May 17, 2001

MEMORANDUM

TO: Mark Dietrich, Administrator
Pocatello Regional Office

FROM: Allan Johnson, Air Quality Engineer
State Office of Technical Services

SUBJECT: ***PERMIT TO CONSTRUCT TECHNICAL ANALYSIS***
P-000320, Pendleton Flour Mills L.L.C., Blackfoot
(Flour Mill Change of Ownership, PTC No. 011-00033)

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.200 (*Rules for the Control of Air Pollution in Idaho*) for issuing Permits to Construct (PTC).

PROJECT DESCRIPTION

Pendleton Flour Mills, L.L.C. has purchased the Fisher Mills, Inc. Blackfoot flour milling facility and is requesting that the PTC originally issued for the facility under Koch Agriculture be modified to reflect the current ownership. Pendleton Mills is requested that the terms and conditions pertaining to the operation and construction of the flour milling facility in PTC #011-00028 issued on November 20, 1997, remain unchanged.

SUMMARY OF EVENTS

On July 24, 2000, the Idaho Department of Environmental Quality (DEQ) received a request for a permit name change from Fisher Mills Inc. in Blackfoot, Idaho. On August 23, 2000, the application was determined to be incomplete and a letter was sent to Fisher Mills requesting additional information. On February 8, 2001, DEQ received a response to the August 23 letter. On March 9, 2001, the application was determined complete. On April 27, 2001, DEQ received a letter from Pendleton Flour Mills, L.L.C. informing us that they had purchased the Fisher Mills facility effective as of May 1, 2001. Pendleton Mills has requested that the PTC for the Blackfoot facility be issued to them.

Fisher Mills had purchased the facility in July 1999 from Koch Agriculture. Koch originally constructed and operated grain elevators, a grain conditioning facility, and the flour milling facility under PTC # 011-00028. General Mills purchased the grain elevators and grain conditioning facility from Koch and is now named as the permittee on PTC #011-00028, which was issued on February 23, 2001, with the flour mill removed. It has been established that the General Mills facility and the Pendleton Flour Mills facility are two separate stationary sources and as such need separate air quality permits.

DISCUSSION

1. Process Description

   In general, the wheat flour milling process consists of five main steps: (1) receiving, preliminary cleaning, and storing; (2) cleaning the grain; (3) grain tempering or conditioning; (4) milling the grain into flour and its byproducts; and (5) storing and shipping the finished product.

Wheat arrives at a mill and is preliminary cleaned and conveyed to storage bins. As grain is needed for milling, it is withdrawn and conveyed to the mill area where it enters an aspirator to remove dust and lighter impurities, and then passes over a magnetic separator to remove iron and steel particles. From the magnetic separator, the wheat enters a disc separator designed to catch individual grains of wheat and reject larger or smaller material, and then the wheat enters a stoner that removes stones, sand, flints, and balls of caked earth or mud. The wheat then moves into a scourer, which buffs each kernel and removes more dust and loose bran (hull or husk). Following the scouring step, the grain is sent to the tempering bins where water is added to raise the moisture of the wheat to make it easier to grind. When the grain reaches the proper moisture level, it is passed through an impact machine as a final cleaning step. The wheat flows into a grinding bin and then into the mill itself.

The grain kernels are broken open in a system of breaks by sets of corrugated rolls, each set taking feed from the preceding one. After each break, the grain is sifted. The sifting system is a combination of sieving operations and air aspirators (purifiers). The flour then passes through smooth reducing rolls, which further reduce the flour-sized particles and facilitate the removal of the remaining bran and germ particles. Sieves are used after the reducing rolls to divide the stock into over-sized particles, which are sent back to the reducing rolls, and flour, which is removed from the milling system.

Flour stock is transported from the milling system to bulk storage bins and subsequently packaged for shipment.

2. Equipment Listing

The following is a list of equipment that the applicant has indicated exists at the facility.

2.1 Flour Mill Heater

Emissions Unit:	H-1
Manufacturer:	American Heating Company
Model:	AHE-212
Fuel Type:	Natural Gas
Maximum Heat Input:	7 Million BTU/hr
Stack Height:	110 feet
Stack Diameter:	10 inches
Exit Volume:	654 acfm
Exit Temperature:	450°F

2.2 Megamill Flour Milling Facility

Emissions Units: Process Equipment:

EP-1:	Elevator Aspiration
EP-2:	Cleaning House Aspiration
EP-3:	Pneumatic Mill
EP-4:	Pneumatic Mill
EP-5:	Purifier and Aspiration
EP-6:	Patent to Rebolt Lift
EP-7:	Cake to Rebolt Lift
EP-8:	Aspiration and Bin Filling
EP-9:	Bulk Storage Aspiration
EP-10:	Bulk Storage to Lift

	EP-11: Bulk Storage Flour Packing
	EP-12: Bulk Storage Loading Bin LC1
	EP-13: Bulk Storage Loading Bin LC2
	EP-14: Bulk Storage Loading Bin LC3
	EP-15: Bulk Storage Loading Bin LT1
	EP-16: Bulk Storage Loading Bin LT2
	EP-17: Bulk Storage Loading Bin LT3
	EP-18: Feed Storage Millfeed
Maximum Capacity:	28,935 bushels/day
Normal Feed Rate	2,500 bushels/day
Control Device:	Buhler PRBV-9/4 fabric filters – 99.96 percent control efficiency on each point of emission
Stack Heights:	110 ft each
Stack Diameters:	24 inches each for worst-case modeling purposes
Exit Volume:	EP-1: 10,000 acfm
	EP-2: 10,680 acfm
	EP-3: Combined with EP-4 at 13,500 acfm
	EP-5: 20,500 acfm
	EP-6: Combined with EP-7 at 770 acfm
	EP-8: 6,250 acfm – Vents inside building
	EP-9: 4,235 acfm
	EP-10: 1,250 acfm – Vents inside building
	EP-11: 4,495 acfm – Vents inside building
	EP-12: 2,500 acfm – Vents inside building
	EP-13: 2,500 acfm – Vents inside building
	EP-14: 2,500 acfm – Vents inside building
	EP-15: 2,500 acfm – Vents inside building
	EP-16: 2,500 acfm – Vents inside building
	EP-17: 2,500 acfm – Vents inside building
	EP-18: 525 acfm – Vents inside building
Exit Temperature:	Ambient (68°F)

3. Emission Estimates

The pollutants of concern from this facility are primarily particulate matter (PM) and fine particulate matter with an aerodynamic diameter less than or equal to ten microns (PM_{10}). The emission estimates for the original PTC were estimated by Koch Agriculture at the time of the original permit application. The emission factors that were used were unavailable and the calculations could not be replicated by DEQ: therefore, the most recent EPA approved emission factors published in the *Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I* (AP-42) emission factors were utilized to estimate emissions from the flour milling facility. For a higher degree of conservatism in emission estimation, the control efficiency of all the baghouses except the mill pneumatic baghouse was assumed to be 90 percent rather than the manufacturer guaranteed efficiency of 99.96 percent.

Due to the nature of flour milling operations, baghouses are needed at every emission point in order to collect and retain product. Because of this fact, the baghouses at emission points where milled flour may be emitted are considered process equipment rather than control devices. This determination was made as a case-by case determination after consulting a letter from the U.S. EPA dated November 27, 1995. The following questions were answered in determining whether or not the baghouses are control devices or process equipment: 1) Is the primary purpose of the equipment to control air pollution; 2) where the equipment is recovering product, how do the cost

savings from the product recovery compare with the cost of the equipment; and 3) would the equipment be installed if no air quality regulations were in place? The answers to each of the questions support the determination that the baghouses at milled flour emission points are process equipment. Since the baghouses controlling the milling emissions are process equipment, the uncontrolled emissions from EP-3 and EP-4 were calculated taking the effect of baghouse control efficiencies into account. Because of this, the uncontrolled emissions from the facility are less than 100 tons per year.

The estimated emissions from all point sources are summarized in Appendix A of this technical memorandum.

4. Modeling

Emissions from this facility were modeled at the time the original permit was issued in 1997 using SCREEN3. The modeling protocol that was originally used did not take into account building downwash effects on dispersion. DEQ modeling personnel determined that a SCREEN3 model of each emission point with downwash effects included would represent a high enough degree of conservatism when the maximum concentrations from each emission point were added together.

A SCREEN3 model was run for the heater and the six process equipment emission points that vent outside the building. The emission points that vent together were modeled using the average volumetric flowrate of the two points. Emission points that vent inside the building were assumed to have the worst dispersion, and the concentration from these points was calculated using the highest modeled unit concentration of the seven modeled emission points. All points of emission were modeled based on a unit emission rate. The result of the model was a unit concentration for each emission point based on an emission rate of one pound per hour. The unit concentration at each point was then multiplied by the corresponding estimated emission rate to obtain a representative one-hour average concentration from each emission point. The one-hour average concentrations were multiplied by persistence factors of 0.4 and 0.08 to obtain 24-hour average and annual average concentrations respectively. The 24-hour average and the annual average from each emission point were then added together to obtain representative facility-wide concentrations to compare to the National Ambient Air Quality Standards (NAAQS) for PM_{10} emissions. The results of the model showed that the facility is capable of meeting the PM_{10} NAAQS when operating at maximum capacity as long as the control devices are operated in a way that they obtain at least 90 percent efficiency.

5. Facility Classification

The Pendleton Mills facility is not a designated facility as defined in IDAPA 58.01.01.006.27 and is not a major facility as defined in IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10. The Aerometric Information Retrieval System (AIRS) facility subsystem classification for this facility is "B" because potential uncontrolled emissions not including fugitives are less than 100 tons per any consecutive 12-month period. The facility's Standard Industrial Classification (SIC) Code is 2041, which refers to an establishment that is primarily engaged in milling flour or meal from grain, except rice.

6. Area Classification

The Pendleton Mills flour milling facility is located near Blackfoot, Idaho, which is in Zone 12 and Air Quality Control Region (AQCR) 61. The area is classified as attainment or unclassifiable for all criteria pollutants in accordance with 40 CFR 81.313.

7. Regulatory Review

The following regulations have been reviewed as a part of this technical analysis.

IDAPA 58.01.01.201 Permit to Construct Required

This facility is not being modified; however, the old permit is non-transferable, therefore, a new PTC must be issued to Pendleton Mills as the new owner and operator of the facility.

IDAPA 58.01.01.203 Permit Requirements for New and Modified Stationary Sources

Permit requirements for this source have been placed in the permit to comply with the NAAQS, the toxic air pollutant (TAP) increments, and the PM grain loading standard for fuel burning equipment, and to reasonably control fugitive emissions.

IDAPA 58.01.01.210 Demonstration of Preconstruction Compliance with Toxic Standards

No increase in toxic air pollutants is expected associated with this permit because there will be no modification or commencement of construction of an emissions unit that is capable of emitting toxic air pollutants; therefore, the requirements of IDAPA 58.01.01.210 are satisfied.

IDAPA 58.01.01.577 Ambient Air Quality Standards for Specific Air Pollutants - NAAQS

Emissions of NAAQS pollutants were modeled and none are expected at levels close to the respective standards for each air pollutant.

IDAPA 58.01.01.625 Visible Emissions

Visible emissions are addressed in the permit with the standard conditions for reasonable control.

IDAPA 58.01.01.675 Fuel Burning Equipment – Particulate Matter

Estimates show that mill heater will not exceed the PM standard for fuel burning equipment while being fired on natural gas.

40 CFR 52 Prevention of Significant Deterioration (PSD)

The facility is not a PSD major facility, and does not belong to any designated source category, and the modification is not major in and of itself; therefore, PSD review is not applicable.

40 CFR 60 New Source Performance Standards (NSPS)

There is no NSPS applicable to this facility.

40 CFR 61 & 63 National Emission Standards for Hazardous Air Pollutants (NESHAP) and Maximum Achievable Control Technology (MACT)

There are no NESHAP or MACT standards applicable to this facility.

8. Permit Requirements

8.1 Emission Limits

The emission limits that are included in this permit directly correspond to the maximum possible throughput rates that the megamill can achieve according to manufacturer specifications plus 20 percent. There are permit limits on PM_{10} emissions to prevent the facility from violating the PM_{10} NAAQS. Through conservative emission estimation and conservative modeling, analysis shows that the facility is capable of complying with all applicable standards. Since the emission estimates for each point source at this facility are so small, no source testing is required as a permit requirement. The facility only needs to demonstrate compliance with the throughput limits to show compliance with the emission limits.

8.2 Operating Requirements

The operating requirements for this permit consist of throughput limits, a requirement to properly operate the megamill baghouses, and the general requirements for reasonable control of fugitive emissions. These requirements also have monitoring and recordkeeping requirements associated with them.

9. Permit Coordination

Copies of the draft permit and technical analysis were made available for review to the Pocatello Regional Office prior to issuance. This facility is not a major facility as defined by IDAPA 58.01.01.006.55 and IDAPA 58.01.01.008.10; therefore, a Tier I permit will not be necessary.

10. AIRS Information

AIRS/AFS FACILITY-WIDE CLASSIFICATION DATA ENTRY FORM

Air Program Description	**SIP**	**PSD**	**NESHAP**	**NSPS**	**MACT**	**TITLE V**	**AREA CLASSIFICATION** **A – Attainment** **U – Unclassifiable** **N - Nonattainment**
SO_2	B						
NO_x	B						
CO	B						
PM_{10}	B						
PT (Particulate)	B						
VOC	B						
THAP (Total HAPs)	B						
Other (specify below:)							
VE/FE/FD *	ND	ND	ND	ND	ND	ND	

* **VE/FE/FD (VISIBLE EMISSIONS, FUGITIVE EMISSIONS, AND FUGITIVE DUST) ARE ENTERED FOR COMPLIANCE PURPOSES ONLY AND DO NOT REQUIRE EVALUATION BY THE PERMIT ENGINEER.**

AIRS/AFS CLASSIFICATION CODES:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds **if and only if** the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

FEES

The Pendleton Mills facility is not a major facility as defined in IDAPA 58.01.01.008.10. Therefore, registration fees are not applicable in accordance with IDAPA 58.01.01.527.

RECOMMENDATION

Based on review of application materials and all applicable state and federal rules and regulations, DEQ staff recommend that Pendleton Flour Mills L.L.C. be issued amended PTC No. 011-00033 for the change in ownership of the Blackfoot flour milling facility that was formerly owned by Fisher Mills and Koch Agriculture. No public comment period is recommended, no entity has requested a comment period, and the project does not involve PSD requirements.

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cc: DEQ State Office
Pocatello Regional Office

Appendix A

Emission Estimate Calculations

P-000320

Pendleton Flour Mills, L.L.C.; Blackfoot, ID

Pendleton Flour Mills
Megamill Emission Estimates

Maximum Capacity (bushels/day) =	28,935
Actual Feed Rate (bushels/day)=	2,500
Grain Density (lb/bushel) =	60
Maximum Capacity (tons/day) =	868
Actual Feed Rate (tons/day)=	75
Hourly Feed Rate (max tons/hr) =	36

Emissions Unit	SCC Code	Emission Point	Feed Rate	PM-10 EF	PM-10 Uncontrolled PTE		Control Efficiency	PM-10 Controlled PTE	
			(ton/hr)	(lb/ton)	(lb/hr)	(ton/yr)	(%)	(lb/hr)	(ton/yr)
Wheat Elevator Aspiration	30200733	EP-1	36	0.006	0.22	0.95	90	0.026	0.1
Cleaning House Aspiration	30200733	EP-2	36	0.006	0.22	0.95	90	0.026	0.1
Flour Mill Pnuematic	30200734	EP-3	36	35	0.51	2	99.96	0.608	2.7
Flour Mill Pnuematic	30200734	EP-4	36	35	0.51	2	99.96	0.608	2.7
Flour Mill Purifier & Aspiration	30200733	EP-5	36	0.006	0.22	0.95	90	0.026	0.1
Flour Mill Patent to Rebolt Lift	30200732	EP-6	36	0.034	1.23	5.39	90	0.146	0.6
Flour Mill Cake to Rebolt Lift	30200732	EP-7	36	0.034	1.23	5.39	90	0.146	0.6
Flour Mill Aspiration & Bin Filling	30200733	EP-8	36	0.006	0.22	0.95	90	0.026	0.1
Bulk Storage Loss...Aspiration	30200733	EP-9	36	0.006	0.22	0.95	90	0.026	0.1
Bulk Storage Mixing to Lift	30200732	EP-10	36	0.034	1.23	5.39	90	0.146	0.6
Bulk Storage Flour Packaging	30200732	EP-11	36	0.034	1.23	5.39	90	0.146	0.6
Bulk Storage Loading Bin LC1	30200732	EP-12	6	0.034	0.20	0.90	90	0.024	0.1
Bulk Storage Loading Bin LC2	30200732	EP-13	6	0.034	0.20	0.90	90	0.024	0.1
Bulk Storage Loading Bin LC3	30200732	EP-14	6	0.034	0.20	0.90	90	0.024	0.1
Bulk Storage Loading Bin LT1	30200732	EP-15	6	0.034	0.20	0.90	90	0.024	0.1
Bulk Storage Loading Bin LT2	30200732	EP-16	6	0.034	0.20	0.90	90	0.024	0.1
Bulk Storage Loading Bin LT3	30200732	EP-17	6	0.034	0.20	0.90	90	0.024	0.1
Feed Storage Millfeed to Loadout	30200732	EP-18	36	0.034	1.23	5.39	90	0.146	0.6
Total								2.222	9.7

Allan Johnson, EIT
Air Quality Engineer

Pendletion Flour Mills
Mill Heater Emission Estimates

Natural Gas	
Heater Heat Input (MM Btu/hr) =	7.00
Fuel Heat Value (Btu/cfm) =	1,020
Cubic Feet of Fuel Burned (cf/hr) =	6,863
Fuel Heat Value (Btu/lb) =	22,900
Pounds of Fuel Burned per Hour (lb/hr) =	306
Max. Cubic Feet of Fuel Burned (MMcf/yr) =	60.12
Max Hours of Operation (hr/yr) =	8,760

Potential to Emit

Regulated Pollutants	Natural Gas EF (lb/MMcf)	Natural Gas Emissions (lb/hr)	Potential Emissions (T/yr)	Significant Level (T/yr)	Below Regulatory Concern?
Criteria Pollutants					
PM-10	7.6	0.05	0.2	15	YES
SO2	0.6	0.004	0.0	40	YES
NOx	100	0.69	3.0	40	YES
CO	84	0.58	2.52	100	YES
VOC	5.5	0.038	0.165	40	YES
Lead	5.00E-04	3.43E-06	1.50E-05	0.6	YES
Non-Criteria Pollutants with a Significant Threshold					
PM	7.6	0.05	0.2	25	YES
Beryllium	1.20E-05	8.24E-08	3.61E-07	0.0004	YES
Mercury	2.60E-04	1.78E-06	7.82E-06	0.1	YES
Other Pollutants					
TOC	11	0.08	0.33	N/A	N/A
Methane	2.3	0.016	0.07	N/A	N/A
N2O	2.2	0.015	0.07	N/A	N/A

Grain Loading PM Standard

Emission Rate of Natural Gas (lb/hr)	PM Emiss. (gr/min)	DSCF @ 3% O2 (dscfm)	Grain Load (gr/dscf)	Meets Standard?[a]
0.05	6.1	1,163	0.005	YES

a - The standard is 0.015 gr/dscf for NG combustion (corrected to 3% Oxygen).

Allan Johnson, EIT
Air Quality Engineer

Appendix B

Modeling Results

P-000320
Pendleton Flour Mills, L.L.C.; Blackfoot, ID

Pendleton Flour Mills
PM_{10} Modeling Summary

Emissions Unit	SCC Code	Emission Point	PM-10 ER (lb/hr)	1-hr unit Conc. ($\mu g/m^3$)		24-hr Conc. ($\mu g/m^3$)	Annual Conc. ($\mu g/m^3$)
Wheat Elevator Aspiration	30200733	EP-1	0.0258	78.92		0.8	0.2
Cleaning House Aspiration	30200733	EP-2	0.0258	71.98		0.7	0.1
Flour Mill Pnuematic	30200734	EP-3	0.6076	49.38		24.0	4.8
Flour Mill Pnuematic	30200734	EP-4	0.6076				
Flour Mill Purifier & Aspiration	30200733	EP-5	0.0258	40.18		0.4	0.1
Flour Mill Patent to Rebolt Lift	30200732	EP-6	0.1462	79.31		9.3	1.9
Flour Mill Cake to Rebolt Lift	30200732	EP-7	0.1462				
Flour Mill Aspiration & Bin Filling	30200733	EP-8	0.0258			0.8	0.2
Bulk Storage Loss...Aspiration	30200733	EP-9	0.0258	79.31		0.8	0.2
Bulk Storage Mixing to Lift	30200732	EP-10	0.1462			4.6	0.9
Bulk Storage Flour Packaging	30200732	EP-11	0.1462			4.6	0.9
Bulk Storage Loading Bin LC1	30200732	EP-12	0.0244			0.8	0.2
Bulk Storage Loading Bin LC2	30200732	EP-13	0.0244			0.8	0.2
Bulk Storage Loading Bin LC3	30200732	EP-14	0.0244			0.8	0.2
Bulk Storage Loading Bin LT1	30200732	EP-15	0.0244			0.8	0.2
Bulk Storage Loading Bin LT2	30200732	EP-16	0.0244			0.8	0.2
Bulk Storage Loading Bin LT3	30200732	EP-17	0.0244			0.8	0.2
Feed Storage Millfeed to Loadout	30200732	EP-18	0.1462			4.6	0.9
Process Heater	30290003	H-1	0.0522	79.31		1.7	0.3
Total PM-10 Concentration Plus Statewide Background of 86 (24-hr) and 36.7 (annual) =						143	44.1

Allan Johnson, EIT
Air Quality Engineer

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  ***  SCREEN3 MODEL RUN  ***                                    04/25/01
  *** VERSION DATED 96043 ***                                    07:51:17

Pendleton Mills - EP1

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE               =        POINT
   EMISSION RATE (G/S)       =     0.126000
   STACK HEIGHT (M)          =     36.1000
   STK INSIDE DIAM (M)       =      0.6096
   STK EXIT VELOCITY (M/S)=        16.1701
   STK GAS EXIT TEMP (K)     =    293.1500
   AMBIENT AIR TEMP (K)      =    293.1500
   RECEPTOR HEIGHT (M)       =      0.0000
   URBAN/RURAL OPTION        =       RURAL
   BUILDING HEIGHT (M)       =     36.5760
   MIN HORIZ BLDG DIM (M)    =     28.9560
   MAX HORIZ BLDG DIM (M)    =     36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =   24.292 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

  DIST      CONC                  U10M   USTK  MIX HT    PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB      (M/S)  (M/S)    (M)     HT (M)   Y (M)   Z (M)  DWASH
-------  ---------  ------  ---------------  -------  -------  -------  -------  -----
     1.    0.000       0      0.0    0.0      0.0      0.00     0.00     0.00     NA
   100.    0.000       0      0.0    0.0      0.0      0.00     0.00     0.00     NA
   200.   30.12        6      1.0    2.1  10000.0     36.52     7.73    24.66     SS
   300.   25.08        6      1.0    2.1  10000.0     36.52    11.23    30.12     SS
   400.   20.42        6      1.0    2.1  10000.0     36.52    14.64    34.58     SS
   500.   16.67        6      1.0    2.1  10000.0     36.52    17.97    34.89     SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   110.   34.40        6      1.0    2.1  10000.0     36.52     4.48    20.14     SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BRODE, 1988)
**********************************************

 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    62.79         CONC (UG/M**3)      =    78.92
  CRIT WS @10M (M/S)  =     1.18         CRIT WS @10M (M/S)  =     1.54
  CRIT WS @ HS (M/S)  =     1.54         CRIT WS @ HS (M/S)  =     2.01
  DILUTION WS (M/S)   =     1.00         DILUTION WS (M/S)   =     1.00
  CAVITY HT (M)       =    57.49         CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00         CAVITY LENGTH (M)   =    43.85
  ALONGWIND DIM (M)   =    28.96         ALONGWIND DIM (M)   =    36.58

**********************************************
      END OF CAVITY CALCULATIONS
**********************************************

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

 CALCULATION         MAX CONC     DIST TO    TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
--------------     -----------   --------   -------
SIMPLE TERRAIN       34.40          110.        0.

BLDG. CAVITY-1       62.79           62.        --  (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       78.92           44.        --  (DIST - CAVITY LENGTH)
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*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

04/25/01
07:52:27

Pendleton Mills - EP2

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.126000
STACK HEIGHT (M)	=	38.1000
STK INSIDE DIAM (M)	=	0.6096
STK EXIT VELOCITY (M/S)	=	17.2697
STK GAS EXIT TEMP (K)	=	293.1500
AMBIENT AIR TEMP (K)	=	293.1500
RECEPTOR HEIGHT (M)	=	0.0000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	36.5760
MIN HORIZ BLDG DIM (M)	=	28.9560
MAX HORIZ BLDG DIM (M)	=	36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 27.708 M**4/S**2.

*** FULL METEOROLOGY ***

****
*** SCREEN AUTOMATED DISTANCES ***
****

*** 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
1.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
100.	0.000	0	0.0	0.0	0.0	0.00	0.00	0.00	NA
200.	29.19	6	1.0	2.1	10000.0	38.63	7.73	24.44	SS
300.	24.68	6	1.0	2.1	10000.0	38.63	11.23	29.62	SS
400.	20.26	6	1.0	2.1	10000.0	38.63	14.64	34.01	SS
500.	16.55	6	1.0	2.1	10000.0	38.63	17.97	34.32	SS

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

110.	32.51	6	1.0	2.1	10000.0	38.63	4.46	19.64	SS

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

****
*** REGULATORY (Default) ***
PERFORMING CAVITY CALCULATIONS
WITH ORIGINAL SCREEN CAVITY MODEL
(BRODE, 1988)
****

*** CAVITY CALCULATION - 1 ***

CONC (UG/M**3)	=	62.79
CRIT WS @10M (M/S)	=	1.25
CRIT WS @ HS (M/S)	=	1.63
DILUTION WS (M/S)	=	1.00
CAVITY HT (M)	=	57.49
CAVITY LENGTH (M)	=	62.00
ALONGWIND DIM (M)	=	28.96

*** CAVITY CALCULATION - 2 ***

CONC (UG/M**3)	=	71.98
CRIT WS @10M (M/S)	=	1.69
CRIT WS @ HS (M/S)	=	2.20
DILUTION WS (M/S)	=	1.10
CAVITY HT (M)	=	52.52
CAVITY LENGTH (M)	=	43.85
ALONGWIND DIM (M)	=	36.58

****
END OF CAVITY CALCULATIONS
****

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

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)	
SIMPLE TERRAIN	32.51	110.	0.	
BLDG. CAVITY-1	62.79	62.	--	(DIST = CAVITY LENGTH)
BLDG. CAVITY-2	71.98	44.	--	(DIST = CAVITY LENGTH)

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  ***  SCREEN3 MODEL RUN  ***                                   04/25/01
  *** VERSION DATED 96043 ***                                   09:00:55

Pendleton Mills - EP3-4

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE          =        POINT
   EMISSION RATE (G/S)  =     0.126000
   STACK HEIGHT (M)     =     38.1000
   STK INSIDE DIAM (M)  =      0.6096
   STK EXIT VELOCITY (M/S)=   26.6807
   STK GAS EXIT TEMP (K) =   293.1500
   AMBIENT AIR TEMP (K)  =   293.1500
   RECEPTOR HEIGHT (M)   =      0.0000
   URBAN/RURAL OPTION    =       RURAL
   BUILDING HEIGHT (M)   =     36.5760
   MIN HORIZ BLDG DIM (M) =    28.9560
   MAX HORIZ BLDG DIM (M) =    36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =   66.134 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

   DIST     CONC                 U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
    (M)  (UG/M**3)   STAB      (M/S)  (M/S)    (M)    HT (M)  Y (M)   Z (M)  DWASH
-------  ---------   ----      -----  -----  ------   ------  -------  ------  -----
     1.    0.000       0        0.0    0.0     0.0     0.00    0.00    0.00    NA
   100.    0.000       0        0.0    0.0     0.0     0.00    0.00    0.00    NA
   200.   19.15        6        1.5    3.1 10000.0    38.68    7.73   24.25    SS
   300.   18.62        6        1.0    2.1 10000.0    40.63   11.23   25.29    SS
   400.   17.02        6        1.0    2.1 10000.0    40.63   14.64   29.08    SS
   500.   14.03        6        1.0    2.1 10000.0    40.63   17.97   29.46    SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   110.   21.06        6        1.5    3.1 10000.0    38.68    6.48   19.68    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********.**********.**********.**********
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
          (BROOE, 1988)
**********.**********.**********.**********


 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    49.38         CONC (UG/M**3)      =    46.77
  CRIT WS @10M (M/S)  =     1.45         CRIT WS @10M (M/S)  =     2.60
  CRIT WS @ HS (M/S)  =     2.54         CRIT WS @ HS (M/S)  =     3.39
  DILUTION WS (M/S)   =     1.27         DILUTION WS (M/S)   =     1.70
  CAVITY HT (M)       =    57.49         CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00         CAVITY LENGTH (M)   =    43.65
  ALONGWIND DIM (M)   =    28.96         ALONGWIND DIM (M)   =    36.58

**********.**********.**********.**********
     END OF CAVITY CALCULATIONS
**********.**********.**********.**********

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

 CALCULATION         MAX CONC     DIST TO    TERRAIN
  PROCEDURE        (UG/M**3)     MAX (M)     HT (M)
--------------     ---------     -------     -------
SIMPLE TERRAIN       21.06          110.         0.

BLDG. CAVITY-1       49.38           62.        --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2       46.77           44.        --   (DIST = CAVITY LENGTH)
```

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  *** SCREEN3 MODEL RUN ***                                    04/25/01
  *** VERSION DATED 96043 ***                                  08:00:47

Pendleton Mills - EP5

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =     0.126000
   STACK HEIGHT (M)         =     36.1000
   STK INSIDE DIAM (M)      =      0.6096
   STK EXIT VELOCITY (M/S)= 33.1488
   STK GAS EXIT TEMP (K)    =    293.1500
   AMBIENT AIR TEMP (K)     =    293.1500
   RECEPTOR HEIGHT (M)      =      0.0000
   URBAN/RURAL OPTION       =       RURAL
   BUILDING HEIGHT (M)      =     36.5760
   MIN HORIZ BLDG DIM (M) = 26.9560
   MAX HORIZ BLDG DIM (M) = 36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =  102.086 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

  DIST      CONC                 U10M   USTK   MIX HT    PLUME    SIGMA    SIGMA
   (M)   (UG/M**3)   STAB     (M/S)  (M/S)     (M)     HT (M)   Y (M)    Z (M)   DWASH
-------  ----------  ----  ------  -----  -------  -------  -------  -------  -----
     1.    0.000        0     0.0    0.0      0.0     0.00     0.00     0.00    NA
   100.    0.000        0     0.0    0.0      0.0     0.00     0.00     0.00    NA
   200.   16.11         6     1.5    3.1  10000.0    39.36     7.73    22.61    SS
   300.   14.83         6     1.5    3.1  10000.0    39.36    11.23    27.40    SS
   400.   12.72         6     1.5    3.1  10000.0    39.36    14.64    31.48    SS
   500.   10.49         6     1.5    3.1  10000.0    39.36    17.97    35.08    SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   110.   16.86         6     2.0    4.2  10000.0    38.56     4.48    20.05    SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (@RODE, 1986)
**********************************************

 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    40.18         CONC (UG/M**3)      =    38.06
  CRIT WS @10M (M/S)  =     2.39         CRIT WS @10M (M/S)  =     3.19
  CRIT WS @ HS (M/S)  =     3.13         CRIT WS @ HS (M/S)  =     4.17
  DILUTION WS (M/S)   =     1.56         DILUTION WS (M/S)   =     2.06
  CAVITY HT (M)       =    57.49         CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00         CAVITY LENGTH (M)   =    43.65
  ALONGWIND DIM (M)   =    28.96         ALONGWIND DIM (M)   =    36.58

**********************************************
      END OF CAVITY CALCULATIONS
**********************************************


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

 CALCULATION          MAX CONC     DIST TO    TERRAIN
  PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
--------------      ----------    -------    -------
SIMPLE TERRAIN        16.86          110.        0.

BLDG. CAVITY-1        40.18           62.        --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2        38.06           44.        --   (DIST = CAVITY LENGTH)
```

```
 ***  SCREEN3 MODEL RUN  ***                                    04/25/01
 *** VERSION DATED 96043 ***                                    08:01:46

Pendleton Mills - EP6-7

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE          =        POINT
   EMISSION RATE (G/S)  =    0.126000
   STACK HEIGHT (M)     =    38.1000
   STK INSIDE DIAM (M)  =     0.6096
   STK EXIT VELOCITY (M/S)=   1.2451
   STK GAS EXIT TEMP (K)=   299.1500
   AMBIENT AIR TEMP (K) =   293.1500
   RECEPTOR HEIGHT (M)  =     0.0000
   URBAN/RURAL OPTION   =       RURAL
   BUILDING HEIGHT (M)  =    36.5760
   MIN HORIZ BLDG DIM (M) =  28.9560
   MAX HORIZ BLDG DIM (M) =  36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =    0.144 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

  DIST      CONC                   U10M    USTK   MIX HT    PLUME    SIGMA    SIGMA
   (M)   (UG/M**3)   STAB         (M/S)   (M/S)    (M)     HT (M)   Y (M)    Z (M)   DWASH
-------  ----------  ----         -----   -----   ------    ------   ------   ------   -----
     1.    0.000       0          0.0     0.0      0.0      0.00     0.00     0.00     NA
   100.    0.000       0          0.0     0.0      0.0      0.00     0.00     0.00     NA
   200.   22.16        3          1.0     1.1    320.0     38.10    23.62    30.13     SS
   300.   17.94        4          1.0     1.2    320.0     38.10    29.08    36.38     SS
   400.   13.99        4          1.0     1.2    320.0     38.10    36.93    42.47     SS
   500.   11.77        4          1.0     1.2    320.0     38.10    43.49    44.22     SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   330.   25.98        3          1.0     1.1    320.0     38.10    16.41    24.45     SS

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BROBE, 1988)
**********************************


 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    62.79         CONC (UG/M**3)      =    79.31
  CRIT WS @10M (M/S)  =     1.00         CRIT WS @10M (M/S)  =     1.00
  CRIT WS @ HS (M/S)  =     1.31         CRIT WS @ HS (M/S)  =     1.31
  DILUTION WS (M/S)   =     1.00         DILUTION WS (M/S)   =     1.00
  CAVITY HT (M)       =    57.49         CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00         CAVITY LENGTH (M)   =    43.85
  ALONGWIND DIM (M)   =    28.96         ALONGWIND DIM (M)   =    36.58

**********************************
     END OF CAVITY CALCULATIONS
**********************************

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

 CALCULATION          MAX CONC     DIST TO    TERRAIN
   PROCEDURE         (UG/M**3)     MAX (M)    HT (M)
--------------      -----------    -------    -------
SIMPLE TERRAIN        25.98          110.        0.

BLDG. CAVITY-1        62.79           62.       --    (DIST < CAVITY LENGTH)

BLDG. CAVITY-2        79.31           44.       --    (DIST = CAVITY LENGTH)
```

```
 *** SCREEN3 MODEL RUN ***                                    04/25/01
 *** VERSION DATED 96043 ***                                  08:02:27

Pendleton Mills - EP9

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =          POINT
   EMISSION RATE (G/S)      =      0.126000
   STACK HEIGHT (M)         =      36.1000
   STK INSIDE DIAM (M)      =       0.6096
   STK EXIT VELOCITY (M/S)  =       6.8481
   STK GAS EXIT TEMP (K)    =    293.1500
   AMBIENT AIR TEMP (K)     =    293.1500
   RECEPTOR HEIGHT (M)      =       0.0000
   URBAN/RURAL OPTION       =        RURAL
   BUILDING HEIGHT (M)      =      36.5760
   MIN HORIZ BLDG DIM (M)   =      28.9560
   MAX HORIZ BLDG DIM (M)   =      36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.000 M**4/S**3;  MOM. FLUX =    4.357 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

  DIST     CONC                   U10M   USTK   MIX HT    PLUME    SIGMA    SIGMA
   (M)   (UG/M**3)   STAB        (M/S)  (M/S)    (M)     HT (M)   Y (M)    Z (M)   DWASH
-------  ----------  ----       -------------------------------------------------  -----
     1.     0.000      0          0.0    0.0      0.0      0.00     0.00     0.00    NA
   100.     0.000      0          0.0    0.0      0.0      0.00     0.00     0.00    NA
   200.    35.56       6          1.0    2.1  10000.0     38.12     7.73    28.40    SS
   300.    26.91       6          1.0    2.1  10000.0     38.12    11.23    34.41    SS
   400.    20.86       6          1.0    2.1  10000.0     38.12    14.64    39.47    SS
   500.    16.99       6          1.0    2.1  10000.0     38.12    17.97    39.74    SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   110.    47.53       6          1.0    2.1  10000.0     38.12     4.48    23.05    SS

 DWASH=    MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO  MEANS NO BUILDING DOWNWASH USED
 DWASH=HS  MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS  MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA  MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**********************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BRODE, 1988)
**********************************************


 *** CAVITY CALCULATION - 1 ***        *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    62.79          CONC (UG/M**3)      =    79.31
  CRIT WS @10M (M/S)  =     1.00          CRIT WS @10M (M/S)  =     1.00
  CRIT WS @ HS (M/S)  =     1.31          CRIT WS @ HS (M/S)  =     1.31
  DILUTION WS (M/S)   =     1.00          DILUTION WS (M/S)   =     1.00
  CAVITY HT (M)       =    57.49          CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00          CAVITY LENGTH (M)   =    43.85
  ALONGWIND DIM (M)   =    28.96          ALONGWIND DIM (M)   =    36.58

**********************************************
      END OF CAVITY CALCULATIONS
**********************************************


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

 CALCULATION          MAX CONC     DIST TO    TERRAIN
  PROCEDURE          (UG/M**3)     MAX (M)     HT (M)
--------------       ----------    -------    -------
SIMPLE TERRAIN         47.53         110.        0.

BLDG. CAVITY-1         62.79          62.        --   (DIST = CAVITY LENGTH)

BLDG. CAVITY-2         79.31          44.        --   (DIST = CAVITY LENGTH)
```

```
 *** SCREEN3 MODEL RUN ***                                    04/25/01
 *** VERSION DATED 96043 ***                                  08:03:33

Pendleton Mills - H1

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE               =        POINT
   EMISSION RATE (G/S)       =     0.126000
   STACK HEIGHT (M)          =     30.1000
   STK INSIDE DIAM (M)       =      0.2540
   STK EXIT VELOCITY (M/S)   =      6.0919
   STK GAS EXIT TEMP (K)     =    505.3722
   AMBIENT AIR TEMP (K)      =    293.1500
   RECEPTOR HEIGHT (M)       =      0.0000
   URBAN/RURAL OPTION        =       RURAL
   BUILDING HEIGHT (M)       =     36.5760
   MIN HORIZ BLDG DIM (M)    =     28.9560
   MAX HORIZ BLDG DIM (M)    =     36.5760

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.


BUOY. FLUX =    0.405 M**4/S**3;  MOM. FLUX =    0.347 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

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

  DIST      CONC                  U10M    USTK   MIX HT    PLUME    SIGMA    SIGMA
   (M)   (UG/M**3)   STAB        (M/S)   (M/S)    (M)      HT (M)   Y (M)    Z (M)   DWASH
-------  ---------   ----        -----   -----   ------    ------   ------   ------   -----
     1.     0.000      D          0.0     0.0      0.0       0.00     0.00     0.00     NA
   100.     0.000      D          0.0     0.0      0.0       0.00     0.00     0.00     NA
   200.    21.79       B          1.0     1.1    320.0      38.19    23.62    29.59     SS
   300.    17.86       C          1.0     1.2    320.0      38.17    29.08    35.89     SS
   400.    14.01       C          1.0     1.2    320.0      38.17    36.93    41.69     SS
   500.    11.80       C          1.0     1.2    320.0      38.17    43.49    43.46     SS

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
   110.    25.05       B          1.0     1.1    320.0      38.19    16.41    23.96     SS

 DWASH=    MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO  MEANS NO BUILDING DOWNWASH USED
 DWASH=HS  MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS  MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA  MEANS DOWNWASH NOT APPLICABLE, X<3*LB

**************************************************
     *** REGULATORY (Default) ***
    PERFORMING CAVITY CALCULATIONS
  WITH ORIGINAL SCREEN CAVITY MODEL
         (BROOE, 1980)
**************************************************


 *** CAVITY CALCULATION - 1 ***       *** CAVITY CALCULATION - 2 ***
  CONC (UG/M**3)      =    62.79        CONC (UG/M**3)      =    79.31
  CRIT WS @10M (M/S)  =     1.00        CRIT WS @10M (M/S)  =     1.00
  CRIT WS @ HS (M/S)  =     1.31        CRIT WS @ HS (M/S)  =     1.31
  DILUTION WS (M/S)   =     1.00        DILUTION WS (M/S)   =     1.00
  CAVITY HT (M)       =    57.49        CAVITY HT (M)       =    52.52
  CAVITY LENGTH (M)   =    62.00        CAVITY LENGTH (M)   =    43.85
  ALONGWIND DIM (M)   =    28.96        ALONGWIND DIM (M)   =    36.58

**********************************
     END OF CAVITY CALCULATIONS
**********************************

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

 CALCULATION          MAX CONC     DIST TO    TERRAIN
   PROCEDURE         (UG/M**3)     MAX (M)     HT (M)
---------------     -----------    -------    -------
SIMPLE TERRAIN        25.05          110.        0.

BLDG. CAVITY-1        62.79           62.       --    (DIST = CAVITY LENGTH)

BLDG. CAVITY-2        79.31           44.       --    (DIST = CAVITY LENGTH)
```