197.3	7.2	189.2	6.0	202.0	8.7	203.2	7.6	186.1	6.6	222.2	8.1	208.5	18.0	199.1	12.9	200
250	198.5	8.7	190.2	8.5	198.9	8.9	207.3	7.2	202.5	6.1	219.2	7.9	222.0	16.9	203.9	13.3	250
300	198.8	10.0	192.3	10.4	202.0	9.9	211.3	7.1	222.0	6.2	214.1	8.2	229.1	18.4	207.5	14.0	300
350	198.4	11.0	196.5	10.6	204.2	10.5	214.5	8.7	230.2	7.0	213.5	9.3	220.1	24.5	208.8	15.6	350
400	201.3	12.1	200.2	11.2	204.3	10.9	213.5	10.6	223.2	8.7	215.2	10.8	217.6	29.7	211.3	16.1	400
450	207.2	13.4	204.3	12.0	205.1	11.5	209.9	12.5	216.2	10.9	216.4	12.0	217.2	31.6	214.4	16.0	450
500	210.8	13.5	210.9	13.5	209.8	10.7	215.3	12.4	216.2	13.2	217.3	13.0	219.4	22.1	217.6	14.7	500
550	214.1	14.5	214.9	14.7	218.5	11.4	219.8	12.9	218.6	13.0	217.7	14.2	220.4	17.9	223.3	11.7	550
600	216.0	16.7	218.2	15.8	198.2	14.5	218.8	15.3	222.3	12.4	217.3	16.2	219.7	16.1	230.6	8.9	600
650	215.1	20.3	223.1	17.0	173.3	24.6	221.0	16.1	224.0	14.1	219.0	15.5	216.9	13.9	224.4	9.6	650
700	223.1	18.1	226.2	18.0	211.3	17.0	224.8	17.1	228.6	14.3	222.4	13.7	219.4	12.9	220.7	10.5	700
750	241.2	14.1	229.3	18.7	233.3	16.6	228.5	18.9	234.3	14.1	223.0	14.9	223.5	11.9	219.7	11.8	750
800	239.3	17.1	233.4	19.0	238.7	16.0	235.1	16.8	239.4	13.8	225.1	15.9	225.9	9.7	221.7	14.2	800
850	243.2	17.3	235.6	19.5	241.3	15.2	240.1	15.6	240.0	14.3	227.7	15.9	234.1	6.3	219.9	16.5	850
900	252.5	15.6	238.4	19.4	245.6	15.6			241.0	14.2	231.0	15.3	236.3	6.8	218.6	15.4	900
950	250.6	16.2	242.2	18.7	249.3	15.3			243.0	13.6	231.5	16.4	230.4	11.1	218.1	11.2	950
1000			246.9	17.5	252.2	14.4			243.2	12.4	233.4	16.2	226.7	15.9	225.2	8.2	1000
1050			250.1	16.5	251.1	13.9			242.0	12.1	237.3	13.9	226.9	16.2	231.7	6.4	1050
1100			253.4	15.6	248.2	14.5			240.4	11.8	242.1	11.5	227.1	16.2	230.9	6.7	1100
1150			258.4	14.7	246.8	15.0			239.5	11.1	240.0	12.2	225.0	20.3	222.1	10.5	1150
1200			258.5	14.3	247.6	15.0			237.8	11.9	238.1	12.8	228.7	15.3	227.0	10.0	1200
1250			256.7	13.8	251.3	13.8			239.0	12.0	236.6	13.3	234.5	13.6	228.0	12.6	1250
1300			253.1	13.3	248.7	14.2			243.2	11.5	239.6	10.6	238.1	16.1	226.5	18.7	1300
1350			248.2	14.4	245.7	15.0			245.7	11.8	249.0	4.9	241.3	19.0	231.2	24.6	1350
1400			245.9	13.5					246.6	11.9			244.5	18.3	232.7	28.1	1400
1450			244.7	12.3					246.8	12.0			247.5	16.8	233.1	29.8	1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-1 2 May 70 0600 EST Double		Ascn H-1 4 May 70 0600 EST Double		Ascn H-2 4 May 70 0630 EST Double		Ascn H-3 4 May 70 0700 EST Double		Ascn H-4 4 May 70 0730 EST Double		Ascn H-5 4 May 70 0800 EST Double		Ascn H-6 4 May 70 0830 EST Double		Ascn H-7 4 May 70 0900 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	265.0	2.6		0.0		0.0		0.0		0.0		0.0	225.0	0.8	200.0	0.8	Sfc
50	333.4	4.0	163.3	1.3	204.5	1.0	172.8	1.4	247.7	0.4	168.2	1.3	185.7	1.7	206.0	3.0	50
100	338.6	5.2	197.2	2.2	208.7	2.4	198.9	2.6	220.9	1.3	192.8	1.4	209.0	1.8	213.4	3.3	100
150	337.7	6.4	207.0	3.0	217.5	3.7	213.2	3.6	229.0	2.5	210.7	2.3	213.8	2.4	224.4	3.4	150
200	341.4	6.5	211.6	2.9	219.7	3.2	216.1	3.5	231.1	3.0	213.5	3.1	206.9	2.9	242.1	3.4	200
250	344.1	6.5	216.7	2.4	229.0	3.0	222.1	3.1	235.2	2.9	215.0	3.0	224.6	2.0	251.0	3.6	250
300	345.0	6.1	223.2	2.5	239.0	3.3	237.3	3.3	249.6	2.7	229.0	2.7	220.3	3.2	253.7	3.6	300
350	351.7	5.8	228.2	2.7	243.4	3.6	251.6	3.3	253.0	3.0	236.9	2.7	217.9	2.3	264.3	3.4	350
400	000.5	5.5	231.7	2.9	244.0	3.8	248.4	3.4	257.7	3.0	240.9	2.6	227.6	2.0	265.9	3.8	400
450	359.1	4.2	234.2	3.0	245.0	3.4	246.2	3.2	262.1	3.0	246.1	2.3	246.3	2.2	263.6	4.5	450
500	356.8	3.0	235.8	2.9	245.0	3.0	246.2	2.8	266.0	3.1	256.9	2.2	261.2	2.8	263.7	4.1	500
550	351.9	1.8	240.7	2.8	246.6	2.8	241.2	2.5	271.3	3.0	266.1	2.3	268.3	2.5	263.6	3.3	550
600			239.4	3.2	246.8	2.8	248.6	2.4	282.9	3.2	278.4	2.6	275.6	1.9	263.6	2.2	600
650			239.6	3.4	245.0	2.9	252.0	2.5	288.8	3.7	283.9	2.9	304.6	1.7	279.9	1.4	650
700			250.4	2.9	258.2	2.6	265.4	2.4	291.9	3.8	280.7	2.7	336.2	2.9	316.3	1.6	700
750			286.2	2.9			299.9	2.5	292.6	3.2	292.3	2.4	342.6	3.2	334.0	2.3	750
800							317.8	3.2	285.9	3.1			350.8	3.3	344.3	2.8	800
850							336.5	3.4	313.6	2.8			358.5	3.3	349.5	2.9	850
900							353.2	3.7	341.6	3.0			008.5	3.1	353.6	2.7	900
950							002.1	4.3	006.6	3.3			024.6	3.2	008.5	2.2	950
1000							008.8	4.6	014.7	3.5			014.7	2.9	027.3	1.9	1000
1050									023.7	3.7			358.7	3.0	040.8	1.8	1050
1100									033.0	3.9					041.1	1.8	1100
1150									039.7	3.2					015.5	1.8	1150
1200									035.9	2.6					357.5	2.1	1200
1250									030.0	2.3					346.7	2.4	1250
1300									026.3	2.1					343.2	2.7	1300

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-8 4 May 70 0930 EST Double		Ascn H-9 4 May 70 1000 EST Double		Ascn H-10 4 May 70 1030 EST Double		Ascn H-11 4 May 70 1100 EST Double		Ascn H-1 5 May 70 0615 EST Double		Ascn H-2 5 May 70 0630 EST Double		Ascn H-3 5 May 70 0700 EST Double		Ascn H-4 5 May 70 0730 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	265.0	2.6	235.0	0.8	255.0	3.1	180.0	1.3		0.0		0.0	215.0	0.8	205.0	2.6	Sfc
50	254.9	2.0	193.9	3.0	222.1	3.9	176.7	2.9	210.0	3.6	219.9	3.9	212.9	3.2	211.9	4.7	50
100	249.1	2.4	197.8	2.7	219.7	3.1	183.4	2.6	214.6	6.0	221.4	6.4	218.0	5.2	214.3	5.9	100
150	245.3	2.9	207.0	2.3	226.3	3.0	180.0	2.6	221.7	7.5	229.0	7.3	223.2	6.6	216.9	7.0	150
200	245.0	3.1	225.5	2.1	235.7	3.0	170.1	2.7	228.4	7.9	238.3	7.4	230.8	7.4	223.5	7.4	200
250	246.9	3.1	245.3	2.2	249.0	2.3	172.5	2.6	235.1	7.6	247.8	6.7	239.7	6.7	227.9	7.1	250
300	248.8	3.1	256.2	2.3	259.2	2.3	169.6	2.6	241.6	6.8	254.8	5.8	243.4	5.8	231.6	6.8	300
350	247.0	3.0	266.2	2.4	266.3	2.6	180.0	2.4	252.2	5.9	256.5	4.9	246.2	5.6	235.5	7.3	350
400	239.7	2.8	272.7	2.6	276.3	3.3	183.1	2.4	257.8	5.2	254.5	4.1	251.5	7.0	246.2	9.1	400
450	231.4	2.7	268.4	2.8	279.0	3.5	185.8	2.6	260.7	4.4	248.7	4.2	250.9	9.5	249.8	11.1	450
500	228.0	2.6	264.8	3.1	276.7	3.3	191.4	3.0	260.2	3.4	251.5	6.1	254.9	10.1	253.0	11.8	500
550	238.7	2.5	260.4	3.0	261.8	2.6	197.1	3.5	254.5	4.0	252.9	7.5	256.2	10.5	254.0	12.3	550
600	248.9	2.3	268.8	2.3	258.8	1.7	197.1	4.0	253.1	5.7	252.8	8.2	254.7	11.0	253.4	12.7	600
650	258.6	1.9	291.8	1.5	274.9	1.2	173.3	2.3	257.8	7.1	251.0	8.6	252.2	12.1			650
700	303.3	1.2	306.8	1.0	292.8	0.8	147.2	1.4	261.5	8.4	254.0	9.0	251.8	11.7			700
750	340.6	1.9	003.8	1.3	333.6	0.6	134.7	1.2	264.3	8.9	259.5	9.2	252.6	11.5			750
800	351.1	2.4	002.1	2.2	350.2	1.3	141.6	1.2	270.0	8.2	265.7	8.9	254.3	12.0			800
850	353.6	2.6	353.0	3.0	350.2	2.1	111.6	0.7	261.7	10.6	266.7	9.4	255.8	13.0			850
900	349.0	3.2	347.7	3.3	347.1	2.3	009.9	1.1	272.7	8.1	263.3	11.4	261.4	10.5			900
950	342.7	4.1	344.1	3.1	347.0	2.1	355.7	1.4	266.0	10.2	273.6	8.2	258.8	13.1			950
1000			345.5	2.9	337.9	2.1	347.2	1.3			269.5	9.7	256.5	15.8			1000
1050			351.0	2.5	331.1	2.1	341.7	1.8			267.4	12.0					1050
1100			356.5	2.0	018.5	1.4	337.7	1.9									1100
1150			006.9	1.6	350.4	1.5	337.7	1.9									1150
1200			004.7	1.3	338.0	1.5	339.9	2.0									1200
1250			351.0	1.2													1250
1300			348.7	1.5													1300
1350			340.1	1.6													1350
1400			335.6	1.9													1400
1450			336.9	2.5													1450
1500			334.7	3.3													1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-5 5 May 70 0800 EST Double		Ascn H-6 5 May 70 0830 EST Double		Ascn H-7 5 May 70 0900 EST Double		Ascn H-8 5 May 70 0930 EST Double		Ascn H-9 5 May 70 1000 EST Double		Ascn H-10 5 May 70 1030 EST Double		Ascn H-1 6 May 70 0800 EST Double		Ascn H-2 6 May 70 0830 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	235.0	2.6	245.0	3.1	250.0	4.0	225.0	6.2	255.0	8.9	240.0	6.2	290.0	2.2	280.0	4.9	Sfc
50	216.3	5.1	260.6	4.3	237.6	5.1	249.2	6.1	274.0	9.5	266.8	6.9	261.1	3.2	282.6	4.9	50
100	216.0	4.9	263.5	4.4	234.0	5.5	254.7	6.1	269.7	10.4	265.0	8.0	266.3	3.1	285.2	5.4	100
150	217.4	4.8	263.4	4.3	233.0	5.9	256.8	6.1	270.8	9.5	264.5	8.7	270.4	2.9	286.9	5.7	150
200	220.8	5.0	258.2	3.9	236.9	6.2	246.7	6.7	272.1	9.1	265.2	8.8	270.4	2.6			200
250	224.9	4.9	253.1	3.9	242.2	6.1	240.9	7.3	268.4	9.6	266.8	9.0	270.5	2.2			250
300	227.7	5.4	250.5	4.6	248.4	6.3	239.3	7.8	263.1	10.3	268.7	9.2	270.5	2.0			300
350	224.3	5.8	248.8	5.2	251.0	6.8	240.0	8.0	257.4	10.7	269.9	9.6	270.5	2.0			350
400	232.9	7.3			251.1	7.6	243.1	7.9	252.6	9.8	270.9	10.1					400
450	242.8	9.4			253.5	8.6	246.7	8.1	249.9	10.0	271.4	9.3					450
500	249.4	11.3			255.5	9.6	250.4	8.7			271.8	8.1					500
550					256.1	10.0	253.5	9.1			270.0	8.0					550
600					257.6	10.7	256.3	9.1			268.2	8.0					600
650					261.8	12.5	259.1	9.2			268.7	8.2					650
700					263.4	13.5	259.6	9.2			268.4	8.4					700
750											267.0	8.8					750
800											268.3	8.3					800
850											271.3	7.4					850
900											269.9	7.6					900
950											268.4	7.9					950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-3 6 May 70 0900 EST Double		Ascn H-1 7 May 70 0815 EST Double		Ascn H-2 7 May 70 0830 EST Single		Ascn H-3 7 May 70 0900 EST Single		Ascn H-4 7 May 70 0930 EST Double		Ascn H-5 7 May 70 1000 EST Double		Ascn H-1 8 May 70 0700 EST Double		Ascn H-2 8 May 70 0730 EST Single		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	325.0	6.2	220.0	1.3	230.0	1.3	260.0	1.3	250.0	4.0	240.0	1.3	230.0	0.8	245.0	0.8	Sfc
50	336.5	7.1	172.7	2.9	128.2	0.5	128.0	0.3	180.2	4.9	200.4	4.1	218.9	4.4	130.6	0.5	50
100	330.1	9.9	150.5	3.3	133.6	3.7	137.8	2.3	172.6	5.1	183.3	5.5	224.3	6.3	149.3	3.9	100
150	326.7	11.6	139.7	3.1	153.0	5.0	174.6	3.7	174.0	5.1	185.0	5.5	229.9	8.4	220.0	6.7	150
200	324.3	10.3	145.0	2.7	158.9	4.5	164.5	4.7	175.3	4.6	186.7	5.6	235.1	10.4	230.3	9.4	200
250	320.1	8.6	170.1	2.5	171.4	3.1	169.6	4.3	177.1	3.9	181.5	5.5	241.0	12.0	240.1	11.0	250
300	314.8	7.8	197.4	2.1	190.6	2.3	178.4	3.9	179.7	3.3	176.1	5.5	250.8	13.8	249.1	12.9	300
350	319.6	10.7	218.2	2.4	191.0	2.8	191.6	3.4	182.6	3.2	174.9	5.0	257.2	15.6	258.2	15.1	350
400	321.1	10.5	224.8	3.1	196.8	3.5	203.8	3.3	185.8	3.1	182.5	4.7	263.2	17.3	265.6	16.8	400
450	319.4	10.0	222.5	3.7	203.1	4.1	210.3	3.5	189.2	2.9	195.1	4.7	271.4	19.1	271.3	18.4	450
500			226.1	3.8	215.1	3.4	199.8	3.7	193.1	2.7	201.7	4.4	278.0	20.4	274.0	19.5	500
550			230.1	3.8	220.5	4.0	203.2	3.9	197.6	2.4	206.9	4.3	282.3	21.8	274.3	21.7	550
600			228.1	4.4	221.5	4.9	212.0	4.3	202.8	2.2	205.7	4.9	281.0	23.9	273.9	24.2	600
650			231.0	5.2	224.7	5.0	217.8	5.5	208.8	2.1	204.8	5.5	282.1	24.3	274.4	25.4	650
700			233.3	6.1	226.0	5.9	223.2	6.5	216.6	2.1	209.2	5.5	285.5	23.1	275.8	23.4	700
750			231.5	6.6	226.6	6.8	227.6	7.4	224.4	2.7	214.3	5.4	290.6	21.0	277.5	20.7	750
800			231.0	6.8	227.7	7.1	230.5	8.4	229.2	3.4	217.3	5.2	297.4	18.7	278.6	19.2	800
850					229.7	7.0	243.4	8.0	223.4	3.4	218.2	4.9	295.5	19.2	280.2	17.7	850
900					233.6	7.0	249.0	7.3	217.5	3.4	219.4	5.0	297.6	18.0	283.5	15.9	900
950					239.2	7.2	245.6	6.1	217.6	3.1	220.6	5.5	294.9	20.5	288.7	14.2	950
1000					243.9	7.1	251.3	6.1	218.9	2.7	221.2	5.8	291.6	24.5	290.1	14.2	1000
1050					245.2	7.3	252.4	6.4	224.2	2.6					290.8	14.1	1050
1100					245.4	7.5	253.3	6.8	231.2	2.7					292.6	13.7	1100
1150					246.9	7.8	257.7	7.1	236.4	2.9					298.7	12.5	1150
1200					249.0	8.2	258.1	8.1	236.4	2.9							1200
1250					251.0	8.6	262.0	9.0									1250
1300					253.2	8.8	267.0	10.1									1300
1350					258.7	9.9	259.2	12.3									1350
1400					262.3	11.2	257.3	13.6									1400
1450					264.1	12.1	257.3	14.2									1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-3 8 May 70 0800 EST Double		Ascn H-4 8 May 70 0830 EST Double		Ascn H-5 8 May 70 0900 EST Double		Ascn H-6 8 May 70 0930 EST Single		Ascn H-7 8 May 70 1000 EST Double		Ascn H-8 8 May 70 1030 EST Double		Ascn H-9 8 May 70 1100 EST Double		Ascn H-1 9 May 70 0600 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	195.0	0.8	225.0	3.1	230.0	4.0	240.0	6.2	235.0	7.1	245.0	6.2	235.0	8.0		0.0	Sfc
50	227.6	4.0	233.9	5.0	225.5	5.4	312.6	2.4	231.4	6.8	249.0	7.2	253.3	9.7	236.6	3.8	50
100	231.3	5.8	232.7	6.7	232.6	7.2	154.7	1.2	235.2	6.7	244.4	8.7	255.4	10.4	235.4	6.7	100
150	231.9	7.6	233.2	8.3	236.1	8.5	159.6	4.8	239.7	6.7	245.7	9.6	255.2	10.9	238.6	9.2	150
200	239.1	8.7	239.4	9.4	235.6	8.3	166.5	8.3	246.3	7.3	246.0	9.6	253.5	10.8	242.8	11.3	200
250	246.3	10.1	244.0	10.4	237.2	8.6	203.2	5.3	252.7	8.6	245.4	9.2	251.2	10.5	248.4	13.0	250
300	252.5	13.4	247.4	11.4	242.4	10.2	276.9	5.9	257.4	8.9	245.1	8.9	249.4	10.4	255.2	14.9	300
350	257.7	15.9	256.6	14.6	246.7	11.9	271.9	6.0	254.4	9.3	244.0	8.8	247.7	10.2	261.8	16.1	350
400	263.0	17.4	262.0	17.2	250.7	13.8	273.7	9.2	247.5	10.0	241.6	9.1	248.5	10.5	266.9	15.1	400
450	268.0	19.6	265.5	19.0	253.7	14.9	275.6	13.0			241.2	9.5	250.0	11.0	269.8	14.6	450
500	272.1	22.3	266.3	20.9	256.5	16.1	277.0	14.0			246.4	9.8	251.3	11.0	270.5	14.7	500
550	272.8	21.8	267.8	21.7	259.6	17.6	280.3	13.9			261.7	10.0	252.7	10.6			550
600	274.2	21.1	269.9	21.5	265.0	19.4	284.6	13.5					255.5	11.3			600
650	274.4	21.6	271.9	21.2	273.5	21.9	287.4	13.7					260.0	11.9			650
700	273.9	22.7	273.6	20.8	274.9	21.7	286.1	14.3					266.6	11.9			700
750	275.5	21.7	274.6	21.6	282.0	17.5	284.3	15.1					269.4	11.9			750
800	277.4	21.4	274.8	23.4			283.7	15.9					270.9	11.8			800
850	279.4	21.5	277.6	21.4			283.0	15.6					273.1	12.1			850
900	281.0	21.2	282.3	18.2			282.3	16.0					275.2	12.4			900
950	284.2	19.1	281.6	20.6			281.9	17.0					277.7	13.1			950
1000	288.7	16.0	284.1	20.3			281.3	16.7					279.0	14.2			1000
1050			284.9	21.4			281.3	16.7					278.6	16.3			1050
1100			287.3	20.0			281.4	16.8					280.6	16.2			1100
1150													284.3	14.7			1150
1200													280.4	17.4			1200
1250													280.5	17.4			1250
1300													282.4	15.8			1300
1350													284.9	13.8			1350
1400													282.2	15.0			1400
1450													282.4	15.3			1450

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-2 9 May 70 0630 EST Double		Ascn H-3 9 May 70 0700 EST Double		Ascn H-4 9 May 70 0730 EST Double		Ascn H-5 9 May 70 0800 EST Double		Ascn H-6 9 May 70 0830 EST Double		Ascn H-7 9 May 70 0900 EST Double		Ascn H-8 9 May 70 0930 EST Double		Ascn H-9 9 May 70 1000 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0	230.0	0.8	235.0	3.1	235.0	3.1	245.0	4.9	245.0	5.8	245.0	8.4	250.0	10.7	Sfc
50	235.9	4.0	233.1	3.6	231.4	5.5	234.0	4.3	240.1	7.3	230.8	6.8	244.0	8.3	261.6	10.7	50
100	237.9	6.8	236.3	6.7	234.4	6.4	235.3	5.1	243.0	7.4	234.0	7.0	247.4	8.3	263.2	11.1	100
150	240.7	9.4	238.0	9.0	237.8	7.5	236.6	5.8	239.0	7.6	240.8	7.0	252.2	7.7	256.2	9.6	150
200	244.5	11.6	240.6	10.8	241.1	8.8	242.6	7.8	239.6	8.0	244.9	7.3	258.0	7.5	250.0	9.6	200
250	249.9	13.5	247.8	12.8	246.0	10.5	248.2	10.7	241.5	8.4	248.0	7.6	267.1	7.6	246.2	10.5	250
300	255.7	15.1	255.6	14.1	250.2	12.4	251.6	11.5	243.8	8.5	255.0	8.3	277.4	8.4	243.5	11.4	300
350	262.0	16.1	262.7	14.5	254.8	13.1	252.4	12.5	249.2	9.3	260.7	9.1	270.3	10.0	243.2	11.6	350
400	266.4	15.6	269.1	14.3	259.5	13.6	255.7	12.9	254.9	10.3	261.0	9.6	263.3	13.1	243.6	11.6	400
450	268.8	15.9	272.4	14.3	262.8	13.0	260.7	13.0	261.0	11.2	261.5	10.1	261.2	14.4	246.9	12.2	450
500	269.7	16.6	275.3	14.6	266.2	12.3	263.9	12.2	259.8	12.8	263.2	10.9	260.3	9.4	249.6	12.8	500
550			279.0	14.3	269.9	12.2	265.3	12.5	261.9	13.4	264.7	11.9			250.9	12.6	550
600			282.8	13.7	272.8	12.4	266.1	13.2	265.0	13.1	265.7	12.9			252.8	12.4	600
650			280.1	15.2	274.9	12.8	267.4	13.5	267.3	12.5	266.8	13.7			258.9	11.4	650
700			279.1	16.4	275.3	13.6	269.9	12.9	266.4	13.7	268.2	14.3			263.6	11.4	700
750			279.0	16.6	273.5	14.9	270.8	13.2	264.9	14.4	269.6	14.2			264.0	12.8	750
800			279.4	16.1	274.5	13.7	268.9	15.3	263.8	14.9	271.3	13.7			264.2	13.3	800
850			279.3	15.8	273.9	14.1	269.7	15.9	266.4	14.8	273.3	14.2			264.4	13.5	850
900			278.0	17.7	272.3	16.3	270.5	16.1	267.4	15.1	272.8	15.6			266.1	13.3	900
950			277.5	18.6	270.7	19.9	271.4	15.9	267.0	15.7	272.2	16.7			267.8	13.2	950
1000					271.9	17.2	273.3	14.9	268.6	16.0	273.1	16.1			269.3	13.6	1000
1050					274.6	13.4	274.5	14.8	270.1	16.6	280.1	12.0			270.3	14.3	1050
1100					276.8	12.0	273.0	17.0	270.5	19.0	272.8	19.4			268.1	16.8	1100
1150					272.1	18.7	272.1	19.9	270.7	20.3	272.5	20.9			270.4	16.7	1150
1200					271.3	20.7	271.8	21.6			272.5	21.9			278.3	14.3	1200
1250							272.0	22.0							270.8	18.5	1250
1300							272.0	22.1							269.2	19.7	1300
1350															268.9	19.9	1350

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-10 9 May 70 1030 EST Single		Ascn H-1 11 May 70 0600 EST Double		Ascn H-2 11 May 70 0630 EST Double		Ascn H-3 11 May 70 0700 EST Double		Ascn H-4 11 May 70 0730 EST Double		Ascn H-5 11 May 70 0800 EST Double		Ascn H-6 11 May 70 0830 EST Double		Ascn H-7 11 May 70 0900 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0		0.0	220.0	1.3	220.0	1.3	220.0	1.3	230.0	1.3	240.0	2.2	Sfc
50	132.2	0.5	210.1	4.4	215.7	4.8	213.2	4.9	230.8	3.9	218.1	2.4	210.7	3.6	232.9	3.8	50
100	146.9	3.9	209.6	6.2	216.7	6.8	216.3	6.4	231.0	4.8	222.1	3.4	215.6	3.4	233.3	4.0	100
150	228.4	7.2	216.6	6.6	219.0	7.6	221.1	7.2	236.2	5.9	225.2	4.4	216.2	3.8	234.8	4.1	150
200	255.6	10.8	223.9	6.7	223.4	7.6	227.8	7.4	243.2	6.9	231.1	5.4	219.4	4.4	237.6	4.2	200
250	257.5	14.5	230.2	6.6	231.0	7.2	237.6	7.1	251.2	7.7	237.2	6.3	236.4	5.2	238.8	4.3	250
300	259.4	17.9	236.2	6.6	239.7	7.7	242.9	7.6	258.2	8.0	246.9	7.0	246.0	6.1	246.2	4.4	300
350	262.7	20.9	242.1	7.1	247.4	7.9	250.2	7.8	262.2	7.3	257.4	7.8	260.0	5.9	257.2	4.7	350
400	263.0	24.6	251.8	7.2	254.7	7.5	257.1	7.5	261.9	6.7	261.1	7.1	263.4	5.5	260.8	5.2	400
450	263.3	29.3	260.9	7.2	264.5	6.9	264.9	6.9	268.5	6.0	264.2	6.4	264.4	5.2	262.2	5.2	450
500	265.9	36.2	270.0	7.0	279.1	6.8	278.6	6.1	275.8	5.8	267.5	5.9	268.4	5.1	263.0	5.0	500
550	267.6	34.3	277.6	7.1	284.5	7.2	280.9	6.5	281.1	5.8	272.0	5.7	275.4	5.0	262.9	4.8	550
600	269.1	29.2	289.4	7.0	288.8	6.9	290.4	6.2	290.7	5.2	277.0	5.4	285.6	4.4	261.7	4.5	600
650	268.9	28.2	299.8	7.3	292.9	6.2	306.2	5.9					279.7	4.5	260.5	4.3	650
700	268.5	18.8	300.7	7.6	293.5	5.9							277.5	4.5			700
750	269.5	8.6	294.1	7.5	295.8	5.9											750
800	290.8	3.3	293.9	7.3	298.2	5.8											800
850	071.4	1.8	295.1	7.1	300.3	5.7											850
900	100.0	3.4			298.0	5.9											900
950	125.4	2.9			295.5	5.8											950
1000	080.0	6.6			293.0	5.5											1000
1050	071.6	9.4			298.8	4.2											1050
1100	070.1	9.0															1100
1150	084.5	3.2															1150
1200	276.6	2.7															1200
1250	272.7	8.0															1250
1300	271.0	11.9															1300

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-8 11 May 70 0930 EST Double		Ascn H-9 11 May 70 1000 EST Double		Ascn H-10 11 May 70 1030 EST Double		Ascn H-11 11 May 70 1100 EST Double		Ascn H-1 12 May 70 0700 EST Double		Ascn H-2 12 May 70 0730 EST Double		Ascn H-3 12 May 70 0800 EST Double		Ascn H-4 12 May 70 0830 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	275.0	0.8	205.0	2.6		0.0	190.0	1.3	225.0	2.2	235.0	0.8	235.0	2.2	250.0	2.2	Sfc
50	257.9	1.7	233.3	3.2	206.6	1.4	202.6	2.3	216.5	3.5	219.5	3.5	238.8	3.0	246.3	3.5	50
100	240.4	1.9	242.0	3.2	226.2	1.6	201.2	2.6	222.4	5.0	225.4	3.6	238.4	3.5	235.3	3.5	100
150	227.0	2.2	243.2	3.5	219.4	1.9	195.9	2.7	226.4	6.5	224.3	4.5	237.9	4.0	231.4	4.0	150
200	219.6	2.1	241.0	4.0	206.8	2.3	190.9	2.8	230.5	7.8	225.7	5.4	235.9	4.9	232.7	4.9	200
250	212.0	2.1	239.1	4.3	200.4	2.1	198.1	2.9	232.9	8.7	229.8	6.3	234.4	5.8	230.8	5.9	250
300	210.1	2.5	238.1	4.2	193.0	1.9	204.9	3.1	234.4	9.4	230.7	7.8	234.3	7.1	235.3	6.6	300
350	210.2	3.0	236.2	4.3	186.8	1.8	210.9	3.3			228.2	8.4	232.0	7.9	236.0	7.6	350
400	220.1	3.5	235.8	4.4	181.0	1.7	211.5	3.3			224.8	8.7	227.7	8.1	233.7	8.4	400
450	228.0	4.0	237.3	4.2	180.8	1.9	210.5	3.1			221.4	8.1	224.4	8.2	229.3	7.8	450
500	236.0	4.3	241.3	3.7	185.3	2.4	209.4	3.0					220.5	7.7	223.7	7.1	500
550	238.2	4.8	241.1	4.1	192.6	2.5	208.6	3.1					217.0	7.0	218.4	6.5	550
600	239.6	4.9	237.5	4.3	202.6	2.5	208.1	3.3					215.3	6.2	217.6	5.7	600
650	240.1	4.6	231.2	4.5	201.1	3.0	208.8	3.6					218.0	4.7	222.5	6.0	650
700	236.8	4.9	232.9	4.9	197.9	3.4	212.9	4.1					228.6	5.2	226.5	6.4	700
750	237.1	4.7	234.5	5.4	195.4	3.5	216.0	4.6					237.6	5.4			750
800	238.0	4.6	236.4	6.0	192.9	3.8	218.1	4.7					243.7	5.0			800
850			241.8	6.3			220.6	4.8					247.1	4.5			850
900			246.2	6.2			225.2	5.3					248.3	4.5			900
950							227.3	5.5					254.0	4.5			950
1000													259.8	4.9			1000
1050													262.7	5.0			1050
1100													264.8	5.0			1100
1150													269.3	5.4			1150
1200													276.3	4.6			1200
1250													278.9	4.4			1250

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-5 12 May 70 0900 EST Double		Ascn H-6 12 May 70 0930 EST Double		Ascn H-7 12 May 70 1000 EST Double		Ascn H-8 12 May 70 1030 EST Double		Ascn H-9 12 May 70 1100 EST Double		Ascn H-10 12 May 70 1130 EST Double		Ascn H-1 13 May 70 0830 EST Double		Ascn H-2 13 May 70 1000 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	235.0	2.2	245.0	2.6	230.0	2.2	265.0	2.6	245.0	3.1	225.0	2.2	250.0	2.6	250.0	3.1	Sfc
50	220.5	3.5	234.5	4.3	244.5	3.2	222.2	4.2	235.5	3.1	236.2	3.8	234.4	5.1	240.9	4.7	50
100	213.8	3.8	227.4	3.8	235.9	3.4	230.5	4.3	230.8	3.1	238.1	3.7	235.4	6.5	235.7	4.5	100
150	218.8	4.8	219.8	3.7	225.7	3.3	233.9	4.4	224.6	3.2	239.2	3.6	236.7	7.8	230.2	4.4	150
200	223.3	5.7	214.5	4.0	218.7	3.3	228.2	4.1	218.1	3.4	237.8	3.4	234.0	8.5	227.1	4.4	200
250	224.3	6.1	215.0	4.5	216.8	4.2	226.0	4.0	207.3	3.8	235.2	3.2	232.4	9.0	224.7	4.5	250
300	219.1	6.4	218.2	5.2	212.5	4.5	227.8	3.8	196.2	3.6	230.7	2.9			222.4	4.6	300
350	229.9	6.9	223.1	5.7	204.5	4.3	225.2	3.9	193.2	3.6	221.7	2.6			222.4	4.6	350
400			226.7	6.1	201.8	4.3	222.8	4.3	189.9	3.0	208.0	2.4					400
450			229.4	6.3	211.4	4.1	230.8	4.1	192.7	2.5	202.7	2.3					450
500			228.6	6.0	214.6	4.5	236.2	4.4	203.4	3.0	203.4	2.2					500
550			228.5	5.6	222.7	4.6	241.4	4.8	211.5	3.6	197.1	2.6					550
600			229.4	4.9	223.4	5.1	237.0	5.1	217.5	4.1	192.2	3.0					600
650			224.8	5.1	224.2	5.3	233.5	5.0	218.8	4.3	188.7	3.6					650
700			221.0	5.3					223.6	4.5	186.6	4.0					700
750			220.9	5.2					232.6	4.9							750
800			220.8	5.1					236.8	5.1							800
850									236.9	5.1							850
900									232.5	5.0							900
950									230.6	4.9							950
1000									229.5	4.8							1000

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-3 13 May 70 1030 EST Double		Ascn H-1 15 May 70 0830 EST Double		Ascn H-2 15 May 70 0900 EST Double		Ascn H-3 15 May 70 0930 EST Double		Ascn H-4 15 May 70 1000 EST Double		Ascn H-5 15 May 70 1030 EST Double		Ascn C-1 14 Oct 70 0800 EST Double		Ascn C-2 14 Oct 70 0830 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	240.0	4.4	225.0	1.3	215.0	2.2	210.0	2.2	205.0	3.1	135.0	3.1		0.0		0.0	Sfc
50	211.6	5.9	138.1	4.6	162.4	3.7	142.2	5.0	128.0	5.2	126.0	4.1	210.8	1.3	228.8	0.2	50
100	212.2	5.7	133.0	6.8	155.3	4.6	151.4	5.8	132.8	6.0	140.4	4.8	188.1	3.6	223.5	0.4	100
150	212.7	5.5	135.1	8.9	151.8	5.9	161.6	6.7	140.1	6.2	150.9	5.7	187.4	4.7	215.9	1.0	150
200	210.9	5.8	138.4	9.1	150.9	7.5	156.8	7.3	151.4	6.0	160.5	6.4	189.0	5.2	200.8	2.3	200
250	209.5	6.0	141.7	9.2	156.2	8.4	157.1	8.0	160.2	6.1	167.2	6.9	190.2	5.7	193.9	4.5	250
300	208.7	6.0	145.2	9.0	166.3	8.8	162.1	8.6	165.5	6.7	175.6	6.4	192.2	6.6	196.4	5.5	300
350	211.2	6.0	168.8	6.5	172.7	8.8	168.3	8.3	176.5	6.6	189.3	6.0	193.8	7.6	197.8	5.9	350
400	213.3	5.7	165.4	9.5	177.4	8.4	180.0	7.9	191.4	7.1	200.0	6.6	195.0	8.6	190.2	5.4	400
450	215.0	5.2	165.5	10.2	183.2	7.8	189.9	8.0	201.4	8.5	206.5	7.9	196.6	9.3	184.1	5.2	450
500	216.6	5.2	176.4	8.1	191.3	7.9	196.4	8.6	213.1	9.1	211.0	9.3	198.6	9.8			500
550	217.6	5.3	185.8	8.8	200.0	8.6	206.2	9.5	221.9	9.8			200.8	10.4			550
600			206.2	9.5	208.8	10.1	217.1	10.1	228.5	10.6			203.2	11.5			600
650			221.9	10.5	215.1	11.3	232.4	10.6	235.2	10.9			204.2	12.0			650
700			222.7	12.6	220.1	12.4	233.0	12.3	241.3	11.4							700
750			228.5	13.8	230.1	12.8	233.3	13.8	245.4	11.7							750
800			241.0	14.2	230.5	14.9	238.2	14.0	251.7	12.2							800
850			246.8	14.6	227.5	17.8	245.8	14.2	257.2	12.8							850
900					252.0	13.7	253.6	14.6									900
950							256.5	15.0									950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-3 14 Oct 70 0900 EST Double		Ascn C-4 14 Oct 70 0930 EST Double		Ascn C-5 14 Oct 70 1000 EST Double		Ascn C-6 14 Oct 70 1030 EST Double		Ascn C-7 14 Oct 70 1100 EST Double		Ascn C-1 16 Oct 70 0630 EST Double		Ascn C-2 16 Oct 70 0700 EST Double		Ascn C-3 16 Oct 70 0730 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0		0.0	250.0	0.8		0.0	250.0	2.2		0.0	310.0	3.1	300.0	2.2	Sfc
50	266.6	1.2	262.1	1.0	270.2	1.5	240.2	3.1	262.2	7.4	295.8	2.9	312.6	2.5	317.4	3.5	50
100	268.0	1.8	257.4	1.7	271.2	1.9	241.2	3.9	262.6	9.2	312.3	3.3	315.8	3.4	317.2	3.8	100
150	245.5	2.2	240.6	2.6	259.8	2.6	245.2	4.7	261.0	10.7	306.6	4.6	312.4	3.8	318.2	4.7	150
200	224.4	2.9	223.7	4.0	235.0	3.4	219.1	4.9	258.5	12.1	299.5	6.2	303.0	3.8	319.5	5.7	200
250	212.5	3.6	210.6	4.3	218.1	4.7	207.3	5.6	257.3	12.0	304.9	6.8	308.3	5.3	321.8	6.8	250
300	204.3	4.2	198.6	4.7	211.3	5.4	217.9	5.7	256.4	11.5			315.4	6.6	325.0	7.7	300
350	198.3	4.9	196.4	5.2	206.3	6.0	224.3	5.8	257.6	11.9			323.2	7.7	330.8	7.9	350
400	204.1	5.7	199.8	5.8	206.6	6.8	225.6	5.6	259.0	12.3					332.9	8.1	400
450	210.1	6.5	202.5	6.3	212.7	8.0	237.1	4.5	259.8	11.0							450
500	213.9	7.2	207.8	7.9	216.9	8.7	245.2	6.5	260.6	9.1							500
550			211.5	9.6	220.1	8.6	247.9	8.1	261.1	8.6							550
600			217.6	10.1	225.7	8.8	250.7	7.6	262.8	7.4							600
650			224.2	11.4	231.3	9.4	255.8	7.3	265.4	8.1							650
700			229.7	13.3	236.3	10.7	257.3	7.5	266.2	4.9							700
750			230.8	14.3	240.4	11.9	253.3	8.2	266.6	7.1							750
800			230.8	14.9	247.8	11.5	252.4	8.4	269.8	8.8							800
850			232.6	14.9	255.5	11.4	252.1	8.3	268.5	8.2							850
900			238.9	13.7	258.9	12.0	251.5	8.2	265.2	6.9							900
950			246.1	12.8	260.1	13.0	252.8	8.7	263.5	7.9							950
1000			253.1	12.5	259.7	13.7	256.6	10.4	261.9	8.6							1000
1050			252.7	15.5	258.5	14.4	255.6	11.5	257.2	6.6							1050
1100			252.4	18.1	257.6	14.7	252.8	11.1	248.9	4.8							1100
1150			257.7	12.8	256.7	14.7	248.4	9.7	248.8	4.8							1150
1200			259.0	12.0	256.7	14.1	248.7	9.6									1200
1250			259.0	12.4	256.8	13.7	249.7	11.8									1250
1300			262.7	11.1	254.4	16.8	249.5	13.0									1300
1350			258.8	14.4	253.4	17.9	243.6	8.3									1350
1400			256.4	12.7	255.3	11.8	245.3	12.0									1400
1450			252.8	14.0	257.1	9.8	245.5	12.9									1450
1500			250.0	17.6	255.8	10.9											1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-4 16 Oct 70 0800 EST Double		Ascn C-5 16 Oct 70 0830 EST Double		Ascn C-6 16 Oct 70 0900 EST Double		Ascn C-7 16 Oct 70 0930 EST Double		Ascn C-8 16 Oct 70 1000 EST Double		Ascn C-9 16 Oct 70 1030 EST Double		Ascn C-1 17 Oct 70 0700 EST Double		Ascn C-2 17 Oct 70 0730 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0	317.0	1.7	322.0	2.6	312.0	1.3	272.0	4.0	282.0	3.5		0.0	250.0	1.7	Sfc
50	344.6	1.9	324.0	1.7	002.8	4.8	310.0	3.1	344.7	5.8	343.2	3.2	259.4	2.7	268.6	2.4	50
100	339.1	2.9	338.4	2.9	000.9	5.3	317.0	3.5	346.9	5.6	348.4	4.4	264.5	3.4	273.1	3.0	100
150	340.5	4.1	342.6	4.0	356.9	5.2	323.1	3.8	340.5	5.1	344.7	5.9	276.6	4.3	280.4	3.7	150
200	350.3	6.2	332.9	4.4	350.4	4.7	324.8	4.2	324.2	4.8	342.5	7.5	286.1	5.3	288.9	4.5	200
250	349.1	6.4	327.8	4.7	344.3	4.3	326.2	4.6	310.3	5.1	341.1	7.6	290.4	6.2	293.7	5.4	250
300	343.0	6.4	332.9	4.6	337.9	3.9	341.0	4.6	301.5	5.8	339.6	7.7	293.3	6.8	296.1	5.8	300
350	341.2	6.5	335.7	4.8	340.1	3.9	356.9	5.0	295.6	6.6	338.3	7.8	295.6	6.8	296.6	5.9	350
400			336.9	5.1	342.2	3.9	356.4	4.7	298.1	6.4	337.0	7.9	295.2	6.9	295.5	6.0	400
450			339.5	5.1	340.6	4.2	351.6	4.5	300.9	6.2	336.5	7.7	298.9	6.0	295.4	6.0	450
500			344.8	5.3	338.8	4.6	345.9	4.7	301.2	6.2	336.6	7.3			294.3	6.3	500
550					336.8	4.7	340.8	4.8			336.7	7.0			297.9	5.7	550
600					334.4	4.7	335.9	4.9			336.5	6.7					600
650					332.3	4.7	336.2	4.8			331.6	7.5					650
700							337.1	4.6			327.8	8.5					700
750							337.3	4.6			328.0	8.3					750
800											328.7	7.9					800
850											330.3	8.3					850
900											332.2	9.3					900
950											332.8	9.6					950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-3 17 Oct 70 0800 EST Double		Ascn C-4 17 Oct 70 0830 EST Double		Ascn C-5 17 Oct 70 0900 EST Double		Ascn C-6 17 Oct 70 0930 EST Double		Ascn C-7 17 Oct 70 1000 EST Double		Ascn C-8 17 Oct 70 1030 EST Double		Ascn C-1 20 Oct 70 0700 EST Double		Ascn C-2 20 Oct 70 0800 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0	240.0	2.2	280.0	2.2	270.0	2.6	250.0	2.2	260.0	2.6		0.0	180.0	4.9	Sfc
50	262.1	2.7	253.9	3.2	241.3	2.5	249.2	4.2	297.7	3.9	291.4	4.3	227.6	1.0	202.8	2.4	50
100	271.8	3.6	256.9	3.1	248.0	2.5	260.4	4.2	297.6	4.5	267.2	4.0	239.5	1.5	219.8	2.7	100
150	278.2	3.8	260.0	3.2	253.1	2.8	270.7	4.3	279.0	5.4	257.5	4.5	238.0	1.5	219.0	1.1	150
200	282.1	4.6	262.5	4.3	260.2	3.2	275.7	4.0	277.8	6.7	258.8	5.3	233.3	1.4	062.9	0.7	200
250	283.1	5.4	266.9	5.2	273.5	3.6	282.1	4.3	273.9	6.0	260.1	5.8	225.5	1.2	075.2	2.1	250
300	282.3	5.9	275.4	6.1	269.9	4.2	287.7	5.7	274.9	6.0	261.3	6.2	158.1	2.0	085.9	3.4	300
350	293.0	6.1	279.1	6.9	274.7	6.1	288.8	6.3	276.0	6.0	265.1	6.2	139.6	3.7	143.2	7.3	350
400	298.1	6.7	277.9	7.2	277.1	6.2	288.4	6.6	279.3	6.2	269.0	6.2	133.0	5.6	154.0	12.6	400
450	299.5	7.3	278.8	7.8	280.0	6.4	289.3	6.2	284.2	6.8	273.7	6.5	132.6	5.7	155.7	16.4	450
500			280.7	8.2	287.1	7.2	289.1	6.3	290.1	8.4	278.2	6.7			158.3	19.0	500
550			283.0	8.1	289.1	7.6	289.3	6.8	292.2	9.5	283.0	7.1			160.2	19.9	550
600			284.3	8.3	292.9	7.2	296.1	7.2	289.3	9.4	287.2	8.5			162.1	19.5	600
650			284.8	8.4	295.2	8.4	299.6	7.5	287.4	9.9	289.9	10.8			164.1	19.0	650
700					299.4	9.4			288.1	12.5	291.0	12.2			167.0	17.3	700
750					306.9	10.0									171.3	14.9	750
800					312.8	10.3									177.1	12.7	800
850					315.7	10.5									177.3	12.9	850
900															177.4	13.2	900
950															176.6	14.0	950
1000															175.1	15.5	1000
1050															173.9	17.0	1050
1100															173.4	17.6	1100

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-3 20 Oct 70 0830 EST Double		Ascn C-4 20 Oct 70 0900 EST Double		Ascn C-5 20 Oct 70 0930 EST Double		Ascn C-6 20 Oct 70 1000 EST Double		Ascn C-7 20 Oct 70 1030 EST Double		Ascn C-8 20 Oct 70 1100 EST Double		Ascn C-1 26 Oct 70 0730 EST Double		Ascn C-2 26 Oct 70 1000 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	250.0	2.6	190.0	2.6		0.0		0.0	210.0	4.9	240.0	2.6		0.0		0.0	Sfc
50	322.2	3.3	171.7	2.4	186.7	1.6	256.3	2.4	244.9	3.3	201.7	2.3	281.6	1.3	174.8	2.3	50
100	292.5	1.6	148.9	2.0	198.0	1.3	234.1	2.9	246.1	3.4	225.2	4.8	289.3	1.2	173.5	2.6	100
150	215.0	1.9	120.5	2.0	220.5	2.1	230.0	4.3	242.7	2.9	226.9	6.0	295.5	1.1	172.2	2.7	150
200	157.6	2.1	128.1	2.6	227.1	2.9	231.3	5.3	224.3	2.9	208.6	4.3			170.4	2.7	200
250	143.6	2.5	140.3	3.6	215.7	2.6	237.2	3.3	179.4	4.0	176.2	3.8			164.5	2.5	250
300	151.7	6.3	147.1	4.7	193.0	2.0	245.7	2.1	231.3	3.1	177.8	6.8			157.4	2.2	300
350			154.0	6.4	140.1	1.9					178.5	9.8			148.7	2.1	350
400			158.1	8.3	133.3	2.0					176.1	9.5			153.3	2.5	400
450			160.8	10.3							171.8	8.2			158.7	3.0	450
500			162.5	12.2							167.5	7.3			162.0	3.5	500
550			165.6	13.5													550
600			168.1	14.9													600
650			170.2	16.2													650
700			172.0	17.6													700
750			173.5	19.0													750
800			175.1	18.7													800
850			177.4	16.9													850
900			180.2	15.0													900
950			183.7	13.3													950
1000			188.3	11.6													1000
1050			191.0	10.7													1050
1100			189.9	10.9													1100
1150			188.9	11.0													1150
1200			189.8	11.1													1200
1250			193.1	10.9													1250
1300			196.9	10.8													1300
1350			206.4	9.9													1350
1400			206.8	11.0													1400
1450			203.6	12.9													1450
1500			206.4	12.9													1500

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-3 26 Oct 70 1030 EST Double		Ascn C-4 26 Oct 70 1100 EST Double		Ascn C-5 26 Oct 70 1130 EST Double		Ascn C-1 27 Oct 70 0730 EST Double		Ascn C-2 27 Oct 70 0800 EST Double		Ascn C-3 27 Oct 70 0830 EST Double		Ascn C-4 27 Oct 70 0900 EST Double		Ascn C-5 27 Oct 70 0930 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0	110.0	4.0	090.0	5.3	060.0	0.8	340.0	0.8	090.0	4.9	090.0	4.9	090.0	4.4	Sfc
50	148.8	1.8	130.9	3.5	117.7	6.3	106.5	2.9	087.2	3.3	123.1	3.1	118.3	6.3	118.7	4.4	50
100	145.9	2.4	147.2	4.2	131.6	6.1	105.4	3.9	128.6	5.1	136.9	3.7	123.5	7.2	135.6	5.2	100
150	143.3	2.7	156.4	5.4	144.4	6.1	104.8	4.9	134.2	6.8	143.9	4.7	124.5	8.1	143.5	6.4	150
200	141.5	3.1	157.2	5.0	154.5	6.2	104.7	5.1	133.9	7.8	147.9	5.7	127.2	9.2	147.6	7.8	200
250	144.2	2.8	158.1	4.7	156.4	6.0			134.9	8.0	147.9	5.7	130.7	10.6	144.0	9.2	250
300	147.5	2.5	162.6	4.6	158.5	5.8			141.5	7.0			133.0	11.9	141.3	10.6	300
350	151.5	2.3	167.2	4.5	160.2	5.7			147.6	6.4			133.0	11.9	140.7	11.4	350
400	166.3	2.6	170.5	4.6	160.2	5.7			147.6	6.4					143.7	10.7	400
450	178.5	3.1	167.4	4.9											147.0	10.2	450
500	186.7	3.8	164.7	5.3											149.7	9.5	500
550	186.7	3.8	162.3	5.6											150.8	8.6	550
600			162.2	5.6											152.1	7.7	600
650															155.0	6.7	650
700															161.9	5.7	700
750															171.7	4.7	750
800															180.7	3.4	800
850															199.1	1.8	850
900															177.7	2.3	900
950															165.6	2.9	950
1000															167.2	2.5	1000
1050															168.0	2.3	1050

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-6 27 Oct 70 1000 EST Double		Ascn C-7 27 Oct 70 1030 EST Double		Ascn C-8 27 Oct 70 1100 EST Double		Ascn C-1 28 Oct 70 0737 EST Double		Ascn C-2 28 Oct 70 0800 EST Double		Ascn C-3 28 Oct 70 0830 EST Double		Ascn C-4 28 Oct 70 1000 EST Double		Ascn C-5 28 Oct 70 1030 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	080.0	5.3	060.0	4.9	050.0	3.1		0.0		0.0	060.0	2.2	050.0	1.3		0.0	Sfc
50	140.0	8.3	128.2	9.4	114.0	9.0	122.1	2.8	098.7	0.9	112.9	3.3	096.7	4.4	111.0	2.7	50
100	131.7	9.3	122.5	9.6	122.2	10.2	155.3	3.4	145.8	0.5	111.4	4.3	100.3	4.8	111.5	3.5	100
150	126.7	10.2	122.5	8.7	122.5	10.6	164.2	4.7	175.2	0.9	108.2	5.4	103.7	4.0	114.3	3.7	150
200	129.6	10.1	128.1	6.8	122.7	10.9	159.4	5.9	143.8	2.7	106.9	6.0	108.7	3.2	118.4	3.7	200
250	132.5	9.9	132.5	5.9	122.7	9.9	157.3	4.1	137.7	4.6	106.9	6.0	115.2	2.5	130.9	4.4	250
300	134.2	9.9			122.7	9.0	146.8	4.3	136.7	5.3			125.8	1.9	142.2	5.7	300
350	134.2	9.9			122.7	8.1	138.3	6.2					142.4	1.5	146.7	6.7	350
400					122.7	8.1	135.5	7.9					142.4	1.5	145.9	7.0	400
450							135.6	9.2							145.2	7.4	450
500							138.6	10.3							146.3	7.6	500
550							145.5	10.3							147.4	7.8	550
600															149.3	8.3	600
650															152.6	9.4	650
700															155.2	10.6	700
750															156.8	11.4	750
800															157.8	12.0	800
850															158.8	12.6	850
900															159.0	12.7	900

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-6 28 Oct 70 1100 EST Double		Ascn C-7 28 Oct 70 1130 EST Double		Ascn C-8 28 Oct 70 1200 EST Double		Ascn C-1 29 Oct 70 0800 EST Double		Ascn C-2 29 Oct 70 0830 EST Double		Ascn C-3 29 Oct 70 0900 EST Double		Ascn C-4 29 Oct 70 0930 EST Double		Ascn C-5 29 Oct 70 1000 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	040.0	0.8		0.0	040.0	4.9	310.0	3.5	260.0	2.2	240.0	0.8	110.0	1.3	220.0	1.3	Sfc
50	101.0	2.3	147.1	3.6	130.2	1.4	351.7	2.0	219.7	0.4	014.7	1.7	172.5	0.4	241.7	1.2	50
100	112.8	2.0	155.9	4.0	130.9	2.4	356.8	0.7	183.5	0.6	048.4	1.6	168.6	1.5	217.1	1.4	100
150	128.3	1.9	163.3	4.5	145.5	2.6	186.5	0.5	172.6	0.9	075.0	1.8	168.0	2.7	196.9	2.0	150
200	144.0	2.1	175.5	5.2	158.2	3.0	146.9	2.0	167.2	1.2	116.1	2.9	174.9	3.9	176.9	2.5	200
250	156.5	2.4	184.5	6.1	160.3	3.8	132.9	3.5	166.7	1.2	139.7	5.8	178.3	5.1	157.4	2.8	250
300	155.4	2.3	178.9	6.6	153.0	5.3	118.7	2.3			145.7	8.2	149.1	4.4	138.4	3.3	300
350	145.6	1.9	163.4	6.9	149.0	6.8	103.6	1.8					146.7	5.3	137.0	3.4	350
400	132.3	1.7	151.0	7.3	145.6	7.5							148.9	6.1			400
450	128.8	3.7	139.8	6.5	140.9	6.9											450
500	128.6	6.2	128.0	6.2	138.5	6.5											500
550	121.5	5.5	128.1	7.1	141.7	6.3											550
600	131.2	4.4	128.2	7.9	144.2	6.3											600
650	143.3	7.7	129.7	9.0	141.4	7.3											650
700	141.2	12.5	133.4	10.7	139.4	8.4											700
750			136.1	12.5	141.5	9.0											750
800			136.8	13.0	144.2	9.5											800
850					145.7	9.8											850
900					145.7	9.8											900

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-6 29 Oct 70 1100 EST Double		Ascn C-1 30 Oct 70 1105 EST Double		Ascn C-2 30 Oct 70 1110 EST Double		Ascn C-1 2 Nov 70 0737 EST Double		Ascn C-2 2 Nov 70 0800 EST Double		Ascn C-3 2 Nov 70 0830 EST Double		Ascn C-4 2 Nov 70 0900 EST Double		Ascn C-5 2 Nov 70 0930 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	030.0	1.7	310.0	4.4	310.0	4.4	030.0	3.1	030.0	1.3	030.0	1.7	030.0	2.6	050.0	2.6	Sfc
50	158.7	3.2	321.4	3.7	168.7	1.8	081.4	3.8	073.0	3.4	071.3	4.7	077.0	3.6	099.6	4.3	50
100	171.2	6.0	329.5	2.6	223.3	2.0	079.2	4.7	072.3	4.1	071.1	4.6	079.5	4.9	093.2	4.1	100
150	172.5	8.1	276.3	0.1	236.7	1.8	077.5	4.4	078.1	4.3	080.2	4.4	088.3	4.6	086.1	3.9	150
200	153.4	6.9	155.1	2.4	107.5	0.6	076.2	4.0	088.1	4.4	091.5	4.3	101.8	4.3	118.1	3.2	200
250	135.8	6.6	153.7	4.9	085.7	2.1			097.5	4.4	095.4	4.3	104.8	4.4	152.6	3.7	250
300	149.3	7.4	153.6	5.0	083.1	3.2			104.8	4.2			107.8	4.5	145.4	4.3	300
350	154.8	8.5							111.9	4.1			114.9	4.0	133.1	5.0	350
400	149.5	10.0							112.9	4.0			124.3	3.5	131.1	5.7	400
450	151.0	10.7											124.6	3.5	136.8	6.2	450
500	159.0	10.6													133.7	7.3	500
550	165.1	10.6													138.4	6.7	550
600															151.3	4.5	600
650															156.4	4.6	650
700															147.3	6.3	700
750															144.4	7.7	750
800															143.5	8.8	800
850															142.2	9.3	850
900															140.4	9.4	900
950															143.7	9.4	950
1000															150.7	8.6	1000

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-6 2 Nov 70 1000 EST Double		Ascn C-7 2 Nov 70 1030 EST Double		Ascn C-8 2 Nov 70 1100 EST Double		Ascn C-9 2 Nov 70 1130 EST Double		Ascn C-1 5 Nov 70 0800 EST Double		Ascn C-2 5 Nov 70 0830 EST Double		Ascn C-3 5 Nov 70 0900 EST Double		Ascn C-4 5 Nov 70 0930 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	030.0	4.4	030.0	5.3	130.0	3.5	110.0	2.6	260.0	2.6	260.0	8.9	260.0	6.2	260.0	6.2	Sfc
50	090.5	5.4	107.4	6.0	088.2	5.0	131.8	2.7	250.9	6.7	251.8	9.9	256.8	9.3	251.6	7.2	50
100	090.9	6.3	105.3	6.7	097.6	5.0	144.2	2.9	254.7	6.8	251.0	11.4	256.7	10.8	254.7	8.1	100
150	091.3	6.2	106.0	6.8	105.9	5.0	138.6	3.3	258.2	7.1	250.5	12.9	256.6	11.6	258.3	8.9	150
200	092.0	5.0	108.5	6.6	111.2	4.6	134.0	3.6	260.1	8.1	251.6	12.2	256.7	11.7	258.2	8.8	200
250	094.7	4.1	111.7	6.3	116.3	4.4	130.3	4.0	261.5	9.3	253.3	11.2	259.0	12.0	257.6	9.2	250
300	102.9	4.0	115.2	6.1	119.9	4.3	130.9	4.1	262.5	11.2	259.2	10.9	264.4	13.2	256.5	11.1	300
350	111.6	3.9	119.1	5.9	123.7	4.3	133.8	4.0	263.2	13.3	267.3	11.3	268.2	13.4	263.4	10.9	350
400	116.7	3.9	122.9	5.5	120.3	4.0	136.8	4.0	264.2	13.5	274.2	12.2	270.7	11.8			400
450	116.7	3.9	127.3	5.0	116.3	3.7	131.5	3.7	265.1	13.4	278.9	13.8	268.4	11.2			450
500			132.6	4.6	117.7	3.1	120.8	3.3			282.6	15.4	266.4	11.7			500
550			129.5	5.0	123.9	3.0	114.4	3.2			282.6	15.4	265.4	12.2			550
600			125.2	5.5	126.6	5.4	118.4	3.3									600
650			123.2	6.1	127.1	6.4	121.7	3.5									650
700			131.5	7.0													700
750			137.9	8.0													750
800			142.4	8.8													800
850			146.1	9.6													850
900			142.7	11.5													900
950			139.9	13.6													950
1000			139.4	14.1													1000

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-5 5 Nov 70 1000 EST Single		Ascn C-6 5 Nov 70 1030 EST Double		Ascn C-7 5 Nov 70 1100 EST Single		Ascn C-8 5 Nov 70 1130 EST Double		Ascn C-1 6 Nov 70 0735 EST Double		Ascn C-2 6 Nov 70 0800 EST Double		Ascn C-3 6 Nov 70 0830 EST Double		Ascn C-4 6 Nov 70 0900 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	230.0	8.0	240.0	8.0	230.0	8.0	260.0	8.0	220.0	7.1	240.0	6.2	240.0	6.2	220.0	5.8	Sfc
50	238.6	4.3	259.7	7.9	256.6	8.8	268.9	7.8	245.2	5.0	239.7	6.1	238.3	6.2	251.5	5.7	50
100	253.5	3.4	261.3	8.3	259.5	11.5	266.6	8.8	242.1	6.9	236.6	7.3	241.0	7.1	243.5	6.4	100
150	258.0	4.9	256.4	8.5	257.2	9.1	265.6	9.5	240.1	8.3	234.2	8.7	242.9	8.1	239.1	7.0	150
200	261.1	6.3	254.6	9.3	253.3	6.7	266.2	10.5	239.2	8.6	238.1	9.4	241.5	8.1	237.5	7.3	200
250	268.2	6.8	258.1	11.1			270.0	15.2	240.2	8.5	239.0	9.6	241.1	8.5	237.8	7.9	250
300			259.3	12.6					242.2	8.9	239.9	9.5	242.6	9.6	239.3	8.7	300
350			258.5	14.0					242.1	10.1	241.3	9.7	244.7	10.0	238.3	9.2	350
400			258.4	14.9					243.6	9.9	241.1	10.3	247.8	9.1	236.2	9.4	400
450			259.2	15.0					247.8	9.5	245.8	8.3	254.5	5.1	242.7	10.7	450
500			261.1	16.8					251.7	10.3			263.6	7.8	247.5	11.8	500
550			262.8	18.5					253.9	12.0					251.6	11.8	550
600			268.4	17.8					262.1	11.4					254.8	11.8	600
650			274.4	17.2											255.1	12.0	650

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-1 9 Nov 70 0800 EST Double		Ascn H-2 9 Nov 70 0830 EST Double		Ascn H-3 9 Nov 70 0900 EST Double		Ascn H-4 9 Nov 70 0930 EST Double		Ascn H-5 9 Nov 70 1000 EST Double		Ascn H-6 9 Nov 70 1030 EST Double		Ascn H-7 9 Nov 70 1100 EST Double		Ascn H-8 9 Nov 70 1130 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	110.0	3.5	110.0	3.5	110.0	4.4	110.0	8.0	110.0	5.3	110.0	9.8	110.0	8.9	110.0	8.0	Sfc
50	135.7	5.0	140.0	6.6	130.3	4.7	152.6	8.4	140.6	5.1	160.7	10.8	152.9	11.2	158.2	7.1	50
100	135.0	5.8	138.4	8.4	139.0	5.4	156.7	8.8	151.9	6.2	160.5	8.9	155.3	11.9	150.3	8.7	100
150	137.6	6.8	135.2	10.1	145.6	6.2	156.9	8.9	156.9	7.6	154.2	7.0	157.4	12.6	145.1	10.3	150
200	146.1	8.8	138.6	10.9	139.9	6.7	157.0	9.0	159.0	8.9	151.0	6.7	156.4	12.7	142.5	11.3	200
250	148.6	10.1	143.9	11.5	134.7	7.2	154.3	9.9	157.4	9.9	152.9	7.2	155.2	12.7	144.1	12.8	250
300	149.0	10.9	149.7	11.6	141.0	9.3	151.9	10.8	156.1	10.9	155.7	8.4	153.8	12.1	151.0	15.2	300
350	157.0	11.9	157.0	11.1	146.4	11.9	150.7	11.2	155.1	11.5	157.8	10.0	152.1	11.1	157.2	16.5	350
400	164.9	12.8	163.7	12.2	157.4	13.2	150.2	11.2	154.5	11.9	154.6	9.7	150.1	10.2	163.4	17.1	400
450	172.6	13.7	168.1	14.5	166.8	14.4	156.3	11.4	155.8	12.3	151.2	9.7	150.1	10.2	169.2	15.6	450
500	176.8	11.1	172.3	12.5	170.7	13.8	164.9	11.4	161.4	13.2	149.3	11.0			178.2	11.6	500
550	181.3	9.6	179.3	9.4	174.8	12.6	172.9	12.3	166.5	12.6	154.1	13.0			194.5	8.3	550
600	183.8	9.7	181.6	9.2	180.7	9.3	178.6	13.5	180.6	6.0	159.4	14.4			190.5	10.5	600
650	207.7	6.2	182.0	9.6	186.1	8.0	182.6	11.8	179.6	9.7	166.5	11.2			187.9	12.6	650
700	202.6	7.6	181.2	10.2	187.0	8.2	187.7	10.0	175.3	16.8	173.5	13.8			186.0	14.8	700
750	212.5	5.8	182.9	9.5	184.6	7.7	192.4	8.1	177.9	13.3	180.2	13.4			188.7	13.4	750
800	204.1	6.4	195.9	5.9	223.3	2.3	199.8	5.2	182.0	10.2	186.1	11.8			194.0	11.1	800
850	223.5	2.9	202.1	4.7	346.6	9.4	193.8	6.9	186.0	9.4	204.9	6.1			202.0	8.9	850
900			194.2	2.6	344.1	7.1	187.7	9.6	189.7	7.4	184.4	12.0			196.6	10.6	900
950			193.4	3.5	282.1	1.2	187.0	8.1	199.0	4.6	180.2	16.6			188.6	14.7	950
1000			193.6	4.9	188.7	5.0	319.3	1.4	198.1	4.5					184.2	19.0	1000
1050			191.3	6.1	196.0	4.4	188.3	4.8	193.8	5.1					184.3	17.6	1050
1100			202.4	4.0	205.2	4.0	191.8	4.9	192.6	5.1					192.4	10.0	1100
1150			277.2	1.9	230.7	2.9	203.3	3.7	192.6	4.7					200.8	6.7	1150
1200			196.8	4.4	191.6	9.6									184.6	13.9	1200
1250			184.6	9.6	190.8	10.4									183.7	14.8	1250
1300			184.8	8.2	190.0	11.3											1300
1350			187.1	5.6	189.7	11.6											1350
1400			187.9	5.0													1400

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-1 10 Nov 70 0740 EST Double		Ascn C-2 10 Nov 70 0800 EST Double		Ascn C-3 10 Nov 70 0830 EST Double		Ascn C-4 10 Nov 70 0900 EST Double		Ascn C-5 10 Nov 70 0930 EST Double		Ascn C-6 10 Nov 70 1000 EST Double		Ascn C-7 10 Nov 70 1030 EST Double		Ascn C-8 10 Nov 70 1100 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc		0.0	320.0	2.2	110.0	1.7	180.0	0.8	270.0	1.7	060.0	2.6	320.0	1.3	220.0	4.4	Sfc
50	057.5	1.9	330.8	2.0	029.1	0.9	276.2	1.2	255.0	2.0	008.6	0.5	338.6	1.6	255.7	3.8	50
100	024.7	2.0	327.0	1.1	054.4	0.5	274.3	1.5	238.7	1.7	308.9	1.4	294.6	1.4	248.0	3.0	100
150	003.7	2.6	295.2	0.3	105.1	0.5	273.0	1.8	217.7	1.6	302.2	2.1	264.7	1.3	235.7	2.4	150
200	003.7	2.6	190.2	0.5	096.6	1.5	263.6	1.9	203.0	1.6	309.6	1.6	236.1	1.1	220.2	2.4	200
250			184.1	1.2	095.3	2.1	252.7	1.9	203.0	1.6	319.6	1.3	219.5	1.2	207.1	2.7	250
300			196.1	2.0			243.1	1.7					210.1	1.4	197.0	3.1	300
350			201.5	2.8			228.9	1.1					212.9	1.8	185.8	3.8	350
400			201.8	2.9			193.4	0.7					215.6	2.1	177.8	4.6	400
450							164.2	0.7					201.3	1.7	172.2	5.4	450
500							164.2	0.7					171.6	1.3	169.5	6.0	500
550													162.3	1.3	169.5	6.0	550

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn C-9 10 Nov 70 1130 EST Double		Ascn C-1 11 Nov 70 0735 EST Double		Ascn C-2 11 Nov 70 0800 EST Double		Ascn C-3 11 Nov 70 1000 EST Double		Ascn C-1 16 Nov 70 1005 EST Double		Ascn H-1 16 Nov 70 1124 EST Double		Ascn H-2 16 Nov 70 1200 EST Double		Ascn H-3 16 Nov 70 1230 EST Double		
Z, m	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	D,deg	S,mps	Z, m
Sfc	270.0	4.4		0.0	270.0	1.3	030.0	2.6	230.0	4.9	250.0	2.6	270.0	2.2	270.0	4.0	Sfc
50	203.0	2.2	069.4	1.7	314.3	0.7	037.8	2.9	257.3	4.3	250.1	5.6	278.4	7.2	248.0	6.0	50
100	195.6	1.7	067.8	3.0	046.2	1.0	045.3	3.8	261.8	4.0	253.6	5.8	269.0	7.6	249.6	7.5	100
150	183.1	1.5	067.6	3.5	062.4	1.2	053.3	3.8	259.0	3.8	259.2	6.4	260.3	8.0	251.1	8.8	150
200	162.9	1.6	067.9	3.3	072.8	1.4	065.5	3.4	256.0	3.7	259.4	6.7	253.6	8.2	254.6	8.2	200
250	114.6	3.0	071.8	2.8	065.8	1.5	075.0	3.2	256.4	4.1	262.5	7.8	249.5	8.4	259.4	7.2	250
300	164.2	6.0	090.2	2.1	059.4	1.5			256.7	4.5	259.9	8.4	252.2	8.6	255.1	6.9	300
350	160.1	7.6	116.0	1.7	057.6	1.7			259.1	4.9	271.6	6.9	253.1	8.0	254.1	7.4	350
400	162.2	7.8			056.1	1.8			269.1	5.4	268.4	8.1	252.7	7.0	257.6	7.2	400
450	161.3	9.5			055.9	1.9			275.6	5.8	265.0	8.9	257.0	6.5	259.6	6.3	450
500	158.4	12.8							275.3	5.9	264.5	8.0	262.1	6.1	259.9	6.5	500
550	159.3	15.0							267.7	6.6	261.1	8.6	260.7	6.9	252.7	7.6	550
600	161.4	16.6							262.9	7.2	259.2	9.1	259.5	7.7	255.2	5.3	600
650	163.1	18.2							261.8	7.5	262.3	8.4	259.5	7.6	260.7	6.1	650
700	163.3	18.4							261.8	7.8	268.7	8.7	260.0	7.1	260.1	7.6	700
750									264.5	8.3	275.2	9.5	261.5	6.7	259.7	7.6	750
800									266.1	8.7	279.5	9.0	265.8	6.6	263.1	6.8	800
850											283.7	8.4	269.9	6.6	259.6	8.1	850
900													267.5	7.1	257.4	8.6	900
950													265.9	7.5	262.7	4.8	950

Table 9 (continued). PILOT BALLOON MEASUREMENTS

	Ascn H-4 16 Nov 70 1300 EST Double	
Z, m	D,deg	S,mps
Sfc	270.0	1.7
50	253.4	5.5
100	257.9	5.8
150	262.6	6.0
200	264.8	6.1
250	266.4	6.0
300	264.3	6.8
350	259.9	8.6
400	258.4	9.3
450	258.9	9.3
500	261.6	9.3
550	260.4	9.6
600	264.7	8.7
650	266.1	9.6
700	269.6	9.0
750	268.9	9.9
800	268.8	8.8
850	270.7	8.0
900	273.5	7.6
950	275.9	7.7
1000	274.3	8.3

RADIOSONDE MEASUREMENTS

Radiosonde observations taken at Jimmy Stewart Airport are presented in Table 10. On most experiment days, two releases were effected, one prior to and another following the airborne activities. In addition, a single early-morning radiosonde was occasionally released on days during which the weather proved too restrictive for flying; these are also included in this table.

The pressure, temperature, dewpoint, and height above MSL of each mandatory and significant level up to 700 millibars are given for each radiosonde in Table 10. The accompanying rabal wind speeds and directions are listed for fixed heights, i.e., surface, 150 and 300 meters above surface, and 500, 1000, 1500, 2000, 2500, and 3000 meters MSL. Elevation of the release site is 428 meters MSL.

Table 10. RADIOSONDE MEASUREMENTS

Legend

Ascn	:	Individual ascension or radiosonde designation.
EST	:	Release time of radiosonde.
P, mb	:	Mandatory and significant pressure levels in whole millibars.
Z, m	:	Height of each level above mean sea level in whole meters.
T, °C	:	Dry-bulb temperature in degrees centigrade to nearest tenth.
Td, °C	:	Dewpoint temperature in degrees centigrade to nearest tenth.
H, m	:	Surface and 150 and 300 meters above surface in whole meters. Remaining heights above mean sea level in whole meters.
D, deg	:	Wind direction in whole degrees of azimuth.
S, mps	:	Wind speed in meters per second to nearest tenth.
Sfc	:	Surface wind direction and speed from Aerovane.

Table 10. RADIOSONDE MEASUREMENTS

Ascn 228 20 April 1970 1343 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	30					
954	428	16.3	3.0	Sfc	240	8.5
950	463	15.7	1.8	150	240	9.1
922	715	12.5	- 6.4	300	236	11.2
900	917	10.5	- 7.2			
853	1360	6.3	- 8.8	500	246	7.6
850	1389	6.0	- 9.0	1000	236	13.9
800	1881	1.3	-10.8	1500	244	11.9
762	2270	- 2.3	-12.9	2000	243	12.8
750	2396	- 3.3	-16.3	2500	250	21.5
700	2938	- 7.7	-18.4			

Ascn 229 21 April 1970 1540 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	96					
961	428	12.3	2.4	Sfc	260	9.3
950	524	11.4	0.7	150	302	14.7
925	746	9.1	- 5.1	300	305	25.5
900	972	7.0	- 5.3			
850	1438	2.6	- 6.5	500	291	9.1
845	1486	2.3	- 6.5			
800	1925	- 2.0	- 7.7			
766	2268	- 5.2	- 8.8			
750	2434	- 6.5	-10.0			
700	2970	-10.2	-13.6			

Ascn 230 22 April 1970 0544 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	190					
971	428	3.0	1.3	Sfc	260	1.8
954	572	6.3	- 1.3	150	269	6.8
950	606	6.0	- 1.6	300	282	11.2
911	948	4.0	- 3.2			
900	1047	3.1	- 3.9	500	262	3.6
850	1507	-0.6	- 6.1	1000	285	14.7
800	1988	-4.7	- 8.6	1500	293	19.0
766	2329	-7.6	-14.2	2000	303	18.6
758	2411	-3.5	-21.7	2500	299	34.4
750	2495	-3.1	-22.9			
739	2612	-2.5	-23.0			
700	3042	-2.9	-25.2			

Ascn 231 22 April 1970 1335 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	181					
971	428	17.4	3.7	Sfc	270	1.8
961	516	16.4	- 7.2	150	295	4.6
950	613	15.3	- 7.5	300	304	4.5
900	1067	10.6	-10.2			
891	1150	9.9	-10.2	500	286	3.3
850	1539	6.3	-11.3	1000	295	7.1
811	1922	2.9	-12.2	1500	299	10.0
800	2032	3.5	-14.7	2000	292	12.5
791	2124	3.9	-17.6			
769	2353	2.6	-21.5			

Ascn 232 23 April 1970 0746 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	143					
967	428	15.3	14.9	Sfc	190	3.6
955	534	17.2	12.8	150	216	8.2
950	579	16.9	12.7	300	244	12.6
922	833	14.4	12.5			
910	944	13.8	12.7	500	211	4.6
900	1038	14.0	13.1	1000	253	20.8
860	1423	14.6	13.9			
850	1522	14.1	13.4			
810	1929	11.8	10.9			
800	2033	11.2	10.1			
750	2571	8.1	6.2			
736	2727	7.2	5.2			
700	3138	3.7	2.0			

Ascn 233 25 April 1970 0551 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	150					
967	428	5.6	5.3	Sfc	215	2.3
950	573	6.0	6.0			
945	616	6.1	6.1			
915	882	8.0	- 5.4			
900	1018	7.4	- 5.3			
867	1325	5.9	- 5.1			
850	1486	4.4	- 6.5			
827	1709	2.4	- 8.6			
800	1976	0.1	-10.4			
764	2343	-2.9	-12.9			
750	2490	-3.6	-14.4			
700	3033	-6.1	-21.7			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 234 25 April 1970 1310 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	136					
966	428	17.7	2.0	Sfc	280	6.3
950	570	16.3	0.4	150	274	7.1
918	860	13.6	- 2.7	300	272	11.2
900	1026	12.0	- 3.3			
850	1500	7.6	- 5.8	500	288	5.2
833	1666	6.2	- 6.4	1000	270	6.3
800	1996	3.3	- 8.7	1500	280	9.3
750	2515	- 1.4	-12.7	2000	285	8.7
700	3060	- 6.4	-16.9	2500	296	13.3

Ascn 235 27 April 1970 0454 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	131					
965	428	8.1	7.8	Sfc	080	1.8
951	549	10.7	10.1	150	180	1.5
950	558	11.0	10.1	300	244	1.6
931	727	14.0	4.8			
900	1013	13.2	1.2	500	128	1.9
894	1069	13.0	0.4	1000	270	1.2
850	1491	10.0	1.3			
840	1589	9.3	1.2			
811	1880	6.8	- 2.6			
800	1992	5.9	- 3.2			
750	2516	1.4	- 6.2			
728	2755	- 0.6	- 7.4			
700	3069	- 0.8	-12.7			

Ascn 236 27 April 1970 1257 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	112					
964	428	23.9	7.1	Sfc	260	3.1
950	555	22.4	5.3	150	258	2.0
920	832	19.5	1.4	300	257	3.4
900	1020	17.6	0.7			
850	1505	12.8	- 1.8	500	280	2.2
800	2009	7.6	- 5.1	1000	258	2.5
786	2154	6.2	- 6.0	1500	261	1.3
750	2536	3.1	- 6.8	2000	322	0.9
708	3001	- 0.1	-14.8	2500	182	0.8
700	3092	1.8	-21.4	3000	232	1.8

Ascn 237 28 April 1970 0510 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	85					
961	428	13.9	6.3	Sfc	080	7.0
952	507	17.3	4.6	150	199	5.2
950	525	17.4	4.7	300	206	6.0
937	643	18.3	4.8			
900	987	16.2	2.2	500	166	2.9
879	1187	15.0	0.8	1000	212	3.1
850	1470	12.6	- 0.6	1500	235	2.5
835	1619	11.4	- 1.0			
800	1975	8.0	0.7			
777	2215	5.9	1.4			
757	2429	5.2	- 3.3			
750	2505	4.4	- 3.6			
740	2614	3.5	- 3.3			
700	3064	1.5	-17.9			

Ascn 238 28 April 1970 1254 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	92					
962	428	23.4	13.6	Sfc	210	4.0
951	528	21.5	8.4	150	220	2.7
950	537	21.4	8.3	300	210	4.3
905	954	17.0	7.1			
900	1001	16.4	6.8	500	214	3.2
866	1327	13.5	4.6	1000	208	3.6
850	1484	12.1	4.1	1500	185	4.0
806	1927	8.5	2.7	2000	198	8.0
800	1989	8.1	2.1	2500	201	7.3
783	2166	7.3	0.2	3000	225	3.7
750	2520	5.7	- 3.1			
700	3083	3.4	- 8.9			

Ascn 239 29 April 1970 0451 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	127					
965	428	16.4	16.4	Sfc	130	1.3
955	517	17.3	14.2	150	129	0.1
950	561	17.0	14.3	300	324	1.0
900	1022	14.4	13.7			
895	1069	14.2	13.6	500	120	1.2
850	1504	11.3	10.7	1000	309	6.7
838	1623	10.6	10.0			
800	2009	8.0	7.2			
758	2453	5.0	4.1			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 240 29 April 1970 1244 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	141					
968	428	24.6	17.7	Sfc	240	2.7
956	537	22.3	11.1	150	266	4.7
950	591	21.6	10.5	300	261	5.8
900	1057	17.0	8.4			
850	1542	13.4	6.0	500	257	3.2
820	1843	11.1	4.1	1000	268	6.4
800	2049	10.1	1.4	1500	270	4.6
798	2070	10.0	1.1	2000	281	6.2
750	2583	6.0	- 2.6	2500	288	12.7
734	2759	4.5	- 4.0	3000	298	12.5
700	3145	3.8	-19.0			

Ascn 241 30 April 1970 0500 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	150					
968	428	16.2	15.5	Sfc	120	2.2
953	561	19.5	14.2	150	165	7.3
950	589	19.6	14.0	300	186	5.3
920	866	21.2	12.4			
900	1056	19.8	10.5	500	146	5.3
880	1250	18.4	8.7	1000	201	7.6
853	1516	16.9	- 2.2	1500	229	3.4
850	1546	16.6	- 2.4	2000	284	4.8
808	1975	13.6	- 6.0	2500	313	5.0
800	2059	12.9	- 2.9	3000	282	4.6
781	2260	10.9	1.1			
750	2597	8.7	- 8.3			
749	2608	8.6	- 8.9			
700	3164	5.1	-18.7			

Ascn 242 30 April 1970 1220 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	150					
969	428	28.7	17.3	Sfc	150	6.3
959	519	26.6	10.3	150	140	7.6
950	602	25.9	10.1	300	151	5.9
900	1075	21.2	8.8			
850	1566	16.2	6.6	500	133	7.2
844	1626	15.7	6.4	1000	177	4.7
825	1819	15.5	1.9	1500	196	6.2
800	2079	13.7	- 1.0	2000	213	8.0
750	2620	9.9	- 7.3	2500	223	9.7
745	2675	9.5	- 8.1	3000	225	12.3
700	3188	5.1	- 6.7			

Ascn 243 1 May 1970 0503 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	165					
970	428	19.1	13.1	Sfc	240	4.0
953	580	21.5	10.4	150	185	9.0
950	608	21.3	9.9	300	204	11.3
905	1026	18.4	6.6			
900	1073	18.6	7.1	500	195	7.2
884	1228	19.5	9.7	1000	226	15.4
850	1564	17.3	7.9	1500	236	16.2
819	1881	15.2	6.2	2000	230	10.0
800	2079	13.5	7.1	2500	207	12.3
777	2325	11.5	7.2	3000	208	14.6
750	2620	9.6	1.0			
733	2810	8.4	- 3.7			
700	3189	5.3	- 3.0			

Ascn 244 1 May 1970 1216 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	154					
970	428	28.0	15.7	Sfc	250	7.6
950	612	26.0	12.8	150	250	6.9
922	874	23.5	9.1	300	234	8.8
900	1084	21.4	8.3			
855	1526	17.1	6.6	500	255	6.7
850	1576	16.6	6.4	1000	231	11.2
819	1891	13.1	6.2	1500	227	10.1
800	2088	12.2	6.9	2000	234	12.4
781	2290	11.3	7.2	2500	228	13.7
765	2462	9.4	3.4			
750	2627	8.1	2.1			
700	3193	4.5	- 1.0			

Ascn 245 2 May 1970 0502 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	144					
968	428	18.4	17.5	Sfc	250	0.9
957	526	19.5	14.6	150	304	3.2
950	589	18.9	14.6	300	308	3.9
914	920	15.4	14.0			
900	1051	15.0	13.9	500	306	2.6
860	1436	13.5	13.2	1000	293	3.1
850	1535	12.7	12.4			
818	1857	10.5	10.2			
800	2043	9.7	8.6			
785	2200	9.0	7.3			
762	2447	8.8	4.0			
750	2579	7.9	3.3			
725	2858	5.9	2.0			
700	3145	4.3	- 6.3			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 246 4 May 1970 0452 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	191					
971	428	3.0	3.0	Sfc	090	0.9
959	529	8.9	4.3	150	223	1.3
950	607	8.4	2.2	300	255	2.6
945	651	8.2	1.1			
900	1052	5.0	- 1.4	500	199	0.9
889	1152	4.3	- 2.1	1000	267	4.0
879	1244	4.5	- 7.6			
860	1423	6.5	- 8.6			
850	1519	5.9	- 8.7			
813	1882	3.6	- 9.7			
800	2012	3.0	-10.6			
750	2533	0.2	-13.8			
738	2662	-0.4	-14.4			
700	3083	-3.3	-16.6			

Ascn 247 4 May 1970 1344 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	162					
969	428	19.3	3.8	Sfc	185	2.7
951	588	16.5	- 1.1	150	254	3.7
950	597	16.3	- 1.2	300	258	4.6
900	1053	12.0	- 3.7			
889	1155	11.1	- 4.1	500	245	3.3
850	1527	7.6	- 5.8	1000	261	5.5
800	2023	2.9	- 7.8	1500	276	4.1
798	2043	2.7	- 8.0	2000	300	7.7
790	2125	3.4	- 7.4	2500	321	9.8
750	2544	0.8	-11.3			
700	3095	- 2.9	-16.6			

Ascn 248 5 May 1970 0452 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	155					
968	428	6.8	6.8	Sfc	200	0.9
952	566	10.9	10.8	150	260	5.5
950	583	10.7	10.4	300	266	5.7
915	896	8.8	8.4			
907	969	9.5	7.6	500	219	5.2
900	1033	9.3	6.4	1000	270	8.1
894	1089	9.0	5.2			
876	1257	9.0	- 0.3			
850	1506	6.9	- 2.8			
800	2001	2.6	- 8.4			
773	2277	0.2	-11.2			
750	2519	- 1.3	-18.4			
745	2572	- 1.5	-20.5			
723	2811	- 0.7	-21.5			
700	3068	- 3.0	-21.8			

Ascn 249 5 May 1970 1218 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	138					
967	428	18.7	2.1	Sfc	245	7.2
950	579	16.7	- 0.9	150	261	5.8
913	914	12.1	- 6.8	300	264	6.7
900	1034	10.9	- 7.8			
857	1439	6.6	- 9.3	500	259	6.0
850	1506	6.1	- 9.7	1000	258	7.0
840	1603	5.6	-10.2	1500	261	5.5
820	1799	3.7	-11.1	2000	280	17.6
809	1909	4.0	-11.6	2500	287	20.6
800	2000	3.4	-11.7			
750	2520	- 0.5	-14.8			
700	3067	- 4.6	-18.1			

Ascn 250 6 May 1970 0453 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	185					
970	428	- 0.2	- 0.2	Sfc	270	0.9
954	561	0.5	- 1.2			
950	595	0.2	- 1.4			
908	956	- 2.4	- 2.4			
900	1026	- 3.0	- 3.0			
852	1458	- 6.4	- 7.1			
850	1476	- 6.6	- 7.4			
821	1746	- 8.8	-14.2			
800	1947	-10.0	-14.1			
773	2211	-11.3	-14.1			
750	2442	-13.3	-16.5			
749	2453	-13.5	-16.7			
716	2794	-15.2	-26.4			
700	2965	-15.9	-27.9			

Ascn 251 7 May 1970 1223 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	195					
972	428	11.2	- 5.3	Sfc	260	4.9
950	617	8.3	-11.1	150	285	3.4
945	661	7.5	-12.8	300	287	4.1
900	1059	3.3	-13.5			
857	1453	- 0.9	-14.8	500	279	3.4
850	1519	- 1.4	-15.6	1000	284	5.1
822	1784	- 3.5	-21.2	1500	284	2.3
808	1921	- 1.2	-23.2	2000	319	14.0
800	2000	- 1.2	-23.2	2500	331	20.4
797	2030	- 1.2	-23.2	3000	321	29.1
771	2294	- 2.0	-19.4			
759	2419	- 0.9	- 8.6			
750	2514	- 1.5	- 9.1			
736	2664	- 2.5	-10.1			
725	2784	- 2.5	-12.3			
700	3062	- 4.5	-18.7			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 252 8 May 1970 0550 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	137					
966	428	10.1	0.1	Sfc	220	2.2
952	549	11.5	-5.4	150	235	8.0
950	567	11.5	-5.4	300	260	13.5
929	753	11.3	-4.3			
900	1019	13.7	6.1	500	226	4.4
898	1038	13.8	6.7	1000	282	22.4
854	1460	11.5	3.3	1500	285	20.1
850	1500	11.2	3.0	2000	288	23.5
830	1698	9.6	2.9	2500	292	36.0
800	2003	6.9	2.8			
772	2295	4.3	2.0			
750	2530	2.7	0.7			
700	3086	- 0.9	-2.1			

Ascn 253 8 May 1970 1327 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	102					
963	428	24.9	10.8	Sfc	255	8.5
950	546	23.1	6.4	150	249	9.6
944	601	22.4	4.4	300	244	10.9
900	1013	17.8	2.9			
893	1079	17.0	2.6	500	256	6.2
850	1497	13.3	1.6	1000	246	11.0
833	1667	11.8	0.8	1500	258	11.4
800	2004	9.6	1.0	2000	284	9.6
787	2140	8.8	1.0	2500	272	17.9
776	2256	6.1	- 4.0	3000	277	19.6
758	2448	5.5	- 6.4			
750	2535	4.4	- 7.4			
732	2732	2.1	- 9.5			
700	3094	3.9	-18.9			

Ascn 254 9 May 1970 0449 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	123					
965	428	11.9	11.5	Sfc	235	0.9
955	516	17.0	8.7	150	245	9.9
950	560	17.4	8.8	300	261	16.5
927	771	19.5	10.2			
900	1025	17.5	8.1	500	238	4.1
862	1392	14.8	5.0	1000	272	19.8
850	1510	13.6	5.0	1500	282	17.0
802	1997	9.1	4.5	2000	279	22.6
800	2017	8.9	4.3	2500	281	18.6
768	2354	5.8	1.3	3000	278	18.5
750	2548	4.7	- 4.8			
734	2724	3.8	-13.5			
718	2903	4.7	-18.3			
700	3110	4.3	-18.6			

Ascn 255 9 May 1970 1214 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	113					
965	428	26.1	11.5	Sfc	240	8.5
950	565	24.2	9.0	150	250	9.1
922	825	20.7	3.8	300	253	14.3
900	1033	18.6	2.4			
850	1519	13.9	- 1.2	500	247	5.9
817	1851	10.5	- 4.3	1000	256	9.8
800	2025	9.0	- 1.9	1500	263	11.9
774	2298	6.6	0.2	2000	251	9.8
750	2556	5.0	- 3.0			
745	2611	4.7	- 3.8			
730	2778	7.5	-18.3			
700	3122	5.5	-16.9			

Ascn 256 11 May 1970 0451 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	148					
968	428	13.3	13.3	Sfc	220	0.9
956	533	15.2	14.5	150	254	4.9
950	587	15.0	14.3	300	284	7.5
900	1044	12.7	12.0			
886	1176	12.1	11.4	500	232	2.6
850	1523	10.4	9.7	1000	293	12.7
846	1563	10.2	9.5	1500	295	9.5
833	1692	9.2	7.2			
817	1852	7.6	6.5			
800	2026	6.4	5.3			
770	2339	4.3	3.2			
750	2553	3.2	1.7			
722	2862	1.8	- 0.2			
700	3111	1.2	- 5.2			

Ascn 257 11 May 1970 1250 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	148					
968	428	23.9	14.6	Sfc	210	4.0
955	545	21.6	7.8	150	231	4.4
950	591	21.0	7.6	300	231	6.0
900	1055	16.3	5.9			
851	1527	11.5	4.0	500	228	3.2
850	1537	11.5	4.0	1000	231	4.4
839	1646	11.4	1.0	1500	234	7.0
800	2042	8.5	- 1.3	2000	271	10.0
750	2572	4.7	- 4.5			
700	3132	1.2	-14.5			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 258 12 May 1970 0532 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	175					
968	428	15.0	15.0	Sfc	115	0.9
959	507	15.8	14.9	150	193	2.7
950	587	15.8	14.6	300	233	1.4
932	750	15.8	13.9			
900	1047	14.8	10.8	500	184	2.0
870	1334	13.8	8.0	1000	348	2.9
850	1530	12.4	6.9	1500	297	7.4
811	1923	9.6	4.6	2000	291	9.0
800	2036	8.9	4.3	2500	278	7.8
750	2568	5.3	2.1	3000	264	13.2
735	2733	4.2	1.5			
724	2856	3.9	0.6			
700	3130	1.9	- 0.1			

Ascn 259 12 May 1970 1324 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	152					
969	428	23.3	15.4	Sfc	220	4.0
951	591	21.1	10.3	150	220	3.6
950	600	21.0	10.5	300	236	5.6
900	1064	16.6	7.5			
890	1159	15.8	7.0	500	234	1.9
850	1548	12.3	7.0	1000	239	7.0
833	1717	10.8	6.5	1500	256	8.0
800	2054	8.9	3.9	2000	259	9.9
794	2116	8.5	3.3			
766	2412	6.1	3.1			
750	2585	5.0	- 0.8			
729	2817	3.5	- 6.4			
700	3146	2.1	- 8.9			

Ascn 260 13 May 1970 0502 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	133					
966	428	15.1	15.1	Sfc	220	3.1
950	569	15.1	14.4	150	232	7.8
937	686	15.1	13.5	300	242	11.2
914	897	13.6	12.2			
900	1027	13.6	11.5	500	223	5.0
879	1227	13.6	10.8	1000	271	13.6
850	1509	11.6	10.4	1500	286	13.1
836	1648	10.8	10.4			
800	2016	9.2	8.8			
784	2183	8.5	8.1			
755	2494	4.9	1.5			
750	2548	4.7	1.5			
721	2870	4.0	3.5			
709	3007	2.7	- 2.4			
700	3110	2.4	- 3.5			

Ascn 261 13 May 1970 1225 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	130					
966	428	21.1	16.6	Sfc	220	4.0
953	545	19.8	13.5	150	225	4.6
950	572	19.6	13.6	300	230	5.8
900	1035	15.3	12.8			
884	1187	14.0	12.6	500	224	3.8
850	1518	13.0	8.7	1000	232	6.8
819	1831	12.1	4.6			
800	2027	11.3	2.0			
792	2111	11.0	0.9			
750	2564	8.0	- 1.7			
700	3130	4.4	- 5.1			

Ascn 262 15 May 1970 0534 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	169					
970	428	14.8	14.5	Sfc	135	6.7
950	604	14.2	12.8	150	160	6.6
940	694	14.0	12.1	300	185	10.2
924	839	15.6	13.1			
900	1063	15.0	11.6	500	154	6.2
885	1205	14.5	10.7	1000	232	12.3
867	1380	15.2	11.6	1500	248	10.8
850	1548	14.0	11.4	2000	268	14.5
821	1840	11.6	10.7			
800	2057	10.1	8.4			
761	2472	7.5	3.9			
750	2592	6.8	1.7			
736	2747	5.8	- 1.1			
725	2870	5.1	1.2			
700	3156	2.4	- 1.5			

Ascn 263 15 May 1970 1253 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	163					
970	428	21.7	16.7	Sfc	160	4.9
950	608	19.6	12.6	150	156	5.2
929	800	17.5	8.4	300	187	6.4
915	930	18.0	8.3			
900	1071	17.0	7.6	500	150	4.5
850	1556	13.8	4.9	1000	225	6.8
847	1586	13.6	4.7	1500	265	8.9
800	2065	10.2	1.8			
783	2243	9.0	0.9			
750	2600	8.0	- 4.1			
700	3167	6.5	-17.5			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 264 14 October 1970 0509 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	132					
966	428	17.2	15.1	Sfc	150	4.8
950	571	19.2	13.9	150	192	12.3
945	616	19.9	13.4	300	199	7.9
928	773	19.0	10.1			
900	1036	17.9	9.3	500	161	7.4
874	1286	16.8	8.2	1000	226	10.3
850	1523	14.9	8.6	1500	178	8.2
845	1573	14.5	8.7			
807	1961	11.8	5.0			
800	2034	11.2	5.1			
768	2374	8.3	5.4			
756	2504	7.8	4.6			
750	2570	7.4	3.0			
730	2793	6.3	- 2.5			
700	3137	5.6	-11.0			

Ascn 265 14 October 1970 1320 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	141					
967	428	18.1	16.1	Sfc	235	3.1
950	580	17.7	14.3			
930	762	17.3	12.0			
900	1042	15.5	11.9			
890	1136	14.3	11.3			
850	1525	12.5	10.6			
849	1535	12.4	10.7			
800	2032	9.4	8.5			
784	2200	8.4	7.8			
750	2566	6.6	4.2			
734	2743	5.7	2.3			
700	3131	3.4	0.0			

Ascn 266 15 October 1970 0519 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	135					
966	428	15.8	15.8	Sfc	210	1.8
950	569	13.6	12.5			
948	587	13.3	12.1			
900	1023	10.7	9.5			
850	1498	8.0	6.9			
836	1636	7.1	6.0			
800	1998	5.7	3.5			
759	2428	4.0	0.7			
750	2525	3.6	- 0.2			
733	2711	3.0	- 1.9			
700	3084	1.5	- 2.6			

Ascn 267 16 October 1970 0445 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	191					
972	428	4.7	4.4	Sfc	290	1.3
950	614	4.2	1.4	150	330	9.5
933	761	3.7	- 1.4	300	341	7.3
903	1026	1.8	- 7.2			
900	1052	1.5	- 6.8	500	314	6.8
854	1473	-2.2	- 2.9	1000	343	8.9
850	1510	-2.4	- 3.4	1500	336	13.2
802	1970	-5.0	- 8.9	2000	324	16.0
800	1989	-5.1	- 9.0	2500	300	13.2
779	2198	-6.9	-10.8			
767	2319	-7.5	-12.4			
750	2494	-6.5	-21.2			
726	2748	-6.7	-27.1			
700	3032	-8.0	-28.2			

Ascn 268 16 October 1970 1303 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	208					
974	428	6.7	- 1.6	Sfc	330	5.5
964	512	5.3	- 7.2	150	340	10.5
950	631	4.2	- 6.9	300	333	6.2
900	1068	0.2	- 8.0			
854	1468	- 3.5	- 9.1	500	334	11.4
850	1523	- 3.8	- 9.0	1000	319	10.9
800	1998	- 7.8	-10.7	1500	327	11.3
778	2215	- 9.6	-11.7	2000	327	16.4
755	2446	-10.4	-13.4			
750	2498	-10.6	-16.1			
738	2622	-11.0	-25.2			
731	2695	-13.0	-27.0			
700	3024	-14.4	-30.2			

Ascn 269 17 October 1970 0507 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	232					
976	428	- 1.1	- 1.1	Sfc	280	0.9
955	601	- 0.2	- 3.7	150	311	4.8
950	643	- 0.4	- 3.9	300	335	5.9
926	848	- 1.8	- 6.0			
900	1074	- 3.4	- 7.0	500	288	4.0
850	1524	- 6.4	- 9.0	1000	335	10.2
800	1995	- 9.6	-11.1	1500	339	15.2
753	2460	-12.8	-13.3			
750	2491	-12.0	-14.9			
740	2594	- 9.8	-25.3			
700	3022	-12.0	-23.5			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 270 17 October 1970 1233 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	219					
975	428	5.6	2.7	Sfc	275	3.1
950	639	4.0	- 1.1	150	290	5.3
949	648	3.9	- 1.4	300	288	8.3
900	1076	0.2	- 1.8			
882	1238	- 1.0	- 2.0	500	293	4.1
850	1533	- 2.5	- 3.6	1000	293	12.0
818	1837	- 3.9	- 5.1			
800	2012	- 5.0	- 7.1			
792	2091	- 5.6	- 8.0			
750	2516	- 8.7	-14.1			
721	2821	-10.8	-18.8			
710	2939	-11.6	-20.9			
700	3018	-11.1	-21.3			

Ascn 271 20 October 1970 1258 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	249					
978	428	13.1	8.2	Sfc	090	4.4
950	671	10.4	2.0			
942	741	9.8	0.4			
900	1118	7.6	- 1.8			
895	1164	7.5	- 1.9			
882	1285	8.5	- 4.3			
850	1590	6.8	- 6.8			
847	1619	6.6	- 7.0			
830	1785	6.6	-10.6			
800	2086	5.1	-15.4			
798	2107	5.0	-16.1			
760	2503	1.9	-20.6			
750	2609	1.5	-20.9			
724	2893	0.3	-21.9			
700	3162	- 2.0	-21.4			

Ascn 272 22 October 1970 0450 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	142					
967	428	11.7	11.7	Sfc	225	1.8
950	576	11.0	10.9			
900	1027	9.0	8.6			
879	1222	8.0	7.4			
850	1499	6.4	3.9			
833	1665	5.4	1.3			
800	1994	3.5	1.2			
771	2294	1.8	0.9			
759	2420	1.6	- 4.4			
750	2517	1.6	- 4.9			
739	2636	1.6	- 6.0			
700	3071	1.1	- 8.1			

Ascn 273 23 October 1970 0451 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	152					
968	428	11.1	11.1	Sfc		0.0
950	584	10.2	10.1			
900	1033	7.5	6.9			
890	1125	7.0	6.4			
850	1503	5.0	4.2			
819	1806	3.5	2.6			
800	1996	1.1	- 0.3			
779	2209	- 1.6	- 3.8			
767	2333	- 1.3	-20.8			
750	2512	0.0	-21.5			
730	2729	2.0	-21.9			

Ascn 274 24 October 1970 0514 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	163					
968	428	2.5	2.5	Sfc	060	0.9
952	564	9.4	9.4	150	031	2.5
950	582	9.5	9.2	300	051	3.6
943	643	9.8	8.6			
911	930	8.3	5.9	500	034	2.0
900	1030	7.7	5.7	1000	082	10.2
883	1187	6.9	5.4	1500	074	12.0
869	1319	7.8	2.2	2000	085	8.5
855	1453	8.4	- 0.3			
850	1502	8.3	- 2.6			
838	1619	7.8	-10.0			
800	2002	8.6	-13.7			
793	2075	8.8	-14.2			
750	2534	6.6	-12.5			
700	3098	4.0	-12.0			

Ascn 275 26 October 1970 0548 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	148					
967	428	10.0	10.0	Sfc		0.0
959	497	12.8	12.5	150	138	4.7
950	576	12.6	12.0	300	167	8.0
916	882	11.5	9.9			
900	1030	10.5	9.3	500	111	3.0
850	1505	7.8	7.2	1000	187	5.4
846	1544	7.6	7.2	1500	236	3.9
831	1691	6.2	1.7			
819	1811	7.5	-15.3			
811	1892	7.6	-14.6			
800	2004	7.4	-11.8			
750	2534	5.8	- 7.7			
749	2545	5.7	- 7.5			
700	3097	4.0	-16.9			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 276 26 October 1970 1435 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	148					
968	428	16.9	8.6	Sfc	085	4.8
950	587	15.4	7.2	150	090	6.9
920	858	13.1	4.8	300	105	4.5
900	1043	11.3	5.4			
852	1498	7.0	5.5	500	086	7.2
850	1517	6.8	5.4	1000	131	4.5
814	1872	4.5	3.4			
800	2013	4.0	- 3.0			
787	2146	3.5	-12.0			
751	2527	4.2	-11.4			
750	2538	4.3	-11.3			
725	2815	6.3	-14.4			
714	2940	5.7	-14.9			

Ascn 277 27 October 1970 1255 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	208					
974	428	10.6	6.0	Sfc	120	3.1
952	618	10.0	4.1	150	102	5.3
950	635	9.8	4.2	300	114	6.7
900	1081	5.4	2.5			
880	1265	3.6	1.6	500	107	4.3
850	1546	2.0	0.3	1000	127	8.2
839	1651	1.5	0.0			
826	1777	1.1	- 1.7			
813	1905	1.8	- 2.3			
800	2036	5.2	- 7.9			
795	2087	6.4	-12.7			
761	2445	6.1	-15.8			
750	2565	6.5	-16.1			
749	2576	6.6	-16.0			
723	2865	6.1	-12.4			
700	3130	5.0	-17.4			

Ascn 278 28 October 1970 0557 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	214					
974	428	6.1	4.9	Sfc	110	4.1
950	632	4.8	2.1	150	127	9.1
919	902	4.2	2.4	300	143	10.5
900	1072	3.8	1.3			
877	1283	3.4	0.1	500	118	8.3
850	1536	1.2	- 1.0	1000	157	14.5
842	1612	0.5	- 1.5	1500	179	7.3
821	1817	5.9	-14.8			
800	2029	6.2	-15.1			
790	2132	6.4	-14.9			
750	2557	4.5	-10.8			
744	2622	4.2	-10.3			
700	3117	3.2	-20.2			

Ascn 279 28 October 1970 1409 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	215					
975	428	8.9	3.1	Sfc	130	4.5
950	642	8.1	- 0.1	150	137	7.6
900	1086	4.0	0.1	300	158	9.1
850	1547	-0.5	- 0.7			
846	1585	-0.7	- 0.7	500	127	6.9
832	1718	-1.5	- 2.7	1000	151	12.2
819	1844	1.7	-16.2			
801	2025	7.2	-11.5			
800	2036	7.2	-11.5			
766	2393	6.7	-11.9			
753	2533	7.2	-11.5			
750	2566	7.0	-11.2			
729	2799	5.4	-10.4			
715	2957	5.5	-10.7			
700	3130	4.1	-10.0			

Ascn 280 29 October 1970 0553 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	197					
973	428	8.1	7.2	Sfc	120	2.7
950	625	7.4	5.9	150	126	7.4
920	889	6.0	5.4	300	146	9.4
905	1024	6.5	5.1			
900	1070	6.1	4.6	500	116	6.3
887	1189	5.1	3.3	1000	170	9.6
850	1538	7.3	-2.4	1500	205	3.8
849	1548	7.4	-2.8	2000	276	4.5
836	1675	8.5	-6.1	2500	069	3.0
800	2039	7.7	-6.8	3000	158	4.4
758	2483	6.7	-7.3			
750	2570	6.4	-5.5			
700	3133	3.4	-0.2			

Ascn 281 29 October 1970 1437 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	195					
972	428	9.4	9.0	Sfc	130	4.8
950	617	8.1	7.8	150	134	8.0
921	873	6.4	6.4	300	142	9.0
910	972	7.6	7.6			
900	1063	7.4	7.4	500	125	7.2
887	1183	7.0	7.0			
873	1315	9.5	9.5			
850	1537	8.4	8.4			
830	1734	7.5	7.5			
816	1874	7.9	7.6			
800	2038	7.0	5.5			
794	2100	6.5	4.3			
750	2567	4.0	1.5			
740	2676	3.4	0.7			
700	3126	0.7	0.2			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 282 30 October 1970 0918 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	206					
974	428	9.7	9.7	Sfc	130	4.8
950	635	8.4	8.4			
904	1044	5.8	5.8			
900	1080	6.0	6.0			
892	1153	6.3	6.3			
879	1275	9.9	9.9			
850	1554	8.4	8.4			
800	2054	5.9	5.9			
750	2581	3.1	3.1			
700	3139	0.1	0.1			

Ascn 283 31 October 1970 0606 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	211					
974	428	10.8	10.7	Sfc	150	4.0
950	636	9.6	9.5			
920	902	8.1	8.1			
900	1083	7.5	7.5			
896	1120	7.4	7.4			
871	1354	7.4	7.4			
850	1555	7.0	7.0			
813	1921	6.0	6.0			
800	2054	5.3	5.3			
750	2579	2.0	1.7			
747	2612	1.8	1.5			
700	3135	0.0	- 0.4			

Ascn 284 2 November 1970 0609 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	149					
967	428	8.3	8.3	Sfc	100	1.8
958	505	10.1	---	150	132	6.5
950	574	9.9	---	300	139	8.6
900	1021	8.0	---			
869	1309	6.8	2.5	500	124	4.5
850	1491	6.0	2.1	1000	145	7.0
846	1530	5.7	1.8	1500	158	5.6
800	1987	4.8	-15.7	2000	155	4.0
799	1997	4.7	-17.0	2500	134	5.7
753	2478	2.4	- 3.5			
750	2511	2.0	- 3.6			
700	3064	- 2.0	- 6.2			

Ascn 285 2 November 1970 1350 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	107					
963	428	15.6	7.1	Sfc	130	4.1
950	543	14.5	5.8	150	135	4.2
900	996	10.0	1.3	300	143	4.5
852	1448	5.8	- 2.7			
850	1468	6.0	- 2.8	500	132	4.1
840	1565	7.4	- 3.4	1000	135	5.3
800	1965	5.0	- 2.3	1500	160	6.7
793	2037	4.5	- 2.1	2000	170	8.2
750	2489	2.2	-14.0	2500	160	10.0
733	2674	1.3	-22.5			
700	3044	- 0.9	-13.8			

Ascn 286 4 November 1970 0550 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	103					
961	428	3.6	3.6	Sfc	215	1.2
950	521	3.0	3.0			
900	957	0.1	0.1			
885	1092	-0.6	- 0.6			
864	1284	-0.1	- 0.1			
850	1415	-0.9	- 0.9			
840	1510	-1.4	- 1.4			
802	1878	-2.6	- 6.2			
800	1898	-2.8	- 6.3			
750	2407	-6.0	- 8.0			
741	2502	-6.9	- 8.6			
723	2694	-6.0	-23.8			
700	2947	-6.6	-25.9			

Ascn 287 5 November 1970 0604 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	22					
952	428	4.4	3.6	Sfc	265	5.9
950	445	4.3	3.5	150	286	13.3
900	883	1.2	0.9	300	286	21.1
858	1266	-1.5	- 1.5			
850	1341	-2.1	- 2.1	500	282	8.5
833	1501	-3.6	- 3.6			
816	1663	-5.7	-22.2			
803	1790	-2.6	-11.1			
800	1820	-2.7	-11.0			
759	2237	-3.1	-11.1			
750	2331	-3.6	-11.8			
734	2502	-4.4	-12.8			
711	2752	-5.2	- 8.4			
700	2875	-5.8	-10.6			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 288 5 November 1970 1343 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	9					
950	428	5.0	5.0	Sfc	265	8.5
900	867	1.9	1.9			
887	984	1.0	1.0			
850	1326	-0.6	- 1.1			
800	1810	-2.8	- 3.9			
798	1829	-2.9	- 5.0			
763	2184	-4.7	- 7.1			
750	2319	-5.2	-10.9			
737	2457	-5.8	-15.6			
726	2574	-7.0	-21.3			
715	2694	-5.4	-16.9			
700	2860	-6.7	-20.7			

Ascn 289 6 November 1970 0553 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	100					
961	428	3.3	3.3	Sfc	230	2.3
950	521	3.3	3.3	150	261	6.8
921	773	3.1	3.1	300	275	12.3
900	959	1.6	1.6			
850	1418	-1.9	- 1.9	500	244	4.3
820	1703	-4.0	- 4.0	1000	281	9.6
813	1771	-3.4	-18.5			
800	1898	-2.0	-15.4			
794	1958	-1.5	-14.6			
767	2234	-1.5	-11.3			
755	2360	1.0	-14.6			
750	2414	0.9	-14.7			
700	2967	-0.7	-16.5			

Ascn 290 7 November 1970 0551 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	114					
962	428	3.3	2.7	Sfc	215	3.1
952	513	7.9	2.9	150	240	11.4
950	530	8.0	2.0	300	245	11.3
939	627	8.6	- 0.9			
900	976	6.6	- 2.2	500	232	9.4
850	1443	4.0	- 4.4	1000	262	11.6
843	1511	3.6	- 4.8	1500	259	12.1
800	1934	1.3	-11.4	2000	258	17.7
791	2025	0.8	-13.3	2500	274	19.4
750	2452	-0.3	-13.2			
744	2516	-0.5	-13.1			
700	3001	-3.8	-13.7			

Ascn 291 9 November 1970 0619 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	204					
973	428	8.6	6.2	Sfc	140	5.9
950	625	7.9	4.5	150	151	9.3
946	660	7.8	4.0	300	163	12.2
908	1000	10.0	1.3			
900	1073	9.5	0.6	500	144	7.5
850	1545	6.7	- 3.8	1000	190	12.3
800	2041	3.8	- 8.5	1500	208	5.7
783	2215	2.8	-10.4	2000	221	3.6
750	2564	3.2	-17.6	2500	199	7.3
741	2662	3.3	-20.9	3000	193	7.7
700	3121	1.0	-22.0			

Ascn 292 9 November 1970 1325 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	186					
972	428	12.2	7.7	Sfc	170	5.3
950	619	11.3	2.0	150	148	8.6
900	1067	6.9	0.3	300	153	11.7
886	1196	7.6	- 1.3			
857	1471	8.6	- 4.5	500	148	7.2
850	1539	8.2	- 5.2	1000	168	14.0
800	2036	4.7	-12.2	1500	192	8.6
798	2057	4.6	-12.8	2000	194	10.6
790	2139	6.5	-20.0	2500	200	11.6
759	2467	5.4	-20.0	3000	192	11.5
750	2564	4.8	-20.5			
700	3123	1.0	-22.0			

Ascn 293 10 November 1970 0547 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	156					
968	428	11.7	10.3	Sfc	130	7.2
950	584	10.0	7.6	150	135	9.7
934	725	8.5	5.4	300	150	13.4
902	1015	10.6	5.1			
900	1034	10.5	5.0	500	127	7.4
855	1459	7.6	2.7	1000	182	15.6
850	1507	7.6	2.5	1500	208	14.9
831	1694	7.5	2.0			
800	2006	5.4	1.1			
750	2531	1.6	- 0.8			
700	3084	- 2.3	- 3.0			

Table 10 (continued). RADIOSONDE MEASUREMENTS

Ascn 294 10 November 1970 1354 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	153					
968	428	12.8	12.8	Sfc	140	1.8
952	567	11.5	9.4			
950	585	11.3	9.4			
921	844	9.0	9.0			
900	1035	8.4	8.4			
851	1498	7.1	7.1			
850	1507	7.0	6.9			
812	1882	4.4	1.7			
800	2004	3.6	1.1			
750	2525	0.2	- 1.7			
700	3076	- 3.1	- 4.3			

Ascn 295 11 November 1970 0550 EST

P,mb	Z, m	T,°C	Td,°C	H, m	D,deg	S,mps
1000	160					
969	428	11.7	11.7	Sfc	080	1.3
950	593	10.9	10.9	150	093	7.4
914	915	9.1	9.0	300	114	7.5
904	1007	9.9	9.6			
900	1044	9.7	9.4	500	084	5.8
877	1259	8.5	7.3	1000	144	8.6
850	1517	6.6	5.7	1500	163	5.6
811	1902	3.9	3.7	2000	165	4.4
800	2013	3.4	3.1			
779	2229	2.6	1.8			
759	2440	3.0	- 0.1			
750	2536	2.2	- 0.5			
700	3090	- 2.4	- 3.1			

POWER PLANT OPERATIONAL PARAMETERS

Analyses of the Homer City and Conemaugh coal supplies are presented in Table 11. Although various mine sources supplied coal to each of the generating stations, the data for each source and experiment day are averaged to obtain one analysis per each of the two series. Parameters include moisture, volatile matter, fixed carbon, ash, sulfur, and heat value. The sulfur content is a close approximation to the "as burned" basis with allowance made for rejection of sulfur-containing pyrites. The heat value of the coal is presented in English as well as metric units because of common usage.

Table 11. COAL ANALYSES

Homer City Station April 1970 Series		Homer City Station October 1970 Series	
Moisture, %	3.90	Moisture, %	4.41
Volatile matter, %	23.73	Volatile matter, %	25.60
Fixed carbon, %	49.52	Fixed carbon, %	50.49
Ash, %	20.67	Ash, %	17.48
Sulfur, %	2.18	Sulfur, %	2.02
Btu per pound	11,488	Btu per pound	11,884
Calories per gram	6,382	Calories per gram	6,602

Conemaugh Station October 1970 Series	
Moisture, %	3.60
Volatile matter, %	23.85
Fixed carbon, %	51.75
Ash, %	18.40
Sulfur, %	2.40
Btu per pound	11,830
Calories per gram	6,572

Table 12 contains the hourly operational data of the Homer City and Conemaugh Stations. Included are values of plant load, stack gas exit temperature and velocity, temperature difference at stack top, SO_2 emission, and heat emission. The nominal period of record extends up to 2 hours before and 1 hour after helicopter or bubbler SO_2 measurements on each series day. When both stacks of one station were emitting, a separate listing is included for each.

The plant load was obtained from the station records and includes total electrical output generated during each hour. Temperature difference at stack top is the difference between stack exit temperature and the 250-meter SBE ambient temperature at the Homer City Station or the 300-meter SBE ambient temperature at the Conemaugh Station, as determined from the helicopter profiles. The stack exit temperature was not monitored; instead, corrections of 13.9°C (25°F) at Homer City and 16.7°C (30°F) at Conemaugh were subtracted from the effluent temperatures leaving the air heaters.

The equations presented below permit calculation of the remaining three parameters (Carpenter and Blackwell, 1969). The units of the formulas are British because all plant data were so supplied; after calculations were performed, conversion was made to metric units.

The hourly stack-gas exit velocity in feet per second was calculated from the following equation:

$$V = \frac{T_c}{3600\ A_s}\left[H_2O\frac{(359)}{(18)} + CO_2\frac{(359)}{(44)} + N_2\frac{(359)}{(28)} + SO_2\frac{(359)}{(64)} + A_e\frac{(359)}{(29)}\right]\frac{t_s + 460}{32 + 460}$$

where T_c = hourly coal consumption in pounds per hour per unit.

A_s = stack exit area = 449.25 square feet for Homer City; 581.42 square feet for Conemaugh.

t_s = hourly gas temperature leaving stack in degrees Fahrenheit.

32 = standard temperature in degrees Fahrenheit.

460 = conversion to Rankine temperature scale.

3600 = seconds per hour.

H_2O, CO_2, N_2, and SO_2 = series average in pounds per pound of coal as products of combustion.

A_e series average excess air in pounds per pound of coal required for combustion.

Denominators in parentheses are molecular weights of respective gaseous constituents in whole grams per mole.

359 conversion factor to British units calculated as follows:

$$\frac{22.414\ \text{liters/mole}}{28.317\ \text{liters/ft}^3} \times 453.59\ \text{g/lb} = 359\ \frac{\text{g(ft}^3)}{\text{lb(mole)}}$$

Hourly SO_2 emission from each unit in tons per hour was calculated by means of this formula:

$$SO_2 = \frac{T_c \times \%S \times 2}{2000}$$

where T_c = hourly coal consumption in pounds per hour per unit.

%S = decimal equivalent of series average percent sulfur in fuel.

2 = mass of SO_2 per unit mass of sulfur.

2000 = pounds per ton.

The final parameter, stack heat emission in British thermal units per second, was computed from the following equation:

$$Q_h = \frac{T_c}{3600} \times \% \text{ DG} \times \text{HV} \times \frac{(t_s - t_a)}{(t_g - t_a)}$$

where T_c = hourly coal consumption in pounds per hour per unit.

% DG = decimal equivalent of hourly percent dry gas loss.

HV = series average heat value of fuel in Btu's per pound.

t_s = hourly gas temperature leaving stack in degrees Fahrenheit.

t_g = hourly gas temperature leaving air heaters in degrees Fahrenheit.

t_a = hourly ambient temperature at stack top in degrees Fahrenheit.

Although hourly coal consumption is not included in this volume, it can be approximated for the Homer City Station using the ratios of 0.823 and 0.851 pounds of coal per kilowatt hour generated in units 1 and 2 respectively. This amounts to 4.3×10^{-4} and 4.5×10^{-4} grams per calorie for units 1 and 2. The corresponding ratio for unit 1 at the Conemaugh Station is 0.739 pounds of coal per kilowatt hour or 3.9×10^{-4} grams per calorie.

Table 12. PLANT OPERATIONAL DATA

Legend

Unit 1 or 2	:	Designation of unit in operation.
Time, EST	:	Hour designating preceding 60 minutes.
Load, mw	:	Total hourly generation in whole megawatts.
T, °C	:	Stack-gas exit temperature in whole degrees centigrade.
DT, °C	:	Difference in whole degrees centigrade between computed stack-gas exit temperature and ambient temperature at 250 meters above stack base elevation at Homer City or 300 meters above stack base elevation at Conemaugh, as determined from helicopter profiles.
Vel, mps	:	Stack-gas exit velocity in meters per second to nearest tenth.
SO_2, g/sec	:	Stack SO_2 emission in whole grams per second.
Cal/sec x 10^6	:	Stack heat emission in millions of calories per second to nearest tenth.

Table 12. PLANT OPERATIONAL DATA

Homer City Unit 2 20 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	426	144	135	16.5	2045	18.3
0700	427	144	135	16.5	2050	18.4
0800	422	144	135	16.3	2026	18.2
0900	437	146	136	17.0	2098	19.0
1000	477	150	138	18.7	2290	21.0
1100	499	153	139	19.7	2396	22.2
1200	496	152	138	19.5	2382	21.8
1300	501	153	138	19.7	2406	22.0
1400	500	153	138	19.8	2401	22.0
1500	511	153	137	20.1	2454	22.3
1600						
1700						

Homer City Unit 1 21 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300	42	101	86	1.6	217	1.2
1400	95	107	92	3.6	491	3.0
1500	184	117	101	7.2	951	6.4
1600						
1700						

Homer City Unit 2 21 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	417	143	127	15.1	1874	15.9
0700	472	150	134	17.3	2121	18.9
0800	478	151	136	17.6	2148	19.5
0900	479	151	136	17.6	2152	19.3
1000	478	151	138	17.6	2148	19.7
1100	484	151	137	17.8	2175	19.8
1200	477	150	136	17.5	2143	19.4
1300	480	151	136	17.6	2157	19.5
1400	477	150	135	17.5	2143	19.2
1500	479	151	135	17.6	2152	19.3
1600						
1700						

Homer City Unit 1 22 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	350	147	139	13.3	1638	15.1
0700	356	137	129	13.2	1666	14.3
0800	354	137	128	13.1	1657	14.2
0900	355	137	127	13.1	1662	14.1
1000	352	136	125	13.0	1648	13.7
1100	356	137	125	13.2	1666	13.8
1200	371	138	125	13.8	1736	14.5
1300	352	136	121	13.0	1648	13.3
1400	356	137	121	13.2	1666	13.4
1500	356	137	121	13.2	1666	13.4
1600						
1700						

Homer City Unit 2 22 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	160	115	107	5.9	796	5.7
0700	173	116	108	6.5	861	6.2
0800	200	119	110	7.5	996	7.3
0900	195	119	109	7.3	971	7.0
1000	226	122	111	8.6	1125	8.4
1100	236	123	111	9.0	1175	8.7
1200	255	125	112	9.8	1269	9.5
1300	256	125	110	9.8	1274	9.3
1400	254	125	109	9.7	1264	9.2
1500	262	126	110	10.0	1304	9.6
1600						
1700						

Homer City Unit 1 23 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900	412	143	126	15.4	1919	16.1
1000	421	144	127	15.8	1961	16.6
1100	419	144	127	15.7	1952	16.6
1200	416	143	125	15.5	1938	16.1
1300	419	144	126	15.7	1952	16.4
1400						
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 2 23 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900	283	128	111	11.1	1437	10.6
1000	283	129	112	11.1	1437	10.7
1100	286	129	112	11.2	1452	10.9
1200	285	129	111	11.2	1447	10.7
1300	158	115	97	6.0	802	5.2
1400						
1500						
1600						
1700						

Homer City Unit 1 24 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	426	144	126	15.4	1917	16.1
0700	424	144	126	15.4	1908	16.0
0800	419	144	126	15.2	1885	15.8
0900	385	141	122	13.8	1732	14.1
1000	411	143	124	14.8	1849	15.3
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 2 24 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	312	131	113	12.3	1574	11.8
0700	315	132	114	12.4	1589	12.1
0800	313	132	114	12.4	1579	12.0
0900	310	131	112	12.2	1563	11.7
1000	314	132	113	12.4	1584	11.9
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 1 25 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700	420	144	135	15.9	1973	17.7
0800	423	144	135	16.0	1987	17.8
0900	425	144	133	16.1	1996	17.7
1000	426	143	130	16.1	2001	17.3
1100	425	144	129	16.1	1996	17.1
1200	421	144	127	15.9	1977	16.7
1300	424	144	126	16.0	1992	16.7
1400	426	144	126	16.1	2001	16.8
1500						
1600						
1700						

Homer City Unit 2 25 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700	292	129	120	10.8	1394	11.1
0800	293	130	121	10.8	1399	11.3
0900	294	130	119	10.9	1404	11.1
1000	296	130	117	11.0	1413	11.0
1100	288	129	114	10.7	1375	10.5
1200	293	130	113	10.8	1399	10.5
1300	289	129	111	10.7	1380	10.2
1400	286	129	111	10.6	1365	10.1
1500						
1600						
1700						

Homer City Unit 1 27 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	423	144	128	15.7	1957	16.6
0600	451	147	132	16.9	2086	18.3
0700	486	151	137	18.4	2248	20.4
0800	490	152	138	18.6	2266	20.8
0900	485	151	135	18.4	2243	20.2
1000	488	152	134	18.5	2257	20.1
1100	490	152	132	18.6	2266	19.9
1200	491	152	131	18.6	2271	19.8
1300	487	152	130	18.5	2253	19.5
1400	488	152	130	18.5	2257	19.5
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 2 27 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	435	146	131	16.3	2019	17.6
0600	461	148	133	17.4	2140	19.0
0700	490	152	138	18.7	2275	20.9
0800	492	152	138	18.7	2284	21.0
0900	493	152	136	18.7	2289	20.7
1000	490	152	134	18.7	2275	20.3
1100	488	152	132	18.6	2265	19.9
1200	497	152	131	18.9	2307	20.1
1300	493	152	130	18.7	2289	19.8
1400	489	152	130	18.6	2270	19.6
1500						
1600						
1700						

Homer City Unit 1 28 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	494	152	134	17.7	2157	19.2
0600	489	152	134	17.5	2135	19.0
0700	488	152	134	17.4	2131	19.0
0800	488	152	134	17.4	2131	19.0
0900	489	152	134	17.5	2135	19.0
1000	483	151	133	17.3	2109	18.7
1100	483	151	133	17.3	2109	18.7
1200	487	151	132	17.4	2127	18.7
1300	490	152	133	17.6	2140	19.0
1400						
1500						
1600						
1700						

Homer City Unit 2 28 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	437	146	128	16.7	2065	17.6
0600	435	146	128	16.6	2055	17.5
0700	437	146	128	16.7	2065	17.6
0800	444	147	129	17.1	2107	18.0
0900	455	148	130	17.4	2150	18.6
1000	455	148	130	17.4	2150	18.6
1100	445	147	129	17.0	2102	18.0
1200	435	146	127	16.6	2055	17.4
1300	444	147	128	17.0	2098	17.9
1400						
1500						
1600						
1700						

Homer City Unit 1 29 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	486	151	134	18.0	2200	19.6
0600	486	151	134	18.0	2200	19.6
0700	486	151	134	18.0	2200	19.6
0800	486	151	134	18.0	2200	19.6
0900	483	151	134	17.8	2186	19.5
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 2 29 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	440	146	129	16.6	2055	17.6
0600	452	147	130	17.1	2111	18.3
0700	464	148	131	17.6	2167	18.9
0800	463	148	131	17.6	2162	18.8
0900	461	148	131	17.5	2153	18.7
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 1 30 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	467	149	127	17.1	2096	17.8
0600	471	150	128	17.3	2114	18.0
0700	470	150	129	17.3	2109	18.1
0800	469	150	128	17.2	2105	18.0
0900	469	150	127	17.2	2105	17.8
1000	468	150	126	17.1	2100	17.6
1100	470	150	125	17.3	2109	17.5
1200	470	150	124	17.3	2109	17.4
1300	466	149	122	17.0	2091	17.0
1400	468	150	123	17.1	2100	17.2
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 2 30 April 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	462	148	126	17.7	2185	18.3
0600	460	148	126	17.7	2176	18.3
0700	462	148	127	17.7	2185	18.5
0800	461	148	126	17.7	2181	18.3
0900	458	148	125	17.6	2166	18.0
1000	452	147	123	17.3	2138	17.5
1100	416	143	118	15.8	1968	15.5
1200	452	147	121	17.3	2138	17.2
1300	452	147	120	17.3	2138	17.1
1400	455	148	121	17.4	2152	17.3
1500						
1600						
1700						

Homer City Unit 1 1 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	470	150	128	17.1	2099	17.9
0600	468	150	129	17.1	2090	17.9
0700	465	149	127	16.9	2077	17.6
0800	470	150	127	17.1	2099	17.8
0900	476	150	127	17.4	2126	18.0
1000	483	151	127	17.6	2157	18.3
1100	484	151	127	17.7	2162	18.3
1200	484	151	126	17.7	2161	18.2
1300	484	151	126	17.7	2161	18.2
1400						
1500						
1600						
1700						

Homer City Unit 2 1 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	314	132	110	11.7	1492	10.9
0600	315	132	111	11.7	1497	11.0
0700	385	141	119	14.6	1830	14.5
0800	435	146	123	16.7	2067	17.0
0900	438	146	123	16.8	2081	17.0
1000	460	148	124	17.7	2186	18.0
1100	454	148	124	17.5	2157	17.8
1200	442	146	121	17.0	2100	16.9
1300	443	147	122	17.1	2105	17.1
1400						
1500						
1600						
1700						

Homer City Unit 1 3 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500	469	150	135	17.5	2143	19.2
1600	466	149	134	17.3	2130	19.0
1700	467	149	134	17.4	2134	19.0

Homer City Unit 2 3 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500	445	147	132	16.8	2080	18.3
1600	445	147	132	16.8	2080	18.3
1700	439	146	131	16.6	2052	17.8

Homer City Unit 1 4 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	397	141	131	14.4	1799	15.7
0600	398	142	132	14.4	1804	15.8
0700	399	142	133	14.5	1808	16.0
0800	401	142	132	14.5	1817	15.9
0900	404	143	132	14.7	1831	16.1
1000	463	149	137	17.1	2098	19.1
1100	469	150	137	17.3	2126	19.3
1200	466	149	135	17.2	2112	19.0
1300	467	149	134	17.3	2116	18.9
1400	467	149	134	17.3	2116	18.8
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 2 4 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	442	146	136	16.7	2061	18.7
0600	441	146	136	16.6	2057	18.7
0700	441	146	137	16.6	2057	18.7
0800	442	146	136	16.7	2061	18.7
0900	498	153	142	19.1	2323	21.1
1000	548	158	146	21.3	2556	24.8
1100	548	158	145	21.3	2556	24.7
1200	552	158	144	21.4	2575	24.7
1300	549	158	143	21.3	2561	24.3
1400	537	157	142	20.7	2505	23.6
1500						
1600						
1700						

Homer City Unit 1 5 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	461	148	137	16.6	2049	18.6
0600	471	150	139	17.1	2093	19.4
0700	468	150	139	17.0	2080	19.2
0800	462	148	136	16.7	2053	18.6
0900	469	150	137	17.0	2084	19.0
1000	469	150	136	17.0	2084	18.9
1100	461	148	133	16.6	2049	18.1
1200	465	149	133	16.8	2066	18.3
1300	461	148	132	16.6	2049	18.0
1400						
1500						
1600						
1700						

Homer City Unit 2 5 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	439	146	135	15.7	1939	17.4
0600	479	151	140	17.3	2116	19.6
0700	467	149	138	16.8	2063	19.1
0800	461	148	136	16.5	2036	18.4
0900	470	150	137	16.9	2076	18.8
1000	478	151	137	17.3	2111	19.2
1100	461	148	133	16.5	2036	18.0
1200	467	149	133	16.8	2063	18.3
1300	472	150	134	17.0	2085	18.6
1400						
1500						
1600						
1700						

Homer City Unit 2 6 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	457	148	147	16.1	1996	19.5
0600	450	147	146	15.9	1965	19.1
0700	452	147	146	16.0	1974	19.1
0800	452	147	145	16.0	1974	19.1
0900	450	147	145	15.9	1965	18.9
1000	453	148	145	16.1	1978	19.1
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 2 7 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	455	148	149	16.1	1987	19.6
0600	455	148	149	16.1	1987	19.6
0700	455	148	148	16.1	1987	19.5
0800	453	148	147	16.1	1978	19.3
0900	456	148	146	16.1	1991	19.3
1000	455	148	145	16.1	1987	19.1
1100	452	147	143	16.0	1974	18.7
1200	453	148	143	16.1	1978	18.7
1300	458	148	142	16.3	2000	18.8
1400	446	147	140	15.8	1948	18.0
1500	453	148	141	16.1	1978	18.5
1600	454	148	141	16.1	1983	18.5
1700						

Homer City Unit 1 8 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	394	141	128	14.4	1809	11.2
0600	391	141	128	14.3	1796	15.3
0700	406	143	131	15.0	1865	16.2
0800	457	148	135	17.1	2099	18.9
0900	474	151	136	17.8	2177	19.7
1000	468	150	132	17.6	2149	18.9
1100	468	150	130	17.6	2149	18.6
1200	470	150	129	17.6	2158	18.5
1300	473	150	128	17.7	2172	18.6
1400	476	150	128	17.6	2164	18.5
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 1 9 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	448	147	128	16.7	2055	17.5
0600	472	150	131	17.7	2165	18.9
0700	475	150	132	17.8	2179	19.1
0800	476	150	131	17.8	2183	19.1
0900	478	151	131	17.9	2193	19.1
1000	477	150	129	17.8	2188	18.7
1100	477	150	128	17.8	2188	18.7
1200	475	150	127	17.8	2179	18.4
1300	478	151	128	17.9	2193	18.7
1400	477	150	126	17.8	2188	18.3
1500	475	150	126	17.8	2179	18.3
1600	477	150	126	17.8	2188	18.3
1700	475	150	127	17.8	2179	18.4

Homer City Unit 1 10 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	459	148	131	16.9	2078	18.1
0600	476	150	133	17.6	2155	19.1
0700	477	150	134	17.6	2159	19.2
0800	478	151	134	17.7	2164	19.2
0900	475	150	132	17.6	2150	18.9
1000	479	151	132	17.7	2168	19.1
1100	476	150	130	17.6	2155	18.7
1200	478	151	130	17.6	2164	18.7
1300	475	150	128	17.6	2150	18.3
1400						
1500						
1600						
1700						

Homer City Unit 1 11 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	470	150	134	17.0	2086	18.6
0600	481	150	134	17.4	2135	19.0
0700	475	150	135	17.2	2109	18.9
0800	478	151	135	17.4	2122	19.1
0900	479	151	134	17.4	2126	19.0
1000	473	150	132	17.1	2099	18.5
1100	474	150	131	17.2	2104	18.3
1200	469	150	130	17.0	2082	17.9
1300	470	150	129	17.0	2086	17.8
1400	474	150	128	17.2	2104	18.0
1500	472	150	128	17.1	2095	17.9
1600	475	150	128	17.2	2108	18.0
1700	467	149	128	16.9	2073	17.7

Homer City Unit 1 12 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	367	138	122	12.8	1625	13.2
0700	372	138	122	13.0	1647	13.3
0800	351	136	119	12.2	1554	12.3
0900	323	133	116	11.2	1430	11.0
1000	330	134	117	11.5	1461	11.4
1100	325	133	115	11.3	1439	11.0
1200	320	132	113	11.1	1417	10.7
1300	328	134	114	11.4	1452	11.0
1400	341	135	115	11.9	1510	11.6
1500	423	144	123	15.0	1873	15.4
1600	445	147	126	16.0	1970	16.5
1700						

Homer City Unit 1 13 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	389	141	125	13.9	1746	14.5
0600	452	147	131	16.4	2029	17.7
0700	476	151	136	17.4	2136	19.3
0800	474	150	134	17.4	2127	19.0
0900	478	151	134	17.6	2145	19.1
1000	475	150	133	17.4	2132	18.9
1100	478	151	133	17.6	2145	19.0
1200	477	150	131	17.4	2141	18.7
1300	470	150	130	17.3	2109	18.3
1400	483	151	131	17.7	2168	18.9
1500	488	152	132	17.9	2190	19.2
1600	485	151	132	17.8	2177	19.1
1700						

Homer City Unit 1 15 May 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	491	152	136	18.3	2225	20.2
0600	490	152	136	18.2	2221	20.1
0700	491	152	137	18.3	2225	20.3
0800	490	152	136	18.2	2221	20.1
0900	490	152	135	18.2	2221	19.9
1000	490	152	134	18.2	2221	19.8
1100	494	152	133	18.3	2239	19.9
1200	492	152	132	18.3	2230	19.5
1300	489	152	131	18.1	2216	19.3
1400	489	152	130	18.1	2216	19.1
1500	489	152	130	18.1	2216	19.1
1600	493	152	131	18.3	2234	19.5
1700	490	152	131	18.2	2221	19.4

Table 12 (continued). PLANT OPERATIONAL DATA

Conemaugh Unit 1 14 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	766	133	111	19.2	3476	23.6
0600	831	142	120	21.3	3771	27.8
0700	844	143	122	21.7	3830	28.6
0800	858	146	124	22.2	3893	29.6
0900	853	147	125	22.1	3870	29.5
1000	855	156	133	22.6	3880	31.4
1100	857	152	128	22.5	3889	30.5
1200	852	152	128	22.3	3866	30.2
1300	854	153	128	22.5	3875	30.3
1400						
1500						
1600						
1700						

Conemaugh Unit 1 16 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	853	135	127	21.3	3834	29.8
0600	853	134	126	21.3	3834	29.7
0700	862	134	127	21.5	3875	30.1
0800	865	135	128	21.6	3888	30.5
0900	855	135	128	21.3	3843	30.1
1000	858	136	128	21.4	3857	30.2
1100	843	134	126	21.0	3789	29.3
1200	847	135	127	21.1	3807	29.6
1300	849	136	127	21.2	3816	29.6
1400	837	135	126	20.9	3762	29.1
1500						
1600						
1700						

Conemaugh Unit 1 17 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	856	129	126	21.3	3848	29.8
0600	850	129	126	21.3	3821	29.6
0700	786	126	123	19.2	3533	26.7
0800	711	122	119	17.2	3196	23.3
0900	717	123	120	17.4	3223	23.7
1000	705	124	120	17.1	3169	23.3
1100	710	124	120	17.3	3192	23.4
1200	709	125	120	17.3	3187	23.5
1300	787	130	125	19.4	3538	27.0
1400	805	131	126	19.9	3619	27.8
1500	773	129	124	19.0	3475	26.2
1600						
1700						

Conemaugh Unit 1 20 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	743	132	120	18.2	3299	24.2
0600	688	129	117	16.7	3055	21.9
0700	701	131	119	17.1	3113	22.6
0800	817	137	125	20.2	3628	27.9
0900	855	140	128	21.3	3797	29.7
1000	843	140	127	21.1	3743	29.1
1100	848	141	128	21.2	3766	29.4
1200	849	141	127	21.3	3770	29.3
1300	846	142	128	21.2	3757	29.4
1400						
1500						
1600						
1700						

Conemaugh Unit 1 26 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	857	137	122	21.2	3795	28.3
0600	860	138	123	21.3	3809	28.6
0700	860	137	122	21.3	3809	28.5
0800	857	140	125	21.3	3795	28.9
0900	857	143	128	21.5	3795	29.6
1000	862	144	128	21.7	3817	30.0
1100	872	145	129	21.9	3862	30.4
1200	865	145	129	21.8	3831	30.1
1300	862	145	129	21.7	3817	30.1
1400	863	145	129	21.8	3822	30.1
1500	864	145	129	21.8	3826	30.1
1600						
1700						

Conemaugh Unit 1 27 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	889	140	128	22.4	3980	31.2
0600	889	140	128	22.4	3980	31.2
0700	890	141	129	22.4	3985	31.4
0800	888	141	129	22.4	3976	31.5
0900	888	142	130	22.4	3976	31.5
1000	925	144	132	23.5	4141	33.5
1100	924	143	131	23.4	4137	33.3
1200	905	143	131	22.9	4052	32.6
1300	915	143	132	23.2	4096	33.0
1400	907	143	131	23.0	4061	32.7
1500	902	142	130	22.8	4038	32.2
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Conemaugh Unit 1 28 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	882	137	128	22.2	3986	31.1
0600	887	137	128	22.4	4009	31.5
0700	890	138	129	22.5	4022	31.6
0800	891	138	129	22.5	4027	31.7
0900	903	139	129	22.9	4081	32.5
1000	944	141	132	24.0	4266	34.5
1100	899	139	130	22.8	4063	32.5
1200	887	139	130	22.5	4009	31.9
1300	888	140	130	22.5	4013	32.0
1400	886	140	130	22.5	4004	32.0
1500						
1600						
1700						

Conemaugh Unit 1 29 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	885	141	130	22.1	3930	31.4
0600	886	140	130	22.1	3934	31.2
0700	887	140	130	22.1	3939	31.3
0800	889	140	129	22.2	3948	31.2
0900	888	140	129	22.2	3943	31.2
1000	888	141	130	22.2	3943	31.3
1100	886	141	130	22.2	3934	31.2
1200	885	141	129	22.2	3930	31.1
1300	885	141	129	22.2	3930	31.0
1400	886	141	129	22.2	3934	31.0
1500						
1600						
1700						

Conemaugh Unit 1 30 October 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700	885	141	129	22.2	3951	31.1
0800	888	141	129	22.3	3965	31.2
0900	886	141	129	22.3	3956	31.1
1000	885	141	129	22.3	3951	31.2
1100	894	141	129	22.5	3992	31.5
1200	887	141	129	22.3	3960	31.2
1300	887	141	129	22.3	3960	31.2
1400	890	141	129	22.4	3974	31.3
1500						
1600						
1700						

Conemaugh Unit 1 2 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	854	139	126	21.5	3829	29.6
0600	857	139	126	21.6	3842	29.7
0700	856	139	126	21.5	3838	29.7
0800	858	140	128	21.6	3846	30.1
0900	872	142	129	22.1	3909	30.9
1000	887	143	130	22.5	3976	31.7
1100	883	143	130	22.4	3959	31.4
1200	884	144	129	22.5	3963	31.4
1300	887	145	129	22.6	3976	31.5
1400	885	145	129	22.6	3968	31.2
1500	886	145	129	22.6	3972	31.2
1600	890	145	129	22.7	3990	31.4
1700						

Conemaugh Unit 1 5 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	714	126	119	17.5	3218	23.3
0600	709	126	119	17.4	3196	23.2
0700	707	126	119	17.3	3187	23.3
0800	739	128	121	18.2	3331	24.7
0900	788	131	124	19.5	3552	26.8
1000	786	131	124	19.5	3543	26.7
1100	789	131	124	19.5	3556	26.9
1200	791	131	124	19.6	3565	26.9
1300	790	131	124	19.6	3561	26.9
1400	787	131	124	19.5	3547	26.7
1500						
1600						
1700						

Conemaugh Unit 1 6 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	794	131	123	19.5	3550	26.7
0600	790	131	123	19.4	3532	26.7
0700	788	131	123	19.4	3523	26.6
0800	785	131	123	19.3	3510	26.5
0900	783	131	123	19.2	3501	26.2
1000	791	131	123	19.5	3537	26.7
1100						
1200						
1300						
1400						
1500						
1600						
1700						

Table 12 (continued). PLANT OPERATIONAL DATA

Homer City Unit 1 9 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	436	132	120	15.5	1755	15.7
0600	413	128	116	14.5	1663	14.5
0700	289	115	103	9.8	1164	9.0
0800	282	114	102	9.5	1135	8.7
0900	281	114	102	9.5	1131	8.6
1000	274	114	101	9.3	1103	8.3
1100	275	115	102	9.3	1107	8.5
1200	318	121	108	11.0	1280	10.3
1300	321	121	108	11.1	1292	10.4
1400	374	127	114	12.9	1506	12.8
1500						
1600						
1700						

Conemaugh Unit 1 10 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600	802	137	124	19.8	3547	27.0
0700	804	137	124	19.9	3556	27.1
0800	806	138	125	19.9	3565	27.2
0900	806	138	125	19.9	3565	27.2
1000	807	139	125	20.0	3569	27.4
1100	818	140	126	20.3	3618	27.8
1200	845	142	128	21.1	3737	29.2
1300	822	140	126	20.4	3635	28.0
1400	838	141	127	20.9	3706	28.8
1500	869	143	129	21.8	3843	30.2
1600						
1700						

Conemaugh Unit 1 11 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500	887	143	128	22.2	3917	30.6
0600	888	142	127	22.2	3922	30.5
0700	885	143	128	22.1	3909	30.6
0800	888	143	129	22.2	3922	30.9
0900	889	144	129	22.3	3926	31.1
1000	885	144	129	22.2	3909	30.9
1100	888	144	129	22.3	3922	31.1
1200	887	145	130	22.3	3917	31.1
1300						
1400						
1500						
1600						
1700						

Conemaugh Unit 1 16 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700	510	106	106	11.7	2280	14.9
0800	451	101	101	10.2	2016	12.5
0900	479	103	104	11.0	2142	13.6
1000	561	110	110	13.1	2508	17.0
1100	626	115	115	14.8	2799	19.8
1200						
1300						
1400						
1500						
1600						
1700						

Homer City Unit 2 16 November 1970

Time, EST	Load, mw	T, °C	DT, °C	Vel, mps	SO_2, g/sec	Cal/sec x 10^6
0400						
0500						
0600						
0700						
0800						
0900	636	139	139	22.3	2496	25.8
1000	632	139	139	22.2	2480	25.6
1100	635	139	139	22.3	2492	25.8
1200	636	139	139	22.3	2496	25.9
1300	632	139	139	22.2	2480	25.6
1400	634	139	139	22.3	2488	25.8
1500						
1600						
1700						

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REFERENCES

Carpenter, S. B., and J. P. Blackwell, 1969: Private communication. Tennessee Valley Authority. Muscle Shoals, Alabama.

Estrada, H., and A. F. Smith, 1964: The Keystone Station - General Design. Presented at American Power Conference. Chicago, Illinois.

Frankenburg, T. T., and P. Sporne, 1966: Pioneering Experience with High Stacks on the Ohio Valley Electric Corporation and the American Electric Power System. Presented at International Clean Air Congress. London, England.

Hales, J. M., J. M. Thorp, and M. A. Wolf, 1971: Field Investigation of Sulfur Dioxide Washout from the Plume of a Large Coal-Fired Power Plant by Natural Precipitation. Battelle Memorial Institute, Pacific Northwest Laboratory. Richland, Washington. APCO Contract No. CPA 22-69-150.

Johnson, W. B., Jr., 1971: Lidar Study of the Homer City Stack Plume - An Interim Report. Stanford Research Institute. Menlo Park, California. APCO Contract No. CPA 70-49.

Niemeyer, L. E., R. A. McCormick, and J. H. Ludwig, 1970: Environmental Aspects of Power Plants. Presented at Symposium on Environmental Aspects of Nuclear Power Stations. New York, New York.

Niemeyer, L. E., and F. A. Schiermeier, 1969: Tall Stack Study Underway. Power Engineering, 73:42-45.

NOAA, 1970: Daily Weather Maps. U. S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data Service. Washington, D. C.

Penelec, 1969: Private Communication and review of Plan Maps, Specifications and Operating Characteristics of Keystone, Homer City, and Conemaugh Generating Stations. Pennsylvania Electric Company. Johnstown, Pennsylvania.

Pooler, F., Jr., and L. E. Niemeyer, 1970: Dispersion from Tall Stacks: An Evaluation. Presented at Second International Clean Air Congress. Washington, D. C.

Schiermeier, F. A., 1970: Large Power Plant Effluent Study (LAPPES); Volume 2 - Instrumentation, Procedures, and Data Tabulations (1967 and 1969). DHEW, PHS, EHS, National Air Pollution Control Administration. Raleigh, North Carolina. NAPCA Publication No. APTD 0589.

Schiermeier, F. A., and L. E. Niemeyer, 1970: Large Power Plant Effluent Study

(LAPPES); Volume 1 - Instrumentation, Procedures, and Data Tabulations (1968). DHEW, PHS, EHS, National Air Pollution Control Administration. Raleigh, North Carolina. NAPCA Publication No. APTD 70-2.

Sign X, 1970: Operating and Service Manual for Model 600 Series SO_2 Analyzer. Sign X Laboratories, Inc. Essex, Connecticut.

Smith, M. E., 1966: Reduction of Ambient Air Concentrations of Pollutants by Dispersion from High Stacks. Presented at National Conference on Air Pollution. Washington, D. C. Public Health Service Publication No. 1649.

Stone, G. N., and A. J. Clarke, 1967: British Experience with Tall Stacks for Air Pollution Control on Large Fossil-Fueled Power Plants. Presented at American Power Conference. Chicago, Illinois.

Technicon, 1966: General Operating Instruction Manual. Technicon Corporation. Ardsley, New York.

USGS, 1970: Topographic Maps. U. S. Department of the Interior, Geological Survey. Washington, D. C.

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