Clark County Wind Tunnel Study

Section I

Estimation of Valley-Wide PM_{10} emissions using UNLV 1995 wind tunnel measurements, revised vacant land classifications, and GIS-based mapping of vacant lands

Supplemental Task:
Estimation of Stabilized land PM_{10} emission using data from 1998-1999 UNLV wind tunnel study of PM_{10} emissions from different dust suppressants

March 28, 2000 - Draft Report

Estimation of Valley-Wide PM-10 Emissions using UNLV 1995 wind tunnel measurements, revised vacant land classifications, and GIS-based mapping of vacant lands

Supplemental Task: Estimation of stabilized land PM-10 emissions using data from 1998-1999 UNLV wind tunnel study of PM-10 emissions from different dust suppressants

David James, Ph.D., P.E.
Johan Pulgarin
Srinivas Pulugurtha, Ph.D.
Jon Becker, B.S., M.S.

Civil and Environmental Engineering Department
University of Nevada, Las Vegas
4505 Maryland Parkway
Las Vegas NV 89154-4015

DRAFT Report DRAFT

for

Clark County Department of Comprehensive Planning
Clark County Government Center
500 S Grand Central Parkway Box 551741
Las Vegas NV 89155 - 1741

March 28, 2000

EXECUTIVE SUMMARY – SUPPLEMENTAL REPORT

The UNLV wind tunnel database developed from a year-long study of PM-10 emissions from land surfaces treated with nine different dust suppressants, was combined with the 1999 Clark County Health District wind database and the Clark County Comprehensive Planning vacant land database to estimate the reduction in Valley-wide annual (1999) and design day (February 25, 1999) PM-10 emissions from vacant lands that could occur if vacant lands currently rated as "unstable" were all successfully treated with dust suppressants to reduce emissions.

Stabilized land emissions factors in ton/acre/hour have been computed for the Phase I and Phase II dust suppressant treatments from the 1998-1999 UNLV wind tunnel study. Preliminary stabilized land emissions factors are typically on the order of $2x10^{-4}$ ton/acre/hour, 2-6% of unstable land emissions factors (typically $1x10^{-2}$ ton/acre/hour, and are 8-50% of stable land emissions factors (typically $2x10^{-3}$ ton/acre/hour).

Estimates of emissions reductions that can be obtained using the above emission factors for application of dust suppressants unstable vacant lands are shown below using *preliminary* values of dust suppressant PM-10 emissions from Phase II of the 1998-1999 wind tunnel study:

Preliminary 1999 annual emissions reductions estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	19,959	14,705	5,254	26%
80/20	22,933	13,424	9,509	41%
variable*	23,011	13,395	9,616	42%
70/30	26,407	12,144	14,263	54%

Preliminary 1999 design day (February 25, 1999) emissions reduction estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	836	580	256	31%
80/20	998	529	469	47%
variable*	1006	527	480	48%
70/30	1051	478	573	55%

*variable means 80/20 stable/unstable ratio in outlying areas and higher ratios (70/30 or 60/40) in small polygons near Las Vegas' urban core.

The methodology for calculating the Valley-wide estimate was identical to that used in the first UNLV report, dated February 22, 2000, that estimated 1999 annual and design day emissions from unstable lands, except that the source of data for emissions from vacant disturbed (unstable) lands was changed from the 1995 UNLV wind tunnel study of desert lands to the 1998-1999 UNLV wind tunnel study of disturbed soil treated with commercial dust suppressants. The source of data for estimation of emissions from vacant *undisturbed (stable)* lands, the 1995 UNLV wind tunnel database, remains the same in both the February 22 and March 29 reports.

Emission factors used for the stabilized lands in this supplemental study were derived from the Phase II treated surface PM-10 fluxes as a function of wind speed, averaged over eight types of dust suppressants. Averaging was done in this way because it was assumed that a variety of dust suppressants would be used in the Las Vegas Valley, and so, a reduction averaged over different suppressant types should be employed to reflect a population of different land surfaces treated with a variety of dust suppressant products. It should be noted that the 1998-1999 UNLV wind tunnel study showed that some types of suppressants, notably mulches and acrylic polymer emulsions, performed better than others.

Preliminary results for stabilized land surfaces were computed using 1998-1999 wind tunnel emissions estimates that still contain the initial "spike" of loose PM-10. Processing of spike removal from 400 computer data files has consumed more time than expected, and the Phase II flux data set was not completely analyzed by March 28. However, initial review of Phase I spike-corrected flux values indicates that their geometric means are typically within 15% of the uncorrected flux geometric means. The difference between corrected and uncorrected flux values is small because, on dust-suppressant-treated surfaces, the observed initial "spike" is often of low amplitude or non-existent. In contrast, on untreated surfaces (1995 UNLV study), and on torn-up surfaces, the initial spike is usually much higher than the rest of the signal, and the spike-corrected flux can be much smaller than the uncorrected flux.

When the above calculations are repeated using spike-corrected values, it is anticipated that the estimated reductions in PM-10 emissions will change slightly from the estimates cited on page i. The effect of using the spike-corrected values and spikes may be to slightly *decrease* the stabilized PM-10 emissions, to slightly *increase* the PM-10 reductions (in tons) and also slightly *increase* the percentage PM-10 reductions. For a scenario using 20% vacant stabilized land and spike-corrected fluxes for stabilized lands that are 10% smaller than uncorrected fluxes, the spike corrections will slightly *decrease* estimated PM-10 *emissions* by 1-2 percent , and will slightly *increase* estimated PM-10 *emissions reductions* by 1-2 percent. For example, in the 1999 Valley-wide annual estimates, we may see an *increase* in PM-10 reduction from 41% to 43% for an 80/20 stable/stabilized scenario). Reprocessed data should be incorporated into the second draft of this report by the beginning of next week.

For available wind speed data used in this study (1999 Clark County Health District average hourly wind speeds in excess of 20 mph), the above tables show that:

1) Degree of reduction of emissions from the unstabilized baseline value strongly depends on the estimated ratio of stable (untreated) lands to stable (treated) vacant lands.

2) 1999 *design day* reductions using suppressants are higher than 1999 *annual* reductions

Plots of the geometric means of the stabilized land emission factors show very large variability and a declining trend of the means with increasing wind speeds. Because of the high variability in the data, the declining trend is not statistically significant. The high variability is partially an effect of experimental variation in the field, and also an effect to averaging PM-10 emissions over all suppressant types. Slight additional reductions in predicted stabilized land emissions could be obtained if only data from the best-performing (lowest emitting) suppressants were used.

Keywords: PM-10, dust suppressants; emissions estimates, wind tunnel, GIS, database, Clark County, Valley-wide

ACKNOWLEDGMENTS

UNLV gratefully acknowledges the continuing support and assistance of the following individuals who provided data, ideas and review that helped to shape this project:

Clark County Comprehensive Planning:	Will Cates Majed Khater Rodney Langston Rick Matar
Clark County Health District:	Femi Durosimini Cheryl McDonnell-Canan Cyndy Mikes Michael Naylor Mickey Palmer Monte Symonds Lew Wallenmeyer
Dames and Moore	Carrie MacDougall Doug Landwehr

Any errors or omissions are the sole responsibility of the principal author, David James

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. METHODOLOGY FOR COMPUTING SUPPLEMENTAL EMISSIONS FACTORS

Spike Removal

PM-10 data in the 1998-99 UNLV wind tunnel dust suppressant study were acquired using a TSI Dust-Trak(r) laser-diode sensor, factory-calibrated to Arizona Road dust. The TSI continuously samples the flow in the wind tunnel and stores 1 data point per second in memory. Data are then downloaded to laboratory computers for processing.

Typically, on untreated soil surfaces an initial "spike" of high PM-10 concentration is seen in the first one to two minutes of a wind tunnel run, corresponding to erosion of loose PM-10 material from the soil surface. Wind tunnel runs have durations of 5 and 10 minutes. Five minute runs were used to determine surface roughness properties, and 10 minute runs were used to measure eroded material. To avoid undue influence of the spikes on estimated hourly averages, the spikes need to be removed from the data and processed separately when 5 and 10 minute runs are converted to hourly average emission rates. The spike-removed fluxes (called spike-corrected) are converted to hourly averages in ton/acre/hour. Spike data are converted into masses per unit area (ton/acre).

When computing erosion using wind data at a particular station, spikes are added to the rsults at the start of each erosive wind result. For example, when estimating of wind tunnel emissions during a two-hour erosive wind event, the spike-corrected average in ton/acre/hour is multiplied by 2 hours, the spike in ton/acre is added, and then the result in ton/acre is multiplied by the estimated land area.

The 1998-1999 UNLV wind tunnel study data showed that, for soil surfaces treated with dust suppressants, spikes were typically very small, much smaller than for untreated surfaces. A typical plot of a small-spike wind tunnel run on a treated surface is shown in Figure A. The rising diagonal line of integrated concentration (area under the curve) has a nearly constant slope, indicating a very small initial spike for this run. In Figure A, the uncorrected average PM-10 concentration is 0.0164 mg/m^3, and the spike-corrected concentration is 0.0159 mg/m^3, a difference of 3%.

A typical plot of a moderate-spike wind tunnel run on a treated surface is shown in Figure B. An initial spike in the range of 0.3 to 1.0 mg/m^3 can be observed in the raw data line. The corresponding line of integrated concentration changes in slope until about 50 seconds into the run. The "knee" in the integrated concentration curve arises from the spike. The initial spike mass in this plot corresponds to the area under the spike after removal of the long-term average concentration. In Figure B, the uncorrected average PM-10 concentration is 0.0991 mg/m^3, and the spike-corrected concentration is 0.0773 mg/m^3, a difference of 22%.

Measured PM-10 vs time plots for soils with intact suppressant-treated surfaces generally resembled Figure A. Several suppressants that performed less well in the wind tunnel tests generally resembled Figure B.

Dust suppressants used for computation of flux data

It is difficult at the time of this writing to predict what types of suppressants might be generally employed in a Valley-wide dust control program. Therefore, it was decided to compute flux values averaged over a set of dust suppressants that might be in common use in the Valley. Geometric means across eight different types of dust suppressants were computed for 5 mph wind ranges. The following dust suppressants were used in the Phase I and Phase II calculations.

Type	Supplier and Trade name		Application rates pounds/100 square feet	
			Phase I	Phase II
$MgCl_2$ solution	BMI	Chlor-Tex	17.6	17.6
Acrylic emulsion	Rohm & Haas	Poly-Tex	2.9	2.9
Plaster of Paris-mulch	Soil-Tech	Plas-Tex	15.0	15.0
Lignin sulfonate emulsion	Georgia Pacific	Dustac	13.9	13.9
Petroleum resin emulsion	Pennzoil	PennzSuppressD	4.5	3.5
Acrylic emulsion	Midwest Ind	Soil Sement	1.9	3.1
Reclaimed water	City of Las Vegas	none	0.0	0.0
Recycled road aggregate	Las Vegas Paving	RAP	3,249	3,249*

*RAP was applied only once in Phase I, and not reapplied in Phase II. All other suppressants were reapplied in Phase II

Details of the application methods may be found in the UNLV Report "Field Testing of Dust Suppressants using a Portable Wind Tunnel", dated December 8, 1999.

Flux Calculation

Measured wind-tunnel PM-10 concentrations were converted to fluxes by using a mass balance on the wind tunnel sampling train, the known flow velocity in the tunnel, the floor area of the tunnel, and a small background PM-10 concentration from ambient air. The mathematical conversion from concentration to flux is as follows:

$$\text{Flux} = \frac{(\text{Tunnel flow+cylcone flow}) * (\text{corrected TSI PM-10 concentr} - \text{background PM-10})}{\text{Tunnel floor area}}$$

For flow rates in m^3/minute, spike-corrected PM-10 concentrations in mg/m^3, and floor area in m^2, this computation gives fluxes in mg/m^2/min. Values in mg/m^2/min were then converted to ton/acre/hour. Background PM-10 was typically set at .020 mg/m^3.

Spike Calculation

Numerical integrals of PM-10 concentration vs. time were computed using the formula:

$$\sum_{i=1}^{n}(\text{concentration})_i \times (\text{delta } t)_i$$ where n = 300 or 600 seconds, depending on the length of the wind tunnel run

The numerical integrals were computed for both the entire duration of the record (usually i = 1 to i=300 or 600), and for the duration of record that did not include the spike (usually i = 100 to i=300 or 600).

The numerical integral over the entire record duration is called Integrated PM-10 (mg-sec/m^3).

The numerical integral over the record duration that did not include the spike is called Spike-corrected PM-10 (mg-sec/m^3).

Average spike concentrations (mg/m^3) were then computed by the formula:

$$\frac{[\text{Integrated PM-10 (mg-sec/m}^3) - \text{spike-corrected PM-10 (mg-sec/m}^3)]}{\text{spike duration (seconds)}}$$

Spike mass per unit area was then computed by the following relationship:

$$\text{Spike mass/area} = \frac{(\text{Average spike concentration}) \times (\text{tunnel flow rate}) \times (\text{spike duration})}{\text{Tunnel floor area}}$$

This computation produced a spike mass in milligrams per square meter. This result was then converted to ton per acre using numerical conversion factors.

Rationale for selection of Phase II data for use in estimation of fluxes from stabilized vacant lands

Wind tunnel data are available for two phases in the 1998-1999 wind tunnel study. Phase I data were obtained from August 1, 1998 through January 30, 1999. Phase II data were obtained from February 1999 through June 30, 1999. During Phase I, the Las Vegas Valley was experiencing an El Nino (usually warmer and wetter than normal) weather cycle. Unusually heavy rains in September and October 1998 inundated the suppressant test beds with two-to-three inches of standing water. Unusually cold conditions in

December 1998 produced snowfall on the beds and may have subjected the test suppressants to a freeze-thaw cycle. The result was that several suppressants dissolved in the standing water. Phase I testing of the suppressants employed the technique of measuring PM-10 emissions from the suppressants as they weathered over time. Phase II emission factors for each suppressant were derived from a strategy of making single sampling runs of the beds at intervals of one to two weeks, for a period of 10 weeks.

To eliminate effects of unusual weathering, a Phase II study was launched in January 1888. All suppressants except for RAP were reapplied between January 31 and February 14, 1999. After February 14, Las Vegas experienced an unusually dry spring as a result of a La Nina (usually cooler and dryer than normal) weather cycle. The suppressants were not subjected to heavy precipitation until July 8, 1999, after the completion of wind tunnel testing. Phase II testing employed a strategy of intensive replicate sampling of the PM-10 emissions from the suppressants in a short period of time. PM-10 emissions were measured after the beds had typically been subjected to one to three months of weathering.

Phase I and Phase II geometric mean uncorrected fluxes in each 5mph wind speed category are presented in Table A and in Figures 1, 2, and 3. The large standard deviations shown in the Figures indicate considerable scatter in the data. The scatter is the result of computing averages from measurements collected over periods of several months, and from averages over different suppressant types.

Comparison of the Phase I and Phase II tabulated uncorrected fluxes and the plots of the (geometric mean $\pm$ 1 standard deviation) average fluxes (Figures 2 and 3) shows that the geometric means of the Phase II fluxes are 30% to 60% of the geometric means of Phase I fluxes. When statistical testing is completed, it is anticipated that there will be few cases of significant differences between the means of the Phase I and Phase II samples.

This author believes that the Phase II results are more representative of actual field applications, largely due to the absence of the extreme weathering conditions that subjected the Phase I beds to inundations of standing water. This is the main reason why the Phase II data were selected for use in Valley-wide emission factor estimates.

Preliminary results of spike correction calculations - Phase I

Preliminary results from spike removal calculations for the Phase I dataset shows minimal effects of spike correction on Phase I data. Comparison of geometric means and standard deviations in Table A and Figure 1 (fluxes uncorrected for presence of spike) to Table B and Figure 1A (fluxes corrected for presence of spike) shows that the fluxes are nearly identical. This result indicates that spike magnitudes in the Phase I dataset were small compared to the steady-state fluxes.

Sources of data for the Valley-wide PM-10 emission calculation

1. PM-10 Emissions factors: Undisturbed (stable) land emission factors were assigned to each wind speed using 1995 wind tunnel study data from the Excel spreadsheet FLUXDRAFT3.XLS. Stabilized disturbed land emission factors were assigned to each wind speed using 1998-1999 wind tunnel study data from STABLFLUX.XLS.

2. Threshold velocities for initiation of a wind erosion event. SPIKESOIL.XLS, another Excel 5.0 spreadsheet, contains the estimated 10-meter threshold velocity (called a spike velocity) for initiation of a PM-10 event, classified for disturbed (unstable) and undisturbed (stable) soils and also classified by major soil type. Following analysis of the data in this spreadsheet, 20 mph was uniformly used as the spike velocity, which is close the (geometric mean - 1 standard deviation) value averaged over all soil types. Average observed 10-meter spike velocities usually exceeded 20 mph. A pessimistic value of 20 mph, representing a value approximately equal to the (geometric mean – 1 standard deviation) of the initiation velocities observed in the wind tunnel data, was used to select erosive winds. This assumption leads to higher emission estimates than if the geometric mean spike velocity value had been selected as the threshold, as there are more hours of erosive winds above 20 mph in the record than there are hours of erosive winds above 26 mph.

In computing emissions estimates, spike values were used only in the first hour of erosive wind events separated by more than 24 hours, to allow for weathering and deposition to renew a layer of loose material on the surface. The actual time required for renewal of the loose layer is not known.

3. Wind data: Wind data came from the Clark County Health District monitoring network:

a. Hourly average wind data for 18 monitoring stations inside the BLM land disposal boundary were imported into a Microsoft Access 97 database, and identified by station id#.

b. Queries were run on the database to obtain hourly average wind records greater than or equal to 20 mph for each station. Missing wind records (indicated by 9999) in the data from Clark County were not used. No attempt was made to adjust or patch missing records in the database.

c. For each station, hourly average wind records exceeding 20 mph for each monitoring station (polygon) resulting from the query were exported to separate MS Excel 5.0 spreadsheets. Wind tunnel study emission factors were assigned to each hourly average wind speed using emission factor data from the Excel spreadsheets FLUXDRAFT3.XLS and STABLFLUX.XLS.

4. Vacant land areas: Vacant land estimates came from Clark County Comprehensive Planning as ASCII data showing the number of acres of vacant land in each grid cell. Each grid cell corresponds to one section in a township and range map. Each cell is approximately one square mile (640 acres) in area. As described in the February 22, 2000 report, Thiessen polygons were constructed between the locations of the monitoring stations. Each polygon encloses six to several hundred grid cells. Vacant land area inside each Thiessen polygon was obtained by the following method:

a. A grid surface of the land inside the BLM disposal boundary was developed from UNLV's GIS database. The number of acres of vacant land in each grid cell had been estimated by Clark County Comp Planning, from the Spring 1999 aerial photos, and assigned to each township, range and section.

b. Locations of CCHD AQD monitoring stations were converted to UTM coordinates and overlaid on the southern Clark County township and range grid.

c. The BLM Land Disposal Boundary was overlaid on the same grid to provide exterior limits.

d. Thiessen polygons were created around each monitoring station. The polygons were converted into a layer on the map grid.

e. A GIS query was run on the number of grid cells touched or contained by each polygon to compute the total area of all grid cells touched or contained within a polygon. This approach means that the areas of grid cells straddling a polygon boundary were incorporated into polygons on each side of a boundary. This means that the polygons have more area assigned to them than they really contain. A correction technique is needed to repair this area.

f. Areas of straddling grid cells assigned to two polygons were found by creating a second MS Access97 database of all grid cells contained in or straddling each polygon. A third MS Access97 database that contains only the duplicated cells was then created by running a "find duplicates" query in the second database on the unique record identifier for each grid cell. This second database was used to compute the vacant land area corrections that were to be applied to each polygon. To compute the correction, the total vacant land area of duplicated grid cells in each polygon was calculated, then divided by two and subtracted from the total vacant area assigned to each polygon.

5. Summary: The following databases were combined to estimate Valley-wide PM-10 emissions:

a. Wind speed data from Clark County Health District, sorted by day and time within each polygon, in units of miles per hour, and selected to include only hourly average winds exceeding 20 mph (based on observed spike velocity data from the 1995 UNLV wind tunnel study.

b. PM-10 emission factor data from 1995 and 1998-1999 UNLV Phase II wind tunnel studies, computed as geometric means for stable (undisturbed) and unstable (disturbed) soil conditions, in units of ton/acre/hour for 5 mph increments of wind speed, beginning at 15-19.9 mph, then 20-24.9 mph, 25-29.9 mph, etc.

c. Corrected polygon vacant land areas from Clark County Comprehensive Planning, in units of acres.

Sample calculation of PM-10 emissions in a polygon

For each hour of erosive wind in each erosion event in each polygon, PM-10 emissions in each polygon were computed in the following manner:

A. *For stable lands:*

1) estimated fraction stable land

x

2) area vacant land (acre) in the polygon

x

3) stable land emission factor (1995 wind tunnel study) in ton/acre/hour corresponding to observed average wind speed in that hour

x

4) duration of that average wind speed (always 1 hour)

=

5) estimated stable land emissions of PM-10 in tons for that hour in that polygon

6) For the first hour of each erosion event separated by more than one day, the spike emission factor (ton/acre) was multiplied by 1) and 2) above to get a spike value in tons, and added to the first hour of steady emissions.

B. *For stabilized disturbed lands*, the procedure was the same as in A., except that changes were made in the following steps,

1) the estimated fraction *unstable (disturbed)* land was used. The unstable fraction is (1 - estimated fraction of stable land)

3) the Phase II stabilized land emission factor (1998-1999 study) was used instead of the stable land emission factor

6) if available, the stabilized spike value was used instead of the stable spike value (at the time of this writing, spike values for stabilized lands were unavailable for Phase II)

C. Emissions from steps A and B were summed for each erosion event (hourly average winds > 20 mph) over the entire period of record for that monitoring station. These summed values are found in column N of each individual spreadsheet in the workbook STABL99PM10.XLS. Each spreadsheet represents a different polygon on the Valley-wide grid.

A sample calculation is shown in Table A.7 for Polygon number 14, surrounding the CCHD Green Valley (GV) monitoring station, for the 80% stable, 20% unstable case. Table A.7 shows 33 erosive wind hours documented to be exceeding 20 mph in this polygon. The 33 hours are divided among 11 different erosive wind events. Vacant land area assigned to the polygon comprises 26,020 acres in the southeast portion of the Valley.

For an example calculation, look at the first row of Table A.7. The indicated erosive wind speed is 20.1 mph for an event that started at 7 pm (hour 20) on January 20, 1999. From Table B, the stable land emission factor corresponding to 20.1 mph is $1.38x10^{-3}$ ton/acre/hour. This emission factor is multiplied by the assumed area of stable vacant land in the polygon, corresponding to 80% of the total area (20,816 acres) to produce an emission of 28.73 tons in that hour. Since this is the first hour of the wind event, a stable land spike emission factor of $2.12x10^{-4}$ ton/acre is multiplied by the stable land area, 20,816 acres, to produce an estimated spike emission of 4.41 tons.

For the 20% of land assumed to be previously unstable, but now stabilized, the unstable land emission factor corresponding to 20.1 mph is **$3.42x10^{-4}$ ** ton/acre/hour (Table A). This is multiplied by the assumed area of unstable vacant land in the polygon, 5,204 acres, to estimate a value of **1.78** tons of PM-10 in that first hour. Since this is the first hour of the wind event, a stabilized land spike emission factor of **$0.0x10^{-4}$** ton/acre is multiplied by the unstable land area, 5,204 acres to produce an estimated spike emission of **0.00** tons.

The emissions corresponding to the first hour of the event are then summed, (stable: 28.73 tons + 4.41 tons) + (stabilized: **1.78 tons + 0.00** tons), to produce an estimated total emission in that polygon of 34.9 tons. *The ** indicates that a spike value and spike-corrected flux are missing and will be applied as soon as data become available.*
This process is repeated for each hour of each wind event, except that, for erosive hours other than the first hour of each event, the spike values are not used.

When computations in each polygon are completed, then emissions for each polygon are summed to develop the Valley-wide estimate. The Valley-wide 1999 annual estimates were computed in the Excel workbook STAB99LSUM.XLS. Results from this spreadsheet are printed out for different assumed ratios of stable to stabilized vacant land area as Tables 1 through 4 and Tables 1-II through 4-II, and are presented and discussed below.

Data from the individual station spreadsheets were also tabulated for February 25, 1999, to develop Valley-wide estimates of emissions for the specified Design Day. The Valley-wide 1999 design day estimates were computed in the Excel workbook STAB99LSUM.XLS. Results from this spreadsheet are printed out for different assumed ratios of stable to stabilized vacant land area as Tables 5 through 8 and Tables 5-II through 8-II, and are presented and discussed below.

II. PRELIMINARY RESULTS - STABILIZED LAND EMISSION FACTORS

Stabilized land emission factors ranged from 3% to 19% of the magnitude of *unstable* land emission factors. The following data compare geometric means for unstable lands (Table A - February 22 report - 1995 UNLV wind tunnel data) to geometric means for stabilized lands (Tables A and B - this report – 1998-99 wind tunnel data).

Wind speed (mph)	Unstable lands spike-corrected geometric mean (ton/acre/hour)	Phase I stabilized uncorrected geometric mean (ton/acre/hour)	Phase II stabilized uncorrected geometric mean (ton/acre/hour)
15-19.9	$4.95x10^{-3}$	$9.45x10^{-4}$	$4.20x10^{-4}$
20-24.9	$5.21x10^{-3}$	$5.44x10^{-4}$	$3.42x10^{-4}$
25-29.9	$6.40x10^{-3}$	$6.50x10^{-4}$	$1.94x10^{-4}$
30-34.9	$4.62x10^{-3}$	$4.83x10^{-4}$	

When ratios are computed, the data are:

Wind speed (mph)	Ratio Phase I uncorrected data to unstable corrected data	Ratio Phase II uncorrected data to unstable corrected data
15-19.9	19.1%	8.5%
20-24.9	10.4%	6.6%
25-29.9	10.2%	3.0%
30-34.9	10.4%	

Stabilized land emissions factors (Tables A and B - this report) ranged from 8% to 49% of the value of emissions factors computed for *stable* lands (Table B - February 22, 2000 report):

Wind speed (mph)	Stable lands spike-corrected geometric mean (ton/acre/hour)	Phase I stabilized uncorrected geometric mean (ton/acre/hour)	Phase II stabilized uncorrected geometric mean (ton/acre/hour)
15-19.9	$1.95x10^{-3}$	$9.45x10^{-4}$	$4.20x10^{-4}$
20-24.9	$1.38x10^{-3}$	$5.44x10^{-4}$	$3.42x10^{-4}$
25-29.9	$2.57x10^{-3}$	$6.50x10^{-4}$	$1.94x10^{-4}$
30-34.9	$3.16x10^{-3}$	$4.83x10^{-4}$	

When ratios are computed, the data are:

Wind speed (mph)	Ratio Phase I uncorrected data to stable corrected data	Ratio Phase II uncorrected data to stable corrected data
15-19.9	48.5%	21.5%
20-24.9	39.4%	24.8%
25-29.9	25.3%	7.5%
30-34.9	15.3%	

There are several potential reasons for the lower values of stabilized emissions factors:

1) The short duration of each Phase of the 1998-1999 suppressant weathering study (five months for each phase), compared to the long duration of weathering and background PM-10 deposition on stable desert surfaces may have limited the accumulation of PM-10 on the surfaces from background deposition and in-situ weathering.

2) Isolation of the suppressant-treated beds from adjacent erodible soils that could have limited surface transport of PM-10 from erodible soils to the beds.

3) Cleaner wind tunnel sampling techniques were developed by UNLV for the 1998-1999 study when low PM-10 concentrations were initially observed.

4) Lower loose PM-10 concentrations on the surface and greater resistance to erodibility during wind events by the suppressant-treated surfaces (i.e. the suppressants actually worked).

The lower flux values for suppressant-treated (stabilized) surfaces will have two principal effects on Valley-wide estimates:

1. Estimated PM-10 emissions from stabilized disturbed lands will decrease significantly compared to emissions from unstable disturbed lands.

2. The effect of changes in estimated proportion of disturbed land surfaces on Valley-wide PM-10 emissions will be changed:

a. For scenarios where dust suppressant is not applied to any land surfaces, an *increase* in the assumed proportion of disturbed land will produce an *increase* in estimated PM-10 emissions, because the disturbed (unstable) land emissions factors are *higher* than the undisturbed (stable) land emissions factors

b. For scenarios where dust suppressants are assumed to be applied Valley-wide to all unstable land surfaces, an *increase* in the assumed proportion of disturbed land will produce a *decrease* in estimated PM-10 emissions, because the stabilized land emissions factors are *lower* than the undisturbed (stable) land emissions factors.

III. PRELIMINARY RESULTS - VALLEY-WIDE ESTIMATES

Valley-wide results were calculated for unstable (disturbed) lands without treatment, and for unstable lands after treatment (stabilization) with dust suppressants. The sensitivity of the model to changes in estimated fraction stable land area was tested by running the computations for estimated conditions of 10%, 20% and 30% unstable vacant lands over the entire Las Vegas Valley. For a pessimistic estimate that includes varying degrees of soil instability, an additional sensitivity calculation was performed, using high estimates (a mixture of 30% and 40%) of unstable land in the urban core, where human activity is more likely to have adversely impacted vacant properties, and lower estimates (20%) of unstable vacant land on the periphery. Results of this calculation are shown in Table C, 3, 3-ii, 7, and 7-ii under the label "variable".

1) Spreadsheets containing results for the 80/20 stable/stabilized case for each polygon are contained in Appendix A.

2) Results from individual polygon spreadsheets are condensed into Valley-wide estimates in Tables 1 through 8 and 1-ii through 8-ii. Tables 1-8 repeat the Valley-wide estimates of emissions from stable and *unstable* lands that was presented in the February 22, 2000 UNLV report. Tables 1ii-8ii contain the Valley-wide estimates of emissions from stable and ***stabilized*** lands.

Tables 1 through 8 (untreated unstable surfaces) and 1-ii through 8-ii (treated (stabilized) unstable surfaces) are organized according the following guide.

1999 annual estimates

Ratio stable/unstable	Table #	Ratio unstable/stabilized	Table #
90/10	1	90/10	1-ii
80/20	2	80/20	2-ii
variable	3	variable	3-ii
70/30	4	70/30	4-ii

1999 design day estimates Ratio stable/unstable	Table #	Ratio unstable/stabilized	Table #
90/10	5	90/10	5-ii
80/20	6	80/20	6-ii
variable	7	variable	7-ii
70/30	8	70/30	8-ii

3) Table C condenses the totals from Tables 1 through 8 and 1-ii through 8-ii into one page. Table C shows that:

a. For unstable vacant lands that *have not* been stabilized with application of dust suppressants, annual and design day emissions *increase* as the fraction of unstable land *increases.* This is the expected pattern, as PM-10 emission factors for unstable land are *higher* than PM-10 emissions factors for stable land.

b. For unstable vacant lands that *have* been stabilized with application of dust suppressants, annual and design day emissions *decrease* as the fraction of stabilized unstable land *increases.* This occurs because UNLV's measured emissions from *stabilized (treated with dust suppressant)* lands are *lower* than emissions from stable, undisturbed desert. Therefore, as the relative proportion of treated (stabilized) land increases from 10% (90% stable land) to 30% (70% stable land), Valley-wide emissions are predicted to *decrease.*

c. The "variable" case is very similar to the 80/20 scenario, indicating that urban core polygons make a small contribution to the Valley-wide estimate.

d. The proportion of unstable lands present in the Valley is a key parameter in the estimation of the degree of Valley-wide emissions reduction that could be obtained from Valley-wide application of dust suppressants. The following tables, reproduced from Table C, show the effects of choosing different estimated proportions of stabilized disturbed vacant land.

Preliminary 1999 annual emissions reductions estimates

Assumed ratio stable/unstable	baseline unstabilized emissions	stabilized emissions	reduction in emissions	percent reduction
	tons	tons	tons	
90/10	19,959	14,705	5,254	26%
80/20	22,933	13,424	9,509	41%
variable*	23,011	13,395	9,616	42%
70/30	26,407	12,144	14,263	54%

Preliminary 1999 design day (February 25, 1999) emissions reduction estimates

Assumed ratio stable/unstable	baseline unstabilized emissions tons	stabilized emissions tons	reduction in emissions tons	percent reduction
90/10	836	580	256	31%
80/20	998	529	469	47%
variable*	1006	527	480	48%
70/30	1051	478	573	55%

*variable means 80/20 stable/unstable ratio in outlying areas and higher ratios (70/30 or 60/40) in small polygons near Las Vegas' urban core.

The dependence of emissions reduction on proportion of stabilized/disturbed vacant land is plotted, for the 1999 design year, in Figure 4. A 50% reduction in annual estimated Valley-wide emissions is achieved at approximately a 27% proportion of stabilized disturbed land, and corresponds approximately to a PM-10 emissions reduction of about 13,000 tons (from 26,000 tons of emissions to 13,000 tons of emissions).

The February 25, 1999 design day results are plotted in Figure 5. A 50% reduction in design day emissions is estimated to be achieved at about 24% stabilized disturbed land., and corresponds approximately to a PM-10 emissions reduction of about 520 tons.

Notification of error in February 22, 2000 UNLV report

The data shown in the first column of Table C, and in Tables 1 through 8 are repeats of the data tables presented in the February 22, 2000 UNLV report. Computed values for stable/unstable lands reported in Table C and Tables 1-4 of this (March 29, 2000) report are slightly higher than in the February 22, 2000 report. In carrying out the computations for this report, an error was discovered in the Green Valley polygon (gv, Polygon 14) spreadsheet. The error consisted of omission of about 20 hours of computations of PM-10 emissions, and when corrected, estimated 1999 annual PM-10 emissions increased substantially for this polygon. The following table summarizes the errors contained in the February 22, 2000 report for the case of *unstable* vacant lands

Ratio stable/ unstable	Feb 22 Incorrect gv estimate tons	Mar 29 Correct gv estimate tons	Feb 22 Incorrect annual estimate tons	Mar 29 Correct annual estimate tons
90/10	582	1,685	18,857	19,959
80/20	709	2,031	21,612	22,933
variable	709	2,031	21,690	23,011
70/30	836	2,377	24,866	26,407

Design day emissions were not affected by the omission on the Green Valley spreadsheet, as there were no wind records available for the Green Valley polygon on February 25, 1999. A revised version of the February 22,2000 report will be issued with this correction, along with any other corrections suggested by Clark County.

IV. DISCUSSION

Preliminary results indicate that the degree of emission reduction obtained by stabilization of vacant lands with dust suppressants will depend on the proportion of unstable vacant lands that exist in the Valley. Since treatment of unstable land surfaces with dust suppressants will likely produce a surface with a lower emission rate than undisturbed (stable) desert surfaces, higher assumed proportions of unstable vacant lands will give larger reductions of PM-10 emissions from the baseline case. It therefore becomes a crucial matter to accurately document the extent of unstable vacant lands in the Valley.

Current estimates of vacant land proportions in the Valley vary widely. Here is a summary of information sources known to this author:

1) To date, results from the field work component of the UNLV project (Table D of the original report dated February 22, 2000), indicate that, if the procedures in the Maricopa County rule are followed, only five of 68 sites surveyed to date (7.4%) would be rated as "unstable".

2) Clark County Health District dust inspectors stated in a meeting on February 24 that they estimate the percentage of disturbed, unstable lands on the periphery of the Valley to be as high as 25%, in areas where there is a lot of active development.

3) Examination of the Clark County Health District dust permit database indicates that about 20,000 acres are permitted for active construction at any one time. When compared to the 150,000 acres of vacant land in the land disposal boundary, the ratio 20,000/150,000 gives an estimated proportion of 13% *potentially unstable* vacant lands.

4) Dames and Moore estimates of proportion of unstable lands in their February, 2000 microinventory study for Clark County Comprehensive Planning.

5) The current Kleinfelder satellite study, if it can really distinguish between disturbed (unstable) and undisturbed (stable) land surfaces, may produce the most relevant estimate of proportion of vacant lands.

V. PRELIMINARY CONCLUSIONS

1. Preliminary stabilized land emissions factors in ton/acre/hour have been computed for the Phase I and Phase II dust suppressant treatments from the 1998-1999 UNLV wind tunnel study. Stabilized land emissions factors are typically on the order of 2×10^{-4} ton/acre/hour, 2%-6% of unstable land emissions factors (typically 1×10^{-2} ton/acre/hour), and are 8%-50% of stable land emissions factors (typically 2×10^{-3} ton/acre/hour).

2. Valley-wide estimates of PM-10 emissions from vacant have been completed for several estimated proportions of stable and stabilized vacant lands. Results are sensitive to estimated relative proportions of stable and unstable lands.

a. For the 1999 Design Year, PM-10 estimated emissions reductions of approximately 5,000 tons (at 10% unstable lands) to 14,000 tons (at 30% unstable lands) are obtained if dust suppressants were applied Valley-wide to unstable lands. A 50% reduction of 1999 Design Year PM-10 emissions from vacant disturbed lands could be obtained if 27% of vacant lands in the valley were treated with dust suppressants. The approximate "slope " of the curve of design year emissions reductions vs. proportion of stabilized vacant lands is 500 tons per percent stabilized. One percent of the vacant land in the Valley is about 1500 acres, giving an overall reduction of 0.33 ton/acre.

b. For the 1999 Design Day, PM-10 emissions reductions of approximately 250 tons (at 10% unstable lands) to 570 tons (at 30% unstable lands) are estimated to be obtained if dust suppressants were applied Valley-wide to unstable lands. A 50% reduction of 1999 Design Day PM-10 emissions from vacant disturbed lands could be obtained if 24% of vacant lands in the valley were treated with dust suppressants.

3. Three polygons in the north and west portions of the Las Vegas Valley, Lone Mountain (lo), Palo Verde (pv), and Craig Road (bs), typically contribute 65-70% of the 1999 Design Year PM-10 emissions. This occurs because these polygons have large areas of vacant land and longer periods of erosive winds than are recorded at stations in other parts of the Valley.

4. Three polygons, Paul Myer (pm), Lone Mountain (lo), and Craig Road (bs) typically contribute 70-75% of the 1999 Design Day PM-10 emissions. This occurs because these polygons had large areas of vacant land and the longest periods of record for the design days.

VI. DRAFT RECOMMENDATIONS

1. Once agreement has been reached on a suitable method for evaluating stability of vacant lands, a Valley-wide field survey, evaluating representative samples of vacant lands in each polygon, could be carried out to accurately estimate the percentage of vacant land in each polygon. Current estimates of the proportion of unstable land vary widely.

2. The current Clark County Health District database indicates that there about 20,000 acres of land under active dust control permits at any one time. Estimates of number of acres of land in each polygon currently permitted for construction, an approach similar to that used in the 1997 SIP, would probably put an outside limit on the proportion of vacant land in each polygon that could be rated as "unstable". However, inactive construction sites either in areas where the soil can form a crust, or that have been treated with a dust suppressant, will be "stable". Absent accurate remote sensing techniques, or accurate field evaluation of every section of vacant land in the Valley, it will be necessary to guess the fraction of lands rated as stable or unstable.

3. Results of the current Kleinfelder satellite image study funded by Clark County Health District may provide useful information of proportion of unstable lands that could be used to improve the accurate estimation of Valley-wide PM-10 emissions.

4. To achieve a large reduction in PM-10 emissions in the shortest time, priority for control of PM-10 should be assigned to those polygons that are the largest contributors to Valley-wide emissions. The Lone Mountain and Craig Road polygons are in the top three contributors for both the design year and design day calculations.

Figure A - Typical non-existent spike - intact treated surface

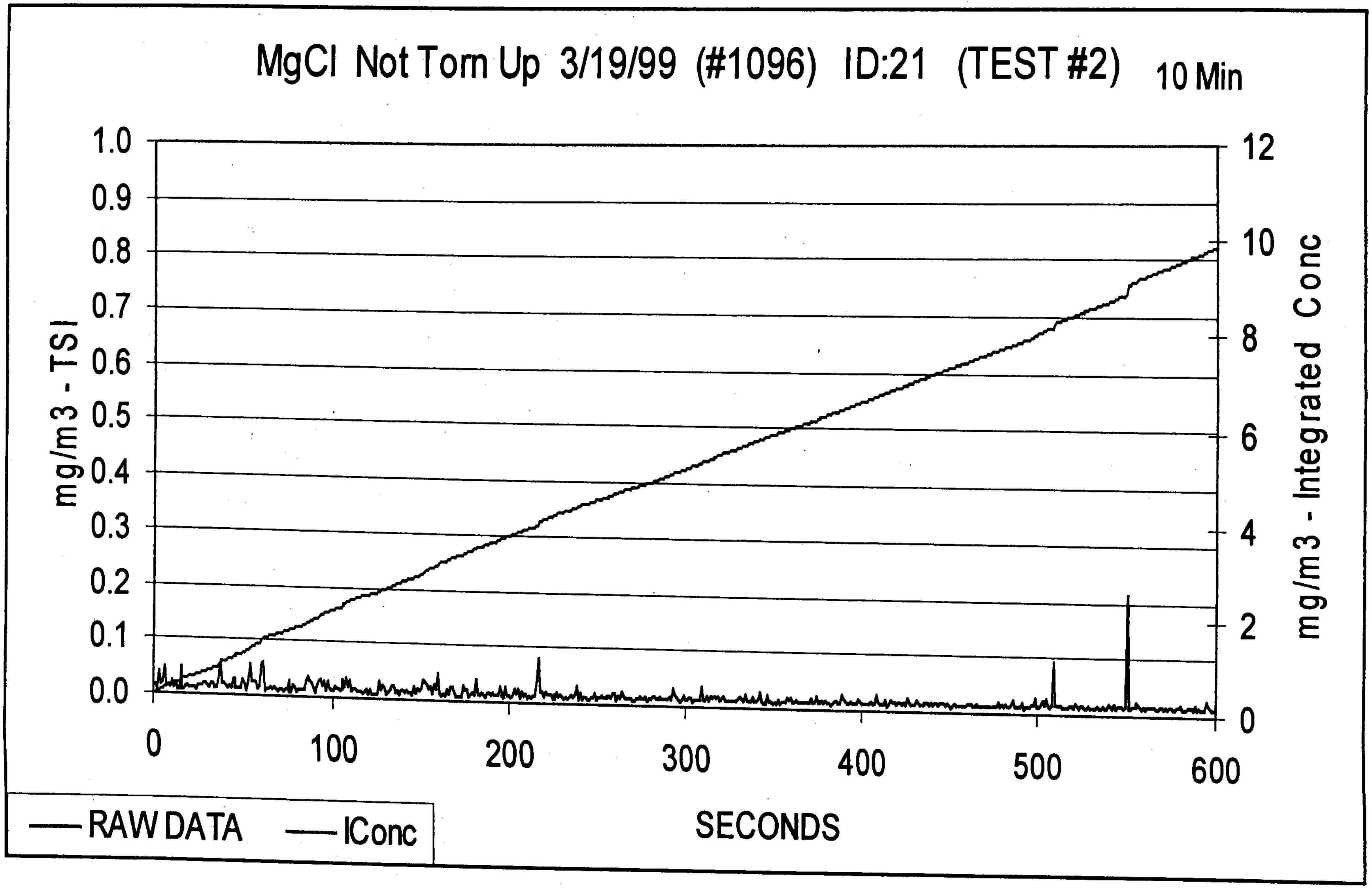


Figure B - Typical spike - intact treated surface

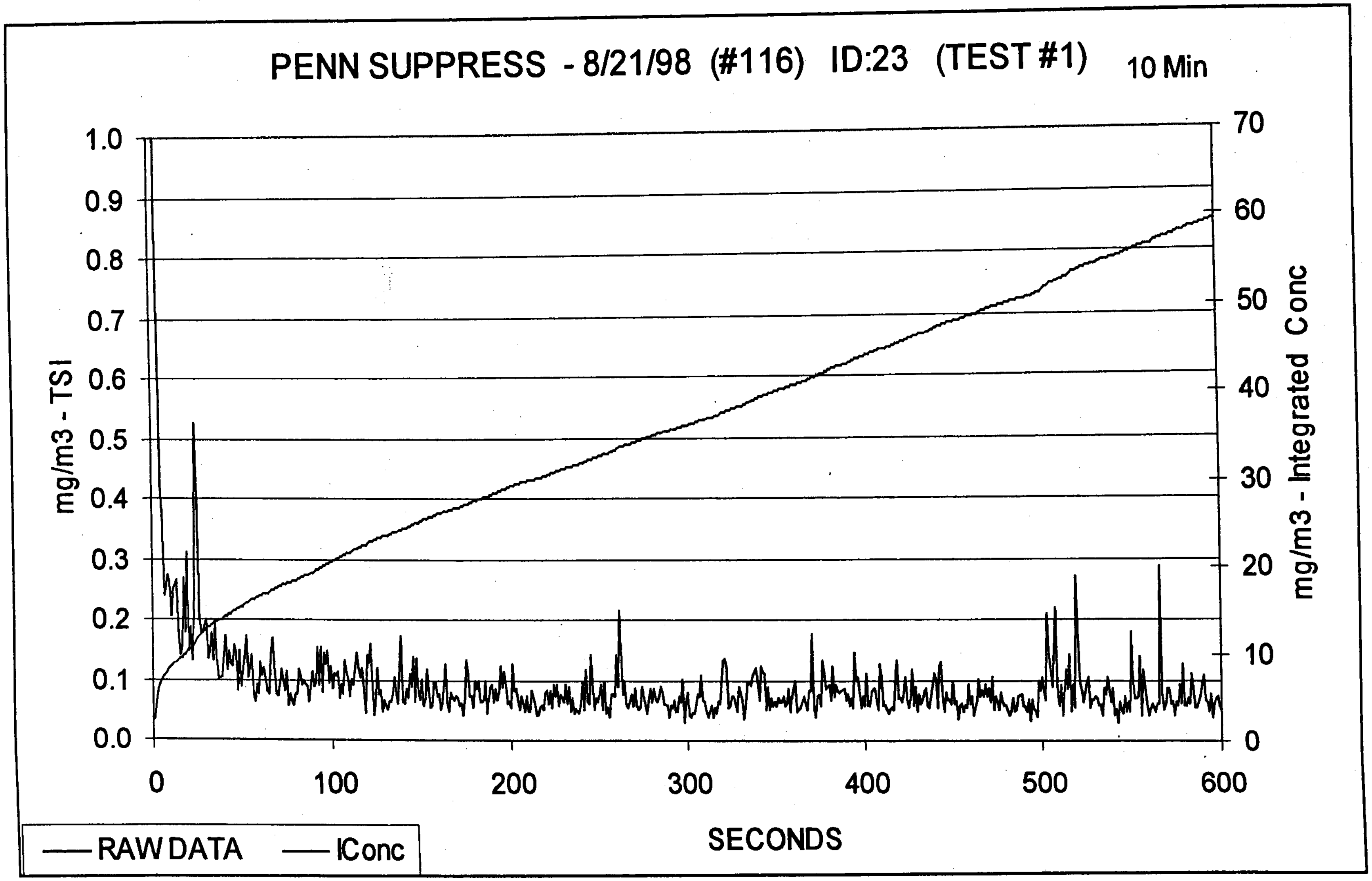


Figure 1 - Geometric mean +/- 1 standard deviation

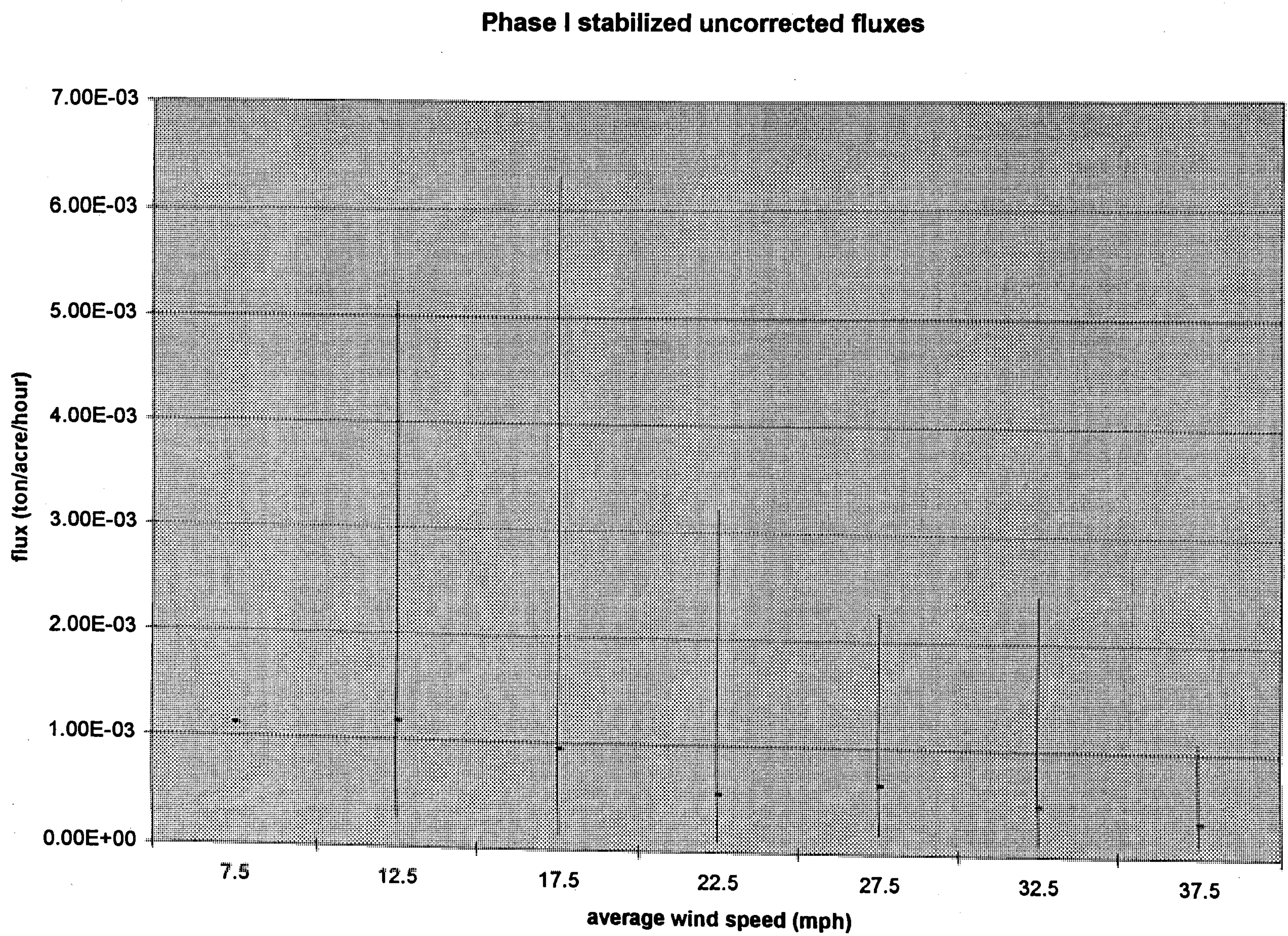


Figure 1A - Geometric mean +/- 1 standard deviation

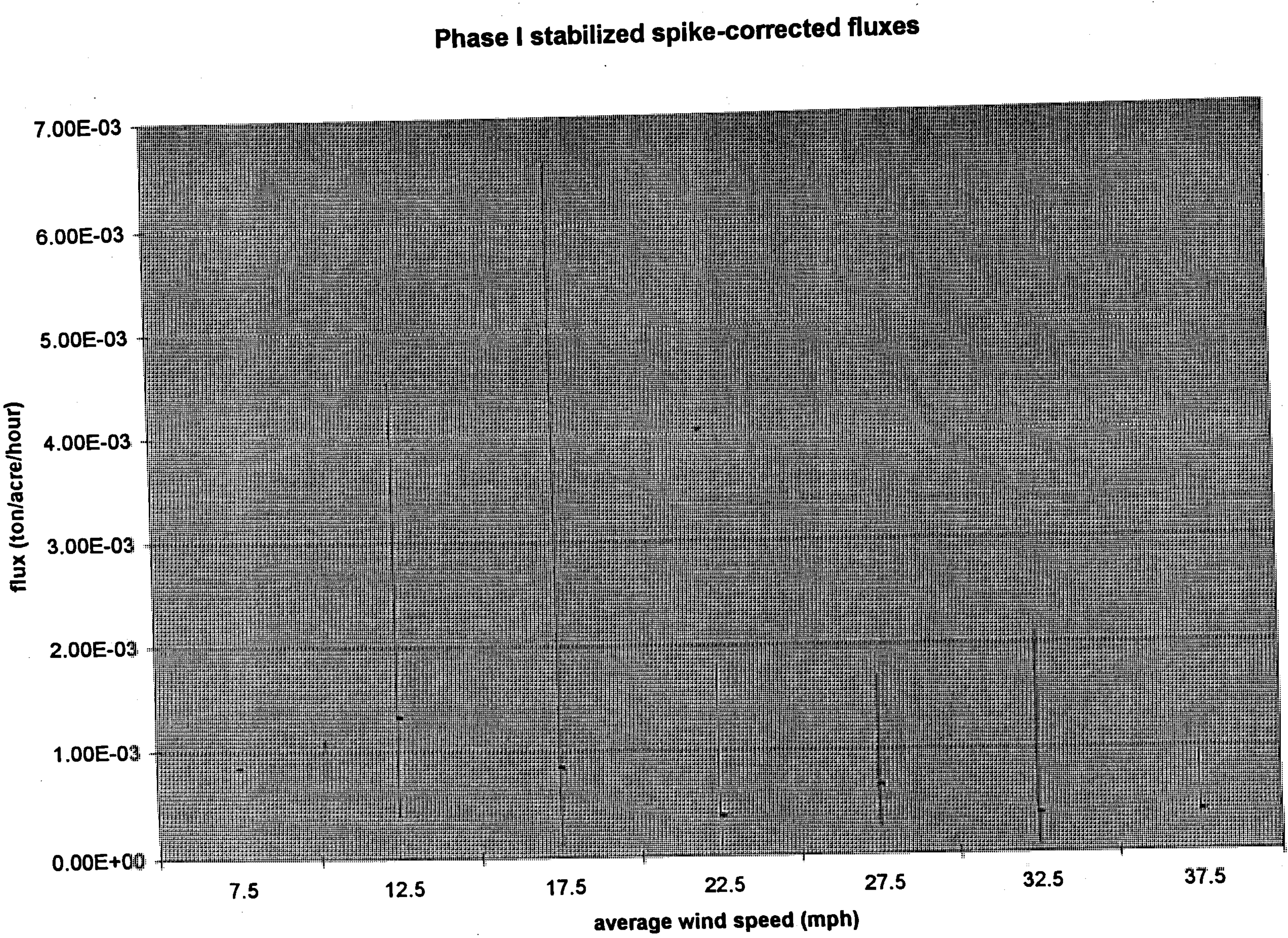


Figure 2 - Geometric mean +/- 1 standard deviation

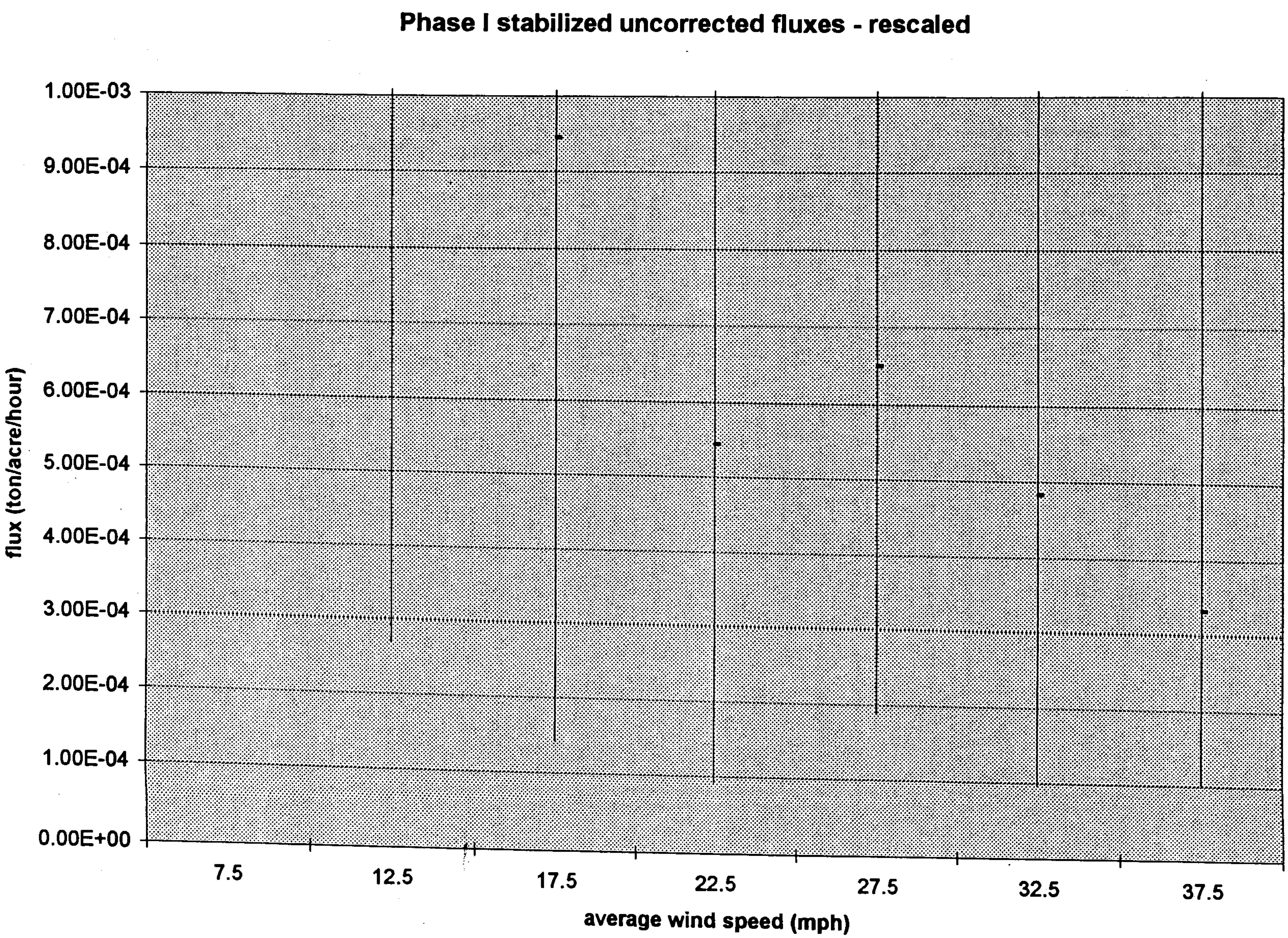


Figure 3 - Geometric mean +/- 1 standard deviation

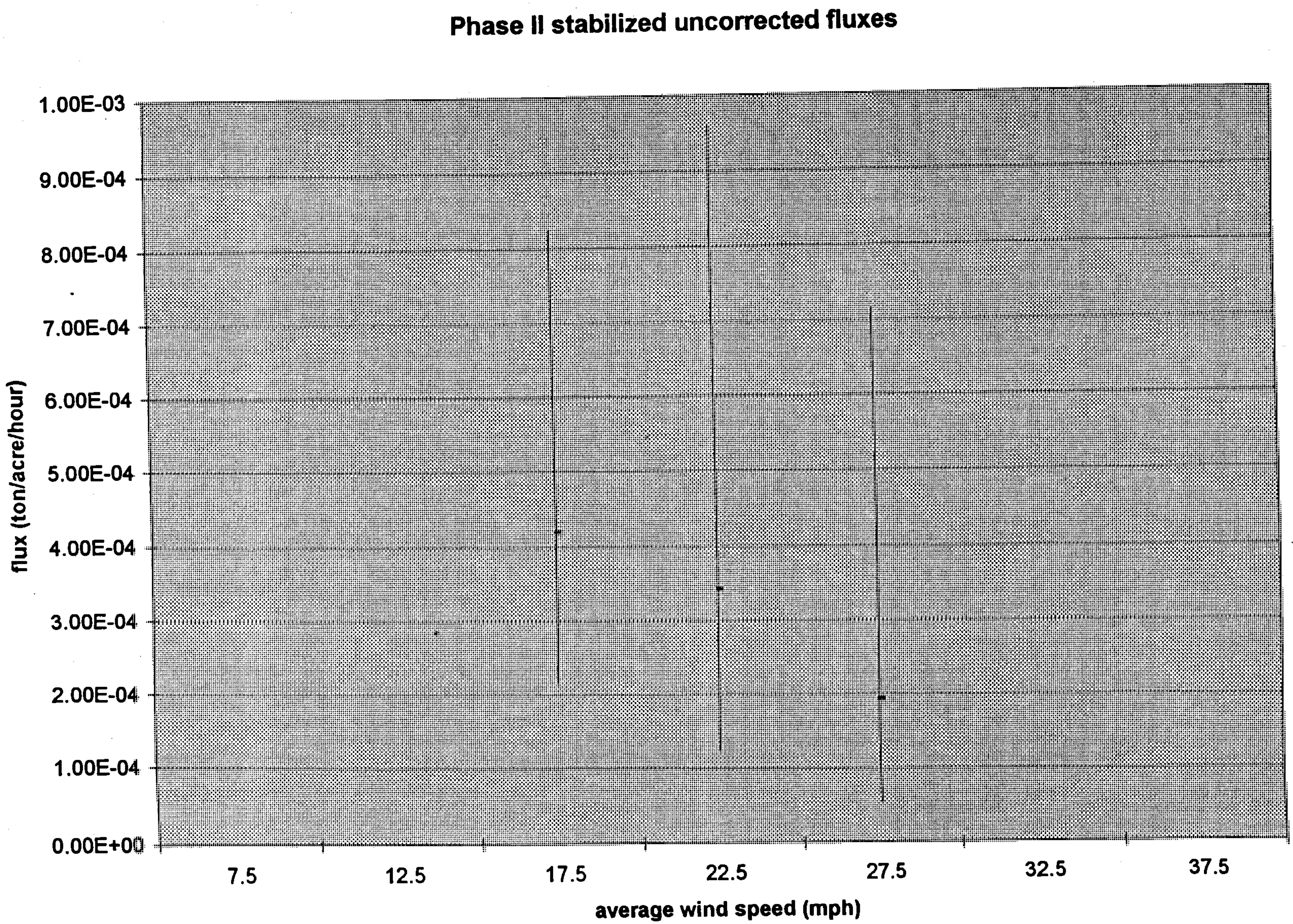
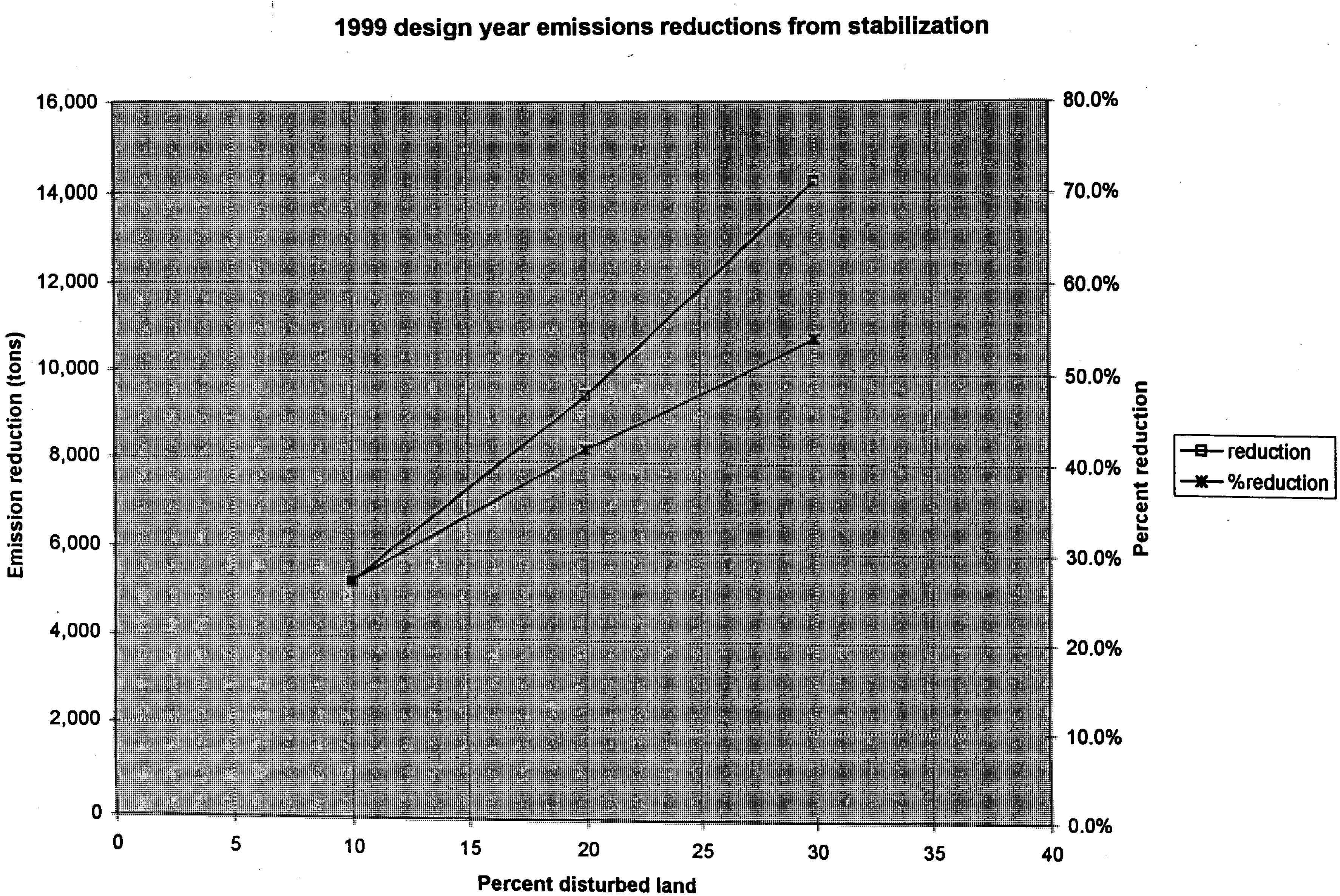
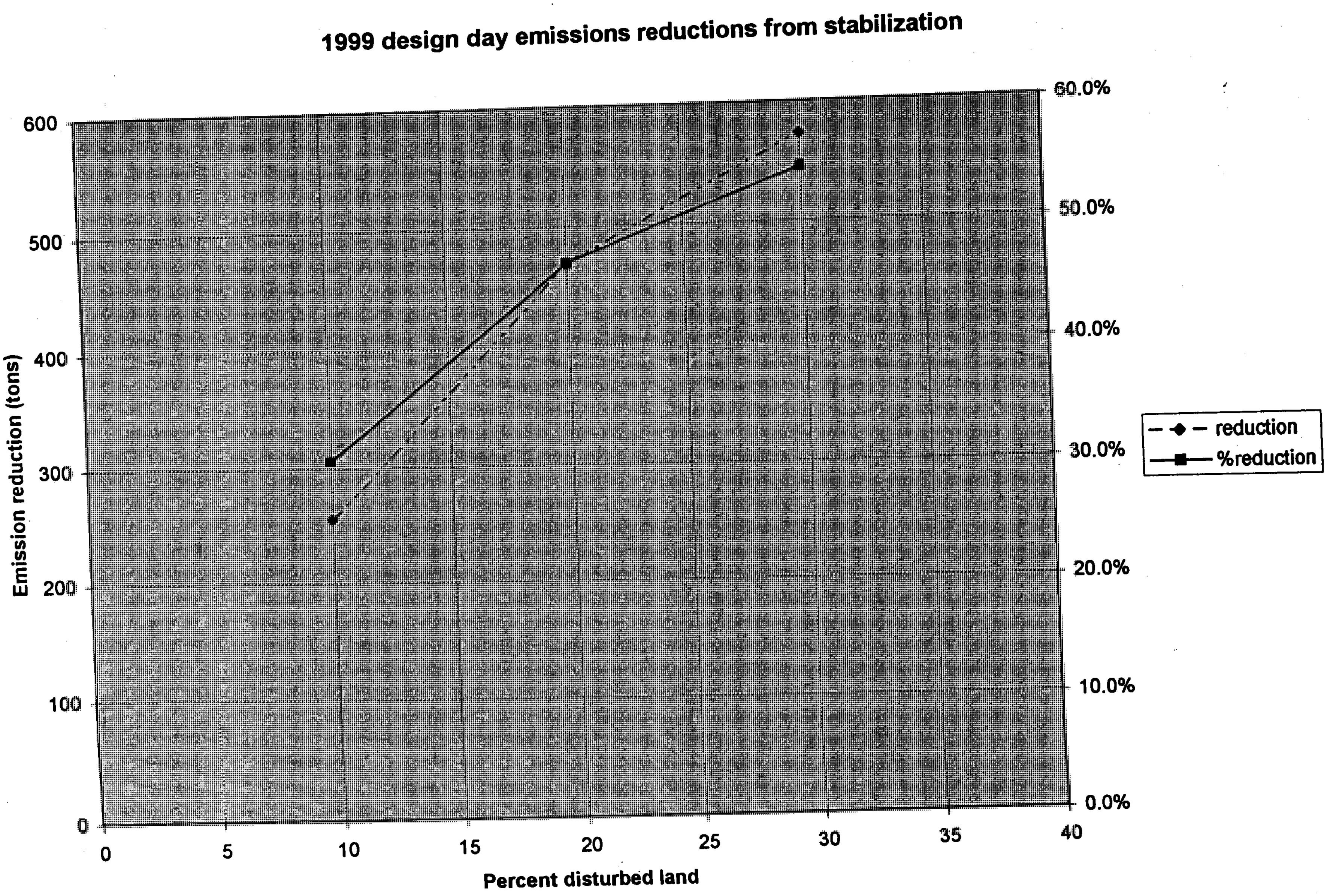


Figure 4



1999 design year emissions reductions from stabilization
Emission reduction (tons)
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
0
5
10
15
20
25
30
35
40
Percent disturbed land
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
Percent reduction
reduction
%reduction

Figure 5



1999 design day emissions reductions from stabilization
Emission reduction (tons)
600
500
400
300
200
100
0
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
0
5
10
15
20
25
30
35
40
Percent disturbed land
reduction
%reduction

Table A - Stabilized uncorrected fluxes

Flux Averages : Phase I				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
5 - 9.9		1.12E-03		2
10 - 14.9	2.67E-04	1.17E-03	5.14E-03	11
15 - 19.9	1.42E-04	9.45E-04	6.30E-03	29
20 - 24.9	9.20E-05	5.44E-04	3.22E-03	30
25 - 29.9	1.87E-04	6.50E-04	2.26E-03	27
30 - 34.9	9.57E-05	4.83E-04	2.44E-03	21
35 - 39.9	1.01E-04	3.32E-04	1.10E-03	9

Flux Averages : Phase II				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
5 - 9.9	N/A	N/A	N/A	0
10 - 14.9	N/A	N/A	N/A	0
15 - 19.9	2.14E-04	4.20E-04	8.26E-04	22
20 - 24.9	1.22E-04	3.42E-04	9.60E-04	36
25 - 29.9	5.26E-05	1.94E-04	7.15E-04	20
30 - 34.9	N/A	N/A	N/A	0
35 - 39.9	N/A	N/A	N/A	0

Table B - Stabilized spike-corrected fluxes

Corrected Flux Averages - Phase I				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
5 - 9.9		8.32E-04		2
10 - 14.9	3.82E-04	1.32E-03	4.53E-03	11
15 - 19.9	1.06E-04	8.38E-04	6.59E-03	29
20 - 24.9	7.72E-05	3.76E-04	1.83E-03	30
25 - 29.9	2.54E-04	6.55E-04	1.69E-03	27
30 - 34.9	6.45E-05	3.68E-04	2.10E-03	21
35 - 39.9	1.57E-04	3.86E-04	9.52E-04	9

Corrected Flux Averages - Phase II				
Wind Speed (mph)	Geometric Mean - 1 Std. Dev (ton/acre/hr)	Geometric Mean (ton/acre/hr)	Geometric Mean + 1 Std. Dev (ton/acre/hr)	Number of Runs
		In process		
		Not available at		
		deadline		

Table C - Emissions reductions for varying proportions of stabilized land

[illegible]

stable/unstable scenario	unstabilized	Phase II stabilized	Phase II reduction	ratio for Phase II stabilized/unstabilized	Phase II %reduction
(units)	tons	tons	tons		
90/10	19,959	14,705	5,254	74%	26%
80/20	22,933	13,424	9,509	59%	41%
variable	23,011	13,395	9,616	58%	42%
70/30	26,407	12,144	14,263	46%	54%

[illegible]

25-Feb-99

stable/unstable scenario	unstabilized	Phase II stabilized	Phase II reduction	ratio for Phase II stabilized/unstabilized	Phase II %reduction
(units)	tons	tons	tons		
90/10	836	580	256	69%	31%
80/20	998	529	469	53%	47%
variable	1,006	527	480	52%	48%
70/30	1,051	478	573	45%	55%

Table 1 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	90%	10%	2.4	0.0%
2	ww	18	1,574	90%	10%	53.8	0.3%
3	sl	5	1,315	90%	10%	12.6	0.1%
4	bs	48	22,369	90%	10%	3,140.7	15.7%
5	pl	79	8,288	90%	10%	1,226.7	6.1%
6	mc	14	422	90%	10%	11.9	0.1%
7	ms	23	170	90%	10%	7.6	0.0%
8	dm	16	2,192	90%	10%	65.4	0.3%
9	fl	59	7,833	90%	10%	884.0	4.4%
10	pt	26	6,764	90%	10%	834.7	4.2%
11	jd	12	3,116	90%	10%	79.3	0.4%
12	pm	26	30,662	90%	10%	1,595.4	8.0%
13	wj	20	1,523	90%	10%	61.9	0.3%
14	gv	33	26,021	90%	10%	1,684.7	8.4%
15	cw	20	192	90%	10%	28.1	0.1%
16	sa	35	207	90%	10%	13.8	0.1%
17	lo	95	26,102	90%	10%	6,077.8	30.5%
18	pv	162	12,125	90%	10%	4,178.3	20.9%
	Total	694	151,189			19,959.1	100.0%

Table 2 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio 80/20

Polygon id	letter code	[illegible]	[illegible]	% stable	% unstable	[illegible]	[illegible]
1	cc	3	318	80%	20%	2.8	0.0%
2	ww	18	1,574	80%	20%	65.5	0.3%
3	sl	5	1,315	80%	20%	15.4	0.1%
4	bs	48	22,369	80%	20%	3,467.8	15.1%
5	pl	79	8,288	80%	20%	1,489.2	6.5%
6	mc	14	422	80%	20%	14.3	0.1%
7	ms	23	170	80%	20%	9.2	0.0%
8	dm	16	2,192	80%	20%	79.6	0.3%
9	fl	59	7,833	80%	20%	1,068.1	4.7%
10	pt	26	6,764	80%	20%	405.7	1.8%
11	jd	12	3,116	80%	20%	94.9	0.4%
12	pm	26	30,662	80%	20%	1,926.6	8.4%
13	wj	20	1,523	80%	20%	74.5	0.3%
14	gv	33	26,021	80%	20%	2,031.0	8.9%
15	cw	20	192	80%	20%	28.4	0.1%
16	sa	35	207	80%	20%	16.7	0.1%
17	lo	95	26,102	80%	20%	7,211.9	31.4%
18	pv	162	12,125	80%	20%	4,931.5	21.5%
	Total	694	151,189			22,933.1	100.0%

Table 3 1999 PM-10 Valley-wide emissions estimate
Varying stable/unstable ratio
Pessimistic estimate of effects of human activity on stability

Polygon ID	Letter code	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	60%	40%	3.6	0.0%
2	ww	18	1,574	70%	30%	77.2	0.3%
3	sl	5	1,315	60%	40%	20.9	0.1%
4	bs	48	22,369	80%	20%	3,467.8	15.1%
5	pl	79	8,288	80%	20%	1,489.2	6.5%
6	mc	14	422	60%	40%	19.3	0.1%
7	ms	23	170	60%	40%	12.3	0.1%
8	dm	16	2,192	70%	30%	93.9	0.4%
9	fl	59	7,833	80%	20%	1,068.1	4.6%
10	pt	26	6,764	80%	20%	405.7	1.8%
11	jd	12	3,116	60%	40%	126.2	0.5%
12	pm	26	30,662	80%	20%	1,926.6	8.4%
13	wj	20	1,523	70%	30%	74.5	0.3%
14	gv	33	26,021	80%	20%	2,031.0	8.8%
15	cw	20	192	60%	40%	28.9	0.1%
16	sa	35	207	60%	40%	22.5	0.1%
17	lo	95	26,102	80%	20%	7,211.9	31.3%
18	pv	162	12,125	80%	20%	4,931.5	21.4%
	Total	694	151,189			23,011.1	100.0%

Table 4 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	70%	30%	3.2	0.0%
2	ww	18	1,574	70%	30%	77.2	0.3%
3	sl	5	1,315	70%	30%	18.2	0.1%
4	bs	48	22,369	70%	30%	3,794.8	14.4%
5	pl	79	8,288	70%	30%	1,751.7	6.6%
6	mc	14	422	70%	30%	16.8	0.1%
7	ms	23	170	70%	30%	10.7	0.0%
8	dm	16	2,192	70%	30%	93.9	0.4%
9	fl	59	7,833	70%	30%	1,252.2	4.7%
10	pt	26	6,764	70%	30%	476.7	1.8%
11	jd	12	3,116	70%	30%	110.5	0.4%
12	pm	26	30,662	70%	30%	2,257.9	8.6%
13	wj	20	1,523	70%	30%	87.2	0.3%
14	gv	33	26,021	70%	30%	2,377.0	9.0%
15	cw	20	192	70%	30%	28.6	0.1%
16	sa	35	207	70%	30%	19.6	0.1%
17	lo	95	26,102	70%	30%	8,346.0	31.6%
18	pv	162	12,125	70%	30%	5,684.8	21.5%
	Total	694	151,189			26,407.0	100.0%

Table 5 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio
25-Feb-99

1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	3.2	0.4%
3	sl	0	1,315	90%	10%	0.0	0.0%
4	bs	2	22,369	90%	10%	85.0	10.2%
5	pl	3	8,288	90%	10%	46.1	5.5%
6	mc	2	422	90%	10%	2.3	0.3%
7	ms	4	170	90%	10%	1.4	0.2%
8	dm	1	2,192	90%	10%	4.5	0.5%
9	fl	4	7,833	90%	10%	57.4	6.9%
10	pt	3	6,764	90%	10%	37.6	4.5%
11	jd	1	3,116	90%	10%	6.3	0.8%
12	pm	4	30,662	90%	10%	305.9	36.6%
13	wj	3	1,523	90%	10%	12.1	1.4%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.5	0.2%
17	lo	4	26,102	90%	10%	191.2	22.9%
18	pv	3	12,125	90%	10%	81.9	9.8%
	Total	39	151,189			836.4	100.0%

Table 6 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio
25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	3.9	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	103.4	10.4%
5	pl	3	8,288	80%	20%	56.1	5.6%
6	mc	2	422	80%	20%	2.6	0.3%
7	ms	4	170	80%	20%	1.7	0.2%
8	dm	1	2,192	80%	20%	5.4	0.5%
9	fl	4	7,833	80%	20%	69.8	7.0%
10	pt	3	6,764	80%	20%	45.8	4.6%
11	jd	1	3,116	80%	20%	7.7	0.8%
12	pm	4	30,662	80%	20%	356.6	35.7%
13	wj	3	1,523	80%	20%	13.9	1.4%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.9	0.2%
17	lo	4	26,102	80%	20%	232.7	23.3%
18	pv	3	12,125	80%	20%	96.5	9.7%
	Total	39	151,189			998.2	100.0%

Table 7 Design Day PM-10 Valley-wide emissions estimate

Varying stable/unstable ratio — Pessimistic estimate of effects of human activity on stability

25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	60%	40%	0.0	0.0%
2	ww	1	1,574	70%	30%	4.6	0.5%
3	sl	0	1,315	60%	40%	0.0	0.0%
4	bs	2	22,369	80%	20%	103.4	10.3%
5	pl	3	8,288	80%	20%	56.1	5.6%
6	mc	2	422	60%	40%	3.4	0.3%
7	ms	4	170	60%	40%	2.3	0.2%
8	dm	1	2,192	70%	30%	6.4	0.6%
9	fl	4	7,833	80%	20%	69.8	6.9%
10	pt	3	6,764	80%	20%	45.8	4.5%
11	jd	1	3,116	60%	40%	10.5	1.0%
12	pm	4	30,662	80%	20%	356.6	35.4%
13	wj	3	1,523	70%	30%	15.8	1.6%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	60%	40%	0.0	0.0%
16	sa	4	207	60%	40%	2.5	0.2%
17	lo	4	26,102	80%	20%	232.7	23.1%
18	pv	3	12,125	80%	20%	96.5	9.6%
	Total	39	151,189			1,006.4	100.0%

Table 8 Design Day PM-10 Valley-wide emissions estimate
Assuming fixed stable/unstable ratio

Polygon #	letter code	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	3	318	70%	30%	0.0	0.0%
2	ww	18	1,574	70%	30%	4.6	0.4%
3	sl	5	1,315	70%	30%	0.0	0.0%
4	bs	48	22,369	70%	30%	12.9	1.2%
5	pl	79	8,288	70%	30%	66.1	6.3%
6	mc	14	422	70%	30%	3.0	0.3%
7	ms	23	170	70%	30%	2.0	0.2%
8	dm	16	2,192	70%	30%	6.4	0.6%
9	fl	59	7,833	70%	30%	82.3	7.8%
10	pt	26	6,764	70%	30%	54.0	5.1%
11	jd	12	3,116	70%	30%	9.1	0.9%
12	pm	26	30,662	70%	30%	407.3	38.7%
13	wj	20	1,523	70%	30%	15.8	1.5%
14	gv	33	26,021	70%	30%	0.0	0.0%
15	cw	20	192	70%	30%	0.0	0.0%
16	sa	35	207	70%	30%	2.2	0.2%
17	lo	95	26,102	70%	30%	274.3	26.1%
18	pv	162	12,125	70%	30%	111.2	10.6%
	Total	694	151,189			1,051.2	100.0%

Table 1-II 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

Phase II stabilized land geometric means
3/29/00

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	90%	10%	1.8	0.0%
2	ww	18	1,574	90%	10%	38.9	0.3%
3	sl	5	1,315	90%	10%	9.1	0.1%
4	bs	48	22,369	90%	10%	2,570.5	17.5%
5	pl	79	8,288	90%	10%	890.0	6.1%
6	mc	14	422	90%	10%	8.6	0.1%
7	ms	23	170	90%	10%	5.6	0.0%
8	dm	16	2,192	90%	10%	47.3	0.3%
9	fl	59	7,833	90%	10%	645.5	4.4%
10	pt	26	6,764	90%	10%	243.2	1.7%
11	jd	12	3,116	90%	10%	58.4	0.4%
12	pm	26	30,662	90%	10%	1,164.1	7.9%
13	wj	20	1,523	90%	10%	45.3	0.3%
14	gv	33	26,021	90%	10%	1,232.9	8.4%
15	cw	20	192	90%	10%	27.3	0.2%
16	sa	35	207	90%	10%	10.1	0.1%
17	lo	95	26,102	90%	10%	4,560.1	31.0%
18	pv	162	12,125	90%	10%	3,146.1	21.4%
	Total	694	151,189			14,704.8	100.0%

Table 2-II 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

3/29/00

Phase II stabilized land geometric means

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	80%	20%	1.6	0.0%
2	ww	18	1,574	80%	20%	35.6	0.3%
3	sl	5	1,315	80%	20%	8.4	0.1%
4	bs	48	22,369	80%	20%	2,327.4	17.3%
5	pl	79	8,288	80%	20%	815.7	6.1%
6	mc	14	422	80%	20%	7.9	0.1%
7	ms	23	170	80%	20%	5.1	0.0%
8	dm	16	2,192	80%	20%	43.4	0.3%
9	fl	59	7,833	80%	20%	591.2	4.4%
10	pt	26	6,764	80%	20%	222.7	1.7%
11	jd	12	3,116	80%	20%	53.3	0.4%
12	pm	26	30,662	80%	20%	1,064.0	7.9%
13	wj	20	1,523	80%	20%	41.3	0.3%
14	gv	33	26,021	80%	20%	1,127.3	8.4%
15	cw	20	192	80%	20%	26.7	0.2%
16	sa	35	207	80%	20%	8.4	0.1%
17	lo	95	26,102	80%	20%	4,176.8	31.1%
18	pv	162	12,125	80%	20%	2,867.1	21.4%
	Total	694	151,189			13,423.8	100.0%

Table 3-II 1999 PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means

Varying stable/unstable ratio — 3/29/00

Pessimistic estimate of effects of human activity on stability

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	60%	40%	1.3	0.0%
2	ww	18	1,574	70%	30%	32.4	0.2%
3	sl	5	1,315	60%	40%	6.2	0.0%
4	bs	48	22,369	80%	20%	2,327.4	17.4%
5	pl	79	8,288	80%	20%	815.7	6.1%
6	mc	14	422	60%	40%	6.5	0.0%
7	ms	23	170	60%	40%	4.1	0.0%
8	dm	16	2,192	70%	30%	39.4	0.3%
9	fl	59	7,833	80%	20%	591.2	4.4%
10	pt	26	6,764	80%	20%	222.7	1.7%
11	jd	12	3,116	60%	40%	42.9	0.3%
12	pm	26	30,662	80%	20%	1,064.0	7.9%
13	wj	20	1,523	70%	30%	37.4	0.3%
14	gv	33	26,021	80%	20%	1,127.3	8.4%
15	cw	20	192	60%	40%	25.5	0.2%
16	sa	35	207	60%	40%	6.9	0.1%
17	lo	95	26,102	80%	20%	4,176.8	31.2%
18	pv	162	12,125	80%	20%	2,867.1	21.4%
	Total	694	151,189			13,394.7	100.0%

Table 4-II 1999 PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio

3/29/00

Phase II stabilized land geometric means

Polygon id	letter code	# hours wind >= 20 mph	rev vacant land (acres)	% stable	% stabilized	PM-10 (tons)	% of total
1	cc	3	318	70%	30%	1.4	0.0%
2	ww	18	1,574	70%	30%	32.4	0.3%
3	sl	5	1,315	70%	30%	7.6	0.1%
4	bs	48	22,369	70%	30%	2,084.3	17.2%
5	pl	79	8,288	70%	30%	741.4	6.1%
6	mc	14	422	70%	30%	7.2	0.1%
7	ms	23	170	70%	30%	4.6	0.0%
8	dm	16	2,192	70%	30%	39.4	0.3%
9	fl	59	7,833	70%	30%	536.8	4.4%
10	pt	26	6,764	70%	30%	202.3	1.7%
11	jd	12	3,116	70%	30%	48.1	0.4%
12	pm	26	30,662	70%	30%	964.0	7.9%
13	wj	20	1,523	70%	30%	37.4	0.3%
14	gv	33	26,021	70%	30%	1,021.6	8.4%
15	cw	20	192	70%	30%	26.1	0.2%
16	sa	35	207	70%	30%	8.4	0.1%
17	lo	95	26,102	70%	30%	3,793.3	31.2%
18	pv	162	12,125	70%	30%	2,588.1	21.3%
	Total	694	151,189			12,144.4	100.0%

Table 5-II Design day PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means

Assuming fixed stable/stabilized ratio

25-Feb-99

Polygon id	letter code	[illegible]	[illegible]	% stable	[illegible]	[illegible]	[illegible]
1	cc	0	318	90%	10%	0.0	0.0%
2	ww	1	1,574	90%	10%	2.3	0.4%
3	sl	0	1,315	90%	10%	0.0	0.0%
4	bs	2	22,369	90%	10%	61.5	10.6%
5	pl	3	8,288	90%	10%	33.3	5.7%
6	mc	2	422	90%	10%	1.7	0.3%
7	ms	4	170	90%	10%	1.1	0.2%
8	dm	1	2,192	90%	10%	3.2	0.6%
9	fl	4	7,833	90%	10%	41.5	7.2%
10	pt	3	6,764	90%	10%	27.2	4.7%
11	jd	1	3,116	90%	10%	4.6	0.8%
12	pm	4	30,662	90%	10%	227.1	39.1%
13	wj	3	1,523	90%	10%	9.3	1.6%
14	gv	0	26,021	90%	10%	0.0	0.0%
15	cw	0	192	90%	10%	0.0	0.0%
16	sa	4	207	90%	10%	1.1	0.2%
17	lo	4	26,102	90%	10%	138.2	23.8%
18	pv	3	12,125	90%	10%	28.3	4.9%
	Total	39	151,189			580.4	100.0%

Table 6-II Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means

[illegible]	letter code	# hours wind > 20 mph	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	80%	20%	0.0	0.0%
2	ww	1	1,574	80%	20%	2.1	0.4%
3	sl	0	1,315	80%	20%	0.0	0.0%
4	bs	2	22,369	80%	20%	56.5	10.7%
5	pl	3	8,288	80%	20%	30.6	5.8%
6	mc	2	422	80%	20%	1.5	0.3%
7	ms	4	170	80%	20%	1.0	0.2%
8	dm	1	2,192	80%	20%	2.9	0.6%
9	fl	4	7,833	80%	20%	38.1	7.2%
10	pt	3	6,764	80%	20%	24.9	4.7%
11	jd	1	3,116	80%	20%	4.2	0.8%
12	pm	4	30,662	80%	20%	205.6	38.9%
13	wj	3	1,523	80%	20%	8.4	1.6%
14	gv	0	26,021	80%	20%	0.0	0.0%
15	cw	0	192	80%	20%	0.0	0.0%
16	sa	4	207	80%	20%	1.0	0.2%
17	lo	4	26,102	80%	20%	126.8	24.0%
18	pv	3	12,125	80%	20%	25.4	4.8%
	Total	39	151,189			529.2	100.0%

Table 7-II Design Day PM-10 Valley-wide emissions estimate — Phase II stabilized land geometric means

Varying stable/stabilized ratio — Pessimistic estimate of effects of human activity on stability

25-Feb-99

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc		0	318	60%	40%	0.0	0.0%
2	ww		1	1,574	70%	30%	1.9	0.4%
3	sl		0	1,315	60%	40%	0.0	0.0%
4	bs		2	22,369	80%	20%	56.5	10.7%
5	pl		3	8,288	80%	20%	30.6	5.8%
6	mc		2	422	60%	40%	1.2	0.2%
7	ms		4	170	60%	40%	0.8	0.1%
8	dm		1	2,192	70%	30%	2.7	0.5%
9	fl		4	7,833	80%	20%	38.1	7.2%
10	pt		3	6,764	80%	20%	24.9	4.7%
11	jd		1	3,116	60%	40%	3.8	0.7%
12	pm		4	30,662	80%	20%	205.6	39.0%
13	wj		3	1,523	70%	30%	7.5	1.4%
14	gv		0	26,021	80%	20%	0.0	0.0%
15	cw		0	192	60%	40%	0.0	0.0%
16	sa		4	207	60%	40%	0.8	0.2%
17	lo		4	26,102	80%	20%	126.8	24.1%
18	pv		3	12,125	80%	20%	25.4	4.8%
	Total		39	151,189			526.7	100.0%

Table 8-II Design day PM-10 Valley-wide emissions estimate
Assuming fixed stable/stabilized ratio
25-Feb-99

Phase II stabilized land geometric means

Polygon #	Letter code	# hours wind >= 20 mph	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	cc	0	318	70%	30%	0.0	0.0%
2	ww	1	1,574	70%	30%	1.9	0.3%
3	sl	0	1,315	70%	30%	0.0	0.0%
4	bs	2	22,369	70%	30%	51.5	8.9%
5	pl	3	8,288	70%	30%	27.8	4.8%
6	mc	2	422	70%	30%	1.4	0.2%
7	ms	4	170	70%	30%	0.9	0.2%
8	dm	1	2,192	70%	30%	2.7	0.5%
9	fl	4	7,833	70%	30%	34.8	6.0%
10	pt	3	6,764	70%	30%	22.7	3.9%
11	jd	1	3,116	70%	30%	3.8	0.7%
12	pm	4	30,662	70%	30%	184.0	31.7%
13	wj	3	1,523	70%	30%	7.5	1.3%
14	gv	0	26,021	70%	30%	0.0	0.0%
15	cw	0	192	70%	30%	0.0	0.0%
16	sa	4	207	70%	30%	0.9	0.2%
17	lo	4	26,102	70%	30%	115.4	19.9%
18	pv	3	12,125	70%	30%	22.5	3.9%
	Total	39	151,189			477.8	82.3%

Table A.1.1 - Correspondence of GIS Polygons to Clark County Health District Monitoring stations

Polygon	CCHD station	Site Name	Approximate crossing streets or location
1	CC	City Center	Bonanza & 7th street
2	WW	Winterwood	E Sahara & Nellis
3	SL	Shadow Lane	E Charleston & Shadow
4	BS	Craig Road	I-15 & Craig Road
5	PL	S.E. Valley	W Lake Mead Drive & Van Wagenen
6	MC	East Sahara	Maycliff Storage
7	MS	Micro-scale	E Charleston & Eastern
8	DM	Dime III	
9	FL	East Flamingo	E Flamingo & Cambridge
10	PT	Pittman	Boulder Highway & Pabco Rd
11	JD	J.D. Smith	Bruce & Tonopah
12	PM	Paul Meyer Park	W Flamingo & Rainbow
13	WJ	Walter Johnson	
14	GV	Green Valley	Warm Springs & Stephanie
15	CW	Crestwood	E Charleston & 17th St
16	SA	Sunrise Acres	Sunrise & N. Eastern
17	LO	Lone Mountain	N/A
18	PV	Palo Verde	Palo Verde High School?

Table A.2 - Polygon 4 - CCHD Station bs

BS PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 4	vacant land area	22369	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		17895.2		17895.2		4473.8		4473.8	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	20	24	480	20	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
1	21	12	492	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
1	21	13	493	22.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	14	494	23.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	15	495	21.9	1.38E-03	24.70			3.42E-04	1.53			26.23
1	21	16	496	21.6	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	2	962	21.299999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	10	7	967	20.799999	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	8	968	22.299999	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	9	969	21.700001	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	10	970	22.9	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	11	971	22.9	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	13	973	22	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	14	974	23	1.38E-03	24.70			3.42E-04	1.53			26.23
2	10	15	975	20.1	1.38E-03	24.70			3.42E-04	1.53			26.23
2	21	15	1239	20.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	25	13	1333	20.4	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
2	25	14	1334	20.1	1.38E-03	24.70			3.42E-04	1.53			26.23
3	30	13	2125	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
3	30	14	2126	21	1.38E-03	24.70			3.42E-04	1.53			26.23
3	31	14	2150	20.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
3	31	15	2151	24.1	1.38E-03	24.70			3.42E-04	1.53			26.23
3	31	16	2152	31.9	3.16E-03	56.55			4.83E-04	2.16			58.71
3	31	17	2153	28	2.57E-03	45.99			1.94E-04	0.87			46.86
4	5	14	2270	21.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
4	5	15	2271	21.9	1.38E-03	24.70			3.42E-04	1.53			26.23
4	9	3	2355	20.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
4	9	6	2358	20.200001	1.38E-03	24.70			3.42E-04	1.53			26.23
4	9	8	2360	21	1.38E-03	24.70			3.42E-04	1.53			26.23
4	12	17	2441	20.1	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
5	26	22	3502	21.1	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	9	22	4558	23	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	9	23	4559	20	1.38E-03	24.70			3.42E-04	1.53			26.23
7	14	20	4676	20.4	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
7	14	22	4678	21	1.38E-03	24.70			3.42E-04	1.53			26.23
9	18	2	6242	27.299999	2.57E-03	45.99	4.90E-04	8.77	1.94E-04	0.87	1.00E-04	0.45	56.07
9	18	3	6243	22	1.38E-03	24.70			3.42E-04	1.53			26.23

Table A.2 - Polygon 4 - CCHD Station bs

10	21	4	7036	34.599998	3.16E-03	56.55	5.88E-04	10.52	4.83E-04	2.16	1.00E-04	0.45	69.68
11	21	9	7785	20.5	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
11	21	10	7786	21.700001	1.38E-03	24.70			3.42E-04	1.53			26.23
12	1	14	8030	23.799999	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
12	1	15	8031	20.9	1.38E-03	24.70			3.42E-04	1.53			26.23
12	3	8	8072	20.700001	1.38E-03	24.70	2.12E-04	3.79	3.42E-04	1.53	5.00E-05	0.22	30.24
12	3	9	8073	21.1	1.38E-03	24.70			3.42E-04	1.53			26.23
12	7	20	8180	25.4	2.57E-02	459.91	4.90E-04	8.77	1.94E-04	0.87		0.00	469.54
12	7	22	8182	25.799999	2.57E-02	459.91			1.94E-04	0.87			460.77
12	7	23	8183	20.6	1.38E-03	24.70			3.42E-04	1.53			26.23
12	7	24	8184	21	1.38E-03	24.70			3.42E-04	1.53			26.23
Total													2327.39

Table A.3. - Polygon 1 - CCHD Station cc

CC PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 1	vacant land area	317.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		254		254		63.5		63.5	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	16	2152	25.200001	2.57E-03	0.65	4.90E-04	0.12	1.94E-04	0.01		0.00	0.79
3	31	17	2153	21.5	1.38E-03	0.35			3.42E-04	0.02			0.37
12	7	20	8180	20.6	1.38E-03	0.35	2.12E-04	0.05	3.42E-04	0.02		0.00	0.43
													1.59
Total													

Table A.4 - Polygon 15 CCHD Station cw

CW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 15	vacant land area	192	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		153.6		153.6		38.4		38.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum_hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
5	2	20	2924	35.900002	2.99E-03	0.46	9.24E-04	0.14	3.32E-04	0.01		0	0.61
5	2	21	2925	50	1.10E-02	1.69			6.30E-03	0.24			1.93
5	2	22	2926	50	1.10E-02	1.69			6.30E-03	0.24			1.93
5	2	23	2927	49.599998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	2	24	2928	48.900002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	1	2929	47.700001	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	2	2930	47.099998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	3	2931	47	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	4	2932	46.099998	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	5	2933	45.799999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	6	2934	45.799999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	7	2935	45.900002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	8	2936	45.5	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	9	2937	45.299999	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	10	2938	45.400002	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	11	2939	45.200001	7.58E-03	1.16			6.30E-03	0.24			1.41
5	3	12	2940	44.200001	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	13	2941	43.900002	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	14	2942	43.299999	5.92E-03	0.91			6.30E-03	0.24			1.15
5	3	15	2943	39.900002	2.99E-03	0.46			3.32E-04	0.01			0.47
Total													26.68

Table A.5 - Polygon 8 - CCHD Station dm

DM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized		
Polygon 8	vacant land area	2192	acres											
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2		
	unstable fraction	0.2		Area (acres)		1753.6		1753.6		438.4		438.4		
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike		
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total	Daily
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons	25-Feb
2	25	15	1335	20.299999	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	2.94
3	15	16	1768	21.4	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	20	13	1885	20.299999	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	20	14	1886	21.6	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	20	15	1887	21.4	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	20	16	1888	20.200001	1.38E-03	2.42			3.42E-04	0.15			2.57	
3	31	15	2151	21.200001	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
3	31	17	2153	20.799999	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	1	2281	21.6	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
4	6	2	2282	20.4	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	3	2283	21.1	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	4	2284	20.9	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	5	2285	22.700001	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	6	2286	22.299999	1.38E-03	2.42			3.42E-04	0.15			2.57	
4	6	7	2287	21	1.38E-03	2.42			3.42E-04	0.15			2.57	
7	27	14	4982	20.4	1.38E-03	2.42	2.12E-04	0.37	3.42E-04	0.15		0.00	2.94	
Total													43.35	

Table A.6 - Polygon 9 - CCHD Station fl

FL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 9	vacant land area	7832.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		6266		6266		1566.5		1566.5	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	20	21	477	24.4	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
1	20	24	480	25.5	1.38E-03	8.65			1.94E-04	0.30			8.95
1	21	1	481	22.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
1	21	12	492	22.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
1	21	13	493	23.5	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	11	1235	20	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
2	21	12	1236	22.1	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	13	1237	22.1	1.38E-03	8.65			3.42E-04	0.54			9.18
2	21	14	1238	22.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	9	1329	20.5	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
2	25	10	1330	23.4	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	12	1332	22.9	1.38E-03	8.65			3.42E-04	0.54			9.18
2	25	13	1333	20.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	3	24	1488	20.200001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	4	1	1489	22	1.38E-03	8.65			3.42E-04	0.54			9.18
3	20	16	1888	21.6	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	30	11	2123	24.700001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
3	30	12	2124	25.5	2.57E-03	16.10			1.94E-04	0.30			16.41
3	30	13	2125	24.1	1.38E-03	8.65			3.42E-04	0.54			9.18
3	30	14	2126	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	30	15	2127	22.6	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	2	2138	20	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	6	2142	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	8	2144	20.9	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	13	2149	26	2.57E-03	16.10			1.94E-04	0.30			16.41
3	31	14	2150	27.299999	2.57E-03	16.10			1.94E-04	0.30			16.41
3	31	15	2151	23.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	16	2152	23.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
3	31	17	2153	24.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
4	3	17	2225	20.1	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	8	21	2349	21.799999	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	8	22	2350	20	1.38E-03	8.65			3.42E-04	0.54			9.18
4	8	23	2351	21	1.38E-03	8.65			3.42E-04	0.54			9.18
4	27	14	2798	20.200001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	27	24	2808	21.1	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54	5.00E-05	0.08	10.59
4	28	14	2822	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
4	28	15	2823	20.799999	1.38E-03	8.65			3.42E-04	0.54			9.18

Table A.6 - Polygon 9 - CCHD Station fl

5	2	17	2921	20.4	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
5	2	18	2922	24.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	2	21	2925	21.1	1.38E-03	8.65			3.42E-04	0.54			9.18
5	2	23	2927	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	12	24	3168	25.9	2.57E-03	16.10	2.12E-04	1.33	1.94E-04	0.30		0.00	17.74
5	13	1	3169	23.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	2	3170	21.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	18	3186	20.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	19	3187	20.6	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	20	3188	22	1.38E-03	8.65			3.42E-04	0.54			9.18
5	13	21	3189	23.700001	1.38E-03	8.65			3.42E-04	0.54			9.18
5	14	18	3210	21.4	1.38E-03	8.65			3.42E-04	0.54			9.18
5	14	22	3214	23.5	1.38E-03	8.65			3.42E-04	0.54			9.18
6	2	23	3671	22	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
6	2	24	3672	23.799999	1.38E-03	8.65			3.42E-04	0.54			9.18
6	3	1	3673	22.6	1.38E-03	8.65			3.42E-04	0.54			9.18
6	3	4	3676	22.299999	1.38E-03	8.65			3.42E-04	0.54			9.18
12	2	23	8063	21.700001	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
12	3	8	8072	21.5	1.38E-03	8.65			3.42E-04	0.54			9.18
12	3	9	8073	21.700001	1.38E-03	8.65			3.42E-04	0.54			9.18
12	3	10	8074	20.5	1.38E-03	8.65			3.42E-04	0.54			9.18
12	7	20	8180	21.799999	1.38E-03	8.65	2.12E-04	1.33	3.42E-04	0.54		0.00	10.51
Total													591.16

Table A.7 - Polygon 14 - CCHD Station gv

GV PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 14	vacant land area	26020.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		20816.4		20816.4		5204.1		5204.1	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	20	20	476	20.1	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
1	20	21	477	23.5	1.38E-03	28.73			3.42E-04	1.78			30.51
1	21	13	493	21.9	1.38E-03	28.73			3.42E-04	1.78			30.51
1	25	14	590	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
4	8	24	2352	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
4	9	2	2354	21	1.38E-03	28.73			3.42E-04	1.78			30.51
5	2	19	2923	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	2	24	2928	20.799999	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	1	2929	22.700001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	2	2930	20.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	9	2937	20	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	10	2938	20.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	3	13	2941	20.1	1.38E-03	28.73			3.42E-04	1.78			30.51
5	12	24	3168	21.6	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	13	1	3169	22.700001	1.38E-03	28.73			3.42E-04	1.78			30.51
5	13	2	3170	20.5	1.38E-03	28.73			3.42E-04	1.78			30.51
5	13	21	3189	25.4	2.57E-03	53.50			1.94E-04	1.01			54.51
5	14	19	3211	21.799999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
5	14	20	3212	21.6	1.38E-03	28.73			3.42E-04	1.78			30.51
6	21	12	4116	22.6	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
6	21	13	4117	20.6	1.38E-03	28.73			3.42E-04	1.78			30.51
6	21	14	4118	20.4	1.38E-03	28.73			3.42E-04	1.78			30.51
7	3	12	4404	20.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
7	6	20	4484	20.1	1.38E-03	28.73			3.42E-04	1.78			30.51
7	7	5	4493	22.4	1.38E-03	28.73			3.42E-04	1.78			30.51
7	27	14	4982	25.9	2.57E-03	53.50			1.94E-04	1.01			54.51
7	27	15	4983	27.4	2.57E-03	53.50			1.94E-04	1.01			54.51
7	28	18	5010	21.299999	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
8	6	9	5217	20	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
8	6	10	5218	21.200001	1.38E-03	28.73			3.42E-04	1.78			30.51
8	6	11	5219	21	1.38E-03	28.73			3.42E-04	1.78			30.51
8	6	14	5222	20.5	1.38E-03	28.73			3.42E-04	1.78			30.51
11	17	12	7692	20.9	1.38E-03	28.73	2.12E-04	4.41	3.42E-04	1.78		0.00	34.92
Total													1127.26

Table A.8 - Polygon 11 - CCHD Station jd

JD PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 11	vacant land area	3115.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		2492.4		2492.4		623.1		623.1	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	26	11	611	22.9	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
2	25	15	1335	24.6	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
3	30	13	2125	21.200001	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
3	31	13	2149	21.4	1.38E-03	3.44			3.42E-04	0.21			3.65
3	31	14	2150	26.1	2.57E-03	6.41			1.94E-04	0.12			6.53
3	31	15	2151	24.200001	1.38E-03	3.44			3.42E-04	0.21			3.65
3	31	16	2152	26.5	2.57E-03	6.41			1.94E-04	0.12			6.53
3	31	17	2153	23.1	1.38E-03	3.44			3.42E-04	0.21			3.65
4	12	9	2433	21.6	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
7	27	14	4982	20.299999	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
7	27	15	4983	20.4	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
12	7	20	8180	21.799999	1.38E-03	3.44	2.12E-04	0.53	3.42E-04	0.21		0.00	4.18
Total													53.28

Table A.9 - Polygon 17 - CCHD Station lo

LO PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 17	vacant land area	26101.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		20881.2		20881.2		5220.3		5220.3	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	8	8	176	20.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
1	8	9	177	21.9	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	11	179	20.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	13	181	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	14	182	22.4	1.38E-03	28.82			3.42E-04	1.79			30.60
1	8	15	183	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
1	20	20	476	25.1	2.57E-03	53.66	4.90E-04	10.23	1.94E-04	1.01		0.00	64.91
1	20	21	477	28	2.57E-03	53.66			1.94E-04	1.01			54.68
1	20	22	478	26.299999	2.57E-03	53.66			1.94E-04	1.01			54.68
1	20	23	479	23.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	11	491	21.5	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	12	492	20	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	13	493	20.1	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	14	494	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	15	495	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
1	21	16	496	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
1	26	12	612	21.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	9	14	950	21	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	9	15	951	21.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	9	16	952	22.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	2	962	22	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	5	965	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	10	970	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	11	971	25.9	2.57E-03	53.66			3.42E-04	1.79			30.60
2	10	12	972	27.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
2	10	13	973	24.200001	1.38E-03	28.82			1.94E-04	1.01			54.68
2	10	15	975	22	1.38E-03	28.82			3.42E-04	1.79			30.60
2	10	16	976	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
2	19	10	1186	20.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
2	19	11	1187	20.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	19	13	1189	20.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	21	13	1237	20.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
2	21	14	1238	21.1	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	25	12	1332	23.9	1.38E-03	28.82			3.42E-04	1.79			30.60
2	25	13	1333	22	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
2	25	14	1334	21.6	1.38E-03	28.82			3.42E-04	1.79			30.60
2	25	15	1335	20	1.38E-03	28.82			3.42E-04	1.79			30.60

Table A.9 - Polygon 17 - CCHD Station lo

3	9	9	1617	21.700001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	9	10	1618	25.799999	2.57E-03	53.66			1.94E-04	1.01			54.68
3	9	11	1619	24.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	12	1620	24.5	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	13	1621	22.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	14	1622	22	1.38E-03	28.82			3.42E-04	1.79			30.60
3	9	15	1623	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
3	15	16	1768	22	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	20	14	1886	20.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	20	15	1887	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	20	16	1888	20.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	30	10	2122	21.200001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
3	30	11	2123	21.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	1	2137	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	2	2138	24.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	3	2139	28.1	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	4	2140	27.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	5	2141	25.1	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	6	2142	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	9	2145	20.799999	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	10	2146	22.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	11	2147	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	12	2148	23.1	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	13	2149	21.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	14	2150	21.4	1.38E-03	28.82			3.42E-04	1.79			30.60
3	31	16	2152	29.200001	2.57E-03	53.66			1.94E-04	1.01			54.68
3	31	17	2153	22.6	1.38E-03	28.82			3.42E-04	1.79			30.60
4	9	2	2354	21.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
4	9	12	2364	20.200001	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	3	16	2944	20.1	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	26	20	3500	23.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
5	26	21	3501	22.5	1.38E-03	28.82			3.42E-04	1.79			30.60
5	26	22	3502	21.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
7	15	21	4701	23	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
7	27	15	4983	21	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
10	15	4	6892	24.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
10	16	3	6915	20.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	4	6916	22.200001	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	6	6918	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	10	6922	23.5	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	11	6923	20.4	1.38E-03	28.82			3.42E-04	1.79			30.60
10	16	12	6924	20.9	1.38E-03	28.82			3.42E-04	1.79			30.60
10	31	4	7276	80.599998	1.69E-02	352.89	3.32E-03	69.33	6.30E-03	32.89		0.00	455.11
11	14	15	7623	72.699997	1.69E-02	352.89	3.32E-03	69.33	6.30E-03	32.89		0.00	455.11

Table A.9 - Polygon 17 - CCHD Station Io

11	17	9	7689	21.6	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	1	14	8030	20.5	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	2	22	8062	23	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	2	23	8063	29.5	2.57E-03	53.66			1.94E-04	1.01			54.68
12	2	24	8064	22.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
12	3	9	8073	23.6	1.38E-03	28.82			3.42E-04	1.79			30.60
12	7	20	8180	24.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	7	21	8181	25.1	2.57E-03	53.66			1.94E-04	1.01			54.68
12	7	22	8182	25	2.57E-03	53.66			1.94E-04	1.01			54.68
12	7	24	8184	20.6	1.38E-03	28.82			3.42E-04	1.79			30.60
12	8	1	8185	22.299999	1.38E-03	28.82			3.42E-04	1.79			30.60
12	8	2	8186	21.700001	1.38E-03	28.82			3.42E-04	1.79			30.60
12	21	12	8508	21.299999	1.38E-03	28.82	2.12E-04	4.43	3.42E-04	1.79		0.00	35.03
12	21	13	8509	21.1	1.38E-03	28.82			3.42E-04	1.79			30.60
Total													4176.75

Table A.10 - Polygon 6 CCHD Station mc

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
MC PM-10	1999												
Polygon 6	vacant land area	421.5	acres	fraction		0.8		0.8		0.2		0.2	
Excel 5.0	stable fraction	0.8		Area (acres)		337.2		337.2		84.3		84.3	
	unstable fraction	0.2			Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	Wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
2	10	10	970	20.5	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
2	10	11	971	20.200001	1.38E-03	0.47			3.42E-04	0.03			0.49
2	10	14	974	20	1.38E-03	0.47			3.42E-04	0.03			0.49
2	25	14	1334	25.200001	2.57E-03	0.87	4.90E-04	0.17	1.94E-04	0.02		0.00	1.05
2	25	15	1335	24.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	30	13	2125	22	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
3	30	14	2126	20.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	14	2150	21.9	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
3	31	15	2151	22.5	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	16	2152	24.1	1.38E-03	0.47			3.42E-04	0.03			0.49
3	31	18	2154	23.6	1.38E-03	0.47			3.42E-04	0.03			0.49
4	8	23	2351	21.5	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
9	18	2	6242	20.299999	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
12	7	20	8180	20.4	1.38E-03	0.47	2.12E-04	0.07	3.42E-04	0.03		0.00	0.57
Total													7.90

Table A.11 - Polygon 7 - CCHD Station ms

MS PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 7	vacant land area	169.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		135.6		135.6		33.9		33.9	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	26	11	611	23.9	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
2	25	13	1333	20.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
2	25	14	1334	25.5	2.57E-03	0.35			1.94E-04	0.01			0.36
2	25	15	1335	24.9	1.38E-03	0.19			3.42E-04	0.01			0.20
2	25	16	1336	21.799999	1.38E-03	0.19			3.42E-04	0.01			0.20
3	9	13	1621	20.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
3	9	15	1623	20	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	11	2123	22.4	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
3	30	12	2124	24	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	13	2125	25.4	2.57E-03	0.35			1.94E-04	0.01			0.36
3	30	14	2126	24.200001	1.38E-03	0.19			3.42E-04	0.01			0.20
3	30	15	2127	21.6	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	6	2142	21.799999	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	7	2143	20.200001	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	8	2144	20.1	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	9	2145	20.5	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	10	2146	21	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	13	2149	20.1	1.38E-03	0.19			3.42E-04	0.01			0.20
3	31	14	2150	22.4	1.38E-03	0.19			3.42E-04	0.01			0.20
4	27	14	2798	20.200001	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
4	27	15	2799	20.5	1.38E-03	0.19			3.42E-04	0.01			0.20
5	13	19	3187	21.6	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
5	14	20	3212	20.200001	1.38E-03	0.19	2.12E-04	0.03	3.42E-04	0.01		0.00	0.23
Total													5.08

Table A.12 - Polygon 5 - CCHD Station pl

PL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 5	vacant land area	8,288	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		6630.4		6630.4		1657.6		1657.6	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	20	21	477	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
1	23	18	546	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
1	23	19	547	23.4	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	20	548	21.9	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	21	549	22.1	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	22	550	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
1	23	23	551	20.6	1.38E-03	9.15			3.42E-04	0.57			9.72
1	25	15	591	21.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	7	943	20.1	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	9	8	944	22.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	9	945	22.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	10	946	21.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
2	9	24	960	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	1	961	21.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	2	962	21.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	8	968	20.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	9	969	22.9	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	10	970	22.799999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	11	971	22.5	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	12	972	24	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	13	973	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	14	974	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	15	975	24.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	10	16	976	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	21	19	1243	20.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	21	20	1244	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
2	21	21	1245	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
2	25	12	1332	21.9	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
2	25	13	1333	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
2	25	14	1334	20.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	3	19	1483	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	9	14	1622	22.1	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	20	13	1885	20.6	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	20	14	1886	22	1.38E-03	9.15			3.42E-04	0.57			9.72
3	20	15	1887	22.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
3	30	11	2123	20.200001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
3	30	13	2125	22.299999	1.38E-03	9.15			3.42E-04	0.57			9.72

Table A.12 - Polygon 5 - CCHD Station pl

3	30	14	2126	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	12	2148	21.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	13	2149	21.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	15	2151	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
3	31	17	2153	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	13	2269	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
4	5	14	2270	23.6	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	15	2271	23.4	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	16	2272	22.700001	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	17	2273	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
4	5	18	2274	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	6	15	2295	20	1.38E-03	9.15			3.42E-04	0.57			9.72
4	8	24	2352	20.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
4	9	1	2353	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	8	2360	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	9	2361	21.799999	1.38E-03	9.15			3.42E-04	0.57			9.72
4	9	10	2362	21	1.38E-03	9.15			3.42E-04	0.57			9.72
5	3	1	2929	20.799999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
5	14	19	3211	20.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	6	20	4484	21.299999	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	7	1	4489	20.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
7	7	5	4493	20.5	1.38E-03	9.15			3.42E-04	0.57			9.72
7	27	14	4982	28.6	2.57E-03	17.04	4.90E-04	3.25	1.94E-04	0.32		0.00	20.61
7	27	15	4983	28.200001	2.57E-03	17.04			1.94E-04	0.32			17.36
7	27	16	4984	20.6	1.38E-03	9.15			3.42E-04	0.57			9.72
7	28	17	5009	20	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
7	28	18	5010	20.4	1.38E-03	9.15			3.42E-04	0.57			9.72
7	28	19	5011	20.4	1.38E-03	9.15			3.42E-04	0.57			9.72
10	6	20	6692	20.5	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
10	16	10	6922	20.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
10	16	11	6923	21.5	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	13	6925	21.299999	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	14	6926	20.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	18	6930	20.1	1.38E-03	9.15			3.42E-04	0.57			9.72
10	16	19	6931	21.200001	1.38E-03	9.15			3.42E-04	0.57			9.72
11	21	18	7794	22	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	1	14	8030	21.4	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	3	7	8071	20.200001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	3	12	8076	22.4	1.38E-03	9.15			3.42E-04	0.57			9.72
12	3	13	8077	20.9	1.38E-03	9.15			3.42E-04	0.57			9.72
12	7	20	8180	21.700001	1.38E-03	9.15	2.12E-04	1.41	3.42E-04	0.57		0.00	11.12
12	7	23	8183	21	1.38E-03	9.15			3.42E-04	0.57			9.72
Total													815.69

Table A.13 - Polygon 12 - CCHD Station pm

PM PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 12	vacant land area	30662	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		24529.6		24529.6		6132.4		6132.4	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	8	6	174	20.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
1	21	11	491	23.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
1	21	12	492	24.200001	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	13	493	22.299999	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	14	494	22.299999	1.38E-03	33.85			3.42E-04	2.10			35.95
1	21	15	495	20	1.38E-03	33.85			3.42E-04	2.10			35.95
2	9	22	958	20.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
2	25	10	1330	22.9	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
2	25	11	1331	26	2.57E-03	63.04			1.94E-04	1.19			64.23
2	25	12	1332	29.4	2.57E-03	63.04			1.94E-04	1.19			64.23
2	25	13	1333	22.1	1.38E-03	33.85			3.42E-04	2.10			35.95
3	3	22	1486	23.5	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	9	14	1622	21.299999	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	20	14	1886	20.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	20	15	1887	22.4	1.38E-03	33.85			3.42E-04	2.10			35.95
3	20	16	1888	21.1	1.38E-03	33.85			3.42E-04	2.10			35.95
3	30	12	2124	20.6	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
3	31	10	2146	20	1.38E-03	33.85			3.42E-04	2.10			35.95
3	31	13	2149	20.9	1.38E-03	33.85			3.42E-04	2.10			35.95
3	31	14	2150	23.6	1.38E-03	33.85			3.42E-04	2.10			35.95
4	8	23	2351	21.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
4	28	12	2820	20.9	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	3	14	2942	20.200001	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	14	19	3211	22.1	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
5	26	20	3500	21.5	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
12	7	20	8180	22.200001	1.38E-03	33.85	2.12E-04	5.20	3.42E-04	2.10		0.00	41.15
Total													1064.02

Table A.14 - Polygon 10 - CCHD Station pt

PT PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 10	vacant land area	6763.5	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		5410.8		5410.8		1352.7		1352.7	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
Month	Day	Hour	Cum hour	wind (mph)									
2	9	24	960	21.1	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
2	10	2	962	20.700001	1.38E-03	7.47			3.42E-04	0.46			7.93
2	25	12	1332	23	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
2	25	13	1333	23.299999	1.38E-03	7.47			3.42E-04	0.46			7.93
2	25	14	1334	23.299999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	3	19	1483	20.200001	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	9	13	1621	20	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	9	14	1622	24.200001	1.38E-03	7.47			3.42E-04	0.46			7.93
3	9	15	1623	22.6	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	11	2123	22	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
3	30	12	2124	22.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	13	2125	23.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	30	15	2127	21.1	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	9	2145	20.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	11	2147	20.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	12	2148	22.799999	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	13	2149	25.200001	2.57E-03	13.91			1.94E-04	0.26			14.17
3	31	14	2150	23.4	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	15	2151	24.200001	1.38E-03	7.47			3.42E-04	0.46			7.93
3	31	16	2152	20.1	1.38E-03	7.47			3.42E-04	0.46			7.93
4	9	1	2353	20	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
4	9	2	2354	20.700001	1.38E-03	7.47			3.42E-04	0.46			7.93
5	13	21	3189	21.799999	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
5	14	19	3211	20.9	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
7	27	14	4982	23.6	1.38E-03	7.47	2.12E-04	1.15	3.42E-04	0.46		0.00	9.08
7	27	15	4983	23	1.38E-03	7.47			3.42E-04	0.46			7.93
Total													222.73

Table A.15 - Polygon 18 - CCHD Station pv

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
PV PM-10	1999												
Polygon 18	vacant land area	12125	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		9700		9700		2425		2425	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum. hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	8	9	177	22.700001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
1	8	10	178	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
1	8	14	182	21.4	1.38E-03	13.39			3.42E-04	0.83			14.22
1	8	15	183	21	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	4	460	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	9	465	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	10	466	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	17	473	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
1	20	18	474	24.6	2.57E-03	24.93			3.42E-04	0.83			25.76
1	20	19	475	28.1	2.57E-03	24.93			1.94E-04	0.47			25.40
1	20	20	476	30	3.16E-03	30.65			1.94E-04	0.47			31.12
1	20	21	477	26.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
1	20	22	478	31.5	3.16E-03	30.65			4.83E-04	1.17			31.82
1	20	23	479	32.099998	3.16E-03	30.65			4.83E-04	1.17			31.82
1	20	24	480	24.5	1.38E-03	13.39			3.42E-04	0.83			14.22
1	21	1	481	29.5	2.57E-03	24.93			1.94E-04	0.47			25.40
1	21	2	482	32.900002	3.16E-03	30.65			4.83E-04	1.17			31.82
1	21	3	483	27.6	2.57E-03	24.93			1.94E-04	0.47			25.40
1	21	15	495	20.6	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	9	13	949	20.5	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	9	14	950	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	15	951	24.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	16	952	23.6	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	21	957	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	9	22	958	26.4	2.57E-03	24.93			3.42E-04	0.83			25.76
2	9	23	959	22.9	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	5	965	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	11	971	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
2	10	12	972	36	2.99E-03	29.00			3.32E-04	0.81			29.81
2	10	13	973	22.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	11	1235	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
2	21	12	1236	24	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	13	1237	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	14	1238	25	2.57E-03	24.93			1.94E-04	0.47			25.40
2	21	15	1239	23.9	1.38E-03	13.39			3.42E-04	0.83			14.22
2	21	16	1240	25.6	2.57E-03	24.93			1.94E-04	0.47			25.40
2	25	9	1329	22.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27

Table A.15 - Polygon 18 - CCHD Station pv

2	25	10	1330	24.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
2	25	12	1332	27	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	12	1476	21.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	3	13	1477	22	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	14	1478	23	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	15	1479	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	16	1480	23.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	17	1481	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	18	1482	25.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	19	1483	26.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	3	20	1484	21.6	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	23	1487	22.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	3	24	1488	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	8	23	1607	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	8	24	1608	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	1	1609	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	2	1610	24	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	3	1611	22.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	4	1612	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	14	1622	21.4	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	15	1623	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	9	16	1624	20.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	15	16	1768	20.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	20	13	1885	21.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	20	14	1886	23.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	15	1887	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	16	1888	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	17	1889	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	18	1890	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	19	1891	22	1.38E-03	13.39			3.42E-04	0.83			14.22
3	20	20	1892	22.5	1.38E-03	13.39			3.42E-04	0.83			14.22
3	21	16	1912	20.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	23	5	1949	20.9	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	23	6	1950	22.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
3	23	8	1952	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	30	9	2121	22.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
3	30	10	2122	24.9	1.38E-03	13.39			3.42E-04	0.83			14.22
3	30	11	2123	27.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	30	12	2124	26.700001	2.57E-03	24.93			1.94E-04	0.47			25.40
3	30	13	2125	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
3	31	12	2148	25.799999	2.57E-03	24.93			1.94E-04	0.47			25.40
3	31	13	2149	29.4	2.57E-03	24.93			1.94E-04	0.47			25.40
3	31	14	2150	35.799999	2.99E-03	29.00			3.32E-04	0.81			29.81
3	31	15	2151	31.299999	3.16E-03	30.65			4.83E-04	1.17			31.82

Table A.15 - Polygon 18 - CCHD Station pv

3	31	21	2157	21	1.38E-03	13.39			3.42E-04	0.83			14.22
4	3	14	2222	20.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	3	15	2223	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	3	17	2225	22.6	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	15	2343	23.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	8	16	2344	21.5	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	21	2349	25.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	8	22	2350	28.700001	2.57E-03	24.93			1.94E-04	0.47			25.40
4	8	23	2351	24.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	9	2	2354	23.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	9	12	2364	21.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	14	5	2477	22.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	26	23	2783	23.5	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
4	26	24	2784	34.5	3.16E-03	30.65			4.83E-04	1.17			31.82
4	27	1	2785	21.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	18	2802	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	19	2803	25.299999	2.57E-03	24.93			1.94E-04	0.47			25.40
4	27	20	2804	23	1.38E-03	13.39			3.42E-04	0.83			14.22
4	27	21	2805	20.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
4	28	13	2821	20	1.38E-03	13.39			3.42E-04	0.83			14.22
5	2	17	2921	21.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	3	14	2942	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	3	15	2943	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
5	3	16	2944	22.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	12	22	3166	26	2.57E-03	24.93	4.90E-04	4.75	1.94E-04	0.47		0.00	30.15
5	12	23	3167	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	12	24	3168	23.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	2	3170	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	3	3171	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	15	3183	20	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	16	3184	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	17	3185	23.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	21	3189	23.1	1.38E-03	13.39			3.42E-04	0.83			14.22
5	13	22	3190	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	14	16	3208	20.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	14	17	3209	21.700001	1.38E-03	13.39			3.42E-04	0.83			14.22
5	14	18	3210	25.5	2.57E-03	24.93			1.94E-04	0.47			25.40
5	14	19	3211	26.9	2.57E-03	24.93			1.94E-04	0.47			25.40
5	14	20	3212	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
5	26	20	3500	22.6	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
5	26	21	3501	23.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
5	26	22	3502	20.4	1.38E-03	13.39			3.42E-04	0.83			14.22
6	2	21	3669	22.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	16	14	3998	20.9	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27

Table A.15 - Polygon 18 - CCHD Station pv

6	21	13	4117	21.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	25	15	4215	20.1	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
6	25	16	4216	21.1	1.38E-03	13.39			3.42E-04	0.83			14.22
6	25	20	4220	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
7	3	14	4406	20	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
7	15	21	4701	24	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
7	27	15	4983	20.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
8	30	14	5798	20	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
10	16	11	6923	20.200001	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
10	29	4	7228	21.299999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	8	8	7472	20.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	8	9	7473	23.4	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	10	7474	21.799999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	12	7476	21.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	8	14	7478	22.299999	1.38E-03	13.39			3.42E-04	0.83			14.22
11	17	5	7685	22.4	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
11	17	6	7686	28.5	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	7	7687	25.1	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	8	7688	29.4	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	9	7689	30.1	3.16E-03	30.65			4.83E-04	1.17			31.82
11	17	10	7690	31.799999	3.16E-03	30.65			4.83E-04	1.17			31.82
11	17	11	7691	29.5	2.57E-03	24.93			1.94E-04	0.47			25.40
11	17	12	7692	23.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
11	17	13	7693	22	1.38E-03	13.39			3.42E-04	0.83			14.22
12	1	6	8022	21.799999	1.38E-03	13.39	2.12E-04	2.06	3.42E-04	0.83		0.00	16.27
12	2	23	8063	21.1	1.38E-03	13.39			3.42E-04	0.83			14.22
12	2	24	8064	25.9	2.57E-03	24.93			1.94E-04	0.47			25.40
12	3	1	8065	25.200001	2.57E-03	24.93			1.94E-04	0.47			25.40
12	3	9	8073	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	13	8077	22	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	14	8078	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	3	15	8079	20.6	1.38E-03	13.39			3.42E-04	0.83			14.22
12	7	20	8180	27.4	2.57E-03	24.93	4.90E-04	4.75	1.94E-04	0.47		0.00	30.15
12	7	21	8181	26.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
12	7	22	8182	21.9	1.38E-03	13.39			3.42E-04	0.83			14.22
12	8	1	8185	31.299999	3.16E-03	30.65			1.94E-04	0.47			31.12
12	8	2	8186	22.200001	1.38E-03	13.39			3.42E-04	0.83			14.22
Total													2867.08

Table A.16 - Polygon 16 - CCHD Station sa

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
SA PM-10	1999												
Polygon 16	vacant land area	207	acres							0.2		0.2	
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		41.4		41.4	
	unstable fraction	0.2		Area (acres)		165.6		165.6					
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
Month	Day	Hour	Cum hour	wind (mph)	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Factor (ton/ac/hr)	Emission ton	Factor (ton/ac)	Emission ton	Total tons
1	21	12	492	22.799999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
1	21	13	493	21.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	14	494	21.6	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	15	495	22.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
1	21	16	496	20.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	9	969	21	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
2	10	10	970	22.1	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	11	971	22.1	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	12	972	21.4	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	13	973	21.799999	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	14	974	20.9	1.38E-03	0.23			3.42E-04	0.01			0.24
2	10	15	975	20.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	12	1332	20.299999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
2	25	13	1333	21.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	14	1334	21.5	1.38E-03	0.23			3.42E-04	0.01			0.24
2	25	15	1335	22.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	13	2149	20.700001	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
3	31	14	2150	23.6	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	15	2151	23.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
3	31	16	2152	29.6	2.57E-03	0.43			1.94E-04	0.01			0.43
3	31	17	2153	26.200001	2.57E-03	0.43			1.94E-04	0.01			0.43
5	26	21	3501	20	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
5	26	22	3502	21.5	1.38E-03	0.23			3.42E-04	0.01			0.24
7	14	20	4676	20.6	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
9	18	2	6242	22	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	1	14	8030	20.9	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	1	15	8031	20.700001	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	1	8065	21.6	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	3	3	8067	20.1	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	8	8072	21.299999	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	9	8073	21.6	1.38E-03	0.23			3.42E-04	0.01			0.24
12	3	10	8074	21.200001	1.38E-03	0.23			3.42E-04	0.01			0.24
12	7	20	8180	24.799999	1.38E-03	0.23	2.12E-04	0.04	3.42E-04	0.01		0.00	0.28
12	7	21	8181	20	1.38E-03	0.23			3.42E-04	0.01			0.24
12	7	22	8182	22.4	1.38E-03	0.23			3.42E-04	0.01			0.24
													9.23
Total													

Table A.17 - Polygon 3 - CCHD Station sl

SL PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 3	vacant land area	1315	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		1052		1052		263		263	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	Wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
3	31	13	2149	20.799999	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
3	31	16	2152	23.700001	1.38E-03	1.45			3.42E-04	0.09			1.54
3	31	17	2153	21.6	1.38E-03	1.45			3.42E-04	0.09			1.54
6	3	5	3677	21.1	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
12	7	20	8180	20.1	1.38E-03	1.45	2.12E-04	0.22	3.42E-04	0.09		0.00	1.76
Total													8.38

Table A.18 - Polygon 13 - CCHD Station wj

					Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
WJ PM-10	1999													
Polygon 13	vacant land area	1522.5	acres							0.2		0.2	
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		304.5		304.5	
	unstable fraction	0.2		Area (acres)		1218		1218					
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	12	492	20.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	9	16	952	20.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	21	14	1238	20.200001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	25	11	1331	20.9	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
2	25	12	1332	29.700001	2.57E-03	3.13			1.94E-04	0.06			3.19
2	25	13	1333	25.799999	2.57E-03	3.13			1.94E-04	0.06			3.19
3	9	13	1621	23.799999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	9	14	1622	23.200001	1.38E-03	1.68			3.42E-04	0.10			1.78
3	20	15	1887	20.700001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	31	10	2146	21.5	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
3	31	14	2150	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
3	31	16	2152	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
3	31	17	2153	22	1.38E-03	1.68			3.42E-04	0.10			1.78
10	16	10	6922	20.299999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	3	1	8065	20.299999	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	7	20	8180	21.200001	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
12	7	21	8181	21.5	1.38E-03	1.68			3.42E-04	0.10			1.78
12	7	22	8182	22	1.38E-03	1.68			3.42E-04	0.10			1.78
12	8	1	8185	20	1.38E-03	1.68			3.42E-04	0.10			1.78
12	21	13	8509	20.9	1.38E-03	1.68	2.12E-04	0.26	3.42E-04	0.10		0.00	2.04
Total													41.35

Table A.19 - Polygon 2 - CCHD Station ww

WW PM-10	1999				Stable	Stable	Stable	Stable	Stabilized	Stabilized	Stabilized	Stabilized	
Polygon 2	vacant land area	1574	acres										
Excel 5.0	stable fraction	0.8		fraction		0.8		0.8		0.2		0.2	
	unstable fraction	0.2		Area (acres)		1259.2		1259.2		314.8		314.8	
					Steady	Steady	Spike	Spike	Steady	Steady	Spike	Spike	
					Factor	Emission	Factor	Emission	Factor	Emission	Factor	Emission	Total
Month	Day	Hour	Cum. hour	wind (mph)	(ton/ac/hr)	ton	(ton/ac)	ton	(ton/ac/hr)	ton	(ton/ac)	ton	tons
1	21	1	481	20.4	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
1	26	11	611	20.9	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
2	9	23	959	21.299999	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
2	25	15	1335	21.6	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	9	14	1622	21	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	20	14	1886	21	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	30	13	2125	21.1	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
3	30	14	2126	20.1	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	14	2150	21.1	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	15	2151	24.6	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	16	2152	20.9	1.38E-03	1.74			3.42E-04	0.11			1.85
3	31	17	2153	21.4	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	13	2269	21.299999	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
4	5	14	2270	21.9	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	17	2273	20.799999	1.38E-03	1.74			3.42E-04	0.11			1.85
4	5	18	2274	20.799999	1.38E-03	1.74			3.42E-04	0.11			1.85
4	8	23	2351	21.6	1.38E-03	1.74	2.12E-04	0.27	3.42E-04	0.11		0.00	2.11
4	8	24	2352	21	1.38E-03	1.74			3.42E-04	0.11			1.85
Total													35.62

Figure 6 – Las Vegas Valley Thiessen polygons within BLM land disposal boundary