WESTVACO PAPER MILL STUDY

by

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FLUID MECHANICS AND
WIND ENGINEERING PROGRAM

COLLEGE OF ENGINEERING

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ABSTRACT

Wind tunnel tests were conducted simulating the transport of plumes emitted from the Westvaco Paper Mill under neutral, stable and unstable conditions. A series of ground-level and aerial concentration measurements were obtained to form a base for comparing the results with field observations as well as for numerical model development and validation.

A second series of wind tunnel tests was conducted simulating the flow and plume rise over a two dimensional hill under stable and neutral conditions. A series of vertical and horizontal concentration distributions were obtained to determine plume rise and dispersion rates for use in developing and validating a numerical model.

For both studies velocity and temperature measurements were obtained to document the flow characteristics. In addition complete photographic documentation was obtained.

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LIST OF SYMBOLS

Symbol	Definition	Units
A	Hot film calibration constant	(-)
B	Hot film calibration constant	(-)
b_s	Stack radius	(m)
C	Concentration	(ppm)
C_o	Source strength	(ppm)
C_p	Specific heat at constant pressure	$(m^2 s^{-2} {}^oK^{-1})$
d	Diameter of hot film	(m)
D	Dilution factor $[C/C_o]$	(-)
E	Hot-film voltage	(V)
Ec	Eckert number $\left[\frac{u_o^2}{C_{p_o} \Delta T_o}\right]$	(-)
Fr	Stack Froude number $\frac{u_s}{\sqrt{g\gamma 2b_s}}$	
F_H	Froude number based on tunnel height $= \frac{h}{H} F_h$	
F_h	Froude number based on obstacle height $F_h = \frac{u_h}{\left(\frac{g}{T}\frac{dT}{dz}\right)^{\frac{1}{2}} h}$	
g	Acceleration due to gravity	(ms^{-2})
Gr	Grashof number $\left[\frac{g\ d^3\ (T_w - T_g)}{\nu_g^2\ T_g}\right]$	(-)
H	Height of wind tunnel	(m)
h	Height of obstacle	(m)

Symbol	Definition	Units
h_s	Stack height	(m)
h_r	Reference height	(m)
i	Turbulence intensity	(-)
ι	Integrated value	(μv-s)
I	Current through wire	(a)
k_s	Uniform sand grain height	(m)
k	Thermal conductivity	($Wm^{-1}{}^{o}K^{-1}$)
K	Dimensionless concentration $\left[\frac{Cu_r h_r^2}{C_o V}\right]$	
ℓ	Length of hot film	(m)
ℓ_b	Buoyancy length scale $\left[\frac{u_s b_s^2 g\gamma}{u_a^3}\right]$	(m)
L	Length	(m)
n	Power law exponent or Kings Law exponent	
Nu	Nusselt number	
Pr	Prandtl number $\left[\frac{\nu_o \quad \rho_o \; C_{P_o}}{k_o}\right]$	(-)
R	Speed ratio $\left[u_s/u_a\right]$	(-)
R_c	Hot resistance at calibration conditions	(Ω)
Re	Reynolds number $\left[\frac{L_o u_o}{\nu_o}\right]$	(-)
Ro	Rossby number $\left[\frac{u_o}{L_o \Omega_o}\right]$	(-)
R_H	Film hot resistance	(Ω)

Symbol	Definition	Units
Ri	Richardson number $\frac{g}{T}\left[\frac{\frac{\partial\theta}{\theta z}}{\left(\frac{\partial u}{\partial z}\right)^2}\right]$ or $\left[\frac{g\Delta T_o L_o}{T_o\ u_o^2}\right]$	(-)
SF	Length scaling factor	(-)
T	Ambient temperature	(^oK)
ΔT	Temperature difference	(^oK)
t	Time	(s)
u	Mean horizontal wind speed	(m/s)
u*	Friction velocity	(m/s)
u_s	Stack gas exit velocity	(m/s)
u'	Root-mean-square velocity $\left[\sqrt{\overline{u'^2}}\right]$	(m/s)
x'	Horizontal distance from stack	(m)
V	Volume flow rate	(m^3s^{-1})
W	Width of Gaussian Hill	(m)
x,y,z	Cartesian coordinates	(m)
z_o	Surface roughness parameter	(m)
z_m	Matching height $\left(\frac{z_2 - z_1}{\ell n z_2/z_1}\right)$	(m)
z_g	Height of ground above stack base	(m)
z'	Height above stack top	(m)
z	Height above stack base	(m)

Greek Symbols

α	Thermal coefficients of resistance	($\Omega/^oK$)
β	Entrainment coefficient	(-)
Φ*	Dissipation term	(-)
ε	Permutation symbol	(-)

Symbol	Definition	Units
Greek Symbols		
Λ	Length scale	(m)
Ω	Angular velocity	(s^{-1})
ν	Kinematic viscosity	$(m^2 s^{-1})$
ρ	Density	$(g\ m^{-3})$
γ	Density ratio $\left[\dfrac{\rho_a - \rho_s}{\rho_a}\right]$	(-)
θ'	Temperature fluctuation	(^oK)
σ_z, σ_y	Vertical and horizontal standard deviation of concentration distribution	(m)
τ	Time	(s)
δ	Kronecker delta	(-)

Subscripts

a	Pertaining to ambient conditions	
r	Pertaining to reference height	
m	Model	
o	General reference quantity or initial condition	
p	Prototype	
∞	Pertaining to free stream value	
s	Pertaining to stack exit conditions	
h	Pertaining to obstacle height	

WESTVACO PAPER MILL STUDY

1. INTRODUCTION

A two phase wind tunnel study was conducted at Colorado State University, Fluid Dynamics and Diffusion Laboratory. The first phase involved simulating the transport and diffusion of plumes emitted from the Westvaco Paper Mill which is near Luke, Maryland. Tests were run under neutral, stable and unstable atmospheric conditions and were designed to match the meteorology and source conditions for two periods of intensive field observation, October 22, 1975 and April 1, 1976. The purpose of the simulation was to compare wind tunnel concentration measurements to those observed in the field on the two intensive field measurement days. If the wind tunnel compares adequately, the wind tunnel will thereafter be used as a standard for validating a numerical model.

The second phase of the program involved simulating the flow and plume rise from a stack over an idealized two dimensional gaussian-shaped hill. The tests were conducted under neutral and stable stratification with various stack heights and stack distances relative to the hill. The purpose of these tests was to obtain plume rise information for validating a numerical model developed by Weil (1979). The later tests, due to their general nature, are referred to as generic tests throughout the report.

Included in this report are a discussion of similarity requirements, the experimental methods and results. A set of black and white photographs, color slides and 16 mm motion pictures supplement this report.

2. WIND-TUNNEL SIMILARITY REQUIREMENTS

The basic equations governing atmospheric and plume motion (conservation of mass, momentum and energy) may be expressed in the following dimensionless form (Cermak, 1974; Snyder, 1972):

$$\frac{\partial \rho^*}{\partial t} + \frac{\partial (\rho^* u_i^*)}{\partial x_j^*} = 0, \tag{2.1}$$

$$\frac{\partial u_i^*}{\partial t^*} + u_j^* \frac{\partial u_i^*}{\partial x_j^*} - \left[\frac{L_o \Omega_o}{u_o}\right] 2\varepsilon_{ijk}\Omega_j^* u_k^* =$$

$$- \frac{\partial p^*}{\partial x_i^*} - \left[\frac{\Delta T_o L_o g_o}{T_o u_o^2}\right] \Delta T^* g^* \delta_{i3}$$

$$+ \left[\frac{\nu_o}{u_o L_o}\right] \frac{\partial^2 u_i^*}{\partial x_k^* \partial x_k^*} + \frac{\partial}{\partial x_j^*}\left(- \overline{u'^*_i u'^*_j}\right) \tag{2.2}$$

and

$$\frac{\partial T^*}{\partial t^*} + u_i^* \frac{\partial T^*}{\partial x_i^*} = \left[\frac{k_o}{\rho_o C_{p_o} \nu_o}\right] \left[\frac{\nu_o}{L_o u_o}\right] \frac{\partial^2 T^*}{\partial x_k^* \partial x_k^*}$$

$$+ \frac{\partial}{\partial x_i^*}\left(-\overline{\theta'^* u_i'^*}\right) + \left[\frac{\nu_o}{u_o L_o}\right] \left[\frac{u_o^{\ 2}}{C_{p_o} (\Delta T)_o}\right] \phi^* . \tag{2.3}$$

The dependent and independent variables have been made dimensionless (indicated by an asterisk) by choosing appropriate reference values.

For exact similarity, the bracketed quantities and boundary conditions must be the same in the wind tunnel and in the plume as they are in the corresponding full-scale case. The complete set of requirements for similarity is:

1) Undistorted geometry
2) Equal Rossby number: $Ro = u_o/(L_o \Omega_o)$
3) Equal gross Richardson number: $Ri = \Delta T_o g L_o / T_o u_o^{\ 2}$

4) Equal Reynolds number: $Re = u_o L_o / \nu_o$

5) Equal Prandtl number: $Pr = (\nu_o \rho_o C_{p_o})/k_o$

6) Equal Eckert number: $Ec = u_o^2/[C_{p_o}(\Delta T)_o]$

7) Similar surface-boundary conditions

8) Similar approach-flow characteristics

All of the above requirements cannot be simultaneously satisfied in the model and prototype. However, some of the quantities are not important for the simulation of many flow conditions. The parameters which can be neglected for this study and those which are important will now be discussed in detail.

Although the stack exit Reynolds number need not be simulated in the tunnel to produce plumes geometrically similar to those in the field, it must be sufficiently high that the plume is fully turbulent at stack exit. The Reynolds number related to the stack exit is defined by

$$Re_s = \frac{2u_s b_s}{\nu}$$

Hoult and Weil (1972) reported that plumes appear to be fully turbulent for exit numbers greater than 300, based on the viscosity of the ambient fluid (water in their towing tank tests). In addition, the stack height and radius and terrain features should be geometrically scaled so that

$$\frac{(h_s)_p}{(h_s)_m} = \frac{(b_s)_p}{(b_s)_m} = \frac{(h_r)_p}{(h_r)_m} = SF \qquad 2.4$$

where h_s is the stack height, p and m denote prototype and model, respectively, and SF is the scale factor.

For large values of scale factor, as with the Westvaco pulp mill (SF = 2000), the stack radius cannot be scaled according to equation 2.4

and also satisfy the stack Reynolds number criterion at the same time.

However, scaling of the model stack radius can be relaxed if the primary interest is in plume rise far downwind where plume buoyancy dominates. Hoult and Weil (1972) discuss three possible trajectories for plumes (in the rise region) with initially finite momentum and buoyancy fluxes.

Very close to the stack the plume is dominated by its initial momentum flux , and the rise varies as $x'^{\frac{1}{2}}$, where x' is the downwind distance. Farther downwind, where the plume has bent over, the rise may still be momentum dominated and vary as $x'^{1/3}$, provided that the Froude number (Fr) is sufficiently large.

Far downwind, the plume trajectory will be dominated by the buoyancy flux, and the rise will vary as $x'^{2/3}$ (the $x'^{2/3}$ dependence holds until the plume rise slows down or ceases due to ambient turbulence). The trajectory in the intermediate, momentum-dominated region is:

$$z' = \left(\frac{3}{\beta^2}\right)^{1/3} (Rb_s)^{2/3} \; x'^{1/3} \qquad 2.5$$

where

- z' is the rise above the stack and
- β a nondimensional entrainment coefficient (β = 0.6, see Hoult and Weil 1972)
- R velocity ratio (u_s/u_a)

In the buoyancy-dominated region the trajectory is given by the well known "two-thirds law":

$$z' = \left(\frac{3}{2\beta^2}\right)^{1/3} (\ell_b)^{1/3} \; x'^{2/3} \qquad 2.6$$

where ℓ_b is the buoyancy length scale defined by

$$\ell_b = \frac{Fi}{u_a^3}$$

and Fi is the buoyancy flux given by

$$Fi = u_s b_s^2 g\gamma$$

and where

u_s = vertical speed of plume at stack exit

u_a = horizontal wind speed at stack top

b_s = effective plume radius at stack exit

g = gravitational acceleration

γ = fractional density difference at stack exit

$$\gamma = \frac{\rho_a - \rho_s}{\rho_a}$$

ρ_a = ambient air density at stack height

ρ_s = plume density at stack exit

Equations 2.5 and 2.6 intersect at a distance x'_c, where

$$x'_c = 2\left(\frac{Fr}{R}\right)^2 Rb_s \qquad 2.7$$

Equations 2.5 and 2.6 approximate the plume trajectory for $x' < x'_c$ and $x' > x'_c$ respectively.

At the Westvaco Paper Mill, the stack plumes are buoyancy-dominated in the downwind region of interest, (where appreciable surface concentrations occur), and equation 2.6 therefore applies. If

$$\frac{(\ell_b)_p}{(\ell_b)_m} = SF$$

we can maintain geometrically scaled plume rise at corresponding distances in the wind tunnel, and neglect the individual conditions $(b_s)_m = (b_s)_p/SF$, $(R)_m = (R)_p$ and $(Fr)_m = (Fr)_p$.

A further condition is that x'_c in the model be sufficiently small that the plume rise follows equation 2.6 at scaled distances of interest.

The initial rise and dispersion of the plume is predominantly dominated by the plume's own self-generated turbulence. Farther downwind ambient turbulence dominates the process. For similarity in this region consider Taylor's (1921) relation for diffusion in a stationary homogeneous turbulence.

$$\sigma_z^2(t) = \overline{2w'^2} \int_0^t \int_0^t R(\xi)d\xi dt \qquad 2.8$$

which can be simplified to (see Csnaday, 1973)

$$\sigma_z^2(t) \cong w'^2 t^2 \cong i_z^2 x^2 \qquad 2.9$$

for short travel times; or,

$$\sigma_z(t) = 2w'^2 t_o(t-t_1); \qquad 2.10$$

for long travel times where

$$t_o = \int_0^\infty \tau R(\tau)d \qquad 2.11$$

is an integral time scale and

$$t_1 = \frac{1}{t_o} \int_0^\infty \tau R(\tau)d \qquad 2.12$$

is the center of gravity of the autocorrelations curve. Hence for geometric similarity at short travel times,

$$\frac{[\sigma_z^2]_m}{[\sigma_z^2]_p} = \frac{[L^2]_m}{[L^2]_p} = \frac{[i_z^2 \ x^2]}{[i_z^2 \ x^2]_p}$$

or,

$$[i_z]_m = [i_z]_p. \qquad 2.13$$

For similarity at long travel times

$$\frac{L_m^2}{L_p^2} = \frac{[\sigma_z^2]_m}{[\sigma_z^2]_p} = \frac{[\overline{w'^2}t_o(t-t_1)]_m}{[\overline{w'^2}t_o(t-t_1)]_p}$$

$$= \frac{[i_z^2]_m}{[i_z^2]_p} \; \frac{[t_o(t-t_1)/u^2]_m}{[t_o(t-t_1)/u^2]_p} = \frac{[Li_z^2 \, \Lambda]_m}{[Li_z^2 \, \Lambda]_p}$$

if it is assumed $t_o << t$, $t_o/u = \Lambda$ and $t/u = L$. Thus the turbulence length scales must scale as the ratio of the model to prototype length scaling if $(i_z)_p = (i_z)_m$ or,

$$\frac{L_m}{L_p} = \frac{\Lambda_m}{\Lambda_p} \qquad 2.14$$

An alternate way of evaluating the similarity requirement is by putting 2.8 in spectral form or (Snyder, 1972),

$$\sigma_z^2 = \overline{w'^2}t^2 \int_0^\infty F_L(n) \left[\frac{\sin \pi nt}{\pi nt}\right]^2 dn = \overline{w'^2}t^2 I \qquad 2.15$$

where

$$I = \int_0^\infty F_L(n) \left[\frac{\sin \pi nt}{\pi nt}\right]^2 dn$$

F_L = Langrangian spectral function

The quantity in brackets is a filter function the form of which can be seen in Pasquill (1974). In brief for $n > \frac{1}{t}$ the filter function is very small and for $n < \frac{1}{10t}$ virtual unity.

For geometric similarity of the plume the following must be true:

$$\frac{L_m^2}{L_p^2} = \frac{[\sigma_z^2]_m}{[\sigma_z^2]_p} = \frac{[\overline{w'^2}t^2 I]_m}{[\overline{w'^2}t^2 I]_p} = \frac{[L^2 i_z^2]_m}{[L^2 i_z^2]_p}$$

or

$$\frac{[i_z^2 I]_m}{[i_z^2 I]_p} = 1 \qquad 2.16$$

If $[i_z]_m = [i_z]_p$ the requirement is $I_m = I_p$. For short travel times the filter function is essentially equal to one; hence, $I_m = I_p = 1$ and the same similarity requirement as previously deduced for short travel times is obtained (equation 2.13).

For long travel times the larger scales (smaller frequencies) of turbulence progressively dominate the dispersion process. If the spectra in the model and prototype are of a similar shape then similarity would be achieved. However for a given turbulent flow a decrease in Reynolds number (hence wind velocity) decreases the range (or energy) of the high frequency end of the spectrum. Fortunately, due to the nature of the filter function, the high frequency (small wavelength) components do not contribute significantly to the dispersion. There would be, however, some critical Reynolds number below which too much of the high frequency turbulence is lost. If a study is run with a Reynolds number in this range similarity may be impaired.

The ambient flow field affects the plume trajectories and consequently similarity of this field between model and prototype is required. The mean flow field will become independent of Reynolds number if the flow is fully turbulent. The critical Reynolds number for this criteria to be met is based on the work of Nikuradse as summarized by Schlichting (1968) and Sutton (1953) and is given by

$$(Re)_{k_s} = \frac{k_s u^*}{\nu} > 75.$$

or assuming $k_s = 30\ z_o$

$$Re_{z_o} = \frac{z_o u^*}{\nu} > 2.5$$

In this relation k_s is a uniform sand grain height and z_o is the surface roughness factor. Re_{z_o} at point 50 (see Figure 3-1 for location) was estimated to be 18.4 by analyzing the velocity profile for neutral stability.

The Rossby number Ro is a quantity which indicates the effect of the earth's rotation on the flow field. In the wind tunnel equal Rossby numbers between model and prototype cannot be achieved. The effect of the earth's rotation becomes significant if the distance scale is large. Snyder (1972) puts a conservative cutoff point at 5 km for diffusion studies. He states that for length scales above this value the Rossby number should be considered. For this particular study, the maximum range over which the plume is transported is less than 5 km in the horizontal and 1 km in the vertical. Hence, neglecting the earth's rotation effect is justified.

When equal Richardson numbers are achieved, equality of the Eckert number between model and prototype cannot be attained. This is not a serious compromise since the Eckert number is equivalent to a Mach number squared. Consequently, the Eckert number is small compared to unity for laboratory and atmospheric flows.

The scaling factors of the present study have been worked out J. C. Weil, Martin-Marietta Corporation after Hoult and Weil (1972). (For more similarity discussions one can refer to Weil (1979) regarding the present study.) A summary of the similarity requirements are as follows:

1) Stack Reynolds number sifficiently high so that the plume is turbulent at the stack exit.
2) The plume in the model is buoyancy dominated no further than 17.5 cm downwind of the stack which corresponds to 350 m for the prototype.

3) $\frac{(\ell_b)_p}{(\ell_b)_m}$ = SF where m and p denote model and prototype respectively, SF is the scale factor and ℓ_b is the buoyancy length scale defined by:

$$\ell_b = \frac{u_s b_s^2 g\gamma}{u_a^3}$$

Here u_s and u_a are the vertical speed of plume at stack exit and horizontal wind speed respectively, b_s stack diameter, g acceleration of gravity and γ the fractional density difference at stack exit.

4) $Re_{z_o} > 2.5$; $Re_{z_o} = \frac{u^* z_o}{\nu_a}$

5) Similar geometric dimensions (except stack radius)

6) Equality of dimensionless boundary conditions

7) Equal Richardson number $Ri = \frac{g}{T} \frac{\Delta T \ \Delta z}{(\Delta u)^2}$

Tables 2.1 and 2.2 present the stack parameters as worked out by Martin-Marietta for two operating conditions, one representing conditions in October, the other in April.

3. EXPERIMENTAL PROGRAM - WESTVACO PAPER MILL

3.1 Summary

The objective of this study was to evaluate the transport and diffusion of plumes released from the Westvaco Paper Mill for two stack configurations: one configuration representing October 22, 1975 with three stacks operating and the second configuration representing April 1, 1976 with four stacks operating. To meet this objective a 1:2000 scale model of the paper mill, the stacks and the surrounding terrain were built by Colorado State University according to plant description data and terrain contour maps supplied by Martin-Marietta Corporation and United States Geological Survey respectively. The wind tunnel tests were carried out for unstable, neutral and stable stratification. For each environmental condition, vertical profiles of velocity were measured at several locations. The location of vertical velocity and temperature profiles are given in Figure 3-1. Concentration measurements were conducted with each stack emitting a different tracer gas so that each source could be monitored independently. Vertical and crosswind tracer concentration fields for each stack plume were mapped at 6 downwind cross-sections (line A to F in Figure 3-1).

3.2 Scale Models and Wind Tunnel

- Topographic Scale Model

An undistorted scale (1:2000) topographic model of the Westvaco Paper Mill (WPM) site and surrounding area was constructed by CSU. This model, designed for dispersion studies for west wind, represents an east-west strip 3,658 m wide and 7,350 m long centered on the town of Luke, Maryland.

Construction of the topographic model entailed a two-step process. The first step involved constructing a styrofoam model out of 1.3 cm thick styrofoam sheets (corresponds to a 26 m full-scale contour interval).

Unites States Geological Survey maps were enlarged and used as patterns from which the styrofoam was cut. The roughness elements on the styrofoam terrain model consisted of the 1.3 cm contour interval steps. The second phase of construction entailed constructing a wood-ribbed frame. The frame had wood supports approximately every 30.5 cm which were cut to conform with the terrain elevation. Next, thin aluminum foil was placed on the styrofoam model and molded in 30.5 cm wide strips to fit the terrain contours as shown in Figure 3-2. Once a strip was molded it was placed onto the wood frame and fastened. This procedure was repeated until a 1.22 x 1.83 cm section was complete. On the surface of the model 0.3 cm gravel was randomly placed to simulate forest vegetation. A picture of a completed section is shown in Figure 3-3.

Holes were cut in the ribs at the bottom to allow for circulation of air underneath the aluminum topographic simulated surface. Next, fans were positioned underneath the aluminum surface to enhance the airflow beneath the model. This is also shown in Figure 3-3. This hollow platform was then placed on the cooling plates that are permanently installed in the wind tunnel and the fans were activated to enhance the heat transfer from the surface and thereby keep a fairly uniform surface temperature distribution along the aluminum topographic surface of the model.

- Models of the Paper Mill Complex and Emission Sources

A simplified plexiglass model of the power house at the same scale as the topographic model (1:2000) was constructed together with six emission sources adjacent to it. (1) Tall stack, (2) two boilers, (3) two recovery units, (4) lime kiln. The paper mill model and emission sources are depicted in Figure 3-4 and their location in Figure 3-1. The emission sources were operated in two combinations; a group of 4 sources representing conditions in October, and a group of 3 sources representing conditions in April. These two combinations and the physical dimensions of the stacks, as well as the concentration of tracer gas emitted from each, are presented in Table 2.2.

- Wind Tunnel

The meteorological wind tunnel (MWT) shown in Figure 3-5 was used for this study. This wind tunnel, especially designed to study atmospheric flow phenomena (Cermak, 1958; Plate and Cermak, 1963), incorporates special features such as an adjustable ceiling, a rotating turntable, temperature controlled boundary walls, and a long test section to permit adequate reproduction of micrometeorological behavior. Mean wind speeds of 0.1 to 39.6 m/s in the MWT can be obtained. Boundary layer thicknesses up to 1.2 m can be developed naturally over the downstream 6.1 m of the MWT test section. Thermal stratification in the MWT is provided by the heating and cooling systems in the section passage in the test-section floor.

For this study no vortex generators or boundary-layer trips were installed at the entrance since a very shallow boundary layer was desired. To develop the boundary layer a set of 12 Roll-Bond plates was used as a ramp at the beginning of the test section. A three-dimensional sketch of the tunnel configuration is shown in Figure 3-6.

To run the tunnel for stable stratification, the Roll-Bond aluminum panels and the permanently installed cooling plates were connected to the facility refrigeration system and cooled until the required stability conditions were achieved. Other controls were used to adjust the free-stream air (air entering the test section) temperature. During the runs with stably stratified flow, the fans which were under the terrain model were running to enhance the heat transfer from the model surface insuring that a stable boundary layer would be maintained.

3.3 Flow Visualization

The purpose of this phase of the study was to visually assess the transport of the plumes released from the different stacks of the paper mill over the terrain downwind. The data collected consists of a series of photographs of the smoke emitted from the stacks at different stratification conditions set in the tunnel. The photographic tests are numerated in Table 3.1 and presented in a supplement to this report.

The smoke was produced by passing air through a container of titanium tetrachloride located outside the wind tunnel and transported through the tunnel wall by means of a tygon tube terminating at a stack. The plume was illuminated with high intensity lamps and a visible record was obtained by means of black and white photographs taken with a supergraphic camera (lens focal length 135 mm) and color slides taken with a Pentax camera (focal length 50 mm). The shutter speed for the black and white photographs was 1/20 of a second and for the color slides 1/30 of a second. The black and white and color photographs were taken at an angle perpendicular to the tunnel such that the field of view would show the plume being transported along the valley to the urban area east of the mill. A series of 16 mm motion pictures were taken of all tests. A Bolex movie camera was used with a speed of 24 frames per second.

3.4 Velocity and Temperature Measurements

Mean and turbulent velocity measurements were performed to 1) quantitatively assess the flow patterns over the simulated terrain, 2) monitor and set flow conditions, and 3) document the approach conditions in the wind tunnel. Temperature measurements were also taken so that the characteristics of the thermal boundary layer could be obtained. Instrumentation used for this study included 1) one Thermo-Systems, Inc. (TSI) 1050 series anemometer, 2) a TSI Model 1210 hot-film sensor, 3) a Model 1800 LV Datametric Linear Flow Meter and Probe, 4) a Matheson Linear Mass Flow Meter and Controller for velocity calibration, and 5) a Yellow Springs, Inc. Precision Thermistor and telethermometer. The instruments used for velocity and temperature measurements are shown in Figure 3-7. For the test done with stratified flow, detailed temperature measurements were required. The techniques used to obtain the velocity data with this assortment of equipment and the data processing techniques will now be discussed in more detail.

- Hot-Film Anemometry -- Principle of Operation and Calibration Technique

The transducer used for measuring velocities for this study was a Model 1210 hot-film sensor. The sensor consists of a platinum film on a single quartz fiber. The diameter of the sensor is 0.0025 cm. The sensor has the capability of resolving one component of velocity in turbulent flow fields.

The basic theory of operation is based on the physical principle that the heat transfer from the wire equals the heat supplied to the wire by the anemometer or in equation form (see Hinze, 1975),

$$I^2 R_H = \pi \ell k \, (T_w - T_g) \, Nu \qquad 3.1$$

where

I = current through wire

k = heat conductivity of gas

ℓ = length of wire

T_w = temperature of wire

T_g = temperature of gas

Nu = Nusselt number

$= F\left(Re, Pr, Gr \dfrac{T_w - T_g}{T_g}, \left(\dfrac{\ell}{d}\right)\right)$

$$Re = \frac{ud}{\nu_g}$$

$$Pr = \frac{C_p \mu_g}{k_g}$$

$$Gr = \frac{gd^3(T_w - T_g)}{\nu_g^2 \; T_g}$$

d = diameter of wire

R_H = operating resistance of wire

For most wind-tunnel applications an empirical equation evolved by Kramers as reported in Hinze (1975) is adequate for representing Nu for a Reynolds number range $0.01 < Re < 1000$, or

$$Nu = 0.42^{0.2} + 0.56 \; Pr^{0.33} \; Re^{0.5}.$$

Free convection from the wire can be neglected for $Re > 0.5$ when

$$GrPr < 10^{-4}.$$

Alternately buoyancy may be neglected when

$$Gr < Re^3.$$

The temperature dependence of the electric resistance of the wire is assumed to follow the ensuing relation:

$$R_H = R_o[1 + b_1(T_w - T_o) + b_2(T_w - T_o)^2 \ldots]$$

where b_i are temperature coefficients. Normally the higher order terms are neglected and

$$R_w = R_o[1 + b_1(T_w - T_o)]$$

Substituting the appropriate relations yields the following equation:

$$\frac{I^2 R_w}{R_w - R_c} = A + B(\rho_c u)^n \qquad 3.2$$

where

R_c = resistance of wire at calibration temperature

ρ_c = density of air at calibration temperature

$$A = \frac{\pi \ell k_f}{b_1 R_o} \quad 0.42(Pr)^{0.2}$$

$$B = \frac{\pi \ell k_f}{b_1 R_o} \quad 0.57(Pr)^{0.33}\left(\frac{d}{\mu}\right)^{0.5}.$$

For this study A, B and n were obtained by calibrating the wire over a range of known velocities. Thereafter A, B and n were determined by a least-squares analysis. Since the wire is calibrated at fixed temperature and the wire will be placed in a stratified environment a method for correcting the voltage output of the wire was developed. At each measurement point in the wind tunnel the ambient temperature and resistance of the wire were measured. The instantaneous velocity was then calculated using the inverse of equation 3.2 or

$$u = \frac{T_a}{T_c}\left[\frac{\dfrac{I^2 R_w}{R_w - R_a} - A}{B}\right]^{1/n} \qquad 3.3$$

where

T_a = the measured ambient temperature

R_a = the measured wire resistance at ambient temperature.

Calibration of the hot film was performed with the Matheson Linear Flow Meter (MLFR). A special flow chamber was attached to the MLFR with a specially constructed orifice which gave a uniform velocity profile upon exit. With this device velocities over the range of 0.09 to 2 m/s could be obtained. Accuracy of this system is quoted to be 1 percent of full-scale range or $\pm$ 0.02 m/s. A typical calibration curve is shown in Figure 3-8. A calibration was performed at the beginning of each day's measurement.

After the wire was calibrated, the desired flow condition was set in the wind tunnel. The free-stream velocity was monitored with the Model

800 LV Datametric Flow Meter and Probe. Once the desired condition at the reference height was obtained the Datametric setting was recorded and used to monitor and set the tunnel conditions for all remaining tests. During all subsequent velocity measurements care was taken to ensure the Datametric probe reading remained constant.

- Data Collection

Velocity and temperature profiles were measured at various locations on the terrain. The manner of collecting the data was as follows: 1) the hot film was attached to a carriage along with a yellow spring thermistor, 2) the bottom height of the profile was set to be 1.0 cm, and 3) a vertical distribution of velocity and temperature was obtained using the vertically traversing mechanism which gave a voltage output corresponding to the height of the wire and thermistor above the ground, 4) the signals from the hot film and potentiometer device indicating height were fed directly to a Hewlett-Packard Series 1000 Real Time Executive Data Acquisition System, 5) samples were stored digitally in the computer at a rate of 500 samples/second, and 6) the computer program converted each voltage into a velocity (m/s) using the equation 3.3. Also, input was the cold resistance and temperature at the level so that the appropriate correction as discussed above could be made. At this point the program computes several useful quantities using the following equations:

$$\bar{u} = 1/N \sum_{i=1}^{N} u_i$$

$$\overline{u'^2} = \frac{1}{N-1} \sum_{i=1}^{N} (u_i - \bar{u})^2$$

where N is the number of velocities considered (typically a 15-second average was taken, hence 7500 samples were obtained). The mean velocity and turbulence intensity at each measurement height were stored on a file in addition to being returned to the operator at the wind tunnel on a remote terminal. The temperature data were recorded by typing the indicated temperature from the Yellow Springs thermistor on the computer sheet at the remote terminal. To compute Richardson and Froude numbers a program had not been developed prior to conducting the test. Hence, this data were entered manually into the file for subsequent analysis.

3.5 Gas Tracer Technique

The purpose of this phase of the experimental study was to provide quantitative information on the transport and dispersion along the valley and at intermediate locations of the plume emitted from the paper mill. To meet this goal a comprehensive set of concentration measurements were taken. The data obtained included elevated samples taken through a 26 point rake mounted on the wind tunnel traversing carriage and ground-level samples also obtained using a rake. A photo of the vertical sampling rake is shown in Figure 3-9, distance between rake points in Figure 3-10 and a schematic of the ground-level sampling rake in Figure 3-11.

The test procedure consisted of: 1) setting the proper tunnel wind speed, 2) releasing a metered mixture of tracer gas of the required density from the stacks, 3) withdraw samples of air from the tunnel at the locations desired, and 4) analyze the samples with a flame-ionization gas chromatograph (FIGC). A photograph of the sampling system and gas chromatograph are shown in Figure 3-12.

The procedure for analyzing air samples from the tunnel was 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 millivolts) is sent to the Fluid Dynamics and Diffusion

Laboratory (FDDL) dedicated minicomputer system, 3) the analog signal is converted to a digital record at a rate of 208 values per second which are then averaged in groups of 16, 4) a digital record is integrated and a tracer concentration determined by multiplying the integrated signal (mvs) times a calibration factor (ppm/mvs), 5) the ethane concentration is stored in the computer for subsequent use, and 6) a summary of the computer analysis (tracer concentration, peak height, integrated voltage, etc.) is printed out on the remote terminal at the wind tunnel. Prior to any data collection a tracer of known concentration was introduced into the FID to determine the calibration factor. This factor is input into the computer for use in converting the data.

The FID operates on the principal that the electrical conductivity of a gas is directly proportional to the concentration of charged particles within the gas. The ions in this case are formed by the effluent gas being mixed in the GC with hydrogen and then burned in air. The ions and electrons formed enter an electrode gap and decrease the gap resistance. The resulting voltage drop is amplified by an electrometer and fed to the FDDL computer. When no effluent gas is flowing, a carrier gas (nitrogen) flows through the FID. Due to certain impurities in the carrier some ions and electrons are formed creating a background voltage or zero shift. When the effluent gas enters the FID the voltage increases above this zero shift in proportion to the degree of ionization or correspondingly the amount of tracer gas present. Since the chromatograph used in this study features a temperature control on the flame and electrometer there is very low zero drift. In case of any zero drift the computer program which integrates the effluent peak also subtracts out the zero drift.
In order to monitor the plumes of individual stacks, different gas tracers

were used for each stack. The gas chromatograph attenuates each gas a different length of time thus enabling analysis of individual gases. In the present study, up to four tracer gases were used: methane, ethane, propane and buthane.

4. EXPERIMENTAL PROGRAM - GENERIC TESTS

4.1 Summary

Simulations of buoyant plume rise in neutral and stably stratified flows over a two-dimensional hill were conducted to test a mathematical plume model in the stratified wind tunnel. This tunnel was able to simulate the uniform (with height) velocity and density stratification far upstream of the hill that is the basis of the ambient flow model used in the plume calculations. In addition, it provided a low-turbulence environment so that the growth of the plume was due to the plume's own self-generated turbulence.

The model operating conditions are given in Table 4.1. A total of 8 tests were conducted in the wind tunnel. The run numbers, ridge configuration, Froude numbers, and release heights for each test are given in Table 4.1.

All tests were conducted in a similar manner. A thin boundary layer was established over a flat tunnel floor and measurements of velocity and temperature were made directly upwind of the source. The profiles were analyzed to assess whether the desired Froude number had been achieved. Once the desired value was obtained numerous velocity and temperature profiles were made along the center of the test section with a Gaussian shaped ridge in place.

After completing the velocity measurements a metered quantity of buoyant gas was allowed to flow from a stack at the required speed. Vertical and horizontal distributions of the resulting plume were obtained at 6 and 4 locations respectively, along the centerline of the tunnel.

To qualitatively document the flow pattern the plume was made visible by passing the gas mixture through titanium tetrachloride prior to emission from the release stack. Still (color and black and white) pictures of the tests which are mentioned in Table 4.1 were obtained.

A more detailed description of every facet of the study will now be given.

4.2 Wind Tunnel and Scale Model

The stratified wind tunnel, which is shown in Figure 4-1, is a low-speed, open-circuit tunnel with a 0.5 m x 0.6 m cross-section and a 4.6 m-long test section. Mean wind speeds attainable range from approximately 0.1 m/sec to 2 m/sec. A stable density gradient is created at the tunnel inlet by passing the flow through a vertical array of horizontal, parallel, electrically heated plates, which establishes a temperature gradient. Since the power dissipated in each plate is controlled separately, the temperature profile shape may be varied. The temperature profile is maintained along the tunnel by electrically heated plates on the ceiling and by cooled water panels on the floor. The maximum temperature gradient attained during these tests was 0.6° C/cm. Other details of the tunnel can be found in Yamada and Meroney (1974).

A Gaussian-shaped ridge, shown in Figure 4-2, was used in the experiments with a profile $z_g(x)$ given by:

$$z_g = h \exp - \left(\frac{x^2}{2W^2}\right) .$$

where h is the maximum hill height, W the hill width, and x the distance from the ridge peak. This shape was chosen to minimize flow separation on the down-stream side of the hill. The model was constructed of lucite with width and maximum height both equal to 6 cm. The hill could be moved freely along the tunnel axis to vary its distance from the stack.

The model stacks which are shown in Figure 4-3 were located upstream of the ridge. They were made of brass and were 1 or 3 cm high. A stack

Reynolds number of less than 300 was required for these tests because of the low speeds used in the tunnel (10 cm/sec to 21 cm/sec) and at stack exit. From the work of Hewett et al (1971), it was found that a fully turbulent plume could be obtained with a stack Reynolds number of 150 provided that the flow was tripped in the stack. Preliminary experiments were conducted using a circular disc with a V notch in it which was inserted in each stack at ground level to promote turbulence. This alone did not work satisfactorily. Consequently a rubber balloon with several small holes in it was placed over the very bottom of the stack. This method did not work either due to rapid deterioration of the rubber. The method which was finally adopted was to place a washer type trip at the bottom of each stack which extended below ground level (underneath the tunnel). The circular disc with a V notch in it was still in each stack at ground level.

The stack operating conditions were designed to satisfy the Reynolds number (150), to provide for a small distance x_c' (8 cm or 14 cm), and to keep the plume rise as small as possible (on the order of the ridge height) at the ridge peak. Consequently, a compromise was necessary on the tunnel wind speed since high speeds produced low plume rise but large values of x_c'. The same stack exit conditions, except for height, were used in all tests. The density defect in the plume was achieved with a helium/nitrogen mixture; the helium was also used to trace the plume.

The experiments were conducted for three different stability conditions: F_h = 1.31, 3.47 and ∞, where the lowest F_h was the smallest value attainable in the tunnel. A summary of the test conditions is given in Table 4.1.

4.3 Flow Visualization

The purpose of this phase of study is to visually assess the transport of the plumes released from the model stacks. The data collected consist of a series of photographs of the smoke emitted from the stacks for the different tests enumerated in Table 4.1.

The smoke was produced by passing source gas through a container of titanium tetrachloride located outside the wind tunnel and transported through the tunnel wall by means of a tygon tube terminating at the stack inlets. The plume was illuminated with high intensity lamps and a visible record was obtained by means of black and white photographs taken with a Graflex supergraphic camera (lens focal length 90 mm) and color slides taken with a Canon F1 camera (focal length 28 and 55 mm). The shutter speed for the black and white photographs was 1/30, 1/50 and 1/8 of a second and for the color slides 1/25 and 1/5 of a second. The black and white and color photographs were taken at an angle perpendicular to the tunnel such that the field of view extended from the stack to approximately 91.44 cm in the model downwind.

4.4 Gas Tracer Technique

The purpose of this phase of the experimental study is to provide quantitative information on the transport and dispersion of the plume emitted from the model stacks. To meet this goal a comprehensive set of concentration measurements was taken. The data obtained included an array of samples along the center of the tunnel in the vertical direction and a horizontal array of samples elevated above the ground at the height of maximum concentration in the vertical. Two sampling rakes, shown in Figure 4-4, one with 25 tubes in the vertical and one with a horizontal array were used to obtain vertical and horizontal distributions of the plume.

The test procedure consisted of: 1) setting the proper tunnel wind speed and temperature, 2) releasing a metered mixture of source gas (helium and nitrogen) of the required density from the model stacks, 3) withdraw samples of air from the tunnel at the locations designated, and 4) analyze the samples with a thermal conductivity gas chromatograph (TCGC). Concentrations of the tracer gas (He) were determined by using the TCGC. The TCGC was modified so that continuous sample analysis was possible. The flow rate through the TCGC was maintained at 27.5 cc/min and the carrier gas was ambient air. The samples were drawn into the TCGC over a 30 second (approximate) time.

The system used for drawing air samples from the tunnel worked in the following manner. Air samples were drawn from the wind tunnel directly through a Carle Model Gas Chromatograph by a Doerr vacuum pump. The vacuum pump was connected to a holding tank to help stabilize the draw rate. A Brooks flowrator was used to monitor the rate of flow through the GC and a Veriflo Series SC440 flow controller was used to regulate the actual flow rate.

The procedure for analyzing air samples from the tunnel was as follows:

1) The TCGC intake tube was hooked to one of the 26 sample tubes exiting from the roof of the tunnel.
2) A stop watch was used to monitor an approximately 30 second sample period.
3) An average value was recorded from the Hewlett Packard Model 3440A Digital Voltmeter output over the sample period.
4) The TCGC intake tube was disconnected and reconnected to a background tube in the tunnel allowing the TCGC to come back to base level before drawing in the next sample.
5) A H-P Moseley 680 strip chart recorder was also used to record the results of the gas concentration measurements.

The TCGC detector is based on the principle that a hot body will lose heat at a rate which is dependent upon the composition of the surrounding gas (McNair and Bonelli, 1969). The gas concentrations are detected by measuring changes in the resistance of a heated thermistor which has a constant current flowing through it. When ambient tunnel air flows through the detector, the resistance remains essentially constant. When air mixed with various percentages of helium flows through, the heat transfer from the thermistor changes as does the resistance. If various known concentrations of helium in the air are run through the analyzer and the voltage output due to maintaining a constant resistance is recorded, a calibration of the analyzer is obtained. Figure 4-5 shows a calibration curve giving ppm helium versus TCGC response in millivolts. Since the calibration was nearly linear, 100 percent helium was used to record changes in the calibration curve during the course of the study.

The lower limit of measurement is imposed by the instrument sensitivity (~ 30 ppm for He) and the background concentrations of helium in the air within the wind tunnel (< 30 ppm). Background concentrations were subtracted from all measurements and were assumed to be the values at the extreme edge of the plume on each horizontal or vertical array.

4.5 Velocity and Temperature Measurements

Uniform velocity profiles (except for thin boundary layers) for the neutral stability and $F_h = 3.47$ case were established by placing a honeycomb (2 ft x 2 ft x 1½ in. with ¼ in. diameter holes) mesh in the tunnel cross-section about 10 cm upwind of the stack. For $F_h = 1.31$, the honeycomb was removed because it created wavelike disturbances that strongly affected the plume. Such disturbances are created by any obstacle in the tunnel when the tunnel Froude number, $F_H = \frac{h}{H} F_h$, is less than $\frac{1}{\pi}$

(Yih, 1965), as it was for the latter case. The velocity profile for the tests at $F_h = 1.31$ was not uniform (even without the hill in place) and exhibited a low-level maximum (13.7 cm/sec at z = 6 cm) that was about 25 percent greater than the mean speed within the range $0 \leq x \leq 6$ cm. (The average speed over the whole profile was 8.9 cm/sec.)

The tests for the intermediate stability were originally to be conducted at $F_h = 2$, which was close to the point where the flow field near the hill would begin to be affected by the stable stratification (Hunt et al, 1978). However, the tests at $F_h = 2$ could not be conducted with the honeycomb in place because F_H was less than $\frac{1}{\pi}$. We preferred to conduct tests at the intermediate stability with a uniform velocity profile rather than at the stronger stability ($F_h = 2$). As expected, results from the $F_h = 3.47$ tests were not much different from those under neutral conditions.

Vertical profiles of velocity and temperature were measured without the hill to determine the free stream velocity and temperature distribution far upstream of it. Then, with the hill in place, profiles were obtained at seven locations along the tunnel centerline, both ahead of and behind the hill. Six of these locations corresponded to distances where the plume concentrations were measured. The velocity measurements were obtained with a Datametrics probe (Datametrics Linear Flow Meter, Model 800 LV) that was accurate to within 1 cm/sec down to 2 cm/sec. It is shown in Figure 4-6. Temperature was measured with a Yellow Springs, Inc Precision Thermistor and a YSI Tele-Thermometer (Model 42SC) as shown in Figures 4-6 and 4-7.

The Datametrics probe works in the following manner. Two stainless steel wires are mounted on needle supports and exposed to the flow. One is called the "hot" filament and the other the "cold" filament. The Model

800 LV circuit automatically maintains enough electrical current in the hot filament to keep its operating temperature higher than the absolute temperature of the cold filament by a fixed ratio (about 1.3), resulting in a hot-wire temperature about 150^{o} F above the cold wire. When the flow rate is zero, the voltage is zero at the output receptacle. When the flow rate increases, the electrical current required to keep the hot filament hot automatically increases. This increase causes a voltage increase at the output receptacle. A built-in linearizer circuit is adjusted at the factory to assure that the output voltage is linearly proportioned to flow rate (Datametrics ITE Imperial Corp, 1973).

5. EXPERIMENTAL RESULTS - WESTVACO PAPER MILL

5.1 Visualization

The purpose of this phase of study is to visually assess the transport of the plumes released from different stack configurations over the terrain around the Westvaco pulp mill. During the experiments, the stack gas mixture was passed through titanium tetrachloride to make the model plumes visible.

Black and white photographs, color slides and movies of the plumes were made of all tests. Table 3.1 is the key to the photographs for different runs and also shows which stack configuration was operating for each case. Figures 5-1 and 5-7 show a visualization of the plumes for different stack configurations and different meteorological conditions. In all cases the wind is coming from the west.

5.2 Velocity and Temperature Measurements

Velocity and temperature measurements were obtained to 1) establish the correct operating speeds and temperature in the tunnel, 2) assess the representativeness of the wind tunnel velocity and temperature profiles in comparison to those observed in the atmosphere and 3) document the flow conditions in the wind tunnel.

Vertical profiles of wind speed and temperature were measured at points 50, 53 and E (which are shown in Figure 3-1) and at the approach to the model. At each location velocity and temperature profiles were obtained for neutral, stable and unstable conditions. Wind speed was measured with a single film hot-wire anemometer as discussed in Section 3.

Average speed (30-second average) and temperature were obtained at 10 altitudes (1 cm to 50 cm) at the designated locations. For all stability conditions, the tunnel wind speed was adjusted to the desired value at the reference location (point 50, z = 9 cm) and simultaneously measured by a Datametrics flowmeter just ahead of the model, at a height of about 65 cm. The Datameterics meter setting at the correct reference speed was then used to monitor the tunnel speed during subsequent concentration measurements and velocity profile measurements. The stability was adjusted by the cooling (or heating) of the model surface and heating (or cooling) the free stream air.

The velocity and temperature measurements are presented in tabular form in Appendix A. In the tables z is the elevation from the local ground, u and u' are the mean velocity and its root-mean-square value respectively and i is the turbulent intensity defined by

$$i(\%) = \frac{u'}{u} \times 100 . \qquad 5.1$$

The temperature T was measured at the same elevation as the velocity.

The last columns in each table contain the Richardson number and matching height z_m. The Richardson number is defined by

$$Ri(z) = \frac{g}{T} \frac{\left(\frac{\partial T}{\partial z}\right)}{\left(\frac{\partial u}{\partial z}\right)^2} \qquad 5.2$$

or put in finite different form

$$Ri(z) = \frac{g}{T} \frac{\left(\frac{\Delta T}{\Delta z}\right)}{\left(\frac{\Delta u}{\Delta z}\right)^2} \qquad 5.3$$

In the wind tunnel $Ri(z)$ is computed using Equation 5.3, where $\Delta z = z_2 - z_1$ where z_2 and z_1 are the top and bottom points where the velocity and temperature are measured in adjacent layers, ΔT is the temperature difference between the level Δz, Δu is the speed difference between the level Δz and T is the average temperature over Δz.

To determine which height the value of $Ri(z)$ corresponds, the matching height is computed. The matching height, z_m, is defined as that point where $\frac{\partial u}{\partial z} = \frac{\Delta u}{\Delta z}$ assuming a log-linear velocity profile (i.e. $\frac{\partial u}{\partial z} = \frac{ku^*}{z}$). Equating the difference and partial derivatives gives

$$z = z_m = \frac{\left(z_2 - z_1\right)}{\ell n \frac{z_2}{z_1}} .$$

Hence all Ri values computed between subsequent layers z_1 and z_2 correspond to the height z_m.

The measured speeds at the reference location were within 15% of the design speed (33 cm/sec). The free stream speed, measured about 65 cm above the model, was checked for uniformity among the different measurement sites (points 50, 53, E and approach) for a given stability condition. In the neutral and stable tests, the free stream speeds at the different locations were within a few percent of one another. But, in the unstable tests, the free stream speed was 30% and 43% greater in the approach and at point 53, respectively, than at points 50 and E. Measurements were made on different days, so an improper setting on the Datametrics probe could explain this discrepancy. The higher speeds at point 53 and the approach were found after the model was already taken out of the tunnel and there was not the possibility of repeating the tests.

5.3 Concentration

The purpose of this phase of the study was to quantify the magnitude of the SO_2 concentration downwind of the Luke Paper Mill and the effect of the complex terrain on the concentration distribution.

The gas flow rate from each stack was controlled by a separate flow meter which was calibrated with a soap bubble meter and the test gas mixture for that stack. To determine model plume dispersion, gas samples were withdrawn from the surface of the model. The ground-level samples were collected from a horizontal rake of vertically suspended brass tubes which is shown in Figure 3-11. The rake consisted of 26 tubes, but only 14 were used at each cross-section. Tubes were one diameter (0.16 cm) above the model surface, and the opposite end of each tube was connected to a sampling pump manifold by tygon tubing. Depending on the spread of the plume at each cross-section downwind of the stack the number of sampling tubes used varied. Sampling time ranged from 45 sec to 60 sec. The downwind distances of the sampling rake are shown in Figure 3-1.

Lines A, B and C were used to map out the concentration distribution along the road West Virginia Old Route 46, on the west side of the hill for comparison to field data. Lines D, E, F and L were used to obtain concentration data at points on the hill. Surface samples were also obtained along Maryland Route 135, behind the hill.

To determine plume height and vertical dispersion in the elevated plume, elevated gas samples were collected on lines C, D, E, F and L which are shown in Figure 3-1. The center of the elevated sampling rake in the crosswind direction was placed at the position of the maximum surface concentration. The gas samples withdrawn from the tunnel were analyzed with a Flame Ionization Gas Chromatograph.

Concentration measurements were conducted for October 22, 1975 when the short boiler stacks were operating, and for April 1, 1976 when the tall stack was operating. The lime-kiln and recovery units were operating on both dates and also were modeled in the tests. On both days, the wind was from the west and carried the plumes across the prominent hill to the east of the plant. Dispersion was simulated for unstable conditions, to match those conditions in the field, and also for neutral and stable conditions for comparison. For the short stack configurations, four stacks were operating while for the tall stack configuration, three stacks were operating. The boiler and recovery unit stacks were located on or near the boiler house. The Lime Kiln was located 10 cm (in the tunnel) south of the boiler house.

The density defect in each model plume was achieved with a gas mixture consisting of helium, nitrogen and a hydrocarbon. A different hydrocarbon was used in each stack so that the downwind concentration due to a particular stack could be uniquely determined when all stacks were operating simultaneously.

The similarity parameters and source conditions for the tests are given in Tables 2.1 and 2.2. Concentration measurements are presented in Appendix B. This appendix has two parts. B-1 contains the data tabulation key and sample coordinates. B-2 contains the concentration measurements. The details concerning both parts will be presented.

Table B.2 is the key to tabulated concentration data. The fourth column in this table is the location of lines along which concentrations were measured. The fifth column contains the lines on which the center of the elevated sampling rake is situated. Both lines are shown in Figure 5-8. Table B.3 contains the sampling locations along Highway 135. These locations are shown in Figure 5-8. The x-coordinates of sample locations along lines A, B, C, D, E, F and L and y-coordinates of surface sample locations along lines A to Z are enumerated in Table B.4. The location of all the lines are shown in Figure 5-8. Tables B.5 through B.20 contain the y-z coordinates for the vertical rake centered at crossing points of lines A through L with lines G through Z perpendicular to the first set of lines. Explanation for interpretation of the first column is given in Table B.1.

The second part of Appendix B contains the concentration measurements. There are 36 runs in this part. Each run contains several units. The common factors for different units are stability condition, stack configuration, sample type and the center of sampling rake. Each concentration data sheet in Appendix B-2 consists of five columns. The first column is the location of surface sample (two letters) or elevated sample (a letter and a number) which are explained in Table B.1, the second column contains the integrated signal from the gas chromatograph (RAW DATA), the third column contains the non-dimensional concentration coefficient (K), the fourth column is the model dilution factor (D_o) and the prototype dilution factor is in column five.

The formulas and the definitions used to present the concentration measurements follow. The definition for the model dilution factor D is

$$(D)_m = \left(\frac{C}{C_o}\right)_m$$

where

$(D)_m$ = model dilution factor (fourth column in Appendix B-2)

C = tracer gas concentration $[(\iota - \iota_{BG})CF]_i$

C_o = tracer gas source strength in ppm

ι = integrated value of sample for tracer i (Raw Data)

ι_{BG} = integrated value of background sample

CF_i = calibration factor for tracer i .

The calibration factor was obtained by introducing a known quantity, C_s, of propane in the HPGC and recording the integrated value, ι_s, in μv-s.

The CF_i value for propane is then

$$CF_p = \frac{C_s\ (\text{ppm})}{\iota_s\ (\mu\text{v-s})}$$

For the other tracers, the calibration factor was obtained by multiplying by the ratio of molecular weights as follows:

$$CF_i = CF_p * \frac{m_p}{m_i}$$

where

m_p = molecular weight of propane (44 g)

m_i = molecular weight of i; i = 1, methane (16 g); i = 2, ethane (30 g); i = 3, butane (58 g).

Calibrations were obtained at the beginning and end of each measurement period.

A dimensionless concentration K is defined as

$$K = \left(\frac{Cu_r h_r^2}{C_o V}\right)_m = D_m \left(\frac{u_r h_r^2}{V}\right)_m \qquad 5.2$$

Equation 5.2 shows the form that the data in column three of Appendix B-2 are presented. Here V is the volume flow of pollutant at stack exit and u_r and h_r are reference velocity and height.

The prototype dilution, D_p, factor (fifth column in Appendix B-2) is then defined

$$D_p = K\left(\frac{V}{u_r h_r^2}\right)_p$$

At the end of each run series is a table consisting of the summation of the prototype dilution factor for the common locations for each unit.

For more clarification of Appendix B, let us consider an example. Pick Run number 20 from Table B.2. For this run the stability is S, (stable), stack configuration 0, (October, 1975 case), sample type is E (elevated) and the concentration measurements are obtained along line F (see Figure 5-8). The elevated sampling rake is centered at the intersection of line F and line 0 also as shown in Figure 5-8. Now turn to Table B.16. This table contains the y-z coordinates for the vertical sampler centered at point 0 on line F. These coordinates correspond to concentration data for Run 20, Units 1, 3, 4 and 6.

6. EXPERIMENTAL RESULTS - GENERIC TEST

6.1 Visualization

The purpose of this part of the study was to visually assess the transport of the plumes released from two different stack configurations over a Gaussian hill in the stratified wind tunnel. The stack gas mixture was passed through titanium tetrachloride to make the model plume visible. Black and white photographs, color slides and movies of the plumes were made for all cases of study. There were 8 different runs and the characteristics of each run are given in Table 4.1. Figures 6-1 to 6-4 show plumes over the two-dimensional Gaussian hill for two different stack heights (1 cm or 3 cm), three different meteorological conditions (F_h = 1.31 or 3.47 or ∞) and two stack distances upwind of the hill.

6.2 Velocity Measurements

Velocity and temperature measurements were obtained to 1) establish the correct operating speeds and temperature in the stratified wind tunnel in accordance with the test plan requirements and 2) document the flow conditions in the wind tunnel to compare them with a mathematical model. Velocity and temperature measurements were obtained without the hill to determine the free stream velocity and temperature distribution far upstream. Then, with the hill in place, profiles were obtained at seven locations along the tunnel centerline. The velocity and temperature measurements were obtained for different stability conditions represented by F_h = 1.31, 3.47 and ∞ where the lowest F_h was the smallest value obtainable in the tunnel.

The velocity and temperature results are presented in tabular form in Appendix C. Each table contains the average velocity, root-mean-square value and temperature measurements at 8 or 9 altitudes (1 cm to 28 cm) at the designated location in the wind tunnel. For the neutral cases the temperature is the room temperature.

6.3 Concentration

The purpose of this part of the study was to obtain concentration measurements under idealized flow conditions (uniform upstream velocity and density stratification) over a two dimensional obstacle to compare the results with the predictions of a mathematical model developed by Weil (1979). A Gaussian hill was chosen to minimize flow separation on the downstream side of the hill. The model was constructed of lucite with a width and maximum height both equal to 6 cm. The hill could be moved freely along the tunnel to vary its distance from the stack.

The stack operating conditions were designed to satisfy the Reynolds number criteria (Re > 150), to provide for a small distance x'_c of about 8 or 14 cm, and to keep the plume rise on the order of the hill height at the top of the hill. A compromise was necessary on the tunnel wind speed since high velocities produced low plume rise but large values of x'_c.

The density defect in the plume was achieved with a helium/nitrogen mixture. The helium was also used to trace the plume. The measurements were conducted for stability conditions $F_h = 1.31$, 3.47 and ∞, where the lowest F_h was the smallest value obtainable in the tunnel. Test conditions are given in Table 4.1.

Vertical concentration measurements were obtained at six locations along the centerline of the tunnel to determine plume height and width. At the height of the maximum concentration crosswind concentration measurements were obtained to determine crosswind width. The downwind location of these measurements are given in Table 4.1.

The gas samples were withdrawn from a rake of tubes through tygon tubing to a thermal conductivity gas chromatograph. Two different rakes were used: one for vertical concentration measurements and another for ground-level concentration measurements. These rakes are shown in Figure 4-4. Figure 6-5 shows the vertical sampling rake at the time of sampling.

The concentration measurement results are presented in Appendix D. This Appendix contains 8 runs, and each run contains vertical and horizontal measurements. Horizontal measurements are at the level of maximum vertical measurement. The x, y and z coordinates of each concentration measurement are given along with the measured data in the form C/C_o where C is the measured helium concentration and C_o is the helium source strength at stack exit.

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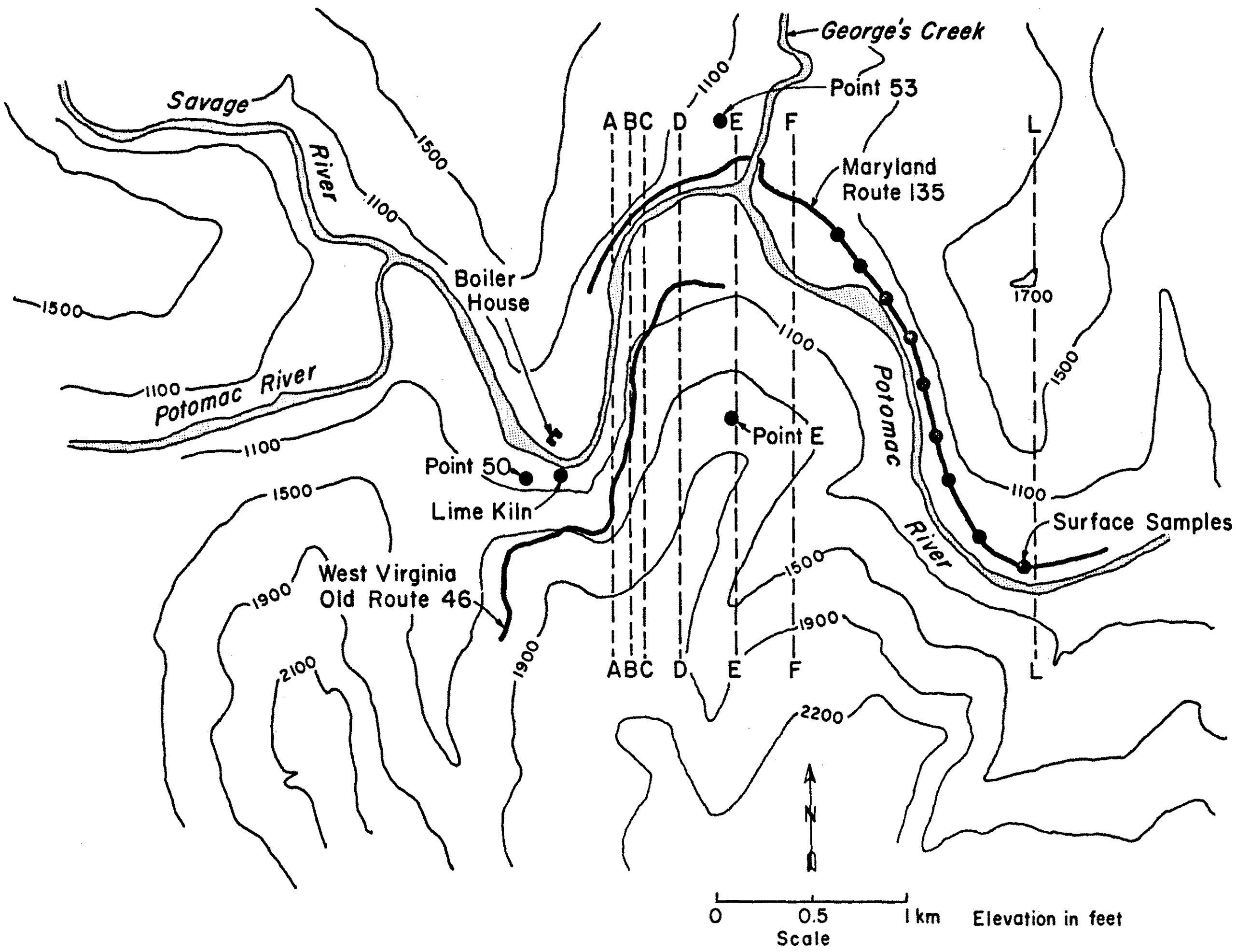


Figure 3-1. Source Locations and Ground-Level Concentration Sampling Positions in Field and Wind Tunnel. (Heavy solid lines denote mobile van sampling routes used in field; dashed lines and closed circles show sampling locations in wind tunnel.)

Figure 3-2. Picture Showing Technique for Constructing Aluminum Shell Model.

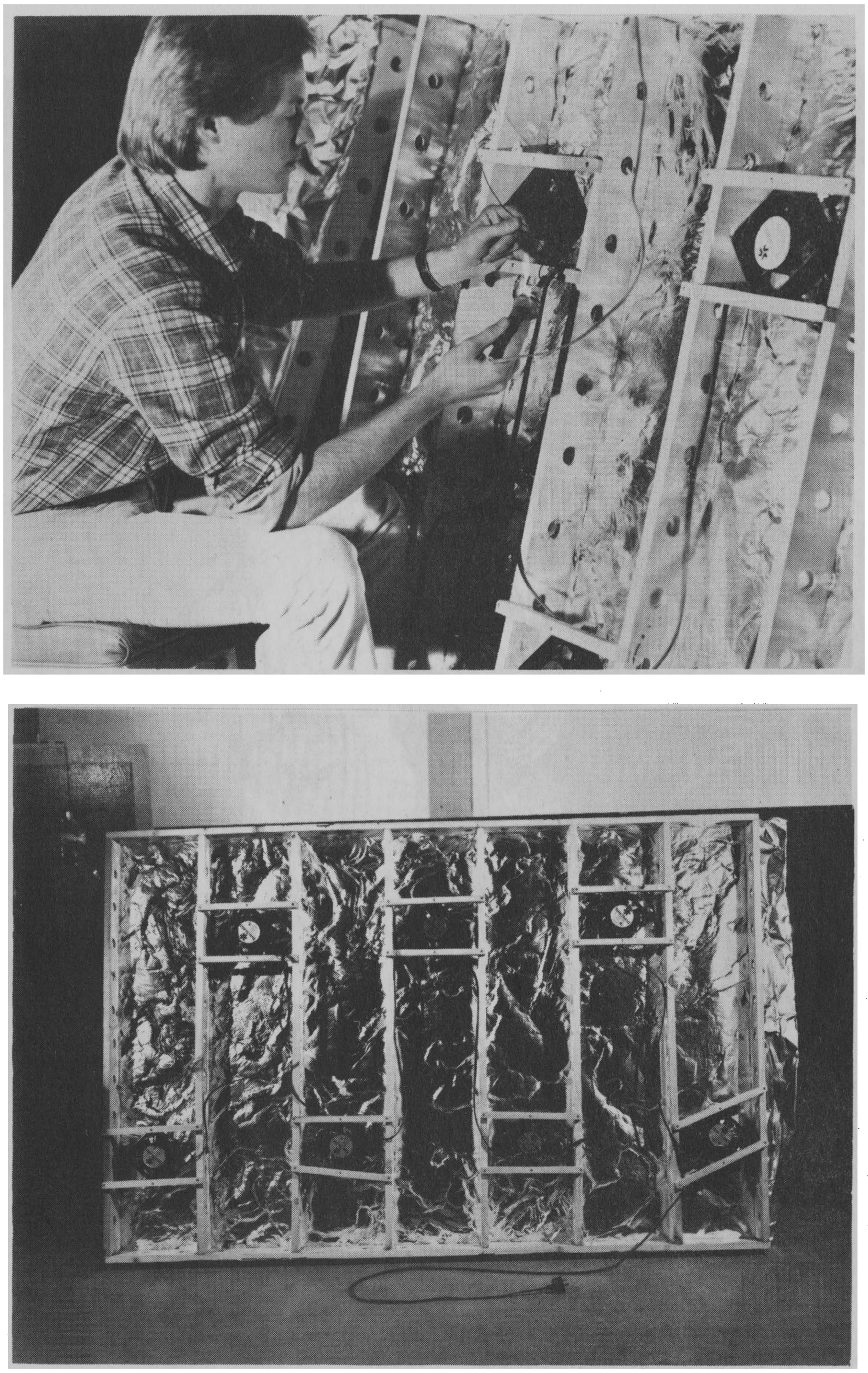


Figure 3-3. Pictures of Wood Frame and Attached Fans to which the Aluminum Sheets were Fixed that Conform with the Topography.

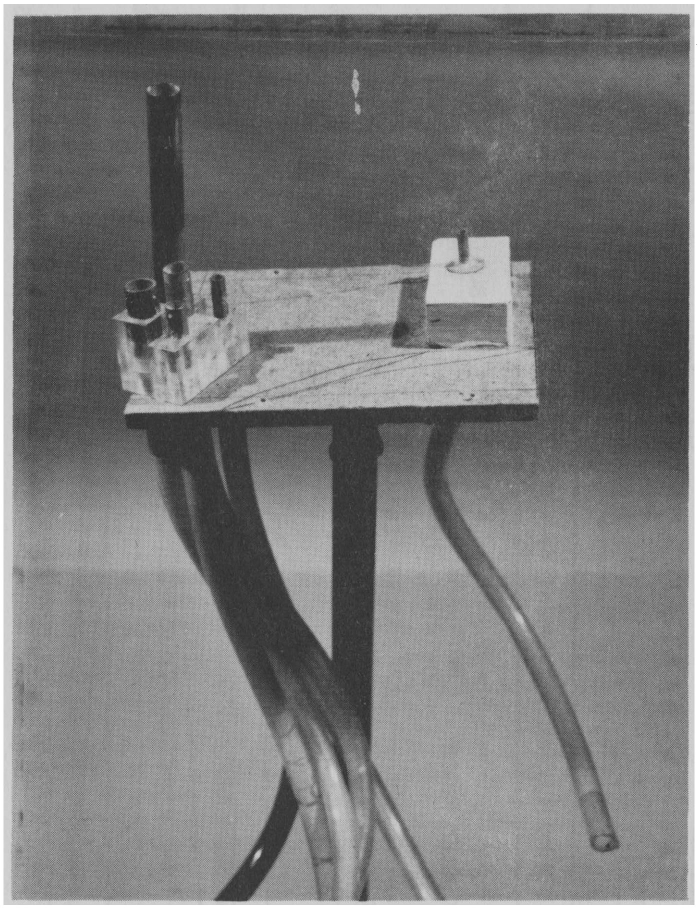


Figure 3-4. The Paper Mill Scale Model and Its Emission Sources.

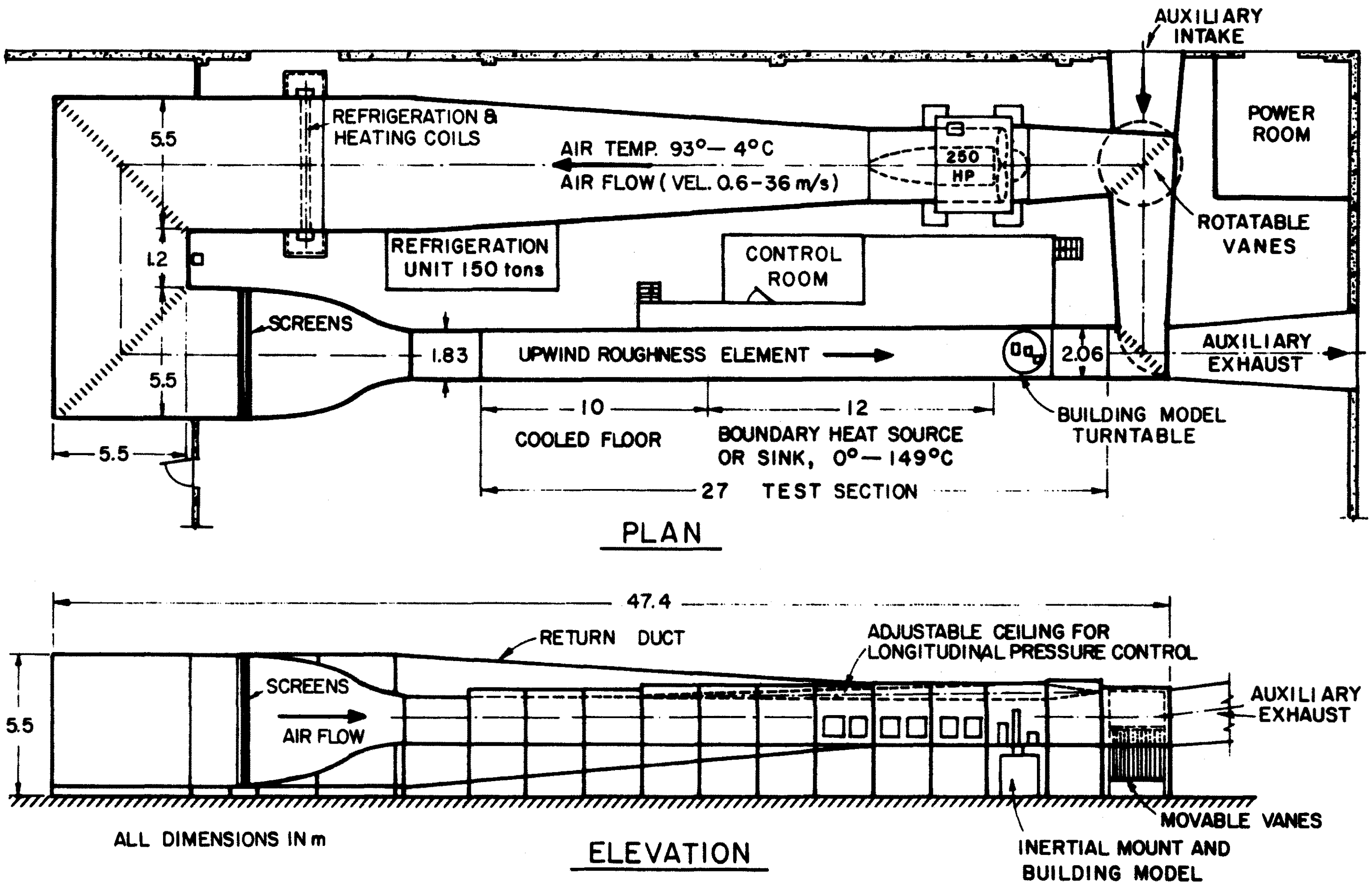


Figure 3-5. Meteorological Wind Tunnel. Fluid Dynamics and Diffusion Laboratory, Colorado State University.

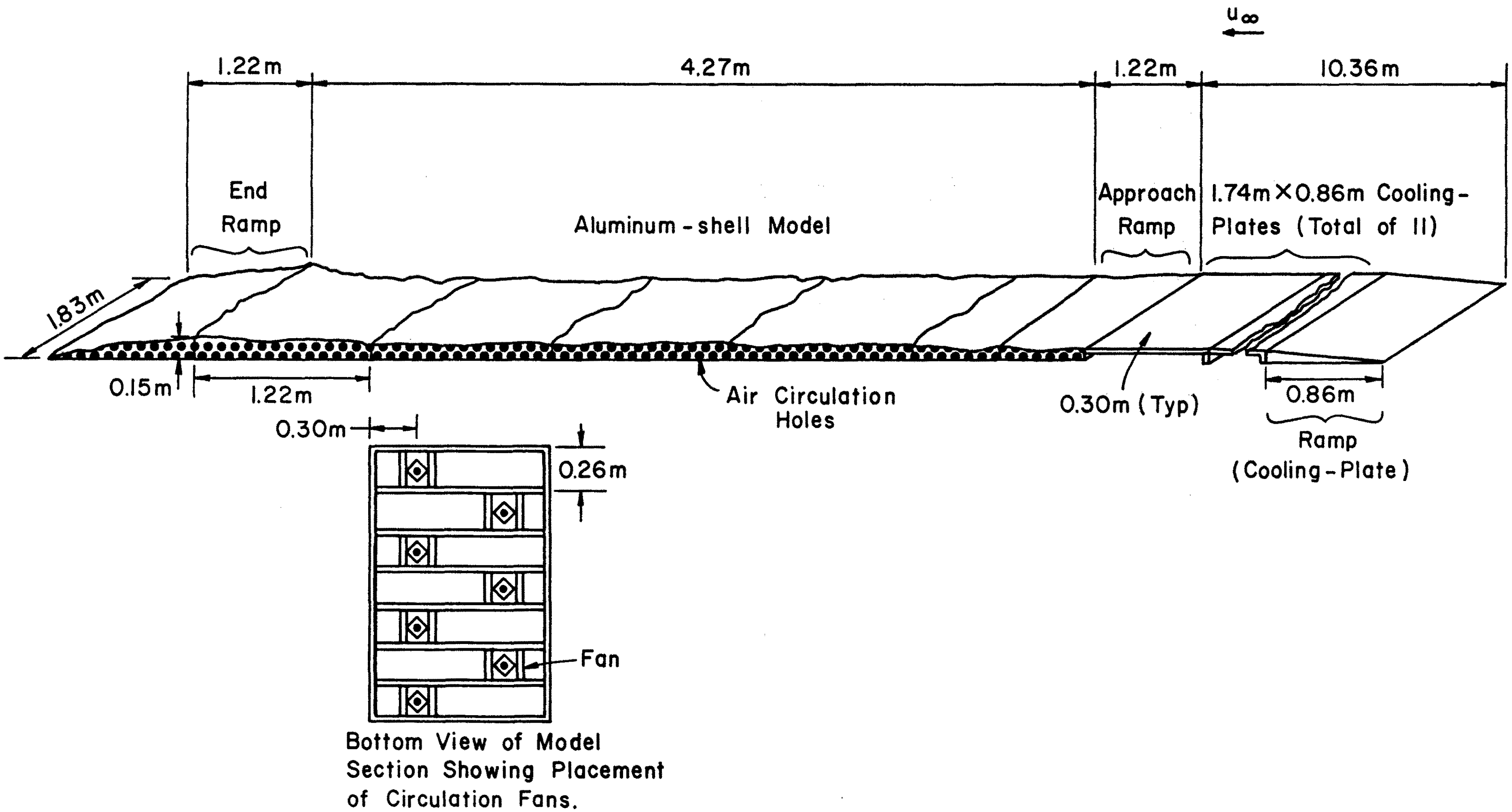


Figure 3-6. Three-Dimensional Sketch of Wind-Tunnel Configuration.

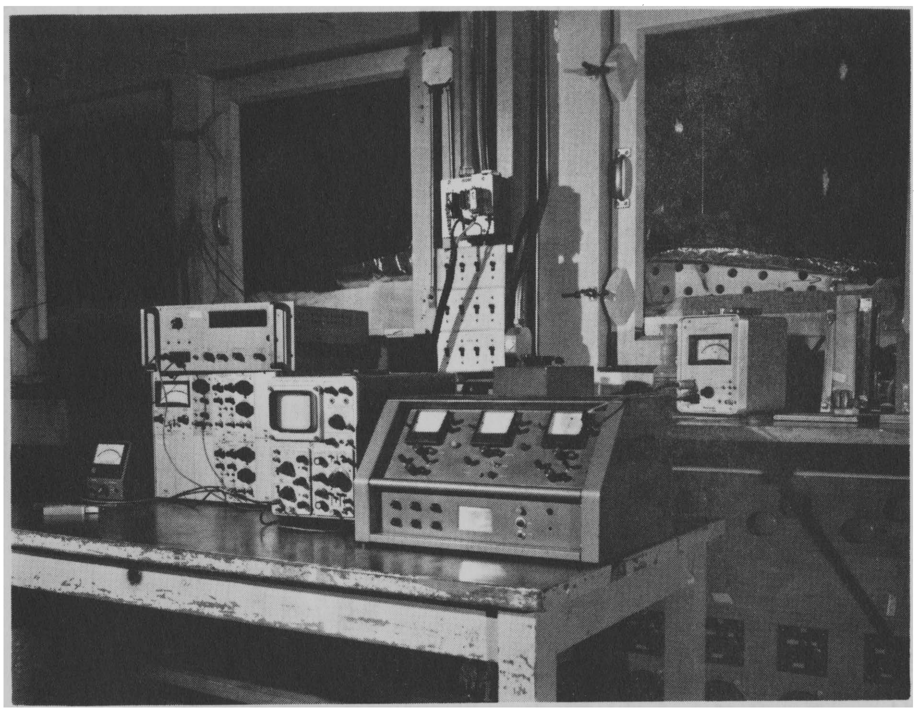


Figure 3-7. The Instruments used for Velocity and Temperature Measurements.

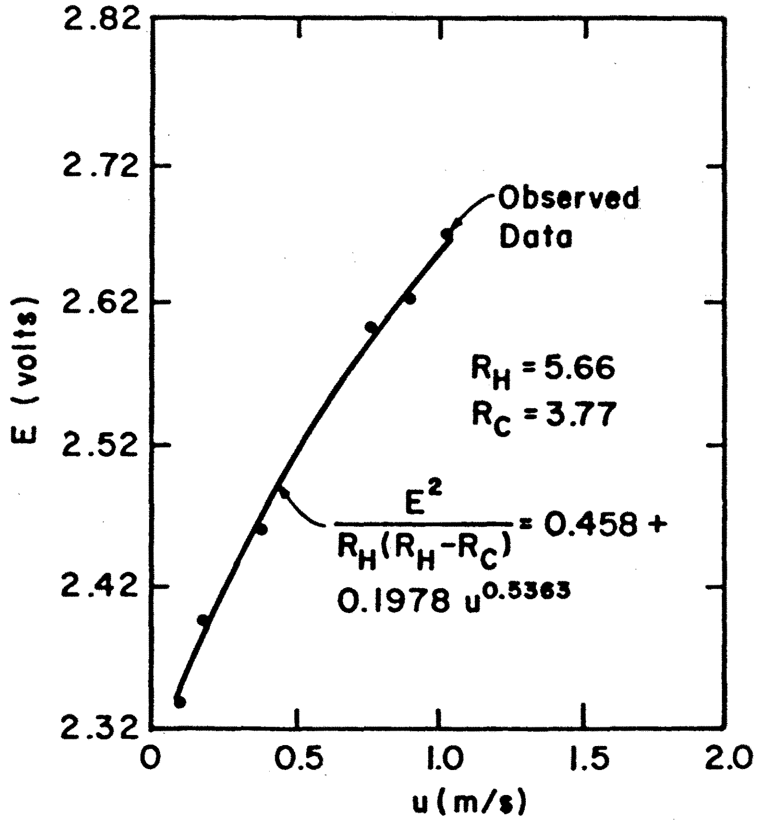


Figure 3-8. Typical Calibration Curves for Hot-Film Sensor (Matheson Linear Flow Meter was used as Calibration Standard).

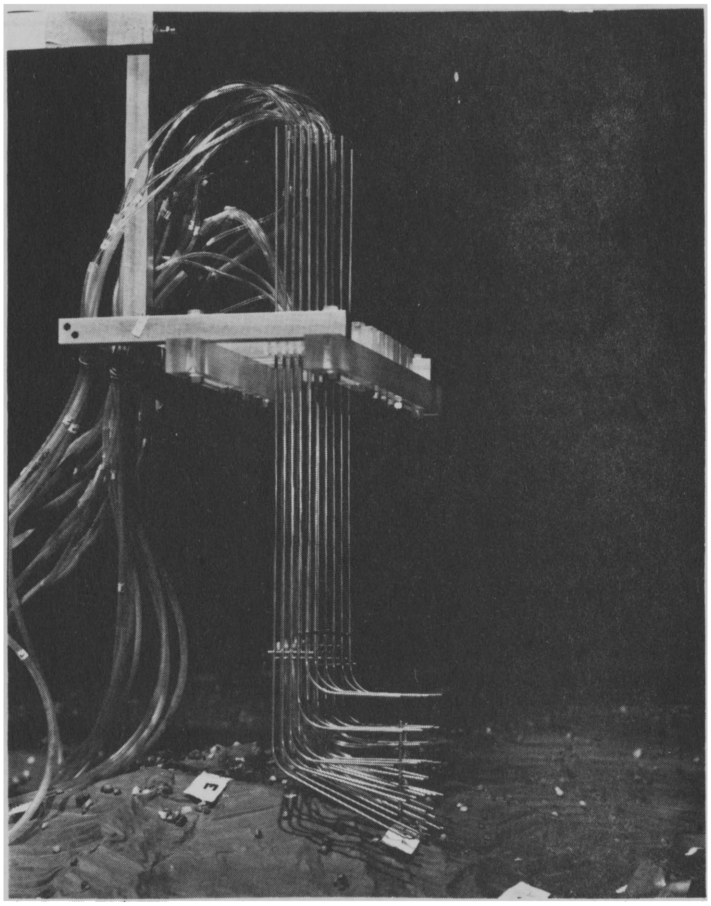


Figure 3-9. Sampling Rake used to Obtain Elevated Tracer Gas Samples.

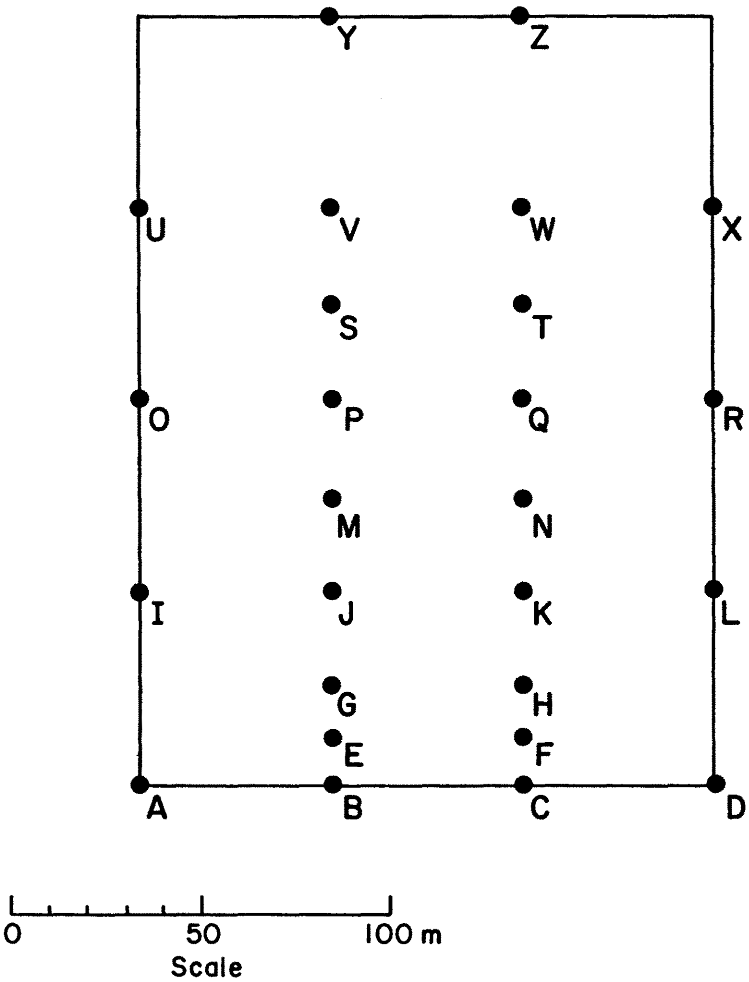


Figure 3-10. Front View of Elevated Sampling Rake Showing the Sampling Tube Number and the Spacing Between Tubes.

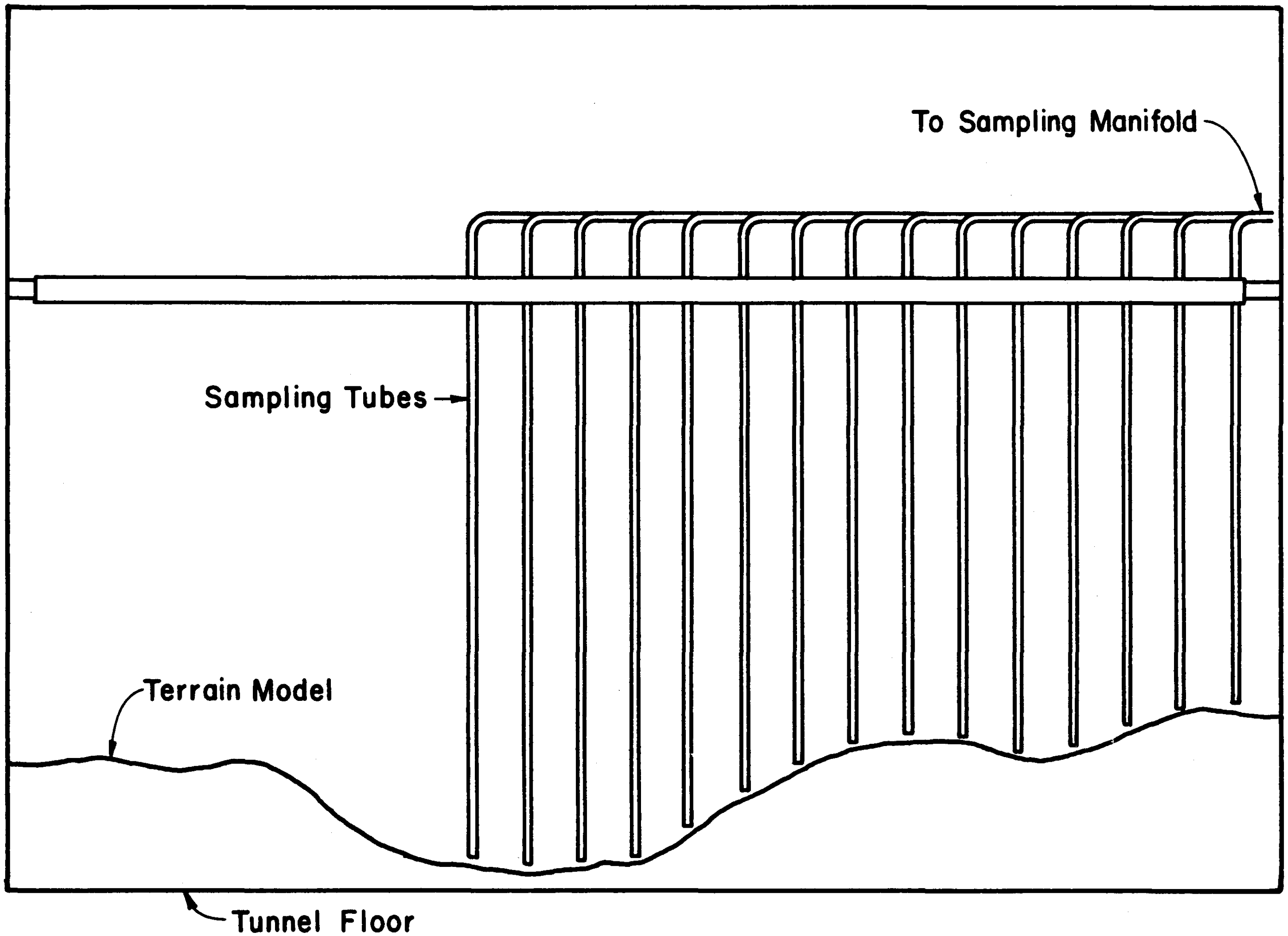


Figure 3-11. Schematic of Tunnel Cross Section showing Rake of Vertical Sampling Tubes used for Collecting Gas Samples on Terrain Model Surface.

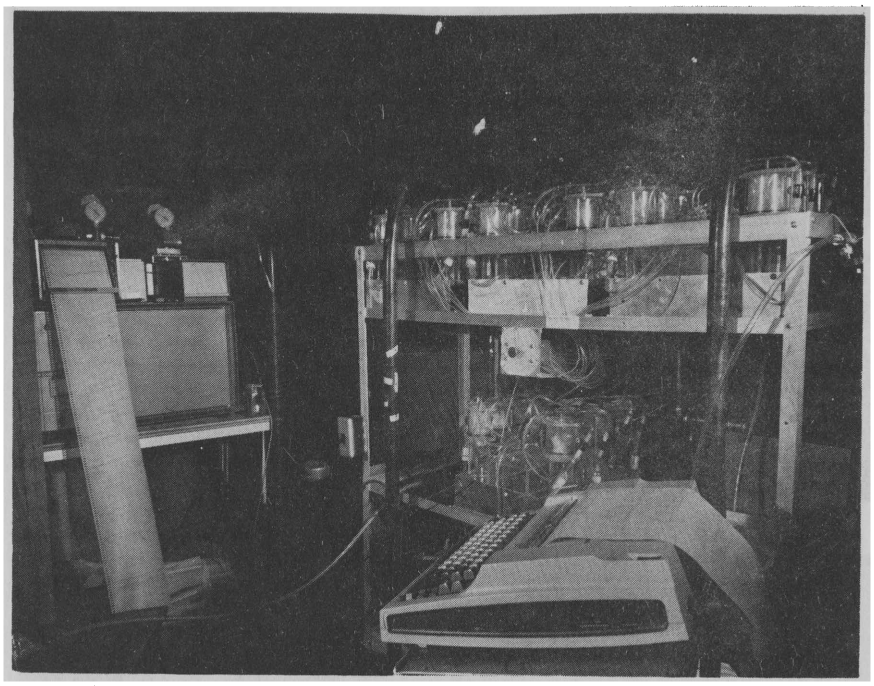
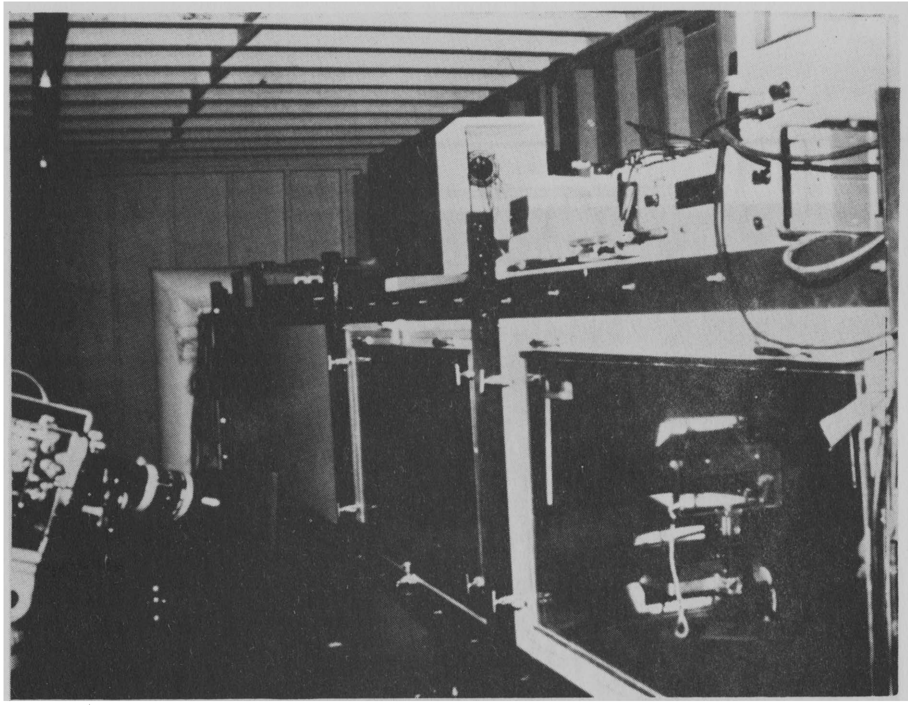
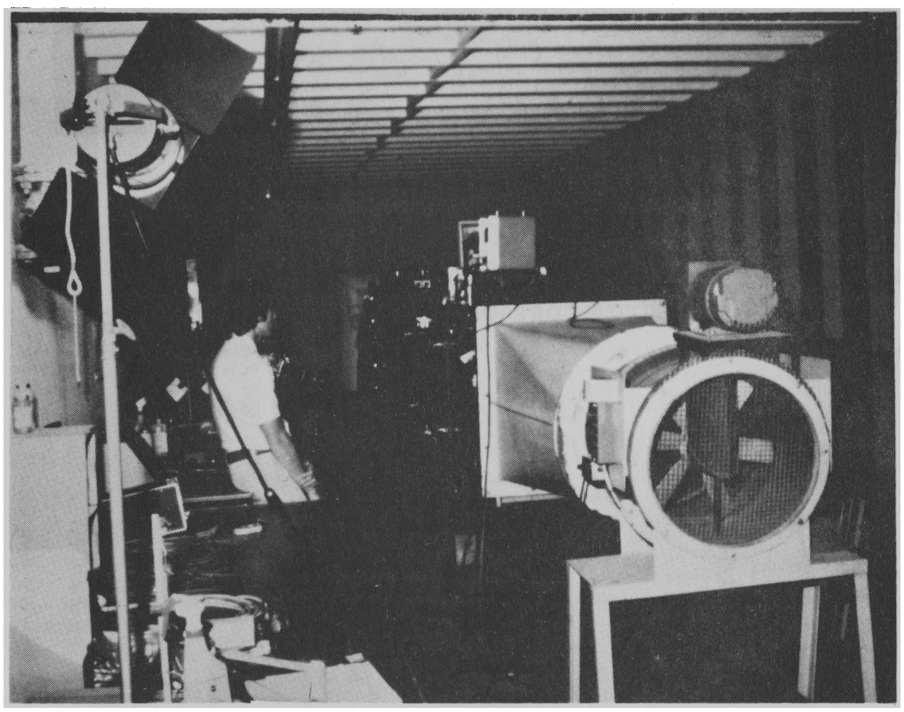


Figure 3-12. Photograph of Flame Ionization Gas Chromatograph and Gas Sampling System.



a)



b)

Figure 4-1. Two Views of the Stratified Wind Tunnel That was used for the Generic Tests.

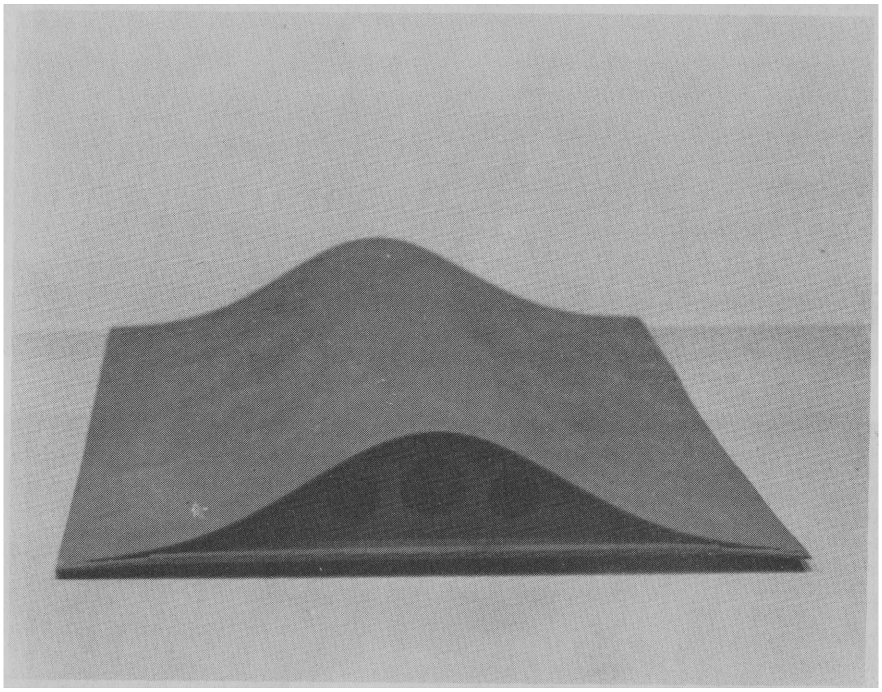
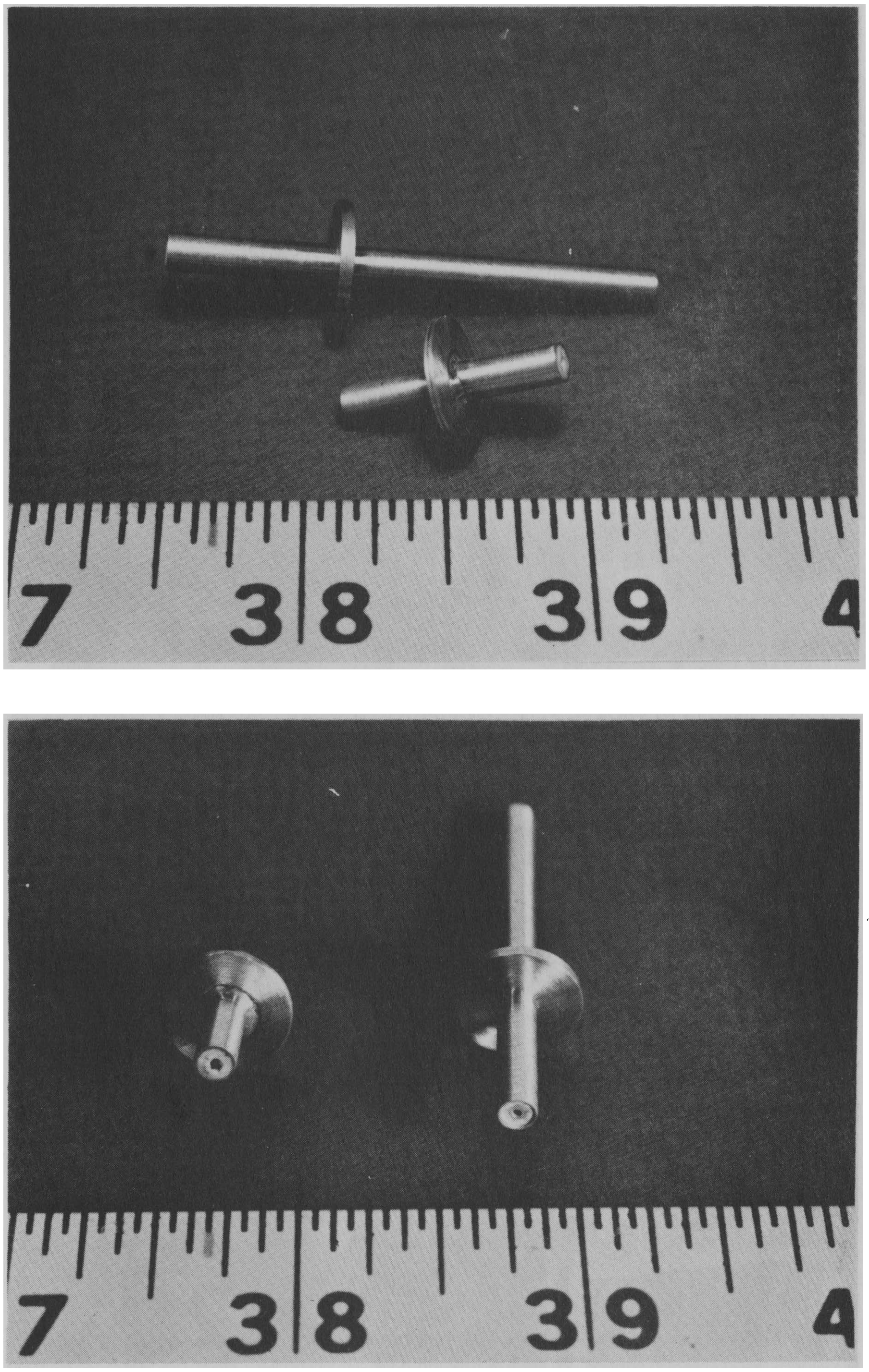


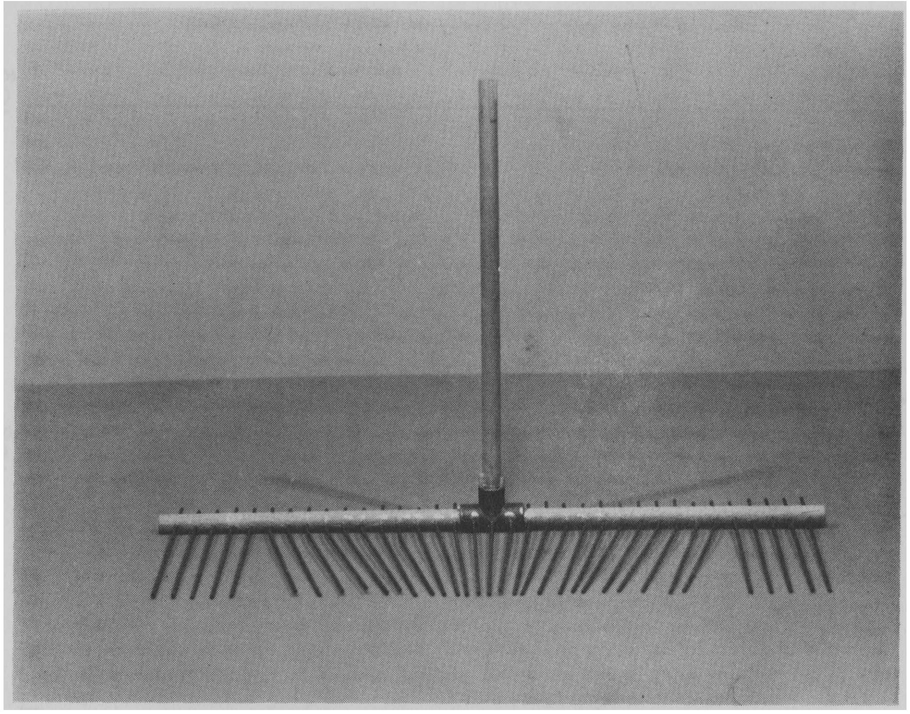
Figure 4-2. The Gaussian-Shaped Ridge used in the Stratified Wind Tunnel.



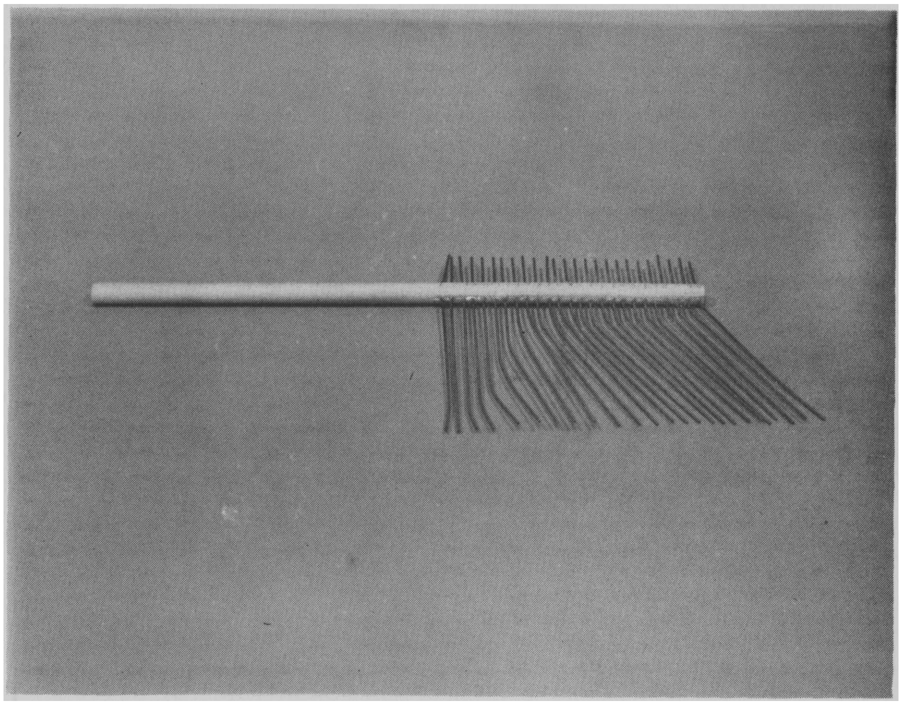
a)

b)

Figure 4-3. Two Views of the Model Stacks used in the Stratified Wind Tunnel (Notice the washer type trip at the bottom of each stack).



a)



b)

Figure 4-4. a) Horizontal Sampling Rake
b) Vertical Sampling Rake used for the Generic Tests

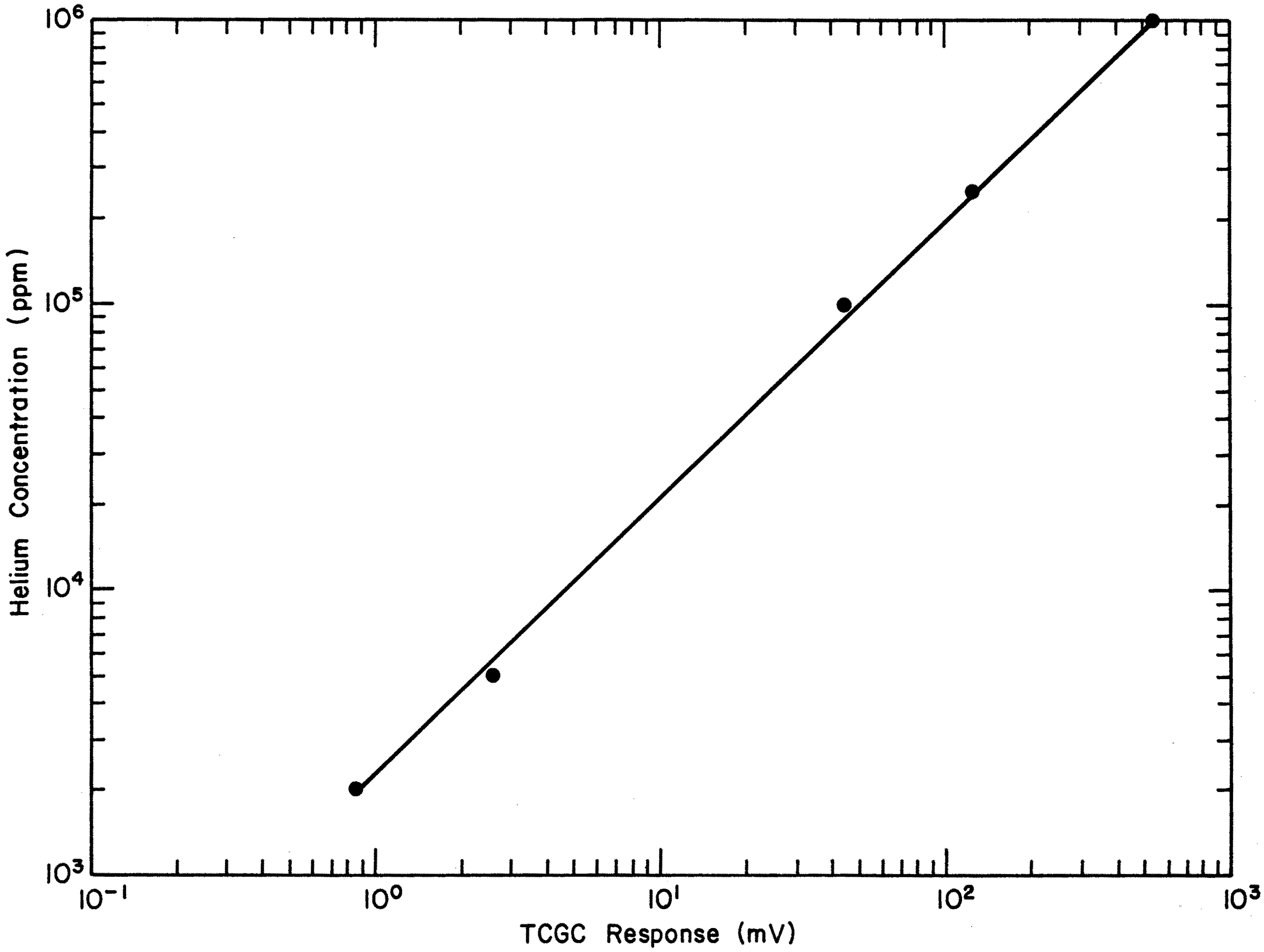


Figure 4-5. Calibration Curve for Carle Thermo Conductivity Gas Chromatograph.

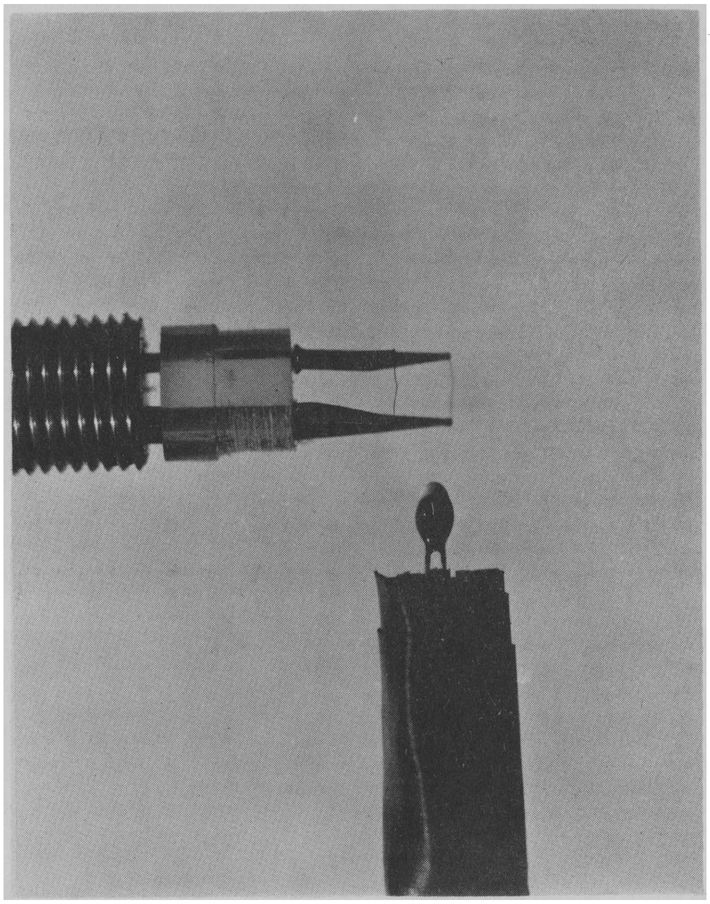


Figure 4-6. Datametrics Probe (Model 800 LV) with Two Stainless Steel Wires used for Velocity Measurements and the Precision Thermistor used for Temperature Measurements.

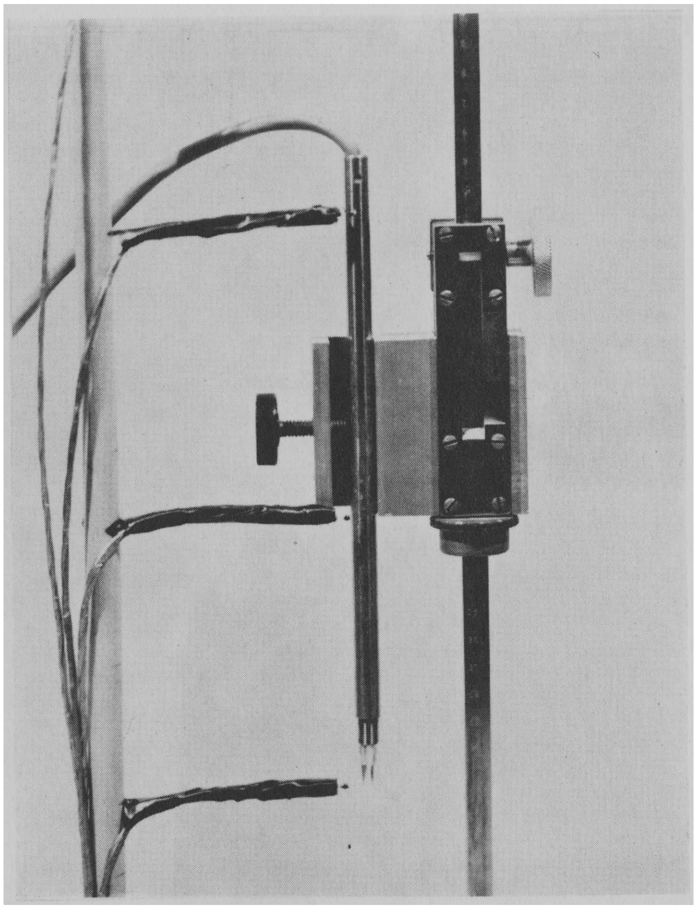
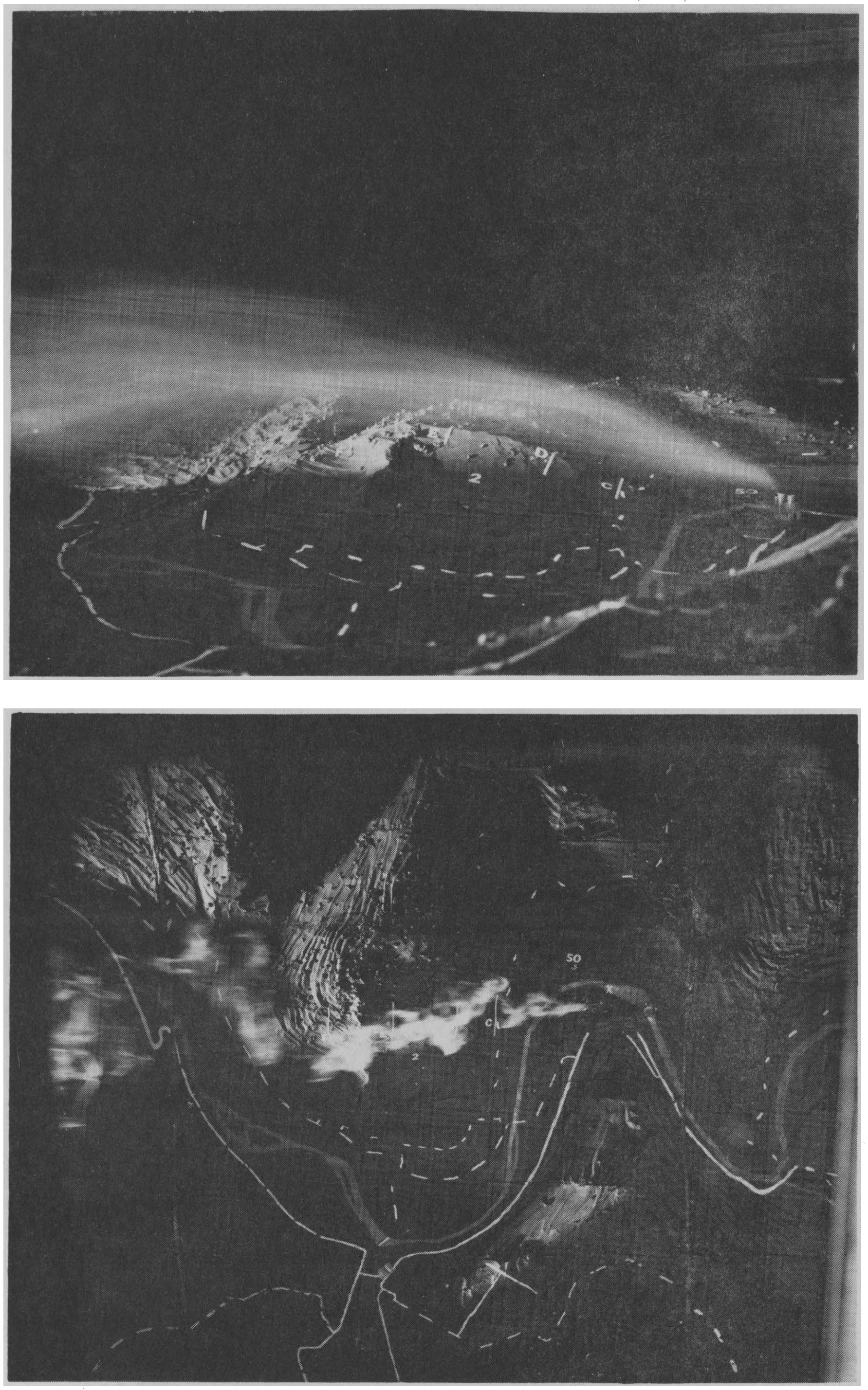


Figure 4-7. Picture of Vertical Temperature Rake with YSI Thermistors installed at Various Elevations and the Datametrics Velocity Probe mounted on the Vertical Traverse.

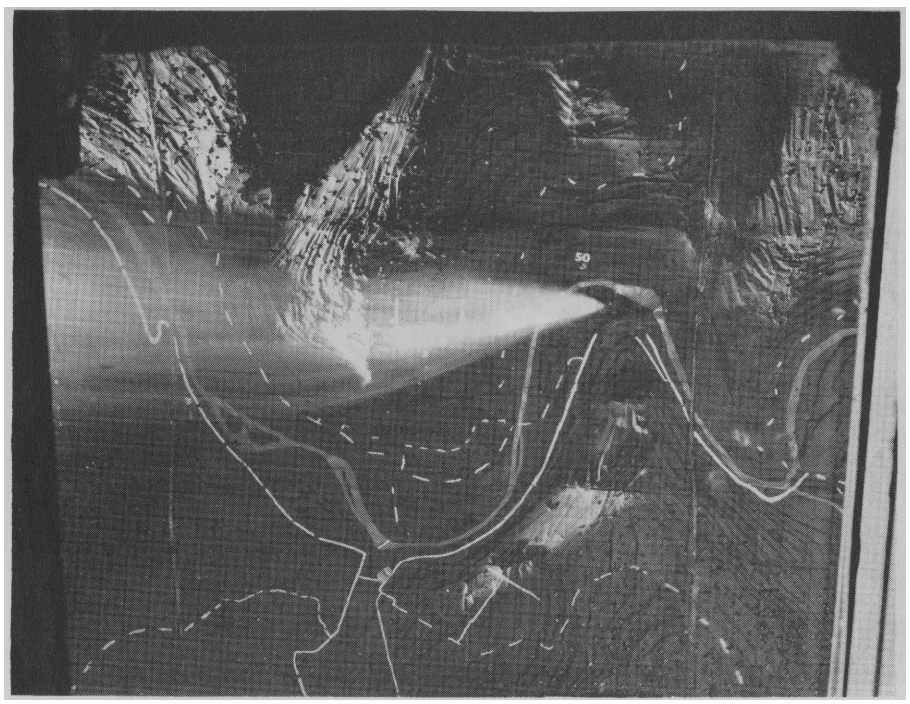


a)

b)

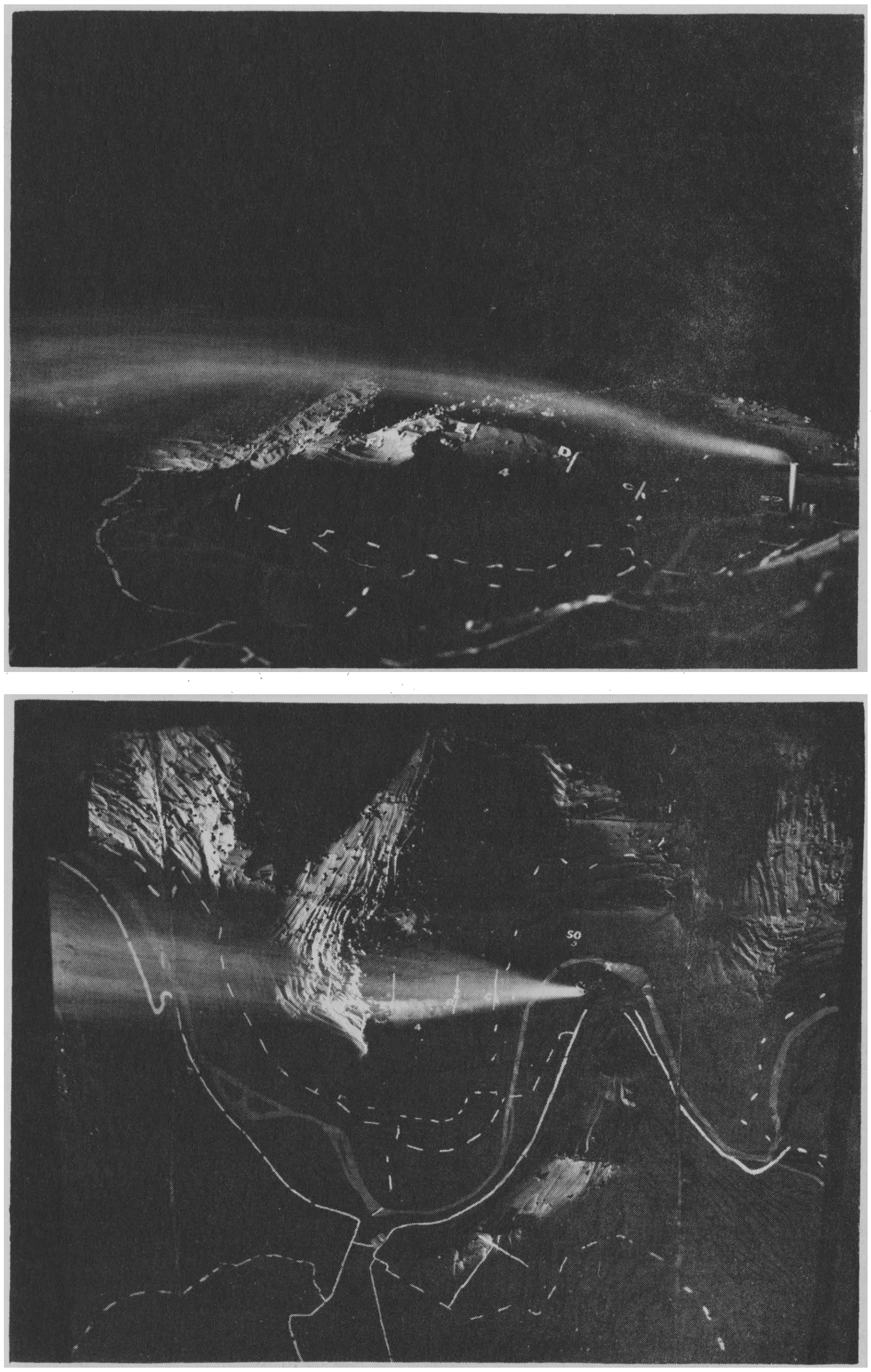
Figure 5-1. Plume Visualization of Boiler 25 for Neutral Condition - October 22, 1975 Test, a) side view b) top view.

a)



b)

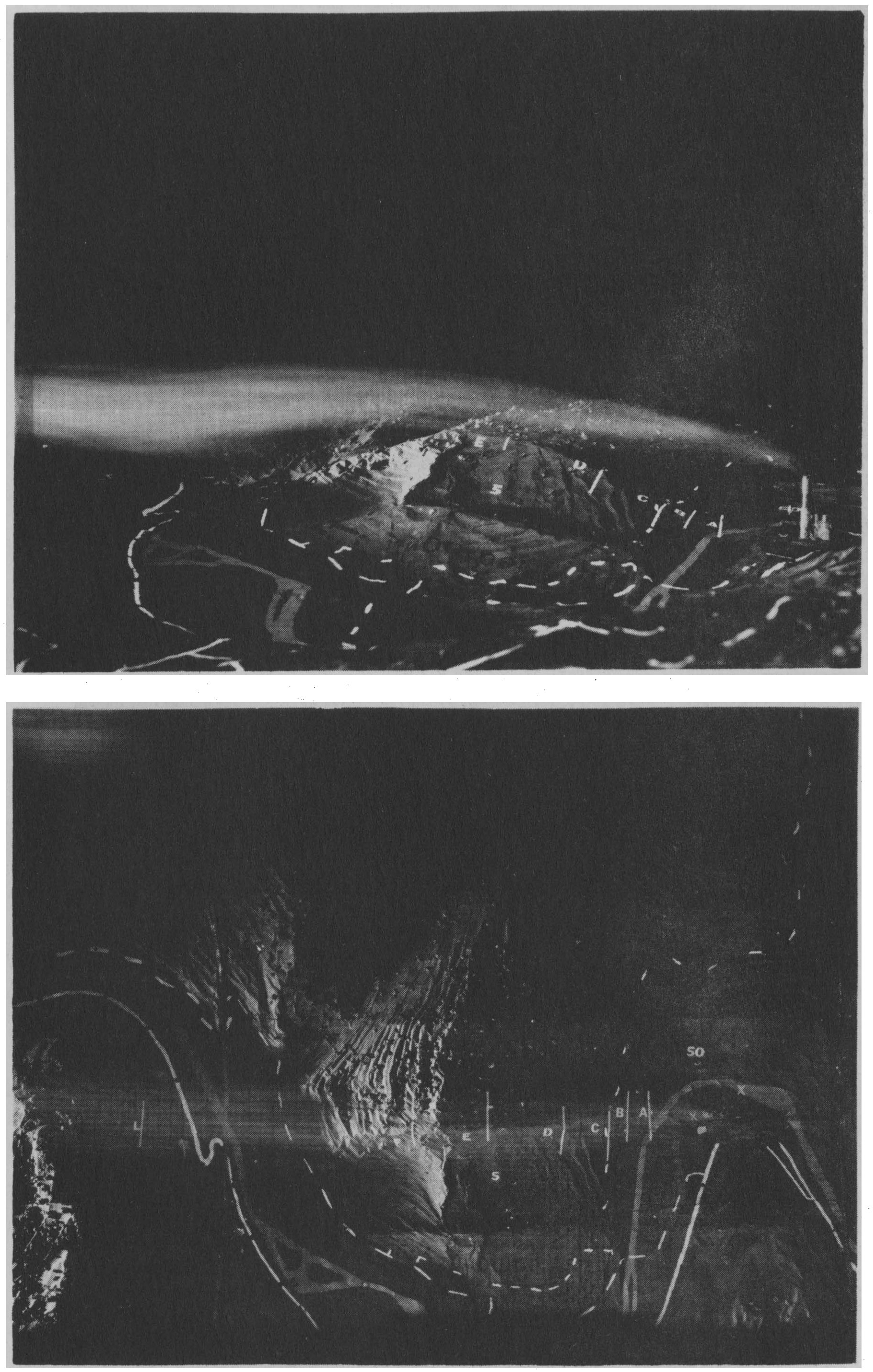
Figure 5-2. Plume Visualization of Boilers 24 and 25 and Recovery Unit 2 for Neutral Condition - October 22, 1975 Test, a) side view, b) top view.



a)

b)

Figure 5-3. Plume Visualization of Tall Stack for Neutral Condition - April 1, 1976 Test, a) side view, b) top view.



a)

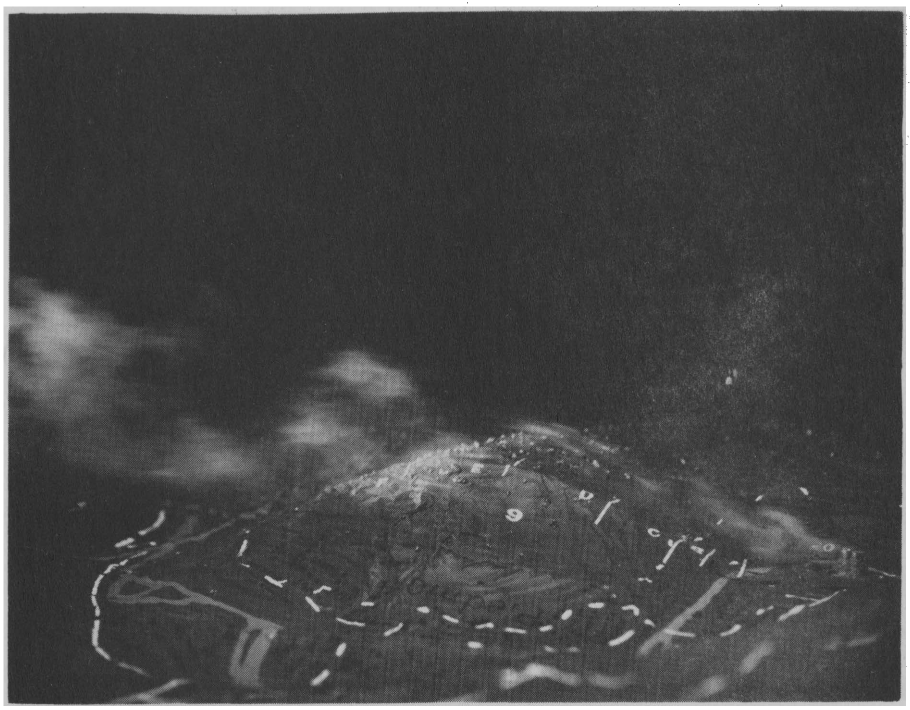
b)

Figure 5-4. Plume Visualization of Tall Stack for Stable Condition - April 1, 1976 Test, a) side view, b) top view.

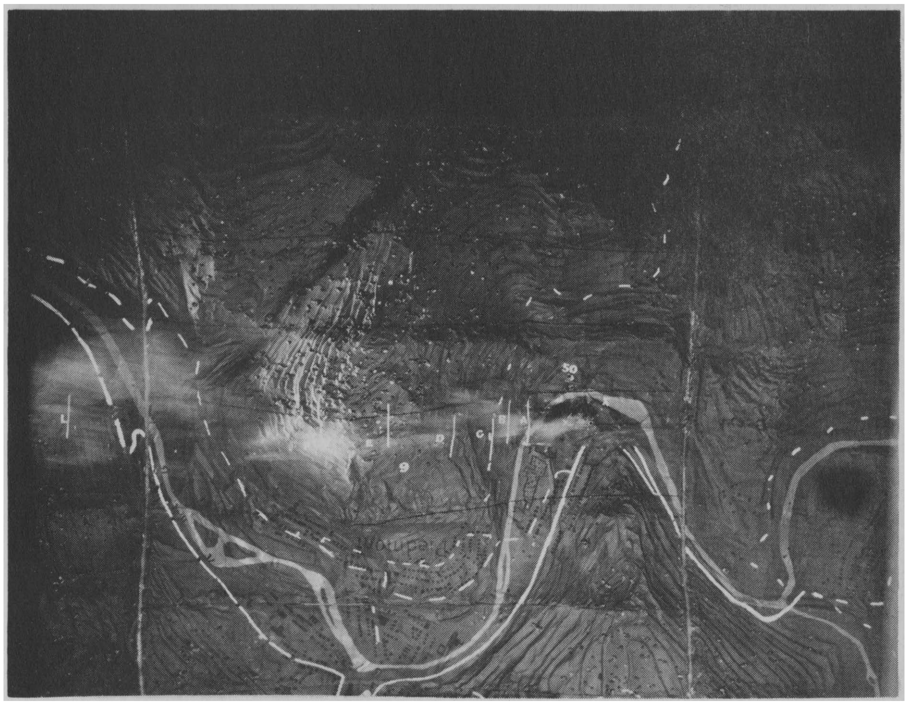
a)

b)

Figure 5-5. Plume Visualization of Lime Kiln, Boilers 24 & 25 and Recovery Unit 2 for Stable Condition - October 22, 1975 Test, a) side view, b) top view.



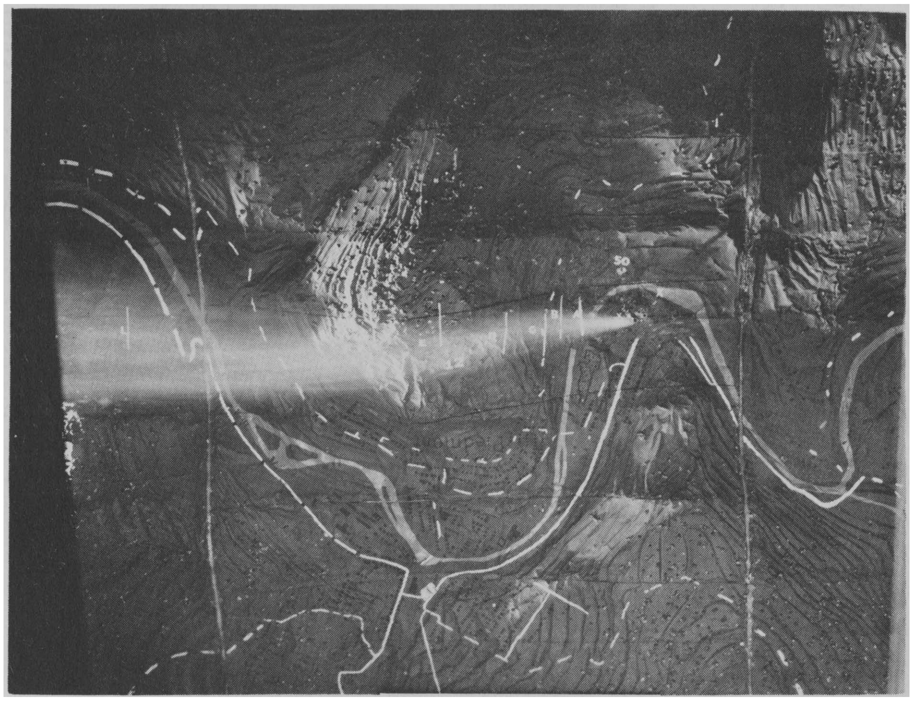
a)



b)

Figure 5-6. Plume Visualization of Boiler 24 for Unstable Condition - October 22, 1975 Test, a) side view, b) top view.

a)



b)

Figure 5-7. Plume Visualization of Tall Stack for Unstable Condition - April 1, 1976 Test, a) side view, b) top view.

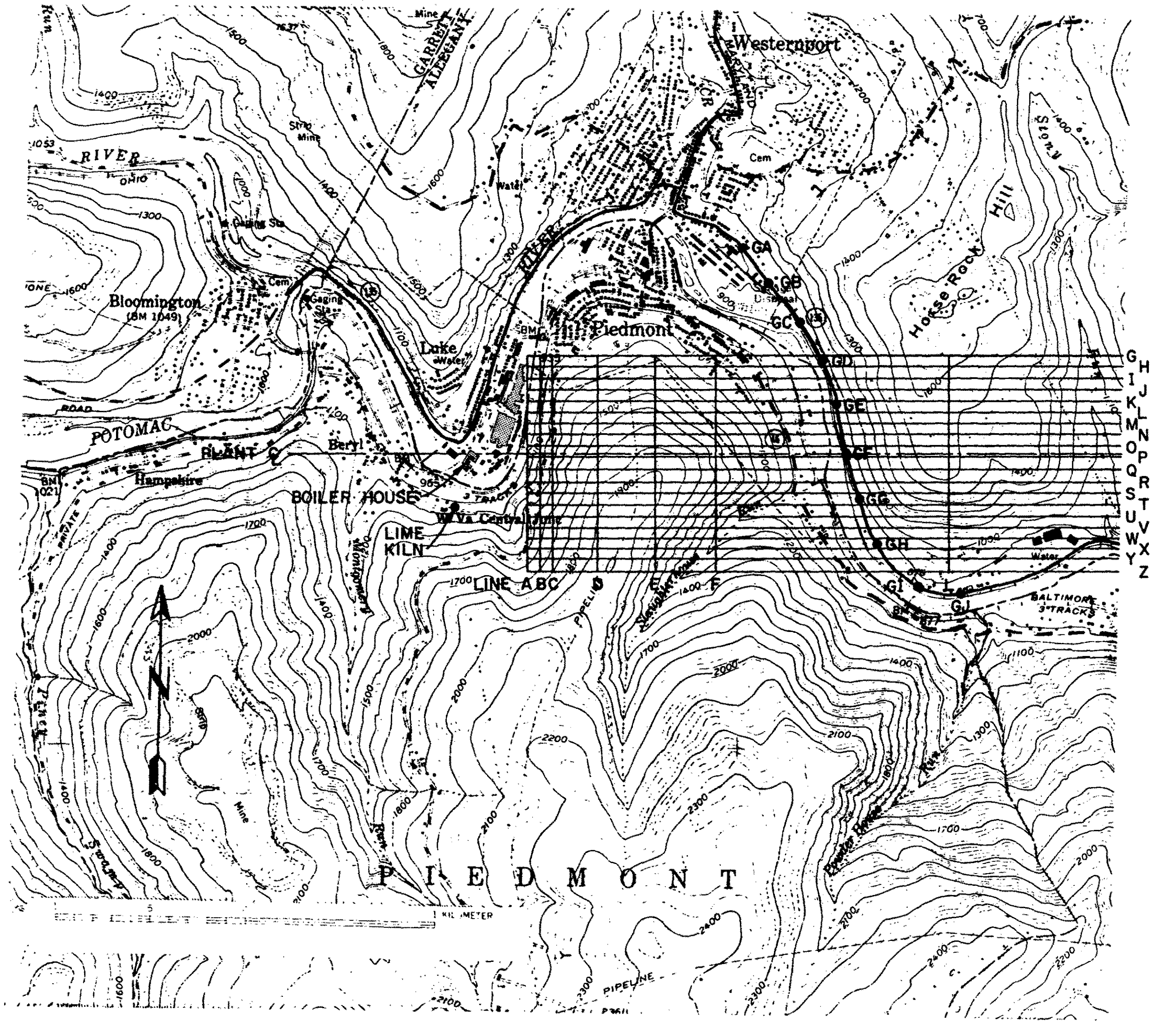
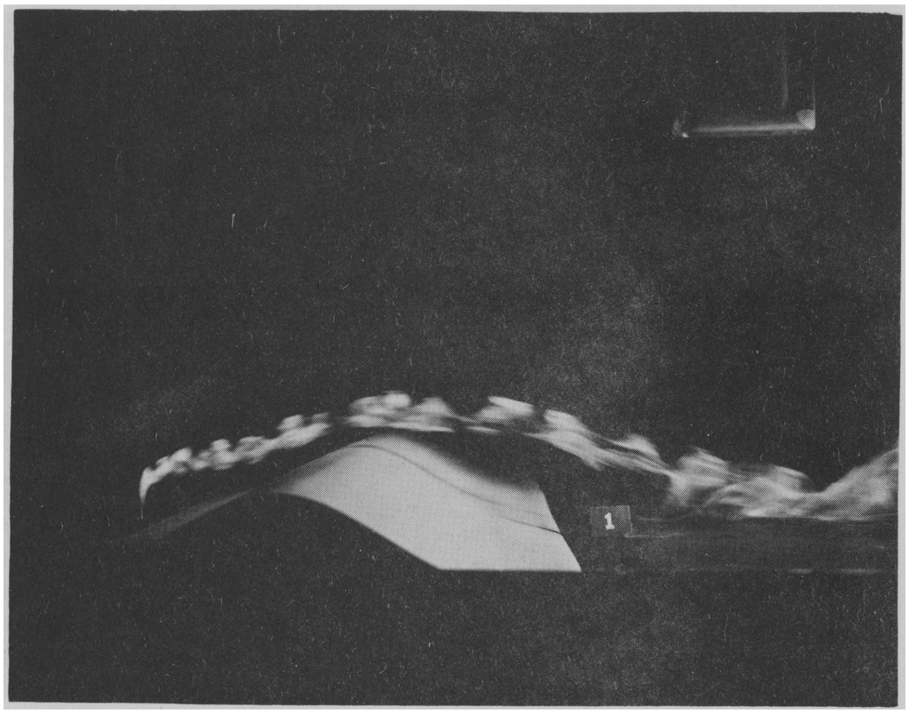


Figure 5-8. Map showing Location of Reference Lines for Ground-Level and Aerial Sampling.

Run: 1



Run: 2

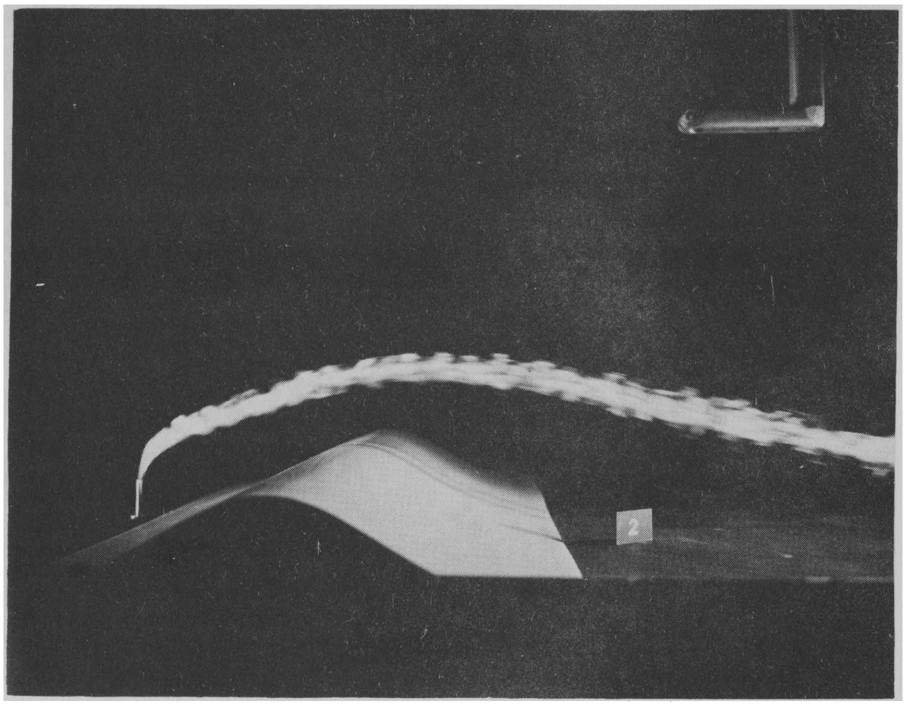


Figure 6-1. Visualization of Plume for F_h = 1.33 from Wind Tunnel Simulation of Buoyant Plume in Flow Over a Two-Dimensional Gaussian Hill for Run 1 -- h_s = 1 cm and Run 2 -- h_s = 3 cm.

Run: 4

Run: 5

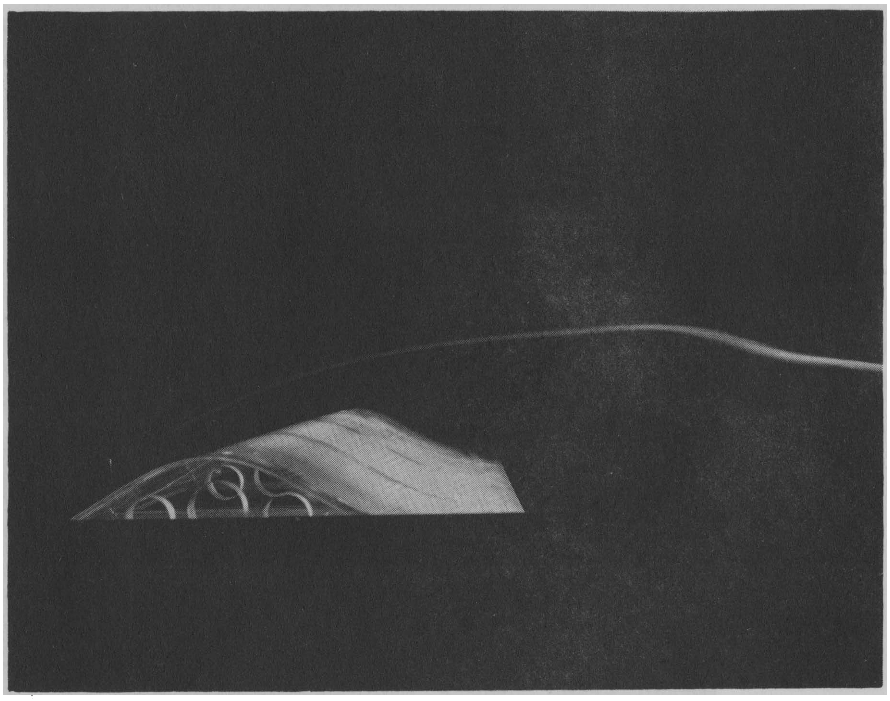
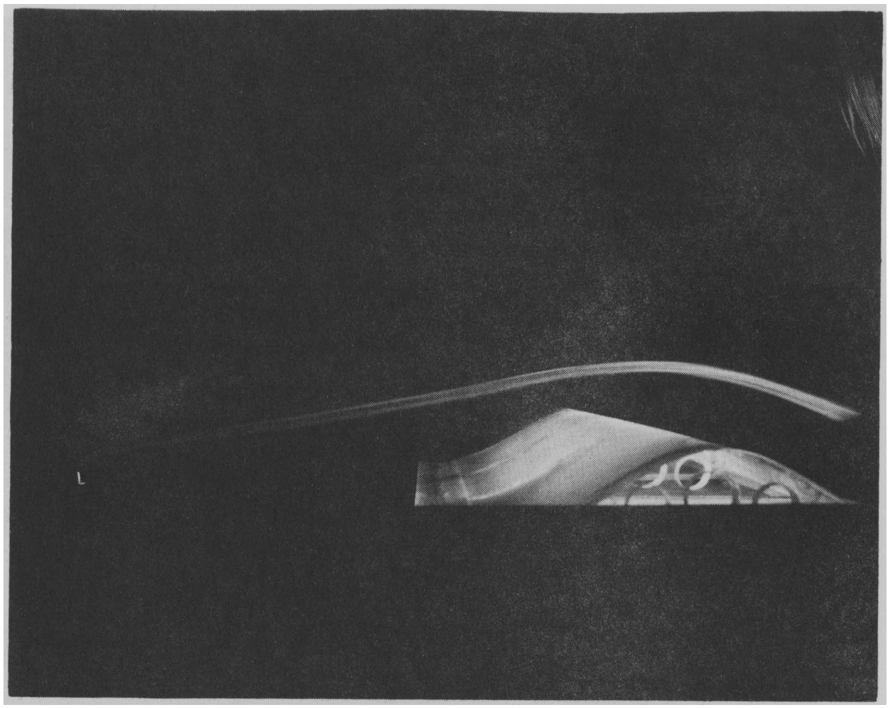


Figure 6-2. Plume Visualization for F_h = 3.47 from Wind Tunnel Simulation of Buoyant Plume in Flow Over a Two-Dimensional Gaussian Hill for Run 4 -- h_s = 1 cm and Run 5 -- h_s = 3 cm.

Run: 6



Run: 7

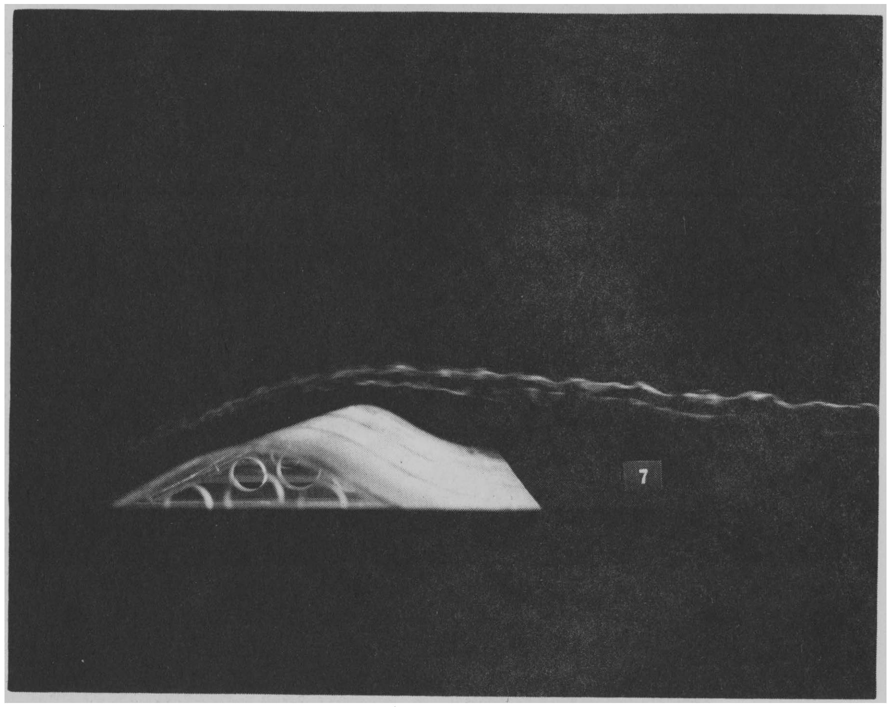
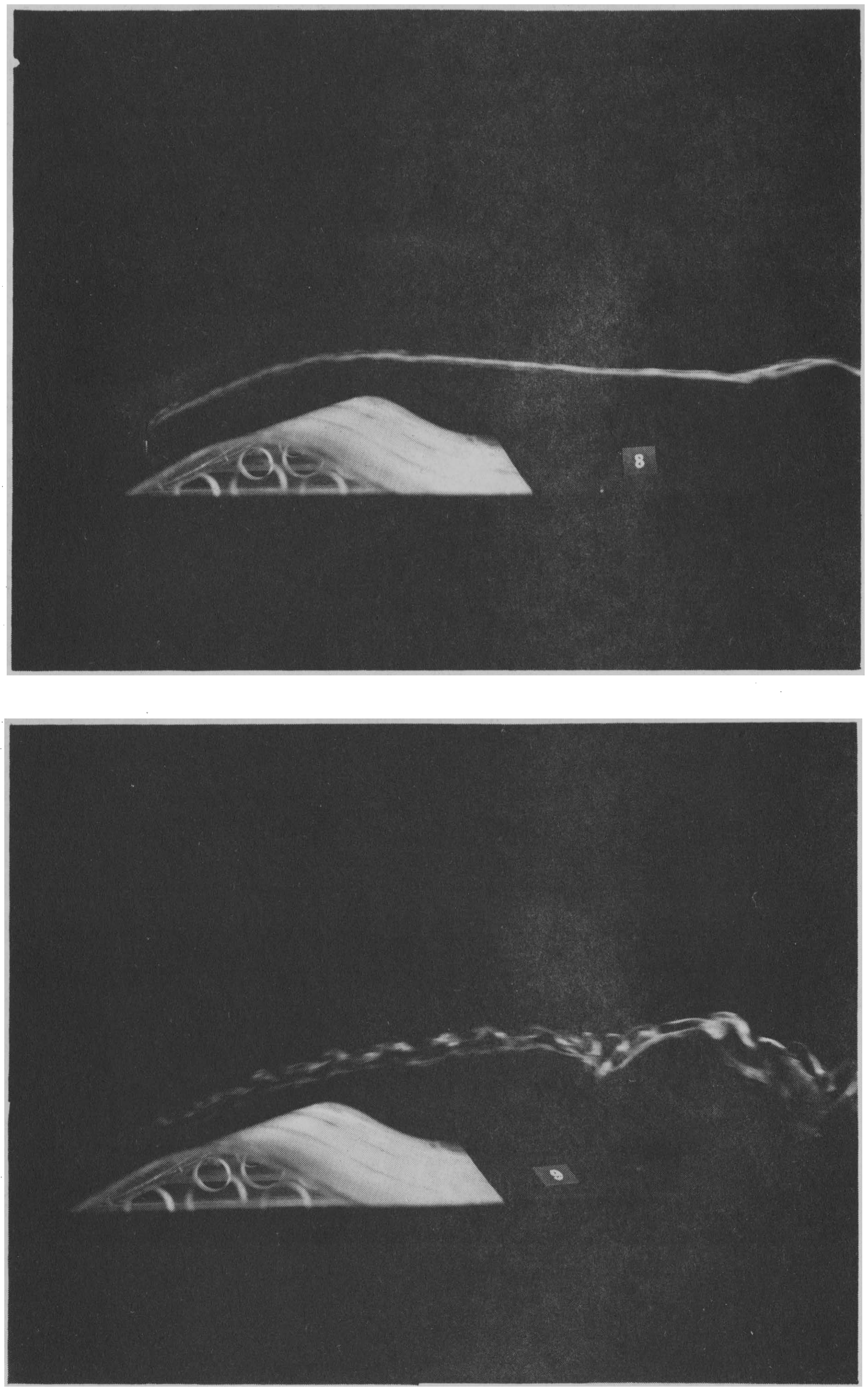


Figure 6-3. Plume Visualization from Wind Tunnel Simulation of Buoyant Plume in Flow Over a Two-Dimensional Gaussian Hill for Run 6 (F_h = 3.47, h_s = 1 cm, x' ridge = 50 cm) and Run 7 ($F_h = \infty$, h_s = 1cm, x' ridge = 19 cm).



Run: 8

Run: 9

Figure 6-4. Plume Visualization for $F_h = \infty$ from Wind Tunnel Simulation of Buoyant Plume in Flow Over a Two-Dimensional Gaussian Hill for Run 8 -- $h_s = 3$ cm and Run 9 -- $h_s = 1$ cm.

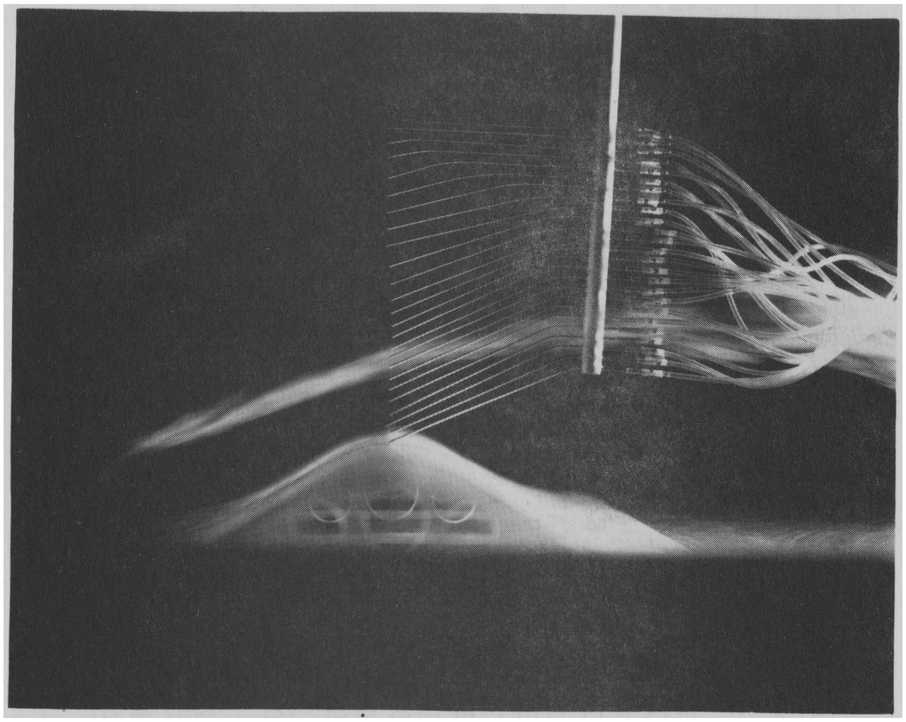


Figure 6-5. Photograph Showing the Method used for Obtaining Vertical Concentration Distributions.

Table 2.1. Similarity Parameters and Source Conditions for the Model - Westvaco Paper Mill Tests

Unit Number		Source	γ	Re_m	u_s	V_{im}	R_m	Fr
October 1975	April 1976				cm/sec	cc/min		
1		R2	0.127	260	67.9	1137	2.06	7.6
3		B24	0.620	360	144.8	1070	4.40	13.2
4		B25	0.390	330	65.9	1958	2.00	5.3
6		LK	0.210	123	45.5	337	1.40	7.1
	11	R3	0.270	230	45.3	1346	1.37	4.4
	12	TS	0.270	330	54.6	2332	1.70	4.9
	13	LK	0.210	70	43.4	158	1.30	8.1

R2 = Recovery Unit 2
R3 = Recovery Unit 3
B24 = Boiler 24
B25 = Boiler 25
TS = Tall Stack
LK = Lime Kiln

Table 2.2. Model and Prototype Source Conditions for Westvaco Paper Mill Tests.

Unit Number		Source*	Model				Prototype		
Oct.	Apr.		Height (m)	Radius (m)	Conc. @ Stack (ppm) x10^{-4}	Tracer Gas	Height (m)	Radius (m)	Conc. @ Stack (ppm)
1		R2	0.030	0.0030	7.3	methane	61	1.3**	150
3		B24	0.026	0.0020	13.8	ethane	52	1.1	1087
4		B25	0.032	0.0037	5.0	propane	64	1.5	1820
6		LK	0.014	0.0019	3.8	buthane	28	0.9	150
	11	R3	0.034	0.0038	7.3	methane	68	1.6	150
	12	TS	0.092	0.0050	5.0	ethane	183	2.5	1417
	13	LK	0.014	0.0014	3.8	propane	28	0.9	150

*R2 = Recovery Unit 2
R3 = Recovery Unit 3
B24 = Boiler 24
B25 = Boiler 25
TS = Tall Stack
LK = Lime Kiln

**Equivalent diameter of single stack that would maintain exit velocity of actual multiple stacks of prototype.

Table 3.1. Photo Key for Westvaco Paper Mill Tests

(Photo Run #) TITLE	(Actual) RUN#	SOURCE	STACK	SERIES	COND.
1	1	6	L.K.	Oct.	N.
2	1	4	B25	Oct.	N.
3	1	1, 3, 4	R2, B24, B25	Oct.	N.
4	2	2	T.S.	Apr.	N.
5	6	2	T.S.	Apr.	St.
5A	6	1, 2, 6	R3, T.S., L.K.	Apr.	St.
6	5	6	L.K.	Oct.	St.
7	5	4	B25	Oct.	St.
8	5	1, 3, 4	R2, B24, B25	Oct.	St.
8A	5	1, 3, 4, 6	R2, B24, B25, L.K.	Oct.	St.
9	3	1, 3, 4, 6	R2, B24, B25, L.K.	Oct.	Unst.
9A	3	3	B24	Oct.	Unst.
10	3	6	L.K.	Oct.	Unst.
11	3	4	B25	Oct.	Unst.
12	4	2	T.S.	Apr.	Unst.
12A	4	1, 2, 6	R3, T.S., L.K.	Apr.	Unst.

KEY:

		STACK	SOURCE
L.K.	=	Lime Kiln	6
T.S.	=	Tall Stack	2
R2	=	Recovery Unit 2	1
R3	=	Recovery Unit 3	1
B24	=	Boiler 24	3
B25	=	Boiler 25	4
N.	=	Neutral	
St.	=	Stable	
Unst.	=	Unstable	

Table 4.1. Test Conditions for Buoyant Plume in Flow Over Two-Dimensional Gaussian Hill

Test	F_h	$\frac{dT}{dZ}$ ($^oC/cm$)	R	Fr	h_s (cm)	x'_{ridge} (cm)	u_h (cm/sec)
1	1.31	0.59	6.8	12.6	1	19	10.8
2	1.31	0.59	6.8	12.6	3	19	10.8
4	3.47	0.28	3.6	12.6	1	19	20.2
5	3.47	0.28	3.6	12.6	3	19	20.2
6	3.47	0.28	3.6	12.6	1	50	20.2
7	∞	0	5.9	12.6	1	19	12.4
8	∞	0	5.9	12.6	3	19	12.4
9	∞	0	3.5	12.6	1	19	21.0

Notes:

1) Vertical concentration profiles at

   $x' = 5, 10, 15, 19, 23, 28$ cm for $x'_{ridge} = 19$ cm

   $x' = 5, 20, 41, 46, 50, 54$ cm for $x'_{ridge} = 50$ cm

2) Horizontal concentrations profiles through centerline at

   $x' = 5, 10, 19, 28$ cm for $x'_{ridge} = 19$ cm

   $x' = 5, 20, 46, 54$ cm for $x'_{ridge} = 50$ cm

3) Vertical profiles of velocity at same distances as in 1) and also at $x' = 0$

4) Stack radius = 0.159 cm; $\gamma = 0.218$

APPENDIX A

TABULATION OF VELOCITY AND TEMPERATURE MEASUREMENTS

Approach Flow : Neutral Atmosphere

z cm	u m/s	u_{rms} m/s	i %	z_m cm
1.00	0.22	0.05	23.92	
				1.25
1.54	0.26	0.05	20.23	
				1.93
2.38	0.30	0.04	13.79	
				3.44
4.77	0.32	0.04	12.49	
				6.95
9.71	0.39	0.04	9.36	
				12.06
14.76	0.43	0.03	7.47	
				17.12
19.73	0.45	0.02	3.84	
				23.98
28.81	0.47	0.01	1.92	
				33.76
39.25	0.48	0.01	1.62	

Point 50 : Neutral Atmosphere

z cm	u m/s	u_{rms} m/s	i %	z_m cm
1.00	0.13	0.04	32.36	
				1.21
1.45	0.15	0.04	27.76	
				1.80
2.20	0.16	0.04	24.62	
				3.29
4.70	0.23	0.05	21.72	
				6.91
9.72	0.31	0.07	22.12	
				12.03
14.69	0.36	0.05	15.02	
				17.10
19.77	0.39	0.05	14.26	
				24.40
29.71	0.46	0.04	7.59	
				34.47
39.71	0.49	0.01	2.98	
				42.73
45.90	0.50	0.01	2.11	

Point 53 : Neutral Atmosphere

z cm	u m/s	u_{rms} m/s	i %	z_m cm
1.00	0.10	0.03	35.14	
				1.25
1.53	0.14	0.04	30.25	
				1.91
2.35	0.14	0.04	27.85	
				3.42
4.78	0.20	0.06	29.74	
				6.98
9.77	0.26	0.06	22.14	
				12.08
14.72	0.36	0.05	14.02	
				17.08
19.68	0.42	0.04	9.87	
				24.42
29.86	0.48	0.02	4.82	
				34.56
39.72	0.50	0.01	2.21	
				44.58
49.82	0.51	0.01	1.73	

Approach Flow : Unstable Atmosphere

z vm	u m/s	u_{rms} m/s	i %	T ^{o}K	Ri	z_m cm
1.02	0.61	0.11	17.39	291		
					0.00	1.26
1.54	0.61	0.09	15.59	291		
					0.00	2.86
4.77	0.75	0.09	11.42	291		
					0.00	5.96
7.34	0.74	0.08	10.55	291		
					0.00	8.58
9.95	0.78	0.09	11.98	291		
					0.00	12.04
14.41	0.85	0.04	4.51	291		
					0.00	21.26
30.00	0.86	0.02	1.89	291		
					0.00	36.99
45.00	0.87	0.01	1.64	291		

Point 50 : Unstable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T ^{o}K	Ri	z_m cm
1.00	0.23	0.13	57.69	296.5		
					-1.09	1.30
1.66	0.24	0.11	43.12	296.0		
					-0.21	2.92
4.69	0.31	0.14	46.96	295.0		
					-2.66	5.68
6.81	0.29	0.16	53.04	293.5		
					-0.08	8.09
9.52	0.40	0.16	39.99	292.5		
					-0.06	12.09
15.03	0.52	0.12	23.29	292.0		
					-2.64	17.27
19.72	0.55	0.12	22.81	290.5		
					0.00	22.43
25.38	0.59	0.09	15.34	290.5		
					0.00	27.21
29.13	0.69	0.06	10.09	290.5		
					0.00	40.29
54.00	0.67	0.02	2.53	290.5		

Point 53 : Unstable Atmosphere

z	u	u_{rms}	i	T	Ri	z_m
cm	m/s	m/s	%	^{o}K		cm
1.00	0.36	0.13	36.45	297.5		
					-2.68	1.37
1.81	0.35	0.14	40.40	296.5		
					-0.05	3.12
4.95	0.58	0.18	31.65	294.0		
					-0.17	5.81
6.76	0.52	0.19	35.54	293.0		
					-0.08	8.15
9.71	0.60	0.15	24.45	292.5		
					-0.11	11.91
14.41	0.72	0.11	15.67	291.5		
					0.00	14.38
14.36	0.76	0.12	16.42	291.5		
					0.00	16.97
19.88	0.83	0.12	14.30	291.5		
					-0.10	23.76
28.12	0.95	0.06	6.48	291.0		
					0.00	39.25
53.00	0.96	0.02	2.01	291.0		

Point E : Unstable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T ^{o}K	Ri	z_m cm
1.00	0.63	0.11	17.63	292		
					0.00	1.24
1.51	0.58	0.12	20.02	292		
					-4.90	2.71
4.42	0.57	0.09	15.58	291.5		
					0.00	5.42
6.57	0.62	0.10	16.32	291.5		
					0.00	8.04
9.72	0.66	0.09	13.09	291.5		
					-8.16	11.98
14.56	0.65	0.08	12.59	291.0		
					0.00	17.05
19.81	0.68	0.06	8.86	291.0		
					-3.94	24.18
29.15	0.66	0.03	5.16	290.5		
					0.00	33.66
38.61	0.67	0.01	2.04	290.5		

Approach Flow : Stable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T ^oK	Ri	z_m cm
1.00	0.18	0.01	4.26	296.5		
					0.16	1.32
1.70	0.24	0.01	3.85	299.0		
					0.08	2.94
4.66	0.60	0.02	2.92	310.5		
					0.10	5.65
6.76	0.76	0.02	3.18	314.5		
					0.08	8.17
9.76	0.89	0.02	2.49	316.0		
					0.23	12.00
14.57	0.97	0.03	2.59	317.0		
					0.55	17.26
20.26	1.01	0.03	3.22	317.5		
					0.48	22.64
25.20	1.05	0.03	3.32	318.0		
					0.37	36.19
50.00	1.37	0.03	2.20	323.0		

Point 50 : Stable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T ^oK	Ri	z_m cm
1.00	0.16	0.02	12.71	299.0		
					0.00	1.32
1.71	0.17	0.03	16.28	299.0		
					0.30	2.94
4.66	0.25	0.03	11.17	301.0		
					13.34	5.63
6.72	0.26	0.03	11.43	303.0		
					0.27	7.94
9.31	0.37	0.04	10.31	307.0		
					0.17	11.81
14.72	0.57	0.05	9.63	311.0		
					0.08	17.09
19.70	0.85	0.05	6.20	315.0		
					0.23	21.26
22.89	0.93	0.04	4.19	316.5		
					0.27	27.47
32.62	1.08	0.02	1.90	318.5		
					0.27	43.68
57.00	1.43	0.01	0.46	323.0		

Point 53 : Stable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T °K	Ri	z_m cm
1.00	0.15	0.03	21.31	301.0		
					0.26	1.32
1.71	0.18	0.04	21.98	302.0		
					0.10	2.97
4.73	0.30	0.06	21.56	303.5		
					0.52	5.68
6.74	0.35	0.06	18.07	305.5		
					0.08	8.19
9.83	0.54	0.07	13.04	308.5		
					0.21	12.11
14.71	0.71	0.06	8.83	212.5		
					0.14	17.10
19.74	0.88	0.07	7.63	315.0		
					0.16	24.41
29.77	1.08	0.04	3.52	317.0		
					0.27	30.86
31.97	1.13	0.04	3.32	318.0		
					0.43	42.87
56.00	1.42	0.02	1.08	323.0		

Point E : Stable Atmosphere

z cm	u m/s	u_{rms} m/s	i %	T ^{o}K	Ri	z_m cm
1.00	0.49	0.04	8.09	305.0		
					0.14	1.32
1.70	0.53	0.04	8.24	306.0		
					0.14	2.88
4.50	0.69	0.06	8.24	310.0		
					0.16	5.66
7.01	0.79	0.06	7.65	312.0		
					0.10	8.28
9.70	0.92	0.06	5.98	314.0		
					0.10	11.92
14.46	1.13	0.04	3.70	317.0		
						15.36
16.29	1.13	0.03	2.62	317.0		
					1.58	16.79
17.31	1.14	0.03	2.95	317.5		
					0.50	27.85
42.00	1.40	0.02	1.40	322.0		

APPENDIX B

Concentration Measurement Results for Westvaco Paper Mill Tests

APPENDIX B-1

Data Tabulation Key & Sample Coordinates

Table B.1

NOTE ON SAMPLE NAME CONVENTION

The sample locations tabulated in the computer output each refer to specific spatial coordinates (relative to ground level at the easternmost corner of the boilerhouse). These coordinates are determined as follows (see also the surface sample location plan, Figure 5-8):

-surface samples are coded with two letters

eg. CK
lateral position (y) on line
line

-elevated samples are coded with a number and a letter

eg. 2P
point on elevated sample rake
level of rake (in rake heights above the surface)

As indicated on the "Key to Tabulated Concentration Data," for a particular environmental condition, one computer run contains all of the data pertaining to surface samples (eg., Run 1 - neutral, October case) and five additional runs contain the data for elevated samples at one location each (eg., Run 7 - neutral, October case, line C).

Table B.2

KEY TO TABULATED CONCENTRATION DATA

COMPUTER RUN NO.	STABILITY	STACK CONFIGURATION	SAMPLE TYPE	LOCATION OF LINE	ELEVATED SAMPLES RAKE CENTERED AT
1	N	O	S		
2	N	A	S		
3	U	O	S		
4	U	A	S		
5	S	O	S		
6	S	A	S		
7	N	O	E	C	Q
8	N	O	E	D	O
9	N	O	E	E	O
10	N	O	E	F	P
11	N	O	E	L	P
12	N	A	E	C	Q
13	N	A	E	D	O
14	N	A	E	E	O
15	N	A	E	F	O
16	N	A	E	L	P
17	S	O	E	C	O
18	S	O	E	D	O
19	S	O	E	E	O
20	S	O	E	F	O
21	S	O	E	L	O
22	S	A	E	C	O
23	S	A	E	D	O
24	S	A	E	E	O
25	S	A	E	F	O
26	S	A	E	L	O
27	U	O	E	C	O
28	U	O	E	D	O
29	U	O	E	E	O
30	U	O	E	F	P
31	U	O	E	L	P
32	U	A	E	C	O
33	U	A	E	D	O
34	U	A	E	E	O
35	U	A	E	F	O
36	U	A	E	L	O

STABILITY: N = Neutral, S = Stable, U = Unstable

STACK CONFIGURATION: O = October 1975 case
(Recovery Unit 2, Boilers 24 & 25 and Lime Kiln Operating)

A = April 1975 case
(Recovery Unit 3, Tall Stack and Lime Kiln Operating)

SAMPLE TYPE: S = Surface, E = Elevated

LOCATION OF SAMPLES: See Figures 3-1 and 5-8.

Table B.3

HIGHWAY 135 (LINE G) SAMPLE LOCATIONS

SAMPLE NAME	XM(cm)	YM(cm)	XP(m)	YP(m)
GA	71.0	51.8	1420	1035
GB	78.0	45.4	1560	910
GC	86.0	36.0	1720	720
GD	91.8	25.0	1835	500
GE	96.0	13.4	1920	268
GF	99.1	0	1980	0
GG	102.1	-11.6	2040	-230
GH	106.4	-24.4	2130	-490
GI	114.3	-35.0	2285	-700
GJ	128.0	-39.6	2560	-795

XM = x-coordinate, model

YM = y-coordinate, model

XP = x-coordinate, prototype

YP = y-coordinate, prototype

*origin is at easternmost corner of boilerhouse

Table B.4

SAMPLE GRID LOCATIONS

X COORDINATES OF SAMPLE LOCATIONS*

	LINE A	LINE B	LINE C	LINE D	LINE E	LINE F	LINE L
X Model (cm)	13	17	20.75	30	45	60	125
X Proto (m)	260	340	415	600	900	1200	2500

Y COORDINATES OF SURFACE SAMPLE LOCATIONS*

Position	A	B	C	D	E	F	G	H	I
Y Model (cm)	45.0	41.9	38.9	35.8	32.8	29.7	26.7	23.6	21.0
Y Proto (m)	900	838	777	716	655	594	533	472	412

Position	J	K	L	M	N	O	P	Q	R
Y Model (cm)	17.5	14.5	11.4	8.4	5.34	2.29	-0.76	-3.81	-6.86
Y Proto (m)	351	290	229	168	107	45.8	-15.2	-76.2	-137

Position	S	T	U	V	W	X	Y	Z
Y Model (cm)	-9.9	-13.0	-16.0	-19.0	-22.1	-25.1	-28.2	-31.2
Y Proto (m)	-198	-259	-320	-381	-442	-503	-564	-625

* Origin is at East Corner of Boilerhouse

Table B.5

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT M ON LINE C

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	12.19	1.55	243.8	31.0	3A	12.19	21.87	243.8	437.4
1B	9.65	1.55	193.0	31.0	3B	9.65	21.87	193.0	437.4
1C	7.11	1.55	142.2	31.0	3C	7.11	21.87	142.2	437.4
1D	4.57	1.55	91.4	31.0	3D	4.57	21.87	91.4	437.4
1E	9.65	2.18	193.0	43.7	3E	9.65	22.50	193.0	450.1
1F	7.11	2.18	142.2	43.7	3F	7.11	22.50	142.2	450.1
1G	9.65	2.82	193.0	56.4	3G	9.65	23.14	193.0	462.8
1H	7.11	2.82	142.2	56.4	3H	7.11	23.14	142.2	462.8
1I	12.19	4.09	243.8	81.8	3I	12.19	24.41	243.8	488.2
1J	9.65	4.09	193.0	81.8	3J	9.65	24.41	193.0	488.2
1K	7.11	4.09	142.2	81.8	3K	7.11	24.41	142.2	488.2
1L	4.57	4.09	91.4	81.8	3L	4.57	24.41	91.4	488.2
1M	9.65	5.36	193.0	107.2	3M	9.65	25.68	193.0	513.6
1N	7.11	5.36	142.2	107.2	3N	7.11	25.68	142.2	513.6
1O	12.19	6.63	243.8	132.6	3O	12.19	26.95	243.8	539.0
1P	9.65	6.63	193.0	132.6	3P	9.65	26.95	193.0	539.0
1Q	7.11	6.63	142.2	132.6	3Q	7.11	26.95	142.2	539.0
1R	4.57	6.63	91.4	132.6	3R	4.57	26.95	91.4	539.0
1S	9.65	7.90	193.0	158.0	3S	9.65	28.22	193.0	564.4
1T	7.11	7.90	142.2	158.0	3T	7.11	28.22	142.2	564.4
1U	12.19	9.17	243.8	183.4	3U	12.19	29.49	243.8	589.8
1V	9.65	9.17	193.0	183.4	3V	9.65	29.49	193.0	589.8
1W	7.11	9.17	142.2	183.4	3W	7.11	29.49	142.2	589.8
1X	4.57	9.17	91.4	183.4	3X	4.57	29.49	91.4	589.8
1Y	9.65	11.71	193.0	234.2	3Y	9.65	32.03	193.0	640.6
1Z	7.11	11.71	142.2	234.2	3Z	7.11	32.03	142.2	640.6
2A	12.19	11.71	243.8	234.2	4A	12.19	32.03	243.8	640.6
2B	9.65	11.71	193.0	234.2	4B	9.65	32.03	193.0	640.6
2C	7.11	11.71	142.2	234.2	4C	7.11	32.03	142.2	640.6
2D	4.57	11.71	91.4	234.2	4D	4.57	32.03	91.4	640.6
2E	9.65	12.34	193.0	246.9	4E	9.65	32.66	193.0	653.3
2F	7.11	12.34	142.2	246.9	4F	7.11	32.66	142.2	653.3
2G	9.65	12.98	193.0	259.6	4G	9.65	33.30	193.0	666.0
2H	7.11	12.98	142.2	259.6	4H	7.11	33.30	142.2	666.0
2I	12.19	14.25	243.8	285.0	4I	12.19	34.57	243.8	691.4
2J	9.65	14.25	193.0	285.0	4J	9.65	34.57	193.0	691.4
2K	7.11	14.25	142.2	285.0	4K	7.11	34.57	142.2	691.4
2L	4.57	14.25	91.4	285.0	4L	4.57	34.57	91.4	691.4
2M	9.65	15.52	193.0	310.4	4M	9.65	35.84	193.0	716.8
2N	7.11	15.52	142.2	310.4	4N	7.11	35.84	142.2	716.8
2O	12.19	16.79	243.8	335.8	4O	12.19	37.11	243.8	742.2
2P	9.65	16.79	193.0	335.8	4P	9.65	37.11	193.0	742.2
2Q	7.11	16.79	142.2	335.8	4Q	7.11	37.11	142.2	742.2
2R	4.57	16.79	91.4	335.8	4R	4.57	37.11	91.4	742.2
2S	9.65	18.06	193.0	361.2	4S	9.65	38.38	193.0	767.6
2T	7.11	18.06	142.2	361.2	4T	7.11	38.38	142.2	767.6
2U	12.19	19.33	243.8	386.6	4U	12.19	39.65	243.8	793.0
2V	9.65	19.33	193.0	386.6	4V	9.65	39.65	193.0	793.0
2W	7.11	19.33	142.2	386.6	4W	7.11	39.65	142.2	793.0
2X	4.57	19.33	91.4	386.6	4X	4.57	39.65	91.4	793.0
2Y	9.65	21.87	193.0	437.4	4Y	9.65	42.19	193.0	843.8
2Z	7.11	21.87	142.2	437.4	4Z	7.11	42.19	142.2	843.8

Table B.6

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT O ON LINE C

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	6.10	3.13	121.9	62.7
1B	3.56	3.13	71.1	62.7
1C	1.02	3.13	20.3	62.7
1D	-1.52	3.13	-30.5	62.7
1E	3.56	3.77	71.1	75.4
1F	1.02	3.77	20.3	75.4
1G	3.56	4.40	71.1	88.1
1H	1.02	4.40	20.3	88.1
1I	6.10	5.67	121.9	113.5
1J	3.56	5.67	71.1	113.5
1K	1.02	5.67	20.3	113.5
1L	-1.52	5.67	-30.5	113.5
1M	3.56	6.94	71.1	138.9
1N	1.02	6.94	20.3	138.9
1O	6.10	8.21	121.9	164.3
1P	3.56	8.21	71.1	164.3
1Q	1.02	8.21	20.3	164.3
1R	-1.52	8.21	-30.5	164.3
1S	3.56	9.48	71.1	189.7
1T	1.02	9.48	20.3	189.7
1U	6.10	10.75	121.9	215.1
1V	3.56	10.75	71.1	215.1
1W	1.02	10.75	20.3	215.1
1X	-1.52	10.75	-30.5	215.1
1Y	3.56	13.29	71.1	265.9
1Z	1.02	13.29	20.3	265.9
2A	6.10	13.29	121.9	265.9
2B	3.56	13.29	71.1	265.9
2C	1.02	13.29	20.3	265.9
2D	-1.52	13.29	-30.5	265.9
2E	3.56	13.93	71.1	278.6
2F	1.02	13.93	20.3	278.6
2G	3.56	14.56	71.1	291.3
2H	1.02	14.56	20.3	291.3
2I	6.10	15.83	121.9	316.7
2J	3.56	15.83	71.1	316.7
2K	1.02	15.83	20.3	316.7
2L	-1.52	15.83	-30.5	316.7
2M	3.56	17.10	71.1	342.1
2N	1.02	17.10	20.3	342.1
2O	6.10	18.37	121.9	367.5
2P	3.56	18.37	71.1	367.5
2Q	1.02	18.37	20.3	367.5
2R	-1.52	18.37	-30.5	367.5
2S	3.56	19.64	71.1	392.9
2T	1.02	19.64	20.3	392.9
2U	6.10	20.91	121.9	418.3
2V	3.56	20.91	71.1	418.3
2W	1.02	20.91	20.3	418.3
2X	-1.52	20.91	-30.5	418.3
2Y	3.56	23.45	71.1	469.1
2Z	1.02	23.45	20.3	469.1
3A	6.10	23.45	121.9	469.1
3B	3.56	23.45	71.1	469.1
3C	1.02	23.45	20.3	469.1
3D	-1.52	23.45	-30.5	469.1
3E	3.56	24.09	71.1	481.8
3F	1.02	24.09	20.3	481.8
3G	3.56	24.72	71.1	494.5
3H	1.02	24.72	20.3	494.5
3I	6.10	25.99	121.9	519.9
3J	3.56	25.99	71.1	519.9
3K	1.02	25.99	20.3	519.9
3L	-1.52	25.99	-30.5	519.9
3M	3.56	27.26	71.1	545.3
3N	1.02	27.26	20.3	545.3
3O	6.10	28.53	121.9	570.7
3P	3.56	28.53	71.1	570.7
3Q	1.02	28.53	20.3	570.7
3R	-1.52	28.53	-30.5	570.7
3S	3.56	29.80	71.1	596.1
3T	1.02	29.80	20.3	596.1
3U	6.10	31.07	121.9	621.5
3V	3.56	31.07	71.1	621.5
3W	1.02	31.07	20.3	621.5
3X	-1.52	31.07	-30.5	621.5
3Y	3.56	33.61	71.1	672.3
3Z	1.02	33.61	20.3	672.3
4A	6.10	33.61	121.9	672.3
4B	3.56	33.61	71.1	672.3
4C	1.02	33.61	20.3	672.3
4D	-1.52	33.61	-30.5	672.3
4E	3.56	34.25	71.1	685.0
4F	1.02	34.25	20.3	685.0
4G	3.56	34.88	71.1	697.7
4H	1.02	34.88	20.3	697.7
4I	6.10	36.15	121.9	723.1
4J	3.56	36.15	71.1	723.1
4K	1.02	36.15	20.3	723.1
4L	-1.52	36.15	-30.5	723.1
4M	3.56	37.42	71.1	748.5
4N	1.02	37.42	20.3	748.5
4O	6.10	38.69	121.9	773.9
4P	3.56	38.69	71.1	773.9
4Q	1.02	38.69	20.3	773.9
4R	-1.52	38.69	-30.5	773.9
4S	3.56	39.96	71.1	799.3
4T	1.02	39.96	20.3	799.3
4U	6.10	41.23	121.9	824.7
4V	3.56	41.23	71.1	824.7
4W	1.02	41.23	20.3	824.7
4X	-1.52	41.23	-30.5	824.7
4Y	3.56	43.77	71.1	875.5
4Z	1.02	43.77	20.3	875.5

Table B.7

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT P ON LINE C

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	3.05	3.47	61.0	69.4	3A	3.05	23.79	61.0	475.8
1B	.51	3.47	10.2	69.4	3B	.51	23.79	10.2	475.8
1C	-2.03	3.47	-40.6	69.4	3C	-2.03	23.79	-40.6	475.8
1D	-4.57	3.47	-91.4	69.4	3D	-4.57	23.79	-91.4	475.8
1E	.51	4.10	10.2	82.1	3E	.51	24.42	10.2	488.5
1F	-2.03	4.10	-40.6	82.1	3F	-2.03	24.42	-40.6	488.5
1G	.51	4.74	10.2	94.8	3G	.51	25.06	10.2	501.2
1H	-2.03	4.74	-40.6	94.8	3H	-2.03	25.06	-40.6	501.2
1I	3.05	6.01	61.0	120.2	3I	3.05	26.33	61.0	526.6
1J	.51	6.01	10.2	120.2	3J	.51	26.33	10.2	526.6
1K	-2.03	6.01	-40.6	120.2	3K	-2.03	26.33	-40.6	526.6
1L	-4.57	6.01	-91.4	120.2	3L	-4.57	26.33	-91.4	526.6
1M	.51	7.28	10.2	145.6	3M	.51	27.60	10.2	552.0
1N	-2.03	7.28	-40.6	145.6	3N	-2.03	27.60	-40.6	552.0
1O	3.05	8.55	61.0	171.0	3O	3.05	28.87	61.0	577.4
1P	.51	8.55	10.2	171.0	3P	.51	28.87	10.2	577.4
1Q	-2.03	8.55	-40.6	171.0	3Q	-2.03	28.87	-40.6	577.4
1R	-4.57	8.55	-91.4	171.0	3R	-4.57	28.87	-91.4	577.4
1S	.51	9.82	10.2	196.4	3S	.51	30.14	10.2	602.8
1T	-2.03	9.82	-40.6	196.4	3T	-2.03	30.14	-40.6	602.8
1U	3.05	11.09	61.0	221.8	3U	3.05	31.41	61.0	628.2
1V	.51	11.09	10.2	221.8	3V	.51	31.41	10.2	628.2
1W	-2.03	11.09	-40.6	221.8	3W	-2.03	31.41	-40.6	628.2
1X	-4.57	11.09	-91.4	221.8	3X	-4.57	31.41	-91.4	628.2
1Y	.51	13.63	10.2	272.6	3Y	.51	33.95	10.2	679.0
1Z	-2.03	13.63	-40.6	272.6	3Z	-2.03	33.95	-40.6	679.0
2A	3.05	13.63	61.0	272.6	4A	3.05	33.95	61.0	679.0
2B	.51	13.63	10.2	272.6	4B	.51	33.95	10.2	679.0
2C	-2.03	13.63	-40.6	272.6	4C	-2.03	33.95	-40.6	679.0
2D	-4.57	13.63	-91.4	272.6	4D	-4.57	33.95	-91.4	679.0
2E	.51	14.26	10.2	285.3	4E	.51	34.58	10.2	691.7
2F	-2.03	14.26	-40.6	285.3	4F	-2.03	34.58	-40.6	691.7
2G	.51	14.90	10.2	298.0	4G	.51	35.22	10.2	704.4
2H	-2.03	14.90	-40.6	298.0	4H	-2.03	35.22	-40.6	704.4
2I	3.05	16.17	61.0	323.4	4I	3.05	36.49	61.0	729.8
2J	.51	16.17	10.2	323.4	4J	.51	36.49	10.2	729.8
2K	-2.03	16.17	-40.6	323.4	4K	-2.03	36.49	-40.6	729.8
2L	-4.57	16.17	-91.4	323.4	4L	-4.57	36.49	-91.4	729.8
2M	.51	17.44	10.2	348.8	4M	.51	37.76	10.2	755.2
2N	-2.03	17.44	-40.6	348.8	4N	-2.03	37.76	-40.6	755.2
2O	3.05	18.71	61.0	374.2	4O	3.05	39.03	61.0	780.6
2P	.51	18.71	10.2	374.2	4P	.51	39.03	10.2	780.6
2Q	-2.03	18.71	-40.6	374.2	4Q	-2.03	39.03	-40.6	780.6
2R	-4.57	18.71	-91.4	374.2	4R	-4.57	39.03	-91.4	780.6
2S	.51	19.98	10.2	399.6	4S	.51	40.30	10.2	806.0
2T	-2.03	19.98	-40.6	399.6	4T	-2.03	40.30	-40.6	806.0
2U	3.05	21.25	61.0	425.0	4U	3.05	41.57	61.0	831.4
2V	.51	21.25	10.2	425.0	4V	.51	41.57	10.2	831.4
2W	-2.03	21.25	-40.6	425.0	4W	-2.03	41.57	-40.6	831.4
2X	-4.57	21.25	-91.4	425.0	4X	-4.57	41.57	-91.4	831.4
2Y	.51	23.79	10.2	475.8	4Y	.51	44.11	10.2	882.2
2Z	-2.03	23.79	-40.6	475.8	4Z	-2.03	44.11	-40.6	882.2

Table B.8

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT Q ON LINE C

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	0.00	3.80	0.0	76.1	3A	0.00	24.12	0.0	482.5
1B	-2.54	3.80	-50.8	76.1	3B	-2.54	24.12	-50.8	482.5
1C	-5.08	3.80	-101.6	76.1	3C	-5.08	24.12	-101.6	482.5
1D	-7.62	3.80	-152.4	76.1	3D	-7.62	24.12	-152.4	482.5
1E	-2.54	4.44	-50.8	88.8	3E	-2.54	24.76	-50.8	495.2
1F	-5.08	4.44	-101.6	88.8	3F	-5.08	24.76	-101.6	495.2
1G	-2.54	5.07	-50.8	101.5	3G	-2.54	25.39	-50.8	507.9
1H	-5.08	5.07	-101.6	101.5	3H	-5.08	25.39	-101.6	507.9
1I	0.00	6.34	0.0	126.9	3I	0.00	26.66	0.0	533.3
1J	-2.54	6.34	-50.8	126.9	3J	-2.54	26.66	-50.8	533.3
1K	-5.08	6.34	-101.6	126.9	3K	-5.08	26.66	-101.6	533.3
1L	-7.62	6.34	-152.4	126.9	3L	-7.62	26.66	-152.4	533.3
1M	-2.54	7.61	-50.8	152.3	3M	-2.54	27.93	-50.8	558.7
1N	-5.08	7.61	-101.6	152.3	3N	-5.08	27.93	-101.6	558.7
1O	0.00	8.88	0.0	177.7	3O	0.00	29.20	0.0	584.1
1P	-2.54	8.88	-50.8	177.7	3P	-2.54	29.20	-50.8	584.1
1Q	-5.08	8.88	-101.6	177.7	3Q	-5.08	29.20	-101.6	584.1
1R	-7.62	8.88	-152.4	177.7	3R	-7.62	29.20	-152.4	584.1
1S	-2.54	10.15	-50.8	203.1	3S	-2.54	30.47	-50.8	609.5
1T	-5.08	10.15	-101.6	203.1	3T	-5.08	30.47	-101.6	609.5
1U	0.00	11.42	0.0	228.5	3U	0.00	31.74	0.0	634.9
1V	-2.54	11.42	-50.8	228.5	3V	-2.54	31.74	-50.8	634.9
1W	-5.08	11.42	-101.6	228.5	3W	-5.08	31.74	-101.6	634.9
1X	-7.62	11.42	-152.4	228.5	3X	-7.62	31.74	-152.4	634.9
1Y	-2.54	13.96	-50.8	279.3	3Y	-2.54	34.28	-50.8	685.7
1Z	-5.08	13.96	-101.6	279.3	3Z	-5.08	34.28	-101.6	685.7
2A	0.00	13.96	0.0	279.3	4A	0.00	34.28	0.0	685.7
2B	-2.54	13.96	-50.8	279.3	4B	-2.54	34.28	-50.8	685.7
2C	-5.08	13.96	-101.6	279.3	4C	-5.08	34.28	-101.6	685.7
2D	-7.62	13.96	-152.4	279.3	4D	-7.62	34.28	-152.4	685.7
2E	-2.54	14.60	-50.8	292.0	4E	-2.54	34.92	-50.8	698.4
2F	-5.08	14.60	-101.6	292.0	4F	-5.08	34.92	-101.6	698.4
2G	-2.54	15.23	-50.8	304.7	4G	-2.54	35.55	-50.8	711.1
2H	-5.08	15.23	-101.6	304.7	4H	-5.08	35.55	-101.6	711.1
2I	0.00	16.50	0.0	330.1	4I	0.00	36.82	0.0	736.5
2J	-2.54	16.50	-50.8	330.1	4J	-2.54	36.82	-50.8	736.5
2K	-5.08	16.50	-101.6	330.1	4K	-5.08	36.82	-101.6	736.5
2L	-7.62	16.50	-152.4	330.1	4L	-7.62	36.82	-152.4	736.5
2M	-2.54	17.77	-50.8	355.5	4M	-2.54	38.09	-50.8	761.9
2N	-5.08	17.77	-101.6	355.5	4N	-5.08	38.09	-101.6	761.9
2O	0.00	19.04	0.0	380.9	4O	0.00	39.36	0.0	787.3
2P	-2.54	19.04	-50.8	380.9	4P	-2.54	39.36	-50.8	787.3
2Q	-5.08	19.04	-101.6	380.9	4Q	-5.08	39.36	-101.6	787.3
2R	-7.62	19.04	-152.4	380.9	4R	-7.62	39.36	-152.4	787.3
2S	-2.54	20.31	-50.8	406.3	4S	-2.54	40.63	-50.8	812.7
2T	-5.08	20.31	-101.6	406.3	4T	-5.08	40.63	-101.6	812.7
2U	0.00	21.58	0.0	431.7	4U	0.00	41.90	0.0	838.1
2V	-2.54	21.58	-50.8	431.7	4V	-2.54	41.90	-50.8	838.1
2W	-5.08	21.58	-101.6	431.7	4W	-5.08	41.90	-101.6	838.1
2X	-7.62	21.58	-152.4	431.7	4X	-7.62	41.90	-152.4	838.1
2Y	-2.54	24.12	-50.8	482.5	4Y	-2.54	44.44	-50.8	888.9
2Z	-5.08	24.12	-101.6	482.5	4Z	-5.08	44.44	-101.6	888.9

Table B.9

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT M ON LINE D

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	12.19	4.35	243.8	87.1	3A	12.19	24.67	243.8	493.5
1B	9.65	4.35	193.0	87.1	3B	9.65	24.67	193.0	493.5
1C	7.11	4.35	142.2	87.1	3C	7.11	24.67	142.2	493.5
1D	4.57	4.35	91.4	87.1	3D	4.57	24.67	91.4	493.5
1E	9.65	4.99	193.0	99.8	3E	9.65	25.31	193.0	506.2
1F	7.11	4.99	142.2	99.8	3F	7.11	25.31	142.2	506.2
1G	9.65	5.62	193.0	112.5	3G	9.65	25.94	193.0	518.9
1H	7.11	5.62	142.2	112.5	3H	7.11	25.94	142.2	518.9
1I	12.19	6.89	243.8	137.9	3I	12.19	27.21	243.8	544.3
1J	9.65	6.89	193.0	137.9	3J	9.65	27.21	193.0	544.3
1K	7.11	6.89	142.2	137.9	3K	7.11	27.21	142.2	544.3
1L	4.57	6.89	91.4	137.9	3L	4.57	27.21	91.4	544.3
1M	9.65	8.16	193.0	163.3	3M	9.65	28.48	193.0	569.7
1N	7.11	8.16	142.2	163.3	3N	7.11	28.48	142.2	569.7
1O	12.19	9.43	243.8	188.7	3O	12.19	29.75	243.8	595.1
1P	9.65	9.43	193.0	188.7	3P	9.65	29.75	193.0	595.1
1Q	7.11	9.43	142.2	188.7	3Q	7.11	29.75	142.2	595.1
1R	4.57	9.43	91.4	188.7	3R	4.57	29.75	91.4	595.1
1S	9.65	10.70	193.0	214.1	3S	9.65	31.02	193.0	620.5
1T	7.11	10.70	142.2	214.1	3T	7.11	31.02	142.2	620.5
1U	12.19	11.97	243.8	239.5	3U	12.19	32.29	243.8	645.9
1V	9.65	11.97	193.0	239.5	3V	9.65	32.29	193.0	645.9
1W	7.11	11.97	142.2	239.5	3W	7.11	32.29	142.2	645.9
1X	4.57	11.97	91.4	239.5	3X	4.57	32.29	91.4	645.9
1Y	9.65	14.51	193.0	290.3	3Y	9.65	34.83	193.0	696.7
1Z	7.11	14.51	142.2	290.3	3Z	7.11	34.83	142.2	696.7
2A	12.19	14.51	243.8	290.3	4A	12.19	34.83	243.8	696.7
2B	9.65	14.51	193.0	290.3	4B	9.65	34.83	193.0	696.7
2C	7.11	14.51	142.2	290.3	4C	7.11	34.83	142.2	696.7
2D	4.57	14.51	91.4	290.3	4D	4.57	34.83	91.4	696.7
2E	9.65	15.15	193.0	303.0	4E	9.65	35.47	193.0	709.4
2F	7.11	15.15	142.2	303.0	4F	7.11	35.47	142.2	709.4
2G	9.65	15.78	193.0	315.7	4G	9.65	36.10	193.0	722.1
2H	7.11	15.78	142.2	315.7	4H	7.11	36.10	142.2	722.1
2I	12.19	17.05	243.8	341.1	4I	12.19	37.37	243.8	747.5
2J	9.65	17.05	193.0	341.1	4J	9.65	37.37	193.0	747.5
2K	7.11	17.05	142.2	341.1	4K	7.11	37.37	142.2	747.5
2L	4.57	17.05	91.4	341.1	4L	4.57	37.37	91.4	747.5
2M	9.65	18.32	193.0	366.5	4M	9.65	38.64	193.0	772.9
2N	7.11	18.32	142.2	366.5	4N	7.11	38.64	142.2	772.9
2O	12.19	19.59	243.8	391.9	4O	12.19	39.91	243.8	798.3
2P	9.65	19.59	193.0	391.9	4P	9.65	39.91	193.0	798.3
2Q	7.11	19.59	142.2	391.9	4Q	7.11	39.91	142.2	798.3
2R	4.57	19.59	91.4	391.9	4R	4.57	39.91	91.4	798.3
2S	9.65	20.86	193.0	417.3	4S	9.65	41.18	193.0	823.7
2T	7.11	20.86	142.2	417.3	4T	7.11	41.18	142.2	823.7
2U	12.19	22.13	243.8	442.7	4U	12.19	42.45	243.8	849.1
2V	9.65	22.13	193.0	442.7	4V	9.65	42.45	193.0	849.1
2W	7.11	22.13	142.2	442.7	4W	7.11	42.45	142.2	849.1
2X	4.57	22.13	91.4	442.7	4X	4.57	42.45	91.4	849.1
2Y	9.65	24.67	193.0	493.5	4Y	9.65	44.99	193.0	899.9
2Z	7.11	24.67	142.2	493.5	4Z	7.11	44.99	142.2	899.9

Table B.10

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT 0 ON LINE 0

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	6.10	7.71	121.9	154.1	3A	6.10	28.03	121.9	560.5
1B	3.56	7.71	71.1	154.1	3B	3.56	28.03	71.1	560.5
1C	1.02	7.71	20.3	154.1	3C	1.02	28.03	20.3	560.5
1D	-1.52	7.71	-30.5	154.1	3D	-1.52	28.03	-30.5	560.5
1E	3.56	8.34	71.1	166.8	3E	3.56	28.66	71.1	573.2
1F	1.02	8.34	20.3	166.8	3F	1.02	28.66	20.3	573.2
1G	3.56	8.98	71.1	179.5	3G	3.56	29.30	71.1	585.9
1H	1.02	8.98	20.3	179.5	3H	1.02	29.30	20.3	585.9
1I	6.10	10.25	121.9	204.9	3I	6.10	30.57	121.9	611.3
1J	3.56	10.25	71.1	204.9	3J	3.56	30.57	71.1	611.3
1K	1.02	10.25	20.3	204.9	3K	1.02	30.57	20.3	611.3
1L	-1.52	10.25	-30.5	204.9	3L	-1.52	30.57	-30.5	611.3
1M	3.56	11.52	71.1	230.3	3M	3.56	31.84	71.1	636.7
1N	1.02	11.52	20.3	230.3	3N	1.02	31.84	20.3	636.7
1O	6.10	12.79	121.9	255.7	3O	6.10	33.11	121.9	662.1
1P	3.56	12.79	71.1	255.7	3P	3.56	33.11	71.1	662.1
1Q	1.02	12.79	20.3	255.7	3Q	1.02	33.11	20.3	662.1
1R	-1.52	12.79	-30.5	255.7	3R	-1.52	33.11	-30.5	662.1
1S	3.56	14.06	71.1	281.1	3S	3.56	34.38	71.1	687.5
1T	1.02	14.06	20.3	281.1	3T	1.02	34.38	20.3	687.5
1U	6.10	15.33	121.9	306.5	3U	6.10	35.65	121.9	712.9
1V	3.56	15.33	71.1	306.5	3V	3.56	35.65	71.1	712.9
1W	1.02	15.33	20.3	306.5	3W	1.02	35.65	20.3	712.9
1X	-1.52	15.33	-30.5	306.5	3X	-1.52	35.65	-30.5	712.9
1Y	3.56	17.87	71.1	357.3	3Y	3.56	38.19	71.1	763.7
1Z	1.02	17.87	20.3	357.3	3Z	1.02	38.19	20.3	763.7
2A	6.10	17.87	121.9	357.3	4A	6.10	38.19	121.9	763.7
2B	3.56	17.87	71.1	357.3	4B	3.56	38.19	71.1	763.7
2C	1.02	17.87	20.3	357.3	4C	1.02	38.19	20.3	763.7
2D	-1.52	17.87	-30.5	357.3	4D	-1.52	38.19	-30.5	763.7
2E	3.56	18.50	71.1	370.0	4E	3.56	38.82	71.1	776.4
2F	1.02	18.50	20.3	370.0	4F	1.02	38.82	20.3	776.4
2G	3.56	19.14	71.1	382.7	4G	3.56	39.46	71.1	789.1
2H	1.02	19.14	20.3	382.7	4H	1.02	39.46	20.3	789.1
2I	6.10	20.41	121.9	408.1	4I	6.10	40.73	121.9	814.5
2J	3.56	20.41	71.1	408.1	4J	3.56	40.73	71.1	814.5
2K	1.02	20.41	20.3	408.1	4K	1.02	40.73	20.3	814.5
2L	-1.52	20.41	-30.5	408.1	4L	-1.52	40.73	-30.5	814.5
2M	3.56	21.68	71.1	433.5	4M	3.56	42.00	71.1	839.9
2N	1.02	21.68	20.3	433.5	4N	1.02	42.00	20.3	839.9
2O	6.10	22.95	121.9	458.9	4O	6.10	43.27	121.9	865.3
2P	3.56	22.95	71.1	458.9	4P	3.56	43.27	71.1	865.3
2Q	1.02	22.95	20.3	458.9	4Q	1.02	43.27	20.3	865.3
2R	-1.52	22.95	-30.5	458.9	4R	-1.52	43.27	-30.5	865.3
2S	3.56	24.22	71.1	484.3	4S	3.56	44.54	71.1	890.7
2T	1.02	24.22	20.3	484.3	4T	1.02	44.54	20.3	890.7
2U	6.10	25.49	121.9	509.7	4U	6.10	45.81	121.9	916.1
2V	3.56	25.49	71.1	509.7	4V	3.56	45.81	71.1	916.1
2W	1.02	25.49	20.3	509.7	4W	1.02	45.81	20.3	916.1
2X	-1.52	25.49	-30.5	509.7	4X	-1.52	45.81	-30.5	916.1
2Y	3.56	28.03	71.1	560.5	4Y	3.56	48.35	71.1	966.9
2Z	1.02	28.03	20.3	560.5	4Z	1.02	48.35	20.3	966.9

Table B.11

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT P ON LINE O

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	3.05	8.26	61.0	165.1	3A	3.05	28.58	61.0	571.5
1B	.51	8.26	10.2	165.1	3B	.51	28.58	10.2	571.5
1C	-2.03	8.26	-40.6	165.1	3C	-2.03	28.58	-40.6	571.5
1D	-4.57	8.26	-91.4	165.1	3D	-4.57	28.58	-91.4	571.5
1E	.51	8.89	10.2	177.8	3E	.51	29.21	10.2	584.2
1F	-2.03	8.89	-40.6	177.8	3F	-2.03	29.21	-40.6	584.2
1G	.51	9.53	10.2	190.5	3G	.51	29.85	10.2	596.9
1H	-2.03	9.53	-40.6	190.5	3H	-2.03	29.85	-40.6	596.9
1I	3.05	10.80	61.0	215.9	3I	3.05	31.12	61.0	622.3
1J	.51	10.80	10.2	215.9	3J	.51	31.12	10.2	622.3
1K	-2.03	10.80	-40.6	215.9	3K	-2.03	31.12	-40.6	622.3
1L	-4.57	10.80	-91.4	215.9	3L	-4.57	31.12	-91.4	622.3
1M	.51	12.07	10.2	241.3	3M	.51	32.39	10.2	647.7
1N	-2.03	12.07	-40.6	241.3	3N	-2.03	32.39	-40.6	647.7
1O	3.05	13.34	61.0	266.7	3O	3.05	33.66	61.0	673.1
1P	.51	13.34	10.2	266.7	3P	.51	33.66	10.2	673.1
1Q	-2.03	13.34	-40.6	266.7	3Q	-2.03	33.66	-40.6	673.1
1R	-4.57	13.34	-91.4	266.7	3R	-4.57	33.66	-91.4	673.1
1S	.51	14.61	10.2	292.1	3S	.51	34.93	10.2	698.5
1T	-2.03	14.61	-40.6	292.1	3T	-2.03	34.93	-40.6	698.5
1U	3.05	15.88	61.0	317.5	3U	3.05	36.20	61.0	723.9
1V	.51	15.88	10.2	317.5	3V	.51	36.20	10.2	723.9
1W	-2.03	15.88	-40.6	317.5	3W	-2.03	36.20	-40.6	723.9
1X	-4.57	15.88	-91.4	317.5	3X	-4.57	36.20	-91.4	723.9
1Y	.51	18.42	10.2	368.3	3Y	.51	38.74	10.2	774.7
1Z	-2.03	18.42	-40.6	368.3	3Z	-2.03	38.74	-40.6	774.7
2A	3.05	18.42	61.0	368.3	4A	3.05	38.74	61.0	774.7
2B	.51	18.42	10.2	368.3	4B	.51	38.74	10.2	774.7
2C	-2.03	18.42	-40.6	368.3	4C	-2.03	38.74	-40.6	774.7
2D	-4.57	18.42	-91.4	368.3	4D	-4.57	38.74	-91.4	774.7
2E	.51	19.05	10.2	381.0	4E	.51	39.37	10.2	787.4
2F	-2.03	19.05	-40.6	381.0	4F	-2.03	39.37	-40.6	787.4
2G	.51	19.69	10.2	393.7	4G	.51	40.01	10.2	800.1
2H	-2.03	19.69	-40.6	393.7	4H	-2.03	40.01	-40.6	800.1
2I	3.05	20.96	61.0	419.1	4I	3.05	41.28	61.0	825.5
2J	.51	20.96	10.2	419.1	4J	.51	41.28	10.2	825.5
2K	-2.03	20.96	-40.6	419.1	4K	-2.03	41.28	-40.6	825.5
2L	-4.57	20.96	-91.4	419.1	4L	-4.57	41.28	-91.4	825.5
2M	.51	22.23	10.2	444.5	4M	.51	42.55	10.2	850.9
2N	-2.03	22.23	-40.6	444.5	4N	-2.03	42.55	-40.6	850.9
2O	3.05	23.50	61.0	469.9	4O	3.05	43.82	61.0	876.3
2P	.51	23.50	10.2	469.9	4P	.51	43.82	10.2	876.3
2Q	-2.03	23.50	-40.6	469.9	4Q	-2.03	43.82	-40.6	876.3
2R	-4.57	23.50	-91.4	469.9	4R	-4.57	43.82	-91.4	876.3
2S	.51	24.77	10.2	495.3	4S	.51	45.09	10.2	901.7
2T	-2.03	24.77	-40.6	495.3	4T	-2.03	45.09	-40.6	901.7
2U	3.05	26.04	61.0	520.7	4U	3.05	46.36	61.0	927.1
2V	.51	26.04	10.2	520.7	4V	.51	46.36	10.2	927.1
2W	-2.03	26.04	-40.6	520.7	4W	-2.03	46.36	-40.6	927.1
2X	-4.57	26.04	-91.4	520.7	4X	-4.57	46.36	-91.4	927.1
2Y	.51	28.58	10.2	571.5	4Y	.51	48.90	10.2	977.9
2Z	-2.03	28.58	-40.6	571.5	4Z	-2.03	48.90	-40.6	977.9

Table B.12

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT M ON LINE E

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	12.19	7.43	243.8	148.6	3A	12.19	27.75	243.8	555.0
1B	9.65	7.43	193.0	148.6	3B	9.65	27.75	193.0	555.0
1C	7.11	7.43	142.2	148.6	3C	7.11	27.75	142.2	555.0
1D	4.57	7.43	91.4	148.6	3D	4.57	27.75	91.4	555.0
1E	9.65	8.07	193.0	161.3	3E	9.65	28.39	193.0	567.7
1F	7.11	8.07	142.2	161.3	3F	7.11	28.39	142.2	567.7
1G	9.65	8.70	193.0	174.0	3G	9.65	29.02	193.0	580.4
1H	7.11	8.70	142.2	174.0	3H	7.11	29.02	142.2	580.4
1I	12.19	9.97	243.8	199.4	3I	12.19	30.29	243.8	605.8
1J	9.65	9.97	193.0	199.4	3J	9.65	30.29	193.0	605.8
1K	7.11	9.97	142.2	199.4	3K	7.11	30.29	142.2	605.8
1L	4.57	9.97	91.4	199.4	3L	4.57	30.29	91.4	605.8
1M	9.65	11.24	193.0	224.8	3M	9.65	31.56	193.0	631.2
1N	7.11	11.24	142.2	224.8	3N	7.11	31.56	142.2	631.2
1O	12.19	12.51	243.8	250.2	3O	12.19	32.83	243.8	656.6
1P	9.65	12.51	193.0	250.2	3P	9.65	32.83	193.0	656.6
1Q	7.11	12.51	142.2	250.2	3Q	7.11	32.83	142.2	656.6
1R	4.57	12.51	91.4	250.2	3R	4.57	32.83	91.4	656.6
1S	9.65	13.78	193.0	275.6	3S	9.65	34.10	193.0	682.0
1T	7.11	13.78	142.2	275.6	3T	7.11	34.10	142.2	682.0
1U	12.19	15.05	243.8	301.0	3U	12.19	35.37	243.8	707.4
1V	9.65	15.05	193.0	301.0	3V	9.65	35.37	193.0	707.4
1W	7.11	15.05	142.2	301.0	3W	7.11	35.37	142.2	707.4
1X	4.57	15.05	91.4	301.0	3X	4.57	35.37	91.4	707.4
1Y	9.65	17.59	193.0	351.8	3Y	9.65	37.91	193.0	758.2
1Z	7.11	17.59	142.2	351.8	3Z	7.11	37.91	142.2	758.2
2A	12.19	17.59	243.8	351.8	4A	12.19	37.91	243.8	758.2
2B	9.65	17.59	193.0	351.8	4B	9.65	37.91	193.0	758.2
2C	7.11	17.59	142.2	351.8	4C	7.11	37.91	142.2	758.2
2D	4.57	17.59	91.4	351.8	4D	4.57	37.91	91.4	758.2
2E	9.65	18.23	193.0	364.5	4E	9.65	38.55	193.0	770.9
2F	7.11	18.23	142.2	364.5	4F	7.11	38.55	142.2	770.9
2G	9.65	18.86	193.0	377.2	4G	9.65	39.18	193.0	783.6
2H	7.11	18.86	142.2	377.2	4H	7.11	39.18	142.2	783.6
2I	12.19	20.13	243.8	402.6	4I	12.19	40.45	243.8	809.0
2J	9.65	20.13	193.0	402.6	4J	9.65	40.45	193.0	809.0
2K	7.11	20.13	142.2	402.6	4K	7.11	40.45	142.2	809.0
2L	4.57	20.13	91.4	402.6	4L	4.57	40.45	91.4	809.0
2M	9.65	21.40	193.0	428.0	4M	9.65	41.72	193.0	834.4
2N	7.11	21.40	142.2	428.0	4N	7.11	41.72	142.2	834.4
2O	12.19	22.67	243.8	453.4	4O	12.19	42.99	243.8	859.8
2P	9.65	22.67	193.0	453.4	4P	9.65	42.99	193.0	859.8
2Q	7.11	22.67	142.2	453.4	4Q	7.11	42.99	142.2	859.8
2R	4.57	22.67	91.4	453.4	4R	4.57	42.99	91.4	859.8
2S	9.65	23.94	193.0	478.8	4S	9.65	44.26	193.0	885.2
2T	7.11	23.94	142.2	478.8	4T	7.11	44.26	142.2	885.2
2U	12.19	25.21	243.8	504.2	4U	12.19	45.53	243.8	910.6
2V	9.65	25.21	193.0	504.2	4V	9.65	45.53	193.0	910.6
2W	7.11	25.21	142.2	504.2	4W	7.11	45.53	142.2	910.6
2X	4.57	25.21	91.4	504.2	4X	4.57	45.53	91.4	910.6
2Y	9.65	27.75	193.0	555.0	4Y	9.65	48.07	193.0	961.4
2Z	7.11	27.75	142.2	555.0	4Z	7.11	48.07	142.2	961.4

Table B.13

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT O ON LINE E

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	6.10	11.94	121.9	238.9	3A	6.10	32.26	121.9	645.3
1B	3.56	11.94	71.1	238.9	3B	3.56	32.26	71.1	645.3
1C	1.02	11.94	20.3	238.9	3C	1.02	32.26	20.3	645.3
1D	-1.52	11.94	-30.5	238.9	3D	-1.52	32.26	-30.5	645.3
1E	3.56	12.58	71.1	251.6	3E	3.56	32.90	71.1	658.0
1F	1.02	12.58	20.3	251.6	3F	1.02	32.90	20.3	658.0
1G	3.56	13.21	71.1	264.3	3G	3.56	33.53	71.1	670.7
1H	1.02	13.21	20.3	264.3	3H	1.02	33.53	20.3	670.7
1I	6.10	14.48	121.9	289.7	3I	6.10	34.80	121.9	696.1
1J	3.56	14.48	71.1	289.7	3J	3.56	34.80	71.1	696.1
1K	1.02	14.48	20.3	289.7	3K	1.02	34.80	20.3	696.1
1L	-1.52	14.48	-30.5	289.7	3L	-1.52	34.80	-30.5	696.1
1M	3.56	15.75	71.1	315.1	3M	3.56	36.07	71.1	721.5
1N	1.02	15.75	20.3	315.1	3N	1.02	36.07	20.3	721.5
1O	6.10	17.02	121.9	340.5	3O	6.10	37.34	121.9	746.9
1P	3.56	17.02	71.1	340.5	3P	3.56	37.34	71.1	746.9
1Q	1.02	17.02	20.3	340.5	3Q	1.02	37.34	20.3	746.9
1R	-1.52	17.02	-30.5	340.5	3R	-1.52	37.34	-30.5	746.9
1S	3.56	18.29	71.1	365.9	3S	3.56	38.61	71.1	772.3
1T	1.02	18.29	20.3	365.9	3T	1.02	38.61	20.3	772.3
1U	6.10	19.56	121.9	391.3	3U	6.10	39.88	121.9	797.7
1V	3.56	19.56	71.1	391.3	3V	3.56	39.88	71.1	797.7
1W	1.02	19.56	20.3	391.3	3W	1.02	39.88	20.3	797.7
1X	-1.52	19.56	-30.5	391.3	3X	-1.52	39.88	-30.5	797.7
1Y	3.56	22.10	71.1	442.1	3Y	3.56	42.42	71.1	848.5
1Z	1.02	22.10	20.3	442.1	3Z	1.02	42.42	20.3	848.5
2A	6.10	22.10	121.9	442.1	4A	6.10	42.42	121.9	848.5
2B	3.56	22.10	71.1	442.1	4B	3.56	42.42	71.1	848.5
2C	1.02	22.10	20.3	442.1	4C	1.02	42.42	20.3	848.5
2D	-1.52	22.10	-30.5	442.1	4D	-1.52	42.42	-30.5	848.5
2E	3.56	22.74	71.1	454.8	4E	3.56	43.06	71.1	861.2
2F	1.02	22.74	20.3	454.8	4F	1.02	43.06	20.3	861.2
2G	3.56	23.37	71.1	467.5	4G	3.56	43.69	71.1	873.9
2H	1.02	23.37	20.3	467.5	4H	1.02	43.69	20.3	873.9
2I	6.10	24.64	121.9	492.9	4I	6.10	44.96	121.9	899.3
2J	3.56	24.64	71.1	492.9	4J	3.56	44.96	71.1	899.3
2K	1.02	24.64	20.3	492.9	4K	1.02	44.96	20.3	899.3
2L	-1.52	24.64	-30.5	492.9	4L	-1.52	44.96	-30.5	899.3
2M	3.56	25.91	71.1	518.3	4M	3.56	46.23	71.1	924.7
2N	1.02	25.91	20.3	518.3	4N	1.02	46.23	20.3	924.7
2O	6.10	27.18	121.9	543.7	4O	6.10	47.50	121.9	950.1
2P	3.56	27.18	71.1	543.7	4P	3.56	47.50	71.1	950.1
2Q	1.02	27.18	20.3	543.7	4Q	1.02	47.50	20.3	950.1
2R	-1.52	27.18	-30.5	543.7	4R	-1.52	47.50	-30.5	950.1
2S	3.56	28.45	71.1	569.1	4S	3.56	48.77	71.1	975.5
2T	1.02	28.45	20.3	569.1	4T	1.02	48.77	20.3	975.5
2U	6.10	29.72	121.9	594.5	4U	6.10	50.04	121.9	1000.9
2V	3.56	29.72	71.1	594.5	4V	3.56	50.04	71.1	1000.9
2W	1.02	29.72	20.3	594.5	4W	1.02	50.04	20.3	1000.9
2X	-1.52	29.72	-30.5	594.5	4X	-1.52	50.04	-30.5	1000.9
2Y	3.56	32.26	71.1	645.3	4Y	3.56	52.58	71.1	1051.7
2Z	1.02	32.26	20.3	645.3	4Z	1.02	52.58	20.3	1051.7

Table B.14

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT P ON LINE E

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	3.05	12.46	61.0	249.2	3A	3.05	32.78	61.0	655.6
1B	.51	12.46	10.2	249.2	3B	.51	32.78	10.2	655.6
1C	-2.03	12.46	-40.6	249.2	3C	-2.03	32.78	-40.6	655.6
1D	-4.57	12.46	-91.4	249.2	3D	-4.57	32.78	-91.4	655.6
1E	.51	13.10	10.2	261.9	3E	.51	33.42	10.2	668.3
1F	-2.03	13.10	-40.6	261.9	3F	-2.03	33.42	-40.6	668.3
1G	.51	13.73	10.2	274.6	3G	.51	34.05	10.2	681.0
1H	-2.03	13.73	-40.6	274.6	3H	-2.03	34.05	-40.6	681.0
1I	3.05	15.00	61.0	300.0	3I	3.05	35.32	61.0	706.4
1J	.51	15.00	10.2	300.0	3J	.51	35.32	10.2	706.4
1K	-2.03	15.00	-40.6	300.0	3K	-2.03	35.32	-40.6	706.4
1L	-4.57	15.00	-91.4	300.0	3L	-4.57	35.32	-91.4	706.4
1M	.51	16.27	10.2	325.4	3M	.51	36.59	10.2	731.8
1N	-2.03	16.27	-40.6	325.4	3N	-2.03	36.59	-40.6	731.8
1O	3.05	17.54	61.0	350.8	3O	3.05	37.86	61.0	757.2
1P	.51	17.54	10.2	350.8	3P	.51	37.86	10.2	757.2
1Q	-2.03	17.54	-40.6	350.8	3Q	-2.03	37.86	-40.6	757.2
1R	-4.57	17.54	-91.4	350.8	3R	-4.57	37.86	-91.4	757.2
1S	.51	18.81	10.2	376.2	3S	.51	39.13	10.2	782.6
1T	-2.03	18.81	-40.6	376.2	3T	-2.03	39.13	-40.6	782.6
1U	3.05	20.08	61.0	401.6	3U	3.05	40.40	61.0	808.0
1V	.51	20.08	10.2	401.6	3V	.51	40.40	10.2	808.0
1W	-2.03	20.08	-40.6	401.6	3W	-2.03	40.40	-40.6	808.0
1X	-4.57	20.08	-91.4	401.6	3X	-4.57	40.40	-91.4	808.0
1Y	.51	22.62	10.2	452.4	3Y	.51	42.94	10.2	858.8
1Z	-2.03	22.62	-40.6	452.4	3Z	-2.03	42.94	-40.6	858.8
2A	3.05	22.62	61.0	452.4	4A	3.05	42.94	61.0	858.8
2B	.51	22.62	10.2	452.4	4B	.51	42.94	10.2	858.8
2C	-2.03	22.62	-40.6	452.4	4C	-2.03	42.94	-40.6	858.8
2D	-4.57	22.62	-91.4	452.4	4D	-4.57	42.94	-91.4	858.8
2E	.51	23.26	10.2	465.1	4E	.51	43.58	10.2	871.5
2F	-2.03	23.26	-40.6	465.1	4F	-2.03	43.58	-40.6	871.5
2G	.51	23.89	10.2	477.8	4G	.51	44.21	10.2	884.2
2H	-2.03	23.89	-40.6	477.8	4H	-2.03	44.21	-40.6	884.2
2I	3.05	25.16	61.0	503.2	4I	3.05	45.48	61.0	909.6
2J	.51	25.16	10.2	503.2	4J	.51	45.48	10.2	909.6
2K	-2.03	25.16	-40.6	503.2	4K	-2.03	45.48	-40.6	909.6
2L	-4.57	25.16	-91.4	503.2	4L	-4.57	45.48	-91.4	909.6
2M	.51	26.43	10.2	528.6	4M	.51	46.75	10.2	935.0
2N	-2.03	26.43	-40.6	528.6	4N	-2.03	46.75	-40.6	935.0
2O	3.05	27.70	61.0	554.0	4O	3.05	48.02	61.0	960.4
2P	.51	27.70	10.2	554.0	4P	.51	48.02	10.2	960.4
2Q	-2.03	27.70	-40.6	554.0	4Q	-2.03	48.02	-40.6	960.4
2R	-4.57	27.70	-91.4	554.0	4R	-4.57	48.02	-91.4	960.4
2S	.51	28.97	10.2	579.4	4S	.51	49.29	10.2	985.8
2T	-2.03	28.97	-40.6	579.4	4T	-2.03	49.29	-40.6	985.8
2U	3.05	30.24	61.0	604.8	4U	3.05	50.56	61.0	1011.2
2V	.51	30.24	10.2	604.8	4V	.51	50.56	10.2	1011.2
2W	-2.03	30.24	-40.6	604.8	4W	-2.03	50.56	-40.6	1011.2
2X	-4.57	30.24	-91.4	604.8	4X	-4.57	50.56	-91.4	1011.2
2Y	.51	32.78	10.2	655.6	4Y	.51	53.10	10.2	1062.0
2Z	-2.03	32.78	-40.6	655.6	4Z	-2.03	53.10	-40.6	1062.0

Table B.15

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT M ON LINE F

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	12.19	8.77	243.8	175.5	3A	12.19	29.09	243.8	581.9
1B	9.65	8.77	193.0	175.5	3B	9.65	29.09	193.0	581.9
1C	7.11	8.77	142.2	175.5	3C	7.11	29.09	142.2	581.9
1D	4.57	8.77	91.4	175.5	3D	4.57	29.09	91.4	581.9
1E	9.65	9.41	193.0	188.2	3E	9.65	29.73	193.0	594.6
1F	7.11	9.41	142.2	188.2	3F	7.11	29.73	142.2	594.6
1G	9.65	10.04	193.0	200.9	3G	9.65	30.36	193.0	607.3
1H	7.11	10.04	142.2	200.9	3H	7.11	30.36	142.2	607.3
1I	12.19	11.31	243.8	226.3	3I	12.19	31.63	243.8	632.7
1J	9.65	11.31	193.0	226.3	3J	9.65	31.63	193.0	632.7
1K	7.11	11.31	142.2	226.3	3K	7.11	31.63	142.2	632.7
1L	4.57	11.31	91.4	226.3	3L	4.57	31.63	91.4	632.7
1M	9.65	12.58	193.0	251.7	3M	9.65	32.90	193.0	658.1
1N	7.11	12.58	142.2	251.7	3N	7.11	32.90	142.2	658.1
1O	12.19	13.85	243.8	277.1	3O	12.19	34.17	243.8	683.5
1P	9.65	13.85	193.0	277.1	3P	9.65	34.17	193.0	683.5
1Q	7.11	13.85	142.2	277.1	3Q	7.11	34.17	142.2	683.5
1R	4.57	13.85	91.4	277.1	3R	4.57	34.17	91.4	683.5
1S	9.65	15.12	193.0	302.5	3S	9.65	35.44	193.0	708.9
1T	7.11	15.12	142.2	302.5	3T	7.11	35.44	142.2	708.9
1U	12.19	16.39	243.8	327.9	3U	12.19	36.71	243.8	734.3
1V	9.65	16.39	193.0	327.9	3V	9.65	36.71	193.0	734.3
1W	7.11	16.39	142.2	327.9	3W	7.11	36.71	142.2	734.3
1X	4.57	16.39	91.4	327.9	3X	4.57	36.71	91.4	734.3
1Y	9.65	18.93	193.0	378.7	3Y	9.65	39.25	193.0	785.1
1Z	7.11	18.93	142.2	378.7	3Z	7.11	39.25	142.2	785.1
2A	12.19	18.93	243.8	378.7	4A	12.19	39.25	243.8	785.1
2B	9.65	18.93	193.0	378.7	4B	9.65	39.25	193.0	785.1
2C	7.11	18.93	142.2	378.7	4C	7.11	39.25	142.2	785.1
2D	4.57	18.93	91.4	378.7	4D	4.57	39.25	91.4	785.1
2E	9.65	19.57	193.0	391.4	4E	9.65	39.89	193.0	797.8
2F	7.11	19.57	142.2	391.4	4F	7.11	39.89	142.2	797.8
2G	9.65	20.20	193.0	404.1	4G	9.65	40.52	193.0	810.5
2H	7.11	20.20	142.2	404.1	4H	7.11	40.52	142.2	810.5
2I	12.19	21.47	243.8	429.5	4I	12.19	41.79	243.8	835.9
2J	9.65	21.47	193.0	429.5	4J	9.65	41.79	193.0	835.9
2K	7.11	21.47	142.2	429.5	4K	7.11	41.79	142.2	835.9
2L	4.57	21.47	91.4	429.5	4L	4.57	41.79	91.4	835.9
2M	9.65	22.74	193.0	454.9	4M	9.65	43.06	193.0	861.3
2N	7.11	22.74	142.2	454.9	4N	7.11	43.06	142.2	861.3
2O	12.19	24.01	243.8	480.3	4O	12.19	44.33	243.8	886.7
2P	9.65	24.01	193.0	480.3	4P	9.65	44.33	193.0	886.7
2Q	7.11	24.01	142.2	480.3	4Q	7.11	44.33	142.2	886.7
2R	4.57	24.01	91.4	480.3	4R	4.57	44.33	91.4	886.7
2S	9.65	25.28	193.0	505.7	4S	9.65	45.60	193.0	912.1
2T	7.11	25.28	142.2	505.7	4T	7.11	45.60	142.2	912.1
2U	12.19	26.55	243.8	531.1	4U	12.19	46.87	243.8	937.5
2V	9.65	26.55	193.0	531.1	4V	9.65	46.87	193.0	937.5
2W	7.11	26.55	142.2	531.1	4W	7.11	46.87	142.2	937.5
2X	4.57	26.55	91.4	531.1	4X	4.57	46.87	91.4	937.5
2Y	9.65	29.09	193.0	581.9	4Y	9.65	49.41	193.0	988.3
2Z	7.11	29.09	142.2	581.9	4Z	7.11	49.41	142.2	988.3

Table B.16

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT O ON LINE F

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	6.10	11.73	121.9	234.6
1B	3.56	11.73	71.1	234.6
1C	1.02	11.73	20.3	234.6
1D	-1.52	11.73	-30.5	234.6
1E	3.56	12.36	71.1	247.3
1F	1.02	12.36	20.3	247.3
1G	3.56	13.00	71.1	260.0
1H	1.02	13.00	20.3	260.0
1I	6.10	14.27	121.9	285.4
1J	3.56	14.27	71.1	285.4
1K	1.02	14.27	20.3	285.4
1L	-1.52	14.27	-30.5	285.4
1M	3.56	15.54	71.1	310.8
1N	1.02	15.54	20.3	310.8
1O	6.10	16.81	121.9	336.2
1P	3.56	16.81	71.1	336.2
1Q	1.02	16.81	20.3	336.2
1R	-1.52	16.81	-30.5	336.2
1S	3.56	18.08	71.1	361.6
1T	1.02	18.09	20.3	361.6
1U	6.10	19.35	121.9	387.0
1V	3.56	19.35	71.1	387.0
1W	1.02	19.35	20.3	387.0
1X	-1.52	19.35	-30.5	387.0
1Y	3.56	21.89	71.1	437.8
1Z	1.02	21.89	20.3	437.8
2A	6.10	21.89	121.9	437.8
2B	3.56	21.89	71.1	437.8
2C	1.02	21.89	20.3	437.8
2D	-1.52	21.89	-30.5	437.8
2E	3.56	22.52	71.1	450.5
2F	1.02	22.52	20.3	450.5
2G	3.56	23.16	71.1	463.2
2H	1.02	23.16	20.3	463.2
2I	6.10	24.43	121.9	488.6
2J	3.56	24.43	71.1	488.6
2K	1.02	24.43	20.3	488.6
2L	-1.52	24.43	-30.5	488.6
2M	3.56	25.70	71.1	514.0
2N	1.02	25.70	20.3	514.0
2O	6.10	26.97	121.9	539.4
2P	3.56	26.97	71.1	539.4
2Q	1.02	26.97	20.3	539.4
2R	-1.52	26.97	-30.5	539.4
2S	3.56	28.24	71.1	564.8
2T	1.02	28.24	20.3	564.8
2U	6.10	29.51	121.9	590.2
2V	3.56	29.51	71.1	590.2
2W	1.02	29.51	20.3	590.2
2X	-1.52	29.51	-30.5	590.2
2Y	3.56	32.05	71.1	641.0
2Z	1.02	32.05	20.3	641.0
3A	6.10	32.05	121.9	641.0
3B	3.56	32.05	71.1	641.0
3C	1.02	32.05	20.3	641.0
3D	-1.52	32.05	-30.5	641.0
3E	3.56	32.68	71.1	653.7
3F	1.02	32.68	20.3	653.7
3G	3.56	33.32	71.1	666.4
3H	1.02	33.32	20.3	666.4
3I	6.10	34.59	121.9	691.8
3J	3.56	34.59	71.1	691.8
3K	1.02	34.59	20.3	691.8
3L	-1.52	34.59	-30.5	691.8
3M	3.56	35.86	71.1	717.2
3N	1.02	35.86	20.3	717.2
3O	6.10	37.13	121.9	742.6
3P	3.56	37.13	71.1	742.6
3Q	1.02	37.13	20.3	742.6
3R	-1.52	37.13	-30.5	742.6
3S	3.56	38.40	71.1	768.0
3T	1.02	38.40	20.3	768.0
3U	6.10	39.67	121.9	793.4
3V	3.56	39.67	71.1	793.4
3W	1.02	39.67	20.3	793.4
3X	-1.52	39.67	-30.5	793.4
3Y	3.56	42.21	71.1	844.2
3Z	1.02	42.21	20.3	844.2
4A	6.10	42.21	121.9	844.2
4B	3.56	42.21	71.1	844.2
4C	1.02	42.21	20.3	844.2
4D	-1.52	42.21	-30.5	844.2
4E	3.56	42.84	71.1	856.9
4F	1.02	42.84	20.3	856.9
4G	3.56	43.48	71.1	869.6
4H	1.02	43.48	20.3	869.6
4I	6.10	44.75	121.9	895.0
4J	3.56	44.75	71.1	895.0
4K	1.02	44.75	20.3	895.0
4L	-1.52	44.75	-30.5	895.0
4M	3.56	46.02	71.1	920.4
4N	1.02	46.02	20.3	920.4
4O	6.10	47.29	121.9	945.8
4P	3.56	47.29	71.1	945.8
4Q	1.02	47.29	20.3	945.8
4R	-1.52	47.29	-30.5	945.8
4S	3.56	48.56	71.1	971.2
4T	1.02	48.56	20.3	971.2
4U	6.10	49.83	121.9	996.6
4V	3.56	49.83	71.1	996.6
4W	1.02	49.83	20.3	996.6
4X	-1.52	49.83	-30.5	996.6
4Y	3.56	52.37	71.1	1047.4
4Z	1.02	52.37	20.3	1047.4

Table B.17

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT P ON LINE F

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	3.05	12.19	61.0	243.7	3A	3.05	32.51	61.0	650.1
1B	.51	12.19	10.2	243.7	3B	.51	32.51	10.2	650.1
1C	-2.03	12.19	-40.6	243.7	3C	-2.03	32.51	-40.6	650.1
1D	-4.57	12.19	-91.4	243.7	3D	-4.57	32.51	-91.4	650.1
1E	.51	12.82	10.2	256.4	3E	.51	33.14	10.2	662.8
1F	-2.03	12.82	-40.6	256.4	3F	-2.03	33.14	-40.6	662.8
1G	.51	13.46	10.2	269.1	3G	.51	33.78	10.2	675.5
1H	-2.03	13.46	-40.6	269.1	3H	-2.03	33.78	-40.6	675.5
1I	3.05	14.73	61.0	294.5	3I	3.05	35.05	61.0	700.9
1J	.51	14.73	10.2	294.5	3J	.51	35.05	10.2	700.9
1K	-2.03	14.73	-40.6	294.5	3K	-2.03	35.05	-40.6	700.9
1L	-4.57	14.73	-91.4	294.5	3L	-4.57	35.05	-91.4	700.9
1M	.51	16.00	10.2	319.9	3M	.51	36.32	10.2	726.3
1N	-2.03	16.00	-40.6	319.9	3N	-2.03	36.32	-40.6	726.3
1O	3.05	17.27	61.0	345.3	3O	3.05	37.59	61.0	751.7
1P	.51	17.27	10.2	345.3	3P	.51	37.59	10.2	751.7
1Q	-2.03	17.27	-40.6	345.3	3Q	-2.03	37.59	-40.6	751.7
1R	-4.57	17.27	-91.4	345.3	3R	-4.57	37.59	-91.4	751.7
1S	.51	18.54	10.2	370.7	3S	.51	38.86	10.2	777.1
1T	-2.03	18.54	-40.6	370.7	3T	-2.03	38.86	-40.6	777.1
1U	3.05	19.81	61.0	396.1	3U	3.05	40.13	61.0	802.5
1V	.51	19.81	10.2	396.1	3V	.51	40.13	10.2	802.5
1W	-2.03	19.81	-40.6	396.1	3W	-2.03	40.13	-40.6	802.5
1X	-4.57	19.81	-91.4	396.1	3X	-4.57	40.13	-91.4	802.5
1Y	.51	22.35	10.2	446.9	3Y	.51	42.67	10.2	853.3
1Z	-2.03	22.35	-40.6	446.9	3Z	-2.03	42.67	-40.6	853.3
2A	3.05	22.35	61.0	446.9	4A	3.05	42.67	61.0	853.3
2B	.51	22.35	10.2	446.9	4B	.51	42.67	10.2	853.3
2C	-2.03	22.35	-40.6	446.9	4C	-2.03	42.67	-40.6	853.3
2D	-4.57	22.35	-91.4	446.9	4D	-4.57	42.67	-91.4	853.3
2E	.51	22.98	10.2	459.6	4E	.51	43.30	10.2	866.0
2F	-2.03	22.98	-40.6	459.6	4F	-2.03	43.30	-40.6	866.0
2G	.51	23.62	10.2	472.3	4G	.51	43.94	10.2	878.7
2H	-2.03	23.62	-40.6	472.3	4H	-2.03	43.94	-40.6	878.7
2I	3.05	24.89	61.0	497.7	4I	3.05	45.21	61.0	904.1
2J	.51	24.89	10.2	497.7	4J	.51	45.21	10.2	904.1
2K	-2.03	24.89	-40.6	497.7	4K	-2.03	45.21	-40.6	904.1
2L	-4.57	24.89	-91.4	497.7	4L	-4.57	45.21	-91.4	904.1
2M	.51	26.16	10.2	523.1	4M	.51	46.48	10.2	929.5
2N	-2.03	26.16	-40.6	523.1	4N	-2.03	46.48	-40.6	929.5
2O	3.05	27.43	61.0	548.5	4O	3.05	47.75	61.0	954.9
2P	.51	27.43	10.2	548.5	4P	.51	47.75	10.2	954.9
2Q	-2.03	27.43	-40.6	548.5	4Q	-2.03	47.75	-40.6	954.9
2R	-4.57	27.43	-91.4	548.5	4R	-4.57	47.75	-91.4	954.9
2S	.51	28.70	10.2	573.9	4S	.51	49.02	10.2	980.3
2T	-2.03	28.70	-40.6	573.9	4T	-2.03	49.02	-40.6	980.3
2U	3.05	29.97	61.0	599.3	4U	3.05	50.29	61.0	1005.7
2V	.51	29.97	10.2	599.3	4V	.51	50.29	10.2	1005.7
2W	-2.03	29.97	-40.6	599.3	4W	-2.03	50.29	-40.6	1005.7
2X	-4.57	29.97	-91.4	599.3	4X	-4.57	50.29	-91.4	1005.7
2Y	.51	32.51	10.2	650.1	4Y	.51	52.83	10.2	1056.5
2Z	-2.03	32.51	-40.6	650.1	4Z	-2.03	52.83	-40.6	1056.5

Table B.18

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT M ON LINE L

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	12.19	3.23	243.8	64.5	3A	12.19	23.55	243.8	470.9
1B	9.65	3.23	193.0	64.5	3B	9.65	23.55	193.0	470.9
1C	7.11	3.23	142.2	64.5	3C	7.11	23.55	142.2	470.9
1D	4.57	3.23	91.4	64.5	3D	4.57	23.55	91.4	470.9
1E	9.65	3.86	193.0	77.2	3E	9.65	24.18	193.0	483.6
1F	7.11	3.86	142.2	77.2	3F	7.11	24.18	142.2	483.6
1G	9.65	4.50	193.0	89.9	3G	9.65	24.82	193.0	496.3
1H	7.11	4.50	142.2	89.9	3H	7.11	24.82	142.2	496.3
1I	12.19	5.77	243.8	115.3	3I	12.19	26.09	243.8	521.7
1J	9.65	5.77	193.0	115.3	3J	9.65	26.09	193.0	521.7
1K	7.11	5.77	142.2	115.3	3K	7.11	26.09	142.2	521.7
1L	4.57	5.77	91.4	115.3	3L	4.57	26.09	91.4	521.7
1M	9.65	7.04	193.0	140.7	3M	9.65	27.36	193.0	547.1
1N	7.11	7.04	142.2	140.7	3N	7.11	27.36	142.2	547.1
1O	12.19	8.31	243.8	166.1	3O	12.19	28.63	243.8	572.5
1P	9.65	8.31	193.0	166.1	3P	9.65	28.63	193.0	572.5
1Q	7.11	8.31	142.2	166.1	3Q	7.11	28.63	142.2	572.5
1R	4.57	8.31	91.4	166.1	3R	4.57	28.63	91.4	572.5
1S	9.65	9.58	193.0	191.5	3S	9.65	29.90	193.0	597.9
1T	7.11	9.58	142.2	191.5	3T	7.11	29.90	142.2	597.9
1U	12.19	10.85	243.8	216.9	3U	12.19	31.17	243.8	623.3
1V	9.65	10.85	193.0	216.9	3V	9.65	31.17	193.0	623.3
1W	7.11	10.85	142.2	216.9	3W	7.11	31.17	142.2	623.3
1X	4.57	10.85	91.4	216.9	3X	4.57	31.17	91.4	623.3
1Y	9.65	13.39	193.0	267.7	3Y	9.65	33.71	193.0	674.1
1Z	7.11	13.39	142.2	267.7	3Z	7.11	33.71	142.2	674.1
2A	12.19	13.39	243.8	267.7	4A	12.19	33.71	243.8	674.1
2B	9.65	13.39	193.0	267.7	4B	9.65	33.71	193.0	674.1
2C	7.11	13.39	142.2	267.7	4C	7.11	33.71	142.2	674.1
2D	4.57	13.39	91.4	267.7	4D	4.57	33.71	91.4	674.1
2E	9.65	14.02	193.0	280.4	4E	9.65	34.34	193.0	686.8
2F	7.11	14.02	142.2	280.4	4F	7.11	34.34	142.2	686.8
2G	9.65	14.66	193.0	293.1	4G	9.65	34.98	193.0	699.5
2H	7.11	14.66	142.2	293.1	4H	7.11	34.98	142.2	699.5
2I	12.19	15.93	243.8	318.5	4I	12.19	36.25	243.8	724.9
2J	9.65	15.93	193.0	318.5	4J	9.65	36.25	193.0	724.9
2K	7.11	15.93	142.2	318.5	4K	7.11	36.25	142.2	724.9
2L	4.57	15.93	91.4	318.5	4L	4.57	36.25	91.4	724.9
2M	9.65	17.20	193.0	343.9	4M	9.65	37.52	193.0	750.3
2N	7.11	17.20	142.2	343.9	4N	7.11	37.52	142.2	750.3
2O	12.19	18.47	243.8	369.3	4O	12.19	38.79	243.8	775.7
2P	9.65	18.47	193.0	369.3	4P	9.65	38.79	193.0	775.7
2Q	7.11	18.47	142.2	369.3	4Q	7.11	38.79	142.2	775.7
2R	4.57	18.47	91.4	369.3	4R	4.57	38.79	91.4	775.7
2S	9.65	19.74	193.0	394.7	4S	9.65	40.06	193.0	801.1
2T	7.11	19.74	142.2	394.7	4T	7.11	40.06	142.2	801.1
2U	12.19	21.01	243.8	420.1	4U	12.19	41.33	243.8	826.5
2V	9.65	21.01	193.0	420.1	4V	9.65	41.33	193.0	826.5
2W	7.11	21.01	142.2	420.1	4W	7.11	41.33	142.2	826.5
2X	4.57	21.01	91.4	420.1	4X	4.57	41.33	91.4	826.5
2Y	9.65	23.55	193.0	470.9	4Y	9.65	43.87	193.0	877.3
2Z	7.11	23.55	142.2	470.9	4Z	7.11	43.87	142.2	877.3

Table B.19

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT N ON LINE L

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	9.14	2.16	182.9	43.2
1B	6.60	2.16	132.1	43.2
1C	4.06	2.16	81.3	43.2
1D	1.52	2.16	30.5	43.2
1E	6.60	2.79	132.1	55.9
1F	4.06	2.79	81.3	55.9
1G	6.60	3.43	132.1	68.6
1H	4.06	3.43	81.3	68.6
1I	9.14	4.70	182.9	94.0
1J	6.60	4.70	132.1	94.0
1K	4.06	4.70	81.3	94.0
1L	1.52	4.70	30.5	94.0
1M	6.60	5.97	132.1	119.4
1N	4.06	5.97	81.3	119.4
1O	9.14	7.24	182.9	144.8
1P	6.60	7.24	132.1	144.8
1Q	4.06	7.24	81.3	144.8
1R	1.52	7.24	30.5	144.8
1S	6.60	8.51	132.1	170.2
1T	4.06	8.51	81.3	170.2
1U	9.14	9.78	182.9	195.6
1V	6.60	9.78	132.1	195.6
1W	4.06	9.78	81.3	195.6
1X	1.52	9.78	30.5	195.6
1Y	6.60	12.32	132.1	246.4
1Z	4.06	12.32	81.3	246.4
2A	9.14	12.32	182.9	246.4
2B	6.60	12.32	132.1	246.4
2C	4.06	12.32	81.3	246.4
2D	1.52	12.32	30.5	246.4
2E	6.60	12.95	132.1	259.1
2F	4.06	12.95	81.3	259.1
2G	6.60	13.59	132.1	271.8
2H	4.06	13.59	81.3	271.8
2I	9.14	14.86	182.9	297.2
2J	6.60	14.86	132.1	297.2
2K	4.06	14.86	81.3	297.2
2L	1.52	14.86	30.5	297.2
2M	6.60	16.13	132.1	322.6
2N	4.06	16.13	81.3	322.6
2O	9.14	17.40	182.9	348.0
2P	6.60	17.40	132.1	348.0
2Q	4.06	17.40	81.3	348.0
2R	1.52	17.40	30.5	348.0
2S	6.60	18.67	132.1	373.4
2T	4.06	18.67	81.3	373.4
2U	9.14	19.94	182.9	398.8
2V	6.60	19.94	132.1	398.8
2W	4.06	19.94	81.3	398.8
2X	1.52	19.94	30.5	398.8
2Y	6.60	22.48	132.1	449.6
2Z	4.06	22.48	81.3	449.6
3A	9.14	22.48	182.9	449.6
3B	6.60	22.48	132.1	449.6
3C	4.06	22.48	81.3	449.6
3D	1.52	22.48	30.5	449.6
3E	6.60	23.11	132.1	462.3
3F	4.06	23.11	81.3	462.3
3G	6.60	23.75	132.1	475.0
3H	4.06	23.75	81.3	475.0
3I	9.14	25.02	182.9	500.4
3J	6.60	25.02	132.1	500.4
3K	4.06	25.02	81.3	500.4
3L	1.52	25.02	30.5	500.4
3M	6.60	26.29	132.1	525.8
3N	4.06	26.29	81.3	525.8
3O	9.14	27.56	182.9	551.2
3P	6.60	27.56	132.1	551.2
3Q	4.06	27.56	81.3	551.2
3R	1.52	27.56	30.5	551.2
3S	6.60	28.83	132.1	576.6
3T	4.06	28.83	81.3	576.6
3U	9.14	30.10	182.9	602.0
3V	6.60	30.10	132.1	602.0
3W	4.06	30.10	81.3	602.0
3X	1.52	30.10	30.5	602.0
3Y	6.60	32.64	132.1	652.8
3Z	4.06	32.64	81.3	652.8
4A	9.14	32.64	182.9	652.8
4B	6.60	32.64	132.1	652.8
4C	4.06	32.64	81.3	652.8
4D	1.52	32.64	30.5	652.8
4E	6.60	33.27	132.1	665.5
4F	4.06	33.27	81.3	665.5
4G	6.60	33.91	132.1	678.2
4H	4.06	33.91	81.3	678.2
4I	9.14	35.18	182.9	703.6
4J	6.60	35.18	132.1	703.6
4K	4.06	35.18	81.3	703.6
4L	1.52	35.18	30.5	703.6
4M	6.60	36.45	132.1	729.0
4N	4.06	36.45	81.3	729.0
4O	9.14	37.72	182.9	754.4
4P	6.60	37.72	132.1	754.4
4Q	4.06	37.72	81.3	754.4
4R	1.52	37.72	30.5	754.4
4S	6.60	38.99	132.1	779.8
4T	4.06	38.99	81.3	779.8
4U	9.14	40.26	182.9	805.2
4V	6.60	40.26	132.1	805.2
4W	4.06	40.26	81.3	805.2
4X	1.52	40.26	30.5	805.2
4Y	6.60	42.80	132.1	856.0
4Z	4.06	42.80	81.3	856.0

Table B.20

Y-Z COORDINATES FOR VERTICAL SAMPLER CENTERED AT POINT O ON LINE L

SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)	SAM	YM(CM)	ZM(CM)	YP(M)	ZP(M)
1A	6.10	2.80	121.9	56.0	3A	6.10	23.12	121.9	462.4
1B	3.56	2.80	71.1	56.0	3B	3.56	23.12	71.1	462.4
1C	1.02	2.80	20.3	56.0	3C	1.02	23.12	20.3	462.4
1D	-1.52	2.80	-30.5	56.0	3D	-1.52	23.12	-30.5	462.4
1E	3.56	3.43	71.1	68.7	3E	3.56	23.75	71.1	475.1
1F	1.02	3.43	20.3	68.7	3F	1.02	23.75	20.3	475.1
1G	3.56	4.07	71.1	81.4	3G	3.56	24.39	71.1	487.8
1H	1.02	4.07	20.3	81.4	3H	1.02	24.39	20.3	487.8
1I	6.10	5.34	121.9	106.8	3I	6.10	25.66	121.9	513.2
1J	3.56	5.34	71.1	106.8	3J	3.56	25.66	71.1	513.2
1K	1.02	5.34	20.3	106.8	3K	1.02	25.66	20.3	513.2
1L	-1.52	5.34	-30.5	106.8	3L	-1.52	25.66	-30.5	513.2
1M	3.56	6.61	71.1	132.2	3M	3.56	26.93	71.1	538.6
1N	1.02	6.61	20.3	132.2	3N	1.02	26.93	20.3	538.6
1O	6.10	7.88	121.9	157.6	3O	6.10	28.20	121.9	564.0
1P	3.56	7.88	71.1	157.6	3P	3.56	28.20	71.1	564.0
1Q	1.02	7.88	20.3	157.6	3Q	1.02	28.20	20.3	564.0
1R	-1.52	7.88	-30.5	157.6	3R	-1.52	28.20	-30.5	564.0
1S	3.56	9.15	71.1	183.0	3S	3.56	29.47	71.1	589.4
1T	1.02	9.15	20.3	183.0	3T	1.02	29.47	20.3	589.4
1U	6.10	10.42	121.9	208.4	3U	6.10	30.74	121.9	614.8
1V	3.56	10.42	71.1	208.4	3V	3.56	30.74	71.1	614.8
1W	1.02	10.42	20.3	208.4	3W	1.02	30.74	20.3	614.8
1X	-1.52	10.42	-30.5	208.4	3X	-1.52	30.74	-30.5	614.8
1Y	3.56	12.96	71.1	259.2	3Y	3.56	33.28	71.1	665.6
1Z	1.02	12.96	20.3	259.2	3Z	1.02	33.28	20.3	665.6
2A	6.10	12.96	121.9	259.2	4A	6.10	33.28	121.9	665.6
2B	3.56	12.96	71.1	259.2	4B	3.56	33.28	71.1	665.6
2C	1.02	12.96	20.3	259.2	4C	1.02	33.28	20.3	665.6
2D	-1.52	12.96	-30.5	259.2	4D	-1.52	33.28	-30.5	665.6
2E	3.56	13.59	71.1	271.9	4E	3.56	33.91	71.1	678.3
2F	1.02	13.59	20.3	271.9	4F	1.02	33.91	20.3	678.3
2G	3.56	14.23	71.1	284.6	4G	3.56	34.55	71.1	691.0
2H	1.02	14.23	20.3	284.6	4H	1.02	34.55	20.3	691.0
2I	6.10	15.50	121.9	310.0	4I	6.10	35.82	121.9	716.4
2J	3.56	15.50	71.1	310.0	4J	3.56	35.82	71.1	716.4
2K	1.02	15.50	20.3	310.0	4K	1.02	35.82	20.3	716.4
2L	-1.52	15.50	-30.5	310.0	4L	-1.52	35.82	-30.5	716.4
2M	3.56	16.77	71.1	335.4	4M	3.56	37.09	71.1	741.8
2N	1.02	16.77	20.3	335.4	4N	1.02	37.09	20.3	741.8
2O	6.10	18.04	121.9	360.8	4O	6.10	38.36	121.9	767.2
2P	3.56	18.04	71.1	360.8	4P	3.56	38.36	71.1	767.2
2Q	1.02	18.04	20.3	360.8	4Q	1.02	38.36	20.3	767.2
2R	-1.52	18.04	-30.5	360.8	4R	-1.52	38.36	-30.5	767.2
2S	3.56	19.31	71.1	386.2	4S	3.56	39.63	71.1	792.6
2T	1.02	19.31	20.3	386.2	4T	1.02	39.63	20.3	792.6
2U	6.10	20.58	121.9	411.6	4U	6.10	40.90	121.9	818.0
2V	3.56	20.58	71.1	411.6	4V	3.56	40.90	71.1	818.0
2W	1.02	20.58	20.3	411.6	4W	1.02	40.90	20.3	818.0
2X	-1.52	20.58	-30.5	411.6	4X	-1.52	40.90	-30.5	818.0
2Y	3.56	23.12	71.1	462.4	4Y	3.56	43.44	71.1	868.8
2Z	1.02	23.12	20.3	462.4	4Z	1.02	43.44	20.3	868.8

APPENDIX B-2

Tabulation of Concentration Measurements

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AI	13.6	.275E-03	.194E-05	.150E-06
AK	37.4	.632E-02	.447E-04	.346E-05
AL	72.5	.153E-01	.108E-03	.834E-05
AM	59.2	.119E-01	.839E-04	.649E-05
AN	57.3	.114E-01	.804E-04	.622E-05
AO	113.4	.272E-01	.192E-03	.149E-04
AP	64.2	.131E-01	.928E-04	.718E-05
AR	54.5	.107E-01	.755E-04	.584E-05
AT	13.6	.156E-02	.110E-04	.852E-06
AQ	78.9	.169E-01	.119E-03	.923E-05
BM	43.6	.344E-02	.667E-04	.516E-05
BN	113.0	.255E-01	.181E-03	.140E-04
BO	136.1	.314E-01	.222E-03	.172E-04
BP	205.1	.490E-01	.346E-03	.268E-04
BR	184.0	.436E-01	.308E-03	.238E-04
BS	113.5	.272E-01	.192E-03	.149E-04
BT	43.4	.339E-02	.664E-04	.514E-05
BQ	92.1	.202E-01	.143E-03	.111E-04
CK	13.7	.296E-03	.209E-05	.162E-06
CM	40.2	.704E-02	.498E-04	.385E-05
CN	108.8	.245E-01	.173E-03	.134E-04
CO	187.9	.446E-01	.315E-03	.244E-04
CP	309.9	.756E-01	.535E-03	.414E-04
CR	505.5	.125E+00	.886E-03	.685E-04
CS	187.4	.444E-01	.314E-03	.243E-04
CT	55.0	.108E-01	.763E-04	.590E-05
DK	38.8	.669E-02	.473E-04	.366E-05
DM	102.2	.228E-01	.161E-03	.125E-04
DN	221.6	.531E-01	.376E-03	.291E-04
DO	405.6	.993E-01	.706E-03	.547E-04
DP	339.0	.830E-01	.587E-03	.454E-04
DQ	204.5	.488E-01	.345E-03	.267E-04
DR	304.8	.743E-01	.525E-03	.406E-04
DS	203.5	.486E-01	.343E-03	.266E-04
DT	100.4	.223E-01	.158E-03	.122E-04
DV	18.6	.156E-02	.110E-04	.851E-06
EG	12.7	.457E-04	.323E-06	.250E-07
EI	18.4	.149E-02	.106E-04	.817E-06
EK	88.6	.194E-01	.137E-03	.106E-04
EM	371.0	.911E-01	.644E-03	.498E-04
EN	485.3	.120E+00	.850E-03	.657E-04
EO	582.8	.145E+00	.102E-02	.793E-04
EP	594.9	.148E+00	.105E-02	.810E-04
EQ	224.7	.539E-01	.381E-03	.295E-04
ER	467.6	.116E+00	.818E-03	.633E-04
ES	431.5	.107E+00	.753E-03	.583E-04
ET	282.2	.685E-01	.485E-03	.375E-04
EV	115.3	.261E-01	.185E-03	.143E-04
EX	23.3	.426E-02	.301E-04	.233E-05
FM	209.7	.478E-01	.338E-03	.262E-04
FO	338.8	.829E-01	.586E-03	.454E-04
FQ	236.2	.568E-01	.402E-03	.311E-04
FR	216.5	.518E-01	.367E-03	.284E-04
FS	70.0	.146E-01	.103E-03	.799E-05
FT	30.8	.464E-02	.328E-04	.254E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 1 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
GF	33.4	.531E-02	.375E-04	.290E-05
GH	91.2	.200E-01	.142E-03	.109E-04
GI	51.2	.383E-02	.635E-04	.538E-05
GJ	68.7	.143E-01	.101E-03	.781E-05

CONCENTRATION DATA FOR RUN: 1

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.409E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AI	22.8	.473E-02	.315E-04	.368E-05
AK	36.1	.832E-02	.554E-04	.648E-05
AL	44.1	.105E-01	.699E-04	.817E-05
AN	88.9	.226E-01	.150E-03	.176E-04
AO	173.6	.454E-01	.303E-03	.354E-04
AP	109.2	.281E-01	.187E-03	.218E-04
AR	97.5	.249E-01	.166E-03	.194E-04
AS	31.0	.696E-02	.464E-04	.542E-05
AT	30.4	.679E-02	.452E-04	.528E-05
AV	20.8	.420E-02	.280E-04	.327E-05
AX	21.0	.426E-02	.284E-04	.332E-05
AQ	132.3	.343E-01	.228E-03	.267E-04
BK	40.8	.976E-02	.650E-04	.760E-05
XG	30.3	.693E-02	.461E-04	.539E-05
BM	84.5	.216E-01	.144E-03	.168E-04
BN	130.3	.339E-01	.226E-03	.264E-04
BO	202.9	.535E-01	.356E-03	.417E-04
BP	236.1	.625E-01	.416E-03	.486E-04
BR	213.1	.579E-01	.385E-03	.451E-04
BS	108.4	.280E-01	.187E-03	.218E-04
BT	59.7	.147E-01	.979E-04	.114E-04
BZ	31.3	.702E-02	.467E-04	.546E-05
BV	30.7	.687E-02	.457E-04	.534E-05
BX	32.4	.732E-02	.488E-04	.570E-05
BQ	178.2	.467E-01	.311E-03	.363E-04
CI	27.2	.629E-02	.419E-04	.489E-05
CK	34.8	.834E-02	.555E-04	.649E-05
CG	27.1	.626E-02	.417E-04	.488E-05
CM	69.5	.177E-01	.118E-03	.138E-04
CN	127.6	.334E-01	.222E-03	.260E-04
CO	290.4	.773E-01	.515E-03	.602E-04
CP	434.8	.116E+00	.774E-03	.905E-04
CR	562.8	.151E+00	.100E-02	.117E-03
CS	261.1	.694E-01	.462E-03	.540E-04
CT	91.6	.237E-01	.158E-03	.184E-04
CZ	28.3	.659E-02	.439E-04	.513E-05
CV	31.8	.754E-02	.502E-04	.587E-05
CX	28.7	.669E-02	.445E-04	.521E-05
CQ	23.2	.521E-02	.347E-04	.406E-05
DG	36.2	.904E-02	.602E-04	.704E-05
DI	39.8	.100E-01	.667E-04	.780E-05
DK	80.0	.209E-01	.139E-03	.162E-04
DM	189.8	.505E-01	.336E-03	.393E-04
DN	392.3	.105E+00	.700E-03	.819E-04
DO	546.8	.147E+00	.978E-03	.114E-03
DP	539.5	.145E+00	.965E-03	.113E-03
DQ	304.7	.815E-01	.543E-03	.634E-04
DR	444.5	.119E+00	.794E-03	.928E-04
DS	309.5	.828E-01	.551E-03	.645E-04
DT	163.2	.433E-01	.289E-03	.337E-04
DV	51.1	.131E-01	.870E-04	.102E-04
DX	36.2	.904E-02	.602E-04	.704E-05
DZ	36.1	.900E-02	.599E-04	.701E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 3 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
EG	33.1	.711E-02	.474E-04	.554E-05
EI	39.5	.884E-02	.589E-04	.689E-05
EK	111.5	.283E-01	.188E-03	.220E-04
EM	364.1	.364E-01	.642E-03	.751E-04
EN	490.1	.130E+00	.869E-03	.102E-03
EO	586.4	.156E+00	.104E-02	.122E-03
EP	603.8	.161E+00	.107E-02	.125E-03
EQ	265.3	.698E-01	.465E-03	.543E-04
ER	549.1	.146E+00	.975E-03	.114E-03
ES	526.7	.140E+00	.934E-03	.109E-03
ET	363.2	.362E-01	.641E-03	.749E-04
EV	153.7	.397E-01	.264E-03	.309E-04
EX	56.5	.134E-01	.893E-04	.104E-04
EZ	30.3	.636E-02	.423E-04	.495E-05
FC	28.5	.630E-02	.420E-04	.491E-05
FI	28.8	.639E-02	.426E-04	.498E-05
FM	257.5	.681E-01	.453E-03	.530E-04
FO	433.1	.117E+00	.778E-03	.310E-04
FQ	267.5	.708E-01	.471E-03	.551E-04
FR	244.8	.647E-01	.431E-03	.504E-04
FS	105.5	.271E-01	.180E-03	.211E-04
FT	51.0	.124E-01	.824E-04	.364E-05
FV	27.7	.609E-02	.405E-04	.474E-05
FX	26.8	.586E-02	.390E-04	.456E-05
FZ	25.5	.551E-02	.367E-04	.429E-05
GB	25.3	.541E-02	.360E-04	.421E-05
GC	25.5	.546E-02	.364E-04	.425E-05
GD	27.2	.592E-02	.334E-04	.461E-05
GE	33.8	.770E-02	.513E-04	.599E-05
GF	54.0	.131E-01	.875E-04	.102E-04
GH	113.8	.309E-01	.206E-03	.241E-04
GI	76.4	.192E-01	.128E-03	.149E-04
GJ	92.8	.236E-01	.157E-03	.184E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.69
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AK	27.9	.250E-02	.305E-04	.233E-05
AL	33.6	.335E-02	.409E-04	.312E-05
AM	46.0	.518E-02	.632E-04	.482E-05
AN	54.4	.641E-02	.782E-04	.597E-05
AO	72.2	.303E-02	.110E-03	.841E-05
AP	37.7	.394E-02	.481E-04	.367E-05
AR	26.6	.232E-02	.283E-04	.216E-05
~~AR~~ OMIT	37.7	.394E-02	.481E-04	.367E-05
AS	18.5	.111E-02	.136E-04	.104E-05
AT	21.5	.157E-02	.191E-04	.146E-05
AQ	31.6	.305E-02	.373E-04	.284E-05
BK	3.5	.900E-04	.110E-05	.838E-07
BM	29.7	.321E-02	.392E-04	.299E-05
BN	66.0	.856E-02	.104E-03	.797E-05
BO	85.0	.114E-01	.139E-03	.106E-04
BP	115.4	.159E-01	.193E-03	.148E-04
BR	57.5	.731E-02	.892E-04	.681E-05
BS	26.0	.268E-02	.326E-04	.249E-05
BT	14.5	.538E-03	.656E-05	.501E-06
BQ	41.5	.452E-02	.551E-04	.421E-05
CK	11.4	.873E-03	.106E-04	.813E-06
CG	5.5	.686E-05	.837E-07	.639E-08
CM	31.2	.379E-02	.462E-04	.353E-05
CN	101.9	.142E-01	.173E-03	.132E-04
CO	222.3	.320E-01	.330E-03	.298E-04
CP	265.6	.383E-01	.467E-03	.357E-04
CR	252.3	.364E-01	.443E-03	.339E-04
CS	85.8	.118E-01	.144E-03	.110E-04
CT	24.8	.284E-02	.347E-04	.265E-05
CV	9.9	.653E-03	.796E-05	.608E-06
CX	5.6	.159E-04	.194E-06	.148E-07
DG	13.2	.384E-03	.468E-05	.357E-06
DI	11.9	.196E-03	.239E-05	.182E-06
DK	27.4	.248E-02	.303E-04	.231E-05
DM	134.3	.182E-01	.222E-03	.170E-04
DN	337.7	.482E-01	.588E-03	.449E-04
DO	797.2	.116E+00	.141E-02	.108E-03
DP	574.4	.831E-01	.101E-02	.774E-04
DQ	286.4	.406E-01	.496E-03	.378E-04
DR	306.3	.436E-01	.531E-03	.406E-04
DS	143.6	.196E-01	.239E-03	.182E-04
DT	61.3	.747E-02	.911E-04	.695E-05
DV	16.8	.919E-03	.112E-04	.856E-06
DX	16.1	.815E-03	.994E-05	.759E-06
DZ	12.5	.280E-03	.341E-05	.261E-06
EG	16.3	.128E-02	.157E-04	.120E-05
EI	24.6	.251E-02	.306E-04	.234E-05
EK	113.2	.156E-01	.190E-03	.145E-04
EM	600.4	.874E-01	.107E-02	.813E-04
EN	731.6	.107E+00	.130E-02	.993E-04
EO	970.6	.142E+00	.173E-02	.132E-03
EP	931.1	.136E+00	.166E-02	.127E-03
EQ	389.2	.562E-01	.686E-03	.524E-04
ER	759.5	.111E+00	.135E-02	.103E-03
ES	602.6	.877E-01	.107E-02	.816E-04
ET	319.2	.459E-01	.560E-03	.428E-04
EV	81.1	.108E-01	.132E-03	.101E-04
EX	13.5	.176E-02	.214E-04	.164E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 4 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FM	318.4	.445E-01	.543E-03	.415E-04
FN	407.9	.577E-01	.704E-03	.538E-04
FO	555.8	.795E-01	.970E-03	.740E-04
FP	673.9	.969E-01	.118E-02	.902E-04
FQ	377.9	.533E-01	.650E-03	.496E-04
FR	341.6	.480E-01	.585E-03	.447E-04
FS	108.1	.136E-01	.165E-03	.126E-04
FT	33.3	.253E-02	.309E-04	.236E-05
GE	16.0	.759E-03	.926E-05	.707E-06
GF	54.2	.639E-02	.779E-04	.595E-05
GH	165.6	.228E-01	.278E-03	.212E-04
GI	75.2	.948E-02	.116E-03	.883E-05
GJ	110.2	.146E-01	.178E-03	.136E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STREHGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AK	113.0	.302E-01	.207E-03	.131E-04
AL	10.7	.568E-02	.120E-04	.756E-06
AM	27.9	.204E-01	.428E-04	.271E-05
AS	1692.0	.144E+01	.303E-02	.192E-03
AV	118.5	.978E-01	.206E-03	.130E-04
AQ	20.8	.143E-01	.301E-04	.191E-05
BI	7.6	.250E-02	.526E-05	.333E-06
BK	10.3	.485E-02	.102E-04	.645E-06
BM	6.8	.183E-02	.336E-05	.251E-06
BO	41.3	.314E-01	.660E-04	.417E-05
~~BP~~ OMIT	6.8	.183E-02	.336E-05	.251E-06
BP	213.4	.184E+00	.386E-03	.244E-04
BR	802.5	.682E+00	.143E-02	.907E-04
BT	1426.5	.122E+01	.256E-02	.162E-03
BZ	35.0	.265E-01	.556E-04	.352E-05
BV	191.3	.160E+00	.337E-03	.213E-04
BQ	333.2	.287E+00	.602E-03	.381E-04
CN	3.5	.470E-02	.987E-05	.625E-06
CO	20.3	.148E-01	.310E-04	.196E-05
CP	73.3	.601E-01	.126E-03	.800E-05
CS	1283.5	.110E+01	.231E-02	.146E-03
CT	1553.6	.133E+01	.279E-02	.176E-03
CZ	26.3	.199E-01	.418E-04	.264E*05
CV	792.7	.675E+00	.142E-02	.898E-04
CX	133.2	.111E+00	.234E-03	.148E-04
CQ	21.1	.155E-01	.325E-04	.206E-05
DM	39.8	.311E-01	.654E-04	.414E-05
~~DH~~ OMIT	11.9	.720E-02	.151E-04	.958E-06
DH	60.6	.488E-01	.103E-03	.649E-05
DO	193.6	.163E+00	.342E-03	.216E-04
DP	543.0	.466E+00	.980E-03	.620E-04
DQ	501.2	.425E+00	.894E-03	.566E-04
DR	1120.6	.955E+00	.201E-02	.127E-03
~~DS~~ OMIT	574.4	.488E+00	.103E-02	.649E-04
DS	1000.8	.852E+00	.179E-02	.113E-03
DT	1045.9	.891E+00	.187E-02	.119E-03
DV	374.4	.830E+00	.174E-02	.110E-03
DX	125.6	.104E+00	.219E-03	.139E-04
DZ	16.3	.110E-01	.230E-04	.146E-05
EI	3.0	.266E-03	.560E-06	.355E-07
EM	31.7	.248E-01	.521E-04	.329E-05
EH	54.8	.445E-01	.936E-04	.592E-05
EO	103.4	.861E-01	.181E-03	.115E-04
EP	273.4	.237E+00	.497E-03	.315E-04
EQ	201.8	.170E+00	.358E-03	.226E-04
ER	547.3	.465E+00	.979E-03	.619E-04
ES	663.6	.565E+00	.119E-02	.752E-04
ET	817.8	.697E+00	.146E-02	.927E-04
EV	643.7	.548E+00	.115E-02	.729E-04
EX	340.8	.289E+00	.608E-03	.385E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNIT # 6 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FI	6.8	.235E-02	.435E-05	.313E-06
FM	145.3	.121E+00	.254E-03	.161E-04
FN	203.1	.175E+00	.368E-03	.233E-04
FO	314.7	.265E+00	.558E-03	.353E-04
FP	367.2	.310E+00	.653E-03	.413E-04
FQ	278.9	.235E+00	.434E-03	.313E-04
FR	2108.5	.180E+01	.378E-02	.239E-03
FS	230.1	.193E+00	.406E-03	.257E-04
FT	144.5	.120E+00	.252E-03	.160E-04
FV	73.5	.594E-01	.125E-03	.790E-05
~~FW~~ OMIT	367.2	.310E+00	.653E-03	.413E-04
FX	12.5	.721E-02	.152E-04	.960E-06
FZ	17.0	.111E-01	.233E-04	.147E-05
GA	23.9	.170E-01	.358E-04	.226E-05
GE	4.7	.531E-03	.112E-05	.707E-07
GF	3.9	.501E-02	.105E-04	.667E-06
GH	41.3	.319E-01	.670E-04	.424E-05
GI	90.4	.739E-01	.155E-03	.983E-05
GJ	93.9	.768E-01	.162E-03	.102E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AI	.221E-05
AK	.756E-05
AL	.875E-05
AM	.558E-05
AN	.170E-04
AO	.398E-04
AP	.173E-04
AR	.179E-04
AS	.201E-04
AT	.469E-05
BI	.274E-07
BK	.467E-05
XG	.322E-05
BM	.135E-04
BN	.249E-04
BO	.372E-04
BP	.480E-04
BR	.432E-04
BS	.167E-04
AV	.392E-05
AX	.130E-05
AQ	.137E-04
BT	.211E-04
BZ	.355E-05
BV	.435E-05
BX	.341E-05
BQ	.300E-04
CI	.232E-05
CK	.470E-05
CG	.292E-05
CM	.121E-04
CN	.299E-04
CO	.679E-04
CP	.938E-04
CR	.110E-03
CS	.573E-04
CT	.287E-04
CZ	.328E-05
CV	.115E-04
CX	.435E-05
CQ	.259E-05
DG	.456E-05
DI	.484E-05
DK	.123E-04
DM	.418E-04
DN	.968E-04
DO	.182E-03
DP	.154E-03
DQ	.826E-04
DR	.110E-03
DS	.736E-04
DT	.379E-04
DV	.161E-04
DX	.611E-05
DZ	.457E-05
EG	.451E-05
EI	.652E-05
EK	.285E-04
EM	.131E-03
EN	.166E-03
EO	.212E-03
EP	.211E-03
EQ	.831E-04
ER	.182E-03
ES	.158E-03
ET	.982E-04
EV	.357E-04
EX	.112E-04
EZ	.236E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 1

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FG	.233E-05
FI	.300E-05
FM	.766E-04
FN	.557E-04
FO	.135E-03
FP	.936E-04
FQ	.877E-04
FR	.968E-04
FS	.280E-04
FT	.964E-05
FV	.348E-05
FX	.621E-05
FZ	.268E-05
GA	.187E-06
GB	.251E-05
GC	.254E-05
GD	.275E-05
GE	.429E-05
GF	.124E-04
GH	.369E-04
GI	.130E-04
GJ	.261E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AK	84.9	.155E-01	.130E-03	.997E-05
AM	453.8	.946E-01	.793E-03	.608E-04
AN	619.2	.130E+00	.109E-02	.835E-04
AO	824.5	.174E+00	.146E-02	.112E-03
AP	366.2	.759E-01	.636E-03	.487E-04
AR	21.9	.202E-02	.169E-04	.129E-05
BG	13.9	.305E-03	.256E-05	.196E-06
BI	56.4	.942E-02	.790E-04	.605E-05
BK	189.9	.381E-01	.319E-03	.244E-04
BM	629.8	.132E+00	.111E-02	.850E-04
BN	1126.0	.239E+00	.200E-02	.153E-03
BO	1357.9	.289E+00	.242E-02	.185E-03
BP	1194.5	.253E+00	.212E-02	.163E-03
BQ	483.8	.101E+00	.847E-03	.649E-04
BR	104.8	.198E-01	.166E-03	.127E-04
CI	21.2	.178E-02	.149E-04	.114E-05
CK	210.5	.424E-01	.355E-03	.272E-04
CM	710.8	.150E+00	.125E-02	.961E-04
CN	1272.1	.270E+00	.226E-02	.173E-03
CP	893.5	.189E+00	.158E-02	.121E-03
CQ	488.2	.102E+00	.854E-03	.654E-04
CR	178.2	.355E-01	.297E-03	.228E-04
CS	104.4	.196E-01	.164E-03	.126E-04
DI	81.1	.147E-01	.123E-03	.944E-05
DK	421.5	.877E-01	.735E-03	.563E-04
DP	1049.4	.222E+00	.186E-02	.143E-03
DM	866.3	.183E+00	.153E-02	.118E-03
DN	1622.0	.345E+00	.289E-02	.222E-03
DO	1365.7	.290E+00	.243E-02	.186E-03
DQ	836.5	.177E+00	.148E-02	.113E-03
DR	382.1	.793E-01	.664E-03	.509E-04
DS	170.8	.340E-01	.285E-03	.218E-04
DT	60.8	.104E-01	.868E-04	.665E-05
EG	44.9	.696E-02	.583E-04	.447E-05
EI	359.0	.743E-01	.623E-03	.477E-04
EK	577.6	.121E+00	.102E-02	.779E-04
EM	1391.8	.296E+00	.248E-02	.190E-03
EN	133.5	.260E-01	.217E-03	.167E-04
EO	1654.5	.352E+00	.295E-02	.226E-03
EP	997.3	.211E+00	.177E-02	.136E-03
EQ	839.4	.177E+00	.149E-02	.114E-03
ER	537.8	.113E+00	.944E-03	.723E-04
ES	310.6	.639E-01	.536E-03	.410E-04
ET	211.2	.426E-01	.357E-03	.274E-04
FI	45.8	.714E-02	.598E-04	.458E-05
FK	190.8	.382E-01	.320E-03	.245E-04
FM	440.0	.917E-01	.768E-03	.588E-04
FN	588.3	.123E+00	.103E-02	.793E-04
FO	1253.9	.266E+00	.223E-02	.171E-03
FP	1028.0	.218E+00	.182E-02	.140E-03
FQ	657.8	.138E+00	.116E-02	.888E-04
FS	164.0	.325E-01	.272E-03	.209E-04
FT	126.1	.244E-01	.204E-03	.156E-04
FV	17.7	.111E-02	.933E-05	.715E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 11 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
GF	39.2	.572E-02	.479E-04	.367E-05
GG	101.9	.192E-01	.161E-03	.123E-04
GH	159.3	.315E-01	.264E-03	.202E-04
GI	124.1	.239E-01	.201E-03	.154E-04
GJ	160.0	.316E-01	.265E-03	.203E-04
LI	13.5	.120E-03	.100E-05	.768E-07
LK	16.7	.778E-03	.652E-05	.499E-06
LM	41.8	.596E-02	.499E-04	.383E-05
LN	38.9	.535E-02	.448E-04	.344E-05
LO	61.3	.998E-02	.836E-04	.641E-05
LP	111.0	.203E-01	.170E-03	.130E-04
LQ	140.0	.263E-01	.220E-03	.169E-04
LR	182.9	.351E-01	.294E-03	.225E-04
LS	205.5	.398E-01	.334E-03	.255E-04
LT	188.9	.364E-01	.305E-03	.233E-04
LV	232.7	.454E-01	.381E-03	.292E-04
LX	140.1	.263E-01	.220E-03	.169E-04
LZ	77.1	.132E-01	.111E-03	.850E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
XG	4.8	.627E-04	.913E-06	.695E-07
BI	5.0	.886E-04	.129E-05	.981E-07
BK	5.4	.128E-03	.186E-05	.142E-06
BM	5.4	.130E-03	.190E-05	.144E-06
BT	7.4	.386E-03	.561E-05	.427E-06
BV	5.1	.951E-04	.138E-05	.105E-06
CG	11.7	.244E-03	.354E-05	.270E-06
CK	12.9	.398E-03	.579E-05	.440E-06
CN	10.4	.860E-04	.125E-05	.953E-07
CQ	12.2	.310E-03	.451E-05	.344E-06
CR	12.6	.360E-03	.524E-05	.399E-06
CS	11.5	.218E-03	.318E-05	.242E-06
CT	11.4	.204E-03	.297E-05	.226E-06
CV	10.5	.935E-04	.136E-05	.103E-06
CZ	9.8	.906E-05	.132E-06	.100E-07
DG	8.2	.169E-03	.245E-05	.187E-06
DI	8.2	.168E-03	.244E-05	.185E-06
DK	8.4	.189E-03	.275E-05	.209E-06
DP	20.9	.173E-02	.252E-04	.192E-05
DM	191.1	.228E-01	.331E-03	.252E-04
DN	87.4	.996E-02	.145E-03	.110E-04
DO	352.5	.427E-01	.621E-03	.473E-04
DQ	9.3	.297E-03	.432E-05	.328E-06
DR	12.3	.671E-03	.976E-05	.743E-06
DS	9.6	.335E-03	.488E-05	.371E-06
DT	9.4	.314E-03	.457E-05	.348E-06
DV	8.4	.195E-03	.284E-05	.216E-06
DX	8.0	.141E-03	.204E-05	.156E-06
FK	21.8	.134E-02	.195E-04	.149E-05
FM	145.7	.167E-01	.242E-03	.184E-04
FN	126.1	.142E-01	.207E-03	.158E-04
FO	554.5	.672E-01	.977E-03	.744E-04
FP	390.9	.470E-01	.683E-03	.520E-04
FQ	451.2	.544E-01	.791E-03	.602E-04
FS	55.8	.555E-02	.808E-04	.615E-05
FT	21.7	.133E-02	.194E-04	.147E-05
EM	292.7	.348E-01	.506E-03	.385E-04
EN	34.1	.286E-02	.417E-04	.317E-05
EO	653.8	.794E-01	.116E-02	.879E-04
EP	464.8	.561E-01	.816E-03	.621E-04
EQ	337.8	.404E-01	.588E-03	.447E-04
ER	54.8	.542E-02	.789E-04	.600E-05
ES	23.9	.161E-02	.234E-04	.178E-05
ET	18.3	.915E-03	.133E-04	.101E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 12 LENGTH SCALE: 2000

GF	30.2	.239E-02	.347E-04	.264E-05
GG	69.7	.727E-02	.106E-03	.805E-05
GH	107.0	.119E-01	.173E-03	.131E-04
GI	99.0	.109E-01	.158E-03	.120E-04
GJ	130.1	.147E-01	.214E-03	.163E-04
LG	11.6	.408E-04	.594E-06	.452E-07
LI	12.8	.176E-03	.255E-05	.194E-06
LK	17.3	.709E-03	.103E-04	.785E-06
LM	29.0	.210E-02	.306E-04	.233E-05
LN	32.3	.250E-02	.364E-04	.277E-05
LO	42.8	.375E-02	.546E-04	.416E-05
LP	73.8	.744E-02	.108E-03	.824E-05
LQ	93.4	.978E-02	.142E-03	.108E-04
LR	137.8	.151E-01	.219E-03	.167E-04
LS	146.1	.161E-01	.233E-03	.178E-04
LT	160.8	.178E-01	.259E-03	.197E-04
LV	164.6	.183E-01	.265E-03	.202E-04
LX	105.3	.112E-01	.163E-03	.124E-04
LZ	61.5	.598E-02	.869E-04	.662E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	2.5	.170E-02	.167E-05	.177E-06
AM	4.5	.523E-02	.514E-05	.544E-06
AN	30.2	.522E-01	.514E-04	.544E-05
AO	40.7	.714E-01	.702E-04	.743E-05
AP	150.9	.273E+00	.268E-03	.284E-04
AR	1440.9	.263E+01	.259E-02	.274E-03
AS	2468.1	.450E+01	.443E-02	.469E-03
AT	973.1	.177E+01	.175E-02	.185E-03
AV	56.5	.100E+00	.987E-04	.104E-04
AX	2.9	.236E-02	.233E-05	.246E-06
~~AX~~AY	11.1	.173E-01	.170E-04	.180E-05
AZ	12.1	.191E-01	.188E-04	.199E-05
BK	7.8	.680E-02	.669E-05	.708E-06
BM	11.2	.131E-01	.129E-04	.136E-05
BN	25.2	.386E-01	.380E-04	.402E-05
BO	107.1	.188E+00	.185E-03	.196E-04
BP	286.8	.517E+00	.508E-03	.538E-04
BQ	859.1	.156E+01	.154E-02	.163E-03
BR	1098.9	.200E+01	.197E-02	.208E-03
BS	839.1	.153E+01	.150E-02	.159E-03
BT	1059.2	.193E+01	.190E-02	.201E-03
BX	9.6	.101E-01	.995E-05	.105E-05
BZ	16.8	.232E-01	.229E-04	.242E-05
CN	59.4	.898E-01	.884E-04	.936E-05
CQ	891.4	.161E+01	.158E-02	.168E-03
CR	1261.3	.229E+01	.225E-02	.238E-03
CS	1098.6	.199E+01	.196E-02	.207E-03
CT	987.1	.178E+01	.176E-02	.186E-03
CV	365.3	.649E+00	.638E-03	.675E-04
CX	81.9	.131E+00	.129E-03	.136E-04
CZ	38.0	.507E-01	.499E-04	.528E-05
DI	6.8	.497E-02	.489E-05	.517E-06
DK	10.7	.122E-01	.120E-04	.127E-05
DP	212.2	.380E+00	.374E-03	.396E-04
DM	958.7	.174E+01	.172E-02	.182E-03
DN	99.7	.175E+00	.172E-03	.182E-04
DO	1070.3	.195E+01	.192E-02	.203E-03
DQ	336.8	.608E+00	.598E-03	.633E-04
DR	363.0	.656E+00	.645E-03	.683E-04
DS	449.0	.813E+00	.800E-03	.846E-04
DT	400.6	.724E+00	.713E-03	.754E-04
DV	236.7	.425E+00	.418E-03	.442E-04
DX	54.2	.916E-01	.901E-04	.954E-05
DZ	35.1	.568E-01	.559E-04	.591E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNIT # 13 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
EG	50.1	.841E-01	.827E-04	.876E-05
EI	15.0	.200E-01	.197E-04	.208E-05
EK	23.9	.363E-01	.357E-04	.378E-05
EM	992.8	.181E+01	.178E-02	.188E-03
EN	99.3	.174E+00	.171E-03	.181E-04
EO	145.5	.258E+00	.254E-03	.269E-04
EP	1007.5	.183E+01	.180E-02	.191E-03
EQ	1078.6	.196E+01	.193E-02	.204E-03
ER	661.0	.120E+01	.118E-02	.125E-03
ES	295.8	.533E+00	.524E-03	.555E-04
ET	328.8	.593E+00	.584E-03	.618E-04
EV	271.0	.488E+00	.480E-03	.508E-04
EX	114.1	.201E+00	.198E-03	.209E-04
EZ	43.7	.724E-01	.713E-04	.754E-05
FI	5.1	.187E-02	.184E-05	.194E-06
FK	6.2	.402E-02	.396E-05	.419E-06
FM	20.5	.301E-01	.296E-04	.314E-05
FO	922.2	.168E+01	.165E-02	.175E-03
FP	90.3	.158E+00	.155E-03	.164E-04
FQ	946.9	.172E+01	.169E-02	.179E-03
FS	144.2	.256E+00	.252E-03	.267E-04
FT	180.2	.322E+00	.317E-03	.335E-04
FV	107.1	.188E+00	.185E-03	.196E-04
FX	30.7	.486E-01	.478E-04	.506E-05
FZ	8.0	.733E-02	.721E-05	.763E-06
GF	6.5	.457E-02	.449E-05	.476E-06
GG	17.2	.241E-01	.237E-04	.251E-05
GH	35.1	.567E-01	.558E-04	.591E-05
GI	25.8	.398E-01	.391E-04	.414E-05
GJ	38.5	.629E-01	.619E-04	.655E-05
LO	5.4	.210E-02	.207E-05	.219E-06
LP	11.5	.128E-01	.126E-04	.133E-05
LQ	12.6	.148E-01	.146E-04	.154E-05
LR	15.2	.193E-01	.190E-04	.201E-05
LS	17.8	.240E-01	.237E-04	.250E-05
LT	19.3	.267E-01	.262E-04	.278E-05
LV	25.3	.371E-01	.365E-04	.387E-05
LX	21.4	.302E-01	.297E-04	.315E-05
LZ	22.9	.330E-01	.325E-04	.343E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AG	.187E-07
AK	.106E-05
AM	.649E-05
AN	.942E-05
AO	.126E-04
AP	.816E-05
AR	.291E-04
AS	.497E-04
AT	.196E-04
AV	.111E-05
AX	.217E-06
AZ	.211E-06
XG	.902E-07
BI	.738E-06
BK	.280E-05
BM	.928E-05
BN	.167E-04
BO	.217E-04
BP	.229E-04
BQ	.241E-04
BR	.234E-04
BS	.168E-04
BT	.217E-04
BV	.105E-06
BX	.111E-06
BZ	.256E-06
CG	.270E-06
CI	.121E-06
CK	.332E-05
CM	.102E-04
CN	.194E-04
CP	.128E-04
CQ	.250E-04
CR	.280E-04
CS	.235E-04
CT	.199E-04
CV	.725E-05
CX	.144E-05
CZ	.569E-06
DG	.187E-06
DI	.124E-05
DK	.630E-05
DP	.212E-04
DM	.569E-04
DN	.364E-04
DO	.885E-04
DQ	.190E-04
DR	.134E-04
DS	.116E-04
DT	.904E-05
DV	.490E-05
DX	.117E-05
DZ	.626E-06
EG	.140E-05
EI	.527E-05
EK	.864E-05
EM	.786E-04
EN	.685E-05
EO	.115E-03
EP	.966E-04
EQ	.784E-04
ER	.269E-04
ES	.120E-04
ET	.104E-04
EV	.538E-05
EX	.222E-05
EZ	.798E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 2

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FI	.506E-06
FK	.413E-05
FM	.250E-04
FN	.242E-04
FO	.111E-03
FP	.685E-04
FQ	.886E-04
FS	.112E-04
FT	.668E-05
FV	.215E-05
FX	.536E-06
FZ	.808E-07
GF	.308E-05
GG	.962E-05
GH	.159E-04
GI	.141E-04
GJ	.191E-04
LG	.452E-07
LI	.203E-06
LK	.838E-06
LM	.273E-05
LN	.313E-05
LO	.486E-05
LP	.976E-05
LQ	.128E-04
LR	.193E-04
LS	.207E-04
LT	.225E-04
LV	.237E-04
LX	.145E-04
LZ	.788E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AQ	7371.5	.187E+01	.132E-01	.102E-02
AT	184.8	.438E-01	.310E-03	.239E-04
AV	128.2	.294E-01	.208E-03	.161E-04
AX	679.2	.169E+00	.120E-02	.927E-04
AZ	39.5	.686E-02	.485E-04	.375E-05
AI	16.7	.108E-02	.762E-05	.589E-06
AK	21.2	.222E-02	.157E-04	.122E-05
AM	261.3	.632E-01	.447E-03	.346E-04
AN	536.3	.133E+00	.941E-03	.728E-04
AO	1439.2	.363E+00	.256E-02	.198E-03
AP	1435.1	.362E+00	.256E-02	.198E-03
BI	23.9	.106E-02	.752E-05	.582E-06
BK	83.1	.161E-01	.114E-03	.881E-05
BM	377.5	.909E-01	.643E-03	.497E-04
BN	840.1	.209E+00	.147E-02	.114E-03
BO	790.5	.196E+00	.139E-02	.107E-03
BP	1600.8	.402E+00	.284E-02	.220E-03
BQ	908.7	.226E+00	.160E-02	.124E-03
BR	702.6	.174E+00	.123E-02	.949E-04
BS	275.5	.650E-01	.460E-03	.356E-04
BT	93.1	.186E-01	.132E-03	.102E-04
BV	69.0	.125E-01	.885E-04	.685E-05
BX	39.2	.495E-02	.350E-04	.271E-05
CM	155.1	.340E-01	.240E-03	.186E-04
CN	350.1	.836E-01	.591E-03	.457E-04
CO	725.1	.179E+00	.126E-02	.978E-04
CP	1083.1	.270E+00	.191E-02	.148E-03
CQ	338.0	.805E-01	.569E-03	.440E-04
CR	971.2	.241E+00	.171E-02	.132E-03
CS	569.1	.139E+00	.984E-03	.762E-04
CT	147.3	.320E-01	.226E-03	.175E-04
CV	31.2	.251E-02	.177E-04	.137E-05
CX	39.8	.469E-02	.332E-04	.257E-05
DI	43.2	.626E-02	.443E-04	.343E-05
DK	236.5	.554E-01	.392E-03	.303E-04
DM	536.7	.132E+00	.931E-03	.720E-04
DN	755.6	.187E+00	.132E-02	.102E-03
DO	998.2	.249E+00	.176E-02	.136E-03
DP	1037.1	.259E+00	.183E-02	.142E-03
DR	874.1	.217E+00	.154E-02	.119E-03
DQ	345.3	.831E-01	.587E-03	.454E-04
DS	423.0	.103E+00	.727E-03	.562E-04
DT	324.1	.777E-01	.549E-03	.425E-04
DV	64.9	.118E-01	.834E-04	.645E-05
DX	25.1	.167E-02	.118E-04	.914E-06
EI	34.2	.255E-02	.180E-04	.140E-05
EK	115.0	.231E-01	.163E-03	.126E-04
EM	330.0	.777E-01	.550E-03	.425E-04
EN	430.5	.103E+00	.730E-03	.565E-04
EO	356.8	.845E-01	.598E-03	.462E-04
EP	764.7	.188E+00	.133E-02	.103E-03
EQ	265.0	.612E-01	.433E-03	.335E-04
ER	567.4	.138E+00	.976E-03	.755E-04
ES	568.8	.138E+00	.979E-03	.757E-04
ET	328.5	.774E-01	.547E-03	.423E-04
EV	126.9	.261E-01	.185E-03	.143E-04
EZ	56.3	.817E-02	.578E-04	.447E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 1 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FM	281.0	.661E-01	.467E-03	.361E-04
FN	337.8	.805E-01	.569E-03	.440E-04
FO	301.2	.712E-01	.504E-03	.390E-04
FP	501.1	.122E+00	.863E-03	.667E-04
FQ	90.2	.176E-01	.124E-03	.962E-05
FR	251.4	.586E-01	.414E-03	.320E-04
FS	158.4	.349E-01	.247E-03	.191E-04
FT	97.2	.194E-01	.137E-03	.106E-04
FX	30.7	.247E-02	.174E-04	.135E-05
GE	21.5	.228E-02	.161E-04	.125E-05
GF	35.0	.573E-02	.405E-04	.313E-05
GG	48.4	.913E-02	.645E-04	.499E-05
GJ	13.1	.154E-03	.109E-05	.842E-07
LN	26.5	.356E-02	.252E-04	.195E-05
LP	48.6	.918E-02	.649E-04	.502E-05
LQ	31.6	.486E-02	.344E-04	.266E-05
LR	42.9	.773E-02	.547E-04	.423E-05
LS	52.8	.102E-01	.724E-04	.560E-05
LT	50.8	.972E-02	.688E-04	.532E-05
LV	53.8	.105E-01	.743E-04	.575E-05
LX	28.2	.399E-02	.282E-04	.218E-05
LZ	40.8	.720E-02	.509E-04	.394E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AT	347.2	.916E-01	.610E-03	.713E-04
AV	281.7	.739E-01	.492E-03	.576E-04
AX	1122.1	.301E+00	.200E-02	.234E-03
AZ	183.6	.475E-01	.316E-03	.370E-04
AG	25.1	.537E-02	.358E-04	.418E-05
AI	35.3	.811E-02	.540E-04	.631E-05
AK	40.3	.946E-02	.630E-04	.737E-05
AM	368.1	.979E-01	.652E-03	.762E-04
AN	724.3	.194E+00	.129E-02	.151E-03
AO	2164.1	.583E+00	.388E-02	.454E-03
AP	2505.2	.675E+00	.449E-02	.525E-03
XG	28.1	.646E-02	.430E-04	.503E-05
BI	34.5	.820E-02	.546E-04	.638E-05
BK	99.8	.258E-01	.172E-03	.201E-04
BM	531.9	.142E+00	.948E-03	.111E-03
BN	1257.6	.338E+00	.225E-02	.263E-03
BO	1135.4	.305E+00	.203E-02	.238E-03
BP	2354.2	.634E+00	.422E-02	.494E-03
BQ	1338.3	.360E+00	.240E-02	.280E-03
BR	1083.2	.291E+00	.194E-02	.227E-03
BS	419.8	.112E+00	.747E-03	.873E-04
BT	137.9	.361E-01	.240E-03	.281E-04
BV	233.7	.620E-01	.413E-03	.482E-04
BX	69.7	.177E-01	.118E-03	.138E-04
BZ	18.6	.391E-02	.260E-04	.304E-05
CG	19.7	.394E-02	.262E-04	.307E-05
CI	25.0	.537E-02	.358E-04	.418E-05
CK	22.9	.480E-02	.320E-04	.374E-05
CM	266.5	.705E-01	.470E-03	.549E-04
CN	529.3	.141E+00	.942E-03	.110E-03
CO	1206.5	.324E+00	.216E-02	.252E-03
CP	1709.2	.460E+00	.306E-02	.358E-03
CQ	472.4	.126E+00	.840E-03	.982E-04
CR	1416.8	.381E+00	.254E-02	.297E-03
CS	853.0	.229E+00	.152E-02	.178E-03
CT	206.5	.543E-01	.362E-03	.423E-04
CV	78.6	.198E-01	.132E-03	.154E-04
CX	77.1	.194E-01	.129E-03	.151E-04
CZ	180.0	.472E-01	.314E-03	.367E-04
DG	29.6	.659E-02	.439E-04	.513E-05
DI	68.3	.170E-01	.113E-03	.132E-04
DK	378.9	.101E+00	.671E-03	.785E-04
DM	755.7	.203E+00	.135E-02	.158E-03
DN	1109.8	.298E+00	.199E-02	.232E-03
DO	1403.7	.377E+00	.251E-02	.294E-03
DP	1524.2	.410E+00	.273E-02	.319E-03
DR	1166.2	.313E+00	.209E-02	.244E-03
DQ	464.5	.124E+00	.825E-03	.965E-04
DS	666.9	.179E+00	.119E-02	.139E-03
DT	443.6	.118E+00	.788E-03	.921E-04
DV	102.2	.262E-01	.174E-03	.204E-04
DX	45.8	.109E-01	.729E-04	.852E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 3 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
EI	51.3	.128E-01	.850E-04	.994E-05
EK	194.5	.514E-01	.342E-03	.400E-04
EM	425.7	.114E+00	.758E-03	.886E-04
EN	559.8	.150E+00	.999E-03	.117E-03
EO	478.9	.128E+00	.853E-03	.998E-04
EP	906.4	.244E+00	.162E-02	.190E-03
EQ	288.8	.769E-01	.512E-03	.598E-04
ER	662.9	.178E+00	.118E-02	.138E-03
ES	647.8	.174E+00	.116E-02	.135E-03
ET	385.2	.103E+00	.685E-03	.801E-04
EV	179.9	.475E-01	.316E-03	.370E-04
EX	93.8	.242E-01	.161E-03	.189E-04
EZ	243.8	.647E-01	.431E-03	.504E-04
FG	31.2	.701E-02	.467E-04	.546E-05
FI	47.9	.115E-01	.767E-04	.896E-05
FK	127.4	.330E-01	.220E-03	.257E-04
FM	609.9	.163E+00	.109E-02	.127E-03
FN	504.9	.135E+00	.898E-03	.105E-03
FO	283.5	.751E-01	.500E-03	.585E-04
FP	588.0	.157E+00	.105E-02	.122E-03
FR	308.8	.819E-01	.545E-03	.638E-04
FS	123.0	.318E-01	.212E-03	.247E-04
FT	123.8	.320E-01	.213E-03	.249E-04
FX	50.0	.121E-01	.803E-04	.939E-05
FZ	20.4	.408E-02	.272E-04	.318E-05
GA	21.9	.450E-02	.299E-04	.350E-05
GB	17.2	.322E-02	.214E-04	.251E-05
GC	19.8	.393E-02	.262E-04	.306E-05
GD	6.5	.352E-03	.235E-05	.274E-06
GE	33.0	.749E-02	.499E-04	.583E-05
GF	45.3	.108E-01	.721E-04	.842E-05
GG	68.3	.170E-01	.113E-03	.132E-04
GI	20.8	.421E-02	.280E-04	.328E-05
GJ	14.2	.243E-02	.162E-04	.189E-05
LG	22.4	.462E-02	.308E-04	.360E-05
LI	17.6	.335E-02	.223E-04	.260E-05
LK	23.5	.492E-02	.327E-04	.383E-05
LM	28.7	.633E-02	.421E-04	.493E-05
LN	43.3	.103E-01	.684E-04	.800E-05
LO	33.5	.763E-02	.508E-04	.594E-05
LP	64.9	.161E-01	.107E-03	.125E-04
LQ	53.8	.131E-01	.873E-04	.102E-04
LR	64.3	.159E-01	.106E-03	.124E-04
LS	82.4	.208E-01	.139E-03	.162E-04
LT	79.5	.201E-01	.134E-03	.156E-04
LV	86.3	.219E-01	.146E-03	.170E-04
LX	78.8	.198E-01	.132E-03	.155E-04
LZ	66.1	.164E-01	.109E-03	.128E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AQ	10610.1	.156E+01	.191E-01	.145E-02
AT	343.7	.494E-01	.602E-03	.460E-04
AV	202.5	.286E-01	.349E-03	.266E-04
AX	1250.9	.183E+00	.223E-02	.170E-03
AZ	77.6	.102E-01	.124E-03	.947E-05
AI	25.8	.219E-02	.268E-04	.204E-05
AK	28.5	.259E-02	.316E-04	.241E-05
AM	391.9	.561E-01	.685E-03	.523E-04
AN	775.9	.113E+00	.137E-02	.105E-03
AO	2482.6	.364E+00	.444E-02	.339E-03
AP	2593.2	.381E+00	.464E-02	.354E-03
XG	17.0	.150E-02	.183E-04	.140E-05
BI	23.4	.243E-02	.297E-04	.227E-05
BK	108.9	.150E-01	.183E-03	.140E-04
BM	650.0	.948E-01	.116E-02	.882E-04
BN	1562.3	.229E+00	.280E-02	.213E-03
BO	1534.7	.225E+00	.275E-02	.210E-03
BP	2985.3	.439E+00	.535E-02	.409E-03
BQ	1512.5	.222E+00	.271E-02	.207E-03
BR	978.8	.143E+00	.175E-02	.133E-03
BS	368.4	.533E-01	.650E-03	.496E-04
BT	131.4	.183E-01	.224E-03	.171E-04
BV	156.0	.220E-01	.268E-03	.205E-04
BX	62.4	.819E-02	.998E-04	.762E-05
BZ	7.4	.848E-04	.103E-05	.790E-07
CI	11.3	.102E-02	.124E-04	.950E-06
CK	12.2	.116E-02	.142E-04	.108E-05
CM	264.7	.384E-01	.468E-03	.357E-04
CN	748.2	.110E+00	.134E-02	.102E-03
CO	1634.7	.240E+00	.293E-02	.224E-03
CP	2142.9	.315E+00	.384E-02	.293E-03
CQ	591.0	.864E-01	.105E-02	.805E-04
CR	1406.1	.207E+00	.252E-02	.192E-03
CS	770.0	.113E+00	.138E-02	.105E-03
CT	168.7	.242E-01	.295E-03	.225E-04
CV	121.1	.172E-01	.210E-03	.160E-04
CX	17.6	.195E-02	.238E-04	.182E-05
CZ	50.0	.672E-02	.820E-04	.626E-05
DG	16.6	.162E-02	.198E-04	.151E-05
DI	69.7	.946E-02	.115E-03	.880E-05
DK	377.5	.548E-01	.668E-03	.510E-04
DM	986.7	.145E+00	.176E-02	.135E-03
DN	1460.1	.214E+00	.261E-02	.200E-03
DO	1910.8	.281E+00	.342E-02	.261E-03
DP	1963.8	.289E+00	.352E-02	.269E-03
DR	1355.3	.199E+00	.243E-02	.185E-03
DQ	618.8	.904E-01	.110E-02	.841E-04
DS	708.7	.104E+00	.126E-02	.965E-04
DT	359.5	.522E-01	.636E-03	.486E-04
DV	92.2	.128E-01	.156E-03	.119E-04
DX	80.3	.110E-01	.134E-03	.103E-04
DZ	11.5	.867E-03	.106E-04	.808E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 4 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
EG	12.3	.151E-02	.184E-04	.141E-05
EI	63.0	.898E-02	.110E-03	.836E-05
EK	244.7	.358E-01	.436E-03	.333E-04
EM	686.8	.101E+00	.123E-02	.939E-04
EN	807.8	.119E+00	.145E-02	.111E-03
EO	734.9	.108E+00	.132E-02	.101E-03
EP	1413.1	.208E+00	.254E-02	.194E-03
EQ	494.1	.725E-01	.884E-03	.675E-04
ER	938.7	.138E+00	.168E-02	.129E-03
ES	855.7	.126E+00	.153E-02	.117E-03
ET	448.5	.658E-01	.802E-03	.613E-04
EV	200.5	.293E-01	.357E-03	.272E-04
EX	4.3	.331E-03	.403E-05	.308E-06
EZ	73.6	.105E-01	.129E-03	.982E-05
FG	28.5	.259E-02	.316E-04	.241E-05
FI	49.7	.572E-02	.697E-04	.532E-05
FK	64.4	.788E-02	.961E-04	.734E-05
FM	988.1	.144E+00	.176E-02	.134E-03
FN	921.2	.134E+00	.164E-02	.125E-03
FO	672.4	.975E-01	.119E-02	.908E-04
FP	903.9	.132E+00	.160E-02	.123E-03
FQ	222.5	.312E-01	.380E-03	.290E-04
FR	533.4	.770E-01	.939E-03	.717E-04
FS	244.6	.344E-01	.420E-03	.321E-04
FT	64.9	.796E-02	.971E-04	.741E-05
FV	94.1	.123E-01	.150E-03	.114E-04
FX	72.8	.912E-02	.111E-03	.849E-05
GF	73.3	.919E-02	.112E-03	.856E-05
GG	111.0	.147E-01	.180E-03	.137E-04
GH	163.3	.225E-01	.274E-03	.209E-04
GI	50.2	.580E-02	.707E-04	.540E-05
GJ	24.6	.203E-02	.247E-04	.189E-05
LK	29.0	.267E-02	.326E-04	.249E-05
LM	35.3	.360E-02	.438E-04	.335E-05
LN	61.9	.751E-02	.916E-04	.699E-05
LO	69.2	.859E-02	.105E-03	.800E-05
LP	109.0	.145E-01	.176E-03	.135E-04
LQ	85.3	.110E-01	.134E-03	.102E-04
LR	85.2	.109E-01	.134E-03	.102E-04
LS	116.9	.156E-01	.191E-03	.145E-04
LT	102.8	.135E-01	.165E-03	.126E-04
LV	131.2	.177E-01	.216E-03	.165E-04
LX	89.2	.115E-01	.141E-03	.107E-04
LZ	78.7	.999E-02	.122E-03	.930E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AQ	1266.4	.108E+01	.227E-02	.144E-03
AT	12473.5	.107E+02	.224E-01	.142E-02
AV	2219.6	.189E+01	.398E-02	.252E-03
AX	234.8	.197E+00	.415E-03	.262E-04
AZ	121.9	.101E+00	.212E-03	.134E-04
AI	5.5	.122E-02	.256E-05	.162E-06
AK	8.2	.357E-02	.750E-05	.475E-06
AN	8.5	.379E-02	.796E-05	.504E-06
AO	156.4	.130E+00	.274E-03	.173E-04
AP	16.3	.105E-01	.220E-04	.139E-05
XG	4.9	.701E-03	.147E-05	.933E-07
BI	31.7	.236E-01	.497E-04	.315E-05
BM	6.4	.206E-02	.432E-05	.274E-06
BP	141.1	.117E+00	.246E-03	.156E-04
BQ	137.6	.114E+00	.240E-03	.152E-04
BR	474.9	.402E+00	.846E-03	.536E-04
BS	636.8	.541E+00	.114E-02	.720E-04
BT	923.2	.786E+00	.165E-02	.105E-03
BV	3860.9	.330E+01	.693E-02	.439E-03
BX	43.6	.338E-01	.711E-04	.450E-05
BZ	12.2	.700E-02	.147E-04	.931E-06
CO	18.5	.513E-02	.108E-04	.683E-06
CP	81.9	.593E-01	.125E-03	.789E-05
CQ	33.5	.179E-01	.376E-04	.238E-05
CR	180.4	.143E+00	.302E-03	.191E-04
CS	427.1	.354E+00	.745E-03	.472E-04
CT	607.5	.508E+00	.107E-02	.677E-04
CV	385.2	.319E+00	.670E-03	.424E-04
CZ	118.1	.903E-01	.190E-03	.120E-04
DG	2.4	.113E-02	.237E-05	.150E-06
DI	4.2	.264E-02	.555E-05	.351E-06
DK	4.0	.244E-02	.512E-05	.324E-06
DN	1.5	.278E-03	.585E-06	.370E-07
DO	64.9	.545E-01	.115E-03	.725E-05
DP	97.6	.824E-01	.173E-03	.110E-04
DR	237.1	.202E+00	.424E-03	.268E-04
DQ	54.5	.456E-01	.959E-04	.607E-05
DT	515.6	.440E+00	.924E-03	.585E-04
DX	201.4	.171E+00	.360E-03	.228E-04
DZ	43.7	.364E-01	.765E-04	.484E-05
EK	19.4	.129E-01	.272E-04	.172E-05
EP	153.5	.128E+00	.268E-03	.170E-04
EQ	25.2	.178E-01	.375E-04	.237E-05
ES	169.3	.141E+00	.296E-03	.188E-04
ET	219.9	.104E+00	.387E-03	.245E-04
EX	101.0	.826E-01	.174E-03	.110E-04
FK	22.1	.147E-01	.308E-04	.195E-05
FR	94.8	.768E-01	.161E-03	.102E-04
FT	742.7	.631E+00	.133E-02	.839E-04
FX	12.3	.627E-02	.132E-04	.835E-06
FZ	13.0	.689E-02	.145E-04	.917E-06
GB	14.6	.907E-02	.191E-04	.121E-05
GD	24.0	.171E-01	.359E-04	.227E-05
GF	25.7	.185E-01	.390E-04	.247E-05
GG	7.1	.261E-02	.550E-05	.348E-06
~~GJ~~ OMIT	50.2	.395E-01	.830E-04	.526E-05
GJ	18.2	.121E-01	.255E-04	.161E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNIT # 6 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
LG	10.7	.568E-02	.119E-04	.755E-06
LS	24.6	.176E-01	.369E-04	.234E-05
LT	24.1	.172E-01	.361E-04	.229E-05
LV	23.6	.168E-01	.352E-04	.223E-05
LZ	8.5	.378E-02	.795E-05	.503E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AQ	.155E-02
AT	.207E-03
AV	.831E-04
AX	.320E-03
AZ	.330E-04
AG	.250E-05
AI	.587E-05
AK	.695E-05
AM	.101E-03
AN	.201E-03
AO	.628E-03
AP	.684E-03
XG	.441E-05
BI	.639E-05
BK	.267E-04
BM	.159E-03
BN	.380E-03
BO	.360E-03
BP	.723E-03
BQ	.385E-03
BR	.281E-03
BS	.111E-03
BT	.433E-04
BV	.860E-04
BX	.164E-04
BZ	.197E-05
CG	.183E-05
CI	.345E-05
CK	.332E-05
CM	.701E-04
CN	.172E-03
CO	.383E-03
CP	.520E-03
CQ	.143E-03
CR	.382E-03
CS	.222E-03
CT	.548E-04
CV	.288E-04
CX	.111E-04
CZ	.292E-04
DG	.459E-05
DI	.170E-04
DK	.100E-03
DM	.235E-03
DN	.347E-03
DO	.449E-03
DP	.472E-03
DR	.343E-03
DQ	.146E-03
DS	.184E-03
DT	.112E-03
DV	.246E-04
DX	.173E-04
DZ	.121E-05
EG	.141E-05
EI	.144E-04
EK	.584E-04
EM	.150E-03
EN	.185E-03
EO	.164E-03
EP	.317E-03
EQ	.106E-03
ER	.217E-03
ES	.206E-03
ET	.115E-03
EV	.505E-04
EX	.125E-04
EZ	.403E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 3

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FG	.567E-05
FI	.107E-04
FK	.228E-04
FM	.213E-03
FN	.191E-03
FO	.129E-03
FP	.201E-03
FQ	.298E-04
FR	.113E-03
FS	.484E-04
FT	.301E-04
FV	.114E-04
FX	.143E-04
FZ	.197E-05
GA	.209E-05
GB	.160E-05
GC	.183E-05
GD	.351E-06
GE	.358E-05
GF	.141E-04
GG	.221E-04
GH	.209E-04
GI	.736E-05
GJ	.359E-05
LG	.221E-05
LI	.156E-05
LK	.477E-05
LM	.629E-05
LN	.119E-04
LO	.115E-04
LP	.214E-04
LQ	.165E-04
LR	.180E-04
LS	.249E-04
LT	.226E-04
LV	.273E-04
LX	.201E-04
LZ	.173E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AI	21.0	.183E-02	.153E-04	.118E-05
AK	73.4	.131E-01	.109E-03	.838E-05
AN	1370.9	.291E+00	.244E-02	.187E-03
AP	2178.2	.464E+00	.389E-02	.298E-03
AR	438.8	.914E-01	.766E-03	.587E-04
AS	161.2	.319E-01	.267E-03	.205E-04
AX	75.4	.135E-01	.113E-03	.865E-05
AM	73.5	.131E-01	.110E-03	.840E-05
AT	15.7	.692E-03	.580E-05	.444E-06
BI	26.9	.309E-02	.259E-04	.198E-05
BK	123.4	.238E-01	.199E-03	.153E-04
BM	693.9	.146E+00	.122E-02	.938E-04
BN	967.6	.205E+00	.172E-02	.131E-03
BO	1685.0	.359E+00	.301E-02	.230E-03
BP	2120.0	.452E+00	.379E-02	.290E-03
BQ	478.0	.998E-01	.837E-03	.641E-04
BR	917.3	.194E+00	.163E-02	.125E-03
BS	268.7	.549E-01	.460E-03	.353E-04
BT	163.5	.324E-01	.271E-03	.208E-04
BV	44.6	.689E-02	.577E-04	.442E-05
BX	367.8	.762E-01	.639E-03	.489E-04
CG	11.8	.159E-03	.133E-05	.102E-06
CI	22.9	.255E-02	.213E-04	.164E-05
CK	26.1	.322E-02	.270E-04	.207E-05
CM	303.5	.627E-01	.525E-03	.403E-04
CN	672.0	.142E+00	.119E-02	.910E-04
CO	1062.6	.226E+00	.189E-02	.145E-03
CP	1691.0	.360E+00	.302E-02	.231E-03
CQ	1154.7	.245E+00	.206E-02	.157E-03
CR	762.2	.161E+00	.135E-02	.103E-03
CS	430.8	.900E-01	.754E-03	.578E-04
CT	133.9	.263E-01	.221E-03	.169E-04
CV	28.9	.382E-02	.320E-04	.245E-05
CX	35.7	.528E-02	.442E-04	.339E-05
CZ	13.9	.604E-03	.506E-05	.388E-06
DG	18.3	.124E-02	.104E-04	.794E-06
DI	46.6	.732E-02	.614E-04	.470E-05
DK	296.0	.608E-01	.509E-03	.390E-04
DM	556.8	.117E+00	.978E-03	.749E-04
DN	701.6	.148E+00	.124E-02	.949E-04
DO	779.5	.164E+00	.138E-02	.106E-03
DP	848.6	.179E+00	.150E-02	.115E-03
DQ	730.3	.154E+00	.129E-02	.988E-04
DR	488.0	.102E+00	.855E-03	.655E-04
DS	342.8	.708E-01	.594E-03	.455E-04
DT	175.4	.349E-01	.293E-03	.224E-04
DV	41.7	.626E-02	.525E-04	.402E-05
DX	31.8	.414E-02	.347E-04	.266E-05
DZ	14.5	.425E-03	.356E-05	.273E-06
EG	28.0	.332E-02	.278E-04	.213E-05
EI	81.4	.148E-01	.124E-03	.949E-05
EK	92.1	.171E-01	.143E-03	.110E-04
EM	491.0	.103E+00	.860E-03	.659E-04
EN	660.6	.139E+00	.116E-02	.892E-04
EO	726.0	.153E+00	.128E-02	.982E-04
EP	632.3	.133E+00	.111E-02	.853E-04
EQ	432.7	.901E-01	.755E-03	.578E-04
ER	307.4	.632E-01	.530E-03	.406E-04
ES	305.1	.628E-01	.526E-03	.403E-04
ET	170.7	.339E-01	.284E-03	.218E-04
EV	76.3	.137E-01	.115E-03	.878E-05
EX	30.9	.395E-02	.331E-04	.254E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FG	17.4	.104E-02	.876E-05	.671E-06
FI	83.2	.152E-01	.127E-03	.973E-05
FK	82.1	.149E-01	.125E-03	.959E-05
FM	387.1	.803E-01	.673E-03	.516E-04
FN	417.0	.867E-01	.727E-03	.557E-04
FO	555.2	.116E+00	.975E-03	.747E-04
FP	391.6	.813E-01	.681E-03	.522E-04
FQ	76.0	.136E-01	.114E-03	.874E-05
FR	214.3	.433E-01	.363E-03	.278E-04
FS	128.6	.249E-01	.209E-03	.160E-04
FT	79.7	.144E-01	.121E-03	.925E-05
FV	24.0	.248E-02	.207E-04	.159E-05
FX	12.8	.608E-04	.510E-06	.390E-07
GA	19.8	.156E-02	.131E-04	.100E-05
GB	20.4	.169E-02	.141E-04	.108E-05
GC	18.1	.121E-02	.101E-04	.775E-06
GD	22.7	.219E-02	.183E-04	.141E-05
GE	29.2	.359E-02	.300E-04	.230E-05
GF	59.9	.102E-01	.853E-04	.653E-05
GG	58.3	.982E-02	.823E-04	.630E-05
GH	109.9	.209E-01	.175E-03	.134E-04
GI	45.4	.705E-02	.591E-04	.453E-05
GJ	105.4	.199E-01	.167E-03	.128E-04
LG	28.2	.337E-02	.283E-04	.217E-05
LI	39.7	.583E-02	.488E-04	.374E-05
LK	42.1	.634E-02	.532E-04	.407E-05
LM	44.7	.690E-02	.578E-04	.443E-05
LN	61.3	.105E-01	.877E-04	.672E-05
LO	70.2	.124E-01	.104E-03	.794E-05
LP	84.0	.153E-01	.129E-03	.985E-05
LR	87.2	.160E-01	.134E-03	.103E-04
LS	97.3	.182E-01	.152E-03	.117E-04
LT	87.4	.161E-01	.135E-03	.103E-04
~~LT~~ LV	94.9	.177E-01	.148E-03	.113E-04
LX	65.8	.114E-01	.958E-04	.734E-05
LZ	69.0	.121E-01	.102E-03	.778E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AO	32.2	.264E-02	.384E-04	.292E-05
AQ	40.6	.367E-02	.534E-04	.406E-05
BO	94.1	.103E-01	.149E-03	.114E-04
CO	83.0	.891E-02	.130E-03	.986E-05
CP	23.0	.150E-02	.218E-04	.166E-05
CQ	21.8	.134E-02	.195E-04	.149E-05
CR	13.9	.378E-03	.550E-05	.418E-06
CS	13.1	.279E-03	.406E-05	.309E-06
DI	11.4	.657E-04	.955E-06	.727E-07
DK	15.4	.554E-03	.806E-05	.613E-06
DM	88.1	.954E-02	.139E-03	.106E-04
DN	165.1	.191E-01	.277E-03	.211E-04
DO	524.5	.635E-01	.923E-03	.703E-04
DP	292.4	.348E-01	.506E-03	.385E-04
DQ	181.6	.211E-01	.307E-03	.234E-04
DR	62.2	.634E-02	.922E-04	.701E-05
DS	41.1	.374E-02	.544E-04	.414E-05
DT	18.4	.922E-03	.134E-04	.102E-05
DV	12.9	.254E-03	.370E-05	.282E-06
DX	10.9	.408E-05	.594E-07	.452E-08
EI	15.0	.513E-03	.747E-05	.568E-06
EK	21.5	.131E-02	.190E-04	.145E-05
EM	345.8	.414E-01	.602E-03	.458E-04
EN	518.3	.627E-01	.912E-03	.694E-04
EO	836.2	.102E+00	.148E-02	.113E-03
EP	659.2	.801E-01	.117E-02	.887E-04
EQ	440.0	.530E-01	.771E-03	.587E-04
ER	231.8	.273E-01	.397E-03	.302E-04
ES	168.3	.195E-01	.283E-03	.215E-04
ET	72.0	.756E-02	.110E-03	.837E-05
EV	21.1	.126E-02	.184E-04	.140E-05
EX	22.8	.147E-02	.214E-04	.163E-05
FI	16.8	.725E-03	.105E-04	.803E-06
FK	18.4	.933E-03	.136E-04	.103E-05
FM	583.7	.708E-01	.103E-02	.784E-04
FN	603.5	.732E-01	.106E-02	.811E-04
FO	984.2	.120E+00	.175E-02	.133E-03
FP	758.8	.924E-01	.134E-02	.102E-03
FQ	140.5	.160E-01	.233E-03	.177E-04
FR	250.2	.296E-01	.430E-03	.327E-04
FS	119.0	.134E-01	.194E-03	.148E-04
FT	48.2	.461E-02	.670E-04	.510E-05
FV	14.9	.500E-03	.727E-05	.554E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
GA	28.0	.744E-03	.108E-04	.824E-06
GB	28.2	.769E-03	.112E-04	.851E-06
GC	28.5	.815E-03	.119E-04	.902E-06
GD	29.4	.925E-03	.135E-04	.102E-05
GE	30.8	.109E-02	.159E-04	.121E-05
GF	81.2	.732E-02	.106E-03	.810E-05
GG	88.1	.817E-02	.119E-03	.905E-05
GH	182.2	.198E-01	.288E-03	.219E-04
GI	77.6	.688E-02	.100E-03	.762E-05
GJ	178.0	.193E-01	.280E-03	.213E-04
LG	42.7	.256E-02	.373E-04	.284E-05
LI	55.2	.411E-02	.598E-04	.455E-05
LK	58.9	.456E-02	.664E-04	.505E-05
LM	73.2	.633E-02	.921E-04	.701E-05
LN	96.5	.921E-02	.134E-03	.102E-04
LO	104.6	.102E-01	.149E-03	.113E-04
LP	149.9	.158E-01	.230E-03	.175E-04
LQ	53.6	.392E-02	.570E-04	.434E-05
LR	155.6	.165E-01	.240E-03	.183E-04
LS	161.3	.172E-01	.250E-03	.191E-04
LT	146.4	.154E-01	.224E-03	.170E-04
~~LT~~ LV	166.0	.178E-01	.259E-03	.197E-04
LX	101.6	.984E-02	.143E-03	.109E-04
LZ	102.3	.993E-02	.144E-03	.110E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AQ	96.0	.168E+00	.165E-03	.175E-04
AR	225.9	.405E+00	.399E-03	.422E-04
AS	994.7	.181E+01	.178E-02	.188E-03
AV	514.1	.932E+00	.917E-03	.970E-04
AX	38.6	.631E-01	.621E-04	.657E-05
AM	6.2	.389E-02	.383E-05	.405E-06
BM	57.8	.983E-01	.967E-04	.102E-04
BN	187.2	.335E+00	.329E-03	.348E-04
BO	8.3	.771E-02	.759E-05	.803E-06
BQ	156.1	.278E+00	.273E-03	.289E-04
BS	360.0	.650E+00	.640E-03	.677E-04
BV	15.6	.211E-01	.208E-04	.220E-05
BX	1095.0	.199E+01	.196E-02	.207E-03
BZ	13.8	.178E-01	.175E-04	.186E-05
CK	13.1	.160E-01	.157E-04	.166E-05
CM	17.8	.245E-01	.241E-04	.255E-05
CP	68.8	.118E+00	.116E-03	.122E-04
CQ	45.6	.752E-01	.740E-04	.783E-05
CR	70.2	.120E+00	.118E-03	.125E-04
CS	219.5	.393E+00	.386E-03	.409E-04
CT	376.2	.679E+00	.668E-03	.707E-04
CV	278.6	.501E+00	.493E-03	.522E-04
CX	71.6	.123E+00	.121E-03	.128E-04
CZ	15.4	.200E-01	.197E-04	.209E-05
DG	6.4	.437E-02	.430E-05	.455E-06
~~DM~~ OMIT	50.5	.849E-01	.836E-04	.885E-05
DM	27.2	.424E-01	.417E-04	.441E-05
DN	4.8	.140E-02	.138E-05	.146E-06
DO	75.8	.131E+00	.129E-03	.136E-04
DP	54.1	.915E-01	.900E-04	.953E-05
DQ	22.0	.327E-01	.322E-04	.341E-05
DR	26.0	.401E-01	.394E-04	.417E-05
DS	123.6	.218E+00	.215E-03	.227E-04
DT	150.7	.268E+00	.264E-03	.279E-04
DV	151.9	.270E+00	.266E-03	.281E-04
DX	60.6	.103E+00	.102E-03	.108E-04
DZ	23.9	.363E-01	.357E-04	.378E-05
EK	8.3	.787E-02	.774E-05	.819E-06
EM	21.5	.318E-01	.313E-04	.332E-05
EN	7.9	.714E-02	.702E-05	.743E-06
EO	6.7	.492E-02	.484E-05	.512E-06
EP	42.6	.704E-01	.693E-04	.733E-05
EQ	52.5	.885E-01	.870E-04	.921E-05
ER	93.4	.163E+00	.161E-03	.170E-04
ES	71.8	.124E+00	.122E-03	.129E-04
ET	76.9	.133E+00	.131E-03	.139E-04
EV	69.8	.120E+00	.118E-03	.125E-04
EX	44.9	.747E-01	.735E-04	.778E-05
EZ	30.3	.480E-01	.473E-04	.500E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FG	4.7	.126E-02	.124E-05	.131E-06
FM	20.8	.306E-01	.301E-04	.319E-05
FO	16.6	.229E-01	.225E-04	.239E-05
FP	23.7	.359E-01	.353E-04	.374E-05
FQ	20.4	.298E-01	.293E-04	.311E-05
FR	35.4	.573E-01	.564E-04	.597E-05
FS	38.2	.623E-01	.613E-04	.649E-05
FT	48.9	.820E-01	.807E-04	.854E-05
FV	21.0	.310E-01	.305E-04	.323E-05
FX	12.0	.145E-01	.142E-04	.151E-05
GG	9.5	.271E-02	.267E-05	.283E-06
GJ	12.4	.790E-02	.777E-05	.823E-06
LG	10.3	.408E-02	.401E-05	.425E-06
LP	12.0	.728E-02	.716E-05	.758E-06
LR	9.5	.267E-02	.263E-05	.278E-06
LS	18.3	.188E-01	.185E-04	.195E-05
LT	13.2	.945E-02	.930E-05	.984E-06
LX	12.9	.884E-02	.870E-05	.921E-06
LZ	8.8	.145E-02	.143E-05	.151E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AI	.124E-06
AK	.888E-06
AN	.198E-04
AO	.292E-05
AP	.316E-04
AQ	.591E-05
AR	.107E-04
AS	.221E-04
AV	.103E-04
AX	.161E-05
AM	.932E-06
AT	.470E-07
BI	.210E-06
BK	.162E-05
BM	.110E-04
BN	.176E-04
BO	.358E-04
BP	.307E-04
BQ	.985E-05
BR	.132E-04
BS	.109E-04
BT	.220E-05
BV	.701E-06
BX	.271E-04
BZ	.196E-06
CG	.108E-07
CI	.173E-06
CK	.395E-06
CM	.453E-05
CN	.963E-05
CO	.252E-04
CP	.274E-04
CQ	.190E-04
CR	.127E-04
CS	.108E-04
CT	.928E-05
CV	.578E-05
CX	.171E-05
CZ	.262E-06
DG	.132E-06
DI	.570E-06
DK	.474E-05
DM	.199E-04
DN	.312E-04
DO	.829E-04
DP	.517E-04
DQ	.342E-04
DR	.144E-04
DS	.114E-04
DT	.635E-05
DV	.368E-05
DX	.142E-05
DZ	.429E-06
EG	.226E-06
EI	.157E-05
EK	.269E-05
EM	.531E-04
EN	.789E-04
EO	.123E-03
EP	.985E-04
EQ	.658E-04
ER	.363E-04
ES	.272E-04
ET	.121E-04
EV	.365E-05
EX	.272E-05
EZ	.530E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 4

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FG	.849E-07
FI	.183E-05
FK	.205E-05
FM	.841E-04
FN	.869E-04
FO	.141E-03
FP	.108E-03
FQ	.190E-04
FR	.363E-04
FS	.172E-04
FT	.699E-05
FV	.106E-05
FX	.164E-06
GA	.930E-06
GB	.966E-06
GC	.984E-06
GD	.117E-05
GE	.145E-05
GF	.879E-05
GG	.974E-05
GH	.233E-04
GI	.810E-05
GJ	.228E-04
LG	.311E-05
LI	.495E-05
LK	.548E-05
LM	.748E-05
LN	.109E-04
LO	.121E-04
LP	.186E-04
LQ	.434E-05
LR	.194E-04
LS	.205E-04
LT	.391E-04
LX	.118E-04
LZ	.118E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	301.4	.742E-01	.525E-03	.406E-04
AI	282.4	.693E-01	.490E-03	.379E-04
AK	453.2	.114E+00	.808E-03	.625E-04
AO	1019.7	.263E+00	.186E-02	.144E-03
AP	1000.5	.258E+00	.183E-02	.141E-03
AQ	625.9	.160E+00	.113E-02	.874E-04
AR	251.1	.610E-01	.431E-03	.334E-04
AS	179.4	.421E-01	.298E-03	.230E-04
AT	191.6	.453E-01	.321E-03	.248E-04
AV	254.6	.619E-01	.438E-03	.339E-04
AX	179.4	.421E-01	.298E-03	.230E-04
AZ	359.5	.896E-01	.633E-03	.490E-04
BK	31.7	.518E-02	.366E-04	.283E-05
BM	192.6	.475E-01	.336E-03	.260E-04
BN	203.1	.503E-01	.356E-03	.275E-04
BO	463.9	.119E+00	.841E-03	.651E-04
BP	191.3	.472E-01	.334E-03	.258E-04
BR	22.8	.283E-02	.200E-04	.155E-05
BQ	87.9	.200E-01	.141E-03	.109E-04
CM	52.9	.101E-01	.713E-04	.552E-05
CN	94.4	.210E-01	.149E-03	.115E-04
CO	134.4	.316E-01	.223E-03	.173E-04
CP	115.4	.265E-01	.188E-03	.145E-04
CQ	108.3	.247E-01	.174E-03	.135E-04
CR	88.1	.194E-01	.137E-03	.106E-04
CS	19.9	.138E-02	.973E-05	.752E-06
DK	19.7	.116E-02	.819E-05	.633E-06
DM	256.7	.636E-01	.449E-03	.348E-04
DO	433.9	.110E+00	.780E-03	.603E-04
DP	368.3	.930E-01	.657E-03	.509E-04
DQ	415.0	.105E+00	.744E-03	.576E-04
DR	214.8	.525E-01	.371E-03	.287E-04
DS	86.6	.188E-01	.133E-03	.103E-04
EG	17.5	.142E-02	.101E-04	.778E-06
EI	47.8	.942E-02	.666E-04	.515E-05
EK	101.4	.235E-01	.166E-03	.129E-04
EM	208.8	.518E-01	.366E-03	.283E-04
~~EK~~ EN	45.7	.887E-02	.627E-04	.485E-05
~~EQ~~ EO	655.3	.169E+00	.120E-02	.927E-04
EP	459.1	.118E+00	.832E-03	.644E-04
EQ	381.2	.972E-01	.687E-03	.532E-04
ER	343.5	.873E-01	.617E-03	.477E-04
ES	230.4	.575E-01	.407E-03	.315E-04
ET	53.8	.110E-01	.777E-04	.601E-05
EV	16.9	.126E-02	.892E-05	.690E-06
EX	18.8	.178E-02	.126E-04	.971E-06
EZ	23.7	.307E-02	.217E-04	.168E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 1 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FI	258.0	.606E-01	.428E-03	.331E-04
FK	253.9	.596E-01	.421E-03	.326E-04
FM	530.4	.130E+00	.918E-03	.710E-04
FN	578.8	.142E+00	.100E-02	.777E-04
FO	905.2	.225E+00	.159E-02	.123E-03
FP	718.6	.178E+00	.126E-02	.972E-04
FQ	466.4	.114E+00	.803E-03	.621E-04
FR	272.9	.644E-01	.455E-03	.352E-04
FS	175.7	.397E-01	.281E-03	.217E-04
FT	69.5	.127E-01	.897E-04	.694E-05
FV	88.5	.175E-01	.124E-03	.958E-05
GA	23.3	.273E-02	.193E-04	.150E-05
GB	22.8	.263E-02	.186E-04	.144E-05
GC	23.8	.287E-02	.203E-04	.157E-05
GD	24.4	.302E-02	.213E-04	.165E-05
GE	39.3	.680E-02	.481E-04	.372E-05
GF	61.4	.124E-01	.878E-04	.680E-05
GG	188.0	.446E-01	.315E-03	.244E-04
GH	339.5	.831E-01	.588E-03	.455E-04
GI	395.1	.972E-01	.688E-03	.532E-04
GJ	471.9	.117E+00	.826E-03	.639E-04
LG	14.9	.610E-03	.431E-05	.334E-06
LI	14.6	.535E-03	.379E-05	.293E-06
LK	15.3	.712E-03	.503E-05	.389E-06
LM	41.6	.741E-02	.524E-04	.405E-05
LN	63.4	.129E-01	.915E-04	.708E-05
LO	71.9	.151E-01	.107E-03	.825E-05
LP	115.9	.263E-01	.186E-03	.144E-04
LQ	126.8	.290E-01	.205E-03	.159E-04
LR	203.6	.486E-01	.343E-03	.266E-04
LS	276.6	.671E-01	.475E-03	.367E-04
LT	286.4	.696E-01	.492E-03	.381E-04
LV	364.3	.894E-01	.632E-03	.489E-04
LX	318.8	.778E-01	.550E-03	.426E-04
LZ	394.6	.971E-01	.687E-03	.531E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	208.1	.532E-01	.354E-03	.414E-04
AI	222.7	.573E-01	.381E-03	.446E-04
AK	291.6	.766E-01	.510E-03	.596E-04
AO	1108.5	.305E+00	.203E-02	.237E-03
AP	1125.9	.310E+00	.206E-02	.241E-03
AQ	610.8	.166E+00	.110E-02	.129E-03
AR	216.2	.555E-01	.369E-03	.432E-04
AS	209.7	.536E-01	.357E-03	.417E-04
AT	211.5	.541E-01	.361E-03	.421E-04
AV	205.5	.525E-01	.349E-03	.408E-04
AX	194.2	.493E-01	.328E-03	.384E-04
AZ	196.9	.501E-01	.333E-03	.390E-04
XG	16.7	.326E-02	.217E-04	.254E-05
BI	16.7	.327E-02	.218E-04	.254E-05
BK	26.9	.611E-02	.407E-04	.476E-05
BM	150.8	.408E-01	.271E-03	.317E-04
BN	234.9	.643E-01	.428E-03	.500E-04
BO	650.7	.181E+00	.120E-02	.141E-03
BP	329.7	.908E-01	.605E-03	.707E-04
BR	32.1	.756E-02	.504E-04	.589E-05
BT	16.4	.318E-02	.212E-04	.247E-05
BV	17.0	.334E-02	.222E-04	.260E-05
BQ	166.7	.452E-01	.301E-03	.352E-04
CG	14.7	.140E-02	.930E-05	.109E-05
CI	15.2	.154E-02	.102E-04	.120E-05
CK	18.4	.244E-02	.163E-04	.190E-05
CM	59.3	.139E-01	.924E-04	.108E-04
CN	104.8	.266E-01	.177E-03	.207E-04
CO	173.0	.457E-01	.304E-03	.356E-04
CP	236.9	.636E-01	.423E-03	.495E-04
CQ	182.0	.482E-01	.321E-03	.375E-04
CR	112.1	.286E-01	.191E-03	.223E-04
CS	29.6	.558E-02	.371E-04	.434E-05
CT	14.6	.136E-02	.907E-05	.106E-05
CV	13.6	.110E-02	.732E-05	.856E-06
CX	14.1	.122E-02	.814E-05	.952E-06
CZ	14.7	.139E-02	.927E-05	.108E-05
DG	14.5	.272E-02	.181E-04	.212E-05
DI	16.0	.313E-02	.209E-04	.244E-05
DK	20.0	.427E-02	.285E-04	.333E-05
DM	303.1	.834E-01	.556E-03	.649E-04
DO	562.5	.156E+00	.104E-02	.121E-03
DP	482.2	.134E+00	.889E-03	.104E-03
DQ	500.0	.139E+00	.922E-03	.108E-03
DR	256.8	.705E-01	.469E-03	.549E-04
DS	120.0	.322E-01	.215E-03	.251E-04
DT	23.5	.525E-02	.350E-04	.409E-05
DV	14.3	.268E-02	.179E-04	.209E-05
DX	15.3	.294E-02	.196E-04	.229E-05
DZ	15.4	.299E-02	.199E-04	.233E-05
EI	25.3	.133E-02	.886E-05	.104E-05
EK	60.2	.111E-01	.740E-04	.865E-05
EM	213.9	.541E-01	.360E-03	.421E-04
EK	57.2	.103E-01	.683E-04	.798E-05
EQ	823.2	.224E+00	.149E-02	.175E-03
EP	600.0	.162E+00	.108E-02	.126E-03
EQ	448.1	.120E+00	.796E-03	.931E-04
ER	390.9	.104E+00	.690E-03	.806E-04
ES	250.9	.644E-01	.429E-03	.502E-04
ET	52.2	.888E-02	.591E-04	.691E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 3 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FG	26.1	.589E-02	.392E-04	.459E-05
FI	274.6	.729E-01	.486E-03	.568E-04
FK	278.2	.739E-01	.492E-03	.575E-04
FM	574.1	.154E+00	.102E-02	.120E-03
FN	639.9	.172E+00	.114E-02	.134E-03
FO	1173.9	.316E+00	.210E-02	.246E-03
FP	929.0	.250E+00	.166E-02	.194E-03
FQ	640.7	.172E+00	.114E-02	.134E-03
FR	365.1	.974E-01	.648E-03	.758E-04
FS	234.9	.622E-01	.414E-03	.484E-04
FT	90.1	.232E-01	.154E-03	.180E-04
FV	211.3	.559E-01	.372E-03	.435E-04
FX	18.7	.387E-02	.258E-04	.301E-05
FZ	18.4	.380E-02	.253E-04	.296E-05
GA	23.8	.502E-02	.334E-04	.390E-05
GB	23.1	.482E-02	.321E-04	.375E-05
GC	23.6	.496E-02	.330E-04	.386E-05
GD	24.1	.508E-02	.338E-04	.396E-05
GE	37.3	.866E-02	.577E-04	.674E-05
GF	63.5	.157E-01	.105E-03	.122E-04
GG	200.1	.526E-01	.350E-03	.409E-04
GH	358.7	.954E-01	.635E-03	.743E-04
GI	445.2	.119E+00	.791E-03	.924E-04
GJ	541.1	.145E+00	.963E-03	.113E-03
LG	23.8	.500E-02	.333E-04	.389E-05
LI	23.6	.495E-02	.329E-04	.385E-05
LK	23.6	.495E-02	.330E-04	.386E-05
LM	49.7	.120E-01	.800E-04	.935E-05
LN	69.5	.173E-01	.116E-03	.135E-04
LO	80.4	.203E-01	.135E-03	.158E-04
LP	127.7	.330E-01	.220E-03	.257E-04
LQ	138.7	.360E-01	.240E-03	.280E-04
LR	224.9	.593E-01	.395E-03	.462E-04
LS	301.8	.800E-01	.533E-03	.623E-04
LT	321.8	.854E-01	.569E-03	.665E-04
LV	395.8	.105E+00	.702E-03	.821E-04
LX	356.3	.947E-01	.631E-03	.738E-04
LZ	462.1	.123E+00	.821E-03	.960E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU M/SEC)	326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	249.3	.348E-01	.424E-03	.324E-04
AI	247.6	.345E-01	.421E-03	.321E-04
AK	356.2	.511E-01	.623E-03	.475E-04
AO	515.1	.753E-01	.919E-03	.701E-04
AP	527.0	.772E-01	.941E-03	.718E-04
AQ	358.2	.514E-01	.627E-03	.478E-04
AR	260.4	.364E-01	.444E-03	.339E-04
AS	434.4	.630E-01	.769E-03	.587E-04
AT	326.1	.465E-01	.567E-03	.433E-04
AV	261.1	.365E-01	.446E-03	.340E-04
AX	237.3	.329E-01	.401E-03	.306E-04
AZ	303.7	.431E-01	.525E-03	.401E-04
XG	12.4	.285E-03	.347E-05	.265E-06
BI	12.8	.349E-03	.425E-05	.325E-06
BK	40.7	.461E-02	.562E-04	.429E-05
BM	196.8	.284E-01	.347E-03	.265E-04
BN	268.4	.394E-01	.480E-03	.367E-04
BO	726.1	.109E+00	.133E-02	.102E-03
BP	439.5	.655E-01	.799E-03	.610E-04
BR	37.0	.405E-02	.493E-04	.377E-05
BS	22.3	.180E-02	.220E-04	.168E-05
BT	18.6	.123E-02	.150E-04	.115E-05
BV	13.5	.465E-03	.567E-05	.433E-06
BQ	232.7	.339E-01	.414E-03	.316E-04
DG	5.6	.771E-04	.941E-06	.718E-07
DI	6.6	.230E-03	.280E-05	.214E-06
DK	24.4	.295E-02	.360E-04	.275E-05
DM	266.0	.398E-01	.486E-03	.371E-04
DO	766.6	.116E+00	.142E-02	.108E-03
DP	541.8	.820E-01	1.000E-03	.763E-04
DQ	544.4	.824E-01	.100E-02	.767E-04
DR	381.6	.575E-01	.701E-03	.535E-04
DS	134.2	.197E-01	.240E-03	.184E-04
DT	23.4	.281E-02	.342E-04	.261E-05
DV	7.3	.348E-03	.424E-05	.324E-06
DX	5.8	.111E-03	.135E-05	.103E-06
DZ	7.7	.410E-03	.500E-05	.382E-06
EG	4.9	.155E-03	.190E-05	.145E-06
EI	22.1	.278E-02	.339E-04	.259E-05
EK	76.6	.111E-01	.135E-03	.103E-04
EM	309.4	.466E-01	.569E-03	.434E-04
~~EK~~ EN	78.2	.113E-01	.138E-03	.106E-04
~~EQ~~ EO	1142.1	.174E+00	.212E-02	.162E-03
EP	739.6	.112E+00	.137E-02	.105E-03
EQ	540.7	.820E-01	1.000E-03	.763E-04
ER	477.9	.724E-01	.883E-03	.674E-04
ES	304.9	.460E-01	.560E-03	.428E-04
ET	56.5	.803E-02	.980E-04	.748E-05
EV	6.2	.350E-03	.426E-05	.325E-06
EX	4.8	.140E-03	.171E-05	.131E-06
EZ	7.6	.562E-03	.686E-05	.523E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 4

LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FG	26.2	.210E-02	.256E-04	.196E-05
FI	374.6	.534E-01	.652E-03	.498E-04
FK	367.9	.524E-01	.640E-03	.488E-04
FM	791.7	.115E+00	.140E-02	.107E-03
FN	845.2	.123E+00	.150E-02	.114E-03
FO	1521.0	.222E+00	.271E-02	.207E-03
FP	1217.8	.178E+00	.217E-02	.165E-03
FQ	797.0	.116E+00	.141E-02	.108E-03
FR	467.1	.671E-01	.818E-03	.624E-04
FS	329.4	.468E-01	.571E-03	.436E-04
FT	125.6	.167E-01	.204E-03	.156E-04
FV	216.6	.302E-01	.368E-03	.281E-04
GA	12.5	.239E-03	.292E-05	.223E-06
GB	12.3	.206E-03	.251E-05	.192E-06
GC	12.6	.251E-03	.306E-05	.234E-06
GD	13.5	.383E-03	.467E-05	.356E-06
GE	35.9	.369E-02	.450E-04	.343E-05
GF	73.7	.926E-02	.113E-03	.862E-05
GG	271.7	.384E-01	.469E-03	.358E-04
GH	505.7	.729E-01	.889E-03	.679E-04
GI	598.6	.866E-01	.106E-02	.806E-04
GJ	715.0	.104E+00	.127E-02	.966E-04
LG	14.4	.513E-03	.626E-05	.478E-06
LI	14.5	.529E-03	.646E-05	.493E-06
LK	17.7	.101E-02	.123E-04	.940E-06
LM	56.6	.674E-02	.822E-04	.627E-05
LN	89.5	.116E-01	.141E-03	.108E-04
LO	103.3	.136E-01	.166E-03	.127E-04
LP	165.6	.228E-01	.278E-03	.212E-04
LQ	176.2	.244E-01	.297E-03	.227E-04
LR	300.4	.427E-01	.520E-03	.397E-04
LS	411.9	.591E-01	.721E-03	.550E-04
LT	421.1	.604E-01	.737E-03	.563E-04
LV	547.0	.790E-01	.963E-03	.736E-04
LX	469.2	.675E-01	.824E-03	.629E-04
LZ	589.2	.852E-01	.104E-02	.793E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	68.2	.536E-01	.113E-03	.713E-05
AI	73.8	.585E-01	.123E-03	.779E-05
AK	36.2	.252E-01	.531E-04	.336E-05
AO	88.3	.714E-01	.150E-03	.950E-05
AP	109.2	.899E-01	.189E-03	.120E-04
AQ	239.4	.205E+00	.431E-03	.273E-04
AR	1663.3	.147E+01	.308E-02	.195E-03
AS	5027.9	.445E+01	.935E-02	.592E-03
AT	513.1	.448E+00	.941E-03	.596E-04
AV	109.9	.905E-01	.190E-03	.120E-04
AX	76.2	.607E-01	.128E-03	.808E-05
AZ	163.1	.138E+00	.289E-03	.183E-04
XG	4.0	.139E-03	.292E-06	.185E-07
BI	4.7	.702E-03	.148E-05	.934E-07
BK	4.0	.965E-04	.203E-06	.128E-07
BM	4.3	.387E-03	.814E-06	.515E-07
BN	7.0	.277E-02	.583E-05	.369E-06
BO	8.7	.422E-02	.887E-05	.562E-06
BP	12.3	.745E-02	.157E-04	.991E-06
BR	653.0	.575E+00	.121E-02	.765E-04
BS	410.5	.360E+00	.757E-03	.479E-04
BT	134.3	.116E+00	.243E-03	.154E-04
BV	8.2	.384E-02	.808E-05	.511E-06
BQ	61.1	.507E-01	.107E-03	.674E-05
DM	6.3	.238E-02	.500E-05	.316E-06
DO	98.7	.842E-01	.177E-03	.112E-04
DP	235.4	.205E+00	.432E-03	.273E-04
DQ	205.1	.178E+00	.375E-03	.237E-04
DR	615.7	.542E+00	.114E-02	.721E-04
DS	724.2	.638E+00	.134E-02	.849E-04
DT	340.7	.299E+00	.628E-03	.397E-04
DV	48.5	.398E-01	.836E-04	.529E-05
DX	4.2	.502E-03	.106E-05	.668E-07
DZ	8.3	.418E-02	.879E-05	.556E-06
EI	3.3	.888E-03	.187E-05	.118E-06
EM	41.3	.345E-01	.726E-04	.460E-05
EK	10.8	.757E-02	.159E-04	.101E-05
EO	354.6	.312E+00	.656E-03	.415E-04
EP	330.4	.291E+00	.611E-03	.387E-04
EQ	395.7	.348E+00	.733E-03	.464E-04
ER	616.4	.544E+00	.114E-02	.724E-04
ES	581.9	.513E+00	.108E-02	.683E-04
ET	366.6	.323E+00	.679E-03	.429E-04
EV	38.7	.322E-01	.678E-04	.429E-05
EX	8.4	.545E-02	.115E-04	.726E-06
EZ	7.7	.479E-02	.101E-04	.637E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNIT # 6 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FG	22.8	.160E-01	.337E-04	.213E-05
FI	179.4	.150E+00	.315E-03	.199E-04
FK	165.8	.138E+00	.291E-03	.184E-04
FM	314.9	.266E+00	.559E-03	.354E-04
FN	424.6	.360E+00	.756E-03	.478E-04
FO	1067.7	.909E+00	.191E-02	.121E-03
FP	994.9	.847E+00	.178E-02	.113E-03
FQ	859.6	.731E+00	.154E-02	.973E-04
FR	1023.8	.872E+00	.183E-02	.116E-03
FS	974.2	.829E+00	.174E-02	.110E-03
FT	754.4	.641E+00	.135E-02	.853E-04
FV	1739.8	.148E+01	.312E-02	.197E-03
FX	15.3	.964E-02	.203E-04	.128E-05
FZ	21.1	.146E-01	.307E-04	.195E-05
GA	5.6	.136E-02	.285E-05	.181E-06
GB	4.6	.475E-03	.999E-06	.632E-07
GC	5.0	.832E-03	.175E-05	.111E-06
GD	4.7	.530E-03	.111E-05	.705E-07
GE	17.8	.118E-01	.247E-04	.156E-05
GF	38.8	.298E-01	.626E-04	.396E-05
GG	84.0	.693E-01	.144E-03	.909E-05
GH	172.4	.144E+00	.303E-03	.192E-04
GI	302.7	.255E+00	.537E-03	.340E-04
GJ	266.8	.225E+00	.472E-03	.299E-04
LG	7.9	.329E-02	.691E-05	.438E-06
LI	8.0	.341E-02	.718E-05	.454E-06
LK	17.5	.115E-01	.241E-04	.153E-05
LM	27.7	.203E-01	.426E-04	.270E-05
LN	44.4	.345E-01	.725E-04	.459E-05
LO	61.3	.489E-01	.103E-03	.651E-05
LP	78.2	.634E-01	.133E-03	.844E-05
LQ	76.5	.619E-01	.130E-03	.824E-05
LR	123.3	.102E+00	.214E-03	.136E-04
LS	173.9	.145E+00	.305E-03	.193E-04
LT	170.0	.142E+00	.298E-03	.189E-04
LV	181.3	.152E+00	.319E-03	.202E-04
LX	178.9	.149E+00	.314E-03	.199E-04
LZ	289.1	.244E+00	.512E-03	.324E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AG	.610E-04
AI	.625E-04
AK	.886E-04
AO	.225E-03
AP	.229E-03
AQ	.134E-03
AR	.785E-04
AS	.134E-03
AT	.754E-04
AV	.622E-04
AX	.561E-04
AZ	.689E-04
XG	.178E-05
BI	.185E-05
BK	.737E-05
BM	.476E-04
BN	.688E-04
BO	.191E-03
BP	.105E-03
BR	.137E-04
BS	.563E-05
BT	.389E-05
BV	.203E-05
BQ	.541E-04
CG	.649E-06
CI	.715E-06
CK	.113E-05
CM	.691E-05
CN	.133E-04
CO	.227E-04
CP	.307E-04
CQ	.235E-04
CR	.142E-04
CS	.265E-05
CT	.633E-06
CV	.511E-06
CX	.568E-06
CZ	.647E-06
DG	.134E-05
DI	.167E-05
DK	.479E-05
DM	.788E-04
DO	.187E-03
DP	.145E-03
DQ	.148E-03
DR	.946E-04
DS	.412E-04
DT	.833E-05
DV	.201E-05
DX	.148E-05
DZ	.182E-05
EG	.209E-06
EI	.364E-05
EK	.324E-04
EM	.713E-04
EQ	.417E-03
EP	.188E-03
ER	.125E-03
ES	.810E-04
ET	.156E-04
EV	.736E-06
EX	.271E-06
EZ	.714E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 5

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FG	.487E-05
FI	.881E-04
FK	.874E-04
FM	.187E-03
FN	.204E-03
FO	.374E-03
FP	.299E-03
FQ	.201E-03
FR	.120E-03
FS	.834E-04
FT	.340E-04
FV	.711E-04
FX	.191E-05
FZ	.193E-05
GA	.269E-05
GB	.256E-05
GC	.268E-05
GD	.286E-05
GE	.790E-05
GF	.168E-04
GG	.630E-04
GH	.118E-03
GI	.143E-03
GJ	.172E-03
LG	.287E-05
LI	.285E-05
LK	.340E-05
LM	.124E-04
LN	.198E-04
LO	.233E-04
LP	.385E-04
LQ	.414E-04
LR	.706E-04
LS	.968E-04
LT	.101E-03
LV	.128E-03
LX	.112E-03
LZ	.144E-03

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AG	21.3	.142E-02	.119E-04	.913E-06
AI	80.4	.141E-01	.118E-03	.904E-05
AK	54.4	.851E-02	.713E-04	.547E-05
AM	304.2	.621E-01	.520E-03	.399E-04
AN	522.9	.109E+00	.913E-03	.700E-04
AO	767.4	.161E+00	.135E-02	.104E-03
AP	697.8	.146E+00	.123E-02	.940E-04
AQ	189.8	.375E-01	.315E-03	.241E-04
AR	35.3	.441E-02	.370E-04	.283E-05
AS	30.4	.337E-02	.282E-04	.216E-05
AT	30.1	.331E-02	.278E-04	.213E-05
AV	30.5	.339E-02	.284E-04	.218E-05
AX	25.4	.229E-02	.192E-04	.147E-05
AZ	31.7	.364E-02	.305E-04	.234E-05
BI	86.4	.161E-01	.135E-03	.104E-04
BK	109.3	.210E-01	.176E-03	.135E-04
BM	631.3	.133E+00	.111E-02	.853E-04
BN	1315.6	.280E+00	.234E-02	.180E-03
BO	886.2	.188E+00	.157E-02	.120E-03
BP	117.2	.227E-01	.190E-03	.146E-04
BQ	41.3	.640E-02	.536E-04	.411E-05
CG	8.9	.252E-04	.211E-06	.162E-07
CI	343.7	.718E-01	.602E-03	.461E-04
CK	301.0	.627E-01	.525E-03	.402E-04
CN	1173.5	.250E+00	.209E-02	.160E-03
CO	1256.4	.268E+00	.224E-02	.172E-03
CT	25.3	.354E-02	.297E-04	.227E-05
CV	33.0	.519E-02	.435E-04	.333E-05
CZ	34.4	.551E-02	.462E-04	.354E-05
CM	137.0	.270E-01	.226E-03	.173E-04
~~CO~~ OMIT	707.3	.149E+00	.125E-02	.958E-04
CP	407.5	.850E-01	.712E-03	.546E-04
CQ	525.6	.110E+00	.925E-03	.708E-04
CR	226.0	.461E-01	.386E-03	.296E-04
CS	94.9	.180E-01	.151E-03	.115E-04
DG	24.5	.298E-02	.250E-04	.191E-05
DI	263.9	.543E-01	.455E-03	.349E-04
DK	207.2	.422E-01	.353E-03	.271E-04
DM	1007.5	.214E+00	.179E-02	.137E-03
DN	839.1	.178E+00	.149E-02	.114E-03
DO	649.6	.137E+00	.115E-02	.880E-04
DP	475.6	.997E-01	.836E-03	.640E-04
DQ	164.2	.329E-01	.276E-03	.211E-04
DR	34.0	.502E-02	.421E-04	.323E-05
DS	63.5	.113E-01	.951E-04	.728E-05
DT	52.3	.894E-02	.749E-04	.574E-05
DV	48.0	.801E-02	.671E-04	.514E-05
DX	47.6	.793E-02	.664E-04	.509E-05
DZ	44.4	.725E-02	.608E-04	.466E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
EG	65.7	.109E-01	.915E-04	.701E-05
EI	693.0	.145E+00	.122E-02	.934E-04
EK	776.2	.163E+00	.137E-02	.105E-03
EM	1639.6	.348E+00	.292E-02	.224E-03
EN	1242.6	.263E+00	.221E-02	.169E-03
EO	875.8	.185E+00	.155E-02	.119E-03
EP	837.3	.176E+00	.148E-02	.113E-03
EQ	122.1	.230E-01	.193E-03	.148E-04
ER	147.8	.285E-01	.239E-03	.183E-04
ES	803.7	.169E+00	.142E-02	.109E-03
FG	50.6	.822E-02	.688E-04	.527E-05
FI	645.6	.136E+00	.114E-02	.872E-04
FK	609.0	.128E+00	.107E-02	.822E-04
FM	1176.0	.250E+00	.209E-02	.160E-03
FN	1334.3	.284E+00	.238E-02	.182E-03
FO	1056.0	.224E+00	.188E-02	.144E-03
FP	620.6	.130E+00	.109E-02	.837E-04
FQ	246.0	.501E-01	.420E-03	.322E-04
FR	156.8	.310E-01	.260E-03	.199E-04
FS	82.6	.151E-01	.126E-03	.968E-05
FT	44.8	.699E-02	.586E-04	.449E-05
GE	11.0	.269E-03	.226E-05	.173E-06
GF	18.0	.178E-02	.149E-04	.114E-05
GG	93.8	.180E-01	.151E-03	.116E-04
GH	124.4	.246E-01	.206E-03	.158E-04
GI	151.1	.303E-01	.254E-03	.195E-04
GJ	130.0	.258E-01	.216E-03	.166E-04
LR	55.4	.993E-02	.832E-04	.637E-05
LS	95.2	.185E-01	.155E-03	.118E-04
LT	95.6	.185E-01	.155E-03	.119E-04
LV	112.1	.221E-01	.185E-03	.142E-04
LX	70.1	.131E-01	.109E-03	.839E-05
LZ	70.4	.131E-01	.110E-03	.843E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AI	1.4	.263E-05	.382E-07	.291E-08
AR	6.6	.649E-03	.943E-05	.718E-06
AV	2.1	.849E-04	.123E-05	.940E-07
AX	2.1	.909E-04	.132E-05	.101E-06
AZ	3.8	.305E-03	.444E-05	.338E-06
XG	3.2	.229E-03	.333E-05	.253E-06
BK	4.1	.337E-03	.490E-05	.373E-06
BM	4.2	.345E-03	.502E-05	.382E-06
BO	4.3	.362E-03	.526E-05	.400E-06
BS	4.0	.328E-03	.477E-05	.363E-06
BT	3.0	.205E-03	.299E-05	.227E-06
BV	1.9	.602E-04	.875E-06	.666E-07
BX	3.3	.236E-03	.343E-05	.261E-06
BZ	2.1	.869E-04	.126E-05	.962E-07
CG	4.0	.607E-05	.883E-07	.672E-08
CI	5.6	.199E-03	.289E-05	.220E-06
CO	6.5	.314E-03	.457E-05	.348E-06
CT	42.2	.472E-02	.686E-04	.522E-05
CV	50.5	.575E-02	.837E-04	.637E-05
CZ	51.2	.584E-02	.849E-04	.646E-05
~~CQ~~ omit	18.2	.236E-03	.343E-05	.261E-06
CS	19.0	.335E-03	.488E-05	.371E-06
DI	13.3	.651E-03	.947E-05	.721E-06
DM	31.0	.283E-02	.412E-04	.314E-05
DN	87.0	.976E-02	.142E-03	.108E-04
DO	134.2	.156E-01	.227E-03	.173E-04
DP	21.7	.169E-02	.246E-04	.188E-05
DQ	34.8	.330E-02	.481E-04	.366E-05
DR	10.9	.355E-03	.517E-05	.393E-06
DS	93.0	.105E-01	.153E-03	.116E-04
DT	85.9	.962E-02	.140E-03	.106E-04
DV	77.4	.857E-02	.125E-03	.948E-05
DX	76.4	.845E-02	.123E-03	.935E-05
DZ	75.3	.831E-02	.121E-03	.920E-05
EG	10.8	.184E-03	.268E-05	.204E-06
EI	41.8	.401E-02	.584E-04	.444E-05
EK	23.5	.176E-02	.256E-04	.195E-05
EM	184.3	.216E-01	.315E-03	.239E-04
EN	377.7	.455E-01	.662E-03	.504E-04
EO	693.0	.845E-01	.123E-02	.935E-04
EP	629.1	.766E-01	.111E-02	.848E-04
EQ	25.2	.197E-02	.287E-04	.218E-05
ER	26.8	.216E-02	.314E-04	.239E-05
ES	202.6	.239E-01	.347E-03	.264E-04
ET	12.7	.429E-03	.624E-05	.475E-06
EV	10.5	.150E-03	.218E-05	.166E-06
EX	9.5	.253E-04	.369E-06	.281E-07
EZ	11.1	.223E-03	.324E-05	.247E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FI	99.0	.106E-01	.154E-03	.117E-04
FK	94.0	.998E-02	.145E-03	.110E-04
FM	272.9	.321E-01	.467E-03	.355E-04
FN	355.0	.422E-01	.614E-03	.467E-04
FO	574.3	.693E-01	.101E-02	.767E-04
FP	430.0	.515E-01	.749E-03	.570E-04
FQ	240.7	.281E-01	.409E-03	.311E-04
FR	134.7	.150E-01	.218E-03	.166E-04
FS	40.5	.337E-02	.490E-04	.373E-05
FT	25.9	.157E-02	.228E-04	.174E-05
FZ	14.2	.126E-03	.183E-05	.140E-06
GD	14.6	.391E-03	.568E-05	.433E-06
GF	29.4	.222E-02	.323E-04	.246E-05
GG	135.7	.153E-01	.223E-03	.170E-04
GH	167.8	.193E-01	.281E-03	.214E-04
GI	156.3	.179E-01	.260E-03	.198E-04
GJ	145.9	.166E-01	.242E-03	.184E-04
LG	17.4	.446E-03	.649E-05	.494E-06
LR	63.3	.611E-02	.889E-04	.677E-05
LS	130.9	.145E-01	.210E-03	.160E-04
LT	135.7	.151E-01	.219E-03	.167E-04
LV	139.6	.155E-01	.226E-03	.172E-04
LX	74.2	.746E-02	.109E-03	.826E-05
LZ	61.0	.583E-02	.848E-04	.646E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: '6

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
AI	1.4	.119E-02	.117E-05	.124E-06
AK	2.6	.344E-02	.338E-05	.358E-06
AM	3.4	.496E-02	.488E-05	.517E-06
AO	11.8	.202E-01	.199E-04	.211E-05
AP	64.8	.117E+00	.115E-03	.122E-04
AQ	264.1	.481E+00	.473E-03	.501E-04
AR	1804.2	.329E+01	.324E-02	.343E-03
AS	3458.4	.632E+01	.621E-02	.658E-03
AT	371.3	.677E+00	.666E-03	.705E-04
AV	17.7	.311E-01	.306E-04	.324E-05
AX	17.7	.311E-01	.306E-04	.324E-05
AZ	6.8	.111E-01	.109E-04	.115E-05
BN	10.9	.686E-02	.675E-05	.715E-06
BO	119.3	.205E+00	.202E-03	.213E-04
BP	894.6	.162E+01	.159E-02	.169E-03
BQ	574.7	.104E+01	.102E-02	.108E-03
BR	1026.9	.186E+01	.183E-02	.194E-03
BS	735.1	.133E+01	.131E-02	.138E-03
BT	88.0	.148E+00	.145E-03	.154E-04
CK	4.0	.185E-02	.182E-05	.192E-06
CN	16.3	.243E-01	.239E-04	.253E-05
CO	137.7	.246E+00	.242E-03	.256E-04
CT	4130.9	.754E+01	.742E-02	.785E-03
CV	100.5	.178E+00	.175E-03	.185E-04
CZ	70.9	.124E+00	.122E-03	.129E-04
CM	17.1	.239E-01	.235E-04	.249E-05
~~CO~~ OMIT	47.9	.800E-01	.788E-04	.833E-05
CP	73.5	.127E+00	.125E-03	.132E-04
CQ	391.3	.707E+00	.696E-03	.737E-04
CS	1527.1	.278E+01	.274E-02	.290E-03
DI	9.2	.665E-02	.654E-05	.692E-06
DK	16.8	.205E-01	.202E-04	.213E-05
DM	176.1	.311E+00	.306E-03	.324E-04
DN	440.8	.795E+00	.782E-03	.828E-04
DO	686.3	.124E+01	.122E-02	.129E-03
DP	726.2	.132E+01	.129E-02	.137E-03
DQ	682.8	.124E+01	.122E-02	.129E-03
DR	736.4	.133E+01	.131E-02	.139E-03
DS	5338.6	.974E+01	.958E-02	.101E-02
DT	1661.0	.302E+01	.297E-02	.315E-03
DV	67.0	.112E+00	.110E-03	.117E-04
DX	109.9	.190E+00	.187E-03	.198E-04
DZ	58.6	.967E-01	.952E-04	.101E-04
EM	150.5	.266E+00	.262E-03	.277E-04
EN	366.7	.661E+00	.651E-03	.689E-04
EP	395.7	.714E+00	.703E-03	.744E-04
EQ	373.3	.673E+00	.662E-03	.701E-04
ER	762.1	.138E+01	.136E-02	.144E-03
ES	7553.2	.138E+02	.136E-01	.144E-02
ET	411.4	.743E+00	.731E-03	.773E-04
EZ	14.2	.174E-01	.171E-04	.181E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
FI	22.5	.383E-01	.377E-04	.399E-05
FK	16.5	.273E-01	.268E-04	.284E-05
FM	83.4	.150E+00	.147E-03	.156E-04
FN	148.4	.268E+00	.264E-03	.279E-04
FO	375.4	.683E+00	.672E-03	.711E-04
FQ	239.2	.434E+00	.427E-03	.452E-04
FR	297.6	.541E+00	.532E-03	.563E-04
FS	277.3	.504E+00	.496E-03	.524E-04
FT	221.1	.401E+00	.395E-03	.418E-04
FV	20.0	.337E-01	.332E-04	.351E-05
FX	6.7	.944E-02	.928E-05	.983E-06
FZ	6.1	.843E-02	.829E-05	.878E-06
GG	4.8	.263E-02	.259E-05	.274E-06
GH	3.8	.853E-03	.839E-06	.888E-07
GI	19.0	.286E-01	.281E-04	.297E-05
GJ	14.7	.207E-01	.204E-04	.215E-05
LO	4.1	.144E-03	.142E-06	.150E-07
LR	14.7	.196E-01	.192E-04	.204E-05
LS	27.0	.420E-01	.413E-04	.437E-05
LT	23.0	.347E-01	.342E-04	.362E-05
LV	7.6	.651E-02	.641E-05	.678E-06
LZ	21.1	.312E-01	.307E-04	.325E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
AG	.967E-07
AI	.973E-06
AK	.616E-06
AM	.427E-05
AN	.741E-05
AO	.112E-04
AP	.112E-04
AQ	.785E-05
AR	.373E-04
AS	.698E-04
AT	.769E-05
AV	.667E-06
AX	.599E-06
AZ	.707E-06
XG	.253E-06
BK	.180E-05
BM	.941E-05
BN	.191E-04
BO	.154E-04
BP	.194E-04
BQ	.119E-04
BR	.205E-04
BS	.150E-04
BT	.186E-05
BV	.666E-07
BX	.261E-06
BZ	.962E-07
BI	.110E-05
CM	.210E-05
CO	.113E-04
CP	.718E-05
CQ	.153E-04
CR	.313E-05
CS	.323E-04
CG	.843E-08
CI	.510E-05
CK	.428E-05
CN	.172E-04
~~CO~~ OMIT	.212E-04
CT	.886E-04
CV	.868E-05
CZ	.820E-05
DG	.203E-06
DI	.448E-05
DK	.309E-05
DM	.211E-04
DN	.316E-04
DO	.403E-04
DP	.232E-04
DQ	.195E-04
DR	.154E-04
DS	.120E-03
DT	.446E-04
DV	.113E-04
DX	.120E-04
DZ	.108E-04
EG	.946E-06
EI	.143E-04
EK	.130E-04
EM	.506E-04
EN	.756E-04
EO	.106E-03
EP	.105E-03
EQ	.112E-04
ER	.196E-04
ES	.190E-03
ET	.866E-05
EV	.166E-06
EX	.281E-07
EZ	.439E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 6

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
FG	.558E-06
FI	.214E-04
FK	.200E-04
FM	.541E-04
FN	.690E-04
FO	.995E-04
FP	.659E-04
FQ	.393E-04
FR	.247E-04
FS	.103E-04
FT	.663E-05
FV	.372E-06
FX	.104E-06
FZ	.232E-06
GD	.433E-06
GE	.183E-07
GF	.258E-05
GG	.182E-04
GH	.231E-04
GI	.222E-04
GJ	.204E-04
LG	.494E-06
LO	.159E-08
LR	.766E-05
LS	.177E-04
LT	.183E-04
LV	.188E-04
LX	.915E-05
LZ	.769E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 7

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.609E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1W	236.7	.570E-01	.403E-03	.312E-04
1Z	820.5	.205E+00	.145E-02	.112E-03
1C	336.6	.824E-01	.582E-03	.451E-04
1F	364.0	.893E-01	.632E-03	.489E-04
1H	498.5	.124E+00	.873E-03	.676E-04
1K	1024.4	.257E+00	.182E-02	.141E-03
1N	1407.7	.355E+00	.251E-02	.194E-03
1Q	1305.6	.323E+00	.232E-02	.180E-03
1D	147.1	.342E-01	.242E-03	.187E-04
1L	468.1	.116E+00	.819E-03	.633E-04
1R	433.4	.107E+00	.756E-03	.585E-04
1X	733.2	.184E+00	.130E-02	.101E-03
1A	458.3	.113E+00	.801E-03	.620E-04
1I	1706.0	.439E+00	.304E-02	.235E-03
1O	1356.1	.341E+00	.241E-02	.187E-03
1U	2125.2	.537E+00	.380E-02	.294E-03
1B	318.1	.777E-01	.549E-03	.425E-04
1G	872.0	.218E+00	.154E-02	.119E-03
1J	1876.4	.474E+00	.335E-02	.259E-03
1M	2437.3	.616E+00	.436E-02	.337E-03
1P	3007.8	.761E+00	.538E-02	.416E-03
1S	1015.8	.255E+00	.180E-02	.139E-03
1V	548.7	.136E+00	.964E-03	.745E-04
1Y	1494.1	.377E+00	.266E-02	.206E-03
2K	127.8	.293E-01	.207E-03	.160E-04
2Q	31.0	.470E-02	.332E-04	.257E-05
2B	598.1	.151E+00	.107E-02	.826E-04
2J	294.0	.737E-01	.521E-03	.403E-04
2P	13.1	.382E-02	.270E-04	.209E-05
2V	11.2	.179E-02	.127E-04	.981E-06
2Y	48.6	.113E-01	.739E-04	.610E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 7

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.409E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1T	1318.2	.354E+00	.236E-02	.276E-03
1W	206.1	.542E-01	.361E-03	.422E-04
1Z	733.6	.197E+00	.131E-02	.153E-03
1C	457.2	.122E+00	.812E-03	.950E-04
1F	516.2	.138E+00	.918E-03	.107E-03
1H	630.5	.169E+00	.112E-02	.131E-03
1K	1063.6	.286E+00	.190E-02	.222E-03
1N	1393.2	.376E+00	.251E-02	.293E-03
1Q	1360.4	.366E+00	.244E-02	.285E-03
1D	182.3	.478E-01	.318E-03	.372E-04
1L	498.9	.133E+00	.887E-03	.104E-03
1R	447.1	.119E+00	.794E-03	.928E-04
1X	634.0	.170E+00	.113E-02	.132E-03
1A	1078.5	.290E+00	.193E-02	.225E-03
1I	2101.4	.566E+00	.377E-02	.440E-03
1O	2753.7	.742E+00	.494E-02	.577E-03
1U	2220.3	.598E+00	.398E-02	.465E-03
1B	623.2	.168E+00	.112E-02	.131E-03
1E	640.7	.172E+00	.114E-02	.134E-03
1G	1095.5	.294E+00	.196E-02	.229E-03
1J	2184.8	.588E+00	.392E-02	.458E-03
1M	2597.0	.693E+00	.466E-02	.544E-03
1P	3060.8	.825E+00	.549E-02	.642E-03
1S	2741.6	.738E+00	.492E-02	.575E-03
1V	2057.4	.554E+00	.369E-02	.431E-03
1Y	1511.1	.406E+00	.271E-02	.316E-03
2C	630.0	.169E+00	.112E-02	.131E-03
2K	133.3	.359E-01	.239E-03	.280E-04
2Q	46.6	.112E-01	.743E-04	.869E-05
2W	32.1	.725E-02	.483E-04	.564E-05
2Z	30.2	.674E-02	.449E-04	.524E-05
2B	575.2	.155E+00	.103E-02	.121E-03
2J	298.2	.802E-01	.534E-03	.624E-04
2P	40.7	.107E-01	.711E-04	.831E-05
2V	41.1	.108E-01	.718E-04	.839E-05
2Y	56.3	.143E-01	.932E-04	.116E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 7

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1W	369.3	.528E-01	.644E-03	.492E-04
1Z	1485.7	.217E+00	.265E-02	.202E-03
1C	248.8	.351E-01	.428E-03	.326E-04
1F	262.4	.371E-01	.452E-03	.345E-04
1H	460.1	.662E-01	.807E-03	.616E-04
1K	1059.3	.153E+00	.187E-02	.143E-03
1N	1780.6	.261E+00	.318E-02	.243E-03
1Q	1801.4	.264E+00	.322E-02	.246E-03
1D	97.9	.128E-01	.156E-03	.119E-04
1L	408.4	.586E-01	.714E-03	.545E-04
1R	576.1	.833E-01	.102E-02	.775E-04
1X	989.8	.144E+00	.176E-02	.134E-03
1A	606.8	.878E-01	.107E-02	.818E-04
1I	3674.9	.540E+00	.658E-02	.503E-03
1U	4277.7	.629E+00	.767E-02	.585E-03
1B	253.4	.357E-01	.436E-03	.333E-04
1G	1073.1	.157E+00	.191E-02	.146E-03
1J	2357.0	.346E+00	.422E-02	.322E-03
1M	4064.9	.597E+00	.729E-02	.556E-03
1P	5399.0	.794E+00	.968E-02	.739E-03
1Y	2534.6	.372E+00	.454E-02	.346E-03
2K	199.4	.278E-01	.339E-03	.259E-04
2Q	80.0	.102E-01	.124E-03	.948E-05
2S	1148.3	.168E+00	.204E-02	.156E-03
2J	549.2	.793E-01	.967E-03	.739E-04
2P	70.8	.883E-02	.108E-03	.822E-05
2V	31.6	.306E-02	.373E-04	.285E-05
2Y	89.3	.116E-01	.141E-03	.108E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 7

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.389E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1Z	82.3	.669E-01	.141E-03	.891E-05
1C	1445.4	.123E+01	.259E-02	.164E-03
1F	1460.2	.124E+01	.262E-02	.166E-03
1H	1394.6	.119E+01	.250E-02	.158E-03
1K	941.6	.801E+00	.168E-02	.107E-03
1N	1073.9	.920E+00	.193E-02	.122E-03
1Q	678.2	.576E+00	.121E-02	.767E-04
1D	1920.0	.164E+01	.344E-02	.218E-03
1L	1760.2	.150E+01	.316E-02	.200E-03
1R	785.7	.668E+00	.140E-02	.889E-04
1X	251.6	.212E+00	.445E-03	.282E-04
1A	627.3	.533E+00	.112E-02	.709E-04
1I	635.0	.539E+00	.113E-02	.718E-04
1U	8.7	.400E-02	.841E-05	.532E-06
1B	1100.0	.937E+00	.197E-02	.125E-03
1O	992.9	.845E+00	.178E-02	.112E-03
1J	669.1	.568E+00	.120E-02	.756E-04
1M	868.4	.739E+00	.155E-02	.983E-04
1P	518.3	.440E+00	.924E-03	.585E-04
1Y	47.0	.368E-01	.773E-04	.489E-05
2Q	11.7	.655E-02	.138E-04	.872E-06
2W	11.7	.655E-02	.138E-04	.872E-06
2Z	11.7	.655E-02	.138E-04	.872E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 7

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1T	.165E-03
1W	.769E-04
1Z	.304E-03
1C	.197E-03
1F	.116E-03
1H	.159E-03
1K	.236E-03
1N	.444E-03
1Q	.437E-03
1D	.537E-04
1L	.138E-03
1R	.145E-03
1X	.224E-03
1A	.227E-03
1I	.731E-03
1O	.360E-03
1U	.888E-03
1B	.125E-03
1E	.737E-04
1G	.302E-03
1J	.623E-03
1M	.917E-03
1P	.116E-02
1S	.355E-03
1V	.264E-03
1Y	.553E-03
2B	.235E-03
2J	.114E-03
2P	.134E-04
2V	.734E-05
2Y	.182E-04
2C	.784E-04
2K	.439E-04
2Q	.150E-04
2W	.344E-05
2Z	.320E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 8

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.609E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	393.3	.969E-01	.685E-03	.530E-04
1I	377.4	.245E+00	.173E-02	.134E-03
1O	1344.2	.338E+00	.239E-02	.185E-03
1U	798.5	.209E+00	.141E-02	.109E-03
~~1O~~ 1C	479.2	.119E+00	.839E-03	.649E-04
1T	1693.1	.423E+00	.303E-02	.234E-03
1W	1609.2	.406E+00	.287E-02	.222E-03
1Z	676.5	.169E+00	.119E-02	.923E-04
1F	976.9	.245E+00	.173E-02	.134E-03
1H	1178.2	.296E+00	.209E-02	.162E-03
1K	1610.5	.406E+00	.287E-02	.222E-03
1N	1845.9	.466E+00	.329E-02	.255E-03
1Q	1644.7	.415E+00	.293E-02	.227E-03
1D	593.0	.148E+00	.104E-02	.807E-04
1L	1314.1	.331E+00	.234E-02	.181E-03
1R	1742.9	.440E+00	.311E-02	.241E-03
1X	1612.5	.407E+00	.288E-02	.222E-03
1B	657.7	.164E+00	.116E-02	.897E-04
1E	701.8	.175E+00	.124E-02	.958E-04
1G	1080.4	.271E+00	.192E-02	.148E-03
1J	1197.6	.301E+00	.213E-02	.165E-03
1M	1550.8	.391E+00	.276E-02	.214E-03
1P	1624.5	.410E+00	.290E-02	.224E-03
1S	1767.4	.446E+00	.315E-02	.244E-03
1V	1180.9	.297E+00	.210E-02	.162E-03
1Y	515.0	.128E+00	.903E-03	.699E-04
2B	871.6	.218E+00	.154E-02	.119E-03
2J	221.2	.530E-01	.375E-03	.290E-04
2C	877.7	.220E+00	.155E-02	.120E-03
2Q	121.8	.278E-01	.196E-03	.152E-04
2K	367.9	.303E-01	.639E-03	.494E-04
2W	30.4	.455E-02	.322E-04	.249E-05
2Z	16.2	.940E-03	.665E-05	.514E-06
2P	126.0	.288E-01	.204E-03	.158E-04
2V	26.2	.348E-02	.246E-04	.190E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 8

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	497.0	.133E+00	.884E-03	.103E-03
1I	1140.1	.306E+00	.204E-02	.238E-03
1O	1332.3	.358E+00	.238E-02	.279E-03
1U	921.0	.247E+00	.165E-02	.192E-03
~~1O~~ 1C	643.2	.172E+00	.115E-02	.134E-03
1T	1796.7	.483E+00	.322E-02	.376E-03
1W	1733.0	.466E+00	.310E-02	.363E-03
1Z	727.2	.195E+00	.130E-02	.152E-03
1F	1099.2	.295E+00	.197E-02	.230E-03
1H	1303.6	.350E+00	.233E-02	.273E-03
1K	1766.1	.475E+00	.316E-02	.370E-03
1N	2079.5	.560E+00	.373E-02	.436E-03
1Q	1841.8	.496E+00	.330E-02	.386E-03
1D	879.4	.236E+00	.157E-02	.184E-03
1L	1472.6	.396E+00	.264E-02	.308E-03
1R	1910.4	.514E+00	.342E-02	.400E-03
1X	1699.7	.457E+00	.305E-02	.356E-03
1B	715.5	.192E+00	.128E-02	.149E-03
1E	872.1	.234E+00	.156E-02	.182E-03
1G	1158.1	.311E+00	.207E-02	.242E-03
1J	1449.1	.390E+00	.259E-02	.303E-03
1M	1800.2	.484E+00	.323E-02	.377E-03
1P	1691.3	.455E+00	.303E-02	.354E-03
1S	1920.7	.517E+00	.344E-02	.402E-03
1V	1251.2	.336E+00	.224E-02	.262E-03
1Y	539.5	.144E+00	.960E-03	.112E-03
2B	1039.0	.277E+00	.184E-02	.215E-03
2J	272.0	.720E-01	.479E-03	.560E-04
2C	995.4	.267E+00	.178E-02	.208E-03
2K	413.9	.110E+00	.734E-03	.859E-04
2W	61.9	.153E-01	.102E-03	.119E-04
2Z	33.6	.765E-02	.510E-04	.596E-05
2P	170.9	.447E-01	.238E-03	.348E-04
2V	72.3	.181E-01	.121E-03	.141E-04
2Y	25.1	.536E-02	.357E-04	.417E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 8

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.749E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	778.0	.113E+00	.138E-02	.105E-03
1I	1665.8	.244E+00	.297E-02	.227E-03
1O	2228.1	.327E+00	.398E-02	.304E-03
1U	1410.7	.206E+00	.252E-02	.192E-03
1C	751.6	.103E+00	.133E-02	.102E-03
1T	3388.7	.498E+00	.607E-02	.463E-03
1W	3130.8	.469E+00	.561E-02	.428E-03
1Z	1291.4	.183E+00	.230E-02	.176E-03
1F	1722.5	.252E+00	.308E-02	.235E-03
1H	2094.7	.307E+00	.374E-02	.286E-03
1K	2737.6	.402E+00	.490E-02	.374E-03
1N	3421.6	.503E+00	.613E-02	.468E-03
1Q	3010.3	.442E+00	.539E-02	.411E-03
1D	918.3	.134E+00	.163E-02	.124E-03
1L	2626.4	.385E+00	.470E-02	.359E-03
1R	3674.6	.540E+00	.658E-02	.503E-03
1X	3430.3	.504E+00	.615E-02	.469E-03
1B	1316.3	.192E+00	.235E-02	.179E-03
1E	1127.8	.165E+00	.201E-02	.153E-03
1G	2170.8	.318E+00	.388E-02	.296E-03
1J	2667.4	.391E+00	.477E-02	.364E-03
1M	2805.3	.412E+00	.502E-02	.383E-03
1P	3383.4	.497E+00	.606E-02	.463E-03
1S	3603.7	.530E+00	.647E-02	.494E-03
1V	2314.6	.339E+00	.414E-02	.316E-03
1Y	997.2	.145E+00	.177E-02	.135E-03
2B	1737.3	.254E+00	.310E-02	.237E-03
2J	1737.3	.254E+00	.310E-02	.237E-03
2P	257.5	.363E-01	.443E-03	.338E-04
2C	1987.1	.291E+00	.355E-02	.271E-03
2Q	276.2	.391E-01	.477E-03	.364E-04
2K	738.7	.107E+00	.131E-02	.999E-04
2W	76.6	.968E-02	.118E-03	.902E-05
2Z	76.6	.968E-02	.118E-03	.902E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 8

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	344.4	.804E+00	.169E-02	.107E-03
1I	57.0	.453E-01	.952E-04	.603E-05
1O	47.9	.375E-01	.789E-04	.499E-05
1U	19.3	.130E-01	.274E-04	.173E-05
~~1O~~ 1C	238.1	.200E+00	.421E-03	.266E-04
1T	261.5	.220E+00	.463E-03	.293E-04
1W	145.8	.121E+00	.255E-03	.161E-04
1F	239.6	.201E+00	.423E-03	.268E-04
1H	690.1	.586E+00	.123E-02	.780E-04
1K	162.2	.135E+00	.284E-03	.180E-04
1N	196.6	.165E+00	.346E-03	.219E-04
1Q	171.1	.143E+00	.300E-03	.190E-04
1R	1443.6	.123E+01	.259E-02	.164E-03
1X	1146.1	.976E+00	.205E-02	.130E-03
1B	1061.2	.904E+00	.190E-02	.120E-03
1E	58.7	.467E-01	.982E-04	.622E-05
1G	1078.2	.918E+00	.193E-02	.122E-03
1J	738.3	.628E+00	.132E-02	.835E-04
1P	1072.3	.913E+00	.192E-02	.121E-03
1S	87.1	.710E-01	.149E-03	.945E-05
1V	71.7	.573E-01	.122E-03	.770E-05
2B	25.2	.181E-01	.380E-04	.241E-05
2J	25.2	.181E-01	.380E-04	.241E-05
2C	34.3	.259E-01	.544E-04	.344E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 8

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.180E-03
1I	.381E-03
1O	0.486 ~~.676~~E-03
1U	.316E-03
1T	.710E-03
1W	.664E-03
1Z	.274E-03
1F	.385E-03
1H	.469E-03
1K	.615E-03
1N	.751E-03
1Q	.662E-03
1D	.241E-03
1L	.558E-03
1R	.775E-03
1X	.711E-03
1B	.286E-03
1E	.270E-03
1G	.463E-03
1J	.566E-03
1M	.626E-03
~~4~~ 1P	.703E-03
1S	.755E-03
1V	.436E-03
1Y	.298E-03
1C	.169E-03
2B	.375E-03
2J	.273E-03
2P	.339E-04
2V	.857E-05
2Y	.249E-05
2C	.496E-03
2Q	.377E-04
2K	.155E-03
2W	.163E-04
2Z	.126E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 9

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.73
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1C	665.7	.166E+00	.117E-02	.908E-04
1T	1359.8	.340E+00	.241E-02	.186E-03
1W	1214.0	.305E+00	.216E-02	.167E-03
1Z	556.5	.138E+00	.978E-03	.756E-04
1F	897.4	.225E+00	.159E-02	.123E-03
1H	1039.1	.261E+00	.184E-02	.143E-03
1K	1024.6	.257E+00	.182E-02	.141E-03
1N	1325.1	.334E+00	.236E-02	.182E-03
1Q	1117.7	.281E+00	.199E-02	.154E-03
1D	675.1	.168E+00	.119E-02	.921E-04
1L	1321.1	.333E+00	.235E-02	.182E-03
1R	1490.4	.376E+00	.266E-02	.205E-03
1X	1254.2	.316E+00	.223E-02	.173E-03
1A	411.5	.101E+00	.717E-03	.555E-04
1I	894.1	.224E+00	.158E-02	.123E-03
1O	639.6	.159E+00	.113E-02	.872E-04
1U	356.7	.875E-01	.619E-03	.478E-04
1B	503.4	.125E+00	.882E-03	.682E-04
1E	366.5	.900E-01	.636E-03	.492E-04
1G	919.7	.231E+00	.163E-02	.126E-03
1J	1027.8	.258E+00	.182E-02	.141E-03
1M	1373.3	.346E+00	.245E-02	.189E-03
1P	1181.5	.297E+00	.210E-02	.163E-03
1S	976.3	.245E+00	.173E-02	.134E-03
1V	795.9	.199E+00	.141E-02	.109E-03
1Y	293.6	.715E-01	.505E-03	.391E-04
2B	389.3	.958E-01	.677E-03	.524E-04
2J	111.2	.251E-01	.177E-03	.137E-04
2P	43.7	.793E-02	.561E-04	.434E-05
2C	522.8	.130E+00	.917E-03	.709E-04
2K	130.6	.300E-01	.212E-03	.164E-04
2Q	189.6	.450E-01	.318E-03	.246E-04
2W	27.9	.391E-02	.277E-04	.214E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 9

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.409E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1C	761.0	.204E+00	.136E-02	.159E-03
1T	1318.5	.354E+00	.236E-02	.276E-03
1W	1194.4	.321E+00	.214E-02	.250E-03
1Z	519.9	.139E+00	.925E-03	.108E-03
1F	1044.1	.280E+00	.187E-02	.218E-03
1H	1170.9	.315E+00	.209E-02	.245E-03
1K	1069.0	.287E+00	.191E-02	.223E-03
1N	1375.6	.370E+00	.246E-02	.288E-03
1D	733.4	.197E+00	.131E-02	.153E-03
1L	1380.7	.371E+00	.247E-02	.289E-03
1R	1493.1	.402E+00	.267E-02	.313E-03
1X	1238.5	.333E+00	.222E-02	.259E-03
1A	465.3	.124E+00	.827E-03	.967E-04
1I	899.7	.241E+00	.161E-02	.188E-03
1C	653.9	.175E+00	.117E-02	.136E-03
1U	383.1	.102E+00	.679E-03	.794E-04
1B	614.5	.164E+00	.109E-02	.128E-03
1E	402.2	.107E+00	.713E-03	.834E-04
1G	998.5	.268E+00	.179E-02	.209E-03
1J	1075.0	.289E+00	.192E-02	.225E-03
1M	1368.2	.368E+00	.245E-02	.286E-03
1P	1141.1	.307E+00	.204E-02	.239E-03
1S	936.6	.251E+00	.167E-02	.196E-03
1V	758.9	.203E+00	.135E-02	.158E-03
1Y	276.5	.732E-01	.488E-03	.570E-04
2Z	29.4	.652E-02	.434E-04	.508E-05
2B	389.4	.104E+00	.690E-03	.807E-04
2J	142.3	.370E-01	.246E-03	.288E-04
2P	65.2	.162E-01	.108E-03	.126E-04
2C	581.2	.155E+00	.104E-02	.121E-03
2K	158.1	.413E-01	.275E-03	.321E-04
2Q	168.3	.440E-01	.293E-03	.343E-04
2W	56.5	.138E-01	.921E-04	.108E-04
2Y	26.1	.563E-02	.375E-04	.438E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 9

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.592E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.749E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/C0)	PROTOTYPE DILUTION FACTOR
1C	1393.0	.204E+00	.248E-02	.190E-03
1T	2252.6	.330E+00	.403E-02	.308E-03
1W	2051.7	.301E+00	.367E-02	.280E-03
1Z	1023.6	.150E+00	.183E-02	.140E-03
1F	1680.6	.246E+00	.300E-02	.229E-03
1H	1883.7	.276E+00	.337E-02	.257E-03
1K	2035.3	.298E+00	.364E-02	.278E-03
1N	2274.0	.333E+00	.407E-02	.310E-03
1Q	2091.6	.307E+00	.374E-02	.285E-03
1D	1153.2	.168E+00	.205E-02	.157E-03
1L	2333.3	.342E+00	.417E-02	.319E-03
1R	2503.9	.367E+00	.448E-02	.342E-03
1X	2117.2	.310E+00	.379E-02	.289E-03
1A	847.2	.123E+00	.150E-02	.115E-03
1I	1440.9	.211E+00	.257E-02	.196E-03
1O	1123.0	.165E+00	.201E-02	.153E-03
1U	486.5	.716E-01	.873E-03	.666E-04
1B	844.9	.123E+00	.150E-02	.114E-03
1E	601.7	.871E-01	.106E-02	.811E-04
1G	1637.7	.240E+00	.232E-02	.223E-03
1J	1766.7	.259E+00	.316E-02	.241E-03
1M	2389.2	.350E+00	.427E-02	.326E-03
1P	2032.4	.293E+00	.364E-02	.278E-03
1S	1621.4	.237E+00	.289E-02	.221E-03
1V	1341.9	.196E+00	.239E-02	.183E-03
1Y	494.1	.712E-01	.868E-03	.663E-04
2B	623.6	.312E-01	.111E-02	.849E-04
2J	155.9	.214E-01	.261E-03	.199E-04
2P	56.7	.675E-02	.823E-04	.629E-05
2C	833.0	.121E+00	.148E-02	.113E-03
2K	213.0	.307E-01	.374E-03	.286E-04
2Q	342.4	.488E-01	.596E-03	.455E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 9

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.300E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1C	1065.5	.907E+00	.191E-02	.121E-03
1T	35.9	.272E-01	.572E-04	.362E-05
1W	53.4	.422E-01	.887E-04	.561E-05
1F	130.8	.108E+00	.228E-03	.144E-04
1H	115.8	.955E-01	.201E-03	.127E-04
1K	996.3	.848E+00	.178E-02	.113E-03
1N	86.5	.705E-01	.148E-03	.939E-05
1Q	1027.2	.875E+00	.184E-02	.116E-03
1D	187.0	.156E+00	.329E-03	.208E-04
1L	71.4	.576E-01	.121E-03	.766E-05
1R	59.6	.475E-01	.999E-04	.632E-05
1A	893.5	.760E+00	.160E-02	.101E-03
1I	462.7	.392E+00	.824E-03	.522E-04
1O	330.4	.279E+00	.586E-03	.371E-04
1E	88.0	.718E-01	.151E-03	.955E-05
1G	15.7	.998E-02	.210E-04	.133E-05
1M	1003.2	.854E+00	.180E-02	.114E-03
1P	18.3	.122E-01	.256E-04	.162E-05
1Y	4.9	.722E-03	.152E-05	.961E-07

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 9

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1C	.302E-03
1T	.438E-03
1W	.443E-03
1Z	.211E-03
1F	.371E-03
1H	.416E-03
1K	.432E-03
1N	.438E-03
1Q	.308E-03
1D	.257E-03
1L	.507E-03
1R	.546E-03
1X	.458E-03
1A	.185E-03
1I	.323E-03
1O	.245E-03
1U	.118E-03
1B	.136E-03
1E	.136E-03
1G	.358E-03
1J	.387E-03
1M	.522E-03
1P	.434E-03
1S	.349E-03
1V	.286E-03
1Y	.104E-03
2Z	.303E-05
2B	.137E-03
2J	.382E-04
2P	.142E-04
2C	.131E-03
2K	.431E-04
2Q	.680E-04
2W	.661E-05
2Y	.262E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 10

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	114.9	.269E-01	.184E-03	.142E-04
1I	92.6	.204E-01	.144E-03	.111E-04
1O	278.0	.675E-01	.477E-03	.369E-04
1U	462.3	.114E+00	.808E-03	.625E-04
1B	199.2	.474E-01	.335E-03	.260E-04
1E	170.5	.402E-01	.284E-03	.220E-04
1G	133.0	.319E-01	.226E-03	.175E-04
1J	161.8	.379E-01	.268E-03	.208E-04
1M	168.1	.396E-01	.280E-03	.216E-04
1P	260.2	.630E-01	.445E-03	.344E-04
1S	457.2	.113E+00	.799E-03	.618E-04
1V	502.5	.125E+00	.881E-03	.681E-04
1Y	514.8	.128E+00	.903E-03	.698E-04
1C	262.6	.636E-01	.450E-03	.348E-04
1F	268.8	.651E-01	.461E-03	.356E-04
1H	223.8	.537E-01	.380E-03	.294E-04
1K	284.6	.691E-01	.489E-03	.378E-04
1N	223.3	.536E-01	.379E-03	.293E-04
1Q	235.1	.566E-01	.400E-03	.310E-04
1T	723.0	.181E+00	.128E-02	.988E-04
1W	855.3	.214E+00	.151E-02	.117E-03
1Z	723.9	.181E+00	.128E-02	.989E-04
1D	403.9	.995E-01	.703E-03	.544E-04
1L	464.4	.115E+00	.812E-03	.628E-04
1R	500.6	.124E+00	.877E-03	.679E-04
1X	788.4	.197E+00	.139E-02	.108E-03
2B	609.4	.152E+00	.107E-02	.830E-04
2J	288.9	.703E-01	.497E-03	.384E-04
2V	83.1	.179E-01	.127E-03	.981E-05
2Y	27.3	.377E-02	.267E-04	.206E-05
2C	700.0	.175E+00	.124E-02	.956E-04
2K	395.3	.973E-01	.688E-03	.532E-04
2Q	303.7	.740E-01	.523E-03	.405E-04
2W	162.1	.389E-01	.269E-03	.208E-04
2Z	84.8	.184E-01	.130E-03	.101E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 10

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.409E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	130.6	.338E-01	.225E-03	.263E-04
1I	123.0	.318E-01	.212E-03	.247E-04
1O	296.0	.785E-01	.523E-03	.611E-04
1U	498.7	.133E+00	.887E-03	.104E-03
1B	230.1	.607E-01	.404E-03	.472E-04
1E	186.1	.488E-01	.325E-03	.380E-04
1G	179.1	.469E-01	.312E-03	.365E-04
1J	196.0	.515E-01	.343E-03	.401E-04
1M	218.1	.574E-01	.383E-03	.447E-04
1P	286.9	.760E-01	.506E-03	.592E-04
1S	478.9	.128E+00	.851E-03	.995E-04
1V	507.5	.136E+00	.903E-03	.106E-03
1Y	531.7	.142E+00	.946E-03	.111E-03
1C	281.9	.747E-01	.497E-03	.581E-04
1F	301.2	.799E-01	.532E-03	.622E-04
1H	268.5	.711E-01	.473E-03	.553E-04
1K	287.9	.763E-01	.508E-03	.594E-04
1N	253.2	.669E-01	.446E-03	.521E-04
1Q	260.4	.689E-01	.459E-03	.536E-04
1T	735.3	.197E+00	.131E-02	.153E-03
1W	834.1	.224E+00	.149E-02	.174E-03
1Z	696.0	.186E+00	.124E-02	.145E-03
1D	451.8	.121E+00	.802E-03	.938E-04
1L	494.2	.132E+00	.879E-03	.103E-03
1R	611.6	.164E+00	.109E-02	.127E-03
1X	777.4	.208E+00	.139E-02	.162E-03
2B	555.4	.148E+00	.989E-03	.116E-03
2J	275.3	.729E-01	.485E-03	.567E-04
2V	96.7	.247E-01	.164E-03	.192E-04
2Y	45.3	.108E-01	.719E-04	.841E-05
2C	703.1	.188E+00	.125E-02	.147E-03
2K	435.4	.116E+00	.773E-03	.904E-04
2Q	316.4	.840E-01	.559E-03	.654E-04
2W	185.8	.487E-01	.325E-03	.379E-04
2Z	110.0	.283E-01	.188E-03	.220E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 10

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	194.2	.270E-01	.329E-03	.251E-04
1I	108.6	.144E-01	.176E-03	.134E-04
1O	483.1	.696E-01	.849E-03	.648E-04
1U	711.4	.103E+00	.126E-02	.961E-04
1B	305.6	.434E-01	.530E-03	.404E-04
1E	258.7	.365E-01	.445E-03	.340E-04
1G	177.5	.245E-01	.299E-03	.229E-04
1J	291.5	.414E-01	.504E-03	.385E-04
1M	276.0	.391E-01	.476E-03	.364E-04
1P	447.0	.643E-01	.784E-03	.598E-04
1S	654.4	.948E-01	.116E-02	.883E-04
1V	797.4	.116E+00	.141E-02	.108E-03
1Y	773.2	.112E+00	.137E-02	.105E-03
1C	528.1	.762E-01	.929E-03	.710E-04
1F	443.8	.638E-01	.778E-03	.594E-04
1H	304.0	.432E-01	.527E-03	.402E-04
1K	587.2	.849E-01	.104E-02	.791E-04
1N	367.0	.525E-01	.640E-03	.489E-04
1Q	376.6	.539E-01	.657E-03	.502E-04
1T	1206.2	.176E+00	.215E-02	.164E-03
1W	1603.2	.235E+00	.286E-02	.218E-03
1Z	1192.7	.174E+00	.212E-02	.162E-03
1D	637.5	.923E-01	.113E-02	.860E-04
1L	701.6	.102E+00	.124E-02	.948E-04
1R	816.0	.119E+00	.145E-02	.110E-03
1X	1536.0	.225E+00	.274E-02	.209E-03
2B	993.0	.145E+00	.176E-02	.135E-03
2J	429.8	.617E-01	.753E-03	.575E-04
2V	111.2	.148E-01	.180E-03	.138E-04
2Y	51.8	.603E-02	.736E-04	.562E-05
2C	1290.2	.189E+00	.230E-02	.176E-03
2K	597.3	.864E-01	.105E-02	.805E-04
2Q	493.1	.710E-01	.867E-03	.662E-04
2W	247.7	.349E-01	.426E-03	.325E-04
2Z	121.7	.163E-01	.199E-03	.152E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 10

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	5.2	.388E-03	.208E-05	.132E-06
1B	31.3	.233E-01	.430E-04	.310E-05
1M	10.1	.520E-02	.109E-04	.692E-06
1P	424.0	.353E+00	.755E-03	.478E-04
1Y	37.0	.282E-01	.533E-04	.375E-05
1C	893.9	.761E+00	.160E-02	.101E-03
1F	72.2	.583E-01	.122E-03	.775E-05
1K	843.7	.723E+00	.152E-02	.962E-04
1H	20.7	.142E-01	.299E-04	.189E-05
1T	75.6	.612E-01	.129E-03	.814E-05
1W	361.0	.818E+00	.172E-02	.109E-03
1D	608.4	.517E+00	.109E-02	.687E-04
1L	170.8	.143E+00	.300E-03	.190E-04
1R	55.3	.438E-01	.922E-04	.583E-05
1X	1063.1	.905E+00	.190E-02	.120E-03
2B	43.2	.386E-01	.811E-04	.513E-05
2J	9.6	.476E-02	.100E-04	.633E-06
2C	1014.2	.863E+00	.182E-02	.115E-03
2Q	43.7	.390E-01	.820E-04	.519E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 10

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.421E-04
1I	.231E-04
1O	.104E-03
1U	.163E-03
1B	.710E-04
1E	.585E-04
1G	.461E-04
1J	.641E-04
1M	.649E-04
1P	.102E-03
1S	.153E-03
1V	.177E-03
1Y	.177E-03
1C	.117E-03
1F	.100E-03
1H	.757E-04
1K	.126E-03
1N	.825E-04
1Q	.847E-04
1T	.264E-03
1W	.341E-03
1Z	.257E-03
1D	.152E-03
1L	.163E-03
1R	.193E-03
1X	.325E-03
2B	.211E-03
2J	.946E-04
2V	.260E-04
2Y	.108E-04
2C	.280E-03
2K	.139E-03
2Q	.109E-03
2W	.569E-04
2Z	.232E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 11

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	72.5	.152E-01	.108E-03	.834E-05
1I	154.9	.362E-01	.256E-03	.198E-04
1O	173.1	.424E-01	.299E-03	.232E-04
1U	329.9	.807E-01	.570E-03	.441E-04
1B	106.5	.239E-01	.169E-03	.131E-04
1E	153.2	.358E-01	.253E-03	.196E-04
1G	158.2	.370E-01	.262E-03	.203E-04
1J	276.9	.672E-01	.475E-03	.368E-04
1M	227.8	.547E-01	.387E-03	.299E-04
1P	269.5	.653E-01	.462E-03	.357E-04
1S	304.6	.742E-01	.525E-03	.406E-04
1V	287.8	.709E-01	.495E-03	.383E-04
1Y	347.9	.852E-01	.603E-03	.466E-04
1C	122.0	.278E-01	.197E-03	.152E-04
1F	166.7	.392E-01	.277E-03	.214E-04
1H	163.8	.385E-01	.272E-03	.210E-04
1K	175.7	.415E-01	.293E-03	.227E-04
1N	237.3	.571E-01	.404E-03	.313E-04
1Q	189.5	.459E-01	.318E-03	.246E-04
1T	271.6	.659E-01	.466E-03	.360E-04
1W	317.8	.776E-01	.549E-03	.424E-04
1Z	370.2	.906E-01	.643E-03	.497E-04
1D	138.8	.321E-01	.227E-03	.176E-04
1L	224.6	.539E-01	.381E-03	.295E-04
1R	264.3	.640E-01	.453E-03	.350E-04
1X	299.3	.730E-01	.517E-03	.400E-04
2G	327.2	.800E-01	.566E-03	.438E-04
2J	348.3	.853E-01	.603E-03	.467E-04
2P	402.6	.992E-01	.701E-03	.542E-04
2V	412.8	.102E+00	.719E-03	.556E-04
2Y	325.0	.794E-01	.562E-03	.434E-04
2C	366.5	.900E-01	.636E-03	.492E-04
2K	340.7	.834E-01	.590E-03	.456E-04
2Q	189.2	.449E-01	.318E-03	.246E-04
2W	287.1	.698E-01	.494E-03	.382E-04
2Z	217.5	.521E-01	.368E-03	.285E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 11

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	30.80
STACK DIAMETER (M)	.409E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0300	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	102.3	.262E-01	.174E-03	.204E-04
1I	182.7	.479E-01	.319E-03	.373E-04
1O	142.3	.370E-01	.246E-03	.288E-04
1U	353.4	.940E-01	.626E-03	.731E-04
1B	126.1	.326E-01	.217E-03	.254E-04
1E	159.1	.415E-01	.276E-03	.323E-04
1G	176.2	.461E-01	.307E-03	.359E-04
1J	265.3	.702E-01	.467E-03	.546E-04
1M	245.5	.648E-01	.432E-03	.505E-04
1P	273.5	.740E-01	.493E-03	.576E-04
1S	316.9	.841E-01	.560E-03	.655E-04
1V	313.1	.831E-01	.553E-03	.647E-04
1Y	359.9	.957E-01	.637E-03	.745E-04
1C	139.9	.363E-01	.242E-03	.283E-04
1F	183.1	.480E-01	.320E-03	.374E-04
1H	192.2	.504E-01	.336E-03	.393E-04
1K	196.7	.517E-01	.344E-03	.402E-04
1N	249.1	.658E-01	.438E-03	.512E-04
1Q	213.6	.562E-01	.374E-03	.438E-04
1T	293.7	.779E-01	.518E-03	.606E-04
1W	300.4	.797E-01	.530E-03	.620E-04
1Z	355.2	.944E-01	.629E-03	.735E-04
1D	153.6	.400E-01	.267E-03	.312E-04
1L	234.8	.620E-01	.413E-03	.482E-04
1R	261.7	.692E-01	.461E-03	.539E-04
1X	296.5	.786E-01	.523E-03	.612E-04
2G	315.3	.837E-01	.557E-03	.651E-04
2J	331.7	.881E-01	.587E-03	.686E-04
2P	401.6	.107E+00	.712E-03	.833E-04
2V	401.1	.107E+00	.711E-03	.832E-04
2Y	318.1	.844E-01	.562E-03	.657E-04
2C	353.5	.940E-01	.626E-03	.732E-04
2K	336.2	.893E-01	.595E-03	.695E-04
2W	287.9	.763E-01	.508E-03	.594E-04
2Z	220.1	.580E-01	.386E-03	.451E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 11

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	68.6	.850E-02	.104E-03	.792E-05
1I	235.1	.330E-01	.403E-03	.308E-04
1O	152.3	.208E-01	.254E-03	.194E-04
1U	532.0	.768E-01	.936E-03	.715E-04
1B	136.3	.185E-01	.225E-03	.172E-04
1E	230.5	.324E-01	.395E-03	.301E-04
1G	210.7	.294E-01	.359E-03	.274E-04
1J	594.3	.860E-01	.105E-02	.800E-04
1M	362.3	.518E-01	.632E-03	.482E-04
1P	546.3	.789E-01	.962E-03	.735E-04
1S	473.6	.682E-01	.832E-03	.635E-04
1V	447.8	.644E-01	.785E-03	.599E-04
1Y	548.6	.792E-01	.966E-03	.738E-04
1C	192.7	.268E-01	.327E-03	.249E-04
1F	253.4	.357E-01	.436E-03	.333E-04
1H	282.4	.400E-01	.488E-03	.372E-04
1K	238.5	.335E-01	.409E-03	.312E-04
1N	379.7	.543E-01	.663E-03	.506E-04
1Q	288.7	.409E-01	.499E-03	.381E-04
1T	428.4	.615E-01	.750E-03	.573E-04
1W	668.6	.969E-01	.118E-02	.902E-04
1Z	595.7	.862E-01	.105E-02	.802E-04
1D	206.4	.288E-01	.351E-03	.268E-04
1L	485.1	.699E-01	.852E-03	.651E-04
1R	565.1	.817E-01	.996E-03	.760E-04
1X	594.0	.859E-01	.105E-02	.800E-04
2G	698.8	.101E+00	.124E-02	.944E-04
2J	717.5	.104E+00	.127E-02	.969E-04
2P	643.8	.933E-01	.114E-02	.868E-04
2V	664.5	.963E-01	.117E-02	.897E-04
2Y	527.5	.761E-01	.928E-03	.709E-04
2C	752.1	.109E+00	.133E-02	.102E-03
2K	543.8	.785E-01	.958E-03	.731E-04
2Q	480.2	.692E-01	.843E-03	.644E-04
2W	612.5	.886E-01	.108E-02	.825E-04
2Z	343.4	.490E-01	.598E-03	.456E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 11

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.9140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	27.9	.204E-01	.429E-04	.272E-05
1O	84.4	.687E-01	.144E-03	.914E-05
1U	68.7	.553E-01	.116E-03	.736E-05
1E	32.2	.241E-01	.506E-04	.320E-05
1J	939.0	.793E+00	.168E-02	.106E-03
1M	59.0	.470E-01	.988E-04	.625E-05
1P	841.7	.716E+00	.151E-02	.353E-04
1S	32.1	.240E-01	.505E-04	.320E-05
1V	71.7	.578E-01	.122E-03	.770E-05
1Y	37.6	.287E-01	.604E-04	.382E-05
1C	13.1	.777E-02	.163E-04	.103E-05
1F	38.3	.293E-01	.616E-04	.390E-05
1H	52.7	.416E-01	.875E-04	.554E-05
1N	61.5	.492E-01	.103E-03	.654E-05
1T	58.4	.465E-01	.977E-04	.619E-05
1W	917.6	.781E+00	.164E-02	.104E-03
1Z	69.9	.563E-01	.118E-03	.749E-05
1L	885.4	.753E+00	.158E-02	.100E-03
1R	923.6	.786E+00	.165E-02	.105E-03
1X	857.2	.729E+00	.153E-02	.970E-04
2G	979.5	.834E+00	.175E-02	.111E-03
2J	882.7	.751E+00	.158E-02	.999E-04
2P	60.2	.480E-01	.101E-03	.638E-05
2V	56.7	.450E-01	.946E-04	.599E-05
2Y	28.0	.205E-01	.431E-04	.273E-05
2C	973.1	.828E+00	.174E-02	.110E-03
2K	65.8	.528E-01	.111E-03	.703E-05
2Q	961.0	.818E+00	.172E-02	.109E-03
2W	865.7	.737E+00	.155E-02	.980E-04
2Z	5.6	.134E-02	.282E-05	.179E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 11

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.208E-04
1I	.549E-04
1O	.333E-04
1U	.119E-03
1B	.334E-04
1E	.513E-04
1G	.505E-04
1J	.124E-03
1M	.813E-04
1P	.119E-03
1S	.106E-03
1V	.102E-03
1Y	.122E-03
1C	.432E-04
1F	.577E-04
1H	.629E-04
1K	.571E-04
1N	.843E-04
1Q	.663E-04
1T	.970E-04
1W	.139E-03
1Z	.129E-03
1D	.469E-04
1L	.105E-03
1R	.120E-03
1X	.128E-03
2G	.146E-03
2J	.150E-03
2P	.142E-03
2V	.144E-03
2Y	.114E-03
2C	.159E-03
2K	.119E-03
2Q	.754E-04
2W	.129E-03
2Z	.749E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 12

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	326.3	.673E-01	.564E-03	.432E-04
1I	437.3	.911E-01	.763E-03	.585E-04
1O	472.4	.986E-01	.826E-03	.633E-04
1U	377.6	.783E-01	.656E-03	.503E-04
1G	1481.9	.315E+00	.264E-02	.202E-03
1J	1257.9	.267E+00	.224E-02	.171E-03
1M	1670.4	.356E+00	.298E-02	.228E-03
1P	1017.8	.216E+00	.181E-02	.138E-03
1S	1193.7	.253E+00	.212E-02	.163E-03
1V	601.8	.126E+00	.106E-02	.811E-04
1Y	241.4	.491E-01	.411E-03	.315E-04
1C	1055.3	.224E+00	.187E-02	.144E-03
1F	1829.7	.390E+00	.327E-02	.250E-03
1H	2751.5	.587E+00	.492E-02	.377E-03
1K	3701.9	.791E+00	.663E-02	.508E-03
1N	4007.8	.857E+00	.718E-02	.550E-03
1Q	4062.8	.869E+00	.728E-02	.558E-03
1T	3208.4	.685E+00	.574E-02	.440E-03
1Z	1046.9	.222E+00	.186E-02	.142E-03
1D	987.8	.209E+00	.175E-02	.134E-03
1L	4449.0	.951E+00	.797E-02	.611E-03
1R	538.6	.113E+00	.945E-03	.724E-04
1X	497.7	.104E+00	.872E-03	.668E-04
2B	546.2	.114E+00	.959E-03	.735E-04
2J	120.3	.231E-01	.194E-03	.148E-04
2C	1340.5	.285E+00	.239E-02	.183E-03
2K	299.8	.616E-01	.516E-03	.396E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 12

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1J	23.6	.157E-02	.228E-04	.173E-05
1M	133.0	.151E-01	.219E-03	.167E-04
1P	430.5	.518E-01	.754E-03	.574E-04
1S	1293.7	.158E+00	.231E-02	.175E-03
1V	1974.5	.243E+00	.353E-02	.269E-03
1Y	1749.9	.215E+00	.313E-02	.238E-03
1C	15.8	.613E-03	.891E-05	.679E-06
1F	35.0	.298E-02	.433E-04	.329E-05
1H	16.4	.683E-03	.993E-05	.756E-06
1K	105.4	.117E-01	.170E-03	.129E-04
1N	345.5	.413E-01	.601E-03	.458E-04
1Q	1014.1	.124E+00	.180E-02	.137E-03
1T	3422.4	.421E+00	.613E-02	.467E-03
1W	4784.8	.590E+00	.858E-02	.653E-03
1Z	7954.1	.981E+00	.143E-01	.109E-02
1D	7580.3	.935E+00	.136E-01	.104E-02
1R	34.6	.293E-02	.427E-04	.325E-05
1X	924.6	.113E+00	.164E-02	.125E-03
1O	40.7	.368E-02	.535E-04	.407E-05
2B	4505.5	.555E+00	.808E-02	.615E-03
2J	2110.6	.259E+00	.377E-02	.287E-03
2P	481.9	.582E-01	.846E-03	.644E-04
2C	9425.5	.116E+01	.169E-01	.129E-02
2K	4762.8	.587E+00	.854E-02	.650E-03
2Q	193.4	.225E-01	.328E-03	.250E-04
2W	12.9	.248E-03	.361E-05	.275E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 12

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1U	40.7	.669E-01	.658E-04	.697E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 12

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.457E-05
1I	.619E-05
1O	.108E-04
1U	.606E-05
1G	.214E-04
1J	.199E-04
1M	.409E-04
1P	.720E-04
1S	.193E-03
1V	.277E-03
1Y	.241E-03
1C	.159E-04
1F	.298E-04
1H	.407E-04
1K	.667E-04
1N	.104E-03
1Q	.196E-03
1T	.513E-03
1W	.653E-03
1Z	.110E-02
1D	.105E-02
1L	.647E-04
1R	.109E-04
1X	.132E-03
2B	.623E-03
2J	.289E-03
2P	.644E-04
2C	.131E-02
2K	.654E-03
2Q	.250E-04
2W	.275E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 13

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	389.7	.809E-01	.678E-03	.519E-04
1I	469.5	.980E-01	.821E-03	.629E-04
1D	3372.7	.721E+00	.604E-02	.463E-03
1U	136.2	.265E-01	.222E-03	.170E-04
1B	1079.0	.229E+00	.192E-02	.147E-03
1E	695.3	.146E+00	.123E-02	.940E-04
1G	1204.7	.256E+00	.214E-02	.164E-03
1J	974.5	.206E+00	.173E-02	.132E-03
1M	1217.8	.258E+00	.217E-02	.166E-03
1P	937.9	.198E+00	.166E-02	.127E-03
1S	998.7	.211E+00	.177E-02	.136E-03
1V	457.8	.955E-01	.800E-03	.613E-04
1Y	461.7	.963E-01	.807E-03	.618E-04
1C	865.9	.183E+00	.153E-02	.117E-03
1T	1658.3	.353E+00	.296E-02	.227E-03
1H	1886.1	.402E+00	.337E-02	.258E-03
1K	2193.5	.468E+00	.392E-02	.300E-03
1N	1890.2	.403E+00	.337E-02	.259E-03
1Q	1689.6	.360E+00	.301E-02	.231E-03
1T	1194.5	.253E+00	.212E-02	.163E-03
1W	997.6	.211E+00	.177E-02	.136E-03
1Z	672.9	.142E+00	.119E-02	.909E-04
1D	6780.4	.145E+01	.122E-01	.932E-03
1L	18618.8	.399E+01	.334E-01	.256E-02
1R	1776.2	.378E+00	.317E-02	.243E-03
1X	2135.6	.455E+00	.382E-02	.292E-03
2B	139.0	.271E-01	.227E-03	.174E-04
2J	71.7	.127E-01	.106E-03	.816E-05
2C	562.4	.118E+00	.988E-03	.757E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 13

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	22.5	.143E-02	.208E-04	.158E-05
1I	105.1	.116E-01	.169E-03	.129E-04
1D	4748.7	.585E+00	.851E-02	.648E-03
1U	471.1	.569E-01	.827E-03	.629E-04
1B	106.2	.118E-01	.171E-03	.130E-04
1E	154.3	.177E-01	.258E-03	.196E-04
1G	218.4	.256E-01	.373E-03	.284E-04
1J	329.5	.394E-01	.573E-03	.436E-04
1M	795.2	.969E-01	.141E-02	.107E-03
1P	625.1	.759E-01	.110E-02	.840E-04
1S	707.0	.860E-01	.125E-02	.952E-04
1V	1298.6	.159E+00	.231E-02	.176E-03
1Y	1299.2	.159E+00	.232E-02	.176E-03
1C	92.5	.101E-01	.147E-03	.112E-04
1T	255.1	.302E-01	.439E-03	.334E-04
1H	335.7	.401E-01	.584E-03	.444E-04
1K	582.0	.706E-01	.103E-02	.781E-04
1N	957.8	.117E+00	.170E-02	.130E-03
1Q	1752.6	.215E+00	.313E-02	.238E-03
1T	1727.2	.212E+00	.308E-02	.235E-03
1W	2440.0	.300E+00	.437E-02	.332E-03
1Z	2693.7	.331E+00	.482E-02	.367E-03
1D	26279.0	.325E+01	.472E-01	.359E-02
1L	3489.7	.430E+00	.625E-02	.476E-03
1R	907.4	.111E+00	.161E-02	.123E-03
1X	3638.1	.448E+00	.652E-02	.496E-03
2B	358.3	.429E-01	.624E-03	.475E-04
2J	302.9	.361E-01	.525E-03	.399E-04
2P	65.7	.677E-02	.985E-04	.750E-05
2Y	14.9	.491E-03	.714E-05	.543E-06
2C	1951.9	.240E+00	.349E-02	.265E-03
2W	88.4	.958E-02	.139E-03	.106E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 13

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 13

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.708E-05
1I	.195E-04
1D	.439E-02
1U	.647E-04
1B	.286E-04
1E	.296E-04
1G	.458E-04
1J	.576E-04
1M	.125E-03
1P	.975E-04
1S	.110E-03
1V	.183E-03
1Y	.183E-03
1C	.236E-04
1T	.309E-03
1H	.717E-04
1K	.110E-03
1N	.157E-03
1Q	.263E-03
1W	.347E-03
1Z	.377E-03
1L	.747E-03
1R	.148E-03
1X	.527E-03
2B	.494E-04
2J	.408E-04
2P	.750E-05
2Y	.543E-06
2C	.274E-03
2W	.106E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 14

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1E	1380.3	.293E+00	.246E-02	.188E-03
1G	581.3	.122E+00	.102E-02	.783E-04
1J	761.7	.161E+00	.135E-02	.103E-03
1M	727.4	.153E+00	.128E-02	.984E-04
1P	799.6	.169E+00	.141E-02	.108E-03
1S	453.9	.946E-01	.793E-03	.608E-04
1V	484.5	.101E+00	.848E-03	.650E-04
1Y	155.1	.306E-01	.256E-03	.196E-04
1C	1634.3	.348E+00	.291E-02	.223E-03
1F	1326.5	.282E+00	.236E-02	.181E-03
1H	1235.8	.262E+00	.220E-02	.168E-03
1K	1210.7	.257E+00	.215E-02	.165E-03
1N	2822.5	.603E+00	.505E-02	.387E-03
1Q	2034.5	.434E+00	.363E-02	.278E-03
1T	954.7	.202E+00	.169E-02	.130E-03
1W	585.2	.123E+00	.103E-02	.788E-04
1Z	421.4	.877E-01	.735E-03	.563E-04
1D	2058.2	.439E+00	.368E-02	.282E-03
1L	1730.1	.368E+00	.309E-02	.236E-03
1R	2050.6	.437E+00	.366E-02	.281E-03
1X	1098.3	.233E+00	.195E-02	.149E-03
1B	1194.7	.254E+00	.212E-02	.163E-03
2B	218.9	.426E-01	.357E-03	.273E-04
2J	86.3	.152E-01	.127E-03	.973E-05
2C	411.9	.824E-01	.691E-03	.529E-04
2K	121.4	.224E-01	.188E-03	.144E-04
2Q	29.8	.348E-02	.292E-04	.224E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 14

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1E	698.7	.850E-01	.124E-02	.941E-04
1M	888.3	.108E+00	.158E-02	.120E-03
1P	1111.6	.136E+00	.198E-02	.151E-03
1V	904.8	.110E+00	.161E-02	.122E-03
1Y	307.3	.366E-01	.533E-03	.405E-04
1C	747.5	.910E-01	.132E-02	.101E-03
1F	1408.4	.173E+00	.251E-02	.191E-03
1H	1441.4	.177E+00	.257E-02	.196E-03
1K	1633.1	.200E+00	.292E-02	.222E-03
1Q	2121.6	.261E+00	.379E-02	.289E-03
1T	2143.8	.264E+00	.383E-02	.292E-03
1W	1560.2	.191E+00	.278E-02	.212E-03
1Z	1466.5	.180E+00	.262E-02	.199E-03
1D	1465.2	.180E+00	.261E-02	.199E-03
1L	1445.4	.177E+00	.258E-02	.196E-03
1X	3125.8	.385E+00	.560E-02	.426E-03
1B	701.1	.853E-01	.124E-02	.944E-04
2B	1584.3	.187E+00	.272E-02	.207E-03
2J	346.4	.399E-01	.580E-03	.442E-04
2P	26.0	.175E-02	.255E-04	.194E-05
2Y	12.1	.994E-04	.145E-05	.110E-06
2C	1883.3	.223E+00	.324E-02	.247E-03
2K	636.9	.745E-01	.108E-02	.825E-04
2Q	150.2	.165E-01	.241E-03	.183E-04
2W	39.8	.340E-02	.494E-04	.376E-05
2Z	17.0	.683E-03	.994E-05	.757E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 14

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1E	85.1	.148E+00	.146E-03	.154E-04
1J	2684.2	.490E+01	.482E-02	.510E-03
1M	2684.2	.490E+01	.482E-02	.510E-03
1P	2684.2	.490E+01	.482E-02	.510E-03
1Y	2684.2	.490E+01	.482E-02	.510E-03
1C	2684.2	.490E+01	.482E-02	.510E-03
1F	2684.2	.490E+01	.482E-02	.510E-03
1K	2684.2	.490E+01	.482E-02	.510E-03
1T	1329.6	.242E+01	.238E-02	.252E-03
1W	1329.6	.242E+01	.238E-02	.252E-03
1Z	18.2	.259E-01	.255E-04	.270E-05
1D	2121.6	.387E+01	.381E-02	.403E-03
1L	1465.2	.267E+01	.263E-02	.278E-03
1R	29.2	.460E-01	.452E-04	.479E-05
1X	1465.2	.267E+01	.263E-02	.278E-03

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 14

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1E	.116E-03
1G	.829E-05
1J	.649E-04
1M	.184E-03
1P	.216E-03
1S	.643E-05
1V	.129E-03
1Y	.966E-04
1C	.178E-03
1F	.264E-03
1H	.213E-03
1K	.293E-03
1N	.410E-04
1Q	.318E-03
1T	.332E-03
1W	.247E-03
1Z	.205E-03
1D	.271E-03
1L	.251E-03
1R	.302E-04
1X	.471E-03
1B	.112E-03
2B	.210E-03
2J	.452E-04
2P	.194E-05
2Y	.110E-06
2C	.252E-03
2K	.840E-04
2Q	.186E-04
2W	.376E-05
2Z	.757E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 15

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	723.7	.147E+00	.123E-02	.943E-04
1O	547.2	.110E+00	.925E-03	.709E-04
1U	446.0	.895E-01	.750E-03	.574E-04
1B	369.6	.737E-01	.618E-03	.473E-04
1E	714.7	.145E+00	.122E-02	.931E-04
1G	967.2	.197E+00	.165E-02	.127E-03
1J	776.2	.158E+00	.132E-02	.101E-03
1M	740.6	.150E+00	.126E-02	.965E-04
1P	918.3	.187E+00	.157E-02	.120E-03
1S	635.8	.129E+00	.108E-02	.826E-04
1V	736.8	.150E+00	.125E-02	.960E-04
1Y	249.2	.488E-01	.409E-03	.313E-04
1C	270.2	.532E-01	.445E-03	.341E-04
1F	413.3	.827E-01	.693E-03	.531E-04
1H	636.2	.129E+00	.108E-02	.827E-04
1K	1023.1	.209E+00	.175E-02	.134E-03
1N	1245.8	.255E+00	.214E-02	.164E-03
1Q	1176.8	.241E+00	.202E-02	.154E-03
1T	996.3	.203E+00	.170E-02	.130E-03
1W	881.8	.180E+00	.150E-02	.115E-03
1Z	625.3	.127E+00	.106E-02	.812E-04
1D	617.9	.125E+00	.105E-02	.803E-04
1L	710.2	.144E+00	.121E-02	.925E-04
1R	1134.2	.232E+00	.194E-02	.149E-03
1X	1164.5	.238E+00	.199E-02	.153E-03
2B	759.1	.154E+00	.129E-02	.990E-04
2J	571.7	.115E+00	.968E-03	.741E-04
2P	183.3	.352E-01	.295E-03	.226E-04
2Y	23.8	.224E-02	.188E-04	.144E-05
2C	882.9	.180E+00	.151E-02	.115E-03
2K	630.0	.128E+00	.107E-02	.819E-04
2Q	276.4	.544E-01	.456E-03	.350E-04
2W	66.7	.111E-01	.930E-04	.712E-05
2Z	16.4	.718E-03	.602E-05	.461E-06
2V	63.0	.103E-01	.867E-04	.664E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 15

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	293.4	.336E-01	.489E-03	.372E-04
1I	636.3	.744E-01	.108E-02	.824E-04
1O	908.5	.107E+00	.155E-02	.118E-03
1U	978.6	.115E+00	.168E-02	.128E-03
1B	106.1	.113E-01	.164E-03	.125E-04
1E	163.7	.182E-01	.264E-03	.201E-04
1G	469.0	.545E-01	.793E-03	.603E-04
1J	567.6	.662E-01	.963E-03	.733E-04
1M	1081.9	.127E+00	.185E-02	.141E-03
1P	1437.3	.170E+00	.247E-02	.188E-03
1S	1542.2	.182E+00	.265E-02	.202E-03
1V	1522.9	.180E+00	.262E-02	.199E-03
1Y	988.6	.116E+00	.169E-02	.129E-03
1C	89.3	.929E-02	.135E-03	.103E-04
1F	191.3	.214E-01	.312E-03	.237E-04
1H	260.3	.296E-01	.431E-03	.328E-04
1K	499.4	.581E-01	.845E-03	.643E-04
1N	914.8	.108E+00	.156E-02	.119E-03
1Q	1512.4	.179E+00	.260E-02	.198E-03
1T	1949.6	.231E+00	.336E-02	.255E-03
1W	2234.7	.265E+00	.385E-02	.293E-03
1Z	2047.4	.242E+00	.353E-02	.268E-03
1D	1960.3	.232E+00	.338E-02	.257E-03
1L	463.1	.538E-01	.783E-03	.596E-04
1R	1521.3	.180E+00	.262E-02	.199E-03
1X	2520.6	.299E+00	.435E-02	.331E-03
2B	1359.2	.160E+00	.233E-02	.178E-03
2J	1156.4	.136E+00	.198E-02	.151E-03
2P	670.0	.784E-01	.114E-02	.868E-04
2Y	82.8	.852E-02	.124E-03	.943E-05
2C	1486.5	.176E+00	.255E-02	.194E-03
2K	1396.1	.165E+00	.240E-02	.183E-03
2Q	1002.2	.118E+00	.172E-02	.131E-03
2W	333.6	.384E-01	.558E-03	.425E-04
2Z	89.3	.929E-02	.135E-03	.103E-04
2V	309.3	.355E-01	.516E-03	.393E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 15

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 15

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.372E-04
1I	.924E-04
1O	.126E-03
1U	.134E-03
1B	.175E-04
1E	.300E-04
1G	.737E-04
1J	.841E-04
1M	.151E-03
1P	.201E-03
1S	.211E-03
1V	.209E-03
1Y	.132E-03
1C	.139E-04
1F	.293E-04
1H	.416E-04
1K	.785E-04
1N	.136E-03
1Q	.214E-03
1T	.269E-03
1W	.305E-03
1Z	.277E-03
1D	.265E-03
1L	.694E-04
1R	.215E-03
1X	.347E-03
2B	.188E-03
2J	.159E-03
2P	.892E-04
2Y	.958E-05
2C	.207E-03
2K	.191E-03
2Q	.134E-03
2W	.432E-04
2Z	.103E-04
2V	.400E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 16

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	20.8	.161E-02	.135E-04	.103E-05
1I	63.6	.105E-01	.876E-04	.671E-05
1O	155.1	.294E-01	.246E-03	.189E-04
1U	164.4	.313E-01	.262E-03	.201E-04
1B	57.4	.918E-02	.770E-04	.590E-05
1E	74.4	.127E-01	.106E-03	.815E-05
1G	77.0	.132E-01	.111E-03	.850E-05
1J	142.6	.268E-01	.225E-03	.172E-04
1M	139.0	.260E-01	.218E-03	.167E-04
1P	136.6	.256E-01	.214E-03	.164E-04
1S	14.8	.378E-03	.317E-05	.243E-06
1V	252.8	.496E-01	.415E-03	.318E-04
1Y	270.1	.531E-01	.445E-03	.341E-04
1C	77.9	.134E-01	.112E-03	.862E-05
1F	155.2	.294E-01	.246E-03	.189E-04
1H	164.3	.313E-01	.262E-03	.201E-04
1N	229.7	.448E-01	.375E-03	.287E-04
1Q	390.0	.779E-01	.653E-03	.500E-04
1T	305.6	.605E-01	.507E-03	.388E-04
1W	73.3	.125E-01	.104E-03	.800E-05
1Z	334.1	.664E-01	.556E-03	.426E-04
1D	304.7	.603E-01	.505E-03	.387E-04
1L	254.7	.499E-01	.419E-03	.321E-04
1R	314.8	.624E-01	.523E-03	.400E-04
1X	444.5	.892E-01	.747E-03	.573E-04
2B	485.5	.976E-01	.818E-03	.627E-04
2J	430.1	.862E-01	.723E-03	.553E-04
2V	296.7	.586E-01	.491E-03	.376E-04
2Y	224.3	.437E-01	.366E-03	.280E-04
2C	463.3	.931E-01	.780E-03	.597E-04
2K	454.4	.912E-01	.764E-03	.586E-04
2Q	466.5	.937E-01	.786E-03	.602E-04
2W	368.7	.735E-01	.616E-03	.472E-04
2Z	405.3	.811E-01	.679E-03	.521E-04
2E	375.2	.749E-01	.627E-03	.481E-04
2G	443.7	.890E-01	.746E-03	.571E-04
2M	339.2	.674E-01	.565E-03	.433E-04
2S	363.9	.725E-01	.608E-03	.466E-04
3B	41.9	.597E-02	.501E-04	.384E-05
3J	28.9	.329E-02	.276E-04	.211E-05
3P	28.1	.312E-02	.262E-04	.200E-05
3V	16.6	.743E-03	.623E-05	.477E-06
3C	38.0	.518E-02	.434E-04	.333E-05
3K	35.3	.462E-02	.387E-04	.297E-05
3Q	27.1	.292E-02	.245E-04	.188E-05
3W	17.6	.954E-03	.799E-05	.612E-06
3Z	19.1	.126E-02	.106E-04	.808E-06
4C	16.3	.684E-03	.573E-05	.439E-06
4K	16.3	.691E-03	.579E-05	.443E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 16

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	41.5	.359E-02	.522E-04	.398E-05
1O	159.3	.176E-01	.256E-03	.195E-04
1U	249.3	.283E-01	.412E-03	.314E-04
1B	26.5	.181E-02	.263E-04	.200E-05
1E	56.2	.535E-02	.777E-04	.592E-05
1G	42.1	.367E-02	.533E-04	.406E-05
1J	138.6	.152E-01	.221E-03	.168E-04
1M	135.1	.147E-01	.214E-03	.163E-04
1P	200.6	.225E-01	.328E-03	.250E-04
1S	21.2	.118E-02	.172E-04	.131E-05
1V	395.5	.457E-01	.665E-03	.506E-04
1Y	457.5	.531E-01	.773E-03	.588E-04
1C	63.1	.617E-02	.897E-04	.683E-05
1F	138.7	.152E-01	.221E-03	.168E-04
1H	143.1	.157E-01	.228E-03	.174E-04
1N	334.6	.385E-01	.560E-03	.426E-04
1Q	549.6	.641E-01	.932E-03	.710E-04
1T	545.3	.636E-01	.925E-03	.704E-04
1W	130.3	.142E-01	.206E-03	.157E-04
1Z	675.3	.791E-01	.115E-02	.875E-04
1D	604.0	.706E-01	.103E-02	.781E-04
1L	353.1	.407E-01	.592E-03	.451E-04
1R	505.4	.588E-01	.856E-03	.651E-04
1X	663.4	.776E-01	.113E-02	.860E-04
2B	730.0	.856E-01	.124E-02	.947E-04
2J	696.9	.816E-01	.119E-02	.904E-04
2V	730.0	.856E-01	.124E-02	.947E-04
2Y	660.6	.773E-01	.112E-02	.856E-04
2C	707.0	.828E-01	.120E-02	.917E-04
2K	698.7	.818E-01	.119E-02	.906E-04
2Q	870.5	.102E+00	.149E-02	.113E-03
2W	745.1	.874E-01	.127E-02	.967E-04
2Z	816.9	.959E-01	.140E-02	.106E-03
2E	665.4	.779E-01	.113E-02	.862E-04
2G	776.8	.911E-01	.133E-02	.101E-03
2M	672.6	.787E-01	.115E-02	.872E-04
2S	768.3	.901E-01	.131E-02	.998E-04
3B	67.8	.673E-02	.979E-04	.745E-05
3J	60.3	.584E-02	.849E-04	.646E-05
3P	57.0	.544E-02	.792E-04	.603E-05
3V	22.0	.128E-02	.186E-04	.142E-05
3Y	19.4	.966E-03	.140E-04	.107E-05
3C	78.7	.803E-02	.117E-03	.889E-05
3K	70.2	.701E-02	.102E-03	.777E-05
3Q	57.5	.550E-02	.800E-04	.609E-05
3W	46.5	.419E-02	.609E-04	.464E-05
3Z	49.6	.456E-02	.663E-04	.505E-05
4B	21.2	.118E-02	.172E-04	.131E-05
4J	15.3	.479E-03	.697E-05	.531E-06
4P	16.1	.575E-03	.837E-05	.637E-06
4Y	11.6	.405E-04	.589E-06	.448E-07
4C	22.8	.137E-02	.199E-04	.152E-05
4K	23.2	.142E-02	.207E-04	.158E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 16

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	8.8	.817E-02	.803E-05	.850E-06
1I	8.8	.817E-02	.803E-05	.850E-06
1O	8.8	.817E-02	.803E-05	.850E-06
1U	8.8	.817E-02	.803E-05	.850E-06
1E	8.8	.817E-02	.803E-05	.850E-06
1G	8.8	.817E-02	.803E-05	.850E-06
1J	7.5	.581E-02	.571E-05	.605E-06
1M	6.2	.361E-02	.356E-05	.376E-06
1P	8.1	.684E-02	.673E-05	.713E-06
1V	11.7	.133E-01	.130E-04	.138E-05
1Y	13.6	.165E-01	.162E-04	.172E-05
1C	6.9	.486E-02	.478E-05	.506E-06
1F	15.7	.203E-01	.200E-04	.211E-05
1H	12.7	.150E-01	.147E-04	.156E-05
1N	13.7	.168E-01	.165E-04	.175E-05
1Q	18.6	.254E-01	.250E-04	.264E-05
1Z	12.7	.150E-01	.147E-04	.156E-05
1D	11.3	.126E-01	.124E-04	.131E-05
1L	13.6	.166E-01	.163E-04	.173E-05
1R	16.1	.210E-01	.207E-04	.219E-05
1X	20.7	.291E-01	.287E-04	.303E-05
2C	8.8	.817E-02	.803E-05	.850E-06
2K	8.8	.817E-02	.803E-05	.850E-06
2W	8.8	.817E-02	.803E-05	.850E-06
2Z	8.8	.817E-02	.803E-05	.850E-06
2S	8.8	.817E-02	.803E-05	.850E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 16

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.199E-06
1I	.478E-05
1O	.216E-04
1U	.336E-04
1B	.262E-05
1E	.687E-05
1G	.505E-05
1J	.187E-04
1M	.181E-04
1P	.268E-04
1S	.134E-05
1V	.542E-04
1Y	.626E-04
1C	.779E-05
1F	.190E-04
1H	.197E-04
1N	.459E-04
1Q	.765E-04
1T	.745E-04
1W	.165E-04
1Z	.922E-04
1D	.824E-04
1L	.486E-04
1R	.696E-04
1X	.923E-04
2B	.101E-03
2J	.962E-04
2V	.987E-04
2Y	.886E-04
2C	.981E-04
2K	.969E-04
2Q	.120E-03
2W	.102E-03
2Z	.112E-03
2E	.913E-04
2G	.107E-03
2M	.918E-04
2S	.105E-03
3B	.785E-05
3J	.669E-05
3P	.624E-05
3V	.147E-05
3Y	.107E-05
3C	.924E-05
3K	.808E-05
3Q	.629E-05
3W	.470E-05
3Z	.513E-05
4B	.131E-05
4J	.531E-06
4P	.637E-06
4Y	.448E-07
4C	.156E-05
4K	.162E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 17

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	156.7	.366E-01	.259E-03	.200E-04
1I	728.2	.182E+00	.129E-02	.995E-04
1O	219.2	.525E-01	.372E-03	.287E-04
1U	224.9	.540E-01	.382E-03	.295E-04
1B	388.7	.956E-01	.676E-03	.523E-04
1E	394.8	.972E-01	.687E-03	.532E-04
1G	432.7	.107E+00	.755E-03	.584E-04
1J	1078.0	.271E+00	.191E-02	.148E-03
1M	1064.4	.267E+00	.189E-02	.146E-03
1P	1768.7	.446E+00	.316E-02	.244E-03
1S	1972.9	.498E+00	.352E-02	.273E-03
1V	1622.3	.409E+00	.289E-02	.224E-03
1Y	359.1	.881E-01	.623E-03	.482E-04
1C	276.8	.672E-01	.475E-03	.367E-04
1F	364.3	.894E-01	.632E-03	.489E-04
1H	784.9	.196E+00	.139E-02	.107E-03
1K	777.0	.194E+00	.137E-02	.106E-03
1N	948.7	.238E+00	.168E-02	.130E-03
1Q	3886.3	.985E+00	.696E-02	.539E-03
1T	4222.5	.107E+01	.757E-02	.585E-03
1W	3366.5	.852E+00	.603E-02	.466E-03
1Z	3222.9	.816E+00	.577E-02	.446E-03
1D	117.9	.268E-01	.189E-03	.147E-04
1L	1600.9	.404E+00	.285E-02	.221E-03
1R	2901.7	.734E+00	.519E-02	.402E-03
1X	5445.5	.138E+01	.976E-02	.755E-03
2A	38.8	.668E-02	.472E-04	.365E-05
2I	26.3	.351E-02	.248E-04	.192E-05
2O	25.3	.326E-02	.230E-04	.178E-05
2U	40.4	.710E-02	.502E-04	.388E-05
2B	628.6	.157E+00	.111E-02	.856E-04
2J	39.0	.674E-02	.476E-04	.368E-05
2P	32.0	.495E-02	.350E-04	.271E-05
2V	38.9	.670E-02	.474E-04	.366E-05
2Y	26.9	.366E-02	.259E-04	.200E-05
2K	1547.3	.390E+00	.276E-02	.213E-03
2Q	33.5	.533E-02	.377E-04	.291E-05
2W	44.9	.822E-02	.582E-04	.450E-05
2Z	53.6	.105E-01	.739E-04	.572E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 17

UNIT # 3 — LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	84.0	.213E-01	.142E-03	.165E-04
1I	460.1	.123E+00	.817E-03	.956E-04
1O	149.4	.389E-01	.259E-03	.303E-04
1U	147.7	.385E-01	.256E-03	.299E-04
1B	293.1	.777E-01	.517E-03	.605E-04
1E	698.2	.187E+00	.125E-02	.146E-03
1G	670.6	.180E+00	.120E-02	.140E-03
1J	1269.3	.341E+00	.227E-02	.266E-03
1M	877.1	.235E+00	.157E-02	.183E-03
1P	1446.3	.389E+00	.259E-02	.303E-03
1S	1657.6	.446E+00	.297E-02	.347E-03
1V	1536.5	.413E+00	.275E-02	.322E-03
1Y	159.1	.415E-01	.276E-03	.323E-04
1C	380.5	.101E+00	.674E-03	.788E-04
1F	684.8	.183E+00	.122E-02	.143E-03
1H	1245.4	.335E+00	.223E-02	.261E-03
1K	1247.3	.335E+00	.223E-02	.261E-03
1N	779.3	.209E+00	.139E-02	.163E-03
1Q	3211.4	.865E+00	.576E-02	.674E-03
1T	3312.7	.893E+00	.594E-02	.695E-03
1W	2587.4	.697E+00	.464E-02	.542E-03
1Z	2512.6	.677E+00	.451E-02	.527E-03
1D	29.9	.665E-02	.443E-04	.518E-05
1L	2202.4	.593E+00	.395E-02	.462E-03
1R	3305.8	.891E+00	.593E-02	.693E-03
1X	4409.3	.119E+01	.791E-02	.925E-03
2A	28.3	.624E-02	.415E-04	.485E-05
2I	22.7	.471E-02	.313E-04	.366E-05
2O	22.3	.460E-02	.306E-04	.358E-05
2U	25.5	.547E-02	.364E-04	.426E-05
2B	545.0	.146E+00	.970E-03	.113E-03
2J	36.3	.837E-02	.557E-04	.652E-05
2P	24.3	.515E-02	.343E-04	.401E-05
2V	25.5	.548E-02	.365E-04	.427E-05
2Y	22.8	.473E-02	.315E-04	.368E-05
2C	692.3	.185E+00	.123E-02	.144E-03
2K	1293.5	.348E+00	.232E-02	.271E-03
2Q	24.4	.516E-02	.344E-04	.402E-05
2W	30.5	.681E-02	.453E-04	.530E-05
2Z	32.9	.746E-02	.497E-04	.581E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 17

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	100.1	.132E-01	.160E-03	.122E-04
1I	681.8	.989E-01	.121E-02	.920E-04
1O	191.8	.267E-01	.325E-03	.248E-04
1U	207.8	.290E-01	.354E-03	.270E-04
1B	265.8	.376E-01	.458E-03	.350E-04
1E	382.5	.548E-01	.668E-03	.510E-04
1G	479.9	.691E-01	.843E-03	.643E-04
1J	1300.8	.190E+00	.232E-02	.177E-03
1M	1412.7	.207E+00	.252E-02	.192E-03
1P	2585.0	.379E+00	.463E-02	.353E-03
1S	2988.4	.439E+00	.535E-02	.409E-03
1V	2552.7	.375E+00	.457E-02	.349E-03
1Y	463.6	.667E-01	.814E-03	.621E-04
1C	545.1	.787E-01	.960E-03	.733E-04
1F	801.7	.117E+00	.142E-02	.108E-03
1H	1087.3	.159E+00	.193E-02	.148E-03
1K	1066.3	.156E+00	.190E-02	.145E-03
1N	1462.1	.214E+00	.261E-02	.199E-03
1Q	5664.1	.833E+00	.102E-01	.776E-03
1T	6518.7	.959E+00	.117E-01	.893E-03
1W	5502.4	.809E+00	.987E-02	.753E-03
1Z	5149.3	.757E+00	.923E-02	.705E-03
1D	357.6	.511E-01	.623E-03	.476E-04
1L	2843.3	.417E+00	.509E-02	.389E-03
1R	4174.5	.614E+00	.748E-02	.571E-03
1X	8116.7	.119E+01	.146E-01	.111E-02
2A	31.4	.303E-02	.369E-04	.282E-05
2U	61.2	.742E-02	.905E-04	.691E-05
2B	986.1	.144E+00	.175E-02	.134E-03
2J	41.0	.444E-02	.542E-04	.414E-05
2P	24.7	.203E-02	.247E-04	.189E-05
2V	38.1	.401E-02	.489E-04	.373E-05
2Y	13.6	.394E-03	.481E-05	.367E-06
2K	2282.9	.335E+00	.408E-02	.312E-03
2Q	35.1	.357E-02	.436E-04	.333E-05
2W	58.7	.704E-02	.859E-04	.656E-05
2Z	85.2	.109E-01	.133E-03	.102E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 17

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	279.5	.235E+00	.495E-03	.313E-04
1I	38.8	.297E-01	.624E-04	.395E-05
1U	22.5	.157E-01	.331E-04	.210E-05
1B	392.4	.332E+00	.698E-03	.442E-04
1E	203.7	.171E+00	.359E-03	.227E-04
1G	151.0	.126E+00	.264E-03	.167E-04
1J	38.1	.291E-01	.612E-04	.387E-05
1M	50.3	.396E-01	.832E-04	.527E-05
1P	51.4	.405E-01	.852E-04	.539E-05
1S	52.7	.416E-01	.875E-04	.554E-05
1V	7.2	.268E-02	.563E-05	.356E-06
1C	806.5	.686E+00	.144E-02	.913E-04
1F	828.4	.705E+00	.148E-02	.938E-04
1H	680.1	.578E+00	.121E-02	.769E-04
1K	639.6	.543E+00	.114E-02	.723E-04
1N	68.8	.553E-01	.116E-03	.736E-05
1Q	145.3	.121E+00	.254E-03	.161E-04
1T	89.4	.730E-01	.153E-03	.971E-05
1W	23.9	.170E-01	.358E-04	.226E-05
1Z	35.2	.266E-01	.560E-04	.354E-05
1D	18.3	.122E-01	.257E-04	.163E-05
1L	657.5	.559E+00	.117E-02	.743E-04
1R	343.2	.290E+00	.610E-03	.386E-04
1X	38.5	.295E-01	.620E-04	.392E-05
2A	5.9	.159E-02	.335E-05	.212E-06
2I	4.2	.108E-03	.227E-06	.143E-07
2U	12.8	.747E-02	.157E-04	.995E-06
2P	5.9	.160E-02	.337E-05	.213E-06
2V	10.0	.506E-02	.106E-04	.674E-06
2C	11.9	.675E-02	.142E-04	.899E-06
2K	16.2	.104E-01	.218E-04	.138E-05
2Q	5.9	.158E-02	.333E-05	.211E-06
2Z	6.5	.214E-02	.451E-05	.285E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 17

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.264E-04
1I	.158E-03
1O	.453E-04
1U	.475E-04
1B	.790E-04
1E	.144E-03
1G	.154E-03
1J	.348E-03
1M	.314E-03
1P	.555E-03
1S	.639E-03
1V	.559E-03
1Y	.854E-04
1C	.131E-03
1F	.206E-03
1H	.318E-03
1K	.315E-03
1N	.308E-03
1Q	.122E-02
1T	.136E-02
1W	.112E-02
1Z	.106E-02
1D	.520E-04
1L	.689E-03
1R	.102E-02
1X	.173E-02
2A	.604E-05
2I	.235E-05
2O	.228E-05
2U	.986E-05
2B	.209E-03
2J	.833E-05
2P	.452E-05
2V	.664E-05
2Y	.273E-05
2C	.863E-04
2K	.491E-03
2Q	.598E-05
2W	.101E-04
2Z	.142E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 18

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	505.9	.125E+00	.887E-03	.686E-04
1I	1051.1	.264E+00	.187E-02	.144E-03
1O	426.0	.105E+00	.743E-03	.575E-04
1U	425.2	.105E+00	.742E-03	.574E-04
1B	758.1	.190E+00	.134E-02	.104E-03
1E	924.3	.232E+00	.164E-02	.127E-03
1G	1198.4	.301E+00	.213E-02	.165E-03
1J	1489.5	.375E+00	.265E-02	.205E-03
1M	1716.7	.433E+00	.306E-02	.237E-03
1P	1821.8	.460E+00	.325E-02	.252E-03
1S	1410.6	.355E+00	.251E-02	.194E-03
1V	465.9	.115E+00	.815E-03	.630E-04
1Y	53.0	.103E-01	.729E-04	.564E-05
1C	573.0	.142E+00	.101E-02	.779E-04
1F	1032.7	.259E+00	.183E-02	.142E-03
1H	1705.9	.430E+00	.304E-02	.235E-03
1K	1679.7	.424E+00	.300E-02	.232E-03
1N	848.9	.213E+00	.150E-02	.116E-03
1Q	2863.1	.725E+00	.512E-02	.396E-03
1T	1826.0	.461E+00	.326E-02	.252E-03
1W	887.5	.222E+00	.157E-02	.122E-03
1Z	869.6	.218E+00	.154E-02	.119E-03
1D	204.2	.487E-01	.344E-03	.266E-04
1L	2567.9	.649E+00	.459E-02	.355E-03
1R	2444.7	.618E+00	.437E-02	.338E-03
1X	1465.5	.369E+00	.261E-02	.202E-03
2B	135.5	.278E-01	.197E-03	.152E-04
2J	68.6	.108E-01	.764E-04	.591E-05
2P	50.8	.628E-02	.444E-04	.343E-05
2V	45.5	.493E-02	.349E-04	.270E-05
2Y	40.8	.375E-02	.265E-04	.205E-05
2C	159.9	.340E-01	.241E-03	.186E-04
2K	161.9	.345E-01	.244E-03	.189E-04
2Q	72.3	.118E-01	.831E-04	.643E-05
2W	118.4	.235E-01	.166E-03	.128E-04
2Z	123.3	.247E-01	.175E-03	.135E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 18

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	434.4	.116E+00	.771E-03	.902E-04
1I	821.0	.220E+00	.147E-02	.171E-03
1O	445.1	.119E+00	.791E-03	.924E-04
1U	436.2	.116E+00	.774E-03	.905E-04
1B	1039.7	.279E+00	.186E-02	.217E-03
1E	1008.5	.271E+00	.180E-02	.211E-03
1G	1249.1	.336E+00	.224E-02	.261E-03
1J	1406.3	.378E+00	.252E-02	.294E-03
1M	1450.7	.390E+00	.260E-02	.304E-03
1P	1759.5	.473E+00	.315E-02	.369E-03
1S	1305.0	.351E+00	.234E-02	.273E-03
1V	433.7	.116E+00	.770E-03	.900E-04
1Y	44.4	.106E-01	.704E-04	.823E-05
1C	617.3	.165E+00	.110E-02	.129E-03
1F	1347.3	.362E+00	.241E-02	.282E-03
1H	2392.8	.644E+00	.429E-02	.502E-03
1K	2400.0	.646E+00	.430E-02	.503E-03
1N	732.1	.196E+00	.131E-02	.153E-03
1Q	2888.4	.778E+00	.518E-02	.606E-03
1T	1790.2	.482E+00	.321E-02	.375E-03
1W	865.0	.232E+00	.154E-02	.181E-03
1Z	846.2	.227E+00	.151E-02	.177E-03
1D	177.6	.465E-01	.310E-03	.362E-04
1L	3278.5	.883E+00	.588E-02	.688E-03
1R	2761.0	.744E+00	.495E-02	.579E-03
1X	1433.2	.385E+00	.257E-02	.300E-03
2B	84.8	.215E-01	.143E-03	.167E-04
2J	43.3	.103E-01	.685E-04	.800E-05
2P	26.5	.574E-02	.382E-04	.446E-05
2V	22.7	.471E-02	.314E-04	.367E-05
2Y	22.6	.469E-02	.313E-04	.365E-05
2C	115.1	.297E-01	.197E-03	.231E-04
2K	114.3	.294E-01	.196E-03	.229E-04
2Q	40.5	.953E-02	.634E-04	.742E-05
2W	82.2	.208E-01	.138E-03	.162E-04
2Z	81.6	.206E-01	.137E-03	.160E-04
3B	20.9	.285E-02	.190E-04	.222E-05
3J	21.0	.288E-02	.192E-04	.224E-05
3P	20.4	.271E-02	.181E-04	.211E-05
3V	20.3	.270E-02	.180E-04	.210E-05
3Y	19.8	.256E-02	.170E-04	.199E-05
3C	20.6	.278E-02	.185E-04	.217E-05
3K	20.5	.275E-02	.183E-04	.214E-05
3Q	21.1	.290E-02	.193E-04	.226E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 18

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	543.6	.785E-01	.957E-03	.731E-04
1I	1267.0	.185E+00	.226E-02	.172E-03
1O	712.4	.103E+00	.126E-02	.962E-04
1U	711.7	.103E+00	.126E-02	.961E-04
1B	1429.1	.209E+00	.255E-02	.195E-03
1E	1808.0	.265E+00	.323E-02	.247E-03
1G	1943.4	.285E+00	.347E-02	.265E-03
1J	2253.1	.330E+00	.403E-02	.308E-03
1M	2622.0	.385E+00	.469E-02	.358E-03
1P	2738.4	.402E+00	.490E-02	.374E-03
1S	2412.0	.354E+00	.432E-02	.329E-03
1V	791.5	.115E+00	.140E-02	.107E-03
1Y	55.3	.655E-02	.799E-04	.610E-05
1C	1067.6	.156E+00	.190E-02	.145E-03
1F	1857.4	.272E+00	.332E-02	.253E-03
1H	3463.3	.509E+00	.620E-02	.474E-03
1K	3332.5	.489E+00	.597E-02	.456E-03
1N	1428.1	.209E+00	.255E-02	.194E-03
1Q	4763.0	.700E+00	.854E-02	.652E-03
1T	3317.1	.487E+00	.594E-02	.454E-03
1W	1591.2	.233E+00	.284E-02	.217E-03
1Z	1569.4	.230E+00	.280E-02	.214E-03
1D	426.8	.613E-01	.747E-03	.571E-04
1L	5400.1	.794E+00	.968E-02	.739E-03
1R	4405.1	.647E+00	.790E-02	.603E-03
1X	2745.8	.403E+00	.491E-02	.375E-03
2B	207.5	.288E-01	.351E-03	.268E-04
2J	55.6	.642E-02	.783E-04	.597E-05
2P	31.2	.281E-02	.343E-04	.262E-05
2V	16.5	.654E-03	.797E-05	.609E-06
2C	197.0	.272E-01	.332E-03	.254E-04
2K	212.1	.295E-01	.359E-03	.274E-04
2Q	85.1	.108E-01	.131E-03	.100E-04
2W	151.3	.205E-01	.250E-03	.191E-04
2Z	178.6	.245E-01	.299E-03	.228E-04
3J	7.4	.143E-03	.175E-05	.133E-06
3C	7.2	.116E-03	.141E-05	.108E-06
3K	8.1	.250E-03	.305E-05	.233E-06
3Q	14.2	.115E-02	.140E-04	.107E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 18

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	177.4	.148E+00	.311E-03	.197E-04
1I	61.1	.488E-01	.103E-03	.649E-05
1O	19.7	.134E-01	.281E-04	.178E-05
1U	26.5	.192E-01	.404E-04	.256E-05
1B	429.1	.363E+00	.764E-03	.483E-04
1E	287.2	.242E+00	.509E-03	.322E-04
1G	255.0	.215E+00	.451E-03	.285E-04
1J	122.3	.101E+00	.213E-03	.135E-04
1M	99.1	.813E-01	.171E-03	.108E-04
1P	32.9	.247E-01	.519E-04	.328E-05
1S	20.9	.144E-01	.303E-04	.192E-05
1V	9.5	.469E-02	.986E-05	.624E-06
1C	980.0	.834E+00	.175E-02	.111E-03
1F	1097.2	.934E+00	.196E-02	.124E-03
1H	601.7	.511E+00	.107E-02	.680E-04
1K	597.0	.507E+00	.107E-02	.674E-04
1N	54.9	.434E-01	.913E-04	.578E-05
1Q	59.3	.472E-01	.993E-04	.629E-05
1T	31.7	.237E-01	.498E-04	.315E-05
1W	16.3	.105E-01	.221E-04	.140E-05
1Z	23.2	.164E-01	.345E-04	.218E-05
1D	22.3	.156E-01	.328E-04	.207E-05
1L	946.0	.805E+00	.169E-02	.107E-03
1R	149.4	.124E+00	.261E-03	.165E-04
1X	31.0	.231E-01	.485E-04	.307E-05
2B	6.6	.257E-02	.539E-05	.341E-06
2J	8.6	.426E-02	.896E-05	.567E-06
2P	5.4	.159E-02	.333E-05	.211E-06
2V	4.6	.888E-03	.187E-05	.118E-06
2C	41.5	.324E-01	.681E-04	.431E-05
2K	45.0	.354E-01	.744E-04	.471E-05
2Q	7.7	.353E-02	.743E-05	.470E-06
2Z	16.7	.112E-01	.235E-04	.149E-05
3J	3.6	.346E-05	.728E-08	.461E-09
3P	4.4	.707E-03	.149E-05	.940E-07
3C	8.6	.424E-02	.892E-05	.565E-06
3K	10.9	.629E-02	.132E-04	.837E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 18

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.134E-03
1I	.287E-03
1O	.156E-03
1U	.155E-03
1B	.337E-03
1E	.386E-03
1G	.437E-03
1J	.501E-03
1M	.560E-03
1P	.615E-03
1S	.509E-03
1V	.166E-03
1Y	.115E-04
1C	.237E-03
1F	.444E-03
1H	.798E-03
1K	.781E-03
1N	.296E-03
1Q	.105E-02
1T	.699E-03
1W	.335E-03
1Z	.329E-03
1D	.811E-04
1L	.119E-02
1R	.978E-03
1X	.571E-03
2B	.381E-04
2J	.113E-04
2P	.559E-05
2V	.303E-05
2Y	.235E-05
2C	.410E-04
2K	.431E-04
2Q	.150E-04
2W	.298E-04
2Z	.337E-04
3B	.133E-05
3J	.147E-05
3P	.127E-05
3V	.126E-05
3Y	.119E-05
3C	.145E-05
3K	.158E-05
3Q	.242E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 19

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	843.2	.212E+00	.150E-02	.116E-03
1I	1176.0	.297E+00	.210E-02	.162E-03
1O	451.1	.113E+00	.797E-03	.617E-04
1U	163.5	.397E-01	.280E-03	.217E-04
1B	1570.8	.397E+00	.281E-02	.217E-03
1E	1432.1	.362E+00	.256E-02	.198E-03
1G	1793.6	.454E+00	.321E-02	.248E-03
1J	1597.5	.404E+00	.286E-02	.221E-03
1M	1191.3	.301E+00	.213E-02	.165E-03
1P	878.0	.221E+00	.156E-02	.121E-03
1S	403.5	.101E+00	.712E-03	.551E-04
1V	188.2	.459E-01	.325E-03	.251E-04
1Y	25.8	.467E-02	.330E-04	.255E-05
1C	976.6	.246E+00	.174E-02	.135E-03
1F	1277.0	.323E+00	.228E-02	.176E-03
1H	1617.4	.409E+00	.289E-02	.224E-03
1K	1589.5	.402E+00	.284E-02	.220E-03
1N	1420.0	.359E+00	.254E-02	.196E-03
1Q	1204.3	.304E+00	.215E-02	.166E-03
1T	635.7	.160E+00	.113E-02	.873E-04
1W	254.0	.627E-01	.443E-03	.343E-04
1Z	260.6	.643E-01	.455E-03	.352E-04
1D	54.1	.119E-01	.838E-04	.648E-05
1L	1703.1	.431E+00	.305E-02	.236E-03
1R	1191.1	.301E+00	.213E-02	.165E-03
1X	210.0	.515E-01	.364E-03	.282E-04
2J	205.3	.461E-01	.326E-03	.252E-04
2P	105.4	.207E-01	.147E-03	.113E-04
2V	93.7	.178E-01	.126E-03	.972E-05
2K	25.8	.506E-03	.358E-05	.277E-06
2W	23.9	.260E-04	.184E-06	.142E-07
2Z	26.6	.698E-03	.494E-05	.382E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 19

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	848.5	.228E+00	.152E-02	.177E-03
1I	1140.3	.306E+00	.204E-02	.238E-03
1O	438.1	.117E+00	.778E-03	.909E-04
1B	1756.3	.473E+00	.315E-02	.368E-03
1E	1631.1	.439E+00	.292E-02	.342E-03
1G	1905.8	.513E+00	.342E-02	.399E-03
1J	1592.7	.428E+00	.285E-02	.333E-03
1M	1204.1	.323E+00	.215E-02	.252E-03
1P	814.0	.218E+00	.145E-02	.170E-03
1S	404.5	.108E+00	.717E-03	.838E-04
1V	196.4	.515E-01	.343E-03	.401E-04
1Y	34.5	.706E-02	.524E-04	.612E-05
1C	1222.9	.329E+00	.219E-02	.256E-03
1F	1556.8	.419E+00	.279E-02	.326E-03
1H	1944.7	.523E+00	.349E-02	.407E-03
1K	1936.1	.521E+00	.347E-02	.406E-03
1N	1543.1	.415E+00	.276E-02	.323E-03
1Q	1222.8	.329E+00	.219E-02	.256E-03
1T	646.0	.173E+00	.115E-02	.135E-03
1W	281.7	.746E-01	.497E-03	.581E-04
1Z	277.8	.735E-01	.489E-03	.572E-04
1D	49.9	.120E-01	.799E-04	.934E-05
1L	2072.3	.558E+00	.371E-02	.434E-03
1R	1345.6	.362E+00	.241E-02	.282E-03
1X	251.0	.663E-01	.441E-03	.516E-04
2B	28.2	.571E-02	.380E-04	.444E-05
2J	310.9	.820E-01	.546E-03	.638E-04
2P	241.2	.632E-01	.421E-03	.492E-04
2V	235.2	.616E-01	.410E-03	.479E-04
2Y	22.9	.428E-02	.285E-04	.334E-05
2C	31.3	.657E-02	.437E-04	.511E-05
2K	31.8	.670E-02	.446E-04	.521E-05
2Q	29.6	.609E-02	.406E-04	.474E-05
2W	33.9	.727E-02	.484E-04	.566E-05
2Z	34.1	.731E-02	.487E-04	.569E-05
2D	24.5	.472E-02	.314E-04	.367E-05
2X	24.7	.477E-02	.318E-04	.372E-05
3C	25.7	.530E-02	.353E-04	.412E-05
3K	25.5	.525E-02	.349E-04	.409E-05
3Q	25.3	.520E-02	.346E-04	.405E-05
3W	25.2	.517E-02	.344E-04	.403E-05
3Z	25.4	.523E-02	.348E-04	.407E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 19

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1450.5	.212E+00	.259E-02	.198E-03
1I	2085.5	.306E+00	.373E-02	.285E-03
1O	829.6	.121E+00	.148E-02	.113E-03
1U	307.0	.439E-01	.536E-03	.409E-04
1B	2870.0	.422E+00	.514E-02	.393E-03
1E	2594.2	.381E+00	.465E-02	.355E-03
1G	3365.8	.495E+00	.603E-02	.461E-03
1J	2858.2	.420E+00	.512E-02	.391E-03
1M	2090.3	.307E+00	.374E-02	.286E-03
1P	1522.4	.223E+00	.272E-02	.208E-03
1S	710.0	.103E+00	.126E-02	.962E-04
1V	319.3	.458E-01	.558E-03	.426E-04
1Y	36.5	.408E-02	.497E-04	.380E-05
1C	1827.2	.268E+00	.327E-02	.249E-03
1F	2356.7	.346E+00	.422E-02	.322E-03
1H	2922.5	.429E+00	.524E-02	.400E-03
1K	2834.2	.416E+00	.508E-02	.388E-03
1N	2430.6	.357E+00	.435E-02	.332E-03
1Q	2097.4	.308E+00	.375E-02	.287E-03
1T	1094.6	.160E+00	.195E-02	.149E-03
1W	441.7	.638E-01	.778E-03	.594E-04
1Z	477.1	.690E-01	.841E-03	.642E-04
1D	121.6	.166E-01	.203E-03	.155E-04
1L	3031.6	.445E+00	.543E-02	.415E-03
1R	2020.6	.296E+00	.362E-02	.276E-03
1X	346.7	.498E-01	.607E-03	.463E-04
2B	30.8	.360E-02	.439E-04	.335E-05
2J	391.7	.568E-01	.692E-03	.529E-04
2P	149.1	.210E-01	.256E-03	.196E-04
2V	110.5	.153E-01	.187E-03	.143E-04
2Y	7.5	.170E-03	.208E-05	.159E-06
2C	44.8	.566E-02	.690E-04	.527E-05
2K	52.4	.679E-02	.828E-04	.632E-05
2Q	40.6	.505E-02	.616E-04	.470E-05
2W	45.1	.571E-02	.696E-04	.531E-05
2Z	56.6	.740E-02	.903E-04	.689E-05
2D	21.7	.225E-02	.275E-04	.210E-05
2X	15.8	.139E-02	.170E-04	.129E-05
3C	16.9	.173E-02	.211E-04	.161E-05
3K	28.1	.338E-02	.412E-04	.315E-05
3Q	20.9	.233E-02	.284E-04	.217E-05
3W	18.2	.193E-02	.236E-04	.180E-05
3Z	23.5	.270E-02	.330E-04	.252E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 19

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	97.3	.813E-01	.171E-03	.108E-04
1I	69.6	.577E-01	.121E-03	.768E-05
1O	7.7	.472E-02	.992E-05	.628E-06
1U	3.3	.999E-03	.210E-05	.133E-06
1B	418.2	.356E+00	.748E-03	.473E-04
1E	259.7	.220E+00	.463E-03	.293E-04
1G	248.0	.210E+00	.442E-03	.280E-04
1J	152.4	.128E+00	.270E-03	.171E-04
1M	81.1	.675E-01	.142E-03	.898E-05
1P	33.9	.271E-01	.571E-04	.361E-05
1S	18.6	.141E-01	.297E-04	.188E-05
1V	7.8	.484E-02	.102E-04	.643E-06
1Y	2.7	.486E-03	.102E-05	.646E-07
1C	755.4	.644E+00	.135E-02	.857E-04
1F	581.7	.495E+00	.104E-02	.659E-04
1H	413.0	.351E+00	.738E-03	.467E-04
1K	392.1	.333E+00	.701E-03	.443E-04
1N	119.7	.101E+00	.211E-03	.134E-04
1Q	74.2	.616E-01	.129E-03	.819E-05
1T	19.3	.147E-01	.309E-04	.196E-05
1W	11.6	.805E-02	.169E-04	.107E-05
1Z	15.9	.117E-01	.247E-04	.156E-05
1D	12.0	.843E-02	.177E-04	.112E-05
1L	280.8	.238E+00	.501E-03	.317E-04
1R	77.6	.645E-01	.136E-03	.859E-05
1X	15.0	.110E-01	.230E-04	.146E-05
2B	5.3	.192E-02	.403E-05	.255E-06
2J	41.3	.327E-01	.688E-04	.435E-05
2P	36.9	.289E-01	.607E-04	.384E-05
2V	27.4	.208E-01	.437E-04	.276E-05
2C	19.4	.139E-01	.293E-04	.186E-05
2K	21.8	.160E-01	.337E-04	.213E-05
2Q	3.3	.172E-03	.361E-06	.228E-07
2Z	9.1	.518E-02	.109E-04	.689E-06
2D	8.8	.491E-02	.103E-04	.653E-06
3C	11.7	.864E-02	.182E-04	.115E-05
3K	12.0	.892E-02	.188E-04	.119E-05
3Q	3.0	.118E-02	.249E-05	.158E-06
3W	1.7	.761E-04	.160E-06	.101E-07
3Z	4.6	.261E-02	.549E-05	.347E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 19

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.314E-03
1I	.441E-03
1O	.172E-03
1U	.427E-04
1B	.634E-03
1E	.577E-03
1G	.722E-03
1J	.610E-03
1M	.450E-03
1P	.319E-03
1S	.151E-03
1V	.687E-04
1Y	.767E-05
1C	.420E-03
1F	.537E-03
1H	.665E-03
1K	.652E-03
1N	.542E-03
1Q	.454E-03
1T	.237E-03
1W	.970E-04
1Z	.101E-03
1D	.217E-04
1L	.696E-03
1R	.458E-03
1X	.796E-04
2B	.603E-05
2J	.934E-04
2P	.502E-04
2V	.439E-04
2Y	.215E-05
2C	.847E-05
2K	.963E-05
2Q	.754E-05
2W	.869E-05
2Z	.104E-04
2D	.434E-05
2X	.351E-05
3C	.417E-05
3K	.569E-05
3Q	.460E-05
3W	.421E-05
3Z	.497E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 20

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	728.8	.184E+00	.130E-02	.100E-03
1I	974.3	.246E+00	.174E-02	.135E-03
1O	533.5	.134E+00	.947E-03	.733E-04
1U	514.6	.129E+00	.913E-03	.706E-04
1B	691.7	.174E+00	.123E-02	.953E-04
1E	906.8	.229E+00	.162E-02	.125E-03
1G	899.2	.227E+00	.160E-02	.124E-03
1J	1238.4	.313E+00	.221E-02	.171E-03
1M	961.9	.243E+00	.172E-02	.133E-03
1P	927.6	.234E+00	.166E-02	.128E-03
1S	628.5	.158E+00	.112E-02	.865E-04
1V	273.9	.680E-01	.481E-03	.372E-04
1Y	55.9	.126E-01	.889E-04	.688E-05
1F	908.2	.229E+00	.162E-02	.125E-03
1H	1230.6	.311E+00	.220E-02	.170E-03
1K	501.1	.126E+00	.889E-03	.688E-04
1N	1124.5	.284E+00	.201E-02	.155E-03
1Q	1112.5	.281E+00	.199E-02	.154E-03
1T	651.3	.164E+00	.116E-02	.896E-04
1W	269.2	.668E-01	.472E-03	.365E-04
1Z	281.2	.698E-01	.494E-03	.382E-04
1D	70.4	.163E-01	.115E-03	.889E-05
1L	1601.0	.405E+00	.287E-02	.222E-03
1R	1176.4	.297E+00	.210E-02	.163E-03
1X	340.2	.848E-01	.600E-03	.464E-04
2B	75.1	.123E-01	.869E-04	.672E-05
2C	92.7	.167E-01	.118E-03	.916E-05
2K	93.9	.171E-01	.121E-03	.934E-05
2L	33.5	.170E-02	.120E-04	.932E-06
3Q	229.3	.551E-01	.390E-03	.301E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 20

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	704.8	.189E+00	.126E-02	.147E-03
1I	881.9	.237E+00	.158E-02	.184E-03
1O	479.7	.128E+00	.854E-03	.998E-04
1U	474.8	.127E+00	.845E-03	.988E-04
1B	704.6	.189E+00	.126E-02	.147E-03
1E	944.6	.254E+00	.169E-02	.197E-03
1G	872.5	.234E+00	.156E-02	.182E-03
1J	1190.4	.320E+00	.213E-02	.249E-03
1M	880.0	.236E+00	.157E-02	.184E-03
1P	844.3	.227E+00	.151E-02	.176E-03
1S	580.0	.155E+00	.103E-02	.121E-03
1V	251.5	.666E-01	.444E-03	.518E-04
1Y	64.0	.160E-01	.107E-03	.125E-04
1F	980.8	.263E+00	.175E-02	.205E-03
1H	1252.0	.337E+00	.224E-02	.262E-03
1N	1093.0	.294E+00	.196E-02	.229E-03
1Q	1053.3	.283E+00	.188E-02	.220E-03
1T	618.5	.166E+00	.110E-02	.129E-03
1W	277.4	.736E-01	.490E-03	.573E-04
1Z	282.7	.750E-01	.500E-03	.584E-04
1D	71.8	.181E-01	.121E-03	.141E-04
1L	1630.5	.439E+00	.292E-02	.342E-03
1R	1124.9	.302E+00	.201E-02	.235E-03
1X	318.2	.846E-01	.563E-03	.659E-04
2B	104.7	.266E-01	.177E-03	.207E-04
2J	35.1	.778E-02	.518E-04	.605E-05
2P	25.4	.518E-02	.345E-04	.403E-05
2V	24.9	.504E-02	.335E-04	.392E-05
2Y	24.4	.491E-02	.327E-04	.382E-05
2C	114.1	.291E-01	.194E-03	.227E-04
2K	114.1	.291E-01	.194E-03	.227E-04
2Q	28.4	.596E-02	.397E-04	.464E-05
2W	36.7	.823E-02	.548E-04	.640E-05
2Z	36.6	.820E-02	.546E-04	.638E-05
2X	27.3	.568E-02	.378E-04	.442E-05
2L	41.8	.958E-02	.638E-04	.746E-05
2R	28.9	.611E-02	.407E-04	.475E-05
3C	26.8	.582E-02	.387E-04	.453E-05
3K	26.8	.581E-02	.387E-04	.452E-05
3L	5.7	.127E-03	.849E-06	.992E-07
3D	5.4	.416E-04	.277E-06	.324E-07

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 20

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1239.0	.181E+00	.221E-02	.169E-03
1I	1576.4	.231E+00	.282E-02	.215E-03
1O	889.5	.130E+00	.158E-02	.121E-03
1U	871.0	.127E+00	.155E-02	.118E-03
1B	1138.7	.166E+00	.203E-02	.155E-03
1E	1600.1	.234E+00	.286E-02	.218E-03
1G	1594.6	.234E+00	.285E-02	.218E-03
1J	2082.4	.306E+00	.373E-02	.284E-03
1M	1721.2	.252E+00	.308E-02	.235E-03
1P	1607.2	.236E+00	.287E-02	.219E-03
1S	1138.8	.167E+00	.203E-02	.155E-03
1V	478.7	.692E-01	.844E-03	.645E-04
1Y	85.9	.114E-01	.139E-03	.106E-04
1C	1194.8	.175E+00	.213E-02	.163E-03
1F	1633.5	.239E+00	.292E-02	.223E-03
1H	2216.1	.325E+00	.397E-02	.303E-03
1K	902.0	.132E+00	.161E-02	.123E-03
1N	2029.3	.298E+00	.363E-02	.277E-03
1Q	1982.4	.291E+00	.355E-02	.271E-03
1T	1121.7	.164E+00	.200E-02	.153E-03
1W	465.0	.672E-01	.820E-03	.626E-04
1Z	501.0	.725E-01	.885E-03	.675E-04
1D	159.0	.221E-01	.270E-03	.206E-04
1L	2840.2	.417E+00	.509E-02	.388E-03
1R	2055.8	.302E+00	.368E-02	.281E-03
1X	599.0	.870E-01	.106E-02	.810E-04
2B	134.7	.186E-01	.227E-03	.173E-04
2J	43.1	.515E-02	.628E-04	.479E-05
2P	14.4	.906E-03	.111E-04	.844E-06
2V	10.4	.326E-03	.397E-05	.303E-06
2Y	8.6	.501E-04	.611E-06	.466E-07
2C	167.0	.234E-01	.285E-03	.218E-04
2K	169.1	.237E-01	.289E-03	.221E-04
2Q	30.0	.320E-02	.391E-04	.298E-05
2W	42.6	.507E-02	.619E-04	.472E-05
2Z	54.4	.680E-02	.829E-04	.633E-05
2D	10.5	.337E-03	.412E-05	.314E-06
2X	19.3	.164E-02	.199E-04	.152E-05
2L	75.5	.991E-02	.121E-03	.923E-05
2R	40.2	.472E-02	.575E-04	.439E-05
3C	16.1	.763E-03	.930E-05	.710E-06
3K	29.1	.269E-02	.328E-04	.250E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 20

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	174.6	.148E+00	.312E-03	.197E-04
1I	79.7	.672E-01	.141E-03	.894E-05
1O	18.0	.144E-01	.303E-04	.192E-05
1U	25.0	.205E-01	.430E-04	.272E-05
1B	309.8	.264E+00	.555E-03	.351E-04
1E	295.1	.251E+00	.528E-03	.334E-04
1G	193.9	.165E+00	.346E-03	.219E-04
1J	130.1	.110E+00	.232E-03	.147E-04
1P	56.5	.473E-01	.995E-04	.630E-05
1S	27.2	.224E-01	.470E-04	.297E-05
1V	12.9	.101E-01	.212E-04	.134E-05
1Y	4.0	.246E-02	.516E-05	.327E-06
1C	756.6	.646E+00	.136E-02	.859E-04
1F	580.3	.495E+00	.104E-02	.659E-04
1H	416.1	.355E+00	.746E-03	.472E-04
1K	176.6	.150E+00	.315E-03	.200E-04
1N	142.1	.121E+00	.253E-03	.160E-04
1Q	101.8	.861E-01	.181E-03	.115E-04
1T	35.7	.296E-01	.623E-04	.394E-05
1W	14.0	.110E-01	.232E-04	.147E-05
1Z	28.6	.235E-01	.494E-04	.312E-05
1D	18.5	.149E-01	.313E-04	.198E-05
1L	390.2	.333E+00	.699E-03	.443E-04
1R	123.2	.104E+00	.219E-03	.139E-04
1X	17.8	.143E-01	.301E-04	.190E-05
2B	5.8	.285E-02	.600E-05	.379E-06
2J	5.1	.228E-02	.480E-05	.304E-06
2P	3.3	.713E-03	.150E-05	.948E-07
2V	2.6	.948E-04	.199E-06	.126E-07
2C	16.3	.118E-01	.248E-04	.157E-05
2K	18.9	.141E-01	.296E-04	.187E-05
2Q	4.5	.176E-02	.369E-05	.234E-06
2W	3.3	.752E-03	.158E-05	.100E-06
2Z	8.8	.540E-02	.114E-04	.719E-06
2D	4.3	.160E-02	.337E-05	.213E-06
2X	3.2	.635E-03	.134E-05	.845E-07
2L	15.7	.113E-01	.238E-04	.151E-05
2R	4.9	.208E-02	.437E-05	.276E-06
3C	11.0	.599E-02	.126E-04	.797E-06
3K	15.7	.993E-02	.209E-04	.132E-05
3D	4.3	.267E-03	.561E-06	.355E-07

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 20

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.267E-03
1I	.337E-03
1O	.187E-03
1U	.183E-03
1B	.254E-03
1E	.349E-03
1G	.338E-03
1J	.449E-03
1M	.356E-03
1P	.336E-03
1S	.235E-03
1V	.986E-04
1Y	.186E-04
1C	.170E-03
1F	.361E-03
1H	.477E-03
1K	.130E-03
1N	.428E-03
1Q	.416E-03
1T	.237E-03
1W	.999E-04
1Z	.106E-03
1D	.299E-04
1L	.614E-03
1R	.436E-03
1X	.124E-03
2B	.303E-04
2J	.843E-05
2P	.326E-05
2V	.265E-05
2Y	.233E-05
2C	.362E-04
2K	.365E-04
2Q	.578E-05
2W	.856E-05
2Z	.102E-04
2D	.332E-06
2X	.417E-05
2L	.139E-04
2R	.725E-05
3C	.348E-05
3K	.531E-05
3Q	.248E-05
3L	.592E-07
3D	.223E-07

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 21

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	25.2	.323E-02	.228E-04	.177E-05
1I	49.4	.937E-02	.662E-04	.512E-05
1O	111.5	.252E-01	.178E-03	.138E-04
1U	107.2	.241E-01	.170E-03	.132E-04
1B	52.2	.101E-01	.713E-04	.551E-05
1E	58.0	.116E-01	.817E-04	.632E-05
1G	34.4	.556E-02	.393E-04	.304E-05
1J	97.2	.215E-01	.152E-03	.118E-04
1M	126.6	.290E-01	.205E-03	.159E-04
1P	166.7	.392E-01	.277E-03	.214E-04
1S	206.2	.492E-01	.348E-03	.269E-04
1V	255.1	.617E-01	.436E-03	.337E-04
1Y	222.0	.532E-01	.376E-03	.291E-04
1C	78.9	.169E-01	.119E-03	.923E-05
1H	137.1	.317E-01	.224E-03	.173E-04
1K	139.4	.323E-01	.228E-03	.176E-04
1N	41.7	.743E-02	.525E-04	.406E-05
1T	371.3	.912E-01	.645E-03	.499E-04
1W	38.2	.654E-02	.463E-04	.358E-05
1Z	35.4	.581E-02	.411E-04	.318E-05
1D	32.7	.512E-02	.362E-04	.280E-05
1L	26.3	.352E-02	.249E-04	.192E-05
1R	37.9	.645E-02	.456E-04	.353E-05
1X	42.8	.769E-02	.544E-04	.421E-05
2B	301.0	.733E-01	.519E-03	.401E-04
2J	204.5	.488E-01	.345E-03	.267E-04
2P	107.1	.240E-01	.170E-03	.131E-04
2V	47.3	.885E-02	.626E-04	.484E-05
2Y	21.8	.236E-02	.167E-04	.129E-05
2C	364.6	.895E-01	.633E-03	.490E-04
2K	35.1	.574E-02	.406E-04	.314E-05
2H	33.5	.534E-02	.377E-04	.292E-05
2Q	13.6	.291E-03	.206E-05	.159E-06
2W	61.9	.126E-01	.887E-04	.686E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 21

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	45.0	.107E-01	.715E-04	.836E-05
1I	71.1	.178E-01	.118E-03	.138E-04
1O	132.9	.345E-01	.229E-03	.268E-04
1U	129.7	.336E-01	.224E-03	.261E-04
1B	72.8	.182E-01	.121E-03	.142E-04
1E	76.0	.191E-01	.127E-03	.149E-04
1G	45.8	.110E-01	.730E-04	.853E-05
1J	120.5	.311E-01	.207E-03	.242E-04
1M	148.9	.388E-01	.258E-03	.302E-04
1P	189.1	.496E-01	.330E-03	.386E-04
1S	225.5	.594E-01	.396E-03	.463E-04
1V	277.7	.735E-01	.490E-03	.572E-04
1Y	247.1	.653E-01	.435E-03	.508E-04
1C	99.3	.254E-01	.169E-03	.198E-04
1H	157.7	.411E-01	.274E-03	.320E-04
1K	159.6	.416E-01	.277E-03	.324E-04
1N	43.8	.104E-01	.693E-04	.810E-05
1Q	118.4	.305E-01	.203E-03	.238E-04
1T	394.5	.105E+00	.700E-03	.818E-04
1W	39.1	.914E-02	.609E-04	.712E-05
1Z	37.5	.871E-02	.580E-04	.678E-05
1D	35.1	.807E-02	.537E-04	.628E-05
1L	28.7	.632E-02	.421E-04	.492E-05
1R	41.2	.971E-02	.647E-04	.756E-05
1X	45.9	.110E-01	.731E-04	.854E-05
2B	321.7	.854E-01	.569E-03	.665E-04
2J	230.9	.609E-01	.405E-03	.474E-04
2P	133.6	.346E-01	.231E-03	.270E-04
2V	68.6	.171E-01	.114E-03	.133E-04
2Y	38.3	.652E-02	.434E-04	.507E-05
2C	396.3	.103E+00	.687E-03	.803E-04
2K	38.7	.665E-02	.443E-04	.517E-05
2H	36.7	.609E-02	.405E-04	.474E-05
2Q	16.7	.708E-03	.471E-05	.551E-06
2W	83.8	.188E-01	.125E-03	.146E-04
3B	40.5	.952E-02	.634E-04	.741E-05
3J	32.7	.742E-02	.494E-04	.577E-05
3P	26.7	.579E-02	.386E-04	.451E-05
3C	45.5	.109E-01	.723E-04	.845E-05
3Q	29.9	.664E-02	.442E-04	.517E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 21

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	39.4	.419E-02	.512E-04	.391E-05
1I	87.5	.113E-01	.138E-03	.105E-04
1O	201.3	.281E-01	.342E-03	.261E-04
1U	193.4	.269E-01	.328E-03	.250E-04
1B	78.6	.998E-02	.122E-03	.929E-05
1E	92.4	.120E-01	.147E-03	.112E-04
1G	57.9	.692E-02	.844E-04	.645E-05
1J	169.2	.233E-01	.285E-03	.217E-04
1M	227.5	.319E-01	.389E-03	.297E-04
1P	299.2	.425E-01	.518E-03	.396E-04
1S	377.1	.540E-01	.658E-03	.502E-04
1V	470.3	.677E-01	.826E-03	.630E-04
1Y	397.0	.569E-01	.694E-03	.530E-04
1C	134.0	.181E-01	.221E-03	.169E-04
1H	241.5	.340E-01	.415E-03	.316E-04
1K	244.3	.344E-01	.419E-03	.320E-04
1N	75.8	.956E-02	.117E-03	.890E-05
1T	679.9	.986E-01	.120E-02	.918E-04
1W	66.3	.817E-02	.996E-04	.761E-05
1Z	61.8	.750E-02	.915E-04	.698E-05
1D	57.0	.679E-02	.828E-04	.632E-05
1R	64.7	.793E-02	.967E-04	.738E-05
1X	74.4	.935E-02	.114E-03	.871E-05
2B	527.3	.761E-01	.928E-03	.709E-04
2J	355.4	.508E-01	.619E-03	.473E-04
2P	188.0	.261E-01	.318E-03	.243E-04
2V	85.4	.110E-01	.134E-03	.102E-04
2Y	42.0	.275E-02	.336E-04	.256E-05
2C	614.1	.871E-01	.106E-02	.811E-04
2K	57.0	.497E-02	.607E-04	.463E-05
2H	59.2	.529E-02	.645E-04	.492E-05
2Q	24.3	.154E-03	.188E-05	.144E-06
2W	110.4	.128E-01	.157E-03	.120E-04
2Z	116.6	.138E-01	.168E-03	.128E-04
3B	38.6	.459E-02	.560E-04	.427E-05
3J	24.0	.244E-02	.297E-04	.227E-05
3P	11.9	.648E-03	.791E-05	.604E-06
3C	45.6	.562E-02	.685E-04	.523E-05
3K	46.2	.571E-02	.696E-04	.531E-05
3Q	20.9	.197E-02	.241E-04	.184E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 21

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	20.6	.117E-01	.245E-04	.155E-05
1I	14.7	.660E-02	.139E-04	.878E-06
1O	19.9	.111E-01	.233E-04	.147E-05
1U	22.7	.135E-01	.283E-04	.179E-05
1B	17.9	.933E-02	.196E-04	.124E-05
1E	21.1	.121E-01	.254E-04	.161E-05
1G	13.2	.530E-02	.111E-04	.706E-06
1J	25.6	.160E-01	.335E-04	.212E-05
1M	27.7	.177E-01	.372E-04	.236E-05
1P	29.6	.193E-01	.406E-04	.257E-05
1S	29.8	.195E-01	.411E-04	.260E-05
1V	26.1	.164E-01	.344E-04	.218E-05
1Y	17.7	.916E-02	.193E-04	.122E-05
1C	26.6	.168E-01	.353E-04	.223E-05
1H	36.4	.251E-01	.528E-04	.334E-05
1K	38.3	.267E-01	.562E-04	.356E-05
1N	11.3	.367E-02	.772E-05	.489E-06
1T	47.5	.346E-01	.728E-04	.461E-05
2B	23.8	.169E-01	.355E-04	.225E-05
2J	12.6	.730E-02	.153E-04	.971E-06
2P	6.8	.232E-02	.489E-05	.309E-06
2V	4.7	.583E-03	.123E-05	.776E-07
2Y	4.7	.212E-02	.446E-05	.282E-06
2C	34.8	.278E-01	.585E-04	.370E-05
2K	3.6	.114E-02	.240E-05	.152E-06
2H	2.7	.340E-03	.714E-06	.452E-07
2W	6.1	.332E-02	.699E-05	.442E-06
2Z	8.6	.544E-02	.114E-04	.723E-06
3B	3.4	.155E-02	.326E-05	.206E-06
3J	3.5	.157E-02	.330E-05	.209E-06
3P	2.8	.102E-02	.214E-05	.136E-06
3C	7.1	.469E-02	.986E-05	.624E-06
3K	7.9	.533E-02	.112E-04	.710E-06
3Q	3.8	.187E-02	.394E-05	.249E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 21

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.917E-05
1I	.193E-04
1O	.434E-04
1U	.419E-04
1B	.183E-04
1E	.207E-04
1G	.118E-04
1J	.373E-04
1M	.492E-04
1P	.646E-04
1S	.803E-04
1V	.100E-03
1Y	.858E-04
1C	.296E-04
1H	.525E-04
1K	.531E-04
1N	.141E-04
1Q	.142E-04
1T	.145E-03
1W	.122E-04
1Z	.113E-04
1D	.103E-04
1L	.310E-05
1R	.122E-04
1X	142E-04
2B	.114E-03
2J	.779E-04
2P	.415E-04
2V	.186E-04
2Y	.572E-05
2C	.133E-03
2K	.799E-05
2H	.900E-05
2Q	.486E-06
2W	.213E-04
2Z	.129E-04
3B	.871E-05
3J	.573E-05
3P	.331E-05
3C	.103E-04
3K	.537E-05
3Q	.495E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 22

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	1360.1	.289E+00	.242E-02	.186E-03
1O	70.3	.124E-01	.104E-03	.795E-05
1U	110.1	.209E-01	.175E-03	.134E-04
1B	2075.8	.442E+00	.371E-02	.284E-03
1E	4199.4	.898E+00	.752E-02	.576E-03
1G	4025.9	.861E+00	.721E-02	.553E-03
1J	4247.4	.908E+00	.761E-02	.583E-03
1M	2251.0	.480E+00	.402E-02	.308E-03
1P	2013.9	.429E+00	.360E-02	.276E-03
1Y	432.9	.902E-01	.755E-03	.579E-04
1C	1559.4	.332E+00	.278E-02	.213E-03
1F	2733.0	.583E+00	.489E-02	.375E-03
1Z	3040.4	.649E+00	.544E-02	.417E-03
1D	1144.4	.243E+00	.203E-02	.156E-03
1R	5826.5	.125E+01	.104E-01	.800E-03
1X	3691.8	.789E+00	.661E-02	.507E-03
1S	2466.3	.526E+00	.441E-02	.338E-03
1V	1738.7	.370E+00	.310E-02	.238E-03
1H	3792.0	.811E+00	.679E-02	.520E-03
1K	3528.4	.754E+00	.632E-02	.484E-03
1Q	7281.2	.156E+01	.131E-01	.100E-02
1T	5230.2	.112E+01	.938E-02	.718E-03
1W	4175.9	.893E+00	.748E-02	.573E-03
1L	5492.9	.118E+01	.985E-02	.754E-03
2B	693.6	.146E+00	.122E-02	.938E-04
2C	1229.6	.261E+00	.219E-02	.168E-03
2T	16.7	.903E-03	.757E-05	.580E-06
2W	13.7	.266E-03	.223E-05	.171E-06
2Z	21.4	.192E-02	.161E-04	.123E-05
3K	14.9	.730E-03	.612E-05	.469E-06
3Z	12.8	.265E-03	.222E-05	.170E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 22

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	14.9	.501E-03	.729E-05	.555E-06
1O	462.2	.558E-01	.811E-03	.617E-04
1U	408.2	.491E-01	.714E-03	.543E-04
1E	15.8	.605E-03	.880E-05	.670E-06
1G	29.3	.228E-02	.331E-04	.252E-05
1J	79.2	.845E-02	.123E-03	.935E-05
1M	116.0	.130E-01	.189E-03	.144E-04
1P	1672.4	.205E+00	.299E-02	.227E-03
1Y	4963.4	.612E+00	.890E-02	.677E-03
1C	37.5	.329E-02	.478E-04	.364E-05
1F	102.9	.114E-01	.165E-03	.126E-04
1Z	18011.3	.222E+01	.323E-01	.246E-02
1D	11195.0	.138E+01	.201E-01	.153E-02
1R	2594.8	.319E+00	.464E-02	.353E-03
1X	16810.4	.208E+01	.302E-01	.230E-02
1S	6474.8	.799E+00	.116E-01	.884E-03
1V	12024.7	.148E+01	.216E-01	.164E-02
1H	132.6	.150E-01	.219E-03	.166E-04
1K	706.3	.859E-01	.125E-02	.951E-04
1N	898.4	.110E+00	.160E-02	.121E-03
1Q	3028.5	.373E+00	.542E-02	.413E-03
1T	10022.4	.124E+01	.180E-01	.137E-02
1W	18087.0	.223E+01	.325E-01	.247E-02
1L	191.7	.223E-01	.325E-03	.247E-04
2B	9453.6	.117E+01	.170E-01	.129E-02
2V	55.9	.556E-02	.808E-04	.615E-05
2Y	106.0	.117E-01	.171E-03	.130E-04
2C	12797.8	.158E+01	.230E-01	.175E-02
2K	12360.2	.153E+01	.222E-01	.169E-02
2T	69.5	.724E-02	.105E-03	.802E-05
2W	92.6	.101E-01	.147E-03	.112E-04
2Z	129.8	.147E-01	.214E-03	.163E-04
3B	110.5	.126E-01	.183E-03	.139E-04
3J	56.6	.593E-02	.862E-04	.656E-05
3Y	14.1	.680E-03	.989E-05	.753E-06
3C	108.1	.123E-01	.179E-03	.136E-04
3K	133.2	.154E-01	.224E-03	.170E-04
3Q	10.0	.167E-03	.243E-05	.185E-06
3W	52.2	.538E-02	.782E-04	.595E-05
3Z	65.4	.702E-02	.102E-03	.777E-05
3T	11.9	.402E-03	.585E-05	.445E-06
3X	15.2	.808E-03	.118E-04	.895E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 22

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	578.0	.105E+01	.103E-02	.109E-03
1I	101.9	.179E+00	.176E-03	.186E-04
1O	13.3	.170E-01	.167E-04	.177E-05
1U	34.8	.561E-01	.552E-04	.584E-05
1B	1852.4	.338E+01	.332E-02	.352E-03
1E	818.8	.149E+01	.146E-02	.155E-03
1G	956.7	.174E+01	.171E-02	.181E-03
1J	262.5	.472E+00	.464E-03	.492E-04
1M	141.1	.250E+00	.246E-03	.261E-04
1P	84.8	.148E+00	.145E-03	.154E-04
1Y	20.0	.291E-01	.287E-04	.303E-05
~~1C~~ OMIT	13.4	.171E-01	.168E-04	.178E-05
1C	1326.3	.242E+01	.238E-02	.251E-03
1F	1352.4	.246E+01	.242E-02	.256E-03
1D	23.4	.354E-01	.348E-04	.368E-05
1R	66.1	.113E+00	.112E-03	.118E-04
1X	19.5	.283E-01	.278E-04	.294E-05
1S	57.0	.967E-01	.952E-04	.101E-04
1H	639.8	.116E+01	.114E-02	.121E-03
1K	475.2	.861E+00	.847E-03	.896E-04
1N	296.5	.534E+00	.526E-03	.556E-04
1Q	81.6	.142E+00	.139E-03	.148E-04
1T	42.4	.701E-01	.689E-04	.730E-05
1W	46.4	.775E-01	.762E-04	.807E-05
1L	323.8	.584E+00	.575E-03	.608E-04
2B	58.9	.100E+00	.987E-04	.104E-04
2C	106.9	.188E+00	.185E-03	.196E-04
2K	17.7	.250E-01	.246E-04	.260E-05
2Q	6.5	.450E-02	.443E-05	.469E-06
3B	2.8	.341E-03	.335E-06	.355E-07
3K	4.9	.425E-02	.419E-05	.443E-06
3Z	3.3	.140E-02	.138E-05	.146E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 22

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.116E-04
1I	.222E-04
1O	.628E-04
1U	.564E-04
1B	.673E-04
1E	.781E-04
1G	.802E-04
1J	.763E-04
1M	.498E-04
1P	.258E-03
1Y	.684E-03
1C	.530E-04
1F	.794E-04
1Z	.251E-02
1D	.155E-02
1R	.439E-03
1X	.235E-02
1S	.921E-03
1V	.167E-02
1H	.845E-04
1K	.156E-03
1N	.127E-03
1Q	.520E-03
1T	.145E-02
1W	.253E-02
1L	.111E-03
2B	.130E-02
2V	.615E-05
2Y	.130E-04
2C	.177E-02
2K	.169E-02
2Q	.496E-07
2T	.808E-05
2W	.112E-04
2Z	.164E-04
3B	.139E-04
3J	.656E-05
3Y	.753E-06
3C	.136E-04
3K	.171E-04
3Q	.185E-06
3W	.595E-05
3Z	.780E-05
3T	.445E-06
3X	.895E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 23

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	2870.2	.613E+00	.514E-02	.393E-03
1I	2873.9	.614E+00	.514E-02	.394E-03
1O	1174.4	.249E+00	.209E-02	.160E-03
1U	1174.9	.249E+00	.209E-02	.160E-03
1B	3669.2	.784E+00	.657E-02	.503E-03
1E	4282.7	.916E+00	.767E-02	.588E-03
1G	4173.5	.892E+00	.748E-02	.573E-03
1J	4132.7	.884E+00	.740E-02	.567E-03
1M	2922.2	.624E+00	.523E-02	.401E-03
1P	3142.1	.671E+00	.562E-02	.431E-03
1S	1884.8	.402E+00	.336E-02	.258E-03
1V	785.4	.166E+00	.139E-02	.106E-03
1C	2960.2	.632E+00	.530E-02	.406E-03
1F	4666.0	.998E+00	.836E-02	.641E-03
1H	4744.4	.101E+01	.850E-02	.651E-03
1K	4816.5	.103E+01	.863E-02	.661E-03
1N	4294.7	.918E+00	.770E-02	.590E-03
1Q	3128.0	.668E+00	.560E-02	.429E-03
1T	2092.9	.446E+00	.374E-02	.286E-03
1W	968.9	.205E+00	.172E-02	.132E-03
1Z	956.4	.202E+00	.170E-02	.130E-03
1L	4266.9	.912E+00	.765E-02	.586E-03
1R	2497.8	.533E+00	.447E-02	.342E-03
1X	712.7	.150E+00	.126E-02	.964E-04
2B	97.1	.181E-01	.152E-03	.116E-04
2J	18.6	.130E-02	.109E-04	.833E-06
2C	229.9	.466E-01	.391E-03	.299E-04
2K	224.7	.455E-01	.381E-03	.292E-04
2Q	22.8	.220E-02	.184E-04	.141E-05
2W	13.7	.267E-03	.224E-05	.171E-06
2Z	26.7	.304E-02	.255E-04	.195E-05
2D	29.5	.364E-02	.305E-04	.233E-05
3Z	12.9	.362E-03	.303E-05	.232E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 23

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	467.7	.564E-01	.821E-03	.625E-04
1I	4762.2	.587E+00	.854E-02	.650E-03
1O	6764.6	.834E+00	.121E-01	.924E-03
1U	6300.4	.777E+00	.113E-01	.860E-03
1B	289.1	.344E-01	.500E-03	.381E-04
1E	364.2	.437E-01	.635E-03	.483E-04
1G	1330.4	.163E+00	.237E-02	.180E-03
1J	3616.2	.445E+00	.648E-02	.493E-03
1M	5196.9	.641E+00	.932E-02	.709E-03
1P	9315.7	.115E+01	.167E-01	.127E-02
1S	9453.6	.117E+01	.170E-01	.129E-02
1V	5969.2	.736E+00	.107E-01	.815E-03
1Y	634.8	.771E-01	.112E-02	.853E-04
1C	106.9	.119E-01	.172E-03	.131E-04
1F	671.0	.816E-01	.119E-02	.903E-04
1H	1100.1	.135E+00	.196E-02	.149E-03
1K	1125.3	.138E+00	.200E-02	.152E-03
1N	5263.0	.649E+00	.944E-02	.718E-03
1Q	8849.9	.109E+01	.159E-01	.121E-02
1T	9149.1	.113E+01	.164E-01	.125E-02
1W	5951.6	.734E+00	.107E-01	.813E-03
1Z	5719.2	.705E+00	.103E-01	.781E-03
1L	2010.6	.247E+00	.359E-02	.274E-03
1R	4596.2	.567E+00	.824E-02	.627E-03
1X	3985.6	.491E+00	.714E-02	.544E-03
2B	1629.5	.200E+00	.291E-02	.221E-03
2J	37.5	.329E-02	.478E-04	.364E-05
2P	39.0	.347E-02	.505E-04	.384E-05
2V	31.9	.259E-02	.377E-04	.287E-05
2Y	17.2	.784E-03	.114E-04	.868E-06
2C	1529.7	.188E+00	.273E-02	.208E-03
2K	1432.0	.176E+00	.255E-02	.194E-03
2Q	79.4	.847E-02	.123E-03	.937E-05
2W	100.0	.110E-01	.160E-03	.122E-04
2Z	162.0	.187E-01	.271E-03	.207E-04
2D	167.3	.193E-01	.281E-03	.214E-04
2X	31.3	.252E-02	.367E-04	.280E-05
3B	15.1	.739E-03	.107E-04	.818E-06
3J	13.0	.478E-03	.695E-05	.529E-06
3P	14.9	.708E-03	.103E-04	.784E-06
3Y	13.2	.502E-03	.730E-05	.556E-06
3V	20.8	.144E-02	.210E-04	.160E-05
3C	15.0	.718E-03	.104E-04	.795E-06
3K	36.5	.338E-02	.492E-04	.375E-05
3Q	15.7	.813E-03	.118E-04	.900E-06
3W	43.7	.427E-02	.620E-04	.472E-05
3Z	65.5	.696E-02	.101E-03	.771E-05
3X	15.5	.784E-03	.114E-04	.868E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 23

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	154.4	.275E+00	.270E-03	.286E-04
1I	12.8	.160E-01	.157E-04	.166E-05
1B	300.3	.541E+00	.532E-03	.564E-04
1E	66.9	.115E+00	.113E-03	.120E-04
1G	93.1	.163E+00	.160E-03	.169E-04
1J	57.5	.977E-01	.961E-04	.102E-04
1M	52.1	.878E-01	.864E-04	.914E-05
1P	13.9	.180E-01	.177E-04	.187E-05
1S	37.2	.605E-01	.595E-04	.630E-05
1C	373.8	.675E+00	.664E-03	.703E-04
1F	245.5	.441E+00	.434E-03	.459E-04
1H	143.2	.254E+00	.250E-03	.265E-04
1K	184.7	.330E+00	.325E-03	.344E-04
1Q	43.7	.724E-01	.712E-04	.754E-05
1T	9.8	.106E-01	.104E-04	.110E-05
1W	33.8	.543E-01	.535E-04	.566E-05
1L	138.7	.246E+00	.242E-03	.256E-04
1R	34.2	.550E-01	.542E-04	.573E-05
2C	6.5	.454E-02	.446E-05	.472E-06
2K	7.3	.602E-02	.592E-05	.627E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 23

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.107E-03
1I	.692E-03
1O	.941E-03
1U	.877E-03
1B	.973E-04
1E	.112E-03
1G	.243E-03
1J	.554E-03
1M	.753E-03
1P	.132E-02
1S	.132E-02
1V	.826E-03
1Y	.853E-04
1C	.635E-04
1F	.163E-03
1H	.221E-03
1K	.226E-03
1N	.781E-03
1Q	.126E-02
1T	.128E-02
1W	.827E-03
1Z	.795E-03
1L	.338E-03
1R	.664E-03
1X	.554E-03
2B	.223E-03
2J	.373E-05
2P	.384E-05
2V	.287E-05
2Y	.868E-06
2C	.211E-03
2K	.198E-03
2Q	.952E-05
2W	.122E-04
2Z	.209E-04
2D	.216E-04
2X	.280E-05
3B	.818E-06
3J	.529E-06
3P	.784E-06
3Y	.556E-06
3V	.160E-05
3C	.795E-06
3K	.375E-05
3Q	.900E-06
3W	.472E-05
3Z	.774E-05
3X	.868E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 24

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1872.0	.399E+00	.335E-02	.256E-03
1I	1375.4	.293E+00	.245E-02	.188E-03
1O	404.0	.843E-01	.707E-03	.541E-04
1U	420.8	.880E-01	.737E-03	.565E-04
1B	2903.8	.620E+00	.520E-02	.398E-03
1E	2809.3	.600E+00	.503E-02	.385E-03
1G	2197.8	.469E+00	.393E-02	.301E-03
1M	884.3	.187E+00	.157E-02	.120E-03
1P	590.0	.124E+00	.104E-02	.798E-04
1S	290.6	.600E-01	.503E-03	.385E-04
1V	59.3	.104E-01	.875E-04	.670E-05
1C	2476.3	.529E+00	.443E-02	.339E-03
1F	2900.1	.620E+00	.519E-02	.398E-03
1H	2610.5	.558E+00	.467E-02	.358E-03
1K	2559.9	.547E+00	.458E-02	.351E-03
1N	1048.7	.223E+00	.187E-02	.143E-03
1Q	557.9	.117E+00	.983E-03	.753E-04
1T	236.6	.485E-01	.406E-03	.311E-04
1W	98.3	.188E-01	.157E-03	.121E-04
1Z	115.5	.225E-01	.188E-03	.144E-04
1D	283.1	.584E-01	.490E-03	.375E-04
1L	45.0	.738E-02	.618E-04	.474E-05
1R	49.6	.835E-02	.700E-04	.536E-05
2B	15.6	.129E-02	.108E-04	.826E-06
2J	10.7	.251E-03	.210E-05	.161E-06
2C	17.0	.160E-02	.134E-04	.103E-05
2K	23.2	.292E-02	.245E-04	.188E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 24

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	2882.8	.355E+00	.516E-02	.393E-03
1I	5129.9	.632E+00	.920E-02	.700E-03
1O	3108.0	.383E+00	.557E-02	.424E-03
1U	3156.8	.389E+00	.565E-02	.430E-03
1B	2078.9	.256E+00	.372E-02	.283E-03
1E	3788.2	.467E+00	.679E-02	.517E-03
1G	3474.2	.428E+00	.622E-02	.474E-03
1J	4378.9	.540E+00	.785E-02	.597E-03
1M	3770.6	.465E+00	.676E-02	.514E-03
1P	3657.3	.451E+00	.655E-02	.499E-03
1S	2263.8	.278E+00	.405E-02	.308E-03
1V	842.0	.103E+00	.149E-02	.114E-03
1Y	49.4	.476E-02	.692E-04	.527E-05
1C	1174.7	.144E+00	.209E-02	.159E-03
1F	2698.9	.332E+00	.483E-02	.368E-03
1H	3658.6	.451E+00	.656E-02	.499E-03
1K	3475.8	.428E+00	.623E-02	.474E-03
1N	4179.9	.515E+00	.749E-02	.570E-03
1Q	3604.1	.444E+00	.646E-02	.491E-03
1T	1819.3	.223E+00	.325E-02	.247E-03
1W	607.2	.737E-01	.107E-02	.816E-04
1Z	715.3	.870E-01	.127E-02	.964E-04
1D	120.2	.135E-01	.196E-03	.149E-04
1R	180.5	.210E-01	.305E-03	.232E-04
1X	68.1	.707E-02	.103E-03	.783E-05
2B	108.7	.122E-01	.178E-03	.135E-04
2J	37.7	.344E-02	.501E-04	.381E-05
2P	20.5	.132E-02	.192E-04	.146E-05
2V	13.2	.420E-03	.610E-05	.464E-06
2Y	10.1	.300E-04	.436E-06	.332E-07
2C	88.9	.976E-02	.142E-03	.108E-04
2K	112.8	.127E-01	.185E-03	.141E-04
2Q	29.9	.248E-02	.360E-04	.274E-05
2W	16.2	.789E-03	.115E-04	.874E-06
2Z	33.9	.297E-02	.432E-04	.329E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 24

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	19.3	.338E-01	.333E-04	.352E-05
1I	17.9	.314E-01	.309E-04	.327E-05
1B	113.3	.206E+00	.202E-03	.214E-04
1E	46.7	.838E-01	.825E-04	.873E-05
1G	20.3	.356E-01	.351E-04	.371E-05
1J	65.2	.118E+00	.116E-03	.123E-04
1P	43.6	.782E-01	.769E-04	.814E-05
1S	19.2	.337E-01	.332E-04	.351E-05
1V	10.1	.171E-01	.168E-04	.178E-05
1Y	27.7	.492E-01	.484E-04	.513E-05
1C	210.6	.383E+00	.377E-03	.399E-04
1F	104.7	.190E+00	.187E-03	.198E-04
1H	79.5	.144E+00	.141E-03	.150E-04
1K	76.9	.139E+00	.137E-03	.145E-04
1N	16.0	.279E-01	.274E-04	.290E-05
1Q	3.3	.468E-02	.460E-05	.487E-06
1T	2.1	.251E-02	.247E-05	.261E-06
1W	.9	.254E-03	.250E-06	.265E-07
1Z	1.4	.117E-02	.115E-05	.122E-06
1D	28.5	.507E-01	.499E-04	.528E-05
1L	29.6	.526E-01	.518E-04	.548E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 24

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.420E-03
1I	.720E-03
1O	.429E-03
1U	.436E-03
1B	.327E-03
1E	.558E-03
1G	.506E-03
1J	.599E-03
1M	.527E-03
1P	.508E-03
1S	.313E-03
1V	.115E-03
1Y	.581E-05
1C	.199E-03
1F	.412E-03
1H	.538E-03
1K	.513E-03
1N	.586E-03
1Q	.500E-03
1T	.251E-03
1W	.828E-04
1Z	.979E-04
1D	.195E-04
1L	.108E-05
1R	.238E-04
1X	.783E-05
2B	.136E-04
2J	.383E-05
2P	.146E-05
2V	.464E-06
2Y	.332E-07
2C	.109E-04
2K	.143E-04
2Q	.274E-05
2W	.874E-06
2Z	.329E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 25

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	587.7	.123E+00	.103E-02	.792E-04
1I	1039.0	.220E+00	.184E-02	.141E-03
1O	515.2	.108E+00	.903E-03	.692E-04
1U	522.9	.109E+00	.917E-03	.703E-04
1B	1142.1	.242E+00	.203E-02	.156E-03
1E	1059.5	.225E+00	.188E-02	.144E-03
1G	906.9	.192E+00	.161E-02	.123E-03
1J	869.1	.184E+00	.154E-02	.118E-03
1M	148.1	.291E-01	.244E-03	.187E-04
1P	504.7	.106E+00	.884E-03	.678E-04
1S	341.4	.705E-01	.591E-03	.453E-04
1V	234.8	.477E-01	.399E-03	.306E-04
1Y	78.3	.141E-01	.118E-03	.906E-05
1C	956.6	.202E+00	.170E-02	.130E-03
1F	859.2	.182E+00	.152E-02	.117E-03
1H	908.6	.192E+00	.161E-02	.123E-03
1K	862.8	.182E+00	.153E-02	.117E-03
1N	528.6	.111E+00	.927E-03	.711E-04
1Q	445.1	.928E-01	.777E-03	.596E-04
1T	288.5	.592E-01	.496E-03	.380E-04
1W	238.5	.485E-01	.406E-03	.311E-04
1Z	233.8	.475E-01	.398E-03	.305E-04
1L	567.7	.119E+00	.998E-03	.764E-04
1R	263.1	.537E-01	.450E-03	.345E-04
1X	201.4	.405E-01	.339E-03	.260E-04
2A	117.4	.232E-01	.194E-03	.149E-04
2I	27.5	.388E-02	.325E-04	.249E-05
2O	14.4	.108E-02	.907E-05	.695E-06
2B	83.2	.158E-01	.133E-03	.102E-04
2E	58.0	.104E-01	.874E-04	.669E-05
2G	76.7	.144E-01	.121E-03	.926E-05
2J	63.5	.116E-01	.973E-04	.745E-05
2M	17.1	.165E-02	.139E-04	.106E-05
2P	14.9	.118E-02	.987E-05	.756E-06
2S	13.1	.803E-03	.673E-05	.516E-06
2V	12.5	.669E-03	.561E-05	.430E-06
2Y	9.8	.781E-04	.655E-06	.501E-07
2C	59.9	.108E-01	.908E-04	.695E-05
2F	62.1	.113E-01	.947E-04	.725E-05
2H	36.8	.588E-02	.493E-04	.377E-05
2K	41.2	.682E-02	.571E-04	.438E-05
2N	18.6	.198E-02	.166E-04	.127E-05
2Q	13.3	.839E-03	.703E-05	.539E-06
2T	11.0	.341E-03	.286E-05	.219E-06
2W	9.8	.878E-04	.736E-06	.564E-07
2Z	12.1	.582E-03	.488E-05	.374E-06
2L	27.4	.387E-02	.324E-04	.248E-05
2R	14.8	.116E-02	.969E-05	.742E-06
2X	9.4	.719E-05	.603E-07	.462E-08

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 25

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	476.8	.568E-01	.826E-03	.628E-04
1I	1160.3	.141E+00	.205E-02	.156E-03
1O	1086.8	.132E+00	.192E-02	.146E-03
1U	1061.2	.129E+00	.188E-02	.143E-03
1B	359.8	.423E-01	.615E-03	.468E-04
1E	475.5	.566E-01	.823E-03	.627E-04
1G	572.7	.686E-01	.998E-03	.760E-04
1J	878.9	.106E+00	.155E-02	.118E-03
1M	260.8	.301E-01	.437E-03	.333E-04
1P	1192.7	.145E+00	.211E-02	.161E-03
1S	926.5	.112E+00	.163E-02	.124E-03
1V	908.4	.110E+00	.160E-02	.122E-03
1Y	448.1	.532E-01	.774E-03	.589E-04
1C	386.1	.456E-01	.663E-03	.504E-04
1F	534.1	.638E-01	.929E-03	.707E-04
1H	655.5	.788E-01	.115E-02	.873E-04
1K	628.0	.754E-01	.110E-02	.835E-04
1N	706.2	.851E-01	.124E-02	.942E-04
1Q	871.5	.106E+00	.154E-02	.117E-03
1T	679.7	.818E-01	.119E-02	.906E-04
1W	608.5	.730E-01	.106E-02	.809E-04
1Z	587.8	.705E-01	.103E-02	.780E-04
1L	532.7	.637E-01	.926E-03	.705E-04
1R	377.8	.445E-01	.648E-03	.493E-04
1X	404.7	.479E-01	.696E-03	.530E-04
2A	366.0	.429E-01	.623E-03	.475E-04
2I	132.9	.141E-01	.205E-03	.156E-04
2O	46.2	.335E-02	.488E-04	.371E-05
2B	299.7	.347E-01	.504E-03	.384E-04
2E	231.9	.263E-01	.382E-03	.291E-04
2G	226.8	.257E-01	.373E-03	.284E-04
2J	164.6	.180E-01	.262E-03	.199E-04
2M	47.4	.349E-02	.508E-04	.387E-05
2P	48.9	.368E-02	.536E-04	.408E-05
2S	38.4	.239E-02	.348E-04	.265E-05
2V	49.5	.376E-02	.547E-04	.416E-05
2Y	21.0	.235E-03	.341E-05	.260E-06
2C	279.9	.322E-01	.469E-03	.357E-04
2F	218.1	.246E-01	.358E-03	.272E-04
2H	163.3	.178E-01	.259E-03	.197E-04
2K	170.4	.187E-01	.272E-03	.207E-04
2N	58.6	.488E-02	.709E-04	.540E-05
2Q	45.0	.320E-02	.466E-04	.355E-05
2T	53.6	.427E-02	.620E-04	.472E-05
2W	23.9	.598E-03	.870E-05	.662E-06
2Z	38.3	.238E-02	.346E-04	.263E-05
2L	69.3	.620E-02	.902E-04	.686E-05
2R	55.8	.454E-02	.660E-04	.502E-05
2X	20.2	.143E-03	.207E-05	.158E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 25

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	77.8	.139E+00	.137E-03	.145E-04
1I	71.7	.128E+00	.126E-03	.133E-04
1O	33.7	.585E-01	.576E-04	.610E-05
1U	64.1	.114E+00	.112E-03	.119E-04
1B	100.7	.181E+00	.178E-03	.188E-04
1E	120.7	.217E+00	.214E-03	.226E-04
1G	154.5	.279E+00	.275E-03	.291E-04
1J	102.2	.184E+00	.181E-03	.191E-04
1M	9.1	.136E-01	.134E-04	.142E-05
1P	105.1	.189E+00	.186E-03	.197E-04
1S	41.1	.722E-01	.710E-04	.751E-05
1V	30.0	.518E-01	.510E-04	.540E-05
1Y	8.3	.123E-01	.121E-04	.128E-05
1C	137.6	.248E+00	.244E-03	.259E-04
1F	162.4	.294E+00	.289E-03	.306E-04
1H	135.3	.244E+00	.240E-03	.254E-04
1K	118.2	.213E+00	.209E-03	.222E-04
1N	93.8	.168E+00	.166E-03	.175E-04
1Q	88.5	.159E+00	.156E-03	.165E-04
1T	43.0	.755E-01	.743E-04	.786E-05
1W	34.0	.591E-01	.582E-04	.616E-05
1Z	35.4	.617E-01	.607E-04	.643E-05
1D	2.2	.111E-02	.110E-05	.116E-06
1L	121.2	.218E+00	.215E-03	.227E-04
1R	57.6	.102E+00	.101E-03	.106E-04
1X	35.4	.617E-01	.607E-04	.643E-05
2A	10.3	.170E-01	.167E-04	.177E-05
2I	3.9	.528E-02	.520E-05	.550E-06
2O	1.7	.127E-02	.125E-05	.132E-06
2B	7.0	.110E-01	.108E-04	.115E-05
2E	10.5	.173E-01	.170E-04	.180E-05
2G	3.3	.413E-02	.406E-05	.430E-06
2J	5.0	.724E-02	.712E-05	.754E-06
2M	3.6	.465E-02	.458E-05	.485E-06
2P	3.7	.491E-02	.483E-05	.512E-06
2S	1.8	.148E-02	.145E-05	.154E-06
2V	3.4	.438E-02	.431E-05	.456E-06
2Y	1.2	.378E-03	.372E-06	.394E-07
2C	9.2	.150E-01	.147E-04	.156E-05
2F	15.3	.262E-01	.257E-04	.272E-05
2H	5.6	.845E-02	.831E-05	.880E-06
2K	7.0	.109E-01	.107E-04	.113E-05
2N	4.9	.709E-02	.698E-05	.738E-06
2Q	3.2	.396E-02	.390E-05	.412E-06
2T	3.1	.384E-02	.378E-05	.400E-06
2Z	4.2	.590E-02	.581E-05	.615E-06
2L	8.1	.129E-01	.127E-04	.134E-05
2R	2.9	.350E-02	.345E-05	.365E-06
2X	3.5	.446E-02	.439E-05	.464E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 25

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.728E-04
1I	.173E-03
1O	.154E-03
1U	.151E-03
1B	.653E-04
1E	.803E-04
1G	.921E-04
1J	.132E-03
1M	.354E-04
1P	.170E-03
1S	.130E-03
1V	.126E-03
1Y	.600E-04
1C	.669E-04
1F	.863E-04
1H	.103E-03
1K	.983E-04
1N	.104E-03
1Q	.125E-03
1T	.954E-04
1W	.848E-04
1Z	.819E-04
1D	.123E-07
1L	.810E-04
1R	.541E-04
1X	.564E-04
2A	.492E-04
2I	.159E-04
2O	.380E-05
2B	.396E-04
2E	.300E-04
2G	.294E-04
2J	.208E-04
2M	.403E-05
2P	.421E-05
2S	.272E-05
2V	.426E-05
2Y	.269E-06
2C	.366E-04
2F	.283E-04
2H	.202E-04
2K	.213E-04
2N	.561E-05
2Q	.365E-05
2T	.479E-05
2W	.668E-06
2Z	.274E-05
2L	.727E-05
2R	.514E-05
2X	.207E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 26

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	175.7	.355E-01	.297E-03	.228E-04
1I	276.2	.571E-01	.478E-03	.366E-04
1O	376.2	.785E-01	.658E-03	.504E-04
1U	357.4	.745E-01	.624E-03	.478E-04
1B	148.5	.297E-01	.249E-03	.191E-04
1E	197.9	.403E-01	.337E-03	.258E-04
1G	242.2	.498E-01	.417E-03	.319E-04
1J	240.1	.493E-01	.413E-03	.317E-04
1M	298.2	.618E-01	.518E-03	.397E-04
1P	343.6	.715E-01	.599E-03	.459E-04
1S	391.0	.817E-01	.684E-03	.524E-04
1V	342.2	.712E-01	.597E-03	.457E-04
1Y	334.4	.695E-01	.583E-03	.446E-04
1C	136.2	.270E-01	.227E-03	.174E-04
1F	240.5	.494E-01	.414E-03	.317E-04
1H	241.2	.496E-01	.415E-03	.318E-04
1K	267.7	.552E-01	.463E-03	.355E-04
1N	285.8	.591E-01	.496E-03	.380E-04
1Q	374.7	.782E-01	.655E-03	.502E-04
1T	356.0	.742E-01	.622E-03	.476E-04
1W	368.7	.769E-01	.644E-03	.494E-04
1Z	350.7	.730E-01	.612E-03	.469E-04
1D	135.3	.268E-01	.225E-03	.172E-04
1L	288.1	.596E-01	.500E-03	.383E-04
1R	299.6	.621E-01	.520E-03	.399E-04
1X	301.3	.624E-01	.523E-03	.401E-04
2B	348.4	.726E-01	.608E-03	.466E-04
2J	272.9	.564E-01	.473E-03	.362E-04
2P	226.1	.464E-01	.389E-03	.298E-04
2V	157.4	.316E-01	.265E-03	.203E-04
2Y	96.6	.186E-01	.156E-03	.119E-04
2C	259.9	.536E-01	.449E-03	.344E-04
2K	268.7	.555E-01	.465E-03	.356E-04
2Q	186.8	.379E-01	.318E-03	.244E-04
2W	150.0	.301E-01	.252E-03	.193E-04
2Z	148.0	.296E-01	.248E-03	.190E-04
3Z	21.0	.182E-02	.152E-04	.117E-05
3C	26.4	.297E-02	.249E-04	.191E-05
3B	32.8	.435E-02	.365E-04	.279E-05
3A	30.9	.394E-02	.330E-04	.253E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 26

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	218.6	.257E-01	.373E-03	.284E-04
1I	266.4	.316E-01	.459E-03	.349E-04
1O	472.5	.570E-01	.830E-03	.631E-04
1U	436.4	.526E-01	.765E-03	.582E-04
1B	130.1	.147E-01	.214E-03	.163E-04
1E	178.3	.207E-01	.301E-03	.229E-04
1G	251.0	.297E-01	.431E-03	.328E-04
1J	229.0	.269E-01	.392E-03	.298E-04
1M	327.1	.391E-01	.568E-03	.433E-04
1P	422.2	.508E-01	.739E-03	.563E-04
1S	568.1	.688E-01	.100E-02	.762E-04
1V	508.7	.615E-01	.895E-03	.681E-04
1Y	638.2	.775E-01	.113E-02	.858E-04
1C	118.1	.132E-01	.193E-03	.147E-04
1F	206.7	.242E-01	.352E-03	.268E-04
1H	218.5	.257E-01	.373E-03	.284E-04
1K	247.7	.293E-01	.426E-03	.324E-04
1N	311.4	.371E-01	.540E-03	.411E-04
1Q	499.6	.604E-01	.878E-03	.668E-04
1T	529.1	.640E-01	.931E-03	.709E-04
1W	627.7	.762E-01	.111E-02	.844E-04
1Z	585.5	.710E-01	.103E-02	.786E-04
1D	252.9	.299E-01	.435E-03	.331E-04
1L	320.6	.383E-01	.557E-03	.424E-04
1R	417.6	.502E-01	.731E-03	.556E-04
1X	506.1	.612E-01	.890E-03	.677E-04
2B	584.9	.709E-01	.103E-02	.785E-04
2J	557.9	.676E-01	.983E-03	.748E-04
2P	549.9	.666E-01	.969E-03	.737E-04
2V	419.3	.505E-01	.734E-03	.559E-04
2Y	300.1	.357E-01	.520E-03	.396E-04
2C	501.9	.607E-01	.882E-03	.672E-04
2K	513.5	.621E-01	.903E-03	.687E-04
2Q	507.6	.614E-01	.893E-03	.679E-04
2W	428.5	.516E-01	.751E-03	.571E-04
2Z	414.9	.499E-01	.726E-03	.553E-04
3Z	77.9	.827E-02	.120E-03	.916E-05
3W	22.5	.144E-02	.209E-04	.159E-05
3K	12.0	.131E-03	.191E-05	.146E-06
3C	225.4	.265E-01	.385E-03	.293E-04
3P	31.3	.252E-02	.367E-04	.279E-05
3J	97.9	.107E-01	.156E-03	.119E-04
3B	273.8	.325E-01	.473E-03	.360E-04
3I	87.7	.949E-02	.138E-03	.105E-04
3A	180.8	.210E-01	.305E-03	.232E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 26

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	12.4	.673E-03	.662E-06	.700E-07
1I	26.8	.269E-01	.265E-04	.280E-05
1O	44.1	.586E-01	.576E-04	.610E-05
1U	37.4	.464E-01	.457E-04	.483E-05
1B	15.9	.712E-02	.701E-05	.742E-06
1E	17.6	.103E-01	.101E-04	.107E-05
1G	22.3	.188E-01	.185E-04	.195E-05
1J	24.0	.219E-01	.216E-04	.228E-05
1M	34.0	.402E-01	.395E-04	.418E-05
1P	41.0	.530E-01	.521E-04	.552E-05
1S	52.3	.735E-01	.724E-04	.766E-05
1V	48.5	.667E-01	.656E-04	.694E-05
1Y	51.3	.718E-01	.706E-04	.747E-05
1C	13.0	.184E-02	.181E-05	.192E-06
1F	27.6	.284E-01	.280E-04	.296E-05
1H	23.0	.202E-01	.198E-04	.210E-05
1K	28.0	.292E-01	.288E-04	.304E-05
1N	33.0	.384E-01	.378E-04	.400E-05
1Q	52.7	.744E-01	.732E-04	.775E-05
1T	46.3	.626E-01	.616E-04	.652E-05
1W	52.9	.747E-01	.735E-04	.778E-05
1Z	46.5	.630E-01	.620E-04	.656E-05
1D	25.3	.242E-01	.238E-04	.252E-05
1L	35.7	.432E-01	.425E-04	.450E-05
1R	41.9	.547E-01	.538E-04	.569E-05
1X	43.5	.576E-01	.566E-04	.599E-05
2B	47.3	.710E-01	.699E-04	.740E-05
2J	36.7	.516E-01	.508E-04	.537E-05
2P	29.7	.389E-01	.383E-04	.406E-05
2V	20.7	.225E-01	.221E-04	.234E-05
2Y	13.2	.877E-02	.863E-05	.913E-06
2C	39.0	.559E-01	.550E-04	.582E-05
2K	38.3	.546E-01	.538E-04	.569E-05
2Q	30.2	.398E-01	.392E-04	.415E-05
2W	24.2	.288E-01	.283E-04	.300E-05
2Z	23.3	.272E-01	.268E-04	.283E-05
3Z	10.0	.109E-01	.107E-04	.113E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 26

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.308E-04
1I	.391E-04
1O	.691E-04
1U	.638E-04
1B	.184E-04
1E	.258E-04
1G	.364E-04
1J	.334E-04
1M	.479E-04
1P	.617E-04
1S	.826E-04
1V	.737E-04
1Y	.913E-04
1C	.165E-04
1F	.305E-04
1H	.320E-04
1K	.365E-04
1N	.455E-04
1Q	.730E-04
1T	.766E-04
1W	.904E-04
1Z	.843E-04
1D	.352E-04
1L	.469E-04
1R	.605E-04
1X	.726E-04
2B	.842E-04
2J	.792E-04
2P	.773E-04
2V	.583E-04
2Y	.409E-04
2C	.714E-04
2K	.731E-04
2Q	.710E-04
2W	.595E-04
2Z	.576E-04
3Z	.940E-05
3W	.159E-05
3K	.146E-06
3C	.295E-04
3P	.279E-05
3J	.119E-04
3B	.363E-04
3I	.105E-04
3A	.235E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 27

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	981.5	.246E+00	.174E-02	.135E-03
1I	400.3	.986E-01	.697E-03	.539E-04
1O	130.3	.299E-01	.212E-03	.164E-04
1U	178.2	.421E-01	.298E-03	.230E-04
1B	1495.5	.377E+00	.267E-02	.206E-03
1E	905.8	.227E+00	.161E-02	.124E-03
1G	860.1	.215E+00	.152E-02	.118E-03
1J	185.6	.440E-01	.311E-03	.241E-04
1M	43.2	.779E-02	.551E-04	.426E-05
1P	194.5	.462E-01	.327E-03	.253E-04
1V	161.6	.379E-01	.268E-03	.207E-04
1Y	39.5	.687E-02	.486E-04	.376E-05
1C	224.8	.539E-01	.381E-03	.295E-04
1F	1117.4	.281E+00	.199E-02	.154E-03
1H	922.9	.231E+00	.164E-02	.127E-03
1Q	535.3	.133E+00	.940E-03	.727E-04
1T	252.3	.609E-01	.431E-03	.333E-04
1W	78.0	.167E-01	.118E-03	.911E-05
1Z	91.8	.202E-01	.143E-03	.110E-04
1D	64.8	.133E-01	.940E-04	.727E-05
1L	395.2	.973E-01	.688E-03	.532E-04
1R	410.5	.101E+00	.715E-03	.553E-04
2B	115.9	.263E-01	.186E-03	.144E-04
2J	141.4	.328E-01	.232E-03	.179E-04
2P	19.9	.187E-02	.133E-04	.103E-05
2V	43.6	.790E-02	.559E-04	.432E-05
2Y	27.2	.372E-02	.263E-04	.204E-05
2C	79.2	.170E-01	.120E-03	.927E-05
2Q	75.9	.161E-01	.114E-03	.881E-05
2W	70.9	.148E-01	.105E-03	.812E-05
3P	47.0	.102E-01	.721E-04	.558E-05
3V	50.7	.111E-01	.788E-04	.609E-05
3Y	18.1	.287E-02	.203E-04	.157E-05
3C	75.3	.174E-01	.123E-03	.951E-05
3K	83.0	.193E-01	.137E-03	.106E-04
3Q	8.1	.314E-03	.222E-05	.172E-06
3W	15.3	.214E-02	.152E-04	.117E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 27

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1B	1990.4	.536E+00	.357E-02	.417E-03
1E	1188.1	.319E+00	.213E-02	.249E-03
1G	1031.8	.277E+00	.184E-02	.216E-03
1F	1508.5	.406E+00	.270E-02	.316E-03
1H	1598.8	.430E+00	.286E-02	.335E-03
1Q	465.5	.124E+00	.827E-03	.967E-04
1T	210.5	.554E-01	.369E-03	.431E-04
1W	18.2	.351E-02	.234E-04	.273E-05
1Z	13.5	.222E-02	.148E-04	.173E-05
1D	105.6	.271E-01	.180E-03	.211E-04
1L	605.1	.162E+00	.108E-02	.126E-03
1R	441.8	.118E+00	.784E-03	.917E-04
2B	85.7	.217E-01	.145E-03	.169E-04
2J	22.5	.465E-02	.310E-04	.362E-05
2V	6.7	.382E-03	.254E-05	.297E-06
2Y	12.1	.186E-02	.124E-04	.145E-05
2C	12.6	.199E-02	.133E-04	.155E-05
2Q	84.2	.213E-01	.142E-03	.166E-04
2W	71.7	.179E-01	.119E-03	.140E-04
3B	18.3	.353E-02	.235E-04	.275E-05
3J	20.1	.400E-02	.266E-04	.311E-05
3P	14.8	.257E-02	.171E-04	.200E-05
3V	11.1	.159E-02	.106E-04	.124E-05
3Y	15.3	.272E-02	.181E-04	.212E-05
3C	20.8	.420E-02	.280E-04	.327E-05
3K	23.0	.478E-02	.318E-04	.372E-05
3Q	22.1	.454E-02	.302E-04	.353E-05
3W	23.4	.489E-02	.326E-04	.381E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 27

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1849.0	.271E+00	.330E-02	.252E-03
1I	1281.2	.187E+00	.228E-02	.174E-03
1O	1241.8	.181E+00	.221E-02	.169E-03
1U	406.9	.584E-01	.712E-03	.543E-04
1B	2950.1	.433E+00	.528E-02	.403E-03
1E	1731.7	.254E+00	.309E-02	.236E-03
1G	1715.6	.251E+00	.306E-02	.234E-03
1P	498.6	.719E-01	.876E-03	.669E-04
1S	1136.0	.166E+00	.202E-02	.154E-03
1V	425.8	.611E-01	.746E-03	.569E-04
1Y	281.3	.398E-01	.486E-03	.371E-04
1F	2042.6	.299E+00	.365E-02	.279E-03
1H	2285.9	.335E+00	.409E-02	.312E-03
1K	1046.2	.153E+00	.186E-02	.142E-03
1Q	1110.4	.162E+00	.198E-02	.151E-03
1T	678.6	.984E-01	.120E-02	.916E-04
1W	216.8	.303E-01	.370E-03	.282E-04
1Z	535.2	.773E-01	.942E-03	.719E-04
1D	258.6	.365E-01	.445E-03	.340E-04
1L	614.2	.889E-01	.108E-02	.828E-04
1R	737.4	.107E+00	.131E-02	.997E-04
1X	99.6	.131E-01	.159E-03	.122E-04
2B	243.9	.343E-01	.419E-03	.320E-04
2J	71.6	.894E-02	.109E-03	.833E-05
2P	102.3	.135E-01	.164E-03	.125E-04
2V	480.3	.692E-01	.844E-03	.644E-04
2Y	183.3	.254E-01	.310E-03	.237E-04
2Q	180.4	.250E-01	.305E-03	.233E-04
2W	194.0	.270E-01	.329E-03	.251E-04
3B	30.9	.422E-02	.515E-04	.393E-05
3J	4.4	.313E-03	.382E-05	.291E-06
3V	441.8	.648E-01	.790E-03	.603E-04
3Y	199.5	.291E-01	.354E-03	.271E-04
3C	13.0	.159E-02	.193E-04	.148E-05
3K	24.3	.324E-02	.395E-04	.302E-05
3Q	41.7	.581E-02	.708E-04	.541E-05
3W	41.4	.577E-02	.704E-04	.538E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 27

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	45.5	.354E-01	.745E-04	.471E-05
1U	54.5	.431E-01	.907E-04	.574E-05
1E	151.4	.126E+00	.265E-03	.168E-04
1P	282.1	.238E+00	.500E-03	.316E-04
1Y	236.5	.199E+00	.418E-03	.264E-04
1K	28.6	.210E-01	.442E-04	.280E-05
1W	36.8	.280E-01	.589E-04	.373E-05
1L	11.0	.595E-02	.125E-04	.792E-06
2K	6.8	.241E-02	.506E-05	.320E-06
~~2U~~ OMIT	6.8	.241E-02	.506E-05	.320E-06
2W	6.5	.212E-02	.447E-05	.283E-06
3B	4.3	.200E-03	.422E-06	.267E-07
3P	7.8	.323E-02	.678E-05	.429E-06
~~3K~~ OMIT	13.0	.768E-02	.162E-04	.102E-05
3K	28.0	.205E-01	.432E-04	.273E-05
3Z	5.1	.946E-03	.199E-05	.126E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 27

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.263E-03
1I	.179E-03
1O	.170E-03
1U	.567E-04
1B	.669E-03
1E	.396E-03
1G	.372E-03
1J	.198E-05
1M	.351E-06
1P	.716E-04
1S	.154E-03
1V	.586E-04
1Y	.396E-04
1C	.243E-05
1F	.480E-03
1H	.522E-03
1K	.142E-03
1Q	.215E-03
1T	.120E-03
1W	.309E-04
1Z	.739E-04
1D	.472E-04
1L	.162E-03
1R	.159E-03
1X	.122E-04
2B	.433E-04
2J	.120E-04
2P	.126E-04
2V	.649E-04
2Y	.247E-04
2C	.169E-05
2K	.264E-07
2Q	.339E-04
2W	.342E-04
3B	.557E-05
3J	.215E-05
3P	.169E-05
3V	.615E-04
3Y	.285E-04
3C	.421E-05
3K	.642E-05
3Q	.753E-05
3W	.775E-05
3Z	.104E-07

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 28

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	122.0	.278E-01	.197E-03	.152E-04
1E	34.6	.562E-02	.397E-04	.307E-05
1S	40.4	.709E-02	.501E-04	.388E-05
1V	515.7	.128E+00	.904E-03	.700E-04
1C	61.3	.124E-01	.877E-04	.679E-05
1F	588.9	.147E+00	.104E-02	.801E-04
1H	57.9	.115E-01	.815E-04	.631E-05
1R	56.3	.111E-01	.786E-04	.608E-05
2J	66.1	.121E-01	.857E-04	.663E-05
2V	43.9	.648E-02	.458E-04	.354E-05
2C	134.9	.296E-01	.209E-03	.162E-04
2K	111.0	.235E-01	.166E-03	.129E-04
2Q	20.8	.598E-03	.423E-05	.327E-06
2Z	39.9	.546E-02	.386E-04	.299E-05
2D	24.6	.156E-02	.110E-04	.853E-06
2L	151.5	.338E-01	.239E-03	.185E-04
2R	80.8	.159E-01	.112E-03	.868E-05
2X	35.4	.430E-02	.304E-04	.235E-05
3J	88.2	.193E-01	.136E-03	.105E-04
3V	32.9	.520E-02	.367E-04	.284E-05
3C	126.0	.288E-01	.204E-03	.158E-04
3K	103.2	.231E-01	.163E-03	.126E-04
3Q	51.1	.981E-02	.694E-04	.537E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 28

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	344.0	.885E-01	.589E-03	.689E-04
1E	545.1	.143E+00	.951E-03	.111E-03
1S	19.9	.103E-02	.683E-05	.798E-06
1F	590.3	.155E+00	.103E-02	.121E-03
1H	71.8	.150E-01	.100E-03	.117E-04
1R	83.2	.181E-01	.121E-03	.141E-04
2B	20.1	.178E-03	.119E-05	.139E-06
2Q	38.6	.518E-02	.345E-04	.403E-05
2W	35.2	.425E-02	.283E-04	.331E-05
2Z	44.5	.678E-02	.452E-04	.528E-05
2D	23.5	.110E-02	.732E-05	.855E-06
2L	179.4	.432E-01	.287E-03	.336E-04
2R	111.8	.249E-01	.166E-03	.194E-04
2X	50.0	.827E-02	.551E-04	.644E-05
3B	11.7	.175E-02	.116E-04	.136E-05
3J	14.3	.246E-02	.164E-04	.191E-05
3V	10.7	.148E-02	.986E-05	.115E-05
3C	10.6	.144E-02	.956E-05	.112E-05
3W	12.3	.191E-02	.127E-04	.148E-05
3D	8.7	.929E-03	.619E-05	.723E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 28

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	590.1	.868E-01	.106E-02	.809E-04
1I	877.5	.129E+00	.158E-02	.120E-03
1B	1781.2	.262E+00	.320E-02	.244E-03
1E	706.9	.104E+00	.127E-02	.969E-04
1G	610.7	.899E-01	.110E-02	.837E-04
1J	21.6	.308E-02	.375E-04	.286E-05
1M	12.4	.172E-02	.210E-04	.160E-05
1P	32.7	.472E-02	.575E-04	.439E-05
1S	291.9	.429E-01	.523E-03	.399E-04
1V	3717.6	.548E+00	.668E-02	.510E-03
1Y	159.9	.235E-01	.286E-03	.218E-04
1F	979.3	.144E+00	.176E-02	.134E-03
1H	98.1	.143E-01	.175E-03	.134E-04
1K	73.8	.108E-01	.131E-03	.100E-04
1T	18.5	.262E-02	.320E-04	.244E-05
1W	2.7	.285E-03	.347E-05	.265E-06
1Z	2.7	.292E-03	.357E-05	.272E-06
1D	4.6	.565E-03	.689E-05	.526E-06
1L	13.7	.191E-02	.234E-04	.178E-05
1R	106.3	.156E-01	.190E-03	.145E-04
1X	3.5	.404E-03	.493E-05	.376E-06
2B	48.5	.706E-02	.861E-04	.657E-05
2J	24.3	.350E-02	.426E-04	.325E-05
2P	5.0	.649E-03	.792E-05	.605E-06
2V	246.5	.362E-01	.442E-03	.337E-04
2Y	87.6	.128E-01	.156E-03	.119E-04
2C	18.8	.269E-02	.328E-04	.250E-05
2Q	75.5	.110E-01	.135E-03	.103E-04
2W	74.1	.108E-01	.132E-03	.101E-04
2Z	86.7	.127E-01	.155E-03	.118E-04
2D	64.4	.941E-02	.115E-03	.876E-05
2L	208.2	.306E-01	.373E-03	.285E-04
2R	144.4	.212E-01	.258E-03	.197E-04
2X	55.4	.809E-02	.986E-04	.753E-05
3J	40.7	.439E-02	.535E-04	.409E-05
3V	237.8	.334E-01	.408E-03	.311E-04
3Y	64.5	.790E-02	.964E-04	.736E-05
3C	28.0	.252E-02	.307E-04	.234E-05
3K	18.1	.106E-02	.129E-04	.988E-06
3Q	103.1	.136E-01	.166E-03	.126E-04
3W	28.8	.264E-02	.322E-04	.246E-05
3Z	21.8	.160E-02	.195E-04	.149E-05
3D	14.8	.572E-03	.698E-05	.533E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 28

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1B	47.0	.367E-01	.773E-04	.489E-05
1E	246.8	.208E+00	.436E-03	.276E-04
1M	6.4	.207E-02	.434E-05	.275E-06
1P	5.2	.970E-03	.204E-05	.129E-06
1V	238.7	.201E+00	.422E-03	.267E-04
1C	284.8	.240E+00	.504E-03	.319E-04
1R	10.9	.586E-02	.123E-04	.779E-06
2B	22.9	.161E-01	.340E-04	.215E-05
2P	22.9	.161E-01	.340E-04	.215E-05
2Y	6.9	.248E-02	.521E-05	.330E-06
2C	4.3	.244E-03	.513E-06	.325E-07
2Q	54.8	.434E-01	.912E-04	.577E-05
2X	6.1	.178E-02	.374E-05	.237E-06
3B	4.3	.196E-03	.413E-06	.261E-07
3J	4.3	.196E-03	.413E-06	.261E-07
3V	10.7	.569E-02	.120E-04	.758E-06
3Q	4.6	.476E-03	.100E-05	.633E-07
3Z	21.5	.149E-01	.314E-04	.199E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 28

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.123E-03
1I	.120E-03
1B	.245E-03
1E	.169E-03
1G	.837E-04
1J	.286E-05
1M	.162E-05
1P	.440E-05
1S	.407E-04
1V	.518E-03
1Y	.218E-04
1C	.319E-05
1F	.213E-03
1H	.209E-04
1K	.100E-04
1T	.244E-05
1W	.265E-06
1Z	.272E-06
1D	.526E-06
1L	.178E-05
1R	.235E-04
1X	.376E-06
2B	.683E-05
2J	.380E-05
2P	.782E-06
2V	.340E-04
2Y	.120E-04
2C	.384E-05
2K	.106E-05
2Q	.132E-04
2W	.121E-04
2Z	.152E-04
2D	.934E-05
2L	.501E-04
2R	.320E-04
2X	.116E-04
3B	.815E-06
3J	.610E-05
3V	.321E-04
3Y	.736E-05
3C	.431E-05
3K	.203E-05
3Q	.131E-04
3W	.335E-05
3Z	.165E-05
3D	.965E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 29

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	155.9	.383E-01	.271E-03	.209E-04
1I	151.9	.373E-01	.263E-03	.204E-04
1O	55.9	.128E-01	.908E-04	.702E-05
1U	78.1	.185E-01	.131E-03	.101E-04
1G	185.7	.458E-01	.324E-03	.251E-04
1J	264.1	.658E-01	.465E-03	.360E-04
1S	16.1	.272E-02	.192E-04	.149E-05
1T	23.2	.453E-02	.320E-04	.248E-05
1Y	14.0	.221E-02	.156E-04	.121E-05
1C	97.6	.234E-01	.166E-03	.128E-04
1F	362.3	.907E-01	.641E-03	.496E-04
1H	317.0	.792E-01	.560E-03	.433E-04
1K	286.9	.716E-01	.506E-03	.391E-04
1N	17.2	.300E-02	.212E-04	.164E-05
1Q	137.0	.335E-01	.237E-03	.183E-04
1T	45.7	.102E-01	.724E-04	.560E-05
1Z	10.0	.117E-02	.829E-05	.641E-06
1L	12.2	.175E-02	.124E-04	.956E-06
1R	25.2	.505E-02	.357E-04	.276E-05
2B	30.5	.398E-02	.281E-04	.218E-05
2J	50.4	.903E-02	.639E-04	.494E-05
2C	31.7	.427E-02	.302E-04	.233E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 29

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	170.7	.447E-01	.297E-03	.348E-04
1I	229.1	.604E-01	.402E-03	.470E-04
1E	146.2	.380E-01	.253E-03	.296E-04
1G	330.0	.877E-01	.584E-03	.682E-04
1M	13.5	.223E-02	.148E-04	.174E-05
1S	6.7	.392E-03	.261E-05	.305E-06
~~1T~~ 1V	18.0	.343E-02	.228E-04	.267E-05
1Y	9.9	.126E-02	.838E-05	.980E-06
1C	29.0	.641E-02	.427E-04	.499E-05
1F	457.0	.122E+00	.812E-03	.949E-04
1H	439.0	.117E+00	.780E-03	.911E-04
1K	439.4	.117E+00	.780E-03	.912E-04
1N	22.9	.476E-02	.317E-04	.371E-05
1Q	162.0	.423E-01	.282E-03	.329E-04
1T	71.3	.178E-01	.119E-03	.139E-04
1W	10.1	.130E-02	.868E-05	.101E-05
1Z	22.4	.462E-02	.308E-04	.360E-05
1D	7.8	.702E-03	.467E-05	.546E-06
1L	16.2	.295E-02	.197E-04	.230E-05
1R	39.8	.933E-02	.622E-04	.727E-05
1X	12.7	.200E-02	.133E-04	.156E-05
2B	44.5	.113E-01	.756E-04	.883E-05
2J	18.2	.426E-02	.284E-04	.332E-05
2P	13.7	.305E-02	.203E-04	.238E-05
2V	15.6	.355E-02	.236E-04	.276E-05
2Y	12.4	.271E-02	.180E-04	.211E-05
2C	38.1	.963E-02	.641E-04	.749E-05
2H	18.6	.438E-02	.292E-04	.341E-05
2Q	16.9	.389E-02	.259E-04	.303E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 29

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	320.7	.467E-01	.569E-03	.434E-04
1I	318.2	.463E-01	.565E-03	.431E-04
1O	131.5	.188E-01	.229E-03	.175E-04
1U	111.0	.158E-01	.192E-03	.147E-04
1B	940.7	.138E+00	.168E-02	.129E-03
1E	420.7	.614E-01	.749E-03	.572E-04
1G	462.4	.675E-01	.824E-03	.629E-04
1J	155.2	.223E-01	.272E-03	.207E-04
1P	132.6	.189E-01	.231E-03	.176E-04
1S	118.2	.168E-01	.205E-03	.157E-04
1T	237.7	.344E-01	.420E-03	.321E-04
1Y	54.1	.738E-02	.900E-04	.687E-05
1F	640.0	.937E-01	.114E-02	.873E-04
1H	589.6	.863E-01	.105E-02	.803E-04
1K	582.1	.852E-01	.104E-02	.793E-04
1N	30.8	.395E-02	.481E-04	.368E-05
1Q	230.7	.334E-01	.407E-03	.311E-04
1T	87.7	.123E-01	.150E-03	.115E-04
1W	26.7	.335E-02	.409E-04	.312E-05
1Z	36.5	.479E-02	.584E-04	.446E-05
1D	27.9	.353E-02	.430E-04	.328E-05
1L	42.3	.565E-02	.689E-04	.526E-05
1R	56.9	.780E-02	.951E-04	.726E-05
1X	13.1	.134E-02	.164E-04	.125E-05
2B	63.9	.888E-02	.108E-03	.827E-05
2J	27.8	.356E-02	.434E-04	.331E-05
2P	6.9	.483E-03	.589E-05	.449E-06
2V	67.9	.947E-02	.115E-03	.881E-05
2Y	7.5	.558E-03	.680E-05	.519E-06
2C	16.9	.194E-02	.237E-04	.181E-05
2H	40.1	.537E-02	.655E-04	.500E-05
2Q	19.6	.234E-02	.286E-04	.218E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 29

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.390E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1U	8.7	.399E-02	.839E-05	.531E-06
1G	162.9	.136E+00	.285E-03	.181E-04
1J	20.9	.145E-01	.304E-04	.192E-05
~~1T~~ 1V	27.6	.202E-01	.424E-04	.268E-05
1C	16.5	.107E-01	.225E-04	.142E-05
1H	52.2	.412E-01	.866E-04	.548E-05
1Q	33.2	.249E-01	.524E-04	.332E-05
1T	21.7	.151E-01	.317E-04	.201E-05
1W	11.0	.596E-02	.125E-04	.794E-06
1D	6.5	.207E-02	.435E-05	.275E-06
1R	4.2	.138E-03	.291E-06	.184E-07
~~1X~~ OMIT	21.7	.151E-01	.317E-04	.201E-05
1X	4.5	.382E-03	.802E-06	.508E-07
2V	4.1	.332E-04	.699E-07	.442E-08
2Y	39.4	.302E-01	.635E-04	.402E-05
2H	4.1	.532E-04	.112E-06	.707E-08

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 29

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.659E-04
1I	.729E-04
1O	.181E-04
1U	.156E-04
1B	.129E-03
1E	.749E-04
1G	.107E-03
1J	.239E-04
1M	.104E-05
1P	.176E-04
1S	.160E-04
1T	.545E-04
1Y	.755E-05
1C	.416E-05
1F	.148E-03
1H	.139E-03
1K	.137E-03
1N	.603E-05
1Q	.525E-04
1W	.379E-05
1Z	.666E-05
1D	.363E-05
1L	.671E-05
1R	.118E-04
1X	.235E-05
2B	.137E-04
2J	.570E-05
2P	.187E-05
2V	.105E-04
2Y	.211E-05
2C	.648E-05
2H	.704E-05
2Q	.399E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 30

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	446.2	.108E+00	.763E-03	.591E-04
1I	364.1	.871E-01	.616E-03	.476E-04
1O	234.0	.540E-01	.382E-03	.296E-04
1U	226.6	.522E-01	.369E-03	.285E-04
1B	595.9	.146E+00	.103E-02	.799E-04
1E	342.1	.815E-01	.576E-03	.446E-04
1G	408.6	.984E-01	.696E-03	.538E-04
1J	114.2	.236E-01	.167E-03	.129E-04
1P	51.2	.757E-02	.535E-04	.414E-05
1S	132.7	.283E-01	.200E-03	.155E-04
1V	120.8	.253E-01	.179E-03	.138E-04
1Y	56.7	.896E-02	.633E-04	.490E-05
1F	364.7	.873E-01	.617E-03	.477E-04
1H	427.7	.103E+00	.730E-03	.565E-04
1K	375.0	.899E-01	.635E-03	.492E-04
1N	67.1	.116E-01	.821E-04	.635E-05
1Q	281.4	.661E-01	.467E-03	.362E-04
1T	197.8	.448E-01	.317E-03	.245E-04
1W	85.2	.162E-01	.115E-03	.886E-05
1Z	89.7	.174E-01	.123E-03	.949E-05
1D	96.2	.190E-01	.134E-03	.104E-04
1L	141.7	.306E-01	.216E-03	.167E-04
1R	135.8	.291E-01	.206E-03	.159E-04
2B	42.6	.712E-02	.503E-04	.389E-05
2J	32.0	.442E-02	.312E-04	.242E-05
2C	27.7	.331E-02	.234E-04	.181E-05
2H	44.9	.768E-02	.543E-04	.420E-05
2Q	28.0	.339E-02	.240E-04	.185E-05
2W	44.4	.757E-02	.535E-04	.414E-05
2Z	40.5	.658E-02	.466E-04	.360E-05
2D	17.1	.631E-03	.446E-05	.345E-06
2L	103.9	.227E-01	.161E-03	.124E-04
2X	43.4	.731E-02	.517E-04	.400E-05
3C	23.9	.331E-02	.234E-04	.181E-05
3L	20.1	.235E-02	.166E-04	.129E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 30

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	551.2	.146E+00	.974E-03	.114E-03
1I	427.3	.113E+00	.752E-03	.879E-04
1O	299.9	.785E-01	.523E-03	.611E-04
1U	290.0	.758E-01	.505E-03	.590E-04
1B	735.2	.196E+00	.131E-02	.153E-03
1E	439.9	.116E+00	.774E-03	.905E-04
1G	496.2	.131E+00	.876E-03	.102E-03
1J	46.9	.102E-01	.681E-04	.796E-05
1M	19.9	.295E-02	.196E-04	.229E-05
1P	134.2	.338E-01	.225E-03	.263E-04
1S	237.4	.616E-01	.410E-03	.480E-04
1V	184.5	.474E-01	.315E-03	.369E-04
1Y	167.1	.426E-01	.284E-03	.332E-04
1C	45.3	.978E-02	.651E-04	.761E-05
1F	453.5	.120E+00	.799E-03	.934E-04
1H	529.4	.140E+00	.935E-03	.109E-03
1K	514.9	.137E+00	.909E-03	.106E-03
1N	101.1	.248E-01	.165E-03	.193E-04
1Q	348.4	.916E-01	.610E-03	.713E-04
1T	251.2	.654E-01	.435E-03	.509E-04
1W	115.8	.288E-01	.192E-03	.224E-04
1Z	115.6	.288E-01	.192E-03	.224E-04
1D	122.7	.307E-01	.204E-03	.239E-04
1L	184.0	.472E-01	.314E-03	.368E-04
1R	172.8	.442E-01	.294E-03	.344E-04
1X	38.6	.799E-02	.532E-04	.622E-05
2B	59.5	.150E-01	.996E-04	.116E-04
2J	18.5	.388E-02	.259E-04	.302E-05
2P	11.4	.196E-02	.130E-04	.153E-05
2Y	9.5	.146E-02	.974E-05	.114E-05
2C	18.7	.393E-02	.262E-04	.306E-05
2H	59.8	.150E-01	.100E-03	.117E-04
2Q	43.2	.105E-01	.702E-04	.820E-05
2W	68.0	.173E-01	.115E-03	.134E-04
2Z	63.0	.159E-01	.106E-03	.124E-04
2D	28.5	.658E-02	.438E-04	.513E-05
2L	146.9	.385E-01	.257E-03	.300E-04
2X	69.0	.175E-01	.117E-03	.136E-04
3B	19.8	.493E-02	.328E-04	.384E-05
3C	19.5	.486E-02	.323E-04	.378E-05
3H	19.1	.474E-02	.316E-04	.369E-05
3D	18.0	.445E-02	.296E-04	.347E-05
3L	24.3	.614E-02	.409E-04	.478E-05
3X	16.4	.401E-02	.267E-04	.312E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 30

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	820.9	.119E+00	.145E-02	.111E-03
1I	667.1	.966E-01	.118E-02	.899E-04
1O	412.7	.591E-01	.720E-03	.550E-04
1U	418.7	.599E-01	.731E-03	.558E-04
1B	1078.2	.157E+00	.192E-02	.146E-03
1E	584.4	.844E-01	.103E-02	.785E-04
1G	701.6	.102E+00	.124E-02	.946E-04
1J	91.4	.117E-01	.143E-03	.109E-04
1M	82.2	.104E-01	.126E-03	.964E-05
1P	159.7	.218E-01	.266E-03	.203E-04
1S	506.9	.729E-01	.890E-03	.679E-04
1V	1222.0	.178E+00	.217E-02	.166E-03
1Y	271.1	.382E-01	.466E-03	.356E-04
1C	15.2	.487E-03	.594E-05	.453E-06
1F	584.1	.843E-01	.103E-02	.785E-04
1H	718.7	.104E+00	.127E-02	.970E-04
1K	678.5	.982E-01	.120E-02	.915E-04
1N	157.7	.215E-01	.262E-03	.200E-04
1Q	495.4	.712E-01	.869E-03	.663E-04
1T	335.9	.477E-01	.582E-03	.445E-04
1W	132.5	.178E-01	.217E-03	.165E-04
1Z	143.8	.194E-01	.237E-03	.181E-04
1D	138.5	.187E-01	.227E-03	.174E-04
1L	214.0	.298E-01	.363E-03	.277E-04
1R	202.2	.280E-01	.342E-03	.261E-04
1X	31.9	.295E-02	.359E-04	.274E-05
2B	74.7	.101E-01	.123E-03	.936E-05
2J	23.1	.245E-02	.298E-04	.228E-05
2Y	23.9	.256E-02	.312E-04	.238E-05
2C	25.7	.283E-02	.346E-04	.264E-05
2H	98.5	.136E-01	.165E-03	.126E-04
2Q	60.4	.794E-02	.969E-04	.739E-05
2W	76.3	.103E-01	.125E-03	.957E-05
2Z	76.7	.103E-01	.126E-03	.964E-05
2D	36.8	.446E-02	.544E-04	.415E-05
2L	178.8	.254E-01	.310E-03	.236E-04
2X	69.9	.934E-02	.114E-03	.870E-05
3B	17.2	.237E-02	.289E-04	.221E-05
3C	18.3	.254E-02	.310E-04	.236E-05
3H	24.2	.341E-02	.416E-04	.318E-05
3D	26.7	.377E-02	.460E-04	.351E-05
3L	53.2	.769E-02	.937E-04	.716E-05
3X	18.1	.251E-02	.306E-04	.233E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 30

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	48.9	.384E-01	.807E-04	.511E-05
1I	77.9	.631E-01	.133E-03	.840E-05
1O	38.3	.293E-01	.616E-04	.390E-05
1U	31.4	.234E-01	.493E-04	.312E-05
1E	41.7	.322E-01	.676E-04	.428E-05
1P	54.6	.432E-01	.909E-04	.575E-05
1S	68.3	.549E-01	.115E-03	.731E-05
1V	178.0	.149E+00	.313E-03	.198E-04
1Y	50.1	.394E-01	.828E-04	.524E-05
1F	67.1	.539E-01	.113E-03	.717E-05
1K	62.5	.500E-01	.105E-03	.665E-05
1N	19.3	.130E-01	.274E-04	.174E-05
1Q	40.8	.314E-01	.660E-04	.418E-05
1T	36.8	.280E-01	.588E-04	.372E-05
1W	14.1	.865E-02	.182E-04	.115E-05
1Z	57.4	.456E-01	.960E-04	.607E-05
1L	19.7	.134E-01	.281E-04	.178E-05
2B	7.1	.266E-02	.559E-05	.354E-06
2H	12.6	.736E-02	.155E-04	.979E-06
2Q	10.2	.526E-02	.111E-04	.700E-06
2W	27.4	.200E-01	.420E-04	.266E-05
2Z	8.1	.351E-02	.738E-05	.467E-06
2D	5.1	.912E-03	.192E-05	.121E-06
2X	12.0	.685E-02	.144E-04	.911E-06
3B	5.8	.153E-02	.321E-05	.203E-06
3D	6.4	.200E-02	.420E-05	.266E-06
3L	10.7	.567E-02	.119E-04	.755E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 30

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.184E-03
1I	.147E-03
1O	.942E-04
1U	.937E-04
1B	.244E-03
1E	.137E-03
1G	.160E-03
1J	.167E-04
1M	.110E-04
1P	.368E-04
1S	.985E-04
1V	.191E-03
1Y	.562E-04
1C	.500E-05
1F	.139E-03
1H	.167E-03
1K	.160E-03
1N	.322E-04
1Q	.112E-03
1T	.772E-04
1W	.308E-04
1Z	.328E-04
1D	.325E-04
1L	.512E-04
1R	.480E-04
1X	.646E-05
2B	.167E-04
2J	.428E-05
2P	.911E-06
2Y	.306E-05
2C	.462E-05
2H	.200E-04
2Q	.125E-04
2W	.182E-04
2Z	.174E-04
2D	.725E-05
2L	.426E-04
2X	.172E-04
3B	.452E-05
3C	.477E-05
3H	.538E-05
3D	.560E-05
3L	.102E-04
3X	.420E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNIT # 1 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.189E-04	63.80
STACK DIAMETER (M)	.600E-02	2.58
EXIT VELOCITY (M/SEC)	.668E+00	12.20
DENSITY RATIO	.73	.79
STACK HEIGHT	.0300	60.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1O	78.7	.147E-01	.104E-03	.804E-05
1B	44.6	.602E-02	.426E-04	.329E-05
1E	41.6	.526E-02	.372E-04	.287E-05
1J	49.2	.719E-02	.509E-04	.393E-05
1C	43.9	.584E-02	.413E-04	.319E-05
1F	62.6	.106E-01	.748E-04	.579E-05
1H	82.5	.156E-01	.111E-03	.855E-05
1K	76.8	.142E-01	.100E-03	.776E-05
1N	24.1	.817E-03	.578E-05	.447E-06
1Q	105.2	.214E-01	.151E-03	.117E-04
1T	113.9	.236E-01	.167E-03	.129E-04
1W	70.8	.127E-01	.896E-04	.693E-05
1Z	70.5	.126E-01	.892E-04	.690E-05
1D	65.1	.112E-01	.795E-04	.615E-05
1L	49.5	.726E-02	.513E-04	.397E-05
1R	59.4	.979E-02	.692E-04	.536E-05
1X	34.8	.352E-02	.249E-04	.193E-05
2B	168.7	.368E-01	.260E-03	.201E-04
2C	40.6	.428E-02	.302E-04	.234E-05
2F	127.4	.263E-01	.186E-03	.144E-04
2K	104.9	.206E-01	.146E-03	.113E-04
2Q	100.0	.194E-01	.137E-03	.106E-04
2W	71.7	.122E-01	.863E-04	.667E-05
2D	61.4	.956E-02	.676E-04	.523E-05
2L	86.3	.159E-01	.112E-03	.869E-05
2X	38.3	.371E-02	.262E-04	.203E-05
3B	57.6	.956E-02	.676E-04	.523E-05
3C	51.5	.801E-02	.567E-04	.438E-05
3K	36.6	.423E-02	.299E-04	.231E-05
3W	42.9	.583E-02	.412E-04	.319E-05
3Z	43.1	.588E-02	.416E-04	.322E-05
3L	43.7	.602E-02	.426E-04	.329E-05
3X	45.1	.639E-02	.452E-04	.349E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNIT # 3 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.138E+06	
VOLUME FLOW (CU. M/SEC)	.178E-04	90.80
STACK DIAMETER (M)	.400E-02	2.20
EXIT VELOCITY (M/SEC)	.142E+01	23.89
DENSITY RATIO	.38	.68
STACK HEIGHT	.0260	52.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	69.2	.163E-01	.109E-03	.127E-04
1I	9.8	.272E-03	.181E-05	.212E-06
1O	122.0	.306E-01	.203E-03	.238E-04
1B	62.8	.146E-01	.971E-04	.113E-04
1E	62.8	.146E-01	.970E-04	.113E-04
1G	70.3	.166E-01	.111E-03	.129E-04
1J	38.3	.797E-02	.531E-04	.621E-05
1M	13.8	.136E-02	.905E-05	.106E-05
1P	17.5	.236E-02	.157E-04	.184E-05
1S	23.1	.388E-02	.259E-04	.302E-05
1V	18.1	.252E-02	.168E-04	.196E-05
1Y	18.6	.266E-02	.177E-04	.207E-05
1C	71.9	.170E-01	.114E-03	.133E-04
1F	84.2	.204E-01	.136E-03	.159E-04
1H	105.4	.261E-01	.174E-03	.203E-04
1K	99.5	.245E-01	.163E-03	.191E-04
1N	30.1	.576E-02	.384E-04	.448E-05
1Q	133.2	.336E-01	.224E-03	.262E-04
1T	143.3	.363E-01	.242E-03	.283E-04
1W	95.5	.234E-01	.156E-03	.182E-04
1Z	94.9	.232E-01	.155E-03	.181E-04
1D	84.7	.205E-01	.136E-03	.159E-04
1L	71.5	.169E-01	.113E-03	.132E-04
1R	82.2	.198E-01	.132E-03	.154E-04
1X	56.4	.129E-01	.857E-04	.100E-04
2B	200.6	.507E-01	.337E-03	.395E-04
2J	21.8	.242E-02	.161E-04	.188E-05
2P	16.6	.101E-02	.671E-05	.784E-06
2V	21.6	.236E-02	.157E-04	.183E-05
2Y	22.1	.249E-02	.166E-04	.194E-05
2C	50.8	.102E-01	.681E-04	.796E-05
2F	151.8	.375E-01	.250E-03	.292E-04
2K	121.0	.292E-01	.194E-03	.227E-04
2Q	124.5	.301E-01	.201E-03	.235E-04
2W	91.8	.213E-01	.142E-03	.166E-04
2D	72.0	.160E-01	.106E-03	.124E-04
2L	113.2	.271E-01	.180E-03	.211E-04
2X	51.9	.105E-01	.701E-04	.819E-05
3B	76.3	.188E-01	.125E-03	.146E-04
3P	18.2	.309E-02	.206E-04	.241E-05
3V	22.3	.421E-02	.280E-04	.328E-05
~~1Y~~ 3Y	20.2	.363E-02	.242E-04	.283E-05
3C	62.7	.151E-01	.101E-03	.118E-04
3K	47.6	.110E-01	.735E-04	.859E-05
3Q	32.7	.702E-02	.468E-04	.547E-05
3W	56.9	.136E-01	.903E-04	.106E-04
3Z	59.2	.142E-01	.944E-04	.110E-04
3D	27.5	.561E-02	.374E-04	.437E-05
3L	60.9	.146E-01	.975E-04	.114E-04
3X	63.4	.153E-01	.102E-03	.119E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNIT # 4 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.326E-04	108.60
STACK DIAMETER (M)	.740E-02	3.12
EXIT VELOCITY (M/SEC)	.758E+00	14.20
DENSITY RATIO	.61	.68
STACK HEIGHT	.0320	64.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	87.2	.122E-01	.148E-03	.113E-04
1I	13.7	.134E-02	.163E-04	.125E-05
1O	178.9	.257E-01	.313E-03	.239E-04
1B	93.3	.131E-01	.159E-03	.122E-04
1E	80.9	.112E-01	.137E-03	.105E-04
1G	103.6	.146E-01	.178E-03	.136E-04
1J	46.1	.611E-02	.745E-04	.569E-05
1M	32.4	.410E-02	.500E-04	.381E-05
1P	35.0	.447E-02	.546E-04	.416E-05
1S	77.1	.107E-01	.130E-03	.994E-05
1V	79.6	.110E-01	.135E-03	.103E-04
1Y	27.5	.337E-02	.411E-04	.314E-05
1C	25.9	.313E-02	.382E-04	.291E-05
1F	110.5	.156E-01	.190E-03	.145E-04
1H	141.3	.201E-01	.246E-03	.188E-04
1K	129.5	.184E-01	.224E-03	.171E-04
1N	41.8	.547E-02	.668E-04	.510E-05
1Q	178.6	.256E-01	.313E-03	.239E-04
1T	181.6	.261E-01	.318E-03	.243E-04
1W	119.8	.170E-01	.207E-03	.158E-04
1Z	122.8	.174E-01	.212E-03	.162E-04
1D	111.8	.158E-01	.193E-03	.147E-04
1L	82.0	.114E-01	.139E-03	.106E-04
1R	96.5	.135E-01	.165E-03	.126E-04
1X	61.9	.844E-02	.103E-03	.785E-05
2B	291.8	.414E-01	.505E-03	.385E-04
2J	15.8	.731E-03	.891E-05	.680E-06
2P	36.3	.375E-02	.457E-04	.349E-05
2V	65.3	.802E-02	.978E-04	.747E-05
2Y	21.6	.159E-02	.193E-04	.148E-05
2C	37.3	.389E-02	.475E-04	.362E-05
2F	203.5	.284E-01	.346E-03	.264E-04
2K	185.2	.257E-01	.313E-03	.239E-04
2Q	171.6	.237E-01	.289E-03	.220E-04
2W	129.1	.174E-01	.212E-03	.162E-04
2D	97.0	.127E-01	.155E-03	.118E-04
2L	128.6	.173E-01	.212E-03	.161E-04
2X	61.0	.738E-02	.900E-04	.687E-05
3B	97.0	.127E-01	.155E-03	.118E-04
3V	56.3	.670E-02	.817E-04	.624E-05
~~1Y~~ 3Y	20.6	.144E-02	.175E-04	.134E-05
3C	36.6	.379E-02	.462E-04	.352E-05
3K	35.2	.358E-02	.436E-04	.333E-05
3Q	31.6	.306E-02	.373E-04	.285E-05
3W	77.0	.975E-02	.119E-03	.907E-05
3Z	69.4	.863E-02	.105E-03	.803E-05
3D	30.0	.282E-02	.344E-04	.262E-05
3L	67.1	.828E-02	.101E-03	.771E-05
3X	63.4	.774E-02	.944E-04	.720E-05
4B	16.3	.794E-03	.969E-05	.740E-06
4J	12.8	.284E-03	.347E-05	.265E-06
4P	11.9	.142E-03	.173E-05	.132E-06
4V	46.2	.520E-02	.635E-04	.485E-05
4Y	31.8	.307E-02	.375E-04	.286E-05
4C	21.7	.160E-02	.195E-04	.149E-05
4H	29.2	.270E-02	.330E-04	.252E-05
4W	23.8	.191E-02	.233E-04	.178E-05
4Z	13.0	.311E-03	.380E-05	.290E-06
4X	12.7	.263E-03	.321E-05	.245E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNIT # 3 LENGTH SCALE: 2000

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
4B	25.2	.597E-02	.397E-04	.465E-05
4J	15.8	.345E-02	.230E-04	.269E-05
4P	20.8	.479E-02	.319E-04	.373E-05
4V	25.1	.593E-02	.395E-04	.462E-05
4Y	10.4	.197E-02	.131E-04	.154E-05
4C	22.7	.529E-02	.352E-04	.412E-05
4H	19.4	.441E-02	.294E-04	.343E-05
4Q	22.1	.514E-02	.342E-04	.400E-05
4W	14.3	.304E-02	.202E-04	.236E-05
4Z	21.0	.485E-02	.323E-04	.378E-05
4D	6.3	.881E-03	.587E-05	.686E-06
4L	4.9	.490E-03	.326E-05	.382E-06
4X	17.4	.386E-02	.257E-04	.300E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNIT # 6 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	3.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.562E-05	15.52
STACK DIAMETER (M)	.380E-02	1.80
EXIT VELOCITY (M/SEC)	.496E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1B	67.2	.540E-01	.114E-03	.719E-05
1G	29.9	.221E-01	.464E-04	.294E-05
1J	30.6	.227E-01	.477E-04	.302E-05
1P	7.1	.265E-02	.557E-05	.352E-06
1S	14.4	.884E-02	.186E-04	.118E-05
1V	16.1	.103E-01	.217E-04	.137E-05
1Y	6.3	.195E-02	.410E-05	.259E-06
1C	11.2	.611E-02	.128E-04	.813E-06
1F	11.6	.646E-02	.136E-04	.860E-06
1K	8.9	.415E-02	.873E-05	.553E-06
1T	20.2	.138E-01	.291E-04	.184E-05
1W	9.1	.436E-02	.917E-05	.580E-06
1Z	12.5	.721E-02	.152E-04	.959E-06
1L	12.0	.681E-02	.143E-04	.906E-06
1R	11.7	.656E-02	.138E-04	.873E-06
~~1X~~ 1R	11.7	.656E-02	.138E-04	.873E-06
1X	9.2	.442E-02	.930E-05	.589E-06
2B	27.9	.204E-01	.428E-04	.271E-05
2P	6.0	.165E-02	.347E-05	.220E-06
2V	11.5	.636E-02	.134E-04	.847E-06
2Y	12.0	.679E-02	.143E-04	.903E-06
2K	16.1	.103E-01	.216E-04	.137E-05
2W	11.1	.606E-02	.127E-04	.807E-06
2D	8.5	.378E-02	.795E-05	.503E-06
2L	11.6	.647E-02	.136E-04	.861E-06
3B	6.5	.210E-02	.442E-05	.280E-06
3C	26.4	.191E-01	.402E-04	.254E-05
3Q	11.0	.598E-02	.126E-04	.796E-06
3W	13.0	.766E-02	.161E-04	.102E-05
3X	10.6	.558E-02	.117E-04	.743E-06
4V	13.7	.761E-02	.160E-04	.101E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 31

UNITS 1 3 4 6 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.189E-04
1I	.137E-05
1O	.388E-04
1B	.198E-04
1E	.175E-04
1G	.215E-04
1J	.997E-05
1M	.445E-05
1P	.529E-05
1S	.118E-04
1V	.116E-04
1Y	.440E-05
1C	.112E-04
1F	.245E-04
1H	.316E-04
1K	.292E-04
1N	.781E-05
1Q	.405E-04
1T	.424E-04
1W	.273E-04
1Z	.277E-04
1D	.247E-04
1L	.189E-04
1R	.223E-04
1X	.141E-04
2B	.640E-04
2J	.180E-05
2P	.397E-05
2V	.863E-05
2Y	.271E-05
2C	.857E-05
2F	.450E-04
2K	.385E-04
2Q	.369E-04
2W	.267E-04
2D	.197E-04
2L	.295E-04
2X	.119E-04
3B	.210E-04
3P	.144E-05
3V	.819E-05
3Y	.303E-05
3C	.111E-04
3K	.865E-05
3Q	.618E-05
3W	.157E-04
3Z	.149E-04
3D	.523E-05
3L	.148E-04
3X	.147E-04
4B	.351E-05
4J	.187E-05
4P	.236E-05
4V	.769E-05
4Y	.378E-05
4C	.395E-05
4H	.457E-05
4Q	.239E-05
4W	.319E-05
4Z	.255E-05
4D	.410E-06
4L	.228E-06
4X	.204E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 32

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	85.6	.157E-01	.131E-03	.101E-04
1O	69.6	.122E-01	.103E-03	.786E-05
1U	37.4	.535E-02	.448E-04	.343E-05
1B	1043.8	.221E+00	.185E-02	.142E-03
1E	831.7	.176E+00	.147E-02	.113E-03
1G	877.6	.186E+00	.155E-02	.119E-03
1J	495.0	.103E+00	.867E-03	.664E-04
1M	138.4	.270E-01	.226E-03	.173E-04
1P	354.7	.734E-01	.615E-03	.471E-04
1S	119.9	.230E-01	.193E-03	.148E-04
1V	64.8	.112E-01	.941E-04	.721E-05
1C	1805.0	.384E+00	.322E-02	.247E-03
1F	1617.4	.344E+00	.288E-02	.221E-03
1H	1775.8	.378E+00	.317E-02	.243E-03
1N	290.1	.595E-01	.499E-03	.382E-04
1Q	888.9	.188E+00	.157E-02	.121E-03
1T	484.0	.101E+00	.847E-03	.649E-04
1K	13.3	.165E-03	.138E-05	.106E-06
1W	271.2	.555E-01	.465E-03	.356E-04
1Z	332.1	.685E-01	.574E-03	.440E-04
1D	200.5	.403E-01	.338E-03	.259E-04
1R	1365.1	.290E+00	.243E-02	.186E-03
1L	1925.0	.410E+00	.344E-02	.263E-03
2P	31.3	.524E-02	.439E-04	.337E-05
2V	34.7	.596E-02	.499E-04	.383E-05
2Y	8.3	.299E-03	.251E-05	.192E-06
2C	105.5	.212E-01	.177E-03	.136E-04
2K	91.0	.180E-01	.151E-03	.116E-04
2L	70.5	.136E-01	.114E-03	.876E-05
2X	39.6	.701E-02	.587E-04	.450E-05
3B	23.5	.131E-02	.109E-04	.838E-06
3J	32.5	.322E-02	.270E-04	.207E-05
3Q	17.7	.609E-04	.510E-06	.391E-07
3C	41.6	.517E-02	.433E-04	.332E-05
3K	20.7	.690E-03	.578E-05	.443E-06
3Q	32.1	.315E-02	.264E-04	.202E-05
3D	18.7	.270E-03	.226E-05	.173E-06
3X	32.7	.327E-02	.274E-04	.210E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 32

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	48.4	.464E-02	.675E-04	.514E-05
1I	360.7	.432E-01	.629E-03	.478E-04
1O	320.5	.383E-01	.556E-03	.424E-04
1U	47.6	.453E-02	.660E-04	.502E-05
1B	92.7	.101E-01	.147E-03	.112E-04
1E	81.5	.873E-02	.127E-03	.966E-05
1G	258.7	.306E-01	.445E-03	.339E-04
1J	616.7	.748E-01	.109E-02	.829E-04
1M	336.3	.402E-01	.585E-03	.445E-04
1P	1682.8	.207E+00	.300E-02	.229E-03
1S	1685.9	.207E+00	.301E-02	.229E-03
1V	1354.9	.166E+00	.242E-02	.184E-03
1Y	351.6	.421E-01	.612E-03	.466E-04
1C	73.4	.772E-02	.112E-03	.855E-05
1F	202.1	.236E-01	.344E-03	.262E-04
1H	708.2	.862E-01	.125E-02	.954E-04
1N	602.9	.731E-01	.106E-02	.810E-04
1Q	4476.3	.552E+00	.802E-02	.611E-03
1T	4749.4	.585E+00	.852E-02	.648E-03
1X	4021.4	.496E+00	.721E-02	.549E-03
1K	27.0	.199E-02	.290E-04	.220E-05
1W	4504.5	.555E+00	.808E-02	.615E-03
1Z	4012.7	.494E+00	.719E-02	.547E-03
1D	2440.5	.300E+00	.437E-02	.332E-03
1R	4479.6	.552E+00	.803E-02	.611E-03
1L	1351.8	.166E+00	.241E-02	.183E-03
2B	26.8	.142E-02	.207E-04	.158E-05
2P	61.6	.572E-02	.832E-04	.633E-05
2V	27.7	.154E-02	.224E-04	.170E-05
2Y	18.6	.411E-03	.598E-05	.455E-06
2C	967.2	.118E+00	.171E-02	.130E-03
2K	790.2	.957E-01	.139E-02	.106E-03
2W	39.9	.304E-02	.443E-04	.337E-05
2Z	44.0	.355E-02	.516E-04	.393E-05
2L	171.2	.193E-01	.280E-03	.213E-04
2X	241.6	.280E-01	.407E-03	.310E-04
3J	26.1	.238E-02	.346E-04	.263E-05
~~3Q~~ 3P	15.5	.108E-02	.157E-04	.119E-05
3C	27.6	.256E-02	.373E-04	.284E-05
3K	35.5	.355E-02	.516E-04	.393E-05
3Q	40.2	.412E-02	.599E-04	.456E-05
3D	51.9	.557E-02	.811E-04	.617E-05
3L	17.3	.130E-02	.189E-04	.144E-05
3X	32.1	.313E-02	.455E-04	.346E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 32

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	98.2	.172E+00	.169E-03	.179E-04
1I	98.2	.172E+00	.169E-03	.179E-04
1B	92.0	.161E+00	.158E-03	.167E-04
1E	371.4	.671E+00	.660E-03	.699E-04
1P	90.2	.157E+00	.155E-03	.164E-04
1C	11.3	.132E-01	.130E-04	.137E-05
~~1H~~ OMIT	20.1	.294E-01	.290E-04	.306E-05
1N	9.8	.106E-01	.104E-04	.110E-05
1Q	319.2	.576E+00	.566E-03	.599E-04
1X	48.8	.817E-01	.804E-04	.851E-05
1K	114.0	.201E+00	.198E-03	.209E-04
1W	362.9	.655E+00	.645E-03	.683E-04
1Z	76.6	.132E+00	.130E-03	.138E-04
~~1D~~ OMIT	76.6	.132E+00	.130E-03	.138E-04
1D	116.2	.205E+00	.202E-03	.213E-04
1R	23.3	.351E-01	.345E-04	.366E-05
2B	5.3	.236E-02	.232E-05	.246E-06
2Y	27.9	.435E-01	.428E-04	.453E-05
2C	17.2	.240E-01	.236E-04	.250E-05
2D	7.5	.627E-02	.617E-05	.653E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 32

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.703E-05
1I	.508E-04
1O	.432E-04
1U	.538E-05
1B	.280E-04
1E	.290E-04
1G	.465E-04
1J	.899E-04
1M	.463E-04
1P	.235E-03
1S	.231E-03
1V	.185E-03
1Y	.466E-04
1C	.348E-04
1F	.495E-04
1H	.121E-03
1N	.855E-04
1Q	.630E-03
1T	.655E-03
1X	.549E-03
1K	.443E-05
1W	.626E-03
1Z	.553E-03
1D	.339E-03
1R	.631E-03
1L	.211E-03
2B	.160E-05
2P	.669E-05
2V	.211E-05
2Y	.956E-06
2C	.132E-03
2K	.107E-03
2W	.337E-05
2Z	.393E-05
2D	.692E-07
2L	.222E-04
2X	.314E-04
3B	.887E-07
3J	.285E-05
3Q	.597E-05
3C	.319E-05
3K	.397E-05
3D	.619E-05
3L	.144E-05
3X	.368E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 33

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	910.3	.193E+00	.162E-02	.124E-03
1I	211.1	.431E-01	.362E-03	.277E-04
1O	195.3	.398E-01	.333E-03	.255E-04
1U	194.7	.396E-01	.332E-03	.254E-04
1B	720.9	.152E+00	.128E-02	.979E-04
1E	1198.9	.255E+00	.214E-02	.164E-03
1G	881.4	.187E+00	.157E-02	.120E-03
1J	753.4	.159E+00	.134E-02	.102E-03
1M	125.9	.249E-01	.209E-03	.160E-04
1P	130.3	.258E-01	.216E-03	.166E-04
1S	207.1	.423E-01	.354E-03	.271E-04
1C	963.8	.205E+00	.171E-02	.131E-03
1F	1196.1	.254E+00	.213E-02	.163E-03
1H	1160.4	.247E+00	.207E-02	.158E-03
1K	1223.6	.260E+00	.218E-02	.167E-03
1N	336.6	.701E-01	.587E-03	.450E-04
1T	318.3	.661E-01	.554E-03	.425E-04
1Z	95.6	.184E-01	.154E-03	.118E-04
1D	115.0	.225E-01	.189E-03	.145E-04
1L	1034.7	.220E+00	.184E-02	.141E-03
1R	564.8	.119E+00	.997E-03	.764E-04
1X	155.4	.312E-01	.262E-03	.200E-04
2B	41.7	.627E-02	.525E-04	.402E-05
2J	71.6	.127E-01	.106E-03	.813E-05
2P	26.7	.305E-02	.256E-04	.196E-05
2V	43.2	.658E-02	.551E-04	.422E-05
2Y	27.3	.317E-02	.265E-04	.203E-05
2K	81.6	.148E-01	.124E-03	.951E-05
2Q	43.9	.673E-02	.564E-04	.432E-05
2W	46.8	.736E-02	.617E-04	.472E-05
2Z	54.3	.897E-02	.752E-04	.576E-05
2D	32.7	.432E-02	.362E-04	.277E-05
2L	40.3	.596E-02	.499E-04	.383E-05
3B	32.3	.424E-02	.355E-04	.272E-05
3J	57.8	.971E-02	.814E-04	.623E-05
3P	29.7	.369E-02	.310E-04	.237E-05
3V	39.2	.573E-02	.480E-04	.368E-05
3Y	34.8	.479E-02	.401E-04	.307E-05
3C	40.0	.591E-02	.495E-04	.379E-05
3K	43.2	.657E-02	.551E-04	.422E-05
3Q	39.2	.572E-02	.480E-04	.367E-05
3W	39.4	.578E-02	.484E-04	.371E-05
3Z	42.9	.651E-02	.546E-04	.418E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 33

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1140.9	.140E+00	.203E-02	.155E-03
1I	1251.3	.153E+00	.223E-02	.170E-03
1O	1101.2	.135E+00	.196E-02	.149E-03
1U	1025.9	.125E+00	.182E-02	.139E-03
1E	1456.0	.179E+00	.260E-02	.198E-03
1G	1507.0	.185E+00	.269E-02	.205E-03
1J	2409.1	.296E+00	.431E-02	.328E-03
1M	718.7	.874E-01	.127E-02	.968E-04
1P	1917.0	.236E+00	.343E-02	.261E-03
1S	1419.4	.174E+00	.253E-02	.193E-03
1V	909.2	.111E+00	.161E-02	.123E-03
1Y	122.1	.137E-01	.200E-03	.152E-04
1C	969.2	.118E+00	.172E-02	.131E-03
1F	1694.0	.208E+00	.302E-02	.230E-03
1H	2662.4	.328E+00	.477E-02	.363E-03
1K	2585.5	.318E+00	.463E-02	.352E-03
1N	1287.7	.158E+00	.229E-02	.175E-03
1Q	181.7	.211E-01	.307E-03	.234E-04
1T	1887.4	.232E+00	.337E-02	.257E-03
1W	1070.7	.131E+00	.190E-02	.145E-03
1Z	1201.1	.147E+00	.214E-02	.163E-03
1D	881.8	.108E+00	.157E-02	.119E-03
1L	2116.7	.260E+00	.378E-02	.288E-03
1R	2424.7	.298E+00	.434E-02	.330E-03
1X	1173.9	.144E+00	.209E-02	.159E-03
2B	101.5	.117E-01	.170E-03	.129E-04
2J	71.0	.792E-02	.115E-03	.876E-05
2V	12.9	.729E-03	.106E-04	.807E-06
2C	90.2	.103E-01	.149E-03	.114E-04
2K	143.0	.168E-01	.245E-03	.186E-04
2Q	62.9	.691E-02	.101E-03	.765E-05
2W	160.5	.190E-01	.276E-03	.210E-04
2Z	155.7	.184E-01	.267E-03	.203E-04
2D	101.8	.117E-01	.170E-03	.130E-04
2L	110.9	.128E-01	.187E-03	.142E-04
3V	11.7	.957E-04	.139E-05	.106E-06
3C	21.4	.130E-02	.189E-04	.144E-05
3K	20.9	.124E-02	.180E-04	.137E-05
3Q	20.1	.114E-02	.166E-04	.126E-05
3W	44.6	.417E-02	.607E-04	.462E-05
3Z	47.7	.455E-02	.662E-04	.504E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 33

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1I	289.7	.523E+00	.514E-03	.544E-04
1O	248.4	.447E+00	.440E-03	.466E-04
1E	112.6	.199E+00	.196E-03	.207E-04
1V	121.6	.215E+00	.212E-03	.224E-04
1F	55.5	.948E-01	.932E-04	.987E-05
1H	174.3	.312E+00	.307E-03	.325E-04
1Q	312.5	.564E+00	.555E-03	.588E-04
1L	79.2	.138E+00	.136E-03	.144E-04
1X	7.2	.665E-02	.655E-05	.693E-06
2J	4.4	.638E-02	.627E-05	.664E-06
2Y	25.5	.449E-01	.442E-04	.468E-05
2C	31.5	.558E-01	.549E-04	.581E-05
2Q	3.0	.380E-02	.374E-05	.396E-06
2Z	3.6	.498E-02	.490E-05	.518E-06
2D	7.2	.116E-01	.114E-04	.121E-05
3J	56.1	.950E-01	.935E-04	.990E-05
3P	20.4	.298E-01	.294E-04	.311E-05
3V	7.5	.631E-02	.621E-05	.658E-06
3C	6.0	.354E-02	.348E-05	.368E-06
3Q	6.7	.491E-02	.483E-05	.511E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 33

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.168E-03
1I	.178E-03
1O	.157E-03
1U	.142E-03
1B	.104E-04
1E	.217E-03
1G	.217E-03
1J	.339E-03
1M	.985E-04
1P	.262E-03
1S	.196E-03
1V	.125E-03
1Y	.152E-04
1C	.145E-03
1F	.249E-03
1H	.383E-03
1K	.370E-03
1N	.179E-03
1Q	.296E-04
1T	.261E-03
1W	.145E-03
1Z	.164E-03
1D	.121E-03
1L	.304E-03
1R	.338E-03
1X	.161E-03
2B	.134E-04
2J	.969E-05
2P	.207E-06
2V	.125E-05
2Y	.710E-06
2C	.120E-04
2K	.196E-04
2Q	.815E-05
2W	.215E-04
2Z	.210E-04
2D	.134E-04
2L	.146E-04
3B	.288E-06
3J	.171E-05
3P	.580E-06
3V	.565E-06
3Y	.325E-06
3C	.188E-05
3K	.182E-05
3Q	.171E-05
3W	.501E-05
3Z	.548E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 34

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	669.6	.141E+00	.118E-02	.905E-04
1I	555.0	.116E+00	.975E-03	.747E-04
1O	308.4	.635E-01	.532E-03	.407E-04
1U	307.5	.633E-01	.530E-03	.406E-04
1B	556.1	.117E+00	.977E-03	.748E-04
1E	693.3	.146E+00	.122E-02	.937E-04
1G	563.5	.118E+00	.990E-03	.759E-04
1J	531.7	.111E+00	.933E-03	.715E-04
1M	360.6	.747E-01	.626E-03	.479E-04
1P	277.5	.568E-01	.476E-03	.365E-04
1S	252.0	.514E-01	.430E-03	.330E-04
1V	187.5	.375E-01	.315E-03	.241E-04
1Y	47.7	.755E-02	.633E-04	.485E-05
1C	576.4	.121E+00	.101E-02	.776E-04
1F	568.5	.119E+00	.999E-03	.765E-04
1H	569:1	.119E+00	.100E-02	.766E-04
1K	554.8	.116E+00	.975E-03	.747E-04
1N	149.7	.294E-01	.247E-03	.189E-04
1Q	276.0	.565E-01	.473E-03	.363E-04
1T	174.6	.348E-01	.291E-03	.223E-04
1W	97.5	.182E-01	.153E-03	.117E-04
1Z	82.8	.151E-01	.126E-03	.968E-05
1D	46.6	.730E-02	.612E-04	.469E-05
1L	350.0	.724E-01	.607E-03	.465E-04
1R	169.6	.337E-01	.282E-03	.216E-04
1X	89.9	.166E-01	.139E-03	.107E-04
2B	99.6	.184E-01	.154E-03	.118E-04
2J	31.7	.386E-02	.323E-04	.248E-05
2P	21.1	.159E-02	.134E-04	.102E-05
2V	32.5	.402E-02	.337E-04	.258E-05
2Y	28.6	.320E-02	.268E-04	.205E-05
2C	71.4	.124E-01	.104E-03	.795E-05
2K	58.9	.968E-02	.811E-04	.622E-05
2Q	35.0	.458E-02	.383E-04	.294E-05
2W	43.0	.629E-02	.527E-04	.404E-05
2Z	42.0	.606E-02	.508E-04	.389E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 34

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	985.6	.120E+00	.175E-02	.133E-03
1I	1574.1	.193E+00	.281E-02	.214E-03
1O	984.4	.120E+00	.175E-02	.133E-03
1U	933.6	.114E+00	.166E-02	.126E-03
1B	953.2	.116E+00	.169E-02	.129E-03
1E	1354.3	.166E+00	.241E-02	.184E-03
1G	1030.0	.126E+00	.183E-02	.139E-03
1J	1334.1	.163E+00	.238E-02	.181E-03
1M	1197.5	.147E+00	.213E-02	.162E-03
1P	1156.8	.142E+00	.206E-02	.157E-03
1S	780.1	.950E-01	.138E-02	.105E-03
1V	543.3	.658E-01	.957E-03	.728E-04
1Y	189.8	.221E-01	.322E-03	.245E-04
1C	719.4	.875E-01	.127E-02	.969E-04
1F	879.1	.107E+00	.156E-02	.119E-03
1H	1132.0	.139E+00	.201E-02	.153E-03
1K	1071.7	.131E+00	.191E-02	.145E-03
1N	473.6	.572E-01	.832E-03	.633E-04
1Q	900.8	.110E+00	.160E-02	.122E-03
1T	590.0	.716E-01	.104E-02	.792E-04
1W	232.0	.273E-01	.397E-03	.302E-04
1Z	257.9	.305E-01	.444E-03	.338E-04
1D	157.5	.181E-01	.263E-03	.201E-04
1L	523.1	.633E-01	.921E-03	.701E-04
1R	387.7	.466E-01	.677E-03	.515E-04
1X	159.1	.183E-01	.266E-03	.203E-04
2B	68.4	.513E-02	.746E-04	.568E-05
2J	66.0	.483E-02	.703E-04	.535E-05
2C	108.8	.101E-01	.147E-03	.112E-04
2K	112.8	.106E-01	.154E-03	.118E-04
2Q	35.1	.102E-02	.149E-04	.113E-05
2W	49.8	.284E-02	.413E-04	.315E-05
2Z	57.9	.383E-02	.557E-04	.424E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 34

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	26.8	.415E-01	.408E-04	.432E-05
1I	86.2	.150E+00	.148E-03	.156E-04
1O	33.8	.543E-01	.534E-04	.566E-05
1B	35.8	.579E-01	.570E-04	.603E-05
1E	9.7	.103E-01	.101E-04	.107E-05
1G	20.0	.292E-01	.287E-04	.304E-05
1J	52.2	.880E-01	.866E-04	.917E-05
1M	22.8	.342E-01	.337E-04	.357E-05
1P	11.4	.134E-01	.132E-04	.140E-05
1S	9.5	1.000E-02	.984E-05	.104E-05
1V	11.4	.134E-01	.132E-04	.140E-05
1Y	24.3	.371E-01	.365E-04	.386E-05
1C	31.5	.502E-01	.494E-04	.523E-05
1F	39.9	.654E-01	.644E-04	.681E-05
1H	15.0	.200E-01	.197E-04	.208E-05
1K	48.0	.802E-01	.790E-04	.836E-05
1N	3537.8	.645E+01	.635E-02	.672E-03
1Q	39.0	.638E-01	.628E-04	.664E-05
1W	13.3	.169E-01	.166E-04	.176E-05
1Z	12.3	.151E-01	.149E-04	.157E-05
1D	65.8	.113E+00	.111E-03	.118E-04
1R	17.2	.241E-01	.237E-04	.251E-05
1X	10.6	.121E-01	.119E-04	.126E-05
2J	12.3	.995E-02	.979E-05	.104E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 34

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.143E-03
1I	.223E-03
1O	.138E-03
1U	.131E-03
1B	.137E-03
1E	.194E-03
1G	.148E-03
1J	.190E-03
1M	.168E-03
1P	.161E-03
1S	.109E-03
1V	.755E-04
1Y	.254E-04
1C	.106E-03
1F	.128E-03
1H	.162E-03
1K	.154E-03
1N	.136E-03
1Q	.126E-03
1T	.816E-04
1W	.317E-04
1Z	.350E-04
1D	.218E-04
1L	.750E-04
1R	.541E-04
1X	.215E-04
2B	.693E-05
2J	.572E-05
2P	.108E-06
2V	.273E-06
2Y	.217E-06
2C	.121E-04
2K	.124E-04
2Q	.144E-05
2W	.357E-05
2Z	.465E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 35

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	546.5	.115E+00	.960E-03	.735E-04
1I	403.0	.837E-01	.702E-03	.538E-04
1O	230.7	.468E-01	.392E-03	.300E-04
1U	216.1	.437E-01	.366E-03	.280E-04
1B	606.8	.127E+00	.107E-02	.818E-04
1E	579.6	.122E+00	.102E-02	.781E-04
1G	524.3	.110E+00	.920E-03	.705E-04
1J	399.4	.830E-01	.695E-03	.533E-04
1M	281.5	.577E-01	.483E-03	.370E-04
1P	241.7	.492E-01	.412E-03	.316E-04
1S	190.0	.381E-01	.319E-03	.244E-04
1V	130.7	.253E-01	.212E-03	.163E-04
1Y	77.6	.140E-01	.117E-03	.897E-05
1C	480.7	.100E+00	.841E-03	.645E-04
1F	499.0	.104E+00	.874E-03	.670E-04
1H	522.6	.109E+00	.917E-03	.702E-04
1K	509.6	.107E+00	.893E-03	.684E-04
1Q	284.4	.583E-01	.489E-03	.374E-04
1T	187.7	.376E-01	.315E-03	.241E-04
1W	134.2	.261E-01	.219E-03	.168E-04
1Z	123.2	.237E-01	.199E-03	.152E-04
1D	38.9	.567E-02	.475E-04	.364E-05
1L	296.4	.609E-01	.510E-03	.391E-04
1R	221.9	.449E-01	.376E-03	.288E-04
1X	129.5	.251E-01	.210E-03	.161E-04
2B	117.1	.224E-01	.188E-03	.144E-04
2J	65.2	.113E-01	.946E-04	.725E-05
2P	41.5	.622E-02	.522E-04	.400E-05
2V	35.3	.489E-02	.410E-04	.314E-05
2Y	34.0	.462E-02	.387E-04	.296E-05
2C	102.9	.194E-01	.163E-03	.125E-04
2K	105.2	.199E-01	.167E-03	.128E-04
2Q	50.4	.812E-02	.681E-04	.521E-05
2W	32.2	.422E-02	.353E-04	.271E-05
2Z	56.0	.933E-02	.782E-04	.599E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 35

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	1303.4	.160E+00	.232E-02	.177E-03
1I	1228.5	.150E+00	.219E-02	.167E-03
1O	730.1	.889E-01	.129E-02	.984E-04
1U	722.7	.879E-01	.128E-02	.974E-04
1B	1235.5	.151E+00	.220E-02	.168E-03
1E	1354.6	.166E+00	.241E-02	.184E-03
1G	1404.2	.172E+00	.250E-02	.191E-03
1J	1238.6	.152E+00	.221E-02	.168E-03
1M	887.0	.108E+00	.157E-02	.120E-03
1P	816.2	.995E-01	.145E-02	.110E-03
1S	636.7	.773E-01	.112E-02	.856E-04
1V	500.6	.605E-01	.880E-03	.670E-04
1Y	195.9	.229E-01	.332E-03	.253E-04
1C	839.3	.102E+00	.149E-02	.113E-03
1F	867.9	.106E+00	.154E-02	.117E-03
1H	1143.7	.140E+00	.204E-02	.155E-03
1K	1079.7	.132E+00	.192E-02	.146E-03
1Q	822.1	.100E+00	.146E-02	.111E-03
1T	556.8	.674E-01	.981E-03	.747E-04
1W	405.1	.487E-01	.709E-03	.539E-04
1Z	404.0	.486E-01	.706E-03	.538E-04
1D	186.3	.217E-01	.315E-03	.240E-04
1L	701.8	.854E-01	.124E-02	.945E-04
1R	573.1	.695E-01	.101E-02	.769E-04
1X	311.0	.371E-01	.539E-03	.410E-04
2B	266.0	.315E-01	.458E-03	.349E-04
2J	83.1	.892E-02	.130E-03	.987E-05
2P	15.6	.582E-03	.846E-05	.644E-06
2V	11.5	.759E-04	.110E-05	.840E-07
2C	206.1	.241E-01	.351E-03	.267E-04
2K	213.7	.251E-01	.364E-03	.277E-04
2Q	12.0	.141E-03	.205E-05	.156E-06
2W	30.8	.246E-02	.358E-04	.273E-05
2Z	53.0	.521E-02	.757E-04	.576E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 35

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	57.0	.968E-01	.952E-04	.101E-04
1I	11.1	.129E-01	.127E-04	.134E-05
1O	12.7	.159E-01	.156E-04	.165E-05
1U	38.4	.628E-01	.617E-04	.653E-05
1B	37.6	.613E-01	.603E-04	.638E-05
1E	68.2	.117E+00	.115E-03	.122E-04
1G	12.0	.146E-01	.143E-04	.152E-05
1J	39.7	.651E-01	.641E-04	.678E-05
1P	7.3	.592E-02	.583E-05	.617E-06
1S	28.1	.439E-01	.432E-04	.458E-05
1V	54.3	.919E-01	.904E-04	.957E-05
1Y	20.4	.298E-01	.293E-04	.310E-05
1C	32.5	.521E-01	.512E-04	.542E-05
1F	10.9	.125E-01	.123E-04	.130E-05
1H	14.6	.194E-01	.191E-04	.202E-05
1K	26.5	.410E-01	.403E-04	.427E-05
1N	28.2	.441E-01	.434E-04	.459E-05
1T	37.2	.605E-01	.595E-04	.630E-05
1W	6.2	.398E-02	.392E-05	.415E-06
1X	26.4	.409E-01	.403E-04	.426E-05
2B	93.9	.164E+00	.162E-03	.171E-04
2J	4.5	.847E-03	.834E-06	.882E-07
2P	22.5	.338E-01	.333E-04	.352E-05
2V	6.2	.399E-02	.393E-05	.416E-06
2C	10.8	.123E-01	.121E-04	.128E-05
2K	4.9	.166E-02	.163E-05	.173E-06
2Q	72.4	.125E+00	.123E-03	.130E-04

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 35

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.186E-03
1I	.172E-03
1O	.102E-03
1U	.101E-03
1B	.177E-03
1E	.193E-03
1G	.198E-03
1J	.174E-03
1M	.124E-03
1P	.114E-03
1S	.887E-04
1V	.697E-04
1Y	.266E-04
1C	.121E-03
1F	.124E-03
1H	.163E-03
1K	.154E-03
1N	.486E-06
1Q	.115E-03
1T	.779E-04
1W	.557E-04
1Z	.554E-04
1D	.244E-04
1L	.986E-04
1R	.800E-04
1X	.432E-04
2B	.382E-04
2J	.106E-04
2P	.144E-05
2V	.460E-06
2Y	.314E-06
2C	.282E-04
2K	.291E-04
2Q	.208E-05
2W	.301E-05
2Z	.640E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 36

UNIT # 11 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.736E+05	
VOLUME FLOW (CU. M/SEC)	.224E-04	95.68
STACK DIAMETER (M)	.760E-02	3.16
EXIT VELOCITY (M/SEC)	.494E+00	12.20
DENSITY RATIO	.73	.63
STACK HEIGHT	.0340	68.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	54.0	.722E-02	.605E-04	.464E-05
1I	108.3	.189E-01	.158E-03	.121E-04
1O	156.1	.291E-01	.244E-03	.187E-04
1U	24.9	.964E-03	.808E-05	.619E-06
1B	72.4	.112E-01	.935E-04	.716E-05
1E	63.8	.931E-02	.780E-04	.598E-05
1J	104.1	.180E-01	.150E-03	.115E-04
1M	36.0	.334E-02	.280E-04	.215E-05
1P	149.6	.277E-01	.232E-03	.178E-04
1S	179.2	.341E-01	.285E-03	.219E-04
1V	173.1	.328E-01	.275E-03	.210E-04
1Y	149.6	.277E-01	.232E-03	.178E-04
1C	95.6	.161E-01	.135E-03	.104E-04
1F	96.8	.164E-01	.137E-03	.105E-04
1H	122.7	.219E-01	.184E-03	.141E-04
1K	22.6	.477E-03	.400E-05	.306E-06
1N	49.1	.616E-02	.516E-04	.396E-05
1Q	173.7	.329E-01	.276E-03	.211E-04
1T	192.8	.370E-01	.310E-03	.237E-04
1W	195.2	.375E-01	.314E-03	.241E-04
1Z	197.8	.381E-01	.319E-03	.244E-04
1L	182.0	.347E-01	.291E-03	.223E-04
1R	177.6	.337E-01	.283E-03	.216E-04
1X	172.6	.326E-01	.274E-03	.210E-04
2B	214.4	.433E-01	.363E-03	.278E-04
2J	163.2	.323E-01	.271E-03	.207E-04
2M	26.6	.303E-02	.254E-04	.195E-05
2P	125.5	.242E-01	.203E-03	.156E-04
2V	94.1	.175E-01	.147E-03	.112E-04
2Y	62.8	.108E-01	.905E-04	.693E-05
2C	201.9	.406E-01	.340E-03	.261E-04
2K	74.7	.133E-01	.112E-03	.856E-05
2H	192.8	.387E-01	.324E-03	.248E-04
2Q	140.7	.275E-01	.230E-03	.176E-04
2W	94.6	.176E-01	.148E-03	.113E-04
2Z	102.4	.193E-01	.162E-03	.124E-04
3B	45.8	.713E-02	.598E-04	.458E-05
3J	26.9	.309E-02	.259E-04	.198E-05
3P	19.9	.158E-02	.133E-04	.102E-05
3V	13.6	.239E-03	.201E-05	.154E-06
3K	33.8	.457E-02	.383E-04	.293E-05
3Q	20.4	.169E-02	.142E-04	.109E-05
3W	18.4	.127E-02	.107E-04	.817E-06
3R	27.4	.320E-02	.268E-04	.205E-05
3X	18.9	.138E-02	.115E-04	.884E-06

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 36

UNIT # 12 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.502E+05	
VOLUME FLOW (CU. M/SEC)	.389E-04	165.00
STACK DIAMETER (M)	1.000E-02	5.00
EXIT VELOCITY (M/SEC)	.495E+00	8.40
DENSITY RATIO	.73	.73
STACK HEIGHT	.0920	184.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1A	88.3	.957E-02	.139E-03	.106E-04
1I	182.3	.212E-01	.308E-03	.234E-04
1O	309.8	.369E-01	.537E-03	.409E-04
1U	67.3	.697E-02	.101E-03	.771E-05
1B	92.8	.101E-01	.147E-03	.112E-04
1E	124.9	.141E-01	.205E-03	.156E-04
1G	17.6	.827E-03	.120E-04	.916E-06
1J	213.5	.250E-01	.364E-03	.277E-04
1M	73.6	.775E-02	.113E-03	.858E-05
1P	341.3	.408E-01	.594E-03	.452E-04
1S	376.2	.451E-01	.656E-03	.500E-04
1V	404.7	.487E-01	.708E-03	.539E-04
1Y	390.8	.469E-01	.683E-03	.520E-04
1C	134.5	.153E-01	.222E-03	.169E-04
1F	166.9	.193E-01	.280E-03	.213E-04
1H	228.4	.269E-01	.391E-03	.297E-04
1K	44.8	.419E-02	.609E-04	.464E-05
1N	96.1	.105E-01	.153E-03	.117E-04
1Q	374.4	.449E-01	.653E-03	.497E-04
1T	432.9	.521E-01	.758E-03	.577E-04
1W	454.3	.548E-01	.797E-03	.607E-04
1Z	456.9	.551E-01	.802E-03	.610E-04
1D	24.6	.170E-02	.247E-04	.188E-05
1L	366.6	.439E-01	.639E-03	.487E-04
1R	379.4	.455E-01	.662E-03	.504E-04
1X	405.7	.488E-01	.710E-03	.540E-04
2B	466.0	.562E-01	.818E-03	.623E-04
2J	414.3	.498E-01	.725E-03	.552E-04
2M	68.0	.705E-02	.103E-03	.781E-05
2P	347.5	.416E-01	.605E-03	.460E-04
2V	245.1	.289E-01	.421E-03	.320E-04
2Y	143.6	.164E-01	.239E-03	.182E-04
2C	441.5	.532E-01	.774E-03	.589E-04
2K	173.2	.201E-01	.292E-03	.222E-04
2H	452.0	.545E-01	.793E-03	.603E-04
2Q	358.7	.430E-01	.625E-03	.476E-04
2W	257.9	.305E-01	.444E-03	.338E-04
2Z	861.1	105E+00	153E-02	.116E-03
3B	134.4	.153E-01	.222E-03	.169E-04
3J	86.7	.937E-02	.136E-03	.104E-04
3P	57.1	.571E-02	.831E-04	.632E-05
3V	40.6	.367E-02	.533E-04	.406E-05
3Y	25.2	.177E-02	.257E-04	.195E-05
3C	111.6	.124E-01	.181E-03	.138E-04
3K	118.5	.133E-01	.193E-03	.147E-04
3Q	58.9	.594E-02	.863E-04	.657E-05
3W	66.0	.681E-02	.991E-04	.754E-05
3L	40.4	.365E-02	.531E-04	.404E-05
3R	69.9	.730E-02	.106E-03	.808E-05
3X	43.9	.408E-02	.594E-04	.452E-05
4B	25.0	.174E-02	.253E-04	.193E-05
4C	32.8	.271E-02	.394E-04	.300E-05
4K	37.6	.330E-02	.479E-04	.365E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 36

UNIT # 13 LENGTH SCALE: 2000

	MODEL	PROTOTYPE
VELOCITY (M/SEC)	.33	4.60
SOURCE STRENGTH (PPM)	.381E+05	
VOLUME FLOW (CU. M/SEC)	.263E-05	15.52
STACK DIAMETER (M)	.280E-02	1.80
EXIT VELOCITY (M/SEC)	.427E+00	6.10
DENSITY RATIO	.79	.80
STACK HEIGHT	.0140	28.00
REFERENCE HEIGHT	.0900	180.0

LOCATION	RAW DATA (MV-SEC)	NON-DIMENSIONAL CONCENTRATION COEFFICIENT(K)	DILUTION FACTOR (C/CO)	PROTOTYPE DILUTION FACTOR
1S	9.7	.781E-02	.768E-05	.813E-06
1V	12.8	.134E-01	.132E-04	.140E-05
1Q	9.1	.671E-02	.660E-05	.698E-06
1T	9.0	.655E-02	.645E-05	.682E-06
1W	10.0	.834E-02	.820E-05	.868E-06
1Z	13.7	.151E-01	.148E-04	.157E-05
1L	7.9	.448E-02	.441E-05	.466E-06
1R	11.1	.104E-01	.102E-04	.108E-05
1X	11.4	.109E-01	.108E-04	.114E-05
2B	12.0	.146E-01	.144E-04	.152E-05
2J	5.6	.282E-02	.277E-05	.293E-06
2P	5.8	.318E-02	.313E-05	.332E-06
2V	5.6	.289E-02	.285E-05	.301E-06
2H	11.7	.140E-01	.138E-04	.146E-05
2Q	16.5	.228E-01	.224E-04	.237E-05
2W	7.2	.576E-02	.567E-05	.600E-06
2Z	350.0	.632E+00	.622E-03	.658E-04
3C	5.9	.342E-02	.337E-05	.356E-06
3W	6.4	.428E-02	.421E-05	.445E-06
3D	17.4	.244E-01	.240E-04	.254E-05
4B	14.6	.193E-01	.190E-04	.201E-05
4K	11.7	.140E-01	.138E-04	.146E-05

-- WESTVACO PAPER MILL STUDY --

CONCENTRATION DATA FOR RUN: 36

UNITS 11 12 13 LENGTH SCALE: 2000

LOCATION	DILUTION FACTOR
1A	.111E-04
1I	.247E-04
1O	.429E-04
1U	.778E-05
1B	.120E-04
1E	.162E-04
1G	.916E-06
1J	.289E-04
1M	.881E-05
1P	.471E-04
1S	.524E-04
1V	.562E-04
1Y	.538E-04
1C	.180E-04
1F	.225E-04
1H	.312E-04
1K	.467E-05
1N	.121E-04
1Q	.520E-04
1T	.603E-04
1W	.633E-04
1Z	.638E-04
1D	.188E-05
1L	.511E-04
1R	.528E-04
1X	.563E-04
2B	.654E-04
2J	.574E-04
2M	.802E-05
2P	.477E-04
2V	.333E-04
2Y	.189E-04
2C	.617E-04
2K	.231E-04
2H	.631E-04
2Q	.497E-04
2W	.350E-04
2Z	.125E-03
3B	.174E-04
3J	.106E-04
3P	.643E-05
3V	.408E-05
3Y	.195E-05
3C	.138E-04
3K	.150E-04
3Q	.669E-05
3W	.767E-05
3D	.269E-06
3L	.404E-05
3R	.829E-05
3X	.461E-05
4B	.214E-05
4C	.300E-05
4K	.380E-05

APPENDIX C

Velocity Data - Generic Tests

Velocity Profiles

for

Runs 1 and 2

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 0

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	7.2	0.045	35.00
1.5	6.9	0.047	35.25
2.5	8.3	0.045	36.00
4.5	12.5	0.030	36.75
6.5	14.3	0.030	37.50
9.5	13.2	0.029	39.0
12.5	11.4	0.033	40.5
17.5	8.0	0.047	42.5
27.5	5.6	0.058	48.5

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2 Without hill

Distance from Release Site (cm) 0

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	6.9	0.055	32.75
1.5	7.8	0.041	33.00
2.5	10.7	0.035	34.00
4.5	13.7	0.028	35.25
7.5	13.7	0.028	37.00
12.5	9.3	0.041	39.00
17.5	6.6	0.049	42.25
27.5	5.0	0.087	49.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 5

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	8.2	0.040	38.5
2.0	8.5	0.044	38.5
4.0	12.3	0.044	38.5
6.0	13.8	0.031	38.5
8.0	13.5	0.032	39.0
12.0	10.6	0.041	40.0
17.0	7.9	0.048	42.0
27.0	5.6	0.058	48.5

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 10

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	10.9	0.079	39.0
2.0	10.3	0.037	39.0
3.0	11.2	0.039	39.0
5.0	13.7	0.032	39.0
7.5	13.0	0.029	39.75
10.5	11.5	0.033	40.5
15.5	8.3	0.046	43.0
25.5	5.0	0.076	49.0

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 15

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	13.4	0.032	40.0
2.0	14.4	0.034	40.0
4.0	15.2	0.028	39.5
6.0	13.4	0.028	40.0
8.0	13.1	0.029	41.0
13.0	8.4	0.045	43.0
23.0	6.5	0.068	46.5

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 19

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	16.7	0.026	40.0
1.5	16.8	0.035	40.0
2.5	17.2	0.028	39.0
4.5	14.3	0.034	39.25
6.5	12.2	0.053	40.0
11.5	8.2	0.046	42.5
21.5	5.4	0.080	48.0

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 23

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	5.0	0.226	43.00
2.0	15.8	0.038	39.5
3.0	17.5	0.028	39.0
5.0	15.5	0.028	39.0
8.0	12.2	0.040	39.5
13.0	8.0	0.060	40.0
23.0	4.4	0.073	48.5

MARTIN-MARIETTA

Two Dimensional Hill Tests

Applicable Run Numbers 1 and 2

Distance from Release Site (cm) 28

Room Temperature (°C) 28°C

Case 3

z (cm)	u (cm/s)	u'/u	T °C
1.0	4.4	0.123	41.5
2.0	6.0	0.342	40.5
3.0	8.9	0.433	41.0
5.0	14.9	0.181	39.0
7.0	15.5	0.028	38.5
10.0	12.0	0.077	39.0
15.0	7.8	0.056	39.5
20.0	4.8	0.079	45.0
25.0	5.6	0.115	48.5

Velocity Profiles

for

Runs 4, 5 and 6

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6 No Hill

Distance from Release Site (cm) 0.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	19.50	0.033	17.00
2.0	21.40	0.030	19.25
3.0	20.70	0.031	19.75
4.0	21.30	0.030	Missing
5.0	21.10	0.031	21.00
7.0	21.10	0.028	22.00
9.0	20.40	0.029	22.25
13.0	20.10	0.030	23.00
18.0	20.40	0.032	24.00
28.0	19.90	0.033	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 0.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	17.90	0.036	19.00
2.0	20.40	0.032	19.75
3.0	20.60	0.031	20.25
4.0	20.70	0.031	21.00
5.0	20.90	0.031	21.25
7.0	20.80	0.031	22.00
9.0	20.80	0.031	22.00
11.0	21.00	0.028	22.50
13.0	20.20	0.032	23.00
18.0	20.60	0.032	24.00
28.0	20.40	0.032	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 5.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	15.6	0.038	19.25
1.5	18.0	0.036	19.50
2.5	20.0	0.032	20.00
3.5	20.3	0.032	20.50
4.5	20.6	0.031	21.00
6.5	21.1	0.031	21.50
8.5	21.6	0.030	22.00
10.5	21.2	0.031	22.50
12.5	21.0	0.031	23.00
17.5	20.9	0.036	24.00
22.5	20.9	0.036	24.00
27.5	20.3	0.032	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 10.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	14.0	0.050	20.25
1.5	17.9	0.033	20.00
2.5	20.4	0.032	20.25
3.5	21.1	0.033	21.00
4.5	21.8	0.030	21.50
5.5	22.4	0.029	21.75
7.5	22.4	0.029	22.00
9.5	22.2	0.029	22.50
13.5	21.2	0.031	23.00
17.5	21.7	0.032	24.00
21.5	21.2	0.033	24.75
25.5	20.7	0.031	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 15.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	20.5	0.034	19.75
1.5	23.0	0.031	21.00
2.5	24.0	0.032	21.25
3.5	24.5	0.026	21.50
4.5	24.4	0.031	22.00
5.5	24.4	0.029	22.25
7.5	23.9	0.027	22.75
9.5	23.2	0.028	23.00
12.5	22.2	0.029	24.00
17.5	22.4	0.029	25.00
22.5	21.0	0.031	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 19.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	18.1	0.042	19.75
1.5	22.2	0.037	20.00
2.5	24.6	0.029	21.00
3.5	25.1	0.028	21.50
4.5	25.1	0.028	22.00
5.5	25.3	0.028	22.50
7.5	25.0	0.028	23.00
9.5	24.0	0.029	23.50
11.5	23.4	0.028	24.00
16.5	22.5	0.029	24.75
21.5	22.1	0.029	26.00

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (cm) 23.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	4.4	0.125	19.75
1.5	4.6	0.118	20.25
2.5	13.3	0.053	19.50
3.5	22.5	0.034	20.00
4.5	24.6	0.029	21.00
5.5	25.6	0.025	21.50
7.5	25.2	0.026	22.25
9.5	25.0	0.026	23.00
11.5	24.6	0.026	23.50
14.5	23.3	0.028	24.00
18.5	23.2	0.028	24.75
22.5	22.0	0.030	25.50

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 4, 5 and 6

Distance from Release Site (CM) 28.0

Room Temperature (°C) 25.5°C

Case 2

u_∞ = 20.2 cm/s

z (cm)	u (cm/s)	u'/u	T °C
1.0	3.7	0.149	22.00
2.0	3.2	0.169	21.00
3.0	3.6	0.182	20.50
4.0	4.2	0.171	20.25
5.0	5.8	0.131	20.00
6.0	14.9	0.084	19.75
7.0	21.4	0.046	20.25
9.0	25.2	0.026	21.25
11.0	25.2	0.027	22.00
15.0	24.4	0.029	23.00
20.0	23.4	0.028	24.00
25.0	22.6	0.029	25.00

Velocity Profiles

for

Runs 7 and 8

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 0.0

Room Temperature (°C) ______

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0	7.3	0.066
3.0	11.2	0.043
4.0	11.7	0.041
5.0	12.0	0.041
7.0	12.2	0.040
11.0	11.8	0.041
16.0	12.3	0.044
21.0	12.6	0.043
31.0	12.4	0.048

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 5.0

Room Temperature (°C) ________

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0	5.7	0.094
2.0	10.5	0.041
3.0	10.9	0.045
4.0	11.1	0.039
5.0	11.6	0.047
6.0	11.7	0.041
8.0	12.6	0.043
10.0	12.4	0.039
15.0	12.4	0.044
20.0	13.3	0.041
30.0	12.7	0.038

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 10.0

Room Temperature (°C) ______

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0	5.9	0.083
2.0	11.0	0.044
3.0	12.0	0.045
4.0	12.5	0.039
5.0	13.1	0.041
7.0	13.7	0.036
12.0	13.2	0.037
17.0	13.6	0.040
22.0	13.9	0.039

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 15.0

Room Temperature (°C) ____________

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	T °C
1.0	14.1	0.034
2.0	16.0	0.034
3.0	16.2	0.030
4.0	16.1	0.027
5.0	16.1	0.030
6.0	16.0	0.027
8.0	15.1	0.029
10.0	14.8	0.033
12.0	14.7	0.037
14.0	14.6	0.033
19.0	14.2	0.034
24.0	13.7	0.036

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 19.0

Room Temperature (°C) ______

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0	18.2	0.030
2.0	18.3	0.033
3.0	17.7	0.028
4.0	17.7	0.034
5.0	17.4	0.025
6.0	17.0	0.029
8.0	16.2	0.030
10.0	15.9	0.031
13.0	15.4	0.028
18.0	14.7	0.033
23.0	14.1	0.034

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 23.0

Room Temperature (°C) ____

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0	--	--
1.5	1.5	0.393
2.0	8.9	0.097
3.0	18.1	0.033
4.0	18.7	0.026
5.0	18.1	0.033
7.0	17.8	0.030
9.0	17.2	0.028
12.0	16.2	0.030
17.0	15.5	0.031
22.0	14.5	0.034
27.0	13.8	0.039

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Numbers 7 and 8

Distance from Release Site (cm) 28.0

Room Temperature (°C) ______

u_∞ (cm/s) 12.4

z (cm)	u (cm/s)	u'/u
1.0		
2.0		
3.0		
4.0		
5.0	8.6	0.015
6.0	17.7	0.046
8.0	18.4	0.032
10.0	18.3	0.029
15.0	16.8	0.029
20.0	15.7	0.031
25.0	15.2	0.035
30.0	14.8	0.029

Velocity Profiles

for

Run 9

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 0.0

Room Temperature (°C) ____

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0	14.6	0.037
2.0	19.3	0.028
3.0	19.4	0.025
4.0	19.8	0.022
6.0	20.5	0.021
11.0	20.6	0.024
16.0	21.2	0.023
21.0	21.2	0.023
31.0	21.6	0.020

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 5

Room Temperature (°C) ______

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0	12.3	0.021
2.0	18.8	0.029
3.0	19.1	0.025
5.0	20.1	0.024
10.0	20.8	0.018
15.0	20.5	0.021
20.0	21.9	0.022
30.0	21.4	0.020

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 10

Room Temperature (°C) ______

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0	14.6	0.033
2.0	19.1	0.028
3.0	20.2	0.021
4.0	20.8	0.021
5.0	21.7	0.022
7.0	22.6	0.024
10.5	22.7	0.024
13.0	22.4	0.022
18.0	22.7	0.024
28.0	21.7	0.020

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 15

Room Temperature (°C) ______

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0	23.3	0.023
2.0	25.8	0.025
3.0	25.7	0.025
4.0	25.7	0.021
7.5	25.3	0.023
10.0	24.0	0.022
15.0	23.9	0.023
20.0	23.4	0.023
25.0	22.3	0.022

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 19

Room Temperature (°C) ______

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0	26.3	0.027
2.0	29.1	0.019
3.0	28.2	0.019
4.0	28.1	0.019
6.0	27.5	0.024
8.5	25.2	0.024
14.0	24.6	0.024
19.0	23.7	0.025
24.0	22.7	0.021

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 23

Room Temperature (°C) ______

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
1.0		
1.5	5.0	0.185
2.0	19.1	0.048
3.0	28.6	0.017
4.0	28.6	0.017
5.0	28.4	0.015
7.3	27.9	0.021
9.5	27.0	0.022
15.0	25.2	0.024
25.0	23.4	0.023

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Applicable Run Number 9

Distance from Release Site (cm) 28

Room Temperature (°C) ____

u_∞ (cm/s) 21.0

z (cm)	u (cm/s)	u'/u
3.5	8.3	0.281
4.0	2.3	0.452
6.0	28.5	0.021
7.0	28.6	0.021
9.0	28.0	0.019
12.0	27.0	0.020
17.0	25.8	0.023
22.0	24.8	0.024
27.0	23.7	0.023

APPENDIX D

Concentration Data - Generic Tests

Run 1

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 6.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	2.555E-3	A	12.4	0
B	1.2	2.555E-3	B	11.2	0
C	1.9	2.895E-3	C	9.2	0
D	2.6	5.12 E-3	D	8.2	0
E	3.05	6.813E-3	E	7.2	0
F	3.5	7.664E-3	F	5.9	0
G	4.2	1.175E-2	G	5.1	0.0
H	4.9	1.311E-2	H	4.25	4.258E-3
I	5.5	1.618E-2	I	3.1	2.384E-2
J	6.1	2.044E-2	J	2.1	3.066E-2
K	6.5	2.299E-2	K	1.3	2.998E-2
L	7.5	2.146E-2	L	0.7	2.725E-2
M	8.3	1.277E-2	M	0.0	2.129E-2
N	9.2	8.516E-4	N	- 0.7	1.55 E-2
O	10.2	5.12 E-4	O	- 0.9	2.555E-3
P	11.3		P	- 1.5	3.406E-4
Q	12.55	5.12 E-4	Q	- 2.4	0
R	13.6		R	- 3.1	0
S	14.6	4.258E-4	S	- 4.0	0
T	15.65		T	- 5.2	0
U	16.8	5.12 E-4	U	- 6.0	0
V	18.2		V	- 7.4	0
W	19.1	4.258E-4	W	- 8.8	0
X	20.0		X	-10.3	0
Y	20.5	4.258E-4	Y	-11.8	0
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 6.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1		A	12.4	
B	1.2	4.258E-4	B	11.2	
C	1.9	2.214E-3	C	9.2	
D	2.6	5.45 E-3	D	8.2	
E	3.05	6.131E-3	E	7.2	
F	3.5	6.983E-3	F	5.9	
G	4.2	9.367E-3	G	5.1	6.813E-4
H	4.9	1.192E-2	H	4.25	5.110E-3
I	5.5	1.346E-2	I	3.1	1.533E-2
J	6.1	1.567E-2	J	2.1	1.908E-2
K	6.5	1.754E-2	K	1.3	1.788E-2
L	7.5	1.533E-2	L	0.7	1.737E-2
M	8.3	7.324E-3	M	0.0	1.516E-2
N	9.2	8.516E-4	N	- 0.7	1.107E-2
O	10.2	0	O	- 0.9	7.239E-3
P	11.3	0	P	- 1.5	3.406E-3
Q	12.55		Q	- 2.4	8.516E-4
R	13.6	0	R	- 3.1	0
S	14.6		S	- 4.0	
T	15.65	0	T	- 5.2	
U	16.8		U	- 6.0	
V	18.2	0	V	- 7.4	
W	19.1		W	- 8.8	
X	20.0	0	X	-10.3	
Y	20.5		Y	-11.8	
Z		0	Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	2.384E-3	A		
B	1.2	3.406E-3	B		
C	1.9	5.11 E-3	C		
D	2.6	6.302E-3	D		
E	3.05	7.664E-3	E		
F	3.5	8.857E-3	F		
G	4.2	1.175E-2	G		
H	4.9	1.260E-2	H		
I	5.5	1.192E-2	I		
J	6.1	8.857E-3	J		
K	6.5	9.197E-3	K		
L	7.5	5.110E-4	L		
M	8.3	0	M		
N	9.2		N		
O	10.2		O		
P	11.3		P		
Q	12.55		Q		
R	13.6		R		
S	14.6		S		
T	15.65		T		
U	16.8		U		
V	18.2		V		
W	19.1		W		
X	20.0		X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 3.0

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	2.129E-3	A	12.4	
B	1.2	4.003E-3	B	11.2	
C	1.9	6.472E-3	C	9.2	
D	2.6	1.192E-2	D	8.2	
E	3.0	1.363E-2	E	7.2	2.555E-4
F	3.5	1.192E-2	F	5.9	1.192E-3
G	4.2	8.09 E-3	G	5.1	2.555E-4
H	4.9	7.835E-3	H	4.25	6.131E-3
I	5.5	4.939E-3	I	3.1	9.368E-3
J	6.1	8.516E-4	J	2.1	1.047E-2
K	6.5	1.703E-4	K	1.3	1.039E-2
L	7.5	1.703E-4	L	0.7	9.708E-3
M	8.3		M	0.0	8.005E-3
N	9.2		N	- 0.7	5.110E-3
O	10.2		O	- 0.9	2.895E-3
P	11.3		P	- 1.5	2.555E-3
Q	12.55		Q	- 2.4	6.813E-4
R	13.6		R	- 3.1	0
S	14.6		S	- 4.0	
T	15.65		T	- 5.2	
U	16.8		U	- 6.0	
V	18.2		V	- 7.4	
W	19.1		W	- 8.8	
X	20.0		X	-10.3	
Y	20.5		Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ________

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	5.961E-3	A		
B	1.2	5.45 E-3	B		
C	1.9	4.684E-3	C		
D	2.6	7.579E-3	D		
E	3.05	7.75 E-3	E		
F	3.5	8.26 E-3	F		
G	4.2	1.013E-2	G		
H	4.9	1.082E-2	H		
I	5.5	9.282E-3	I		
J	6.1	7.579E-3	J		
K	6.5	3.832E-3	K		
L	7.5	5.11 E-4	L		
M	8.3	1.703E-4	M		
N	9.2	8.516E-5	N		
O	10.2	8.516E-5	O		
P	11.3		P		
Q	12.55		Q		
R	13.6		R		
S	14.6		S		
T	15.65		T		
U	16.8		U		
V	18.2		V		
W	19.1		W		
X	20.0		X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 1

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9212E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 5.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	1.022E-3	A	12.4	
B	1.2	2.129E-3	B	11.2	
C	1.9	3.236E-3	C	9.2	
D	2.6	4.684E-3	D	8.2	
E	3.05	5.11 E-3	E	7.2	3.406E-4
F	3.5	5.621E-3	F	5.9	1.703E-3
G	4.2	5.961E-3	G	5.1	3.406E-3
H	4.9	6.642E-3	H	4.25	4.258E-3
I	5.5	8.005E-3	I	3.1	8.005E-3
J	6.1	7.92 E-3	J	2.1	9.368E-3
K	6.5	7.068E-3	K	1.3	8.686E-3
L	7.5	4.684E-3	L	0.7	7.835E-3
M	8.3	1.874E-3	M	0.0	6.813E-3
N	9.2	4.258E-4	N	- 0.7	5.28 E-3
O	10.2	0	O	- 0.9	2.555E-3
P	11.3	0	P	- 1.5	2.555E-3
Q	12.55		Q	- 2.4	8.516E-4
R	13.6		R	- 3.1	0
S	14.6		S	- 4.0	
T	15.65		T	- 5.2	
U	16.8		U	- 6.0	
V	18.2		V	- 7.4	
W	19.1		W	- 8.8	
X	20.0		X	-10.3	
Y	20.5		Y	-11.8	
Z			Z		

Run 2

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 7.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	4.254E-3	A	12.4	0
B	1.2	4.169E-3	B	11.2	0
C	1.9	4.679E-3	C	9.2	0
D	2.6	8.678E-3	D	8.2	0
E	3.05	1.038E-2	E	7.2	0
F	3.5	1.174E-2	F	5.9	1.702E-4
G	4.2	1.778E-2	G	5.1	2.552E-4
H	4.9	2.331E-2	H	4.25	1.702E-4
I	5.5	2.672E-2	I	3.1	1.702E-4
J	6.1	1.94 E-2	J	2.1	1.021E-3
K	6.5	3.182E-2	K	1.3	2.723E-3
L	7.5	3.692E-2	L	0.7	1.276E-2
M	8.3	2.757E-2	M	0.0	2.042E-2
N	9.2	6.126E-3	N	- 0.7	1.361E-2
O	10.2	0	O	- 0.9	3.744E-3
P	11.3	0	P	- 1.5	1.617E-3
Q	12.55	0	Q	- 2.4	6.806E-4
R	13.6	0	R	- 3.1	5.105E-4
S	14.6	0	S	- 4.0	3.403E-4
T	15.65	0	T	- 5.2	3.403E-4
U	16.8	0	U	- 6.0	3.403E-4
V	18.2	0	V	- 7.4	3.403E-4
W	19.1	0	W	- 8.8	3.403E-4
X	20.0	0	X	-10.3	3.403E-4
Y	20.5	0	Y	-11.8	3.403E-4
Z		1.702E-4	Z		0

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 7.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	2.723E-3	A	12.4	0
B	1.2	2.978E-3	B	11.2	0
C	1.9	4.254E-3	C	9.2	0
D	2.6	5.615E-3	D	8.2	0
E	3.05	7.657E-3	E	7.2	0
F	3.5	8.763E-3	F	5.9	0
G	4.2	1.115E-2	G	5.1	0
H	4.9	1.344E-2	H	4.25	1.702E-4
I	5.5	1.685E-2	I	3.1	1.191E-3
J	6.1	1.82 E-2	J	2.1	4.169E-3
K	6.5	2.195E-2	K	1.3	7.147E-3
L	7.5	2.314E-2	L	0.7	8.678E-3
M	8.3	1.174E-2	M	0.0	1.038E-2
N	9.2	5.105E-4	N	- 0.7	1.012E-2
O	10.2	0	O	- 0.9	7.317E-3
P	11.3		P	- 1.5	5.785E-3
Q	12.55		Q	- 2.4	1.617E-3
R	13.6		R	- 3.1	2.552E-4
S	14.6		S	- 4.0	0.0
T	15.65		T	- 5.2	0.0
U	16.8		U	- 6.0	
V	18.2		V	- 7.4	
W	19.1		W	- 8.8	
X	20.0		X	-10.3	
Y	20.5		Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) 6.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	1.87 E-3	A	12.4	
B	1.2	2.552E-3	B	11.2	
C	1.9	4.254E-3	C	9.2	
D	2.6	6.296E-3	D	8.2	
E	3.05	6.977E-3	E	7.2	
F	3.5	8.338E-3	F	5.9	
G	4.2	1.106E-2	G	5.1	
H	4.9	1.310E-2	H	4.25	1.702E-4
I	5.5	1.497E-2	I	3.1	2.382E-3
J	6.1	1.617E-2	J	2.1	9.189E-3
K	6.5	1.489E-2	K	1.3	1.089E-2
L	7.5	6.381E-3	L	0.7	1.225E-2
M	8.3	1.702E-4	M	0.0	1.191E-2
N	9.2	0	N	- 0.7	1.157E-2
O	10.2	0	O	- 0.9	9.187E-3
P	11.3	0	P	- 1.5	7.657E-3
Q	12.55	0	Q	- 2.4	2.382E-3
R	13.6	0	R	- 3.1	1.191E-3
S	14.6	0	S	- 4.0	3.403E-4
T	15.65	0	T	- 5.2	0
U	16.8	0	U	- 6.0	0
V	18.2	0	V	- 7.4	0
W	19.1	0	W	- 8.8	0
X	20.0	0	X	-10.3	0
Y	20.5	0	Y	-11.8	0
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 7.0

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.6	2.382E-3	A	12.4	
B	1.7	2.552E-3	B	11.2	
C	2.4	4.935E-3	C	9.2	
D	3.1	6.977E-3	D	8.2	
E	3.55	7.402E-3	E	7.2	
F	4.0	8.933E-3	F	5.9	
G	4.7	1.132E-2	G	5.1	
H	5.4	1.302E-2	H	4.25	3.403E-4
I	6.0	1.429E-2	I	3.1	1.702E-3
J	6.6	1.259E-2	J	2.1	7.232E-3
K	7.0	7.147E-3	K	1.3	9.699E-3
L	8.0	6.806E-4	L	0.7	1.2 E-2
M	8.8	0.0	M	0.0	1.259E-2
N	9.7	0	N	- 0.7	1.183E-2
O	10.7	0	O	- 0.9	9.529E-3
P	11.8	0	P	- 1.5	5.615E-3
Q	13.05	0	Q	- 2.4	2.042E-3
R	14.1	0	R	- 3.1	5.956E-4
S	15.1	0	S	- 4.0	2.552E-4
T	16.15	0	T	- 5.2	0
U	17.3	0	U	- 6.0	
V	18.7	0	V	- 7.4	
W	19.6	0	W	- 8.8	
X	20.5	0	X	-10.3	
Y	21.0	0	Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.6	1.191E-3	A		
B	1.7	1.531E-3	B		
C	2.4	2.723E-3	C		
D	3.1	4.764E-3	D		
E	3.55	5.105E-3	E		
F	4.0	5.956E-3	F		
G	4.7	6.806E-3	G		
H	5.4	8.848E-3	H		
I	6.0	1.004E-2	I		
J	6.6	1.089E-2	J		
K	7.0	1.174E-2	K		
L	8.0	1.004E-2	L		
M	8.8	5.275E-3	M		
N	9.7	1.702E-4	N		
O	10.7	0	O		
P	11.8	0	P		
Q	13.05		Q		
R	14.1	0	R		
S	15.1	0	S		
T	16.15	0	T		
U	17.3	0	U		
V	18.7	0	V		
W	19.6	0	W		
X	20.5	0	X		
Y	21.0	0	Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 2

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9194E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 8.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.0	5.956E-4	A	12.4	
B	0.5	1.702E-3	B	11.2	
C	1.2	1.191E-3	C	9.2	
D	1.9	1.872E-3	D	8.2	
E	2.35	1.191E-3	E	7.2	
F	2.8	1.361E-3	F	5.9	0
G	3.5	1.021E-3	G	5.1	5.105E-4
H	4.2	2.552E-3	H	4.25	8.508E-4
I	4.8	4.084E-3	I	3.1	3.403E-3
J	5.4	5.105E-3	J	2.1	5.785E-3
K	5.8	6.126E-3	K	1.3	6.806E-3
L	6.8	7.147E-3	L	0.7	7.657E-3
M	7.6	8.593E-3	M	0.0	7.487E-3
N	8.5	1.004E-2	N	- 0.7	7.317E-3
O	9.5	8.338E-3	O	- 0.9	5.275E-3
P	10.6	1.531E-3	P	- 1.5	4.254E-3
Q	11.85	0	Q	- 2.4	1.702E-3
R	12.9		R	- 3.1	5.105E-4
S	13.9		S	- 4.0	
T	14.95		T	- 5.2	
U	16.1		U	- 6.0	
V	17.5		V	- 7.4	
W	18.4		W	- 8.8	
X	19.3		X	-10.3	
Y	19.8		Y	-11.8	
Z			Z		

Run 4

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 3.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	4.43 E-3	A	12.4	3.408E-4
B	1.2	8.52 E-3	B	11.2	
C	1.9	1.619E-2	C	9.2	3.408E-4
D	2.6	2.249E-2	D	8.2	
E	3.05	4.004E-2	E	7.2	3.408E-4
F	3.5	4.890E-2	F	5.9	
G	4.2	3.442E-2	G	5.1	3.408E-4
H	4.9	6.645E-3	H	4.25	
I	5.5	3.408E-4	I	3.1	0
J	6.1	0	J	2.1	0
K	6.8		K	1.3	2.726E-3
L	7.5	1.704E-4	L	0.7	2.266E-2
M	8.3		M	0.0	5.350E-2
N	9.2	5.112E-4	N	- 0.7	3.067E-2
O	10.2		O	- 0.9	2.726E-3
P	11.3	3.408E-4	P	- 1.5	3.408E-4
Q	12.55		Q	- 2.4	1.704E-4
R	13.6	3.408E-4	R	- 3.1	
S	14.6		S	- 4.0	0.0
T	15.65	3.408E-4	T	- 5.2	
U	16.8		U	- 6.0	0
V	18.2	1.704E-4	V	- 7.4	
W	19.1		W	- 8.8	1.704E-4
X	20.0	3.408E-4	X	-10.3	
Y	20.5		Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 4.2

SAMPLE	VERTICAL	
	z(cm)	C/C_o
A	0.1	3.749E-3
B	1.2	7.497E-3
C	1.9	1.073E-2
D	2.6	1.397E-2
E	3.05	1.959E-2
F	3.5	2.334E-2
G	4.2	2.709E-2
H	4.9	1.431E-2
I	5.5	3.749E-3
J	6.1	3.408E-4
K	6.8	0.0
L	7.5	0.0
M	8.3	
N	9.2	1.704E-4
O	10.2	
P	11.3	0.0
Q	12.55	
R	13.6	0.0
S	14.6	
T	15.65	0.0
U	16.8	
V	18.2	0.0
W	19.1	
X	20.0	0.0
Y	20.5	
Z		

SAMPLE	HORIZONTAL	
	y(cm)	C/C_o
A	12.4	1.704E-4
B	11.2	
C	9.2	1.704E-4
D	8.2	
E	7.2	0.0
F	5.9	
G	5.1	0.0
H	4.25	
I	3.1	0.0
J	2.1	0.0
K	1.3	5.112E-4
L	0.7	4.26 E-3
M	0.0	1.772E-2
N	- 0.7	2.726E-2
O	- 0.9	2.624E-2
P	- 1.5	1.619E-2
Q	- 2.4	3.067E-3
R	- 3.1	1.704E-4
S	- 4.0	
T	- 5.2	0.0
U	- 6.0	
V	- 7.4	3.408E-4
W	- 8.8	
X	-10.3	1.704E-4
Y	-11.8	
Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	3.578E-3	A		
B	1.2	7.497E-3	B		
C	1.9	1.108E-2	C		
D	2.6	1.329E-2	D		
E	3.05	1.772E-2	E		
F	3.5	1.975E-2	F		
G	4.2	1.465E-2	G		
H	4.9	4.43 E-3	H		
I	5.5	5.112E-4	I		
J	6.1	1.704E-4	J		
K	6.8	0.0	K		
L	7.5		L		
M	8.3	0.0	M		
N	9.2		N		
O	10.2	0.0	O		
P	11.3		P		
Q	12.55		Q		
R	13.6	0.0	R		
S	14.6		S		
T	15.65		T		
U	16.8	0.0	U		
V	18.2		V		
W	19.1		W		
X	20.0	0.0	X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 3.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	4.089E-3	A	12.4	1.704E-4
B	1.2	6.475E-3	B	11.2	
C	1.9	9.031E-3	C	9.2	0.0
D	2.6	1.159E-2	D	8.2	
E	3.05	1.414E-2	E	7.2	0.0
F	3.5	1.551E-2	F	5.9	
G	4.2	1.227E-2	G	5.1	1.704E-4
H	4.9	1.278E-2	H	4.25	
I	5.5	9.71 E-3	I	3.1	0.0
J	6.1	1.704E-4	J	2.1	3.409E-4
K	6.8		K	1.3	2.897E-3
L	7.5	0.0	L	0.7	7.668E-3
M	8.3		M	0.0	1.380E-2
N	9.2	0.0	N	- 0.7	1.653E-2
O	10.2		O	- 0.9	1.448E-2
P	11.3		P	- 1.5	9.883E-3
Q	12.55	0.0	Q	- 2.4	3.067E-3
R	13.6		R	- 3.1	3.408E-4
S	14.6		S	- 4.0	0.0
T	15.65	0.0	T	- 5.2	
U	16.8		U	- 6.0	0.0
V	18.2		V	- 7.4	
W	19.1	0.0	W	- 8.8	0.0
X	20.0		X	-10.3	
Y	20.5		Y	-11.8	0.0
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	6.816E-4	A		
B	1.2	1.874E-3	B		
C	1.9	3.408E-3	C		
D	2.6	4.771E-3	D		
E	3.05	6.475E-3	E		
F	3.5	7.497E-3	F		
G	4.2	1.056E-2	G		
H	4.9	1.346E-2	H		
I	5.5	1.380E-2	I		
J	6.1	9.883E-3	J		
K	6.8	4.601E-3	K		
L	7.5	6.816E-4	L		
M	8.3	0.0	M		
N	9.2	1.704E-4	N		
O	10.2	0.0	O		
P	11.3	0.0	P		
Q	12.55		Q		
R	13.6	0.0	R		
S	14.6		S		
T	15.65	0.0	T		
U	16.8		U		
V	18.2	0.0	V		
W	19.1		W		
X	20.0	0.0	X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 4

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 8.3

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	1.704E-3	A	12.4	1.704E-4
B	1.2	1.536E-3	B	11.2	
C	1.9	1.022E-3	C	9.2	0.0
D	2.6	1.704E-3	D	8.2	
E	3.05	1.874E-3	E	7.2	0.0
F	3.5	2.045E-3	F	5.9	
G	4.2	2.045E-3	G	5.1	1.704E-4
H	4.9	2.897E-3	H	4.25	
I	5.5	3.578E-3	I	3.1	1.704E-4
J	6.1	4.430E-3	J	2.1	6.816E-4
K	6.8	6.304E-3	K	1.3	2.897E-3
L	7.5	8.69 E-3	L	0.7	5.964E-3
M	8.3	1.193E-2	M	0.0	9.712E-3
N	9.2	1.073E-2	N	- 0.7	1.176E-2
O	10.2	4.26 E-3	O	- 0.9	1.090E-2
P	11.3	5.112E-4	P	- 1.5	8.179E-3
Q	12.55	1.704E-4	Q	- 2.4	3.749E-3
R	13.6	3.408E-4	R	- 3.1	8.52 E-4
S	14.6	3.408E-4	S	- 4.0	
T	15.65	1.704E-4	T	- 5.2	0.0
U	16.8	1.704E-4	U	- 6.0	
V	18.2	0.0	V	- 7.4	0.0
W	19.1	1.704E-4	W	- 8.8	
X	20.0	5.112E-4	X	-10.3	0.0
Y	20.5	0.0	Y	-11.8	
Z			Z		

Run 5

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 4.9

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	6.835E-4	A	12.4	6.835E-4
B	1.2	8.544E-4	B	11.2	
C	1.9	3.418E-3	C	9.2	5.126E-4
D	2.6	2.905E-3	D	8.2	
E	3.05	1.367E-3	E	7.2	1.709E-4
F	3.5	1.196E-3	F	5.9	
G	4.2	9.740E-3	G	5.1	0.0
H	4.9	3.127E-2	H	4.25	
I	5.5	2.409E-2	I	3.1	0.0
J	6.1	5.126E-3	J	2.1	1.709E-4
K	6.8	0.0	K	1.3	2.563E-3
L	7.5	0.0	L	0.07	2.819E-2
M	8.3	0.0	M	0.00	5.519E-2
N	9.2		N	- 0.07	5.126E-2
O	10.2	0.0	O	- 0.09	3.076E-3
P	11.3		P	- 1.5	8.544E-4
Q	12.55	0.0	Q	- 2.4	3.418E-4
R	13.6		R	- 3.1	
S	14.6	0.0	S	- 4.0	1.709E-4
T	15.65		T	- 5.2	
U	16.8	1.709E-4	U	- 6.0	5.126E-4
V	18.2		V	- 7.4	
W	19.1	1.709E-4	W	- 8.8	3.418E-4
X	20.0		X	-10.3	
Y	20.5	1.709E-4	Y	-11.8	5.126E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 5.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	0.0	A	12.4	1.709E-4
B	1.2	1.025E-3	B	11.2	
C	1.9	5.468E-3	C	9.2	0.0
D	2.6	6.493E-3	D	8.2	
E	3.05	3.759E-3	E	7.2	0.0
F	3.5	2.734E-3	F	5.9	
G	4.2	7.519E-3	G	5.1	0.0
H	4.9	1.965E-2	H	4.25	
I	5.5	2.495E-2	I	3.1	0.0
J	6.1	1.623E-2	J	2.1	2.392E-3
K	6.8	3.588E-3	K	1.3	1.111E-2
L	7.5	0.0	L	0.07	2.478E-2
M	8.3		M	0.00	2.837E-2
N	9.2	0.0	N	- 0.07	2.495E-2
O	10.2		O	- 0.09	1.042E-2
P	11.3	1.709E-4	P	- 1.5	3.418E-4
Q	12.55		Q	- 2.4	
R	13.6	0.0	R	- 3.1	1.709E-4
S	14.6		S	- 4.0	
T	15.65	0.0	T	- 5.2	3.418E-4
U	16.8		U	- 6.0	
V	18.2	5.126E-4	V	- 7.4	3.418E-4
W	19.1		W	- 8.8	
X	20.0	5.126E-4	X	-10.3	3.418E-4
Y	20.5		Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	1.025E-3	A		
B	1.2	3.247E-3	B		
C	1.9	6.064E-3	C		
D	2.6	5.81 E-3	D		
E	3.05	6.664E-3	E		
F	3.5	9.057E-3	F		
G	4.2	1.555E-2	G		
H	4.9	1.521E-2	H		
I	5.5	7.348E-3	I		
J	6.1	1.538E-3	J		
K	6.8	1.709E-4	K		
L	7.5	0.0	L		
M	8.3		M		
N	9.2	0.0	N		
O	10.2		O		
P	11.3	0.0	P		
Q	12.55		Q		
R	13.6	1.709E-4	R		
S	14.6		S		
T	15.65	3.418E-4	T		
U	16.8		U		
V	18.2	3.418E-4	V		
W	19.1		W		
X	20.0	3.418E-4	X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 4.2

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	1.367E-3	A	12.4	1.709E-4
B	1.2	3.418E-3	B	11.2	
C	1.9	5.81 E-3	C	9.2	0.0
D	2.6	7.006E-3	D	8.2	
E	3.05	7.86 E-3	E	7.2	1.709E-4
F	3.5	1.077E-2	F	5.9	
G	4.2	1.452E-2	G	5.1	1.709E-4
H	4.9	1.145E-2	H	4.25	
I	5.5	5.639E-3	I	3.1	3.418E-4
J	6.1	1.196E-3	J	2.1	1.709E-3
K	6.8	1.709E-4	K	1.3	5.639E-3
L	7.5		L	0.07	3.759E-3
M	8.3	0.0	M	0.0	1.589E-2
N	9.2		N	- 0.07	1.572E-2
O	10.2	0.0	O	- 0.09	1.230E-2
P	11.3		P	- 1.5	1.88 E-3
Q	12.55	6.835E-4	Q	- 2.4	8.544E-4
R	13.6		R	- 3.1	
S	14.6	6.835E-4	S	- 4.0	5.126E-4
T	15.65		T	- 5.2	
U	16.8	8.544E-5	U	- 6.0	5.126E-4
V	18.2		V	- 7.4	
W	19.1	8.544E-5	W	- 8.8	5.126E-4
X	20.0		X	-10.3	
Y	20.5	6.835E-4	Y	-11.8	5.126E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	1.709E-4	A		
B	1.2	3.418E-4	B		
C	1.9	8.544E-4	C		
D	2.6	2.392E-3	D		
E	3.05	3.930E-3	E		
F	3.5	5.981E-3	F		
G	4.2	3.759E-3	G		
H	4.9	5.297E-3	H		
I	5.5	8.03 E-3	I		
J	6.1	1.094E-2	J		
K	6.8	1.111E-2	K		
L	7.5	4.785E-3	L		
M	8.3	1.367E-3	M		
N	9.2	0.0	N		
O	10.2		O		
P	11.3	0.0	P		
Q	12.55		Q		
R	13.6		R		
S	14.6	0.0	S		
T	15.65		T		
U	16.8		U		
V	18.2	0.0	V		
W	19.1		W		
X	20.0		X		
Y	20.5	0.0	Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 5

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9275E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 9.2

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	3.418E-4	A	12.4	0.0
B	1.2	5.126E-4	B	11.2	
C	1.9	5.126E-4	C	9.2	3.418E-4
D	2.6	3.418E-4	D	8.2	
E	3.05	3.418E-4	E	7.2	0.0
F	3.5	5.126E-4	F	5.9	
G	4.2	5.126E-4	G	5.1	0.0
H	4.9	1.025E-3	H	4.25	
I	5.5	2.051E-3	I	3.1	8.544E-4
J	6.1	3.418E-3	J	2.1	2.563E-3
K	6.8	5.981E-3	K	1.3	3.418E-3
L	7.5	4.443E-3	L	0.07	2.905E-3
M	8.3	8.373E-3	M	0.00	4.443E-3
N	9.2	1.008E-2	N	- 0.07	1.709E-3
O	10.2	1.094E-2	O	- 0.09	1.025E-3
P	11.3	4.101E-3	P	- 1.5	6.835E-4
Q	12.55	3.418E-4	Q	- 2.4	
R	13.6	3.418E-4	R	- 3.1	6.835E-4
S	14.6		S	- 4.0	
T	15.65	1.709E-4	T	- 5.2	5.126E-4
U	16.8		U	- 6.0	
V	18.2	1.709E-4	V	- 7.4	5.126E-4
W	19.1		W	- 8.8	
X	20.0	0.0	X	-10.3	5.126E-4
Y	20.5		Y	-11.8	
Z			Z		

Run 6

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 3.5

SAMPLE	VERTICAL z(cm)	VERTICAL C/C_o	SAMPLE	HORIZONTAL y(cm)	HORIZONTAL C/C_o
A	0.1	4.601E-3	A	12.4	1.704E-4
B	1.2	9.542E-3	B	11.2	1.704E-4
C	1.9	1.977E-2	C	9.2	3.408E-4
D	2.6	2.658E-2	D	8.2	
E	3.05	4.072E-2	E	7.2	1.704E-4
F	3.5	4.549E-2	F	5.9	
G	4.2	2.198E-2	G	5.1	0.0
H	4.9	6.816E-4	H	4.25	
I	5.5	1.704E-4	I	3.1	0.0
J	6.1	3.408E-4	J	2.1	
K	6.8	1.704E-4	K	1.3	3.578E-3
L	7.5	1.704E-4	L	0.7	1.994E-2
M	8.3		M	0.0	4.89 E-2
N	9.2	0.0	N	- 0.7	2.846E-2
O	10.2		O	- 0.9	4.089E-3
P	11.3	3.408E-4	P	- 1.5	5.112E-4
Q	12.55		Q	- 2.4	
R	13.6		R	- 3.1	3.408E-4
S	14.6	3.408E-4	S	- 4.0	
T	15.65		T	- 5.2	1.704E-4
U	16.8		U	- 6.0	
V	18.2	6.816E-4	V	- 7.4	0.0
W	19.1		W	- 8.8	
X	20.0		X	-10.3	0.0
Y	20.5	3.408E-4	Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 20

Height of Horizontal Rake (cm) 4.9

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	2.215E-3	A	12.4	0.0
B	1.2	2.726E-3	B	11.2	
C	1.9	3.578E-3	C	9.2	1.704E-4
D	2.6	4.771E-3	D	8.2	
E	3.05	6.475E-3	E	7.2	1.704E-4
F	3.5	7.668E-3	F	5.9	
G	4.2	1.022E-2	G	5.1	0.0
H	4.9	1.295E-2	H	4.25	
I	5.5	1.295E-2	I	3.1	3.408E-3
J	6.1	1.227E-2	J	2.1	5.452E-3
K	6.8	6.816E-3	K	1.3	1.09 E-2
L	7.5	1.193E-3	L	0.7	1.551E-2
M	8.3	1.704E-4	M	0.0	1.534E-2
N	9.2		N	- 0.7	1.005E-2
O	10.2	0.0	O	- 0.9	3.749E-3
P	11.3		P	- 1.5	1.022E-3
Q	12.55	1.704E-4	Q	- 2.4	3.408E-4
R	13.6		R	- 3.1	3.408E-4
S	14.6	1.704E-4	S	- 4.0	
T	15.65		T	- 5.2	1.704E-4
U	16.8	1.704E-4	U	- 6.0	
V	18.2		V	- 7.4	1.704E-4
W	19.1	1.704E-4	W	- 8.8	
X	20.0		X	-10.3	3.408E-4
Y	20.5	1.704E-4	Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 41

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	1.704E-4	A		
B	1.2	3.408E-4	B		
C	1.9	1.193E-3	C		
D	2.6	2.215E-3	D		
E	3.05	3.408E-3	E		
F	3.5	4.26 E-3	F		
G	4.2	5.112E-3	G		
H	4.9	6.304E-3	H		
I	5.5	7.156E-3	I		
J	6.1	7.838E-3	J		
K	6.8	7.156E-3	K		
L	7.5	7.156E-3	L		
M	8.3	4.26 E-3	M		
N	9.2	1.363E-3	N		
O	10.2	0.0	O		
P	11.3	0.0	P		
Q	12.55		Q		
R	13.6	0.0	R		
S	14.6		S		
T	15.65	0.0	T		
U	16.8		U		
V	18.2	0.0	V		
W	19.1		W		
X	20.0	1.704E-4	X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 46

Height of Horizontal Rake (cm) 4.9

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	1.363E-3	A	12.4	6.816E-4
B	1.2	1.363E-3	B	11.2	
C	1.9	2.556E-3	C	9.2	6.816E-4
D	2.6	2.726E-3	D	8.2	
E	3.05	3.749E-3	E	7.2	6.816E-4
F	3.5	4.771E-3	F	5.9	
G	4.2	5.793E-3	G	5.1	5.112E-4
H	4.9	6.475E-3	H	4.25	
I	5.5	5.282E-3	I	3.1	2.385E-3
J	6.1	4.771E-3	J	2.1	5.112E-3
K	6.8	2.215E-3	K	1.3	6.134E-3
L	7.5	1.022E-3	L	0.7	7.156E-3
M	8.3	8.52 E-4	M	0.0	6.986E-3
N	9.2		N	- 0.7	5.112E-3
O	10.2	0.0	O	- 0.9	3.067E-3
P	11.3		P	- 1.5	1.704E-3
Q	12.55	1.704E-4	Q	- 2.4	6.816E-4
R	13.6		R	- 3.1	5.112E-4
S	14.6	5.112E-4	S	- 4.0	
T	15.65		T	- 5.2	0.0
U	16.8	3.408E-4	U	- 6.0	
V	18.2		V	- 7.4	3.408E-4
W	19.1	3.408E-4	W	- 8.8	
X	20.0		X	-10.3	1.704E-4
Y	20.5	3.408E-4	Y	-11.8	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 50

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0.1	2.215E-3	A		
B	1.2	3.237E-3	B		
C	1.9	4.771E-3	C		
D	2.6	5.452E-3	D		
E	3.05	5.964E-3	E		
F	3.5	6.304E-3	F		
G	4.2	6.816E-3	G		
H	4.9	6.645E-3	H		
I	5.5	5.452E-3	I		
J	6.1	3.749E-3	J		
K	6.8	1.874E-3	K		
L	7.5	8.52 E-4	L		
M	8.3		M		
N	9.2	0.0	N		
O	10.2		O		
P	11.3	1.704E-4	P		
Q	12.55		Q		
R	13.6	0.0	R		
S	14.6		S		
T	15.65	1.704E-4	T		
U	16.8		U		
V	18.2	1.704E-4	V		
W	19.1		W		
X	20.0	1.704E-4	X		
Y	20.5		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 6

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9220E3

Distance from Release Site to Rake Location (cm) 54

Height of Horizontal Rake (cm) 5.5

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.1	1.022E-3	A	12.4	1.704E-4
B	1.2	1.363E-3	B	11.2	
C	1.9	1.874E-3	C	9.2	5.112E-4
D	2.6	2.726E-3	D	8.2	
E	3.05	3.408E-3	E	7.2	3.408E-4
F	3.5	3.919E-3	F	5.9	
G	4.2	4.771E-3	G	5.1	5.112E-4
H	4.9	5.964E-3	H	4.25	8.52 E-4
I	5.5	6.304E-3	I	3.1	1.005E-2
J	6.1	6.475E-3	J	2.1	3.408E-3
K	6.8	5.452E-3	K	1.3	5.112E-3
L	7.5	3.749E-3	L	0.7	5.193E-3
M	8.3	1.874E-3	M	0.0	6.304E-3
N	9.2	8.52 E-4	N	- 0.7	5.452E-3
O	10.2		O	- 0.9	4.430E-3
P	11.3	0.0	P	- 1.5	3.067E-3
Q	12.55		Q	- 2.4	1.022E-3
R	13.6	0.0	R	- 3.1	6.816E-4
S	14.6		S	- 4.0	
T	15.65	0.0	T	- 5.2	3.408E-4
U	16.8		U	- 6.0	
V	18.2	0.0	V	- 7.4	3.408E-4
W	19.1		W	- 8.8	
X	20.0	0.0	X	-10.3	3.408E-4
Y	20.5		Y	-11.8	
Z			Z		

Run 7

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 4.65

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	2.912E-3	A	15.2	4.722E-4
B	0.75	2.833E-3	B	13.9	
C	1.3	3.620E-3	C	12.6	3.935E-4
D	2.0	5.903E-3	D	11.3	
E	3.05	1.417E-2	E	10.0	2.361E-4
F	3.6	2.534E-2	F	8.3	
G	4.25	3.227E-2	G	6.9	1.574E-4
H	5.05	3.271E-2	H	5.4	
I	5.65	1.378E-2	I	4.0	2.361E-4
J	6.25	4.329E-3	J	3.0	2.361E-4
K	7.0	1.023E-3	K	2.0	2.755E-3
L	7.7		L	1.0	1.259E-2
M	8.5		M	0	2.212E-2
N	9.35		N	1.0	3.542E-3
O	10.35		O	2.0	0
P	11.5		P	2.9	3.935E-4
Q	12.75		Q	3.9	0
R	13.85		R	4.9	
S	14.95		S	6.35	
T	16.0		T	7.65	
U	17.1		U	8.95	2.361E-4
V	18.5		V	10.55	
W	19.45		W	11.9	6.296E-4
X	20.55		X	13.4	
Y	21.25		Y	14.7	6.296E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 7.0

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	2.046E-3	A	15.20	1.574E-4
B	0.75	2.282E-3	B	13.90	
C	1.30	2.282E-3	C	12.60	1.574E-4
D	2.00	2.676E-3	D	11.30	
E	3.05	5.824E-3	E	10.00	3.148E-4
F	3.60	7.319E-3	F	8.30	
G	4.25	9.365E-3	G	6.90	7.870E-3
H	5.05	1.212E-2	H	5.40	
I	5.65	1.338E-2	I	4.00	0
J	6.25	1.684E-2	J	3.00	2.282E-3
K	7.00	1.834E-2	K	2.00	9.602E-3
L	7.70	1.543E-2	L	1.00	1.299E-2
M	8.50	6.768E-3	M	0	1.275E-2
N	9.35	2.361E-4	N	1.00	1.259E-2
O	10.35	0	O	2.00	4.171E-3
P	11.50	0	P	2.90	6.296E-4
Q	12.75	0	Q	3.90	2.361E-4
R	13.85	0	R	4.90	
S	14.95	2.361E-4	S	6.35	1.574E-4
T	16.00	0	T	7.65	
U	17.10	4.722E-4	U	8.95	
V	18.50	7.870E-5	V	10.55	
W	19.45	7.870E-5	W	11.90	1.574E-4
X	20.55	7.870E-5	X	13.40	
Y	21.25		Y	14.70	1.574E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) 6.25

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	3.148E-3	A	15.20	6.296E-4
B	0.75	3.305E-3	B	13.90	
C	1.30	4.014E-3	C	12.60	1.259E-3
D	2.00	4.171E-3	D	11.30	
E	3.05	5.666E-3	E	10.00	8.657E-4
F	3.60	7.083E-3	F	8.30	
G	4.25	9.602E-3	G	6.90	1.574E-4
H	5.05	1.228E-2	H	5.40	3.935E-4
I	5.65	1.377E-2	I	4.00	9.444E-4
J	6.25	1.456E-2	J	3.00	2.991E-4
K	7.00	1.377E-2	K	2.00	9.051E-3
L	7.70	1.102E-2	L	1.00	1.047E-2
M	8.50	5.666E-3	M	0	1.039E-2
N	9.35	1.653E-3	N	1.00	1.110E-2
O	10.35	1.259E-3	O	2.00	6.611E-3
P	11.50		P	2.90	2.361E-3
Q	12.75	8.657E-4	Q	3.90	7.870E-4
R	13.85	2.361E-4	R	4.90	
S	14.95		S	6.35	6.296E-4
T	16.00	1.181E-3	T	7.65	
U	17.10	1.338E-3	U	8.95	0
V	18.50	7.870E-4	V	10.55	
W	19.45	3.935E-4	W	11.90	6.296E-4
X	20.55	7.870E-5	X	13.40	
Y	21.25	0	Y	14.70	4.722E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 6.25

SAMPLE	VERTICAL z(cm)	VERTICAL C/C_o	SAMPLE	HORIZONTAL y(cm)	HORIZONTAL C/C_o
A	0	1.495E-3	A	15.20	6.296E-4
B	0.75	1.259E-3	B	13.90	7.870E-5
C	1.30	9.444E-4	C	12.60	7.870E-5
D	2.00	2.204E-3	D	11.30	3.935E-4
E	3.05	2.991E-3	E	10.00	3.935E-4
F	3.60	4.643E-3	F	8.30	7.870E-5
G	4.25	6.139E-3	G	6.90	7.870E-5
H	5.05	7.555E-3	H	5.40	2.361E-4
I	5.65	9.051E-3	I	4.00	7.083E-4
J	6.25	1.062E-2	J	3.00	1.810E-3
K	7.00	1.047E-2	K	2.00	3.856E-3
L	7.70	7.791E-3	L	1.00	6.139E-3
M	8.50	3.778E-3	M	0	7.713E-3
N	9.35	7.870E-4	N	1.00	5.745E-3
O	10.35	0	O	2.00	1.417E-3
P	11.50	0	P	2.90	3.935E-4
Q	12.75	7.870E-4	Q	4.30	2.361E-4
R	13.85	1.574E-4	R	5.30	7.870E-5
S	14.95	0	S	6.75	0
T	16.00	5.509E-4	T	8.05	2.361E-4
U	17.10	5.509E-4	U	9.35	2.361E-4
V	18.50	0	V	10.95	2.361E-4
W	19.45	0	W	12.30	2.361E-4
X	20.55	0	X	13.80	4.722E-4
Y	21.25	0	Y	15.10	2.361E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) 7.0

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	0	A	15.20	8.657E-4
B	0.75	2.361E-4	B	13.90	0
C	1.30	2.361E-4	C	12.60	0
D	2.00	2.361E-4	D	11.30	0
E	3.05	3.148E-4	E	10.00	0
F	3.60	6.296E-4	F	8.30	7.870E-5
G	4.25	1.102E-3	G	6.90	1.574E-4
H	5.05	1.259E-3	H	5.40	0
I	5.65	1.653E-3	I	4.00	0
J	6.25	2.046E-3	J	3.00	0
K	7.00	2.440E-3	K	2.00	1.889E-3
L	7.70	1.889E-3	L	1.00	3.935E-3
M	8.50	1.417E-3	M	0	5.352E-3
N	9.35	2.204E-3	N	1.00	1.968E-3
O	10.35	9.444E-4	O	2.00	7.870E-5
P	11.60	4.722E-4	P	2.90	0
Q	12.75	3.148E-4	Q	3.90	0
R	13.85	0	R	4.90	0
S	14.95	0	S	6.35	0
T	16.00	7.870E-5	T	7.65	0
U	17.10	3.148E-4	U	8.95	0
V	18.50	0	V	10.55	0
W	19.45	0	W	11.90	7.870E-5
X	20.55	0	X	13.40	0
Y	21.25	0	Y	14.70	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 7

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) ________

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	1.968E-3	A		
B	0.75	1.968E-3	B		
C	1.30	1.968E-3	C		
D	2.00	2.833E-3	D		
E	3.05	1.968E-3	E		
F	3.60	2.833E-3	F		
G	4.25	2.991E-3	G		
H	5.05	3.069E-3	H		
I	5.65	3.620E-3	I		
J	6.25	3.856E-3	J		
K	7.00	4.407E-3	K		
L	7.70	4.722E-3	L		
M	8.50	4.801E-3	M		
N	9.35	6.139E-3	N		
O	10.35	7.319E-3	O		
P	11.60	7.791E-3	P		
Q	12.75	8.578E-3	Q		
R	13.85	5.509E-3	R		
S	14.95	3.935E-3	S		
T	16.00	1.889E-3	T		
U	17.10	0	U		
V	18.50	3.935E-4	V		
W	19.45	3.935E-4	W		
X	20.55	2.361E-4	X		
Y	21.25	5.509E-4	Y		
Z			Z		

Run 8

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9120E3/1.7637E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 5.85

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	1.356E-3	A	0	0.0
B	0.95	2.204E-3	B	1.20	
C	1.6	4.577E-3	C	1.95	0.0
D	2.35	1.034E-2	D	2.55	
E	2.8	1.22 E-2	E	3.05	0.0
F	3.25	1.254E-2	F	3.45	
G	3.9	1.678E-2	G	4.10	0.0
H	4.7	2.543E-2	H	4.90	
I	5.3	4.0 E-2	I	5.40	0.0
J	5.85	5.221E-2	J	6.00	4.69 E-4
K	6.6	4.831E-2	K	6.70	5.472E-3
L	7.25	9.831E-3	L	7.35	1.939E-2
M	8.1	1.356E-3	M	8.10	2.236E-2
N	8.9	5.085E-4	N	8.95	8.131E-3
O	9.9	5.085E-4	O	9.95	1.407E-3
P	11.05	1.017E-3	P	11.10	4.691E-4
Q	12.4	6.78 E-4	Q	12.35	0.0
R	13.35	3.390E-4	R	13.35	0.0
S	14.4	1.695E-4	S	14.35	0.0
T	15.4		T	15.35	0.0
U	16.6	0.0	U	16.50	0.0
V	17.9		V	17.90	0.0
W	18.8	0.0	W	18.80	0.0
X	19.8		X	19.80	0.0
Y	20.25	0.0	Y	20.50	0.0
Z			Z		0.0

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9120E3/1.7637E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 7.25

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	0	A	0	1.564E-4
B	0.95	0	B	1.20	1.564E-4
C	1.60	1.695E-4	C	1.95	3.127E-4
D	2.35	8.475E-4	D	2.55	4.691E-4
E	2.80	1.356E-3	E	3.05	4.691E-4
F	3.25	2.034E-3	F	3.45	1.564E-4
G	3.90	4.746E-3	G	4.10	3.127E-4
H	4.70	9.153E-3	H	4.90	3.127E-4
I	5.30	1.322E-2	I	5.40	0
J	5.85	1.729E-2	J	6.00	3.127E-4
K	6.60	2.441E-2	K	6.70	7.818E-4
L	7.25	2.526E-2	L	7.35	5.16 E-3
M	8.10	7.458E-3	M	8.10	1.876E-2
N	8.90	0.0	N	8.95	2.220E-2
O	9.90	0.0	O	9.95	2.064E-2
P	11.05	0.0	P	11.10	1.282E-2
Q	12.40		Q	12.35	2.814E-3
R	13.35	0.0	R	13.35	0
S	14.40		S	14.35	0
T	15.40	0.0	T	15.35	0
U	16.60		U	16.50	0
V	17.90	0.0	V	17.90	0
W	18.80		W	18.80	0
X	19.80	0.0	X	19.80	1.564E-4
Y	20.25		Y	20.50	1.564E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9120E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0.0	0.0	A		
B	0.95	0.0	B		
C	1.6	3.39 E-4	C		
D	2.35	1.017E-3	D		
E	2.8	1.695E-3	E		
F	3.25	2.373E-3	F		
G	3.9	4.746E-3	G		
H	4.7	8.814E-3	H		
I	5.3	1.187E-2	I		
J	5.85	1.441E-2	J		
K	6.6	1.695E-2	K		
L	7.25	1.356E-2	L		
M	8.1	1.695E-3	M		
N	8.9	0.0	N		
O	9.9		O		
P	11.05	0.0	P		
Q	12.4		Q		
R	13.35	0.0	R		
S	14.4		S		
T	15.4	0.0	T		
U	16.6		U		
V	17.9	0.0	V		
W	18.8		W		
X	19.8	0.0	X		
Y	20.25		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.9120E3/1.7637E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 7.25

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	0.0	A	0	0
B	0.95	0.0	B	1.20	
C	1.6	0.0	C	1.95	1.564E-4
D	2.35	3.39 E-4	D	2.55	
E	2.8	8.475E-4	E	3.05	0
F	3.25	1.526E-3	F	3.45	
G	3.9	2.712E-3	G	4.10	0
H	4.7	5.594E-3	H	4.90	
I	5.3	7.967E-3	I	5.40	0
J	5.85	1.051E-2	J	6.00	6.254E-4
K	6.6	1.254E-2	K	6.70	2.814E-3
L	7.25	1.39 E-2	L	7.35	7.818E-3
M	8.1	5.424E-3	M	8.10	1.188E-2
N	8.9	1.695E-4	N	8.95	1.282E-2
O	9.9	0.0	O	9.95	1.22 E-2
P	11.05		P	11.10	7.974E-3
Q	12.4	0.0	Q	12.35	2.345E-3
R	13.35		R	13.35	3.127E-4
S	14.4	0.0	S	14.35	
T	15.4		T	15.35	0
U	16.6	0.0	U	16.50	
V	17.9		V	17.90	1.564E-4
W	18.8	0.0	W	18.80	
X	19.8		X	19.80	1.564E-4
Y	20.25	0.0	Y	20.50	
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7637E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ________

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0	2.502E-3	A		
B	0.95	3.283E-3	B		
C	1.6	2.508E-3	C		
D	2.35	3.283E-3	D		
E	2.8	3.127E-3	E		
F	3.25	3.596E-3	F		
G	3.9	3.909E-3	G		
H	4.7	5.629E-3	H		
I	5.3	7.036E-3	I		
J	5.85	8.287E-3	J		
K	6.6	8.6 E-3	K		
L	7.25	1.141E-2	L		
M	8.1	1.329E-2	M		
N	8.9	1.548E-2	N		
O	9.9	1.126E-2	O		
P	11.05	3.283E-3	P		
Q	12.4	2.658E-3	Q		
R	13.35	1.564E-4	R		
S	14.4	1.72 E-3	S		
T	15.4		T		
U	16.6	9.381E-4	U		
V	17.9		V		
W	18.8	0.0	W		
X	19.8		X		
Y	20.25		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 8

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7637E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 12.4

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_0		y(cm)	C/C_0
A	0	3.75 E-3	A	0	0
B	0.95	3.75 E-3	B	1.20	
C	1.6	3.44 E-3	C	1.95	3.127E-4
D	2.35	3.596E-3	D	2.55	
E	2.8	3.283E-3	E	3.05	0
F	3.25	3.283E-3	F	3.45	
G	3.9	2.658E-3	G	4.10	0
H	4.7	2.658E-3	H	4.90	
I	5.3	3.44 E-3	I	5.40	4.691E-4
J	5.85	3.596E-3	J	6.00	3.283E-3
K	6.6	4.065E-3	K	6.70	5.942E-3
L	7.25	4.847E-3	L	7.35	8.756E-3
M	8.1	6.254E-3	M	8.10	8.912E-3
N	8.9	7.349E-3	N	8.95	8.912E-3
O	9.9	9.381E-3	O	9.95	8.6 E-3
P	11.05	1.063E-2	P	11.10	7.818E-3
Q	12.4	1.392E-2	Q	12.35	3.753E-3
R	13.35	1.251E-2	R	13.35	1.094E-3
S	14.4	8.6 E-2	S	14.35	
T	15.4	3.909E-3	T	15.35	4.691E-4
U	16.6	4.222E-3	U	16.50	
V	17.9	2.2 E-3	V	17.90	4.691E-4
W	18.8	3.283E-3	W	18.80	
X	19.8	3.283E-3	X	19.80	6.254E-4
Y	20.25	2.971E-3	Y	20.50	
Z			Z		

Run 9

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 5

Height of Horizontal Rake (cm) 5.3

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	0	A	11.24	7.870E-5
B	1.20	3.070E-3	B	9.74	7.870E-5
C	1.95	1.944E-2	C	8.34	
D	2.55	2.141E-2	D	6.84	7.870E-5
E	3.05	1.527E-2	E	5.84	
F	3.45	1.204E-2	F	4.74	7.870E-5
G	4.10	9.520E-3	G	4.65	
H	4.90	1.102E-2	H	3.65	
I	5.40	2.558E-2	I	2.65	
J	6.00	1.905E-2	J	1.80	5.509E-4
K	6.70	2.200E-3	K	1.20	6.060E-3
L	7.35	3.310E-3	L	0.60	2.322E-2
M	8.10		M	0	2.133E-2
N	8.95		N	0.65	4.801E-3
O	9.95		O	1.35	5.430E-3
P	11.10		P	1.95	1.141E-2
Q	12.35	1.573E-4	Q	2.60	1.645E-2
R	13.35		R	3.40	1.424E-2
S	14.35	3.935E-4	S	4.40	2.361E-3
T	15.35		T	5.40	3.148E-4
U	16.50		U	6.25	2.361E-4
V	17.90		V	7.65	7.870E-5
W	18.80	7.870E-5	W	9.05	7.870E-5
X	19.80		X	10.55	
Y	20.50	2.361E-4	Y	12.05	7.870E-5
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 10

Height of Horizontal Rake (cm) 4.9

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z (cm)	C/C_o		y (cm)	C/C_o
A	0		A	11.24	0
B	1.20	2.203E-3	B	9.74	0
C	1.95	6.296E-3	C	8.34	
D	2.55	9.523E-3	D	6.84	7.870E-5
E	3.05	1.086E-2	E	5.84	
F	3.45	1.188E-2	F	4.74	7.870E-5
G	4.10	1.582E-2	G	4.65	
H	4.90	2.054E-2	H	3.65	
I	5.40	2.030E-2	I	2.65	7.870E-4
J	6.00	1.440E-2	J	1.80	5.903E-3
K	6.70	2.361E-3	K	1.20	1.275E-2
L	7.35	7.870E-5	L	0.60	1.787E-2
M	8.10		M	0	1.794E-2
N	8.95		N	0.65	1.149E-2
O	9.95		O	1.35	3.227E-3
P	11.10		P	1.95	1.574E-3
Q	12.35	7.870E-5	Q	2.60	2.125E-3
R	13.35		R	3.40	7.870E-4
S	14.35	2.361E-4	S	4.40	3.148E-4
T	15.35		T	5.40	2.361E-4
U	16.50		U	6.25	3.148E-4
V	17.90		V	7.65	
W	18.80	7.870E-5	W	9.05	3.148E-4
X	19.80		X	10.55	
Y	20.50	1.574E-4	Y	12.05	3.148E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 15

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	0	A		
B	1.20	1.968E-3	B		
C	1.95	5.194E-3	C		
D	2.55	8.563E-2	D		
E	3.05	1.015E-2	E		
F	3.45	9.759E-3	F		
G	4.10	8.578E-3	G		
H	4.90	5.745E-3	H		
I	5.40	3.384E-3	I		
J	6.00	7.870E-4	J		
K	6.70		K		
L	7.35		L		
M	8.10		M		
N	8.95		N		
O	9.95		O		
P	11.10		P		
Q	12.35	7.870E-5	Q		
R	13.35		R		
S	14.35		S		
T	15.35		T		
U	16.50	7.870E-5	U		
V	17.90		V		
W	18.80		W		
X	19.80		X		
Y	20.50	7.870E-5	Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 19

Height of Horizontal Rake (cm) 3.05

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	5.509E-4	A	11.24	
B	1.20	1.810E-3	B	9.74	
C	1.95	6.454E-3	C	8.34	
D	2.55	9.287E-3	D	6.84	
E	3.05	1.039E-2	E	5.84	1.574E-4
F	3.45	1.015E-2	F	4.74	
G	4.10	9.208E-3	G	4.65	7.870E-5
H	4.90	6.690E-3	H	3.65	3.148E-4
I	5.40	3.542E-3	I	2.65	1.495E-3
J	6.00	1.338E-3	J	1.80	5.745E-3
K	6.70		K	1.20	7.555E-3
L	7.35		L	0.60	9.523E-3
M	8.10		M	0	1.047E-2
N	8.95		N	0.65	8.578E-3
O	9.95		O	1.35	3.935E-3
P	11.10		P	1.95	2.125E-3
Q	12.35		Q	2.60	2.125E-3
R	13.35		R	3.40	3.778E-3
S	14.35		S	4.40	4.879E-3
T	15.35		T	5.40	4.722E-3
U	16.50	7.870E-5	U	6.25	2.046E-3
V	17.90		V	7.65	3.148E-4
W	18.80		W	9.05	3.148E-4
X	19.80		X	10.55	
Y	20.50	7.870E-5	Y	12.05	3.148E-4
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 23

Height of Horizontal Rake (cm) ______

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	1.023E-3	A		
B	1.20	1.889E-3	B		
C	1.95	3.148E-3	C		
D	2.55	4.407E-3	D		
E	3.05	5.273E-3	E		
F	3.45	5.981E-3	F		
G	4.10	6.454E-3	G		
H	4.90	7.083E-3	H		
I	5.40	7.555E-3	I		
J	6.00	7.634E-3	J		
K	6.70	6.532E-3	K		
L	7.35	3.620E-3	L		
M	8.10	1.102E-3	M		
N	8.95	1.574E-4	N		
O	9.95		O		
P	11.10	1.574E-4	P		
Q	12.35	7.870E-5	Q		
R	13.35		R		
S	14.35	2.361E-4	S		
T	15.35		T		
U	16.50	1.574E-4	U		
V	17.90		V		
W	18.80	1.574E-4	W		
X	19.80		X		
Y	20.50		Y		
Z			Z		

MARTIN-MARIETTA

Two-Dimensional Hill Tests

Run Number 9

Source Strength (ppm) 22.56E4

Calibration Factor (ppm/mvs) 1.7755E3

Distance from Release Site to Rake Location (cm) 28

Height of Horizontal Rake (cm) 8.95

SAMPLE	VERTICAL		SAMPLE	HORIZONTAL	
	z(cm)	C/C_o		y(cm)	C/C_o
A	0	3.148E-4	A	11.24	
B	1.20	9.444E-4	B	9.74	
C	1.95	4.722E-4	C	8.34	
D	2.55	7.870E-4	D	6.84	
E	3.05	1.023E-3	E	5.84	7.870E-5
F	3.45	1.023E-3	F	4.74	7.870E-5
G	4.10	1.810E-3	G	4.65	2.361E-4
H	4.90	2.833E-3	H	3.65	4.722E-4
I	5.40	3.305E-3	I	2.65	1.731E-3
J	6.00	3.778E-3	J	1.80	2.912E-3
K	6.70	4.014E-3	K	1.20	3.778E-3
L	7.35	4.643E-3	L	0.60	4.958E-3
M	8.10	5.509E-3	M	0	5.352E-3
N	8.95	5.667E-3	N	0.65	4.565E-3
O	9.95	3.384E-3	O	1.35	3.305E-3
P	11.10	1,338E-3	P	1.95	2.833E-3
Q	12.35	1.574E-4	Q	2.60	2.912E-3
R	13.35	7.870E-5	R	3.40	2.991E-3
S	14.35	2.361E-4	S	4.40	2.518E-3
T	15.35		T	5.40	2.046E-3
U	16.50	7.870E-5	U	6.25	1.338E-3
V	17.90		V	7.65	3.935E-4
W	18.80		W	9.05	3.148E-4
X	19.80		X	10.55	
Y	20.50	7.870E-5	Y	12.05	3.148E-4
Z			Z		