PERMIT-TO-INSTALL APPLICATION
OHIO RIVER CLEAN FUELS FACILITY
VILLAGE OF WELLSVILLE, COLUMBIANA AND JEFFERSON COUNTIES, OHIO

SUBMITTED TO:

OHIO ENVIRONMENTAL PROTECTION AGENCY

SUBMITTED BY:

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APPENDIX A

Appendix A Addendum - February 2008

Dispersion Modeling

Dispersion Modeling

Executive Summary

The Ohio River Clean Fuels project uses coal to make a liquid fuel product. The current facility design is for 6 coal gasifiers, 3 Fischer-Tropsch reactors, and 1 product upgrade system to produce a total of approximately 53,000 barrels per day (bpd) liquid hydrocarbons. The project also includes a syngas-fired combined cycle power plant and ancillary operations to support the plant.

A modeling protocol to define the dispersion modeling techniques used to assess the air quality impacts from the proposed project was prepared and submitted to the Ohio EPA in June 2007. The modeling methodology is based on U.S. EPA modeling guidance. The air quality analysis is conducted in two stages: the significance analysis and the full impact analysis. The dispersion modeling analysis for this project was conducted using the latest version of the AMS/EPA Regulatory Model (AERMOD – Version 07026) to estimate maximum ground-level concentrations. Surface meteorological data from the Pittsburgh International Airport (station number 94823) for years 2001 through 2005 were used in this analysis.

Significance Analysis

The significance analysis is conducted to determine the scope of the modeling analysis. If the facility can demonstrate an impact on ambient air quality that is below the significant impact levels, the facility does not cause or contribute to an adverse impact on ambient air quality. If the facility is over the significance levels, a full modeling analysis is required using emissions data from existing background sources in an interactive analysis. The significance analysis for the ORCF project resulted in impacts that were above the significance levels for fine particulate matter (PM_{10}), nitrogen oxides (NOx), sulfur dioxide (SO_2) and carbon monoxide (CO).

Source and emissions data were collected for major source within the area where significant impacts were predicted (out to 2300 meters) and out to 50 kilometers (km) beyond. This information was provided by the Ohio EPA, the Pennsylvania DEP and West Virginia DEP.

Increment Consumption Assessment

PSD increments are the maximum increases in concentration that are allowed to occur above the baseline concentration. The impacts for the proposed project are below the Ohio Acceptable Increment and the allowable Federal PSD increments.

NAAQS Compliance Demonstration

The source parameters and emission rates for major air emission sources were provided by the three regulatory agencies of Ohio, West Virginia and Pennsylvania. These data were modeling interactively (on an hour-by-hour, receptor -by-receptor basis) with the sources

and emissions from the ORCF facility. The maximum modeling impacts from this interactive modeling analysis were added to the measured ambient background concentrations. The combined impacts from the proposed facility, existing major sources in a three state area and measured ambient background concentrations are less than half of the standards. Only 24-hour sulfur dioxide concentration is greater than 50 percent of the air quality criteria.

Additional Impacts Assessment

The US EPA and Ohio EPA also require that additional air quality impacts that may be associated with the project be assessed. The potential air quality impacts associated with local economic growth associated with the project were found to be minimal. In addition, the potential for impact to the closest Class I area was insignificant, and the impact from Hazardous Air Pollutants was found to be acceptable.

1 Modeling Framework and Background

The air dispersion modeling techniques used to assess the impacts from the proposed Baard Energy Ohio River Clean Fuels (ORCF) Project were submitted in a modeling protocol to Ohio Environmental Protection Agency (Ohio EPA) in June 2007. Dialogue/comments based on review of the protocol were received from the Ohio EPA and adopted in the modeling approach.

The air permitting for the ORCF project includes a Prevention of Significant Deterioration (PSD) [40 Code of Federal Regulations (CFR) Part 52.21] / New Source Review (NSR) permit application and air quality impact modeling analysis for submittal to the Ohio EPA. Columbiana County has recently been reclassified as attainment for all relevant criteria contaminant standards. Jefferson County is designated non-attainment for the $PM_{2.5}$ standard only.

The modeling methodology used to demonstrate compliance with the National Ambient Air Quality Standards (NAAQS) and PSD Increments for criteria contaminants is described in this section. Based on U.S. EPA modeling guidance, the PSD air quality analysis is conducted in two stages: the significance analysis and the full impact analysis. If impacts from the proposed emission increase are less than significant impact levels, a full impact analysis is not required.

1.1 Significance Analysis

The impacts from the proposed project sources, as estimated with the AERMOD model, are compared to the modeling significance levels for Class II areas. If any of the impacts equal or exceed the modeling significance levels for a particular pollutant and averaging period, a full impact analysis will be performed.

The determination of air quality impacts for the proposed project sources are made using the highest modeled impact for each pollutant and averaging period. Although 8-hour CO concentrations are properly determined with a running average rather than a block average, the AERMOD model reports 8-hour concentrations as block averages (i.e. only 8-hour

periods ending at 0800, 1600, or 2400 hours) in accordance with the refined analytical modeling techniques described in 40 CFR 51 Appendix W.

New emissions of toxics will be evaluated to determine the maximum incremental impact of these emissions for comparison with the Maximum Acceptable Ground Level Concentration (MAGLC) as described in the Ohio EPA's current procedure for reviewing new sources of air toxics (Ohio Administrative Code, Chapter 3745-114-01).

Dispersion modeling is not done for $PM_{2.5}$ but is done for PM_{10}. Ozone is a secondary contaminant that is not well characterized by AERMOD. Ozone and volatile organic compounds (VOCs) are not required to be modeled in PSD applications. NO_x emissions and impacts for NO_2 are quantitatively analyzed in the application.

1.2 Background Concentrations

Background concentrations used for the near-field dispersion modeling represent all current air pollution sources other than those that are explicitly modeled. Commonly, the impacts of distant background sources are accounted for by using monitored air quality data (i.e., a background concentration). If a full impact analysis is required for a particular pollutant to demonstrate compliance with NAAQS, suitable background concentration data are used along with modeled impacts from existing major sources in the study area.

To demonstrate compliance with the ambient air quality standards, the predicted air quality impacts are added to the existing background concentrations. The United States EPA maintains the AIRS database (http://www.epa.gov/air/data/geosel.html) that includes air monitoring site information for various regions throughout the United States. A total of 14 ambient PM_{10} air quality monitoring stations are located within about 50 km of the proposed site. A number of other criteria contaminants are measured in the vicinity as well.

A summary of the most recent year of ambient concentrations of all criteria pollutants from the closest monitoring stations, as found on the AIRS website, is presented in Table 1. The AIRS website can be used to identify local air quality monitoring stations and obtain summaries of historical air quality data. This system provides summaries of air quality data for varying averaging periods and compares the results to the applicable federal and state ambient air quality standards. The highest short-term ambient concentrations are used for the short-term averaging periods and the mean of the short-term ambient concentrations are used for the long-term (annual) averaging period.

TABLE 1
Background Air Concentrations in Study Area 2006

Pollutant	Avg Time	NAAQS[1]	2006 Conc. (ppm)	2006 90th percentile (ppm)	Background Conc. ($\mu g/m^3$)	Station ID
PM_{10} [a]	24-hour	**150 $\mu g/m^3$**	52	-	52	390290022
	Annual	**50 $\mu g/m^3$** [e]	25.3	-	25.3	
NO_2 [b]	Annual	**0.053 ppm**	0.0054	0.011	10.2	421255001
SO_2 [c]	3 hour [2]	**0.5 ppm**	0.09	-	235.5	
	24-hour	**0.14 ppm**	0.05	-	130.8	540290008
	Annual	**0.03 ppm**	0.0074	0.016	19.4	
CO [d]	1-hour	**35 ppm**	10.8	-	13247	540291004
	8-hour	**9 ppm**	3.6	-	4416	

[1] Source of data: http://epa.gov/air/criteria.html
[2] Secondary standard, which pertains to societal welfare rather than health.
[a] Highest 24-hour average PM_{10} concentration values for the year in $\mu g/m^3$ and arithmetic mean of 24-hour values in $\mu g/m^3$ for annual concentration
[b] Arithmetic average of 1-hour NO_2 concentration values for the year in ppm.
[c] Highest 3-hour average SO_2 concentration in the year in ppm; highest 24-hour average SO_2 concentration in the year in ppm; and arithmetic average of 1-hour SO_2 concentration values for the year in ppm.
[d] Highest 1-hour average CO concentration in the year in ppm and highest 8-hour average CO concentration in the year in ppm
[e]. Annual NAAQS for PM10 revoked on 12/17/2006, provided here for comparison only.
- No data available

2 Dispersion Modeling Methodology

The dispersion modeling analysis for this project was conducted using the latest version of the AMS/EPA Regulatory Model (AERMOD – Version 07026) to estimate maximum ground-level concentrations. AERMOD is a steady-state plume model that incorporates planetary boundary layer (PBL) theory to define ambient turbulence parameters. AERMOD is the recommended model for use in regulatory industrial source modeling as defined in the Guideline on Air Quality Modeling (40 CFR 51, Appendix W) and the Ohio EPA Engineering Guide #69: Air Dispersion Modeling Guidance.

The analysis includes an evaluation of the possible effects of elevated terrain, and aerodynamic effects (downwash) due to nearby building(s) and structures on plume dispersion and ground-level concentrations. The model combines simple and complex terrain algorithms, and includes the Plume Rise Model Enhancement (PRIME) algorithms to account for building downwash and cavity zone impacts.

The required emission source data inputs to AERMOD include source location, source elevation, stack height, stack diameter, stack exit temperature, stack exit velocity, and pollutant emission rates. The source locations are specified for a Cartesian (x, y) coordinate

system where x and y are distances east and north in meters, respectively. The Cartesian coordinate system used for these analyses is the Universal Transverse Mercator Projection (UTM), 1927 North American Datum (NAD27).

The AERMOD models were used with regulatory default options as recommended in the EPA Guideline on Air Quality Models as listed below:

- Accept terrain elevations and hill height input
- Use stack-tip downwash
- Perform meteorological data checking

The complete AERMOD modeling system is comprised of three parts: the AERMET pre-processor, the AERMAP pre-processor, and the AERMOD model. The AERMET pre-processor compiles the surface and upper-air meteorological data and formats the data for AERMOD input. The AERMAP pre-processor is used to obtain elevation and controlling hill heights for AERMOD input.

2.1 Meteorological Data

The nearest meteorological station to the prospective ORCF is located at the Pittsburgh, Pennsylvania airport approximately 40 km to the southwest. This is the recommended station according to OEPA EG#69, Air Dispersion Modeling Guidance, 2003. Surface meteorological data from the Pittsburgh International Airport (station number 94823) were used in the analysis. Five years of surface observations for years 2001 through 2005 were used.

In addition to surface weather observations, dispersion modeling requires an estimation of mixing height, the upper boundary of the surface mixing layer and vertical profiles of wind speed and temperature. This layer caps the mixing of plumes vertically. The meteorological data were processed using the AERMET (Version 06341) preprocessor routine. Preprocessing of the raw observations was done using the surface parameters presented in Table 2. AERMET writes two files for input to AERMOD: a file of hourly boundary layer parameter estimates and a file of multiple-level (when the data are available) observations of wind speed and direction, temperature, and standard deviation of the fluctuating components of the wind direction.

2.2 Surrounding Land Use

The land use surrounding the Airport meteorological station is similar to that of the ORCF site: namely, it is a predominately rural area generally surrounded by forested area, along with small pockets of grassland and small urban and residential developments.

The surface parameters used for the AERMET preprocessing were consistent with the Pittsburgh airport site. As shown in Figure 1, the area around the Pittsburgh airport site is predominantly forested. Seasonal variations in albedo, surface roughness, and Bowen ratio consistent with these land use classification were included into the AERMET. Table 2 lists the seasonal AERMET land-use parameters used in the input files.

FIGURE 1
Aerial Photograph of Area Surrounding Surface Weather Station

TABLE 2
Seasonal AERMET Surface Parameters for Pittsburgh Airport Meteorological Station

Sector†/Land Use	Albedo				Bowen Ratio (average moisture)				Surface Roughness			
	Season				Season				Season			
	1	2	3	4	1	2	3	4	1	2	3	4
1 Deciduous Forest	0.50	0.12	0.12	0.12	1.5	0.70	0.30	1.0	0.50	1.0	1.3	0.80

1 – Winter, 2 – Spring, 3 – Summer, 4 – Fall

These land use parameters are:

- Surface roughness length – is a measure of surface friction and is derived from the specific land use characterization of the surrounding area.
- Albedo – is a ratio of the reflected radiation to the total incident radiation and is derived from the brightness or darkness of a surface.
- Bowen ratio – is a measure of the sensible heat flux and is derived from estimates of surface soil moisture.

The use of urban or rural dispersion coefficients is determined by the land use surrounding the ORCF site near Wellsville, Ohio. The land use within the circle was characterized according to the methodology proposed by Auer (1978). If more than 50% of the surrounding land use is characterized as urban, the population of the urban area is entered into AERMOD. It was determined that the land use is less than 50% urban and the rural dispersion coefficients were used in the modeling analysis.

2.3 Receptor Grids

The base modeling receptor grid for AERMOD modeling consisted of 2,319 receptors that were placed at the ambient air boundary and Cartesian-grid receptors that were placed beyond the boundary at spacing that increases with distance from the origin. The ORCF property boundary was used as the ambient air boundary.

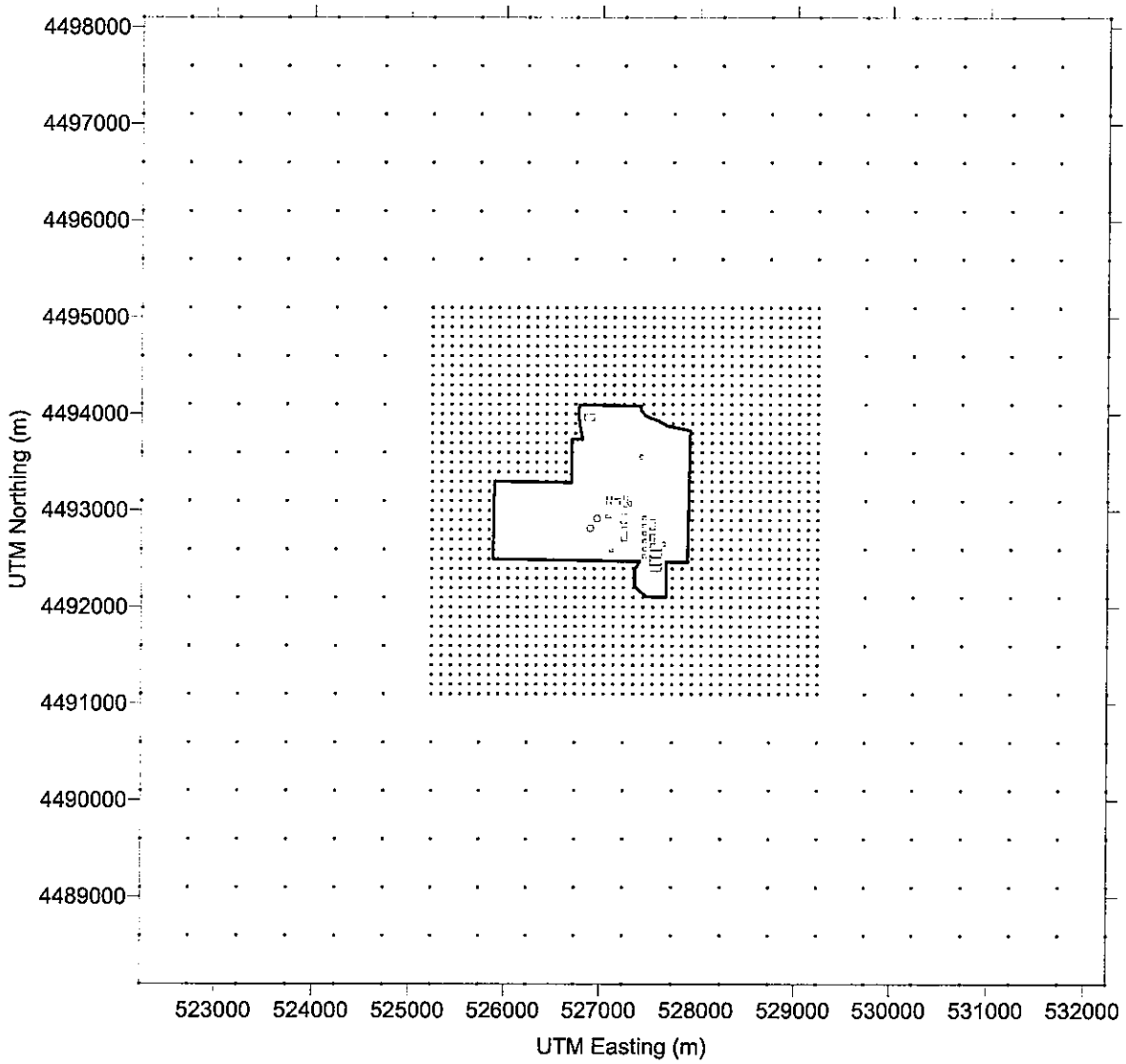
A 10 km by 10 km grid centered on the site was sufficient to capture the contaminant maxima as well as have the estimated concentrations near the grid border be less than the Significant Impact Levels (SILs). Screening runs confirmed that maximum predicted concentrations were in close proximity to the property boundary and occurred within the 10 km by 10 km receptor grid. The site boundary receptors were spaced at 15-meter intervals. Beyond the property boundary, receptor spacing was as follows:

- 100-meter spacing out to a distance of 2 km from the approximate center of the facility
- 500-meter spacing from 2 km to a distance of 5 km from the approximate center of the facility

Figure 2 shows the receptor grid used in the significance modeling analysis. For the full impact analysis only receptors within the significance impact radius were used.

Figure 2

Receptor Grid Used in the Modeling Analysis



2.4 Terrain

Terrain in the vicinity of the project was accounted for by assigning base elevations to each receptor. Data at 7.5-minute intervals (10- by 10-meter spacing) from the U.S. Geological Survey (USGS) Digital Elevation Model (DEM) were used in conjunction with the AERMAP pre-processor (version 06341) to determine receptor elevations. The NAD827 Universal Transverse Mercator (UTM) Zone 17 coordinate datum was used for all the modeling.

On-site source and building elevations were determined from preliminary design maps and other survey data, not from the DEM data. Elevations of all receptors were derived from DEM maps.

2.5 Building Downwash Effects

Buildings or other solid structures may affect the flow of air in the vicinity of a source and cause building downwash (*e.g.*, eddies on the downwind side), which have potential to reduce plume rise and increase dispersion.

For dispersion modeling purposes, building downwash effects were considered for sources at the ORCF facility. A total of 30 buildings in the vicinity of the modeled sources were used in the analysis and include all buildings that could influence the dispersion of source emissions. The Building Profile Input Program (BPIP) is used to calculate controlling building profiles on a direction-specific basis for each point source. Consistent with U.S. EPA modeling guidance, building downwash was not evaluated for volume and area sources.

3 Modeled Emission Sources

The current facility design is for 6 coal gasifiers, 3 Fischer-Tropsch reactors, and 1 product upgrade system to produce a total of approximately 53,000 barrels per day (bpd) liquid hydrocarbons. The project also includes an approximately 985-MW syngas-fired combined cycle power plant and ancillary operations to support the plant. Emission sources from the ORCF project are summarized in Table 3. A complete listing of the source parameters and pollutant emission rates is provided in Exhibit A.

TABLE 3
Emission Sources for the ORCF Project

Process Areas	Emission Sources	Source Type
Coal/Biomass Storage	Storage Piles	Area Sources
Coal/Biomass Processing	Transfer Towers, Stacker / Reclaimers, Conveyors, Crusher Houses, Coal/Biomass Silos, Coal/Biomass Bunkers, Filling Vessel Vents, Roller Mills, Coal/Biomass Milling and Drying Stack	Point and Volume Sources
Gasification Plant	Startup/Shutdown/Malfunction (S/S/M) Venting to Flare	Point Source
Slag and Fly Ash Handling	Slag Dewatering Silo Vents, Slag Storage Pile, Fly Ash Storage Silos, Slag and Ash Loadout	Volume and Area Sources
Syngas Cleanup	Acid Gas Removal Units, Thermal Oxidizers	Point Sources
Fischer-Tropsch and Product Workup	Process Heaters, Process Vents to Flare, Fugitive VOC Equipment leaks	Point and Area Sources
Product Storage and Loading	Storage Tank Farm Loading rack for Liquid Products	Point Sources
Combined Cycle Plant	Gas Turbines and associated	Point Sources

TABLE 3
Emission Sources for the ORCF Project

Process Areas	Emission Sources	Source Type
	Heat Recovery Steam Generators, Phase 1 Boiler	
Circulating Water Systems	Process Cooling Towers	Point Sources
Emergency Generators	Diesel Fired Generator and fire water pumps	Point Sources
Roadways and Parking	Fugitive PM from vehicle traffic	Series of Volume Sources and Area Source

4 Modeling Results

The following sections detail the results of the air quality modeling analyses. The modeling consists of an analysis of the significant impacts and determination of the significant impact area to be used in the full, interactive modeling analysis. Determination of compliance with PSD Class II increments and the NAAQS include the combined impacts of existing increment-consuming or existing major sources. Additional air quality impacts, Class I area impacts and an assessment of impacts for hazardous air pollutants are also provided.

4.1 Significance Analysis

In the significance analysis, the proposed emissions increases were modeled and the resulting maximum concentrations were compared to the Modeled Significance Limit (MSL) to determine if a full impact analysis is required. The results of the significance analysis are summarized in Table 4.

TABLE 4
Maximum Concentrations Calculated in the Significance Analysis

Pollutant	Averaging Period	Date (YYYY, MO, DA)	UTM East (m)	UTM North (m)	Max. Modeled Concentration ($\mu g/m^3$)	MSLa ($\mu g/m^3$)
PM_{10}	24 hr	2005, 02, 04	566900	4492468	13.5	5
	Annual	2002	590300	4493392	2.71	1
NO_2	Annual	2004	533800	4492474	4.42	1
SO_2	3 hr	2005, 07, 02	508400	4492479	35.6	25
	24 hr	2004, 04, 01	532300	4492474	22.4	5
	Annual	2004	532300	4492474	2.48	1
CO	1 hr	2004, 09, 01	534500	4492329	4,672	2,000
	8 hr	2005, 08, 06	532300	4492474	1,729	500

a MSL – modeled significance limit

The maximum modeled concentrations are greater than the MSL, and therefore a full impact analysis is required for all of the criteria contaminants listed in Table 4. The radius of impact within which predicted impacts exceed the MSL is about 2,300 meters for the worst-case contaminant (24-hour average SO_2 concentration). The radius of impact (ROI) for a pollutant is defined as the distance to the furthest receptor that has a modeled concentration greater than the MSL. Table 5 summarizes the distances to the MSL and determination of the ROI.

For the full impact analysis, the modeling domain consists of 1,821 receptors within the largest of the ROI, 2,300 meters from the ORCF center. Impacts from other regional emissions sources with dispersion plumes that may interact with ORCF's emissions, PSD increment-consuming sources or existing major sources within 50 km of the ROI (defined as the area of impact) are included in the modeling analyses.

Pollutant	Averaging Period	Radius of Impact (m)
PM_{10}	24 hr	1,800
	Annual	N/A
NO_2	Annual	1,800
SO_2	3 hr	800
	24 hr	2,300
	Annual	1,500
CO	1 hr	1,100
	8 hr	1,900

4.2 PSD Increment Consumption

The Prevention of Significant Deterioration (PSD) program was established to allow emission increases (increments of consumption) that do not result in significant deterioration of ambient air quality in areas where criteria pollutants have not exceeded the NAAQS. For the purposes of determining applicability of the PSD program requirements, the following regulatory procedure is used. Increments are the maximum increases in concentration that are allowed to occur above the baseline concentration. Class II areas are regions that allow for economic growth in a manner consistent with the preservation of existing clean air resources and include all areas not otherwise designated as Class I areas.

All increment-affecting sources that were located within the area of impact were modeled as part of the increment analysis. EPA guidance states that increment-affecting stationary sources are those with actual emissions changes occurring since the minor source baseline date. Increment-affecting sources located within 50 km of the ROI may be modeled if they affect the amount of PSD increment consumed (EPA, 1990).

The baseline date for Columbiana County was set by Cogentrix in 1986. In 2002, the facility submitted a PSD permit application for a modification. The sources included in that 2002 PSD impact assessment are included in this increment consumption analysis. The source

parameters and emissions rates for the interactive PSD increment modeling analysis were provided by OEPA, as modeled for the 2002 permit modification for Cogentrix. The baseline for Jefferson County has not been set. The Wheeling-Pittsburgh Steel plant has undergone some permit modifications, but netted out of PSD review. The source parameters and emission rates used in the PSD Class II increment consumption analysis are presented in Exhibit B.

Table 6 compares the maximum modeling impact to the Class II PSD increment for each of the criteria contaminants. Also shown are the Ohio Acceptable Increment Impacts taken from the Ohio EPA Engineering Guide #69, 2003. This comparison shows that the modeled impacts are below the Class II PSD and Ohio Acceptable increment consumption level for all contaminants.

TABLE 6
PSD Class II Increment Consumption Results

Pollutant	Averaging Time	Maximum Project Impact ($\mu g/m^3$)	Ohio Acceptable Increment* ($\mu g/m^3$)	Interactive Class II Impact ($\mu g/m3$)	Class II PSD Increment ($\mu g/m^3$)
PM_{10}	24 hr	11.6 [c]	15 [b]	11.7	30[b]
	Annual	2.71	8.5 [a]	2.72	17
NO_2	Annual	4.42 [d]	12.5 [a]	4.43	25
SO_2	3 hr	34.6 [c]	256 [b]	34.6	512[b]
	24 hr	20.9 [c]	45.5 [b]	20.9	91[b]
	Annual	2.48 [d]	10 [a]	2.49	20[a]
CO	1 hr	4,187 [c]	10,000 [b]	N/A	N/A
	8 hr	1,686 [c]	2,500[b]	N/A	N/A

Source: EPA(2007), OEPA , Engineering Guide #69 (2003)

* The Ohio Acceptable Increment only applies to the proposed source.

[a] Not to be exceeded

[b] Not to be exceeded more than once per year

[c] High Second-High 24-hr concentration

[d] Maximum Concentration

N/A There is no Federal PSD increment for CO

4.3 NAAQS Impact Analysis

The full / interactive modeling analysis is used to demonstrate compliance with the NAAQS. Although the ROI is less than 2,300 meters from the plant centroid, major emission sources located within 50 km of the ROI were included in the modeling analysis, as required. This required that facilities with actual emissions greater than 100 tons per year in any of the recent 3 year periods be included in the modeling analysis. To obtain the pollutant emission rates and source characteristics for these facilities, data requests were sent to the Ohio EPA, Pennsylvania DEP and the West Virginia DEP. Each agency or

regional office was able to supply the data needed for the interactive modeling analysis. A complete listing of the emission rates and source parameters used in the interactive modeling analysis are presented in Exhibit C.

Table 7 shows the interactive impacts of the proposed ORCF facility and the other major sources. Predicted impacts are added to the background concentrations as reported at ambient air quality monitoring station. The combined concentration is below the NAAQS for all pollutants and all averaging periods.

TABLE 7
NAAQS IMPACT ANALYSIS RESULTS

Pollutant	Averaging Period	Interactive Concentration ($\mu g/m^3$)	Background Concentration ($\mu g/m^3$)	Combined Concentration ($\mu g/m^3$)	National Ambient Air Quality Standards ($\mu g/m^3$)
PM_{10}	24 hr	11.7	52	63.7	150
	Annual	2.90	25.3	28.2	Revoked[e]
NO_2	Annual	6.40	10.2	16.6	100
SO_2	3 hr	178	236	414	1,300
	24 hr	63.5	131	194	365
	Annual	7.94	19.4	27.3	80
CO	1 hr	4,188	13,247	17,435	40,000
	8 hr	1,686	4,416	6,102	10,000

[a] Not to be exceeded

[b] Not to be exceeded more than once per year

[c] High Second-High 24-hr concentration

[d] Maximum Concentration

. [e] Annual NAAQS for PM10 revoked on 12/17/2006,

4.4 Additional Impact Assessment

While the proposed OCRF will be a significant contribution to the economic growth of the community, the additional air quality impacts from the growth related to the facility should be minimal.

Full time employment at the ORCF and jobs created in the surrounding area is projected to be 522 people. This workforce will be drawn from the local work force of over 211,147 people projected to live in the three counties, Columbiana, Jefferson and Hancock, abutting the ORCF facility. This is less than one percent of the local population. The resulting air quality impacts from commuting to work, building of new homes or living in the area, would be a negligible increase over existing ambient air quality levels.

There is one local source of air emissions whose operations would be impacted as a result of the proposed facility. Buckeye owns a barge unloading and materials handling facility on the Ohio River. Coal being delivered to the ORCF site by barge would be unloaded and temporarily stored in a pile at Buckeye until it can be transferred up to the project site. The

emissions related to ORCF feedstock from the barge loading equipment and fugitive emissions from the coal storage pile are estimated to be 15 tons per year of PM10, or less than five percent of the 344 tons per year of PM10 emissions from the ORCF facility. If the predicted impacts for the ORCF were increased by 5 percent, the combined facilities would still be in compliance with the NAAQS.

The potential impacts to soils and vegetation are limited to those areas immediately adjacent to or with 2300 meters of the plant site. Beyond 2300 meters the predicted concentrations drop below significant impact levels. Civil & Environmental Consultants, Inc. (CEC) performed a land use/land cover classification study which included the proposed project area and a one-half mile radius from the proposed facility boundary to quantify cover types and to analyze impacts to land use/land cover types by the proposed ORCF facility. The 1,455-acre study area was classified as, 69.3% forested land, 18.8% developed land, 7.9% cropland or pasture, 3.0% ponds/open water, 0.6% wetlands, and 0.3% streams.

The NAAQS are established to be protective of public health and welfare, including impacts to soils and vegetation. The combined impacts from the proposed project, other major sources within 50 km of the site and measured background concentrations are predicted to be less than the NAAQS. There is nothing unique about the land use and site geology that would suggests that the area within 2300 km of the plant site would be adversely affected by facility emissions.

4.5 Class I Area Impact Analysis

Class I areas are national parks, wilderness areas, or fish and wildlife parks that are afforded protection under the PSD program. The closest Class I area to the ORCF site is the Otter Creek Wilderness Area, near Elkins, West Virginia. The Otter Creek Class I area is located in Tucker and Randolph Counties in West Virginia, at a distance of approximately 196 kilometers from the site.

An analysis of the possibility of Class I Area impacts was performed using AERMOD. A series of seventeen discrete receptors were spaced at 250 m intervals up to 45 km downwind of the project site along a vector headed toward the Otter Creek Class I area. The width of each of the receptor segment spans approximately 4 km. This analysis provides an extremely conservative upper-limit estimate of impacts that may occur along the remaining 150 km downwind to the Class I area. The distance of 45-km was chosen because AERMOD is the US EPA model of choice for near-field applications less than 50 km downwind.

Table 8 below lists the single Class I areas within 200 km of the ORCF site for which the assessment was performed.

TABLE 8
Class I Area within 200 km of ORCF Site

Class I Area Name	Distance to the Site (km)	County	State	Area (acre)
Otter Creek	196	Tucker/Randolph	West Virginia	20,000

The high-first-high impacts at the 45 km receptor locations were compared to the EPA proposed Class I modeling significance levels. The results for this comparison were taken from the modeling simulation that included all NO_x, SO_2, and PM_{10} sources located at the ORCF all running at their respective maximum emission rates. The results, presented in Table 9 below, show that the maximum estimated concentration at 45-km downwind of the site is much less than the Class I significance level for all averaging periods for NO_2 and PM_{10}. For SO_2, there is a single 3-hr period and a single 24-hour period over the 5-year modeling period that exceeded the Class I significance standard at a distance of 45-km. There were no exceedences of the annual SO_2 averaging period. Compared to results determined in close proximity to the facility, the maximum concentration for 3-hr average SO_2 has decreased from approximately 36 $\mu g/m^3$ to 1 $\mu g/m^3$ at a 45 km distance. So it is expected that the concentrations will decrease to well below the threshold criteria another 145 km downwind, due to further dispersion and dilution. Therefore, it is concluded that both visibility and concentration impacts in the Otter Creek Class I area will be negligible.

TABLE 9
Maximum Concentrations Calculated in the Significance Analysis for Class I Areas

Pollutant	Averaging Period	Max. Modeled Concentration ($\mu g/m^3$)	Class I Significance Level ($\mu g/m^3$)
PM_{10}	24-hour	0.124	0.3
PM_{10}	Annual	0.0042	0.2
SO_2	3-hour	1.16†	1.0
SO_2	24-hour	0.202†	0.2
SO_2	Annual	0.0104	0.1
NO_2	Annual	0.0079	0.1

† Single exceedence of both 3-hr and 24-hour of Class I Significance Level at 45 km. Otter Creek is another 145 km further downwind of receptor locations.

Included on the CD-ROM with this air quality analysis are the input and output files (Exhibit D) from the dispersion modeling analyses.

4.6 Hazardous Air Pollutant Assessment

Hazardous Air Pollutants (HAPs) are compounds that have been identified as pollutants that pose a significant health hazard. The Ohio EPA has published a list of compounds it defines as potential toxic air contaminants (Ohio Administrative Code Chapter 3745-114-01). Any pollutant that is on this list that may be emitted from the project in an amount greater than 1 ton per year should be included as part of the ORCF modeling assessment.

The hourly non-criteria pollutant emissions were derived from annual total emissions and used to calculate off-property concentrations using the full receptor grid used in the initial determination of significant impact areas as described above.

The OEPA describes a method by which Threshold Limit Values (TLVs) can be used to derive maximum allowable ground level concentration criteria for comparison and assessment of the modeled HAPs concentrations. This methodology is presented in Option A of the OEPA document "Review of New Sources of Air Toxic Emissions." The methodology uses TLVs and scaling factors to correct for hours and days of emissions compared to the TLVs, which are established to protect workers over a 40-hour work week. The TLVs were taken from the latest handbook of the American Conference of Governmental Industrial Hygienists (ACGIH). The criteria calculated using the methodology presented in Option A of the above mentioned OEPA document are used to compare with 1-hour average concentrations determined from dispersion modeling. The non-criteria pollutants that meet the criteria shown above were assessed and are shown in Table 10.

The modeled HAPs concentrations are all well below the criteria. Mercury emissions are strictly controlled to prevent contamination of the catalysts used in the Fischer-Tropsch gas-to-liquid process. Use of the syngas for on-site heat or power generation or combustion of the liquid fuel product is mercury-free. No TLV has yet been published by the ACGIH for carbonyl sulfide but the results of the modeling are included since it is emitted in amounts greater than 1 ton per year and is considered a toxic air contaminant. The input and output files from these analyses are included in the CD submitted as part of the application package.

TABLE 10
Hazardous Air Contaminant Air Dispersion Modeling Assessment Summary

Compound	ACGIH TLV ($\mu g/m^3$)	Ohio EPA Maximum Ground Level Concentration ($\mu g/m^3$)[a]	Project Maximum 1-hr Concentration ($\mu g/m^3$)
Ammonia	17,400	414	9.9
Mercury	50	1.2	0.00046
n-hexane	176,000	4,190	3.7
Hydrogen Sulfide	14,000	333	13.6
Carbonyl Sulfide	N/A[b]	N/A	2.4
Formaldehyde	20[c]	0.48	0.13
Phenol	19,000	452	0.18

[a] Emission source assumed 24 hours per day, 7 days per week
[b] TLV not yet determined
[c] NIOSH 15-minute Ceiling Limit

Exhibit A

ORCF Source Parameters and Emission Rates

ORCF Point Sources

Source ID	Description	UTM East (m)	UTM North (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)	NOx (g/s)	SO2 (g/s)	CO (g/s)
REC1	AGR - Rectisol Unit 1	527318.38	4492953	338.33	22.86	291.48	22.649	2.134	0	0	0	38.89176579
REC2	AGR - Rectisol Unit 2	527312.19	4492793	338.33	22.86	291.48	22.649	2.134	0	0	0	38.89176579
REC3	AGR - Rectisol Unit 3	527310.19	4492639	338.33	22.86	291.48	22.649	2.134	0	0	0	38.89176579
TT1	Transfer tower #1	527710	4493228.5	317.6	30.48	293.15	17.84	0.841	0.113398093	0	0	0
TT2	Transfer tower #2	527670	4493269	317.6	30.48	293.15	17.84	0.841	0.113398093	0	0	0
TT3	Transfer tower #2	527487	4493272	317.6	30.48	293.15	17.84	0.841	0.113398093	0	0	0
CRUSHBH	Crusher house bag house	527540.06	4492749.5	338.33	76.2	293.15	22.994	0.84	0.292315083	0	0	0
COALS12	Coal Silos 1 and 2	527526.25	4492749.5	338.33	76.2	293.15	20.25	0.689	0.123477923	0	0	0
COALS34	Coal Silos 3 and 4	527526.5	4492723	338.33	76.2	293.15	25.316	0.689	0.061738962	0	0	0
COALS56	Coal Silos 5 and 6	527526.25	4492694	338.33	76.2	293.15	25.316	0.689	0.061738962	0	0	0
COALB1	Coal bunker 1	527500.19	4492750.5	338.33	76.2	293.15	12.658	0.689	0.054179089	0	0	0
COALB2	Coal bunker 2	527500	4492736	338.33	76.2	293.15	12.658	0.689	0.108358177	0	0	0
COALB3	Coal bunker 3	527499.81	4492723.5	338.33	76.2	293.15	12.658	0.689	0.054179089	0	0	0
COALB4	Coal bunker 4	527499.62	4492709	338.33	76.2	293.15	12.658	0.689	0.108358177	0	0	0
COALB5	Coal bunker 5	527499.38	4492694	338.33	76.2	293.15	12.658	0.689	0.054179089	0	0	0
COALB6	Coal bunker 6	527498.69	4492681	338.33	76.2	293.15	12.658	0.689	0.108358177	0	0	0
CMD1	CDM Stack 1	527546.88	4492749.5	338.33	76.2	394.26	30.942	0.966	0.025199576	0.167577181	0.030239491	0.280975274
CMD2	CDM Stack 2	527546.38	4492736	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337
CMD3	CDM Stack 3	527545.62	4492722.5	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337
CMD4	CDM Stack 4	527545.19	4492708	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337
CMD5	CDM Stack 5	527544.88	4492694.5	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337
CMD6	CDM Stack 6	527544.12	4492680	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337
FV1	Filling Vessel Vent 1	527508.94	4492749.5	338.33	76.2	366.48	1.37	0.982	0.008819852	0	0	0
FV2	Filling Vessel Vent 2	527508.44	4492736	338.33	76.2	366.48	1.37	0.972	0.008819852	0	0	0
FV3	Filling Vessel Vent 3	527508.19	4492723.5	338.33	76.2	366.48	1.37	0.972	0.008819852	0	0	0
FV4	Filling Vessel Vent 4	527507.88	4492708.5	338.33	76.2	366.48	1.37	0.972	0.008819852	0	0	0
FV5	Filling Vessel Vent 5	527507.44	4492695	338.33	76.2	366.48	1.37	0.972	0.008819852	0	0	0
FV6	Filling Vessel Vent 6	527507.69	4492681	338.33	76.2	366.48	1.37	0.972	0.008819852	0	0	0
CTG1	Combustion Turbine Generator 1	527058.69	4493055	338.33	48.768	362.04	9.689	6.096	2.294421405	7.189439064	2.653515365	2.910551041
CTG2	Combustion Turbine Generator 2	527104.25	4493054.5	338.33	48.768	362.04	9.689	6.096	2.294421405	7.189439064	2.653515365	2.910551041
TT5	Transfer tower #5	527481	4492750	338.33	30.48	293.15	17.84	0.841	0.113398093	0	0	0
FLY1	Fly ash silo 1	527321	4493115	338.33	76.2	0	15	0.91	0.007559873	0	0	0
FLY2	Fly ash silo 2	527343	4493115	338.33	76.2	0	15	0.914	0.007559873	0	0	0
FLY3	Fly ash silo 3	527321	4493094	338.33	76.2	0	15	0.914	0.007559873	0	0	0
FLY4	Fly ash silo 4	527342	4493094	338.33	76.2	0	15	0.914	0.007559873	0	0	0
FLY5	Fly ash silo 5	527321	4493068	338.33	76.2	0	15	0.914	0.007559873	0	0	0
FLY6	Fly ash silo 6	527342	4493068	338.33	76.2	0	15	0.914	0.007559873	0	0	0
TTO1	Tailgas Thermal Oxidizers 1	527070	4492873.5	338.33	45.72	533.15	11.685	1.372	0.025199576	0.371693748	4.391026137	0.277195337
TTO2	Tailgas Thermal Oxidizers 2	527070	4492814	338.33	45.72	533.15	11.685	1.372	0.025199576	0.371693748	4.391026137	0.277195337
FTHEAT	Fisher-Trope Heaters	527200	4492818	338.33	38.1	616.48	15.035	1	0.415793006	1.839569056	0.037799364	4.59892264
MISCH	MISCH 1	527200	4492768	338.33	22.86	616.48	18.8	0.266	0.056699046	0.692988343	0	0.629989403
MISCH2	MISCH 2	527200	4492720.5	338.33	22.86	649.82	17.867	0.61	0.175137054	0.277195337	0	1.940367361
COOLTN	Coolling Tower north	526961	4492917	338.33	176.784	315.37	3.322	30.48	0.302394913	0	0	0

Source ID	Description	UTM East (m)	UTM North (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)	NOx (g/s)	SO2 (g/s)	CO (g/s)	0
COALSTK	Stacker/reclaimer 1 and 2	527538.06	4493412	317.6	7.62	293.15	0.1	3.05	0	0	0	0	0
FV7	Filling Vessel Vent 7	527508.19	4492669.5	338.33	76.2	366.48	1.367	0.972	0.008819852	0	0	0	0
CMD7	CDM Stack 7	527544.19	4492669	338.33	76.2	394.26	30.942	0.966	0.025199576	0.163797245	0.030239491	0.277195337	
AUXB	Auxillary Boiler	527193.12	4493055	338.33	13.716	435.93	9.754	0.408	0	0	0	0	0
TT4	Transfer tower #4	527484	4493008	338.33	30.48	293.15	17.841	0.841	0.113398093	0	0	0	0
COALHOP	Coal Hopper	527410.31	4493557	317.6	6.096	293.15	14.557	0.689	0.073078771	0	0	0	0
COALB7	Coal Bunker 7	527498.69	4492669	338.33	76.2	293.15	12.66	0.689	0.054179089	0	0	0	0
FIRE1	Fire water pump	527646.88	4492654.5	338.33	4.57	800	97	0.152	0	0	0	0	0
CMD8910	CDM Stack 8, 9, 10	527533.44	4492680	338.33	76.2	394.26	30.942	0.966	0.075598728	0.491391734	0.090718474	0.831586012	
FV8910	Filling Vessel Vent 8, 9, 10	527518.19	4492681	338.33	76.2	366.48	1.37	0.972	0.026459555	0	0	0	0
SLAG1	Slag Silo vent 1	527445.31	4492920.5	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
SLAG2	Slag Silo vent 2	527445.56	4492841.5	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
SLAG3	Slag Silo vent 3	527444.81	4492762	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
SLAG4	Slag Silo vent 4	527445	4492683	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
SLAG5	Slag Silo vent 5	527445.06	4492603.5	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
SLAG6	Slag Silo vent 6	527445.06	4492525	338.33	60.96	293.15	0.1	1	0.104578241	0	0	0	0
FLAREN	Flare North	526570	4493210	338.33	90.019	1273	20	9.825	0.007559873	0.288535147	21.04164605	1.889968208	
FLARES	Flare South	526508	4493117	338.33	58.737	1273	20	2.729	0.289795125	3.779936417	0.025199576	3.17514659	

Exhibit B

Source Parameters and Emission Rates for PSD Increment Consuming Sources

UTM East (m)	UTM North (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)	NOx (g/s)	SO2 (g/s)
516302.32	4516388.91	353.568	57.912	352.5945	17.88388	5.4864	3.456122	4.120131	1.926508
516302.8	4516422.4	353.568	57.912	352.5945	17.88388	5.4864	3.456122	4.120131	1.926508
516304.3	4516505.1	353.568	57.912	352.5945	17.88388	5.4864	3.456122	4.120131	1.926508
516304.8	4516538.7	353.568	57.912	352.5945	17.88388	5.4864	3.456122	4.120131	1.926508
516336.8	4516380.5	353.568	38.1	799.8167	4.846191	0.6096	0.01385977	0.03527941	0.00755987
516336.5	4516413.9	353.568	38.1	799.8167	4.846191	0.6096	0.01385977	0.03527941	0.00755987
516336.3	4516530.5	353.568	38.1	799.8167	4.846191	0.6096	0.01385977	0.03527941	0.00755987
516325.8	4516445.5	353.568	38.1	799.8167	4.846191	0.6096	0.01385977	0.03527941	0.00755987
516327.8	4516562.2	353.568	38.1	426.4833	15.51849	0.6096	0.02519958	0.1385977	0.03275945
516325.8	4516445.5	353.568	38.1	426.4833	15.51849	0.6096	0.02519958	0.1385977	0.03275945

Exhibit C

Source Parameters and Emission Rates for Existing Major Sources in Modeling Area

Major Emission Sources Used in Interactive Modeling Analysis

Facility ID	Facility Name
	Ohio Sources
0210000046	TENNESSEE GAS PIPLINE- STATION 214
0215010014	SHUT D - NATIONAL REFRACTORIES AND MINERALS CORP
0250000005	WHITACRE-GREER
0250000959	EAST FAIRFIELD COAL COMPANY
0250050996	CARBON LIMESTONE LANDFILL GAS POWER STATION
0250110024	YOUNGSTOWN THERMAL
0250110501	YOUNGSTOWN WASTEWATER TREATMENT FACILITY
0250110625	V & M STAR
0641050002	CARDINAL POWER PLANT (CARDINAL OPERATING COMPANY)
0641090010	WHEELING-PITTSBURGH STEEL CORPORATION - STEUBENVILLE
0641090234	MINGO JUNCTION ENERGY CENTER, LLC
0641160017	W. H. SAMMIS PLANT
0641180064	TITANIUM METALS CORPORATION
1576050694	REPUBLIC ENGINEERED PRODUCTS, INC.
	Pennsylvania Sources
331419	HORSEHEAD CORP/MONACA SMELTER
331111	JEWEL ACQUISITION/MIDLAND FAC
221112	FIRSTENERGY GEN CORP/BRUCE MANSFIELD PLT
327212	ANCHOR HOCKING/MONACA
324199	IPSCO KOPPEL TUBULARS CORP/KOPPEL PLT
221112	AES BEAVER VALLEY LLC/BEAVER VALLEY LLC
486210	DOMINION TRANS INC/BEAVER
327420	US GYPSUM CO/ALIQUIPPA
331112	LANGELOTH METALLURGICAL/LANGELOTH
20-1046636-1	ROBINSON POWER COMPANY, LLC
4200300022	SHENANGO INC / COKE BATTERY
331314	INMETCO/ELLWOOD CITY
327310	ESSROC/BESSEMER
221112	ORION POWER MIDWEST LP/NEW CASTLE POWER PLT
327332	CEMEX INC/WAMPUM CEMENT PLT
	West Virginia
5400900001	KOPPERS FOLLANSBEE
5400900002	MOUNTAIN STATE CARBON, LLC
5402900001	MITTAL STEEL USA - WEIRTON INC.
5402900008	ERGON - WEST VIRGINIA, INC.

PM10

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)
I1	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.00
I2	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I3	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.00
I4	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.00
I5	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I6	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I7	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I8	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I9	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I10	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I11	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I12	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.01
I13	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.01
I14	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.00
I15	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.01
I16	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.00
I17	POINT	520400	4508080	329.49	1.524	0	0.03	15.24	0.05
I18	POINT	520400	4508080	329.49	6.096	330.37	20.63	0.84	0.00
I21	POINT	520400	4508080	329.49	10.668	783.15	15.95	0.81	0.05
I22	POINT	435980	4508330	329.49	4.572	408.15	13.97	0.81	0.00
I23	POINT	520400	4508080	347.78	30.48	294.26	21.03	0.51	0.00
I24	POINT	520400	4508080	353.87	30.48	294.26	15.66	0.71	0.00
I25	POINT	520400	4508080	353.87	30.48	294.26	13.77	0.61	0.02
I26	POINT	520400	4508080	329.49	7.62	294.26	16.92	0.71	0.01
I27	POINT	520400	4508080	329.49	6.096	366.48	21.05	0.86	0.02
I28	POINT	520400	4508080	329.49	1.524	0	0.03	15.24	0.00
I29	POINT	520400	4508080	329.49	7.62	294.26	16.92	0.71	0.00
I30	POINT	520400	4508080	329.49	10.668	422.04	18.95	0.79	0.01
I31	POINT	520400	4508080	329.49	1.524	294.26	20.73	0.91	0.00
I32	POINT	500000	4525620	338.33	1.524	0	0.03	15.24	0.00
I33	POINT	493330	4525620	338.33	5.4864	294.26	6.32	0.49	0.03
I34	POINT	493330	4525620	338.33	12.192	477.59	8.44	1.03	0.28
I35	POINT	493330	4525620	338.33	12.192	477.59	8.98	0.91	0.03
I36	POINT	494390	4525620	338.33	3.6576	294.26	15.55	0.24	0.00
I37	POINT	494390	4525620	338.33	1.524	0	0.03	15.24	0.01
I39	POINT	494390	4525620	338.33	1.524	0	0.03	15.24	0.01
I41	POINT	493330	4525620	338.33	1.524	0	0.03	15.24	0.07
I42	POINT	493330	4525620	338.33	1.524	0	0.03	15.24	0.00
I43	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.01
I44	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.02
I45	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.02
I46	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.19
I47	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.25
I48	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.12
I49	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.33
I50	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.14
I51	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.01
I52	POINT	540000	4530000	335.28	1.524	0	0.03	15.24	0.01
I54	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.00
I55	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.19
I56	POINT	528760	4547590	264.87	38.1	477.59	9.11	1.62	0.21
I57	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.18
I58	POINT	530100	4545710	263.65	38.1	344.26	40.62	1.50	0.07

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)
I62	POINT	529110	4547340	266.7	1.524	0	0.03	15.24	0.02
I63	POINT	529110	4547340	266.7	22.5552	588.71	3.68	3.00	0.04
I64	POINT	529110	4547340	266.7	27.432	314.82	16.88	1.59	0.27
I65	POINT	529110	4547340	266.7	3.6576	322.04	17.84	0.25	0.00
I66	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.00
I67	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.00
I68	POINT	529120	4544540	266.7	1.524	0	0.03	15.24	0.18
I69	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.00
I70	POINT	529110	4547340	266.7	19.2024	355.37	7.86	1.22	0.19
I71	POINT	529000	4547000	266.7	19.2024	355.37	7.86	1.22	0.06
I72	POINT	529910	4452890	204.22	251.46	447.04	2.70	6.71	5.88
I74	POINT	529840	4455560	204.22	251.46	447.04	2.54	6.71	7.26
I77	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.00
I78	POINT	529910	4452890	204.22	21.336	614.82	41.14	1.83	0.01
I79	POINT	529910	4452890	204.22	274.32	430.37	3.09	7.32	1.18
I81	POINT	529910	4452890	204.22	1.524	0	0.03	15.24	0.02
I82	POINT	529910	4452890	204.22	1.524	0	0.03	15.24	0.00
I83	POINT	529910	4452890	204.22	1.524	0	0.03	15.24	0.06
I84	POINT	529910	4452890	204.22	1.524	0	0.03	15.24	0.72
I86	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.07
I87	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.01
I89	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.07
I90	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.01
I92	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.07
I93	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.01
I95	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.31
I96	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.04
I98	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.32
I99	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.04
I101	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.31
I102	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.04
I103	POINT	532630	4466220	201.17	10.668	588.71	10.11	1.52	0.01
I104	POINT	533090	4460060	201.17	1.524	0	0.03	15.24	0.63
I105	POINT	533090	4460060	201.17	1.524	0	0.03	15.24	0.17
I106	POINT	533700	4462710	204.22	20.1168	283.15	18.09	1.31	0.06
I107	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.03
I108	POINT	533690	4462650	204.22	9.144	410.93	18.40	2.75	0.31
I109	POINT	533540	4462480	204.22	1.524	0	0.03	15.24	0.15
I110	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.05
I111	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.18
I112	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.24
I114	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.04
I115	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.08
I117	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.04
I118	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.08
I120	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.04
I121	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.08
I122	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I123	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I124	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I125	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I126	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.00
I127	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.27
I128	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.02
I129	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	1.07
I134	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.00

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)
I137	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.13
I138	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.01
I139	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.02
I140	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.44
I142	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.00
I143	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	0.64
I145	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	0.24
I146	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	0.09
I147	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	2.45
I148	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.00
I149	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.02
I150	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I151	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.02
I152	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I153	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I154	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I155	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I156	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I157	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I158	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.00
I159	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.14
I160	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.14
I161	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.14
I162	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.15
I163	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.00
I164	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.00
I165	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.00
I166	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.00
I167	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.00
I168	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	7.49
I169	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	8.19
I170	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	8.49
I171	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	4.66
I172	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	2.44
I173	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	5.48
I174	POINT	531200	4486600	210.31	259.08	412.04	16.27	9.50	2.88
I175	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	0.02
I176	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	1.27
I177	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	0.03
I178	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	0.16
I179	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	2.30
I180	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	0.06
I181	POINT	531240	4486580	210.31	1.524	0	0.03	15.24	0.01
I182	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.00
I183	POINT	533110	4477130	207.26	10.4059	463.71	4.79	0.56	0.00
I184	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.00
I185	POINT	533220	4477380	207.26	18.288	299.82	9.60	1.43	0.05
I186	POINT	533140	4477070	207.26	8.6868	297.04	18.33	1.28	0.09
I187	POINT	533160	4477300	207.26	27.432	1088.71	1.05	1.38	0.00
I188	POINT	533080	4477370	207.26	1.524	0	0.03	15.24	0.00
I189	POINT	533200	4477370	207.26	1.524	0	0.03	15.24	0.00
I190	POINT	532980	4477040	207.26	22.2504	310.93	4.60	0.59	0.11
I192	POINT	533020	4477360	207.26	16.4592	297.04	16.17	1.22	0.02
I193	POINT	533120	4477010	207.26	11.5824	310.93	18.19	1.22	0.38
I194	POINT	533080	4477380	207.26	1.524	0	0.03	15.24	0.00
I195	POINT	533160	4477290	207.26	22.86	1088.71	1.05	1.38	0.00

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	PM10 (g/s)
I198	POINT	533020	4477100	207.26	19.812	310.93	11.67	1.02	0.00
I199	POINT	533160	4477270	207.26	22.86	1088.71	2.09	1.38	0.00
I200	POINT	533190	4477410	207.26	5.1816	303.15	14.79	0.84	0.01
I201	POINT	533190	4477410	207.26	5.1816	300.37	24.66	0.84	0.01
I202	POINT	533180	4477380	207.26	5.1816	300.37	24.66	0.84	0.01
I203	POINT	533190	4477410	207.26	5.1816	303.15	14.79	0.84	0.00
I204	POINT	533210	4477300	207.26	1.524	0	0.03	15.24	0.00
I205	POINT	533210	4477310	207.26	1.524	0	0.03	15.24	0.00
I206	POINT	533230	4477400	207.26	9.144	302.59	21.23	0.84	0.04
I207	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I208	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I209	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I210	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I211	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I212	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.00
I213	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.00
I214	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.00
I215	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.01
I216	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.01
I217	POINT	500000	4514090	322.48	1.524	0	0.03	15.24	0.25
I218	POINT	500000	4514090	322.48	1.524	0	0.03	15.24	0.16
I219	POINT	471180	4514270	322.48	1.524	0	0.03	15.24	0.00
I220	POINT	470830	4514980	319.74	6.4008	283.15	24.97	1.14	0.08
I221	POINT	472190	4514790	323.09	24.6888	283.15	12.94	0.91	0.03
I222	POINT	472190	4514790	323.09	3.6576	283.15	12.94	0.91	0.03
I223	POINT	470800	4514120	319.74	4.572	283.15	12.94	0.91	0.08
I224	POINT	471200	4514270	319.74	1.524	0	0.03	15.24	0.00
I225	POINT	500000	4513690	323.39	60.6552	319.26	32.34	1.22	0.06
I226	POINT	500000	4513760	329.18	28.3464	533.15	10.84	2.19	0.02
I227	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	0.14
I228	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	0.80
I229	POINT	471900	4514210	322.17	1.524	0	0.03	15.24	0.03
WV1	POINT	533500	4466500	225	24.38	533.15	0.10	3.05	0.21
WV2	POINT	533600	4465400	205	76.20	597.04	27.30	3.96	3.98
WV3	POINT	534200	4474400	225	54.86	455.37	59.00	3.35	3.56
WV4	POINT	531000	4495200	285	45.72	467.04	38.00	1.83	0.34
WV5	POINT	533700	4474500	235	0.00	0.00	0.10	50.00	5.75
AG1	POINT	578200	4482700	220	76.20	590.37	9.02	2.59	1.79
PA1	POINT	556080	4502192	217	61.00	344.00	9.70	3.35	10.8
PA2	POINT	545579	4498579	235	15.20	450.00	24.90	3.00	1.2
PA3	POINT	549049	4498124	220	289.50	325.00	17.20	5.85	22.3
PA4	POINT	560720	4504371	226	30.50	474.00	5.20	1.50	0.7
PA5	POINT	557468	4520519	262	30.50	339.00	12.00	3.00	0.1
PA6	POINT	554454	4500315	230	61.00	330.00	12.30	2.40	9.1
PA7	POINT	563303	4513529	335	15.80	644.00	3.30	0.90	0.3
PA8	POINT	543844	4493074	229	30.50	378.00	10.70	1.60	3.3
PA9	POINT	550860	4468065	360	153.30	324.00	3.20	2.40	0.2
PA10	POINT	560997	4523001	285	60.00	450.00	10.00	3.00	1.0
PA11	POINT	542901	4535840	335	60.00	450.00	10.00	3.00	11.1
PA12	POINT	553212	4531855	245	60.00	450.00	10.00	3.00	3.8
PA13	POINT	556900	4525255	255	60.00	450.00	10.00	3.00	17.8
PA14	POINT	553189	4469719	353	121.90	394.00	27.40	4.40	5.2

NOx

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	NOx (g/s)
NI1	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.51
NI2	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	1.53
NI3	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.35
NI4	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.40
NI5	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	2.12
NI6	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	2.06
NI7	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	1.84
NI8	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	2.08
NI9	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	2.10
NI10	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	1.97
NI11	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	1.68
NI12	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	2.32
NI13	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	1.93
NI14	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	1.51
NI15	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	1.98
NI16	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	1.54
NI17	POINT	520400	4508080	329.49	9.144	477.59	9.95	0.71	0.00
NI19	POINT	520400	4508080	329.49	10.668	783.15	15.95	0.81	4.97
NI20	POINT	435980	4508330	329.49	4.572	408.15	13.97	0.81	0.01
NI21	POINT	493330	4525620	338.33	12.192	477.59	8.44	1.03	0.08
NI22	POINT	493330	4525620	338.33	12.192	477.59	8.98	0.91	0.02
NI23	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.05
NI24	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	1.54
NI25	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	1.54
NI26	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI27	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI28	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI29	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI30	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI31	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI32	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI33	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI34	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI35	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI36	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.35
NI38	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.05
NI39	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	1.17
NI40	POINT	528760	4547590	264.87	38.1	477.59	9.11	1.62	1.70
NI41	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	1.10
NI42	POINT	530100	4545710	263.65	38.1	344.26	40.62	1.50	0.62
NI44	POINT	529110	4547340	263.65	1.524	0	0.03	15.24	0.27
NI45	POINT	529110	4547340	266.7	22.5552	588.71	3.68	3.00	0.40
NI46	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.12
NI47	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.12
NI48	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.07
NI49	POINT	529110	4547340	266.7	19.2024	355.37	7.86	1.22	2.22
NI50	POINT	529000	4547000	266.7	19.2024	355.37	7.86	1.22	0.15
NI51	POINT	529910	4452890	204.22	251.46	447.04	2.70	6.71	233.35
NI53	POINT	529840	4455560	204.22	251.46	447.04	2.54	6.71	263.76
NI55	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.00
NI56	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.01
NI57	POINT	529910	4452890	204.22	21.336	614.82	41.14	1.83	0.30

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	NOx (g/s)
NI62	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.12
NI64	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.85
NI65	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.12
NI67	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.86
NI68	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.12
NI70	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	3.80
NI71	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.76
NI73	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	3.84
NI74	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.78
NI76	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	3.71
NI77	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.76
NI78	POINT	532630	4466220	201.17	10.668	588.71	10.11	1.52	0.84
NI79	POINT	533540	4462480	201.17	1.524	0	0.03	15.24	0.33
NI81	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	5.30
NI82	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.45
NI84	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	5.29
NI85	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.45
NI87	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	5.29
NI88	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.45
NI89	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.14
NI90	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.14
NI91	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.14
NI92	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.14
NI93	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.26
NI94	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	7.84
NI95	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.52
NI96	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.04
NI97	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.02
NI98	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	3.38
NI99	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	2.02
NI100	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.69
NI101	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.43
NI102	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	3.00
NI103	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	0.75
NI104	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.07
NI105	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.65
NI106	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.03
NI107	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.29
NI108	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.03
NI109	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.17
NI110	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.14
NI111	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.14
NI112	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.23
NI113	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.07
NI114	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.07
NI115	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.07
NI116	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.07
NI117	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.07
NI118	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	99.69
NI119	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	79.75
NI120	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	216.95
NI121	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	84.12
NI122	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	150.99
NI123	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	276.19
NI124	POINT	531200	4486600	210.31	259.08	412.04	16.27	9.50	191.67

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	NOx (g/s)
NI127	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.02
NI128	POINT	533160	4477300	207.26	27.432	1088.71	1.05	1.38	0.02
NI129	POINT	533080	4477370	207.26	1.524	0	0.03	15.24	0.02
NI130	POINT	533200	4477370	207.26	1.524	0	0.03	15.24	0.02
NI131	POINT	532980	4477040	207.26	22.2504	310.93	4.60	0.59	1.47
NI132	POINT	533020	4477360	207.26	16.4592	297.04	16.17	1.22	0.30
NI133	POINT	533120	4477010	207.26	11.5824	310.93	18.19	1.22	2.43
NI134	POINT	533080	4477380	207.26	1.524	0	0.03	15.24	0.03
NI135	POINT	533160	4477290	207.26	1.524	0	1.05	1.38	0.02
NI136	POINT	533160	4477290	207.26	22.86	1088.71	2.09	1.38	0.02
NI137	POINT	533020	4477100	207.26	19.812	310.93	11.67	1.02	0.49
NI138	POINT	533160	4477270	207.26	22.86	1088.71	2.09	1.38	0.02
NI139	POINT	533210	4477300	207.26	1.524	0	0.03	15.24	0.01
NI140	POINT	533210	4477310	207.26	1.524	0	0.03	15.24	0.01
NI141	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI142	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI143	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI144	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI145	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI146	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.03
NI147	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.04
NI148	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.07
NI149	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.63
NI150	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.66
NI151	POINT	471180	4514270	322.48	1.524	0	0.03	15.24	0.11
NI152	POINT	470830	4514980	319.74	6.4008	283.15	24.97	1.14	0.00
NI153	POINT	471200	4514270	319.74	1.524	0	0.03	15.24	0.03
NI154	POINT	500000	4513760	329.18	28.3464	533.15	10.84	2.19	0.53
NI155	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	0.14
NI156	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	2.42
NI157	POINT	471760	4513990	322.17	33.528	313.15	0.50	52.43	0.28
WV1	POINT	533500	4466500	225	24.38	533.15	0.10	3.05	3.64
WV2	POINT	533600	4465400	205	76.20	597.04	27.30	3.96	16.48
WV3	POINT	534200	4474400	225	54.86	455.37	59.00	3.35	20.27
WV4	POINT	531000	4495200	285	45.72	467.04	38.00	1.83	3.44
WV5	POINT	531000	4495200	285	68.58	1258.71	21.00	1.07	1.85
AG1	POINT	578200	4482700	220	76.20	590.37	9.02	2.59	13.54
PA1	POINT	556080	4502192	217	83.80	450.00	15.40	3.35	47.9
PA2	POINT	545579	4498579	235	15.20	450.00	24.90	3.00	3.6
PA3	POINT	549049	4498124	220	289.50	325.00	17.20	5.85	683.6
PA4	POINT	560720	4504371	226	30.50	474.00	5.20	1.50	3.1
PA5	POINT	557468	4520519	262	30.50	339.00	12.00	3.00	2.0
PA6	POINT	554454	4500315	230	61.00	330.00	12.30	2.40	90.6
PA7	POINT	563303	4513529	335	15.80	644.00	3.30	0.90	3.6
PA8	POINT	543844	4493074	229	16.50	368.00	6.50	2.60	2.1
PA9	POINT	550860	4468065	360	153.30	324.00	3.20	2.40	0.1
PA10	POINT	560997	4523001	285	60.00	450.00	10.00	3.00	2.1
PA11	POINT	542901	4535840	335	60.00	450.00	10.00	3.00	61.8
PA12	POINT	553212	4531855	245	60.00	450.00	10.00	3.00	93.4
PA13	POINT	556900	4525255	255	60.00	450.00	10.00	3.00	45.2
PA14	POINT	553189	4469719	353	121.90	394.00	27.40	4.40	14.4

CO

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	CO (g/s)
CI1	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.04
CI2	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.12
CI3	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.03
CI4	POINT	492120	4486800	362.71	7.7724	810.93	58.92	0.20	0.03
CI5	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.17
CI6	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.17
CI7	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.15
CI8	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.17
CI9	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.17
CI10	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.16
CI11	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.13
CI12	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.18
CI13	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.15
CI14	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.12
CI15	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.16
CI16	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.12
CI17	POINT	520400	4508080	329.49	9.144	477.59	9.95	0.71	0.00
CI18	POINT	493330	4525620	338.33	12.192	477.59	8.44	1.03	0.02
CI19	POINT	493330	4525620	338.33	12.192	477.59	8.98	0.91	0.01
CI20	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.01
CI21	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.36
CI22	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.36
CI23	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI24	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI25	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI26	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI27	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI28	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI29	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI30	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI31	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI32	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI33	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.55
CI35	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.00
CI36	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.53
CI37	POINT	528760	4547590	264.87	38.1	477.59	9.11	1.62	0.77
CI38	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	0.50
CI39	POINT	530100	4545710	263.65	38.1	344.26	40.62	1.50	3.40
CI41	POINT	529110	4547340	266.7	22.5552	588.71	3.68	3.00	0.87
CI42	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.10
CI43	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.10
CI44	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.10
CI45	POINT	529110	4547340	266.7	19.2024	355.37	7.86	1.22	8.34
CI46	POINT	529000	4547000	266.7	19.2024	355.37	7.86	1.22	0.15
CI47	POINT	529910	4452890	204.22	251.46	447.04	2.70	6.71	8.01
CI48	POINT	529910	4452890	204.22	251.46	447.04	2.70	6.71	0.05
CI49	POINT	529840	4455560	204.22	251.46	447.04	2.54	6.71	9.80
CI50	POINT	529840	4455560	204.22	251.46	447.04	2.54	6.71	0.01
CI51	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.00

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	CO (g/s)
CI54	POINT	529910	4452890	204.22	274.32	430.37	3.09	7.32	7.43
CI55	POINT	529910	4452890	204.22	274.32	430.37	3.09	7.32	0.04
CI57	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.51
CI58	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.03
CI60	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.51
CI61	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.03
CI63	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.51
CI64	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.03
CI66	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	2.26
CI67	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.17
CI69	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	2.29
CI70	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.18
CI72	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	2.21
CI73	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	0.18
CI74	POINT	532630	4466220	201.17	10.668	588.71	10.11	1.52	0.25
CI75	POINT	533540	4462480	201.17	1.524	0	0.03	15.24	0.08
CI77	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.59
CI78	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.33
CI80	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.59
CI81	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.33
CI83	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	1.59
CI84	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.33
CI85	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.12
CI86	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.12
CI87	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.12
CI88	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.12
CI89	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.22
CI90	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	4.67
CI92	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.03
CI93	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.02
CI94	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	2.01
CI95	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	1.20
CI96	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.16
CI97	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	6.43
CI98	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	944.12
CI99	POINT	533580	4462600	204.22	53.9496	324.82	9.94	3.96	0.31
CI100	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.02
CI101	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.39
CI102	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.01
CI103	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.07
CI104	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.01
CI105	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.74
CI106	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	0.76
CI107	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.76
CI108	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	0.78
CI109	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.02
CI110	POINT	531000	4486700	210.31	6.0198	669.82	13.77	1.04	0.02
CI111	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.02
CI112	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.02
CI113	POINT	531100	4486700	210.31	6.0198	669.82	13.77	1.04	0.02
CI114	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	4.27
CI115	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	3.27

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	CO (g/s)
CI118	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	6.14
CI119	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	12.65
CI120	POINT	531200	4486600	210.31	259.08	412.04	16.27	9.50	10.47
CI121	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.04
CI122	POINT	533110	4477130	207.26	10.4059	463.71	4.79	0.56	0.05
CI123	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.02
CI124	POINT	533160	4477300	207.26	27.432	1088.71	1.05	1.38	0.01
CI125	POINT	533080	4477370	207.26	1.524	0	0.03	15.24	0.02
CI126	POINT	533200	4477370	207.26	1.524	0	0.03	15.24	0.01
CI127	POINT	533080	4477380	207.26	1.524	0	0.03	15.24	0.02
CI128	POINT	533160	4477290	207.26	22.86	1088.71	1.05	1.38	0.02
CI129	POINT	533160	4477290	207.26	22.86	1088.71	2.09	1.38	0.02
CI130	POINT	533160	4477270	207.26	22.86	1088.71	2.09	1.38	0.02
CI131	POINT	533210	4477300	207.26	1.524	0	0.03	15.24	0.01
CI132	POINT	533210	4477310	207.26	1.524	0	0.03	15.24	0.01
CI133	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI134	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI135	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI136	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI137	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI138	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.05
CI139	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.04
CI140	POINT	533180	4477380	207.26	1.524	0	0.03	15.24	0.06
CI141	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.28
CI142	POINT	471180	4514270	322.48	1.524	0	0.03	15.24	0.09
CI143	POINT	470830	4514980	319.74	6.4008	283.15	24.97	1.14	0.00
CI144	POINT	471200	4514270	319.74	1.524	0	0.03	15.24	0.03
CI145	POINT	500000	4513760	329.18	28.3464	533.15	10.84	2.19	0.91
CI146	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	1.45
CI147	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	6.13
CI148	POINT	471760	4513990	322.17	33.528	313.15	0.50	52.43	0.24
WV1	POINT	533500	4466500	225	24.38	533.15	0.10	3.05	0.04
WV2	POINT	533600	4465400	205	76.20	597.04	27.30	3.96	5.80
WV3	POINT	534200	4474400	225	54.86	455.37	59.00	3.35	6.42
WV4	POINT	531000	4495200	285	45.72	467.04	38.00	1.83	3.90
AG1	POINT	578200	4482700	220	76.20	590.37	9.02	2.59	12.81
PA1	POINT	556080	4502192	217	83.80	450.00	15.40	3.35	633.25
PA2	POINT	545579	4498579	235	15.20	450.00	24.90	3.00	11.01
PA3	POINT	549049	4498124	220	289.50	325.00	17.20	5.85	52.76
PA4	POINT	560720	4504371	226	30.50	474.00	5.20	1.50	0.45
PA5	POINT	557468	4520519	262	30.50	339.00	12.00	3.00	24.35
PA6	POINT	554454	4500315	230	61.00	330.00	12.30	2.40	50.63
PA7	POINT	563303	4513529	335	15.80	644.00	3.30	0.90	5.41
PA8	POINT	543844	4493074	229	16.50	368.00	6.50	2.60	5.93
PA9	POINT	550860	4468065	360	153.30	324.00	3.20	2.40	0.01
PA10	POINT	560997	4523001	285	60.00	450.00	10.00	3.00	14.62
PA11	POINT	542901	4535840	335	60.00	450.00	10.00	3.00	4.54
PA12	POINT	553212	4531855	245	60.00	450.00	10.00	3.00	4.98
PA13	POINT	556900	4525255	255	60.00	450.00	10.00	3.00	11.00
PA14	POINT	553189	4469719	353	121.90	394.00	27.40	4.40	27.33

SO2

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	SO2 (g/s)
SI2	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI5	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI6	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI7	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI8	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI9	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI10	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI11	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI12	POINT	492120	4486800	362.71	9.653	922.04	56.53	0.30	0.0003
SI13	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.0003
SI14	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.0003
SI15	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.0003
SI16	POINT	492120	4486800	362.71	10.1803	705.37	33.26	0.51	0.0003
SI19	POINT	520400	4508080	329.49	10.668	783.15	15.95	0.81	0.8052
SI21	POINT	493330	4525620	338.33	12.192	477.59	8.44	1.03	5.2145
SI22	POINT	493330	4525620	338.33	12.192	477.59	8.98	0.91	0.4761
SI23	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.0046
SI24	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.1516
SI25	POINT	540000	4530000	335.28	4.1148	770.93	48.51	0.30	0.1519
SI26	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI27	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI28	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI29	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI30	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI31	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI32	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI33	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI34	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI35	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI36	POINT	540290	4538390	341.38	9.9974	711.48	51.09	0.35	0.0190
SI39	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	8.1640
SI40	POINT	528760	4547590	264.87	38.1	477.59	9.11	1.62	11.8248
SI41	POINT	528780	4547590	264.87	38.1	477.59	9.11	1.62	7.6741
SI42	POINT	530100	4545710	263.65	38.1	344.26	40.62	1.50	2.5968
SI44	POINT	529110	4547340	266.7	22.5552	588.71	3.68	3.00	0.0066
SI45	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.0006
SI46	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.0006
SI47	POINT	529110	4547340	266.7	27.432	1255.37	5.39	1.83	0.0003
SI48	POINT	529110	4547340	266.7	19.2024	355.37	7.86	1.22	0.1870
SI49	POINT	529000	4547000	266.7	19.2024	355.37	7.86	1.22	0.3049
SI50	POINT	529910	4452890	204.22	251.46	447.04	2.70	6.71	1147.6178
SI52	POINT	529840	4455560	204.22	251.46	447.04	2.54	6.71	593.4549
SI54	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.0017
SI55	POINT	529910	4452890	204.22	40.5384	616.48	30.48	1.52	0.0414
SI56	POINT	529910	4452890	204.22	21.336	614.82	41.14	1.83	0.8394
SI57	POINT	529910	4452890	204.22	274.32	430.37	3.09	7.32	440.4567
SI60	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.4019
SI61	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.1706
SI63	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.4016

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	SO2 (g/s)
SI67	POINT	532710	4466230	201.17	77.4192	588.71	1.74	3.43	0.1723
SI69	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.7830
SI70	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.1202
SI72	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.8037
SI73	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.1403
SI75	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.7418
SI76	POINT	532710	4466230	201.17	35.6616	505.37	7.39	2.44	1.0739
SI77	POINT	532630	4466220	201.17	10.668	588.71	10.11	1.52	0.0017
SI78	POINT	533540	4462480	201.17	1.524	0	0.03	15.24	0.0800
SI80	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.0112
SI81	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	2.1661
SI83	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.0112
SI84	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	2.1604
SI86	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	0.0112
SI87	POINT	533390	4462420	204.22	56.9976	783.15	2.18	3.96	2.1604
SI88	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0009
SI89	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0009
SI90	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0009
SI91	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0009
SI92	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.0014
SI93	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	6.4385
SI94	POINT	533610	4463080	204.22	71.3232	574.82	8.55	3.05	0.2770
SI95	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.0003
SI97	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	1.5871
SI98	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.9493
SI99	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	1.0166
SI100	POINT	532760	4466210	201.17	55.7784	574.82	19.42	1.83	0.2304
SI102	POINT	533700	4462710	204.22	53.6448	1088.71	24.58	1.52	0.5322
SI103	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0501
SI104	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.4240
SI105	POINT	533090	4460060	204.22	1.524	0	0.03	15.24	0.0501
SI106	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	1.7131
SI107	POINT	533610	4463160	204.22	42.672	449.82	6.06	3.05	1.7493
SI108	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	1.7441
SI109	POINT	533610	4463160	204.22	42.672	544.26	6.06	3.05	1.7956
SI115	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	405.8369
SI116	POINT	531100	4486800	210.31	153.6192	422.04	15.69	6.40	304.7883
SI117	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	384.5582
SI118	POINT	531100	4486700	210.31	153.6192	422.04	17.30	6.10	363.3370
SI119	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	570.4770
SI120	POINT	531100	4486600	210.31	304.8	413.71	14.37	8.15	1146.1550
SI121	POINT	531200	4486600	210.31	259.08	412.04	16.27	9.50	970.0168
SI122	POINT	532970	4477090	207.26	10.4059	463.71	4.79	0.56	0.0003
SI123	POINT	533110	4477130	207.26	10.4059	463.71	4.79	0.56	0.0003
SI126	POINT	533080	4477370	207.26	1.524	0	0.03	15.24	0.0003
SI128	POINT	533080	4477380	207.26	1.524	0	0.03	15.24	0.0003
SI134	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003
SI135	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003
SI136	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003
SI137	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003
SI138	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003
SI139	POINT	533130	4477240	207.26	19.812	1588.71	8.59	1.37	0.0003

Source ID	Stack Release Type	Easting (X) (m)	Northing (Y) (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	SO2 (g/s)
SI142	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.0020
SI143	POINT	500000	4513760	322.48	16.703	499.82	2.25	1.83	0.0020
SI144	POINT	471180	4514270	322.48	1.524	0	0.03	15.24	0.0006
SI146	POINT	471200	4514270	319.74	1.524	0	0.03	15.24	0.0003
SI147	POINT	500000	4513690	323.39	60.6552	319.26	32.34	1.22	0.2462
SI148	POINT	500000	4513760	329.18	28.3464	533.15	10.84	2.19	0.0066
SI149	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	0.0072
SI150	POINT	500000	4513940	322.17	33.528	313.15	0.50	52.43	0.0158
SI151	POINT	471760	4513990	322.17	33.528	313.15	0.50	52.43	0.0017
WV1	POINT	533500	4466500	225	24.38	533.15	0.10	3.05	0.77
WV2	POINT	533600	4465400	205	76.20	597.04	27.30	3.96	18.98
WV3	POINT	534200	4474400	225	54.86	455.37	59.00	3.35	45.80
WV4	POINT	531000	4495200	285	45.72	467.04	38.00	1.83	0.43
WV5	POINT	531000	4495200	285	68.58	1258.71	21.00	1.07	2.63
AG1	POINT	578200	4482700	220	76.20	590.37	9.02	2.59	12.86
PA1	POINT	556080	4502192	217	83.80	450.00	15.40	3.35	139.95
PA2	POINT	545579	4498579	235	15.20	450.00	24.90	3.00	0.57
PA3	POINT	549049	4498124	220	289.50	325.00	17.20	5.85	1077.92
PA4	POINT	560720	4504371	226	30.50	474.00	5.20	1.50	1.12
PA5	POINT	557468	4520519	262	30.50	339.00	12.00	3.00	1.67
PA6	POINT	554454	4500315	230	61.00	330.00	12.30	2.40	109.50
PA7	POINT	563303	4513529	335	15.80	644.00	3.30	0.90	0.01
PA8	POINT	543844	4493074	229	16.50	368.00	6.50	2.60	0.03
PA9	POINT	550860	4468065	360	153.30	324.00	3.20	2.40	5.20
PA10	POINT	560997	4523001	285	60.00	450.00	10.00	3.00	0.27
PA11	POINT	542901	4535840	335	60.00	450.00	10.00	3.00	37.57
PA12	POINT	553212	4531855	245	60.00	450.00	10.00	3.00	649.87
PA13	POINT	556900	4525255	255	60.00	450.00	10.00	3.00	60.25
PA14	POINT	553189	4469719	353	121.90	394.00	27.40	4.40	90.73

Exhibit D

List of Dispersion Modeling Input and Output Files (Accompanying CD)

ORCF Dispersion Modeling Files (See enclosed CD)

Model or Preprocessor	File Names	Description of File
AERMET	Pit0105.144	Surface observation from Pittsburgh Airport for the years 2001 to 2005 in the CD144 card format.
	PittsUA_FSL.txt	Upper air sounding data (FSL format) from Pittsburgh Upper Air for the period 2001 to 2005
	Stage1.inp Stage1.msg Stage1.rpt Sfexout.dsk Sfqaout.dsk Uaexout.dsk Uaqaout.dsk	Stage 1 AERMET processor input and output files. Intermediate surface and upper air extract and quality control files.
	Stage2.inp Stage2.msg Stage2.rpt Merge.dsk	Stage 2 AERMET processor input and output files. Intermediate file of merged surface and upper air data.
	Stage3.inp Stage3.msg Stage3.rpt Pitt0105.SFC Pitt0105.PFL	Stage 3 AERMET processor input and output files. AERMOD surface data and vertical profile input files for the combined 5 year period from 1/1/2001 through 12/31/2005.
AERMAP	1017.dem, 1017s.dem, 3676.dem, 7913_75m.dem 7914.dem, 7914g.dem 7916.dem, 8668_75m.dem	USGS Digital Elevation Model (DEM) data files.
	Mapparams.out Domdetail.out Mapdetail.out	Terrain file processing input and output files.
BPIP	PM10_test1.prw PM10_test1.pip	Building Profile Input Program (BPIP) input files
	PM10_test1.tab PM10_test1.sum PM10_test1.so	Building Profile Input Program (BPIP) output files
AERMOD	**Significant Impact Assessment**	
	\SIGNIFICANCE ASSESSMENT*.DTA	AERMOD input files
	\SIGNIFICANCE ASSESSMENT*.USF	AERMOD output files
	Class II Impact Assessment	
	\CLASS II*.DTA	AERMOD input files
	\CLASS II*.OUT	AERMOD output files

Model or Preprocessor	File Names	Description of File
	HAPS Impact Assessment	
	\HAPS*.DTA	AERMOD input files
	\HAPS*.OUT	AERMOD output files
	NAAQS Impact Assessment	
	\NAAQS*.DTA	AERMOD input files
	\NAAQS*.OUT	AERMOD output files
	Class I Impact Assessment	
	\CLASS I*.DTA or *INP	AERMOD input files
	\CLASS I*.OUT or *USF	AERMOD output files