WIND-TUNNEL STUDY OF EXHAUST-INTAKE CROSS-CONTAMINATION AND DISPERSION OF ROOFTOP EMISSIONS, FOR ARCO E/PRC EXPANSION

by

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WIND ENGINEERING PROGRAM

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CSU Project 2-96060

April 1985 CER84-85JEC-JAP23

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EXECUTIVE SUMMARY

A wind-tunnel study on a 1:250 scale model of a planned addition to the ARCO Exploration/Production Research Center and the existing structures was completed in the Fluid Dynamics and Diffusion Laboratory at Colorado State University. The primary purpose of the study was to ascertain the concentration of effluents, emitted from the various exhausts of the planned structures, at the air intakes of those new facilities. Tracers emitted from 25 individually modeled sources were sampled at 23 receptors for prevailing wind direction to determine the extent of exhaust-intake cross-contamination and dispersion of the roof-top emissions, for several different source heights.

Additional wind-tunnel testing included pedestrian-level velocity measurements, pressure coefficient data and a visualization study. The velocity data included mean and gust winds measured at 13 ground-level locations for 16 wind directions. Pressure coefficients were recorded at 24 building entrances, sources and intakes for 36 wind directions. Visible smoke plumes, generated at varying source heights and wind directions, were recorded on a VHS format video cassette, along with selected black-and-white photos and 35 mm slides.

Concentration measurements showed in general a decrease of intake concentrations with increasing emission stack height. Acceptable stack heights must be determined by calculation of intake concentrations for possible future plant emission rates and comparing intake concentrations with acceptability standards. Pedestrian velocity measurements showed one area about the new buildings where pedestrian winds might be higher than desirable. Wind pressure measurements were reported for use in making decisions about acceptability of access door loadings and for calculation of ventilation system pressure balance.

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LIST OF SYMBOLS

Symbols	Definitions	Units
A	equation constant	-
B	building dimension or equation constant	(m), -
D	stack or vent diameter	(m)
E	voltage or exponent ($x10^n$)	volts, -
g	gravitational acceleration	(m/sec^2)
H	stack or vent height	(m)
k	roughness heights for upwind ground surface	(m)
n	velocity profile power law exponent, or equation constant	-
Q	volume flow	(gm/sec, m^3/sec)
t	time duration	(sec)
U	characteristic wind velocity	(m/sec)
U_{ref}, U_r	reference velocity	(m/sec)
U_∞	gradient wind speed	(m/sec)
U_s	wind velocity at stack height	(m/sec)
V_s	exit velocity of exhaust gas	(m/sec)
z	height	(m)
z_{ref}	reference height	(m)
z_∞	gradient height	-
Greek		
$\Delta\gamma$	$(\rho_a-\rho_s)g$, specific weight difference	($kg/m^2 \cdot sec^2$)
δ_a	boundary layer thickness	(m)
μ	dynamic viscosity	($kg/m \cdot sec$)
ρ	density	(kg/m^3)
χ	concentration ratio	-

Subscripts	Definitions	Units
a	ambient	
m	model	
p	prototype	
s	emitted gas	
∞	conditions at gradient level	
rms	root-mean-square about the mean	

1.0 INTRODUCTION

1.1 Background

The Atlantic-Richfield Oil & Gas Company (ARCO) has plans to enlarge their Exploration/Production Research Center (E/PRC), which is situated on a large tract immediately south of the city of Plano, Texas. The expansion plans include construction of: a new multistory Research and Development Building (R&DB); a Pilot Plant/High Bay structure (PP/HB); a Central Utilities Building (CUB); and a Core Facilities Building (CORE).

Project managers associated with the proposed additions expressed concern over the possibility of building exhaust-intake cross-contamination. They questioned the dispersion patterns of source emissions since the structures are all situated in close proximity to each other and also to some of the existing facilities. Pedestrian-level winds around the new structures and wind pressures at building entrances were other matters of concern.

1.2 Purpose and Scope

Wind-tunnel modeling provides both a reasonable and practical method for predicting dispersion, wind velocity and pressure information at a prototype site. The E/PRC Property Management Director contacted the Fluid Dynamics and Diffusion Laboratory (FDDL) at Colorado State University to arrange for a wind-tunnel study on a model of the expanded E/PRC facilities. Three meetings were held with ARCO, the contractor and CSU personnel to define requirements and finalize a test plan.

The study was confined to simulated atmospheric flow over the E/PRC model in a thermally neutral boundary-layer wind tunnel. The purpose of the study was fourfold:

(1) Determine the concentration of effluents emitted from various sources on the E/PRC proposed additions at identified air intakes for various exhaust stack heights and prevailing wind directions.

(2) Measure mean and gust winds at locations of heavy pedestrian traffic in the vicinity of the E/PRC additions for sixteen wind directions at 22.5° intervals.

(3) Ascertain wind pressures at building entrances, selected sources and intakes for 36 wind directions, at 10° intervals.

(4) Document airflow patterns over, around and between the E/PRC structures by means of a visualization study.

1.3 Report Organization

The remainder of this report is dedicated to documentation of the experimental configuration, modeling techniques, test methods, test parameters, data analysis, data presentation and conclusions of this study. A generalized format follows:

- Chapter 2.0, EXPERIMENTAL CONFIGURATION, contains descriptions of the model construction, wind-tunnel configuration, model environment, similarity criteria and similar information.
- Chapter 3.0, VELOCITY MEASUREMENTS, provides a record of the modeled atmospheric boundary later, velocity measurement techniques, and documentation of the pedestrian-level wind data and its interpretation.

- Chapter 4.0, CONCENTRATION MEASUREMENTS, contains a description of the dispersion tests, data collection-analysis procedures, sample calculations, presentation of the dispersion data in sets of tables and figures, an analysis and conclusions.
- Chapter 5.0, PRESSURE MEASUREMENTS, contains a record of the tap locations, description of the test procedures, definitions of the pressure coefficients obtained, tables of the measured data, an analysis and conclusions.
- Chapter 6.0, VISUALIZATION STUDY, provides some general comments about smoke tracers and a tabulation of airflows around the model which were documented by video cassette recorder.

2.0 EXPERIMENTAL CONFIGURATION

2.1 Model Construction

A circular area approximately 1500 ft in radius, and centered on the planned E/PRC Research & Development Building, was modeled for the wind-tunnel studies. The 1:250 scale selection permitted inclusion of all site facilities on the 12 ft diameter turntable. All scaling was accomplished from drawings provided by the architects (Hellmuth, Obata & Kassabaum, Inc.) and from site plans furnished by the sponsor. All existing and planned structures were modeled in the detail necessary to simulate prototype wind flow patterns over the complex.

The E/PRC structures, which contained sources and intakes to be modeled, were assembled from Masonite and soft woods to obtain significant detail, necessary strength and the essential "plumbing" access. The remaining structures, included on the circular model base only for their geometric shapes, were fabricated from styrofoam and assorted other materials.

Streets, walkways, antennas, power grids, shrubbery and similar distinguishable features were added to enhance realism of the model. The Plano water tower and the edge of a residential section were also included within the perimeter of the model base. All model structures were painted to provide a suitable background for the visualization study.

2.2 Model Sources and Receptors

All exhaust sources included in the modeling considerations were identified from drawings annotated by Purdy McGuire, Inc. (PMI), and supplied by the sponsor, or from subsequent consultation with PMI engineers.

A total of 25 prototype sources were included on the scale model as individual vents. These exhausts were further organized into source groups to simplify the dispersion tests. This latter action was accomplished by constructing manifolds which directed flow to selected groupings of the model sources. The modeled source exits were open/capped, as appropriate, to influence directional flow of the exhausts. Volume flow and exit velocity of the prototype sources were modeled by varying the cross-sectional area of the exhaust stacks installed on the models, the diamater of the manifold outlets, and the diameter and length of all inter-connecting tubing.

The prototype sources which were modeled are described in Tables 2-1a, 2-1b, and 2-1c. Table 2-1a provides a description of the particular sources which were included in each of the nine source groupings. Table 2-1b provides a tabulation of the location, volume flow and exit dimensions which were provided and the numbers which were assigned to those sources/source groups for identification. Table 2-1c contains a tabulation of the volume flow (Q), cross-sectional area (A), and exit velocity (V_s) values for each individual source, from prototype to model. A schematic portrayal of the approximate location of each modeled source is contained on Figure 2-1.

The 23 air intakes which were incorporated into the model were identified from the previously referenced drawings and consultations. The physical location/description for each of these intakes is described in Table 2-2 along with tabulation of the arbitrarily assigned intake (sampling point) numbers. Figure 2-2 contains a schematic presentation of the approximate location of these modeled air intakes. (The "fish-hook" arrows on this figure--and elsewhere in the report--were used to denote locations on vertical surfaces.)

Air entering the intakes on the R&DB (#1 through #11), PP/HB (#12 through #18), and CUB (#19) was flow-scaled by reducing pressure at the entrances with a manifold/flowmeter/vacuum pump arrangement.

A single ground-level receptor was placed in the residential area generally north of the E/PRC complex. Data from this receptor is identified as sample point #24.

2.3 Wind Tunnel

Three large atmospheric boundary layer (ABL) wind tunnels are available in the FDDL at Colorado State University for wind engineering studies. The Environmental Wind Tunnel (EWT), largest of the three tunnels, was used for all tests of the E/PRC model. Selection of the EWT permitted modeling to the largest practicable scale, while including all significant structures in the surrounding area, since they can materially influence airflow patterns. Elevation and plan views of the EWT are contained in Figure 2-3.

The E/PRC model buildings and surroundings were affixed to an elevated plywood model base which was installed on the 12 ft diameter EWT downwind turntable and properly oriented. Figure 2-4 provides a close-up view of the model, after being situated in the tunnel.

The tunnel has a flexible roof which is adjustable in height to maintain a zero pressure gradient along the entire length of the test section. The roof was adjusted after installation of the model, and prior to all testing, to obtain the desired effect.

Thermal stratification in the EWT corresponded to the adiabatic lapse rate in the atmosphere (neutral stratification) since the flow, without boundary heating or cooling, is isothermal.

2.4 Model Environment

A large portion of the test section area upstream from the model was covered with uniform roughness constructed from one-quarter inch perforated masonite and randomly spaced 1/4 in. dia. x 1/2 in. dowels. The upwind roughness was selected to simulate the roughness associated with the prototype environment.

Spires were installed at the test section entrance to provide a thicker boundary layer than would otherwise be available. The spires were approximately triangular-shaped pieces of 1/2 in. thick plywood, six inches wide at the base and one inch wide at the top, extending from floor-to-roof of the test section, and positioned broadside to the airflow at 18" intervals. The modeled ABL is further discussed in the following subsection and in Section 3.0.

Figure 2-5 contains a pictorial presentation of the model on the turntable, the roughness elements installed on the tunnel floor, and the spires at the test section entrance. Figure 2-6 provides further documentation in the form of a scaled drawing of the entire test section length, containing: trip and spire location, floor area covered with roughness, turntable position and pertinent dimensions.

Pertinent theories of ABL and natural wind simulation are contained in references by Cermak (1971, 1982).

2.5 Similarity Criteria for Dispersion and Models

When interest is focused on the behavior of plumes of gases emitted from stacks or vents into a thermally neutral atmosphere, the following variables are of primary significance:

δ_a = thickness of planetary boundary layer

ρ_a = density of ambient air

$\Delta\gamma$ = $(\rho_a - \rho_s)g$--difference in specific weight of ambient air and emitted gas

μ_a = dynamic viscosity of ambient air

B = typical dimension of building complex

D = stack or vent diameter

H = stack or vent height

k = roughness heights for upwind ground surface

U_s = mean speed of ambient wind at height of gas emission

U_∞ = gradient wind speed (speed at top of boundary layer)

V_s = speed of gas emission

Grouping the independent variables into dimensionless parameters with ρ_a, U_s, and H as reference variables yields the following parameters upon which the dependent quantities of interest must depend (Lord, 1970):

$$\frac{\delta_a}{H}, \frac{k}{H}, \frac{D}{H}, \frac{B}{H}, \frac{U_s \rho_a B}{\mu_a}, \frac{\rho_a U_s^2}{\Delta\gamma D}, \frac{\rho_a - \rho_s}{\rho_a}$$

Consideration of the surface roughness surrounding the E/PRC site dictated that equality of the surface parameter, k/H, for model and prototype would be satisfied with an exponent $n \cong 0.14$ in the equation $U/U_{ref} = (Z/Z_{ref})^n$. From consideration of winds recorded at Love Field near Dallas, Texas, and from initial dispersion data (see Section 4), it was determined that a median wind speed of 7 miles per hour (10.3 ft/sec), measured at a height of 40 feet, was a good wind speed for the determination of cross-contamination effects. Using the equation $U/U_\infty = (Z/Z_\infty)^n$, with a value of n = 0.14 (typical of the flat terrain near the airport), a value of gradient wind speed U_∞ of 10.3 mph was calculated at a height $Z_\infty = \delta \cong 900$ feet. This should then be the wind speed at Z_∞ above the E/PRC site also. On the model, a value of $n = 0.14$ was achieved, with a δ of 43 in. (corresponding to ~900 feet in the real atmosphere), making the model parameter $(\delta a/H)$ model approximately equal to that for the real atmosphere, $(\delta a/H)$ prototype.

The parameters D/H and B/H were equal for model and prototype because of undistorted geometric scaling. A few of the stacks were slightly over- or under-sized to permit use of available standard sizes of brass tubing. For these cases, discharge was adjusted slightly to keep V_s/U_s constant.

Equal Reynolds numbers, $U_s \rho_a B/\mu_a$, for a large real building complex and a model small enough to fit into any existing wind tunnel cannot be achieved. Fortunately, equality of the Reynolds number is not required for similarity of the model and prototype flow fields so long as the model Reynolds number exceeds a minimum value of approximately 11,000 (Halitsky, 1969). A Reynolds number greater than 17,000 was maintained for the flow around the model, ensuring flow field similarity between model and prototype.

Equality of the velocity ratio, $(V_s/U_s)_m = (V_s/U_s)_p$, could be achieved at any combination of tunnel speed and exhaust flows which maintained this equality, but with the constraints that 1) U_s must be great enough to ensure Reynolds number independence, and 2) V_s must be small enough to fall within the range of available flowmeter instruments. These criteria were satisfied with a wind tunnel speed, $(U_\infty)_m$, of 10.8 ft/sec. Thus a model U_∞ of 10.8 ft/sec represented an atmospheric U_∞ of 16.1 ft/sec.

For all E/PRC emissions, $\Delta\gamma$ were considered to be essentially zero; therefore, the parameters $\rho_a U_s^2 (\Delta\gamma D)^{-1}$ and $(\rho_a - \rho_s)/\rho_a$ were infinity and zero, respectively, for both model and prototype, for all sources.

3.0 VELOCITY MEASUREMENTS

3.1 General

Structures often produce unpleasant wind and turbulence conditions, particularly near their corners. The intensity and frequency of objectionable winds in pedestrian areas is influenced both by the structure shape and by the shape and position of adjacent structures.

Techniques have been developed for wind tunnel modeling of proposed structures which allow the prediction of wind velocities and gusts in pedestrian areas adjacent to buildings. Information on sidewalk-level gustiness allows high pedestrian traffic areas to be protected by design changes before construction, if necessary.

3.2 Velocity Measurement Instrumentation

All velocity measurements were made with a single hot-wire anemometer mounted with its axis vertical. The instrumentation used was a Thermo-Systems constant temperature anemometer (Model 1050) with a 0.001 in. diameter platinum film sensing element 0.020 in. long. Output was directed to the on-line data acquisition system for analysis.

Calibration of the hot-wire anemometer was performed by comparing output with a Pitot-static tube also located in the wind tunnel. The calibration data are fit to a variable exponent King's Law relationship of the form

$$E^2 = A + BU^n$$

where E is the hot-wire output voltage, U the velocity and A, B, and n are coefficients selected to fit the data. The above relationship was used to determine the mean velocity at measurement points using the measured mean voltage. The fluctuating velocity in the form U_{rms} (root-mean-square velocity) was obtained from

$$U_{rms} = \frac{2\ E\ E_{rms}}{B\ n\ U^{n-1}}$$

where E_{rms} is the root-mean-square voltage output from the anemometer.

3.3 Atmospheric Boundary Layer Profiles

The approach mean velocity at the model building site must have a vertical profile shape similar to the full-scale flow. The turbulence characteristics of the flows must also be similar.

Mean velocity and turbulence intensity profiles were measured to determine that an approach boundary-layer flow appropriate to the site had been established. Tests were made at a tunnel wind velocity which was well above that required to produce Reynolds number similarity between the model and the prototype, as discussed elsewhere.

Velocity and turbulence profiles are illustrated on Figure 3-1. These profiles were obtained immediately upstream from the model and are characteristic of the boundary layer approaching the model. Boundary-layer thicknesses, δ, for model and prototype are shown on that figure. This value was established as a reasonable height for the study. The mean velocity profile approaching the modeled area has the form

$$\frac{U}{U_\infty} = \left(\frac{z}{\delta}\right)^n$$

The exponent n for the approach flow established for this study is also shown in Figure 3-1. A value $n = 0.14$ is characteristic of open, flat countryside such as that about the plant site.

Profiles of longitudinal turbulence intensity in the flow approaching the modeled area are shown on the right side of Figure 3-1. The turbulence intensities are appropriate for the approach mean velocity profile selected. For the velocity profiles, turbulence intensity is defined as the root-mean-square about the mean of the longitudinal velocity fluctuations divided by the local mean velocity U,

$$TI = \frac{U_{rms}}{U} \quad .$$

3.4 Pedestrian-Level Wind Velocities

Titanium tetrachloride "smoke," released from sources around the model to make flow lines visible, was used to help identify areas where pedestrian-level winds might be a problem.

Mean velocity and turbulence intensity measurements were made 5 to 7 ft (prototype) above the ground at 13 locations amidst the planned expansion facilities, for 16 wind directions. Velocities were also recorded at a reference position located a short distance from the E/PRC facility in a relatively open locale, and at a rooftop-mounted meteorological station. The surface velocity measurements are indicative of the wind environment to which pedestrians at the measurement locations would be subjected.

The measurement locations, as depicted on Figure 3-2, were chosen to assess the relative degree of pedestrian comfort/discomfort where adverse wind conditions are frequently experienced--near building entrances (Locations 3, 4, 5, 7, and 9); around building corners (Locations 2, 6, 12, and 14); and between closely situated structures where pedestrian traffic may be heavy (Locations 8, 10, 13, and 15). Velocities obtained at Location 1, north of the Plano Parkway, provide values at an undisturbed area for comparison with onsite readings.

Velocities recorded 10 ft above the roof of the Computer Building (Location 11) are included for comparison with any prototype values which are, or may become, available.

Of special note:

(1) Velocities at Location 5, the west entrance of the northwest building, were measured with all the planned new facilities in place, and again for the existing conditions.

(2) Location 7, situated adjacent to the southwest employee entrance of the R&D building, was evaluated with and without the possible future Pilot Plant addition.

Velocity data obtained at each of the pedestrian measurement locations shown on Figure 3-2 are contained in Tables 3-1a through 3-1f as mean velocity U/U_∞, turbulence intensity U_{rms}/U_∞, and largest effective gust

$$U_{pk} = \frac{U + 3U_{rms}}{U_\infty}$$

These data are plotted in polar form on Figures 3-3a through 3-3j.

To enable a quantitative assessment of the wind environment, the wind-tunnel data were combined with wind frequency and direction information obtained at Love Field. Table 3-2 shows wind frequency by direction and magnitude obtained from summaries published by the National Weather Service. A plot of this data is shown in Figure 3-4 to emphasize the wind directions with highest frequencies. Southeast through south directions are the most frequent. These data, obtained at an elevation of 40 ft, were converted to velocities at the reference velocity height of 900 ft for the wind-tunnel measurements and combined with the wind-tunnel data (Tables 3-1) to obtain cumulative probability distributions (percent time a given velocity is exceeded) for wind velocity at each measuring location. The percentage times were summed by wind direction to obtain a percent time exceeded at each measuring position independent of wind direction (but accounting for the fact that the wind blows from different directions with varying frequency). These results are plotted in Figures 3-5a through 3-5e.

Interpretation of the integrated velocity data is aided by a description of the effects of wind of various magnitudes on people. The earliest quantitative description of wind effects was established by Sir Francis Beaufort in 1806 for use at sea and is still in use today. Several recent investigators have added to the knowledge of wind effects on pedestrians. These investigations along with suggested criteria for acceptance have been summarized by Penwarden and Wise (1975) and Melbourne (1978). The Beaufort scale (from Penwarden), based on mean velocity only, is reproduced as Table 3-3 including qualitative descriptions of wind effects. Table 3-3 suggests that mean wind speeds below 12 mph are of minor concern and that mean speeds above 24 mph are definitely inconvenient. Quantitative criteria for acceptance (from Melbourne) are superimposed as dashed lines on Figure 3-5. The peak gust curves shown on the right in Figure 3-5 are the percent of time during which a short gust of the stated magnitude could occur (say about one of these gusts per hour). Because of the way the acceptance criteria for mean winds are calculated, the comparison of mean winds may be too severe. For this reason, the gust velocity curves on the right in each figure are most important.

3.5 Data Analysis

The results of the pedestrian wind analysis are best displayed on the peak gust graphs on the right side of Figure 3-5. The results show that locations at the west end of the complex, particularly Locations 6, 7, and 8 are expected to exceed the comfort criteria for walking 15 to 30 percent of the time. Other locations have lower wind speeds. All wind speeds (except that at 10 ft above the computer building) fall under the criteria for unacceptable gusts. The windiest locations (6, 7, and 8) are not particularly severe for the Dallas area but do exceed an open environment wind (see the gust velocities for Location 1 in an open field). Some reduction in winds at Locations 6, 7, and 8 can probably be obtained by judicious use of planting or fences, depending on the need for vehicle access south of the R&D building.

4.0 CONCENTRATION MEASUREMENTS

4.1 General

Diffusion of gases into the atmosphere is influenced by geometric characteristics such as terrain and man-made structures, in addition to the thermal, dynamic and kinematic considerations for the flow field. Satisfactory techniques have been developed for modeling all of these characteristics which result in a model concentration field that is a congruent replica of the prototype field. The techniques used in acquiring the concentration data for this study are well established in theory and in practice.

Concentration (dispersion) data were collected for all receptors on the E/PRC model for eight different wind directions at 45° intervals. Most measurements were obtained with a tunnel speed of 7 mph at 40 ft (full-scale); some measurements were made to show the effect of changing wind speed. Scaling of the velocity ratio was discussed in Section 2.0.

Table 4-1 provides for each source group tested: 1) the run number assigned to each test, 2) the wind direction with reference to true north, 3) the full-scale wind velocity, 4) the source load (100 or 30 percent), 5) the hydrocarbon tracer with its source strength expressed as a percentage of the total gas mixture, and 6) the stack height used for each source.

4.2 Tracer Gases

During test planning the decision was made to simultaneously sample the exhausts from two source groups by using separate hydrocarbon tracers. The neutrally buoyant sources were modeled with a nominal 9% methane, or 10% ethane tracer in a mixture which was equivalent to the molecular weight of air.

The required tracer gas mixtures were supplied by Scientific Gas Products, Inc., Longmont, Colorado. The gases are certified by SGP to be accurate within ±2%.

4.3 Data Collection Procedures

Tracer gas concentrations were measured at each of the receptors for comparison with the various sources.

The 24 model receptors were all connected to a collection system (which was located adjacent to the wind tunnel) with one-sixteenth I.D. Tygon tubes. The collection system ("Sampler"), which was designed and fabricated in the CSU Engineering Research Center, basically consists of a circular array of syringes, a network of check valves and a manifolded vacuum system, all interconnected, and completing a path from sampling port to gas chromatograph. Sampling time and vacuum pressure of the system are adjustable.

The sampler was calibrated both prior to and immediately following the concentration test program to insure proper function of each of the assemblies (tubing, check valve, syringe).

The data acquisition consisted of: 1) setting the proper tunnel wind speed, 2) releasing metered mixtures of tracer gases from the model sources, 3) withdrawing samples of air from the model receptors, and 4) analyzing the samples with a Flame Ionization Gas Chromatograph (FIGC).

Tunnel speed was established by integrating the signal from the tunnel-mounted sensor with a digital voltmeter over a 100-second interval. Speed was adjusted and the integrations repeated until the desired setting was obtained to a ±2% tolerance.

The tracer gases released from the source groups were initially routed through ball-type flow meters to control the volume flows prior to routing to the group manifolds, or individual sources. Calibration of the flow-meters, over their operating range with air, was used to obtain the proper meter setting. The modeled volume flow rates, sometimes reduced from the prototype values by a square of the scaling factor, were additionally reduced by a factor of 0.667 for this study to maintain equality of the velocity ratio (V_s/U_s), which was described in subsection 2.5. A tabulation of the prototype and model volume flow rates is contained in Table 2-1c.

The tracer gas sampling system consists of a series of fifty 30-cc syringes mounted between two circular aluminum plates. A variable-speed motor raises a third plate, which simultaneously lifts all 50 syringe plungers. A set of check valves and tubing are connected such that airflow from each sampling point passes over the tip of each designated syringe. When the syringe plunger is lifted, a sample from the tunnel is drawn into the syringes. The sampling procedure consists of flushing (taking and expending a sample) the syringe several times, after which the test sample is taken. The variable draw rate was set to approximately 60 seconds. Two of the sampler syringes are used to monitor background values of tracer gases which are present in the wind-tunnel flow approaching the model. Raw integrated outputs for the background readings are subtracted from regular sample port outputs as discussed in the next section.

The procedure for analyzing air samples from the tunnel is as follows: 1) a 2 cc sample volume drawn from the wind tunnel is introduced into the Flame Ionization Detector (FID), 2) the output from the electrometer (in microvolts) is sent to the Hewlett-Packard 3380 Integrator, 3) the output signal is analyzed by the HP 3380 to obtain the proportional amount of hydrocarbons present in the sample, 4) the record is integrated, and the methane, ethane concentration, as appropriate, is determined, 5) a summary of the integrator analysis (gas retention time and integrated area [μv-s]) is printed out on the integrator at the wind tunnel, 6) the integrated (raw) values for each tracer are entered into a computer along with pertinent run parameters, and 7) the computer programs convert the raw data into dimensionless concentration ratio coefficients (see Section 4.4).

Photographs of the sampling system and FIGC are shown in Figure 4-1.

4.4 Data Analysis

A common method of analyzing dispersion data is to compare the concentrations measured at the receptors to the source strengths. When the Gas Chromatograph (GC) calibration values are included, a dimensionless concentration ratio, χ, may be obtained,

$$\chi = \frac{\text{RAW-BG}}{\text{CAL FAC}} \times \frac{\text{S.S.}_{\text{calib gas}}}{\text{S.S.}_{\text{tracer gas}}}$$

where,

RAW = GC integrator value of sample at receptor (μv·s)

BG = background value of tracer gas (μv·s)

CAL FAC = GC integrator value of a calibration gas of known concentration, corrected for differences in molecular weight of the tracer gas, if appropriate (μv·s)

SS = source strength of calibration/tracer gas (ppm).

The concentration ratios (dilution factors) so calculated, at each of the 24 receptors for the various source groups modeled, are contained in the appendix to this report. The appendix contains only the RAW values and calculated χ values. Other values included in the calculation are not included.

The values of χ listed in the appendix represent the ratio of measured concentration at a given receptor to the concentration in the effluent at a given source. Full-scale concentrations can be calculated by multiplying the appropriate χ value by the full-scale emission concentration.

The collected concentration data was analyzed to ascertain which receptors had received the largest amount of concentration from each source group tested. Since the amount of contamination varied extensively between test groups, the resultant concentration ratios were screened to exclude all concentration ratios less than 0.10 E-6. The resulting data are summarized in Tables 4-2a to 4-2i. The tables contain the largest concentration ratios obtained at each building (R&D, PP/HB, CUB, CORE, NW) for the nine source groups, various stack heights and wind directions tested.

Testing included four stack heights on the R&D building, four on the PP/HB, two on the CUB, and two (including a 50-ft height) on the CORE facility. The data in Tables 4-2 show that in many instances additional stack height does reduce the extent of cross-contamination. The level of intake contamination calculated using anticipated levels of emission concentration must be examined to determine which stack heights yield acceptable levels of intake concentration. This calculation was to be performed by ARCO personnel and is not included herein.

A summary of concentration ratios at the ground receptor placed in the residential area to the north (number 24) is listed in Table 4-3a for minimum source output and in Table 4-3b for maximum source output. These data show a general decrease in concentration ratio with increasing stack height. One exception was source group 3 at 180 degrees wind azimuth. Increasing the stack from 20 to 30 ft caused an increase in concentration at receptor 24. The higher stack caused the effluent to be released above the rooftop separation zone which prevented early dispersion into the building wake and resulted in a more concentrated plume downwind.

Also shown on Table 4-3 are concentrations at receptor 24 as a function of wind speed at wind direction 193 degrees for sources 2 and 6. Direction 193 degrees was selected to put receptor 24 directly downwind of the sources. The variations with wind speed are plotted in Figure 4-2 for ease of visualization.

Table 4-4 and Figure 4-3 show the concentration ratios at selected intake locations for two source groups for four wind speeds. Some concentration ratios increase while some decrease with wind speed. Whether or not a receptor concentration ratio decreases with wind speed depends on the buoyancy of the source (if any--in this case buoyancy is not a factor), V_s/U_s for the source, and relative elevations of the source and receptor. For a source with no buoyancy and with V_s/U_s very small, then χ would be expected to be inversely proportional to approach wind speed. Hence the decision was made to run most tests at a wind speed somewhat below the site average wind speed. Where the exit velocity from the stack is the dominant variable, then increasing wind speed dilutes the plume but also deflects its mean position closer to the ground. In this case, either increases or decreases can occur in the χ ratio as wind speed increases. Release of an exhaust within a flow separation region over a rooftop further complicates the situation.

The results of Figures 4-2 and 4-3 can be used to assess the increases in concentration which might be expected for cases run where wind speed variation was not included. Most data were obtained at a wind speed of U_{40} = 7 mph (U_∞ = 11 mph). Maximum increase in concentration with varying wind speed for any case in Figure 4.3 was about 50 percent from the U_∞ = 11 mph case. Thus, other cases are likely to be limited to increases of the order of 2. This conclusion does not include the effects of atmospheric stability which were not a part of this study.

5.0 PRESSURES

Mean and fluctuating pressures were measured at 16 locations on the model to provide wind loads on doors and to provide pressures acting at building intakes and exhausts. The pressure tap locations are shown in Figure 5-1 for the two configurations tested. Tap locations in Configuration A represented doors or potential access points. Tap locations in Configuration B were building intake or exhaust locations (taps 1-12) or door locations (13-16). Tap 13 in Configuration B is the same as tap 9 in Configuration A. Pressure taps were 1/16 inch diameter holes drilled normal to the model surface. The taps were connected by short lengths of tubing to laboratory pressure transducers which measured the fluctuating pressures acting at each tap. The model was rotated at 10 degree intervals so that 36 sets of pressure data were acquired.

Data acquisition was performed under control of the laboratory digital data acquisition system. Data reduction software calculated the mean and extremes (highest and lowest values) of a scaled one-hour time period. Non-dimensional pressure coefficients were calculated in the form

$$C_p = \frac{P}{0.5\ \rho\ U_R^2}$$

where C_p is the mean, highest or lowest pressure coefficient, P is the measured pressure on the model, ρ is the air density, and U_R is the wind speed in the wind tunnel at a scale elevation of 960 ft (the reference velocity location). All calculated pressure coefficients are listed in Appendix A.

It is known that pressure coefficients are the same on a scale model as they are on the full-scale structure. Thus the pressure coefficients can be used to calculate pressures on the full-scale building. The procedure is to multiply the mean or peak C_p by a value of $0.5\ \rho\ U_R^2$ appropriate for the full-scale wind speed under study. These calculations have been performed as shown in Table 5-1 for full-scale mean winds (at 30 ft elevation) of 10, 20, 30 and 55 mph. Ten mph is near the average wind speed, while a 55 mph mean represents a wind expected only once in 100 years. In performing the calculations, the largest mean pressure (outward acting), largest instantaneous positive peak (inward acting), and largest instantaneous negative peak (outward acting) pressures were selected for the particular wind speed from among all wind directions.

Wind pressures were highest on doors of Configuration A at the entrance designated tap 9. This pressure is associated with the relatively high wind velocities measured near the entrance. Pressures at this door and velocities near the door can be reduced by planting trees and shrubs to the west and north of the door, especially near the building. These trees should be evergreen, if possible, to provide blockage to the wind during the winter as well as during the summer.

Pressure measurements can be used as an aid in calculating pressure balance in the building air handling systems. The pressures at intakes and outlets for the 10 mph case are typical of average static pressures acting at the intakes or outlets.

6.0 AIRFLOW VISUALIZATION

6.1 General

Making the airflow visible can be helpful in understanding flow patterns over, around, and in the wakes of buildings and other structures. Visualization is often helpful in identifying areas of stagnation, vortices, and related flow characteristics which can influence diffusion rates and wind speeds.

Titanium tetrachloride ($TiCl_4$), when exposed to water vapor (H_2O) in the air, reacts to produce titanium dioxide (TiO_2) and hydrochloric acid (HCl). The titanium dioxide appears as a white "smoke" readily discernible to the eye and easily photographed, when properly illuminated with tungsten arc-lamps.

6.2 Visualization Tests

Cotton swabs saturated with $TiCl_4$ were used during the initial visualization study and demonstration to reveal airflow patterns in the vicinity of the E/PRC, R&DB and other model structures. In particular, video documentation was focused upon those sources and receptors which, preceding tests revealed, should be further evaluated. The studies were accomplished with a tunnel speed of $\sim$2 m/s (4 mph) (see 8 January 1985 letter).

A table providing cassette segment ID, source, stack heights, and wind direction has been provided in Table 6-1.

The video tapes reveal some of the effects which wind direction, exhaust stack height, and adjacent structures had upon exhaust gas transport and dispersion in the area around the E/PRC Complex. Any assessment of airflow derived from this visualization should be treated as qualitative in nature and further substantiation of the concentration data.

NOTE: Video tapes are furnished to the sponsor separately from the test report.

7.0 REFERENCES

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2. Cermak, J. E., "Simulation of the Natural Wind," Preprint 82-518, ASCE Convention and Exhibit, New Orleans, Louisiana, 25-29 October 1982.

3. Lord, G. R. and Leutheusser, H. J., "Wind-Tunnel Modeling of Stack-Gas Discharge," in Man and His Environment, Vol. 1 (M. A. Ward, ed.), Pergamon Press, 1970.

4. Halitsky, J., "Validation of Scaling Procedures for Wind-Tunnel Model Testing of Diffusion Near Buildings," Report No. TR-69-8, Geophysical Sciences Laboratory, New York University, 1969, p. 90.

5. Penwarden, A. D., and Wise, A. F. E., "Wind Environment Around Buildings," Building Research Establishment Report, HMSO, 1975.

6. Melbourne, W. H., "Criteria for Environmental Wind Conditions," Jl. Industrial Aerodynamics, Vol. 3, pp. 241-257, 1978.

FIGURES

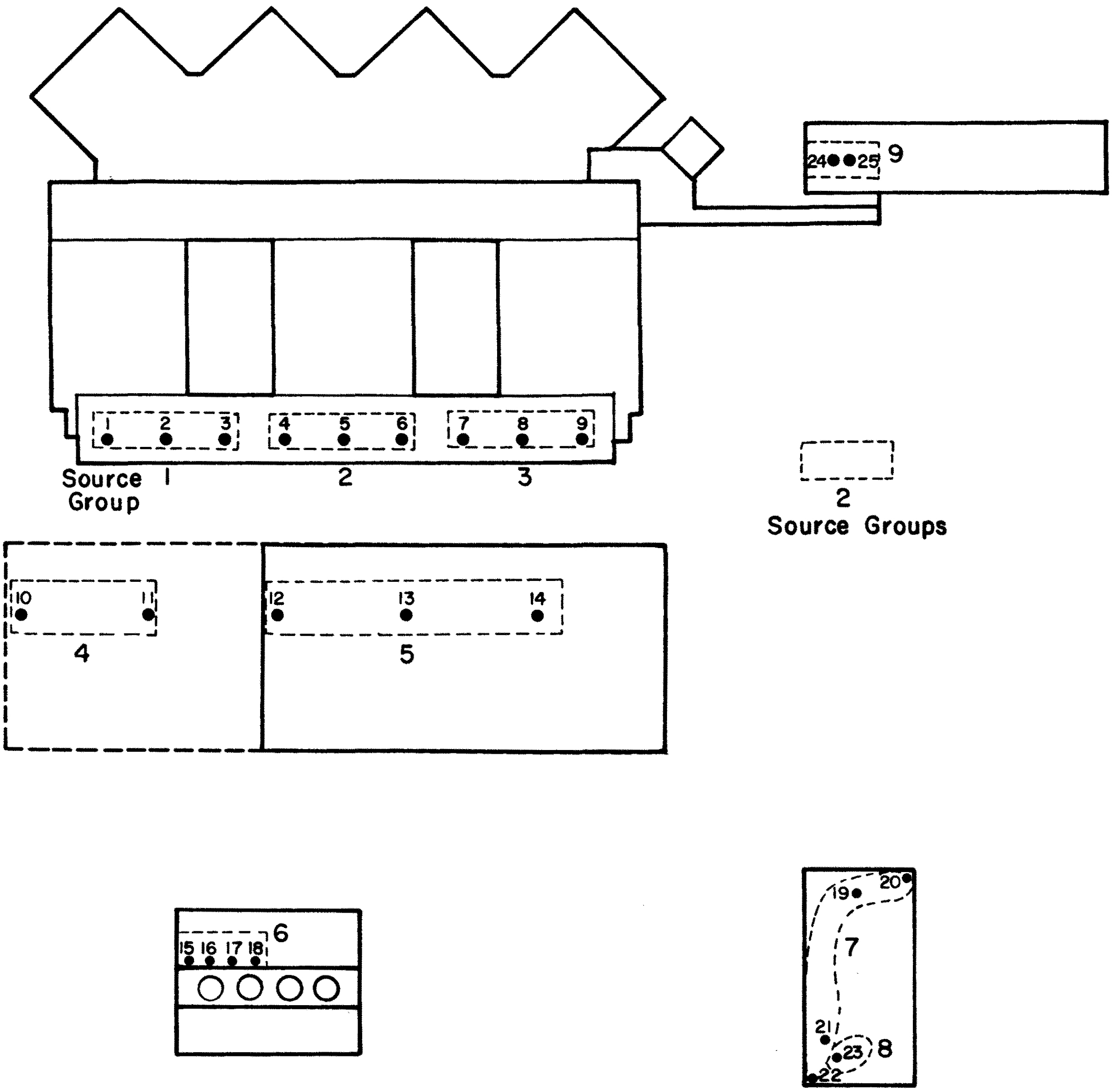


Figure 2-1. Location and Identification of All Modeled Sources (Exhausts) at the ARCO E/PRC

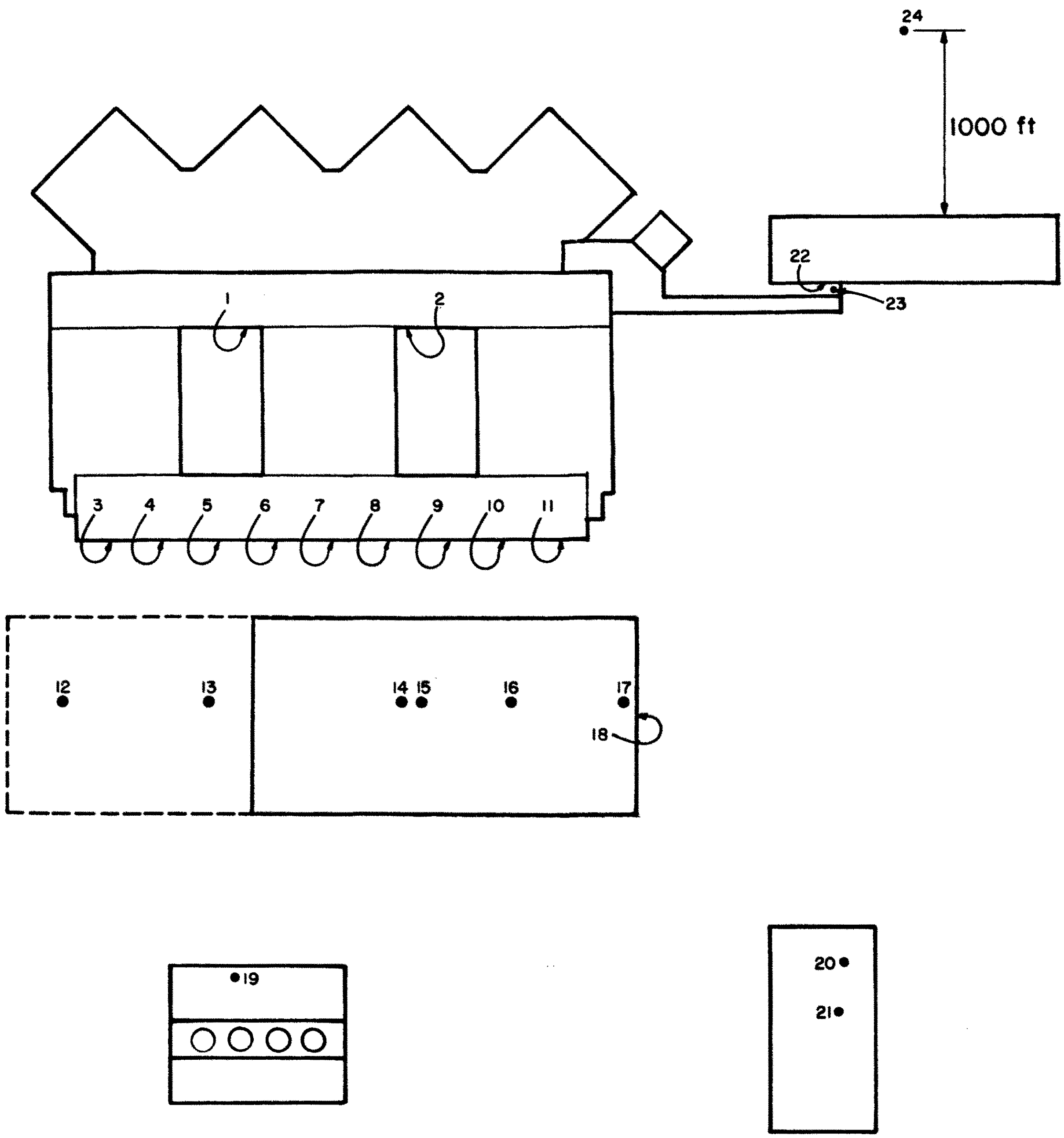


Figure 2-2. Location and Identification of All Modeled Air Intakes at the ARCO E/PRC

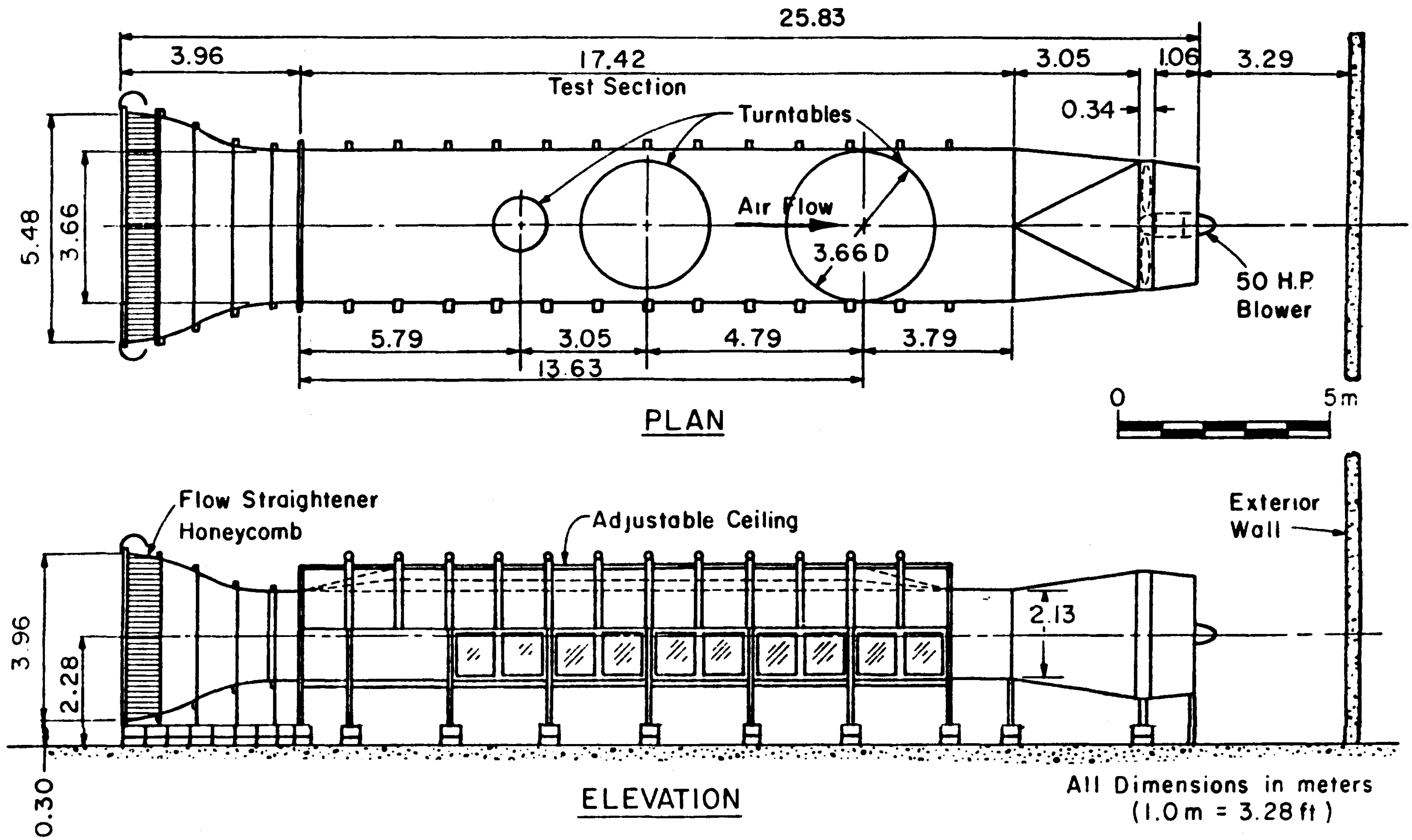
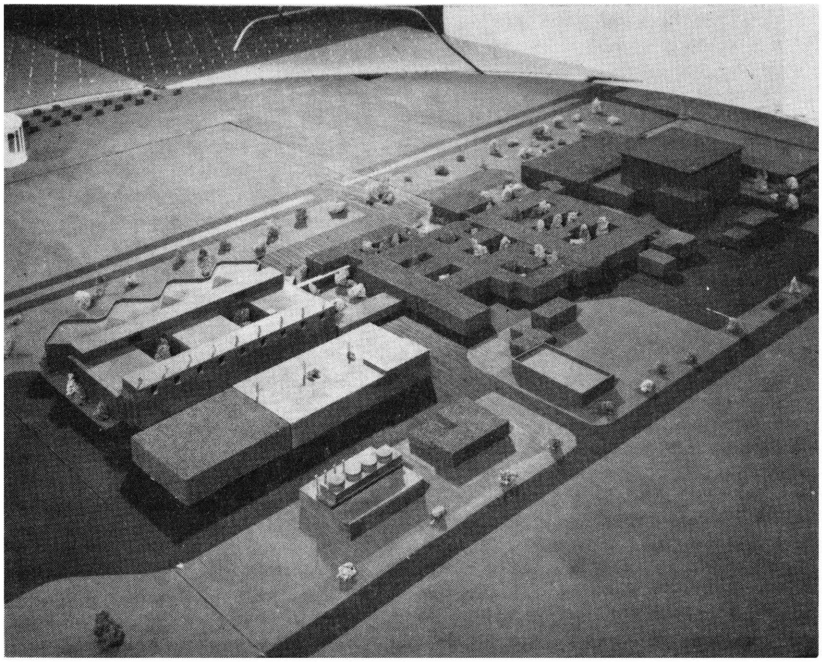


Figure 2-3. Environmental Wind Tunnel, Fluid Dynamics and Diffusion Laboratory, Colorado State University



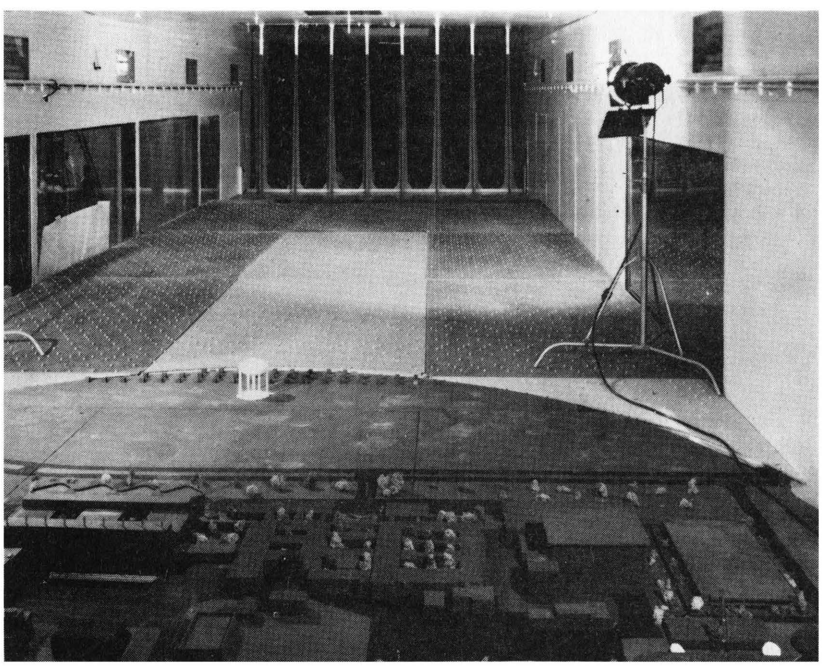


Figure 2-4. E/PRC Model in CSU Environmental Wind Tunnel

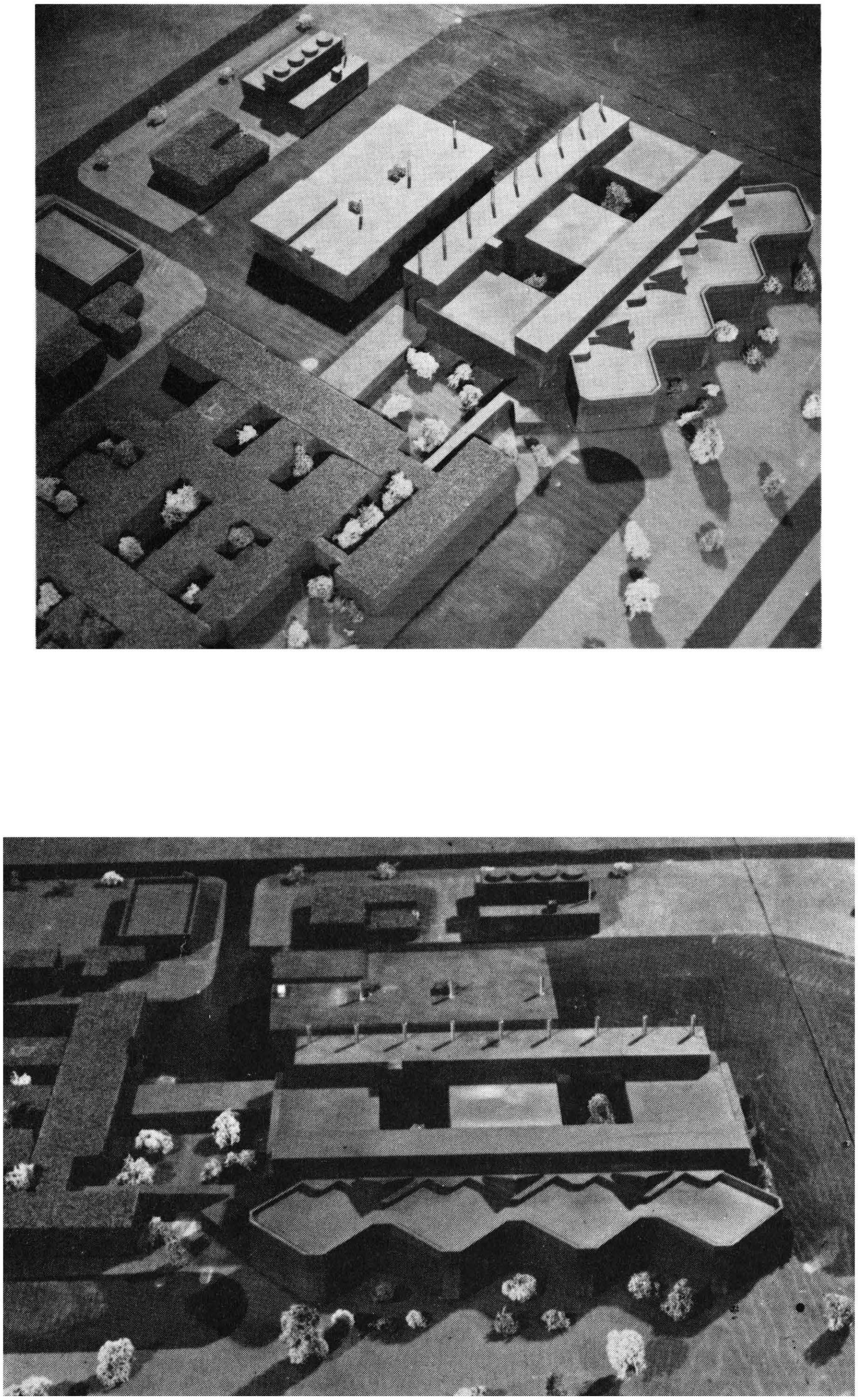


Figure 2-5. Close-up view of E/PRC Model in CSU Environmental Wind Tunnel

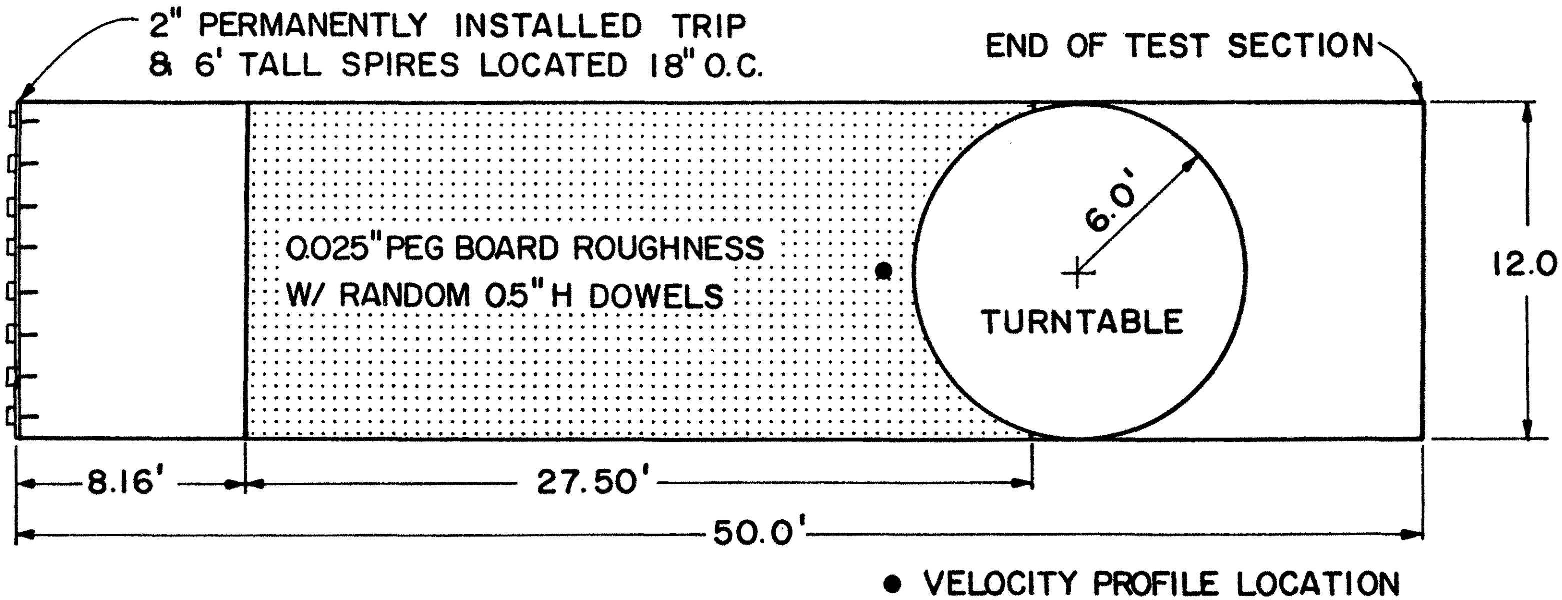


Figure 2-6. Wind Tunnel Test Configuration

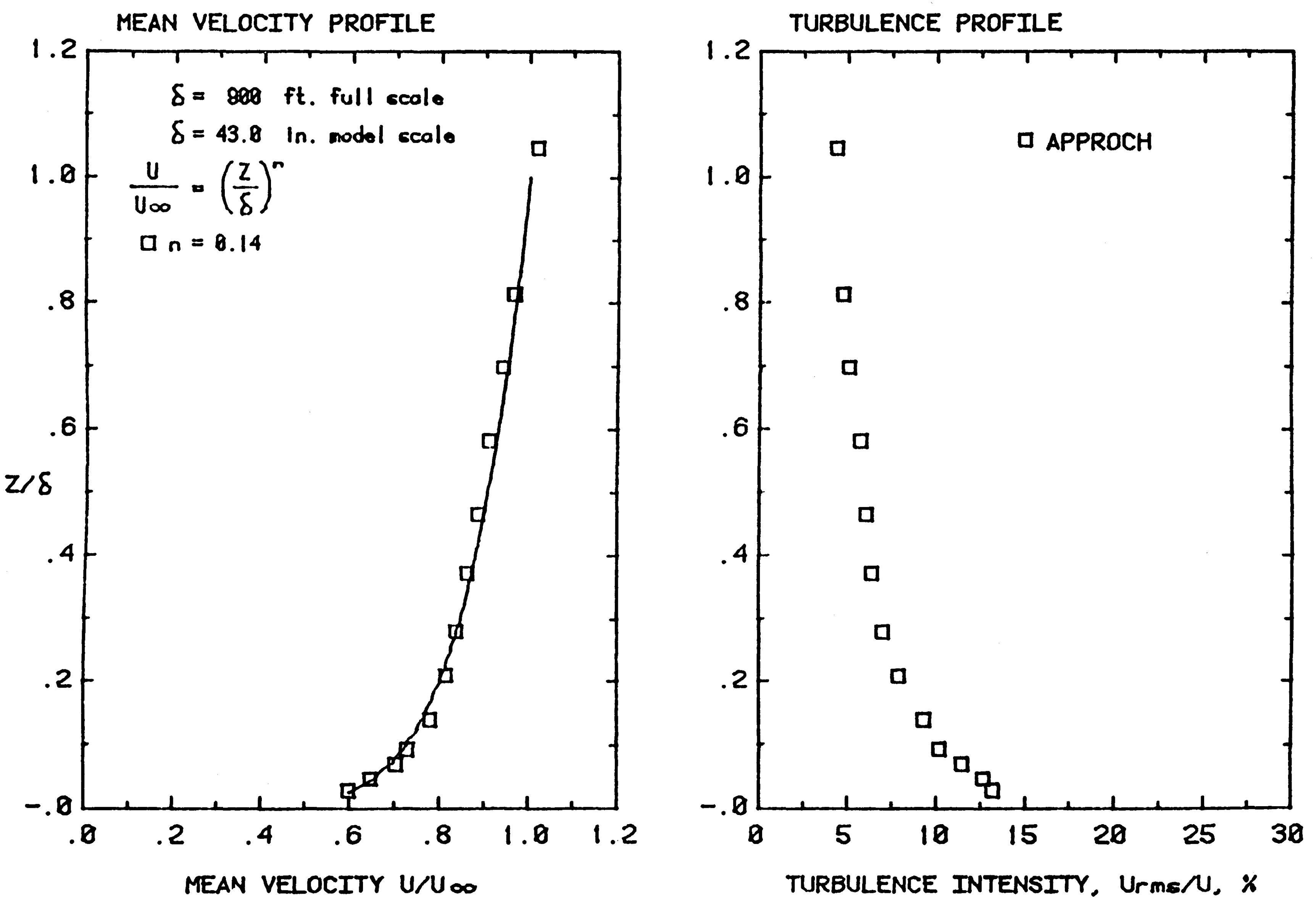


Figure 3-1. Mean Velocity and Turbulence Profiles Approaching the Model

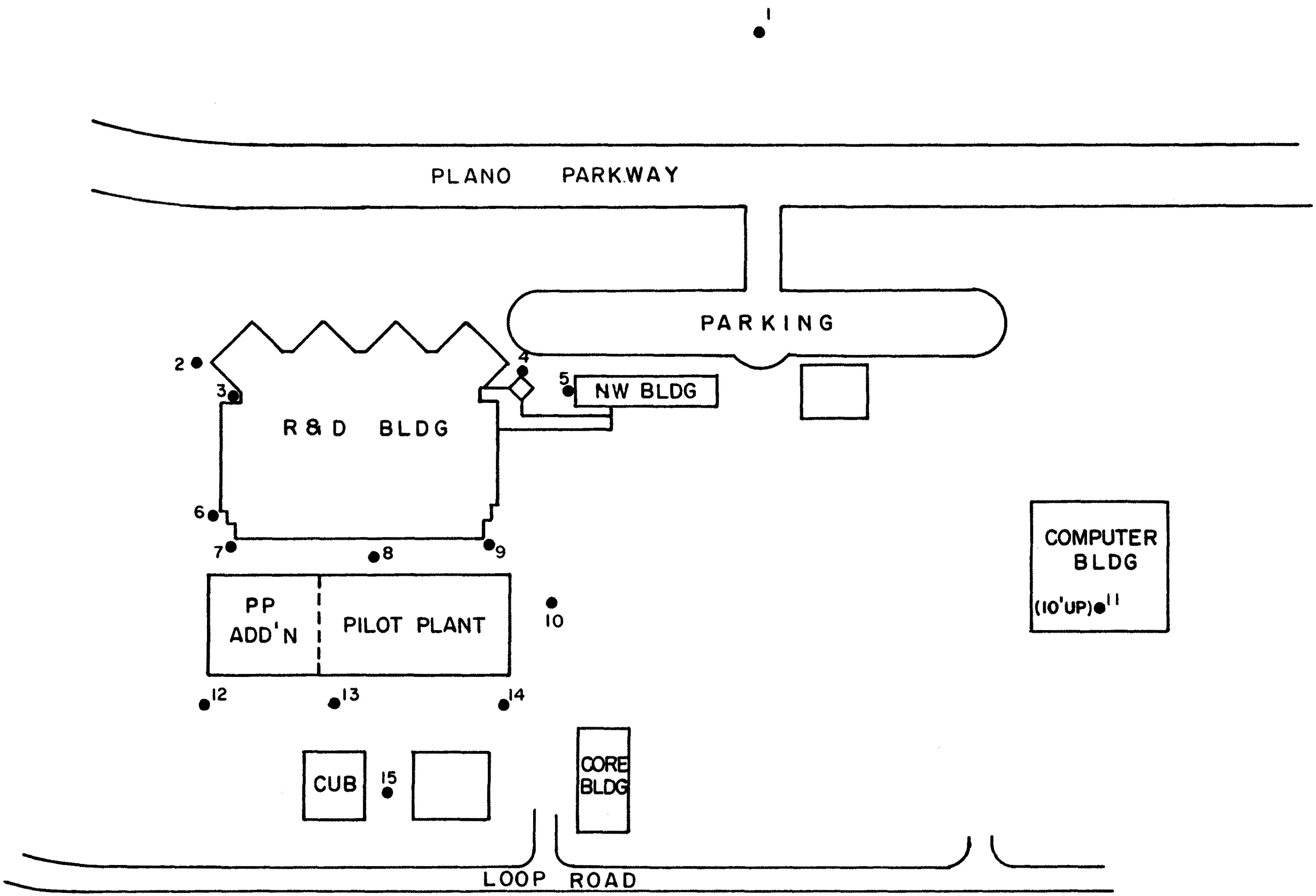
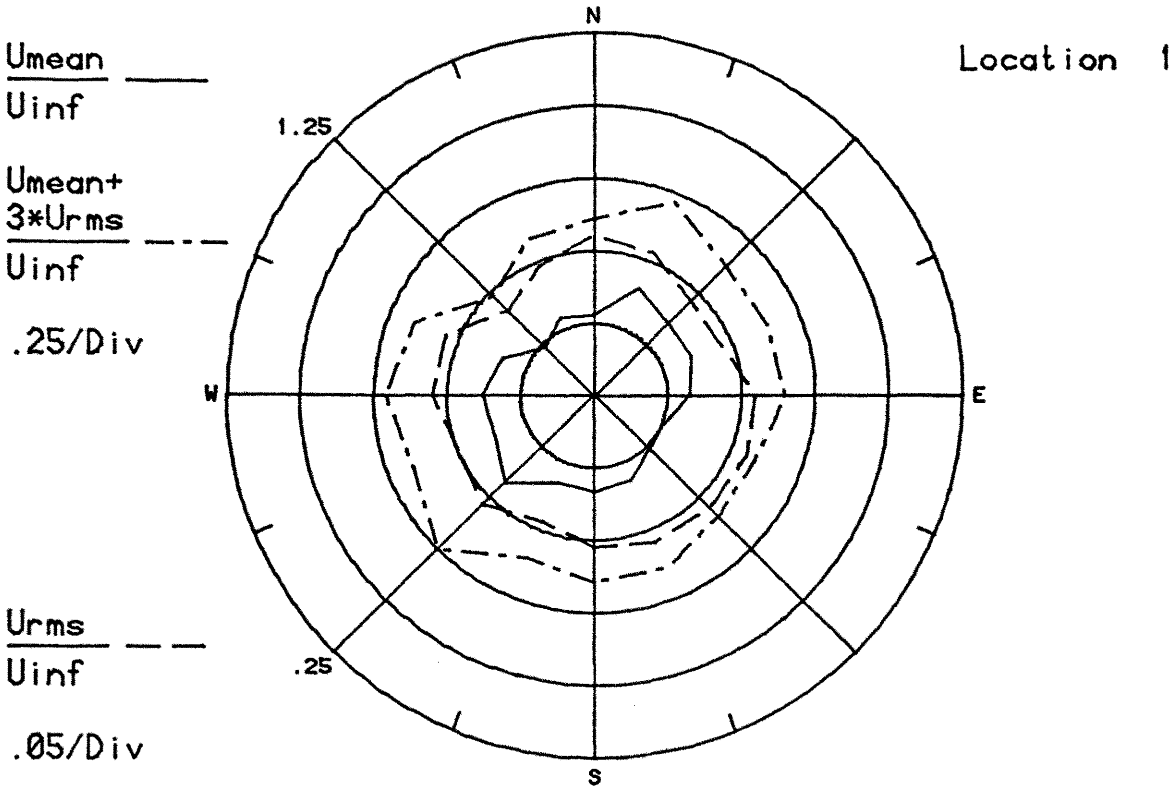


Figure 3-2. Pedestrian Wind Velocity Measurement Positions

ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION



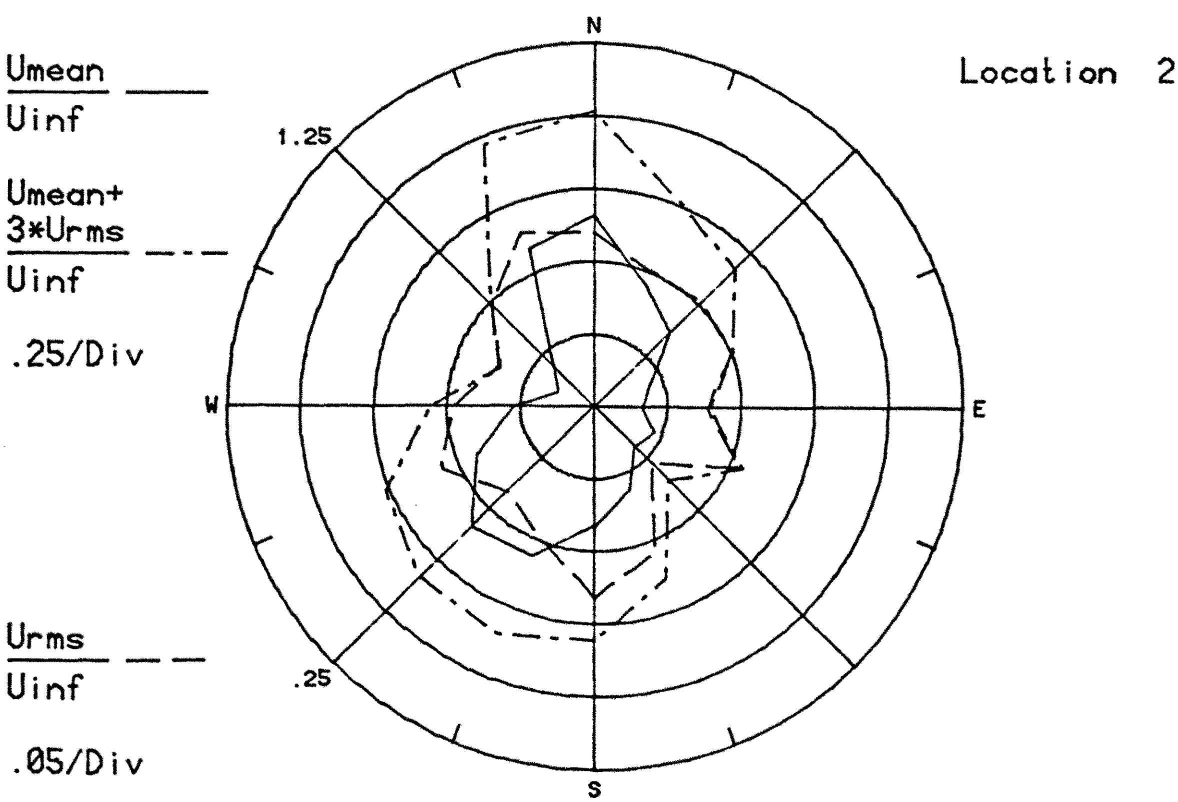


Figure 3-3a. Mean Velocities and Turbulence Intensities at Pedestrian Locations 1 and 2

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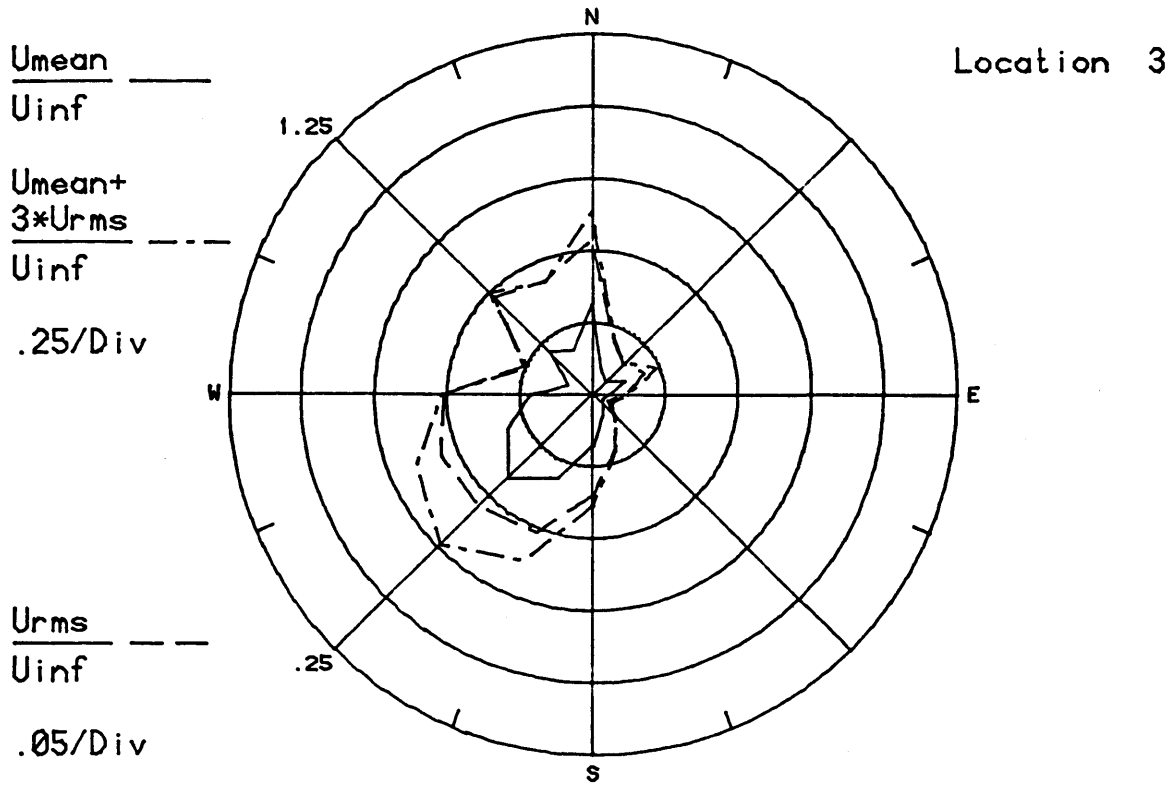

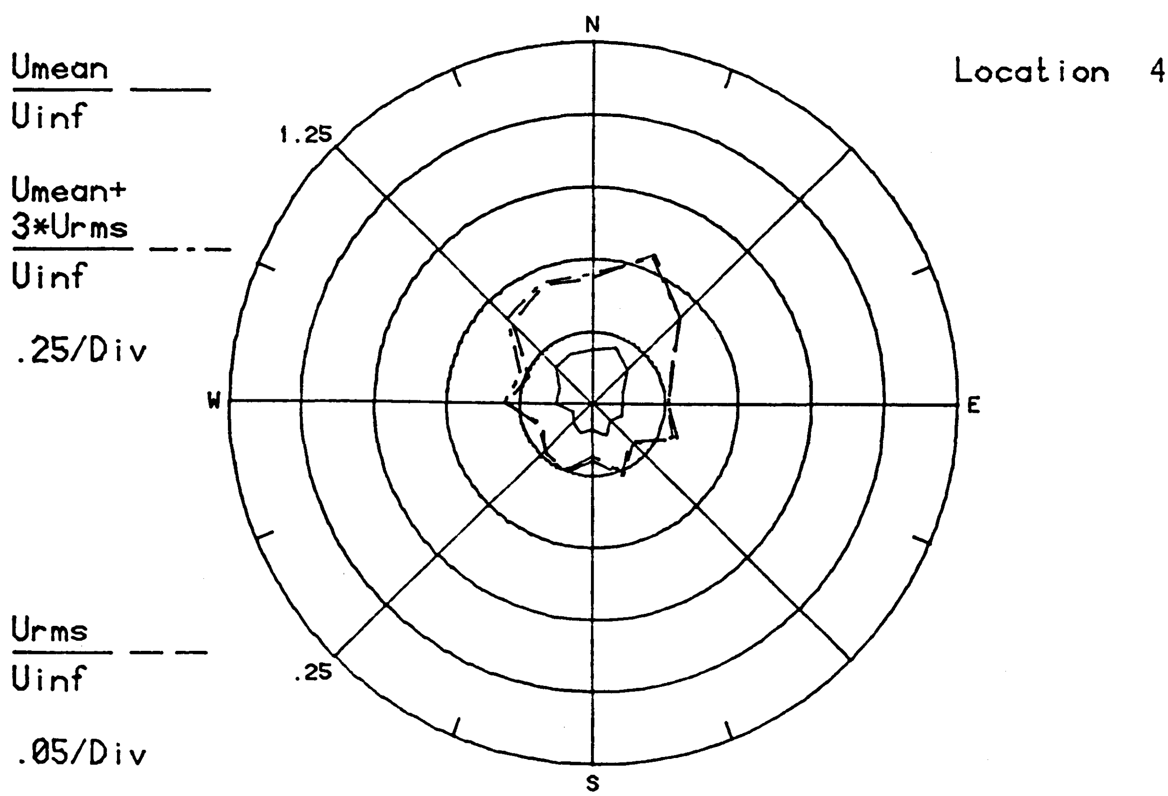

Figure 3-3b. Mean Velocities and Turbulence Intensities at Pedestrian Locations 3 and 4

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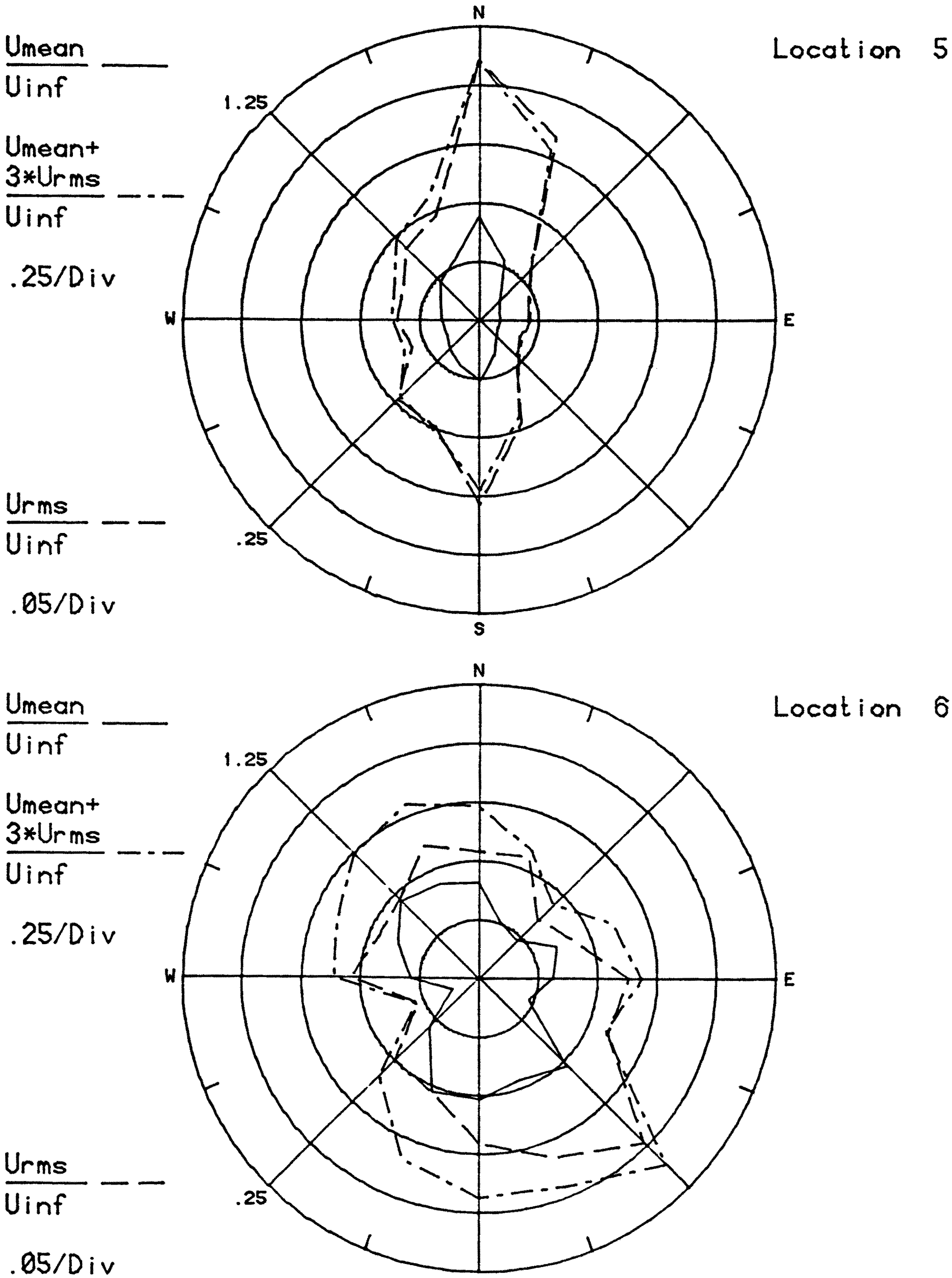

Figure 3-3c. Mean Velocities and Turbulence Intensities at Pedestrian Locations 5 and 6

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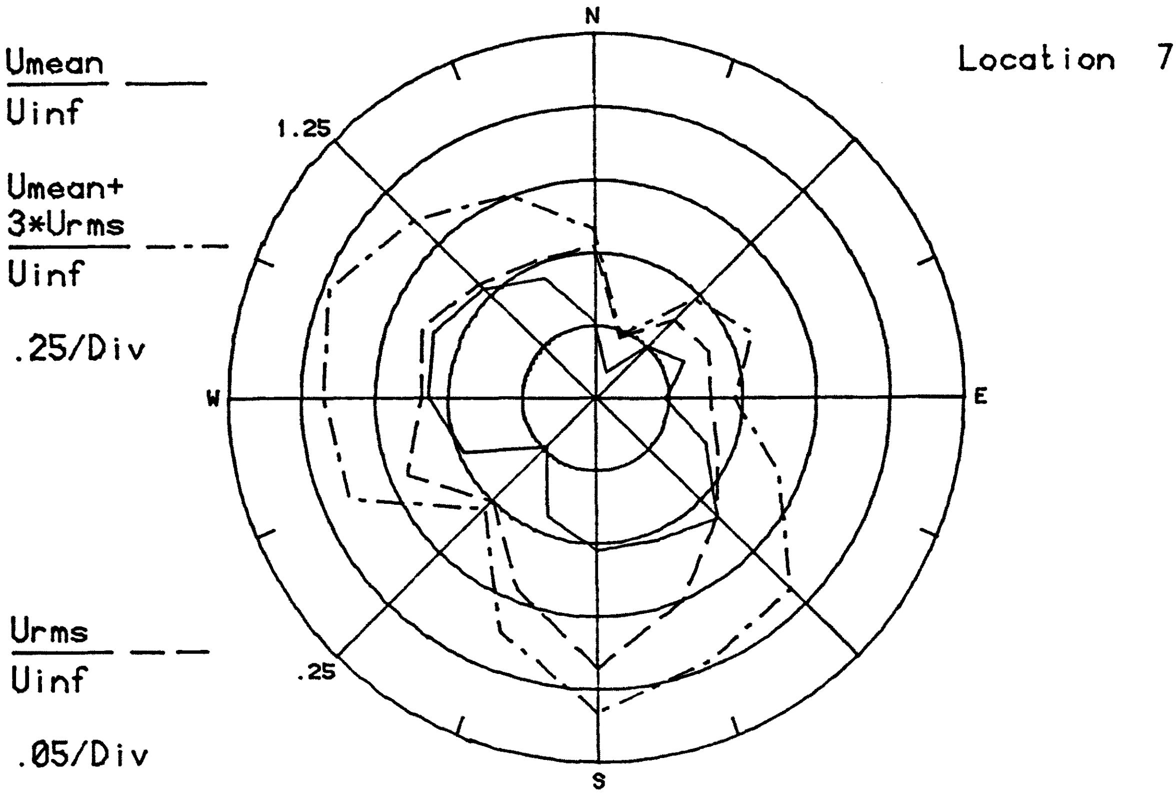

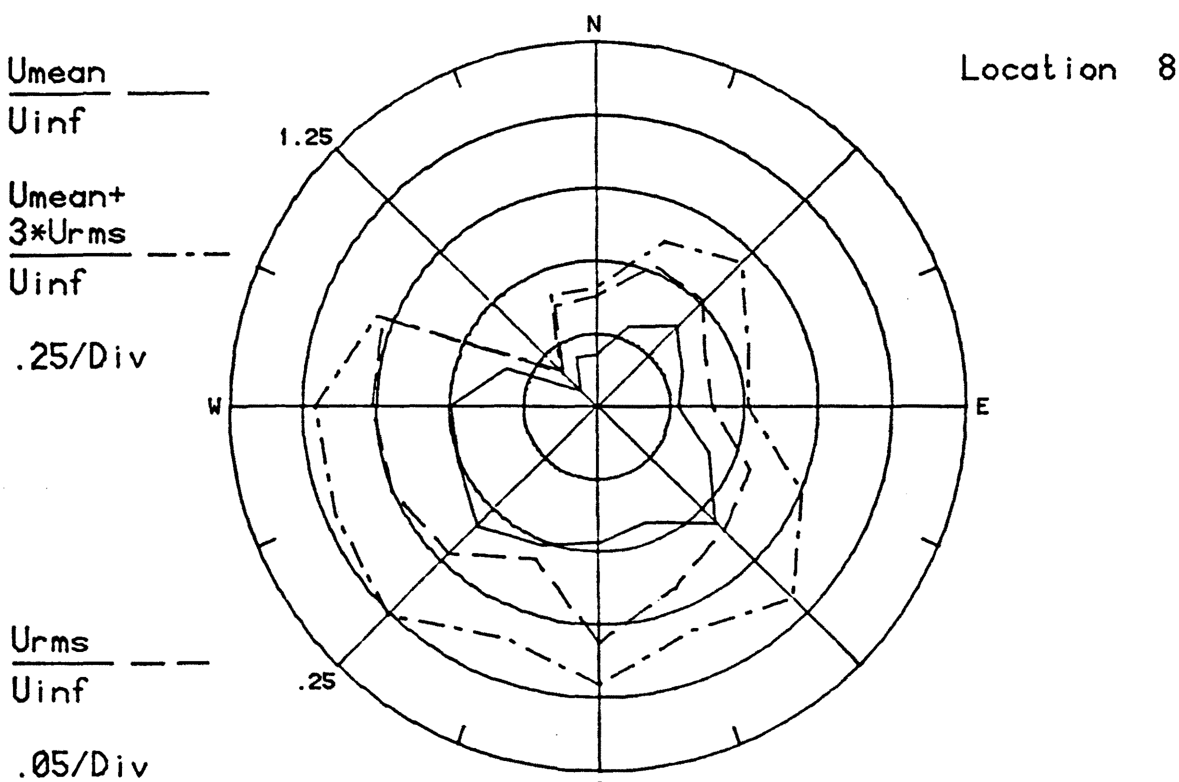

Figure 3-3d. Mean Velocities and Turbulence Intensities at Pedestrian Locations 7 and 8

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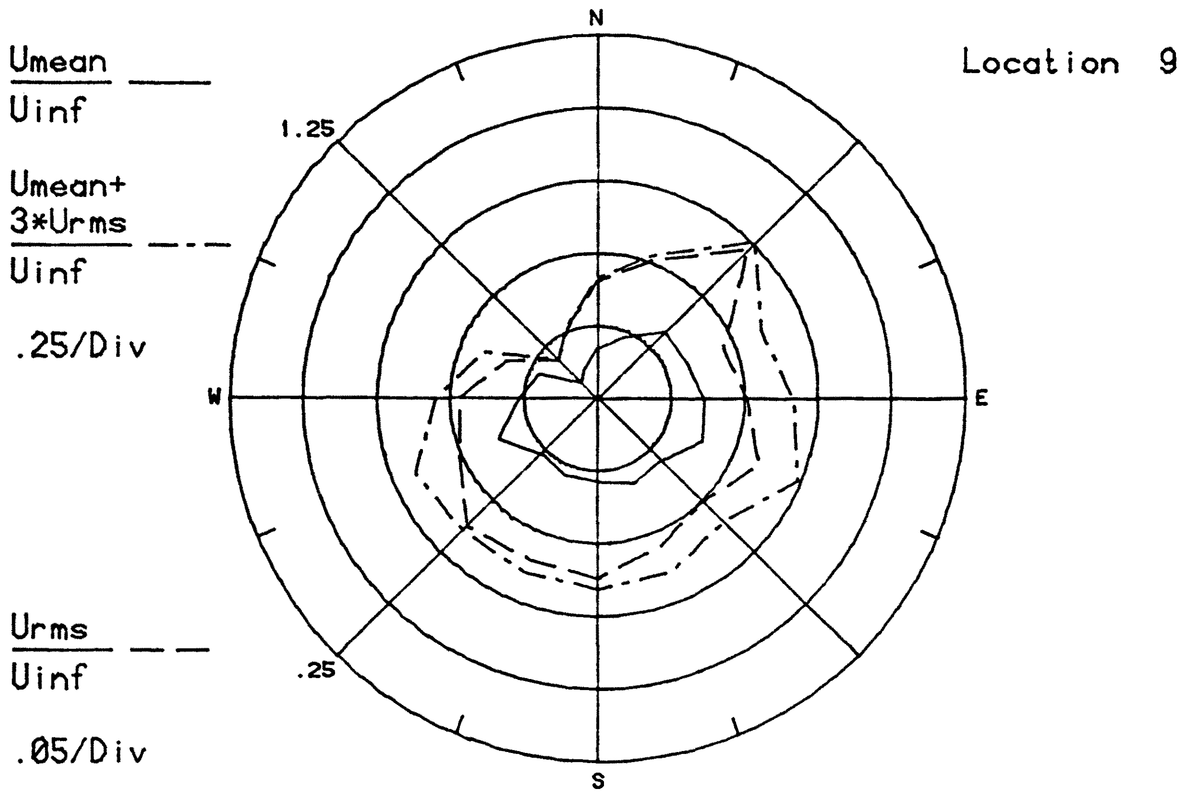

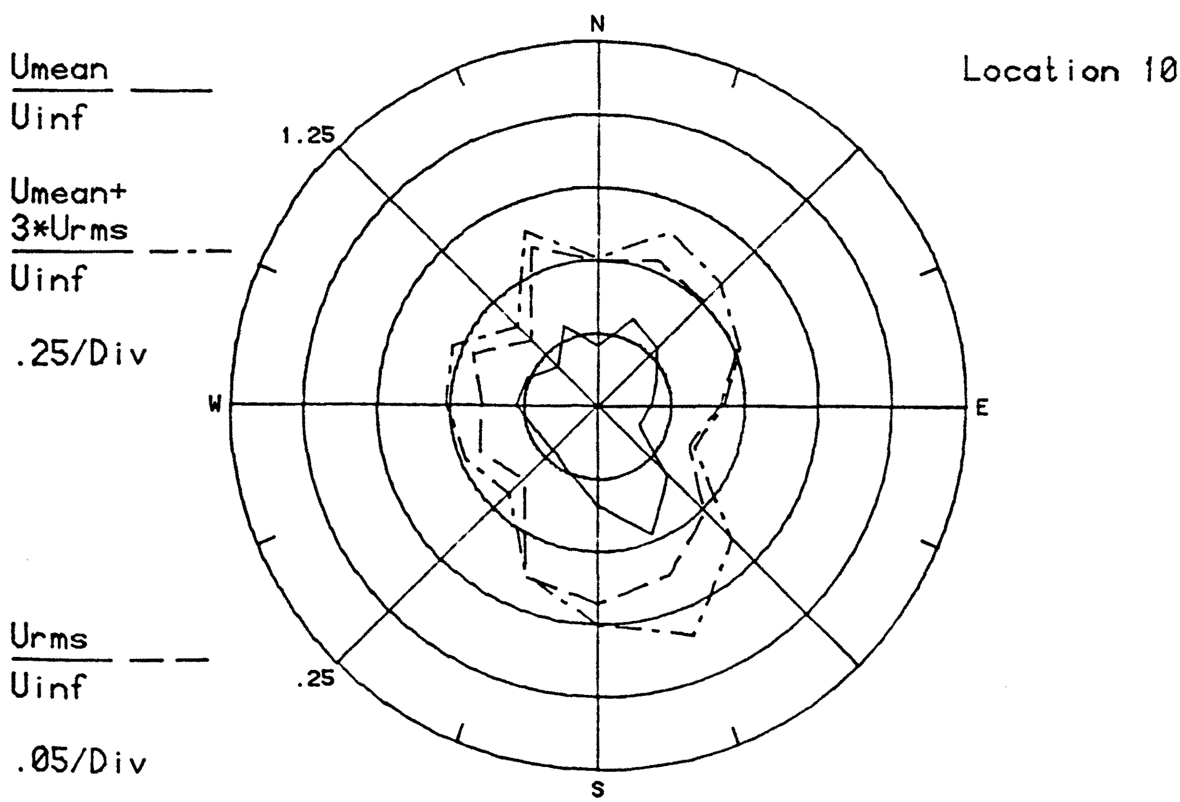

Figure 3-3e. Mean Velocities and Turbulence Intensities at Pedestrian Locations 9 and 10

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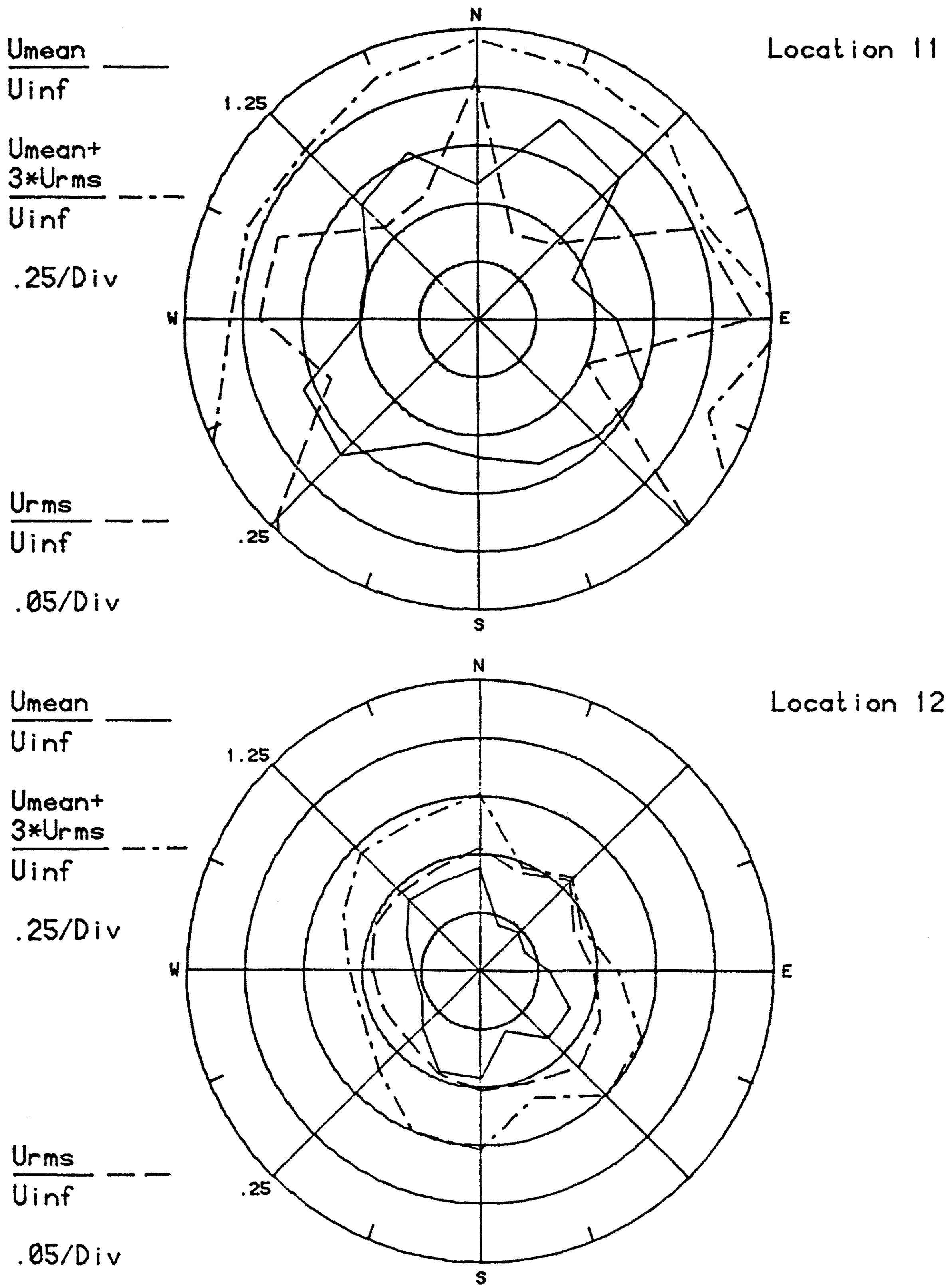

Figure 3-3f. Mean Velocities and Turbulence Intensities at Pedestrian Locations 11 and 12

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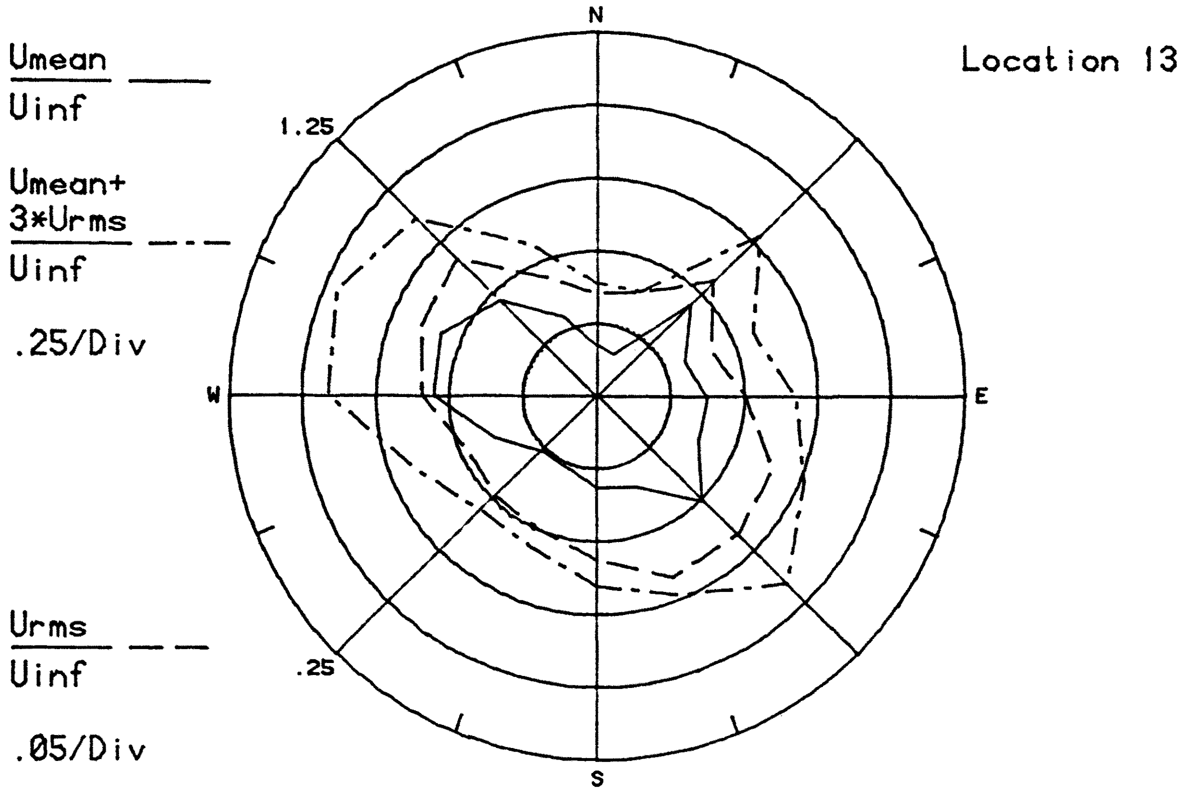

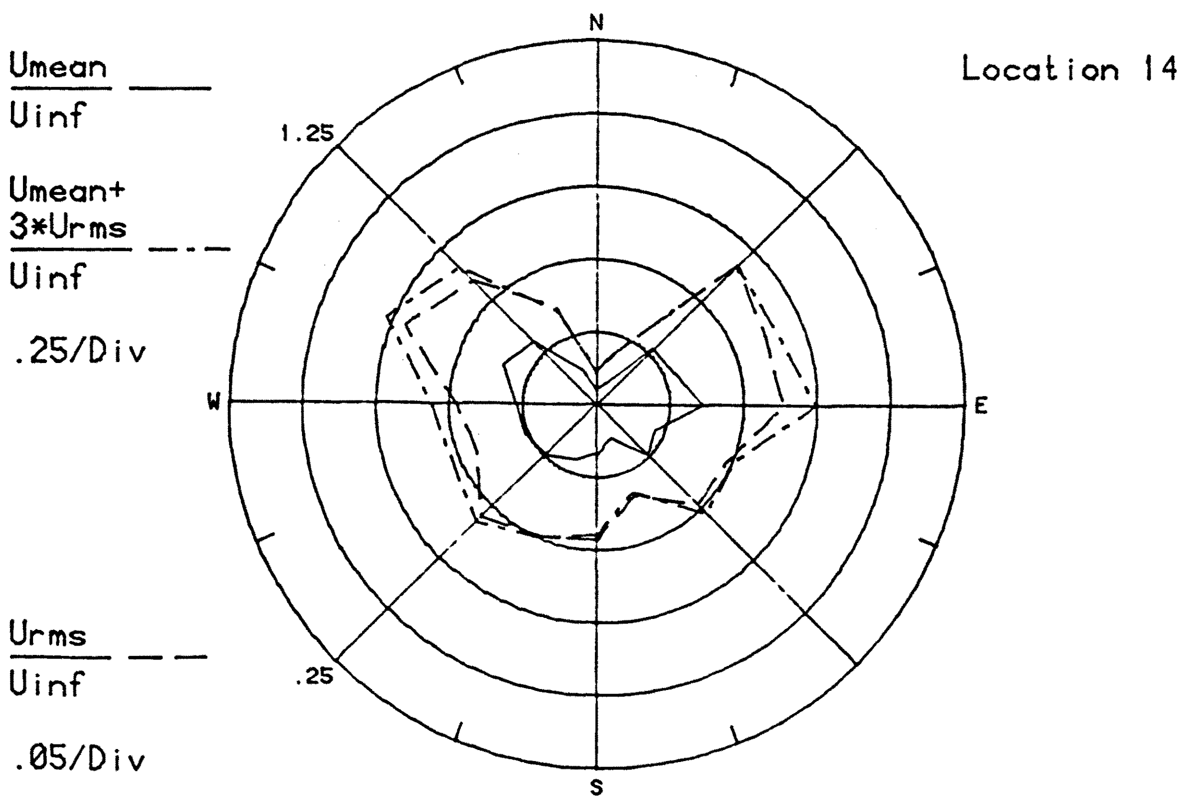

Figure 3-3g. Mean Velocities and Turbulence Intensities at Pedestrian Locations 13 and 14

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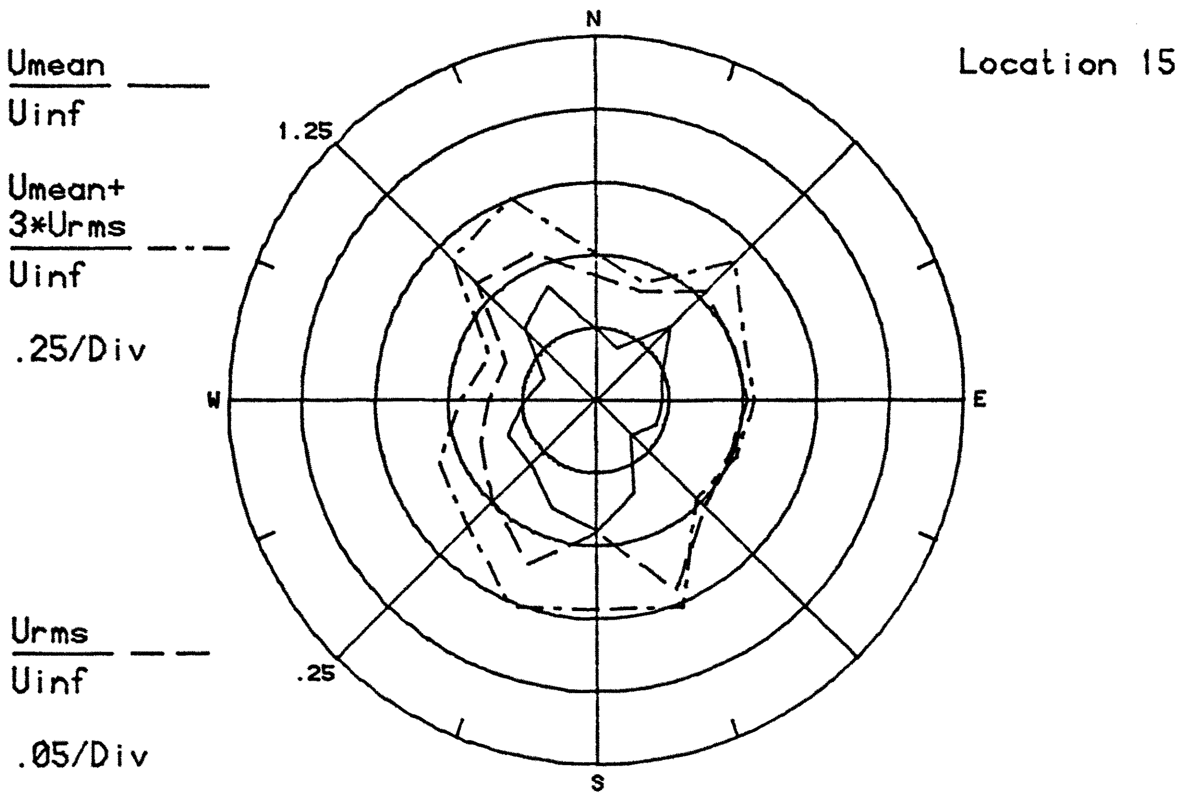

Figure 3-3h. Mean Velocities and Turbulence Intensities at Pedestrian Location 15.

WITH PILOT PLANT ADDITION

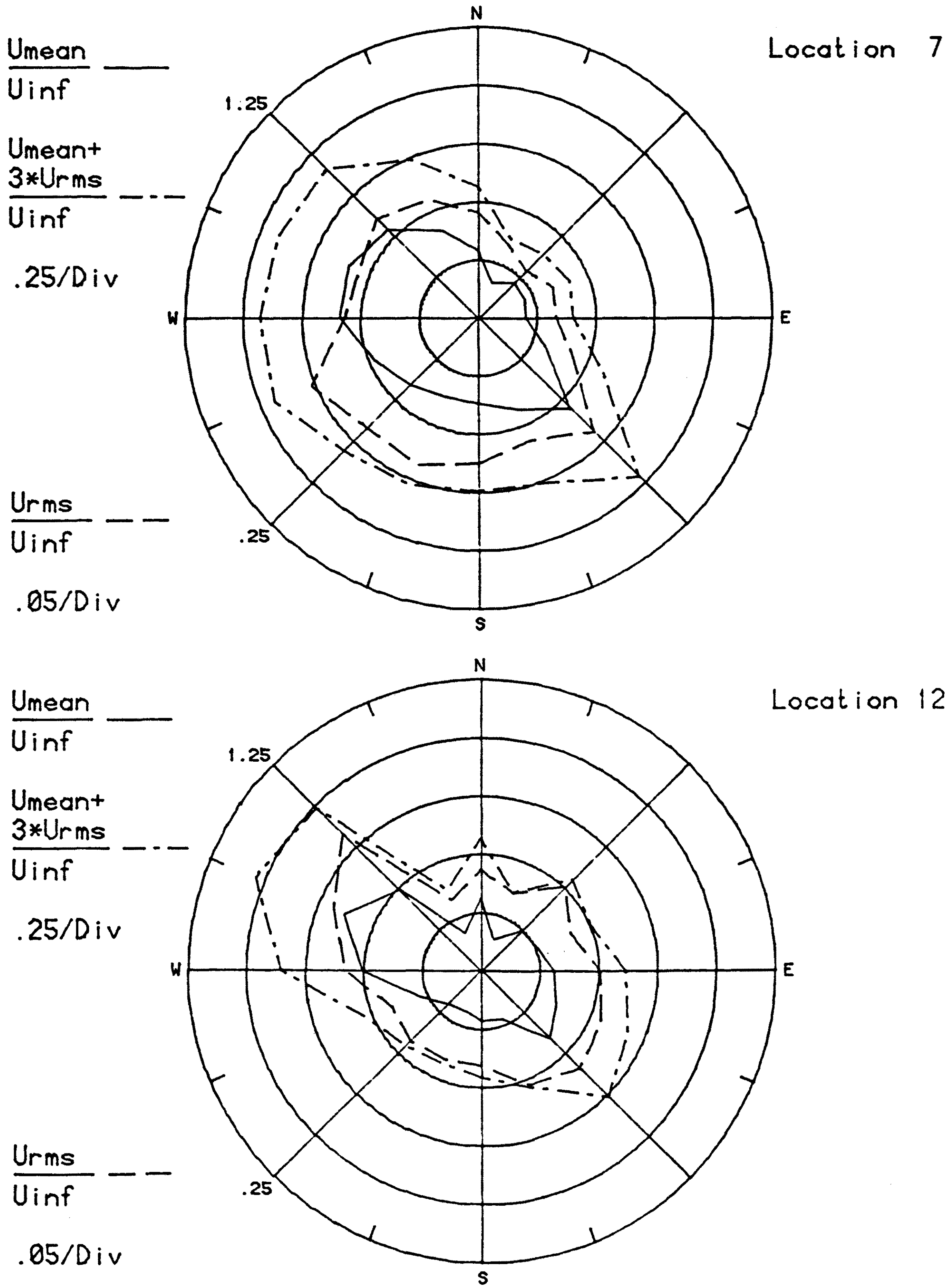

Figure 3-3i. Mean Velocities and Turbulence Intensities at Pedestrian Locations 7 and 12

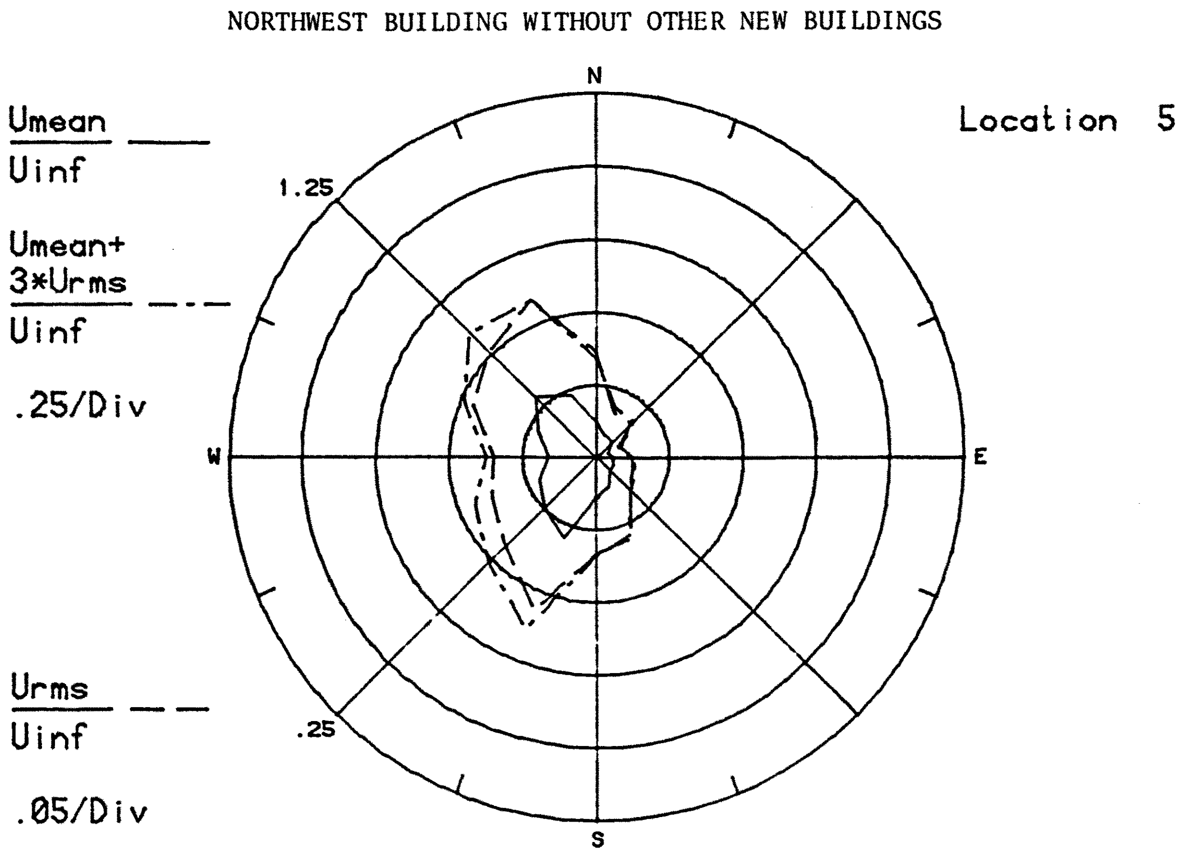

Figure 3-3j. Mean Velocities and Turbulence Intensities at Pedestrian Location 5

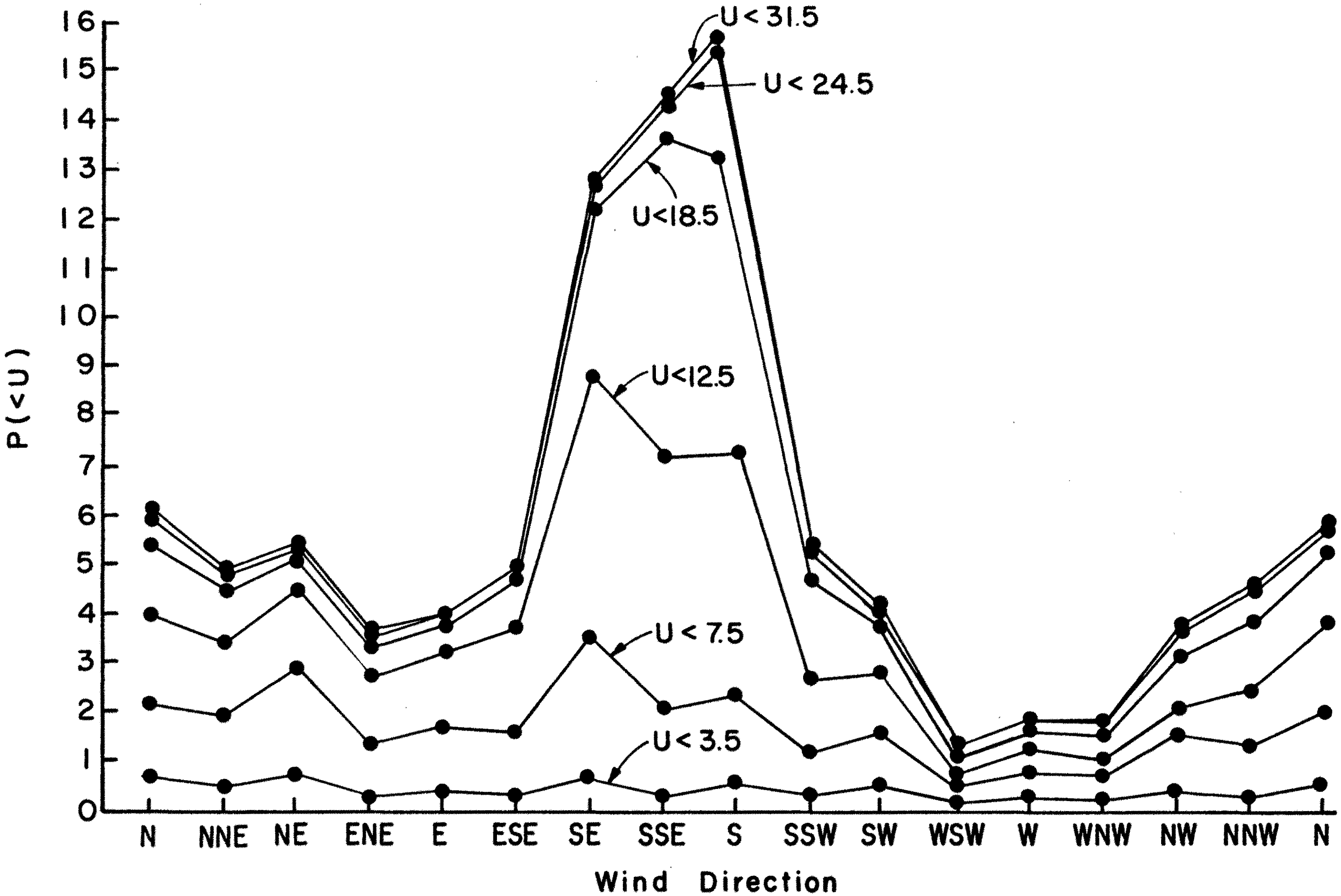

Figure 3-4. Probability of wind speed by magnitude and direction

ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION

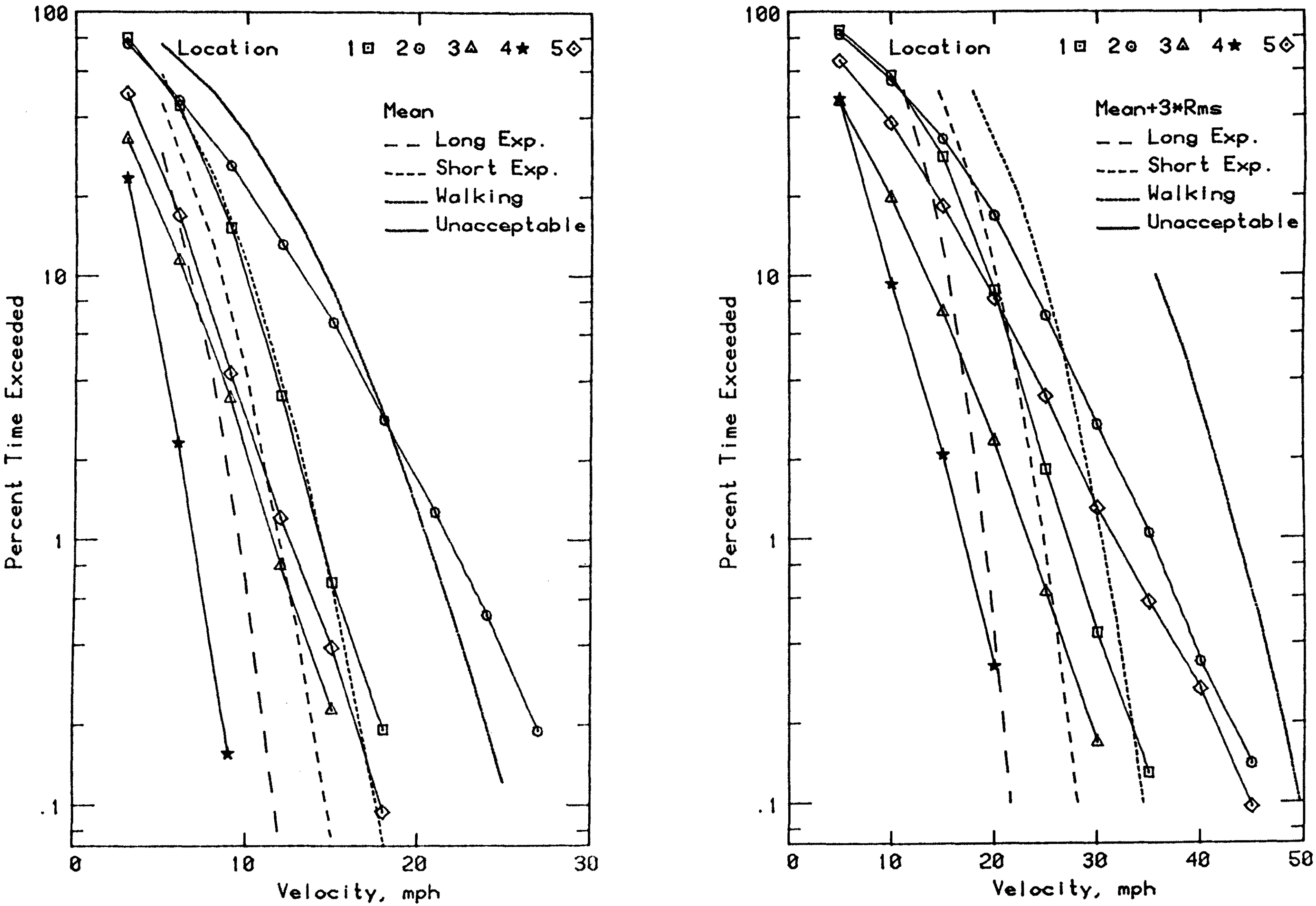

Figure 3-5a. Wind Velocity Probabilities for Pedestrian Locations

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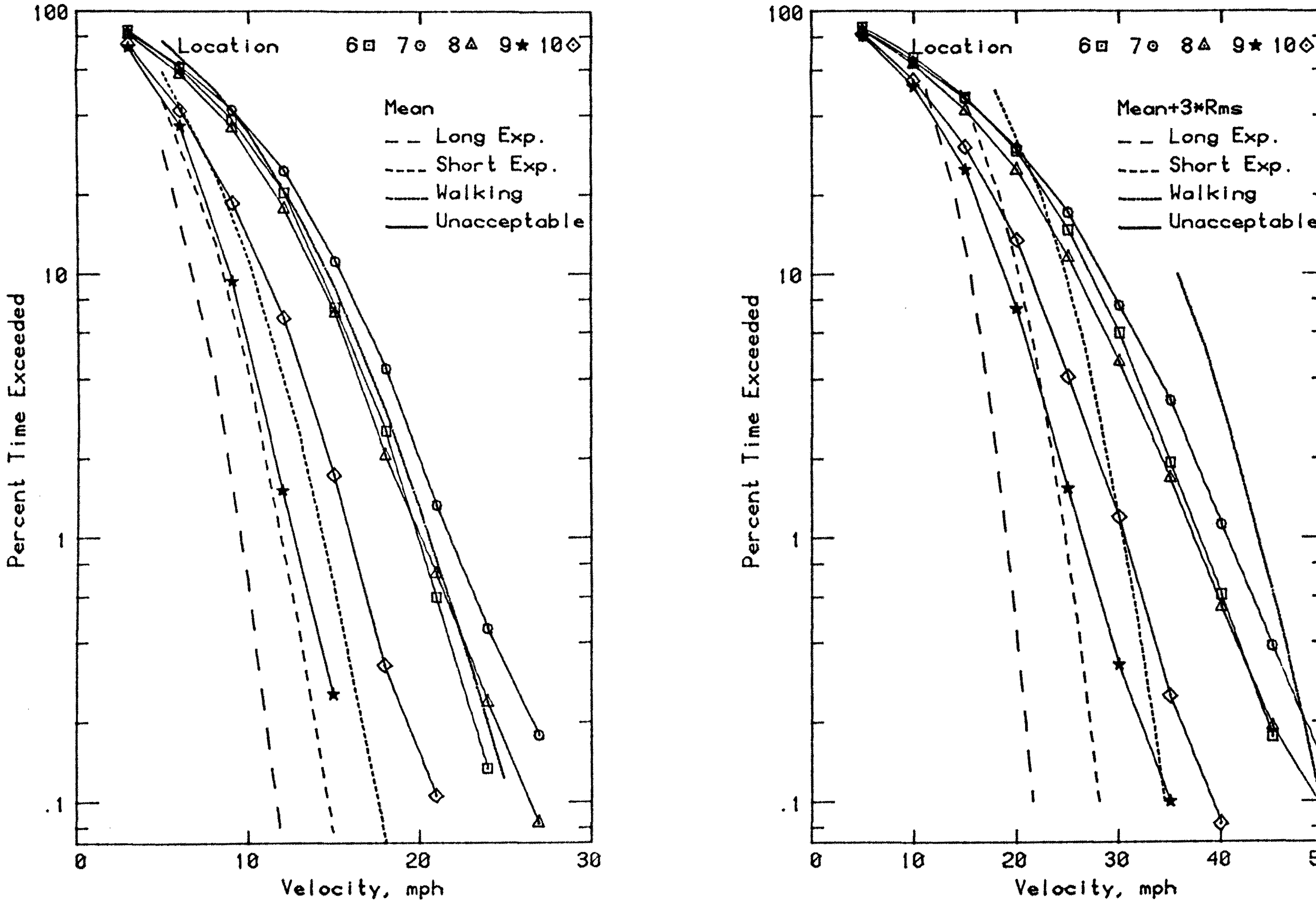

Figure 3-5b. Wind Velocity Probabilities for Pedestrian Locations

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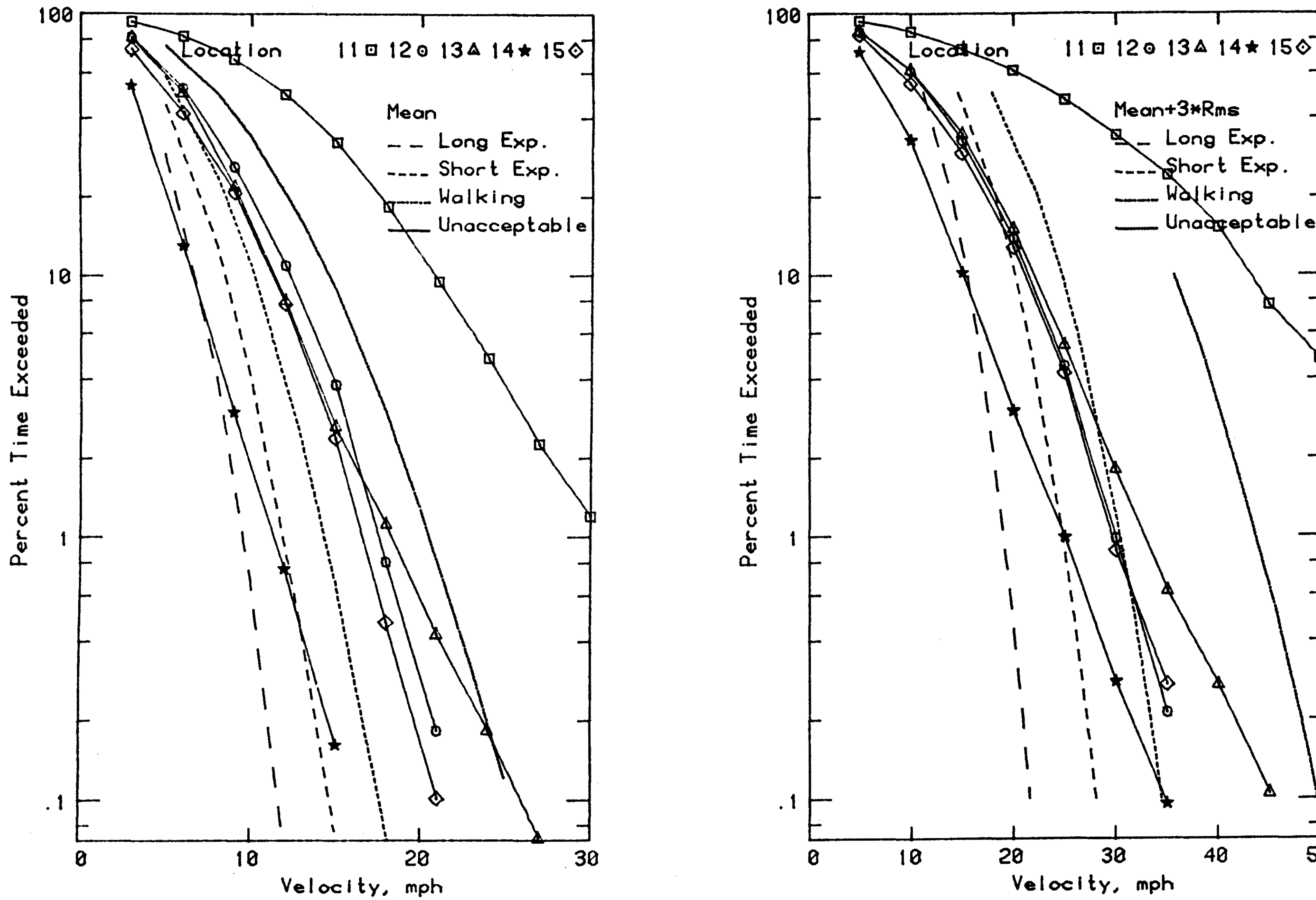

Figure 3-5c. Wind Velocity Probabilities for Pedestrian Locations

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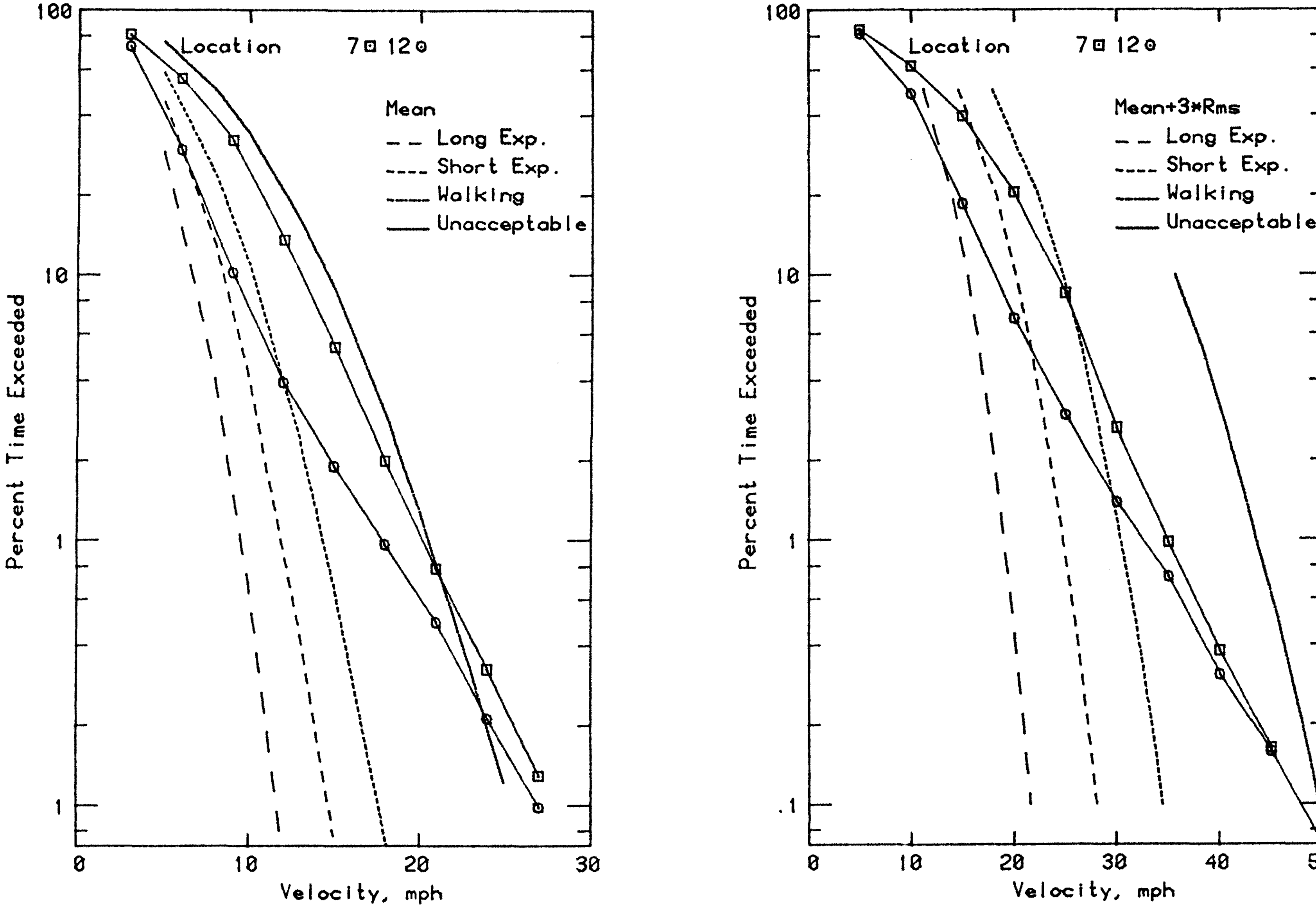
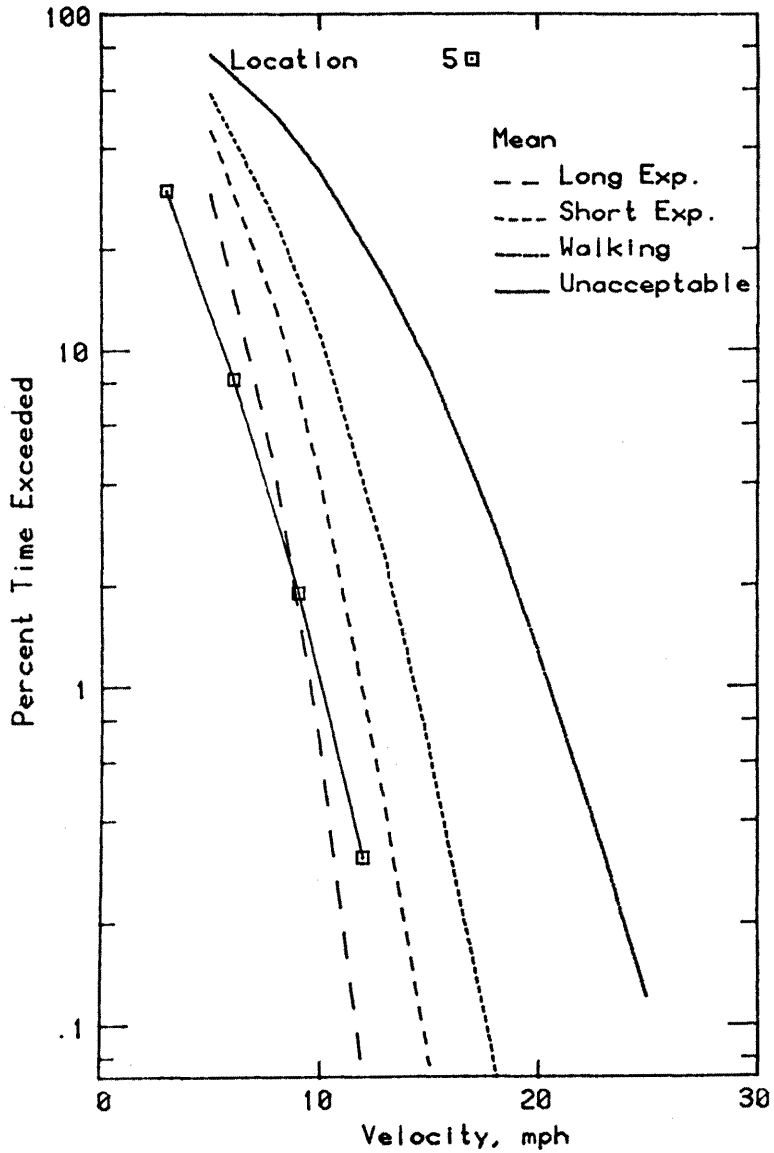


Figure 3-5d. Wind Velocity Probabilities for Pedestrian Locations

NORTHWEST BUILDING WITHOUT OTHER NEW BUILDINGS



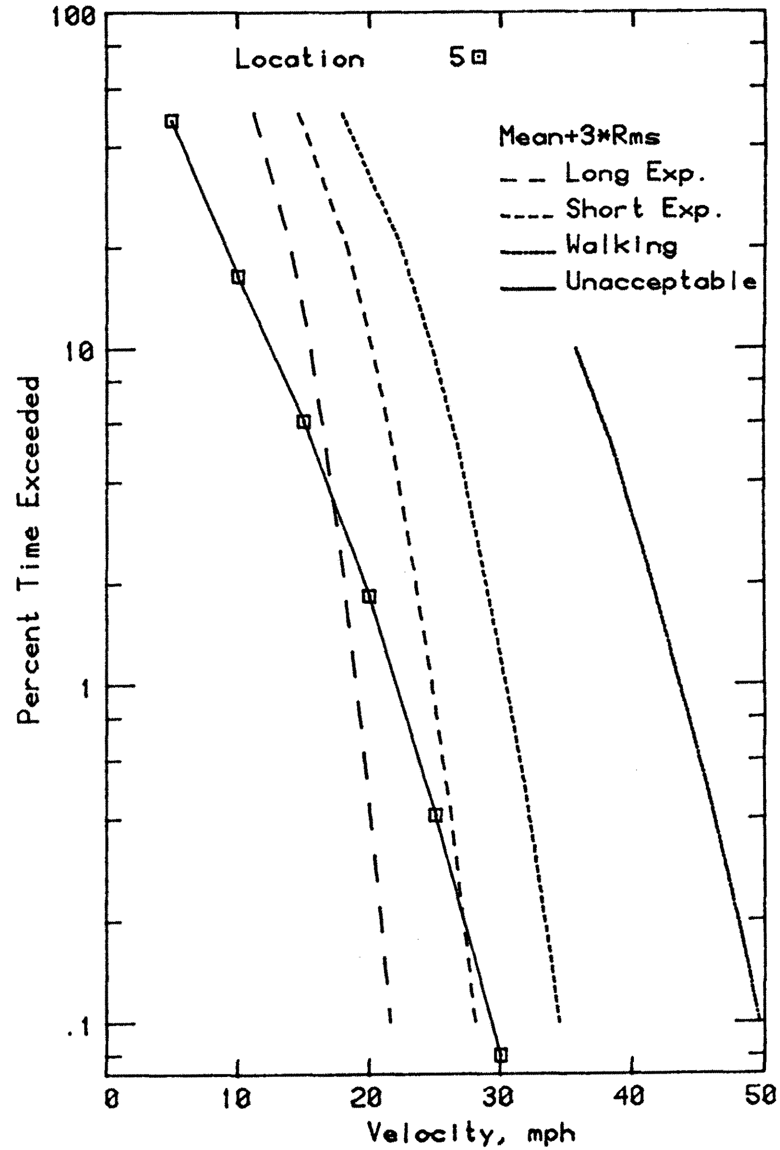
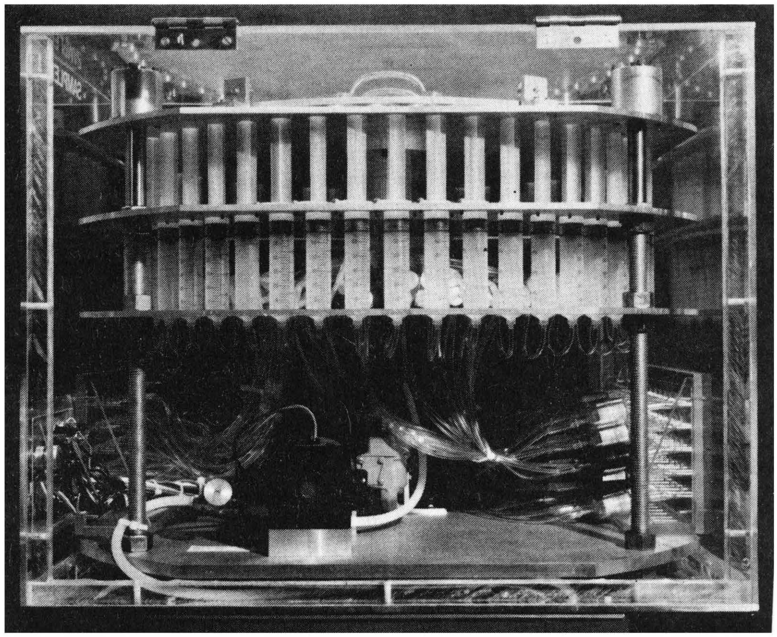
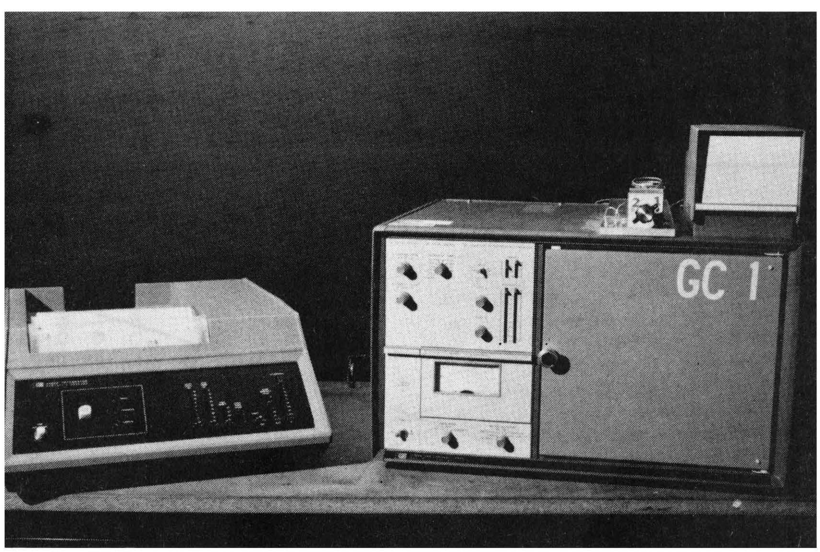


Figure 3-5e. Wind Velocity Probabilities for Pedestrian Locations



(a)



(b)

Figure 4-1. Photographs of (a) the Gas Sampling System, and (b) the HP Integrator and Chromatograph

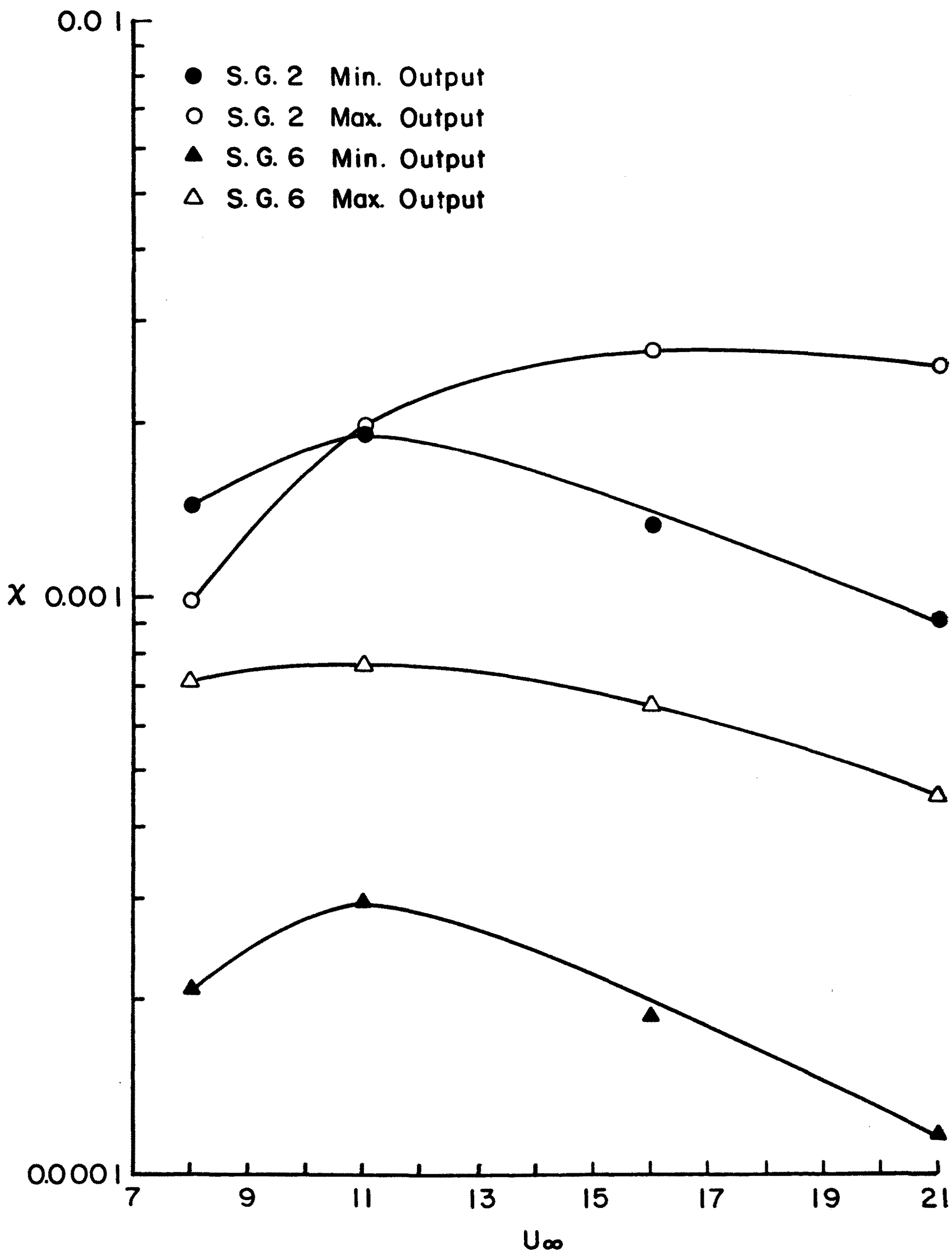


Figure 4-2. Concentration Ratios at Receptor 24 in Residental Area (Data tabulated in Tables 4-3a and 4-3b)

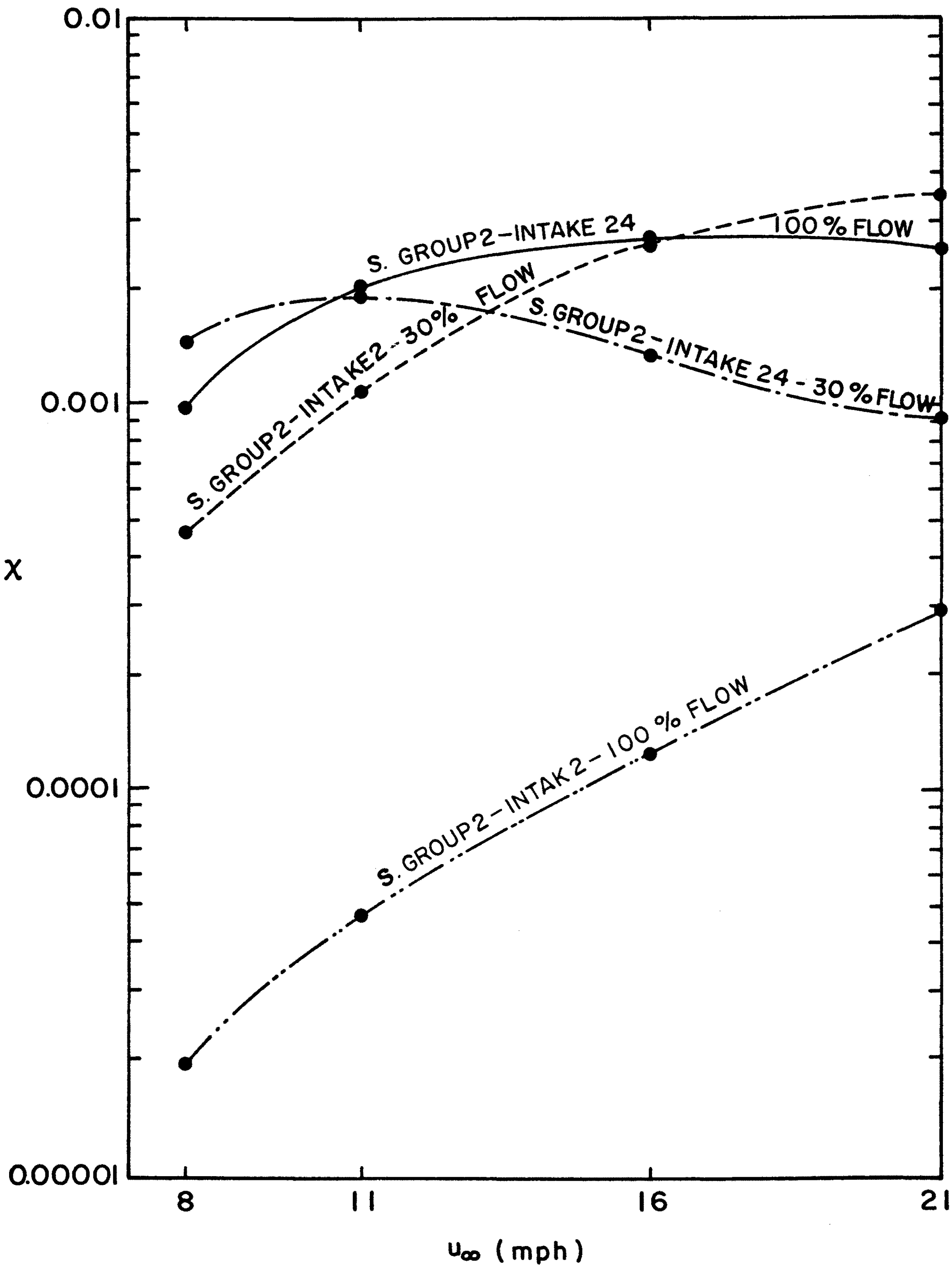


Figure 4-3a. Concentration Ratios vs. Wind Speed for Selected Sources and Receptors

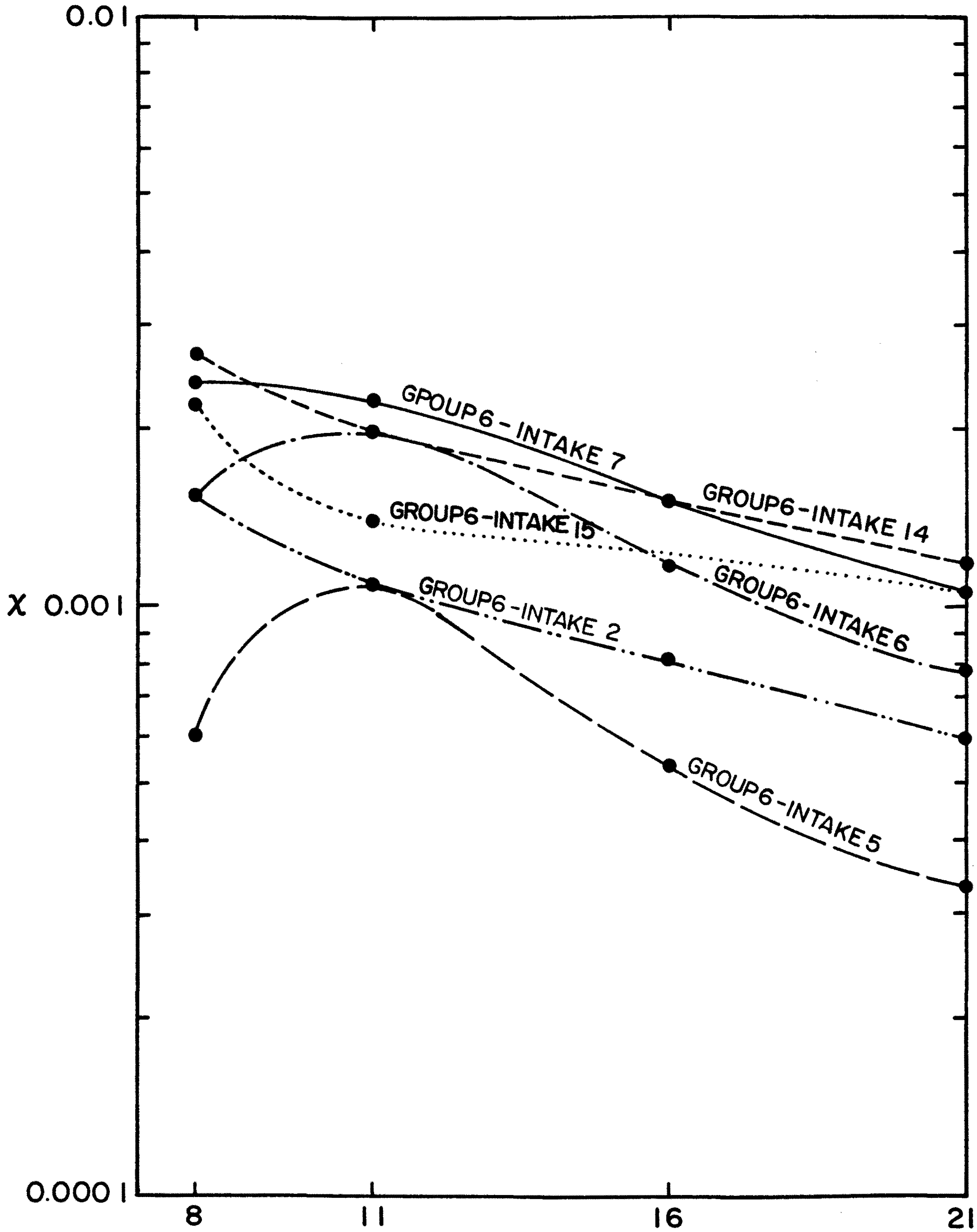


Figure 4-3b. Concentration Ratios vs. Wind Speed for Selected Sources and Receptors (Group 6 - 30% Exhaust)

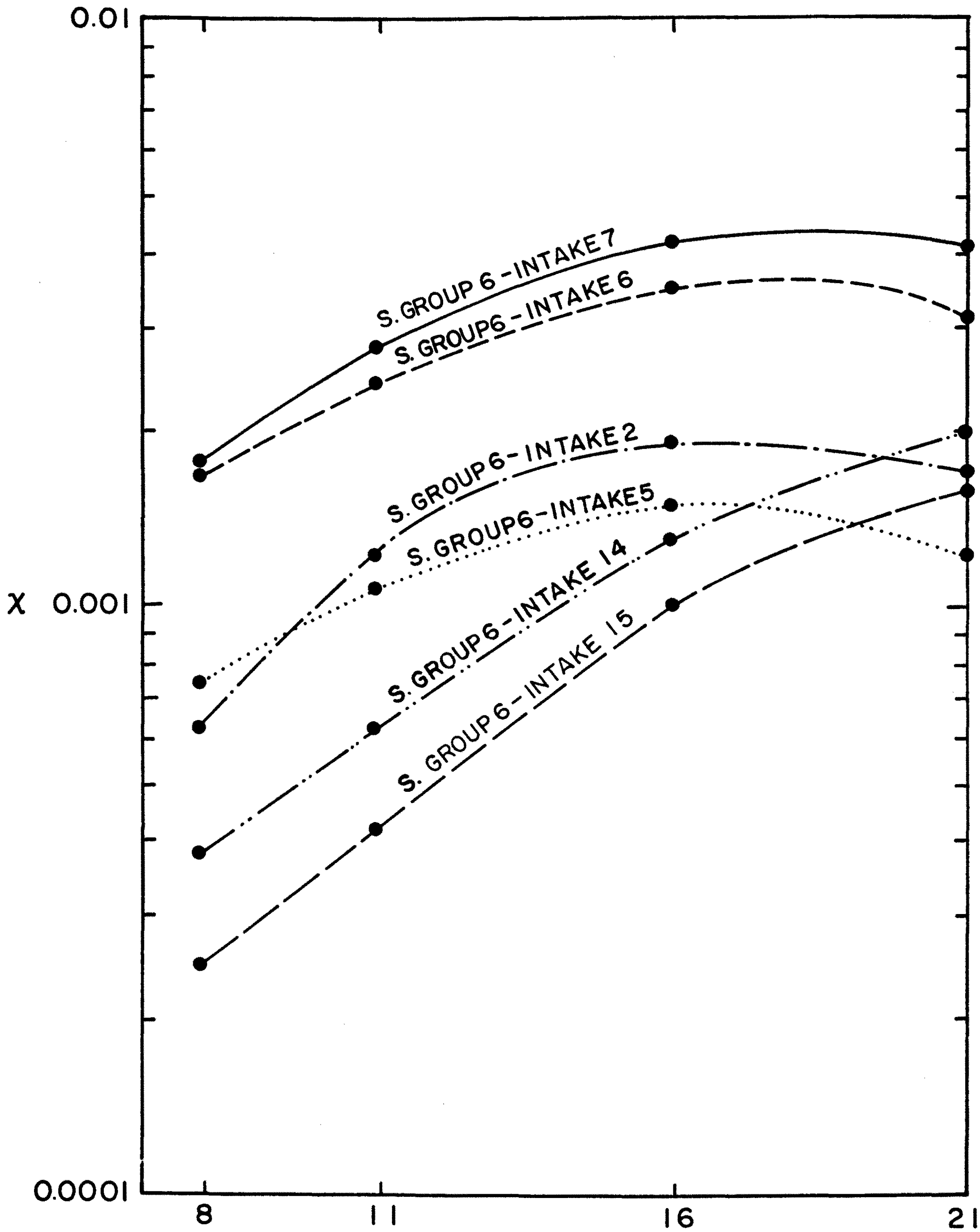


Figure 4-3c. Concentration Ratios vs. Wind Speed for Selected Sources and Receptors (Group 6 - 100% Exhaust)

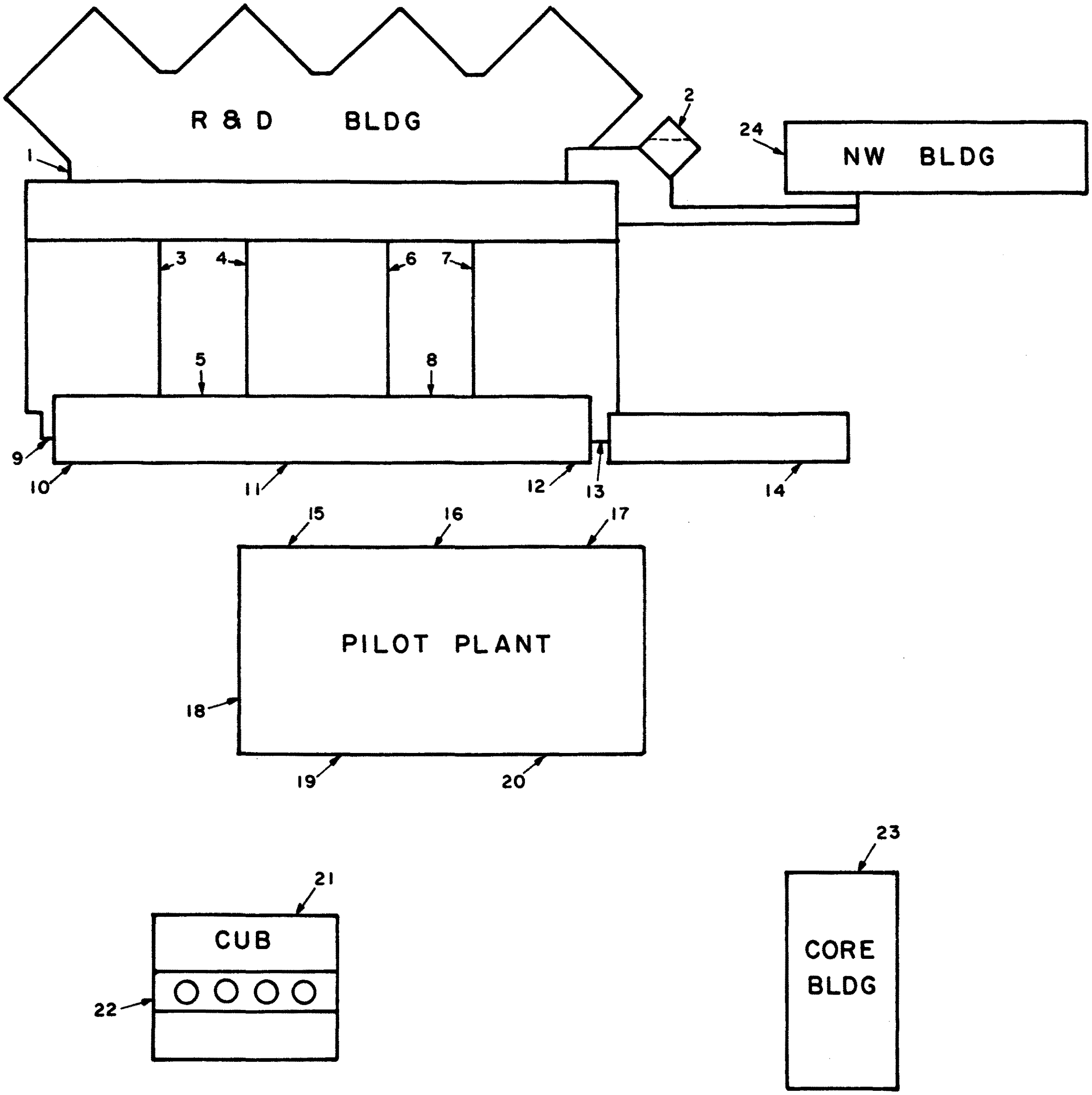


Figure 5-1a. Pressure Measurement Locations, Configuration A

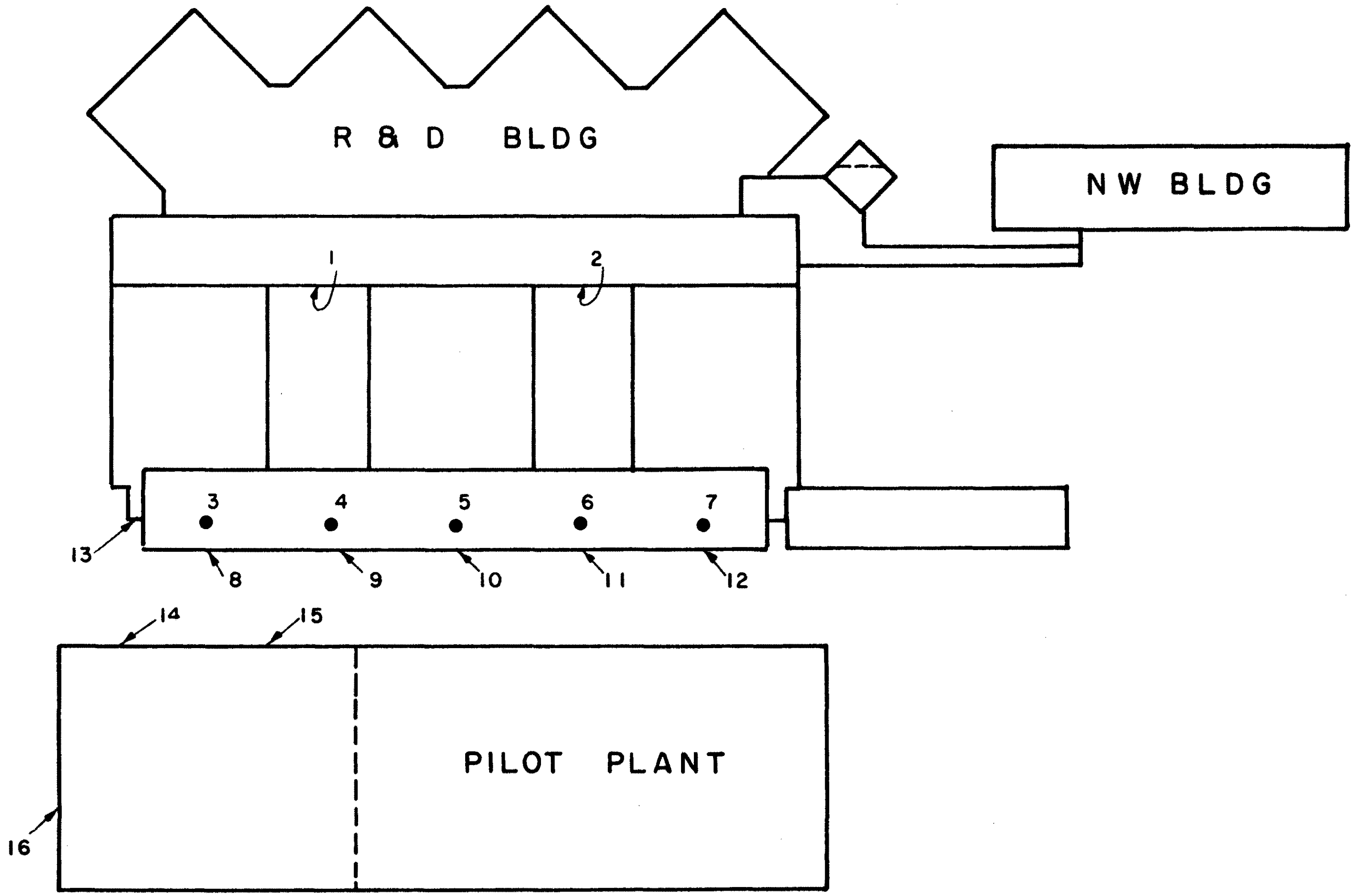


Figure 5-1b. Pressure Measurement Locations, Configuration B

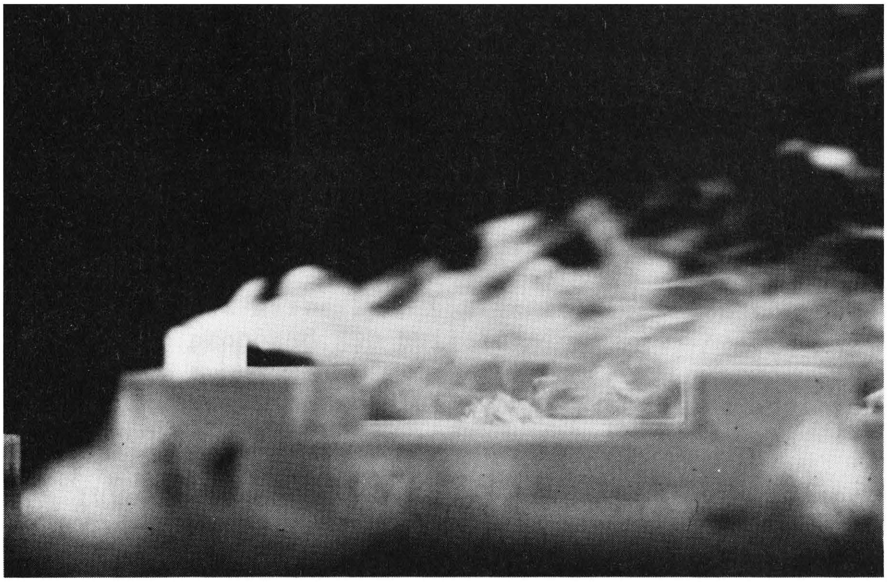


Figure 6-1. Plume Dispersion from R&DB 10 ft Exhaust Stacks

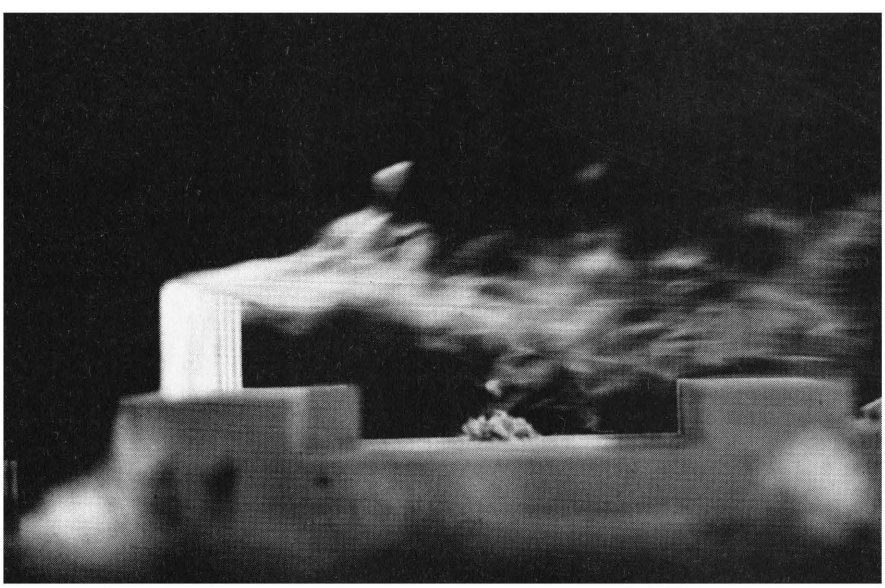


Figure 6-2. Plume Dispersion

TABLES

Table 2-1a. Tabulation of All Modeled Sources/Source Groups (Exhausts) at the ARCO E/PRC (see Figure 2-1).

Source Group Number		
1	-	Three most westerly exhausts located atop the back penthouse on the proposed R&D building
2	-	Three exhausts located in the middle of the back penthouse atop the proposed R&D building
3	-	Three most easterly exhausts located atop the back penthouse on the proposed R&D building
4	-	Two exhausts on roof of a possible future addition to the proposed PP/HB
5	-	Three exhausts located on roof of the proposed PP/HB
6	-	Four exhausts located on roof of the Central Utility Building (CUB)
7	-	Four exhausts located atop the Core Facility (Truck Bay, Flammable Storage, Solvent Storage, and Core Cutting Room)
8	-	Exhaust from Dean Stark Laboratory (10 ft Stack) located atop the Core Facility
9	-	Two rooftop exhausts near west end of Northwest Building

Table 2-1b. ARCO E/PRC Modeled Source Locations, Output in cfm and Stack/Vent Diameters

Source Group	Source	Location	Output	Size
I	1	R&D Bldg	30,000 cfm	36" dia.
	2	R&D Bldg	30,000 cfm	36" dia.
	3	R&D Bldg	30,000 cfm	36" dia.
II	4	R&D Bldg	30,000 cfm	36" dia.
	5	R&D Bldg	30,000 cfm	36" dia.
	6	R&D Bldg	30,000 cfm	36" dia.
III	7	R&D Bldg	30,000 cfm	36" dia.
	8	R&D Bldg	30,000 cfm	36" dia.
	9	R&D Bldg	30,000 cfm	36" dia.
IV	10	PP/HB addition	33,000 cfm	38" dia.
	11	PP/HB addition	33,000 cfm	38" dia.
V	12	PP/HB	33,000 cfm	38" dia.
	13	PP/HB	33,000 cfm	38" dia.
	14	PP/HB	33,000 cfm	38" dia.
VI	15	CUB	5,000 cfm	20" dia.
	16	CUB	6,600 cfm	24" dia.
	17	CUB	6,600 cfm	24" dia.
	18	CUB	6,600 cfm	24" dia.
VII	19	CORE (truck bay)	2,000 cfm	12" fan
	20	CORE (flamm. stor.)	860 cfm	12" capped vent
	21	CORE (cutting rm.)	2,800 cfm	24" fan
	22	CORE (solv. stor.)	360 cfm	12" capped vent
VIII	23	CORE (Stark Lab.)	7,160 cfm	20" fan
IX	24	NW Building	2,000 cfm	6"-8" dia.
	25	NW Building	2,000 cfm	6"-8" dia.

Table 2-1c.

Tabulation of Maximum/Minimum Volume Flows, Cross-sectional Areas, and Exit Velocities for the Prototype and Modeled Sources

Source Number	Prototype Values Q (cfm)	A (ft^2)	V_s (fpm)	Model Values Q (cfm)	A (ft^2)	V_s (fpm)
1-9	30,000	7.0686	4,244	.376760	$.1332 \times 10^{-3}$	2,829
	9,000	7.0686	1,273	.113028		849
10-14	33,000	7.876	4,190	.371959	$.1332 \times 10^{-3}$	2,793
	9,900	7.876	1,257	.111588		838
15	5,000	2.182	2,292	.053325	$.349 \times 10^{-4}$	1,528
	1,500	2.182	688	.015998		458
16-18	6,600	3.142	2,101	.067139	$.479 \times 10^{-4}$	1,401
	1,980	3.142	630	.020142		420
19	2,000			.021330	$.1917 \times 10^{-3}$	
20	860			.009173	$.1917 \times 10^{-3}$	
21	2,800			.003840	$.1917 \times 10^{-3}$	
22	360			.029867	$.852 \times 10^{-4}$	
	6,020			.064213		
	1,806			.019264		
23	7,160	2.182	3,282	.104883	$.479 \times 10^{-4}$	2,189
	2,148	2.182	985	.031465		657
24-25	2,000			.021330	$.852 \times 10^{-4}$	
	600			.006399		

Table 2-2. Tabulation of All Modeled Intakes at the ARCO E/PRC

Intake Number	
1	Westerly 14'x24' intake on south side of northernmost R&D penthouse
2	Easterly 14'x24' intake on south side of northernmost R&D penthouse
3-11	10'x12' intakes on south side of southernmost R&D penthouse (numbered from west to east)
12&13	Roof-mounted intakes on possible future addition to PP/HB (numbered from west to east)
14-16	Roof-mounted intakes on proposed PP/HB (numbered from west to east)
17	Roof-mounted intake on easternmost end of PP/HB*
18	Intake on east end of PP/HB*
19	Intake on roof of CUB
20	Northerly intake on CORE Facility roof
21	Southerly intake on CORE Facility roof
22	Intake on south face in SW corner of Northwest Building
23	Ground-level intake near SW corner of Northwest Building
24	Ground-level intake in residential area 1000 ft north of Northwest Building

*Intake is not a part of construction design but was added to assess feasibility of repositioning intakes.

Table 3-1a -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES
ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION

LOCATION 1

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	27.8	11.0	61.0
22.50	40.1	10.6	71.9
45.00	35.4	9.3	63.2
67.50	35.7	9.3	63.6
90.00	32.2	10.9	64.9
112.50	25.3	11.1	58.6
135.00	26.1	11.0	59.0
157.50	31.5	10.9	64.2
180.00	33.0	10.5	64.4
202.50	32.5	9.4	60.7
225.00	43.0	10.7	75.0
247.50	36.5	10.0	66.4
270.00	37.8	11.0	70.7
292.50	33.2	10.9	65.8
315.00	23.7	8.2	48.4
337.50	29.2	9.7	58.3

LOCATION 2

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	65.8	11.9	101.6
22.50	46.0	10.1	76.4
45.00	36.8	10.2	67.5
67.50	20.5	10.1	50.9
90.00	16.4	7.7	39.4
112.50	22.3	10.7	54.5
135.00	19.0	5.5	35.5
157.50	31.1	10.9	63.7
180.00	41.2	13.1	80.5
202.50	55.6	9.8	85.0
225.00	58.8	8.3	83.9
247.50	42.7	11.3	76.5
270.00	26.8	9.5	55.3
292.50	13.3	7.0	34.3
315.00	19.9	9.8	49.3
337.50	58.4	12.9	97.0

LOCATION 3

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	31.0	10.7	63.1
22.50	8.4	3.9	20.2
45.00	6.6	3.0	15.7
67.50	12.5	3.9	24.1
90.00	5.3	2.3	12.1
112.50	3.9	1.1	7.3
135.00	5.3	2.2	11.8
157.50	8.5	4.1	20.9
180.00	17.7	7.0	38.8
202.50	31.3	10.4	62.4
225.00	41.1	11.0	74.0
247.50	31.6	11.3	65.4
270.00	21.1	10.2	51.6
292.50	9.0	5.1	24.3
315.00	21.4	9.5	50.0
337.50	16.6	8.6	42.3

LOCATION 4

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	18.8	8.7	44.8
22.50	21.1	11.2	54.7
45.00	17.0	8.5	42.6
67.50	11.2	5.9	29.0
90.00	10.5	5.2	26.1
112.50	10.9	6.4	30.1
135.00	8.3	3.7	19.5
157.50	11.6	5.1	26.8
180.00	9.1	3.6	20.0
202.50	10.8	5.0	25.7
225.00	9.4	4.7	23.5
247.50	7.2	3.9	18.9
270.00	12.7	5.8	30.2
292.50	12.2	4.8	26.5
315.00	18.2	7.7	41.4
337.50	18.6	8.9	45.2

Table 3-1b -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES

ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION

LOCATION 5

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	43.9	22.0	110.0
22.50	27.8	16.9	78.4
45.00	12.0	6.1	30.4
67.50	9.3	4.5	22.8
90.00	9.1	4.2	21.6
112.50	8.2	3.7	19.2
135.00	10.0	4.4	23.3
157.50	16.1	9.4	44.2
180.00	25.2	15.7	72.2
202.50	21.1	9.8	50.6
225.00	17.9	9.7	46.9
247.50	15.4	6.1	33.8
270.00	16.1	6.9	36.8
292.50	17.9	6.9	38.5
315.00	23.1	8.6	49.0
337.50	27.4	9.6	56.2

LOCATION 6

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	40.9	10.7	73.1
22.50	25.2	11.1	58.5
45.00	23.0	7.1	44.2
67.50	35.3	8.5	60.9
90.00	30.8	12.6	68.6
112.50	22.5	11.7	57.7
135.00	52.4	19.7	111.4
157.50	46.2	16.5	95.6
180.00	51.3	14.1	93.5
202.50	52.4	10.5	83.9
225.00	29.7	9.9	59.5
247.50	11.9	5.5	28.5
270.00	28.7	10.8	61.0
292.50	37.0	9.1	64.3
315.00	46.0	9.4	74.2
337.50	43.6	12.1	79.9

LOCATION 7

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	26.5	10.5	57.9
22.50	9.8	4.5	23.2
45.00	25.1	7.6	47.8
67.50	32.6	8.3	57.6
90.00	23.5	7.9	47.1
112.50	40.4	9.0	67.4
135.00	58.3	11.5	92.9
157.50	52.8	15.0	98.0
180.00	52.2	18.5	107.8
202.50	44.0	14.3	86.8
225.00	23.8	10.0	53.7
247.50	48.9	13.9	90.6
270.00	56.9	11.8	92.3
292.50	59.3	12.7	97.3
315.00	53.2	11.0	86.3
337.50	44.7	10.2	75.4

LOCATION 8

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	17.8	7.5	40.5
22.50	29.7	10.5	61.0
45.00	39.1	10.3	69.8
67.50	31.4	8.1	55.7
90.00	27.6	7.9	51.3
112.50	41.3	11.2	74.9
135.00	56.9	12.0	93.0
157.50	42.8	13.5	83.4
180.00	46.8	16.2	95.5
202.50	51.7	11.3	85.8
225.00	58.2	14.3	101.1
247.50	51.1	15.1	96.5
270.00	49.9	15.2	95.6
292.50	33.4	15.6	80.2
315.00	7.7	3.2	17.4
337.50	18.4	7.5	40.8

Table 3-1c -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES
ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION

LOCATION 9

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	17.1	8.0	41.3
22.50	22.7	10.3	53.6
45.00	32.5	14.5	76.0
67.50	32.8	9.2	60.4
90.00	36.3	10.2	66.8
112.50	38.1	11.9	73.9
135.00	30.1	10.0	60.3
157.50	31.6	11.0	64.7
180.00	28.5	12.4	65.7
202.50	28.7	12.1	64.9
225.00	27.1	12.5	64.7
247.50	36.5	10.2	67.0
270.00	26.5	9.4	54.6
292.50	21.4	6.7	41.5
315.00	7.5	3.7	18.6
337.50	11.0	5.2	26.6

LOCATION 10

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	20.8	9.9	50.6
22.50	32.3	10.7	64.5
45.00	28.5	10.2	59.1
67.50	21.3	10.3	52.1
90.00	17.8	8.3	42.7
112.50	15.1	6.7	35.4
135.00	33.4	10.3	64.2
157.50	47.2	12.5	84.7
180.00	34.3	13.6	75.1
202.50	25.0	12.7	63.2
225.00	21.6	7.1	42.7
247.50	22.5	8.6	48.2
270.00	27.7	7.8	51.2
292.50	25.7	9.2	53.2
315.00	19.0	6.4	38.2
337.50	29.4	11.7	64.6

LOCATION 11

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	58.2	20.7	120.2
22.50	92.2	7.9	116.0
45.00	86.0	9.1	113.4
67.50	43.6	20.5	105.1
90.00	59.3	23.4	129.5
112.50	75.7	10.1	105.9
135.00	71.4	25.4	147.6
157.50	67.0	28.0	150.8
180.00	59.4	32.1	155.7
202.50	57.6	32.5	155.1
225.00	83.0	24.3	155.8
247.50	80.3	13.5	120.8
270.00	49.5	18.6	105.2
292.50	50.3	18.3	105.3
315.00	69.5	11.1	103.0
337.50	77.4	11.5	112.0

LOCATION 12

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	44.2	10.5	75.7
22.50	20.9	9.1	48.1
45.00	23.4	10.9	56.1
67.50	20.9	8.7	47.0
90.00	29.7	9.7	58.9
112.50	41.1	11.1	74.4
135.00	40.3	11.7	75.4
157.50	27.7	10.4	58.8
180.00	46.0	10.3	76.9
202.50	46.6	9.5	75.1
225.00	35.1	8.6	60.9
247.50	27.3	8.9	54.0
270.00	28.3	9.1	55.7
292.50	33.8	9.7	62.9
315.00	42.8	9.5	71.2
337.50	41.5	9.5	69.9

Table 3-1d -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES
ALL NEW BUILDINGS EXCEPT PILOT PLANT EXTENSION

LOCATION 13

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	17.6	7.0	38.7
22.50	15.7	7.7	38.9
45.00	44.7	11.2	78.2
67.50	32.1	8.4	57.3
90.00	37.6	10.1	67.8
112.50	37.3	12.9	76.0
135.00	50.7	13.4	90.9
157.50	33.5	13.4	73.7
180.00	31.5	11.3	65.2
202.50	26.7	10.0	56.7
225.00	26.6	9.8	55.9
247.50	37.6	9.5	66.2
270.00	55.4	11.9	91.0
292.50	56.7	12.9	95.3
315.00	46.4	13.3	86.3
337.50	29.7	8.8	56.2

LOCATION 14

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	5.2	2.2	11.8
22.50	7.9	4.1	20.1
45.00	27.0	13.5	67.5
67.50	28.9	12.4	66.0
90.00	36.4	12.7	74.5
112.50	21.4	9.7	50.4
135.00	23.9	9.6	52.7
157.50	12.3	6.7	32.5
180.00	16.9	9.3	44.8
202.50	20.2	9.8	49.7
225.00	24.4	11.1	57.8
247.50	26.5	8.8	52.8
270.00	27.6	9.5	56.1
292.50	34.8	14.1	77.0
315.00	30.4	11.8	65.8
337.50	13.1	7.2	34.8

LOCATION 15

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	24.9	8.5	50.5
22.50	19.4	8.1	43.5
45.00	35.8	10.5	67.3
67.50	24.2	10.1	54.5
90.00	22.9	10.3	53.8
112.50	21.8	9.7	51.1
135.00	16.8	10.4	47.9
157.50	34.4	14.1	76.7
180.00	44.6	9.1	71.9
202.50	40.2	12.2	76.7
225.00	31.8	9.9	61.5
247.50	32.5	8.5	57.8
270.00	23.9	7.2	45.6
292.50	19.1	6.6	38.9
315.00	34.5	11.4	68.6
337.50	42.2	10.9	74.9

Table 3-1e -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES
WITH PILOT PLANT ADDITION

LOCATION 7

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	29.2	9.1	56.5
22.50	16.3	6.8	36.8
45.00	21.6	5.8	39.0
67.50	21.5	6.9	42.2
90.00	20.3	6.6	40.3
112.50	30.5	8.7	56.5
135.00	55.1	13.8	96.5
157.50	42.3	11.4	76.6
180.00	36.9	12.5	74.5
202.50	36.5	13.7	77.5
225.00	40.8	13.4	81.0
247.50	47.8	15.4	94.0
270.00	58.9	11.4	93.0
292.50	59.1	10.9	91.8
315.00	54.1	12.1	90.6
337.50	40.8	11.0	73.8

LOCATION 12

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	30.8	8.6	56.6
22.50	14.5	7.2	36.1
45.00	24.6	10.1	55.0
67.50	25.9	8.2	50.6
90.00	31.1	10.1	61.5
112.50	34.4	11.0	67.3
135.00	40.4	11.8	75.6
157.50	21.9	10.5	53.5
180.00	21.3	8.1	45.7
202.50	18.4	8.2	42.9
225.00	19.9	8.5	45.5
247.50	28.2	8.2	52.8
270.00	50.7	11.5	85.4
292.50	63.2	13.5	103.8
315.00	49.1	16.5	98.7
337.50	17.7	6.6	37.4

Table 3-1f -- PEDESTRIAN WIND VELOCITIES AND TURBULENCE INTENSITIES
NORTHWEST BUILDING W/O OTHER NEW BUILDINGS

LOCATION 5

WIND AZIMUTH	U/UR (PERCENT)	URMS/UR (PERCENT)	U+3*URMS/UR (PERCENT)
0.00	12.4	7.3	34.2
22.50	8.3	3.3	18.1
45.00	7.7	3.3	17.7
67.50	4.1	1.5	8.5
90.00	5.6	2.5	13.0
112.50	6.4	2.6	14.3
135.00	6.6	3.3	16.4
157.50	10.9	6.1	29.0
180.00	13.5	6.7	33.5
202.50	29.9	11.4	64.2
225.00	25.3	8.8	51.6
247.50	21.5	7.7	44.6
270.00	16.2	7.0	37.2
292.50	21.6	9.1	48.8
315.00	29.6	10.3	60.3
337.50	23.1	11.7	58.1

TABLE 3-2

PERCENTAGE FREQUENCY OF WIND DIRECTION AND SPEED

DALLAS, TEXAS LOVE FIELD (1951-1960)

SEASON : ANNUAL NO. OF OBS.= 87672 HT. OF MEAS.= 40. FT.

VELOCITY LEVELS IN MPH

DIRECTION	0- 3	4- 7	8-12	13-18	19-24	25-31	32-38	39-46	47 +	TOTAL
N	.59	1.48	1.90	1.45	.52	.10	.03	0.00	0.00	6.07
NNE	.46	1.44	1.52	1.11	.31	.05	0.00	0.00	0.00	4.89
NE	.67	2.23	1.60	.65	.25	.03	0.00	.03	0.00	5.47
ENE	.28	1.09	1.35	.61	.20	.04	0.00	0.00	0.00	3.58
E	.42	1.29	1.52	.53	.22	.01	0.00	0.00	0.00	3.99
ESE	.32	1.28	2.17	.92	.25	.05	0.00	0.00	0.00	4.99
SE	.64	2.90	5.37	3.31	.54	.06	.01	0.00	0.00	12.82
SSE	.31	1.74	5.24	6.44	1.68	.17	.06	.02	0.00	15.67
S	.56	1.87	4.94	6.02	2.13	.25	.05	.02	0.00	15.83
SSW	.30	.90	1.51	2.02	.66	.11	.01	0.00	0.00	5.51
SW	.55	1.08	1.22	.93	.27	.08	.01	.03	0.00	4.16
WSW	.19	.36	.30	.35	.16	.04	.02	.01	0.00	1.42
W	.33	.56	.47	.34	.20	.05	.02	.02	0.00	2.00
WNW	.27	.49	.56	.52	.31	.07	.03	0.00	0.00	2.25
NW	.50	1.14	1.06	1.07	.50	.12	.06	.03	0.00	4.49
NNW	.37	1.08	1.48	1.43	.56	.10	.06	0.00	0.00	5.08
CALM	1.78	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78
TOT	8.54	20.92	32.21	27.69	8.76	1.34	.36	.16	0.00	100.00

TABLE 3-3

SUMMARY OF WIND EFFECTS ON PEOPLE

	Beaufort number	Speed (mph)	Effects
Calm, light air	0,1	0-3	Calm, no noticeable wind
Light breeze	2	4-7	Wind felt on face
Gentle breeze	3	8-12	Wind extends light flag Hair is disburbed Clothing flaps
Moderate breeze	4	13-18	Raises dust, dry soil and loose paper Hair disarranged
Fresh breeze	5	19-24	Force of wind felt on body Drifting snow becomes airborne Limit of agreeable wind on land
Strong breeze	6	25-31	Umbrellas used with difficulty Hair blown straight Difficult to walk steadily Wind noise on ears unpleasant Windborne snow above head height (blizzard)
Near gale	7	32-38	Inconvenience felt when walking
Gale	8	39-46	Generally impedes progress Great difficulty with balance in gusts
Strong gale	9	47-54	People blown over by gusts

Note: Table from Reference 4, p. 40.

Table 4-1. Test Run Identification Numbers, Sources, Source Loads, Stack Heights, and Wind Directions

Run No.	Wind Azimuth (deg.)	Prototype Wind Vel. U_{40}, (mph)	Source Load (%)	9.00% Methane Source Group Number	9.00% Methane Stack Height (ft)	10% Ethane Source Group Number	10% Ethane Stack Height (ft)
1	180	7.09	100	7	1-5	1	10
2	180	7.09	100	7	1-5	1	20
3	180	7.09	100	7	1-5	1	30
4	180	7.09	100	7	1-5	1	40
5	180	7.09	100	8	10	2	10
6	180	7.09	100	8	10	2	20
7	180	7.09	100	8	10	2	30
8	180	7.09	100	8	10	2	40
9	180	7.09	100	6	30	3	10
10	80	7.09	100	6	50	3	20
11	180	7.09	100	6	50	3	30
12	180	7.09	100	6	30	3	40
13	180	7.09	100	9	2	5	20
14	180	7.09	100	9	2	5	30
15	180	7.09	100	9	2	5	40
16	225	7.09	100	7	1-5	1	10
17	225	7.09	100	7	1-5	1	20
18	225	7.09	100	7	1-5	1	30
19	225	7.09	100	7	1-5	1	40
20	225	7.09	100	8	10	2	10
21	225	7.09	100	8	10	2	20
22	225	7.09	100	8	10	2	30
23	225	7.09	100	6	30	3	10
24	225	7.09	100	6	30	3	20
25	225	7.09	100	6	50	3	30
26	225	7.09	100	6	50	3	40
27	225	7.09	100	9	2	5	20
28	225	7.09	100	9	2	5	30
29	225	7.09	100	9	2	5	40
30	135	7.09	100	7	1-5	1	10
31	135	7.09	100	8	10	2	10
32	135	7.09	100	8	10	2	20
33	135	7.09	100	8	50	2	30
34	135	7.09	100	6	50	3	10
35	135	7.09	100	6	30	3	20
36	135	7.09	100	9	2	5	20
37	135	7.09	100	9	2	5	30
38	135	7.09	100	9	2	5	40
39	000	7.09	100	7	1-5	1	10
40	000	7.09	100	7	1-5	1	20
41	000	7.09	100	7	1-5	1	30
42	000	7.09	100	7	1-5	1	40
43	000	7.09	100	8	10	2	10
44	000	7.09	100	8	50	2	20
45	000	7.09	100	8	10	2	30

Table 4-1. Test Run Identification Numbers, Sources, Source Loads, Stack Heights, and Wind Directions (continued)

Run No.	Wind Azimuth (deg.)	Prototype Wind Vel. U_{40}, (mph)	Source Load (%)	9.00% Methane Source Group Number	9.00% Methane Stack Height (ft)	10% Ethane Source Group Number	10% Ethane Stack Height (ft)
46	000	7.09	100	8	10	2	40
47	000	7.09	100	6	30	3	10
48	000	7.09	100	6	30	3	20
49	000	7.09	100	6	30	3	30
50	000	7.09	100	9	2	5	20
51	000	7.09	100	9	2	5	30
52	000	7.09	100	9	2	5	40
53	315	7.09	100	7	1-5	1	10
54	315	7.09	100	7	1-5	1	20
55	315	7.09	100	7	1-5	1	30
56	315	7.09	100	8	10	2	10
57	315	7.09	100	8	50	2	20
58	315	7.09	100	8	10	2	30
59R	315	7.09	100	6	30	3	10
60R	315	7.09	100	6	30	3	20
61R	315	7.09	100	6	50	3	30
62	315	7.09	100	9	2	5	20
63	315	7.09	100	9	2	5	30
64	315	7.09	100	9	2	5	40
65	315	7.09	100	9	2	5	54
66	045	7.09	100	7	1-5	1	10
67	045	7.09	100	8	10	2	10
68	045	7.09	100	6	30	3	10
69	045	7.09	100	6	30	3	20
70	045	7.09	100	6	30	3	30
71	045	7.09	100	9	2	5	20
72	045	7.09	100	9	2	5	30
73	225	7.09	100	--	--	4	20
74	225	7.09	100	6	30	4	30
75	225	7.09	100	--	--	4	40
76	225	7.09	100	--	--	4	54
77	180	7.09	100	6	30	4	20
78	180	7.09	100	6	50	4	30
79	180	7.09	100	--	--	4	40
80	180	7.09	100	--	--	4	54
81	157½	7.09	100	6	30	4	20
82	157½	7.09	100	6	50	4	30
83	000	7.09	100	9	2	4	20
84	000	7.09	100	--	--	1	10
85	000	7.09	100	--	--	1	30
86	315	7.09	100	--	--	1	10
87	315	7.09	100	--	--	1	30
88	337½	7.09	100	--	--	4	20
89	045	7.09	100	9	2	2	10
90	045	7.09	100	--	--	2	30

Table 4-1. Test Run Identification Numbers, Sources, Source Loads, Stack Heights, and Wind Directions (continued)

				9.00% Methane		10% Ethane	
Run No.	Wind Azimuth (deg.)	Prototype Wind Vel. U_{40}, (mph)	Source Load (%)	Source Group Number	Stack Height (ft)	Source Group Number	Stack Height (ft)
101	180	7.09	30	7	1-5	1	10
102	180	7.09	30	7	1-5	1	20
103	180	7.09	30	7	1-5	1	30
104	180	7.09	30	7	1-5	1	40
105	180	7.09	30	8	10	2	10
106	180	7.09	30	8	10	2	20
109	180	7.09	30	6	30	3	10
110	180	7.09	30	6	50	3	20
111	180	7.09	30	6	50	3	30
113	180	7.09	30	9	2	5	20
114	180	7.09	30	9	2	5	30
115	180	7.09	30	9	2	5	40
116	225	7.09	30	7	1-5	1	10
117	225	7.09	30	7	1-5	1	20
118	225	7.09	30	7	1-5	1	30
119	225	7.09	30	7	1-5	1	40
120	225	7.09	30	8	10	2	10
121	225	7.09	30	8	10	2	20
122	225	7.09	30	8	10	2	30
122X	225	7.09	30	8	10	2	40
123	225	7.09	30	6	30	3	10
124	225	7.09	30	6	30	3	20
125	225	7.09	30	6	50	3	30
127	225	7.09	30	9	2	5	20
128	225	7.09	30	9	2	5	30
129	225	7.09	30	9	2	5	40
129X	225	7.09	30	9	2	5	54
130	135	7.09	30	7	1-5	1	10
131	135	7.09	30	8	10	2	10
132	135	7.09	30	8	10	2	20
133	135	7.09	30	8	50	2	30
134	135	7.09	30	6	50	3	10
135	135	7.09	30	--	--	3	20
135X	135	7.09	30	--	--	3	30
135XX	135	7.09	30	--	--	3	40
136	135	7.09	30	9	2	5	20
137	135	7.09	30	9	2	5	30
138	135	7.09	30	9	2	5	40
139	000	7.09	30	7	1-5	1	10
140	000	7.09	30	7	1-5	1	20
141	000	7.09	30	--	--	1	30
142	000	7.09	30	--	--	1	40
143	000	7.09	30	8	10	2	10
144	000	7.09	30	8	50	2	20
145	000	7.09	30	--	--	2	30
146	000	7.09	30	--	--	2	40

Table 4-1. Test Run Identification Numbers, Sources, Source Loads, Stack Heights, and Wind Directions (continued)

				9.00% Methane		10% Ethane	
Run No.	Wind Azimuth (deg.)	Prototype Wind Vel. U_{40}, (mph)	Source Load (%)	Source Group Number	Stack Height (ft)	Source Group Number	Stack Height (ft)
147	000	7.09	30	6	30	3	10
148	000	7.09	30	6	30	3	20
149	000	7.09	30	--	--	3	30
149X	000	7.09	30	--	--	3	40
150	000	7.09	30	9	2	5	20
151	000	7.09	30	9	2	5	30
152	000	7.09	30	9	2	5	40
153	315	7.09	30	7	1-5	1	10
154	315	7.09	30	7	1-5	1	20
155	315	7.09	30	7	1-5	1	30
155X	315	7.09	30	7	1-5	1	40
156	315	7.09	30	8	10	2	10
157	315	7.09	30	8	50	2	20
158	315	7.09	30	8	10	2	30
158X	315	7.09	30	8	10	2	40
159	315	7.09	30	6	30	3	10
160	315	7.09	30	6	30	3	20
161	315	7.09	30	6	50	3	30
162	315	7.09	30	9	2	5	20
163	315	7.09	30	9	2	5	30
164	315	7.09	30	--	--	5	40
165	315	7.09	30	--	--	5	54
166	045	7.09	30	7	1-5	1	10
167	045	7.09	30	8	10	2	10
167X	045	7.09	30	--	--	2	20
168	045	7.09	30	6	30	3	10
169	045	7.09	30	6	30	3	20
170	045	7.09	30	--	--	3	30
170X	045	7.09	30	--	--	3	40
171	045	7.09	30	9	2	5	20
172	045	7.09	30	9	2	5	30
172X	045	7.09	30	9	2	5	54
173	225	7.09	30	--	--	4	20
174	225	7.09	30	6	30	4	30
175	225	7.09	30	--	--	4	40
176	225	7.09	30	--	--	4	54
177	180	7.09	30	6	30	4	20
178	180	7.09	30	--	--	4	30
179	180	7.09	30	6	50	4	40
180	180	7.09	30	--	--	4	54
181	157½	7.09	30	6	30	4	20
182	157½	7.09	30	6	50	4	30
183	000	7.09	30	9	2	4	20
184	000	7.09	30	--	--	1	10
185	000	7.09	30	--	--	1	30

Table 4-1. Test Run Identification Numbers, Sources, Source Loads, Stack Heights, and Wind Directions (continued)

Run No.	Wind Azimuth (deg.)	Prototype Wind Vel. U_{40}, (mph)	Source Load (%)	9.00% Methane Source Group Number	9.00% Methane Stack Height (ft)	10% Ethane Source Group Number	10% Ethane Stack Height (ft)
186	315	7.09	30	--	--	1	10
187	315	7.09	30	--	--	1	30
189	045	7.09	30	9	2	2	10
190	045	7.09	30	--	--	2	30
201	193	5.16	30	6	30	2	10
202	193	7.09	30	6	30	2	10
203	193	10.31	30	6	30	2	10
204	193	13.54	30	6	30	2	10
205	193	5.16	100	6	30	2	10
206	193	7.09	100	6	30	2	10
207	193	10.31	100	6	30	2	10
208	193	13.54	100	6	30	2	10
209	193	13.54	100	6	50	2	30
210	045	13.54	100	9	2	3	30

Table 4-2a

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP I

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
10'	2/0.458E-2/225	14/0.338E-2/315	19/0.277E-2/000	21/0.293E-1/315	22/0.301E-3/225
20'	2/0.747E-3/225	15/0.562E-3/315	19/0.162E-2/000	21/0.179E-2/315	22/0.303E-4/225
30'	2/0.102E-3/225	15/0.445E-4/315	19/0.785E-3/000	21/0.740E-3/315	22/0.529E-5/225
40'	2/0.879E-5/225	16/0.562E-5/315	19/0.308E-3/000	21/0.255E-3/315	0
			Full Flow		
10'	2/0.334E-3/225	14/0.199E-3/315	19/0.696E-3/000	21/0.406E-3/315	22/0.904E-4/225
20'	2/0.425E-4/225	14/0.130E-4/315	19/0.278E-3/000	21/0.118E-3/315	22/0.132E-5/225
30'	1/0.477E-5/180	15/0.115E-5/315	19/0.107E-3/000	-	0
40'	0	0	19/0.259E-4/000	-	0

Table 4-2b

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

	SOURCE GROUP II				
Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
10'	2/0.271E-2/225	16/0.239E-2/315	19/0.654E-3/000	21/0.228E-2/315	23/0.194E-3/225
20'	2/0.583E-3/225	16/0.418E-3/315	19/0.300E-3/000	21/0.142E-2/315	23/0.393E-4/225
30'	2/0.110E-3/225	16/0.356E-4/315	19/0.168E-3/000	21/0.598E-3/315	23/0.170E-4/225
40'	2/0.115E-4/225	14/0.318E-5/000	19/0.844E-4/000	21/0.237E-3/315	23/0.144E-5/225
			Full Flow		
10'	2/0.337E-3/225	16/0.121E-3/315	19/0.978E-4/000	21/0.507E-2/315	23/0.294E-4/225
20'	2/0.416E-4/225	15/0.143E-4/000	19/0.299E-4/000	21/0.146E-3/315	22/0.311E-5/225
30'	2/0.311E-5/225	15/0.193E-5/000	19/0.176E-4/000	21/0.486E-4/315	0
40'	0	0	19/0.262E-5/000	-	-

Table 4-2c

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP III

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
10'	1/0.125E-2/135	16/0.129E-2/000	19/0.606E-3/045	20/0.769E-3/315	23/0.489E-3/225
20'	1/0.272E-3/135	16/0.303E-3/000	19/0.103E-3/045	20/0.220E-3/315	22/0.779E-4/225
30'	1/0.571E-4/135	16/0.467E-4/000	19/0.972E-4/045	20/0.510E-4/315	22/0.961E-5/225
40'	1/0.894E-5/135	16/0.406E-5/000	19/0.146E-4/045	-	-
			Full Flow		
10'	1/0.133E-3/135	16/0.164E-3/000	19/0.113E-3/045	20/0.581E-4/315	23/0.470E-4/225
20'	1/0.185E-4/135	16/0.329E-3/000	19/0.522E-5/045	20/0.147E-4/315	0
30'	0	16/0.475E-5/000	19/0.158E-5/045	20/0.329E-5/315	0
40'	0	-	-	-	0

Table 4-2d

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP IV

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
20'	1/0.268E-2/180	-	19/0.171E-2/000	-	23/0.254E-3/225
30'	1/0.129E-2/180	-	-	-	22/0.830E-4/225
40'	1/0.510E-3/180	-	-	-	22/0.135E-4/225
54'	1/0.110E-3/180	-	-	-	22/0.692E-5/225
			Full Flow		
20'	2/0.263E-3/225	-	19/0.135E-3/000	-	23/0.218E-4/225
30'	2/0.497E-4/225	-	-	-	23/0.124E-5/225
40'	1/0.374E-4/180	-	-	-	0
54'	1/0.711E-5/180	-	-	-	0

Table 4-2e

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP V

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
20'	2/0.130E-2/180	-	19/0.151E-2/045	21/0.353E-2/315	23/0.874E-3/225
30'	1/0.403E-3/135	-	19/0.582E-3/045	21/0.200E-2/315	23/0.266E-3/225
40'	1/0.148E-3/135	-	19/0.818E-4/000	21/0.597E-3/315	22/0.915E-4/225
54'	-	-	19/0.209E-4/045	21/0.993E-4/315	23/0.183E-4/225
			Full Flow		
20'	3/0.158E-3/135	16/0.219E-4/000	19/0.958E-4/045	21/0.552E-3/315	-
30'	1/0.332E-4/135	14/0.514E-5/000	19/0.217E-4/045	21/0.222E-3/315	23/0.400E-4/225
40'	1/0.364E-5/135	14/0.231E-4/000	19/0.482E-5/000	21/0.647E-4/315	22/0.855E-5/225
54'	-	-	-	21/0.697E-5/315	-

Table 4-2f

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP VI

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
30'	4/0.183E-2/180	16/0.281E-2/225	19/0.941E-3/180	-	23/0.684E-3/225
50'	4/0.132E-2/180	-	19/0.252E-4/225	-	22/0.842E-3/225
			Full Flow		
30'	1/0.313E-2/180	16/0.244E-2/225	19/0.113E-3/180	-	23/0.174E-2/225
50'	1/0.888E-3/180	16/0.138E-3/225	19/0.109E-3/225	-	23/0.464E-3/225

Table 4-2g

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP VII

Stack Ht.	R&D	PP/HB	COB	CORE	NW
			Partial Flow		
Fixed	10/0.359E-3/135	15/0.168E-3/135	-	20/0.155E-1/315	22/0.573E-3/180
			Full Flow		
Fixed	11/0.140E-2/135	17/0.177E-2/135	-	21/0.162E-1/225	22/0.219E-2/180

Table 4-2h

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			SOURCE GROUP VIII		
			Partial Flow		
10'	11/0.648E-3/135	14/0.815E-3/135	-	21/0.592E-3/225	22/0.836E-3/180
50'	5/0.626E-3/135	15/0.431E-3/135	-	20/0.232E-4/315	-
			Full Flow		
10'	5/0.163E-2/135	15/0.171E-2/135	-	21/0.444E-3/225	22/0.443E-3/180
50'	4/0.149E-3/135	14/0.248E-4/135	-	21/0.913E-4/225	-

Table 4-2i

Maximum Concentrations vs. Stack Heights
(Intake Nr./Concentration Ratio/Wind Direction)

SOURCE GROUP IX

Stack Ht.	R&D	PP/HB	CUB	CORE	NW
			Partial Flow		
Fixed	11/0.307E-3/045	15/0.199E-3/045	19/0.893E-4/045	20/0.210E-3/000	22/0.182E-3/045
			Full Flow		
Fixed	11/0.161E-2/045	15/0.103E-2/045	19/0.326E-3/045	20/0.129E-2/000	22/0.455E-3/045

Table 4-3a

Concentration Ratios Measured at a Ground Receptor 24 Placed in the Residential Area
North of the E/PRC, for a Minimum Source Output
(Source Group/Concentration Ratio/Stack Height)

W.D. = 180°				
3/.225E-4/10'	5/.470E-4/20'	7/.725E-4	8/.174E-3/10'	9/.126E-3
3/.161E-4/20'	5/.523E-4/30'	7/.778E-4		9/.128E-3
3/.905E-4/30'	5/.288E-4/40'			

W.D. = 193°		
U_∞ = 8 mph	2/.145E-2/10'	6/.209E-3/30'
U_∞ = 11 mph	2/.192E-2/10'	6/.299E-3/30'
U_∞ = 16 mph	2/.135E-2/10'	6/.188E-3/30'
U_∞ = 21 mph	2/.925E-3/10'	6/.119E-3/30'

Table 4-3b.

Concentration Ratios Measured at a Ground Receptor 24 Placed in the Residential Area North of the E/PRC, for a Maximum Source Output (Source Group/Concentration Ratio/Stack Height)

W.D. = 180°

3/.120E-3/10'	5/.111E-4/20'	7/.434E-3	8/.389E-3/10'	9/.285E-3
3/.823E-4/20'	5/.403E-5/30'	7/.409E-3	8/.395E-3/10'	9/.256E-3
3/.638E-4/30'	5/.477E-5/40'	7/.420E-3	8/.363E-3/10'	
3/.273E-4/40'		7/.400E-3	8/.400E-3/10'	

W.D. = 193°

U_∞ = 8 mph	2/.983E-3/10'	6/.715E-3/30'
U_∞ = 11 mph	2/.201E-2/10'	6/.763E-3/30'
U_∞ = 16 mph	2/.268E-2/10'	6/.654E-3/30'
U_∞ = 21 mph	2/.256E-2/10' 2/.190E-2/30'	6/.455E-3/30' 6/.544E-3/50'

Table 4-4. Tabulation of Concentration Ratios at Selected Intakes for Four Wind Speeds

Intake Number	$\frac{U_{40}}{U_\infty}$	$\frac{5.16\ mph}{8\ mph}$	$\frac{7.09\ mph}{11\ mph}$	$\frac{10.31\ mph}{16\ mph}$	$\frac{13.54\ mph}{21\ mph}$
	Source #6, 30' stacks, full flow				
2		.623 E-3	.120 E-2	.183 E-2	.170 E-2
5		.738 E-3	.107 E-2	.148 E-2	.123 E-2
6		.166 E-2	.236 E-2	.343 E-2	.310 E-2
7		.175 E-2	.272 E-2	.415 E-2	.408 E-2
8		.118 E-2	.191 E-2	.323 E-2	.319 E-2
9		.637 E-3	.107 E-2	.188 E-2	.218 E-2
14		.379 E-3	.615 E-3	.131 E-2	.197 E-2
15		.246 E-3	.413 E-3	.101 E-2	.157 E-2
	Group #2, 10' stacks, full flow				
2		.188 E-4	.469 E-4	.123 E-3	.291 E-3
24		.965 E-3	.201 E-2	.268 E-2	.256 E-2
	Source #6, 30' stacks, partial flow				
2		.154 E-2	.109 E-2	.808 E-3	.594 E-3
5		.604 E-3	.108 E-2	.535 E-3	.335 E-3
6		.155 E-2	.194 E-2	.117 E-2	.779 E-3
7		.237 E-2	.223 E-2	.152 E-2	.106 E-2
8		.256 E-2	.194 E-2	.138 E-2	.992 E-3
9		.213 E-2	.325 E-2	.107 E-2	.815 E-3
14		.266 E-2	.174 E-2	.153 E-2	.118 E-2
15		.220 E-2	.139 E-2	.127 E-2	.106 E-2
	Group #2, 10' stacks, partial flow				
2		.466 E-3	.107 E-2	.258 E-2	.349 E-2
24		.145 E-2	.192 E-2	.135 E-2	.925 E-3

Table 5-1a

Pressures

Mean and peak pressures on the full-scale building were calculated from

$$P = q_R \, C_p$$

C_p = measured pressure coefficient, mean or peak, on model building

P = pressure on full-scale building, mean or peak, in pounds per square foot (psf)

q_R = reference dynamic pressure at 960 ft in psf

$$= q_{30} \left(\frac{960}{30}\right)^{.34} = 3.25 \, q_{30}$$

Factor (3.25) represents the ratio of wind dynamic pressure at 960 ft to that at 30 ft.

$$q_{30} = 0.00256 \, U_{30}^2$$

U_{30} is the mean velocity at 30 ft in miles per hour.

q_{30} has units of psf

Thus

$$P = (3.25)(.00256) \, U_{30}^2 \, C_p$$

$$P = 0.00832 \, U_{30}^2 \, C_p$$

The following table provides the results of those calculations. The calculations assume the wind to be from the direction giving the largest load for that pressure (mean, peak positive, or peak negative).

Table 5-1b

PRESSURES AT VARIOUS WIND SPEEDS IN PSF

CONFIGURATION A

Pres. Tap Number	Mean Pres. Coef.	Peak + Pres. Coef.	Peak - Pres. Coef.	Mean Wind Speed at 30 ft: 10 mph			20 mph			30 mph			55 mph*		
				Mean	Peak +	Peak -	Mean	Peak +	Peak -	Mean	Peak +	Peak -	Mean	Peak +	Peak -
1	-.312	.599	-.559	.260	.499	.465	1.040	1.99	1.86	2.34	4.49	4.19	7.86	15.09	14.07
2	-.231	.581	-.500	.192	.483	.416	.769	1.93	1.67	1.73	4.35	3.75	5.81	14.62	12.59
3	-.275	.542	-.612	.229	.451	.509	.915	1.81	2.04	2.06	4.06	4.58	6.92	13.65	15.41
4	-.256	.820	-.532	.213	.682	.443	.851	2.73	1.77	1.91	6.14	3.99	6.43	20.63	13.40
5	-.341	.274	-.656	.284	.228	.546	1.140	.91	2.18	2.55	2.05	4.92	8.58	6.89	16.52
6	-.265	.492	-.594	.221	.409	.494	.883	1.64	1.98	1.99	3.69	4.45	6.68	12.38	14.95
7	-.252	.480	-.558	.210	.400	.464	.839	1.60	1.86	1.89	3.60	4.18	6.34	12.09	14.04
8	-.280	.316	-.618	.233	.263	.514	.933	1.05	2.06	2.10	2.36	4.62	7.06	7.95	15.54
9	-.449	.706	-1.073	.373	.587	.893	1.490	2.35	3.57	3.36	5.29	8.04	11.29	17.77	27.01
10	-.333	.610	-.796	.277	.507	.662	1.110	2.03	2.65	2.49	4.57	5.96	8.38	15.35	20.03
11	-.252	.414	-.573	.209	.344	.477	.838	1.38	1.91	1.89	3.10	4.29	6.34	10.41	14.43
12	-.317	.436	-.623	.264	.362	.518	1.060	1.45	2.07	2.38	3.26	4.66	7.98	10.96	15.68
13	-.274	.317	-.419	.228	.264	.348	.912	1.05	1.39	2.05	2.38	3.14	6.90	7.99	10.54
14	-.241	.446	-.502	.201	.371	.417	.803	1.49	1.67	1.81	3.34	3.76	6.07	11.24	12.63
15	-.259	.361	-.662	.216	.301	.550	.863	1.20	2.20	1.94	2.71	4.95	6.52	9.10	16.65
16	-.253	.519	-.557	.210	.432	.463	.842	1.73	1.85	1.89	3.88	4.17	6.37	13.06	14.02
17	-.210	.375	-.563	.175	.312	.468	.699	1.23	1.87	1.57	2.81	4.21	5.29	9.44	14.16
18	-.275	.660	-.641	.229	.549	.533	.916	2.20	2.13	2.06	4.94	4.80	6.93	16.61	16.13
19	-.350	.555	-.681	.291	.462	.566	1.163	1.85	2.27	2.62	4.16	5.10	8.80	13.97	17.13
20	-.237	.688	-.516	.197	.573	.430	.789	2.30	1.72	1.78	5.15	3.97	5.97	17.32	13.00
21	-.308	.342	-.673	.257	.285	.560	1.030	1.14	2.24	2.31	2.56	5.04	7.76	8.61	16.94
22	-.237	.551	-.560	.197	.458	.466	.788	1.83	1.86	1.77	4.13	4.19	5.96	13.87	14.09
23	-.200	.442	-.535	.167	.368	.445	.666	1.47	1.78	1.50	3.31	4.01	5.04	11.13	13.47
24	-.382	.263	-.694	.318	.219	.577	1.270	.87	2.31	2.86	1.97	5.20	9.61	6.61	17.46

* 100-year recurrence wind

Table 5-1c

PRESSURES AT VARIOUS WIND SPEEDS IN PSF

CONFIGURATION B

Pres. Tap Number	Mean Pres. Coef.	Peak + Pres. Coef.	Peak - Pres. Coef.	Mean Wind Speed at 30 ft: 10 mph			20 mph			30 mph			55 mph*		
				Mean	Peak +	Peak -	Mean	Peak +	Peak -	Mean	Peak +	Peak -	Mean	Peak +	Peak -
1	-.281	.556	-.627	.234	.463	.521	.936	1.850	2.09	2.11	4.160	4.69	7.08	13.99	15.77
2	-.251	.659	-.586	.209	.548	.488	.836	2.190	1.95	1.88	4.930	4.39	6.32	16.58	14.75
3	-.730	.198	-1.359	.607	.165	1.130	2.430	.658	4.52	5.46	1.480	10.18	18.36	4.98	34.20
4	-.530	.131	-1.110	.441	.109	.924	1.770	.436	3.69	3.97	.981	8.31	13.35	3.30	27.94
5	-.486	.131	-1.177	.404	.109	.979	1.620	.437	3.92	3.64	.983	8.81	12.23	3.31	29.62
6	-.540	.156	-1.111	.449	.130	.924	1.800	.520	3.70	4.04	1.170	8.32	13.59	3.93	27.96
7	-.501	.176	-1.079	.417	.146	.898	1.670	.585	3.59	3.75	1.320	8.08	12.62	4.42	27.16
8	-.546	.844	-1.125	.454	.702	.936	1.820	2.810	3.74	4.09	6.320	8.42	13.73	21.24	28.31
9	-.342	.709	-.647	.285	.590	.539	1.140	2.360	2.15	2.56	5.310	4.85	8.62	17.84	16.29
10	-.266	.579	-.571	.221	.481	.475	.884	1.930	1.90	1.99	4.330	4.28	6.69	14.56	14.38
11	-.277	.403	-.422	.230	.335	.351	.921	1.340	1.40	2.07	3.020	3.16	6.97	10.13	10.61
12	-.443	.777	-.749	.369	.647	.623	1.480	2.590	2.49	3.32	5.820	5.61	11.16	19.56	18.85
13	-.363	.717	-.956	.302	.597	.795	1.210	2.390	3.18	2.72	5.370	7.16	9.13	18.05	24.05
14	-.195	.448	-.599	.162	.373	.498	.648	1.490	1.99	1.46	3.350	4.49	4.90	11.27	15.08
15	-.272	.533	-.608	.226	.443	.506	.905	1.770	2.02	2.04	3.990	4.55	6.84	13.40	15.30
16	-.304	.580	-.697	.253	.483	.580	1.010	1.930	2.32	2.28	4.340	5.22	7.66	14.60	17.54

* 100-year recurrence wind

Table 6-1. Flow visualization test sequence.

Title	Run no.	Stack Ht.	Wind Dir.	Counter	Time
Seal & Head Title	na	na	na	00	00-00
Model in Tunnel	na	na	na	37	00-56
ARCO E/PRC Pedestrian Winds	na	na	N	65	01-38
do.	na	na	SE	180	04-32
do.	na	na	SW	293	07-23
do.	na	na	N	344	08-40
ARCO E/PRC Source R&D Bldg.	1	10	N	417	10-31
do.	2	20	N	464	11-42
do.	3	30	N	509	12-50
do.	4	40	N	533	13-26
do.	5	10	NW	559	14-05
do.	6	20	NW	590	14-52
do.	7	30	NW	622	15-40
do.	8	40	NW	647	16-18
do.	9	10	NE	676	17-02
do.	10	20	NE	712	17-57
do.	11	30	NE	744	18-45
do.	12	40	NE	722	19-27
do.	13	10	SE	795	20-02
do.	14	20	SE	829	20-53
do.	15	30	SE	855	21-33
do.	16	10	S	882	22-14
do.	17	20	S	926	23-20
do.	18	30	S	977	24-37
do.	19	40	S	1019	25-41

Table 6-1. Flow Visualization Test Sequence (continued).

Title	Run no.	Stack Ht.	Wind Dir.	Counter	Time
ARCO E/PRC Source R&D Bldg.	20	10	SSW	1067	26-53
do.	21	20	SSW	1108	27-55
do.	22	30	SSW	1149	28-57
do.	23	40	SSW	1189	29-58
ARCO E/PRC Source PP/HB Bldg	24	20	N	1229	30-58
do.	25	30	N	1269	31-59
do.	26	40	N	1303	32-50
do.	27	52	N	1334	33-37
do.	28	20	S	1372	34-34
do.	29	30	S	1402	35-19
do.	30	49	S	1433	36-07
do.	31	52	S	1471	37-04
do.	32	20	SSW	1504	37-54
do.	33	30	SSW	1550	39-04
do.	34	40	SSW	1577	39-44
do.	35	52	SSW	1604	40-25
do.	36	30	SW	1632	41-08
do.	37	40	SW	1660	41-50
do.	38	52	SW	1682	42-23
ARCO E/PRC Source CUB Bldg.	39	30	N	1706	42-59
do.	40	30	SW	1726	43-30
do.	41	30	SSW	1758	44-18
do.	42	30	S	1799	45-20
do.	43	30	SSE	1836	46-16
do.	44	30	SE	1859	46-50
do.	45	50	S	1873	47-12
ARCO E/PRC Source PP/HB Bldg.	46	50	SSW	1918	48-20

Table 6-1. Flow Visualization Test Sequence (continued).

Title	Run no.	Stack Ht.	Wind Dir.	Counter	Time
ARCO E/PRC Source CORE Bldg.	47	10	SSE	1945	49-01
do.	48	10	SE	1983	49-58
do.	49	10	ESE	2004	50-30
ARCO E/PRC Source RD&PP Bldg.	50	30/52	N	2029	51-08
do.	51	30/52	S	2058	51-52
End				2081	52-26
CSU Seal				2089	52-38
Total time				2105	53-03

APPENDIX A

PRESSURE DATA

APPENDIX A -- PRESSURE DATA : CONFIGURATION A : ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
0	1	-.218	.080	.048	-.520
0	2	.088	.101	.453	-.223
0	3	-.231	.083	.040	-.532
0	4	-.239	.078	.014	-.501
0	5	-.215	.086	.104	-.500
0	6	-.242	.074	.037	-.471
0	7	-.244	.081	.025	-.531
0	8	-.199	.079	.085	-.457
0	9	-.249	.083	.069	-.588
0	10	-.218	.081	.047	-.549
0	11	-.236	.077	.029	-.496
0	12	-.224	.072	.006	-.469
0	13	-.264	.044	-.129	-.394
0	14	-.238	.064	-.031	-.452
0	15	-.235	.075	.051	-.544
0	16	-.243	.079	.017	-.516
0	17	-.210	.075	.075	-.530
0	18	-.143	.077	.144	-.406
0	19	-.169	.081	.118	-.481
0	20	-.151	.075	.101	-.389
0	21	-.102	.085	.342	-.373
0	22	-.118	.078	.170	-.476
0	23	-.081	.091	.324	-.407
0	24	-.350	.103	.036	-.692
10	1	-.270	.074	-.022	-.519
10	2	.150	.096	.506	-.242
10	3	-.244	.075	-.006	-.496
10	4	-.251	.079	-.029	-.532
10	5	-.221	.084	.053	-.563
10	6	-.252	.074	.024	-.499
10	7	-.252	.075	-.019	-.511
10	8	-.205	.079	.064	-.469
10	9	-.224	.075	.043	-.475
10	10	-.210	.075	.056	-.451
10	11	-.224	.080	.050	-.549
10	12	-.222	.065	-.001	-.428
10	13	-.273	.034	-.167	-.366
10	14	-.241	.067	-.026	-.479
10	15	-.230	.072	.021	-.459
10	16	-.248	.077	.003	-.498
10	17	-.200	.072	.061	-.434
10	18	-.165	.077	.139	-.434
10	19	-.169	.075	.071	-.451
10	20	-.174	.078	.133	-.447
10	21	-.108	.089	.278	-.397
10	22	-.130	.074	.147	-.411
10	23	-.097	.080	.178	-.346
10	24	-.382	.089	-.024	-.671
20	1	-.312	.068	-.009	-.539
20	2	.158	.099	.581	-.145

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
20	3	-.242	.075	-.013	-.500
20	4	-.256	.077	-.016	-.513
20	5	-.232	.085	.098	-.656
20	6	-.250	.069	.008	-.489
20	7	-.239	.074	.018	-.502
20	8	-.188	.080	.081	-.459
20	9	-.213	.077	.055	-.538
20	10	-.205	.075	.067	-.477
20	11	-.226	.077	.025	-.500
20	12	-.214	.068	.073	-.463
20	13	-.271	.044	-.133	-.419
20	14	-.239	.065	-.035	-.437
20	15	-.232	.075	.033	-.528
20	16	-.250	.076	.013	-.512
20	17	-.176	.080	.129	-.458
20	18	-.175	.074	.069	-.444
20	19	-.160	.074	.100	-.428
20	20	-.199	.079	.050	-.450
20	21	-.118	.085	.185	-.379
20	22	-.136	.078	.125	-.434
20	23	-.093	.081	.234	-.370
20	24	-.343	.083	-.087	-.694
30	1	-.276	.072	-.040	-.559
30	2	.150	.095	.498	-.180
30	3	-.215	.077	.051	-.501
30	4	-.243	.079	.001	-.491
30	5	-.209	.083	.156	-.488
30	6	-.224	.079	.067	-.562
30	7	-.216	.076	.043	-.484
30	8	-.177	.079	.105	-.448
30	9	-.213	.081	.097	-.549
30	10	-.206	.080	.067	-.476
30	11	-.218	.078	.076	-.481
30	12	-.202	.070	.049	-.482
30	13	-.274	.043	-.135	-.386
30	14	-.222	.065	.019	-.427
30	15	-.222	.078	.066	-.527
30	16	-.245	.080	.067	-.529
30	17	-.165	.079	.113	-.441
30	18	-.188	.082	.104	-.534
30	19	-.143	.074	.129	-.429
30	20	-.237	.079	.006	-.493
30	21	-.145	.085	.207	-.537
30	22	-.133	.081	.147	-.492
30	23	-.083	.081	.179	-.378
30	24	-.276	.080	-.004	-.555
40	1	-.229	.070	.016	-.447
40	2	.125	.086	.460	-.154
40	3	-.204	.076	.070	-.451
40	4	-.209	.075	.050	-.506

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
40	5	-.185	.085	.174	-.457
40	6	-.209	.077	.093	-.450
40	7	-.213	.075	.045	-.463
40	8	-.159	.080	.111	-.436
40	9	-.237	.082	.053	-.504
40	10	-.212	.081	.077	-.503
40	11	-.216	.080	.070	-.508
40	12	-.238	.072	.031	-.494
40	13	-.272	.038	-.167	-.385
40	14	-.194	.065	.025	-.390
40	15	-.216	.076	.037	-.463
40	16	-.243	.079	.038	-.492
40	17	-.130	.084	.220	-.367
40	18	-.214	.081	.010	-.457
40	19	-.154	.078	.125	-.424
40	20	-.227	.083	.037	-.501
40	21	-.095	.094	.244	-.451
40	22	-.155	.078	.188	-.411
40	23	-.109	.080	.175	-.408
40	24	-.227	.077	.018	-.487
50	1	-.215	.078	.008	-.487
50	2	.110	.093	.416	-.233
50	3	-.191	.078	.084	-.492
50	4	-.204	.077	.045	-.500
50	5	-.188	.087	.089	-.478
50	6	-.203	.086	.097	-.529
50	7	-.215	.077	.055	-.501
50	8	-.185	.081	.140	-.466
50	9	-.230	.083	.036	-.554
50	10	-.209	.088	.075	-.519
50	11	-.221	.084	.093	-.493
50	12	-.289	.073	-.059	-.532
50	13	-.273	.035	-.150	-.399
50	14	-.169	.067	.066	-.409
50	15	-.215	.079	.039	-.535
50	16	-.231	.088	.086	-.513
50	17	-.109	.086	.205	-.391
50	18	-.256	.090	.054	-.641
50	19	-.162	.077	.112	-.469
50	20	-.236	.083	.062	-.516
50	21	-.059	.092	.305	-.374
50	22	-.153	.080	.127	-.457
50	23	-.128	.086	.161	-.445
50	24	-.176	.082	.091	-.467
60	1	-.209	.068	.020	-.438
60	2	.084	.079	.317	-.173
60	3	-.171	.082	.141	-.432
60	4	-.177	.083	.074	-.447
60	5	-.177	.085	.109	-.452
60	6	-.196	.080	.062	-.475

APPENDIX A -- PRESSURE DATA ;   CONFIGURATION A : ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
60	7	-.210	.081	.093	-.491
60	8	-.194	.086	.108	-.479
60	9	-.258	.086	.048	-.573
60	10	-.221	.090	.071	-.556
60	11	-.202	.081	.060	-.477
60	12	-.317	.071	-.037	-.577
60	13	-.224	.048	-.065	-.348
60	14	-.144	.067	.055	-.349
60	15	-.192	.079	.093	-.474
60	16	-.211	.087	.079	-.557
60	17	-.103	.095	.289	-.437
60	18	-.275	.084	-.006	-.581
60	19	-.161	.080	.137	-.420
60	20	-.203	.082	.076	-.480
60	21	-.120	.090	.315	-.436
60	22	-.148	.080	.149	-.441
60	23	-.126	.086	.176	-.474
60	24	-.138	.080	.128	-.445
70	1	-.192	.072	.033	-.448
70	2	.075	.081	.398	-.267
70	3	-.156	.082	.110	-.432
70	4	-.169	.080	.161	-.442
70	5	-.165	.081	.189	-.522
70	6	-.186	.082	.082	-.485
70	7	-.195	.080	.077	-.460
70	8	-.196	.080	.157	-.457
70	9	-.255	.080	.043	-.529
70	10	-.228	.078	.064	-.483
70	11	-.204	.077	.104	-.529
70	12	-.266	.075	-.020	-.519
70	13	-.177	.045	-.038	-.306
70	14	-.118	.062	.082	-.369
70	15	-.182	.073	.072	-.438
70	16	-.196	.077	.071	-.469
70	17	-.148	.078	.162	-.397
70	18	-.261	.084	-.019	-.585
70	19	-.160	.081	.119	-.430
70	20	-.205	.080	.123	-.489
70	21	-.210	.089	.056	-.539
70	22	-.152	.076	.132	-.412
70	23	-.138	.080	.147	-.420
70	24	-.111	.071	.162	-.369
80	1	-.175	.072	.050	-.401
80	2	.063	.085	.314	-.249
80	3	-.144	.084	.136	-.425
80	4	-.149	.082	.173	-.451
80	5	-.163	.087	.132	-.527
80	6	-.162	.081	.117	-.447
80	7	-.182	.082	.107	-.447
80	8	-.188	.081	.145	-.501
80	9	-.235	.087	.051	-.523
80	10	-.204	.086	.126	-.495
80	11	-.202	.084	.073	-.556
80	12	-.236	.078	.011	-.623
80	13	-.108	.049	.027	-.271
80	14	-.090	.069	.133	-.319
80	15	-.180	.079	.081	-.463
80	16	-.178	.083	.115	-.444
80	17	-.156	.082	.133	-.416
80	18	-.213	.082	.057	-.537
80	19	-.141	.081	.139	-.395
80	20	-.152	.085	.178	-.444
80	21	-.187	.094	.124	-.524
80	22	-.173	.082	.115	-.155
80	23	-.122	.082	.145	-.401
80	24	-.084	.081	.177	-.436
90	1	-.186	.064	.021	-.392
90	2	.027	.079	.323	-.254
90	3	-.139	.082	.149	-.411
90	4	-.144	.082	.134	-.449
90	5	-.159	.089	.118	-.468
90	6	-.159	.075	.097	-.429
90	7	-.171	.081	.109	-.418
90	8	-.181	.080	.098	-.468
90	9	-.176	.083	.103	-.446
90	10	-.166	.084	.117	-.435
90	11	-.182	.085	.072	-.480
90	12	-.198	.080	.078	-.604
90	13	-.042	.049	.095	-.198
90	14	-.075	.069	.157	-.297
90	15	-.159	.077	.103	-.415
90	16	-.155	.084	.136	-.429
90	17	-.134	.078	.128	-.394
90	18	-.209	.079	.049	-.497
90	19	-.140	.079	.118	-.378
90	20	-.154	.086	.161	-.492
90	21	-.201	.089	.082	-.496
90	22	-.167	.079	.130	-.435
90	23	-.132	.082	.110	-.418
90	24	-.068	.079	.171	-.309
100	1	-.186	.069	.058	-.396
100	2	-.032	.073	.239	-.264
100	3	-.123	.086	.191	-.388
100	4	-.133	.081	.150	-.386
100	5	-.145	.086	.128	-.457
100	6	-.125	.079	.144	-.381
100	7	-.154	.084	.167	-.428
100	8	-.169	.079	.107	-.418
100	9	-.161	.081	.119	-.494
100	10	-.147	.086	.130	-.452
100	11	-.165	.081	.126	-.443
100	12	-.179	.083	.079	-.475
100	13	-.054	.043	.098	-.196
100	14	-.064	.067	.137	-.298
100	15	-.156	.076	.115	-.430
100	16	-.146	.085	.137	-.467
100	17	-.131	.080	.138	-.399
100	18	-.200	.080	.078	-.525
100	19	-.139	.082	.116	-.410
100	20	-.118	.083	.195	-.401
100	21	-.218	.084	.078	-.560
100	22	-.181	.077	.064	-.469
100	23	-.168	.087	.134	-.500
100	24	-.052	.078	.201	-.343
110	1	-.202	.074	.082	-.429
110	2	-.032	.082	.324	-.283
110	3	-.109	.090	.228	-.413
110	4	-.132	.083	.138	-.447
110	5	-.147	.086	.139	-.518
110	6	-.129	.091	.208	-.439
110	7	-.160	.085	.123	-.457
110	8	-.169	.080	.076	-.450
110	9	-.166	.087	.145	-.478
110	10	-.148	.084	.098	-.437
110	11	-.143	.083	.143	-.478
110	12	-.138	.083	.171	-.410
110	13	.030	.054	.218	-.144
110	14	-.063	.070	.166	-.335
110	15	-.134	.079	.142	-.407
110	16	-.120	.084	.123	-.396
110	17	-.110	.082	.199	-.460
110	18	-.196	.084	.116	-.482
110	19	-.118	.085	.169	-.410
110	20	-.120	.082	.189	-.435
110	21	-.285	.089	.083	-.599
110	22	-.218	.083	.062	-.529
110	23	-.150	.084	.134	-.462
110	24	-.057	.078	.197	-.317
120	1	-.165	.078	.058	-.454
120	2	-.056	.080	.189	-.316
120	3	-.111	.089	.246	-.411
120	4	-.151	.081	.122	-.447
120	5	-.166	.080	.100	-.415
120	6	-.108	.089	.192	-.390
120	7	-.146	.088	.154	-.444
120	8	-.171	.079	.123	-.409
120	9	-.187	.089	.161	-.516
120	10	-.129	.089	.162	-.445
120	11	-.137	.077	.147	-.398
120	12	-.153	.079	.116	-.478

APPENDIX A -- PRESSURE DATA : CONFIGURATION A : ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
120	13	-.016	.057	.206	-.168	140	15	-.001	.083	.291	-.270	160	17	.035	.092	.375	-.271
120	14	-.107	.065	.106	-.324	140	16	.023	.101	.519	-.332	160	18	-.160	.085	.163	-.475
120	15	-.129	.082	.136	-.434	140	17	-.062	.079	.240	-.291	160	19	-.074	.094	.283	-.372
120	16	-.119	.084	.167	-.399	140	18	-.191	.081	.087	-.562	160	20	.174	.101	.593	-.147
120	17	-.138	.084	.160	-.563	140	19	-.016	.092	.346	-.299	160	21	-.204	.084	.075	-.518
120	18	-.203	.087	.096	-.530	140	20	.119	.086	.442	-.207	160	22	-.211	.081	.079	-.535
120	19	-.071	.087	.256	-.375	140	21	-.229	.084	.094	-.517	160	23	-.200	.084	.109	-.469
120	20	.033	.092	.518	-.251	140	22	-.216	.075	.059	-.441	160	24	-.201	.080	.082	-.483
120	21	-.308	.086	.001	-.673	140	23	-.184	.082	.089	-.478	170	1	-.193	.073	.049	-.416
120	22	-.237	.083	.065	-.560	140	24	-.144	.077	.111	-.405	170	2	-.230	.074	.026	-.494
120	23	-.138	.083	.169	-.483	150	1	-.168	.069	.069	-.391	170	3	-.190	.090	.127	-.479
120	24	-.071	.077	.162	-.343	150	2	-.177	.072	.041	-.434	170	4	-.193	.088	.178	-.474
130	1	-.178	.069	.043	-.436	150	3	-.080	.086	.244	-.333	170	5	-.248	.083	.065	-.503
130	2	-.113	.069	.083	-.402	150	4	-.203	.081	.077	-.499	170	6	-.120	.089	.170	-.379
130	3	-.125	.089	.216	-.413	150	5	-.210	.083	.063	-.472	170	7	-.206	.084	.091	-.535
130	4	-.165	.084	.180	-.418	150	6	.154	.105	.492	-.200	170	8	-.237	.081	.054	-.485
130	5	-.181	.081	.105	-.471	150	7	-.032	.089	.310	-.338	170	9	-.449	.164	.356	-1.035
130	6	-.044	.093	.301	-.349	150	8	-.201	.079	.063	-.489	170	10	-.059	.124	.501	-.447
130	7	-.134	.095	.201	-.440	150	9	-.322	.115	-.023	-.781	170	11	-.025	.091	.260	-.367
130	8	-.174	.080	.131	-.442	150	10	-.121	.105	.282	-.515	170	12	.004	.081	.317	-.281
130	9	-.231	.092	.066	-.545	150	11	-.066	.086	.221	-.354	170	13	-.042	.041	.104	-.176
130	10	-.084	.088	.192	-.366	150	12	.077	.083	.436	-.330	170	14	.016	.082	.446	-.273
130	11	-.055	.087	.241	-.364	150	13	.157	.050	.317	.003	170	15	-.002	.083	.304	-.314
130	12	-.161	.084	.110	-.475	150	14	-.033	.077	.245	-.268	170	16	.033	.094	.422	-.228
130	13	.004	.067	.243	-.170	150	15	-.002	.083	.255	-.322	170	17	-.012	.083	.314	-.332
130	14	-.075	.068	.160	-.284	150	16	.087	.098	.442	-.285	170	18	-.161	.085	.099	-.475
130	15	-.083	.087	.231	-.362	150	17	.027	.088	.327	-.303	170	19	-.051	.100	.296	-.425
130	16	-.093	.078	.158	-.358	150	18	-.166	.079	.086	-.452	170	20	.190	.118	.688	-.191
130	17	-.133	.084	.162	-.454	150	19	-.021	.087	.307	-.313	170	21	-.201	.084	.103	-.494
130	18	-.218	.079	.042	-.535	150	20	.128	.094	.592	-.165	170	22	-.201	.080	.118	-.503
130	19	-.037	.091	.257	-.364	150	21	-.203	.084	.064	-.494	170	23	-.165	.084	.164	-.445
130	20	.133	.096	.427	-.184	150	22	-.205	.081	.048	-.525	170	24	-.220	.080	.065	-.464
130	21	-.258	.082	.013	-.557	150	23	-.197	.083	.080	-.454	180	1	-.187	.069	.038	-.430
130	22	-.236	.083	.065	-.554	150	24	-.167	.080	.113	-.421	180	2	-.215	.071	.019	-.467
130	23	-.165	.079	.096	-.431	160	1	-.191	.074	.069	-.501	180	3	-.175	.082	.110	-.455
130	24	-.114	.072	.121	-.364	160	2	-.216	.072	.026	-.474	180	4	-.156	.088	.156	-.502
140	1	-.166	.073	.054	-.495	160	3	-.147	.093	.180	-.459	180	5	-.229	.081	.084	-.575
140	2	-.144	.073	.080	-.438	160	4	-.220	.081	.043	-.519	180	6	-.188	.079	.078	-.428
140	3	-.052	.091	.279	-.367	160	5	-.237	.082	.042	-.543	180	7	-.197	.078	.056	-.494
140	4	-.174	.087	.200	-.470	160	6	.044	.103	.399	-.340	180	8	-.225	.079	.033	-.561
140	5	-.198	.083	.120	-.466	160	7	-.133	.094	.179	-.487	180	9	-.250	.194	.609	-.965
140	6	-.005	.097	.381	-.429	160	8	-.227	.077	.016	-.527	180	10	-.059	.133	.537	-.437
140	7	-.108	.090	.304	-.436	160	9	-.385	.139	.156	-1.073	180	11	.027	.099	.368	-.376
140	8	-.190	.079	.095	-.455	160	10	-.126	.115	.398	-.473	180	12	-.045	.077	.196	-.323
140	9	-.276	.092	.039	-.615	160	11	-.038	.091	.267	-.382	180	13	-.056	.052	.082	-.197
140	10	-.120	.103	.271	-.446	160	12	.076	.094	.365	-.248	180	14	-.023	.075	.260	-.264
140	11	-.037	.082	.301	-.329	160	13	.097	.052	.235	-.079	180	15	.021	.089	.335	-.279
140	12	-.033	.089	.295	-.284	160	14	.002	.079	.336	-.235	180	16	-.003	.089	.340	-.266
140	13	-.005	.053	.184	-.171	160	15	-.008	.083	.258	-.260	180	17	-.035	.082	.222	-.290
140	14	-.066	.071	.206	-.309	160	16	.055	.100	.402	-.276	180	18	-.126	.081	.159	-.406

APPENDIX A -- PRESSURE DATA ; CONFIGURATION A : ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
180	19	.042	.107	.555	-.293
180	20	.063	.097	.411	-.304
180	21	-.154	.078	.108	-.436
180	22	-.162	.085	.098	-.460
180	23	-.140	.078	.120	-.389
180	24	-.227	.077	.022	-.497
190	1	-.186	.069	.053	-.441
190	2	-.231	.071	.027	-.500
190	3	-.215	.093	.095	-.527
190	4	-.157	.097	.288	-.489
190	5	-.259	.089	.046	-.570
190	6	-.219	.082	.051	-.517
190	7	-.177	.088	.096	-.501
190	8	-.250	.082	.095	-.544
190	9	-.103	.215	.666	-1.048
190	10	.132	.116	.575	-.334
190	11	.008	.099	.318	-.280
190	12	-.116	.078	.236	-.364
190	13	-.082	.046	.121	-.203
190	14	-.042	.081	.252	-.259
190	15	.019	.088	.327	-.310
190	16	-.023	.083	.358	-.393
190	17	-.088	.085	.255	-.378
190	18	-.085	.085	.222	-.413
190	19	.014	.090	.411	-.305
190	20	.104	.115	.546	-.279
190	21	-.130	.077	.136	-.398
190	22	-.104	.083	.178	-.406
190	23	-.140	.076	.108	-.535
190	24	-.217	.076	.051	-.564
200	1	-.162	.073	.091	-.415
200	2	-.214	.071	.017	-.459
200	3	-.275	.110	.196	-.612
200	4	-.051	.129	.417	-.448
200	5	-.341	.087	-.014	-.638
200	6	-.219	.090	.126	-.536
200	7	-.140	.098	.293	-.481
200	8	-.258	.084	.055	-.544
200	9	-.047	.202	.634	-.964
200	10	.184	.107	.610	-.170
200	11	.067	.100	.414	-.231
200	12	-.168	.071	.136	-.457
200	13	-.162	.045	-.030	-.317
200	14	.003	.087	.311	-.246
200	15	.028	.085	.361	-.268
200	16	-.028	.082	.302	-.307
200	17	-.104	.077	.230	-.355
200	18	.032	.090	.381	-.272
200	19	-.036	.085	.267	-.352
200	20	.111	.123	.572	-.251
200	21	-.084	.078	.183	-.361
200	22	-.047	.078	.235	-.313
200	23	-.147	.077	.138	-.419
200	24	-.158	.083	.153	-.464
210	1	-.119	.068	.081	-.421
210	2	-.191	.068	.004	-.469
210	3	-.074	.138	.389	-.515
210	4	.130	.143	.820	-.346
210	5	-.328	.092	.010	-.617
210	6	-.265	.080	-.016	-.594
210	7	-.183	.092	.126	-.496
210	8	-.280	.085	.007	-.618
210	9	.077	.153	.557	-.805
210	10	.194	.100	.608	-.109
210	11	.020	.086	.343	-.319
210	12	-.153	.070	.056	-.385
210	13	-.137	.038	-.039	-.243
210	14	.004	.084	.334	-.283
210	15	-.006	.087	.333	-.304
210	16	-.014	.082	.322	-.266
210	17	-.097	.079	.163	-.370
210	18	.125	.085	.415	-.217
210	19	.041	.087	.395	-.284
210	20	-.004	.093	.349	-.342
210	21	-.075	.077	.215	-.332
210	22	.001	.079	.276	-.298
210	23	-.144	.076	.211	-.404
210	24	-.150	.090	.199	-.483
220	1	-.067	.076	.165	-.388
220	2	-.176	.073	.057	-.436
220	3	.035	.142	.542	-.424
220	4	.157	.120	.557	-.243
220	5	-.281	.086	.056	-.577
220	6	-.255	.086	.001	-.534
220	7	-.136	.094	.284	-.458
220	8	-.278	.086	.018	-.557
220	9	.248	.120	.706	-.223
220	10	.226	.093	.579	-.031
220	11	-.071	.090	.265	-.348
220	12	-.142	.071	.072	-.419
220	13	-.142	.041	-.000	-.277
220	14	-.028	.077	.238	-.298
220	15	-.108	.089	.218	-.396
220	16	-.049	.080	.240	-.350
220	17	-.119	.076	.108	-.407
220	18	.127	.087	.416	-.164
220	19	.042	.087	.351	-.275
220	20	-.053	.085	.295	-.361
220	21	-.060	.081	.200	-.388
220	22	.033	.081	.325	-.273
220	23	-.130	.076	.137	-.421
220	24	-.158	.082	.197	-.483
230	1	.011	.087	.347	-.271
230	2	-.177	.071	.055	-.436
230	3	-.089	.100	.279	-.444
230	4	.016	.098	.351	-.321
230	5	-.233	.085	.017	-.589
230	6	-.196	.094	.203	-.505
230	7	.023	.108	.480	-.343
230	8	-.246	.078	.044	-.497
230	9	.226	.110	.618	-.105
230	10	.155	.103	.525	-.273
230	11	-.115	.086	.207	-.418
230	12	-.134	.074	.111	-.429
230	13	-.137	.042	-.001	-.257
230	14	-.029	.075	.184	-.310
230	15	-.184	.087	.220	-.539
230	16	-.095	.080	.202	-.407
230	17	-.124	.074	.133	-.344
230	18	.168	.087	.506	-.160
230	19	.010	.084	.298	-.320
230	20	-.051	.080	.232	-.333
230	21	-.067	.077	.199	-.347
230	22	.108	.090	.419	-.174
230	23	-.120	.083	.205	-.391
230	24	-.164	.075	.093	-.454
240	1	.094	.100	.476	-.263
240	2	-.174	.072	.055	-.428
240	3	-.150	.083	.213	-.447
240	4	-.068	.093	.249	-.395
240	5	-.227	.083	.128	-.526
240	6	-.156	.088	.143	-.475
240	7	.012	.099	.377	-.353
240	8	-.182	.082	.110	-.476
240	9	.190	.116	.632	-.191
240	10	.036	.105	.385	-.368
240	11	-.158	.088	.292	-.498
240	12	-.158	.066	.111	-.338
240	13	-.170	.039	-.046	-.285
240	14	-.047	.071	.275	-.331
240	15	-.233	.094	.108	-.599
240	16	-.147	.074	.080	-.411
240	17	-.154	.083	.098	-.440
240	18	.171	.098	.660	-.161
240	19	-.055	.080	.299	-.308
240	20	-.064	.080	.217	-.333
240	21	-.089	.077	.204	-.375
240	22	.129	.101	.520	-.188
240	23	-.130	.078	.111	-.397
240	24	-.154	.069	.053	-.448

APPENDIX A -- PRESSURE DATA ; CONFIGURATION A : ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
250	1	.147	.104	.519	-.199	270	3	-.196	.075	.072	-.476	290	5	-.200	.084	.196	-.472
250	2	-.173	.069	.078	-.408	270	4	-.198	.081	.072	-.470	290	6	-.151	.080	.117	-.421
250	3	-.177	.082	.149	-.472	270	5	-.226	.087	.077	-.509	290	7	-.143	.085	.129	-.453
250	4	-.125	.096	.242	-.424	270	6	-.154	.076	.085	-.468	290	8	-.083	.091	.316	-.411
250	5	-.231	.080	.099	-.499	270	7	-.129	.077	.113	-.396	290	9	-.137	.092	.216	-.496
250	6	-.145	.079	.115	-.431	270	8	-.112	.081	.195	-.436	290	10	-.291	.088	.024	-.608
250	7	-.050	.091	.285	-.367	270	9	-.022	.101	.309	-.377	290	11	-.106	.119	.391	-.465
250	8	-.148	.079	.118	-.435	270	10	-.333	.106	-.008	-.796	290	12	-.164	.070	.068	-.381
250	9	.156	.106	.570	-.216	270	11	-.192	.096	.141	-.523	290	13	-.176	.035	-.074	-.320
250	10	-.132	.117	.273	-.682	270	12	-.151	.061	.034	-.367	290	14	-.103	.069	.137	-.334
250	11	-.201	.081	.148	-.444	270	13	-.167	.035	-.061	-.263	290	15	-.180	.082	.096	-.463
250	12	-.170	.066	.055	-.408	270	14	-.069	.082	.209	-.302	290	16	-.175	.087	.105	-.482
250	13	-.189	.031	-.087	-.298	270	15	-.210	.099	.118	-.571	290	17	-.173	.073	.042	-.448
250	14	-.069	.075	.247	-.293	270	16	-.160	.079	.136	-.446	290	18	.069	.106	.512	-.269
250	15	-.249	.092	.123	-.662	270	17	-.145	.075	.101	-.418	290	19	-.350	.094	-.042	-.677
250	16	-.166	.083	.120	-.486	270	18	.143	.102	.658	-.184	290	20	-.159	.088	.110	-.494
250	17	-.158	.074	.127	-.415	270	19	-.291	.100	.032	-.616	290	21	-.173	.077	.130	-.402
250	18	.167	.100	.518	-.176	270	20	-.111	.079	.172	-.398	290	22	.109	.101	.551	-.207
250	19	-.113	.085	.159	-.407	270	21	-.148	.080	.126	-.429	290	23	-.112	.091	.193	-.473
250	20	-.094	.075	.217	-.364	270	22	.090	.098	.487	-.219	290	24	-.118	.080	.133	-.395
250	21	-.103	.074	.156	-.325	270	23	-.120	.081	.181	-.417	300	1	.170	.099	.599	-.128
250	22	.127	.096	.497	-.192	270	24	-.092	.081	.162	-.366	300	2	-.149	.075	.149	-.401
250	23	-.136	.086	.180	-.478	280	1	.222	.095	.576	-.048	300	3	-.156	.083	.129	-.442
250	24	-.141	.079	.155	-.463	280	2	-.163	.071	.063	-.392	300	4	-.165	.077	.149	-.477
260	1	.185	.107	.590	-.115	280	3	-.195	.082	.114	-.447	300	5	-.144	.087	.185	-.453
260	2	-.168	.069	.081	-.398	280	4	-.202	.079	.058	-.468	300	6	-.151	.075	.149	-.407
260	3	-.198	.079	.090	-.473	280	5	-.218	.080	.015	-.507	300	7	-.142	.082	.128	-.427
260	4	-.185	.079	.091	-.439	280	6	-.146	.078	.089	-.426	300	8	-.073	.084	.240	-.421
260	5	-.233	.077	.055	-.517	280	7	-.130	.082	.156	-.407	300	9	-.143	.083	.201	-.404
260	6	-.144	.075	.105	-.401	280	8	-.117	.083	.152	-.424	300	10	-.231	.077	.040	-.498
260	7	-.097	.080	.178	-.368	280	9	-.065	.099	.329	-.396	300	11	-.211	.090	.289	-.531
260	8	-.120	.076	.128	-.363	280	10	-.316	.097	-.000	-.754	300	12	-.163	.071	.088	-.414
260	9	.050	.105	.374	-.333	280	11	-.145	.103	.261	-.498	300	13	-.176	.033	-.082	-.307
260	10	-.286	.121	.149	-.669	280	12	-.153	.068	.086	-.354	300	14	-.150	.067	.088	-.385
260	11	-.223	.080	.130	-.514	280	13	-.174	.034	-.079	-.293	300	15	-.208	.076	.067	-.488
260	12	-.165	.065	.067	-.368	280	14	-.054	.072	.223	-.294	300	16	-.200	.075	.059	-.448
260	13	-.177	.035	-.047	-.275	280	15	-.176	.092	.128	-.493	300	17	-.162	.074	.080	-.391
260	14	-.082	.071	.159	-.319	280	16	-.153	.080	.088	-.446	300	18	.047	.098	.448	-.278
260	15	-.259	.100	.098	-.650	280	17	-.147	.076	.120	-.379	300	19	-.315	.087	-.013	-.612
260	16	-.169	.075	.059	-.409	280	18	.130	.098	.488	-.181	300	20	-.154	.082	.154	-.480
260	17	-.162	.071	.044	-.411	280	19	-.347	.096	.011	-.681	300	21	-.169	.079	.078	-.452
260	18	.153	.102	.538	-.146	280	20	-.131	.080	.107	-.370	300	22	.083	.092	.407	-.212
260	19	-.190	.100	.128	-.533	280	21	-.159	.075	.110	-.422	300	23	-.132	.083	.163	-.426
260	20	-.103	.075	.151	-.388	280	22	.107	.099	.510	-.167	300	24	-.086	.072	.158	-.352
260	21	-.120	.071	.172	-.382	280	23	-.102	.081	.162	-.394	310	1	.190	.110	.597	-.186
260	22	.120	.098	.498	-.216	280	24	-.106	.077	.128	-.358	310	2	-.056	.087	.281	-.317
260	23	-.134	.079	.108	-.393	290	1	.198	.099	.585	-.066	310	3	-.128	.081	.115	-.413
260	24	-.113	.073	.153	-.384	290	2	-.179	.074	.066	-.404	310	4	-.175	.082	.070	-.491
270	1	.230	.096	.572	-.049	290	3	-.185	.086	.089	-.442	310	5	-.095	.097	.242	-.476
270	2	-.173	.071	.064	-.443	290	4	-.184	.085	.060	-.505	310	6	-.179	.077	.088	-.444

APPENDIX A -- PRESSURE DATA ; CONFIGURATION A ; ARCO-PLANO TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
310	7	-.166	.075	.075	-.443
310	8	-.093	.087	.209	-.411
310	9	-.190	.083	.100	-.481
310	10	-.224	.078	.036	-.516
310	11	-.243	.085	.024	-.546
310	12	-.193	.062	.036	-.415
310	13	-.204	.035	-.115	-.296
310	14	-.145	.073	.095	-.385
310	15	-.237	.077	.031	-.480
310	16	-.204	.081	.074	-.505
310	17	-.186	.075	.104	-.415
310	18	.068	.106	.426	-.297
310	19	-.278	.084	-.002	-.574
310	20	-.154	.083	.072	-.479
310	21	-.148	.083	.192	-.455
310	22	.031	.087	.349	-.244
310	23	-.128	.086	.240	-.451
310	24	-.062	.088	.263	-.385
320	1	.096	.104	.449	-.228
320	2	.043	.095	.380	-.294
320	3	-.111	.084	.159	-.403
320	4	-.172	.078	.066	-.445
320	5	-.052	.091	.274	-.500
320	6	-.194	.078	.054	-.453
320	7	-.182	.079	.081	-.468
320	8	-.115	.082	.174	-.408
320	9	-.226	.080	.027	-.469
320	10	-.217	.077	.073	-.491
320	11	-.240	.075	-.011	-.550
320	12	-.203	.067	.034	-.429
320	13	-.211	.033	-.113	-.340
320	14	-.151	.066	.029	-.389
320	15	-.232	.073	.031	-.450
320	16	-.217	.078	.083	-.462
320	17	-.193	.073	.074	-.403
320	18	-.014	.104	.424	-.373
320	19	-.201	.084	.099	-.504
320	20	-.134	.078	.092	-.413

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
320	21	-.106	.082	.165	-.401
320	22	-.026	.083	.269	-.279
320	23	-.093	.088	.276	-.385
320	24	-.053	.076	.175	-.289
330	1	-.001	.099	.342	-.308
330	2	.074	.097	.411	-.232
330	3	-.150	.077	.138	-.443
330	4	-.198	.076	.073	-.475
330	5	-.084	.087	.184	-.386
330	6	-.228	.076	.015	-.554
330	7	-.218	.075	.024	-.480
330	8	-.171	.079	.087	-.491
330	9	-.255	.080	-.006	-.521
330	10	-.222	.078	.079	-.508
330	11	-.242	.076	.001	-.492
330	12	-.216	.067	.046	-.473
330	13	-.237	.032	-.126	-.347
330	14	-.168	.068	.036	-.402
330	15	-.239	.075	.015	-.503
330	16	-.233	.078	.049	-.512
330	17	-.190	.073	.037	-.433
330	18	-.072	.085	.290	-.378
330	19	-.168	.080	.105	-.529
330	20	-.133	.076	.128	-.394
330	21	-.076	.086	.253	-.377
330	22	-.074	.083	.213	-.317
330	23	-.061	.093	.316	-.379
330	24	-.052	.082	.213	-.519
340	1	-.180	.085	.210	-.459
340	2	.110	.099	.487	-.217
340	3	-.192	.079	.139	-.471
340	4	-.229	.079	.041	-.508
340	5	-.193	.095	.126	-.519
340	6	-.239	.077	.070	-.480
340	7	-.231	.078	.096	-.558
340	8	-.197	.082	.101	-.474
340	9	-.277	.083	.004	-.590
340	10	-.227	.081	.050	-.504

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
340	11	-.246	.080	.009	-.573
340	12	-.215	.067	.065	-.495
340	13	-.256	.037	-.140	-.361
340	14	-.201	.072	.040	-.500
340	15	-.247	.074	.004	-.506
340	16	-.235	.082	.049	-.528
340	17	-.206	.073	.074	-.478
340	18	-.087	.086	.201	-.386
340	19	-.178	.081	.152	-.521
340	20	-.134	.077	.114	-.400
340	21	-.058	.094	.325	-.402
340	22	-.115	.079	.151	-.371
340	23	-.025	.109	.442	-.357
340	24	-.077	.096	.224	-.524
350	1	-.231	.080	.042	-.493
350	2	.095	.094	.540	-.174
350	3	-.225	.082	.056	-.493
350	4	-.247	.080	.045	-.514
350	5	-.252	.089	.070	-.533
350	6	-.254	.078	.033	-.493
350	7	-.242	.080	.022	-.495
350	8	-.206	.083	.083	-.492
350	9	-.264	.085	.112	-.587
350	10	-.232	.083	.084	-.512
350	11	-.252	.081	.054	-.528
350	12	-.225	.068	.020	-.428
350	13	-.273	.036	-.153	-.371
350	14	-.221	.070	-.010	-.502
350	15	-.244	.079	.063	-.559
350	16	-.253	.082	.080	-.515
350	17	-.207	.076	.087	-.508
350	18	-.123	.081	.160	-.421
350	19	-.169	.081	.111	-.457
350	20	-.141	.078	.186	-.387
350	21	-.088	.091	.295	-.427
350	22	-.117	.082	.222	-.468
350	23	-.084	.094	.277	-.387
350	24	-.212	.130	.100	-.634

APPENDIX A -- PRESSURE DATA ; CONFIGURATION B : ARCO-PLANO,TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN	WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
0	1	-.272	.083	.007	-.561	30	3	-.211	.088	.097	-.518	60	5	-.215	.077	.040	-.478
0	2	-.244	.080	.028	-.577	30	4	-.216	.086	.076	-.530	60	6	-.237	.087	.062	-.546
0	3	-.285	.089	.051	-.593	30	5	-.236	.077	.011	-.483	60	7	-.501	.134	-.090	-1.079
0	4	-.254	.088	.098	-.574	30	6	-.261	.084	.048	-.549	60	8	-.200	.081	.087	-.468
0	5	-.263	.086	-.016	-.652	30	7	-.302	.084	.020	-.666	60	9	-.197	.071	.031	-.426
0	6	-.224	.084	.078	-.529	30	8	-.193	.082	.081	-.463	60	10	-.224	.064	.002	-.416
0	7	-.206	.083	.058	-.545	30	9	-.213	.078	.010	-.491	60	11	-.254	.050	-.110	-.402
0	8	-.384	.092	-.039	-.706	30	10	-.229	.063	-.026	-.457	60	12	-.438	.088	-.155	-.749
0	9	-.260	.079	.003	-.540	30	11	-.261	.048	-.127	-.422	60	13	-.238	.083	.043	-.516
0	10	-.266	.071	-.068	-.571	30	12	-.316	.074	-.060	-.563	60	14	-.187	.074	.065	-.454
0	11	-.224	.055	-.035	-.402	30	13	-.211	.083	.046	-.513	60	15	-.195	.084	.078	-.455
0	12	-.187	.074	.027	-.439	30	14	-.195	.074	.067	-.514	60	16	-.190	.080	.109	-.481
0	13	-.325	.087	-.047	-.621	30	15	-.205	.080	.073	-.483	70	1	-.211	.083	.090	-.550
0	14	-.001	.098	.382	-.293	30	16	-.151	.080	.121	-.426	70	2	-.188	.083	.095	-.475
0	15	-.258	.086	.035	-.557	40	1	-.246	.085	.021	-.563	70	3	-.202	.084	.049	-.491
0	16	-.171	.079	.088	-.422	40	2	-.236	.076	.032	-.542	70	4	-.192	.078	.070	-.493
10	1	-.263	.083	.018	-.627	40	3	-.222	.081	.061	-.509	70	5	-.196	.083	.084	-.545
10	2	-.242	.081	.080	-.510	40	4	-.217	.085	.048	-.507	70	6	-.210	.080	.030	-.487
10	3	-.259	.086	.042	-.565	40	5	-.238	.077	.007	-.532	70	7	-.382	.121	-.042	-.836
10	4	-.238	.085	.051	-.550	40	6	-.266	.081	.033	-.544	70	8	-.198	.080	.113	-.490
10	5	-.230	.090	.131	-.522	40	7	-.361	.099	-.070	-.792	70	9	-.199	.072	.055	-.482
10	6	-.210	.084	.073	-.472	40	8	-.205	.081	.067	-.541	70	10	-.198	.068	.058	-.427
10	7	-.231	.079	.059	-.532	40	9	-.218	.079	.013	-.485	70	11	-.222	.043	-.101	-.364
10	8	-.284	.082	-.018	-.628	40	10	-.237	.063	-.059	-.489	70	12	-.349	.083	-.086	-.607
10	9	-.239	.077	-.008	-.539	40	11	-.272	.047	-.149	-.416	70	13	-.227	.079	.049	-.523
10	10	-.215	.073	.037	-.436	40	12	-.387	.078	-.145	-.655	70	14	-.180	.080	.125	-.517
10	11	-.200	.052	-.034	-.345	40	13	-.243	.086	.020	-.519	70	15	-.185	.079	.044	-.466
10	12	-.220	.068	-.038	-.449	40	14	-.187	.074	.057	-.465	70	16	-.195	.078	.087	-.488
10	13	-.265	.082	-.013	-.613	40	15	-.215	.076	.037	-.465	80	1	-.185	.084	.105	-.487
10	14	-.123	.090	.250	-.416	40	16	-.167	.080	.110	-.483	80	2	-.182	.078	.041	-.468
10	15	-.248	.080	.045	-.538	50	1	-.230	.079	.025	-.492	80	3	-.188	.079	.111	-.497
10	16	-.156	.075	.121	-.432	50	2	-.236	.080	.019	-.573	80	4	-.170	.081	.079	-.459
20	1	-.281	.085	.005	-.597	50	3	-.222	.082	.046	-.533	80	5	-.183	.078	.063	-.435
20	2	-.251	.079	.022	-.485	50	4	-.211	.077	.061	-.483	80	6	-.185	.076	.081	-.462
20	3	-.247	.090	.050	-.557	50	5	-.229	.079	.033	-.514	80	7	-.389	.132	-.028	-.960
20	4	-.228	.085	.131	-.554	50	6	-.269	.081	-.009	-.550	80	8	-.183	.084	.076	-.477
20	5	-.227	.085	.023	-.550	50	7	-.445	.135	-.019	-.975	80	9	-.175	.075	.045	-.421
20	6	-.234	.082	.063	-.542	50	8	-.199	.081	.051	-.488	80	10	-.183	.065	.022	-.395
20	7	-.258	.085	.043	-.608	50	9	-.211	.070	.022	-.430	80	11	-.190	.036	-.082	-.298
20	8	-.236	.086	.072	-.656	50	10	-.233	.067	-.039	-.482	80	12	-.301	.093	-.004	-.662
20	9	-.229	.074	.053	-.486	50	11	-.277	.044	-.150	-.412	80	13	-.187	.079	.084	-.454
20	10	-.209	.068	.032	-.410	50	12	-.443	.084	-.159	-.705	80	14	-.181	.076	.060	-.435
20	11	-.229	.052	-.089	-.393	50	13	-.253	.079	-.009	-.534	80	15	-.175	.075	.122	-.413
20	12	-.253	.075	.008	-.560	50	14	-.186	.078	.052	-.490	80	16	-.182	.082	.072	-.466
20	13	-.250	.081	.021	-.525	50	15	-.217	.077	.034	-.478	90	1	-.169	.081	.137	-.416
20	14	-.189	.081	.118	-.459	50	16	-.176	.080	.076	-.438	90	2	-.161	.081	.110	-.474
20	15	-.234	.079	.021	-.502	60	1	-.215	.082	.062	-.471	90	3	-.164	.082	.109	-.447
20	16	-.147	.082	.121	-.470	60	2	-.220	.078	.068	-.511	90	4	-.156	.079	.105	-.401
30	1	-.268	.085	-.009	-.619	60	3	-.205	.087	.089	-.497	90	5	-.155	.080	.086	-.463
30	2	-.244	.075	.009	-.515	60	4	-.195	.078	.067	-.452	90	6	-.164	.080	.093	-.416

APPENDIX A -- PRESSURE DATA ; CONFIGURATION B : ARCO-PLANO,TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
90	7	-.390	.138	.013	-.992
90	8	-.164	.084	.106	-.457
90	9	-.152	.074	.100	-.428
90	10	-.147	.069	.067	-.406
90	11	-.158	.039	-.018	-.275
90	12	-.243	.096	.088	-.584
90	13	-.158	.078	.084	-.403
90	14	-.153	.080	.080	-.473
90	15	-.150	.078	.094	-.409
90	16	-.191	.084	.072	-.458
100	1	-.154	.088	.162	-.455
100	2	-.144	.079	.126	-.455
100	3	-.155	.086	.198	-.447
100	4	-.162	.083	.109	-.415
100	5	-.162	.078	.111	-.451
100	6	-.157	.084	.116	-.463
100	7	-.367	.132	.048	-.958
100	8	-.145	.084	.183	-.453
100	9	-.141	.077	.167	-.367
100	10	-.133	.065	.076	-.387
100	11	-.135	.042	-.019	-.273
100	12	-.204	.098	.076	-.587
100	13	-.153	.079	.118	-.406
100	14	-.153	.076	.104	-.466
100	15	-.139	.080	.148	-.404
100	16	-.178	.081	.081	-.467
110	1	-.119	.099	.269	-.466
110	2	-.144	.084	.204	-.424
110	3	-.175	.079	.117	-.458
110	4	-.179	.083	.112	-.457
110	5	-.198	.081	.052	-.476
110	6	-.186	.078	.091	-.465
110	7	-.436	.170	.031	-1.066
110	8	-.149	.082	.138	-.433
110	9	-.134	.079	.150	-.422
110	10	-.124	.067	.145	-.354
110	11	-.116	.037	.030	-.209
110	12	-.107	.081	.162	-.386
110	13	-.163	.082	.124	-.470
110	14	-.158	.077	.141	-.439
110	15	-.140	.075	.146	-.395
110	16	-.191	.080	.108	-.484
120	1	-.108	.098	.262	-.429
120	2	-.144	.087	.146	-.472
120	3	-.197	.085	.096	-.532
120	4	-.219	.094	.081	-.559
120	5	-.223	.088	.056	-.559
120	6	-.212	.082	.032	-.583
120	7	-.360	.143	.042	-1.011
120	8	-.119	.099	.208	-.477

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
120	9	-.116	.085	.166	-.405
120	10	-.118	.070	.134	-.348
120	11	-.117	.043	.016	-.235
120	12	-.105	.089	.217	-.481
120	13	-.176	.085	.121	-.475
120	14	-.166	.078	.101	-.444
120	15	-.136	.077	.112	-.424
120	16	-.215	.083	.099	-.546
130	1	-.112	.096	.247	-.438
130	2	-.109	.090	.305	-.427
130	3	-.244	.086	.029	-.630
130	4	-.321	.102	.019	-.707
130	5	-.338	.117	-.009	-.802
130	6	-.292	.107	.015	-.752
130	7	-.315	.134	.117	-1.078
130	8	-.086	.086	.215	-.387
130	9	.002	.086	.278	-.290
130	10	.017	.097	.301	-.261
130	11	-.036	.053	.175	-.219
130	12	-.086	.081	.198	-.336
130	13	-.216	.077	.058	-.471
130	14	-.152	.079	.129	-.404
130	15	-.090	.083	.227	-.410
130	16	-.222	.077	.040	-.527
140	1	-.091	.105	.379	-.454
140	2	-.116	.093	.270	-.422
140	3	-.278	.085	.016	-.623
140	4	-.353	.112	.010	-.765
140	5	-.441	.116	-.086	-.939
140	6	-.510	.165	-.027	-1.033
140	7	-.251	.078	.021	-.552
140	8	-.085	.095	.272	-.411
140	9	-.022	.092	.398	-.350
140	10	.072	.083	.371	-.167
140	11	.200	.058	.396	.045
140	12	.094	.107	.533	-.262
140	13	-.255	.084	.041	-.530
140	14	-.171	.079	.085	-.440
140	15	-.067	.076	.227	-.334
140	16	-.243	.077	.027	-.548
150	1	-.150	.099	.301	-.460
150	2	-.012	.133	.483	-.422
150	3	-.307	.097	.027	-.713
150	4	-.392	.121	.065	-.885
150	5	-.446	.128	-.058	-.923
150	6	-.540	.135	-.022	-.977
150	7	-.309	.082	.013	-.589
150	8	-.065	.108	.348	-.412
150	9	.015	.109	.509	-.349
150	10	.010	.084	.387	-.235

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
150	11	.181	.073	.372	-.030
150	12	.310	.121	.733	-.022
150	13	-.284	.088	.017	-.598
150	14	-.174	.081	.103	-.446
150	15	-.074	.084	.260	-.366
150	16	-.281	.085	.030	-.542
160	1	-.167	.093	.368	-.468
160	2	.047	.143	.659	-.400
160	3	-.349	.100	-.046	-.785
160	4	-.431	.125	-.013	-.864
160	5	-.486	.138	-.031	-1.035
160	6	-.469	.143	-.037	-1.070
160	7	-.295	.085	.083	-.649
160	8	-.015	.135	.536	-.392
160	9	.040	.101	.419	-.291
160	10	.062	.096	.401	-.253
160	11	.079	.054	.243	-.074
160	12	.344	.136	.777	-.119
160	13	-.347	.099	-.025	-.809
160	14	-.193	.085	.123	-.505
160	15	-.073	.082	.269	-.380
160	16	-.286	.087	-.004	-.624
170	1	-.180	.094	.231	-.528
170	2	-.130	.112	.330	-.586
170	3	-.332	.110	.073	-.953
170	4	-.408	.128	-.064	-1.012
170	5	-.466	.134	-.008	-1.045
170	6	-.521	.156	-.034	-1.111
170	7	-.333	.107	.015	-.816
170	8	.050	.136	.591	-.323
170	9	.056	.123	.543	-.286
170	10	.064	.114	.528	-.393
170	11	.174	.082	.403	-.071
170	12	.196	.131	.622	-.139
170	13	-.354	.114	.000	-.956
170	14	-.139	.095	.200	-.494
170	15	-.042	.092	.270	-.368
170	16	-.274	.093	.152	-.607
180	1	-.173	.099	.381	-.479
180	2	-.179	.095	.260	-.485
180	3	-.368	.127	.051	-.931
180	4	-.398	.137	-.035	-.910
180	5	-.421	.148	.004	-1.117
180	6	-.410	.129	.029	-.988
180	7	-.344	.102	-.008	-.889
180	8	.207	.156	.767	-.214
180	9	.033	.122	.490	-.318
180	10	.062	.146	.579	-.280
180	11	.054	.075	.284	-.204
180	12	.100	.135	.621	-.269

APPENDIX A -- PRESSURE DATA ; CONFIGURATION B : ARCO-PLANO,TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
180	13	-.167	.106	.224	-.498
180	14	-.084	.086	.273	-.339
180	15	.006	.091	.358	-.308
180	16	-.304	.104	.085	-.697
190	1	-.118	.108	.292	-.437
190	2	-.164	.098	.306	-.531
190	3	-.259	.101	.046	-.638
190	4	-.479	.152	-.015	-1.110
190	5	-.480	.144	-.048	-1.044
190	6	-.372	.123	-.004	-.903
190	7	-.322	.098	-.038	-.730
190	8	.164	.157	.762	-.358
190	9	.192	.140	.709	-.261
190	10	.132	.107	.515	-.203
190	11	.005	.055	.203	-.151
190	12	-.044	.115	.449	-.421
190	13	-.074	.106	.276	-.431
190	14	-.096	.088	.276	-.429
190	15	.058	.094	.483	-.267
190	16	-.191	.103	.110	-.622
200	1	.030	.133	.556	-.468
200	2	-.140	.100	.308	-.477
200	3	-.218	.086	.187	-.520
200	4	-.399	.132	-.030	-1.023
200	5	-.475	.151	-.026	-1.177
200	6	-.441	.139	.009	-1.038
200	7	-.304	.093	.011	-.680
200	8	.327	.139	.839	-.066
200	9	.076	.118	.608	-.325
200	10	.102	.122	.568	-.243
200	11	.097	.060	.357	-.051
200	12	-.037	.094	.375	-.355
200	13	.021	.111	.434	-.332
200	14	-.069	.089	.264	-.350
200	15	.075	.099	.467	-.233
200	16	-.092	.084	.181	-.547
210	1	-.058	.118	.429	-.415
210	2	-.136	.099	.217	-.442
210	3	-.245	.081	.015	-.615
210	4	-.530	.125	-.081	-1.091
210	5	-.411	.127	.010	-.986
210	6	-.430	.123	-.021	-1.000
210	7	-.315	.101	-.002	-.764
210	8	.228	.120	.844	-.173
210	9	.190	.099	.508	-.113
210	10	.037	.085	.362	-.243
210	11	.045	.047	.212	-.090
210	12	.020	.094	.361	-.282
210	13	.008	.105	.428	-.366
210	14	-.065	.091	.269	-.391

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
210	15	.105	.103	.533	-.224
210	16	-.004	.084	.276	-.289
220	1	-.118	.094	.185	-.481
220	2	-.050	.106	.324	-.358
220	3	-.262	.108	.058	-.794
220	4	-.387	.157	.055	-1.032
220	5	-.460	.115	-.077	-.889
220	6	-.318	.105	.054	-.713
220	7	-.297	.090	-.003	-.684
220	8	.010	.121	.483	-.386
220	9	.170	.109	.510	-.213
220	10	.098	.091	.428	-.221
220	11	-.023	.045	.102	-.208
220	12	-.031	.090	.387	-.306
220	13	.092	.128	.684	-.358
220	14	-.069	.087	.267	-.378
220	15	.002	.097	.389	-.375
220	16	.100	.093	.464	-.208
230	1	-.097	.100	.319	-.516
230	2	-.045	.104	.378	-.392
230	3	-.361	.160	.059	-1.072
230	4	-.296	.103	.003	-.711
230	5	-.399	.111	-.032	-.802
230	6	-.340	.092	-.006	-.755
230	7	-.261	.089	.078	-.565
230	8	-.013	.106	.374	-.430
230	9	.040	.094	.360	-.217
230	10	.018	.080	.245	-.222
230	11	-.012	.044	.144	-.144
230	12	-.055	.080	.255	-.316
230	13	.200	.116	.717	-.168
230	14	-.113	.093	.197	-.364
230	15	-.029	.078	.232	-.287
230	16	.142	.098	.493	-.163
240	1	-.113	.117	.312	-.492
240	2	-.038	.098	.273	-.383
240	3	-.694	.158	-.179	-1.359
240	4	-.272	.092	.007	-.658
240	5	-.296	.096	.014	-.644
240	6	-.272	.090	.006	-.608
240	7	-.234	.086	.048	-.545
240	8	-.088	.101	.287	-.554
240	9	-.076	.079	.183	-.369
240	10	-.076	.076	.206	-.304
240	11	-.066	.044	.073	-.199
240	12	-.083	.083	.239	-.351
240	13	.142	.115	.576	-.305
240	14	-.163	.096	.155	-.504
240	15	-.077	.077	.195	-.344
240	16	.119	.092	.542	-.187

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
250	1	-.170	.114	.338	-.547
250	2	-.078	.097	.263	-.427
250	3	-.730	.138	-.329	-1.259
250	4	-.223	.082	.079	-.575
250	5	-.235	.087	.066	-.540
250	6	-.226	.086	.065	-.531
250	7	-.209	.081	.032	-.494
250	8	-.276	.159	.218	-.874
250	9	-.116	.075	.123	-.398
250	10	-.113	.067	.123	-.360
250	11	-.113	.039	.035	-.225
250	12	-.122	.072	.104	-.361
250	13	.122	.112	.564	-.283
250	14	-.131	.097	.179	-.515
250	15	-.120	.078	.165	-.420
250	16	.135	.097	.475	-.168
260	1	-.217	.085	.086	-.557
260	2	-.130	.091	.163	-.491
260	3	-.622	.115	-.273	-1.051
260	4	-.179	.079	.050	-.505
260	5	-.196	.085	.078	-.625
260	6	-.175	.082	.111	-.487
260	7	-.183	.078	.112	-.461
260	8	-.473	.162	.057	-1.027
260	9	-.138	.071	.087	-.449
260	10	-.139	.069	.080	-.454
260	11	-.134	.041	-.013	-.258
260	12	-.141	.071	.102	-.357
260	13	.055	.101	.531	-.328
260	14	-.129	.107	.203	-.599
260	15	-.160	.078	.098	-.433
260	16	.166	.098	.496	-.117
270	1	-.234	.081	.113	-.501
270	2	-.153	.084	.128	-.480
270	3	-.603	.122	-.231	-1.098
270	4	-.179	.086	.095	-.466
270	5	-.164	.081	.105	-.511
270	6	-.155	.076	.156	-.387
270	7	-.164	.076	.122	-.435
270	8	-.546	.134	-.109	-1.125
270	9	-.182	.080	.079	-.441
270	10	-.155	.069	.077	-.429
270	11	-.155	.039	-.020	-.259
270	12	-.151	.069	.120	-.381
270	13	.003	.108	.464	-.382
270	14	-.108	.092	.191	-.459
270	15	-.222	.077	.089	-.490
270	16	.134	.098	.580	-.169
280	1	-.242	.087	.044	-.596
280	2	-.165	.081	.103	-.456

APPENDIX A -- PRESSURE DATA ; CONFIGURATION B : ARCO-PLANO,TEXAS

WD	TAP	CPMEAN	CPRMS	CPMAX	CPMIN
280	3	-.627	.120	-.153	-1.220
280	4	-.199	.083	.130	-.469
280	5	-.187	.081	.071	-.500
280	6	-.160	.075	.133	-.429
280	7	-.163	.084	.165	-.462
280	8	-.523	.125	-.090	-1.064
280	9	-.246	.092	.093	-.570
280	10	-.192	.071	.040	-.461
280	11	-.167	.035	-.050	-.285
280	12	-.166	.075	.086	-.424
280	13	-.032	.101	.334	-.352
280	14	-.080	.092	.232	-.418
280	15	-.243	.079	.049	-.510
280	16	.106	.100	.487	-.198
290	1	-.236	.080	.010	-.533
290	2	-.168	.080	.142	-.441
290	3	-.651	.140	-.147	-1.247
290	4	-.248	.072	.003	-.610
290	5	-.202	.083	.129	-.500
290	6	-.175	.087	.084	-.495
290	7	-.163	.079	.117	-.445
290	8	-.481	.092	-.159	-.777
290	9	-.319	.083	-.046	-.647
290	10	-.212	.069	.072	-.456
290	11	-.177	.044	-.059	-.343
290	12	-.162	.070	.091	-.403
290	13	-.098	.082	.190	-.368
290	14	-.046	.088	.290	-.327
290	15	-.269	.091	.075	-.608
290	16	.064	.090	.476	-.252
300	1	-.207	.087	.122	-.478
300	2	-.170	.074	.095	-.445
300	3	-.662	.130	-.260	-1.263
300	4	-.258	.085	.066	-.536
300	5	-.213	.075	.049	-.465
300	6	-.177	.077	.061	-.416
300	7	-.158	.076	.100	-.434
300	8	-.481	.086	-.181	-.786
300	9	-.323	.083	-.025	-.582
300	10	-.223	.061	-.031	-.421
300	11	-.183	.037	-.079	-.309
300	12	-.160	.067	.064	-.401
300	13	-.145	.086	.187	-.474
300	14	-.024	.085	.293	-.286
300	15	-.267	.077	.041	-.521
300	16	.035	.082	.330	-.288
310	1	-.203	.081	.107	-.517
310	2	-.178	.084	.144	-.430
310	3	-.724	.164	-.183	-1.306
310	4	-.293	.080	-.011	-.678
310	5	-.217	.084	.096	-.475
310	6	-.191	.078	.109	-.484
310	7	-.163	.080	.100	-.442
310	8	-.496	.090	-.194	-.811
310	9	-.342	.075	-.069	-.643
310	10	-.223	.070	.016	-.442
310	11	-.195	.035	-.087	-.292
310	12	-.168	.069	.049	-.408
310	13	-.214	.085	.049	-.570
310	14	-.021	.093	.312	-.348
310	15	-.256	.076	.034	-.564
310	16	-.017	.083	.302	-.301
320	1	-.194	.083	.090	-.505
320	2	-.191	.082	.144	-.461
320	3	-.538	.171	-.147	-1.128
320	4	-.269	.084	.027	-.558
320	5	-.224	.084	.094	-.495
320	6	-.203	.078	.045	-.483
320	7	-.167	.078	.088	-.524
320	8	-.496	.093	-.193	-.847
320	9	-.306	.078	-.060	-.565
320	10	-.225	.069	.042	-.449
320	11	-.207	.035	-.106	-.340
320	12	-.173	.067	.026	-.423
320	13	-.267	.086	.010	-.613
320	14	-.020	.095	.415	-.332
320	15	-.231	.078	.018	-.491
320	16	-.081	.081	.218	-.404
330	1	-.226	.081	.099	-.489
330	2	-.211	.082	.079	-.494
330	3	-.372	.098	-.038	-.885
330	4	-.268	.082	.056	-.561
330	5	-.240	.084	.047	-.511
330	6	-.207	.084	.063	-.542
330	7	-.183	.080	.110	-.442
330	8	-.531	.089	-.227	-.832
330	9	-.298	.078	-.045	-.611
330	10	-.242	.069	-.003	-.452
330	11	-.215	.038	-.094	-.353
330	12	-.184	.068	.040	-.406
330	13	-.328	.087	.003	-.680
330	14	-.034	.095	.331	-.352
330	15	-.215	.083	.088	-.525
330	16	-.123	.078	.192	-.373
340	1	-.224	.079	.059	-.478
340	2	-.226	.082	.030	-.539
340	3	-.348	.086	-.086	-.634
340	4	-.250	.080	.055	-.514
340	5	-.255	.084	.005	-.560
340	6	-.226	.086	.040	-.542
340	7	-.183	.089	.176	-.460
340	8	-.524	.099	-.099	-.918
340	9	-.286	.077	-.011	-.526
340	10	-.258	.068	-.036	-.502
340	11	-.232	.037	-.123	-.340
340	12	-.187	.076	.119	-.431
340	13	-.363	.089	-.081	-.675
340	14	.025	.106	.448	-.355
340	15	-.254	.091	.049	-.555
340	16	-.154	.082	.176	-.434
350	1	-.237	.079	.033	-.517
350	2	-.216	.078	.067	-.580
350	3	-.303	.078	-.060	-.580
350	4	-.236	.082	.086	-.557
350	5	-.242	.084	.037	-.581
350	6	-.221	.081	.036	-.531
350	7	-.178	.078	.101	-.463
350	8	-.460	.087	-.177	-.745
350	9	-.252	.073	.023	-.528
350	10	-.244	.067	-.043	-.511
350	11	-.223	.032	-.116	-.334
350	12	-.172	.067	.059	-.376
350	13	-.342	.087	-.024	-.636
350	14	.027	.092	.415	-.301
350	15	-.272	.083	.047	-.572
350	16	-.164	.073	.085	-.411

APPENDIX B

CONCENTRATION RATIOS

RUN # 1 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	SOURCE GP. 7 STACK HT. FIX CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	SOURCE GP. 1 STACK HT. 10 FT. CONC. RATIO
1	0	********	9813	.189E-03
2	0	********	1151	********
3	480	********	1149	********
4	489	********	1143	********
5	493	.910E-07	1129	********
6	513	.100E-05	1212	.700E-06
7	496	.227E-06	1195	.328E-06
8	490	********	1151	********
9	461	********	1122	********
10	482	********	1167	********
11	500	.409E-06	1128	********
14	548	.259E-05	1111	********
15	543	.237E-05	1186	.131E-06
16	510	.864E-06	1208	.613E-06
17	583	.418E-05	1203	.503E-06
18	577	.391E-05	1140	********
19	520	.132E-05	1161	********
20	68364	.309E-02	1094	********
21	91664	.415E-02	1041	********
22	47723	.215E-02	1079	********
23	43465	.195E-02	1047	********
24	10028	.434E-03	1124	********

RUN # 2 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	SOURCE GP. 7 STACK HT. FIX CONC. RATIO	SOURCE GP. 1 STACK HT. 20 FT. RAW (AREA)	SOURCE GP. 1 STACK HT. 20 FT. CONC. RATIO
1	521	********	3039	.256E-04
2	555	.141E-05	1915	.103E-05
20	60552	.273E-02	1767	********
21	88153	.399E-02	1802	********
22	48379	.218E-02	1767	********
23	44657	.201E-02	1818	********
24	9510	.409E-03	1817	********

* = Concentration is the same as the background level ($x \cong 0$).

RUN # 3 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	540	********	2682	.477E-05
2	580	.182E-05	2488	.525E-06
20	62120	.280E-02	2375	********
21	84397	.381E-02	2276	********
22	48738	.219E-02	2363	********
23	44551	.200E-02	2351	********
24	9772	.420E-03	2449	********

RUN # 4 — WIND DIR. 180

SAMPLE PT.	SOURCE GP.7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	567	********	3218	.219E-06
2	585	.819E-06	3180	********
20	58642	.264E-02	3028	********
21	81509	.368E-02	3029	********
22	48979	.220E-02	3028	********
23	45359	.204E-02	3082	********
24	9331	.399E-03	3096	********

RUN # 5 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	676	********	4363	.175E-04
2	689	.409E-06	3578	.306E-06
20	2342	.756E-04	3567	.656E-07
21	2523	.838E-04	3530	********
22	10428	.443E-03	3516	********
23	9471	.400E-03	3544	********
24	9230	.389E-03	3893	.720E-05

RUN # 6 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	838	********	4028	.241E-06
2	851	********	4031	.306E-06
20	2632	.808E-04	4033	.350E-06
21	2742	.858E-04	4068	.112E-05
22	10605	.444E-03	3938	********
23	9604	.398E-03	3986	********
24	9546	.395E-03	4026	.197E-06

RUN # 7 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	841	.318E-06	4351	.591E-06
2	850	.728E-06	4381	.125E-05
18	842	.364E-06	4366	.919E-06
20	2351	.690E-04	4402	.171E-05
21	2471	.745E-04	4449	.274E-05
22	11129	.468E-03	4282	********
23	10164	.424E-03	4356	.700E-06
24	8811	.363E-03	4285	********

RUN # 8 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	848	********	4958	********
2	851	.455E-07	4952	********
21	2755	.867E-04	5023	.136E-05
22	10558	.442E-03	4937	********
23	9733	.404E-03	4968	.153E-06
24	9633	.400E-03	4885	********

RUN # 9 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	69625	.313E-02	5004	********
2	2250	.643E-04	7659	.570E-04
3	38891	.173E-02	4995	********
4	63008	.283E-02	4882	********
5	59966	.269E-02	4955	********
6	25820	.114E-02	4957	********
7	8235	.337E-03	4934	********
8	5486	.212E-03	4977	********
9	3790	.134E-03	5032	********
10	2721	.857E-04	5040	********
11	1907	.487E-04	5058	.875E-07
14	855	.864E-06	5050	********
15	845	.409E-06	5070	.350E-06
16	833	********	5073	.416E-06
17	816	********	5125	.155E-05
18	816	********	5044	********
19	3329	.113E-03	4995	********
20	860	.109E-05	5063	.197E-06
21	915	.359E-05	5088	.744E-06
23	876	.182E-05	4872	********
24	0	********	10552	.120E-03

RUN # 10 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	20354	.888E-03	4751	********
2	1060	.101E-04	5265	.101E-04
3	4694	.175E-03	4695	********
4	8482	.348E-03	4720	********
5	8532	.350E-03	4669	********
6	4309	.158E-03	4678	********
7	1632	.361E-04	4781	********
8	1413	.261E-04	4764	********
9	1284	.202E-04	4784	********
10	1092	.115E-04	4762	********
11	946	.487E-05	4786	********
19	2112	.579E-04	4758	********
24	0	********	8565	.823E-04

RUN # 11 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6, STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	21257	.919E-03	569	********
2	731	.874E-05	645	.511E-06
3	4960	.196E-03	631	.213E-06
4	9451	.395E-03	575	********
5	9819	.412E-03	580	********
6	4089	.158E-03	618	********
7	1417	.392E-04	602	********
8	1188	.290E-04	626	.107E-06
9	964	.191E-04	608	********
10	0	********	619	********
11	663	.572E-05	676	.117E-05
19	1879	.597E-04	702	.173E-05
24	0	********	3614	.638E-04

RUN # 12 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	75314	.331E-02	1087	********
2	1747	.510E-04	1167	********
3	47995	.210E-02	1108	********
4	72675	.320E-02	1050	********
5	62442	.274E-02	1097	********
6	25623	.111E-02	1124	********
7	9925	.414E-03	1132	********
8	7091	.288E-03	1125	********
9	4922	.192E-03	1146	********
10	2885	.101E-03	1168	********
11	1629	.457E-04	1171	********
19	3525	.130E-03	1146	********
24	0	********	2495	.273E-04

RUN # 13 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	989	.162E-04	3128	.365E-04
2	648	.106E-05	4688	.698E-04
3	1023	.177E-04	1372	********
4	1132	.225E-04	1383	********
5	1077	.201E-04	1745	.708E-05
6	833	.927E-05	2520	.236E-04
7	0	********	1532	.254E-05
8	0	********	1488	.160E-05
9	675	.226E-05	1458	.959E-06
10	648	.106E-05	1934	.111E-04
11	628	.177E-06	1625	.452E-05
14	0	********	1440	.575E-06
15	0	********	1405	********
16	605	********	1432	.405E-06
17	606	********	1408	********
18	612	********	1380	********
19	1037	.183E-04	1387	********
20	0	********	1386	********
21	608	********	1400	********
22	596	********	1366	********
23	0	********	1387	********
24	7040	.285E-03	1932	.111E-04

RUN # 14 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	0	********	1435	.968E-05
2	0	********	1477	.106E-04
3	530	********	959	********
4	538	********	984	.639E-07
5	534	********	1022	.874E-06
6	528	********	1088	.228E-05
7	530	********	995	.298E-06
8	533	********	1008	.575E-06
9	523	********	977	********
10	530	********	1036	.117E-05
11	517	********	974	********
19	527	********	980	********
24	6332	.256E-03	1170	.403E-05

RUN # 15 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	532	********	1549	.234E-06
2	537	********	1605	.143E-05
3	527	********	1500	********
4	537	********	1491	********
5	524	********	1506	********
6	523	********	1518	********
7	519	********	1494	********
8	532	********	1544	.128E-06
9	522	********	1509	********
10	522	********	1517	********
11	533	********	1527	********
19	529	********	1489	********
24	8265	.343E-03	1762	.477E-05

RUN # 16 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	538	********	1639	.126E-05
2	646	.470E-05	17250	.334E-03
3	538	********	1623	.916E-06
4	539	********	1581	.213E-07
5	537	********	1585	.107E-06
6	528	********	1586	.128E-06
7	521	********	1668	.188E-05
8	528	********	2559	.209E-04
9	544	.177E-06	4898	.707E-04
10	558	.798E-06	5708	.880E-04
11	565	.111E-05	8277	.143E-03
14	539	********	1604	.511E-06
15	526	********	1601	.448E-06
16	526	********	1600	.426E-06
17	542	.887E-07	1626	.980E-06
18	538	********	2092	.109E-04
19	532	********	1571	********
20	164174	.726E-02	1268	********
21	393689	.174E-01	1323	********
22	1375	.370E-04	5820	.904E-04
23	593	.235E-05	5816	.903E-04
24	0	********	1560	********

RUN # 17 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX: RAW (AREA)	SOURCE GP. 7, STACK HT. FIX: CONC. RATIO	SOURCE GP. 1, STACK HT. 20 FT.: RAW (AREA)	SOURCE GP. 1, STACK HT. 20 FT.: CONC. RATIO
1	526	********	1568	********
2	543	.444E-06	3595	.425E-04
7	533	********	1597	********
8	526	********	1576	********
9	522	********	1592	********
10	527	********	1609	.128E-06
11	533	********	1623	.426E-06
14	531	********	1595	********
18	536	.133E-06	1592	********
19	532	********	1585	********
20	264455	.117E-01	1402	********
21	379806	.168E-01	1231	********
22	872	.150E-04	1665	.132E-05
23	575	.186E-05	1656	.113E-05
24	0	********	1553	********

RUN # 18 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX: RAW (AREA)	SOURCE GP. 7, STACK HT. FIX: CONC. RATIO	SOURCE GP. 1, STACK HT. 30 FT.: RAW (AREA)	SOURCE GP. 1, STACK HT. 30 FT.: CONC. RATIO
1	541	********	1809	********
2	551	********	2055	.343E-05
7	542	********	1826	********
11	542	********	1853	********
18	549	********	1839	********
19	573	.798E-06	1865	********
20	252538	.112E-01	1557	********
21	364927	.162E-01	1602	********
22	1624	.474E-04	1835	********
23	594	.173E-05	1885	********
24	0	********	1792	********

RUN # 19 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	704	********	1640	********
2	705	********	1662	.341E-06
7	702	********	1632	********
11	694	********	1620	********
18	710	.177E-06	1635	********
19	701	********	1610	********
20	250037	.111E-01	1435	********
21	364728	.161E-01	1258	********
22	1144	.194E-04	1633	********
23	765	.262E-05	1613	********
24	0	********	1589	*WAIT

RUN # 20 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	655	********	1907	.454E-05
2	753	.417E-05	17505	.337E-03
3	635	********	1702	.170E-06
4	639	********	1671	********
5	641	********	1675	********
6	653	********	1706	.256E-06
7	644	********	1686	********
8	647	********	1699	.107E-06
9	638	********	1669	********
10	646	********	1691	********
11	638	********	1666	********
14	646	********	1676	********
15	642	********	1683	********
16	641	********	1697	.639E-07
17	631	********	1676	********
18	650	********	1683	********
19	660	.444E-07	1674	********
20	7991	.325E-03	1618	********
21	10679	.444E-03	1657	********
22	2309	.732E-04	2674	.209E-04
23	661	.887E-07	3073	.294E-04
24	652	********	1645	********

RUN # 21 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 8, STZCK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	605	********	1702	********
2	627	.710E-06	3685	.416E-04
20	1612	.444E-04	1754	.426E-06
21	2669	.913E-04	1716	********
22	620	.399E-06	1880	.311E-05
23	604	********	1869	.288E-05

RUN # 22 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 8, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	614	********	2040	********
2	613	********	2119	.107E-05
20	1559	.417E-04	2070	.213E-07
21	2585	.872E-04	2088	.405E-06
22	630	.532E-06	2062	********
23	619	.444E-07	2075	.128E-06

RUN # 23 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	621	********	2074	********
2	640	.488E-06	3320	.248E-04
3	624	********	2116	********
4	631	.887E-07	2101	********
6	626	********	2097	********
7	629	********	2118	********
8	638	.399E-06	2136	********
9	737	.479E-05	2122	********
10	1686	.469E-04	2140	********
11	10144	.422E-03	2067	********
14	2463	.813E-04	2138	********
15	5206	.203E-03	2079	********
16	55604	.244E-02	2058	********
17	42929	.188E-02	2015	********
18	15379	.654E-03	2087	********
19	2610	.879E-04	2131	********
20	741	.497E-05	2128	********
21	933	.135E-04	2145	********
22	39119	.171E-02	4334	.464E-04
23	39877	.174E-02	4363	.470E-04
24	961	.147E-04	2082	********

RUN # 24 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	581	********	1400	********
2	577	********	1383	********
7	590	.444E-07	1394	********
8	626	.164E-05	1408	********
9	843	.113E-04	1399	********
10	2858	.101E-03	1381	********
11	15381	.656E-03	1348	********
14	3891	.146E-03	1379	********
15	8478	.350E-03	1378	********
17	35515	.155E-02	1337	********
18	13702	.582E-03	1389	********
19	2656	.917E-04	1391	********
20	653	.284E-05	1442	.448E-06
21	716	.563E-05	1427	.128E-06
22	43840	.192E-02	1451	.639E-06
23	43346	.190E-02	1409	********
24	962	.165E-04	1317	********

RUN # 25 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	580	********	1249	********
2	577	********	1238	********
8	574	********	1255	********
9	582	********	1259	********
10	845	.113E-04	1260	********
11	2585	.885E-04	1248	********
14	693	.457E-05	1274	********
15	852	.116E-04	1297	.170E-06
16	3707	.138E-03	1251	********
17	3223	.117E-03	1272	********
18	1450	.381E-04	1276	********
19	3043	.109E-03	1248	********
20	632	.186E-05	1287	********
21	666	.337E-05	1315	.554E-06
22	10744	.450E-03	1232	********
23	11062	.464E-03	1245	********
24	731	.625E-05	1175	********

RUN # 26 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
10	640	.976E-06	1534	********
11	1259	.284E-04	1524	********
14	631	.577E-06	1540	********
15	672	.239E-05	1545	********
16	2585	.872E-04	1514	********
17	3366	.122E-03	1533	********
18	1617	.443E-04	1523	********
19	3175	.113E-03	1519	********
22	8943	.369E-03	1494	********
23	9004	.372E-03	1510	********

RUN # 27 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	636	********	1993	********
2	652	********	2033	********
3	652	********	2001	********
4	660	.444E-07	2065	.852E-07
5	658	********	2008	********
6	646	********	2009	********
7	659	********	2031	********
8	655	********	2045	********
9	640	********	2277	.460E-05
10	665	.266E-06	2641	.124E-04
11	665	.266E-06	3244	.252E-04
14	669	.444E-06	2069	.170E-06
15	664	.222E-06	2054	********
16	680	.931E-06	2098	.789E-06
17	672	.577E-06	2051	********
18	679	.887E-06	2116	.117E-05
19	716	.253E-05	2076	.320E-06
20	687	.124E-05	2100	.831E-06
21	686	.120E-05	2066	.107E-06
24	642	********	1987	********

RUN #28 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
8	654	.111E-05	2133	.115E-05
9	631	.887E-07	2152	.156E-05
10	611	********	2150	.151E-05
11	624	********	2249	.362E-05
19	621	********	2067	********
20	614	********	2036	********
21	633	.177E-06	2053	********
22	631	.887E-07	3950	.399E-04
23	622	********	3956	.400E-04
24	611	********	2103	.511E-06

RUN # 29 | WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
8	462	********	259	********
9	476	********	263	********
10	466	********	310	********
11	510	.937E-06	292	********
19	455	********	252	********
20	451	********	296	********
21	459	********	291	********
22	489	********	815	.855E-05
23	469	********	787	.795E-05

RUN # 30 | WIND DIR. 135

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	13110	.563E-03	920	********
2	13324	.572E-03	917	********
3	7247	.301E-03	924	********
4	8370	.351E-03	921	********
5	8278	.347E-03	925	********
6	8469	.356E-03	921	********
7	10737	.457E-03	856	********
8	15154	.654E-03	934	********
9	21553	.939E-03	936	********
10	29051	.127E-02	914	********
11	31916	.140E-02	927	********
14	13489	.580E-03	930	********
15	13736	.591E-03	950	********
16	11410	.487E-03	926	********
17	40118	.177E-02	932	********
18	34861	.153E-02	904	********
19	586	.415E-05	942	********
20	2895	.107E-03	940	********
21	1481	.441E-04	968	********
22	6099	.250E-03	954	********
23	5684	.232E-03	958	********
24	0	********	1028	.103E-05

RUN # 31 WIND DIR. 135

	SOURCE GP. 8 STACK HT. 10 FT.		SOURCE GP. 2 STACK HT. 10 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	3736	.140E-03	4064	.591E-04
2	1040	.195E-04	1237	********
3	27421	.120E-02	1209	********
4	34061	.149E-02	1168	********
5	37140	.163E-02	1189	********
6	33009	.145E-02	1174	********
7	22802	.990E-03	1232	********
8	9385	.392E-03	1235	********
9	3685	.137E-03	1229	********
10	2106	.671E-04	1228	********
11	2206	.715E-04	1240	********
14	37630	.165E-02	1228	********
15	38965	.171E-02	1179	********
16	20330	.880E-03	1239	********
17	2570	.878E-04	1237	********
18	3324	.121E-03	1244	********
19	597	********	1283	********
20	539	********	1255	********
21	645	.192E-05	1254	********
22	773	.763E-05	1254	********
23	748	.651E-05	1275	********
24	557	********	1316	.193E-06

RUN # 32 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 8, STACK HT. 10 FT. RAW (AREA)	SOURCE GP. 8, STACK HT. 10 FT. CONC. RATIO	SOURCE GP. 2, STACK HT. 20 FT. RAW (AREA)	SOURCE GP. 2, STACK HT. 20 FT. CONC. RATIO
1	3544	.134E-03	1496	.186E-05
2	1077	.238E-04	1387	********
3	27564	.121E-02	1309	********
4	34043	.149E-02	1328	********
5	34740	.153E-02	1288	********
6	29192	.128E-02	1339	********
7	19365	.839E-03	1328	********
8	7683	.318E-03	1362	********
9	3236	.120E-03	1765	.763E-05
10	1908	.608E-04	1382	********
11	2050	.672E-04	1355	********
14	36011	.158E-02	1328	********
15	37127	.163E-02	1296	********
16	16868	.728E-03	1364	********
17	2511	.877E-04	1365	********
18	3172	.117E-03	1383	********
19	562	.803E-06	1365	********
20	544	********	1399	********
21	654	.491E-05	1424	.321E-06
22	795	.112E-04	1407	********
23	765	.986E-05	1398	********
24	556	.535E-06	1442	.707E-06

RUN # 33 | WIND DIR. 135

SAMPLE PT.	SOURCE GP. 8, STACK HT. 50 FT. RAW (AREA)	SOURCE GP. 8, STACK HT. 50 FT. CONC. RATIO	SOURCE GP. 2, STACK HT. 30 FT. RAW (AREA)	SOURCE GP. 2, STACK HT. 30 FT. CONC. RATIO
1	944	.155E-04	2050	********
2	618	.981E-06	2049	********
3	3526	.131E-03	1993	********
4	3930	.149E-03	1999	********
5	3334	.122E-03	1976	********
6	2290	.755E-04	2054	********
7	1378	.349E-04	2027	********
8	831	.105E-04	2020	********
9	643	.210E-05	2027	********
10	631	.156E-05	2024	********
11	652	.250E-05	2028	********
14	1151	.248E-04	2043	********
15	1132	.239E-04	2024	********
16	736	.624E-05	2032	********
17	677	.361E-05	2014	********
18	689	.415E-05	2052	********
19	586	********	2012	********
20	586	********	2024	********
21	595	********	2014	********
22	603	.312E-06	2066	********
23	588	********	2026	********
24	581	********	2054	********

RUN # 34 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	593	.111E-05	7582	.133E-03
2	555	********	1433	.793E-06
3	545	********	1360	********
4	552	********	1381	********
5	545	********	1366	********
6	549	********	1367	********
7	548	********	1368	********
8	546	********	1362	********
9	539	********	1353	********
10	556	********	1382	********
14	549	********	1352	********
15	552	********	1383	********
16	545	********	1381	********
17	560	********	1399	.643E-07
18	550	********	1386	********
19	626	.259E-05	1369	********
20	549	********	1377	********
21	552	********	1389	********
22	542	********	1380	********
23	543	********	1364	********
24	540	********	1364	********

RUN # 35 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	591	********	2354	.185E-04
2	589	********	1450	********

RUN # 36 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	620	.129E-05	7089	.122E-03
2	578	********	1408	********
3	635	.196E-05	8777	.158E-03
4	598	.312E-06	5639	.906E-04
5	592	.446E-07	2941	.328E-04
6	543	********	3016	.344E-04
7	591	********	3331	.412E-04
8	587	********	2105	.149E-04
9	597	.268E-06	1410	.214E-07
10	580	********	1389	********
11	573	********	1381	********
14	575	********	1562	.328E-05
15	580	********	1409	********
16	572	********	1395	********
17	585	********	1407	********
18	577	********	1405	********
19	568	********	1368	********
20	581	********	1388	********
21	590	********	1413	.857E-07
22	573	********	1404	********
23	575	********	1403	********
24	576	********	1405	********

RUN # 37 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	544	.178E-06	2808	.332E-04
2	529	********	1234	********
3	538	********	1907	.139E-04
4	541	.446E-07	1379	.255E-05
5	541	.446E-07	1407	.315E-05
6	536	********	1493	.499E-05
7	536	********	1471	.452E-05
9	533	********	1243	********
14	541	.446E-07	1274	.300E-06

RUN # 38 — WIND DIR. 135

SAMPLE PT.	SOURCE GP. 9, STACK HT. FIX: RAW (AREA)	SOURCE GP. 9, STACK HT. FIX: CONC. RATIO	SOURCE GP. 5, STACK HT. 40 FT.: RAW (AREA)	SOURCE GP. 5, STACK HT. 40 FT.: CONC. RATIO
1	538	********	1659	.364E-05
3	525	********	1476	********
4	537	********	1482	********
5	532	********	1460	********
6	533	********	1493	.857E-07
7	533	********	1492	.643E-07
8	531	********	1477	********
14	541	********	1729	.514E-05

RUN # 39 — WIND DIR. 000

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX: RAW (AREA)	SOURCE GP. 7, STACK HT. FIX: CONC. RATIO	SOURCE GP. 1, STACK HT. 10 FT.: RAW (AREA)	SOURCE GP. 1, STACK HT. 10 FT.: CONC. RATIO
1	588	********	1543	********
2	589	********	1541	********
3	652	.219E-05	3770	.470E-04
4	685	.366E-05	3315	.372E-04
5	700	.433E-05	2575	.214E-04
6	739	.607E-05	1836	.553E-05
7	761	.705E-05	1578	********
8	782	.798E-05	1558	********
9	821	.972E-05	1551	********
10	912	.138E-04	1604	.557E-06
11	1049	.199E-04	1558	********
14	901	.133E-04	1577	********
15	634	.138E-05	1574	********
16	655	.232E-05	1571	********
17	658	.245E-05	1553	********
18	919	.141E-04	1562	********
19	823	.981E-05	34060	.696E-03
20	204391	.909E-02	1234	********
21	182353	.811E-02	1131	********
22	1503	.401E-04	1536	********
23	705	.455E-05	1522	********
24	619	.714E-06	1505	********

RUN # 40 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	576	.268E-06	1982	.104E-04
4	588	.803E-06	1914	.894E-05
5	589	.847E-06	1768	.581E-05
6	600	.134E-05	1563	.141E-05
7	607	.165E-05	1483	********
8	609	.174E-05	1488	********
9	615	.201E-05	1463	********
10	644	.330E-05	1484	********
11	678	.482E-05	1465	********
14	695	.557E-05	1488	********
15	568	********	1482	********
16	590	.892E-06	1512	.321E-06
18	650	.357E-05	1488	********
19	664	.419E-05	14459	.278E-03
20	628258	.280E-01	0	********
21	379368	.169E-01	1219	********
22	0	********	1462	********
23	618	.214E-05	1468	********

RUN # 41 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
3	553	********	1569	.557E-06
4	564	********	1569	.557E-06
5	559	********	1535	********
6	579	.491E-06	1559	.343E-06
7	0	********	1526	********
19	614	.205E-05	6534	.107E-03
20	630477	.281E-01	1195	********
21	375658	.167E-01	1167	********

RUN # 42 | WIND DIR. 000

SOURCE GP. 7 / STACK HT. FIX | SOURCE GP. 1 / STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
3	559	********	1602	********
4	560	********	1634	********
5	555	********	1616	********
6	558	********	1604	********
7	555	********	1595	********
19	576	.178E-06	2848	.259E-04

RUN # 43 | WIND DIR. 000

SOURCE GP. 8 / STACK HT. 10 FT. | SOURCE GP. 2 / STACK HT. 10 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	574	********	1838	********
2	583	.892E-07	1848	********
3	572	********	1995	.289E-05
4	580	********	2020	.343E-05
5	583	.892E-07	2020	.343E-05
6	574	********	2071	.452E-05
7	571	********	2132	.583E-05
8	569	********	1974	.244E-05
9	578	********	1878	.386E-06
10	584	.134E-06	1913	.114E-05
11	573	********	1831	********
14	605	.107E-05	6741	.105E-03
15	593	.535E-06	4586	.584E-04
16	580	********	1916	.120E-05
17	573	********	1870	.214E-06
18	573	********	1848	********
19	612	.138E-05	6422	.978E-04
20	1678	.489E-04	1879	.407E-06
21	1242	.295E-04	1852	********
22	567	********	1835	********
23	555	********	1798	********
24	573	********	1808	********

RUN # 44 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 8 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	533	********	1234	.236E-06
4	539	********	1257	.729E-06
5	527	********	1222	********
6	536	********	1248	.536E-06
7	530	********	1248	.536E-06
8	529	********	1223	********
9	545	********	1230	.150E-06
15	544	********	1891	.143E-04
16	543	********	1247	.514E-06
17	534	********	1233	.214E-06
18	530	********	1203	********
19	546	********	2617	.299E-04
20	728	.776E-05	1219	********
21	677	.549E-05	1205	********

RUN # 45 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
4	563	.892E-07	1412	.643E-07
6	555	********	1426	.364E-06
14	544	********	1472	.135E-05
15	556	********	1499	.193E-05
19	550	********	2229	.176E-04
20	632	.317E-05	1400	********
21	606	.201E-05	1406	********

RUN # 46 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
14	481	********	407	********
15	465	********	379	********
19	498	********	634	.262E-05
20	496	********	369	********

RUN # 47 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	681	.680E-06	1932	********
2	656	********	1909	********
3	662	********	2010	.144E-05
4	648	********	2002	.126E-05
5	659	********	2071	.277E-05
6	658	********	2137	.421E-05
7	672	.272E-06	2366	.920E-05
8	659	********	2644	.153E-04
9	682	.726E-06	2965	.222E-04
10	673	.317E-06	2622	.148E-04
11	661	********	2073	.281E-05
14	665	********	2935	.216E-04
15	687	.952E-06	4295	.512E-04
16	731	.295E-05	9449	.164E-03
17	678	.544E-06	2114	.370E-05
18	661	********	1994	.109E-05
19	687	.952E-06	1927	********
20	693	.122E-05	1917	********
21	681	.680E-06	1884	********
22	675	.408E-06	1923	********
23	663	********	1912	********
24	657	********	1878	********

RUN # 48 — WIND DIR. 000

Source GP. 6, Stack HT. 30 FT. / Source GP. 3, Stack HT. 20 FT.

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	628	.127E-05	1450	********
2	605	.227E-06	1464	.654E-07
3	616	.726E-06	1484	.501E-06
4	592	********	1456	********
5	595	********	1465	.872E-07
6	603	.136E-06	1496	.763E-06
7	590	********	1500	.850E-06
8	588	********	1528	.146E-05
9	594	********	1582	.264E-05
10	596	********	1548	.190E-05
11	590	********	1468	.153E-06
14	605	.227E-06	1660	.434E-05
15	593	********	1935	.103E-04
16	603	.136E-06	2970	.329E-04
17	605	.227E-06	1506	.981E-06
18	585	********	1436	********
19	621	.952E-06	1456	********
20	698	.444E-05	1427	********
21	708	.490E-05	1464	.654E-07
22	608	.363E-06	1463	.436E-07
23	610	.453E-06	1445	********
24	594	********	1422	********

RUN # 49 — WIND DIR. 000

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
6	649	********	1788	********
7	659	********	1789	********
8	651	********	1823	.262E-06
9	641	********	1814	.654E-07
10	651	********	1825	.305E-06
11	639	********	1767	********
14	661	.907E-07	1863	.113E-05
15	651	********	1892	.177E-05
16	648	********	2029	.475E-05
17	638	********	1813	.436E-07
19	694	.159E-05	1810	********
20	663	.181E-06	1762	********
21	661	.907E-07	1753	********

RUN # 50 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	621	.907E-07	1693	.828E-06
2	612	********	1657	.436E-07
3	1582	.437E-04	1662	.153E-06
4	1986	.620E-04	1678	.501E-06
5	2631	.912E-04	1628	********
6	3829	.146E-03	1644	********
7	5299	.212E-03	1625	********
8	5837	.237E-03	1633	********
9	6616	.272E-03	1610	********
10	8862	.374E-03	1631	********
11	12951	.559E-03	1596	********
14	1646	.466E-04	2218	.123E-04
15	1642	.464E-04	1761	.231E-05
16	2234	.732E-04	2660	.219E-04
17	2432	.822E-04	1653	********
18	9566	.406E-03	1636	********
19	730	.503E-05	3153	.326E-04
20	28816	.128E-02	1592	********
21	26239	.116E-02	1552	********
22	1268	.294E-04	1692	.806E-06
23	961	.155E-04	1673	.392E-06
24	0	********	0	********

RUN # 51 — WIND DIR. 000

SOURCE GP. 9, STACK HT. FIX — SOURCE GP. 5, STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
3	1601	.476E-04	1328	.458E-06
4	2079	.692E-04	1282	********
5	2792	.102E-03	1292	********
6	4164	.164E-03	1278	********
7	5582	.228E-03	1282	********
8	6127	.253E-03	1268	********
9	7077	.296E-03	1271	********
10	9299	.397E-03	1245	********
11	13837	.602E-03	1246	********
14	1629	.488E-04	1543	.514E-05
15	1652	.499E-04	1348	.893E-06
16	2282	.785E-04	1466	.346E-05
17	2545	.904E-04	1293	********
18	10185	.437E-03	1257	********
19	648	.435E-05	1940	.138E-04
20	28437	.126E-02	1210	********
21	26135	.116E-02	1239	********
22	1369	.371E-04	1301	********
23	957	.184E-04	1335	.610E-06

RUN # 52 — WIND DIR. 000

SOURCE GP. 9, STACK HT. FIX — SOURCE GP. 5, STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
14	1565	.466E-04	2362	.231E-04
15	1615	.489E-04	1384	.181E-05
16	2228	.767E-04	1972	.146E-04
19	621	.381E-05	1522	.482E-05

RUN # 53 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	540	********	1683	.240E-06
2	533	********	1648	********
3	540	********	2345	.147E-04
4	536	********	2465	.173E-04
5	546	.227E-06	2526	.186E-04
6	541	********	2453	.170E-04
7	548	.317E-06	2185	.112E-04
8	548	.317E-06	2035	.791E-05
9	537	********	1811	.303E-05
10	628	.395E-05	1724	.113E-05
11	544	.136E-06	1663	********
14	776	.107E-04	10796	.199E-03
15	612	.322E-05	10527	.193E-03
16	551	.453E-06	3838	.472E-04
17	552	.499E-06	2009	.734E-05
18	554	.590E-06	1770	.214E-05
19	551	.453E-06	1664	********
20	203302	.920E-02	13316	.254E-03
21	69508	.313E-02	20316	.406E-03
22	1091	.249E-04	1850	.388E-05
23	562	.952E-06	1647	********

RUN # 54 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	482	********	671	.174E-06
4	473	********	656	********
5	476	********	664	.218E-07
6	469	********	664	.218E-07
7	471	********	663	********
8	456	********	641	********
9	482	********	652	********
10	468	********	634	********
11	477	********	655	********
14	491	********	1259	.130E-04
15	481	********	1228	.123E-04
16	484	********	875	.462E-05
17	478	********	686	.501E-06
20	530664	.240E-01	3030	.516E-04
21	75424	.340E-02	6076	.118E-03

RUN # 55 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
14	493	********	905	.370E-06
15	498	********	941	.115E-05
16	487	********	897	.196E-06

RUN # 56 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	513	********	1341	.392E-06
4	504	********	1324	.218E-07
5	505	********	1346	.501E-06
6	502	********	1381	.126E-05
7	507	********	1610	.625E-05
8	505	********	1776	.987E-05
9	508	********	1689	.798E-05
10	496	********	1499	.384E-05
11	506	********	1378	.120E-05
14	507	********	1397	.161E-05
15	512	********	1520	.429E-05
16	552	.177E-05	6894	.121E-03
17	554	.186E-05	8777	.162E-03
18	515	.907E-07	1712	.848E-05
19	516	.136E-06	1328	.109E-06
20	1374	.390E-04	188363	.408E-02
21	762	.113E-04	234065	.507E-02

RUN # 57 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8, STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
7	509	.363E-06	1104	.567E-06
8	522	.952E-06	1102	.523E-06
9	537	.163E-05	1126	.105E-05
10	550	.222E-05	1174	.209E-05
11	524	.104E-05	1156	.170E-05
14	513	.544E-06	1142	.139E-05
15	501	********	1133	.120E-05
16	611	.499E-05	1603	.114E-04
17	525	.109E-05	1814	.160E-04
18	524	.104E-05	1135	.124E-05
20	749	.112E-04	5684	.100E-03
21	843	.155E-04	7789	.146E-03

RUN # 58 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
10	518	********	1175	********
11	493	********	1158	********
16	496	********	1243	********
17	522	********	1252	********
20	584	.209E-05	2654	.303E-04
21	563	.113E-05	3495	.486E-04

RUN # 59R — WIND DIR. 315

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	582	********	1073	********
2	613	.771E-06	1125	********
3	586	********	1148	.370E-06
4	594	********	1098	********
5	582	********	1090	********
6	571	********	1104	********
7	576	********	1144	.283E-06
8	570	********	1193	.135E-05
9	574	********	1218	.190E-05
10	574	********	1201	.153E-05
11	592	********	1193	.135E-05
14	580	********	1083	********
15	547	********	1028	********
16	564	********	1074	********
17	606	.453E-06	2504	.299E-04
18	600	.181E-06	1637	.110E-04
19	540	********	1058	********
20	607	.499E-06	3798	.581E-04
21	588	********	3059	.420E-04
22	569	********	1052	********
23	603	.317E-06	1113	********

RUN # 60R — WIND DIR. 315

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	527	********	880	********
2	531	********	904	********
3	564	********	955	********
4	567	.136E-06	943	********
5	564	********	935	********
6	578	.635E-06	953	********
7	527	********	903	********
8	558	********	981	.479E-06
9	564	********	944	********
10	551	********	922	********
11	523	********	909	********
17	536	********	1050	.198E-05
18	560	********	1024	.142E-05
20	594	.136E-05	1633	.147E-04
21	578	.635E-06	1554	.130E-04

RUN # 61R WINND DIR. 315

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
17	600	.639E-06	1179	.877E-06
18	576	********	1112	********
20	586	********	1289	.329E-05
21	556	********	1131	********

RUN # 62 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
2	590	********	1394	********
3	604	.228E-06	1416	.132E-06
5	644	.205E-05	1387	********
6	726	.580E-05	1427	.373E-06
7	1450	.388E-04	1394	********
8	2397	.821E-04	1324	********
9	2818	.101E-03	1342	********
10	3203	.119E-03	1328	********
11	3642	.139E-03	1344	********
14	651	.237E-05	1502	.202E-05
15	676	.351E-05	1871	.101E-04
16	832	.106E-04	1481	.156E-05
17	1127	.241E-04	1502	.202E-05
18	2843	.102E-03	1350	********
19	604	.228E-06	1429	.417E-06
20	1179	.265E-04	15454	.308E-03
21	1052	.207E-04	26564	.552E-03
22	1080	.220E-04	1407	********
23	793	.885E-05	1386	********

RUN # 63 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
5	587	.173E-05	1322	********
6	648	.452E-05	1351	.329E-06
7	1257	.323E-04	1329	********
8	2143	.727E-04	1265	********
9	2565	.920E-04	1271	********
10	2966	.110E-03	1255	********
11	3570	.138E-03	1272	********
14	583	.155E-05	1373	.811E-06
15	597	.219E-05	1425	.195E-05
16	731	.831E-05	1489	.336E-05
17	1015	.213E-04	1373	.811E-06
18	3118	.117E-03	1282	********
20	1096	.250E-04	6080	.104E-03
21	915	.167E-04	11456	.222E-03

RUN # 64 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
5	560	.137E-05	1417	********
6	603	.333E-05	1439	********
7	1070	.246E-04	1414	********
8	1819	.588E-04	1423	********
9	2410	.858E-04	1367	********
10	2854	.106E-03	1356	********
11	3487	.135E-03	1364	********
14	544	.639E-06	1515	.151E-05
15	561	.141E-05	1960	.113E-04
16	673	.653E-05	1500	.118E-05
17	937	.186E-04	1434	********
18	3126	.118E-03	1368	********
20	1016	.222E-04	2698	.275E-04
21	831	.137E-04	4396	.647E-04

RUN # 65 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 54 FT. RAW (AREA)	CONC. RATIO
15	553	.228E-05	1912	.102E-04
16	666	.744E-05	1526	.171E-05
20	984	.220E-04	1578	.285E-05
21	794	.133E-04	1766	.697E-05

RUN # 66 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	520	********	1551	********
2	508	********	1534	********
3	531	.365E-06	1612	.154E-06
4	507	********	1588	********
5	485	********	1515	********
6	505	********	1580	********
7	505	********	1587	********
8	486	********	1543	********
9	506	********	1565	********
10	507	********	1561	********
11	486	********	1520	********
14	487	********	1541	********
15	504	********	1574	********
16	506	********	1582	********
17	519	********	1610	.110E-06
18	484	********	1537	********
19	518	********	1594	********
20	178783	.814E-02	1317	********
21	115048	.523E-02	1386	********
22	0	********	1499	********
23	530	.319E-06	1521	********

RUN # 67 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	516	********	1499	********
2	491	********	1441	********
3	495	********	1589	.167E-05
4	490	********	1519	.132E-06
5	518	********	1513	********
6	508	********	1482	********
7	524	********	1529	.351E-06
8	497	********	1436	********
9	515	********	1490	********
10	519	********	1514	.219E-07
11	515	********	1510	********
14	531	********	1550	.811E-06
15	531	********	1543	.658E-06
16	541	********	1521	.175E-06
17	511	********	1485	********
18	534	********	1549	.790E-06
19	531	********	1541	.614E-06
20	0	********	1434	********
21	686	.662E-05	1540	.592E-06

RUN # 68 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	526	********	1356	********
2	540	.913E-07	1415	.395E-06
3	523	********	1741	.754E-05
4	520	********	1579	.399E-05
5	523	********	1463	.145E-05
6	528	********	1453	.123E-05
7	522	********	1408	.241E-06
8	530	********	1411	.307E-06
9	518	********	1365	********
10	522	********	1378	********
11	521	********	1389	********
14	534	********	2473	.236E-04
15	535	********	1940	.119E-04
16	527	********	1388	********
17	522	********	1378	********
18	522	********	1376	********
19	549	.502E-06	6546	.113E-03
20	630	.420E-05	1397	********
21	554	.730E-06	1383	********

RUN # 69 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	566	********	1482	.329E-06
4	560	********	1474	.154E-06
5	579	.913E-07	1554	.191E-05
6	554	********	1447	********
14	546	********	1498	.680E-06
15	562	********	1544	.169E-05
16	552	********	1463	********
19	557	********	1705	.522E-05

RUN # 70 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
3	599	********	1662	********
4	614	.456E-07	1756	.158E-05
5	602	********	1677	********
14	595	********	1676	********
15	614	.456E-07	1746	.136E-05
16	597	********	1657	********
19	645	.146E-05	1756	.158E-05

RUN #71 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	879	.110E-04	1970	********
2	1679	.476E-04	1922	********
3	26630	.119E-02	1849	********
4	27904	.124E-02	1820	********
5	29289	.131E-02	1821	********
6	30000	.134E-02	1838	********
7	30397	.136E-02	1804	********
8	31015	.139E-02	1864	********
9	31279	.140E-02	1806	********
10	32530	.146E-02	1860	********
11	33325	.149E-02	1802	********
14	21367	.946E-03	1850	********
15	22323	.990E-03	1862	********
16	19648	.868E-03	1936	********
17	10258	.439E-03	1853	********
18	11349	.489E-03	1904	********
19	7773	.326E-03	6343	.958E-04
20	709	.329E-05	1982	.132E-06
21	741	.475E-05	1881	********
22	10614	.455E-03	1869	********
23	8654	.366E-03	1880	********

RUN # 72 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT.30 FT. RAW (AREA)	CONC. RATIO
9	33552	.151E-02	1422	********
10	34604	.155E-02	1372	********
11	35955	.161E-02	1403	********
15	23141	.103E-02	1422	********
19	9548	.410E-03	2560	.250E-04

RUN # 73
WIND DIR. 225

SOURCE GP. 4
STACK HT. 20 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
1	190	********
2	11902	.263E-03
3	207	.270E-06
4	292	.218E-05
5	427	.522E-05
6	456	.587E-05
7	652	.103E-04
8	494	.673E-05
9	274	.178E-05
10	221	.585E-06
11	223	.630E-06
12	189	********
13	196	.225E-07
14	206	.248E-06
15	206	.248E-06
16	209	.315E-06
19	190	********
21	200	.113E-06
22	1060	.195E-04
23	1164	.218E-04
24	186	********

RUN # 74 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	506	.609E-06	636	.135E-05
2	509	.749E-06	2784	.497E-04
3	492	********	577	.225E-07
4	481	********	608	.720E-06
5	496	.140E-06	648	.162E-05
6	479	********	608	.720E-06
7	511	.843E-06	689	.254E-05
8	504	.515E-06	618	.945E-06
9	721	.107E-04	575	********
10	5218	.221E-03	567	********
11	20700	.946E-03	543	********
12	513	.936E-06	573	********
13	482	********	586	.225E-06
14	3444	.138E-03	593	.383E-06
15	7149	.312E-03	573	********
16	46143	.214E-02	555	********
19	2004	.708E-04	582	.135E-06
20	489	********	582	.135E-06
21	512	.890E-06	582	.135E-06
22	32517	.150E-02	645	.155E-05
23	30064	.138E-02	631	.124E-05

RUN # 75
WIND DIR. 225

SOURCE GP. 4
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
2	1312	.146E-04
4	736	.169E-05
5	692	.698E-06
6	673	.270E-06
7	692	.698E-06
8	679	.405E-06
22	699	.855E-06
23	703	.945E-06

RUN # 76
WIND DIR. 225

SOURCE GP. 4
STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
2	939	.185E-05
4	825	********
5	823	********
6	842	********
7	838	********
8	871	.315E-06
22	845	********
23	833	********

RUN # 77 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	56171	.261E-02	7592	.148E-03
2	586	.351E-05	1037	.450E-06
3	45209	.209E-02	2731	.386E-04
4	59598	.277E-02	2856	.414E-04
5	35341	.163E-02	1020	.675E-07
6	11766	.527E-03	998	********
7	2356	.864E-04	1004	********
8	935	.199E-04	1034	.383E-06
9	598	.407E-05	1014	********
10	541	.140E-05	1027	.225E-06
11	535	.112E-05	1045	.630E-06
12	1599	.509E-04	1016	********
13	44236	.205E-02	937	********
14	13321	.600E-03	986	********
15	596	.398E-05	1025	.180E-06
16	518	.328E-06	1019	.450E-07
19	4696	.196E-03	989	********
20	535	.112E-05	1050	.743E-06
22	523	.562E-06	1008	********
24	539	.131E-05	1031	.315E-06

RUN # 78 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	19372	.882E-03	2854	.460E-04
3	7204	.312E-03	1268	.103E-04
4	9380	.414E-03	1053	.547E-05
5	5317	.224E-03	793	********
6	1712	.547E-04	782	********
7	658	.538E-05	801	********
8	556	.609E-06	806	********
12	571	.131E-05	813	.675E-07
13	1858	.616E-04	781	********
14	540	********	800	********
19	1745	.563E-04	779	********

RUN # 79
WIND DIR. 180

SOURCE GP. 4
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
1	2521	.374E-04
3	1014	.344E-05
4	962	.227E-05

RUN # 80
WIND DIR. 180

SOURCE GP. 4
STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
1	1313	.711E-05
3	987	********
4	974	********

RUN # 81 — WIND DIR. 157.5

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	SOURCE GP. 6, STACK HT. 30 FT. CONC. RATIO	SOURCE GP. 4, STACK HT. 20 FT. RAW (AREA)	SOURCE GP. 4, STACK HT. 20 FT. CONC. RATIO
1	501	********	220	********
2	492	********	217	********
3	3053	.115E-03	319	.176E-05
4	698	.781E-05	219	********
5	483	********	214	********
12	70845	.321E-02	205	********
13	866	.155E-04	228	********
14	585	.265E-05	239	********
15	508	********	231	********
19	1993	.670E-04	232	********

RUN # 82 — WIND DIR. 157.5

SAMPLE PT.	SOURCE GP. 6, STACK HT. 50 FT. RAW (AREA)	SOURCE GP. 6, STACK HT. 50 FT. CONC. RATIO	SOURCE GP. 4, STACK HT. 30 FT. RAW (AREA)	SOURCE GP. 4, STACK HT. 30 FT. CONC. RATIO
3	1060	.221E-04	703	********
4	611	.160E-05	731	********
5	586	.457E-06	715	********
12	3845	.149E-03	710	********
13	581	.228E-06	689	********
19	2475	.868E-04	688	********

RUN # 83 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 9, STACK HT. FIX: RAW (AREA)	SOURCE GP. 9, STACK HT. FIX: CONC. RATIO	SOURCE GP. 4, STACK HT. 20 FT: RAW (AREA)	SOURCE GP. 4, STACK HT. 20 FT: CONC. RATIO
2	590	********	1086	********
3	606	********	1135	.220E-06
4	602	********	1098	********
5	626	********	1125	********
6	593	********	1080	********
7	599	********	1114	********
8	618	********	1133	.176E-06
9	593	********	1090	********
10	592	********	1096	********
11	604	********	1108	********
12	612	********	1149	.527E-06
13	626	********	1130	.110E-06
14	603	********	1130	.110E-06
15	612	********	1151	.571E-06
16	605	********	1149	.527E-06
19	644	.823E-06	7278	.135E-03
20	28810	.129E-02	1019	********
21	27133	.121E-02	1020	********
22	1305	.310E-04	1117	********
23	1093	.213E-04	1100	********

RUN # 84
WIND DIR. 000

SOURCE GP. 1
STACK HT. 10 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
3	1584	.224E-05
4	1676	.426E-05
5	1784	.663E-05
6	2003	.114E-04
7	2146	.146E-04
8	2188	.155E-04
9	2194	.156E-04
10	2196	.157E-04
11	2131	.143E-04
12	1647	.362E-05
13	8726	.159E-03
14	1984	.110E-04
15	1857	.824E-05
16	2564	.238E-04
19	55589	.119E-02

RUN # 85
WIND DIR. 000

SOURCE GP. 1
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
3	1753	.922E-06
4	1743	.703E-06
5	1717	.132E-06
6	1727	.351E-06
7	1744	.725E-06
8	1715	.878E-07
9	1718	.154E-06
10	1707	********
11	1713	.439E-07
12	1725	.307E-06
13	2184	.104E-04
14	1726	.329E-06
15	1736	.549E-06
16	1718	.154E-06
19	10421	.191E-03

RUN # 86
WIND DIR. 315

SOURCE GP. 1
STACK HT. 10 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
3	2081	.512E-05
4	2232	.843E-05
5	2288	.966E-05
6	2361	.113E-04
7	2348	.110E-04
8	2431	.128E-04
9	2514	.146E-04
10	2608	.167E-04
11	2654	.177E-04
14	8635	.149E-03
15	8383	.144E-03
16	4575	.599E-04
19	1896	.105E-05

RUN # 87
WIND DIR. 315

SOURCE GP. 1
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
3	1910	********
4	1946	.791E-06
5	1914	.878E-07
6	1941	.681E-06
7	1922	.264E-06
8	1949	.856E-06
9	1909	********
10	1917	.154E-06
11	1918	.176E-06
13	1924	.307E-06
14	1948	.834E-06
15	1957	.103E-05
19	1946	.791E-06

RUN # 88
WIND DIR. 337.5

SOURCE GP. 4
STACK HT. 20 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
3	2348	.285E-06
4	2349	.307E-06
5	2338	.659E-07
6	2353	.395E-06
7	2328	********
8	2315	********
12	2425	.198E-05
13	2371	.791E-06
19	3437	.242E-04

RUN # 89 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	636	.708E-05	2138	.198E-06
2	1193	.325E-04	2173	.966E-06
3	30126	.135E-02	2013	********
4	31069	.140E-02	2031	********
5	31923	.144E-02	2033	********
6	33328	.150E-02	2071	********
7	33667	.152E-02	2004	********
8	34249	.154E-02	2022	********
9	34265	.154E-02	2004	********
10	35669	.161E-02	2055	********
11	36529	.165E-02	1984	********
12	11243	.492E-03	10716	.189E-03
13	11754	.515E-03	6208	.896E-04
14	23055	.103E-02	2079	********
15	24309	.109E-02	2062	********
16	22448	.100E-02	2093	********
19	104100	.474E-02	2082	********
20	468	********	2068	********
21	551	.320E-05	2030	********
22	10854	.474E-03	2101	********
23	8833	.382E-03	2072	********

RUN # 90
WIND DIR. 315

SOURCE GP. 2
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO
12	1539	.149E-05
13	1493	.483E-06

RUN # 101 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	947	.220E-04	76778	.167E-02
2	480	.640E-06	616	.119E-05
3	490	.110E-05	621	.130E-05
4	456	********	579	.373E-06
5	456	********	580	.395E-06
6	456	********	576	.307E-06
7	459	********	561	********
8	462	********	562	********
9	463	********	565	.659E-07
10	497	.142E-05	613	.112E-05
11	478	.548E-06	566	.878E-07
12	460	********	563	.220E-07
13	464	********	568	.132E-06
14	461	********	548	********
15	482	.731E-06	617	.121E-05
16	460	********	558	********
19	461	********	570	.176E-06
20	12365	.544E-03	543	********
21	18644	.831E-03	567	.110E-06
22	12994	.573E-03	540	********
23	12505	.550E-03	557	********
24	2053	.725E-04	595	.725E-06

RUN # 102 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	562	.480E-05	17733	.381E-03
2	473	.731E-06	340	********
3	469	.548E-06	393	.571E-06
4	503	.210E-05	400	.725E-06
15	465	.366E-06	420	.116E-05
16	457	********	422	.121E-05
19	460	.137E-06	423	.123E-05
20	13132	.579E-03	364	********
21	20128	.899E-03	361	********
22	14294	.632E-03	368	.220E-07
23	13765	.608E-03	372	.110E-06
24	2160	.778E-04	385	.395E-06

RUN # 103 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	517	.279E-05	3214	.631E-04

RUN # 104 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	640	.215E-05	995	.740E-05

RUN # 105 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	743	.109E-04	5842	.110E-03
2	502	********	2308	.321E-04
3	479	********	833	********
4	478	********	820	********
5	694	.864E-05	993	.327E-05
6	498	********	801	********
8	502	********	901	.125E-05
9	533	.128E-05	1210	.804E-05
10	507	.914E-07	856	.264E-06
11	504	********	824	********
12	495	********	817	********
13	481	********	811	********
14	475	********	800	********
15	521	.731E-06	1223	.832E-05
16	522	.777E-06	857	.285E-06
19	494	********	842	********
20	471	********	0	********
21	29106	.131E-02	804	********
22	18836	.838E-03	793	********
23	18034	.801E-03	836	********
24	4306	.174E-03	1205	.793E-05

RUN # 106 WIND DIR. 180

	SOURCE GP. 8 STACK HT. 10 FT.		SOURCE GP. 2 STACK HT. 20 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	483	********	1773	.229E-04
2	643	.672E-05	951	.481E-05

END OF FILE

RUN # 109 WIND DIR. 180

	SOURCE GP. 6 STACK HT. 30 FT.		SOURCE GP. 3 STACK HT. 10 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	28967	.130E-02	749	********
2	907	.190E-04	47583	.103E-02
3	35633	.161E-02	758	********
4	40364	.182E-02	745	********
5	25040	.112E-02	745	********
6	9003	.389E-03	789	********
7	2927	.111E-03	774	********
8	1250	.346E-04	793	********
9	643	.690E-05	873	.156E-05
10	542	.228E-05	812	.220E-06
11	514	.101E-05	833	.681E-06
12	5800	.243E-03	793	********
13	60501	.274E-02	694	********
14	863	.170E-04	859	.125E-05
15	721	.105E-04	811	.198E-06
16	542	.228E-05	791	********
19	21085	.941E-03	749	********
20	549	.260E-05	845	.944E-06
21	614	.558E-05	844	.922E-06
22	526	.155E-05	794	********
24	510	.823E-06	1827	.225E-04

RUN # 110 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	28728	.129E-02	668	********
2	620	.480E-05	4296	.782E-04
3	26497	.119E-02	671	********
4	29415	.132E-02	641	********
5	16249	.719E-03	665	********
6	4312	.174E-03	701	********
7	1146	.288E-04	681	********
8	647	.603E-05	688	********
9	533	.823E-06	758	.461E-06
10	500	********	705	********
11	499	********	698	********
12	1144	.287E-04	700	********
13	16055	.710E-03	672	********
14	527	.548E-06	709	********
15	506	********	693	********
16	513	********	694	********
19	962	.204E-04	729	********
20	511	********	724	********
21	526	.503E-06	691	********
22	501	********	688	********
23	502	********	697	********
24	578	.288E-05	1472	.161E-04

RUN # 111 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	33184	.146E-02	287	********
2	534	********	426	.241E-05
3	23752	.104E-02	293	********
4	34699	.153E-02	261	********
5	22669	.990E-03	285	********
6	7105	.294E-03	304	********
7	1826	.578E-04	314	********
8	776	.108E-04	303	********
9	504	********	279	********
10	455	********	301	********
19	847	.140E-04	316	.430E-07
24	465	********	4525	.905E-04

RUN # 113 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	596	.711E-05	22229	.469E-03
2	790	.158E-04	60944	.130E-02
3	425	********	633	.514E-05
4	430	********	1333	.202E-04
5	495	.259E-05	7248	.147E-03
6	480	.192E-05	10977	.227E-03
7	452	.671E-06	3451	.657E-04
8	0	********	5059	.100E-03
9	435	********	2351	.421E-04
10	508	.318E-05	6244	.126E-03
11	480	.192E-05	3656	.701E-04
12	0	********	453	.127E-05
13	457	.895E-06	438	.946E-06
14	0	********	508	.245E-05
15	0	********	463	.148E-05
16	0	********	410	.344E-06
19	489	.233E-05	406	.258E-06
20	427	********	444	.107E-05
21	432	********	442	.103E-05
22	418	********	435	.881E-06
23	426	********	450	.120E-05
24	2022	.709E-04	2581	.470E-04

RUN # 114 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	488	.233E-05	8182	.166E-03
2	582	.653E-05	18023	.378E-03
3	519	.371E-05	532	.159E-05
4	0	********	541	.178E-05
5	0	********	1002	.117E-04
6	518	.367E-05	1428	.208E-04
7	520	.376E-05	728	.580E-05
8	0	********	725	.574E-05
9	0	********	620	.348E-05
10	0	********	844	.830E-05
11	529	.416E-05	680	.477E-05
12	0	********	465	.150E-06
24	3251	.126E-03	2891	.523E-04

RUN # 115 — WIND DIR. 180

SAMPLE PT.	SOURCE GP. 9, STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5, STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	0	********	2772	.492E-04
2	537	.416E-05	3938	.742E-04
3	524	.358E-05	532	.101E-05
4	513	.309E-05	528	.924E-06
5	0	********	541	.120E-05
6	506	.277E-05	582	.208E-05
7	0	********	542	.123E-05
8	0	********	539	.116E-05
9	540	.429E-05	682	.423E-05
10	483	.174E-05	523	.817E-06
11	483	.174E-05	517	.688E-06
24	3298	.128E-03	1827	.288E-04

RUN # 116 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	507	.447E-06	1839	.273E-04
2	2003	.674E-04	213643	.458E-02
3	522	.112E-05	816	.527E-05
4	513	.716E-06	592	.451E-06
5	553	.250E-05	990	.901E-05
6	502	.224E-06	603	.688E-06
7	504	.313E-06	700	.277E-05
8	540	.192E-05	1013	.950E-05
9	764	.119E-04	775	.438E-05
10	522	.112E-05	743	.370E-05
11	498	.447E-07	633	.133E-05
14	567	.313E-05	814	.522E-05
15	543	.206E-05	892	.690E-05
16	635	.617E-05	915	.739E-05
19	546	.219E-05	615	.946E-06
20	12881	.554E-03	602	.666E-06
21	14996	.649E-03	598	.580E-06
22	657	.716E-05	14595	.301E-03
23	608	.496E-05	14370	.297E-03
24	526	.130E-05	576	.107E-06

RUN # 117 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	527	.492E-06	916	.464E-05
2	736	.984E-05	35462	.747E-03
7	494	********	723	.494E-06
8	501	********	690	********
9	580	.286E-05	894	.417E-05
10	714	.886E-05	779	.170E-05
11	501	********	753	.114E-05
14	499	********	692	********
15	537	.939E-06	869	.363E-05
16	508	********	774	.159E-05
19	478	********	757	.123E-05
20	39601	.175E-02	664	********
21	45136	.200E-02	645	********
22	703	.836E-05	2130	.307E-04
23	503	********	1988	.277E-04

RUN # 118 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	530	.626E-06	970	.299E-05
2	593	.344E-05	5581	.102E-03
7	500	********	839	.172E-06
8	676	.716E-05	974	.307E-05
9	514	********	905	.159E-05
10	487	********	902	.153E-05
11	504	********	825	********
14	534	.805E-06	997	.357E-05
15	688	.769E-05	903	.155E-05
16	502	********	852	.451E-06
19	508	********	905	.159E-05
22	534	.805E-06	1092	.561E-05
23	653	.613E-05	1067	.507E-05

RUN # 119 — WIND DIR. 225

	SOURCE GP. 7 STACK HT. FIX		SOURCE GP. 1 STACK HT. 40 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	508	********	879	********
2	506	********	1306	.879E-05
3	484	********	907	.215E-06
8	544	********	994	.208E-05
14	500	********	918	.451E-06
22	495	********	901	.860E-07
23	498	********	882	********

RUN # 120 — WIND DIR. 225

	SOURCE GP. 8 STACK HT. 10 FT.		SOURCE GP. 2 STACK HT. 10 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	503	********	1112	********
2	1306	.352E-04	127082	.271E-02
3	519	********	1224	.228E-05
4	468	********	1171	.114E-05
5	487	********	1212	.202E-05
6	586	.295E-05	1410	.628E-05
7	566	.206E-05	1376	.555E-05
8	601	.362E-05	1416	.641E-05
9	591	.318E-05	1395	.595E-05
10	492	********	1195	.165E-05
11	569	.219E-05	1400	.606E-05
14	715	.872E-05	1213	.204E-05
15	502	********	1139	.451E-06
16	513	********	1127	.193E-06
19	516	********	1169	.110E-05
20	7000	.290E-03	1261	.307E-05
21	13758	.592E-03	1116	********
22	750	.103E-04	10072	.192E-03
23	770	.112E-04	10121	.194E-03
24	483	********	1130	.258E-06

RUN # 121 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	745	.116E-05	1573	.879E-05
2	717	********	28283	.583E-03
6	893	.778E-05	1318	.331E-05
7	726	.313E-06	1599	.935E-05
8	882	.729E-05	1269	.226E-05
9	630	********	1706	.116E-04
10	515	********	1088	********
11	896	.792E-05	1202	.817E-06
20	6344	.252E-03	1265	.217E-05
21	12366	.521E-03	1061	********
22	889	.760E-05	2569	.302E-04
23	607	********	2992	.393E-04

RUN # 122 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	640	.447E-05	1664	.939E-05
2	802	.117E-04	6346	.110E-03
6	564	.107E-05	1197	********
7	801	.117E-04	1456	.492E-05
8	539	********	1185	********
9	611	.318E-05	1762	.115E-04
10	848	.138E-04	1302	.161E-05
11	853	.140E-04	1356	.277E-05
20	7389	.306E-03	1255	.602E-06
21	14091	.606E-03	1211	********
22	489	********	1560	.716E-05
23	598	.259E-05	2019	.170E-04

RUN # 123 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	698	.590E-05	1658	.761E-05
2	548	********	1286	********
3	537	********	1257	********
4	538	********	1257	********
5	851	.127E-04	1364	.129E-05
6	855	.129E-04	1403	.213E-05
7	857	.130E-04	1404	.215E-05
8	828	.117E-04	1303	********
9	885	.143E-04	1412	.232E-05
10	983	.187E-04	1269	********
11	4994	.198E-03	1232	********
14	3747	.142E-03	1243	********
15	8110	.337E-03	1238	********
16	63583	.282E-02	1157	********
19	12327	.526E-03	1220	********
20	589	.103E-05	1249	********
21	965	.178E-04	1348	.946E-06
22	15963	.689E-03	24042	.489E-03
23	15987	.690E-03	24176	.492E-03
24	569	.134E-06	1234	********

RUN # 124 — WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	572	.895E-07	1275	********
2	576	.268E-06	1292	********
6	589	.850E-06	1341	.537E-06
8	555	********	1290	********
9	687	.523E-05	1818	.108E-04
10	929	.161E-04	1268	********
11	4426	.172E-03	1468	.327E-05
19	12756	.545E-03	1262	********
20	914	.154E-04	1364	.103E-05
21	947	.169E-04	1352	.774E-06
22	16201	.699E-03	4941	.779E-04
23	16070	.693E-03	4800	.749E-04

RUN # 125 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
9	520	.262E-05	119	********
10	0	********	139	.441E-07
11	3161	.124E-03	125	********
19	1012	.252E-04	99	********
20	517	.248E-05	111	********
21	503	.184E-05	116	********
22	18808	.842E-03	573	.961E-05
23	18631	.834E-03	570	.955E-05

RUN # 127 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	461	********	312	********
2	545	.353E-05	550	.503E-05
3	475	.321E-06	0	********
4	459	********	322	********
5	0	********	366	.970E-06
6	473	.229E-06	343	.463E-06
7	536	.312E-05	420	.216E-05
8	492	.110E-05	713	.862E-05
9	545	.353E-05	5578	.116E-03
10	545	.353E-05	11246	.241E-03
11	683	.987E-05	14149	.305E-03
14	573	.482E-05	373	.112E-05
15	537	.317E-05	338	.353E-06
16	540	.330E-05	342	.441E-06
19	554	.395E-05	349	.595E-06
20	620	.697E-05	370	.106E-05
21	534	.303E-05	484	.357E-05
22	862	.181E-04	38571	.843E-03
23	823	.163E-04	39950	.874E-03

RUN # 128 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
8	522	.147E-05	546	.573E-06
9	557	.307E-05	881	.796E-05
10	545	.252E-05	1314	.175E-04
11	0	********	1591	.236E-04
22	618	.587E-05	12352	.261E-03
23	662	.789E-05	12569	.266E-03

RUN # 129 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
9	513	********	666	.115E-05
10	592	.119E-05	680	.146E-05
11	567	.459E-07	704	.198E-05
22	610	.202E-05	4763	.915E-04
23	566	********	4694	.900E-04

END OF FILE

RUN # 129X WIND DIR. 225

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 54 FT. RAW (AREA)	CONC. RATIO
22	605	.161E-05	1565	.183E-04
23	567	********	1561	.183E-04

END OF FILE

RUN # 130 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	3089	.117E-03	792	.617E-06
2	3818	.151E-03	982	.481E-05
3	2761	.102E-03	790	.573E-06
4	2407	.858E-04	770	.132E-06
5	2449	.877E-04	763	********
6	3633	.142E-03	783	.419E-06
7	3839	.151E-03	807	.948E-06
8	5550	.230E-03	1287	.115E-04
9	5138	.211E-03	760	********
10	8353	.359E-03	1138	.825E-05
11	6517	.274E-03	793	.639E-06
15	4202	.168E-03	734	********
16	3742	.147E-03	734	********
20	1414	.402E-04	770	.132E-06
21	1022	.222E-04	773	.198E-06
22	1629	.501E-04	805	.904E-06
24	579	.188E-05	773	.198E-06

RUN # 131 WIND DIR. 135

SAMPLE PT.	SOURCE GP 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	5766	.238E-03	72535	.158E-02
2	5396	.221E-03	743	********
3	6638	.278E-03	722	********
4	7530	.319E-03	714	********
5	7577	.322E-03	717	********
6	7359	.312E-03	724	********
7	7668	.326E-03	699	********
8	8387	.359E-03	743	********
9	9843	.426E-03	725	********
10	10894	.474E-03	700	********
11	14697	.648E-03	750	.154E-06
14	18337	.815E-03	733	********
15	16613	.736E-03	730	********
16	11284	.492E-03	639	********
19	649	.367E-05	715	********
20	800	.106E-04	728	********
21	0	********	723	********
22	2848	.105E-03	735	********
23	2676	.967E-04	712	********
24	0	********	718	********

RUN # 132 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	5279	.216E-03	7505	.150E-03

END OF FILE

RUN # 133 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 8 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	2389	.845E-04	1855	.253E-04
2	583	.161E-05	760	.115E-05
3	8457	.363E-03	706	********
4	11845	.518E-03	688	********
5	14193	.626E-03	688	********
6	12134	.532E-03	682	********
7	7388	.314E-03	691	********
8	2822	.104E-03	695	********
9	992	.204E-04	695	********
10	662	.523E-05	694	********
11	707	.730E-05	820	.247E-05
14	0	********	704	********
15	9930	.431E-03	717	.198E-06
16	4261	.170E-03	686	********
19	552	.184E-06	688	********
20	548	********	687	********
21	627	.363E-05	688	********
22	555	.321E-06	706	********
23	564	.734E-06	716	.176E-06
24	543	********	685	********

RUN # 134 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	882	.163E-04	56269	.125E-02
2	508	********	1514	.221E-04
3	544	.514E-06	557	.561E-06
4	530	********	539	.157E-06
5	521	********	522	********
6	525	********	513	********
7	526	********	516	********
8	519	********	516	********
9	521	********	515	********
10	515	********	518	********
11	523	********	516	********
14	534	.467E-07	507	********
15	536	.140E-06	513	********
16	534	.467E-07	522	********
19	555	.103E-05	514	********
20	524	********	508	********
21	525	********	516	********
22	527	********	515	********
23	527	********	517	********
24	518	********	504	********

RUN # 135
WIND DIR. 135

SAMPLE PT.	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	12561	.272E-03		
2	568	.272E-05		
3	456	.202E-06		
4	450	.674E-07		
5	437	********		
6	435	********		
7	437	********		
8	428	********		
9	452	.112E-06		
10	435	********		
11	442	********		
14	436	********		
15	436	********		
16	441	********		
19	442	********		
20	440	********		
21	446	********		
22	442	********		
23	438	********		
24	423	********		

RUN # 135X
WIND DIR. 135

SOURCE GP. 3
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
1	2885	.571E-04	
2	356	.314E-06	

RUN # 136 WIND DIR. 135

	SOURCE GP. 9 STACK HT. FIX		SOURCE GP. 5 STACK HT. 20 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	780	.136E-04	50119	.111E-02
2	470	********	839	.202E-06
3	795	.143E-04	45119	.995E-03
4	691	.949E-05	34864	.764E-03
5	670	.851E-05	29109	.635E-03
6	580	.430E-05	18112	.388E-03
7	615	.594E-05	15581	.331E-03
8	503	.701E-06	5674	.109E-03
9	500	.561E-06	898	.153E-05
10	510	.103E-05	883	.119E-05
11	462	********	811	********
14	501	.608E-06	901	.159E-05
15	498	.467E-06	877	.106E-05
16	473	********	855	.561E-06
19	507	.888E-06	856	.584E-06
20	547	.276E-05	858	.629E-06
21	565	.360E-05	894	.144E-05
22	476	********	816	********
23	479	********	813	********
24	483	********	846	.359E-06

RUN # 137 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	574	.458E-05	18604	.403E-03
2	471	********	678	.427E-06
3	503	.126E-05	4611	.888E-04
4	501	.117E-05	4507	.864E-04
5	487	.514E-06	4248	.806E-04
6	478	.935E-07	2907	.505E-04
7	511	.164E-05	2095	.323E-04
8	528	.243E-05	1110	.101E-04
14	473	********	698	.876E-06

RUN # 138 WIND DIR. 135

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	526	.220E-05	7354	.148E-03
2	505	.122E-05	743	********
4	465	********	1140	.874E-05
5	494	.701E-06	1059	.692E-05
6	466	********	898	.330E-05
7	468	********	865	.256E-05
8	483	.187E-06	777	.584E-06

RUN # 139 — WIND DIR. 000

	SOURCE GP. 7 STACK HT. FIX		SOURCE GP. 1 STACK HT. 10 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	471	********	762	.966E-06
2	464	********	719	********
3	603	.547E-05	18478	.399E-03
4	591	.491E-05	16648	.358E-03
5	577	.425E-05	13335	.283E-03
6	573	.407E-05	7100	.143E-03
7	560	.346E-05	1594	.197E-04
8	562	.355E-05	833	.256E-05
9	574	.411E-05	730	.247E-06
10	653	.781E-05	714	********
11	699	.995E-05	727	.180E-06
14	516	.140E-05	868	.335E-05
15	492	.280E-06	772	.119E-05
16	582	.449E-05	739	.449E-06
19	1260	.362E-04	123836	.277E-02
20	155671	.725E-02	647	********
21	78040	.362E-02	637	********
22	580	.439E-05	728	.202E-06
23	493	.327E-06	702	********
24	474	********	679	********

RUN # 140 — WIND DIR. 000

	SOURCE GP. 7 STACK HT. FIX		SOURCE GP. 1 STACK HT. 20 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	466	********	701	.584E-06
3	511	.182E-05	5129	.100E-03
4	501	.136E-05	4793	.925E-04
5	508	.168E-05	4003	.747E-04
6	490	.841E-06	2486	.407E-04
7	481	.421E-06	946	.609E-05
14	477	.234E-06	725	.112E-05
19	928	.213E-04	72981	.162E-02

RUN # 141
WIND DIR. 000

SOURCE GP. 1
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
2	162	.790E-06	
3	782	.144E-04	
4	709	.128E-04	
5	688	.123E-04	
6	520	.865E-05	
7	210	.184E-05	
8	119	********	
19	35870	.785E-03	

RUN # 142
WIND DIR. 000

SOURCE GP. 1
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	397	.658E-06	
4	399	.702E-06	
5	397	.658E-06	
6	368	.219E-07	
7	383	.351E-06	
19	14394	.308E-03	

RUN # 143 — WIND DIR. 000

SAMPLE PT.	SOURCE GP. 8, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	563	.274E-06	3689	.680E-04
4	539	********	3627	.667E-04
5	540	********	3489	.636E-04
6	533	********	3051	.540E-04
7	524	********	2144	.341E-04
8	519	********	1823	.271E-04
9	513	********	1022	.950E-05
10	502	********	655	.145E-05
11	505	********	567	********
14	815	.118E-04	40774	.882E-03
15	737	.822E-05	28474	.612E-03
16	559	.913E-07	957	.808E-05
19	710	.699E-05	30389	.654E-03
20	723	.758E-05	634	.988E-06
21	576	.868E-06	565	********

RUN # 144 — WIND DIR. 000

SAMPLE PT.	SOURCE GP. 8, STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	537	********	1673	.197E-04
4	527	********	1592	.179E-04
5	535	********	1505	.160E-04
6	526	********	1348	.125E-04
7	530	********	1084	.674E-05
8	526	********	978	.441E-05
9	530	********	835	.127E-05
10	522	********	778	.219E-07
14	628	.393E-05	10969	.224E-03
15	575	.151E-05	7473	.147E-03
16	538	********	886	.239E-05
19	614	.329E-05	14444	.300E-03

RUN # 145
WIND DIR. 000

SOURCE GP. 2
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	1069	.160E-05	
4	1070	.162E-05	
5	1089	.204E-05	
6	1070	.162E-05	
7	1009	.285E-06	
8	998	.439E-07	
10	982	********	
14	2562	.344E-04	
15	1896	.198E-04	
19	8672	.168E-03	

RUN # 146
WIND DIR. 000

SOURCE GP. 2
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
5	901	.571E-06	
6	952	.169E-05	
7	897	.483E-06	
14	1020	.318E-05	
15	978	.226E-05	
19	4719	.844E-04	

RUN # 147 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	532	********	1519	.950E-05
4	526	********	1589	.110E-04
5	525	********	1853	.168E-04
6	524	********	2352	.278E-04
7	535	********	3758	.586E-04
8	543	.137E-06	4992	.857E-04
9	552	.548E-06	5866	.105E-03
10	631	.416E-05	4181	.679E-04
11	593	.242E-05	1901	.179E-04
14	606	.301E-05	14984	.305E-03
15	738	.904E-05	25985	.546E-03
16	899	.164E-04	60102	.130E-02

RUN # 148 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	591	.315E-05	948	.182E-05
4	566	.201E-05	980	.252E-05
5	543	.959E-06	947	.180E-05
6	560	.174E-05	1106	.529E-05
7	545	.105E-05	1302	.959E-05
8	523	.457E-07	1429	.124E-04
9	571	.224E-05	1572	.155E-04
10	530	.365E-06	1299	.953E-05
11	514	********	926	.134E-05
14	567	.206E-05	3706	.624E-04
15	562	.183E-05	6450	.123E-03
16	629	.489E-05	14658	.303E-03

RUN # 149
WIND DIR. 000

SOURCE GP. 3
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	783	********	
4	831	.103E-05	
5	787	.658E-07	
6	818	.746E-06	
7	902	.259E-05	
8	827	.944E-06	
9	839	.121E-05	
10	857	.160E-05	
11	822	.834E-06	
14	1173	.854E-05	
15	1579	.174E-04	
16	2912	.467E-04	
19	794	.219E-06	

RUN # 149X
WIND DIR. 000

SOURCE GP. 3
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
14	806	.116E-05	
15	831	.171E-05	
16	938	.406E-05	

RUN # 150 WIND DIR. 000

	SOURCE GP. 9 STACK HT. FIX		SOURCE GP. 5 STACK HT. 20 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	500	********	834	********
2	503	********	854	.373E-06
3	654	.653E-05	1014	.388E-05
4	701	.868E-05	1013	.386E-05
5	791	.128E-04	963	.277E-05
6	996	.222E-04	927	.198E-05
7	1251	.338E-04	831	********
8	1318	.369E-04	819	********
9	1476	.441E-04	829	********
10	1760	.570E-04	812	********
11	2474	.897E-04	830	********
14	667	.713E-05	1302	.102E-04
15	670	.726E-05	1046	.459E-05
16	752	.110E-04	1039	.443E-05
19	627	.530E-05	16184	.337E-03
20	5103	.210E-03	823	********
21	4803	.196E-03	815	********
22	685	.795E-05	857	.439E-06
23	603	.420E-05	862	.549E-06

RUN # 151 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
3	752	.123E-04	769	.461E-06
4	869	.176E-04	781	.724E-06
5	1054	.261E-04	746	********
6	1429	.432E-04	748	********
7	1765	.586E-04	741	********
8	1965	.677E-04	741	********
9	2121	.748E-04	741	********
10	2659	.994E-04	745	********
11	3832	.153E-03	735	********
14	757	.125E-04	867	.261E-05
15	761	.127E-04	761	.285E-06
16	918	.199E-04	835	.191E-05
19	565	.375E-05	11077	.227E-03
20	7587	.324E-03	743	********
21	6880	.292E-03	731	********

RUN # 152 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
14	747	.117E-04	1012	.553E-05
15	749	.118E-04	774	.307E-06
16	932	.201E-04	977	.476E-05
19	519	.128E-05	4489	.818E-04

RUN # 153 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	485	********	805	********
2	481	********	803	********
3	516	.959E-06	7351	.143E-03
4	535	.183E-05	9160	.183E-03
5	548	.242E-05	11350	.231E-03
6	591	.438E-05	14266	.295E-03
7	623	.585E-05	16260	.339E-03
8	619	.566E-05	19175	.403E-03
9	632	.626E-05	18952	.398E-03
10	639	.658E-05	14500	.300E-03
11	543	.219E-05	8258	.163E-03
14	1483	.451E-04	154634	.338E-02
15	1449	.436E-04	151701	.331E-02
16	1000	.231E-04	70599	.153E-02
19	497	.913E-07	904	.200E-05
20	229107	.104E-01	104127	.227E-02
21	19986	.890E-03	137501	.300E-02
22	530	.160E-05	996	.402E-05
23	488	********	812	********
24	527	.146E-05	793	********

RUN # 154 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7, STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP.1, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	471	********	976	.511E-05
4	483	.137E-06	1059	.694E-05
5	470	********	1182	.964E-05
6	469	********	1400	.144E-04
7	473	********	1738	.218E-04
8	489	.411E-06	2445	.374E-04
9	479	********	2296	.341E-04
10	528	.219E-05	1839	.241E-04
11	470	********	1331	.129E-04
14	654	.795E-05	24018	.511E-03
15	641	.735E-05	26332	.562E-03
16	707	.104E-04	14193	.295E-03
19	478	********	792	.108E-05
20	340369	.155E-01	55835	.121E-02
21	20630	.920E-03	82115	.179E-02

RUN # 155 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
3	471	********	807	********
4	475	********	812	.219E-07
5	469	********	779	********
6	499	.502E-06	816	.110E-06
7	469	********	815	.878E-07
8	506	.822E-06	897	.189E-05
9	482	********	899	.193E-05
10	521	.151E-05	871	.132E-05
11	517	.132E-05	848	.812E-06
14	483	********	2537	.379E-04
15	489	.457E-07	2840	.445E-04
16	605	.534E-05	2037	.269E-04
19	491	.137E-06	819	.176E-06
20	365562	.167E-01	20216	.426E-03
21	22161	.990E-03	34524	.740E-03

RUN # 155X WIND DIR. 315

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
14	487	.137E-06	983	.461E-05
15	477	********	997	.492E-05
16	533	.224E-05	1029	.562E-05
19	480	********	768	********
20	748835	.342E-01	6610	.128E-03
21	21692	.969E-03	12411	.255E-03

RUN # 156 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	498	********	853	********
2	485	********	835	********
3	506	********	977	.263E-05
4	493	********	1021	.360E-05
5	489	********	1221	.799E-05
6	522	.548E-06	1747	.195E-04
7	515	.228E-06	3802	.646E-04
8	572	.283E-05	11261	.228E-03
9	599	.406E-05	16564	.345E-03
11	559	.224E-05	11444	.232E-03
14	543	.151E-05	8877	.176E-03
15	634	.566E-05	22639	.478E-03
16	1200	.315E-04	109655	.239E-02
19	901	.179E-04	60532	.131E-02
20	1656	.523E-04	96479	.210E-02
21	1168	.301E-04	104575	.228E-02

RUN # 157 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	477	********	808	********
4	473	********	811	********
5	474	********	821	********
6	481	********	888	.988E-06
7	499	.457E-06	1096	.555E-05
8	478	********	1784	.207E-04
9	485	********	2187	.295E-04
10	484	********	2234	.305E-04
11	482	********	1988	.251E-04
14	479	********	1329	.107E-04
15	495	.274E-06	2652	.397E-04
16	621	.603E-05	19887	.418E-03
19	497	.365E-06	843	********
20	997	.232E-04	56675	.123E-02
21	871	.174E-04	65610	.142E-02

RUN # 158 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
6	467	********	613	********
7	468	********	615	********
8	478	********	646	.483E-06
9	479	********	700	.167E-05
10	466	********	693	.151E-05
11	465	********	695	.156E-05
14	470	********	648	.527E-06
15	469	********	700	.167E-05
16	476	********	2247	.356E-04
20	699	.996E-05	23529	.503E-03
21	653	.786E-05	27883	.598E-03

RUN # 158X WIND DIR. 315

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
16	470	********	518	********
21	575	.305E-05	11224	.237E-03

RUN # 159 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
1	486	********	688	********
2	489	********	689	********
3	479	********	689	********
4	483	********	726	********
5	480	********	759	.666E-06
6	483	********	834	.233E-05
7	503	.923E-07	1556	.183E-04
8	485	********	1906	.261E-04
9	487	********	2372	.364E-04
10	491	********	2630	.422E-04
11	491	********	2283	.345E-04
14	503	.923E-07	786	.126E-05
15	491	********	794	.144E-05
16	490	********	996	.592E-05
19	483	********	691	********
20	818	.146E-04	35371	.769E-03
21	645	.665E-05	24370	.524E-03
22	510	.415E-06	724	********
23	505	.185E-06	697	********
24	494	********	699	********

RUN # 160 WIND DIR. 315

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
7	516	********	894	********
8	518	********	976	.146E-05
9	546	********	1097	.415E-05
10	504	********	1083	.384E-05
11	510	********	1178	.595E-05
14	553	********	953	.954E-06
15	512	********	933	.510E-06
16	505	********	897	********
20	611	.199E-05	10826	.220E-03
21	546	********	6805	.131E-03

RUN # 161 — WIND DIR. 315

SAMPLE PT.	SOURCE GP. 6, STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
8	588	.309E-05	968	.166E-05
9	511	********	889	********
10	515	********	919	.577E-06
11	510	********	882	********
20	547	.120E-05	3194	.510E-04
21	520	********	2641	.388E-04

RUN # 162 — WIND DIR. 315

SAMPLE PT.	SOURCE GP. 9, STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	512	********	969	********
2	511	********	967	********
3	514	********	997	.200E-06
4	515	********	950	********
5	519	********	967	********
6	519	********	990	.444E-07
7	567	.171E-05	954	********
8	661	.605E-05	999	.244E-06
9	762	.107E-04	1029	.910E-06
10	898	.170E-04	1007	.421E-06
11	1195	.307E-04	1138	.333E-05
14	530	********	1327	.752E-05
15	524	********	1546	.124E-04
16	533	.138E-06	1907	.204E-04
19	516	********	966	********
20	1363	.385E-04	120808	.266E-02
21	1551	.471E-04	160301	.353E-02
22	800	.125E-04	1158	.377E-05
23	613	.383E-05	1102	.253E-05

RUN #163 — WIND DIR. 315

	SOURCE GP. 9 STACK HT. FIX		SOURCE GP. 5 STACK HT. 30 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
9	1228	.304E-04	1064	.379E-05
10	1039	.217E-04	923	.666E-06
11	1465	.414E-04	1412	.115E-04
14	832	.121E-04	1048	.344E-05
15	564	********	1506	.136E-04
16	872	.140E-04	1114	.490E-05
20	1024	.210E-04	60786	.133E-02
21	1558	.457E-04	91198	.200E-02

RUN # 164
WIND DIR. 315

SOURCE GP. 5
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
10	107	********	
11	113	********	
14	136	********	
15	233	.202E-05	
16	140	.215E-07	
19	230	.196E-05	
20	12613	.268E-03	
21	27920	.597E-03	

RUN # 165
WIND DIR. 315

SOURCE GP. 5
STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
15	498	.241E-05	
19	400	.301E-06	
20	2494	.453E-04	
21	5007	.993E-04	

RUN # 166 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 7 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 1 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	487	********	675	********
4	490	********	661	********
5	488	********	665	********
14	507	********	707	.129E-06
19	507	********	708	.150E-06
20	49334	.218E-02	641	********

RUN # 167 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 8 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	0	********	2662	.397E-04
4	522	********	1573	.162E-04
5	0	********	964	.316E-05
6	0	********	816	********
7	0	********	806	********
14	516	********	806	********
19	0	********	795	********
20	0	********	829	.258E-06
21	597	.300E-05	870	.114E-05

RUN # 167X
WIND DIR. 045

SAMPLE PT.	SOURCE GP. 2 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO	RAW (AREA)
3	801	.628E-05	
4	564	.118E-05	
5	508	********	

RUN # 168 — WIND DIR. 045

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 10 FT. RAW (AREA)	CONC. RATIO
3	600	********	6802	.139E-03
4	625	.134E-06	4557	.909E-04
5	587	********	2949	.563E-04
6	574	********	1925	.343E-04
7	595	********	1179	.183E-04
8	577	********	689	.778E-05
9	558	********	410	.178E-05
10	557	********	320	********
11	556	********	315	********
14	874	.113E-04	49835	.106E-02
15	801	.801E-05	34345	.731E-03
16	561	********	380	.114E-05
19	770	.662E-05	28510	.606E-03

RUN # 169 — WIND DIR. 045

SAMPLE PT.	SOURCE GP. 6, STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3, STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
3	556	********	1246	.242E-04
4	556	********	652	.115E-04
5	547	********	268	.322E-05
6	569	.268E-06	182	.138E-05
7	560	********	136	.387E-06
8	553	********	123	.107E-06
9	555	********	117	********
10	560	********	119	.215E-07
14	564	.447E-07	4499	.942E-04
15	560	********	2574	.528E-04
16	549	********	135	.365E-06
19	578	.671E-06	4893	.103E-03
20	551	********	116	********
21	776	.953E-05	0	********

RUN # 170
WIND DIR. 045

SOURCE GP. 3
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	682	.449E-05	
4	554	.174E-05	
5	479	.129E-06	
6	467	********	
14	715	.520E-05	
15	665	.413E-05	
16	555	.176E-05	
19	4996	.972E-04	

RUN # 170X
WIND DIR. 045

SOURCE GP. 3
STACK HT. 40 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	656	.365E-06	
4	634	********	
5	602	********	
14	661	.473E-06	
15	637	********	
16	655	.344E-06	
19	1318	.146E-04	

RUN # 171 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	603	.237E-05	505	********
2	828	.124E-04	502	********
3	5889	.239E-03	855	.701E-05
4	6176	.252E-03	653	.266E-05
5	6484	.265E-03	519	********
6	6660	.273E-03	496	********
7	6813	.280E-03	494	********
8	6989	.288E-03	505	********
9	7027	.290E-03	488	********
10	7296	.302E-03	512	********
11	7409	.307E-03	498	********
14	4852	.192E-03	534	.107E-06
15	4996	.199E-03	526	********
16	4343	.170E-03	544	.322E-06
19	2547	.893E-04	70816	.151E-02
20	539	********	595	.142E-05
21	637	.389E-05	571	.903E-06
22	4620	.182E-03	508	********
23	4000	.154E-03	498	********

RUN # 172 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 5 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
9	12040	.515E-03	479	********
10	12232	.523E-03	471	********
11	12655	.542E-03	484	********
15	8387	.352E-03	479	********
19	3551	.135E-03	27577	.582E-03
22	7506	.312E-03	542	.118E-05

RUN # 172X — WIND DIR. 045

SOURCE GP. 9, STACK HT. FIX — SOURCE GP. 5, STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
9	12673	.542E-03	669	********
11	13256	.568E-03	652	********
15	8654	.363E-03	675	********
19	3630	.138E-03	1685	.209E-04
22	8617	.361E-03	671	********

RUN # 173
WIND DIR. 225

SOURCE GP. 4
STACK HT. 20 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
1	1025	.159E-04	
2	103648	.226E-02	
3	703	.889E-05	
4	6502	.136E-03	
5	17343	.373E-03	
6	13285	.284E-03	
7	10656	.227E-03	
8	5737	.119E-03	
9	1903	.352E-04	
10	1866	.343E-04	
11	1348	.230E-04	
12	341	.963E-06	
13	997	.153E-04	
14	260	********	
15	277	********	
16	260	********	
19	359	.136E-05	
20	985	.151E-04	
21	286	********	
22	9901	.210E-03	
23	11943	.255E-03	
24	247	********	

RUN # 174 WIND DIR. 225

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
1	506	********	601	.127E-05
2	812	.133E-04	46917	.101E-02
3	497	********	545	.438E-07
4	596	.346E-05	1621	.236E-04
5	968	.204E-04	1334	.173E-04
6	566	.210E-05	1735	.261E-04
7	1150	.287E-04	1519	.214E-04
8	795	.125E-04	1693	.252E-04
9	699	.815E-05	1365	.180E-04
10	1243	.329E-04	916	.816E-05
11	3865	.152E-03	875	.727E-05
12	966	.203E-04	736	.422E-05
13	504	********	499	********
14	1638	.509E-04	477	********
15	3992	.158E-03	484	********
16	39672	.178E-02	482	********
19	13986	.613E-03	511	********
20	525	.228E-06	577	.744E-06
21	743	.102E-04	1268	.159E-04
22	11912	.519E-03	4336	.830E-04
23	10947	.475E-03	5438	.107E-03
24	1020	.228E-04	560	.372E-06

RUN # 175
WIND DIR. 225

SAMPLE PT.	SOURCE GP. 4 STACK HT. 40 FT. RAW (AREA)	CONC. RATIO	RAW (AREA)
1	459	********	
2	13965	.295E-03	
3	588	.263E-05	
4	551	.182E-05	
5	484	.350E-06	
6	555	.190E-05	
7	491	.503E-06	
8	478	.219E-06	
9	470	.438E-07	
10	457	********	
11	459	********	
12	455	********	
21	483	.328E-06	
22	1075	.133E-04	

RUN # 176
WIND DIR. 225

SOURCE GP. 4
STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
2	3597	.664E-04	
22	878	.692E-05	
23	794	.508E-05	

RUN # 177 WIND DIR. 180

	SOURCE GP. 6 STACK HT. 30 FT.		SOURCE GP. 4 STACK HT. 20 FT.	
SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)	CONC. RATIO
1	26002	.116E-02	123103	.268E-02
2	682	.748E-05	224	.301E-05
3	29431	.131E-02	23542	.511E-03
4	38963	.174E-02	35825	.778E-03
5	29904	.133E-02	3346	.710E-04
6	13476	.587E-03	322	.514E-05
7	4971	.202E-03	132	.100E-05
8	2253	.787E-04	94	.174E-06
9	954	.198E-04	74	********
10	667	.680E-05	70	********
11	544	.122E-05	68	********
12	5510	.226E-03	59	********
13	56973	.256E-02	0	********
14	956	.199E-04	0	********
15	796	.126E-04	63	********
16	496	********	70	********
19	24563	.109E-02	62	********
20	490	********	83	********
21	496	********	88	.436E-07
22	474	********	70	********
23	498	********	65	********
24	488	********	241	.338E-05

RUN # 178
WIND DIR. 180

SOURCE GP. 4
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
1	59386	.129E-02	
2	315	.200E-05	
3	3264	.662E-04	
4	3906	.802E-04	
5	501	.606E-05	
6	244	.457E-06	
7	240	.370E-06	

RUN # 179 WIND DIR. 180

SAMPLE PT.	SOURCE GP. 6, STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4, STACK HT. 40 FT. RAW (AREA)	CONC. RATIO
1	25558	.114E-02	23768	.510E-03
2	551	.363E-05	376	.414E-06
3	20646	.914E-03	1033	.147E-04
4	27917	.124E-02	638	.612E-05
5	21548	.955E-03	355	********
6	8236	.352E-03	343	********
7	2255	.809E-04	352	********
8	1064	.269E-04	362	.109E-06
9	580	.494E-05	350	********
10	518	.213E-05	345	********
11	507	.163E-05	348	********
12	923	.205E-04	349	********
13	16808	.740E-03	339	********
14	519	.218E-05	348	********
15	490	.861E-06	362	.109E-06
19	944	.214E-04	355	********
24	491	.907E-06	346	********

RUN # 180
WIND DIR. 180

SOURCE GP. 4
STACK HT. 54 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
1	5488	.110E-03	
3	500	.111E-05	
4	458	.196E-06	

RUN # 181 WIND DIR. 157.5

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	507	.113E-05	656	.762E-06
2	492	.453E-06	622	.218E-07
3	2844	.107E-03	11299	.233E-03
4	749	.121E-04	740	.259E-05
5	505	.104E-05	626	.109E-06
6	497	.680E-06	620	********
7	499	.771E-06	625	.871E-07
8	498	.725E-06	624	.653E-07
9	501	.861E-06	626	.109E-06
10	499	.771E-06	626	.109E-06
11	509	.122E-05	657	.784E-06
12	65054	.293E-02	541	********
13	1172	.313E-04	626	.109E-06
14	509	.122E-05	626	.109E-06
15	508	.118E-05	635	.305E-06
16	514	.145E-05	632	.240E-06
19	11103	.481E-03	604	********
20	517	.159E-05	618	********
21	544	.281E-05	619	********
22	503	.952E-06	634	.283E-06
23	532	.227E-05	619	********
24	489	.317E-06	638	.370E-06

RUN # 182 WIND DIR. 157.5

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO
3	2007	.680E-04	1096	.917E-05
4	576	.317E-05	669	********
12	26541	.118E-02	622	********
13	594	.399E-05	663	********
19	869	.165E-04	696	.457E-06

RUN # 183 WIND DIR. 000

SAMPLE PT.	SOURCE GP. 9 STACK HT. FIX RAW (AREA)	CONC. RATIO	SOURCE GP. 4 STACK HT. 20 FT. RAW (AREA)	CONC. RATIO
1	517	********	798	********
2	510	********	786	********
3	564	.131E-05	817	.414E-06
4	513	********	801	.653E-07
5	516	********	783	********
6	516	********	814	.348E-06
7	513	********	793	********
8	512	********	774	********
9	512	********	786	********
10	513	********	787	********
11	515	********	784	********
12	545	.453E-06	779	********
13	519	********	807	.196E-06
14	511	********	778	********
15	513	********	788	********
16	509	********	790	********
19	1035	.227E-04	79330	.171E-02
20	4050	.159E-03	847	.107E-05
21	3831	.149E-03	791	********
22	649	.517E-05	788	********
23	577	.190E-05	780	********

RUN # 184
WIND DIR. 000

SOURCE GP. 1
STACK HT. 10 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
1	847	.348E-06	
2	840	.196E-06	
3	1000	.368E-05	
4	1097	.579E-05	
5	1677	.184E-04	
6	3027	.478E-04	
7	4175	.728E-04	
8	4654	.833E-04	
9	4956	.898E-04	
10	5075	.924E-04	
11	4854	.876E-04	
12	2522	.368E-04	
13	81013	.175E-02	
14	4014	.693E-04	
15	3291	.536E-04	
16	3107	.496E-04	
19	222385	.483E-02	
20	1032	.438E-05	
21	903	.157E-05	
22	847	.348E-06	
23	820	********	

RUN # 185
WIND DIR. 000

SOURCE GP. 1
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	712	.675E-06	
4	670	********	
5	679	********	
6	722	.893E-06	
7	762	.176E-05	
8	743	.135E-05	
9	775	.205E-05	
10	754	.159E-05	
11	765	.183E-05	
12	698	.370E-06	
13	4252	.778E-04	
14	758	.168E-05	
15	738	.124E-05	
16	712	.675E-06	
19	62459	.135E-02	

RUN # 186
WIND DIR. 315

SOURCE GP. 1
STACK HT. 10 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	1094	.765E-05	
4	1507	.166E-04	
5	1865	.244E-04	
6	2249	.328E-04	
7	2805	.449E-04	
8	3586	.619E-04	
9	4938	.914E-04	
10	6389	.123E-03	
11	7586	.149E-03	
12	735	********	
13	962	.477E-05	
14	110432	.239E-02	
15	114550	.248E-02	
16	45389	.972E-03	
19	1188	.969E-05	

RUN # 187
WIND DIR. 315

SOURCE GP. 1
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
3	729	.174E-06	
4	715	********	
5	717	********	
6	706	********	
7	709	********	
8	745	.523E-06	
9	738	.370E-06	
10	737	.348E-06	
11	726	.109E-06	
12	752	.675E-06	
13	757	.784E-06	
14	1748	.224E-04	
15	1950	.268E-04	
16	1611	.194E-04	
19	896	.381E-05	

RUN # 189 — WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9, STACK HT. FIX — RAW (AREA)	SOURCE GP. 9, STACK HT. FIX — CONC. RATIO	SOURCE GP. 2, STACK HT. 10 FT. — RAW (AREA)	SOURCE GP. 2, STACK HT. 10 FT. — CONC. RATIO
1	580	.526E-05	674	.501E-06
2	919	.206E-04	669	.392E-06
3	9512	.410E-03	978	.712E-05
4	9604	.414E-03	786	.294E-05
5	10017	.433E-03	0	********
6	10253	.444E-03	649	********
7	10582	.459E-03	651	********
8	10684	.463E-03	630	********
9	11003	.478E-03	644	********
10	11277	.490E-03	653	.436E-07
11	11687	.509E-03	652	.218E-07
12	3823	.152E-03	79245	.171E-02
13	4178	.168E-03	51483	.111E-02
14	7122	.302E-03	769	.257E-05
15	7398	.314E-03	717	.144E-05
16	6516	.274E-03	688	.806E-06
19	3159	.122E-03	744	.203E-05
20	457	********	733	.179E-05
21	506	.190E-05	823	.375E-05
22	7836	.334E-03	640	********
23	6788	.287E-03	648	********

RUN # 190
WIND DIR. 045

SOURCE GP. 2
STACK HT. 30 FT.

SAMPLE PT.	RAW (AREA)	CONC. RATIO	RAW (AREA)
12	2316	.374E-04	
13	1284	.149E-04	

RUN #201 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	937	.206E-04	603	********
2	34488	.154E-02	22047	.466E-03
3	614	.598E-05	609	********
4	2658	.986E-04	602	********
5	13798	.604E-03	580	********
6	34600	.155E-02	574	********
7	52754	.237E-02	534	********
8	57008	.256E-02	535	********
9	47463	.213E-02	572	********
10	33918	.152E-02	564	********
11	22967	.102E-02	598	********
12	509	.122E-05	679	.958E-06
13	14359	.629E-03	645	.218E-06
14	59144	.266E-02	547	********
15	49084	.220E-02	593	********
16	21057	.933E-03	596	********
19	14985	.657E-03	648	.283E-06
20	532	.227E-05	647	.261E-06
21	756	.124E-04	689	.118E-05
22	3591	.141E-03	617	********
23	3517	.138E-03	616	********
24	5095	.209E-03	67396	.145E-02

RUN # 202 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	2327	.831E-04	660	.871E-07
2	24469	.109E-02	49845	.107E-02
3	1470	.443E-04	649	********
4	7052	.297E-03	615	********
5	24241	.108E-02	589	********
6	43279	.194E-02	557	********
7	49785	.223E-02	574	********
8	43300	.194E-02	561	********
9	72242	.325E-02	589	********
10	21538	.954E-03	586	********
11	14940	.655E-03	604	********
13	26857	.119E-02	610	********
14	38801	.174E-02	573	********
15	31149	.139E-02	604	********
16	12311	.536E-03	620	********
19	20747	.918E-03	630	********
22	2624	.966E-04	612	********
23	2449	.887E-04	644	********
24	7086	.299E-03	88888	.192E-03

RUN # 203 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	1028	.238E-04	671	.370E-06
2	18338	.808E-03	119332	.258E-02
3	723	.993E-05	735	.176E-05
4	3096	.117E-03	644	********
5	12314	.535E-03	613	********
6	26245	.117E-02	587	********
7	33990	.152E-02	596	********
8	30978	.138E-02	586	********
9	24186	.107E-02	618	********
10	17104	.752E-03	621	********
11	12462	.542E-03	620	********
13	13984	.611E-03	617	********
14	34328	.153E-02	607	********
15	28627	.127E-02	592	********
16	13952	.610E-03	636	********
19	20490	.906E-03	619	********
22	2692	.992E-04	631	********
23	2553	.929E-04	630	********
24	4643	.188E-03	62542	.135E-02

RUN # 204 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	778	.114E-04	705	.545E-06
2	13636	.594E-03	160888	.349E-02
3	611	.385E-05	812	.288E-05
4	1960	.650E-04	665	********
5	7919	.335E-03	635	********
6	17721	.779E-03	631	********
7	23906	.106E-02	614	********
8	22408	.992E-03	641	********
9	18517	.815E-03	636	********
10	14464	.632E-03	660	********
11	11161	.482E-03	637	********
13	9302	.398E-03	650	********
14	26668	.118E-02	611	********
15	23845	.106E-02	631	********
16	14522	.634E-03	630	********
19	17541	.771E-03	658	********
22	2698	.984E-04	653	********
23	2530	.908E-04	653	********
24	3145	.119E-03	43151	.925E-03
0	0	********	0	********

RUN # 205 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	2165	.668E-04	279	********
2	14665	.623E-03	1277	.188E-04
3	902	.105E-04	297	********
4	3187	.112E-03	293	********
5	17254	.738E-03	284	********
6	37957	.166E-02	280	********
7	39930	.175E-02	286	********
8	27170	.118E-02	288	********
9	14980	.637E-03	307	********
10	7911	.322E-03	320	********
11	5245	.204E-03	327	********
12	681	.712E-06	304	********
13	5281	.205E-03	340	********
14	9188	.379E-03	317	********
15	6190	.246E-03	347	********
16	1702	.462E-04	365	********
19	3742	.137E-03	382	********
20	854	.841E-05	394	********
21	782	.521E-05	397	.214E-07
22	1261	.265E-04	384	.214E-07
23	1374	.316E-04	449	.113E-05
24	16724	.715E-03	45547	.966E-03

RUN # 206 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	2258	.719E-04	984	********
2	27570	.120E-02	3222	.469E-04
3	935	.130E-04	1016	********
4	4463	.170E-03	959	********
5	24598	.107E-02	951	********
6	53783	.236E-02	878	********
7	61789	.272E-02	907	********
8	43460	.191E-02	905	********
9	24645	.107E-02	945	********
10	13559	.575E-03	949	********
11	8608	.354E-03	970	********
13	7267	.295E-03	962	********
14	14455	.615E-03	969	********
15	9934	.413E-03	962	********
16	2891	.100E-03	994	********
19	3301	.118E-03	970	********
22	2018	.612E-04	978	********
23	1989	.599E-04	968	********
24	17787	.763E-03	95151	.201E-02

RUN # 207 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	2122	.654E-04	1237	********
2	41749	.183E-02	7012	.123E-03
3	979	.146E-04	1275	.214E-07
4	6353	.254E-03	1233	********
5	33999	.148E-02	1157	********
6	77790	.343E-02	1176	********
7	93876	.415E-02	1098	********
8	73201	.323E-02	1170	********
9	42880	.188E-02	1149	********
10	26735	.116E-02	1204	********
11	20173	.869E-03	1195	********
13	13163	.557E-03	1217	********
14	30057	.131E-02	1210	********
15	23362	.101E-02	0	********
16	9520	.395E-03	1257	********
19	4065	.152E-03	1244	********
22	4476	.170E-03	1224	********
23	4216	.159E-03	1241	********
24	15339	.654E-03	126815	.268E-02

RUN # 208 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 30 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 10 FT RAW (AREA)	CONC. RATIO
1	1555	.409E-04	1198	.428E-07
2	38926	.170E-02	14810	.291E-03
3	929	.130E-04	1227	.663E-06
4	5298	.207E-03	1168	********
5	28193	.123E-02	1144	********
6	70324	.310E-02	1074	********
7	92236	.408E-02	1102	********
8	72273	.319E-02	1073	********
9	49582	.218E-02	1143	********
10	32377	.141E-02	1129	********
11	24690	.107E-02	1160	********
13	16189	.692E-03	1161	********
14	44826	.197E-02	1138	********
15	35961	.157E-02	1132	********
16	17740	.761E-03	1188	********
19	5236	.205E-03	1176	********
22	6158	.246E-03	1185	********
23	5757	.228E-03	1168	********
24	10856	.455E-03	120950	.256E-02

RUN # 209 WIND DIR. 193

SAMPLE PT.	SOURCE GP. 6 STACK HT. 50 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 2 STACK HT. 30 FT RAW (AREA)	CONC. RATIO
2	19067	.821E-03	1341	.383E-05
5	6218	.249E-03	1145	********
6	17361	.745E-03	1113	********
7	24652	.107E-02	1129	********
8	17642	.757E-03	1118	********
9	8017	.329E-03	1140	********
14	1805	.525E-04	1159	********
15	1435	.360E-04	1183	.449E-06
19	1890	.563E-04	1153	********
24	12849	.544E-03	90220	.190E-02

RUN # 210 WIND DIR. 045

SAMPLE PT.	SOURCE GP. 9 STACK HT. 2 FT. RAW (AREA)	CONC. RATIO	SOURCE GP. 3 STACK HT. 30 FT RAW (AREA)	CONC. RATIO
1	917	.133E-04	1239	.299E-06
2	1841	.544E-04	1231	.128E-06
3	15860	.678E-03	1175	********
4	16424	.703E-03	1189	********
5	16898	.725E-03	1159	********
6	17595	.756E-03	1186	********
7	18024	.775E-03	1158	********
8	18407	.792E-03	1183	********
9	18849	.811E-03	1161	********
10	19179	.826E-03	1178	********
11	19263	.830E-03	1156	********
12	5620	.223E-03	1481	.547E-05
13	7526	.307E-03	1641	.890E-05
14	12306	.520E-03	1195	********
15	12083	.510E-03	1183	********
16	8320	.343E-03	1206	********
19	3794	.141E-03	1582	.763E-05
20	598	********	1214	********
21	623	.223E-06	1206	********
22	14088	.599E-03	1202	********
23	12211	.516E-03	1180	********