BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE

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May 23, 2003

Don Willard, Director
Mecklenburg County Air Quality
700 N. Tryon Street, Suite 205
Charlotte, NC 28202-2236

Re: Air Permit No. 02-153-716, Ferebee Asphalt Corp., 1005 N. Davidson Street, Charlotte

Dear Mr. Willard:

On behalf of the Blue Ridge Environmental Defense League and our members in Mecklenburg County, I write to provide additional information on the proposed air permit for an asphalt plant in Optimist Park. Thank you for providing me with the opportunity to submit these comments via facsimile today. These comments will expand on my remarks delivered to the Air Quality Commission on April 28th.

MCAPCO Regulation 1.5700/2.1104 Toxic Air Pollutants

The permit indicates that following toxic air pollutants (TAPs) were found to be above the Toxic Permit Emission Rate: arsenic, benzene, formaldehyde, mercury, and toluene. Therefore, air dispersion modeling was required. The Air Quality Permit Application submitted by ENSR Consulting (Document # 09417-285) outlines the air dispersion modeling analysis for the Ferebee plant at the location on 1005 N. Davidson Street. The consultant's analysis was used to determine compliance with MCAQ toxic air pollutant guidelines. The application states, "Clearly, most of the area in the vicinity of the facility is rural. Therefore, rural dispersion coefficients were used in the modeling analysis."

The neighborhood in the vicinity of the proposed asphalt plant is not rural. Optimist Park is a mixed residential neighborhood with multiple family dwellings and commercial areas; it is an area of high population. There are downtown skyscrapers within a short distance. ENSR was mistaken to choose the rural coefficient for the estimate of toxic air pollutants. This error has caused their prediction of toxic air pollutant levels to be too low.

The NC Division of Air Quality published guidelines for use of computer models which state, "Use urban coefficients if more than 50% of the land within a 3 kilometer radius of the facility is of land use types heavy or medium industrial, commercial or multi-family residential." and "Use urban coefficients if the population density within a 3 kilometer radius of the facility is greater than 750 people/km2." (Guidelines for Evaluating the Air Quality Impacts of Toxic Pollutants in North Carolina, November 1996, page 23) [Attachment A] Converting population density to people/square mile, we find the NC DAQ's benchmark density factor to be under 2,000 people per square mile:

$2.59\ km^2/mile^2 \times 750\ people/km^2 = 1943\ people/mile^2$

The area inside a 3 kilometer radius of 1005 North Davidson Street includes all the area east of Interstate 77 as far as Independence Park and Midwood Park from Matheson Ave to the Belk Freeway [Attachment B]. This area includes the most densely developed part of the city within highways I-77 and I-277. According to US Census data, this area has more than 2,000 people per square mile [Attachment C]. This area of Charlotte includes some areas with over 4,500 people/sq-mile. State air modeling guidelines put it plainly: "With few exceptions (e.g. downtown areas of large cities such as Raleigh, Charlotte, Greensboro, etc.) all of North Carolina should be considered rural.

We did a test run using both rural and urban modes of EPA's SCREEN3 air modeling software [Attachment D]. We followed NC Division of Air Quality's generic modeled concentration procedures and input typical asphalt plant parameters. The results of this test revealed that 62% higher levels of pollution are predicted if the urban mode is selected. Our trial also showed that the urban coefficient predicts the maximum point at a different place, closer to the emission source. Table 1 shows the results of the SCREEN3 model:

Table 1. Computer Modeled Toxic Air Pollution levels

Dispersion coefficient	Ambient concentration in micrograms/cubic meter	Distance from source in meters
Rural	2.539	298
Urban	4.120	91

The permit is based on a flawed estimate of toxic air pollution which may predict levels lower than actual values. As written, the permit does not meet the requirements of the Mecklenburg County Air Pollution Control Ordinance (MCAPCO).

MCAPCO Regulation 1.5110 Control and Prohibition of Odorous Emissions

Permit condition G-19 requires the plant to prevent "odorous emissions…or contributing to objectionable odors beyond the facility's boundary." [emphasis added] One of the requirements for the determination of an "objectionable odor" is that the source emits known odor causing compounds such as hydrogen sulfide. Material Safety Data Sheets for asphalt plants list hydrogen sulfide (H_2S) as a hazardous ingredient of common hot mix asphalt (http://www.graniterock.com/products/msds/hotmixasphalt.htm). The NC DAQ estimates that a typical hot-mix asphalt plant emits hydrogen sulfide at 0.7 pounds/hour (ATAST Investigation No. 01007 and 01008, April 30, 2002). Therefore, the Ferebee plant would be an emitter of H_2S.

Levels of hydrogen sulfide below the odor threshold are now known to cause serious health effects. The NC Science Advisory Board recently reported that symptoms such as headache, nausea and eye and throat irritation are found in communities with ambient H_2S levels as low as 7 to 10 ppb associated with periodic fluctuations at higher levels. Experts have identified the following serious health effects from H_2S:

> Public health scientists now recognize that hydrogen sulfide is a potent neurotoxin, and that chronic exposure to even low ambient levels causes irreversible damage to the brain and central nervous system. Children are among the most susceptible to this poison gas. It is unacceptable for communities to have to continue suffering the ill effects of H_2S when the technology to control H_2S emissions is available and affordable.
>
> Neil Carman, Ph.D., former Texas environmental official
> and clean air director for the Lone Star Chapter of the Sierra Club

The asphalt plant site in Optimist Park is in close proximity to four schools and a church with daycare. The location of an asphalt plant in this community would be contrary to the protection of public health. The permit should be revoked on this basis alone.

MCAPCO Regulation 1.5213 Federally enforceable local operating permits (FELOP)

Permits issued under the MCDEP's minor source operating permit program provide federally enforceable limits to an air pollution source's potential to emit. FELOP criteria require the local program to provide EPA and the public with timely notice of the proposal and issuance of such permits, and to provide EPA with a copy of each draft and final permit. This process also requires that the interested public have opportunity for comment on the permit applications prior to issuance of the final permit. MCAPCO Regulation 1.5213(g) requires a 30 day public notice for every permit issued by MCDEP. In addition, every permit must go through a public hearing prior to permit issuance. MCAPCO Regulation 1.5213(h) requires the Department to submit the proposed permit to EPA for review during the 30 day comment period, and also provides that after final permit issuance the Department will submit a copy of the final permit to EPA.

We believe that the affected public has not had an adequate opportunity to comment on this permit. The permit issued by MCDEP does not meet MCAPCO rules and should be revoked.

Respectfully submitted,

Louis Zeller
Blue Ridge Environmental Defense League
926 Elizabeth Ave., Suite 302
Charlotte, NC 28204
(704) 756-7550

Attachments

Cc: Linda Williams
Mike Minsker, Esq
Marion Deerhake

Attachment A
page 1

GUIDELINES FOR EVALUATING THE AIR QUALITY IMPACTS OF TOXIC POLLUTANTS IN NORTH CAROLINA

November 1996

NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT, HEALTH
AND
NATURAL RESOURCES
DIVISION OF AIR QUALITY
PERMITTING SECTION

comments regarding receptor placement is given in Sections 4.0 (screening modeling) and 5.0 (refined modeling).

4.7 Land Use Classification

Land use classification is used by dispersion models to select the appropriate pollutant dispersion characteristics to be used in estimating downwind concentrations. The selection of urban or rural dispersion coefficients in a specific application should follow the guidance described on page 8-10 of the EPA Guidelines. Use one of the following procedures to determine the proper classification.

a. Land use Procedure: Use urban coefficients if more than 50% of the land within a 3 kilometer radius of the facility is of land use types heavy or medium industrial, commercial or multi-family residential.

b. Population density procedure: Use urban coefficients if the population density within a 3 kilometer radius of the facility is greater than 750 people/ km2.

With few exceptions (e.g. downtown areas of large cities such as Raleigh, Charlotte, Greensboro, etc), all of North Carolina should be considered rural.

4.8 Dispersion Models

The dispersion models recommended in this guidance are consistent with the EPA model recommendations given in the EPA Guideline On Air Quality Models (Revised)[1], Supplement C dated June 1994, which will henceforth be referred to as the EPA Guidelines. Although there are a number of technical

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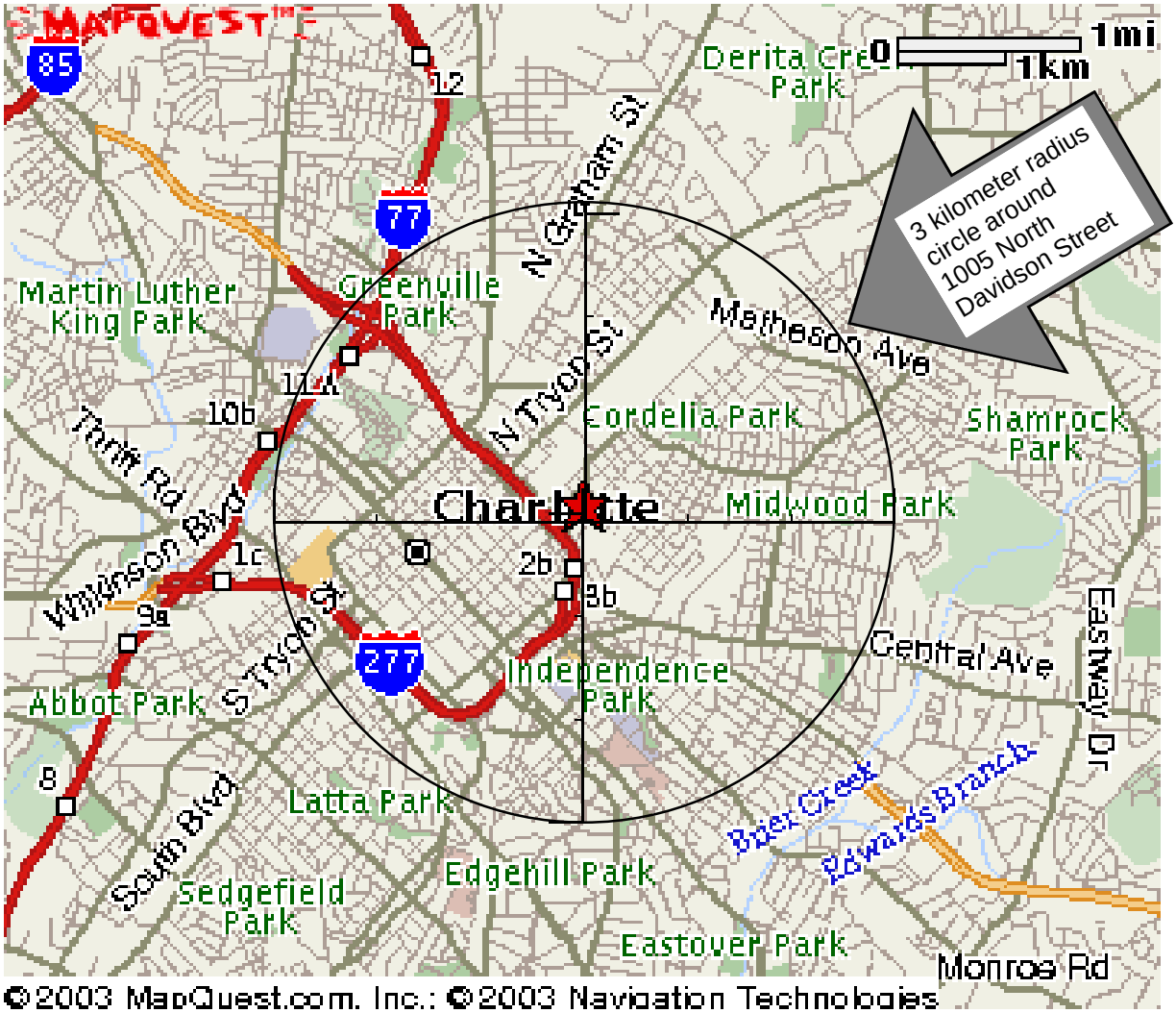
May 23, 2003

Air Permit No. 02-153-716
Ferebee Asphalt Corp.
1005 N. Davidson Street, Charlotte, 28206

Attachment B



3 kilometers

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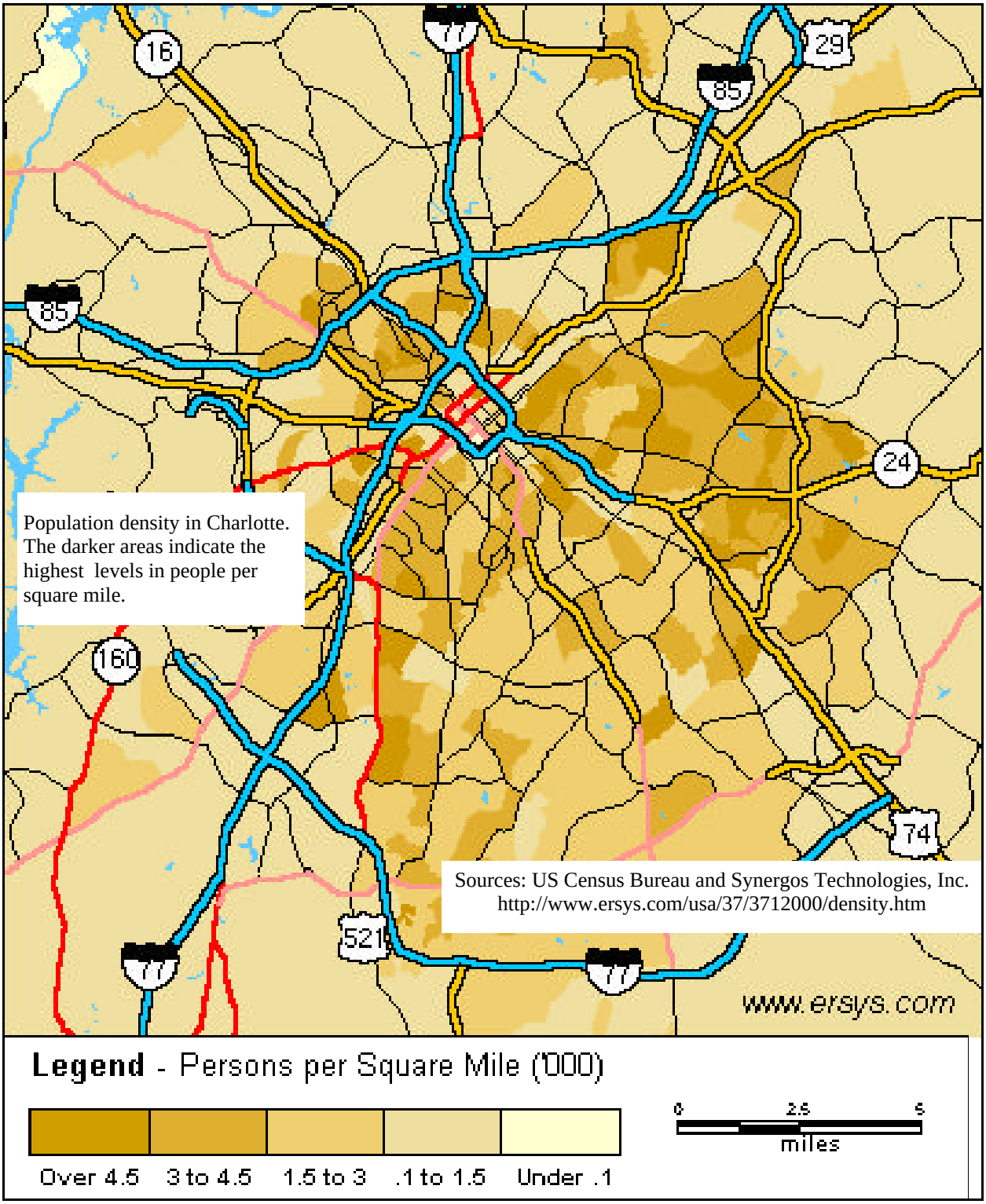
May 23, 2003 **Attachment C** **Re: Air Permit No. 02-153-716**



Population density in Charlotte. The darker areas indicate the highest levels in people per square mile.

Sources: US Census Bureau and Synergos Technologies, Inc.
http://www.ersys.com/usa/37/3712000/density.htm

Attachment D

******** SCREEN3 MODEL ********
****** VERSION DATED 95250 ******

ENTER TITLE FOR THIS RUN (UP TO 79 CHARACTERS):
Ferebee Rural

ENTER SOURCE TYPE: P FOR POINT
F FOR FLARE
A FOR AREA
V FOR VOLUME
p
ENTER EMISSION RATE (G/S):
.126
ENTER STACK HEIGHT (M):
10
ENTER STACK INSIDE DIAMETER (M):
1
ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:
OPTION 1 : EXIT VELOCITY (M/S):
DEFAULT - ENTER NUMBER ONLY
OPTION 2 : VOLUME FLOW RATE (M3/S):**
EXAMPLE "VM=20.00"
OPTION 3 : VOLUME FLOW RATE (ACFM):
EXAMPLE "VF=1000.00"
22
ENTER STACK GAS EXIT TEMPERATURE (K):
416
ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):
293
ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):
0
ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):
R
CONSIDER BUILDING DOWNWASH IN CALCS? ENTER Y OR N:
n
USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT? ENTER Y OR N:
n
USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE? ENTER Y OR N:
n
ENTER CHOICE OF METEOROLOGY;

1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
2 - INPUT SINGLE STABILITY CLASS
3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED
1
USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:
y
ENTER MIN AND MAX DISTANCES TO USE (M):
10
1000
****

***** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES *****

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	1	1.0	1.0	320.0	180.97	8.18	7.63	NO
100.	.1031	3	10.0	10.0	3200.0	27.10	12.71	7.84	NO
200.	2.039	3	10.0	10.0	3200.0	27.10	23.95	14.57	NO
300.	2.539	4	20.0	20.0	6400.0	17.75	22.74	12.34	NO
400.	2.272	4	15.0	15.0	4800.0	21.33	29.63	15.61	NO
500.	2.086	4	10.0	10.0	3200.0	27.10	36.47	18.94	NO
600.	1.975	4	10.0	10.0	3200.0	27.10	43.00	21.77	NO
700.	1.832	4	8.0	8.0	2560.0	31.37	49.57	24.80	NO
800.	1.701	4	8.0	8.0	2560.0	31.37	55.91	27.47	NO
900.	1.556	4	8.0	8.0	2560.0	31.37	62.18	30.09	NO
1000.	1.459	4	5.0	5.0	1600.0	44.19	68.82	33.55	NO

ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

298.	2.539	4	20.0	20.0	6400.0	17.75	22.67	12.30	NO

USE DISCRETE DISTANCES? ENTER Y OR N:
n

DO YOU WISH TO MAKE A FUMIGATION CALCULATION? ENTER Y OR N:
n

****
***** SUMMARY OF SCREEN MODEL RESULTS *****
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)

---------- ---------- ------- -------
SIMPLE TERRAIN 2.539 298. 0.

****
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS ****
****

DO YOU WANT TO PRINT A HARDCOPY OF THE RESULTS? ENTER Y OR N:

******** SCREEN3 MODEL ********
****** VERSION DATED 95250 ******

ENTER TITLE FOR THIS RUN (UP TO 79 CHARACTERS):
Ferebee Urban

ENTER SOURCE TYPE: P FOR POINT
F FOR FLARE
A FOR AREA
V FOR VOLUME
p
ENTER EMISSION RATE (G/S):
.126
ENTER STACK HEIGHT (M):
10
ENTER STACK INSIDE DIAMETER (M):
1
ENTER STACK GAS EXIT VELOCITY OR FLOW RATE:
OPTION 1 : EXIT VELOCITY (M/S):
DEFAULT - ENTER NUMBER ONLY
OPTION 2 : VOLUME FLOW RATE (M3/S):**
EXAMPLE "VM=20.00"
OPTION 3 : VOLUME FLOW RATE (ACFM):
EXAMPLE "VF=1000.00"
22
ENTER STACK GAS EXIT TEMPERATURE (K):
416
ENTER AMBIENT AIR TEMPERATURE (USE 293 FOR DEFAULT) (K):
293
ENTER RECEPTOR HEIGHT ABOVE GROUND (FOR FLAGPOLE RECEPTOR) (M):
0

ENTER URBAN/RURAL OPTION (U=URBAN, R=RURAL):
U
CONSIDER BUILDING DOWNWASH IN CALCS? ENTER Y OR N:
n
USE COMPLEX TERRAIN SCREEN FOR TERRAIN ABOVE STACK HEIGHT? ENTER Y OR N:
n
USE SIMPLE TERRAIN SCREEN WITH TERRAIN ABOVE STACK BASE? ENTER Y OR N:
n
ENTER CHOICE OF METEOROLOGY;
1 - FULL METEOROLOGY (ALL STABILITIES & WIND SPEEDS)
2 - INPUT SINGLE STABILITY CLASS
3 - INPUT SINGLE STABILITY CLASS AND WIND SPEED

1
USE AUTOMATED DISTANCE ARRAY? ENTER Y OR N:
y
ENTER MIN AND MAX DISTANCES TO USE (M):
10
1000

****

***** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES *****

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
10.	.0000	1	1.0	1.0	320.0	180.97	8.12	7.84	NO
100.	4.048	4	20.0	20.0	6400.0	17.75	15.74	13.85	NO
200.	3.054	4	8.0	8.0	2560.0	31.37	31.18	27.64	NO
300.	2.363	4	4.5	4.5	1440.0	47.99	46.64	41.67	NO
400.	1.979	6	1.5	1.5	10000.0	64.23	43.69	29.67	NO
500.	2.595	6	1.0	1.0	10000.0	72.08	53.25	35.06	NO
600.	3.027	6	1.0	1.0	10000.0	72.08	61.87	39.08	NO
700.	3.247	6	1.0	1.0	10000.0	72.08	70.33	42.95	NO
800.	3.314	6	1.0	1.0	10000.0	72.08	78.62	46.65	NO
900.	3.286	6	1.0	1.0	10000.0	72.08	86.73	50.21	NO
1000.	3.201	6	1.0	1.0	10000.0	72.08	94.64	53.62	NO

ITERATING TO FIND MAXIMUM CONCENTRATION . . .

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 10. M:

91.	4.120	4	20.0	20.0	6400.0	17.75	14.50	12.76	NO

USE DISCRETE DISTANCES? ENTER Y OR N:
n

****
***** SUMMARY OF SCREEN MODEL RESULTS *****
****

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	4.120	91.	0.

****
**** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS ****
****

DO YOU WANT TO PRINT A HARDCOPY OF THE RESULTS? ENTER Y OR N: