☒ **Synthetic Minor Determination and/or** ☐ **Netting Determination**

Permit To Install **07-00511**

A. Source Description

Haverhill North Coke Company proposes to install four 100 oven Nonrecovery Coke Batteries during a two-phase construction, Phase I consisting of a single 100-oven battery and Phase II with three 100-oven batteries (P901 & P902), two Quench Towers (P001 & P002), Paved Roadways & Parking Areas (F001), Raw Material Storage Piles (F002), Coal Handling, Processing and Transfer (F003) and Coke and Breeze Handling and Processing (F004).

B. Facility Emissions and Attainment Status

Haverhill North Coke Company will be located in Scioto County, which is an attainment area for all criteria pollutants. This is a new facility with potential emissions greater than 100 tons per year for particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds.

C. Source Emissions

This permit to install establishes an allowable Lead emission limitation of 0.106 tpy from the waste gas stack, 0.0066 from the pushing stack, and 0.000044 tpy from each charging baghouse stack and 0.0025 from quench tower D during Phase I and 0.11 from each waste gas stack, 0.013 tpy from each pushing stack, 0.000044 from each charging baghouse stack and 0.005 from each quench tower during Phase II. Lead emissions shall not exceed 0.60 ton per year for emissions units P001, P002, P901, and P902 combined.

D. Conclusion

The operational restrictions contained in this permit are adequate to provide federally enforceable framework to keep emissions of Lead below the PSD threshold of 0.60 tons per year; therefore, Haverhill North Coke Company will not trigger PSD review for the pollutant Lead.

STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS FOR SUN COKE COMPANY HAVERHILL, OHIO PTI NUMBER 07-00511

October 8, 2003

Ohio Environmental Protection Agency
Division of Air Pollution Control
Lazarus Government Center
122 South Front Street
Columbus, Ohio 43215

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are:

1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.

2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that has been achieved in practice.

2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.

3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that has been achieved in practice.

2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

SITE DESCRIPTION

The facility is in Green Township, in Haverhill, Ohio, which is located in Scioto County. This area is classified as attainment for all of the criteria pollutants, particulate matter less than 10 microns, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds (ozone) and lead.

FACILITY DESCRIPTION AND PROJECT INTRODUCTION

The planned Haverhill Coke Plant will be constructed in two phases. These facilities will include coal handling and transfer operations, coal storage piles, charging, heat recovery coke ovens, pushing, quenching, coke and breeze handling and processing, coal and coke storage piles, HRSGs, and the flue gas desulfurization (FGD) facility. At design capacity, the facility will process 3.5 million tons coal/year and produce a nominal 2.5 million tons coke/year. During the first phase, the facility will process 0.88 million tons coal/year and produce a nominal 0.64 million tons coke/year.

The first construction phase consists of one 100-oven battery. The battery will be located near the Sunoco Chemical boundary and will be constructed in such a way as to allow the facility to provide steam to the chemical facility. No electric power will be produced during Phase 1 operations. The operation of Phase 1 will require maintenance stacks associated with each HRSG to open so that annual inspection and maintenance procedures can be performed safely.

The maximum time that will be required for each HRSG is 14 days/year. The scheduled outages will be spread throughout the year so that the HRSGs are brought down one at a time for scheduled maintenance. During the scheduled maintenance, 20 or fewer of the 100 ovens will vent waste gases directly into the atmosphere, bypassing the FGD/fabric filter system. All vented gases will still pass through the heat recovery oven and common tunnel/afterburner system, which fully combusts the gases prior to release into the atmosphere. The BACT analysis for “maintenance vents” applies to the emissions during this activity.

The second phase includes three additional 100-oven batteries. The waste heat associated with these additional ovens will be recovered in HRSGs and used to generate electricity. Also, following the construction of Phase 2, venting during annual HRSG maintenance will not be required. The 100-oven battery constructed in Phase 1 will be connected to an additional 100-oven battery, allowing waste gas sharing. Phase 2 will also include expanded coal unloading, a domed coal storage facility, additional pushing/charging machines, an additional quench tower, and expanded coke storage.

As previously proposed, the HNCC will utilize Sun Coke’s heat recovery type of oven. In coke production from heat recovery and byproduct ovens, the volatile fraction of the coal is driven off in a reducing atmosphere. Coke is essentially the remaining carbon and ash. With byproduct ovens, the volatiles and combustion products are collected downstream of the oven chamber and refined in a chemical plant to produce coke oven gas and other products such as tar, ammonia, and light oils. In heat recovery ovens, all the coal volatiles are oxidized within

the oven system.

Each technology has its own set of design objectives that affect its emissions. Both types of ovens are typically constructed of refractory brick shapes and other materials that, with day-to-day operation, can form small cracks in the refractory and around the removable parts. Byproduct ovens are kept at a positive pressure to avoid oxidizing recoverable products and overheating the ovens. Heat recovery ovens are kept at a negative pressure, adding air from the outside to oxidize all volatile matter and release the heat of combustion within the oven system. This opposite operating pressure condition and combustion within the oven system are important design differences between heat recovery ovens and byproduct ovens. Small openings or cracks in byproduct ovens allow raw coke oven gas (and hazardous pollutants) to leak into the atmosphere. The openings or cracks in the heat recovery ovens simply allow additional air to be drawn into the oven.

Coal is charged onto the oven floor at the beginning of the cycle. The coal bed absorbs heat from the refractory, starting the coking process. Air is added to the oven crown from the door hole dampers. Partially combusted gases are drawn into downcomers and pass through a sole flue system beneath the oven floor where essentially all combustion is completed. The gases are then drawn into uptakes within the walls and pass into a common tunnel/afterburner where any remaining uncombusted gases are oxidized. The common tunnel/afterburner system routes the hot gases to HRSGs or the vent stacks.

Coal and coke processing and handling units will be constructed for Phase 1. Separate, expanded units will be constructed for Phase 2. Emissions from material transfer will be controlled by enclosures except a few areas where the potential to overheat coal or coke may pose a safety hazard. Charging emissions that escape the ovens will be controlled by traveling hood/baghouse systems on the charging/pushing machines. One charging/pushing machine is included for each battery. HRSGs recover heat from the oven waste gases, lowering the temperature of the waste gases and allowing the operation of the pollution control devices.

The particulate matter (PM) and SO_2 will be removed from the waste gas in lime spray dryer/baghouse systems. Pushing emissions will be captured by stationary hot car sheds and evacuated by fan/baghouse systems. Separate baghouse systems will control emissions from Batteries A and C and Batteries B and D. Quenching will be performed with conventional quench towers with baffles. Separate quenching systems will be constructed for Batteries A-B and C-D. Emissions will be partially controlled by maintaining dissolved solids levels in the quench water at or below 1100 mg/L. A baghouse will control emissions from the coke screening and crushing facilities.

NEW SOURCE REVIEW (NSR)/PSD APPLICABILITY

This facility will generate significant levels of criteria pollutant emissions including SO2, NO_x, CO, PM-10 and VOC. For PSD purposes, the installation of this project makes SunCoke Haverhill a major facility. A PSD analysis is required for any increase in emissions of a pollutant exceeding the PSD threshold emissions level, or the significance levels. Non-Attainment New Source Review is not applicable, due to attainment status.

Sun Coke Haverhill is subject to MACT. The facility is subject to 40 CFR Part 63 Subpart CCCCC and 40 CFR Part 63 Subpart L.

Short term emissions from this Project are based upon worst case operating conditions. The annual emissions are based on pounds per hour emissions at average operating conditions at 8760 hours or synthetically limited through a throughput restriction.

Facility Emissions

Pollutant	After Phase 1 (tons/year)	After Phase 2 (tons/year)
TSP	326	1217
PM_{10}	141	485
SO_2	577	1630
NO_x	445	1780
CO	130	522
VOCs	109	436
Lead	0.12	0.27

CO = Carbon Monoxide
NO_x = Nitrogen Oxides
PM_{10} = Particulate Matter <10 microns
$SO2$ = Sulfur Dioxide
TSP = Total Suspended Particulates
VOC = Volatile Organic Compound

Control Technology Review

As part of the application for any source regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology (BACT) will be employed by the source. The SunCoke Haverhill facility is subject to PSD regulations which mandate a case-by-case BACT analysis be performed for PSD triggering pollutants. The application used a "top-down" approach to determine the latest demonstrated control techniques and select an appropriate level of control.

The basic steps to be followed are:

Identify all available potential control options;

Eliminate technically infeasible options;

Rank remaining technologies by control effectiveness;

Evaluate the feasible controls by performance and cost analysis; and

Select the most effective control based on energy, environmental and economic impacts (generally, the feasible technology that is also considered to be cost effective).

PM

Consistent with the “top-down” methodology discussed above, PM and PM_{10} controls were evaluated in this BACT analysis for the coking process and related activities. Related activities include pushing, charging, and coke crushing and screening. PM controls associated with the quenching activities are also discussed. In addition, several miscellaneous points such as coal unloading, coal storage piles, coal and coke transfer, coke sizing, coke load-out, and roads account for <3% of the particulate emissions. Best available control technology will be demonstrated for these miscellaneous sources.

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Potential Technologies for PM Control from Coking, Pushing, Charging, and Coke Crushing and Screening Activities

Control Technology	Control Level for BACT Analysis
Baghouse on Waste Gas Stream (Coking Process)	99+%
Baghouse with Shed for Pushing	99%
Baghouse for Coke Crushing/Screening	99%
Oven Negative Pressure + Baghouse with Traveling Hood for Charging	93%

BACT = Best Available Control Technology
PM = Particulate Matter

Coking, Pushing, Charging, Crushing, and Screening:
The principal control techniques for PM emissions associated with the sources are the application of capture and control devices. Fabric filtration has been widely applied to coal combustion sources since the early 1970s and consists of a number of filtering elements (bags) along with a bag cleaning system contained in a main shell structure incorporating dust hoppers. Collection efficiencies of fabric filters (baghouses) can be as high as 99.9% (EPA 1995). Variability in overall control efficiencies associated with baghouses is due to the efficiency of the capture device (e.g., hood) used to route the air stream to the baghouse. Baghouses are technically feasible for the heat recovery coking process and related activities.

ESP technology offers a control efficiency that is comparable to baghouses. ESP is a proven technology for a variety of coal combustion sources. Because of their modular design, ESPs, like baghouses, can be applied to a wide range of system sizes. The operating parameters that influence ESP performance include fly ash mass loading, particle size distribution, fly ash electrical resistivity, and precipitator voltage and current. Data for ESPs applied to coal-fired sources show fractional collection efficiencies greater than 99% for fine (less than 0.1 micrometer) and coarse particles (greater than 10 micrometers). These data show a reduction in collection efficiency for particle diameters between 0.1 and 10 micrometers.

Although ESP is technically feasible for Haverhill Works, baghouses offer the "top" or most effective control option and will be the technology considered for BACT.

The same options evaluated to control SO_2 emissions during maintenance venting would also reduce PM emissions. However, since PM emissions during venting are about 15 times less than SO_2 emissions (10.8 tons PM/year and 184.8 tons SO_2/year), the cost of control per ton of pollutant would be approximately 15 times higher. Since the additional controls were cost is prohibitive for SO_2 then PM/PM-10 is also cost prohibitive. BACT for controlling PM emissions from venting are to:

- Optimize combustion,
- Minimize venting by bringing only one HRSG offline at a time so that 80% of the waste gases will go through the primary system, and
- Limit venting to <4% of the operating hours (14 days/year per HRSG).

Quenching
Coke quenching entrains PM from breakup of the hot coke when it is hit with water. The PM is carried up the quench tower by the velocity of the steam plume. In addition, dissolved solids from the quench water may become entrained in the steam plume rising from the tower. The typical control is to install baffles in the

quench tower to reduce these emissions. The towers contain two rows of baffles. Another "control" is to use clean water instead of "dirty" water (i.e., water high in solids or other pollutants) to quench the coke (EPA 1995).

These controls are consistent with the recent (April 14, 2003) MACT standards for quenching in 40 CFR 63, Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks; Final Rule.

The control range for these activities is 50–90%. For the purpose of this analysis, a 70% control level has been applied.

Potential Technologies for PM Control from Quenching

Control Technology	Control Level for BACT Analysis
Baffles and Cleaned Water	70%

BACT = Best Available Control Technology
PM = Particulate matter

Several "dry" coke quenching systems have been tried at various facilities. For these systems, the coke is cooled indirectly. The coke is placed into a large surge bin, where the coke is cooled by water-filled tubes as it travels from top to bottom in the bin. A waste heat recovery unit produces power or steam from the recovered heat. No dry coke quenching system has been demonstrated to the point where it can be considered technically feasible for daily operations. A dependable coke quenching process is essential because coke will be pushed and quenched at the facility 365 days/year. The quenching process used at all facilities in the United States, a baffled tower and cleared water, is the only technically feasible quenching technology currently available.

PM_{10}

Following the "top-down" BACT approach, the highest ranked control technology or combined technology option that is technically feasible is evaluated further for BACT. If this option is economically feasible and does not have unacceptable energy and/or adverse environmental impacts, the option is deemed BACT. Otherwise, the next ranked control option is evaluated. This evaluation process continues until a control option is found that meets all the BACT requirements. Once an option is determined as BACT, it is unnecessary to evaluate any remaining options.

In the case of PM controls for the Haverhill Works coking process, the "top" technically feasible options discussed above are economically feasible and are recommended as BACT. To summarize, these technologies are listed in following table:

Summary of Recommended BACT for PM_{10} Control

Control Technology	Control Level	Expected Emission Level
Baghouse on Waste Gas Stream (Coking Process)	99+%	0.008 gr/dscf
Optimize Combustion (Coking Process during Phase 1 Maintenance Venting)	Baseline	0.03 gr/dscf
Baghouse with Shed for Pushing	99%	0.039 lb/ton
Oven Negative Pressure + Baghouse with Traveling Hood for Charging	99%	0.008 gr/dscf
Baghouse for Coke Crushing/Screening	99%	0.008 gr/dscf
Baffles and Cleaned Water for Quenching	70%	0.05 lb/ton coal

BACT=Best Available Control Technology
dscf=dry standard cubic feet
PM_{10}=Particular matter less than ten microns

CO and VOC

A discussion of CO and VOC controls is combined here due to the similarity in approach for control of these emissions during the coking process and related activities. CO and VOC emissions are potentially generated during the conversion of coal to coke and during pushing activities.

Combustion Emissions

In a by-product coke oven, the volatile fraction of coal is recovered instead of burned. In the heat recovery process, volatile matter is released from the coal bed and combusted within the coke oven. Heat that is generated drives the coking process. The aim of the heat recovery process is to have complete combustion and thereby release all the available heat. This approach naturally produces low emissions of CO and VOCs. The gases remain in the sole flues and common tunnel approximately 7 seconds where they are exposed to oxidizing conditions and temperatures from 1,600 to 2,500˚F. Venting during HRSG maintenance in Phase 1 has no effect on CO and VOC emissions. They are the same whether exhausted from the main stack or the vent stacks.

These operating conditions can be compared to controlled-air incineration. For controlled-air incineration, combustion occurs in two stages. In the first stage, the low air-to-fuel ratio dries and facilitates volatilization of the waste material, and most of the residual carbon in the ash burns. In the second stage, excess air is added to the volatile gases formed in the primary chamber to complete combustion. This type of system is recognized as state-of-the-art for destroying organic compounds and CO. Typical secondary chamber residence times are 0.5 second and 1,800–2,000˚F (EPA 1995).

These operations will also meet MACT for hazardous air pollutants. Specific requirements for heat recovery batteries are 0% leaks for doors and daily monitoring of negative pressure in each oven or in a common battery tunnel. As discussed previously, the heat recovery ovens proposed for Haverhill Works will be operated under negative pressure. This will meet the requirements of the MACT rule and is also the method to ensure the 0% door leakage standard is being met. Venting during HRSG maintenance in Phase 1 has no effect oven pressure. The ovens will operate under negative pressure in either case.

Like incineration, the destruction of VOCs and CO is in the 98–99% range for the coke ovens. This destruction is inherent to the coking process, which has the aim to liberate all heat within the oven. This technology, referred to as combustion optimization, has a control level for BACT analysis of 98%.

Pushing Emissions

An advantage of the heat recovery coking process is that “green” pushes can virtually be eliminated. Green pushes result when coke is pushed that has not been fully carbonized. The uncarbonized material ignites when the oven is pushed. Standard work practice for heat recovery ovens is for the operator to look in the oven to determine whether carbonization is complete prior to pushing the oven. The level of VOC emissions historically associated with byproduct coke ovens is reduced by approximately 80% with the heat recovery ovens. This same mechanism also ensures minimal CO emissions.

These controls are consistent with the recent (April 14, 2003) MACT standards for pushing in 40 CFR 63, Subpart CCCCC, National Emission Standards for Hazardous Air Pollutants for Coke Ovens: Pushing, Quenching, and Battery Stacks; Final Rule.

NOx

The primary sources of NO_x emissions are the waste heat gases. Although NO_x is also present in the emissions from pushing and charging, the concentrations are very dilute (<2 ppm). A top down BACT analysis was performed for the waste gases. No NO_x controls are technically feasible for pushing and charging.

Consistent with the "top-down" methodology discussed above, pre-combustion controls, post-combustion controls (i.e., add-on controls), and feasible combinations of these were evaluated in a BACT analysis for NO_x emissions associated with the coking process in the Application for PTI (August 1999). Pre-combustion controls are technologies that prevent the formation of pollutants during the combustion process (e.g., staged combustion). The post-combustion controls that were identified are add-on controls used to either collect the pollutants or convert the pollutants to another form.

NO_x emissions from coking or coal combustion are primarily nitric oxide, with only a fraction of the NO_x as nitrogen dioxide. NO_x formation results from thermal fixation of atmospheric nitrogen in the combustion flame and from oxidation of nitrogen bound in the coal. Bituminous and subbituminous coals usually contain from 0.5 to 2 weight percent nitrogen, mainly present in aromatic ring structures.

As mentioned previously, no previous BACT determinations were identified for either heat recovery or by-product coke ovens. A RBLC database search was performed to identify technologies that have been approved by state regulatory agencies in PSD permits as BACT for NO_x control for related categories. The applicable RBLC categories were final BACT-PSD determinations for utility and industrial boilers >250 MMBTU/hour since January 1993 associated with "coal combustion." The BACT determinations were reviewed further for technologies that are potentially transferable to Haverhill Works.

Although the above sources are boilers, as opposed to coking facilities, it is possible to use this list to understand which control technologies are being applied to similar processes as BACT throughout the country. Additionally, the emission limits that reflect BACT can also be reviewed for consistency. The sources are listed in order of increasing emission limit (i.e., the most stringent emission limit is first).

RBLC Database Search Results for NO_x Control

RBLC ID	Facility	Last Update	Process	Control Option	Percent Efficient	Emission Limit
IA-0051	Archer Daniels Midland Company	12/18/2001	Boiler, CFB, Coal Fired	SNCR	NL	0.07 lb/MMBTU
IA-0046	Archer Daniels Midland Company	12/18/2001	Boiler, Coal Fired, CFB, #5	SNCR	NL	0.07 lb/MMBTU
IA-0046	Archer Daniels Midland Company	12/18/2001	Boiler, Coal Fired, CFB, Atmospheric, #6	SNCR	NL	0.07 lb/MMBTU
IA-0025	Archer Daniels Midland Company	12/18/2001	Boiler, Fluidized Bed Steam Generator / Co-Gen.	SNCR	82.5	0.07 lb/MMBTU
FL-0178	Jea Northside Generating Station	10/10/2001	Electric Utility, Boiler, Coal	SNCR Emission Limit for 30-day Rolling Average	NL	0.09 lb/MMBTU
PA-0134	Northampton Generating Co.	12/2/2002	CFB Boiler	Thermo Denox	63	0.1 lb/MMBTU
IL-0060	Archer Daniels Midland Company	10/28/2002	Boiler (9&10), Fluidized Bed	SNCR Applied to CFB Boiler	85	0.12 lb/MMBTU
IL-0058	Archer Daniels Midland Company	10/9/2002	Boiler (7&8), Fluidized Bed	SNCR Applied to CFB Boiler	85	0.12 lb/MMBTU
PA-0133	Mon Valley Energy Limited Partnership	12/18/2001	Pulverized Coal Fired Boiler	SCR With LNB	50	0.15 lb/MMBTU
MA-0028	Energy New Bedford	2/25/2003	CFB Boiler	Controlled Combustion, SNCR	NL	0.15 lb/MMBTU
MA-0009	Energy New Bedford Cogeneration	12/18/2001	Boilers, 300-MW Coal-Fired Fluidized Bed	SNCR	NL	0.15 lb/MMBTU

	Facility					
MA-0011	Taunton Energy Center	12/18/2001	Boiler, Coal Fired CFB	Ammonia or Urea Injection, Staged Combustion with SNCR	50	0.15 lb/MMBTU
PA-0058	North Branch Energy Partners LP	12/18/2001	Boiler, CFB, 2 ea	NH3/Urea Injection	75	0.15 lb/MMBTU
WY-0039	Two Elk Generation Partners, Limited Partnership	12/18/2001	Boiler, Steam Electric Power Generating	LNB With Over Fire Air and SCR	75	0.15 lb/MMBTU
WY-0047	Encoal Corporation-Encoal North Rochelle Facility	12/18/2001	Boiler, Coal-Fired, Main Stack	LNBs With Flue Gas Recirculation	NL	0.16 lb/MMBTU
WY-0048	Wygen, Inc. - Wygen Unit One	12/18/2001	Boiler, Pulverized Coal-Fired, Steam Electric Power	LNBs and Overfire Air	56	0.22 lb/MMBTU
UT-0053	Deseret Generation and Transmission Company	12/18/2001	Coal-Fired Boiler	Boiler Design	99.599	0.55 lb/MMBTU
UT-0060	Deseret Generation and Transmission Co.	9/5/2002	Boiler, Generating Unit	LNB	NL	0.55 lb/MMBTU

CFB=Circulating Fluidized BedNO_x=Nitrogen Oxides
LNB=Low NO_x BurnerRBLC=RACT/BACT/LAER Clearinghouse
MMBTU=Million British Thermal UnitsSCR=Selective Catalytic Reduction
NA=not applicable SNCR=Selective Non-Catalytic Reduction

Potential Technologies for NO_x Control on Waste Gas from Coking Process

Control Technology	Control Level for BACT Analysis
Staged Combustion	Uncontrolled baseline[a]
SCR[b]	80%
Low NO_x Burner (not technically feasible)	55%
SCNR (not technically feasible)	50%

[a]Represents approximately 85% reduction inherent to process.
[b]Theoretically feasible—not demonstrated for this application.

BACT	= Best Available Control Technology	SCR	=	Selective Catalytic Reduction
NO_x	= Nitrogen Oxides	SCNR	=	Selective Non-Catalytic Reduction

The following sections discuss these technologies and their applicability to the heat recovery coking process.

Staged Combustion
Staged combustion reduces NO_x by limiting the oxygen present at temperatures where NO_x formation is likely and/or suppressing peak temperatures that increase NO_x formation during gas combustion. The proposed heat recovery coke ovens use three discrete regions for staged combustion of the coal volatiles. The regions are the crown, the sole flues, and the common afterburner. The crown is the first stage of air addition. This operates in a reducing atmosphere where minimal oxygen is present for NO_x formation.

The sole flues receive secondary air and operate in a reducing or oxidizing atmosphere as dictated by the oven gas rates. NO_x formation is minimized in the sole flues by controlling the temperatures. The final stage is the common tunnel afterburner that is always operated in an oxidizing mode. NO_x formation is limited in this region by adding enough tertiary air to cool the gases below temperatures where NO_x is formed (1,600–1,900˚F).

Staged combustion is an inherent part of the heat recovery process that results in the reduction of NO_x formation for this process by 85%. This control efficiency was estimated by evaluating NO_x formation and reduction from an equivalent coal-fired utility boiler. For example, the expected NO_x emission level from the coking process is 1 lb/ton coal (or approximately 55 ppm at 8% oxygen). The baseline for comparison is the NSPS for coal-fired boilers in 40 CFR 60 Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators. This limit is 0.60 lb/MMBTU (equivalent to 317 ppm at 8% oxygen). From this, one can see that staged combustion for the coking process can provide an 80+% reduction of NO_x when compared to the NSPS NO_x emission standard for utility boilers.

Selective Catalytic Reduction
Selective catalytic reduction (SCR) is a post-combustion technique that involves injecting ammonia into the waste gas in the presence of a catalyst to convert NO_x emissions to elemental nitrogen and water. The catalyst is needed because SCR systems operate at much lower temperatures than the selective non-catalytic reduction (SNCR); typical temperatures for SCR are 340–380˚C (650–720˚F), compared with 870–1,200˚C (1,600–2,200˚F) for SNCR. The most commonly used catalysts are a vanadium/titanium formulation (V_2O_5 stabilized in a TiO_2 base) and zeolite materials. The SCR reactor can be located at various positions in the process, including before a particulate control device (hot side) or downstream of particulate control device (cold side).

Specialized SCR catalysts can be used at lower temperatures under certain conditions. The Energy Research Center at Lehigh University in Bethlehem, Pennsylvania, conducted bench-scale testing of six low-temperature catalysts for the SCR of NO_x. The SCR catalyst bench-scale systems initially exhibited NO_x reduction efficiencies of 90% or higher in the temperature range of 120–300˚C (250–570˚F). The researchers evaluated the effects of the concentration of SO_2 and other variables on the system. At SO_2 concentrations of 55 ppm, the conversion of the best catalyst reduced from 99% to 24%, then stabilized at 47% (Ramachandran 1998).

The SCR alternatives evaluated in the BACT analysis are two hot-side SCR systems and one cold-side SCR system. The hot-side units offer the least amount of technical or mechanical problems among the available SCR technologies. In addition, the hot-side units offer fewer energy impacts when compared to cold-side SCR.

With a typical heat recovery system for this type facility, the heat exchangers would be designed to cool the waste gas stream from 1650 to 350ºF. However, with a hot-side SCR system, the gas stream would be cooled with a primary HRSG to a temperature of 650ºF, then an SCR unit would be placed in line at the minimum required catalyst temperature. A secondary HRSG would be placed after the SCR unit, further cooling the gas stream to 350ºF. Finally, the gas stream would proceed to the SO_2 and particulate control systems and the stack.

All SCR systems require a large "footprint." To illustrate the space requirements of SCRs: a 500-MW unit needs a total of 38 m × 30 m plan area × 30 m high (125 × 100 × 100 ft), including structural steel, stairs, walkways, etc.

In order to use a non-conventional SCR, such as the cold-side Low Temperature $DeNO_x$ System, the system installation needs to be at the "clean" end of the gas stream, following the SO_2 and particulate control device to avoid fouling of the catalyst from high SO_2 levels (Vendor 3 1999). The operating range for this cold-side SCR is 120–350˚C (250–660˚F). For the design parameters (e.g., velocity, SO_2, and particulates) at the Haverhill Coke Company, a $DeNO_x$ system temperature of 500˚F is necessary (Vendor 3 1999). With a temperature of 180˚F, the gas stream following the SO_2 and particulate control devices would need to be heated to 500˚F to be treated with this cold-side SCR system. This preheat or energy requirement is much greater than that required for a hot-side SCR. In addition, the gas flow rate is 970,000 acfm at -30 in. w.c. pressure, resulting in sizable equipment, fuel, and material requirements for a heat exchanger/preheat system to prepare the gas stream for treatment with a cold-side SCR. The preheat of the gas stream would be accomplished by using a natural gas fired heater in combination with a heat exchanger. The exhaust gas exiting the SCR would be cycled back through the heat exchanger to recover heat, thus reducing the cost associated with the cold-side SCR unit. The exhaust gas from the heat exchanger would then flow out the stack.

In the utility industry, SCR has a demonstrated ability to remove 75–86% of the NO_x emissions from low-sulfur-firing boilers (EPA 1995). Similar NO_x reduction is expected with the coking process but has not been demonstrated. For the purpose of this analysis, an 80% control level is considered representative for the SCR process. This technology has not been demonstrated with heat recovery coke ovens.

The performance of SCR is influenced by waste gas temperature, fuel sulfur content, ammonia-to-NO_x ratio, inlet NO_x concentration, space velocity, and catalyst condition. SCR is theoretically feasible for the Haverhill Works coking process.

Low NO_x Burners

Low NO_x burners (LNB) limit NO_x formation by controlling the stoichiometric and temperature profiles of the combustion process in each burner zone. The burner design of a LNB may create (1) a reduced oxygen level in the combustion zone to limit fuel NO_x formation, (2) a reduced flame temperature that limits thermal NO_x formation, and/or (3) a reduced residence time at peak temperature, which also limits thermal NO_x formation. Staged combustion burners are the most common type of LNB, achieving NO_x reductions by staging the injection of air or fuel in the near burner range. Typical control efficiencies for boilers employing LNB range from 39 to 71% (EPA 1994a).

LNBs are applicable to tangential and wall-fired boilers of various sizes but are not applicable to other boiler types such as cyclone furnaces or stokers (EPA 1995). LNBs are not applicable or technically feasible for cyclone furnaces or stokers when there is a burning fuel bed instead of burners. A boiler is different from a heat recovery coke oven. Coal is burned in a boiler. In a heat recovery coke oven, the volatile fraction of the coal migrates from the coal bed, and the gases are burned inside the oven system. The coal bed is converted to a coke bed over the cycle and remains in the oven. LNBs are not technically feasible for heat recovery coke ovens because the coal is not burned.

SNCR

SNCR is a post-combustion technique that involves injecting ammonia or urea into specific temperature zones in the upper furnace or connective pass of a boiler. The ammonia or urea reacts with NO_x in the gas to produce nitrogen and water.

Because NO_x reduction is a function of temperature, in the case of a boiler, the reagent is introduced at the top and backpass of a boiler. Multiple injection locations may be required, especially in case of cycling units.

Suppliers of SNCR technologies are limited; two are Nalco/Fuel Tech and Exxon Research and Engineering. Nalco's technology (NOx OUT) is marketed in the United States and other countries by licensees such as Flakt Canada Ltd.; Rertokraft AB; Research Cottrell, Inc.; RJM Corporation; Todd Combustion, Inc.; and Wheelabrator Air Pollution Control. Exxon markets its process (Thermal DeNO$_x$) through similar arrangements (World Bank 1998).

SNCR technologies can reduce NO$_x$ emissions by 35–50% (World Bank 1998). For the purpose of this analysis, a 50% control level is considered representative for the SNCR process. When combined with the staged combustion process discussed above, a control efficiency of 95% is theoretically achievable.

The effectiveness of SNCR depends on the temperature where reagents are injected, mixing of the reagent in the gas, residence time of the reagent within the required temperature window, ratio of reagent to NO$_x$, and the sulfur content of the fuel (i.e., a high sulfur fuel may create sulfur compounds that deposit in downstream equipment).

In the case of the heat recovery coking process, the required temperature window (i.e., 1,600–2,200˚F) is (1) available for a brief period of time during the combustion cycle and (2) may occur anywhere along the coke oven battery. It is thus difficult to inject the reagent into the gas stream that is within the temperature window, since the location is highly variable. If the injection takes place outside the temperature window, (1) the SNCR will not take place if the temperature is less than 1,600˚F or (2) more NO$_x$ will be formed with the addition of the nitrogen-rich reagent at temperatures greater than 2,200˚F. For these reasons, SCNR is not technically feasible.

NO$_x$ Technically Feasible Controls

The control technologies were considered individually and in combination in order to determine which control alternatives present the best control approaches for the Haverhill Works coking process. Taken individually, SCR offers a control efficiency that is less than staged combustion. However, since staged combustion is inherent to the heat recovery coking process, SCR is evaluated in combination with staged combustion.

For discussion purposes, the expected NO$_x$ emission levels associated with the coking process can be compared to the forthcoming allowable limit listed in 40 CFR 60 Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators. The allowable emission limit for coal-fired boilers in this NSPS is 0.60 lb/MMBTU. This is equivalent to 317 ppm expressed as a concentration at the same conditions as the waste heat exhaust (8% oxygen). From this, one can see that the "top" control option available for the coking process provides a 97% reduction of NO$_x$ when compared to the NSPS NO$_x$ allowable emission standard for boilers, and the staged combustion option yields a 83% reduction.

Technically Feasible Controls for NO$_x$ Reduction on Waste Gas from Coking Process

Control Technology	Control Level for BACT Analysis	Expected Emission Level (lb/ton coal)	Expected Emission Level (ppm)
SCR[a]	80%	0.2	11
Staged Combustion	Uncontrolled baseline[b]	1	55
Equivalent Boiler NSPS[c]	--	--	317

[a]Theoretically feasible—not demonstrated for this application.
[b] Represents approximately 85% control inherent to process.
[c]For reference—no NSPS standard applies to this source.

BACT = Best Available Control Technology
NO$_x$ = Nitrogen Oxides

NSPS = New Source Performance Standards
pm = parts per million
SCR = Selective Catalytic Reduction

Top-Down Evaluation of Technically Feasible Controls-NO_x
The "top-down" methodology requires that control options that are technically feasible be evaluated based on economic, energy, and environmental impacts. Those control technologies identified above that were determined to be technically feasible were evaluated to determine the direct impact of each option. The applicable control technology for which there is no significant impact on economics, energy, or the environment is subsequently proposed as BACT.

The assumptions used in determining economic, energy, and environmental impacts for the technically feasible control options in this BACT analysis for Haverhill Works are consistent with the methodology used in EPA's *New Source Review Workshop Manual* (EPA 1990), EPA's Alternative Control Techniques (ACT) Document for Industrial/Commercial/Institutional (ICI) Boilers (EPA 1994a), ACT Document for Process Heaters (EPA 1993), ACT Document for Iron and Steel Mills (EPA 1994b), and the *EPA Air Pollution Control Cost Manual* (EPA 2002).

In the case of NO_x controls for the heat recovery coking process, the "top" control option that theoretically feasible is staged combustion plus SCR. Primary and auxiliary equipment costs for SCR are based on a vendor quotation and data presented in EPA's ACT Document for ICI Boilers (EPA 1994a) and EPA's *EPA Air Pollution Control Cost Manual* (EPA 2002). In addition to the equipment costs, additional costs such as labor, electricity, fuel costs, chemical costs, and the capital recovery factor are applicable. As with the SO_2 cost analysis, the costs and estimating methodology contained in EPA's *OAQPS Control Cost Manual* are directed toward the study estimate of ±30% accuracy.

An economic analysis of SCR was performed in the Application for PTI (August 1999). Since then, a cost-estimating method for SCR systems in coal-fired utility boilers with heat input ranges from 250 to 6000 MMBTU/hour has been incorporated in the sixth edition of the EPA *Air Pollution Cost Manual* (EPA 2002). However, since a heat recovery coke plant does not resemble a utility boiler, a factored cost estimate was used based on the original vendor quotes. The various cost categories that are considered in a total project cost were derived through factors that were applied against the estimated capital cost of equipment.

Cost Factors for Estimating Capital and Annual O&M Costs

Cost Element	Cost Assumption
Direct Capital Costs	
NO_x control equipment (PEC)	Vendor quotes or other
Total = PEC	
Direct installation cost	36% of PEC or included in PEC
Site preparation	0 unless known
Buildings	0 unless known
Indirect Capital Costs	
Engineering	10% of PEC
Construction and field expenses	10% of PEC
Construction fee	10% of PEC
Startup	2% of PEC
Performance test	1% of PEC
Contingency	20% of direct and indirect capital costs
O&M Costs	
Overhead	60% of labor and maintenance material cost
Administrative	2% of total capital cost
Property tax	1% of total capital cost

Insurance	1% of total capital cost

NO_x=Nitrogen Oxides PEC=Purchased Equipment Cost
O&M=Operation and Maintenance

For the purposes of this analysis, three economic evaluations are provided. Budget equipment estimates for two hot-side SCR systems and a cold-side SCR system were obtained from SCR vendors and boiler suppliers. The detailed cost calculations are included in Appendix B.

Economic Impacts

The costs for this analysis have been calculated in annualized dollars per year ($/year), and the emission rates have been calculated in tons per year (tons/year). The result is a cost effectiveness number in dollars per ton ($/ton) of pollutant removed. In establishing the baseline emissions that are used to calculate the amount of pollutants removed, the emissions from the lower polluting process were used. EPA's *New Source Review Workshop Manual* (EPA 1990) states,

When calculating the cost effectiveness of adding post process emission controls to certain inherently lower polluting processes, baseline emissions may be assumed to be the emissions from the lower polluting process itself. In other words, emission reduction credit can be taken for use of inherently lower polluting processes. p. B.37.

As such, the baseline emissions were established at 3,301 tons/year NO_x, which is equivalent to the emissions from the staged combustion option. When the post-combustion control of SCR is applied to the staged combustion technology, an additional 80% reduction of emissions can theoretically be achieved, which is equivalent to a reduction of 2,641 tons/year NO_x. In other words, the combined staged combustion/SCR option results in theoretical emissions of 660 tons/year NO_x.

All of the SCR systems would be very expensive. The hot-side SCR systems costs were similar, ranging from $94,000,000 to $104,000,000. At $39,000,000 the cold-side SCR system was less expensive because of the cleaner gas downstream of the SO_2 and particulate control equipment. The annual costs for all the systems were significant, ranging from $19,000,000 to $23,000,000. The annual cost of the cold-side SCR includes the cost of auxiliary heating and the pressure drop associated with the large heat exchangers. The cost effectiveness of all SCR systems was very expensive—$13,600 to $16,200 per ton of NO_x removed. In contrast, staged combustion does not present any significant economic impact since, as discussed previously, it is inherent to the heat recovery coking process.

NO_x Top-Down BACT Summary

The "top" control option for NO_x is staged combustion + SCR. This control option offers the highest level of NO_x reduction. However, a major concern with this option is that several technical questions remain because SCR technology has never been demonstrated with heat recovery coke ovens. These technical questions include likely tube fouling in the secondary HRSG by ammonium bisulfate with hot-side SCR, high negative pressure where cold-side SCR equipment would be located, impact of cycle variation, and unknown catalyst fouling and poisoning potential in this application. The cost of SCR is also prohibitive. The calculated cost-effectiveness is $13,600 to $16,200/ton of NO_x removed. Additional energy is required and other pollutants may be emitted (i.e., ammonia "slip"). Additional environmental impact results from the potential production of a hazardous waste from spent catalyst. Therefore, SCR is rejected for economic, environmental, and energy considerations.

Staged combustion at a 85% control level is proposed as BACT for the NO_x control of the waste gas stream. This control technology is a pre-combustion control to prevent NO_x formation. The economic impacts of this control alternative are negligible since staged combustion is inherent to the heat recovery process. No substantial energy or environmental impacts result from the application of this control technology.

The NO_x emission limits for boilers in the RLBC database search (Table 3-7) range from 0.07 to 0.55 lb NO_x/MMBTU. This is equivalent to 37 to 291 ppm at 8% oxygen. Clearly the 1.0 lb NO_x/ton coal charged (equivalent to 55 ppm) is in the range of recent BACT-PSD determinations and appropriate as BACT for the heat recovery coking waste gas system.

The venting in Phase 1 has no impact on the BACT analysis. Staged combustion is a pre-combustion control technology that applies to emissions from the primary system or from venting during HRSG maintenance.

SO_2

The primary sources of SO_2 emissions are the waste heat gases. Although SO_2 is also present in the emissions from pushing and charging, the concentrations are very dilute [<2 parts per million (ppm)]. A top-down BACT analysis was performed for the waste heat gases. No SO_2 controls are technically feasible for pushing and charging.

Consistent with the "top-down" methodology discussed above, pre-combustion controls, post-combustion controls (i.e., add-on controls), and feasible combinations of these were evaluated in this BACT analysis for SO_2 emissions associated with the coking process and related activities. SO_2 is released along with the volatile fraction of the coal as the coking cycle proceeds; however, most of the sulfur in the coal remains in the coke product. The emissions are normally released from a primary system that collects cooled flue gas from the discharge side of the HRSGs. During annual HRSG inspection and maintenance, the same emissions are released from maintenance/emergency vent stacks. Pre-combustion controls are technologies that prevent the formation of pollutants during the combustion process (e.g., low-sulfur coal). The post-combustion controls that were identified are add-on controls that are used to either collect the pollutants or convert the pollutants to another form [e.g., lime added to SO_2 gas to form solid calcium sulfite ($CaSO_3$) and calcium sulfate ($CaSO_4$)]. Note that all the post-combustion controls evaluated also remove PM.

Since no previous BACT determinations were identified for either heat recovery or by-product coke ovens, a RBLC database search was performed to identify the technologies that have been approved by state regulatory agencies in PSD permits as BACT for sulfur oxide (SO_x) control for related categories. The applicable RBLC categories were final BACT-PSD determinations for Utility and Industrial Boilers >250 MMBTU/hour since January 1993 associated with "coal combustion." The BACT determinations were reviewed further for technologies that are potentially transferable to Haverhill Works.

Although all the above sources are boilers, as opposed to coking facilities equipped with HRSGs, maintenance vent stacks, and thousands of feet of refractory-line ducts it is possible to use this list to understand which control technologies are being applied to similar processes as BACT throughout the country. Additionally, the emission limits that reflect BACT can also be reviewed for consistency. The sources are listed in order of increasing emission limit (i.e., the most stringent emission limit is first).

Technologies for Primary System and Maintenance Vents
Lime Injection and Spray Dryer/Absorber (Dry Scrubber)

In dry scrubbers, a calcium hydroxide slurry (lime mixed with water) is introduced into a spray dryer tower. The slurry is atomized and injected into the gases,

RBLC Database Search Results for SO_2 Control

RBLC ID	Facility	Last Update	Process	Control Option	Percent Efficient	Emission Limit
UT-0053	Deseret Generation and Transmission Company	12/18/2001	Coal Fired Boiler	Wet Scrubber	90	0.0976 lb/MMBtu (year avg.)
UT-0060	Deseret Generation and Transmission Co.	9/5/2002	Boiler, Generating Unit	Scrubber With Manual Addition of Alkali to Maintain Control Efficiency. Compliance to be Based on CEM and Fuel Heat Input Data	90	0.1 lb/MMBtu (year avg.)
PA-0134	Northampton Generating Co.	12/2/2002	CFB Boiler	Lime Injection	92	0.129 lb/MMBtu
WY-0039	Two Elk Generation Partners, Limited Partnership	12/18/2001	Boiler, Steam Electric Power Generating	Lime Spray Dry Scrubber	91	0.17 lb/MMBtu (30 day)
WY-0046	Black Hills Power and Light Company-Neil Simpson U	12/18/2001	Boiler, Pulverized Coal Fired	Circulating Dry Scrubber	95	0.17 lb/MMBtu (30 day)
MD-0022	Aes Warrior Run, Inc.	12/18/2001	Atmospheric CFB Boiler	Limestone Injection	95	0.19 lb/MMBtu (24 hour)
WY-0047	Encoal Corporation-Encoal North Rochelle Facility	12/18/2001	Boiler, Coal Fired, Main Stack	Lime Spray Dryer	73	0.2 lb/MMBtu
WY-0048	Wygen, Inc. - Wygen Unit One	12/18/2001	Boiler, Pulverized Coal Fired	Circulating Dry Scrubber	92	0.2 lb/MMBtu

RBLC ID	Facility	Last Update	Process	Control Option	Percent Efficient	Emission Limit
FL-0178	Jea Northside Generating Station	10/10/2001	Electric Utility, Boiler, Coal	Proposed Controls: CFB Scrubber/ Electrostatic Precipitator or Spray Dryer Absorber/Fabric Filter or CFB Scrubber/Fabric Filter. Pri. and Standardized Limit 24-hour Avg, Alt. Limit 30-day average	NL	0.2 lb/MMBtu
MA-0009	Energy New Bedford Cogeneration Facility	12/18/2001	Boilers, 300-MW Coal Fired Fluidized Bed	Limestone Injection	NL	0.23 lb/MMBtu
MA-0011	Taunton Energy Center	12/18/2001	Boiler, Coal Fired CFB	Limestone Injection	70	0.23 lb/MMBtu
MA-0028	Energy New Bedford	2/25/2003	CFB Boiler	Injection of Limestone Into Each Fluidized Bed Along With the Fuel, Maximum Allowable Sulfur Content Shall Not Exceed 3.5% by Weight	70	0.23 lb/MMBtu
PA-0133	Mon Valley Energy Limited Partnership	12/18/2001	Pulverized Coal Fired Boiler	Spray Dry Absorption	92	0.25 lb/MMBtu
PA-0132	York County Energy Partners	12/18/2001	Bituminous Coal Fired CFB Boiler	Lime Injection, Fuel Spec: <=2% Sulfur in Coal	92	0.25 lb/MMBtu
IA-0051	Archer Daniels Midland Company	12/18/2001	Boiler, CFB, Coal Fired	Limestone Injection in CFB	92	0.36 lb/MMBtu
IA-0046	Archer Daniels Midland Company	12/18/2001	Boiler, Coal Fired, CFB, Atmospheric, #6	Limestone Injection in CFB	92	0.36 lb/MMBtu (30 day)

IA-0046	Archer Daniels Midland Company	12/18/2001	Boiler, Coal Fired, CFB, #5	Limestone Injection in CFB	92	0.36 lb/MMBtu (30 day)
PA-0058	North Branch Energy Partners LP	12/18/2001	Boiler, CFB, 2 ea	Limestone Injection	46	0.49 lb/MMBtu
IL-0058	Archer Daniels Midland Company	10/9/2002	Boiler (7&8), Fluidized Bed	Limestone Injection Into Fluidized Bed Followed by Fabric Filter for PM Control	90	0.7 lb/MMBtu
IL-0060	Archer Daniels Midland Company	10/28/2002	Boiler (9&10), Fluidized Bed	Limestone Injection Into Fluidized Bed, Followed by Fabric Filter PM Control	92	0.7 lb/MMBtu
IL-0058	Archer Daniels Midland Company	10/9/2002	Boiler, Fluidized Bed, Coal Fired, Modified, #6	Limestone Injection Into Fluidized Bed Followed by Fabric Filter for PM Control	90	0.7 lb/MMBtu

CFB=Circulating Fluidized Bed
MMBtu=Million British Thermal Units
NA=not applicable
RBLC=RACT/BACT/LAER Clearinghouse
SO_2=Sulfur Dioxide

Table 3-2

Potential Technologies for SO_2 Control on Waste Gas from Coking Process

Control Technology	Typical Control Efficiency Range for Utility Power Industry	Control Level for Coking Process BACT Analysis
Limestone Injection and Spray Dryer/Absorber (Dry Scrubber)	80–90+%	92%
Wet Scrubber	80–90%	90%
Limestone Injection	30–90+%	70%
Low-Sulfur Coal[a]	40–50%	0%

[a]Low-sulfur coal is inherent to the process
BACT = Best Available Control Technology
SO_2 = Sulfur Dioxide

where droplets react with SO_2 as the liquid evaporates. This produces a dry product that is collected in the bottom of the spray dryer and in the particulate removal equipment (i.e., baghouse). A fabric filter or electrostatic precipitator (ESP) downstream of the spray dryer removes the ash, $CaSO_3$, $CaSO_4$, and unreacted lime. The collected solids are either recycled back through the process or used for other off-site applications.

This system is categorized as a "dry" system in that the end product of the SO_2 conversion reaction is a dry material. Although termed as a dry system, this air pollution control system uses water for evaporative cooling and for the SO_2 reaction. Unlike a wet scrubbing system, however, there is no liquid blow-down stream from the dry system. The "dry" system has been used in low-sulfur coal applications to effectively remove SO_2 from a gas stream with removal efficiencies in the low 90s (World Bank 1998).

This control technology (lime injection and spray dryer/absorber) is considered technically feasible for the heat recovery waste gas stream. Efficiencies up to 95% are listed in the RLBC database. Levels of 90–92% are more appropriate considering the lower level of SO_2 inlet concentrations in the waste heat recovery process (compared with boilers in the database). A level of 92% was selected for the BACT analysis.

Wet Scrubber
In wet scrubbers, the waste gas enters a large vessel (spray tower or absorber), where it is sprayed with water slurry (approximately 10% lime or limestone). The calcium in the slurry reacts with the SO_2 to form calcium sulfite, or $CaSO_3$. A portion of the slurry from the reaction tank is pumped into the thickener, where the solids settle before going to a filter for final dewatering to about 50% solids. The calcium sulfite waste product is usually mixed with fly ash (approximately 1:1) and fixative lime (approximately 5%) and typically disposed of in landfills.

Note that "mist eliminators" installed at the spray tower outlet or downstream ductwork collect slurry droplets and remove moisture from the gas. In some installations, the gas is reheated to avoid corrosion downstream in the power plant. Many scrubbers have gas-bypassing capability, which can be used for gas reheating.

Wet scrubbers are usually designed for efficiency of 80% to 90% SO_2 removal. Some disadvantages for using wet scrubbing techniques in many applications are (1) the cost of neutralizing chemicals, (2) disposal of the liquid stream containing soluble sulfur containing salts (particularly sulfite and bisulfite salts), and (3) energy costs (World Bank 1998).

A deployment issue associated with a wet scrubber system is the complexity of the system. Additional expertise is often needed in specifying, operating, and maintaining such a system, which is more like a chemical plant than a control device. Companies may need more chemical engineers, chemical laboratories, and revised operating and maintenance procedures (World Bank 1998). Also, an on-site treatment process to handle the liquid waste stream is needed as well as proper equipment and procedures to manage the caustic materials. An additional problem is the limited fly ash produced in the coking process (in contrast with a combustion process). Fly ash would need to be purchased for waste stabilization.

A wet scrubbing system is considered technically feasible for the Haverhill Works waste gas stream.

Limestone Injection
In the utility industry, SO_2 may be removed by injecting a sorbent (lime, limestone, or dolomite) into the combustion gases, typically above the burners or in the backpass before the air heater. Furnace sorbent injection involves injection of the sorbent into the boiler above the combustion zone (preferably where the gas temperature is approximately 1,200˚C, or 2,200˚F) through special injection ports. The sorbent decomposes into lime, which reacts in suspension with SO_2 to form $CaSO_4$. The $CaSO_4$, unreacted sorbent, and fly ash are removed at the particulate control device (either an ESP or baghouse) downstream from the boiler. In the utility industry, SO_2 removal is 30–60% (with a calcium-to-sulfur molar ratio of 2:1) when injected into the combustion zone, but this still must be demonstrated on a large scale (World Bank 1998).

The heat recovery ovens are not designed for suspension burning. Sorbent injected into the oven would settle onto the coal bed and produce contaminated coke. Similarly, the sole flues and afterburner tunnel are designed for gas combustion, and the sorbent would likely settle out. For these reasons, limestone injection is not technically feasible for the Haverhill Works coking process.

Low-Sulfur Coal
Emissions of SO_2 from fuel burning sources vary considerably with the nature or origin of the fossil fuel.

A method to reduce SO_2 emissions from fossil fuel combustion is to change to low-sulfur fuels. Stochiometrically, 2 lb of SO_2 as generated by a typical combustion process (i.e., utility boiler) is equivalent to 1 lb of sulfur. Thus, reducing the sulfur content of the fuel proportionally decreases the generation of SO_2 during this combustion process (EPA 1995; Wark and Warner 1981). For example, replacing a coal containing 2% sulfur with a coal containing 1% of sulfur (i.e., low-sulfur coal) results in a decrease of SO_2 emissions of 50% in the utility industry.

The conversion of coal to coke, however, may not directly parallel the utility industry's experiences with low-sulfur fuels. Unlike coal-fired boilers, the coal is heated, not burned, during the coking process and primarily it is the volatilized material from the coal that is combusted. Although most of the sulfur in the coal remains in the coke, the sulfur component of the volatilized material will follow the equation above and produce SO_2.

All of the heat recovery coking facilities operated by Sun Coke utilize low sulfur coal (<1%) as a requirement for the production of coke. Sun Coke is the only company that operates this process, so there are no data available on the emissions using high sulfur coal. All emission estimates incorporate low sulfur coal, and all other technologies are evaluated based on the use of low sulfur coal in conjunction with the examined technology.

Using low-sulfur coal is technically feasible and is an integral part of the heat recovery coking process.

Technologies for Maintenance Vents Only
This section presents six options for controlling SO_2, as well as PM, from the vent stacks during the 14 days of maintenance on each HRSG. These fall into two groups. In one group, additional equipment would allow the waste gases be treated in the primary system. In the second group, stand alone air pollution controls would be installed at each vent stack for use during maintenance or to replace the primary air pollution control system.

These six options are:

- Spray Quenches at each HRSG to Cool Vent Gas
- Central Spray Quench and Refractory Ductwork
- Larger HRSGs and Waste Heat Tunnel
- Additional HRSGs
- Individual Dry Scrubbing Systems
- Individual Wet Scrubbing Systems

Individual Spray Quenches to Cool Vent Gas
Each duct is connected to spray quench towers that cool the flue gases. In this option, water is sprayed into the flue gas stream to cool the gas that usually goes through the HRSG to an operating point of approximately 400ºF via evaporative cooling. The cooled gas is then routed to the existing collection duct and combined with the flue gases from the four operating HRSGs for treatment in the emission control system provided for the primary system. The spray quench chamber consists of a refractory lined entrance section, a cocurrent, down flow tower, spray nozzles, control system, side discharge, and dry bottom. Water is supplied to the spray quench for cooling at a variable rate to allow for cooling during the course of the facility operating cycle. This will require a system equipped with multiple banks of nozzles to supply the required turndown. Ash that collects in the spray quench is discharged through a rotary valve located at the bottom of the quench chamber and collected in a bin for disposal with baghouse ash.

This option will require the following equipment items, in addition to the controls for the primary system:

- A "T" in each vent stack;
- A hot duct to each spray quench with provision for isolating knife gate;
- Spray quench chambers for each HRSG with multiple banks of atomizing nozzles, temperature control, rotary valve, and ash collection bin;
- Steel ductwork from each quench to collection duct;
- Flow control damper for each quench with control based on differential pressure across quench;
- Isolation knife gate valve in steel duct exiting each spray quench;

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- Increased collection duct size to accommodate additional flow from water vapor; and
- Increased spray dryer and bag house (SO_2 removal system) size to accommodate additional flow.

The control efficiency for this option is the same as the primary system. Bypassing the HRSGs using individual spray quenches to cool the waste heat gas and route it to the primary system is a technically feasible option for controlling SO_2 and PM emissions during maintenance venting.

Central Spray Quench and Refractory Lined Collection Duct
This technology differs from the previous option in that all the bypass ducts share a central spray quench tower. All the ductwork from the individual HRSGs to the spray quench is refractory lined. At a location

near the primary system, water is sprayed into the flue gas stream to cool the gas to an operating point of approximately 400˚F via evaporative cooling. The cooled gas is then combined with the flue gases from the four operating HRSGs for treatment in the emission control system provided for the primary system. The spray quench chamber consists of a refractory lined entrance section, a cocurrent, down flow tower, spray nozzles, control system, side discharge, and dry bottom. Water is supplied to the spray quench for cooling at a variable rate to allow for cooling during the course of the facility operating cycle. This will require a system equipped with multiple banks of nozzles to supply the required turndown. Ash that collects in the spray quench is discharged through a rotary valve located at the bottom of the quench chamber and collected in a bin for disposal with baghouse ash.

This option will require the following equipment items, in addition to the controls selected as BACT for the primary system:

- A "T" in each vent stack;
- A hot duct from each vent stack to a common hot duct with provision for isolating knife gate;
- A common hot duct for transport of hot gas to the central spray quench;
- A spray quench chamber with multiple banks of atomizing nozzles, temperature control, rotary valve, and ash collection bin;
- Steel ductwork from the spray quench to the collection duct for gases from the HRSG discharges;
- Flow control damper for the quench with control based on differential pressure across quench;
- Isolation knife gate valve in steel duct exiting the spray quench; and
- Increased spray dryer and bag house (SO_2 removal system) size to accommodate additional flow.

The control efficiency for this option is the same as the primary system. Bypassing the HRSGs in refractory-lined ductwork followed by cooling in a central spray quench and routing the waste gas to the primary system is a is a technically feasible option for controlling SO_2 and PM emissions during maintenance venting.

Larger HRSGs and Waste Heat Tunnel

This option would allow one of the HRSGs to be shut down for maintenance by routing waste gases to the remaining four HRSGs. To accommodate the shutdown of HRSGs at the end of the common waste heat tunnel, the HSRGs at the second and fourth positions would need to be double in size (compared to the sizing required for operation of all five HRSGs). The HRSGs in the first, third, and fifth positions would be 50% oversized, since shutdown of HSRGs in the interior sections of the common waste heat tunnel could have gases routed to each adjoining HRSG.

This option would require that the waste heat tunnels be increased in size. The tunnels in SunCoke's typical design are cylindrical with a variable inside diameter of 6 ft 2 in. and 7 ft 6 in. The maximum inside diameter that may be used with the SunCoke oven design is 8 ft 6 in., based on the available space between uptakes from the coke oven. A cylindrical tunnel with an 8 ft 6 in. inside diameter can handle the flows from up to 16 ovens flowing in one direction. Using five HRSGs, the tunnels would be required to transport flows from up to 30 ovens when HRSGs in the end positions were shut down for maintenance. A larger waste heat tunnel with a rectangular design would be required to provide adequate flow. The tunnel would need to have inside dimensions of 8 ft 6 in. wide by 13 ft 6 in. height

to provide the required pressure drop when one of the HRSGs at the end of the tunnel was shut down.

The waste heat tunnel is an integral part of the SunCoke heat recovery coking process. This tunnel serves as the final combustion chamber for the offgas generated during the process and use of a cylindrical design is critical to the mixing inside the tunnel. A change in the configuration of the waste heat tunnel is therefore a major change in the coking process, with an unknown effect on emission rates of VOCs, NO_x, and CO. This is a significant design change to the waste heat tunnel/afterburner and ovens with a potential risk to affect performance of the heat recovery coking process.

Based on the requirement for a rectangular waste heat tunnel and the need to radically redesign the ovens, this option for larger HRSGs and a larger common tunnel/afterburner is considered to be technically infeasible.

Addition of HRSGs
This option incorporates additional HRSGs along the length of the common tunnel to accommodate displaced gas when any one HRSG is taken off-line. This option assumes that the HRSGs are the same size as those in the current design, and that the waste heat tunnel is the maximum size cylindrical tunnel that may be accommodated by the Sun Coke oven design (8 ft 6 in. inside diameter). The additional HRSGs will be equipped with ducting, dampers, maintenance vent stack, and controls identical to the five HRSGs planned for the current design.

Based on the system design calculations for a maximum pressure drop of 0.3 in. W.C. in the waste heat tunnel, a maximum of 16 ovens can contribute flow to an HRSG from either direction, and a maximum flow from 20 ovens total. This requires the total number of HRSGs be increased from five to nine, to allow any of the nine HRSGs to be shut down.

The option for adding HRSGs allows the use of the same primary air pollution control system and is therefore considered technically feasible.

Individual Dry Scrubbing Systems
These are like the primary dry scrubbing system but smaller than the primary system. This option is considered technically feasible.

Individual Wet Scrubbing Systems
These are like the primary scrubbing system described above but smaller than the primary system. This option is considered technically feasible.

<u>SO_2 Technically Feasible Controls</u>
For discussion purposes, the expected SO_2 emission levels associated with the coking process can be compared to the allowable limit listed in 40 CFR 60 Subpart D, Standards of Performance for Fossil-Fuel-Fired Steam Generators. The allowable emission limit for coal-fired boilers in this NSPS is 1.2 lb/MMBtu. This is equivalent to 456 ppm expressed as a concentration of the same conditions as the waste heat exhaust (8% oxygen). From this, one can see that the uncontrolled baseline is slightly lower than the equivalent NSPS. The “top” control option available for the coking process provides a 92% reduction of SO_2 when compared to the uncontrolled baseline.

Technically Feasible Controls for SO_2 Reduction Primary System Waste Gas from Coking Process

Control Technology	Control Level for BACT Analysis	Expected Emission Level (lb/ton coal)	Expected Emission Level (ppm)

Limestone Injection and Spray Dryer/Absorber (Dry Scrubber)	92%	0.88	35
Wet Scrubber	90%	1.1	44
Uncontrolled baseline[a]	--	11	442
Equivalent Boiler NSPS[b]	--	--	456

[a] Includes low sulfur coal inherent to process
[b] For reference—no NSPS standard applies to this source.

BACT = Best Available Control Technology
NSPS = New Source Performance Standards
ppm = parts per million
SO_2 = Sulfur Dioxide

Limestone injection and spray dryer/adsorber was also assumed for all options that result in routing the maintenance vent emissions to the primary system.

Technically Feasible Controls for SO_2 Reduction on Maintenance Vent Emissions from Coking Process

Control Technology	Control Level for BACT Analysis	Expected Emission Level (lb/ton coal)	Expected Emission Level (ppm)
Options using Primary system Treatment			
Individual Spray Quenches	92%	0.88	35
Central Spray Quench	92%	0.88	35
Addition of HRSGs	92%	0.88	35
Options using Individual Stack Controls			
Limestone Injection and Spray Dryer/Absorber (Dry Scrubber)	92%	0.88	35
Wet Scrubber	90%	1.1	44
Uncontrolled Baseline[a]	--	11	442
Equivalent Boiler NSPS[b]	--	--456	

[a] Includes low sulfur coal inherent to process
[b] For reference—no NSPS standard applies to this source.

Top-Down Evaluation of Technically Feasible Controls-SO_2, Primary System

This section presents the top-down evaluation of controls from the primary system. The options for treatment of planned emissions from maintenance vent stacks include the combination of these emissions with those treated in the primary system and the treatment of these emissions via dedicated control technologies.

Following the "top-down" BACT approach, the highest ranked control technology or combined technology option that is technically feasible is evaluated further for BACT. If this option is economically feasible and does not have unacceptable energy and/or adverse environmental impacts, the option is deemed BACT. Otherwise, the next ranked control option is evaluated. This evaluation process continues until a control option is found that meets all the BACT requirements. Once an option is determined as BACT, it is unnecessary to evaluate any remaining options.

In the case of SO_2 controls for the Haverhill Works coking process, two "top" control options are available that present similar removal efficiencies of SO_2. These are the dry scrubber and the wet scrubber options. The dry scrubber is the preferred option, due to its manageable waste stream. The $CaSO_3$, $CaSO_4$, and unreacted lime solid wastes can be disposed of in a non-hazardous solid waste landfill. The wet scrubber, however, generates both solid waste and a liquid waste stream containing soluble sulfur-containing salts. This liquid waste stream would require treatment either on-site or at the publicly-owned treatment works. Thus, not only is an additional waste stream generated, but additional energy requirements and costs (e.g., piping and treatment costs) result from the need to treat this additional waste stream.

The dry scrubber provides the highest level of SO_2 removal for the coking process and, therefore, is ranked as the most effective technology. The RBLC database search for coal-fired combustion equipment shows that this technology has been established as BACT for many of these sources. Consequently, the dry scrubber option has been selected as BACT. In addition to recommending the dry scrubber option as BACT, Haverhill Works will use low-sulfur coal (i.e., coal containing <1% sulfur by weight).

The expected emission level for the primary system of the heat recovery coking process at 35 ppm is more stringent than the RBLC BACT determinations.

SO_2 Control Comparison with RBLC Database

Process	Control Option	Percent Efficient	Emission Limit	Equivalent Emission Level
Heat Recovery Coking Waste Gas	Spray Dryer	92	0.88 lb/ton coal	35 ppm
Coal Fired Boiler	Wet Scrubber	90	0.0976 lb/MMBtu	37 ppm

MMBtu = Million British Thermal Units
ppm = parts per million
RBLC = RACT/BACT/LAER Clearinghouse
SO_2 = Sulfur Dioxide

Top-Down Evaluation of Technically Feasible Controls-SO_2, Maintenance Vents

This section presents the top-down evaluation of SO_2 controls from the vent stacks during the 14 potential days of annual maintenance on each HRSG. Note that these options also incorporate particulate control. Three options incorporate additional equipment to allow the waste gases to be treated in the primary system during HRSG maintenance. Two options would be installed at each vent stack and would replace the primary system.

Following the "top-down" BACT approach, the highest ranked control technology or combined technology option that is technically feasible is evaluated further for BACT. If this option is economically feasible and

does not have unacceptable energy and/or adverse environmental impacts, the option is deemed BACT. Otherwise, the next ranked control option is evaluated. This evaluation process continues until a control option is found that meets all the BACT requirements. Once an option is determined as BACT, it is unnecessary to evaluate any remaining options.

The assumptions used in determining economic, energy, and environmental impacts for the technically feasible control options in this BACT analysis for Haverhill Works are consistent with the methodology used in EPA's *New Source Review Workshop Manual* (EPA 1990), *Estimating Costs of Air Pollution Control* (Vatavuk 1990), and the *EPA Air Pollution Control Cost Manual* (EPA 2002).

In the case of SO_2 and PM controls for maintenance venting, five "top" control options were evaluated that present similar removal efficiencies. The costs and estimating methodology contained in the EPA *Air Pollution Control Cost Manual* are directed toward the "study" estimate, of ±30% accuracy, as opposed to a "order-of-magnitude" estimate (less accurate), a "budget authorization" estimate (more accurate), a "definitive" estimate (very accurate), or a "firm" or "contractor's" estimate (most accurate). EPA's Manual states,

> For the purposes of regulatory development, study estimates have been found to be acceptable, as they represent a compromise between the less accurate order-of-magnitude and the more accurate estimate types. The former are too imprecise to be of much value, while the latter are not only very expensive to make, but require detailed site and process-specific knowledge that most Manual users will not have available to them. p. 2-4.

This cost estimate is a factored cost estimating method. Equipment costs were obtained from vendor quotes. Installation, indirect, and operating costs were derived through factors that were applied against the estimated capital cost of equipment. The cost factors that were used for evaluating SO_2 control options are provided in Appendix A, along with the calculations used to evaluate the options. These cost factors were taken from the EPA *Air Pollution Control Cost Manual* (EPA 2002) and *Estimating Costs of Air Pollution Control*, (Vatavuk 1990).

Economic Impacts

The costs for this analysis have been calculated in annualized dollars per year ($/year), and the emission rates have been calculated in tons per year (tons/year). The result is a cost effectiveness number in dollars per ton ($/ton) of pollutant removed. In establishing the baseline emissions that are used to calculate the amount of pollutants removed, the emissions from the lower polluting process were used. EPA's *New Source Review Workshop Manual* (EPA 1990) states,

> When calculating the cost effectiveness of adding post process emission controls to certain inherently lower polluting processes, baseline emissions may be assumed to be the emissions from the lower polluting process itself. In other words, emission reduction credit can be taken for use of inherently lower polluting processes. p. B.37.

The baseline emissions were established at 184.8 tons/year SO_2, which is equivalent to the emissions from the maintenance vent stacks over five 14-day periods of operation. These emissions are the total SO_2 emissions that will occur during annual inspection of all five HRSGs.

All of the options would be very expensive. The lowest cost options were the two systems that utilize a spray quench to cool the flue gas bypassing an HRSG for treatment in the primary FGD system. The cost effectiveness of additional controls ranged from $12,002 to $79,673 per ton of SO_2 removed. Since Sun Coke Company has committed to use low sulfur coal, it is inherent to the heat recovery coking process.

SO_2 Top-Down BACT Summary
A dry FGD system, the top option, was selected as BACT for the primary system for control of SO_2 and PM. Haverhill Works will also use low-sulfur coal (i.e., coal containing <1% sulfur by weight). The level of control is comparable to recent BACT-PSD final determinations listed in the RBLC database.

With cost-effectiveness of $12,000 to $80,000 per ton of SO_2 removed, all options for controlling emissions from maintenance venting are cost prohibitive. These options also have additional energy and, in the case of wet scrubbing, environmental impacts. Therefore, all add-on equipment options to control emissions from venting during the 14 days of maintenance of each HRSG were rejected. BACT for controlling control SO_2 and PM emissions from venting are:

- Use low sulfur coal (<1%),
- Minimize venting by bringing only one HRSG offline at a time so that 80% of the waste gases will go through the primary system, and
- Limit venting to <4% of the operating hours (14 days/year per HRSG).

Summary of BACT Selection

Pollutant	Emission Unit	BACT Determination	Emission Level
SO_2	Waste Gas from Coking Process	Dry scrubber	0.88 lb/ton coal
	Waste Gas from Venting	Low sulfur coal	11.0 lb/ton coal
		Limit venting to one HRSG at a time	
		Limit annual venting to <4% of operating hours (14 days/HRSG)	
NO_x	Waste Gas from Coking Process	Staged combustion	1 lb/ton coal
	Waste Gas from Venting	Staged combustion	1 lb/ton coal
PM_{10}	Waste Gas from Coking Process	Baghouse	0.008 gr/dscf
	Waste Gas from Venting	Combustion optimization	0.03 gr/dscf
		Limit venting to one HRSG at a time	
		Limit annual venting to <4% of operating hours (14 days/HRSG)	
	Pushing	Baghouse with shed	0.039 lb/ton
	Charging	Baghouse with traveling hood	0.008 gr/dscf
	Coke Crushing/Screening	Baghouse	0.008 gr/dscf
	Quenching	Baffles and cleaned water	0.05 lb/ton coal
CO	Waste Gas from Coking Process	Combustion optimization	20 ppm

	Waste Gas from Venting	Combustion optimization	20 ppm
	Pushing	Work practices	0.077 lb/ton coal
VOC	Waste Gas from Coking Process	Combustion optimization	10 ppm
	Waste Gas from Venting	Combustion optimization	10 ppm
	Pushing	Work practices	0.2 lb/ton coal

BACT = Best Available Control Technology
CO = Carbon Monoxide
dscf = dry standard cubic foot
NO_x = Nitrogen Oxides
PM_{10} = Particulate matter less than 10 microns
ppm = parts per million
SO_2 = Sulfur Dioxide
VOC = Volatile Organic Compound

AMBIENT AIR QUALITY MONITORING REQUIREMENTS

The area where the SunCoke Haverhill facility is located is attainment for all criteria pollutants. U.S. EPA regulations require the establishment of baseline air quality in the vicinity of the proposed project. This is normally accomplished using representative air quality monitoring data. Air quality monitoring can be utilized to demonstrate that the project will have less than a threshold impact. This threshold impact is identified as the PSD monitoring de minimus level. If the projected impact from the proposed project exceeds this level, ambient data must be collected or existing representative data must be identified.

SunCoke Haverhill has conducted ambient air quality modeling to determine the potential impact due to the proposed installation. The following are the projected impacts:

Pollutant	Averaging Period	Predicted Concentration	Monitoring De minimus Concentration
PM_{10}	24-hour	24.33 ug/m3	10 ug/m3
SO2	24-hour	64.48 ug/m3	13 ug/m3
NOx	Annual	6.61 ug/m3	14 ug/m3
CO	8-hour	86.0 ug/m3	575 ug/m3

The potential PM-10, SO2 and NOx impacts exceeded the PSD monitoring de minimus concentration. The Ohio EPA finds that the data from monitoring sites 39-081-1-12 (NOx), 39-145-1006 (PM-10), and 39-145-0013 (SO2) provide conservative estimates of the unmodeled source impact for the respective pollutants within the ambient air quality modeling analysis and represent acceptable substitutes for the pre-construction monitoring requirements. Local ozone monitoring data are also available (39-087-0006 and 39-087-0011).

MODELING

Air quality dispersion modeling was conducted to assess the effect of this modification on the national ambient air quality standards (NAAQS) and PSD increments. ISCST3 (version 00101) was used in the regulatory default, rural dispersion mode. Five years of meteorological data (1987-1991) from Huntington (03860) Surface and Huntington (03860) upper were used. Building downwash was incorporated into the ISCST3 estimates. CTSCREEN was also used to address terrain above stack tip. Seven hills surrounding the proposed project were evaluated to determine the worst case impacts in complex terrain. CTSCREEN impacts were the constraining impacts for the facility. Impacts from remote or background sources were modeled using ISCST and added to the near-field CTSCREEN impacts at the complex terrain receptors.

Predicted impacts of PM_{10} SO2 and NOx were above their corresponding PSD significant impact increments. Additional modeling for compliance with both the NAAQS and PSD increments was required. Predicted CO concentrations were below the PSD significant impact increments so no further CO modeling was performed.

INCREMENT

All areas surrounding the SunCoke Haverhill facility are Class II PSD areas. It is the Ohio EPA policy that no individual project consumes more than 50% of the available PSD increment. The following is the summary of the impact of increment consuming sources (peak annual and PM_{10} 6^{th} high 24-hour concentration over five years):

Pollutant	Averaging Period	Project Concentration	PSD Increment Concentration
PM_{10}	24-hour	24.3 ug/m3	30.0 ug/m3
	Annual	4.6 ug/m3	17.0 ug/m3
NOx	Annual	7.1 ug/m3	25.0 ug/m3
SO2	3-hour	339.9 ug/m3	512.0 ug/m3
	24-hour	64.5 ug/m3	91.0 ug/m3
	Annual	12.2 ug/m3	20.0 ug/m3

Predicted SO2 and PM_{10} 24-hour PSD increment impacts exceed ½ of the available increment. Although impacts from the facility exceed Ohio EPA's policy which provides for future growth by limiting increment consumption, the areal extent of the receptors exceeding ½ the SO2 PM_{10}, 24-hour PSD increment are limited to the hilltops and property adjacent to the proposed facility. Ohio EPA initially required the applicant to lower impacts by either reducing emission rates or modifying the source or facility layout. The results of this analysis indicate lower constraining impacts which are below 25 ug/m3 and provide additional assurance that future growth in the area will not be constrained.

NAAQS

Existing sources at the facility, existing sources above the PSD significant rates within the SunCoke Haverhill facility significant impact area (SIA) and sources greater than 100 tons/year outside of the SIA are modeled to determine the combined impact of existing significant sources. A background value is added to account for minor sources not explicitly included in the modeling. The values below are for the ambient impacts for which the proposed facility had a significant impact. NAAQS modeling for this facility identified PM10 and SO2 impacts above the NAAQS near two facilities which have since shut down. The impacts below are the peak concentrations in the nearfield analyses dominated by the CTSCREEN impacts on the nearby terrain.

Pollutant	Averaging Period	Predicted Concentration	Concentration W/ Background	NAAQS Concentration
PM_{10}	24-hour	27.2 ug/m3	75.2 ug/m	150 ug/m3
	Annual	5.6 ug/m3	31.6 ug/m 3	50 ug/m3
NOx	Annual	27.5 ug/m3	55.5 ug/m	100 ug/m3
SO2	3-hour	748.8 ug/m3	929.8 ug/m3	1300 ug/m3
	24-hour	218.8 ug/m3	286.8 ug/m3	365 ug/m3
	Annual	17.0 ug/m3	30.0 ug/m3	80 ug/m3

SECONDARY IMPACT ANALYSIS

SunCoke Haverhill has demonstrated that the predicted pollutant concentrations throughout the study area are below the secondary NAAQS thresholds. The secondary NAAQS are designed to limit the amount of pollutants in the ambient air to levels below those which could have an adverse impact on human welfare, soils and vegetation. The modeling analyses demonstrate that no significant impacts on human welfare, soils or vegetation will occur from the proposed modification.

Soil and Vegetation: EPA Air Quality Criteria documents were reviewed for information on pollutants and adverse effects on the type of vegetation and soils in the area. No adverse impact upon soils or vegetation is expected. The modeled concentrations are below the primary and secondary NAAQS limits.

Visibility: The SunCoke Haverhill facility is located nearly 300 kilometers from the closest class I area. Primary or secondary pollutants associated with this project are not anticipated to affect local or class I visibility.

TOXICS ANALYSIS

The Ohio Air Toxics Policy requires evaluation of increases in air toxics above the one ton/year threshold. Emissions rates are modeled to determine whether they exceed the Maximum Acceptable Ground Level Concentration (MAGLC) which is defined under the Review of New Sources of Toxic Air Pollutants. The MAGLC applies to those toxic pollutants which have a Threshold Limit Value in

the Association of American Congress of Governmental and Industrial Hygienists handbook and is not subject to a MACT or other federal requirement. Impacts of toxic pollutants subject to the modeling review met the MAGLC.

CONCLUSIONS

Based upon the review of the permit to install application and the supporting documentation provided by the applicant, the Ohio EPA staff has determined the installation will comply with all applicable State and Federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to the SunCoke Haverhill facility for the installation of the plant expansion described in the PTI #07-00511 permit recommendation.

State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

TELE: (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

RE: **DRAFT PERMIT TO INSTALL**
SCIOTO COUNTY
Application No: 07-00511

DATE: 10/8/2003

Haverhill North Coke Company
Christopher Allen
PO Box 10388 1111 N Shore Dr
Knoxville, TN 379194005

CERTIFIED MAIL

Y	**TOXIC REVIEW**
Y	**PSD**
Y	**SYNTHETIC MINOR**
Y	**CEMS**
40 CFR Part 63, Subpart CCCCC	**MACT**
40 CFR Part 60, Subpart Y	**NSPS**
	NESHAPS
	NETTING
	MAJOR NON-ATTAINMENT
Y	**MODELING SUBMITTED**
	GASOLINE DISPENSING FACILITY

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install may be issued in proposed of final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install a fee of **$7825** will be due. Please do not submit any payment now.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,
Michael W. Ahern
Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: **USEPA** **PCHD** **KY** **WV**

SCIOTO COUNTY

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW
FOR HAVERHILL NORTH COKE COMPANY

Public notice is hereby given that the Ohio Environmental Protection Agency (EPA) has issued, on **October 8, 2003**, a draft action of Permit to Install (PTI) application number 07-00511 to Haverhill North Coke Company in Scioto County, Ohio.

This draft permit proposes allow an installation of a 400 battery coke production facility, in Haverhill, Ohio. The allowable emissions are in tons per year:

Pollutant	Tons Per Year (Phase I/Phase II)
PM/PM_{10} (stack)	314.33 / 1173.51
PM (fugitive)	12.5 / 48.49
PM_{10} (fugitive)	4.6 / 16.53
SO_2	592.27 / 1629.88
NO_x	461.81 / 1780.04
CO	134.16 / 521.98
VOC	109.74 / 435.82
Lead	0.115 / 0.256
HAPs	2.22 / 14.14

This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21).

A public hearing on the draft air permit is scheduled for 6:30 p.m., Wednesday, November 12, 2003, Green High School, in the gymnasium, 4057 Gallia Pike, Franklin Furnace, Ohio 45629. A presiding officer will be present and may limit oral testimony to ensure that all parties are heard.

All interested persons are entitled to attend or be represented and give written or oral comments on the draft permit at the hearing. Written comments must be received by Ohio EPA at the close of the business day on November 14, 2003. Comments received after this date will not be considered to be a part of the official record. Written comments may be submitted at the hearing or sent to Cindy Charles, Portsmouth City Health Department, Air Pollution Unit, 605 Washington Street, Portsmouth, Ohio, 45662.

Further information concerning this application, which is available for public inspection, may be secured from Cindy Charles, Portsmouth City Health Department, Air Pollution Unit at the above address during normal business hours. Telephone number: (740) 353-5156.

Permit To Install **Issue Date: To be entered upon final issuance**
Terms and Conditions **Effective Date: To be entered upon final issuance**

DRAFT PERMIT TO INSTALL 07-00511

Application Number: 07-00511

APS Premise Number: 0773000182

Permit Fee: **To be entered upon final issuance**

Name of Facility: Haverhill North Coke Company

Person to Contact: Christopher Allen

Address: PO Box 10388 1111 N Shore Dr
Knoxville, TN 379194005

Location of proposed air contaminant source(s) [emissions unit(s)]:
NW corner Gallia Pike & Ironton Ave
Haverhill, Ohio

Description of proposed emissions unit(s):
Four 100 oven nonrecovery coke batteries two quench towers coal and coke storage and material handling.

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install General Terms and Conditions

1. Monitoring and Related Recordkeeping and Reporting Requirements

a. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

i. The date, place (as defined in the permit), and time of sampling or measurements.

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. The operating conditions existing at the time of sampling or measurement.

b. Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

c. Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective

actions or preventive measures taken, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.

iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

2. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06**.**
Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

3. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

4. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.

5. Severability Clause

A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.

6. General Requirements

a. The permittee must comply with all terms and conditions of this permit. Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permit.

c. This permit may be modified, reopened, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d. This permit does not convey any property rights of any sort, or any exclusive privilege.

e. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit To Install fees within 30 days after the issuance of this Permit To Install.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

a. Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

i. At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

ii. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.

iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

iv. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c. The permittee shall submit progress reports to the appropriate Ohio EPA District Office or local air agency concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually, or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

ii. An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

10. Permit To Operate Application

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

12. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

B. State Only Enforceable Permit To Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

4. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

6. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

7. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

8. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

C. Permit To Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

Pollutant	Tons Per Year
	Phase I/Phase II
PM/PM_{10} (stack)	314.33 / 1173.51
PM (fugitive)	12.5 / 48.49
PM_{10} (fugitive)	4.6 / 16.53
SO_2	592.27 / 1629.88
NO_x	461.81 / 1780.04
CO	134.16 / 521.98
VOC	109.74 / 435.82
Lead	0.122 / 0.256

Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

1. PSD REQUIREMENTS

The source described in this Permit to Install is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by the United States Environmental Protection Agency 40 CFR 52.21. The authority to apply and enforce the PSD regulations has been delegated to the Ohio Environmental Protection Agency. The terms and conditions of this permit and the requirements of the PSD regulations are also enforceable by the United States Environmental Protection Agency.

In accordance with 40 CFR 124.15, 124.19 and 124.20, the following shall apply: (1) the effective date of this permit shall be 30 days after the service of notice to any public commentors of the final decision to issue, modify, or revoke and re-issue the permit, unless the service of notice is by mail, in which case the effective date of the permit shall be 33 days after the service of notice; and (2) if an appeal is made to the Environmental Protection Agency, the effective date of the permit is suspended until such time as the appeal is resolved or denied.

Appeals will be addressed to:

United States Environmental Protection Agency
Environmental Appeals Board
401 M. Street, SW (MC-113do)
Washington, DC 20460

B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

Ambient Air Monitoring for Particulate Matter 10 Microns and Smaller in Diameter (PM_{10}), Sulfur Dioxide (SO_2) and Periodic Sampling for Hazardous Air Pollutants (HAPS)

The permittee shall establish and operate ambient PM_{10}, SO_2, and HAP monitoring sites for this facility. The number and location of monitoring sites shall be based on accepted modeling practice and shall adequately monitor areas of maximum impact of the facility emissions and the background concentrations. Determination of the sampling locations shall be coordinated with, and subject to the prior approval of, the Ohio EPA. Within 45 days after the effective date of this permit, the permittee shall submit a plan describing the proposed network. This plan shall include, but not limited to, one (1) HAP monitoring site to be located near the housing subdivision which is adjacent to the proposed facility location, one (1) HAP monitoring site each to be located upwind and downwind of the proposed facility location, and one (1) meteorological site to be located close to the proposed facility location.

Following approval of the $PM_{10,}$ SO_2 and Periodic HAP sampling network plan, 90 days will be allowed to locate the samplers in accordance with the plan. All samplers shall be sited and located in accordance with the requirements of the 40 CFR Part 58 and any subsequent amendments.

The sites shall be equipped with PM_{10} or SO_2 samplers meeting the reference methods specified in 40 CFR Parts 50 and 53 with the additional requirement that each particulate (PM_{10}) instrument shall be equipped with a continuous flow meter (recording transducer), unless the instrument uses volumetric flow control.

PM_{10} Operation

The permittee shall operate one of the PM_{10} monitoring sites, specified by Ohio EPA, on an every other day schedule. The other sites will run on the same schedule as the Ohio air sampling network [one day in six] and in accordance with the following requirements:

1. The operating procedures identified in 40 CFR Parts 50 and 58 and the "Quality Assurance Handbook for Air Pollution Measurement Systems" Volume I - Principles (EPA-600/9-76-005) and Volume II - Ambient Air Specific Methods (EPA-600/4-77-027a) and the manufacturer's operating manual shall be followed.

2. The flow rate of each PM_{10} sampler shall be calibrated after every 500 hours of operation and after any instance of major repair or maintenance.

3. An operator's log book shall be maintained for each site location with a format and content as specified in guidance provided by the Ohio EPA.

The PM_{10} monitoring network shall be in operation at least six months prior to plant start up.

Sulfur Dioxide Instrument Operation

The SO_2 ambient monitors will run continuously 24 hours per day, 365 days per year to measure ambient air except during maintenance, repair, calibration or periodic checks.

The SO_2 monitoring network shall be in operation at least six months prior to plant start up.

Hazardous Air Pollutant Operation

Hazardous Air Pollutant sampling will follow US EPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air Method TO-15 for sampling Volatile Organic Compounds and Method TO-13 (The Determination of Benzo(a)pyrene [B(a)P] and other Polynuclear Aromatic Hydrocarbons (PAHs) in Ambient Air Using Gas Chromatographic (GC) and High Performance Liquid Chromatographic (HPLC) Analysis). The samples will be collected for a minimum of 24 hours. The collection frequency will be no less than once every 12 days in accordance with the USEPA Urban Air Toxics Monitoring Program.

The compounds sampled for will include at least the following 44 compounds as provided for by Method TO-15. Those compounds include:

METHOD TO-15 (VOCS)*

No.	Hazardous Air Pollutants	No.	Hazardous Air Pollutants
1	1,2- Dibromoethane	27	Cumene
2	1,2- Dichloroethane (EDC)		
3	1,3-Butadiene	29	Ethylbenzene
4	1,1-Dichloroethane		
5	1,1,2,2-Tetrachloroethane		
6	1,2,4-Trichlorobenzene	32	Hexachlorobutadiene
7	1,1,2-Trichloroethane		
8	1,2-Dichloropropane (propylene dichloride)		
9	1,3-Dichloropropene	35	m-Xylene
10	1,1,1-Trichloroethane	36	Methyl ethyl ketone
11	1,1-Dichloroethylene	37	Methyl isobutyl ketone
12	1,4-Dichlorobenzene	38	Methyl tert-butyl ether (MTBE)
13	2,2,4-Trimethylpentane		
14	2-Chloro-1,3-butadiene (chloroprene)	40	Methylene Chloride
15	Acetonitrile	41	n-Hexane
16	Acrylonitrile	42	o-Xylene
		43	p-Xylene
18	Benzene	44	Styrene
19	Benzyl chloride+	45	Tetrachloroethylene (PCE)
20	Bromoform (tribromomethane)	46	Toluene
21	Bromomethane (methyl bromide)	47	Trichloroethylene (TCE)
22	Carbon Tetrachloride	48	Vinyl chloride
23	Chlorobenzene	49	Vinyl acetate
24	Chloroethane (ethyl chloride)	50	Vinyl bromide
25	Chloroform	51	Xylene (mixed)
26	Chloromethane (methyl chloride)		

Method TO-13 sampling will include the follow PAHs and any other coke oven emission HAP detectable by TO-13:

Acenaphthen	Benzo(e)pyrene	Fluorene
Acenaphthylene	Benzo(g,h,i)perylene	Indeno(1,2,3-cd)pyrene
Anthracene	Benzo(k)fluoranthene	Naphthalene

Benzo(a)anthracene	Dibenzo(a,h)anthracene	Phenanthrene
Benzo(a)pyrene	Fluoranthene	Pyrene
Benzo(b)fluoranthene	Chrysene	

The HAP monitoring network shall be in operation at least six months prior to plant start up.

Quality Assurance

The permittee shall meet the quality assurance activities specified in 40 CFR Part 58, Appendix B except that at least 25% of the total number of PM_{10} sites shall be collocated with a duplicate sampler. One of the collocated sites shall be at the site with the highest expected 24-hour pollutant concentration. The collocated monitor(s) shall run on a one day in six schedule. Equipment siting and performance specifications must be in accordance with "Ambient Monitoring Guidelines for Prevention of Significant Deterioration (PSD)," (EPA-450/4-80-012).

Other quality assurance activities that are specified in 40 CFR Part 58, Appendix B include quarterly instruments accuracy audits of all of the PM_{10} and SO2 monitors and precision checks performed at least bi-weekly on the SO2 monitors. Additional information and guidance about these activities is available from the Ohio EPA Air Monitoring Section.

The Air Monitoring Section and Ohio EPA District Office and local air agency personnel shall be provided with access to each site location. The site operator and/or supervisor shall accompany the Air Monitoring Section, Ohio EPA District Office and/or local air agency personnel on any site inspection or audit, and respond to inquiries regarding instrument operations and maintenance.

Appropriate corrective actions must be taken by the permittee following the identification of any problem by the independent auditor, or Air Monitoring Section, Ohio EPA District Office and/or local air agency personnel.

Data Capture

Data capture shall be no less than 75% of the total possible samples to be collected on a quarterly basis. The following table summarizes the sample numbers by pollutant:

Pollutant	Total Samples/Quarter/Site	Required Minimum Samples
SO2	2160 - 2208* / 1 hr samples	1620 - 1656
PM_{10}	45 / 24 hr. samples Every-other-day sampler	34
PM_{10}	15 / 24 hr. samples	12

	1-in- 6 day sampler	
PM_{10} Collocated	15 / 24 hr. sampler 1-in-6 day sampler	12
HAP	10 / 24 hr. samples	5

* depending on the number of hours per quarter

Reporting Requirements for the $PM_{10,}$ SO_2 and HAPs Ambient Air Monitoring Network Audit and Quality Assurance Results

All air quality measurement data shall be reported to the Air Monitoring Section of the Ohio EPA, Division of Air Pollution Control in Columbus, within 18 days after the end of each calendar quarter, beginning with the first quarter after commencement of monitor operation. For HAPs measurements the data shall be reported within 45 days of the end of the calendar quarter. All ambient data shall be submitted on magnetic media (diskettes) or via e-mail in Aerometric Information Retrieval System (AIRS) format for direct entry into the US EPA's AIRS database system.

Independent audit (accuracy) results and precision results must be submitted quarterly to the Air Monitoring Section of the Ohio EPA, Division of Air Pollution Control in Columbus, and the appropriate Ohio EPA District Office or local air agency, within 45 days after the end of each calendar quarter, beginning with the first quarter after commencement of monitor operation.

The permittee shall notify the Portsmouth Local Air Agency as soon as they are aware of any exceedance of the 24-hour PM_{10}, 3-hour and/or 24-hour SO2 short-term NAAQS standards.

Continued Operation

The permittee shall continue to operate the PM_{10} and SO_2 ambient monitoring network as described in the permit condition for at least five years after commence of operation. The HAPs monitoring network shall continue operation at least two years after commencement of operation at the facility. The permittee can then request the Director to examine the ambient air quality data collected by the permittee's HAPs and criteria pollutant ambient monitoring network to determine if further ambient monitoring is necessary. The Director shall have at least one year to make a decision on the need for continued operation of the monitoring network. In determining the further need for the continued operation of the monitoring network, the Director shall consider the concentrations measured by the monitors, the trends in air quality concentrations, and the value of the air quality data in fulfilling the goals and requirements of the federal Clean Air Act and Chapter 3704 of the Ohio Revised Code.

Ohio EPA Air Toxics Policy

The following emissions units are subject to the OEPA air toxics policy: P901, P902, P001 and P002. To ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), the emission limitation(s) specified in this permit was (were) established using the Ohio EPA's "Air Toxics Policy" and is (are) based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxics Policy" was applied for each pollutant using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for each pollutant:

Pollutant	TLV ($\mu g/m^3$)	Maximum Hourly Emission Rate (lb/hr)	Predicted 1-Hour Maximum Ground-Level Concentration ($\mu g/m^3$)	MAGLC ($\mu g/m^3$)

Pollutant: arsenic
TLV (Ug/m3): 10
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 0.238

Pollutant: benzene
TLV (Ug/m3): 32,000
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 762

Pollutant: mercury
TLV (Ug/m3): 10
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 0.238

Pollutant: naphthalene
TLV (Ug/m3): 52,000
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 1,240

Pollutant: phosphorus

TLV (Ug/m3): 100
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 2.38

Pollutant: toluene
TLV (Ug/m3): 188,000
Maximum Hourly Emission Rate (lbs/hr):
Predicted 1-Hour Maximum Ground-Level Concentration (Ug/m3):
MAGLC (Ug/m3): 4,480

OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":

a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)'" than the lowest TLV value specified in the above table;

b. changes to the emissions unit or its exhaust parameters (e.g., increased emission rate {not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit}, reduced exhaust gas flow rate, and decreased stack height);

c. changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and,

d. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.

The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:

a. the change is not otherwise considered a "modification" under OAC Chapter 3745-31;

b. the permittee can continue to comply with the allowable emission limitations specified in its permit to install; and,

c. prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determined that the changed emissions unit still satisfies the Air Toxics Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:

a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and ,

b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F001 - Paved roadways and parking areas	OAC rule 3745-31-05(A)(3)	**Phase I** 2.68 TPY fugitive PM **Phase II** 5.36 TPY fugitive PM **Phase I and II** There shall be no visible particulate emissions except for 1 minute during any 60-minute period. **Phase I and II** best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.I.2.c through A.I.2.h)
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I** 0.52 TPY PM_{10} **Phase II** 1.04 TPY PM_{10}

2. Additional Terms and Conditions

2.a The paved roadways and parking areas that are covered by this permit and subject to the above-mentioned requirements are listed below:

Phase I - paved roadways:

Battery D
Coke and Coal Handling

Phase II - paved roadways:

Batteries A, B, C and D
Coke and Coal Handling

Phase I and II - paved parking areas:

Main Gate Parking Area

2.b The permittee shall employ best available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by sweeping at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.c The permittee shall employ best available control measures on the unpaved shoulders of all paved roadways for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved shoulders of all paved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.d The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

2.e The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

2.f Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

2.g Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of the paved roadways and parking areas in accordance with the following frequencies:

Phase I - paved roadways	minimum inspection frequency
Battery D	Daily
Coal and Coke Handling	Daily

Phase II - paved roadways	minimum inspection frequency
Batteries A, B, C, and D	Daily
Coal and Coke Handling	Daily

Phase I and II - paved parking areas	minimum inspection frequency
Main Gate Parking	Daily

2. The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

3. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

4. The permittee shall maintain records of the following information:

   a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

   b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

   c. the dates the control measures were implemented; and,

   d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

   The information required in 4.d. shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports that identify any of the following occurrences:

   a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and,

   b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

2. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section B.I. of these terms and conditions shall be determined in accordance with the following method(s):

   a. Emission Limitation: **Phase I**

      2.68 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. Multiply the vehicle miles traveled (VMT) per year for light duty gasoline vehicles times the 0.07 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

ii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 0.90 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

iii. Multiply the vehicle miles traveled (VMT) per year for heavy duty diesel vehicles times the 9.12 pounds/VMT emission facto`r times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

The particulate emission factors were calculated AP-42 Section 13.2.1, Equation (1), dated 1-95. The control efficiency was obtained from RACM, Table 2.1.1-3, dated 10/80.

Phase I emissions limitations were established assuming 35,000 VMT light duty gasoline vehicles, 15,000 VMT heavy duty gasoline vehicles, and 600 VMT heavy duty diesel vehicles.

b. Emission Limitation: **Phase II**

5.36 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. Multiply the vehicle miles traveled (VMT) per year for light duty gasoline vehicles times the 0.07 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

ii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 0.90 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

iii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 9.12 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

Phase II emissions limitations were established assuming 50,000VMT light duty gasoline vehicles 25,000 VMT heavy duty gasoline vehicles, and 1,850 VMT heavy duty diesel vehicles.

The particulate emission factors were calculated AP-42 Section 13.2.1, Equation (1), dated 1-95. The control efficiency was obtained from RACM, Table 2.1.1-3, dated 10/80.

c. Emission Limitation:

There shall be no visible particulate emissions except for 1 minute during any 60-minute period.

Applicable Compliance Method:

Compliance with the emission limitation for the paved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources," as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

d. Emission Limitation: **Phase I**

0.52 TPY fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. Multiply the vehicle miles traveled (VMT) per year for light duty gasoline vehicles times the 0.01 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

ii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 0.18 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

iii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 1.78 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

The particulate emission factors were calculated AP-42 Section 13.2.1, Equation (1), dated 1-95. The control efficiency was obtained from RACM, Table 2.1.1-3, dated 10/80.

Phase I emissions limitations were established assuming 35,000 VMT/year light duty gasoline vehicles, 15,000 VMT/year heavy duty gasoline vehicles, and 600 VMT heavy duty diesel vehicles.

d. Emission Limitation: **Phase II**

1.04 TPY fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. Multiply the vehicle miles traveled (VMT) per year for light duty gasoline vehicles times the 0.01 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

ii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 0.18 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

iii. Multiply the vehicle miles traveled (VMT) per year for heavy duty gasoline vehicles times the 1.78 pounds/VMT emission factor times 0.25, assuming a 75% control efficiency for sweeping the roads, and divide by 2,000 pounds/ton.

The particulate emission factors were calculated AP-42 Section 13.2.1, Equation (1), dated 1-95. The control efficiency was obtained from RACM, Table 2.1.1-3, dated 10/80.

Phase II emissions limitations were established assuming 50,000 VMT/year light duty gasoline vehicles, 25,000 VMT/year heavy duty gasoline vehicles, and 1,850 VMT heavy duty diesel vehicles.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F001 - Paved roadways and parking areas	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F002 - Coal and coke storage piles	OAC rule 3745-31-05(A)(3)	**Phase I** 1.56 TPY fugitive PM **Phase II** 1.94 TPY fugitive PM **Phase I and II** There shall be no visible emissions except for 3 minutes in any hour.
load-in and load-out of storage piles (See section A.I.2.b for identification of storage piles)		**Phase I and II** best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.I.2.c, A.I.2.d and A.I.2.e) **Phase I and II** There shall be no visible emissions except for 3 minutes in any hour
wind erosion of storage piles (See section A.I.2.b for identification of storage piles)		**Phase I and II** best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.I.2.e through A.I.2.g) **Phase I and II** The requirements of this rule also include compliance with OAC rules 3745-31-10 through 20.

40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I** 0.77 TPY fugitive PM_{10} **Phase II** 0.93 TPY fugitive PM_{10}

2. Additional Terms and Conditions

2.a This permit allows for the construction and operation of the emissions unit in two phases:

Phase I will consist of a one acre open coal storage pile (load-in by stacking conveyor and load-out by under pile gravity feed to a conveyor), a one acre enclosed coal storage pile (load-in by conveyor and load-out by under pile gravity feed to a conveyor), and a one acre open coke storage pile (load-in by conveyor and load-out by front end loader) .

Phase II will consist of a two acre enclosed coal storage pile (load-in by stacking tube and load-out by under pile gravity feed to a conveyor) and a two acre open coke storage pile (load-in by stacking tube and load-out by front end loader).

2.b The storage piles that are covered by this permit and subject to the requirements of OAC rule 3745-31-05 and 3745-31-10 through 20 are listed below:

coal storage pile(s)
coke storage pile(s)

2.c The permittee shall employ best available control measures on all load-in and load-out operations associated with the storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to the following control measures to ensure compliance:

		Load-In	Load-Out
open coal pile	Phase I	stacking conveyor and water sprays	under pile gravity feed to conveyor
enclosed coal pile		dome enclosure and water sprays	under pile gravity feed to conveyor
open coke pile		conveyor	front end loader
enclosed coal pile	Phase II	dome enclosure and water sprays	under pile gravity feed to conveyor
open coke pile		conveyor	front end loader

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.d The above-mentioned control measure(s) shall be employed for each load-in and load-out operation of each storage pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measure(s) shall continue during any such operation until further observation confirms that use of the measure(s) is unnecessary.

2.e The permittee shall employ best available control measures for wind erosion from the surfaces of all storage piles for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the open coal storage pile with water , dome enclosure and watering of enclosed coal storage pile and watering and enclosing the open coal storage pile with a dome enclosure at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.f The above-mentioned control measure(s) shall be employed for wind erosion from each pile if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) are necessary to ensure compliance with the above-mentioned applicable requirements. Implementation of the control measure(s) shall not be necessary for a storage pile

that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements.

2.g Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-31-10 through 20.

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

1. Except as otherwise provided in this section, the permittee shall perform inspections of each load-in operation at each storage pile in accordance with the following frequencies:

storage pile identification	minimum load-in inspection frequency
All	Daily

2. Except as otherwise provided in this section, the permittee shall perform inspections of each load-out operation at each storage pile in accordance with the following frequencies:

storage pile identification	minimum load-out inspection frequency
All	Daily

3. Except as otherwise provided in this section, the permittee shall perform inspections of the wind erosion from pile surfaces associated with each storage pile in accordance with the following frequencies:

storage pile identification	minimum wind erosion inspection frequency
All	Daily

4. No inspection shall be necessary for wind erosion from the surface of a storage pile when the pile is covered with snow and/or ice and for any storage pile activity if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

5. The purpose of the inspections is to determine the need for implementing the control measures specified in this permit for load-in and load-out of a storage pile, and wind erosion

from the surface of a storage pile. The inspections shall be performed during representative, normal storage pile operating conditions.

6. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

7. The permittee shall maintain records of the following information:

   a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

   b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

   c. the dates the control measures were implemented; and,

   d. on a calendar quarter basis, the total number of days the control measures were implemented and, for wind erosion from pile surfaces, the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measure(s).

   The information required in 7.d. shall be kept separately for (i) the load-in operations, (ii) the load-out operations, and (iii) the pile surfaces (wind erosion), and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit deviation reports that identify any of the following occurrences:

   a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and,

   b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

2. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation: **Phase I**

1.56 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. coal pile load-in

Open:
Multiply the maximum tons of coal handled per year times the 0.001 pound/ton particulate emission factor times 0.30 assuming a 70% control efficiency for the stacking conveyor and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.
Domed:
Multiply the maximum tons of coal handled per year times the 0.001 pound/ton particulate emission factor times 0.05 assuming a 95% control efficiency and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal pile wind erosion

Open:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 7.99 pound/day/acre emission factor times the 0.50 assuming a 50% control efficiency for the water sprays and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.
Domed:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 7.99 pound/day/acre emission factor times the 0.05 assuming a 95% control efficiency for the water sprays and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.

iii. coal pile load-out

Multiply the maximum tons of coal handled per year times the 0.0010 pound/ton emission factor times 0.30 assuming a 70% control efficiency for watering the pile before and/or during load-out, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

Open:
Multiply the maximum tons of coal handled per year times the 0.0010 pound/ton emission factor times 0.05 assuming a 95% control efficiency for watering the pile before and/or during load-out, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.
Domed:
Multiply the maximum tons of coal handled per year times the 0.0010 pound/ton emission factor times 0.05 assuming a 95% control efficiency for watering the pile before and/or during load-out, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke pile load-in
Open:
Multiply the maximum tons of coal handled per year times the 0.00129 pound/ton particulate emission factor times 0.30 assuming a 70% control efficiency for partial enclosure and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

v. coke pile wind erosion
Open:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 1.74 pound/day/acre emission factor and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5.

vi. coke pile load-out
Open:
Multiply the maximum tons of coal handled per year times the 0.00129 pound/ton emission factor times 0.30 assuming a 70% control efficiency for

partial enclosure during load-out, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

b. Emission Limitation: **Phase II**

1.94 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. <u>coal pile load-in</u>
domed:
Multiply the maximum tons of coal handled per year times the 0.001 pound/ton particulate emission factor times 0.05 assuming a 95% control efficiency for the stacking tube and pile enclosure, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. <u>coal pile wind erosion</u>
domed:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 7.99 pound/day/acre emission factor times the 0.05 assuming a 95% control efficiency for the pile enclosure and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.

iii. <u>coal pile load-out</u>
domed:
Multiply the maximum tons of coal handled per year times the 0.0010 pound/ton emission factor times 0.05 assuming a 95% control efficiency for the under pile gravity feed to conveyor, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. <u>coke pile load-in</u>
Open:
Multiply the maximum tons of coal handled per year times the 0.00129 pound/ton particulate emission factor times 0.30 assuming a 70% control efficiency and divide by 2,000 pounds per ton. The particulate emission

factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

v. coke pile wind erosion
Open:
Multiply the maximum area of the coke storage pile, in acres, times the 366, the maximum number of days per year, times the 1.74 pound/day/acre emission factor and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5.

vi. coke pile load-out
Open:
Multiply the maximum tons of coal handled per year times the 0.00129 pound/ton emission factor times 0.30 assuming a 70 % control efficiency for partial enclosure, and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

c. Emission Limitation: **Phase I and Phase II**

There shall be no visible emissions except for 3 minutes in any hour.

Applicable Compliance Method:

Compliance with the visible emission limitations for the storage piles identified above shall be determined in accordance with Test Method 22 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(c) of OAC rule 3745-17-03.

d. Emission Limitation: **Phase I**

0.77 TPY fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. coal pile load-in

Open:
Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the stacking conveyor, and divide by 2,000 pounds per ton. The PM_{10} emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.
Domed
Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.05, assuming a 95% control efficiency for the stacking tube, and divide by 2,000 pounds per ton. The PM_{10} emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal pile wind erosion
Open:
Multiply the maximum area of the coal storage pile, in acres, times 366, the maximum number of days per year, times the 3.99 pound/day/acre emission factor times the 0.50 assuming a 50% control efficiency for the water sprays and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.
Domed:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 3.99 pound/day/acre emission factor times the 0.05 assuming a 95% control efficiency for the water sprays and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.

iii. coal pile load-out
Open:
Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.30 assuming a 70% control efficiency for watering the pile before and/or during load-out, and divide by 2,000 pounds per ton. The PM_{10} emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.
Domed:
Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.05 assuming a 95% control efficiency for watering the pile before and/or during load-out, and divide by 2,000 pounds

per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke pile load-in
Open:
Multiply the maximum tons of coal handled per year times the 0.00061 pound/ton particulate emission factor times 0.30 assuming a 70% control efficiency for partial enclosure and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

v. coke pile wind erosion
Open:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 0.87 pound/day/acre emission factor and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5.

vi. coke pile load-out
Open:
Multiply the maximum tons of coal handled per year times the 0.00061 pound/ton emission factor times 0.30 assuming a 70% control efficiency for partial enclosure , and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80

e. Emission Limitation: **Phase II**

0.93 TPY fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. coal pile load-in

Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.05, assuming a 95% control efficiency for the stacking tube and pile enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal pile wind erosion

Multiply the maximum area of the coal storage pile, in acres, times the maximum number of days per year, times the 3.99 pound/day/acre emission factor times the 0.05 assuming a 95% control efficiency for the pile enclosure and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated in accordance with AP-40, Section 4, Equation 5. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 1/80.

iii. coal pile load-out

Multiply the maximum tons of coal handled per year times the 0.0005 pound/ton emission factor times 0.05 assuming a 95% control efficiency for the under pile gravity feed to conveyor, and divide by 2,000 pounds per ton. The PM_{10} emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke pile load-in
Open:
Multiply the maximum tons of coal handled per year times the 0.00061 pound/ton particulate emission factor times 0.30 assuming a 70% control efficiency for partial enclosure and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

v. coke pile wind erosion
Open:
Multiply the maximum area of the coal storage pile, in acres, times the 366, the maximum number of days per year, times the 0.87 pound/day/acre emission factor and divide by 2,000 pounds per ton. The particulate emission factor was calculated in accordance with AP-40, Section 4, Equation 5.

vi. coke pile load-out
Open:
Multiply the maximum tons of coal handled per year times the 0.00061 pound/ton emission factor times 0.30 assuming a 70% control efficiency for partial enclosure , and divide by 2,000 pounds per ton. The particulate emission factor calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) and Table 13.2.4-1, dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F002 - Coal and coke storage piles	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F003 - Coal handling processing and transfer	OAC rule 3745-31-05(A)(3)	**Phase I** 2.29 TPY fugitive PM **Phase II** 4.82 TPY fugitive PM **Phase I and II** Visible particulate emissions shall not exceed 20% opacity, as a 3-minute average. **Phase I and II** best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (See sections A.I.2.c through A.I.2.e) **Phase I and II** The requirements of this rule also include compliance with 40 CFR Part 52.21, 40 CFR Part 60, Subpart Y and OAC rule 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I** 1.10 TPY fugitive PM_{10} as a rolling, 12-month summation

	Phase II 2.26 TPY fugitive PM_{10} as a rolling, 12-month summation
40 CFR Part 60, Subpart Y	There shall be no visible particulate emissions of fugitive dust of 20% opacity or greater from any coal processing and conveying equipment, or coal transfer and loading system processing coal.

2. Additional Terms and Conditions

2.a This permit allows for the construction and operation of the emissions unit in two phases:

Phase I will consist of a rail car bottom dumping station and 10 belt conveyor transfer points (7 controlled with enclosure and wet suppression and 3 uncontrolled) and coal screening and crushing.

Phase II will consist of a rail car bottom dumping station and 16 belt conveyor transfer points (10 controlled with enclosure and wet suppression and 6 uncontrolled) and coal screening and crushing.

2.b The material handling operation(s) that are covered by this permit and subject to the above-mentioned requirements are listed below:

coal unloading via rail car bottom dumping
coal conveying via belt conveyor
coal transfer points via belt conveyor to belt conveyor

2.c The permittee shall employ best available control measures for the above-identified material handling operation(s) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:

material handling operation(s)	control measure(s)
Phase I - rail car bottom dumping	enclosure and wet suppression
Phase II - rail car bottom dumping	enclosure and wet suppression

Phase I - belt conveyors and transfer points (10 belt conveyor to belt conveyor) and coal screening crushing	enclosure and wet suppression (7) none (3)
Phase II - belt conveyors and transfer points (16 belt conveyor to belt conveyor)	enclosure and wet suppression (10) none (6)

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.d For each material handling operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measure(s) shall continue during the operation of the material handling operation(s) until further observation confirms that the use of the control measure(s) is unnecessary.

2.e Implementation of the above-mentioned control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-31-05.

II. Operational Restrictions

1. **Phase I**

The maximum annual wet coal usage rate for this emissions unit shall not exceed 876,000 based upon a rolling, 12-month summation of the wet coal usage rates.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the wet coal usage levels specified in the following table:

Month	Maximum Allowable Cumulative Production
1	73,000
1-2	146,000
1-3	219,000
1-4	292,000
1-5	365,000
1-6	438,000
1-7	511,000
1-8	584,000

1-9	657,000
1-10	730,000
1-11	803,000
1-12	876,000

After the first 12 calendar months of operation, compliance with the annual wet coal usage rate limitation shall be based upon a rolling, 12-month summation of the wet coal usage rates.

2. **Phase II**
The maximum annual wet coal usage rate for this emissions unit shall not exceed 3,504,000 based upon a rolling, 12-month summation of the wet coal usage rates.

To ensure enforceability during the first 12 calendar months of operation, the permittee shall not exceed the wet coal usage levels specified in the following table:

Month	Maximum Allowable Cumulative Production
1	292,000
1-2	584,000
1-3	876,000
1-4	1,168,000
1-5	1,460,000
1-6	1,752,000
1-7	2,044,000
1-8	2,336,000
1-9	2,628,000
1-10	2,920,000
1-11	3,212,000
1-12	3,504,000

After the first 12 calendar months of operation, compliance with the annual wet coal usage rate limitation shall be based upon a rolling, 12-month summation of the wet coal usage rates.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain monthly records of the following information:

   a. The wet coal usage rate for each month.

   b. Beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the wet coal usage rates.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative wet coal usage rate for each calendar month.

2. Except as otherwise provided in this section, for material handling operations that are not adequately enclosed, the permittee shall perform inspections of such operations in accordance with the following minimum frequencies:

material handling operation(s)	minimum inspection frequency
Battery #A oven coal conveyors	daily
Battery #B oven coal conveyors	daily
Battery #C oven coal conveyors	daily
Battery #D oven coal conveyors	daily

3. The above-mentioned inspections shall be performed during representative, normal operating conditions.

4. The permittee may, upon receipt of written approval from the Portsmouth Local Air Agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

5. The permittee shall maintain records of the following information:

   a. the date and reason any required inspection was not performed;

   b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measure(s);

   c. the dates the control measure(s) was (were) implemented; and,

   d. on a calendar quarter basis, the total number of days the control measure(s) was (were) implemented.

   The information in 5.d. shall be kept separately for each material handling operation identified above, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. Pursuant to the NSPS, the permittee is hereby advised of the requirement to report the following at the appropriate times:

   a. Construction date (no later than 30 days after such date);

b. Anticipated start up date (not more than 60 days or less than 30 days prior to such date);

c. Actual start-up date (within 15 days of such date); and

d. Date of performance testing (if required, at least 30 days prior to testing).

Reports are to be sent to:

Ohio Environmental Protection Agency
DAPC - Permit Management Unit
Lazarus Government Center
P. O. Box 1049
Columbus, Ohio 43216-1049

and

Portsmouth Local Air Agency
605 Washington Street, Third Floor
Portsmouth, Ohio 45662

2. The permittee shall submit deviation reports that identify any of the following occurances:

a. each day during which an inspection was not performed by the required frequency; and

b. each instance when a control measure, that was to be performed as a result of an inspection, was not implemented.

3. The deviation reports shall be submitted in accordance with the reporting requirements of Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation: **Phase I**

2.29 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. coal railcar unloading:

Multiply the maximum tons of coal unloaded per year, times the 0.001 pound/ton emission factor times 0.30, assuming a 70% control efficiency for wet suppression and enclosure, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal transfer points with enclosure and wet suppression:

Multiply the maximum tons of coal handled per year, times 7, the number of transfer points, times the 0.001 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iii. uncontrolled coal transfer points:

Multiply the maximum tons of coal handled per year, times 3, the number of transfer points, times the 0.001 pound/ton emission factor and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95.

iv. coal screening/crushing with enclosure and wet suppression:

Multiply the maximum tons of coal handled per year, times 1, the number of transfer points, times the 0.16 pound/ton emission factor times 0.01, assuming a 99% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from AP-40 and Ohio RACM.

b. Emission Limitation: **Phase II**

4.82 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. coal railcar unloading

Multiply the maximum tons of coal unloaded per year, times the 0.001 pound/ton emission factor times 0.30, assuming a 70% control efficiency for wet suppression and enclosure, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal transfer points with enclosure and wet suppression

(1) Multiply the maximum tons of coal handled per year times 8, the number of transfer points, times the 0.001 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coal handled per year times 0.5, for transfer points that handle 50% of the total throughput, times 2, the number of transfer points, times the 0.001 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton.

The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iii. uncontrolled coal transfer points

(1) Multiply the maximum tons of coal handled per year times 0.5, for transfer points that handle 50% of the total throughput, times 2, the number of transfer points, times the 0.001 pound/ton emission factor and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coal handled per year times 0.25, for transfer points that handle 25% of the total throughput, times 4, the number of transfer points, times the 0.001 pound/ton emission factor and divide by 2,000 pounds per ton.

The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95.

c. Emission Limitation: **Phase I and II**

20% opacity as a 3-minute average

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of OAC rule 3745-17-03(B)(3).

d. Emission Limitation: **Phase I**

1.10 TPY fugitive PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by calculating the sum of the following:

i. <u>coal railcar unloading</u>

Multiply the maximum tons of coal unloaded per month, times the 0.00047 pound/ton emission factor times 0.30, assuming a 70% control efficiency for wet suppression and enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. <u>coal transfer points with enclosure and wet suppression</u>

Multiply the maximum tons of coal handled per month, times 7, the number of controlled transfer points, times the 0.00047 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iii. <u>uncontrolled coal transfer points</u>

Multiply the maximum tons of coal handled per month, times 3, the number of uncontrolled transfer points, times the 0.00047 pound/ton emission factor and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95.

iv. coal sizing with enclosure and wet suppression:

Multiply the maximum tons of coal handled per year, times 1, the number of transfer points, times the 0.08 pound/ton emission factor times 0.01, assuming a 99% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from AP-40 and Ohio RACM.

e. Emission Limitation: **Phase II**

2.26 TPY fugitive PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by calculating the sum of the following:

i. coal railcar unloading

Multiply the maximum tons of coal unloaded per month, times the 0.00047 pound/ton emission factor times 0.30, assuming a 70% control efficiency for wet suppression and enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. coal transfer points with enclosure and wet suppression

(1) Multiply the maximum tons of coal handled per month times 8, the number of transfer points, times the 0.00047 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coal handled per month times 0.5, for transfer points that handle 50% of the total throughput, times 2, the number of transfer points, times the 0.00047 pound/ton emission factor times 0.05, assuming a 95% control efficiency for enclosed transfer points and wet suppression, and divide by 2,000 pounds per ton.

The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iii. uncontrolled coal transfer points

(1) Multiply the maximum tons of coal handled per month times 0.5, for transfer points that handle 50% of the total throughput, times 2, the number of transfer points, times the 0.00047 pound/ton emission factor and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coal handled per month times 0.25, for transfer points that handle 25% of the total throughput, times 4, the number of transfer points, times the 0.00047 pound/ton emission factor and divide by 2,000 pounds per ton.

The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1) dated 1/95.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F003 - Coal handling processing and transfer	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F004 - Coke and breeze handling and processing	OAC rule 3745-31-05(A)(3)	**Phase I and II** Emissions of PM/PM_{10} from the crushing/screening baghouse shall not exceed 3.09 pounds per hour. **Phase I** 2.42 TPY fugitive PM **Phase II** 7.99 TPY fugitive PM **Phase I and II** Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average. **Phase I and II** The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21, OAC rule 3745-17-07 and 3745-31-10 through 20.
	OAC rule 3745-17-07(A)(1)	**Phase I and II** Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11	**Phase I and II** The emission limitation specified by this rule is less stringent than the emission

	limitation established pursuant to OAC rule 3745-31-05(A)(3).
40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I and II** Particulate emissions from the crushing/screening baghouse shall not exceed 0.008 grains per dry standard cubic foot of exhaust gases. **Phase I and II** Particulate emissions from the crushing/screening baghouse shall not exceed 13.53 TPY PM/PM_{10} as a rolling, 12-month summation. **Phase I** 1.15 TPY fugitive PM_{10} as a rolling, 12-month summation **Phase II** 3.78 TPY fugitive PM_{10} as a rolling, 12-month summation

2. Additional Terms and Conditions

2.a This permit allows for the construction and operation of the emissions unit in two phases:

Phase I consists of a crusher and screen controlled by a baghouse, 8 enclosed transfer points, 4 uncontrolled transfer points, and coke load-out to railcar and/or barge with partial enclosure.

Phase II consists of a crusher and screening station controlled by a baghouse, 13 enclosed transfer points, 4 uncontrolled transfer points, and coke load-out to railcar and/or barge with partial enclosure.

2.b The material handling operation(s) that are covered by this permit and subject to the above-mentioned requirements are listed below:

coke loading of railcars and barges
coke conveying via belt conveyor
coke transfer points (belt conveyor to belt conveyor and crusher to belt conveyor)

2.c The permittee shall employ best available control measures for the above-identified material handling operation(s) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:

material handling operation(s)	control measure(s)
coke loading of railcars and barges	partial enclosure
coke conveying via belt conveyors	partial enclosure
coke transfer points (belt conveyor to belt conveyor and crusher to belt conveyor)	partial enclosure

Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.

2.d For each material handling operation that is not adequately enclosed, the above-identified control measure(s) shall be implemented if the permittee determines, as a result of the inspection conducted pursuant to the monitoring section of this permit, that the control measure(s) is (are) necessary to ensure compliance with the above-mentioned applicable requirements. Any required implementation of the control measure(s) shall continue during the operation of the material handling operation(s) until further observation confirms that the use of the control measure(s) is unnecessary.

2.e Implementation of the above-mentioned control measure(s) in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements OAC rule 3745-31-05.

II. Operational Restrictions

1. The pressure drop across the coke crushing/screening baghouse shall be maintained within the range of 3 to 12 inches of water, while the emissions unit is in operation.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the coke crushing/screening baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in

accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the coke crushing/screening baghouse on a once per shift basis.

2. Except as otherwise provided in this section, for material handling operations that are not adequately enclosed, the permittee shall perform inspections of such operations in accordance with the following minimum frequencies:

material handling operation(s)	minimum inspection frequency
coke loading of railcars and barges	daily
coke conveying via belt conveyors	daily
coke transfer points (belt conveyor to belt conveyor and crusher to belt conveyor)	daily

3. The above-mentioned inspections shall be performed during representative, normal operating conditions.

4. The permittee may, upon receipt of written approval from the Portsmouth Local Air Agency, modify the above-mentioned inspection frequencies if operating experience indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements.

5. The permittee shall maintain records of the following information:

   a. the date and reason any required inspection was not performed;

   b. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measure(s);

   c. the dates the control measure(s) was (were) implemented; and,

   d. on a calendar quarter basis, the total number of days the control measure(s) was (were) implemented.

   The information in 5.d. shall be kept separately for each material handling operation identified above, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the crushing/screening baghouse did not comply with the allowable range specified above.

2. The permittee shall submit deviation reports that identify any of the following occurrences:

   a. each day during which an inspection was not performed by the required frequency; and,

   b. each instance when a control measure, that was to be performed as a result of an inspection, was not implemented.

3. These deviation (excursion) reports are due by the dates described in Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Emission testing requirements

   The permittee shall conduct, or have conducted, emission testing for the crushing/screening bagouse in accordance with the following requirements:

   a. The emission testing for Phase I shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of Phase I of the emissions unit. The emission testing for Phase II shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of Phase II of the emissions unit.

   b. The emission testing shall be conducted to demonstrate compliance with the PM emissions limits.

   c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): for particulates, Methods 1 through 5 of 40 CFR Part 60, Appendix A. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

   d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

A particulate emissions test shall also be conducted at the inlet of the control device to determine the uncontrolled mass rate of emission for the emission unit, for purposes of applying Figure II of OAC rule 3745-17-11. For this testing, Methods 1 through 5 of 40 CFR Part 60, Appendix A, shall be employed.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

2. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation: **Phase I and II**

Emissions of PM/PM_{10} from the crushing/screening baghouse shall not exceed 3.09 pounds per hour.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures and methods required in OAC rule 3745-17-03(B)(10).

b. Emission Limitation: **Phase I**

2.42 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. enclosed coke transfer points

(1) Multiply the maximum tons of coke handled per year times 3, the number of enclosed transfer points that handle 100% of the total throughput, times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coke handled per year times 0.5, for transfer points that handle 50% of the total throughput, times 5, the number of enclosed transfer points, times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. uncontrolled coke transfer points

Multiply the maximum tons of coke handled per year times 4, the number of uncontrolled transfer points that handle 100% of the total throughput, times the 0.00129 pound/ton emission factor, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95.

iii. coke load-out

Multiply the maximum tons of coke handled per year times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the partial enclosure, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke breeze silo/enclosed bunker

Multiply the maximum tons of coke breeze handled per year times 2, the number of transfer points (load-out and load-in), times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosure, and divide by 2,000 pounds per ton. The particulate emission

factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

c. Emission Limitation: **Phase II**

7.99 TPY fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrate by calculating the sum of the following:

i. <u>enclosed coke transfer points</u>

(1) Multiply the maximum tons of coke handled per year times 7, the number of enclosed transfer points that handle 100% of the total throughput, times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coke handled per year times 0.5, for transfer points that handle 50% of the total throughput, times 1, the number of enclosed transfer points, times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(3) Multiply the maximum tons of coke handled per year times 0.25, for transfer points that handle 25% of the total throughput, times 5, the number of enclosed transfer points, times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. <u>uncontrolled coke transfer points</u>

Multiply the maximum tons of coke handled per year times 0.5, for transfer points that handle 50% of the total throughput, times 4, the number of uncontrolled transfer points that handle 100% of the total throughput, times the 0.00129 pound/ton emission factor, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95.

iii. coke load-out

Multiply the maximum tons of coke handled per year times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the partial enclosure, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke breeze silo/enclosed bunker

Multiply the maximum tons of coke breeze handled per year times 2, the number of transfer points (load-out and load-in), times the 0.00129 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosure, and divide by 2,000 pounds per ton. The particulate emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

d. Emission limitation: **Phase I and II**

Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

e. Emission Limitation: **Phase I and II**

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

f. Emission Limitation: **Phase I and II**

0.008 gr/dscf of exhaust gases from the coke crushing/screening baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures and methods required in OAC rule 3745-17-03(B)(10).

g. Emission Limitation: **Phase I and II**

Particulate emissions from the crushing/screening baghouse shall not exceed 13.53 TPY PM/PM_{10} as a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be calculated by multiplying the PM/PM_{10} emission factor, in pounds/ton, times the maximum throughput rate of coke, in tons/hour, times the hours of operation, in hours/month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

h. Emission Limitation: **Phase I**

1.15 TPY fugitive PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by calculating the sum of the following:

i. <u>enclosed coke transfer points</u>

(1) Multiply the maximum tons of coke handled per month times 3, the number of enclosed transfer points that handle 100% of the total throughput, times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coke handled per month times 0.5, for transfer points that handle 50% of the total throughput, times 5, the number of enclosed transfer points, times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. uncontrolled coke transfer points

Multiply the maximum tons of coke handled per month times 4, the number of uncontrolled transfer points that handle 100% of the total throughput, times the 0.00061 pound/ton emission factor, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95.

iii. coke load-out

Multiply the maximum tons of coke handled per month times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the partial enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke breeze silo/enclosed bunker

Multiply the maximum tons of coke breeze handled per month times 2, the number of transfer points (load-out and load-in), times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

i. Emission Limitation: **Phase II**

3.78 TPY fugitive PM_{10} as a rolling, 12-month summation

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by calculating the sum of the following:

i. enclosed coke transfer points

(1) Multiply the maximum tons of coke handled per month times 7, the number of enclosed transfer points that handle 100% of the total throughput, times the 0.00061 pound/ton emission factor times 0.30,

assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(2) Multiply the maximum tons of coke handled per month times 0.5, for transfer points that handle 50% of the total throughput, times 1, the number of enclosed transfer points, times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

(3) Multiply the maximum tons of coke handled per month times 0.25, for transfer points that handle 25% of the total throughput, times 5, the number of enclosed transfer points, times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the enclosures, and divide by 2,000 pounds per ton.

The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

ii. uncontrolled coke transfer points

Multiply the maximum tons of coke handled per month times 0.5, for transfer points that handle 50% of the total throughput, times 4, the number of uncontrolled transfer points that handle 100% of the total throughput, times the 0.00061 pound/ton emission factor, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95.

iii. coke load-out

Multiply the maximum tons of coke handled per month times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the partial enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

iv. coke breeze silo/enclosed bunker

Multiply the maximum tons of coke breeze handled per month times 2, the number of transfer points (load-out and load-in), times the 0.00061 pound/ton emission factor times 0.30, assuming a 70% control efficiency for the

enclosure, and divide by 2,000 pounds per ton. The PM_{10} emission factor was calculated from AP-42 5th Edition, Section 13.2.4, Equation (1), dated 1/95. The control efficiency was obtained from RACM, Table 2.2.1-2, dated 10/80.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
F004 - Coke and breeze handling and processing	None	None

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001 - Quench Tower for C and D Batteries	OAC rule 3745-31-05(A)(3)	**Phase I and II** 0.0028 lb/hr Lead 0.0006 lb HAPs/ton coal 0.274 lb/hr HAPs **Phase I** 0.0025 tpy Lead 0.250 tpy HAPs **Phase II** 0.0050 tpy Lead 0.329 tpy HAPs **Phase I and II** The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21 and OAC rule 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I** 216.00 lbs/hr PM 197.10 tpy PM as a rolling, 12-month summation 24.00 lbs/hr PM_{10} 21.90 tpy PM_{10} as a rolling, 12-month summation **Phase II** 216.00 lbs/hr PM

	394.20 tpy PM as a rolling, 12-month summation 24.00 lbs/hr PM_{10} 43.80 tpy PM_{10} as a rolling, 12-month summation
OAC rule 3745-17-07(A)	**Phase I and II** 0.05 lb PM_{10} / ton coal See sections A.I.2.b and A.I.2.c below. **Phase I and II** Visible particulate emissions from the quench tower shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
OAC rule 3745-31-05(D)	**Phase I and II** See sections A.I.2.d .
40 CFR Part 63, Subpart CCCCC	See section A.I.2.e below.

2. Additional Terms and Conditions

2.a This permit allows for the operation of this emissions unit in two phases. During Phase I this emissions unit will quench the coke produced from Battery D. During Phase II, this emissions unit will quench the coke produced from Batteries C and D.

2.b The concentration of the total dissolved solids (TDS) of the water employed to quench coke at each quench tower shall not exceed 1100 milligrams per liter (mg/L).

2.c Compliance with OAC rules 3745-31-05 , 3745-31-15 and 40 CFR Part 52.21 shall be demonstrated by a TDS concentration limit of 1100 mg/L and the operation and maintenance of an interior baffle system with coverage of not less than ninety-five per cent of the cross-sectional area of the tower.

2.d Lead emissions shall not exceed 0.52 tons per year as a rolling, 12-month summation for emissions units P901, P902, P001, and P002 combined.

2.e **[**40 CFR 63.7295 (a)(1)(i) or (ii)]
The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L).

II. Operational Restrictions

1. The permittee shall operate and maintain an interior baffle system for the quench tower. The interior baffle system shall be designed and maintained in accordance with good engineering practice and provide coverage of not less than 95% of the cross-sectional area of the tower.

2. The permittee shall employ clean quench water with a TDS concentration of equal to or less than 1100 mg/l of water during the coke quenching operation. The permittee shall achieve compliance with the TDS quench water limitation by using only river water or non-contact cooling water for quenching.

3. **[**40 CFR 63.7295 (a)(2)]
The permittee shall use acceptable makeup water for quenching.

[40 CFR 63.7352]
Acceptable makeup water means surface water from a river, lake, or stream; water meeting drinking water standards; storm water runoff and production area clean up water ; process wastewater treated to meet effluent limitations guidelines in 40 CFR part 420; water from any of these sources that has been used only for non-contact cooling or in water seals.

4. **[**40 CFR 63.7295 (b)(1)]
The permittee shall equip each quench tower with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky.

5. **[**40 CFR 63.7295 (b)(2)]
The permittee shall wash the baffles in each quench tower once each day that the tower is used to quench coke, except as provided in A.II.3.a & b.

   a. the permittee is not required to wash the baffles in a quench tower if the highest measured ambient temperature remains less than 30 degrees Fahrenheit throughout that day (24-hour period). If the measured ambient temperature rises to 30 degrees Fahrenheit or more during the day, you must resume daily washing according to the schedule in your operation and maintenance plan.

   b. the permittee shall continuously record the ambient temperature on days that the baffles were not washed.

6. **[**40 CFR 63.7295 (b)(3)]
The permittee shall inspect each quench tower monthly for damaged or missing baffles and blockage.

7. **[**40 CFR 63.7295 (b)(4)]
The permittee shall initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall wash the baffle system on a daily basis. The permittee shall inspect the baffle system on a monthly basis for damaged or missing baffles and blockage. The permittee shall repair or replace all damaged or missing baffles before the next scheduled inspection.

2. The permittee shall collect a weekly sample of the water employed in each quench tower which shall be analyzed for concentration of total dissolved solids.

   OAC rule 3745-17-03(10)(c) says use section 209(C) "Standard Methods for the Examination of Water and Wastewater," fifteenth edition using a drying temperature between 103 and 105 degrees Celsius. five samples / week / tower either composite or test each and average

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify (1) each day when the baffles were not washed as required and (2) each repair to the baffle system that was not completed by the next scheduled monthly inspection.

2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the concentration of TDS of the quench water did not comply with the TDS requirements specified above.

3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the 0.256 tons per year as a rolling 12-month summation Lead emissions limitation.

4. The deviation (excursion) reports shall be submitted in accordance with Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

   a. Emission Limitation: **Phase I and II**

      0.0028 lb/hr Lead

      Applicable Compliance Method:

      Compliance shall be demonstrated by analysis of the quench water for HAPs, in accordance with U.S. EPA approved test methods.

   b. Emission Limitation: **Phase I and II**

0.0006 lb HAPs/ton coal
0.274 lb/hr HAPs

Applicable Compliance Method:

Compliance shall be demonstrated by analysis of the quench water for HAPs, in accordance with U.S. EPA approved test methods.

c. Emission Limitation: **Phase I**

0.0025 TPY Lead

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per year, and divide by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance.

d. Emission Limitation: **Phase II**

0.0050 TPY Lead

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per year, and divide by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance.

e. Emission Limitation: **Phase I**

0.250 TPY HAPs

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the summation of the HAP emission factor, in pounds/ton, times the wet tons of coal charged per year, and divide by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance

f. Emission Limitation: **Phase II**

0.329 TPY HAPs

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the summation of the HAP emission factor, in pounds/ton, times the wet tons of coal charged per year, and divide by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance

g. Emission Limitation: **Phase I and II**

0.05 lb PM_{10} / ton coal

Applicable Compliance Method:

Compliance shall be demonstrated by compliance with the TDS concentration limit of 1100 mg/L and baffles which provide coverage of not less than 95% of the cross sectional area of the tower. The PM_{10} emission limitation was calculated from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

h. Emission Limitation: **Phase I and II**

216.00 lbs/hr PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.450 pounds per ton times the maximum wet tons of coal charged per hour. The particulate emission factor was determined based on the following equation from Ed Wojociechowski, U. S. EPA, Region 5:

$y = 0.000115x + 0.323$
where:
y = lbs PM/wet ton coal, and
x = total dissolved solids (TDS) concentration of quench water (mg/L)

i. Emission Limitation: **Phase I and II**

24.00 lbs/hr PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.05 lb PM_{10}/wet ton coal charged times the maximum wet tons of coal charged per hour. The PM_{10} emission factor was obtained from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

j. Emission Limitation: **Phase I**

197.10 TPY PM as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.450 pounds per ton times the maximum wet tons of coal charged per month, and divide by 2,000 pounds/ton. The particulate emission factor was determined based on the following equation from Ed Wojociechowski, U. S. EPA, Region 5:

$y = 0.000115x + 0.323$
where:
y = lbs PM/wet ton coal, and
x = total dissolved solids concentration of quench water (mg/L)

k. Emission Limitation: **Phase I**

21.90 tpy PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM_{10} emission factor of 0.05 pounds/ton coal charged, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM_{10} emission factor was obtained from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

l. Emission Limitation: **Phase II**

394.20 tpy PM as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.450 pounds per ton times the maximum wet tons of coal charged per month, and divide by 2,000 pounds/ton. The particulate emission factor was determined based on the following equation from Ed Wojociechowski, U. S. EPA, Region 5:

$y = 0.000115x + 0.323$
where:
y = lbs PM/wet ton coal, and
x = total dissolved solids concentration of quench water (mg/L)

m. Emission Limitation: **Phase II**

43.80 tpy PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM_{10} emission factor of 0.05 pounds/ton coal charged, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM_{10} emission factor was obtained from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

n. Emission Limitation: **Phase I and II**

Visible particulate emissions from each quench tower shall not exceed 20 percent opacity as a 6-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the methods and procedures required in OAC rule 3745-17-03(B)(1).

o. Emission Limitation: **Phase I and II**

TDS less than 1100 mg/L

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(10)(c).

p. Emission Limitation: **Phase I and II**

[40 CFR 63.7295 (a)(1)(i)]
The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L).

Applicable Compliance Method:

[40 CFR 63.7325(a)(1)]
Take the quench water sample from a location that provides a representative sample of the quench water as applied to the coke (e.g., from the header that feeds water to the quench tower reservoirs). Conduct sampling under normal and representative operating conditions.

[40 CFR 63.7325(a)(2)]
Determine the TDS concentration of the sample using Method 160.1 in 40 CFR part 136.3 (see 'residue - filterable'), except that you must dry the total filterable residue at 103 to 105 °C (degrees Centigrade) instead of 180 °C.

q. Emission Limitation:

Lead emissions shall not exceed 0.52 tons per year for emissions units P901, P902, P001, and P002 combined.

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. <u>waste gas stack</u>

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

ii. charging

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor of 0.0000001 pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

iii. pushing

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

vi. quench towers

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent water analysis which demonstrated compliance

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P001 - Quench Tower for C and D Batteries		Compliance with OEPA Air Toxics Policy; see Part II, term B.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P002 - Quench Tower for A and B Batteries	OAC rule 3745-31-05(A)(3)	0.0028 lb/hr and 0.0050 tpy Lead 0.0006 lb HAPs/ton coal 0.274 lb/hr and 0.329 tpy HAPs The requirements of this rule also include compliance with the requirements of 40 CFR Part 52.21 and OAC rule 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	216.00 lbs/hr PM 394.20 tpy PM as a rolling, 12-month summation 24.00 lbs/hr PM_{10} 43.80 tpy PM_{10} as a rolling, 12-month summation 0.05 lb PM_{10} / ton coal See sections A.I.2.b and A.I.2.c below.
	OAC rule 3745-17-07(A)	Visible particulate emissions from the quench tower shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-31-05(D)	See sections A.I.2.c.

40 CFR Part 63, Subpart CCCCC	See section A.I.2.d below.

2. Additional Terms and Conditions

2.a The concentration of the total dissolved solids (TDS) of the water employed to quench coke at each quench tower shall not exceed 1100 milligrams per liter (mg/L).

2.b Compliance with OAC rules 3745-31-05 and 3745-31-15 and 40 CFR Part 52.21 shall be demonstrated by a TDS concentration limit of 1100 mg/L and the operation and maintenance of an interior baffle system with coverage of not less than ninety-five per cent of the cross-sectional area of the tower.

2.c Lead emissions shall not exceed 0.52 ton per year as a rolling, 12-month summation for emissions units P901, P902, P001, and P002 combined.

2.d **[**40 CFR 63.7295 (a)(1)(i) or (ii)]
The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L).

II. Operational Restrictions

1. The permittee shall operate and maintain an interior baffle system for the quench tower. The interior baffle system shall be designed and maintained in accordance with good engineering practice and provide coverage of not less than 95% of the cross-sectional area of the tower.

2. The permittee shall employ clean quench water with a TDS concentration of equal to or less than 1100 mg/l of water during the coke quenching operation. The permittee shall achieve compliance with the TDS quench water limitation by using only river water or non-contact cooling water for quenching.

3. **[**40 CFR 63.7295 (a)(2)]
The permittee shall use acceptable makeup water for quenching.

[40 CFR 63.7352]
Acceptable makeup water means surface water from a river, lake, or stream; water meeting drinking water standards; storm water runoff and production area clean up water ; process wastewater treated to meet effluent limitations guidelines in 40 CFR part 420; water from any of these sources that has been used only for non-contact cooling or in water seals.

4. **[**40 CFR 63.7295 (b)(1)]
The permittee shall equip each quench tower with baffles such that no more than 5 percent of the cross sectional area of the tower may be uncovered or open to the sky.

5. **[**40 CFR 63.7295 (b)(2)]

The permittee shall wash the baffles in each quench tower once each day that the tower is used to quench coke, except as provided in A.II.3.a & b.

a. the permittee is not required to wash the baffles in a quench tower if the highest measured ambient temperature remains less than 30 degrees Fahrenheit throughout that day (24-hour period). If the measured ambient temperature rises to 30 degrees Fahrenheit or more during the day, you must resume daily washing according to the schedule in your operation and maintenance plan.

b. the permittee shall continuously record the ambient temperature on days that the baffles were not washed.

6. **[**40 CFR 63.7295 (b)(3)]
The permittee shall inspect each quench tower monthly for damaged or missing baffles and blockage.

7. **[**40 CFR 63.7295 (b)(4)]
The permittee shall initiate repair or replacement of damaged or missing baffles within 30 days and complete as soon as practicable.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall wash the baffle system on a daily basis. The permittee shall inspect the baffle system on a monthly basis for damaged or missing baffles and blockage. The permittee shall repair or replace all damaged or missing baffles before the next scheduled inspection.

2. The permittee shall collect a weekly sample of the water employed in each quench tower which shall be analyzed for concentration of total dissolved solids.

   OAC rule 3745-17-03(10)(c) says use section 209(C) "Standard Methods for the Examination of Water and Wastewater," fifteenth edition using a drying temperature between 103 and 105 degrees Celsius. five samples / week / tower either composite or test each and average

IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify (1) each day when the baffles were not washed and (2) each repair to the baffle system that was not completed by the next scheduled monthly inspection.

2. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the concentration of TDS of the quench water did not comply with the TDS requirements specified above.

3. The permittee shall submit deviation (excursion) reports which identify all exceedances of the 0.256 tons per year as a rolling 12-month summation Lead emissions limitation.

4. The deviation (excursion) reports shall be submitted in accordance with Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

0.0028 lb/hr Lead

Applicable Compliance Method:

Compliance shall be demonstrated by analysis of the quench water for HAPs, in accordance with U.S. EPA approved test methods.

b. Emission Limitation:

0.0006 lb HAPs/ton coal
0.274 lb/hr HAPs

Applicable Compliance Method:

Compliance shall be demonstrated by analysis of the quench water for HAPs, in accordance with U.S. EPA approved test methods.

c. Emission Limitation:

0.0050 TPY Lead

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in lbs Lead / wet ton coal charged times the wet tons of coal charged per year, and divide by 2000 pounds per ton. The lead emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance.

d. Emission Limitation:

0.329 TPY HAPs

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the summation of the HAP emission factor, in pounds/ton, times the wet tons of coal charged per year, and divide by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent quench water analysis which demonstrated compliance

e. Emission Limitation:

0.05 lb PM_{10} / ton coal

Applicable Compliance Method:

Compliance shall be demonstrated by compliance with the TDS concentration limit of 1100 mg/L and baffles which provide coverage of not less than 95% of the cross sectional area of the tower. The PM_{10} emission limitation was calculated from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

f. Emission Limitation:

216.00 lbs/hr PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.450 pounds per ton times the maximum wet tons of coal charged per hour. The particulate emission factor was determined based on the following equation from Ed Wojociechowski, U. S. EPA, Region 5:

$y = 0.000115x + 0.323$
where:
y = lbs PM/wet ton coal, and
x = total dissolved solids (TDS) concentration of quench water (mg/L)

g. Emission Limitation:

24.00 lbs/hr PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.05 lb PM_{10}/wet ton coal charged times the maximum wet tons of coal charged per hour. The PM_{10} emission factor was obtained from AP-42 5th Edition, Section 12.2, Tables

12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

h. Emission Limitation:

394.20 TPY PM as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.450 pounds per ton times the maximum wet tons of coal charged per month, and divide by 2,000 pounds/ton. The particulate emission factor was determined based on the following equation from Ed Wojociechowski, U. S. EPA, Region 5:

$y = 0.000115x + 0.323$
where:
y = lbs PM/wet ton coal, and
x = total dissolved solids concentration of quench water (mg/L)

i. Emission Limitation:

43.80 TPY PM_{10} as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM_{10} emission factor of 0.05 pounds/ton coal charged, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM_{10} emission factor was obtained from AP-42 5th Edition, Section 12.2, Tables 12.2-2 and 12.2-4 (the PM emission factor for quenching with baffles and clean water is 0.54 lb PM/ton coal charged and 9.8% of PM is PM_{10}).

j. Emission Limitation:

Visible particulate emissions from each quench tower shall not exceed 20 percent opacity as a 6-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the methods and procedures required in OAC rule 3745-17-03(B)(1).

k. Emission Limitation:

TDS less than 1100 mg/L

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in OAC rule 3745-17-03(B)(10)(c).

l. Emission Limitation:

[40 CFR 63.7295 (a)(1)(i)]
The concentration of total dissolved solids (TDS) in the water used for quenching must not exceed 1,100 milligrams per liter (mg/L).

Applicable Compliance Method:

[40 CFR 63.7325(a)(1)]
Take the quench water sample from a location that provides a representative sample of the quench water as applied to the coke (e.g., from the header that feeds water to the quench tower reservoirs). Conduct sampling under normal and representative operating conditions.

[40 CFR 63.7325(a)(2)]
Determine the TDS concentration of the sample using Method 160.1 in 40 CFR part 136.3 (see 'residue - filterable'), except that you must dry the total filterable residue at 103 to 105 °C (degrees Centigrade) instead of 180 °C.

m. Emission Limitation:

Lead emissions shall not exceed 0.52 tons per year for emissions units P901, P902, P001, and P002 combined.

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. waste gas stack

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

ii. charging

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor of 0.0000001 pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

iii. pushing

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

vi. quench towers

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent water analysis which demonstrated compliance

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P002 - Quench Tower for A and B Batteries		Compliance with OEPA Air Toxics Policy; see Part II, term B.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P901 - Phase I: 100 oven nonrecovery coke battery (D battery) and Phase II: additional 100 oven nonrecovery coke battery (B battery)		
waste gas from coking process with a lime spray dryer, baghouse, and staged combustion	OAC rule 3745-31-05(A)(3)	**Phase I (D battery)** 0.060 lb/hr Lead from the waste gas stack 0.054 tpy Lead from the waste gas stack 0.0048 lb HAPs / ton coal from the waste gas stack 2.30 lbs/hr HAPs from the waste gas stack 1.43 tpy HAPs from the waste gas stack 0.30 lb/hr lead from the by-pass vent stacks (VS1-VS5) 0.052 tpy lead from the by-pass vent stacks (VS1-VS5) 0.024 lb HAPS / ton coal from the by-pass vent stacks (VS1-VS5) 2.20 lbs/hr HAPs from the by-pass vent stacks (VS1-VS5) 0.386 tpy HAPs from the by-pass vent stacks (VS1-VS5) **Phase II (D and B batteries)** 0.15 lb/hr Lead from the waste gas stack 0.11 tpy Lead from the waste gas stack 0.0048 lb HAPs / ton coal from the waste gas stack

		17.02 lbs/hr HAPs from the waste gas stack 5.93 tpy HAPs from the waste gas stack **Phase I and II** Visible particulate emissions from the waste gas exhaust stack(s) shall not exceed 10% opacity as a 6-minute average. **Phase I and II** Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average. **Phase I and II** No visible emissions shall be permitted from the common battery tunnel or its associated piping. **Phase I and II** The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I (D battery)** 17.14 lbs/hr PM/PM_{10} from the waste gas stack 75.09 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack 422.40 lbs/hr SO_2 from the waste gas stack 506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack 385.44 tpy SO_2 as a rolling, 12-month summation from the waste gas stack 480.0 lbs/hr NOx from the waste gas stack 438.0 tpy NOx as a rolling, 12-month summation from the waste gas stack 21.81 lbs/hr CO from the waste gas stack 95.54 tpy CO as a rolling, 12-month summation from the waste gas stack 4.67 lbs/hr VOC from the waste gas stack 20.47 tpy VOC as a rolling, 12-month summation from waste gas stack

12.86 lbs/hr PM/PM_{10} from the by-pass vent stacks (VS1-VS5)
10.80 tpy PM/PM_{10} from the by-pass vent stacks (VS1-VS5)
1056 lbs/hr SO_2 from the by-pass vent stacks (VS1-VS5)
1267.2 lbs/hr SO_2 as a 3 hour average from the by-pass vent stacks (VS1-VS5)
184.80 tpy SO_2 from the by-pass vent stacks (VS1-VS5)
96 lbs/hr NOx from the by-pass vent stacks (VS1-VS5)
16.80 tpy NOx from the by-pass vent stacks (VS1-VS5)
4.36 lbs/hr CO from the by-pass vent stacks (VS1-VS5)
3.66 tpy CO from the by-pass vent stacks (VS1-VS5)
0.93 lb/hr VOC from the by-pass vent stacks (VS1-VS5)
0.79 tpy VOC from the by-pass vent stacks (VS1-VS5)
See section A.I.2.k below.

Phase II (D and B batteries)
34.29 lbs/hr PM/PM_{10} from the waste gas stack
150.17 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack
422.40 lbs/hr SO_2 from the waste gas stack
506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack
770.88 tpy SO_2 as a rolling, 12-month summation from the waste gas stack
480 lbs/hr NOx from the waste gas stack
876 tpy NOx as a rolling, 12-month summation from the waste gas stack
43.63 lbs/hr CO from the waste gas stack
191.08 tpy CO as a rolling, 12-month summation from the waste gas stack
9.35 lbs/hr VOC from the waste gas stack
40.95 tpy VOC as a rolling, 12-month summation from waste gas stack

Phase I and II

		Particulate emissions from the lime spray dryer baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases. **Phase I and II** 0.88 lb SO_2 / ton coal from the waste gas stack 1 lb NOx / ton coal from the waste gas stack 20 ppm CO from the waste gas stack 10 ppm VOC from the waste gas stack See section A.I.2.b below.
	OAC rule 3745-17-07(A)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-18-06(E)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-23-06(B)	See section A.I.2.d below.
	OAC rule 3745-21-08(B)	See section A.I.2.e below.
	OAC rule 3745-31-05(D)	See sections A.I.2.f.
	40 CFR Part 63, Subpart L	See sections A.I.2.g, A.I.2.h, and A.I.2.i below.
charging operations with traveling hood(s) and baghouse(s)	OAC rule 3745-31-05(A)(3)	**Phase I (D battery)** 0.000048 lb/hr lead from the charging baghouse 0.000044 tpy lead from the charging baghouse 0.000112 lb HAPs / ton coal from the charging baghouse

		0.0536 lb/hr HAPs from the charging baghouse 0.0489 tpy HAPs from the charging baghouse **Phase II (D and B batteries)** 0.000048 lb/hr lead from each charging baghouse 0.000044 tpy lead from each charging baghouse 0.000112 lb HAPs / ton coal from each charging baghouse 0.1072 lb/hr HAPs from each charging baghouse 0.1956 tpy HAPs from each charging baghouse **Phase I and II** The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), 40 CFR Part 52.21 and 3745-31-10 through 20. **Phase I and II** Visible particulate emissions fugitive dust from charging operations shall not exceed 20% opacity as a 3-minute average.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	**Phase I (D battery)** 0.80 lb/hr PM/PM_{10} from charging baghouse D 0.73 tpy PM/PM_{10} as a rolling, 12-month summation from charging baghouse D 3.89 lbs/hr fugitive PM from charging 3.55 tpy fugitive PM from charging 1.17 lbs/hr fugitive PM_{10} from charging 1.06 tpy fugitive PM_{10} as a rolling, 12-month summation from charging 0.14 lb/hr SO_2 from charging baghouse D 0.13 tpy SO_2 as a rolling, 12-month summation from charging baghouse D 1.34 lbs/hr CO from charging baghouse D 1.23 tpy CO as a rolling, 12-month summation from charging baghouse D 0.96 lb/hr VOC from charging baghouse D

0.88 tpy VOC as a rolling, 12-month summation from charging baghouse D

Phase II (D and B batteries)
0.80 lb/hr PM/PM_{10} from each charging baghouse (D and B)
0.73 tpy PM/PM_{10} as a rolling, 12-month summation from each charging baghouse (D an B)
7.78 lbs/hr fugitive PM from charging
14.19 tpy fugitive PM from charging
2.33 lbs/hr fugitive PM_{10} from charging
4.26 tpy fugitive PM_{10} as a rolling, 12-month summation from charging
0.144 lb/hr SO_2 from each charging baghouse (D and B)
0.13 tpy SO_2 as a rolling, 12-month summation from each charging baghouse (D and B)
1.34 lbs/hr CO from each charging baghouse (D and B)
1.23 tpy CO as a rolling, 12-month summation from each charging baghouse (D and B)
0.96 lb/hr VOC from each charging baghouse (D and B)
0.88 tpy VOC as a rolling, 12-month summation from each charging baghouse (D and B)

Phase I and II
Particulate emissions from each charging baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases.
See section A.I.2.b below.

Phase I and II
0.0003 lb SO_2 / ton coal from each charging baghouse (D and B)
0.0028 lb CO / ton coal from each charging baghouse (D and B)
0.002 lb VOC / ton coal from each charging baghouse (D and B)

		Phase I and II Visible particulate emissions from the charging baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-07(A)(1)	
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See section A.I.2.e below.
	OAC rule 3745-21-08(B)	See sections A.I.2.f .
	OAC rule 3745-31-05(D)	See sections A.I.2.g, A.I.2.h, and A.I.2.i below.
	40 CFR Part 63, Subpart L	
pushing operations with a baghouse and shed	OAC rule 3745-31-05(A)(3)	**Phase I (D battery)** 0.0072 lb/hr Lead from the pushing baghouse 0.0066 tpy Lead from the pushing baghouse 0.000239 lb HAPs /ton coal from the pushing baghouse 0.115 lb/hr HAPs from the pushing baghouse 0.1047 tpy HAPs from the pushing baghouse **Phase II (D and B batteries)** 0.0072 lb/hr Lead from the pushing baghouse 0.013 tpy Lead from the pushing baghouse 0.000239 lb HAPs /ton coal from the pushing baghouse 0.230 lb/hr HAPs from the pushing baghouse 0.4189 tpy HAPs from the pushing baghouse **Phase I and II** Visible particulate emissions of fugitive dust from the pushing operations shall not exceed 20% opacity as a 3-minute average.

		See section A.I.2.c below. **Phase I and II** The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1) and 3745-31-10 through 20. **Phase I (D battery)** 18.72 lbs/hr PM/PM_{10} from the pushing baghouse 17.08 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse 24 lbs/hr SO_2 from the pushing baghouse 28.8 lbs/hr SO_2 as a 3 hour average from the pushing baghouse 21.9 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse 7.68 lbs/hr NOx from the pushing baghouse 7.01 tpy NOx as a rolling, 12-month summation from the pushing baghouse 36.96 lbs/hr CO from the pushing baghouse 33.73 tpy CO as a rolling, 12-month summation from the pushing baghouse 96.0 lbs/hr VOC from the pushing baghouse 87.6 tpy VOC as a rolling, 12-month summation from the pushing baghouse **Phase II (D and B batteries)** 18.72 lbs/hr PM/PM_{10} from the pushing baghouse 34.16 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse 24 lbs/hr SO_2 from the pushing baghouse 28.8 lbs/hr SO_2 as a 3 hour average from the pushing baghouse 43.8 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse 7.68 lbs/hr NOx from the pushing baghouse 14.02 tpy NOx as a rolling, 12-month summation from the pushing baghouse 36.96 lbs/hr CO from the pushing baghouse
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	

	67.45 tpy CO as a rolling, 12-month summation from the pushing baghouse 96.0 lbs/hr VOC from the pushing baghouse 175.2 tpy VOC as a rolling, 12-month summation from the pushing baghouse **Phase I and II** Particulate emissions from the pushing baghouse exhaust shall not exceed 0.039 lb PM_{10} / ton of coal. See section A.I.2.b below. 0.05 lb SO_2 / ton coal from the pushing baghouse 0.016 lb NOx / ton coal from the pushing baghouse 0.077 lb CO / ton coal from the pushing baghouse 0.2 lb VOC / ton coal from the pushing baghouse See section A.I.2.k below.
40 CFR Part 63, Subpart CCCCC	**Phase I and II**
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the pushing baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See section A.I.2.d below. See section A.I.2.e below.
OAC rule 3745-23-06(B)	See section A.I.2.f .
OAC rule 3745-21-08(B)	
OAC rule 3745-31-05(D)	

2. Additional Terms and Conditions

2.a This permit allows for the construction and operation of this emissions unit in two phases.

Phase I will consist of one 100 oven coke battery (D) with one waste gas stack with a lime spray dryer/baghouse, one charging/pushing machine with a charging baghouse and attached hood, and one pushing baghouse with a shed. Phase I will require emergency stacks associated with the heat recovery steam generators (HRSGs) to be opened in order to safely perform annual inspection and maintenance procedures. The maximum time required for these procedures will be 14 days per HRSG per year. This will occur only during Phase I.
Nonrecovery Coke Battery B, 100 oven coke battery, will be constructed in Phase II. Following the construction of Battery B in Phase II, venting for HRSG maintenance will not be required because Battery D constructed in Phase I will be connected to Battery B, allowing for waste gas sharing. The waste gas from each battery will be vented to a shared lime spray dryer/baghouse venting to the waste gas stack. Each battery will have a charging/pushing machine. Emissions from charging will be collected at each battery in a traveling baghouse and attached hood . Pushing emissions will be collected by the stationary shed at each battery and vented to a common pushing baghouse.

2.b OAC rule 3745-31-15 requires the following best available control technologies:

i. The waste gas from coking shall be processed by the use of a lime spray dryer with a manufacturer's design control efficiency of 92% for SO_2 control, staged combustion for NOx control, combustion optimization for CO and VOC control, and a baghouse for PM control.

ii. The pushing operations shall employ a baghouse with a shed for PM control and work practices for CO and VOC control.

iii. The charging operations shall employ a baghouse with a traveling hood for PM control.

2.c The emissions control system for the pushing operation(s) shall maintain a minimum capture efficiency of 98%.

2.d Except as provided by rule, all stationary nitrogen oxide emission sources shall minimize nitrogen oxide emissions by the use of the latest available control techniques and operating practices in accordance with best current technology. The permittee shall employ the best available control technologies described in term and condition A.I.2.b.i above to minimize nitrogen oxide emissions.

2.e Except as provided by rule, all new stationary carbon monoxide emission sources shall minimize carbon monoxide emissions by the use of the best available control techniques and operating practices in accordance with best current technology. The permittee shall employ the best available control technologies described in term and conditions A.I.2.b.i and A.I.2.b.ii above to minimize carbon monoxide emissions.

2.f Lead emissions shall not exceed 0.52 tons per year as a rolling, 12-month summation for emissions units P901, P902, P001, and P002 combined.

2.g [40 CFR 63.300(e)]
The emission limitations set forth in 40 CFR Part 63, Subpart L shall apply at all times except during a period of startup, shutdown, or malfunction. The startup period shall be determined by the Administrator and shall not exceed 180 days.

2.h [40 CFR 63.303(b)(1)]
The coke oven emissions from the nonrecovery coke oven batteries shall not exceed 0.0 percent leaking coke oven doors, as determined by the procedures in 40 CFR Part 63, Section 63.309(d)(1); or
The permittee shall monitor and record, once per day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure.

2.i [40 CFR 63.303(b)(2)]
For charging operations, the permittee shall install, operate and maintain an emission control system for the capture and collection of emissions in a manner consistent with good air pollution control practices for minimizing emissions from the charging operation.

2.j Waste gas emissions from the by-pass vent stacks of battery D, which divert the waste gas from the lime spray dryer/baghouse, shall occur during Phase I only.

2.k **[**40 CFR 63.7290(a)(1)]
The permittee shall not discharge to the atmosphere
emissions of particulate matter from a control device applied to pushing emissions from a new or existing coke oven battery that exceed the applicable limit of 0.01 grain per dry standard cubic foot (gr/dscf)if a cokeside shed is used to capture emissions

2.l **[**40 CFR 63.7300 (a)]

As required by §63.6(e)(1)(i), the permittee must always operate and maintain your affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

2.m **[**40 CFR 63.7290(b)(1) through (6)]

The permittee must prepare and operate at all times
according to a written operation and maintenance plan for the general operation and maintenance of new or existing by-product coke oven batteries. Each plan must address, at a minimum, the elements listed in paragraphs (1) through (6) below.

(1) Frequency and method of recording underfiring gas parameters.

(2) Frequency and method of recording battery operating temperature, including measurement of individual flue and cross-wall temperatures.

(3) Procedures to prevent pushing an oven before it is fully coked.

(4) Procedures to prevent overcharging and undercharging of ovens, including measurement of coal moisture, coal bulk density, and procedures for determining volume of coal charged.

(5) Frequency and procedures for inspecting flues, burners, and nozzles.

(6) Schedule and procedures for the daily washing of baffles.

2.n **[**40 CFR 63.7290(c)(1) through (3)]

The permittee must prepare and operate at all times according to a written operation and maintenance plan for each capture system and control device applied to pushing emissions from a new or existing coke oven battery. Each plan must address at a minimum the elements in paragraphs (1) through (3) below.

(1) Monthly inspections of the equipment that are important to the performance of the total capture system (e.g., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). The operation and maintenance plan must also include

requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.

(2) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(3) Corrective action for all baghouses applied to pushing emissions. In the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Actions may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions

II. Operational Restrictions

1. The pressure drop across the waste gas exhaust baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

2. The pressure drop across each charging baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

3. The pressure drop across the pushing baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

The pushing emissions which escape the cokeside oven door shall be minimized by collecting in a stationary shed, which runs the length of the coke oven battery.

4. The permittee shall operate and maintain common duct temperatures at a minimum of 1400 ^{o}F as established in the Work Practice Plan to ensure emission limits for the waste gas exhaust are not exceeded.

5. **Phase I and II**
The maximum hourly charging/pushing rate for this emissions unit shall not exceed 10 ovens per hour.

6. **Phase I**
The maximum daily wet coal usage rate for this emissions unit shall not exceed 2,400 wet tons coal.

Phase II
The maximum daily wet coal usage rate for this emissions unit shall not exceed 4,800 wet tons coal.

7. **Phase I**
The maximum annual wet coal usage rate for battery D in Phase I shall not exceed 876,000 tons, based upon a rolling, 12-month summation of the wet coal usage rates.

To ensure enforceability during the first 12 calendar months of operation in Phase I, the permittee shall not exceed the wet coal usage levels specified in the following table:

Month	Maximum Allowable Cumulative Wet Coal Usage
1	73,000
1-2	146,000
1-3	219,000
1-4	292,000
1-5	365,000
1-6	438,000
1-7	511,000
1-8	584,000
1-9	657,000
1-10	730,000
1-11	803,000
1-12	876,000

After the first 12 calendar months of operation in Phase I, compliance with the annual wet coal usage rate limitation shall be based upon a rolling, 12-month summation of the wet coal usage rates.

Phase II
The maximum annual wet coal usage rate for batteries B and D in Phase II shall not exceed 1,752,000 tons, based upon a rolling, 12-month summation of the wet coal usage rates.

To ensure enforceability during the first 12 calendar months of operation in Phase II, the permittee shall not exceed the wet coal usage levels specified in the following table:

Month	Maximum Allowable Cumulative Wet Coal Usage
1	146,000
1-2	292,000
1-3	438,000
1-4	584,000
1-5	730,000
1-6	876,000
1-7	1,022,000
1-8	1,168,000
1-9	1,314,000
1-10	1,460,000
1-11	1,606,000
1-12	1,752,000

After the first 12 calendar months of operation in Phase II, compliance with the annual wet coal usage rate limitation shall be based upon a rolling, 12-month summation of the wet coal usage rates.

8. The lime spray dryer and baghouse associated with the battery waste gas exhaust shall begin operation within forty (40) days after start-up of the first coke battery.

9. [40 CFR 63.310]
At all times including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the coke oven battery and its pollution control equipment required under 40 CFR Part 63, Subpart L, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by any applicable performance standards under 40 CFR Part 63, Subpart L. Failure to adhere to the requirements of this paragraph shall not constitute a separate violation if a violation of an applicable performance or work practice standard has also occurred.

10. Waste gas emissions from the by-pass vent stacks of battery D shall be limited to a total of 336 hours per year for all five vent stacks.. There shall no more than one vent stack open at any time.

11. **[**40 CFR 63.7290(b)(3)]
For each capture system applied to pushing emissions, the permittee shall:

(a) Maintain the daily average fan motor amperes at or above the minimum level established during the initial performance test; or

(b) Maintain the daily average volumetric flow rate at the inlet of the control device at or above the minimum level established during the initial performance test.

12. **[**40 CFR 63.7293(a)(1)]
The permittee shall visually inspect each oven prior to pushing by opening the door damper and observing the bed of coke.

13. **[**40 CFR 63.7293(a)(2)]
The permittee shall not push the oven unless the visual inspection indicates that there is no smoke in the open space above the coke bed and that there is an unobstructed view of the door on the opposite side of the oven.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the waste gas baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual (s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across each charging baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across each baghouse on a once per shift basis.

3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the pushing baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

   The stationary shed collecting pushing emissions shall be visually examined weekly for areas potentially needing repair. When an inspection identifies an area needing repair, the permittee shall maintain records of the date the inspection, the dates of each attempt to repair, the repair methods of each attempt to repair, and the date of successful repair.

4. The permittee shall maintain daily records of the coal usage rate, in wet tons, in this emissions unit.

5. The permittee shall maintain hourly records of the charging/pushing rate, in number of charges/pushes per hour, for this emissions unit.

6. The permittee shall maintain monthly records of the following information:

   a. the wet coal usage rate for each month; and,

b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the wet coal usage rates.

Also, during the first 12 calendar months of operation, the permittee shall record the cumulative wet coal usage rate for each calendar month.

7. The permittee shall operate and maintain equipment to continuously monitor and record SO_2 from the waste gas stack in units of the applicable standard(s). Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

8. The permittee shall maintain records of all data obtained by the continuous SO_2 monitoring system including, but not limited to, parts per million SO_2 on a 1-hour basis, and in units of pounds per hour on a one hour and three hour average basis and results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

9. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous SO_2 monitoring system designed to ensure continuous valid and representative readings of SO_2. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous SO_2 monitoring system must be kept on site and available for inspection during regular office hours.

10. The permittee shall monitor and record the temperature of the common battery tunnel on a once per shift basis.

11. The permittee shall monitor and record, once per day for each day of operation, the pressure in the common battery tunnel to ensure that the ovens are operated under a negative pressure.

12. [40 CFR 63.306(a)]
The permittee shall prepare and submit to the Administrator a written emission control work practice plan for each coke oven battery, in accordance with 40 CFR Part 63, Subpart L, Section 63.306, within 45 days of startup of the first coke oven battery facility.

The plan shall be designed to achieve compliance with visible emission limitations for coke oven doors, and charging operations under this subpart or, for a coke oven battery not subject to visible emission limitations under this subpart, other federally enforceable visible emission limitations for these emission points.

a. The work practice plan must address each of the topics specified in paragraph (b) of this section in sufficient detail and with sufficient specificity to allow the Administrator to evaluate the plan for completeness and enforceability.

b. The Administrator may require revisions to the initial plan only where the Administrator finds either that the plan does not address each subject area listed in paragraph (b) of this section for each emission point subject to a visible emission

standard under this subpart, or that the plan is unenforceable because it contains requirements that are unclear.

c. During any period of time that an owner or operator is required to implement the provisions of a plan for a particular emission point, the failure to implement one or more obligations under the plan and/or any recordkeeping requirement(s) under §63.311(f)(4) for the emission point during a particular day is a single violation.

13. [40 CFR 63.306(b)]
Plan components. The permittee shall organize the work practice plan to indicate clearly which parts of the plan pertain to each emission point subject to visible emission standards under this subpart. Each of the following provisions, at a minimum, shall be addressed in the plan:

a. An initial and refresher training program for all coke plant operating personnel with responsibilities that impact emissions, including contractors, in job requirements related to emission control and the requirements of this subpart, including work practice requirements. Contractors with responsibilities that impact emission control may be trained by the owner or operator or by qualified contractor personnel; however, the owner or operator 365shall ensure that the contractor training program complies with the requirements of this section. The training program in the plan must include:

(i) A list, by job title, of all personnel that are required to be trained and the emission point(s) associated with each job title;

(ii) An outline of the subjects to be covered in the initial and refresher training for each group of personnel;

(iii) A description of the training method(s) that will be used (e.g., lecture, video tape);

(iv) A statement of the duration of initial training and the duration and frequency of refresher training;

(v) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion of the initial and refresher training; and

(vi) A description of the procedure to be used to document performance of plan requirements pertaining to daily operation of the coke oven battery and its emission control equipment, including a copy of the form to be used, if applicable, as required under the plan provisions implementing paragraph (b)(7) of this section.

b. Procedures for controlling emissions from nonrecovery coke oven batteries including:

(i) Procedures for charging coal into the oven, including any special procedures for minimizing air infiltration during charging, maximizing the draft on the oven, and for replacing the door promptly after charging;

(ii) If applicable, procedures for the capture and control of charging emissions;

(iii) Procedures for cleaning coke from the door sill area for both sides of the battery after completing the pushing operation and before replacing the coke oven door;

(iv) Procedures for cleaning coal from the door sill area after charging and before replacing the push side door;

(v) Procedures for filling gaps around the door perimeter with sealant material, if applicable; and

(vi) Procedures for detecting and controlling emissions from smoldering coal.

c. Procedures for maintaining, for each emission point subject to visible emission limitations under this subpart, a daily record of the performance of plan requirements pertaining to the daily operation of the coke oven battery and its emission control equipment, including:

(i) Procedures for recording the performance of such plan requirements; and

(ii) Procedures for certifying the accuracy of such records by the owner or operator.

d Any additional work practices or requirements specified by the Administrator according to paragraph (d) of this section.

14. [40 CFR 63.306(c)]
Implementation of work practice plans. On and after November 15, 1993, the owner or operator of a coke oven battery shall implement the provisions of the coke oven emission control work practice plan according to the following requirements:

a. (1) The owner or operator of a coke oven battery subject to visible emission limitations under this subpart on and after November 15, 1993, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second independent exceedance of the visible emission limitation for the emission point

in any consecutive 6-month period, by no later than 3 days after receipt of written notification of the second such exceedance from the certified observer. For the purpose of this paragraph (c)(1)(i), the second exceedance is ``independent'' if either of the following criteria is met:

(A) The second exceedance occurs 30 days or more after the first exceedance;

(B) In the case of coke oven doors, topside port lids, and offtake systems, the 29-run average, calculated by excluding the highest value in the 30-day period, exceeds the value of the applicable emission limitation; or

(C) In the case of charging emissions, the 29-day logarithmic average, calculated in accordance with Method 303 in appendix A to this part by excluding the valid daily set of observations in the 30-day period that had the highest arithmetic average, exceeds the value of the applicable emission limitation.

(ii) Continue to implement such plan provisions until the visible emission limitation for the emission point is achieved for 90 consecutive days if 367work practice requirements are implemented pursuant to paragraph (c)(1)(i) of this section. After the visible emission limitation for a particular emission point is achieved for 90 consecutive days, any exceedances prior to the beginning of the 90 days are not included in making a determination under paragraph (c)(1)(i) of this section.

b. (2) The owner or operator of a coke oven battery not subject to visible emission limitations under this subpart until December 31, 1995, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second exceedance in any consecutive 6-month period of a federally enforceable emission limitation for that emission point for coke oven doors, or charging operations by no later than 3 days after receipt of written notification from the applicable enforcement agency; and

(ii) Continue to implement such plan provisions for 90 consecutive days after the most recent written notification from the enforcement agency of an exceedance of the visible emission limitation.

15. [40 CFR 63.306(d)]
Revisions to plan. Revisions to the work practice emission control plan will be governed by the provisions in this paragraph (d) and in paragraph (a)(2) of this section.

a. (1) The Administrator may request the owner or operator to review and revise as needed the work practice emission control plan for a particular emission point if there are 2 exceedances of the applicable visible emission limitation in the 6-month period that starts 30 days after the owner or operator is required to implement work practices under paragraph (c) of this section. In the case of a coke oven battery subject to visual emission limitations under this subpart, the second exceedance must be independent under the criteria in paragraph (c)(1)(i) of this section.

b. (2) The Administrator may not request the owner or operator to review and revise the plan more than twice in any 12 consecutive month period for any particular emission point unless the Administrator disapproves the plan according to the provisions in paragraph (d)(6) of this section.

c. (3) If the certified observer calculates that a second exceedance (or, if applicable, a second independent exceedance) has occurred, the certified observer shall notify the owner or operator. No later than 10 days after receipt of such a notification, the owner or operator shall notify the Administrator of any finding of whether work practices are related to the cause or the solution of the problem. This notification is subject to review by the Administrator according to the provisions in paragraph (d)(6) of this section.

d. (4) The owner or operator shall submit a revised work practice plan within 60 days of notification from the Administrator under paragraph (d)(1) of this section, unless the Administrator grants an extension of time to submit the revised plan.

e. (5) If the Administrator requires a plan revision, the Administrator may require the plan to address a subject area or areas in addition to those in paragraph (b) of this section, if the Administrator determines that without plan coverage of such an additional subject area, there is a reasonable probability of further exceedances of the visible emission limitation for the emission point for which a plan revision is required.

f. (6) The Administrator may disapprove a plan revision required under paragraph (d) of this section if the Administrator determines that the revised plan is inadequate to prevent exceedances of the visible emission limitation under this subpart for the emission point for which a plan revision is required or, in the case of a battery not subject to visual emission limitations under this subpart, other federally enforceable emission limitations for such emission

point. The Administrator may also disapprove the finding that may be submitted pursuant to paragraph (d)(3) of this section if the Administrator determines that a revised plan is needed to prevent exceedances of the applicable visible emission limitations.

16. [40 CFR 63.310(b)]
The permittee of a coke oven battery shall develop and implement a written startup, shutdown, and malfunction plan that describes procedures for operating the battery, including associated air pollution control equipment, during a period of a startup, shutdown, or malfunction in a manner consistent with good air pollution control practices for minimizing emissions, and procedures for correcting malfunctioning process and air pollution control equipment as quickly as practicable.

17. [40 CFR 63.310(g)]
To satisfy the requirements of 40 CFR Part 63, Section 63.310 to develop a startup, shutdown, and malfunction plan, the permittee may use the standard operating procedures manual for the battery, provided the manual meets all the requirements for 40 CFR Part 63, Section 63.310 and is made available for inspection at reasonable times when requested by the Administrator.

18. [40 CFR 63.310(h)]
The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

a. does not address a startup, shutdown, or malfunction event that has occurred

b. fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions; or

c. does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

19. [40 CFR 63.310(i)]
If the permittee demonstrates to the satisfaction of the Administrator that a startup, shutdown, or malfunction has occurred, then an observation occurring during such startup, shutdown, or malfunction shall not:

a. constitute a violation of relevant requirements of 40 CFR Part 63, Subpart L;

b. be used in any compliance determination under 40 CFR Part 63, Section 63.309; or

c. be considered for purposes of 40 CFR Part 63, Section 63.306, until the Administrator determines that a startup, shutdown, or malfunction has not occurred, such observations may be used for purposes of 40 CFR Part 63, Section 63.306,

regardless of whether the permittee further contests such determination. The permittee's receipt of written notification from the Administrator that a startup, shutdown, or malfunction has not occurred will serve, where applicable under 40 CFR Part 63, Subpart 63.306, as written notification from the certified observer that an exceedance has occurred.

20. [40 CFR 63.311(f)]
The permittee shall maintain files of all required information in a permanent form suitable for inspection at an onsite location for at least 1 year and must thereafter be assessable within 3 working days to the Administrator for a period of at least five years from the date of the monitoring sample, measurement, report or application.

21. [40 CFR 63.311(f)]
Copies of the work practice plan developed under 40 CFR Part 63, Section 63.306 and the startup, shutdown, and malfunction plan developed under 40 CFR Part 63, Section 63.310 shall be kept onsite at all times. The permittee shall maintain the following information:

a. records of daily pressure monitoring, according to 40 CFR Part 63, Section 63.303(b)(1)(ii);

b. records demonstrating the performance of work practice requirements according to 40 CFR Part 63, Section 63.306(b)(7);

c. design characteristics of each emission control system for the capture and collection of charging emissions, as required by 40 CFR Part 63, Section 63.303(b)(2).

22. [40 CFR 63.311(f)(3)]
a copy of the work practice plan required by 40 CFR Part 63, Section 63.306 and any revision to the plan;

23. [40 CFR 63.311(g)(1)-(4)]
records required to be maintained and reports required to be filed with the Administrator, with a copy to the Portsmouth Local Air Agency, under 40 CFR Part 63, Subpart L shall be made available in accordance with the requirements of this section by the permittee to the authorized collective bargaining representative of the employees at a coke oven battery, for inspection and copying.

a. requests under this term and condition shall be submitted in writing, and shall identify the records or reports that are subject to the request with reasonable specificity;

b. the permittee shall produce the reports for inspection and copying within a reasonable period of time, not to exceed 30 days. A reasonable fee may be charged for copying (except for the first copy of any document), which shall not exceed the copying fee charged by the Administrator under part 2 of the CFR, chapter 40;

c. nothing in this term and condition shall require the production for inspection or copying of any portion of a document that contains trade secret or confidential business information that the Administrator would be prohibited from disclosing to the public under part 2 of the CFR, chapter 40; and;

d. the inspection or copying of document under this term and condition shall not in any way affect any property right of the permittee in such document under the laws for the protection of intellectual property, including the copyright laws.

24. [40 CFR 63.310(f)]
The permittee shall maintain a record of internal reports which form the basis of each malfunction notification in accordance with 40 CFR Part 63.310(d).

25. The permittee shall maintain records for each waste gas by-pass event of the date and time each event began, an identification of the stack venting, and the duration in hours.

26 **[**40 CFR 63.7330]

For each baghouse applied to pushing emissions from a coke oven battery, the permittee must at all times monitor the relative change in particulate matter loadings using a bag leak detection system according to the requirements in §63.7331(a) and conduct inspections at their specified frequency according to the requirements in paragraphs (a)through (h) below.

(a) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual;

(b) Confirm that dust is being removed from hoppers through weekly visual inspections or equivalent means of ensuring the proper functioning of removal mechanisms;

(c) Check the compressed air supply for pulse-jet baghouses each day;

(d) Monitor cleaning cycles to ensure proper operation using an appropriate methodology;

(e) Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means;

(f) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices;

(g) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks; and

(h) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

27. For each capture system applied to pushing emissions, the permittee must at all times monitor the fan motor amperes according to the requirements in §63.7331(g) or the volumetric flow rate according to the requirements in §63.7331(h).

28. **[**40 CFR 63.7331 (a)(1) through (7)]

For each baghouse applied to pushing emissions, the permittee must install, operate, and maintain each bag leak detection system according to the requirements in paragraphs (a) through (g) below.

(a) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less;

(b) The system must provide output of relative changes in particulate matter loadings;

(c) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel;

(d) Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). You may install, operate, and maintain other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations;

(e) To make the initial adjustment of the system, establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, establish the alarm set points and the alarm delay time;

(f) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in your operation and maintenance plan. Do not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition; and

(g) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

29. **[**40 CFR 63.7331 (g)]

If the permittee elects the operating limit in §63.7290(b)(3)(i) for a capture system applied to pushing emissions, you must install, operate, and maintain a device to measure the fan motor amperes.

30. **[**40 CFR 63.7331 (h)]

If the permittee elects the operating limit in §63.7290(b)(3)(ii) for a capture system applied to pushing emissions, you must install, operate, and maintain a device to measure the total volumetric flow rate at the inlet of the control device.

31. **[**40 CFR 63.7342 (a)(1) through (3)]

The permittee must keep the records specified in paragraphs (a) through (c) below.

(a) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements in §63.10(b)(2)(xiv).

(b) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(c) Records of performance tests, performance evaluations, and opacity observations as required in §63.10(b)(2)(viii).

32. **[**40 CFR 63.7342 (d)]

The permittee must keep the records required in §§63.7333 through 63.7335 to show continuous compliance with each emission limitation, work practice standard, and operation and maintenance requirement that applies.

33. **[**40 CFR 63.7343 (a) through (c)]

(a) The permittee must keep your records in a form suitable and readily available for expeditious review, according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record,

according to §63.10(b)(1). You can keep the records offsite for the remaining 3 years.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the waste gas baghouse did not comply with the allowable range specified above.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across either charging baghouse did not comply with the allowable range specified above.

3. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the pushing baghouse did not comply with the allowable range specified above.

   The permittee shall submit semi-annual written reports which (a) list all inspections which identified an area of the stationary shed needing repair, and (b) a description of the repairs completed.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the daily wet coal usage rate limitation.

5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly charging/pushing rate limitation.

6. The permittee shall submit deviation (excursion) reports that identify all exceedances of the rolling, 12-month wet coal usage rate limitation and, for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative wet coal usage levels.

7. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration magnitude, reason (if known), and corrective actions taken (if any), of all instances of SO_2 values in excess of the applicable limit(s) specified OAC Chapter 3745-18, the daily SO_2 emission rates and/or the annual SO_2 emission rates. These reports shall also contain the total SO_2 emissions for the calendar quarter (in tons).

   The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous SO_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each

time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

8. The permittee shall submit common battery tunnel temperature deviation (excursion) reports that identify all periods of during which the temperature in the common battery tunnel did not comply with the allowable range specified above. These reports shall include the time of the temperature deviation, the duration of the exceedance and the corrective action taken.

9. The permittee shall submit deviation (excursion) reports which identify all exceedances of the 0.256 tons per year Lead emissions limitation.

10. [40 CFR 63.310(d)]
In order for the provisions of term and condition III.8. to apply with respect to the observation (or set of observations) for a particular day, notification of a startup, shutdown, or a malfunction shall be made by the permittee;

    a. if practicable, to the certified observer if the observer is at the facility during the occurrence; or

    b. to the enforcement agency, in writing, within 24 hours of the occurrence first being documented by a company employee, and if the notification was not made, an explanation of why no such notification was made.

11. [40 CFR 63.310(e)]
Within 14 days of the original notification made under term and condition IV.4 or after a startup or shutdown, the permittee shall submit a written report to the Administrator, with a copy to the Portsmouth Local Air Agency that:

    a. describes the times and circumstances of the startup, shutdown, or malfunction;

    b. describes actions taken that might be considered inconsistent with the startup, shutdown, or malfunction plan.

12. [40 CFR 63.311(b)]

The permittee shall provide a written statement(s) to certify compliance to the Administrator, with a copy to the Portsmouth Local Air Agency, within 45 days of the applicable compliance date for the emission limitations or requirements in 40 CFR Part 63, Subpart L. The permittee shall include the following information in the initial compliance certification:

a. statement, signed by the permittee, certifying that a written startup, shutdown, and malfunction plan has been prepared as required in 40 CFR Part 63, Section 63.310.

13. [40 CFR 63.311(c)]
The permittee shall provide written notification(s) to the Administrator of:

a. intention to construct a new coke oven battery (including reconstruction of an existing coke oven battery and construction of a greenfield coke oven battery), including the anticipated date of startup.

14. [40 CFR 63.311(d)]
The permittee shall include the following information in the semi-annual compliance certification:

a. certification, signed by the permittee, that a startup, shutdown, or malfunction event did not occur for the coke oven battery during the reporting period or that a startup, shutdown, event did occur and a report was submitted according to the requirements in 40 CFR Part 63, Section 63.310(e); and,

b. certification, signed by the permittee, that work practices were implemented if applicable under 40 CFR 63.306.

15. The permittee shall submit semi-annual written reports which identify the date, time, and duration of each waste gas by-pass event.

16. The deviation (excursion) reports shall be submitted in accordance with Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Emission Testing Requirements

The permittee shall conduct, or have conducted, emission testing for the waste gas exhaust, at least one of the five by-pass vent stacks and the pushing baghouse associated with this emissions unit in accordance with the following requirements:

a. The emission testing for Phase I shall be conducted within 60 days after achieving the maximum production rate for Battery D but no later than 180 days after initial startup of the emissions unit.

The emission testing for Phase II shall be conducted within 60 days after achieving the maximum production rate for Battery B but no later than 180 days after initial startup of the emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the particulate, SO_2, NOx, CO, VOC, Lead, and HAPs (waste gas stack and at least one by-pass vent stack) emissions limits.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Pollutant	Method of 40 CFR Part 60, Appendix A
particulates	Method 5
SO_2	Method 6
NOx	Method 7
CO	Method 10
VOC	Method 25 or 25A, as appropriate
Lead	Methods 12 or 29
HAPs	Method 18

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Portsmouth Local Air Agency.

A particulate emissions test shall also be conducted at the inlet of the pushing baghouse to determine the uncontrolled mass rate of emission for the emission unit, for purposes of applying Figure II of OAC rule 3745-17-11. For this testing, Method 5 of 40 CFR Part 60, Appendix A, shall be employed.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).

Personnel from the Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.

2. Certification

Prior to the installation of the continuous SO_2 monitoring system, the permittee shall submit information detailing the proposed location of the sampling site(s) in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 6 for approval by the Ohio EPA, Central Office.

Within 60 days after achieving the maximum production rate, the permittee shall conduct certification tests of the continuous SO_2 monitoring system pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the Portsmouth Local Air Agency within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous SO_2 monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6.

3. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation: **Phase I**

0.060 lb/hr Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 12 or 29.

b. Emission Limitation: **Phase I**

0.054 tpy Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

c. Emission Limitation: **Phase I**

0.0034 lb HAPs / ton coal from waste gas stack
2.30 lbs/hr HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. Emission Limitation: **Phase I**

1.43 tpy HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the the summation of the individual HAP pollutants lb/ton emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

e. Emission Limitation: **Phase I**

0.30 lb/hr lead from the by-pass vent stacks (VS1-VS5)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor of 0.0031 pounds/ton times the tons of coal charged per hour. The lead emission factor was obtained the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

f. Emission Limitation: **Phase I**

0.052 tpy lead from the by-pass vent stacks (VS1-VS5)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor of 0.0031 pounds/ton times the tons of coal charged per hour, times the hours per year of venting, divided by 2,000 pound/ton. The lead emission factor was obtained the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

g. Emission Limitation: **Phase I**

0.024 lb HAPS / ton coal from the by-pass vent stacks (VS1-VS5)

Applicable Compliance Method:

The emissions limit was derived from calculating the summation of the individual HAP pollutants lb/ton emission factors obtained from the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

h. Emission Limitation: **Phase I**

2.20 lbs/hr HAPs from the by-pass vent stacks (VS1-VS5)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the summation of the individual HAP pollutants lb/ton emission factors times the tons of coal charged per hour. The HAPs emission factors were obtained from the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

i. Emission Limitation: **Phase I**

0.386 tpy lead from the by-pass vent stacks (VS1-VS5)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the summation of the individual HAP pollutant lb/ton emission factors times the tons of coal charged per hour, times the hours per year of venting, divided by 2,000 pound/ton. The HAPs emission factor was obtained the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

j. Emission Limitation: **Phase II**

0.060 lb/hr Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 12 or 29.

k. Emission Limitation: **Phase II**

0.11 tpy Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

l. Emission Limitation: **Phase II**

0.0048 lb HAPs / ton coal from the waste gas stack
17.02 lbs/hr HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

m. Emission Limitation: **Phase II**

5.93 tpy HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the the summation of the individual HAP pollutants lb/ton emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

n. Emission Limitation: **Phase I and II**

Visible particulate emissions from waste gas stack B/D shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

o. Emission Limitation: **Phase I and II**

Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

p. Emission Limitation: **Phase I and II**

No visible emissions shall be permitted from the waste gas common duct or its associated piping.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 22 and the procedures and methods required in OAC rule 3745-17-03(B)(4).

q. Emission Limitation: **Phase I**

17.14 lbs/hr PM/PM_{10} from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 5.

r. Emission Limitation: **Phase I**

75.09 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

s. Emission Limitation: **Phase I**

422.40 lbs/hr SO_2 from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the lbs/hr SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

t. Emission Limitation: **Phase I**

506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the three hour average SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

u. Emission Limitation: **Phase I**

385.44 tpy SO_2 as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current months' emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by adding the SO_2 emissions rate in pounds/day for each day of the calendar month, as measured by the SO_2 continuous emissions monitor and dividing by 2,000 pounds/ton.

v. Emission Limitation: **Phase I**

480.0 lbs/hr NOx from the waste gas stack

Applicable Compliance Method:

Compliance shall be determined by multiplying the emission factor , in lbs of pollutant/wet ton coal charged, calculated from the results of the most recent performance test which demonstrated compliance, by the wet tons of coal charged per hour.

w. Emission Limitation: **Phase I**

438.0 tpy NOx as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NOx emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NOx emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

x. Emission Limitation: **Phase I**

21.81 lbs/hr CO from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 10.

y. Emission Limitation: **Phase I**

95.54 tpy CO as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

z. Emission Limitation: **Phase I**

4.67 lbs/hr VOC from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

aa. Emission Limitation: **Phase I**

20.47 tpy VOC as a rolling, 12-month summation from the waste gas stack

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in pounds/ton coal, times the tons of coal charged per month. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ab. Emission Limitation: **Phase I**

12.86 lbs/hr PM/PM_{10} from the by-pass vent stacks (only 1 of the 5 stacks shall be vented at any given time)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the grains of PM/PM_{10} per dscf of 0.03 times the maximum flow rate of the waste gas vented multiplied by an estimated 20% of total gas vented times 60 minutes per hour divided by 7000 grains per lb. The PM/PM_{10} emission estimate was obtained from a stack test at the Jewell Coal and Coke Company in Vansant, VA in *10 /1989*..

ac. Emission Limitation: **Phase I**

10.80 tpy PM/PM_{10} from the by-pass vent stacks

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the grains of PM/PM_{10} per dscf of 0.03 times the maximum flow rate of the waste gas vented multiplied by an estimated 20% of total gas vented times 60 minutes per hour divided by 7000 grains per lb multiplied by 336 hours of venting per year divided by 2000 lbs per ton multiplied by the number of by-pass vent stacks (5). The PM/PM_{10} emission estimate was obtained from a stack test at the Jewell Coal and Coke Company in Vansant, VA in *10 /1989*..

ad. Emission Limitation: **Phase I**

1056 lbs/hr SO_2 from the by-pass vent stacks (only 1 of the 5 stacks shall be vented at any given time)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the SO_2 emission factor of 11 pounds/ton times the tons of coal charged per hour multiplied by an estimated 20% of total gas venting. The SO_2 emission factor was obtained from a stack test at the Jewell Coal and Coke Company in Vansant, VA in *10 /1989*.

ae. Emission Limitation:

1267.2 lb/hr SO2 as a 3 hour average from the by-pass vent stacks

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the SO_2 emission factor of 11 pounds/ton times the tons of coal charged per hour multiplied by an estimated 20% total gas venting . The SO_2 emission factor was obtained from a stack test at the Jewell Coal and Coke Company in Vansant, VA in *10 / 1989*.

af. Emission Limitation: **Phase I**

184.80 tpy SO2 from the by-pass vent stacks

Applicable Compliance Method:

The emission limit was derived by multiplying the SO_2 emission factor of 11 pounds/ton times the tons of coal charged per day multiplied by an estimated 20% of total waste gas venting times 14 days of venting per year times the 5 vent stacks divided by 2,000 lbs/ton. The SO_2 emission factor was obtained the draft AP-42, Section 12.2, Table 12.2-20, dated July 2001.

ag. Emission Limitation: **Phase I**

96 lbs/hr NOx from the by-pass vent stacks (only 1 of the 5 stacks shall be vented at any given time)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the NO_x emission factor of 1 pound/ton times the tons of coal charged per hour multiplied by an estimated 20% of total gas venting. The NO_x emission factor was obtained from a EPA IT stack test data at --- dated ----.

ah. Emission Limitation: **Phase I**

16.80 tpy NOx from the by-pass vent stacks

Applicable Compliance Method:

The emission limit was derived by multiplying the NO_x emission factor of 1 pound/ton times the tons of coal charged per day multiplied by an estimated 20% of total waste gas venting times 14 days of venting per year times the 5 vent stacks divided by 2,000 lbs/ton. The NO_x emission factor was obtained from a EPA IT stack test data at dated.

ai. Emission Limitation: **Phase I**

4.36 lbs/hr CO from the by-pass vent stacks (only 1 of the 5 stacks shall be vented at any given time)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the CO emission factor of 20 ppm, times 28, the molecular weight of CO, divided by the 385,100,000 conversion factor, times the maximum waste gas flow, in dscf/min, times 60 minutes/hour, times 0.20, the fraction of the total waste gas produced expected to be vented from any single by-pass stack.

aj. Emission Limitation: **Phase I**

3.66 tpy CO from the by-pass vent stacks

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the CO emission factor of 20 ppm, times 28, the molecular weight of CO, divided by the 385,100,000 conversion factor, times the maximum waste gas flow, in dscf/min, times 60 minutes/hour, times 0.20, the fraction of the total waste gas produced expected to be vented from any single by-pass stack, times the total hours/year of all by-pass events, divided by 2,000 pounds/ton.

ak. Emission Limitation: **Phase I**

0.93 lb/hr VOC from the by-pass vent stacks (only 1 of the 5 stacks shall be vented at any given time)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the VOC emission factor of 10 ppm, times 12, the molecular weight of carbon, divided by the 385,100,000 conversion factor, times the maximum waste gas flow, in dscf/min, times 60

minutes/hour, times 0.20, the fraction of the total waste gas produced expected to be vented from any single by-pass stack.

al. Emission Limitation: **Phase I**

0.79 tpy VOC from the by-pass vent stacks

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the VOC emission factor of 10 ppm, times 12, the molecular weight of carbon, divided by the 385,100,000 conversion factor, times the maximum waste gas flow, in dscf/min, times 60 minutes/hour, times 0.20, the fraction of the total waste gas produced expected to be vented from any single by-pass stack, times the total hours/year of all by-pass events, divided by 2,000 pounds/ton.

am. Emission Limitation: **Phase II**

34.29 lbs/hr PM/PM_{10} from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 5.

an. Emission Limitation: **Phase II**

150.17 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ao. Emission Limitation: **Phase II**

422.40 lbs/hr SO_2 from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the lbs/hr SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

ap. Emission Limitation: **Phase II**

506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the three hour average SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

aq. Emission Limitation: **Phase II**

770.88 tpy SO_2 as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current months' emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by adding the SO_2 emissions rate in pounds/day for each day of the calendar month, as measured by the SO_2 continuous emissions monitor and dividing by 2,000 pounds/ton.

ar. Emission Limitation: **Phase II**

480 lbs/hr NOx from the waste gas stack

Applicable Compliance Method:

Compliance shall be determined by multiplying the emission factor , in lbs of pollutant/wet ton coal charged, calculated from the results of the most recent performance test which demonstrated compliance, by the wet tons of coal charged per hour.

as. Emission Limitation: **Phase II**

876 tpy NOx as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NOx emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NOx emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

at. Emission Limitation: **Phase II**

43.63 lbs/hr CO from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

au. Emission Limitation: **Phase II**

191.08 tpy CO as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

av. Emission Limitation: **Phase II**

9.35 lbs/hr VOC from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

aw. Emission Limitation: **Phase II**

40.95 tpy VOC as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ax. Emission Limitation: **Phase I and II**

Particulate emissions from the lime spray dryer baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

ay. Emission Limitation: **Phase I and II**

0.88 lb SO_2 / ton coal from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 6.

az. Emission Limitation: **Phase I and II**

1 lb NOx / ton coal from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 7.

ba. Emission Limitation: **Phase I and II**

20 ppm CO from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 10.

bb. Emission Limitation: **Phase I and II**

10 ppm VOC from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

bc. Emission Limitation: **Phase I**

3.89 lbs/hr fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per hour times the capture factor of 0.3 (70% capture rate). The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bd. Emission Limitation: **Phase I**

3.55 tpy fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per year times the capture factor of 0.3 (70% capture rate), divided by 2,000 pounds/ton. The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

be. Emission Limitation: **Phase II**

7.78 lbs/hr fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per hour times the capture factor of 0.3 (70% capture rate). The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bf. Emission Limitation: **Phase II**

14.19 tpy fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per year times the capture factor of 0.3 (70% capture rate), divided by 2,000 pounds/ton. The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bg. Emission Limitation: **Phase I and II**

Visible particulate emissions fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

bh. Emission Limitation: **Phase I**

0.80 lb/hr PM/PM_{10} from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the manufacturer's guaranteed emission rate of 0.008 gr/dscf times the maximum air flow of the baghouse, in dscf/min, times 4 minutes per charge multiplied by the maximum number of ovens charged per hour (10), divided by 7,000 grains/pound.

bi. Emission Limitation: **Phase I**

0.73 tpy PM/PM_{10} as a rolling, 12-month summation from the charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the manufacturer's guaranteed emission rate of 0.008
gr/dscf times the maximum air flow of the baghouse, in dscf/min, times 4 minutes per charge multiplied by the maximum number of ovens charged per day (50), times 365 days per year divided by 7,000 grains/pound. divided by 2000 lbs/ton .

bj. Emission Limitation: **Phase I**

1.17 lbs/hr fugitive PM_{10} from charging

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per hour by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bk. Emission Limitation: **Phase I**

1.06 tpy PM_{10} fugitive emissions as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per month by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}, divided by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bl. Emission Limitation: **Phase I**

0.144 SO_2 from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per hour. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

bm Emission Limitation: **Phase I**

0.13 tpy SO_2 as a rolling, 12-month summation from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

bn. Emission Limitation: **Phase I**

1.34 lbs/hr CO from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0028 pounds/ton wet coal charged times the wet tons of coal charged per hour. The CO emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

Emission Limitation: **Phase I**

bo. 1.23 tpy CO as a rolling, 12-month summation from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0028 pound/ton wet coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

bp. Emission Limitation: **Phase I**

0.000048 lb/hr lead from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per hour. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bq. Emission Limitation: **Phase I**

0.000044 tpy lead from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per year and dividing by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

br. Emission Limitation: **Phase I**

0.000112 lb HAPs / ton coal from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by the 0.000112 pounds/ton HAP emission rate obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bs. Emission Limitation: **Phase I**

0.0536 lb/hr HAPs from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per hour. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bt. Emission Limitation: **Phase I**

0.0489 tpy HAPs from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bu. Emission Limitation: **Phase II**

0.000048 lb/hr lead from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per hour. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bv. Emission Limitation: **Phase II**

0.000044 tpy lead from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per year and dividing by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bw. Emission Limitation: **Phase II**

0.000112 lb HAPs / ton coal from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by the 0.000112 pounds/ton HAP emission rate obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bx. Emission Limitation: **Phase II**

0.1072 lb/hr HAPs from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per hour. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

by. Emission Limitation: **Phase II**

0.1956 tpy HAPs from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

bz. Emission Limitation: **Phase I**

0.96 lb/hr VOC from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per hour. The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ca. Emission Limitation: **Phase I**

0.88 tpy VOC as a rolling, 12-month summation from charging baghouse D

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

cb. Emission Limitation: **Phase II**

0.80 lb/hr PM/PM_{10} from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the manufacturer's guaranteed emission rate of 0.008 gr/dscf times the maximum air flow of the baghouse, in dscf/min, times 4 minutes per charge multiplied by the maximum number of ovens charged per hour (10), divided by 7,000 grains/pound.

cc. Emission Limitation: **Phase II**

0.73 tpy PM/PM_{10} as a rolling, 12-month summation from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lbs/hr emission limitation in V.bn. above by 8760 hours per year divided by 2000 lbs/ton .

cd. Emission Limitation: **Phase II**

2.33 lbs/hr fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per hour by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

ce. Emission Limitation: **Phase II**

4.26 tpy PM_{10} fugitive emissions as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per month by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}, divided by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

cf. Emission Limitation: **Phase II**

0.144 lb/hr SO2 from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per hour. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

cg. Emission Limitation: **Phase II**

0.13 tpy SO_2 as a rolling, 12-month summation from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ch. Emission Limitation: **Phase II**

1.34 lbs/hr CO from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0028 pounds/ton wet coal charged times the wet tons of coal charged per hour. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ci. Emission Limitation: **Phase II**

1.23 tpy CO as a rolling, 12-month summation from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0028 pound/ton wet coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

cj. Emission Limitation: **Phase II**

0.96 lb/hr VOC from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per hour. The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ck. Emission Limitation: **Phase II**

0.88 tpy VOC as a rolling, 12-month summation from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

cl. Emission Limitation: **Phase I and II**

Particulate emissions from each charging baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases.

Applicable Compliance Method:

Compliance shall be demonstrated by the manufacturer's guaranteed emission limitations.

If required, compliance shall also be demonstrated in accordance with the requirements of 40 CFR, Part 60, Appendix A, Methods 1 through 5.

cm. Emission Limitation: **Phase I and II**

Visible particulate emissions from the charging baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

cn. Emission Limitation: **Phase I**

0.0072 lb/hr Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 12 or 29.

co. Emission Limitation: **Phase I**

0.0066 tpy Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

cp. Emission Limitation: **Phase I and II**

0.000239 lb HAPs / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by the 0.00024 the pounds/ton HAP emission rate calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia.

cq. Emission Limitation: **Phase I**

0.115 lb/hr HAPs from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per hour. The HAPs emission

factor was calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia.

cr. Emission Limitation: **Phase I**

0.1047 tpy HAPs from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The HAPs emission factor was calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia

cs. Emission Limitation: **Phase II**

0.230 lb/hr HAPs from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per hour. The HAPs emission factor was calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia.

ct. Emission Limitation: **Phase II**

0.4189 tpy HAPs from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The HAPs emission factor was calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia.

cu. Emission Limitation: **Phase II**

0.0072 lb/hr Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 12 or 29.

cv. Emission Limitation: **Phase II**

0.013 tpy Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

cw. Emission Limitation: **Phase I and II**

Visible particulate emissions of fugitive dust from pushing operations shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

cx. Emission Limitation: **Phase I**

18.72 lbs/hr PM/PM_{10} from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

cy. Emission Limitation: **Phase I**

17.08 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

cz. Emission Limitation: **Phase I**

24 lbs/hr SO2 from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

da Emission Limitation: **Phase I**

28.8 lbs/hr SO2 as a 3 hour average from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged for a three hour averaging period. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

db. Emission Limitation: **Phase I**

21.9 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the SO_2 emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dc. Emission Limitation: **Phase I**

7.68 lbs/hr NOx from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The

emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dd. Emission Limitation: **Phase I**

7.01 tpy NOx as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NO_X emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NO_X emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

de. Emission Limitation: **Phase I**

36.96 lbs/hr CO from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

df. Emission Limitation: **Phase I**

33.73 tpy CO as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dg. Emission Limitation: **Phase I**

96.0 lbs/hr VOC from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dh. Emission Limitation: **Phase I**

87.6 tpy VOC as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

di. Emission Limitation: **Phase II**

18.72 lbs/hr PM/PM_{10} from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dj. Emission Limitation: **Phase II**

34.16 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dk. Emission Limitation: **Phase II**

24 lbs/hr SO2 from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dl. Emission Limitation: **Phase II**

28.8 lbs/hr SO2 as a 3 hour average from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged for a three hour averaging period. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dm. Emission Limitation: **Phase II**

43.8 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the SO_2 emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dn. Emission Limitation: **Phase II**

7.68 lbs/hr NOx from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The

emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

do. Emission Limitation: **Phase II**

14.02 tpy NOx as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NO_X emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NO_X emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dp. Emission Limitation: **Phase II**

36.96 lbs/hr CO from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dq. Emission Limitation: **Phase II**

67.45 tpy CO as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dr. Emission Limitation: **Phase II**

96.0 lbs/hr VOC from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ds. Emission Limitation: **Phase II**

175.2 tpy VOC as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

dt. Emission Limitation: **Phase I and II**

Particulate emissions from the pushing baghouse exhaust shall not exceed 0.039 lb PM_{10} / ton of coal.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Methods 1 through 5.

du. Emission Limitation: **Phase I and II**

0.05 lb SO_2 / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 6.

dv. Emission Limitation: **Phase I and II**

0.016 lb NOx / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 7.

dw. Emission Limitation: **Phase I and II**

0.077 lb CO / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 10.

dx. Emission Limitation: **Phase I and II**

0.2 lb VOC / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

dy. Emission Limitation: **Phase I and II**

Visible particulate emissions from the pushing baghouse stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

dz. Emission Limitation: **Phase I and II**

Lead emissions shall not exceed 0.52 tons per year for emissions units P901, P902, P001, and P002 combined.

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. waste gas stack

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

ii. charging

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor of 0.0000001 pound/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

iii. pushing

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

vi. quench towers

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent water analysis which demonstrated compliance.

ea. Emission Limitation:

0.0 percent leaking coke oven doors, or
ovens operated under a negative pressure.

Applicable Compliance Method:

Compliance shall be demonstrated by the monitoring/recordkeeping requirements in section A.III.11 of this permit.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P901 - Phase I: 100 oven nonrecovery coke battery (D battery) and Phase II: 100 oven nonrecovery coke battery (B battery) Waste Gas from Coking Process with dry scrubber with baghouse and staged combustion Charging Operations with baghouse with traveling hood Pushing Operations with baghouse with shed		Compliance with OEPA Air Toxics Policy; see Part II, term B.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None

Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P902 - Two 100 oven nonrecovery coke oven batteries (A and C batteries)		
waste gas from coking process with a lime spray dryer, baghouse, and staged combustion	OAC rule 3745-31-05(A)(3)	0.060 lb/hr Lead from the waste gas stack 0.27 tpy Lead from the waste gas stack 0.0048 lb HAPs / ton coal from the waste gas stack 17.02 lbs/hr HAPs from the waste gas stack 5.93 tpy HAPs from the waste gas stack Visible particulate emissions from the waste gas exhaust stack(s) shall not exceed 10% opacity as a 6-minute average. Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average. No visible emissions shall be permitted from the common battery tunnel or its associated piping. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	34.29 lbs/hr PM/PM_{10} from the waste gas stack

	150.17 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack 422.40 lbs/hr SO_2 from the waste gas stack 506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack 770.88 tpy SO_2 as a rolling, 12-month summation from the waste gas stack 480 lbs/hr NOx from the waste gas stack 876 tpy NOx as a rolling, 12-month summation from the waste gas stack 43.63 lbs/hr CO from the waste gas stack 191.08 tpy CO as a rolling, 12-month summation from the waste gas stack 9.35 lbs/hr VOC from the waste gas stack 40.95 tpy VOC as a rolling, 12-month summation from waste gas stack Particulate emissions from the lime spray dryer baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases. 0.88 lb SO_2 / ton coal from the waste gas stack 1 lb NOx / ton coal from the waste gas stack 20 ppm CO from the waste gas stack 10 ppm VOC from the waste gas stack See section A.I.2.a below.
OAC rule 3745-17-07(A)(1)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 18-06(E)(2)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 21-08(B)	See section A.I.2.d below.

	OAC rule 23-06(B)	See section A.I.2.c below.
	OAC rule 31-05(D)	See sections A.I.2.e .
	40 CFR Part 63, Subpart L	See sections A.I.2.f, A.I.2.g, and A.I.2.h below.
Charging Operations with baghouse with traveling hood	OAC rule 3745-31-05(A)(3)	7.78 lbs/hr fugitive PM from charging 14.19 tpy fugitive PM from charging 0.000048 lb/hr lead from each charging baghouse 0.000044 tpy lead from each charging baghouse 0.000112 lb HAPs / ton coal from each charging baghouse 0.1072 lb/hr HAPs from each charging baghouse 0.1956 tpy HAPs from each charging baghouse The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1), 40 CFR Part 52.21 and 3745-31-10 through 20. Visible particulate emissions fugitive dust from charging operations shall not exceed 20% opacity as a 3-minute average. 0.80 lb/hr PM/PM_{10} from each charging baghouse (A and C) 0.73 tpy PM/PM_{10} as a rolling, 12-month summation from each charging baghouse (A and C) 7.78 lbs/hr fugitive PM_{10} from charging 14.19 tpy fugitive PM_{10} as a rolling, 12-month summation from charging 0.144 lb/hr SO_2 from each charging baghouse (A and C) 0.13 tpy SO_2 as a rolling, 12-month summation from each charging baghouse 1.34 lbs/hr CO from each charging baghouse (A and C)

		1.23 tpy CO as a rolling, 12-month summation from each charging baghouse (A and C) 0.96 lb/hr VOC from each charging baghouse (A and C) 0.88 tpy VOC as a rolling, 12-month summation from each charging baghouse (A and C)
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	Particulate emissions from each charging baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases (A and C). See section A.I.2.a below. 0.0003 lb SO_2 / ton coal from each charging baghouse (A and C) 0.0028 lb CO / ton coal from each charging baghouse (A and C) 0.002 lb VOC / ton coal from each charging baghouse (A and C)
	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the charging baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-21-08(B)	See section A.I.2.d below.
	OAC rule 3745-31-05(D)	See sections A.I.2.e.
	40 CFR Part 63, Subpart L	See sections A.I.2.f, A.I.2.g, and A.I.2.h below.
Pushing Operations with baghouse with shed	OAC rule 3745-31-05(A)(3)	0.0072 lb/hr Lead from the pushing baghouse 0.013 tpy Lead from the pushing baghouse 0.000239 lb HAPs /ton coal from the pushing baghouse 0.230 lb/hr HAPs from the pushing baghouse

		0.4189 tpy HAPs from the pushing baghouse Visible particulate emissions of fugitive dust from the pushing operations shall not exceed 20% opacity as a 3-minute average. See section A.I.2.b below. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1) and 3745-31-10 through 20.
	40 CFR Part 52.21 and OAC rule 3745-31-10 through 20	18.72 lbs/hr PM/PM_{10} from the pushing baghouse 34.16 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse 24 lbs/hr SO_2 from the pushing baghouse 28.8 lbs/hr SO_2 as a 3 hour average from the pushing baghouse 43.8 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse 7.68 lbs/hr NOx from the pushing baghouse 14.02 tpy NOx as a rolling, 12-month summation from the pushing baghouse 36.96 lbs/hr CO from the pushing baghouse 67.45 tpy CO as a rolling, 12-month summation from the pushing baghouse 96.0 lbs/hr VOC from the pushing baghouse 175.2 tpy VOC as a rolling, 12-month summation from the pushing baghouse Particulate emissions from the pushing baghouse exhaust shall not exceed 0.039 lb PM_{10} / ton of coal. See section A.I.2.a below. 0.05 lb SO_2 / ton coal from the pushing baghouse 0.016 lb NOx / ton coal from the pushing baghouse

	0.077 lb CO / ton coal from the pushing baghouse 0.2 lb VOC / ton coal from the pushing baghouse
40 CFR Part 63, Subpart CCCCC	See section A.I.2.j below.
OAC rule 3745-17-07(A)(1)	Visible particulate emissions from the pushing baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
OAC rule 3745-23-06(B)	See section A.I.2.c below.
OAC rule 3745-21-08(B)	See section A.I.2.d below.
OAC rule 3745-31-05(D)	See section A.I.2.e.

2. Additional Terms and Conditions

2.a OAC rule 3745-31-15 requires the following best available control technologies:

i. The waste gas from coking shall be processed by the use of a lime spray dryer with a manufacturer's design control efficiency of 92% for SO_2 control, staged combustion for NOx control, combustion optimization for CO and VOC control, and a baghouse for PM control.

ii. The pushing operations shall employ a baghouse with a shed for PM control and work practices for CO and VOC control.

iii. The charging operations shall employ a baghouse with a traveling hood for PM control.

2.b The emissions control system for the pushing operation(s) shall maintain a minimum capture efficiency of 98%.

2.c Except as provided by rule, all stationary nitrogen oxide emission sources shall minimize nitrogen oxide emissions by the use of the latest available control techniques and operating practices in accordance with best current technology. The permittee shall employ the best available control technologies described in term and condition A.I.2.b.i above to minimize nitrogen oxide emissions.

2.d Except as provided by rule, all new stationary carbon monoxide emission sources shall minimize carbon monoxide emissions by the use of the best available control techniques and operating practices in accordance with best current technology. The permittee shall employ the best available control technologies described in term and conditions A.I.2.b.i and A.I.2.b.ii above to minimize carbon monoxide emissions.

2.e Lead emissions shall not exceed 0.52 tons per year as a rolling, 12-month summation for emissions units P901, P902, P001, and P002 combined.

2.f [40 CFR 63.300(e)]
The emission limitations set forth in 40 CFR Part 63, Subpart L shall apply at all times except during a period of startup, shutdown, or malfunction. The startup period shall be determined by the Administrator and shall not exceed 180 days.

2.g [40 CFR 63.303(b)(1)]
The coke oven emissions from the nonrecovery coke oven batteries shall not exceed 0.0 percent leaking coke oven doors, as determined by the procedures in 40 CFR Part 63, Section 63.309(d)(1); or
The permittee shall monitor and record, once per day of operation, the pressure in each oven or in a common battery tunnel to ensure that the ovens are operated under a negative pressure.

2.h [40 CFR 63.303(b)(2)]
For charging operations, the permittee shall install, operate and maintain an emission control system for the capture and collection of emissions in a manner consistent with good air pollution control practices for minimizing emissions from the charging operation.

2.i Waste gas emissions from the by-pass vent stacks of battery D, which divert the waste gas from the lime spray dryer/baghouse, shall occur during Phase I only.

2.j **[**40 CFR 63.7290(a)(1)]
The permittee shall not discharge to the atmosphere emissions of particulate matter from a control device applied to pushing emissions from a new or existing coke oven battery that exceed the applicable limit of 0.01 grain per dry standard cubic foot (gr/dscf)if a cokeside shed is used to capture emissions

2.k **[**40 CFR 63.7300 (a)]

As required by §63.6(e)(1)(i), the permittee must always operate and maintain your affected source, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

2.l **[**40 CFR 63.7290(b)(1) through (6)]

The permittee must prepare and operate at all times according to a written operation and maintenance plan for the general operation and maintenance of new or existing by-product coke oven batteries. Each plan must address, at a minimum, the elements listed in paragraphs (1) through (6) below.

(1) Frequency and method of recording underfiring gas parameters.

(2) Frequency and method of recording battery operating temperature, including measurement of individual flue and cross-wall temperatures.

(3) Procedures to prevent pushing an oven before it is fully coked.

(4) Procedures to prevent overcharging and undercharging of ovens, including measurement of coal moisture, coal bulk density, and procedures for determining volume of coal charged.

(5) Frequency and procedures for inspecting flues, burners, and nozzles.

(6) Schedule and procedures for the daily washing of baffles.

2.m **[**40 CFR 63.7290(c)(1) through (3)]

The permittee must prepare and operate at all times according to a written operation and maintenance plan for each capture system and control device applied to pushing emissions from a new or existing coke oven battery. Each plan must address at a minimum the elements in paragraphs (1) through (3) below.

(1) Monthly inspections of the equipment that are important to the performance of the total capture system (e.g., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in ductwork or hoods, flow constrictions caused by dents or accumulated dust in ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair any defect or deficiency in the capture system before the next scheduled inspection.

(2) Preventative maintenance for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(3) Corrective action for all baghouses applied to pushing emissions. In the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Actions may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe, or otherwise repairing the bag leak detection system.

(vi) Shutting down the process producing the particulate emissions

II. Operational Restrictions

1. The pressure drop across the waste gas exhaust baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

2. The pressure drop across each charging baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

3. The pressure drop across the pushing baghouse shall be maintained within the range of 3 to 12 inches of water while the emissions unit is in operation.

   The pushing emissions which escape the cokeside oven door shall be minimized by collecting in a stationary shed, which runs the length of the coke oven battery.

4. The permittee shall operate and maintain common duct temperatures at a minimum of 1400 ^{o}F as established in the Work Practice Plan to ensure emission limits for the waste gas exhaust are not exceeded.

5. The maximum hourly charging/pushing rate for this emissions unit shall not exceed 10 ovens per hour.

6. The maximum daily wet coal usage rate for this emissions unit shall not exceed 4,800 wet tons coal.

7. The maximum annual wet coal usage rate for this emissions unit shall not exceed 1,752,000 tons, based upon a rolling, 12-month summation of the wet coal usage rates.

   To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the wet coal usage levels specified in the following table:

Month	Maximum Allowable Cumulative Wet Coal Usage
1	146,000
1-2	292,000
1-3	438,000
1-4	584,000
1-5	730,000
1-6	876,000
1-7	1,022,000
1-8	1,168,000
1-9	1,314,000
1-10	1,460,000
1-11	1,606,000
1-12	1,752,000

   After the first 12 calendar months of operation, compliance with the annual wet coal usage rate limitation shall be based upon a rolling, 12-month summation of the wet coal usage rates.

8. The lime spray dryer and baghouse associated with the battery waste gas exhaust shall begin operation within forty (40) days after start-up of the first coke battery.

9. [40 CFR 63.310]
At all times including periods of startup, shutdown, and malfunction, the permittee shall operate and maintain the coke oven battery and its pollution control equipment required under 40 CFR Part 63, Subpart L, in a manner consistent with good air pollution control practices for minimizing emissions to the levels required by any applicable performance standards under 40 CFR Part 63, Subpart L. Failure to adhere to the requirements of this paragraph shall not constitute a separate violation if a violation of an applicable performance or work practice standard has also occurred.

10. **[**40 CFR 63.7290(b)(3)]
For each capture system applied to pushing emissions, the permittee shall:

(a) Maintain the daily average fan motor amperes at or above the minimum level established during the initial performance test; or

(b) Maintain the daily average volumetric flow rate at the inlet of the control device at or above the minimum level established during the initial performance test.

11. **[**40 CFR 63.7293(a)(1)]
The permittee shall visually inspect each oven prior to pushing by opening the door damper and observing the bed of coke.

12. **[**40 CFR 63.7293(a)(2)]
The permittee shall not push the oven unless the visual inspection indicates that there is no smoke in the open space above the coke bed and that there is an unobstructed view of the door on the opposite side of the oven.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the waste gas baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual (s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

2. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across each charging baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across each baghouse on a once per shift basis.

3. The permittee shall properly install, operate, and maintain equipment to monitor the pressure drop across the pushing baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the

manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a once per shift basis.

The stationary shed collecting pushing emissions shall be visually examined weekly for areas potentially needing repair. When an inspection identifies an area needing repair, the permittee shall maintain records of the date the inspection, the dates of each attempt to repair, the repair methods of each attempt to repair, and the date of successful repair.

4. The permittee shall maintain daily records of the coal usage rate, in wet tons, in this emissions unit.

5. The permittee shall maintain hourly records of the charging/pushing rate, in number of charges/pushes per hour, for this emissions unit.

6. The permittee shall maintain monthly records of the following information:

   a. the wet coal usage rate for each month; and,

   b. beginning after the first 12 calendar months of operation, the rolling, 12-month summation of the wet coal usage rates.

   Also, during the first 12 calendar months of operation, the permittee shall record the cumulative wet coal usage rate for each calendar month.

7. The permittee shall operate and maintain equipment to continuously monitor and record SO_2 from the waste gas stack in units of the applicable standard(s). Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

8. The permittee shall maintain records of all data obtained by the continuous SO_2 monitoring system including, but not limited to, parts per million SO_2 on a 1-hour basis, and in units of pounds per hour on a one hour and three hour average basis and results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.

9. Within 180 days of the effective date of this permit, the permittee shall develop a written quality assurance/quality control plan for the continuous SO_2 monitoring system designed to ensure continuous valid and representative readings of SO_2. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the continuous SO_2 monitoring system must be kept on site and available for inspection during regular office hours.

10. The permittee shall monitor and record the temperature of the common battery tunnel on a once per shift basis.

11. The permittee shall monitor and record, once per day for each day of operation, the pressure in the common battery tunnel to ensure that the ovens are operated under a negative pressure.

12. [40 CFR 63.306(a)]
The permittee shall prepare and submit to the Administrator a written emission control work practice plan for each coke oven battery, in accordance with 40 CFR Part 63, Subpart L, Section 63.306, within 45 days of startup of the first coke oven battery facility.

The plan shall be designed to achieve compliance with visible emission limitations for coke oven doors, and charging operations under this subpart or, for a coke oven battery not subject to visible emission limitations under this subpart, other federally enforceable visible emission limitations for these emission points.

a. The work practice plan must address each of the topics specified in paragraph (b) of this section in sufficient detail and with sufficient specificity to allow the Administrator to evaluate the plan for completeness and enforceability.

b. The Administrator may require revisions to the initial plan only where the Administrator finds either that the plan does not address each subject area listed in paragraph (b) of this section for each emission point subject to a visible emission standard under this subpart, or that the plan is unenforceable because it contains requirements that are unclear.

c. During any period of time that an owner or operator is required to implement the provisions of a plan for a particular emission point, the failure to implement one or more obligations under the plan and/or any recordkeeping requirement(s) under §63.311(f)(4) for the emission point during a particular day is a single violation.

13. [40 CFR 63.306(b)]
Plan components. The permittee shall organize the work practice plan to indicate clearly which parts of the plan pertain to each emission point subject to visible emission standards under this subpart. Each of the following provisions, at a minimum, shall be addressed in the plan:

a. An initial and refresher training program for all coke plant operating personnel with responsibilities that impact emissions, including contractors, in job requirements related to emission control and the requirements of this subpart, including work practice requirements. Contractors with responsibilities that impact emission control may be trained by the owner or operator or by qualified contractor personnel; however, the owner or operator 365shall ensure that the contractor training program complies with the requirements of this section. The training program in the plan must include:

(i) A list, by job title, of all personnel that are required to be trained and the emission point(s) associated with each job title;

(ii) An outline of the subjects to be covered in the initial and refresher training for each group of personnel;

(iii) A description of the training method(s) that will be used (e.g., lecture, video tape);

(iv) A statement of the duration of initial training and the duration and frequency of refresher training;

(v) A description of the methods to be used at the completion of initial or refresher training to demonstrate and document successful completion of the initial and refresher training; and

(vi) A description of the procedure to be used to document performance of plan requirements pertaining to daily operation of the coke oven battery and its emission control equipment, including a copy of the form to be used, if applicable, as required under the plan provisions implementing paragraph (b)(7) of this section.

b. Procedures for controlling emissions from nonrecovery coke oven batteries including:

(i) Procedures for charging coal into the oven, including any special procedures for minimizing air infiltration during charging, maximizing the draft on the oven, and for replacing the door promptly after charging;

(ii) If applicable, procedures for the capture and control of charging emissions;

(iii) Procedures for cleaning coke from the door sill area for both sides of the battery after completing the pushing operation and before replacing the coke oven door;

(iv) Procedures for cleaning coal from the door sill area after charging and before replacing the push side door;

(v) Procedures for filling gaps around the door perimeter with sealant material, if applicable; and

(vi) Procedures for detecting and controlling emissions from smoldering coal.

c. Procedures for maintaining, for each emission point subject to visible emission limitations under this subpart, a daily record of the performance of plan requirements pertaining to the daily operation of the coke oven battery and its emission control equipment, including:

(i) Procedures for recording the performance of such plan requirements; and

(ii) Procedures for certifying the accuracy of such records by the owner or operator.

d Any additional work practices or requirements specified by the Administrator according to paragraph (d) of this section.

14. [40 CFR 63.306(c)]
Implementation of work practice plans. On and after November 15, 1993, the owner or operator of a coke oven battery shall implement the provisions of the coke oven emission control work practice plan according to the following requirements:

a. (1) The owner or operator of a coke oven battery subject to visible emission limitations under this subpart on and after November 15, 1993, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second independent exceedance of the visible emission limitation for the emission point in any consecutive 6-month period, by no later than 3 days after receipt of written notification of the second such exceedance from the certified observer. For the purpose of this paragraph (c)(1)(i), the second exceedance is ``independent" if either of the following criteria is met:

(A) The second exceedance occurs 30 days or more after the first exceedance;

(B) In the case of coke oven doors, topside port lids, and offtake systems, the 29-run average, calculated by excluding the highest value in the 30-day period, exceeds the value of the applicable emission limitation; or

(C) In the case of charging emissions, the 29-day logarithmic average, calculated in accordance with Method 303 in appendix A to this part by excluding the valid daily set of observations in the 30-day period that had the highest arithmetic average, exceeds the value of the applicable emission limitation.

(ii) Continue to implement such plan provisions until the visible emission limitation for the emission point is achieved for 90 consecutive days if 367work practice requirements are implemented pursuant to paragraph (c)(1)(i) of this section. After the visible emission limitation for a particular emission point is achieved for 90 consecutive days, any exceedances prior to the beginning of the 90

days are not included in making a determination under paragraph (c)(1)(i) of this section.

b. (2) The owner or operator of a coke oven battery not subject to visible emission limitations under this subpart until December 31, 1995, shall:

(i) Implement the provisions of the work practice plan pertaining to a particular emission point following the second exceedance in any consecutive 6-month period of a federally enforceable emission limitation for that emission point for coke oven doors, topside port lids, offtake systems, or charging operations by no later than 3 days after receipt of written notification from the applicable enforcement agency; and

(ii) Continue to implement such plan provisions for 90 consecutive days after the most recent written notification from the enforcement agency of an exceedance of the visible emission limitation.

15. [40 CFR 63.306(d)]
Revisions to plan. Revisions to the work practice emission control plan will be governed by the provisions in this paragraph (d) and in paragraph (a)(2) of this section.

a. (1) The Administrator may request the owner or operator to review and revise as needed the work practice emission control plan for a particular emission point if there are 2 exceedances of the applicable visible emission limitation in the 6-month period that starts 30 days after the owner or operator is required to implement work practices under paragraph (c) of this section. In the case of a coke oven battery subject to visual emission limitations under this subpart, the second exceedance must be independent under the criteria in paragraph (c)(1)(i) of this section.

b. (2) The Administrator may not request the owner or operator to review and revise the plan more than twice in any 12 consecutive month period for any particular emission point unless the Administrator disapproves the plan according to the provisions in paragraph (d)(6) of this section.

c. (3) If the certified observer calculates that a second exceedance (or, if applicable, a second independent exceedance) has occurred, the certified observer shall notify the owner or operator. No later than 10 days after receipt of such a notification, the owner or operator shall notify the Administrator of any finding of whether work practices are related to the cause or the solution of the problem. This notification is subject to review by the Administrator according to the provisions in paragraph (d)(6) of this section.

d. (4) The owner or operator shall submit a revised work practice plan within 60 days of notification from the Administrator under paragraph (d)(1) of this section, unless the Administrator grants an extension of time to submit the revised plan.

e. (5) If the Administrator requires a plan revision, the Administrator may require the plan to address a subject area or areas in addition to those in paragraph (b) of this section, if the Administrator determines that without plan coverage of such an additional subject area, there is a reasonable probability of further exceedances of the visible emission limitation for the emission point for which a plan revision is required.

f. (6) The Administrator may disapprove a plan revision required under paragraph (d) of this section if the Administrator determines that the revised plan is inadequate to prevent exceedances of the visible emission limitation under this subpart for the emission point for which a plan revision is required or, in the case of a battery not subject to visual emission limitations under this subpart, other federally enforceable emission limitations for such emission point. The Administrator may also disapprove the finding that may be submitted pursuant to paragraph (d)(3) of this section if the Administrator determines that a revised plan is needed to prevent exceedances of the applicable visible emission limitations.

16. [40 CFR 63.310(b)]
The permittee of a coke oven battery shall develop and implement a written startup, shutdown, and malfunction plan that describes procedures for operating the battery, including associated air pollution control equipment, during a period of a startup, shutdown, or malfunction in a manner consistent with good air pollution control practices for minimizing emissions, and procedures for correcting malfunctioning process and air pollution control equipment as quickly as practicable.

17. [40 CFR 63.310(g)]
To satisfy the requirements of 40 CFR Part 63, Section 63.310 to develop a startup, shutdown, and malfunction plan, the permittee may use the standard operating procedures manual for the battery, provided the manual meets all the requirements for 40 CFR Part 63, Section 63.310 and is made available for inspection at reasonable times when requested by the Administrator.

18. [40 CFR 63.310(h)]
The Administrator may require reasonable revisions to a startup, shutdown, and malfunction plan, if the Administrator finds that the plan:

a. does not address a startup, shutdown, or malfunction event that has occurred

b. fails to provide for the operation of the source (including associated air pollution control equipment) during a startup, shutdown, or malfunction event in a manner consistent with good air pollution control practices for minimizing emissions; or

c. does not provide adequate procedures for correcting malfunctioning process and/or air pollution control equipment as quickly as practicable.

19. [40 CFR 63.310(i)]
If the permittee demonstrates to the satisfaction of the Administrator that a startup, shutdown, or malfunction has occurred, then an observation occurring during such startup, shutdown, or malfunction shall not:

a. constitute a violation of relevant requirements of 40 CFR Part 63, Subpart L;

b. be used in any compliance determination under 40 CFR Part 63, Section 63.309; or

c. be considered for purposes of 40 CFR Part 63, Section 63.306, until the Administrator determines that a startup, shutdown, or malfunction has not occurred, such observations may be used for purposes of 40 CFR Part 63, Section 63.306, regardless of whether the permittee further contests such determination. The permittee's receipt of written notification from the Administrator that a startup, shutdown, or malfunction has not occurred will serve, where applicable under 40 CFR Part 63, Subpart 63.306, as written notification from the certified observer that an exceedance has occurred.

20. [40 CFR 63.311(f)]
The permittee shall maintain files of all required information in a permanent form suitable for inspection at an onsite location for at least 1 year and must thereafter be assessable within 3 working days to the Administrator for a period of at least five years from the date of the monitoring sample, measurement, report or application.

21. [40 CFR 63.311(f)]
Copies of the work practice plan developed under 40 CFR Part 63, Section 63.306 and the startup, shutdown, and malfunction plan developed under 40 CFR Part 63, Section 63.310 shall be kept onsite at all times. The permittee shall maintain the following information:

a. records of daily pressure monitoring, according to 40 CFR Part 63, Section 63.303(b)(1)(ii);

b. records demonstrating the performance of work practice requirements according to 40 CFR Part 63, Section 63.306(b)(7);

c. design characteristics of each emission control system for the capture and collection of charging emissions, as required by 40 CFR Part 63, Section 63.303(b)(2).

22. [40 CFR 63.311(f)(3)]
a copy of the work practice plan required by 40 CFR Part 63, Section 63.306 and any revision to the plan;

23. [40 CFR 63.311(g)(1)-(4)]
records required to be maintained and reports required to be filed with the Administrator, with a copy to the Portsmouth Local Air Agency, under 40 CFR Part 63, Subpart L shall be made available in accordance with the requirements of this section by the permittee to the authorized collective bargaining representative of the employees at a coke oven battery, for inspection and copying.

a. requests under this term and condition shall be submitted in writing, and shall identify the records or reports that are subject to the request with reasonable specificity;

b. the permittee shall produce the reports for inspection and copying within a reasonable period of time, not to exceed 30 days. A reasonable fee may be charged for copying (except for the first copy of any document), which shall not exceed the copying fee charged by the Administrator under part 2 of the CFR, chapter 40;

c. nothing in this term and condition shall require the production for inspection or copying of any portion of a document that contains trade secret or confidential business information that the Administrator would be prohibited from disclosing to the public under part 2 of the CFR, chapter 40; and;

d. the inspection or copying of document under this term and condition shall not in any way affect any property right of the permittee in such document under the laws for the protection of intellectual property, including the copyright laws.

24. [40 CFR 63.310(f)]
The permittee shall maintain a record of internal reports which form the basis of each malfunction notification in accordance with 40 CFR Part 63.310(d).

25. The permittee shall maintain records for each waste gas by-pass event of the date and time each event began, an identification of the stack venting, and the duration in hours.

26 **[**40 CFR 63.7330]

For each baghouse applied to pushing emissions from a coke
oven battery, the permittee must at all times monitor the relative change in particulate matter loadings using a bag leak detection system according to the requirements in §63.7331(a) and conduct inspections at their specified frequency according to the requirements in paragraphs (a)through (h) below.

(a) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual;

(b) Confirm that dust is being removed from hoppers through weekly visual inspections or equivalent means of ensuring the proper functioning of removal mechanisms;

(c) Check the compressed air supply for pulse-jet baghouses each day;

(d) Monitor cleaning cycles to ensure proper operation using an appropriate methodology;

(e) Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means;

(f) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices;

(g) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks; and

(h) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

27. For each capture system applied to pushing emissions, the permittee must at all times monitor the fan motor amperes according to the requirements in §63.7331(g) or the volumetric flow rate according to the requirements in §63.7331(h).

28. **[**40 CFR 63.7331 (a)(1) through (7)]

For each baghouse applied to pushing emissions, the permittee must install, operate, and maintain each bag leak detection system according to the requirements in paragraphs (a) through (g) below.

(a) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less;

(b) The system must provide output of relative changes in particulate matter loadings;

(c) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over a preset level. The alarm must be located such that it can be heard by the appropriate plant personnel;

(d) Each system that works based on the triboelectric effect must be installed, operated, and maintained in a manner consistent with the guidance document, "Fabric Filter Bag Leak Detection Guidance" (EPA-454/R-98-015, September 1997). You may install, operate, and maintain other types of bag leak detection systems in a manner consistent with the manufacturer's written specifications and recommendations;

(e) To make the initial adjustment of the system, establish the baseline output by adjusting the sensitivity (range) and the averaging period of the device. Then, establish the alarm set points and the alarm delay time;

(f) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set points, or alarm delay time, except as detailed in your operation and maintenance plan. Do not increase the sensitivity by more than 100 percent or decrease the sensitivity by more than 50 percent over a 365-day period unless a responsible official certifies, in writing, that the baghouse has been inspected and found to be in good operating condition; and

(g) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

29. **[**40 CFR 63.7331 (g)]

If the permittee elects the operating limit in §63.7290(b)(3)(i) for a capture system applied to pushing emissions, you must install, operate, and maintain a device to measure the fan motor amperes.

30. **[**40 CFR 63.7331 (h)]

If the permittee elects the operating limit in §63.7290(b)(3)(ii) for a capture system applied to pushing emissions, you must install, operate, and maintain a device to measure the total volumetric flow rate at the inlet of the control device.

31. **[**40 CFR 63.7342 (a)(1) through (3)]

The permittee must keep the records specified in paragraphs (a) through (c) below.

(a) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements in §63.10(b)(2)(xiv).

(b) The records in §63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(c) Records of performance tests, performance evaluations, and opacity observations as required in §63.10(b)(2)(viii).

32. **[**40 CFR 63.7342 (d)]

The permittee must keep the records required in §§63.7333 through 63.7335 to show continuous compliance with each emission limitation, work practice standard, and operation and maintenance requirement that applies.

33. **[**40 CFR 63.7343 (a) through (c)]

(a) The permittee must keep your records in a form suitable and readily available for expeditious review, according to §63.10(b)(1).

(b) As specified in §63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record on site for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to §63.10(b)(1). You can keep the records offsite for the remaining 3 years.

IV. Reporting Requirements

1. The permittee shall submit pressure drop deviation (excursion) reports that identify that all periods of time during which the pressure drop across the waste gas baghouse did not comply with the allowable range specified above.

2. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across either charging baghouse did not comply with the allowable range specified above.

3. The permittee shall submit pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the pushing baghouse did not comply with the allowable range specified above.

   The permittee shall submit semi-annual written reports which (a) list all inspections which identified an area of the stationary shed needing repair, and (b) a description of the repairs completed.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the daily wet coal usage rate limitation.

5. The permittee shall submit deviation (excursion) reports which identify all exceedances of the hourly charging/pushing rate limitation.

6. The permittee shall submit deviation (excursion) reports that identify all exceedances of the rolling, 12-month wet coal usage rate limitation and, for the first 12 calendar months of operation, all exceedances of the maximum allowable cumulative wet coal usage levels.

7. Pursuant to OAC rules 3745-15-04, 3745-35-02, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(h), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting the date, commencement and completion times, duration magnitude, reason (if known), and corrective actions taken (if any), of all instances of SO_2 values in excess of the applicable limit(s) specified OAC Chapter 3745-18, the daily SO_2 emission rates and/or the annual SO_2 emission rates. These reports shall also contain the total SO_2 emissions for the calendar quarter (in tons).

   The permittee shall submit reports within 30 days following the end of each calendar quarter to the Portsmouth Local Air Agency documenting any continuous SO_2 monitoring system downtime while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

   If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.

8. The permittee shall submit common battery tunnel temperature deviation (excursion) reports that identify all periods of during which the temperature in the common battery tunnel did not comply with the allowable range specified above. These reports shall include the time of the temperature deviation, the duration of the exceedance and the corrective action taken.

9. The permittee shall submit deviation (excursion) reports which identify all exceedances of the 9.9 tons per year as a rolling, 12-month summation for any single HAP and/or 24.9 tons per year as a rolling, 12-month summation for total combined HAPs emissions limitations.

10. The permittee shall submit deviation (excursion) reports which identify all exceedances of the 0.52 tons per year Lead emissions limitation.

11. [40 CFR 63.310(d)]
In order for the provisions of term and condition III.8. to apply with respect to the observation (or set of observations) for a particular day, notification of a startup, shutdown, or a malfunction shall be made by the permittee;

    a. if practicable, to the certified observer if the observer is at the facility during the occurrence; or

    b. to the enforcement agency, in writing, within 24 hours of the occurrence first being documented by a company employee, and if the notification was not made, an explanation of why no such notification was made.

12. [40 CFR 63.310(e)]
Within 14 days of the original notification made under term and condition IV.4 or after a startup or shutdown, the permittee shall submit a written report to the Administrator, with a copy to the Portsmouth Local Air Agency that:

    a. describes the times and circumstances of the startup, shutdown, or malfunction;

    b. describes actions taken that might be considered inconsistent with the startup, shutdown, or malfunction plan.

13. [40 CFR 63.311(b)]
The permittee shall provide a written statement(s) to certify compliance to the Administrator, with a copy to the Portsmouth Local Air Agency, within 45 days of the applicable compliance date for the emission limitations or requirements in 40 CFR Part 63, Subpart L. The permittee shall include the following information in the initial compliance certification:

    a. statement, signed by the permittee, certifying that a written startup, shutdown, and malfunction plan has been prepared as required in 40 CFR Part 63, Section 63.310.

14. [40 CFR 63.311(c)]
The permittee shall provide written notification(s) to the Administrator of:

    a. intention to construct a new coke oven battery (including reconstruction of an existing coke oven battery and construction of a greenfield coke oven battery), including the anticipated date of startup.

15. [40 CFR 63.311(d)]
The permittee shall include the following information in the semi-annual compliance certification:

    a. certification, signed by the permittee, that a startup, shutdown, or malfunction event did not occur for the coke oven battery during the reporting period or that a startup,

shutdown, event did occur and a report was submitted according to the requirements in 40 CFR Part 63, Section 63.310(e); and,

b. certification, signed by the permittee, that work practices were implemented if applicable under 40 CFR 63.306.

16. The permittee shall submit semi-annual written reports which identify the date, time, and duration of each waste gas by-pass event.

17. The deviation (excursion) reports shall be submitted in accordance with Part 1 - General Terms and Conditions of this permit under section (A)(1).

V. Testing Requirements

1. Emission Testing Requirements

The permittee shall conduct, or have conducted, emission testing for the waste gas exhaust and pushing baghouse associated with this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 60 days after achieving the maximum production rate but no later than 180 days after initial startup of the emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the particulate, SO_2, NOx, CO, VOC, Lead, and HAPs (waste gas stack only) emissions limits.

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):

Pollutant	Method of 40 CFR Part 60, Appendix A
particulates	Method 5
SO_2	Method 6
NOx	Method 7
CO	Method 10
VOC	Method 25 or 25A, as appropriate
Lead	Methods 12 or 29
HAPs	Method 18

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Portsmouth Local Air Agency.

A particulate emissions test shall also be conducted at the inlet of the pushing baghouse to determine the uncontrolled mass rate of emission for the emission unit, for purposes of applying Figure II of OAC rule 3745-17-11. For this testing, Method 5 of 40 CFR Part 60, Appendix A, shall be employed.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Portsmouth Local Air Agency. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Portsmouth Local Air Agency's refusal to accept the results of the emission test(s).

Personnel from the Portsmouth Local Air Agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Portsmouth Local Air Agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Portsmouth Local Air Agency.

2. Certification

Prior to the installation of the continuous SO_2 monitoring system, the permittee shall submit information detailing the proposed location of the sampling site(s) in accordance with the siting requirements in 40 CFR Part 60, Appendix B, Performance Specification 6 for approval by the Ohio EPA, Central Office.

Within 60 days after achieving the maximum production rate, the permittee shall conduct certification tests of the continuous SO_2 monitoring system pursuant to ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6. Personnel from the Portsmouth Local Air Agency shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. In accordance with OAC rule 3745-15-04, all copies of the test results shall be submitted to the Portsmouth Local Air Agency within 30 days after the test is completed. Copies of the test results shall be sent to the Portsmouth Local Air Agency and the Ohio EPA, Central Office. Certification of the continuous SO_2 monitoring system shall be granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 6.

3. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

0.060 lb/hr Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 12 or 29.

b. Emission Limitation:

0.27 tpy Lead from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the lead emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

c. Emission Limitation:

0.0048 lb HAPs / ton coal from the waste gas stack
17.02 lbs/hr HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

d. Emission Limitation:

5.93 tpy HAPs from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the the summation of the individual HAP pollutants lb/ton emission factor, in pounds/ton, times the tons of coal charged per year and dividing by 2,000 pounds/ton. The HAPs emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

e. Emission Limitation:

Visible particulate emissions from waste gas stack B/D shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

f Emission Limitation:

Visible particulate emissions of fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

g Emission Limitation:

No visible emissions shall be permitted from the waste gas common duct or its associated piping.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 22 and the procedures and methods required in OAC rule 3745-17-03(B)(4).

h Emission Limitation:

34.29 lbs/hr PM/PM_{10} from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 5.

i Emission Limitation:

150.17 tpy PM/PM_{10} as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

j. Emission Limitation:

422.40 lbs/hr SO_2 from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the lbs/hr SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

k. Emission Limitation:

506.88 lbs/hr SO_2 as a 3 hour average from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated from the three hour average SO_2 emission rate obtained from the SO_2 continuous emissions monitor on the lime spray dryer for the coke oven battery waste gas exhaust.

l. Emission Limitation:

770.88 tpy SO_2 as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current months' emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by adding the SO_2 emissions rate in pounds/day for each day of the calendar month, as measured by the SO_2 continuous emissions monitor and dividing by 2,000 pounds/ton.

m. Emission Limitation:

480.0 lbs/hr NOx from the waste gas stack

Applicable Compliance Method:

Compliance shall be determined by multiplying the emission factor , in lbs of pollutant/wet ton coal charged, calculated from the results of the most recent performance test which demonstrated compliance, by the wet tons of coal charged per hour.

n. Emission Limitation:

876 tpy NOx as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NOx emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NOx emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

o. Emission Limitation:

43.63 lbs/hr CO from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 10.

p. Emission Limitation:

191.08 tpy CO as a rolling, 12-month summation from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in pounds/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

q. Emission Limitation:

9.35 lbs/hr VOC from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

r. Emission Limitation:

40.95 tpy VOC as a rolling, 12-month summation from the waste gas stack

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in pounds/ton coal, times the tons of coal charged per month. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

s. Emission Limitation:

Particulate emissions from the lime spray dryer baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

t. Emission Limitation:

0.88 lb SO_2 / ton coal from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 6.

u. Emission Limitation:

1 lb NOx / ton coal from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 7.

v. Emission Limitation:

20 ppm CO from the waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 10.

w. Emission Limitation:

10 ppm VOC from waste gas stack

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

x. Emission Limitation:

7.78 lbs/hr fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per hour times the capture factor of 0.3 (70% capture rate). The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

y. Emission Limitation:

14.19 tpy fugitive PM

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged times the maximum tons of wet coal charged per year times the capture factor of 0.3 (70% capture rate), divided by 2,000 pounds/ton. The PM emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

z. Emission Limitation:

Visible particulate emissions fugitive dust from this emissions unit shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

aa. Emission Limitation:

0.80 lb/hr PM/PM_{10} from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the manufacturer's guaranteed emission rate of 0.008 gr/dscf times the maximum air flow of the baghouse, in dscf/min, times 4 minutes per charge multiplied by the maximum number of ovens charged per hour (10), divided by 7,000 grains/pound.

ab. Emission Limitation:

0.73 tpy PM/PM_{10} as a rolling, 12-month summation from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the manufacturer's guaranteed emission rate of 0.008 gr/dscf times the maximum air flow of the baghouse, in dscf/min, times 4 minutes per charge multiplied by the maximum number of ovens charged per day (50), times 365 days per year divided by 7,000 grains/pound. divided by 2000 lbs/ton .

ac. Emission Limitation:

2.33 lbs/hr fugitive PM_{10}

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per hour by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

ad. Emission Limitation:

4.26 tpy PM_{10} fugitive emissions as a rolling, 12-month summation

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.027 pounds/ton coal charged, times the tons of wet coal charged per month by the capture factor of 0.3 (70% capture rate) by 0.30 the fraction of TSP estimated to by PM_{10}, divided by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

ae. Emission Limitation:

0.144 lb/hr SO2 from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per hour. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

af. Emission Limitation:

0.13 tpy SO_2 as a rolling, 12-month summation from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0003 pounds/ton wet coal charged, times the tons of wet coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ag. Emission Limitation:

1.34 lbs/hr CO from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0028 pounds/ton wet coal charged times the wet tons of coal charged per hour. The SO_2 emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ah. Emission Limitation:

1.23 tpy CO as a rolling, 12-month summation from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0028 pound/ton wet coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ai. Emission Limitation:

0.96 lb/hr VOC from each charging baghouse (A and C)

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per hour. The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

aj. Emission Limitation:

0.88 tpy VOC as a rolling, 12-month summation from each charging baghouse (D and B)

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the emission factor of 0.0020 lb VOC/wet ton coal charged, times the wet tons of coal charged per month, divided by 2,000 pounds/ton.

The VOC emission factor was calculated from the results of an October 1989 stack test at Jewell Coal and Coke Company located in Vansant, Virginia.

ak. Emission Limitation:

0.000048 lb/hr lead from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per hour. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

al. Emission Limitation:

0.000044 tpy lead from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor of 0.0000001 lb lead/wet ton coal charged, times the wet tons of coal charged per year and dividing by 2,000 pounds/ton. The emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

am. Emission Limitation:

0.000112 lb HAPs / ton coal from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by the 0.000112 pounds/ton HAP emission rate obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

an. Emission Limitation:

0.1072 lb/hr HAPs from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per hour. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

ao. Emission Limitation:

0.1956 tpy HAPs from each charging baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The HAPs emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

ap. Emission Limitation:

Particulate emissions from each charging baghouse exhaust shall not exceed 0.008 gr/dscf of exhaust gases.

Applicable Compliance Method:

Compliance shall be demonstrated by the manufacturer's guaranteed emission limitations.

If required, compliance shall also be demonstrated in accordance with the requirements of 40 CFR, Part 60, Appendix A, Methods 1 through 5.

aq. Emission Limitation:

Visible particulate emissions from the charging baghouse stacks shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

ar. Emission Limitation:

0.0072 lb/hr Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 12 or 29.

as. Emission Limitation:

0.013 tpy Lead from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton, times the maximum tons of coal charged per year, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

an. Emission Limitation:

0.000239 lb HAPs /ton coal from each pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by the 0.00024 the pounds/ton HAP emission rate calculated from the results of the October 1989 stack test conducted at Jewell Coal and Coke located in Vansant, Virginia.

ao. Emission Limitation:

Visible particulate emissions of fugitive dust from pushing operations shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(3).

ap. Emission Limitation:

18.72 lbs/hr PM/PM_{10} from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

aq. Emission Limitation:

34.16 tpy PM/PM_{10} as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the PM/PM_{10} emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The PM/PM_{10} emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ar. Emission Limitation:

24 lbs/hr SO2 from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

as. Emission Limitation:

28.8 lbs/hr SO2 as a 3 hour average from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged for a three hour averaging period. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

at. Emission Limitation:

43.8 tpy SO_2 as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the SO_2 emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The SO_2 emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

au. Emission Limitation:

7.68 lbs/hr NOx from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

av. Emission Limitation:

14.02 tpy NOx as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the NO_X emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The NO_X emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

aw. Emission Limitation:

36.96 lbs/hr CO from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

ax. Emission Limitation:

67.45 tpy CO as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the CO emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The CO emission factor shall

be calculated from the results of the most recent performance test which demonstrated compliance.

ay. Emission Limitation:

96.0 lbs/hr VOC from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by multiplying the emission factor, in pounds/ton wet coal charged, times the maximum tons of wet coal charged per hour. The emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

az. Emission Limitation:

175.2 tpy VOC as a rolling, 12-month summation from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated by adding the current month's emissions to the emissions for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the VOC emission factor, in lb/ton coal, times the tons of coal charged per month, divided by 2,000 pounds/ton. The VOC emission factor shall be calculated from the results of the most recent performance test which demonstrated compliance.

bb. Emission Limitation:

Particulate emissions from the pushing baghouse exhaust shall not exceed 0.039 lb PM_{10} / ton of coal.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Methods 1 through 5.

bc. Emission Limitation:

0.05 lb SO_2 / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 6.

bd. Emission Limitation:

0.016 lb NOx / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 7.

be. Emission Limitation:

0.077 lb CO / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 10.

bf. Emission Limitation:

0.2 lb VOC / ton coal from the pushing baghouse

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements of 40 CFR Part 60, Appendix A, Method 25 or 25A, as appropriate.

bg. Emission Limitation:

Visible particulate emissions from the pushing baghouse stack shall not exceed 20% opacity as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures and methods required in OAC rule 3745-17-03(B)(1).

bh. Emission Limitation:

Lead emissions shall not exceed 0.52 tons per year for emissions units P901, P902, P001, and P002 combined.

Applicable Compliance Method:

Compliance shall be demonstrated by calculating the sum of the following:

i. waste gas stack

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

ii. charging

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor of 0.0000001 pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor was obtained from draft AP-42, Section 12.2, Table 12.2-21, dated July 2001.

iii. pushing

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent stack test which demonstrated compliance.

vi. quench towers

Compliance shall be demonstrated by adding the current month's emissions to the emission for the preceding eleven calendar months. Monthly emissions shall be determined by multiplying the lead emission factor, in pounds/ton, times the wet tons of coal charged per month, divided by 2,000 pounds/ton. The lead emission factor shall be calculated from the results of the most recent water analysis which demonstrated compliance.

bi. Emission Limitation:

0.0 percent leaking coke oven doors, or
ovens operated under a negative pressure.

Applicable Compliance Method:

Compliance shall be demonstrated by the monitoring/record 8 keeping requirements in section A.III.11 of this permit.

VI. Miscellaneous Requirements

None

B. State Only Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P902 - Two 100 oven nonrecovery coke oven batteries (A and C batteries) Waste Gas from Coking Process with dry scrubber with baghouse and staged combustion Charging Operations with baghouse with traveling hood Pushing Operations with baghouse with shed		Compliance with OEPA Air Toxics Policy; see Part II, term B.

2. Additional Terms and Conditions

2.a None

II. Operational Restrictions

None

III. Monitoring and/or Recordkeeping Requirements

None

IV. Reporting Requirements

None

V. Testing Requirements

None

VI. Miscellaneous Requirements

None