Dettlinger, Carl

From: Truchan, JoAnn
Sent: Tuesday, June 30, 2020 11:31 AM
To: Dettlinger, Carl; Ajenifuja, Hafeez
Subject: FW: U. S. Steel - Clairton - PEC Baghouse Permit Application
Attachments: U. S. Steel - Clairton PEC Baghouse Replacement Permit Application 6-30-2020.pdf

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From: Tunno, Brett J <BJTunno@uss.com>
Sent: Tuesday, June 30, 2020 10:05 AM
To: Truchan, JoAnn <JoAnn.Truchan@AlleghenyCounty.US>
Cc: Hardin, Christopher W <CWHardin@uss.com>
Subject: U. S. Steel - Clairton - PEC Baghouse Permit Application

Good morning JoAnn,

Please see the attached air permit application for the PEC Baghouse Replacement Project at Clairton. I plan on dropping off the air permit application and air permit fee later this morning.

Thank you,

Brett Tunno, DrPH, CPH
Environmental Affairs
United States Steel Corporation
Office: 412-433-5767
Cell: 412-944-6167
Email: bjtunno@uss.com

United States Steel Corporation
1350 Penn Avenue
Pittsburgh, PA 15222

June 30, 2020

Ms. JoAnn Truchan, P.E.
Allegheny County Health Department
Air Quality Program
301 39th Street, Building #7
Pittsburgh, PA 15201

RE: United States Steel Corporation
Mon Valley Works - Clairton Plant (TVOP No. 0052)
Installation Permit Application – 13-15 & 19-20 Batteries (2nd Unit) Pushing Emissions Control (PEC) Baghouse Replacement

Dear Ms. Truchan,

United States Steel Corporation (U. S. Steel) owns and operates the Clairton Plant in Clairton, Allegheny County. This facility is currently authorized via Title V Operating Permit (TVOP) No. 0052. As part of Settlement Agreement and Order #190601 between the Allegheny County Health Department (ACHD) and U. S. Steel (amended on February 5, 2020), U. S. Steel is required to submit this Installation Permit Application to replace the 2nd Unit Pushing Emissions Control (PEC) Baghouse System (P052 & P053), which services Batteries 13, 14, 15, 19 and 20, no later than July 1, 2020. The modifications to the existing PEC Baghouse System will ultimately result in improved environmental performance including increased system capture efficiency of particulate matter emissions from coke oven battery pushing operations. The project, which will not impact any other existing operations at the Plant, will result in a decrease in actual particulate matter emissions and will not trigger a major modification under New Source Review (NSR).

Enclosed is a complete and timely installation permit application package which includes the following elements:

- Application Report;
  - Project Description
  - Emissions Calculation Methodology
  - Regulatory Applicability
  - New Source Review (NSR) Analysis
  - Best Available Control Technology (BACT) Analysis;
- Air Permit Application Forms;
- Compliance Review Form;
- Detailed Emission Calculations;
- Process Flow Diagram;
- Site Map; and
- Application Fee.

If you have any questions on this application or need any additional information, please contact me by phone at (412) 433-5904 or by email at CWHardin@uss.com .

Sincerely,

Christopher W. Hardin
Environmental Affairs
United States Steel Corporation

INSTALLATION PERMIT APPLICATION

2nd Unit Pushing Emission Control System

United States Steel Corporation / Mon Valley Works – Clairton Plant

Prepared By:

TRINITY CONSULTANTS
4500 Brooktree Drive
Suite 310
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July 1, 2020

Trinity Consultants

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1

2. PROJECT DESCRIPTION 2-1

3. EMISSION CALCULATIONS 3-1
   - 3.1 Criteria Pollutants 3-1
   - 3.2 HAPS and Air Toxics 3-2

4. REGULATORY APPLICABILITY ANALYSIS 4-1
   - 4.1 New Source Review Applicability 4-1
     - *4.1.1 Major Source Status 4-1*
     - *4.1.2 NSR Analysis 4-1*
   - 4.2 New Source Performance Standards 4-2
   - 4.3 National Emission Standards for Hazardous Air Pollutants (NESHAP) 4-2
     - *4.3.1 NESHAP Subpart A – General Provisions 4-2*
     - *4.3.2 NESHAP Subpart L – Coke Oven Batteries 4-3*
     - *4.3.3 NESHAP Subpart CCCCC – Coke Ovens: Pushing, Quenching and Battery Stacks 4-3*
     - *4.3.4 Non-Applicability of All Other NESHAP 4-3*
   - 4.4 Article XXI Applicability 4-4
     - *4.4.1 Article XXI §2104.04 - Odor Emissions 4-4*
     - *4.4.2 Article XXI §2104.08 - National Emission Standards for Hazardous Air Pollutants 4-4*
     - *4.4.3 Article XXI §2105.03 - Proper Operation and Maintenance of Air Pollution Equipment 4-4*
     - *4.4.4 Article XXI §2105.21 – Coke Ovens and Coke Oven Gas 4-4*
     - *4.4.5 ACHD Air Toxics Policy 4-4*

5. NSR APPLICABILITY ANALYSIS 5-1
   - 5.1 NSR Permitting Applicability Procedures 5-1
     - *5.1.1 Defining Existing versus New Emission Units 5-2*
     - *5.1.2 Annual Emission Increase Calculation Methodology 5-2*
     - *5.1.3 Baseline Actual Emissions (BAE) 5-3*
     - *5.1.4 Projected Actual Emissions (PAE) 5-4*
     - *5.1.5 Proposed Project Emissions Increases 5-5*
   - 5.2 Project Emissions (Applicability) Summary 5-7

6. BEST AVAILABLE CONTROL TECHNOLOGY

APPENDIX A. AIR QUALITY PERMIT APPLICATION FORMS

APPENDIX B. COMPLIANCE REVIEW FORM

APPENDIX C. EMISSION CALCULATIONS

APPENDIX D. PROCESS FLOW DIAGRAM

APPENDIX E. SITE MAP

LIST OF TABLES

Table 4-1. NSR Evaluation Step 1 – Project Increases 4-2

Table 5-1. PSD Significant Emission Rates 5-2

Table 5-2. Project Emissions Summary 5-6

Table 6-1. RBLC Search Summary 6-1

1. EXECUTIVE SUMMARY

United States Steel Corporation (U. S. Steel) operates the Mon Valley Works, which consists of three facilities in Allegheny County, Pennsylvania: the Clairton Plant, which produces coke and coke by-products, the Edgar Thomson Plant, an integrated iron and steel facility in Braddock, and the Irvin Plant, a steel finishing plant in Dravosburg; and a fourth facility, the Fairless Plant, a steel finishing plant located outside of Philadelphia, Pennsylvania.

Settlement Agreement and Order No. 190601 between the Allegheny County Health Department (ACHD) and U. S. Steel (amended on February 5, 2020) requires U. S. Steel to submit an application for an installation permit for replacement of the Pushing Emissions Control (PEC) Baghouse System for Batteries 13-15 and 19-20 for improved capture and control of particulate matter (PM). The proposed project will replace the 2nd Unit PEC Baghouse System at the Clairton Plant, which captures/controls PM emissions from pushing operations at Batteries 13-15 (P052) and 19-20 (P053). The current system consists of ten modules, with five modules dedicated to Batteries 13-15; and five modules dedicated to Batteries 19-20. In addition to improved capture equipment, the new system will improve control, as it will consist of twelve modules that are interchangeable between the two sets of batteries. This project is an air pollution control project with no upstream or downstream impact to production/operations of the source.

The Clairton Plant is located in the City of Clairton, Pennsylvania and is currently authorized to operate by Title V Operating Permit No. 0052 issued by ACHD. The Clairton Plant is an existing major source of nitrogen oxides (NO_X), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (PM), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), hazardous air pollutants (HAPs), and volatile organic compounds (VOCs), as defined in §2101.20 of Article XXI. Allegheny County, or portions of it, is currently designated as nonattainment for SO_2 and $PM_{2.5}$.

U. S. Steel is proposing to replace the 2nd Unit PEC Baghouse System which will ultimately result in improved capture and control efficiency of fugitive pushing emissions. As a benefit of the proposed project, there will be a net decrease in actual emissions of particulate matter (PM), particulate matter less than 10 microns (PM_{10}) and fine particulate matter ($PM_{2.5}$). The project emissions are below the Significant Emission Rate (SER) thresholds for triggering a major modification for all regulated New Source Review (NSR) pollutants.

This application is for an Installation Permit requesting authorization to construct the proposed project. The required application elements are organized as follows:

- Section 2: Project Description
- Section 3: Emission Calculations
- Section 4: Regulatory Applicability Analysis
- Section 5: New Source Review (NSR) Applicability Analysis
- Section 6: Best Available Control Technology (BACT) Summary
- Appendix A: Air Quality Permit Application Forms
- Appendix B: Compliance Review Form
- Appendix C: Emission Calculations
- Appendix D: Process Flow Diagrams
- Appendix E: Site Map

2. PROJECT DESCRIPTION

The proposed project involves replacing the 2nd Unit PEC Baghouse System (comprised of Title V Permit Source IDs P052 and P053) which controls pushing emissions from existing Batteries 13, 14 and 15 and Batteries 19 and 20. The existing Batteries 13, 14, and 15 consist of 61 ovens per battery for a total of 183 ovens. Batteries 19 and 20 consist of 87 ovens per Battery for a total of 174 ovens. The batteries will not be modified as part of this project and there will be no operational change to these sources as a result of the project.

These Batteries each utilize a moveable hood car/fixed duct system to collect emissions during the oven pushing operation. These systems consist of a hood that covers the quench car and mates with an enclosed guide. The hood connects to a duct which in turn is connected to a PEC baghouse. During the push, gases are drawn from the coke guide and quench car into the hood where they are channeled to the exhaust duct and to a fixed, pulse jet baghouse system. Each battery group is equipped with one quench car that receives the hot coke from pushing, one moveable hood placed over the door opening on the coke side of the oven and multiple oven door machines. The quench car is spotted opposite the oven to be pushed with the hood placed over the opening of the quench car. The door machine removes the oven door. The PEC Baghouse System is connected to receive hot gases as the hot coke is pushed out of the oven and into the quench car.

The 2nd unit PEC Baghouse System was originally installed in 1990. The existing baghouse for each battery group includes a mass air cooler, five (5) bag modules each with their own fan and stack with a combined total design flow of 115,000 acfm, Programmable Logic Control (PLC) computer control system, structural support, foundations, electrical sub-station, compressed air and fire protection, control house, and dust handling system. The movable hood car travels on the top of a collection duct which is located along the length of the coke batteries.

Based on engineering design, this project will increase the operating volume of the PEC Baghouse System to 155,000 acfm for each battery group, resulting in increased particulate emission capture performance. The fugitive particulate matter capture efficiency is expected to improve/increase from 90% to at least 95%. To achieve the 155,000 acfm target volume, the new PEC Baghouse System will include 6 modules per side and a new exhaust duct between the hood car collection duct to the inlet of the mass cooler that includes a larger round duct. The ten existing individual module fans will be replaced with two new larger fans that will draw emissions from both 13-15 and 19-20 Battery pushing emissions capture exhaust systems and through the twelve new modules, and out a common discharge stack. The proposed common discharge stack will provide improved dispersion to which all the baghouse modules will exhaust, rather than the existing configuration of individual module exhaust stacks/vents. The system will include a spare fan. Additional work on the PEC Baghouse System infrastructure and components to accommodate the project and promote equipment reliability will include, but not be limited to, modifying or replacing the belt or collection duct, enlarging the duct including expansion joints; modifying collection duct support steel, as required; and application of corrosion resistant coating of the baghouse modules.

In addition to installing the new baghouse system as noted above, U. S. Steel will modify the hood car and coke guide to increase both fume capture and reliability. The modifications will improve fume capture by reducing velocities and pressure losses resulting in improved flow characteristics within the capture hoods. Additional improvements to ensure hood car reliability and availability will be made as well.

There will be no changes to the battery coke oven operations as part of this project. The scope of the project is limited to the improved capture/control of pushing emissions and subsequent reduction in fugitive particulate emissions from coke oven pushing operations at Batteries 13, 14, 15, 19 and 20.

3. EMISSION CALCULATIONS

The characteristics of baseline and future projected actual air emissions from the proposed project, along with the methodology used for calculating emissions, are described in narrative form below. Detailed supporting calculations are also provided in Appendix C.

The air emissions quantified for this project are those resulting from the operation of the existing 2nd Unit PEC Baghouse System and the existing, uncaptured PEC fugitive emissions. As this project is an air pollution control project with no upstream or downstream impact to production/operations of the source, emissions considered in this analysis are limited to the following:

- Pushing emissions (PEC baghouse and fugitive emissions) from Batteries 13, 14 and 15; and
- Pushing emissions (PEC baghouse and fugitive emissions) from Batteries 19 and 20.

Past actual emissions from coke oven pushing operations at these Batteries have been calculated and reported using an estimated capture efficiency of 90%. As noted in Section 2 of this report, this project is expected to result in a significantly improved capture efficiency (95+% capture). The future projected actual emissions are based on this improved capture efficiency.

3.1 Criteria Pollutants

The 2nd Unit PEC Baghouse System utilizes a moveable hood car/fixed duct system to collect emissions during the oven pushing operation. These systems consist of a hood that covers the quench car and mates with an enclosed guide. The hood connects to a duct which in turn is connected to a baghouse. During the push, gases are drawn from the coke guide and quench car into the hood where they are channeled to the exhaust duct and to a fixed, pulse jet baghouse system. Particulate emissions from pushing fall under two categories:

1. Captured gases which are routed to the PEC baghouses and associated exhaust vent (i.e., stack emissions); and
2. Uncaptured gases (i.e., fugitive emissions).

With respect to pollutants, particulate matter (PM) emissions are the primary concern from pushing operations and those emissions are controlled, to the extent practical, through the PEC Baghouse System. The improved capture efficiency, and the routing of those capture emissions to the baghouse, will have the overall effect of reducing actual PM emissions. Battery operations and coke oven pushing practices will not change as part of the project.

The future projected actual emissions for non-PM pollutants are based on the latest emissions factors from annual emissions inventories. These factors have been carefully vetted by U. S. Steel and ACHD over the course of the extensive emissions reporting history of the site and are therefore appropriate for use in the future emissions estimates. Where these historical factors were based on 90% capture efficiency, the future emissions factors are now based on the post-project capture efficiency of 95% (i.e., emissions shift from fugitive to controlled stack emissions). This is clearly indicated in the Appendix C calculations.

With respect to PM filterable and PM condensable emissions from the PEC Baghouse System, projected actual annual average emissions of total PM (filterable + condensable) are based on a maximum outlet

grain loading of 0.008 grains per dry standard cubic foot (gr/dscf) and a total stack (i.e., baghouse total) expected hourly-average flowrate of 95,200 dscfm.

For PEC fugitive PM emissions, annual reported emissions (and associated factors) vary each year based on actual process (e.g., ball mill) throughput variations and the results of site-specific stack testing (i.e., every other year testing of PM emissions from the PEC Baghouse System). As such, the projected actual emissions are based on lb/ton coal factors derived from a statistical review of these previously relied upon site-specific factors, taking into account the estimated improvement in capture efficiency.

Finally, for GHG emissions from pushing operations, projected actual annual average emissions are based on the emission factor contained in 40 CFR 98.173(c), EPA's Mandatory Reporting Rule for the source category. For consistency, baseline emissions were computed using the same factor.

3.2 HAPS and Air Toxics

HAP emissions are regulated by U.S. EPA under Title III of the Clean Air Act Amendments of 1990 and comprise 187 compounds. In addition, Allegheny County regulates toxic air pollutants (TAP). The calculations contained within Appendix C of this application include projected actual emissions of TAP and HAP. Given the nature of this project, the projected actual emissions were based on the emission factors used in the annual emissions inventory (2019 emission factors) and were updated to account for the increased capture efficiency, where appropriate (i.e., where the factor was previously based on the current capture efficiency).

Ultimately, there is no increase in potential emissions of these pollutants since the schedule and intensity of operations for the affected batteries will not change based on the project (i.e., any change in operations are wholly unrelatedly to the project and would be driven by future market conditions). In actuality, there will be a slight decrease in total HAP/TAP due to the improved capture efficiency resulting from this project and the passage of capture metal HAP/TAP through the baghouse filters (e.g., see lead calculations in Appendix C).

4. REGULATORY APPLICABILITY ANALYSIS

This section documents the applicability determinations made for state, local and Federal air quality regulations. Applicability or non-applicability of the following regulatory programs is addressed:

- New Source Review (Prevention of Significant Deterioration/Nonattainment New Source Review);
- New Source Performance Standards (NSPS);
- National Emission Standards for Hazardous Air Pollutants (NESHAP); and
- Allegheny County Health Department air quality regulation (Article XXI).

In addition to providing a summary of applicable requirements, this section of the application also provides non-applicability determinations for certain regulations, allowing ACHD to confirm that identified regulations are not applicable for this project. Note that explanations of non-applicability are limited to those regulations for which there may be some question of applicability to specific operations associated with the project. Regulations that are categorically non-applicable are not discussed (e.g., NSPS Subpart J, Standards of Performance for Petroleum Refineries).

4.1 New Source Review Applicability

The federal NSR program regulates the installation of new major sources or major modifications to existing major sources. The NSR permitting regulations are comprised of two (2) programs: 1) Prevention of Significant Deterioration for projects located in areas where specified pollutant levels have met National Ambient Air Quality Standards (NAAQS); and 2) Nonattainment New Source Review (NNSR) for projects located in areas where pollutant levels have not attained the corresponding NAAQS.

4.1.1 Major Source Status

The Clairton Plant is an existing major source located in the City of Clairton, Allegheny County, Pennsylvania which is currently designated as being in non-attainment with the National Ambient Air Quality Standards (NAAQS) for SO_2 and $PM_{2.5}$. In addition, because the county is located within the Ozone Transport Region (OTR), the area is considered non-attainment for ozone precursor pollutants (NO_X and VOC). Therefore, both Non-Attainment New Source Review (NNSR) and Prevention of Significant Deterioration (PSD) permitting requirements are potentially applicable to the proposed project. As an existing major source, a major modification under NSR is triggered when a project results in a net increase in emissions for any regulated pollutant greater than the respective significant emission rate (SER).

4.1.2 NSR Analysis

ACHD's Article XXI regulations adopt the Federal PSD permitting procedures from 40 CFR §52.21 and the state NNSR permitting procedures from 25 PA Code §127.203. To determine the major NSR applicability for the project under these two programs, the steps outlined in the U.S. EPA's NSR Workshop Manual, pages A.46-49 were generally followed. A traditional NSR applicability analysis is based on two steps: (1) determining emissions increases from the proposed project; and if increases are greater than the corresponding SER for any pollutant; (2) determining the net emissions increases from the proposed project and other contemporaneous changes at the facility. These steps are discussed in more detail in Section 5. A summary of the project emissions increases as compared to the SERs is provided in Table 4-1. Detailed emission calculations for all sources are included in Appendix C.

Table 4-1. NSR Evaluation Step 1 – Project Increases

Pollutant	Project Increase (tpy)[1]	NSR SER (tpy)	NSR Major Modification?
PM	0.0	25	**NO**
PM_{10}	0.0	15	**NO**
$PM_{2.5}$	9.9	10	**NO**
Lead	-1.0E-3	0.6	**NO**
SO_2	39.2	40	**NO**
NO_X	6.1	40	**NO**
CO	12.5	100	**NO**
VOC	0.5	40	**NO**
Ammonia	0.1	40	**NO**
CO_2e	3,178.8	75,000	**NA**[2]

4.2 New Source Performance Standards

New Source Performance Standards (NSPS), located in 40 CFR 60, require new, modified, or reconstructed sources to control emissions to the level achievable by the best demonstrated technology as specified in the applicable provisions. Moreover, any source subject to an NSPS is also subject to the general provisions of NSPS Subpart A, except where expressly noted. All NSPS are categorically not applicable to the proposed project.

4.3 National Emission Standards for Hazardous Air Pollutants (NESHAP)

National Emission Standards for Hazardous Air Pollutants (NESHAPs), located in 40 CFR 61 and 63 are applicable to major sources of HAPs and certain designated area sources of HAPs. A major source of HAP is one with potential emissions in excess of 25 tpy for total HAPs and/or potential emissions in excess of 10 tpy for any individual HAP. The Clairton Plant is an existing major source of HAP since its potential emissions of HAP are greater than the major source thresholds. NESHAP apply to sources in specifically regulated industrial source categories (Clean Air Act Section 112(d)) or on a case-by-case basis (Section 112(g)) for facilities not regulated as a specific industrial source type.

The following is a summary of applicability and non-applicability determinations for NESHAP regulations of relevance to the proposed project.

4.3.1 NESHAP Subpart A – General Provisions

NESHAP Subpart A, General Provisions, contains national emissions standards for HAP defined in Section 112(b) of the Clean Air Act. All affected sources, which are subject to another NESHAP, are subject to the general provisions of NESHAP Subpart A, unless specifically excluded by the source specific NESHAP.

[1] Note that any increase in emissions shown in the analysis is due to the required methodologies for performing NSR applicabillity determinations. Actual PM emissions are expected to be reduced as a result of this project and other pollutants would not be impacted by the project.

[2] Per 40 CFR §52.21(b)(49)(iv), as an existing major stationary source, the pollutant GHGs (CO2e) is only subject to PSD if there is an emissions increase of a regulated NSR pollutant **AND** an emissions increase of 75,000 tpy CO2e or more. Since there is no emissions increase of a regulated NSR pollutant, PSD is not triggered for CO2e.

4.3.2 NESHAP Subpart L – Coke Oven Batteries

NESHAP Subpart L applies to existing and new coke oven batteries. The batteries for which the pushing emissions control project pertains are not being modified themselves and are already subject to this Subpart. The appropriate provisions of Subpart L are already contained within the site's Title V permit and there are no changes in regulatory applicability of this subpart as a result of the project.

4.3.3 NESHAP Subpart CCCCC – Coke Ovens: Pushing, Quenching and Battery Stacks

NESHAP Subpart CCCCC establishes HAP standards for pushing, soaking, quenching, and battery stacks at coke oven batteries. Emissions from the batteries are already subject to the following, non-exhaustive, list of requirements under this rule:

- PM (filterable) emissions to the atmosphere from the baghouse stack(s) must not exceed 0.02 lb/ton of coke [40 CFR 63.7290(a)(2)];
- Maintain (monitor and record) 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 or maintain (monitor and record)) the daily average fan motor amperes at or above the minimum level established during the initial performance test [40 CFR 63.7290(b)(3); 40 CFR 63.7330(d)];
- Perform, and record, opacity observations of fugitive pushing emissions in accordance with 40 CFR 63.7291(a) to ensure compliance with opacity limitations spelled out in this section of the rule;
- Prepare and operate at all times according to a written operation and maintenance plan for each PECS which includes provisions for monthly inspections, preventative maintenance and corrective actions [40 CFR 63.7300(c)];
- Establish site-specific operating limits for either fan motor amperes or volumetric flow rate [40 CFR 63.7323(c)];
  - Operating limits may be changed through the procedures of 40 CFR 63.7323(e) and U. S. Steel will evaluate whether such change procedures need to be enacted as a result of this project.
- Use, monitor and maintain a bag leak detection system [40 CFR 63.7330(a); 40 CFR 63.7331(a)];
- Develop a site-specific monitor plan for each continuous parametric monitoring system (CPMS) [40 CFR 63.7331(b) through (d)];
- Conduct performance tests no less frequently than twice during each term [40 CFR 63.7321, 40 CFR 63.7322, 40 CFR 63.7333(a)];

The applicable parts of Subpart CCCCC are already incorporated into the site's Title V permit and there is no change to the regulatory applicability of this Subpart as part of the project. However, as noted, U. S. Steel will review and update its existing site-specific plans and operating limits to ensure that they remain valid for the PEC Baghouse System described in this application. Notification of changes will be provided to the Department, if required by the rule (e.g., if operating limits change).

4.3.4 Non-Applicability of All Other NESHAP

NESHAP standards are developed for particular industrial source categories, and the applicability of a particular subpart to a facility can be readily ascertained based on the industrial source category covered. All other NESHAP subparts are categorically not applicable to the proposed project.

4.4 Article XXI Applicability

The Allegheny County Air Pollution Control Regulations (from Article XXI) that are potentially applicable to the sources associated with the proposed project are outlined below. Note that the project does not change the applicability of, or requirements from, the regulations.

4.4.1 Article XXI §2104.04 - Odor Emissions

Under this regulation, malodors are prohibited beyond the property line. U. S. Steel will ensure that the facility does not emit malodors beyond the property line through proper operation and maintenance of equipment.

4.4.2 Article XXI §2104.08 - National Emission Standards for Hazardous Air Pollutants

The federal NESHAP and MACT requirements are incorporated into ACHD regulations by reference. The potentially applicable regulations are discussed in Section 4.3 above.

4.4.3 Article XXI §2105.03 - Proper Operation and Maintenance of Air Pollution Equipment

All required air pollution control equipment must be properly installed, operated and maintained consistent with good air pollution control practices. The proposed project scope includes replacements of emissions controls, which will improve overall control performance. All equipment will be operated and maintained in accordance with manufacturer's recommended emissions-related instructions and site-specific plans developed for the equipment (e.g., plans required by 40 CFR 63 Subpart CCCCC).

4.4.4 Article XXI §2105.21 – Coke Ovens and Coke Oven Gas

Under §2105.21.e. of this regulation, pushing emissions limits are specified for coke oven batteries as is the requirement to have a pushing emissions control device. The following limits apply from this section:

- PM limited to 0.01 gr/dscf from the control device for Battery 19 [2105.21.e.2];
- PM limited to 0.04 lb/ton coke from the control device for Battery 13, 14, 15 and 20 [2105.21.e.3]; and
- Fugitive pushing emissions or emissions from the control device shall not equal or exceed 20% opacity with possible exception [2105.21.e.4].

The current Title V permit already contains these applicable requirements and this project will not jeopardize compliance with them.

4.4.5 ACHD Air Toxics Policy

ACHD has county-specific guidelines for addressing toxic air contaminants contained in the "Policy for Air Toxics Review of Installation Permit Applications", hereafter referred to as the "Policy". The Policy was adopted on November 7, 2012 by the Allegheny County Board of Health and amended on January 9, 2013.[3] The Policy provides a definitive method of evaluating the potential impact of air emissions of toxic contaminants from projects that require the submittal of an Installation Permit application within Allegheny County.

[3] https://alleghenycounty.us/uploadedFiles/Allegheny_Home/Health_Department/Programs/Air_Quality/ATG_final_2013-01-09_boh.pdf

The Policy applies when a project is expected to increase the net potential air toxics emissions from the facility into the ambient air and do not belong to any one of the following categories:

- Projects resulting in an emissions increase less than the de minimis levels;
- Projects that are solely for the installation or in-kind replacement of pollution control device;
- Exempt activities such as those in Article XXI 2102.04.a.5; or
- Projects that include equipment where EPA has published risk assessment guidance (e.g., Municipal Waste Combustors).

As noted in Section 3.2, there will be no increase in potential emissions of toxic air contaminants as a result of this project and in fact there may be a slight decrease in HAP metals. Since there will be no net increase in potential emissions of these constituents, and considering the nature of the project (replacement of an air pollution control device), the Policy does not apply to this project.

5. NSR APPLICABILITY ANALYSIS

This section presents the detailed New Source Review (NSR) applicability analysis for the proposed project, with a particular focus on determining whether the project constitutes a major modification under either PSD or NNSR. As described in Section 2 of this report, the project involves upgrading of the existing 2nd Unit PEC Baghouse System, which controls pushing emissions from existing Batteries 13, 14 and 15 and Batteries 19 and 20 at the Clairton. As this project is an air pollution control project with no upstream or downstream impact to production/operations of the source, emissions considered in this analysis are limited to the following:

- Pushing emissions (PEC baghouse and fugitive emissions) from Batteries 13, 14 and 15; and
- Pushing emissions (PEC baghouse and fugitive emissions) from Batteries 19 and 20.

This analysis demonstrates that the project will not result in an emissions increase that constitutes a major modification as defined under NSR.

5.1 NSR Permitting Applicability Procedures

If a major source will undergo a physical or operational change, the applicant must review that project to determine if it results in a significant emissions increase (Step 1) and a significant net emissions increase of a regulated air pollutant (Step 2). If both the project's increase and the net emissions increase are significant, then PSD or NNSR permitting is required depending on the attainment status of the regulated air pollutant resulting in the significant net emissions increase. A significant net emissions increase is defined as a net emissions increase resulting from a modification at a major source that exceeds the established SER for that pollutant. Table 5-1 identifies the NSR regulated pollutants evaluated for this project and their associated SERs.

Appendix C is provided as a detailed assessment of the calculations forming the basis for the applicability determination discussed in this section and demonstrates that there is not a significant emissions increase in Step 1. The procedures used to make these determinations are consistent with 40 CFR §52.21 and 25 Pa Code §§127.203 – 204, which are incorporated by reference in Article XXI.

Table 5-1. PSD Significant Emission Rates

Pollutant[4]	Significant Emission Rate (Tons/Year)	Regulated Under PSD or NNSR?
PM	25	PSD
PM_{10}	15	PSD
$PM_{2.5}$	10	NNSR
Lead	0.6	PSD
SO_2	40	NNSR (and $PM_{2.5}$ precursor)
NO_X	40	NNSR (ozone and $PM_{2.5}$ precursor)
CO	100	PSD
VOC	40	NNSR (ozone and $PM_{2.5}$ precursor)
Ammonia	40	NNSR ($PM_{2.5}$ precursor)
CO_2e	75,000	PSD

The following sections discuss the methodology used to assess NSR applicability. The NSR permitting program generally requires that a source obtain a permit and undertake other obligations prior to construction of any project at an industrial facility if the proposed project results in the potential to emit air pollution in excess of certain threshold levels. ACHD has incorporated by reference 40 CFR §52.21 as well as 25 Pa Code §§127.203 - 204.

5.1.1 Defining Existing versus New Emission Units

Different calculation methodologies are used for existing and new units; therefore, it is important to clarify whether a source affected by the proposed project is considered a new or existing emission unit.

40 CFR §52.21(b)(7)(i) and (ii), as well as 25 PA Code §121.1, define new unit and existing units:

> *(i) A new emissions unit is any emissions unit that is (or will be) newly constructed and that has existed for less than 2 years from the date such emissions unit first operated.*
>
> *(ii) An existing emissions unit is any unit that does not meet the requirements in paragraph (b)(7)(i) of this section. A replacement unit, as defined in paragraph (b)(33) of this section, is an existing emissions unit.*

This project only involves existing units, the pushing emissions from the batteries and the associated control equipment.

5.1.2 Annual Emission Increase Calculation Methodology

As the facility is classified as an existing major source for NSR, if the project were classified as a *major modification*, then the full NSR permitting requirements would apply. U. S. Steel has determined the project

[4] The proposed project is not expected to increase emissions of any other NSR regulated pollutants (e.g., CFCs).

emissions increase in accordance with EPA and state guidance to determine if the proposed project is a major modification. The methodology outlined in 25 Pa Code §127.203a(a)(1)(i) was relied upon for conducting this applicability analysis for nonattainment pollutants. For PSD, the procedures of 40 CFR §52.21 have been followed.

§127.203a(a)(1)(i)(A) provides the emission increase calculation method for existing units:

> (A) *For existing emissions units, an emissions increase of a regulated NSR pollutant is the difference between the projected actual emissions and the previous actual emissions for each unit, as determined in paragraphs (4) and (5). When calculating an increase in emissions that results from the particular project, exclude that portion of the unit's emissions following completion of the project that existing units could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that is also unrelated to the particular project, including all increased utilization due to product demand growth as specified in paragraph (5)(i)(C).*

Major modification is defined by 40 CFR §52.21(b)(2)(i) and 25 Pa Code §121 as:

> *"Major Modification" means any physical change in or change in the method of operation of a major stationary source that would result in a significant emission increase … of a regulated NSR pollutant … and a significant net emissions increase of that pollutant …*

As the project is classified as a physical change, the project needs to be analyzed to determine if a significant emissions increase, or a significant net emissions increase will occur. The first step (Step 1) is commonly referred to as the "project emission increases" as it accounts only for emissions changes related to the proposed project itself. If the emission increases estimated per Step 1 exceed the major modification thresholds, then the applicant may move to Step 2, commonly referred to as "netting". The netting analysis includes all projects for which emission increases or decreases have occurred or will occur during a period of time contemporaneous to the project. If the resulting net emission increases exceed the major modification threshold, then NSR permitting is required. These basic procedures are the same for both PSD and NNSR. As demonstrated in Appendix C the project does not result in a significant emissions increase in Step 1 and therefore "netting" (Step 2) is not required.

5.1.3 Baseline Actual Emissions (BAE)

For the purposes of NNSR, baseline actual emissions are defined in 25 Pa Code §127.203a(a)(4)(i) as follows:

> *For an existing emissions unit, baseline actual emissions are the average rate, in TPY, at which the unit emitted the regulated NSR pollutant during a consecutive 24-month period selected by the owner or the operator within the 5-year period immediately prior to the date a complete plan approval application is received by the Department. The Department may approve the use of a different consecutive 24-month period within the last 10 years upon a written determination that it is more representative of normal source operation....*

Per §127.203a(a)(4)(i)(D), when a project involves multiple emission units, only one consecutive 24-month period may be used to determine the baseline actual emissions for all of the emission units being changed.

However, there are provisions to use a different consecutive 24-month period can be used for each pollutant.

U. S. Steel elected to use the 24 consecutive calendar months, as reported in annual emissions report (i.e., annual totals), in each of the selected baseline periods for simplicity and did not seek to evaluate each 24-calendar month period in the last 5 years. A baseline period of 2014 and 2015 was selected for all non-attainment pollutants.

ACHD adopts by reference EPA's PSD program outlined in 40 CFR §52.21. For the PSD program, baseline actual emissions for an emissions unit, other than an electric utility steam generating unit, are defined in 40 CFR §52.21(b)(48)(ii)

> *…the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 10-year period immediately preceding either the date the owner or operator begins actual construction of the project, or the date a complete permit application is received by the Administrator …*

Further clarification is given that only one consecutive 24-month period may be used to determine the baseline for all the emission units being changed but that a different period can be used for each regulated pollutant. U. S. Steel computed actual baseline emissions for PSD pollutants following this procedure and selected the following as baseline periods:

- PM = 2017 and 2018;
- PM_{10} = 2017 and 2018;
- CO = 2011 and 2012;
- NO_2 = 2017 and 2018;
- GHG = 2011 and 2012; and
- Lead = 2011 and 2012.

5.1.4 Projected Actual Emissions (PAE)

Projected actual emissions is defined by 25 Pa Code §121.1 as:

> *The maximum annual rate in TPY at which an existing emissions unit is projected to emit a regulated NSR pollutant, as determined in accordance with* §127.203a(a)(5).

25 Pa Code §127.203a(a)(5) expands upon the definition saying:

> *Projected actual emissions is the maximum annual rate, in TPY, at which an existing emissions unit is projected to emit a regulated NSR pollutant in any one of the 5 years (12-month period) following the date the unit resumes regular operation after the project, or in any one of the 10 years following that date, if the project involves increasing the emissions unit's design capacity or its potential to emit of that regulated NSR pollutant and full utilization of the unit would result in a significant emissions increase or a significant net emissions increase at the major facility. The following procedures apply in determining the projected actual emissions of a regulated NSR pollutant for an emissions unit, before beginning actual construction on the project:*
>
> *(i) The owner or operator of the major facility shall:*

(A) Consider all relevant information, including, but not limited to, historical operational data, the company's own representations, the company's expected business activity and the company's highest projections of business activity, and the company's filings with the State or Federal regulatory authorities.

(B) Include fugitive emissions to the extent quantifiable, and emissions associated with startups and shutdowns.

(C) Exclude, in calculating any increase in emissions that results from the particular project, that portion of the unit's emissions following completion of the project that existing units could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that is also unrelated to the particular project, including any increased utilization due to product demand growth.

Projected actual emissions are calculated using the throughput and production levels for Batteries 13, 14 and 15 and Batteries 19 and 20 that were accounted for in the design of the replacement PEC baghouses (i.e., company expectation of highest projection of business activity for the equipment in question).

For this project, any increase in production levels that result in an air emissions increase will be unrelated to the project since the project has no bearing on production levels and more fugitive PM emissions would ultimately be captured and controlled. However, as a conservative measure, U. S. Steel walked through each step of the NSR applicability determination. In computing the projected actual emissions, U. S. Steel also determined the excludable emissions that could have been accommodated during the baseline period (see Tables C3a and C3b).

5.1.5 Proposed Project Emissions Increases

The following sections summarize the methods used to estimate the emissions increases from the project for comparison to the NSR permitting major modification thresholds. The emissions increase for existing emissions sources is determined by the different between the baseline actual emissions and the expected new level of emissions, which takes into account demand growth exclusion (DGE).

The project emission increase (PEI) in the format of a formula is then:

PEI = (PAE – DGE) – BAE

Where:

PEI = Net Emission Increase
PAE = Projected Actual Emissions
DGE = Demand Growth Exclusion
BAE = Baseline Actual Emission Rates

Table 5-2 provides a summary of the result of this increase calculation for each emission unit and for the project. Detailed calculations are provided in Appendix C. As shown in theses summaries, the analysis ends at this first step and there is no need to perform a "netting", or Step 2, analysis.

Table 5-2. Project Emissions Summary

Pollutant	PSD /NNSR	Projected Actual Emissions (excluding DGE Emissions) (tpy)		Baseline Actual Emissions (tpy)		Project Emissions Increase (tpy)*		Total Increase (tpy)	Significant Emission Rates	Trigger NSR? (Yes/No)
		Pushing from Batteries 13 – 15	Pushing from Batteries 19 – 20	Pushing from Batteries 13 – 15	Pushing from Batteries 19 – 20	Pushing from Batteries 13 – 15	Pushing from Batteries 19 – 20	Sum of Emissions Changes (tpy)	Significant Emission Rates	Trigger NSR? (Yes/No)
PM	PSD	121.6	127.8	121.6	127.8	0.0	0.0	0.0	25	**No**
PM_{10}	PSD	56.7	59.6	56.7	59.6	0.0	0.0	0.0	15	**No**
$PM_{2.5}$	NNSR	34.8	33.9	28.5	30.3	6.3	3.6	9.9	10	**No**
Lead	PSD	4.5E-3	5.3E-3	5.0E-3	5.8E-3	-5.0E-4	-5.4E-4	-1.0E-3	0.6	**No**
SO_2	NNSR	24.0	27.5	6.1	6.2	17.9	21.3	39.2	40	**No**
NO_X	NNSR	10.8	11.5	8.0	8.1	2.8	3.3	6.1	40	**No**
CO	PSD	40.6	50.1	36.0	42.2	4.6	7.9	12.5	100	**No**
VOC	NNSR	1.0	0.8	0.7	0.6	0.2	0.2	0.5	40	**No**
Ammonia	NNSR	0.1	0.1	0.1	0.1	0.0	0.0	0.1	40	**No**
CO_2e	PSD	10,311.6	12,735.2	9,151.8	10,716.2	1,159.8	2,019.0	3,178.8	75,000	**NA**[5]

* - The calculated "increase" is the result of the required methodology and production data required to be used in the evaluation. However, as discussed in this report, the project does not affect production and is an emissions reduction project, with no emission increases resulting from the replacement of the baghouse.

[5] Per 40 CFR §52.21(b)(49)(iv), as an existing major stationary source, the pollutant GHGs (CO2e) is only subject to PSD if there is an emissions increase of a regulated NSR pollutant **AND** an emissions increase of 75,000 tpy CO2e or more. Since there is no emissions increase of a regulated NSR pollutant, PSD is not triggered for CO2e.

5.2 Project Emissions (Applicability) Summary

U. S. Steel determined the project emissions increase as the difference between the projected actual emissions and the baseline actual emissions and has excluded that portion of the emissions that could have been accommodated during the baseline period and which were unrelated to the project. This exercise was performed for each emissions unit (pushing emission system) and then summed for comparison to the SER. As shown in Table 5-2 and in Appendix C, the project emissions increase is less than the SER for all pollutants and therefore the project is not a major modification and not subject to major PSD/NNSR permitting.

6. BEST AVAILABLE CONTROL TECHNOLOGY

As part of the permit application process for the new equipment, U. S. Steel has conducted a BACT review. Given the nature of the project (i.e., replacement to an existing PM emissions control system), the review was limited to PM emissions.

With respect to pushing-related PM emissions from coke oven batteries, U. S. Steel reviewed any entries in EPA's RACT/BACT/LAER Clearinghouse (RBLC) since 1970 as well as applicable rules (see Section 4). Table 6-1 provides a summary of the RBLC search with **emphasis** added for those operations with baghouse control.

Table 6-1. RBLC Search Summary

Facility Name	Permit Date	PM Emission Limit (lb/ton coke / gr/dscf)	Control Description
Bethlehem Steel Corp.	1979	0.03 / 0.03	Not specified
Inland Steel Co.	1980	0.02 / NA	Not specified
Granite City Steel	1981	0.04 / NA	Enclosed quench car with scrubber system
Republic Steel Corp.	1983	0.06 / NA	Enclosed quench car with scrubber system
Haverhill North Coke Co.	2001	**0.05**[a] / NA	Cokeside shed and baghouse
FDS Coke	2004	**0.04** [a]/ NA	Moveable hood with baghouse and flat bed car pushing
Gateway Energy & Coke Company	2008	0.08/ NA	Movable hood with multiclone
Clairton Coke Works	2008	**0.02 / 0.005**	Moveable hood with baghouse
Nucor Steel Louisiana	2010	0.04/ NA	Flat bed car pushing technology
Middletown Coke Co.	2010	**0.04**/ NA	Baghouse

a. Limits are listed as lb/ton coal in the RBLC. A 75% coal to coke conversion rate was assumed to derive equivalent lb/ton coke rates.

The lowest emissions levels with documented controls in the RBLC are those associated with baghouse control of pushing emissions, which the 2nd Unit PECS already employs. Furthermore, the project equipment is already subject to a 0.02 lb/ton coke emission factor for filterable PM, which represents the lowest end of the range of values in the RBLC. The projected emissions associated with the project are also predicted on a baghouse outlet filterable PM emission rate of 0.004 gr/dscf. This rate is significantly lower than any other specified gr/dscf factor in the RBLC. As such, U. S. Steel proposes that BACT be established as follows for this permitting action:

- Continued use of movable hoods and baghouse technology; and
- PM filterable from the baghouse outlet limited to 0.004 gr/dscf.

Compliance will be verified through baghouse stack testing performed every two years.

APPENDIX A. AIR QUALITY PERMIT APPLICATION FORMS

ALLEGHENY COUNTY HEALTH DEPARTMENT

AIR QUALITY PERMIT APPLICATION FORM

SECTION 1. PERMIT DESCRIPTION

Check Type of Permit:		
	Installation	**Operating**
Initial		
New Construction	**X**	
Major Modification		
Minor Modification		
Reactivation		
Temp.Source/Multi.Loc		
New Permit		
Renewal		
Adm. Permit Amend.		
Other (Explain Below)		

This permit application is for a:	
Major Source	**X**
Minor Source	
Synthetic Minor Source (See Section 10)	
Amount enclosed: **$1,700 for IP**	

FOR ACHD USE ONLY

Permit Number: _____

Completeness: _____

Administration: _____

Engineering: _____

Assigned to: _____

Brief Description of Permit Application/Source:
Pushing Emission Control (PEC) baghouse replacement for Batteries 13 through 15 and 19-20. Project includes construction of a new common stack.

SECTION 2. APPLICANT INFORMATION

Applicant Type Code	Applicant Name or Registered Fictitious Name	FOR ACHD USE ONLY
01	United States Steel Corporate, Mon Valley Works	

First Name	M. I.	Last Name
Kurt		Barshick

Title General Manager, Mon Valley Works

Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #)
P.O. Box 878

Relationship of Applicant to Permitted Activity. See instructions for appropriate code.

City	State	Zip Code + Extension
Dravosburg	PA	15034

Telephone 412-675-2600	FAX 412-675-5407	E-mail kbarshick@uss.com

SECTION 3. SITE INFORMATION

Facility Site Name	Federal Tax Identification Number
U. S. Steel Clairton Plant	25-0996816

Address (Street #, Street Prefix, Street Name, Street Type, Street Suffix) ***P. O. BOX # IS NOT ACCEPTABLE***
400 State Street

Municipality	State	Zip Code + Extension
Clairton	PA	15025-1855

Telephone (Day) 412-233-1003	Telephone (Eve.) 412-233-1035	FAX 412-233-1004

SECTION 3. (cont.)

MAP LOCATION: Please provide the Universal Transverse Mercator (UTM) coordinates or the exact latitude and longitude of the plant. UTM coordinates are preferable to latitude and longitude and can be determined from US Geological Survey 7.5 Minute 1:24,000 scale maps.

Attach a drawing of your source showing all emission points. Number each stack S001, S002, S003, etc., and number each fugitive emission location F001, F002, etc. Identify roads as paved or unpaved, marking all parking lots (see Form E). Identify the plant boundary on the map. Include local roads and other necessary identifiers that will allow the Department to locate your source on County-wide maps.

UTM North _____ Or Latitude 40 Degrees 18 Minutes 22.72 Seconds NORTH

UTM East _____ Or Longitude 79 Degrees 52 Minutes 43.27 Seconds WEST

PLANT PROPERTY 392 Acres or _____ Square feet

BUILDING AREA _____ Acres or _____ Square feet

GIVE TRAVEL DIRECTIONS FROM DOWNTOWN PITTSBURGH:

From ACHD's office, turn left onto 40th St. Take ramp left for PA-28 South toward Pittsburgh. Take ramp right for I-579 South toward Monroeville. Bear right onto Crosstown Blvd and proceed over Liberty Bridge and through Liberty Tunnel. Bear right onto W. Liberty Ave. and take ramp on right for PA-51 South toward Uniontown. Bear Right onto PA-51/Saw Mill Run Blvd and proceed approximately 13 miles. Take ramp left for PA-837 North toward Clairton and bear right onto PA-837. Proceed approximately 0.5 mile and the site will be on your right.

DESCRIPTION OF BUSINESS

GIVE A BRIEF DESCRIPTION OF BUSINESS OR ACTIVITY CARRIED OUT AT THIS LOCATION:
Iron and steel making – by-products coke plant

PRINCIPAL PRODUCT(S):
Coke

APPROXIMATE NUMBER OF EMPLOYEES: ~1300

If employment is seasonal, give the typical peak employment and indicate what season.

STANDARD INDUSTRIAL CLASSIFICATION (SIC) CODE FOR THIS LOCATION:
If there is more than one activity at this location, provide the Standard Industrial Code (SIC) for the principal activity, and other SIC codes in descending order of importance.

Primary SIC Code: 33 Primary activity: Primary Metal Industries

Secondary SIC Code: _____ Secondary activity: _____

Tertiary SIC Code: _____ Tertiary activity: _____

SECTION 4. ENVIRONMENTAL CONTACT		
First Name Mike	M. I.	Last Name Dzurinko
Title Environmental Manager		
Telephone (412) 233-1467		FAX (412) 233-1011
Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #) 400 State Street		
City Clairton	State PA	Zip Code + Extension 15025-1855
E-mail mdzurinko@uss.com		

SECTION 5: APPLICABLE REQUIREMENTS

In this section, briefly describe all applicable federal, state, or local air rules or requirements pertaining to the facility or any part of the facility.

"Applicable requirements" can come from any of the following:

(i.) Regulations that have been promulgated or approved by the EPA under the Clean Air Act or the regulations adopted under the Clean Air Act through rulemaking at the time of issuance but have future-effective compliance dates.

(ii.) A regulation under Allegheny County Article XXI (Air Pollution Control), including those incorporated by reference.

(iii.) A term or condition of any installation or operating permits issued pursuant to the County air quality regulations.

(iv.) A standard or other requirement under Section 111 of the Clean Air Act, including subsection (d).

(v.) A standard or other requirement under Section 112 of the Clean Air Act (42 U.S.C.A. □ 7412), including any requirement concerning accident prevention under subsection (r) (7).

(vi.) A standard or other requirement of the acid rain program under Title IV of the Clean Air Act (42 U.S.C.A.□□ 7641 - 7651o) or the regulations promulgated under the Clean Air Act.

(vii.) Requirements established under Section 504(b) or Section 114(a)(3) of the Clean Air Act (42 U.S.C.A. □ 7414(a)(3).

(viii.) A standard or other requirement governing solid waste incineration, under Section 129 of the Clean Air Act (42 U.S.C.A. □ 7429).

(ix.) A standard or other requirement for consumer and commercial products, under Section 183(e) of the Clean Air Act (42 U.S.C.A. □ 7511b(e)).

(x.) A standard or other requirement for tank vessels, under Section 183(f) of the Clean Air Act (42 U.S.C.A. □ 7511b).

(xi.) A standard or other requirement of the program to control air pollution from outer continental shelf sources, under Section 328 of the Clean Air Act (42 U.S.C.A. □ 7627).

(xii.) A standard or other requirement of the regulations promulgated to protect stratospheric ozone under Title VI of the Clean Air Act (42 U.S.C.A. □□ 7671-7671q), unless the Administrator of the EPA has determined that such requirements need not be contained in a Title V permit.

(xiii.) A national ambient air quality standard or increment or visibility requirement under Title I, Part C of the Clean Air Act (42 U.S.C.A. □□ 7470-77491), but only as it would apply to temporary sources permitted pursuant to Section 504(e) of the CAA (42 U.S.C.A. □ 7661d).

Include any regulations that are final, but may require controls to be put on, or lower emission rates to come into effect in the future. Be as specific as necessary. For example, if you have boilers rated at 10, 70, and 100 MMBtu, then for sulfur dioxide emissions list Article XXI 2104.03 a.1, 2, and 3. When you complete the Forms for specific operations, you will be requested to repeat those requirements unique to that unit. Include general emission requirements, such as 2104.04, odor emissions, if they apply.

If there are any limitations on source operation affecting emissions or any work practice standards, provide details in this section. Include supporting documents, if necessary. If the facility is claiming any exemptions to a part of an applicable requirements stated above or any other requirements, clearly identify what section. Copy this page as needed, and attach these additional pages to this section.

An example of how Section 5.A might be completed:

Emission Regulation	**Description**
Art. XXI □ 2104.02.a.2	**PM** 0.40 #/10^6 BTU
Art. XXI □ 2104.03.a.1	**SO_2** 1.0 #/10^6 BTU
Art. XXI □ 2104.01.a	**Opacity** □20% for ≤3 min./hr. or 60% at no time
Art. XXI □ 2105.06.d.1	Low **NOx** Burners w/overfire air

List and summarize all applicable federal, state, or local air rules or requirements pertaining to the facility or any part of the facility. Also describe any regulated work practice standards that affect air emissions. Include any regulations that are in place, but have delayed deadlines for compliance. (COPY THIS PAGE AS NEEDED)

REGULATION	DESCRIPTION
40 CFR 63 Subpart CCCCC	Applies to pushing operations including proposed baghouse – no change in applicability
2104.05	Visible emissions – No visible emissions at or beyond property line
2105.21.e	PM and Visible emissions for each battery and requirement for PEC system (includes subsection 2, 3 and 4)

SECTION 6: METHOD OF DEMONSTRATING COMPLIANCE

List the method of demonstrating compliance with each of the emission standards (these may become conditions of the Operating Permit):

A. Compliance Method/ Monitoring Devices:

EMISSION UNIT #	POLLUTANT	REFERENCE TEST METHOD OR COMPLIANCE METHOD OR MONITORING DEVICE	FREQUENCY / DURATION OF SAMPLING
New Baghouse Stack	$PM/PM_{10}/PM_{2.5}$	Stack Test	Once every two years
New Baghouse Stack	Opacity	Visible Emissions Observation	Once every two years
Attach any details that would further explain the method of compliance.			

B. Record keeping and Reporting:

1. List what parameter will be recorded and the frequency of recording:

PARAMETER	FREQUENCY
Baghouse Differential Pressure	Weekly
Baghouse Maintenance Inspection and Repair	Upon Occurrence

2. Describe what is to be reported and the frequency of reporting? (Reports must be submitted at least every six (6) months)

DESCRIPTION	FREQUENCY
Actual emissions accounted for in annual emissions inventory	Annual
NESHAP (Subpart CCCCC) Reporting	Semi-annual

3. Beginning reporting date: __ /__ /__

COPY THIS PAGE AS NEEDED

SECTION 7: COMPLIANCE PLAN

A source may apply for and receive an Operating Permit if one or more emission units are out of compliance with a regulation, provided that an adequate plan is in place to bring the unit(s) into compliance.

A.__ 1. At the time of this permit application is your source in compliance with all applicable requirements, and do you expect your source to remain in compliance with these requirements during the permit duration (with the exception noted in item C)?

_X_ Yes __ No

2. Will your source be in compliance with all applicable requirements scheduled to take effect during the term of the permit, and will they be met by the applicable deadline?

_X_ Yes __ No

B.__ If you checked "No" for any question in Part A, please attach information identifying the requirement(s) and emission units for which compliance is not achieved, briefly describe how compliance will be achieved with the applicable requirement(s), and provide a detailed Schedule of Compliance (i.e., a schedule of remedial measures, including an enforceable sequence of actions with milestones and projected compliance dates). Title this portion of the document "Schedule M: Compliance Information". Indicate the frequency for submittal of progress reports (at least every six (6) months) and the starting date for submittal of progress reports.

C.__ Do you have scheduled shutdown of control equipment for maintenance while the emission units are still operating?

__ Yes _X_ No

If yes, attach a description of the equipment that will be taken out of service, what pollutants and emission sources are affected, the schedule and duration of the shutdown, and what actions will be taken to minimize emissions.

SECTION 8: OTHER PERMITS

Do you own or are you related to any other permitted company in Pennsylvania?

_X_ Yes __ No

If so, please list the company names:

U. S. Steel Mon Valley Works – Edgar Thomson Plant

U. S. Steel Mon Valley Works – Irvin Plant

U. S. Steel Mon Valley Works – Fairless Plant

SECTION 9: COMPLIANCE CERTIFICATION

You are required to submit a certificate of compliance with all applicable requirements and a method of determining compliance with those requirements (CEMS, monitoring, tests, record keeping and other reporting). Compliance certifications are to be submitted at least on an annual basis. Please answer the following:

Schedule for Submission of Compliance Certification during the term of the permit:

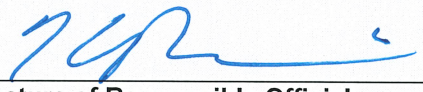
_X_ We will submit a Compliance Certification annually at the same time as the submittal of the annual administrative fee. OR

___ Beginning on: __ /__ /__

CERTIFICATION OF COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS

A "responsible official" must sign this certification. Applications without original signed certifications or necessary corporate authorizations will be returned as incomplete.

Except for the requirements identified in Section 7 for which compliance is not yet achieved, I hereby certify that, based on information and belief formed after reasonable inquiry, the source identified in this application is in compliance with all applicable air requirements.



Signature of Responsible Official

Kurt Barshick; General Manager MVW
Name and Title of Signer (Print or Type)

P.O. Box 878
Mailing Address (Street # and Name or P. O. Box #, RR #, RD #, Box #)

Dravosburg, PA 15034
City, State, and Zip Code + Extension

Date: 6 /26/ 20

SECTION 10: SYNTHETIC MINOR

A Major source may, at its option, choose to place limits on its operation or emissions in order to become a "Synthetic Minor" source, and not be subject to the additional requirements of a Major source. These limits will become permit restrictions and will be federally enforceable.

Does this application include any requested restrictions?
__ Yes _X_ No

If so, have these restrictions caused this site to go below Major source thresholds and become a Synthetic Minor?
__ Yes _X_ No

Is this facility requesting to become a Synthetic Minor source?
__ Yes _X_ No
(Please check the box on the top of page 1 as well.)

Be sure to include on each source information sheets, Forms A, B, and C, a complete description of the limitations that make this source a Synthetic Minor. Attach extra pages, if needed.

SECTION 11: INFORMATION FOR INSTALLATION PERMITS

Is this a new Major source or Major Modification for any criteria pollutant which is in or impacting a non-attainment area?
__ Yes _X_ No

If yes, list below for which pollutant(s).

Attach all required documents required under Article XXI, sections 2102.05 and 2102.06.

Is this a new Major source or Major Modification for any criteria pollutant which is in or impacting an attainment area or unclassified area?
__ Yes _X_ No

If yes, list below for which pollutant(s).

Attach all required documents required under Article XXI, sections 2102.05 and 2102.07.

A source applying for a Minor Installation Permit may request public review at this time.

Are you requesting public review for a Minor Installation Permit?

__ Yes _X_ No

SECTION 12: ALTERNATIVE OPERATING SCENARIOS

This permit allows for certain flexibility in operations. Please note the explanation of this section in the instructions. While filling out your permit application, consider all the different operating scenarios you might want to operate under during the 5-year term of your permit. This may include a change in inks or solvents, operating schedules, or other expected departures from operations that cannot be adequately described in the main body of the permit application.

Do you seek approval of any alternative operating scenario?

__ Yes _X_ No

If "Yes": Complete Form N to provide complete information for each alternative operating scenario to be employed at this location. Duplicate pages as needed.

Please note that there may be additional reporting requirements for alternative scenarios.

SECTION 13: ADDITIONAL SUBMITTALS

A form must be submitted for each process, boiler, incinerator, etc., as indicated below. Provide the numbers of each type of unit below, and submit the designated form for each unit. Also, identify each criteria pollutant and other regulated pollutant emitted by this source (facility). See Article XXI, definition of hazardous air pollutant and section 2101.10. Include also other pollutants not regulated, but with known emission rates. Provide the total below, and submit an emissions summary for each pollutant. List below all attachments made for this application. All applicable forms must be attached to each copy of the application.

_2_ Number of Processes - Submit one Form A for each process. Number each P001, P002, etc.
_0_ Number of Boilers - Submit one Form B for each boiler. Number each B001, B002, etc.
_0_ Number of Incinerators - Submit Form C for each incinerator. Number each I001, I002, etc.
_0_ Number of storage tanks - Submit one Form D for each tank or group of tanks. Number each D001, D002, etc.
_0_ Dry bulk materials storage and handling - Submit Form E.
_0_ Roads and vehicles - Submit Form F.
_0_ Miscellaneous fugitive emissions - Submit Form G.
_0_ Number of Form F: Roads and Vehicles.
_0_ Number of Form G: Miscellaneous Fugitive Emissions.
_7_ Number of Form K: One Emissions Summary Form for Each Pollutant.
_0_ Number of Form M: One Form M for each.
_0_ Number of Form N: One Form N for each scenario.

Are map(s)/drawing(s) attached? _X_ Yes __ No

Are required documents attached pertaining to an Installation Permit? _X_ Yes __ No

Are other comments/notes attached? _X_ Yes __ No

Is a **Best Available Control Technology (BACT) analysis attached for installations?** _X_ Yes __ No

Is a **Compliance Assurance Monitoring** (CAM) **Plan** (40 CFR Part 64) attached? (applicable to Title V Operating Permit Renewals.) __ Yes _X_ No

SECTION 14: ANNUAL APPLICATION / ADMINISTRATION FEE CALCULATION

INSTALLATION PERMIT APPLICATION - Check all that pertain to this application:

If this source is applicable to more than one category listed below, it is subject to the **highest** of the applicable fees, not to the total.

A	☐	Prevention of Significant Deterioration ($22,700)
B	☐	Involving ACHD Development of a MACT Standard ($8,000)
C	☐	Major new source or Major Modification ($8,000)
D	X	Any source subject to an existing NSPS, NESHAP, or MACT ($1,700)
E	☐	Any other Installation Permit ($1,000)
F	☐	Modification to an existing Installation Permit ($300)

Installation Permit Fee $ 1,700

Note: An administrative fee of $750.00 will be billed to the source, beginning 30 days after the Installation Permit is approved, and annually on the anniversary of the approval thereafter, until a complete Operating Permit Application has been submitted to the Department.

OPERATING PERMIT APPLICATION - Check all that pertain to this application:

A.	***Base fee*** (Minor or Synthetic Minor Source - $375.00 / Major Source - $750.00):	$ ____
B.	**Hazardous Air Pollutant Source fee** - (Major Source only - if any "hazardous air pollutants" (see §2101.10) are listed on Form K, add $375.00)	+$ _____
C.	**Acid Rain Source fee** (Major Source only - if any "acid rain" regulations are listed in Section 5, - add $375.00)	+$ _____
D.	**Adjusted Base fee** - Add A., B., and C.:	=$ _____
E.	**Noncomplying Source fee** (if "No" is checked in Section 7 Part A) Add 50% of the "Adjusted Base fee" from line D. above:	+$ _____
F.	**Total Fee Due** - Add D. and E.:	=$ ____

Checks are to be made payable to the "ACHD Air Pollution Control Fund."

All sources that apply for Operating Permits will be required to pay an annual administrative fee equal to the Operating Permit Application Fee. Major sources are also required to pay annual emissions fees. These are to be paid at the scheduled submittal of the annual emissions inventory.

SECTION 14. BILLING CONTACT

First Name Kurt	M. I.	Last Name Barshick	
Title General Manager Mon Valley Works			
Telephone 412-675-2600		FAX 412-675-5407	
Mailing Address (Street # and Name or P. O. Box #, Box #, RR #, RD #): P.O. Box 878			
City Dravosburg	State PA	Zip Code + Extension 15034	
E-mail kbarshick@uss.com			

SECTION 15: SIGNATURES AND CERTIFICATION

CERTIFICATION OF COMPLETED APPLICATION

CERTIFICATION {for corporate applicants: Attach Certificate of Corporate Authority}

Subject to the penalties of Title 18 Pa. C.S. Section 4904 relating to unsworn falsification to authorities, I certify that I have the authority to submit this Permit Application on behalf of the applicant named herein and that the information provided in this Application is true and correct to the best of my knowledge and information.

Signature _____ Date 6-26-20

Kurt Barshick
Name – Print or Type

General Manager, Mon Valley Works
Title – Print or Type

P.O. Box 878
Mailing Address – Print or Type

Dravosburg, PA 15034
City, State, and Zip Code + Extension – Print or Type

(412)675-2600 (412)675-5407
Day Phone Number Fax Phone Number

Signature of Preparer of Form (if different than applicant).

Signature

Name, Mailing Address, and Phone# - Print or Type

Christopher Hardin

1350 Penn Ave, Suite 200

Pittsburgh, PA 15222

{For corporations:
Certificate of Corporate Authority must be completed, by the Corporate Secretary, and attached}

CERTIFICATE OF CORPORATE AUTHORITY

I, _____, certify that I am the Secretary of the corporation named above; that _____, who has signed this document on behalf of the corporation was then _____ of the said corporation; and that I know his/her signature and his/her signature is genuine; and that said Agreement was fully signed, sealed, and attested for and in behalf of said corporation by authority of its governing body.

ATTESTED TO BY: _____ DATE: / /

{Signature}

NAME:

{Print or type}

TITLE: SECRETARY

[AFFIX CORPORATE SEAL]

UNITED STATES STEEL CORPORATION

SECRETARY'S CERTIFICATE

I, Megan Bombick, Corporate Secretary of United States Steel Corporation, a corporation validly existing and organized under the laws of the state of Delaware (the "Corporation"), hereby certify:

1. that Kurt Barshick, General Manager, Mon Valley Works, has authority to sign the attached application form on behalf of the Corporation
2. the signature provided on the application form is Mr. Barshick's true and genuine signature; and
3. that the attached application form is fully signed, sealed, and attested for and in behalf of the Corporation by authority of its governing body.

Megan A. Bombick
Corporate Secretary

PERMIT APPLICATION FORM A
PROCESS OPERATIONS

PLANT NAME AND LOCATION: U. S. Steel Clairton Plant

PART I - DESCRIPTION OF PROCESS (MAKE A COPY OF SCHEDULE A FOR EACH PROCESS.)

Company Identification or Description: Battery No. 13, 14 and 15 Pushing Emission Control (PEC) System [Title V ID P052]

Installer: N/A Installation Date: 1990

Contractor (if operated by another): N/A

Design X__ Charging or __ Production rate (specify units): 545,675 tons of coal/year (per battery)

Total Annual Production (specify units normally used): 423,400 tons of coke/year (per battery)

Raw Materials: Coal

Materials Produced: Metallurgical coke

Process Operation Units: (Name and Previous County Permit Number, if any)

(1.) Pushing Emissions
(2.)
(3.)
(4.)
(5.)
(6.)

Diagram of Process Flow: Attach a separate sheet with a drawing of a flow diagram of this process, labeling each segment listed under Process Operation Segments. Label product intake points and product discharge points for each segment. Label emissions discharge points and the location of emissions control devices.

PART II - PROCESS OPERATION SCHEDULE (per station)

A. Normal schedule: (Provide information for last year. If a new unit, please estimate)

Hours/day 24 Days/week 7 Weeks/year 52 Hours/year 8,760

Start time __:__ End time __:__

Seasonal: Periods correspond to seasons instead of calendar quarters. The first season is split to include December, January, and February of the calendar year reported.

	Percent of Annual Production		
December, January, & February	25	June, July, & August	25
March, April, & May	25	September, October, & November	25

B. Requested limits: (Limitations on operating hours are optional.) Choose One:

_X_ 8760 hours (no limitations) or

___ I/We request the following limitation -- **This may become a federally enforceable permit condition:** Describe how this can be enforced: either list an operating schedule or downtime (e.g. only operate 8:00 to 4:00) or an operating hour reporting requirement.

_____ Total days x _____ Hours/day = _____ Hours/year

PART III – FUELS – Not applicable for this project

A. Normal operation (Provide information for last year. If a new unit, please estimate)

____ Year _____ or _____ Estimate

	Primary	Secondary	Other	Other
Type:				
Max Amount/hour				
Sulfur Content (% wt):				
Ash Content (% wt):				
BTU Rating (specify units)				
Annual Fuel Consumption				
Seasonal Fuel Consumption (%):				
December, January, and February				
March, April, and May				
June, July, and August				
September, October, and November				

Fuel Mixing: If more than one fuel is used, explain usage, stating whether it is burned separately, mixed in a fixed ratio of__:__ (give units such as BTU, mmcf, gallons per ton, etc.), mixed in a variable ratio of__:__ to __:__, determined by ___ (give reason).

B. Requested limits (limitations on operations are optional, but may allow a Major source to be exempted from some requirements) **These may become permit conditions**. Please check one:

__ Full use of any fuel or combination at any time (no limitations)

__ The following limitations on types of fuels or the combination of fuels are requested (describe how compliance with this method will be demonstrated)

PART IV - OTHER LIMITATIONS

Identify any other requested limitations, such as on production rates or materials use. Describe how compliance with these restrictions will be demonstrated. **These limitations may become permit conditions**.

N/A

PART V - APPLICABLE REQUIREMENTS

Describe all applicable requirements affecting air emissions for this unit.

Regulation #	Requirements
2105.21.e	PM – Install PEC to reduce emissions (use BACT)
2105.21.e.3	PM – 0.04 lb/ton coke from PEC baghouse stack
2105.21.e.4	Visible emissions – Opacity not to equal or exceed 20% from PEC outlet or fugitive pushing
40 CFR 63 Subpart CCCCC (63.7290)	PM – Pushing emissions from the control device not to exceed 0.02 lb PM / ton coke
	*No change to applicable existing requirements (e.g., monitoring) already incorporated into the current Title V permit.

PART VI - EMISSION CONTROLS

Complete the following applicable sections for each pollution control device. Attach additional sheets to provide sufficient information and engineering calculations to support the contol device performance.

On the space to the left of each device, number the device(s) by the order in which they process the waste stream(s). Fill out the requested information, then complete the table for efficiencies by pollutant for each device.

Percent Capture 95 % (not control efficiency)

Gas flow through control units Up to 310,000 acfm @ 125 °F

X **BAGHOUSE (fabric collector)**

Manufacturer's Name and Model Belco-Pulse jet, model PM-14 (6-module baghouse)

Type of bag material Polyester/PTFE membrane, or equivalent

Total filter cloth area 5541 (per train) sq. ft., air to cloth ratio 4.7 (gross), 5.6 (net)

Bag cleaning method: Pulse jet , cycle Clean one module with high dP min

Pressure Drop: clean 0 "H_20, dirty 10 "H_20

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading
PM/PM10/PM2.5 (filterable)	99.8	Stack Test	0.004 grains/dscf

N/A **ELECTROSTATIC PRECIPITATOR**

Manufacturer's Name and Model:

Type: __ Single Stage, __ Two Stage, __ Plate, __ Tube

Total collecting area: _____ sq. ft., cleaning cycle _____ min.

Gas Velocity: _____ ft./sec. corona power _____ kw

Bulk resistivity of dust: _____ ohm-cm Moisture content of gases: _____ vol. %

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading

N/A **CYCLONE (dry gas only)**

Manufacturer's Name and Model:

Gas Inlet: width _____ ft., height _____ ft.

Diameter: gas outlet _____ ft., cyclone cylinder (s) _____ ft.

Length of cyclone: _____ ft., no. of cylinder(s) _____ Pressure Drop _____ "H_2O

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading

PART VI - EMISSION CONTROLS (CONTINUED) **NOT APPLICABLE**

N/A **CONDENSER**

Manufacturer's Name and Model: _____

Type: surface _____ , contact _____

Heat transfer area: _____ sq. ft., max process pressure _____ psia

Heat duty: _____ BTU/hr. Coolant temp: inlet _____ °F outlet _____ °F

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

N/A **WET COLLECTOR**

Manufacturer's Name and Model: _____

Type: __ venturi, __ cyclone, __ spray chamber, __ packed bed

Entrainment/separator: type _____ , bed depth _____

Type & construction of chemicals added to the scrubbing liquid:

Pressure drop _____ "H_2O

Scrubbing liquid: flow rate _____ gpm, inlet temp. _____ °F, outlet temp. _____ °F

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

N/A **AFTERBURNER (Oxidation Catalyst)**

Manufacturer's Name and Model: _____

Type: __ direct flame, __ catalytic

If catalytic: inlet temp. _____ °F, outlet temp. _____ °F, catalyst life _____

If direct flame: internal volume _____ cu. ft., average temp. _____ °F

Residence time at average temp. _____ Sec

Auxiliary fuel: max. rating _____ BTU/hr. set point _____ °F, _____ BTU/hr.

Size of Chamber _____ cu. ft., flow rate _____

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading (gn./cu. ft.)

N/A **ADSORPTION EQUIPMENT**

Manufacturer's Name and Model: _____

Type: __ Continuous, __ Fixed bed

Adsorbing material: _____ , Bed depth _____ in., Flow area _____ sq. ft.

Breakthrough (breakpoint) time: _____ , Pressure Drop: _____ "H_2O

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

PART VI - EMISSION CONTROLS (CONTINUED) **NOT APPLICABLE**

N/A **OTHER TYPES** Name and describe. Attach complete details.

FUGITIVE DUST CONTROLS: Describe below or attach a complete explanation of all controls of fugitive emissions not discussed in Form E - Roads or Form F - Storage Piles.

Existing permit requirements for minimization of fugitive pushing emissions remains applicable and appropriate. This project will result in further minimization of fugitive pushing emissions through improved capture efficiencies.

PART VII - STACK DATA

Stack data must be provided for each flue, duct, pipe, stack, chimney or conduit (stacks) at which collected emissions are vented to open air through a restricted opening.

Stack Identification: New PEC Baghouse Stack

UTM East 595319.1 UTM North 4462233.8 or

Longitude See above Latitude See above

Most important stacks have been located on topographic or air navigation charts. If you know the UTM coordinates or latitude and longitude, provide this information. If there is a number of stacks close together, a common location may be used

Stack Height: 90 ft. Ground level elevation ~760 ft. Diameter 8 ft.

Material

Outer: Steel lining: N/A

Exit temperature (°F): 125 Exit Velocity: ~35 f/s.

Exhaust Rate: 155,000 (per train, design) (ACFM) % Moisture: ~2

Nearest building to stack: (PEC Baghouse structure)

distance ~20 ft. height ~75 ft. length ~78 ft. width ~56 ft.

Processes Sharing Stack: If more than one process shares a stack, list them and estimate relative contribution of each.

Description PEC Control System for Batteries 13, 14 and 15

Contribution to emissions from stack ~50 %

Description PEC Control System for Batteries 19 and 20

Contribution to emissions from stack ~50 %

Description

Contribution to emissions from stack %

Description

PART VIII - REMARKS

Attach calculations and reference all emission factors for Allowable, Potential to Emit, and Actual Emissions to this sheet. Reference all emission factors and efficiencies of control equipment.

PART IX - EMISSIONS

PART 9a: EMISSIONS -- SHORT TERM LB/HR (POUNDS PER HOUR) OR OTHER _____

See Appendix C for breakdown of fugitive pushing and PEC baghouse emissions

Pollutant	PM	PM10	SO_2	CO	NO_X	VOC	LEAD	PM2.5
Allowable								
Maximum Potential								
Actual or Estimated								

Pollutant								
Allowable								
Maximum Potential								
Actual or Estimated								

PART 9b: EMISSIONS -- ANNUAL TPY (TONS PER YEAR)[projected actual emissions]

Pollutant	PM	PM10	SO_2	CO	NO_X	VOC	LEAD	PM2.5
Allowable								
Maximum Potential	128.4	70.5	25.5	42.4	12.7	1.1	4.5E-3	42.7
Actual or Estimated	128.4	70.5	25.5	42.4	12.7	1.1	4.5E-3	42.7

Pollutant								
Allowable								
Maximum Potential								
Actual or Estimated								

PERMIT APPLICATION FORM A
PROCESS OPERATIONS

PLANT NAME AND LOCATION: U. S. Steel Clairton Plant

PART I - DESCRIPTION OF PROCESS (MAKE A COPY OF SCHEDULE A FOR EACH PROCESS.)

Company Identification or Description: Battery No. 19 and 20 Pushing Emission Control (PEC) System [Title V ID P053]

Installer: N/A Installation Date: 1990

Contractor (if operated by another): N/A

Design X__ Charging or __ Production rate (specify units): 1,002,290 tons of coal/year (per battery)

Total Annual Production (specify units normally used): 777,815 tons of coke/year (per battery)

Raw Materials: Coal

Materials Produced: Metallurgical coke

Process Operation Units: (Name and Previous County Permit Number, if any)

(1.) Pushing Emissions
(2.)
(3.)
(4.)
(5.)
(6.)

Diagram of Process Flow: Attach a separate sheet with a drawing of a flow diagram of this process, labeling each segment listed under Process Operation Segments. Label product intake points and product discharge points for each segment. Label emissions discharge points and the location of emissions control devices.

PART II - PROCESS OPERATION SCHEDULE (per station)

A. Normal schedule: (Provide information for last year. If a new unit, please estimate)

Hours/day 24 Days/week 7 Weeks/year 52 Hours/year 8,760

Start time __:__ End time __:__

Seasonal: Periods correspond to seasons instead of calendar quarters. The first season is split to include December, January, and February of the calendar year reported.

Percent of Annual Production

December, January, & February	25	June, July, & August	25
March, April, & May	25	September, October, & November	25

B. Requested limits: (Limitations on operating hours are optional.) Choose One:

_X_ 8760 hours (no limitations) or

___ I/We request the following limitation -- **This may become a federally enforceable permit condition:** Describe how this can be enforced: either list an operating schedule or downtime (e.g. only operate 8:00 to 4:00) or an operating hour reporting requirement.

_____ Total days x _____ Hours/day = _____ Hours/year

PART III – FUELS – Not applicable for this project

A. Normal operation (Provide information for last year. If a new unit, please estimate)

____ Year _____ or _____ Estimate

	Primary	Secondary	Other	Other
Type:				
Max Amount/hour				
Sulfur Content (% wt):				
Ash Content (% wt):				
BTU Rating (specify units)				
Annual Fuel Consumption				
Seasonal Fuel Consumption (%):				
December, January, and February				
March, April, and May				
June, July, and August				
September, October, and November				

Fuel Mixing: If more than one fuel is used, explain usage, stating whether it is burned separately, mixed in a fixed ratio of__:__ (give units such as BTU, mmcf, gallons per ton, etc.), mixed in a variable ratio of__:__ to __:__, determined by ___ (give reason).

B. Requested limits (limitations on operations are optional, but may allow a Major source to be exempted from some requirements) **These may become permit conditions**. Please check one:

__ Full use of any fuel or combination at any time (no limitations)

__ The following limitations on types of fuels or the combination of fuels are requested (describe how compliance with this method will be demonstrated)

PART IV - OTHER LIMITATIONS

Identify any other requested limitations, such as on production rates or materials use. Describe how compliance with these restrictions will be demonstrated. **These limitations may become permit conditions**.

N/A

PART V - APPLICABLE REQUIREMENTS

Describe all applicable requirements affecting air emissions for this unit.

Regulation #	Requirements
2105.21.e	PM – Install PEC to reduce emissions (use BACT)
2105.21.e.2	PM – 0.01 gr/dscf from PEC baghouse stack [Battery 19]
2105.21.e.3	PM – 0.04 lb/ton coke from PEC baghouse stack [Battery 20]
2105.21.e.4	Visible emissions – Opacity not to equal or exceed 20% from PEC outlet or fugitive pushing
40 CFR 63 Subpart CCCCC (63.7290)	PM – Pushing emissions from the control device not to exceed 0.02 lb PM / ton coke
	*No change to applicable existing requirements (e.g., monitoring) already incorporated into the current Title V permit.

PART VI - EMISSION CONTROLS

Complete the following applicable sections for each pollution control device. Attach additional sheets to provide sufficient information and engineering calculations to support the contol device performance.

On the space to the left of each device, number the device(s) by the order in which they process the waste stream(s). Fill out the requested information, then complete the table for efficiencies by pollutant for each device.

Percent Capture 95 % (not control efficiency)

Gas flow through control units Up to 310,000 acfm @ 125 °F

X **BAGHOUSE (fabric collector)**

Manufacturer's Name and Model Belco-Pulse jet, model PM-14 (6-module baghouse)

Type of bag material Polyester/PTFE membrane, or equivalent

Total filter cloth area 5541 (per train) sq. ft., air to cloth ratio 4.7 (gross), 5.6 (net)

Bag cleaning method: Pulse jet , cycle Clean one module with high dP min

Pressure Drop: clean 0 "H_20, dirty 10 "H_20

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading
PM/PM10/PM2.5 (filterable)	99.8	Stack Test	0.004 grains/dscf

N/A **ELECTROSTATIC PRECIPITATOR**

Manufacturer's Name and Model:

Type: __ Single Stage, __ Two Stage, __ Plate, __ Tube

Total collecting area: _____ sq. ft., cleaning cycle _____ min.

Gas Velocity: _____ ft./sec. corona power _____ Kw

Bulk resistivity of dust: _____ ohm-cm Moisture content of gases: _____ vol. %

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading

N/A **CYCLONE (dry gas only)**

Manufacturer's Name and Model:

Gas Inlet: width _____ ft., height _____ ft.

Diameter: gas outlet _____ ft., cyclone cylinder (s) _____ ft.

Length of cyclone: _____ ft., no. of cylinder(s) _____ Pressure Drop _____ "H_2O

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading

PART VI - EMISSION CONTROLS (CONTINUED) **NOT APPLICABLE**

N/A **CONDENSER**

Manufacturer's Name and Model: _____

Type: surface _____ , contact _____

Heat transfer area: _____ sq. ft., max process pressure _____ Psia

Heat duty: _____ BTU/hr. Coolant temp: inlet _____ °F outlet _____ °F

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

N/A **WET COLLECTOR**

Manufacturer's Name and Model: _____

Type: __ venturi, __ cyclone, __ spray chamber, __ packed bed

Entrainment/separator: type _____ , bed depth _____

Type & construction of chemicals added to the scrubbing liquid:

Pressure drop _____ "H_2O

Scrubbing liquid: flow rate _____ gpm, inlet temp. _____ °F, outlet temp. _____ °F

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

N/A **AFTERBURNER (Oxidation Catalyst)**

Manufacturer's Name and Model: _____

Type: __ direct flame, __ catalytic

If catalytic: inlet temp. _____ °F, outlet temp. _____ °F, catalyst life _____

If direct flame: internal volume _____ cu. ft., average temp. _____ °F

Residence time at average temp. _____ Sec

Auxiliary fuel: max. rating _____ BTU/hr. set point _____ °F, _____ BTU/hr.

Size of Chamber _____ cu. ft., flow rate _____

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Grain Loading (gn./cu. ft.)

N/A **ADSORPTION EQUIPMENT**

Manufacturer's Name and Model: _____

Type: __ Continuous, __ Fixed bed

Adsorbing material: _____ , Bed depth _____ in., Flow area _____ sq. ft.

Breakthrough (breakpoint) time: _____ , Pressure Drop: _____ "H_2O

Pollutant	Efficiency (%)	Basis for Efficiency	Outlet Concentration (ppm)

PART VI - EMISSION CONTROLS (CONTINUED) **NOT APPLICABLE**

N/A **OTHER TYPES** Name and describe. Attach complete details.

FUGITIVE DUST CONTROLS: Describe below or attach a complete explanation of all controls of fugitive emissions not discussed in Form E - Roads or Form F - Storage Piles.

Existing permit requirements for minimization of fugitive pushing emissions remains applicable and appropriate. This project will result in further minimization of fugitive pushing emissions through improved capture efficiencies.

PART VII - STACK DATA

Stack data must be provided for each flue, duct, pipe, stack, chimney or conduit (stacks) at which collected emissions are vented to open air through a restricted opening.

Stack Identification: New PEC Baghouse Stack

UTM East 595319.1 UTM North 4462233.8 or

Longitude See above Latitude See above

Most important stacks have been located on topographic or air navigation charts. If you know the UTM coordinates or latitude and longitude, provide this information. If there is a number of stacks close together, a common location may be used

Stack Height: 90 ft. Ground level elevation ~760 ft. Diameter 8 ft.

Material

Outer: Steel lining: N/A

Exit temperature (°F): 125 Exit Velocity: ~35 f/s.

Exhaust Rate: 155,000 (per train, design) (ACFM) % Moisture: ~2

Nearest building to stack:

distance ~20 ft. height ~75 ft. length ~78 ft. width ~56 ft.

Processes Sharing Stack: If more than one process shares a stack, list them and estimate relative contribution of each.

Description PEC Control System for Batteries 13, 14 and 15

Contribution to emissions from stack ~50 %

Description PEC Control System for Batteries 19 and 20

Contribution to emissions from stack ~50 %

Description

Contribution to emissions from stack %

Description

PART VIII – REMARKS

Attach calculations and reference all emission factors for Allowable, Potential to Emit, and Actual Emissions to this sheet. Reference all emission factors and efficiencies of control equipment.

PART IX - EMISSIONS

PART 9a: EMISSIONS -- SHORT TERM LB/HR (POUNDS PER HOUR) OR OTHER _____

See Appendix C for breakdown of fugitive pushing and PEC baghouse emissions

Pollutant	PM	PM10	SO_2	CO	NO_X	VOC	LEAD	PM2.5
Allowable								
Maximum Potential								
Actual or Estimated								

Pollutant								
Allowable								
Maximum Potential								
Actual or Estimated								

PART 9b: EMISSIONS -- ANNUAL TPY (TONS PER YEAR) [projected actual emissions]

Pollutant	PM	PM10	SO_2	CO	NO_X	VOC	LEAD	PM2.5
Allowable								
Maximum Potential	151.2	81.1	30.2	50.1	15.0	1.0	5.3E-3	48.0
Actual or Estimated	151.2	81.1	30.2	50.1	15.0	1.0	5.3E-3	48.0

Pollutant								
Allowable								
Maximum Potential								
Actual or Estimated								

PERMIT APPLICATION FORM D – Not Applicable
STORAGE TANKS

Tanks situated at a common location in the facility and storing the same materials, or vented through a common control device may be grouped together for reporting purposes if the emissions from individual tanks are small. A diagram should be attached showing the locations of grouped tanks. A separate listing should be provided for Part I for each tank. Part II and estimates of emissions should be for the group. Emissions from liquid or gas storage tanks that condense to form solids in ambient air should be included in emissions estimates as particulate TSP and/or PM10.

PART I - DESCRIPTION OF STORAGE TANKS (MAKE A COPY OF SCHEDULE E FOR EACH STORAGE TANK)

Company Identification or Description: _____

Installer: _____ Installation Date: _____

Prior Allegheny County Air Pollution Permit No. _____

Capacity _____ (specify units) Age: _____ (years)

Diameter _____ (ft) Height _____ (ft)

Paint Color _____ Loading Type _____

Materials Normally Used

Common Name _____ Chemical Name _____

Chemical Abstract Service # _____ Liquid Molecular Weight _____

Vapor Pressure _____ psia at _____ (temperature)

Type of tank (check appropriate spaces):

Underground _____ Pressure Tank _____ Surface _____

If the tank is a surface tank:

_____ No Roof

_____ Fixed Roof

Roof Paint Color _____ Shell Paint Color _____

Paint Condition _____ Average Vapor Space Height _____ (ft)

Pressure Relief Valve Setting:

Pressure _____ psia

Vacuum _____

Vapor Recovery System (Description)

Control Efficiency _____ %

Gas Blanketing System Gas _____ Amt Used _____

_____ Floating Roof (specify internal or external floating roof.)

_____ External Floating Roof

Primary Seal Type _____

Secondary Seal Type _____

_____ Internal Floating Roof

Primary Seal Type _____

Deck Construction Type _____

Tank Construction Type _____

PART II - OPERATING SCHEDULE

Throughput (specify units):
Annual _____ Daily _____

Maximum turnovers per year: _____

Seasonal: Periods correspond to seasons instead of calendar quarters. The first season is split to include December, January, and February.

Seasonal Percentage of Total Throughput:

December, January, & February _____ % June, July, & August _____ %
March, April, & May _____ % September, October, & November _____ %

Dates tank is not normally in use: from _____ __ /__ /__ _____ TO _____ __ /__ /__ _____

PART III - CONTROL DEVICES

Describe any control devices, including any gas blanketing system noted above.

PART IV - EMISSIONS - ANNUAL TPY

Pollutant	PM	PM10	SO_2	CO	NO_X	VOC	LEAD	
Allowable								
Maximum Potential								
Actual or Estimated								

Pollutant								
Allowable								
Maximum Potential								
Actual or Estimated								

List all known pollutants, including, but not limited to those found under Article XXI section 2101.20 in the definition of Hazardous Air Pollutants.

Transfer this information to the summary emissions sheets.

PERMIT APPLICATION FORM E – Not Applicable
DRY BULK MATERIALS STORAGE AND HANDLING

This form reports particulate emissions from wind erosion of bulk materials stockpiles, from additions and retrievals of material, and from stockpile maintenance. It includes materials stored under cover and in silos. Storage piles including hazardous materials such as lead compounds or asbestos should be reported here. A separate form should be prepared for each stockpile. Mining, excavation, crushing, and other materials processing should be treated as processes and reported on Form A.

PART I - DESCRIPTION OF STORAGE PILE (MAKE A COPY OF SCHEDULE E FOR EACH STORAGE PILE)

Open and enclosed stockpiles of raw materials, intermediate products, and finished products should be reported. Include silos in reporting types of stockpile covering.

Company Identification or Description: _____

UTM East: _____ UTM North: _____ (center of pile)

Type of Material Stored (Generic Name): _____

Major Chemical Components (list, with percentages of each):

Moisture Content: _____ % Silt Content: _____ %

Height of Pile (give units): _____

Uncovered: _____ acres or _____ square feet

If covered or enclosed:

Type of cover: _____

Estimated Control Efficiency: _____ %

PART II - STORAGE PILE TRANSFERS

For the purpose of this schedule, stockpile transfers include either adding material onto a pile and removal of material from a pile. This schedule does not include loading or unloading from barges, rail cars or other transport, or transportation and marketing of dry materials, which should be reported as processes on Form A.

Normal Inventory: _____ (Tons)

Estimated	Additions (tons)	Retrievals
December, January, and February		
March, April, and May		
June, July, and August		
September, October, and November		
Annual storage losses (tons)		

PART III - EQUIPMENT

Immobile equipment or equipment that is dedicated to the particular stockpile should be reported as fixed or dedicated units. Mobile equipment or equipment that may be moved to another area of the plant should be reported as transient or mobile units. This may include bulldozers, backhoes, or other large, mobile equipment that works on or around a stockpile. Percent utilization is the percentage of operating time (hours divided by annual hours) that equipment is in operation on the storage pile.

Fixed or Dedicated Units

	Name	Size (Capacity)	% Utilization
(1.)			
(2.)			
(3.)			
(4.)			
(5.)			
(6.)			

Transient or Mobile Units

	Name	Size (Capacity)	% Utilization
(1.)			
(2.)			
(3.)			
(4.)			
(5.)			
(6.)			

PART IV - DUST CONTROL MEASURES (describe):

PART V - EMISSION ESTIMATES

A. Wind Erosion

	PM10		TSP	
	Lb./hr.	TPY	Lb./hr.	TPY
Uncontrolled				
Controlled				

B. Stockpile Activity (Storage and Retrieval)

	PM10		TSP	
	Lb./hr.	TPY	Lb./hr.	TPY
Uncontrolled				
Controlled				

C. Stockpile Activity Maintenance Not Applicable

	PM10		TSP	
	Lb./hr.	TPY	Lb./hr.	TPY
Uncontrolled				
Controlled				

Attach calculations and reference all emission factors for Allowable, Potential to Emit, and Actual emissions for this sheet. Reference all emission factors and efficiencies of control equipment.

PERMIT APPLICATION FORM F – Not Applicable
ROADS AND VEHICLES

This form covers fugitive emissions from vehicles and vehicle travel on paved and unpaved roads and parking lots within the plant property. Plants with only normal business traffic of light duty vehicles and paved parking lots with capacity less than one hundred cars are not required to submit Form F.

PART I – ROADS

Paved Roads: _____ (miles) Unpaved Roads: _____ (miles)
Parking Lots (area): _____ (specify units)

PART II – VEHICLES

Light-Duty Gasoline Vehicles (LDGV) _____ (average weekly number)

Estimated Total Vehicle Miles Traveled _____

Seasonal Usage (%)	Paved Areas	Unpaved Areas
December, January, and February		
March, April, and May		
June, July, and August		
September, October, and November		
Annual Storage Losses (tons)		

Heavy-Duty Gasoline Vehicles (HDGV) Estimated Annual Fuel Consumption _____ (gal)

Estimated Total Vehicle Miles Traveled _____ Ave. Wgt. _____

Seasonal Usage (%)	Paved Areas	Unpaved Areas
December, January, and February		
March, April, and May		
June, July, and August		
September, October, and November		
Annual Storage Losses (tons)		

Heavy-Duty Diesel Vehicles (HDDV) Estimated Annual Fuel Consumption _____ (gal)

Estimated Total Vehicle Miles Traveled _____ Ave. Wgt. _____

Seasonal Usage (%)	Paved Areas	Unpaved Areas
December, January, and February		
March, April, and May		
June, July, and August		
September, October, and November		
Annual Storage Losses (tons)		

Road Dust Emissions

	TSP	PM10
Uncontrolled Emissions		
Control Efficiency		
Controlled (Actual) Emissions		

Dust Control Measures (Describe):

Transfer this information to the summary emissions sheets.

PERMIT APPLICATION FORM G – Not Applicable
MISCELLANEOUS FUGITIVE EMISSIONS

This form is for reporting miscellaneous fugitive emissions which are not reported in forms A-F. Fugitives are emissions which escape into the plant air or outdoor air by means other than a flue or duct. Fugitives associated with a particular process should be reported on the form for that process. For example, fugitives from a paper coating line would be reported for that line. Fugitives from several segments may be grouped together. Fugitives not associated with any one process should be reported here as "Plant Fugitives." Examples are dust (TSP) and fine particulates (PM_{10}) from abrasive blasting or construction/demolition, VOC and/or air toxics from cleanup, painting or maintenance, or chemicals from laboratory experiments or hoods. A separate form G should be completed for each type or category of activity. Additional forms may be attached if there are more than four (4) pollutants for the activity.

Process Description or Miscellaneous Activity (describe):

Give a verbal description of the activity reported, such as construction projects, abrasive blasting, painting, cleaning, or other activity that has no relation to regular plant processes. State the type of abrasives, cleaners, or paints used, and other information that would be helpful in estimating dust or evaporative emissions.

GASES AND LIQUIDS NOT APPLICABLE

Common Name:				
Chemical Name:				
CAS #:				
Use:				
Quantity Purchased (units):				
Annually:				
Daily:				
Seasonal Use: (%)				
December, January, and February:				
March, April, and May:				
June, July, and August:				
September, October, and November:				
Volatiles Wgt % or lb./gal. OR				
Total Volatiles				
Amt Volatiles Recovered and Shipped Off Site				
Amount Emitted				

PARTICULATE EMISSIONS – NOT APPLICABLE (Including with Process Forms)

	TSP	PM10
Estimated amount of particulates generated per unit of activity		
Estimated total amount of particulates		
Seasonal Distribution (%)		
December, January, and February:		
March, April, and May:		
June, July, and August:		
September, October, and November:		
Controls (describe):		
Efficiency (%)		
Net Emissions		

Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant NOx CAS No. _____ Year for actual emissions _____ or X estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		12.7	12.7
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		15.0	15.0
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					27.7	27.7

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant CO CAS No. _____ Year for actual emissions _____ or X estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		42.4	42.4
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		50.1	50.1
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					92.6	92.6

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant SO_2 CAS No. _____ Year for actual emissions _____ or X estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		25.5	25.5
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		30.2	30.2
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					55.7	55.7

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant VOC CAS No. _____ Year for actual emissions _____ or X Estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		1.1	1.1
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		1.0	1.0
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					2.1	2.1

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant PM_{10} CAS No. _____ Year for actual emissions _____ or X Estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		70.5	70.5
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		81.1	81.1
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					151.6	151.6

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant $PM_{2.5}$ CAS No. _____ Year for actual emissions _____ or X Estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		42.7	42.7
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		48.0	48.0
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					90.6	90.6

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

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Allegheny County Health Department
Air Quality Program

PERMIT APPLICATION FORM K

SUMMARY OF EMISSIONS

Name of Owner/Operator U. S. Steel Mon Valley Works Plant Name Clairton Plant

Pollutant NH3 CAS No. _____ Year for actual emissions _____ or X Estimated

POINT	UNITS DISCHARGING TO THIS STACK	EMISSION SOURCE DESCRIPTION	ANNUAL THROUGHOUT UNITS	ALLOWABLE UNITS (tpy)	POTENTIAL (tpy)	ACTUAL (tpy)
P052	PEC Control System for Batteries 13, 14, 15	Pushing Emissions (baghouse + fugitives) for Batteries 13, 14 and 15	N/A		0.1	0.1
P053	PEC Control System for Batteries 19 and 20	Pushing Emissions (baghouse + fugitives) for Batteries 19 and 20	N/A		0.2	0.2
		*projected actual emissions				
TOTAL EMISSIONS FOR THIS SOURCE (FACILITY)					0.3	0.3

If this is a NON-CRITERIA POLLUTANT, include the CAS number. For the fields "Point" and "Units discharging to this stack," use the identifying numbers from your plant drawing. For a more complete explanation of emissions, see definitions in Article XXI.

Allowable emissions are the maximum allowable by regulation. Calculate using the capacity of the unit unless restricted by operation limits, and the most strict regulation pertaining to that unit. Calculate for the shortest term regulated (one hour, one day….). Reflect the time period when defining the units.

Potential to emit (Potential on the chart) is the maximum capacity to emit contaminants, including fugitive emissions, under the physical and operational design of the unit. Include any permitted or regulated restrictions to operate. The Potential to Emit values should be less than or equal to the Allowable emissions.

Actual emissions are the best estimate of the latest year of emissions from each unit. For those that are new, actual emissions would be an estimate of a normal annual operation. Please note that sources will be required to submit an annual emissions report and may be required to pay an annual emissions fee. This report and fee payment will be made under a separate document.

PERMIT APPLICATION FORM M
SOURCE OUT OF COMPLIANCE

FORM M Sources Out of Compliance

There is no Form M included in this application form. Strategies for bringing non-complying sources into compliance will vary so widely from source to source that it would not be useful to provide a form for completion. Provide your own description and label it Form M. Include enough detail that it is clear what emission units are not in compliance and of what regulations they are not in compliance. Provide a detailed schedule of compliance. This would include an installation schedule, changes in operations, a leak detection program schedule -- whatever it will require to bring the emission unit into compliance. Make sure that the dates are manageable; they may be included in the permit, and become enforceable. Regular reports on the progress of reaching compliance are required every six months (they may be more frequent if desired).

PERMIT APPLICATION FORM N – Not Applicable
ALTERNATIVE OPERATING SCENARIO

A: GENERAL INFORMATION

1. Alternative Scenario Number (Plan #): _____
2. Give a general description of the changes involved in this alternative scenario:

3. Please Identify the emissions units affected in the Table below:

Emission Unit #	Type of Emission Unit	Changes in the Process / Changes in the Project / Other Changes	SIC/SCC Associated with Scenario

4. Describe and cite all applicable requirements pertaining to this alternative scenario:

B: COMPLIANCE METHOD

Emission Unit #	Pollutant	Compliance Method	Reference Test Method	Monitoring Device	Frequency / Duration of Sampling

Attach any other related information which would further explain the method of compliance.

C: RECORDKEEPING AND REPORTING

1. List what parameter will be recorded and the frequency of recording:

2. Describe what is to be reported and the frequency of reporting? (Reports must be submitted at least every six (6) months

3. Beginning reporting date: __ /__ /__ _____

APPENDIX B. COMPLIANCE REVIEW FORM

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF AIR QUALITY

AIR POLLUTION CONTROL ACT COMPLIANCE REVIEW FORM

Fully and accurately provide the following information, as specified. Attach additional sheets as necessary.

Type of Compliance Review Form Submittal (check all that apply)

☐ Original Filing — Date of Last Compliance Review Form Filing:
☒ Amended Filing — 5/2/2019

Type of Submittal

☐ New Plan Approval ☐ New Operating Permit ☐ Renewal of Operating Permit
☐ Extension of Plan Approval ☐ Change of Ownership ☐ Periodic Submission (@ 6 mos)
☒ Other: Minor permit application for Clairton Plant

SECTION A. GENERAL APPLICATION INFORMATION

Name of Applicant/Permittee/("applicant")
(non-corporations-attach documentation of legal name)
United States Steel Corporation (Mon Valley Works - Clairton Plant)

Address 400 State Street
Clairton, PA 15025
c/o Mike Dzurinko, C-71

Telephone (412) 233-1467 **Taxpayer ID#** 25-1897152

Permit, Plan Approval or Application ID# Operating Permit #0052

Identify the form of management under which the applicant conducts its business (check appropriate box)

☐ Individual ☐ Syndicate ☐ Government Agency
☐ Municipality ☐ Municipal Authority ☐ Joint Venture
☐ Proprietorship ☐ Fictitious Name ☐ Association
☒ Public Corporation ☐ Partnership ☐ Other Type of Business, specify below:
☐ Private Corporation ☐ Limited Partnership

Describe below the type(s) of business activities performed.

United States Steel Corporation, a publicly traded corporation, manufactures and sells a wide variety of steel sheet, tubular, and tin products; coke and taconite pellets; and coal chemicals. The Mon Valley Works - Clairton Plant manufactures coke.

SECTION B. GENERAL INFORMATION REGARDING "APPLICANT"

If applicant is a corporation or a division or other unit of a corporation, provide the names, principal places of business, state of incorporation, and taxpayer ID numbers of all domestic and foreign parent corporations (including the ultimate parent corporation), and all domestic and foreign subsidiary corporations of the ultimate parent corporation with operations in Pennsylvania. Please include all corporate divisions or units, (whether incorporated or unincorporated) and privately held corporations. (A diagram of corporate relationships may be provided to illustrate corporate relationships.) Attach additional sheets as necessary.

Unit Name	Principal Places of Business	State of Incorporation	Taxpayer ID	Relationship to Applicant
United States Steel Corporation (U. S. Steel)	USA	Delaware	25-1897152	Self
Transtar, Inc.	USA	Delaware	51-0313339	Subsidiary of U. S. Steel
Union Railroad Company	USA	Delaware	25-1589128	Subsidiary of Transtar, Inc.

SECTION C. SPECIFIC INFORMATION REGARDING APPLICANT AND ITS "RELATED PARTIES"

Pennsylvania Facilities. List the name and location (mailing address, municipality, county), telephone number, and relationship to applicant (parent, subsidiary or general partner) of applicant and all Related Parties' places of business, and facilities in Pennsylvania. Attach additional sheets as necessary.

Unit Name	Street Address	County and Municipality	Telephone No.	Relationship to Applicant
Clairton Plant	400 State Street	Allegheny/Clairton	(412) 233-1467	Self
Edgar Thomson Plant	1300 Braddock Avenue	Allegheny/Braddock	(412) 273-4730	Self
Irvin Plant	Camp Hollow Road	Allegheny/West Mifflin	(412) 675-7382	Self
Fairless Plant	Pennsylvania Avenue	Bucks/Fairless Hills	(412) 675-7382	Self
Transtar, Inc.	200 Penn Avenue, Suite 300	Allegheny/Pittsburgh	(412) 433-7090	Subsidiary of U. S. Steel
Union Railroad Company	200 Penn Avenue, Suite 300	Allegheny/Pittsburgh	(412) 433-7090	Subsidiary of Transtar, Inc.

Provide the names and business addresses of all general partners of the applicant and parent and subsidiary corporations, if any.

Name	Business Address
Not Applicable	

List the names and business address of persons with overall management responsibility for the process being permitted (i.e. plant manager).

Name	Business Address
Kurt Barshick	P. O. Box 878, Dravosburg, PA 15034

Plan Approvals or Operating Permits. List all plan approvals or operating permits issued by the Department or an approved local air pollution control agency under the APCA to the applicant or related parties that are currently in effect or have been in effect at any time 5 years prior to the date on which this form is notarized. This list shall include the plan approval and operating permit numbers, locations, issuance and expiration dates. Attach additional sheets as necessary.

Air Contamination Source	Plan Approval/ Operating Permit#	Location	Issuance Date	Expiration Date
Fairless Plant	09-00006	Fairless Plant, Fairless Hills, PA	10/11/2019	10/10/2024
Edgar Thomson Plant: See Attached List	See Attached List	Edgar Thomson Plant, Braddock, PA	See Attached List	See Attached List
Irvin Plant: See Attached List	See Attached List	Irvin Plant, West Mifflin, PA	See Attached List	See Attached List
Clairton Plant: See Attached List	See Attached List	Clairton Plant, Clairton, PA	See Attached List	See Attached List

Compliance Background. (Note: Copies of specific documents, if applicable, must be made available to the Department upon its request.) List all documented conduct of violations or enforcement actions identified by the Department pursuant to the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. Attach additional sheets as necessary. See the definition of "documented conduct" for further clarification. Unless specifically directed by the Department, deviations which have been previously reported to the Department in writing, relating to monitoring and reporting, need not be reported.

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing or Corrected/Date	Dollar Amount Penalty
See Attached List						$
						$
						$
						$
						$
						$
						$
						$
						$
						$

List all incidents of deviations of the APCA, regulations, terms and conditions of an operating permit or plan approval or order by applicant or any related party, using the following format grouped by source and location in reverse chronological order. This list must include items both currently known and unknown to the Department. Attach additional sheets as necessary. See the definition of "deviations" for further clarification.

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Incident Status: Litigation Existing/Continuing Or Corrected/Date
See Attached List				

<u>CONTINUING OBLIGATION</u>. Applicant is under a continuing obligation to update this form using the Compliance Review Supplemental Form if any additional deviations occur between the date of submission and Department action on the application.

VERIFICATION STATEMENT
Subject to the penalties of Title 18 Pa.C.S. Section 4904 and 35 P.S. Section 4009(b)(2), I verify under penalty of law that I am authorized to make this verification on behalf of the Applicant/Permittee. I further verify that the information contained in this Compliance Review Form is true and complete to the best of my belief formed after reasonable inquiry. I further verify that reasonable procedures are in place to ensure that "documented conduct" and "deviations" as defined in 25 Pa Code Section 121.1 are identified and included in the information set forth in this Compliance Review Form.
Signature — Date: 6-26-20
Kurt Barshick
Name (Print or Type)
Mon Valley Works - General Manager
Title

United States Steel Corporation
Allegheny County Health Department Permits

Clairton Works

7035003-010-26320	Coke Battery No. 1
7035003-010-26318	Coke Battery No. 2
7035003-010-26317	Coke Battery No. 3
7035003-010-26312	Coke Battery No. 7
7035003-010-26313	Coke Battery No. 8
7035003-010-26319	Coke Battery No. 9
7035003-010-26309	Coke Battery No. 13
7035003-010-26307	Coke Battery No. 14
7035003-010-25306	Coke Battery No. 15
7035003-010-26304	Coke Battery No. 19
7035003-010-53800	Coke Battery No. 20
78-I-0083-P	Coke Battery B and B Quench Tower
7035003-010-25101	Quench Tower #1
7035003-010-25102	Quench Tower #3
7035003-010-25104	Quench Tower #5
7035003-010-25106	Quench Tower #7
91-I-0021-P	Coke By-Products Recovery Plant
7035003-010-00801	Boiler No. 1
7035003-010-00800	Boiler No. 2
7035003-010-99100	Boiler Nos. 13 and 14
7035003-010-01300	Boiler Nos. R1 and R2
7035003-010-00600	Boiler Nos. T1 and T2
7035003-010-25001	Coke Screening No. 1
7035003-010-25002	Coke Screening No. 2
0052-I003	Coke Screening No. 3
0052-I006	Fan Upgrade 1-3 PEC
0052-I007	Fan Upgrade 7-9 PEC
0052-I008	Fan Upgrade 13-15 PEC
0052-I005a	Fan Upgrade 19/20 PEC
0052-I002b	Ammonia Flare
0052-I004	Methanol/MEA Tanks
73-O-01138-P	Coke Battery 1
73-O-01136-P	Coke Battery 2
73-I-1135-P	Coke Battery 3
73-O-1130-P	Coke Battery 7
73-O-1131-P	Coke Battery 8
73-O-1137-P	Coke Battery 9
73-O-1127-P	Coke Battery 13
78-I-009	Coke Batteries 13-15 Rebuild
73-O-1126-P	Coke Battery 14
93-I-0010-P	Coke Battery 15
77-I-0019-P	Coke Battery 20
87-I-0031-P	PEC for 1-3
87-I-0032-P	PEC for 7-9
87-I-0037-P	PEC for 13-15
87-I-0033-P	PEC for 19/20
78-I-0083-P	Coke Battery B and Quench Tower
90-I-0031-P	Igniters for 1-3, 7-9, and 13-15
90-I-0032-P	Igniters for 19/20
90-I-0033-P	Igniters for B
73-O-1139-P	Quench Tower #1

73-O-1140-P	Quench Tower #3
73-O-1142-P	Quench Tower #5
73-O-1144-P	Quench Tower #7
73-O-1148-P	Coke Screening #1
73-O-1149-P	Coke Screening #2
GC-80-62	COG Desulfurization
73-I-3784-P	COG Desulfurization
7035003-010-8400	Sulfur Production (Claus Carbonate)
73-O-1153-P	Sulfur Production (Claus Carbonate)
7035003-010-25600	Gas Processing
73-O-1155-P	Gas Processing
91-I-0021-P	Benzene NESHAP By-Product Plant Emission Control
73-O-1161-P	Coal Chemical Recovery #1 Unit
7035003-010-25501	Coal Chemical Recovery #1 Unit
73-I-4035-P	Tanks
73-O-1162-P	Coal Chemical Recovery #2 Unit
7035003-010-25502	Coal Chemical Recovery #2 Unit
73-I-4036-C	Tanks
94-I-0096-C	Boiler #1
75-I-0019-C	Boiler #1
94-I-0019-C	Boiler #2
75-I-0020-C	Boiler #2
94-I-0091-C	Boilers R1 and R2
74-O-6090-C	Boilers R1 and R2
94-I-0093-C	Boilers T1 and T2
89-I-0003-C	Boilers T1 and T2
76-I-0067-C	Boilers T1 and T2
73-I-4034-P	No. 1 Tar Acid Tanks
73-I-4030-P	Tar Refining Tanks V-100 & V-101
73-I-4029-P	Tar Refining Tanks 3-A & 4-A
73-I-4028-P	Tar Refining Tanks 10, 11, & V-113
73-I-4027-P	Tar Refining Tanks 3 to 8 & T
73-I-4026-P	Road Tar Terminal V-200 to V-208 inclusive
0052-I011	C Battery
0052-I011b	Revised C Battery
0052-I013	Coke Screening #4
0052-I014a	Quench Towers 5A and 7A
0052-I015	Truck/ Railcar Loading and Process Tanks
0052-I016	Light Oil Loading Facility
0052-I017	1-Hour SO2 NAAQS
0052-I018	15 Battery Stack
0052-I020	RACT II
0052	Title V Operating Permit

Edgar Thomson

7035003-002-93800	BOP
7035003-002-32300	BOP Slag Processing
92-I006-P	BOP Slag Processing
92-I0088-P	BOP Slag Processing
92-I066-P	BOP Slag Processing
7035003-002-90105	#1 Blast Furnace
7035003-002-31400	#1 Blast Furnace Hard Slag Pit
94-I-0026-P	#1 Blast Furnace Hard Slag Pit
4-1-0026-P	#1 Blast Furnace Hard Slag Pit
7035003-002-90107	#3 Blast Furnace

7035003-002-31401	#3 Blast Furnace Hard Slag Pit
94-I-0027-P	#3 Blast Furnace Hard Slag Pit
7035003-002-93900	Dual Slab Caster and Ladle Metallurgy Facility
90-I-003-P	Dual Slab Caster and Ladle Metallurgy Facility
95-I-006-P	RH Vacuum Degasser
94-I-006-P	RH Vacuum Degasser
7035003-004-99200	#2 Power House Riley Boilers #1, 2, & 3
7035003-002-99200	#2 Power House Riley Boilers #1, 2, & 3
0061559-000-73800	Waste Product Recycle & Briquetting Process
93-I-0039-P	Waste Product Recycle & Briquetting Process
0051-I004a	BOP Emission Control Upgrade
0051-I005	LMF Emission Control Upgrade
0051-I006	1-Hour SO2 NAAQS
0051-I008	RACT II
0051a	Title V Operating Permit

Irvin Plant

0050-I002a	Cold Reduction Mill
0050-I001b	64” Pickle Line
0050-I003	OCA Furnace #14
0050-I006	OCA Furnaces #15 and #16
0050-I007	Continuous Terne Line Molten Lead Pot Baghouse
0050-I008	1-Hour SO2 NAAQS
0050-OP16b	Title V Operating Permit

U. S. Steel – Mon Valley Works – Clairton Plant
Compliance Background – June 29, 2020

Date	Location	Plan Approval/ Operating Permit#	Nature of Documented Conduct	Type of Department Action	Status: Litigation Existing/Continuing Or Corrected/Date	Dollar Amount Penalty
6/5/2020	Edgar Thomson Plant	Article XXI	Visible Emissions	Enforcement Order #200601	In progress	NA
5/28/20	Clairton Plant	Article XXI/ Permit #0052	Self-reported Battery Fugitive Emissions 4Q 2019 and 1Q 2020	Settlement Agreement and Order #190604	Final	$361,400
2/21/20	Clairton Plant	Article XXI/ Permit #0052-I011b	Self-reported C Battery PEC Baghouse Stack exceedance	Enforcement Order #200202	Final	$13,200
1/14/20	Clairton Plant	Article XXI/ Permit #0052	Self-reported Battery Fugitive Emissions 2Q and 3Q 2019	Settlement Agreement and Order #190604	Final	$743,625
7/22/19	Irvin Plant	Article XXI/ Permit #0050	64 CPL Fumes	Enforcement Order #190703	Final	$3,600
5/10/19	Clairton Plant	Article XXI/ Permit #0052	Self-reported Battery Fugitive Emissions – 1Q 2019	Enforcement Order #190501	Final per the USS/ACHD June 2019 Settlement Agreement. Penalty paid.	$337,670
5/6/19	Irvin Plant	Article XXI/ Permit #0050	64 CPL Fumes	Enforcement Order #190401	Final – Information Request Complete	NA
4/11/19	Fairless Plant	Permit #09-00006	Self-reported Galv Line Tune-ups CO Recordings	Notice of Violation	Final - submitted response	NA
3/29/19	Clairton Plant	Article XXI/ Permit #0052	Self-reported Battery Fugitive Emissions – 3Q and 4Q 2018	Enforcement Order #190305	Final per the USS/ACHD June 2019 Settlement Agreement. Penalty paid.	$707,568
3/25/19	Clairton Plant	Article XXI/ Permit #0052-I017	Self-reported B Battery Quench Tower stack test exceedance	Enforcement Order #190304	Final – Re-tested and passed	$1,980
3/25/19	Clairton Plant	Article XXI/ Permit #0052	Self-reported Battery 13 Combustion Stack exceedance	Enforcement Order #190303	Final - submitted corrective action, re-tested and passed	NA
3/6/19	Clairton Plant	Article XXI	Coke Oven Regulations – Request for Reports and Info	Administrative Order	Final (provided ACHD with requested information)	NA

3/12/19	Clairton, Irvin, Edgar Thomson Plants	Article XXI	SO2 Emissions – No. 2 Control Room Fire	Enforcement Order #190202A	Final (in compliance with Order)	NA
10/31/18	Clairton Plant	Article XXI/ Permit #0052-I011b	Self-reported Battery Fugitive Emissions – 2Q 2018	Administrative Order #181002 Revised	Final per the USS/ACHD June 2019 Settlement Agreement. Penalty paid.	$613,716
7/25/18	Edgar Thomson Plant	Article XXI	Visible Emissions- BF Casthouse	Administrative Order #180706	Final	NA
6/28/18	Clairton Plant	Article XXI/ Permit #0052-I011	Article XXI Exceedances	Enforcement Order #180601	Final per the USS/ACHD June 2019 Settlement Agreement. Penalty paid.	$1,073,550
6/13/18	Irvin Plant	Article XXI	Self-reported Asbestos Quarterly Reporting	Enforcement Order #180506	Appealed/ Withdrawn/Final	$25,750
6/13/18	Edgar Thomson Plant	Article XXI	Self-reported Asbestos Quarterly Reporting	Enforcement Order #180505	Appealed/ Withdrawn/Final	$25,750
6/13/18	Clairton Plant	Article XXI	Self-reported Asbestos Quarterly Reporting	Enforcement Order #180504	Appealed/ Withdrawn/Final	$39,600
3/30/18	Clairton Plant	Article XXI	2016 Asbestos Removal Project	Enforcement Order #180303A	Final	$198,625
3/6/18	Clairton Plant	Article XXI/ Permit #0052-I011	Fugitive Battery Emissions	Administrative Order #180301	Final/ Consent Order entered	$392,100
2/27/18	Clairton Plant	Article XXI/ Permit #0052-I011	Self-reported C Battery Combustion Stack PM stack test exceedance	Administrative Order #180203	Final	$5,500
2/27/18	Clairton Plant	Article XXI/ Permit #0052-I017	Self-reported C Battery Quench Tower SO2 stack test exceedance	Administrative Order #180202	Final/Addressed in Order #180601 above	NA
11/9/17	Edgar Thomson Plant	Article XXI	Visible Emissions at BOP scrubber stack, BOP shop, Blast Furnaces, and LMF	Notice of Violation/Notice of Noncompliance from ACHD and EPA	Currently working with EPA and ACHD on resolution	NA
2/8/17	Edgar Thomson Plant	Article XXI	Visible Emissions, Operation and	Notice of Violation/Settlement	Final	$13,350

			Maintenance Blast Furnace No.1	Offer #170201		
1/25/17	Clairton Plant	Article XXI/ Permit No. 0052-I011	Battery Emissions	Notice of Violation/ Settlement Offer #170101	Final	$253,425
11/17/16	Clairton Plant	Article XXI/ Permit No. 0052-I011	Battery Emissions	Notice of Violation/ Settlement Offer #161003	Final	$142,950
8/31/16	Edgar Thomson Plant	Article XXI	Alleged violations of opacity from BOP Scrubber Stacks and Operations and Maintenance of Air Pollution Control Equipment	Notice of Violation #160802	Corrected	NA
7/18/16	Clairton Plant	Article XXI	Battery Emissions	Notice of Violation/ Settlement Offer #160701	Final	$1,575
4/22/16	Edgar Thomson Plant	Article XXI	Blast Furnace Emissions (Goggle Valve)	Notice of Violation	Final	NA
4/12/16	Edgar Thomson Plant	DEP Continuous Source Monitoring System (CSMS) Data Availability Requirements	Insufficient NOx CEMS data availability on Boiler 2	Letter	Final	NA
3/24/16	Clairton Plant	Consent Judgment	Civil Complaint in Equity; and Consent Judgment	Complaint Filed by ACHD; and Consent Judgment entered by the Court of Common Pleas, Allegheny County	Existing/In Effect	$25,000
10/30/15	Clairton Plant	Article XXI and Installation Permit #0052-I011	Battery Emissions	Statement of Violation	Final	$12,275

U. S. Steel Mon Valley Works – Clairton Plant
Incidents of Deviations – June 29, 2020

Date	Location	Plan Approval/ Operating Permit#	Nature of Deviation	Status: Litigation Existing/Continuing Or Corrected/Date
6/2015 – 6/2020	Clairton Plant	Article XXI & Permit #0052	Refer to semi-annual deviation reports/ annual certifications	NA
6/2015 – 6/2020	Fairless	Permit #09-00006	Refer to deviation reports	NA
6/2015 – 6/2020	Edgar Thomson	Article XXI & Permit #0051	Refer to semi-annual deviation report	NA
6/2015 – 6/2020	Irvin	Article XXI & Permit #0050	Refer to deviation reports	NA

APPENDIX C. EMISSION CALCULATIONS

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C1a. PEC Baghouse Replacement Project Emissions Summary - PSD Pollutants

Emission Unit/Pollutant[1,4]	Projected Actual Emissions (tpy) [2]						Baseline Actual Emissions (tpy) [3]					
	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	128.4	70.5	4.5E-03	12.7	10776.0	42.4	121.6	56.7	5.0E-03	8.0	9151.8	36.0
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	151.2	81.1	5.3E-03	15.0	12735.2	50.1	127.8	59.6	5.8E-03	8.1	10716.2	42.2
Total	**279.6**	**151.6**	**9.8E-03**	**27.7**	**23511.2**	**92.6**	**249.4**	**116.3**	**1.1E-02**	**16.1**	**19868.0**	**78.2**

Emission Unit/Pollutant[1,4]	Capable of Accommodating Emissions (tpy)						Demand Growth Exclusion Emissions					
	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	128.4	70.5	4.5E-03	9.9	9616.2	37.9	6.8	13.9	0.0E+00	1.9	464.4	1.8
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	151.2	81.1	5.3E-03	11.7	10475.5	41.2	23.3	21.5	0.0E+00	3.6	0.0	0.0
Total	**279.6**	**151.6**	**9.8E-03**	**21.6**	**20091.7**	**79.1**	**30.1**	**35.3**	**0.0E+00**	**5.5**	**464.4**	**1.8**

Emission Unit/Pollutant[1,4]	Projected Actual Emissions (excluding DGE Emissions)						Baseline Actual Emissions					
	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	121.6	56.7	4.5E-03	10.8	10311.6	40.6	121.6	56.7	5.0E-03	8.0	9151.8	36.0
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	127.8	59.6	5.3E-03	11.5	12735.2	50.1	127.8	59.6	5.8E-03	8.1	10716.2	42.2
Total	**249.4**	**116.3**	**9.8E-03**	**22.3**	**23046.8**	**90.7**	**249.4**	**116.3**	**1.1E-02**	**16.1**	**19868.0**	**78.2**

Emission Unit/Pollutant[1,4]	Project Emissions Increase					
	PM (filt.)	PM_{10} (filt. + cond.)	Lead	NO_2	CO_2e	CO
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	0.0	0.0	-5.0E-04	2.8	1159.8	4.6
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	0.0	0.0	-5.4E-04	3.3	2019.0	7.9
Total	**0.0**	**0.0**	**-1.0E-03**	**6.1**	**3178.8**	**12.5**
PSD SER	25	15	1	40	75000	100
Increase > SER?[4]	NO	NO	NO	NO	NO	NO

1. PSD also has established SERs for other pollutants that are not expected to be emitted in quantifiable quantities based on the sources included in this permitted action (e.g., hydrogen sulfide, total reduced sulfur, and sulfuric acid mist, CFCs).

2. Future emissions from existing units is projected actuals which account for the maximum annual rate projected in the next 5 years following resumption of regular operation after the project.

3. Baseline emissions are the highest 2-year average actual emissions from the last 10 years as reported by U. S. Steel as part of annual emissions inventories. Procedures were followed specific to non-EGU provisions as the proposed system does not meet the definition of an electric generating unit (EGU).

4. There are no other projects or sources that must be aggregated with this project. All existing infrastructure that has air emissions and which is impacted by the project have been accounted for in this analysis.

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C1b. PEC Baghouse Replacement Project Emissions Summary - NNSR Pollutants

	Projected Actual Emissions (tpy) [1]					Baseline Actual Emissions (tpy) [2]				
Emission Unit/Pollutant[3]	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	42.7	25.5	12.7	1.1	0.1	28.5	6.1	8.0	0.7	0.1
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	48.0	30.2	15.0	1.0	0.2	30.3	6.2	8.1	0.6	0.1
Total	**90.6**	**55.7**	**27.7**	**2.1**	**0.3**	**58.8**	**12.3**	**16.1**	**1.3**	**0.2**

	Capable of Accommodating Emissions (tpy)					Demand Growth Exclusion Emissions				
Emission Unit/Pollutant[3]	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	36.4	7.6	9.9	0.9	0.1	7.8	1.5	1.9	0.2	0.0
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	44.4	8.9	11.7	0.8	0.1	14.1	2.7	3.6	0.2	0.0
Total	**80.8**	**16.5**	**21.6**	**1.7**	**0.3**	**21.9**	**4.2**	**5.5**	**0.4**	**0.1**

	Projected Actual Emissions (excluding DGE Emissions)					Baseline Actual Emissions				
Emission Unit/Pollutant[3]	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	34.8	24.0	10.8	1.0	0.1	28.5	6.1	8.0	0.7	0.1
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	33.9	27.5	11.5	0.8	0.1	30.3	6.2	8.1	0.6	0.1
Total	**68.7**	**51.5**	**22.3**	**1.7**	**0.3**	**58.8**	**12.3**	**16.1**	**1.3**	**0.2**

	Project Emissions Increase				
Emission Unit/Pollutant[3]	$PM_{2.5}$ (filt. + cond.)	SO_2	NO_x	VOC	Ammonia
Pushing Emissions (Baghouse and Fugitives) - Batteries 13-15	6.3	17.9	2.8	0.2	0.0
Pushing Emissions (Baghouse and Fugitives) - Batteries 19-20	3.6	21.3	3.3	0.2	0.0
Total	**9.9**	**39.2**	**6.1**	**0.5**	**0.1**
NNSR SER	10	40	40	40	40
Increase > SER? Trigger Netting[3]	NO	NO	NO	NO	NO

1. Future emissions from existing units is projected actuals which account for the maximum annual rate projected in the next 5 years following resumption of regular operation after the project.

2. Baseline emissions are the highest 2-year average actual emissions from the last 5 years as reported by U. S. Steel as part of annual emissions inventories. Procedures were followed specific to non-EGU provisions as the proposed system does not meet the definition of an electric generating unit (EGU).

3. There are no other projects or sources that must be aggregated with this project. All existing infrastructure that has air emissions and which is impacted by the project have been accounted for in this analysis.

PRELIMINARY DRAFT

Company Name: **U. S. Steel**
Facility Name: **Clairton**
Project Description: **2nd Unit PEC Baghouse Replacement Project**

Table C2a. PEC Baghouse Projected Actual Emissions

Unit Information :

Batteries 13-15; Coal Charged (tpy):	1347000	(Projected Actual)
Batteries 19-20; Coal Charged (tpy):	1591900	(Projected Actual)
Batteries 13-15; Coke (tpy):	990000.0	(Projected Actual)
Batteries 19-20; Coke (tpy):	1170000.0	(Projected Actual)
Annual Average Baghouse Flowrate (dscfm):	95200.0	
Capture Efficiency:	95%	
Hours per Year:	8760	

Criteria Pollutant Projected Actual Emission Rates

Pollutant	Emission Factor [2]	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
NO_x	0.018	lb/ton coal	12.16	14.37	AP-42 Table 12.2-9 and capture efficency
CO	0.060	lb/ton coal	40.31	47.64	AP-42 Table 12.2-9 for the entire push (lb/ton coal charged) minus PEC Fugitive Emission Factor
SO_2	0.036	lb/ton coal	24.25	28.65	Engineering estimate considering increased capture
VOC - Battery 13-15	0.0016	lb/ton coal	1.07		2019 AEI Factor (historical stack testing). Updated for improved capture
VOC - Battery 19-20	0.0012	lb/ton coal		0.97	2019 AEI Factor (historical stack testing). Updated for improved capture
CO_2e	0.0080	tons CO_2e/ton coal charge	10237.20	12098.44	40 CFR 98.173(c). Capture efficiency.
Ammonia	0.0002	lb/ton coal	0.14	0.17	2019 AEI Factor (historical stack testing). Updated for improved capture

Pollutant	Emission Factor [1]	Factor Units	Potential Emissions (lb/hr)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
$PM_{filt.}$	0.004	gr/dscf	3.26		Vendor guarantee
PM_{10} (filt.)	0.004	gr/dscf	3.26		Vendor guarantee
$PM_{2.5}$ (filt.)	0.004	gr/dscf	3.26		Vendor guarantee
PM Condensable	0.0042	gr/dscf	3.45		Historical testing
Total PM_{10}			6.71		
Total $PM_{2.5}$			6.71		

Pollutant	Emission Factor [1]	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
$PM_{filt.}$	0.004	gr/dscf	7.15	7.15	Vendor guarantee
PM_{10} (filt.)	0.004	gr/dscf	7.15	7.15	Vendor guarantee
$PM_{2.5}$ (filt.)	0.004	gr/dscf	7.15	7.15	Vendor guarantee
PM Condensable	0.0042	gr/dscf	7.55	7.55	Historical testing
Total PM_{10}			14.69	14.69	
Total $PM_{2.5}$			14.69	14.69	

1. Outlet grain loading value represents worst-case short-term emission rate, and is used to calculate lb/hr values.

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C2a. PEC Baghouse Projected Actual Emissions

Hazardous Air Pollutant (HAP) Projected Actual Emissions

Pollutant	Emission Factor [2]	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source	Air Toxic? (Category)
			Batteries 13-15	Batteries 19-20		
Acetonitrile	8.4E-05	lb/ton coal	0.06	0.07	2019 AEI Factor. Updated for improved capture	Other Toxics
Acrolein	9.5E-05	lb/ton coal	0.06	0.08	2019 AEI Factor. Updated for improved capture	Other Toxics
Anthracene	4.8E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	N/A
Benzene	2.9E-04	lb/ton coal	0.20	0.23	2019 AEI Factor. Updated for improved capture	Other Toxics
Benzo(a)Anthracene	2.1E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(a)Pyrene	1.6E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(b)Fluoranthene	3.0E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(k)Fluoranthene	2.1E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(ghi)perylene	1.9E-06	lb/ton coal	0.00	0.00	2019 AEI Factor	POM
Carbon Disulfide	4.5E-05	lb/ton coal	0.03	0.04	2019 AEI Factor	Other Toxics
Chromium	4.1E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	HAP Metals
Chrysene	5.5E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Coke Oven Emissions	29%	(% of PM2.5 filt.)	2.07	2.07	2019 AEI Factor Methodology (29% of Filt. PM2.5)	Other Toxics
Cyanide Compounds	6.1E-04	lb/ton coal	0.41	0.48	2019 AEI Factor (AP-42 Table 12.2-9 and capture efficency)	Other Toxics
1,4-Dioxane	1.5E-04	lb/ton coal	0.10	0.12	2019 AEI Factor. Updated for improved capture	Other Toxics
Dibenz(a,h)Anthracene	2.6E-09	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Indeno(1,2,3-cd)Pyrene	2.0E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Lead	4.3E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture. Assumes 90% control of lead through baghouse filters.	HAP Metals
Mercury	1.8E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Mercury
Methyl Methacrylate	1.7E-04	lb/ton coal	0.11	0.13	2019 AEI Factor. Updated for improved capture	Other Toxics
Naphthalene	2.1E-05	lb/ton coal	0.01	0.02	2019 AEI Factor. Updated for improved capture	POM
Phenanthrene	1.5E-05	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	POM
POM	1.5E-05	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	POM
Styrene	4.5E-05	lb/ton coal	0.03	0.04	2019 AEI Factor. Updated for improved capture	POM
1,1,2,2-Tetrachloroethane	7.4E-05	lb/ton coal	0.05	0.06	2019 AEI Factor. Updated for improved capture	Other Toxics
Toluene	4.6E-05	lb/ton coal	0.03	0.04	2019 AEI Factor. Updated for improved capture	Other Toxics
Vinyl Acetate	1.5E-04	lb/ton coal	0.10	0.12	2019 AEI Factor. Updated for improved capture	Other Toxics
Total HAP (including Lead)			**3.29**	**3.52**		

2. Battery operations and coke oven pushing practices will not change as part of the project. As such, 2019 emission factors were utilized for combustion by-products and VOC emissions for projected actual emissions estimates with the exception of SO_2 which is based on engineering estimates.

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C2b. PEC Fugitives Projected Actual Emissions

Unit Information :

Batteries 13-15; Coal Charged (tpy):	1347000.0	(Projected Actual)
Batteries 19-20; Coal Charged (tpy):	1591900.0	(Projected Actual)
Batteries 13-15; Coke (tpy):	990000.0	(Projected Actual)
Batteries 19-20; Coke (tpy):	1170000.0	(Projected Actual)
Capture Efficiency:	95%	
Hours per Year:	8760	

Criteria Pollutant Projected Actual Emission Rates

Pollutant	Emission Factor [1]	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
NO_x	0.001	lb/ton coke	0.56	0.66	2019 AEI Factor. Updated for improved capture
CO	0.003	lb/ton coal	2.12	2.51	2019 AEI Factor (Based on AP-42). Updated for improved capture
SO_2	0.0019	lb/ton coal	1.28	1.51	Engineering estimate updated for improved capture
VOC - Battery 13-15	0.0001	lb/ton coal	0.06		2019 AEI Factor (historical stack testing). Updated for improved capture
VOC - Battery 19-20	0.0001	lb/ton coal		0.05	2019 AEI Factor (historical stack testing). Updated for improved capture
CO_2e	0.0080	tons CO_2e/ton coal charge	538.800	636.76	40 CFR 98.173(c). Capture efficiency.
Ammonia	1.11E-05	lb/ton coal	0.01	0.01	2019 AEI Factor (historical stack testing). Updated for improved capture

Pollutant	Emission Factor	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
PM (filt.) - Battery 13-15	0.1800	lb/ton coal	121.23		Based on historical factors used in AEI; updated for improved capture
PM (filt.) - Battery 19-20	0.1810	lb/ton coal		144.03	Based on historical factors used in AEI; updated for improved capture
Total PM_{10} - Battery 13-15	0.0829	lb/ton coal	55.85		Based on historical factors used in AEI; updated for improved capture
Total PM_{10} - Battery 19-20	0.0834	lb/ton coal		66.40	Based on historical factors used in AEI; updated for improved capture
Total $PM_{2.5}$ - Battery 13-15	0.0415	lb/ton coal	27.97		Based on historical factors used in AEI; updated for improved capture
Total $PM_{2.5}$ - Battery 19-20	0.0418	lb/ton coal		33.27	Based on historical factors used in AEI; updated for improved capture

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C2b. PEC Fugitives Projected Actual Emissions

Hazardous Air Pollutant (HAP) Projected Actual Emissions

Pollutant	Emission Factor [1]	Factor Units	Projected Actual Emissions (tpy)		Emission Factor Source	Air Toxic? (Category)
			Batteries 13-15	Batteries 19-20		
Acetonitrile	4.4E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Other Toxics
Acrolein	5.0E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Other Toxics
Anthracene	2.5E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	N/A
Benzene	1.5E-05	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	Other Toxics
Benzo(a)Anthracene	1.1E-09	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(a)Pyrene	8.3E-10	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(b)Fluoranthene	1.6E-09	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(k)Fluoranthene	1.1E-09	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Benzo(ghi)perylene	1.9E-06	lb/ton coal	0.00	0.00	2019 AEI Factor Methodology	POM
Carbon Disulfide	2.3E-06	lb/ton coal	0.00	0.00	2019 AEI Factor Methodology	Other Toxics
Chromium	2.6E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	HAP Metals
Chrysene	3.2E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Coke Oven Emissions - Batteries 13-15	29%	(% of PM2.5 filt.)	8.09	9.61	2019 AEI Factor Methodology (29% of Filt. PM2.5)	Other Toxics
Cyanide Compounds	3.2E-05	lb/ton coal	0.02	0.03	2019 AEI Factor (AP-42 Table 12.2-9 and capture efficency)	Other Toxics
1,4-Dioxane	7.8E-06	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	Other Toxics
Dibenz(a,h)Anthracene	3.6E-08	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Indeno(1,2,3-cd)Pyrene	1.3E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Lead	2.3E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	HAP Metals
Mercury	9.6E-10	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Mercury
Methyl Methacrylate	8.9E-06	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	Other Toxics
Naphthalene	1.1E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Phenanthrene	7.8E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
POM	7.8E-07	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
Styrene	2.4E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	POM
1,1,2,2-Tetrachloroethane	3.9E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Other Toxics
Toluene	2.4E-06	lb/ton coal	0.00	0.00	2019 AEI Factor. Updated for improved capture	Other Toxics
Vinyl Acetate	7.8E-06	lb/ton coal	0.01	0.01	2019 AEI Factor. Updated for improved capture	Other Toxics
Total HAP (including Lead)			**8.15**	**9.69**		

1. Battery operations and coke oven pushing practices will not change as part of the project. As such, 2019 emission factors were utilized for combustion by-products and VOC emissions for projected actual emissions estimates with the exception of SO_2 which is based on engineering estimates.

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C3a. PEC Baghouse Could Have Accommodated Emissions

Unit Information :	For NO_x, SO_2, VOC, NH_3, PM species	For CO, Lead and CO_2e	
Batteries 13-15; Coal Charged (tpy):	1059793.9	1202028.0	(Could Have Accommodated)
Batteries 19-20; Coal Charged (tpy):	1241042.4	1309440.0	(Could Have Accommodated)
Batteries 13-15; Coke (tpy):	758700.0	938364.0	(Could Have Accommodated)
Batteries 19-20; Coke (tpy):	947808.0	1009824.0	(Could Have Accommodated)
Capture Efficiency :	90%		

Criteria Pollutant Could Have Accommodated Emission Rates[1]

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
NO_x	0.017	lb/ton coal	9.06	10.61	Factor from 2017/2018 inventory (consistent with baseline period)
CO	0.057	lb/ton coal	34.08	37.12	Factor from 2011/2012 inventory (consistent with baseline period)
SO_2	0.0130	lb/ton coal	6.89	8.07	Factor from 2017/2018 inventory (consistent with baseline period)
VOC - Battery 13-15	0.0015	lb/ton coal	0.80		Factor from 2017/2018 inventory (consistent with baseline period)
VOC - Battery 19-20	0.0012	lb/ton coal		0.71	Factor from 2017/2018 inventory (consistent with baseline period)
CO_2e	0.0080	tons CO_2e/ton coal	8654.60	9427.97	40 CFR 98.173(c). Capture efficiency.
Ammonia	0.0002	lb/ton coal	0.11	0.12	Factor from 2017/2018 inventory (consistent with baseline period)

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
PM (filt.) - Battery 13-15	0.0015	lb/ton coke	0.57		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
PM (filt.) - Battery 19-20	0.0028	lb/ton coke		1.30	Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total PM_{10} - Battery 13-15	0.0025	lb/ton coke	0.96		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total PM_{10} - Battery 19-20	0.0040	lb/ton coke		1.90	Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total $PM_{2.5}$ - Battery 13-15	0.0021	lb/ton coke	0.80		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total $PM_{2.5}$ - Battery 19-20	0.0032	lb/ton coke		1.54	Avg. of 2017/2018 Emission Factors (consistent with baseline period)

Hazardous Air Pollutant (HAP) Could Have Accommodated Emissions [1]

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
Lead	4.1E-06	lb/ton coal	2.5E-03	2.7E-03	Factor from 2011/2012 inventory (consistent with baseline period). Assumes 90% control of lead through baghouse filters.

1. Calculations are based on the Battery operations (i.e., coal charged or coke production) capable of being accommodated during the baseline period multiplied by the average emission factor for a given pollutant during the baseline period for that same pollutant.

Emissions = Could Have Accommodated Production (tons/month) x 12 Months x Emission Factor (lb/ton) x 1 ton / 2000 lbs

	For NO_x, SO_2, VOC, NH_3, PM species		For CO, Lead and CO_2e	
Unit Information :	**Max Month (tons/month):**	**Month:**	**Max Month (tons/month):**	**Month:**
Batteries 13-15; Coal Charged :	88316.2	August 2018	100169	January 2011
Batteries 19-20; Coal Charged :	103420.2	August 2018	109120	January 2011
Batteries 13-15; Coke :	63225.0	August 2018	78197	January 2011
Batteries 19-20; Coke :	78984.0	August 2018	84152	January 2011

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C3b. PEC Fugitives Could Have Accommodated Emissions

Unit Information :	For NO_x, SO_2, VOC, NH_3, PM species	For CO, Lead and CO_2e	
Batteries 13-15; Coal Charged (tpy):	1059793.9	1202028.0	(Could Have Accommodated)
Batteries 19-20; Coal Charged (tpy):	1241042.4	1309440.0	(Could Have Accommodated)
Batteries 13-15; Coke (tpy):	758700.0	938364.0	(Could Have Accommodated)
Batteries 19-20; Coke (tpy):	947808.0	1009824.0	(Could Have Accommodated)

Criteria Pollutant Could Have Accommodated Emission Rates[1]

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
NO_x	0.002	lb/ton coke	0.85	1.07	Factor from 2017/2018 inventory (consistent with baseline period)
CO	0.006	lb/ton coal	3.79	4.12	Factor from 2011/2012 inventory (consistent with baseline period)
SO_2	0.0013	lb/ton coal	0.69	0.81	Factor from 2017/2018 inventory (consistent with baseline period)
VOC - Battery 13-15	0.0002	lb/ton coal	0.09		Factor from 2017/2018 inventory (consistent with baseline period)
VOC - Battery 19-20	0.0001	lb/ton coal		0.08	Factor from 2017/2018 inventory (consistent with baseline period)
CO_2e	0.0080	tons CO_2e/ton coal	961.62	1047.55	40 CFR 98.173(c). Capture efficiency.
Ammonia	2.22E-05	lb/ton coal	0.01	0.01	Factor from 2017/2018 inventory (consistent with baseline period)

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
PM (filt.) - Battery 13-15	0.2910	lb/ton coal	154.21		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
PM (filt.) - Battery 19-20	0.2992	lb/ton coal		185.67	Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total PM_{10} - Battery 13-15	0.1340	lb/ton coal	71.03		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total PM_{10} - Battery 19-20	0.1379	lb/ton coal		85.57	Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total $PM_{2.5}$ - Battery 13-15	0.0671	lb/ton coal	35.56		Avg. of 2017/2018 Emission Factors (consistent with baseline period)
Total $PM_{2.5}$ - Battery 19-20	0.0691	lb/ton coal		42.86	Avg. of 2017/2018 Emission Factors (consistent with baseline period)

Hazardous Air Pollutant (HAP) Could Have Accommodated Emissions [1]

Pollutant	Emission Factor	Factor Units	Could Have Accommodated Emissions (tpy)		Emission Factor Source
			Batteries 13-15	Batteries 19-20	
Lead	4.6E-06	lb/ton coal	2.8E-03	3.0E-03	Factor from 2011/2012 inventory (consistent with baseline period)

1. Calculations are based on the Battery operations (i.e., coal charged or coke production) capable of being accommodated during the baseline period multiplied by the average emission factor for a given pollutant during the baseline period for that same pollutant.

Emissions = Could Have Accommodated Production (tons/month) x 12 Months x Emission Factor (lb/ton) x 1 ton / 2000 lbs

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C4. Past Actual Emissions Summary - PM filterable

Plant	Unit Description	Emission Unit ID	2011	2012	2013	2014	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	1.74	1.20	1.16	0.85	0.71	0.59	0.69	0.15	0.13
Clairton	PEC Baghouse - Batteries 19-20	P053	1.71	0.40	0.38	0.34	0.30	1.10	1.11	0.55	0.57
Clairton	PEC Fugitives - Batteries 13-15	P052	96.49	89.54	48.27	98.55	109.77	71.97	120.98	121.37	94.35
Clairton	PEC Fugitives - Batteries 19-20	P053	106.60	108.77	60.73	116.20	132.86	91.36	127.03	127.00	94.25
	Years			2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*98.23*	*90.74*	*49.44*	*99.40*	*110.48*	*72.56*	*121.67*	*121.51*	*94.48*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*94.49*	*70.09*	*74.42*	*104.94*	*91.52*	*97.11*	*121.59*	*108.00*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*108.31*	*109.16*	*61.11*	*116.54*	*133.16*	*92.46*	*128.14*	*127.55*	*94.82*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*108.74*	*85.14*	*88.83*	*124.85*	*112.81*	*110.30*	*127.84*	*111.19*
Clairton Baselines	*All*		*206.54*	*199.90*	*110.55*	*215.94*	*243.64*	*165.03*	*249.81*	*249.06*	*189.30*
Clairton Baselines	*All*			*203.22*	*155.23*	*163.24*	*229.79*	*204.33*	*207.42*	*249.43*	*219.18*

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C5a. Past Actual Emissions Summary - PM10 (Filterable)

Plant	Unit Description	Emission Unit ID	2011 tpy	2012 tpy	2013 tpy	2014 tpy	2015 tpy	2016 tpy	2017 tpy	2018 tpy	2019 tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	1.08	0.75	0.73	0.53	0.44	0.37	0.43	0.39	0.38
Clairton	PEC Baghouse - Batteries 19-20	P053	1.07	0.53	0.51	0.49	0.43	0.38	0.38	0.44	0.46
Clairton	PEC Fugitives - Batteries 13-15	P052	44.39	41.19	22.21	45.33	50.49	33.11	55.65	55.83	43.40
Clairton	PEC Fugitives - Batteries 19-20	P053	49.03	50.03	27.94	53.45	61.12	42.03	58.43	58.42	43.36

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C5b. Past Actual Emissions Summary - PM10 (Condensable)

Plant	Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	0.00	0.15	0.19	0.15	0.12	0.61	0.72	0.18	0.17
Clairton	PEC Baghouse - Batteries 19-20	0.00	0.22	0.29	0.72	0.64	0.80	0.97	0.40	0.42
Clairton	PEC Fugitives - Batteries 13-15	0.00	0.02	0.02	0.02	0.02	0.09	0.11	0.03	0.02
Clairton	PEC Fugitives - Batteries 19-20	0.00	0.03	0.03	0.11	0.09	0.11	0.15	0.06	0.05

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C5c. Past Actual Emissions Summary - PM10 total

Plant	Unit Description	2011	2012	2013	2014	2015	2016	2017	2018	2019
		tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	1.08	0.90	0.92	0.68	0.57	0.98	1.15	0.57	0.55
Clairton	PEC Baghouse - Batteries 19-20	1.07	0.75	0.81	1.21	1.06	1.18	1.35	0.84	0.87
Clairton	PEC Fugitives - Batteries 13-15	44.39	41.21	22.23	45.35	50.51	33.19	55.76	55.86	43.42
Clairton	PEC Fugitives - Batteries 19-20	49.03	50.07	27.97	53.56	61.21	42.14	58.58	58.48	43.41
Plant	Years		2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	*45.47*	*42.11*	*23.15*	*46.03*	*51.08*	*34.18*	*56.91*	*56.43*	*43.97*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*		*43.79*	*32.63*	*34.59*	*48.55*	*42.63*	*45.54*	*56.67*	*50.20*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	*50.10*	*50.82*	*28.77*	*54.77*	*62.27*	*43.31*	*59.93*	*59.32*	*44.28*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*		*50.46*	*39.80*	*41.77*	*58.52*	*52.79*	*51.62*	*59.63*	*51.80*
Clairton Baselines	*All*	*95.57*	*92.93*	*51.92*	*100.80*	*113.35*	*77.49*	*116.84*	*115.75*	*88.25*
Clairton Baselines	*All*		*94.25*	*72.42*	*76.36*	*107.08*	*95.42*	*97.16*	*116.30*	*102.00*

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C6a. Past Actual Emissions Summary - PM2.5 (Filterable)

Plant	Unit Description	Emission Unit ID	2015 tpy	2016 tpy	2017 tpy	2018 tpy	2019 tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	0.24	0.20	0.24	0.05	0.05
Clairton	PEC Baghouse - Batteries 19-20	P053	0.10	0.38	0.38	0.19	0.20
Clairton	PEC Fugitives - Batteries 13-15	P052	25.25	16.55	27.82	27.91	21.70
Clairton	PEC Fugitives - Batteries 19-20	P053	30.56	21.01	29.22	29.21	21.68

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C6b. Past Actual Emissions Summary - PM2.5 (Condensable)

Plant	Unit Description	2015	2016	2017	2018	2019
		tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	0.12	0.61	0.72	0.18	0.17
Clairton	PEC Baghouse - Batteries 19-20	0.64	0.80	0.97	0.40	0.42
Clairton	PEC Fugitives - Batteries 13-15	0.02	0.09	0.11	0.03	0.02
Clairton	PEC Fugitives - Batteries 19-20	0.09	0.11	0.15	0.06	0.05

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C6c. Past Actual Emissions Summary - PM2.5 total

Plant	Unit Description	2015	2016	2017	2018	2019
		tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	0.37	0.82	0.96	0.23	0.21
Clairton	PEC Baghouse - Batteries 19-20	0.74	1.18	1.35	0.59	0.61
Clairton	PEC Fugitives - Batteries 13-15	25.27	16.64	27.93	27.94	21.72
Clairton	PEC Fugitives - Batteries 19-20	30.65	21.12	29.36	29.27	21.73
Plant	Years	2014/2015	2015 / 2016	2016 / 2017	2017 / 2018	2018 / 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	*25.63*	*17.46*	*28.89*	*28.17*	*21.93*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*		*21.54*	*23.17*	*28.53*	*25.05*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	*31.39*	*22.30*	*30.72*	*29.86*	*22.34*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*		*26.84*	*26.51*	*30.29*	*26.10*
Clairton Baselines	*All*	*57.02*	*39.76*	*59.60*	*58.03*	*44.27*
Clairton Baselines	*All*		*48.39*	*49.68*	*58.82*	*51.15*

PRELIMINARY DRAFT

Company Name: **U. S. Steel**
Facility Name: **Clairton**
Project Description: **2nd Unit PEC Baghouse Replacement Project**

Table C7. Past Actual Emissions Summary - NOx

Plant	Unit Description	Emission Unit ID	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	7.75	4.95	6.16	8.44	6.11
Clairton	PEC Baghouse - Batteries 19-20	P053	9.45	5.83	6.42	8.35	6.95
Clairton	PEC Fugitives - Batteries 13-15	P052	0.76	0.51	0.60	0.82	0.75
Clairton	PEC Fugitives - Batteries 19-20	P053	0.95	0.62	0.63	0.82	0.86
	Years			2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*8.52*	*5.46*	*6.76*	*9.26*	*6.85*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*6.99*	*6.11*	*8.01*	*8.05*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*10.41*	*6.45*	*7.04*	*9.17*	*7.81*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*8.43*	*6.75*	*8.11*	*8.49*
Clairton Baselines	*All*		*18.92*	*11.91*	*13.80*	*18.43*	*14.66*
Clairton Baselines	*All*			*15.42*	*12.85*	*16.11*	*16.55*

PRELIMINARY DRAFT

Company Name: **U. S. Steel**
Facility Name: **Clairton**
Project Description: **2nd Unit PEC Baghouse Replacement Project**

Table C8. Past Actual Emissions Summary - VOC

Plant	Unit Description	Emission Unit ID	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	0.68	0.44	0.54	0.74	0.54
Clairton	PEC Baghouse - Batteries 19-20	P053	0.64	0.39	0.43	0.56	0.47
Clairton	PEC Fugitives - Batteries 13-15	P052	0.08	0.05	0.06	0.08	0.06
Clairton	PEC Fugitives - Batteries 19-20	P053	0.07	0.04	0.05	0.06	0.05
	Years			2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*0.76*	*0.48*	*0.60*	*0.83*	*0.60*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*0.62*	*0.54*	*0.71*	*0.71*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*0.71*	*0.44*	*0.48*	*0.63*	*0.52*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*0.57*	*0.46*	*0.55*	*0.57*
Clairton Baselines	*All*		*1.47*	*0.92*	*1.08*	*1.45*	*1.12*
Clairton Baselines	*All*			*1.19*	*1.00*	*1.27*	*1.28*

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C9. Past Actual Emissions Summary - CO

Plant	Unit Description	Emission Unit ID	2011	2012	2013	2014	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	33.43	31.43	30.39	30.17	25.71	16.41	20.42	27.97	20.24
Clairton	PEC Baghouse - Batteries 19-20	P053	37.04	38.91	37.68	36.24	31.34	19.33	21.28	27.70	23.05
Clairton	PEC Fugitives - Batteries 13-15	P052	3.71	3.49	3.38	3.35	2.86	1.82	2.27	3.11	2.25
Clairton	PEC Fugitives - Batteries 19-20	P053	4.12	4.32	4.19	4.03	3.48	2.15	2.36	3.08	2.56
	Years			2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*37.15*	*34.92*	*33.77*	*33.52*	*28.57*	*18.23*	*22.68*	*31.08*	*22.49*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*36.04*	*34.35*	*33.64*	*31.04*	*23.40*	*20.46*	*26.88*	*26.79*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*41.15*	*43.24*	*41.87*	*40.27*	*34.82*	*21.48*	*23.64*	*30.78*	*25.61*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*42.19*	*42.55*	*41.07*	*37.54*	*28.15*	*22.56*	*27.21*	*28.20*
Clairton Baselines	*All*		*78.30*	*78.16*	*75.63*	*73.78*	*63.39*	*39.71*	*46.33*	*61.86*	*48.11*
Clairton Baselines	*All*			*78.23*	*76.90*	*74.71*	*68.59*	*51.55*	*43.02*	*54.09*	*54.98*

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C10. Past Actual Emissions Summary - Lead

Plant	Unit Description	Emission Unit ID	2011	2012	2013	2014	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	2.4E-03	2.3E-03	2.2E-03	2.2E-03	1.9E-03	1.2E-03	1.5E-03	2.0E-03	1.5E-03
Clairton	PEC Baghouse - Batteries 19-20	P053	2.7E-03	2.8E-03	2.7E-03	2.6E-03	2.3E-03	1.4E-03	1.5E-03	2.0E-03	1.7E-03
Clairton	PEC Fugitives - Batteries 13-15	P052	2.7E-03	2.5E-03	2.5E-03	2.4E-03	2.1E-03	1.3E-03	1.6E-03	2.3E-03	1.6E-03
Clairton	PEC Fugitives - Batteries 19-20	P053	3.0E-03	3.1E-03	3.0E-03	2.9E-03	2.5E-03	1.6E-03	1.7E-03	2.2E-03	1.9E-03
	Years			2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*5.1E-03*	*4.8E-03*	*4.7E-03*	*4.6E-03*	*3.9E-03*	*2.5E-03*	*3.1E-03*	*4.3E-03*	*3.1E-03*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*5.0E-03*	*4.7E-03*	*4.6E-03*	*4.3E-03*	*3.2E-03*	*2.8E-03*	*3.7E-03*	*3.7E-03*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*5.7E-03*	*6.0E-03*	*5.8E-03*	*5.6E-03*	*4.8E-03*	*3.0E-03*	*3.3E-03*	*4.2E-03*	*3.5E-03*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*5.8E-03*	*5.9E-03*	*5.7E-03*	*5.2E-03*	*3.9E-03*	*3.1E-03*	*3.8E-03*	*3.9E-03*
Clairton Baselines	*All*		*1.1E-02*	*1.1E-02*	*1.0E-02*	*1.0E-02*	*8.8E-03*	*5.5E-03*	*6.4E-03*	*8.5E-03*	*6.6E-03*
Clairton Baselines	*All*			*1.1E-02*	*1.1E-02*	*1.0E-02*	*9.5E-03*	*7.1E-03*	*5.9E-03*	*7.5E-03*	*7.6E-03*

PRELIMINARY DRAFT

Company Name: **U. S. Steel**
Facility Name: **Clairton**
Project Description: **2nd Unit PEC Baghouse Replacement Project**

Table C11. Past Actual Emissions Summary - Ammonia

Plant	Unit Description	Emission Unit ID	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	0.09	0.06	0.07	0.10	0.07
Clairton	PEC Baghouse - Batteries 19-20	P053	0.11	0.07	0.08	0.10	0.08
Clairton	PEC Fugitives - Batteries 13-15	P052	0.01	0.01	0.01	0.01	0.01
Clairton	PEC Fugitives - Batteries 19-20	P053	0.01	0.01	0.01	0.01	0.01
	Years			2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*0.10*	*0.06*	*0.08*	*0.11*	*0.08*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*0.08*	*0.07*	*0.09*	*0.09*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*0.12*	*0.08*	*0.08*	*0.11*	*0.09*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*0.10*	*0.08*	*0.10*	*0.10*
Clairton Baselines	*All*		*0.22*	*0.14*	*0.16*	*0.22*	*0.17*
Clairton Baselines	*All*			*0.18*	*0.15*	*0.19*	*0.19*

PRELIMINARY DRAFT

Company Name: U. S. Steel
Facility Name: Clairton
Project Description: 2nd Unit PEC Baghouse Replacement Project

Table C12. Past Actual Emissions Summary - CO_2

Plant	Unit Description	Emission Unit ID	2011 tpy	2012 tpy	2013 tpy	2014 tpy	2015 tpy	2016 tpy	2017 tpy	2018 tpy	2019 tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	8,490.80	7,982.52	7,718.14	7,661.50	6,529.38	4,167.66	5,223.02	7,132.88	5,141.33
Clairton	PEC Baghouse - Batteries 19-20	P053	9406.39	9,882.72	9,569.35	9,203.64	7,959.02	4,909.90	5,414.67	7,049.78	5,854.38
Clairton	PEC Fugitives - Batteries 13-15	P052	943.42	886.95	857.57	851.28	725.49	463.07	580.34	792.54	571.26
Clairton	PEC Fugitives - Batteries 19-20	P053	1045.15	1,098.08	1,063.26	1,022.63	884.34	545.54	601.63	783.31	650.49
	Years			2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*9434.22*	*8869.46*	*8575.71*	*8512.78*	*7254.87*	*4630.73*	*5803.35*	*7925.43*	*5712.59*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*9151.84*	*8722.59*	*8544.25*	*7883.82*	*5942.80*	*5217.04*	*6864.39*	*6819.01*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*10451.54*	*10980.80*	*10632.61*	*10226.26*	*8843.35*	*5455.45*	*6016.30*	*7833.09*	*6504.86*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*10716.17*	*10806.70*	*10429.44*	*9534.81*	*7149.40*	*5735.88*	*6924.70*	*7168.98*
Clairton Baselines	*All*		*19885.76*	*19850.26*	*19208.32*	*18739.04*	*16098.22*	*10086.18*	*11819.66*	*15758.51*	*12217.46*
Clairton Baselines	*All*			*19868.01*	*19529.29*	*18973.68*	*17418.63*	*13092.20*	*10952.92*	*13789.09*	*13987.99*

1. Baselines computed using EPA GHG reporting factor of 0.008 and multiplying by tons of coal charged (40 CFR 98.173c) and assuming 90% capture.

PRELIMINARY DRAFT

Company Name: **U. S. Steel**
Facility Name: **Clairton**
Project Description: **2nd Unit PEC Baghouse Replacement Project**

Table C13. Past Actual Emissions Summary - SO2

Plant	Unit Description	Emission Unit ID	2015	2016	2017	2018	2019
			tpy	tpy	tpy	tpy	tpy
Clairton	PEC Baghouse - Batteries 13-15	P052	5.89	3.76	4.68	6.41	4.64
Clairton	PEC Baghouse - Batteries 19-20	P053	7.19	4.43	4.88	6.35	5.29
Clairton	PEC Fugitives - Batteries 13-15	P052	4.44	0.38	0.47	0.64	0.46
Clairton	PEC Fugitives - Batteries 19-20	P053	5.42	0.44	0.49	0.64	0.53
	Years			2015 / 2016	2016 / 2017	2017/ 2018	2018/ 2019
Clairton Baselines	*Annual - Pushing (Batteries 13-15)*	P052	*10.34*	*4.14*	*5.15*	*7.05*	*5.11*
Clairton Baselines	*2-yr Average - Pushing (Batteries 13-15)*	*P052*		*7.24*	*4.64*	*6.10*	*6.08*
Clairton Baselines	*Annual - Pushing (Batteries 19-20)*	P053	*12.60*	*4.88*	*5.37*	*6.99*	*5.81*
Clairton Baselines	*2-yr Average - Pushing (Batteries 19-20)*	*P053*		*8.74*	*5.12*	*6.18*	*6.40*
Clairton Baselines	*All*		*22.94*	*9.01*	*10.52*	*14.04*	*10.92*
Clairton Baselines	*All*			*15.98*	*9.77*	*12.28*	*12.48*

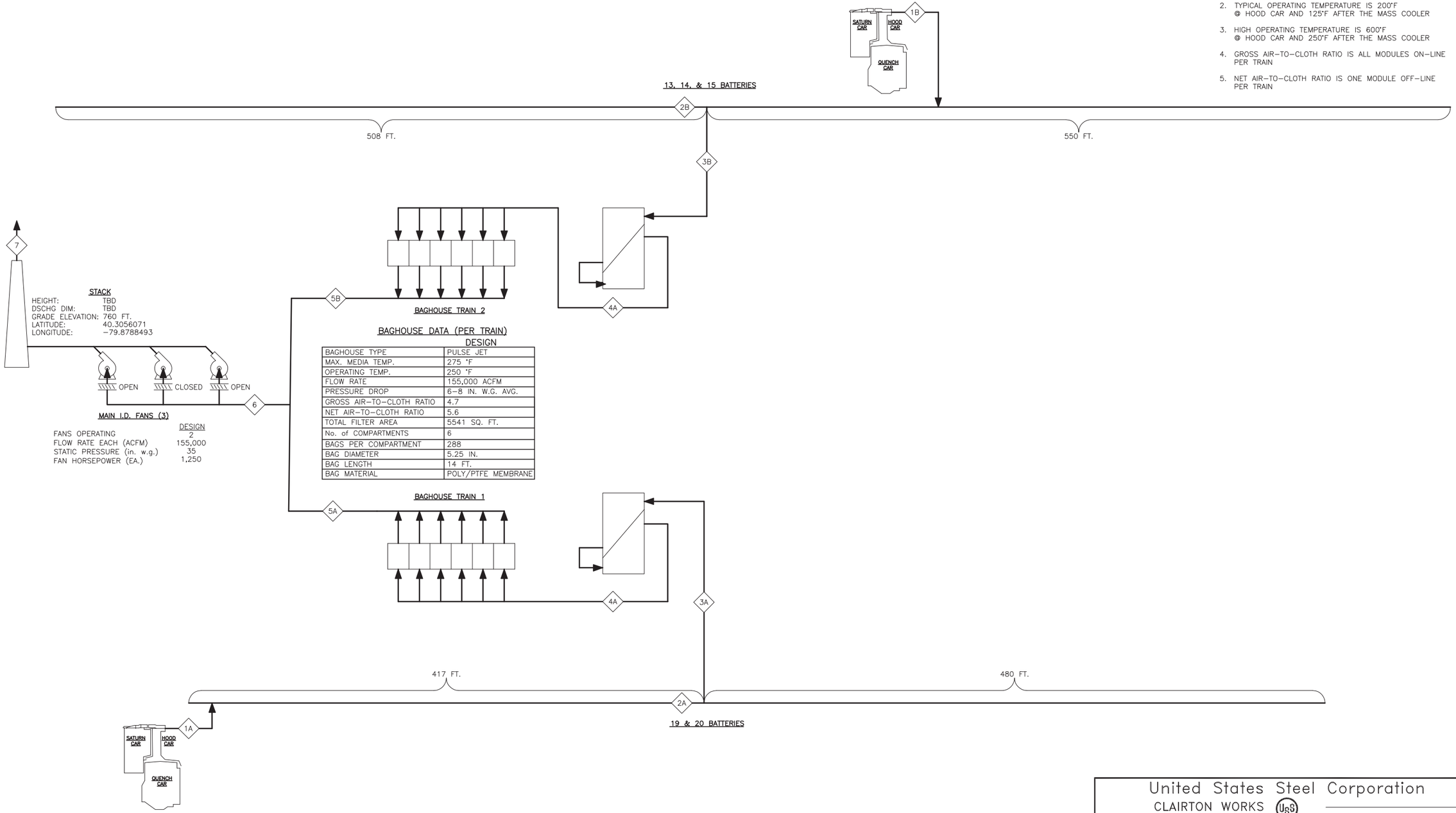
APPENDIX D. PROCESS FLOW DIAGRAM

W-110700

BILL OF MATERIAL							
MARK	REQ'D	DESCRIPTION	MAT'L	REMARKS	WEIGHT EA.	WEIGHT TOTAL	ORDER NO.

NOTES:

1. LOW OPERATING TEMPERATURE IS 70°F @ HOOD CAR AND 70°F AFTER THE MASS COOLER
2. TYPICAL OPERATING TEMPERATURE IS 200°F @ HOOD CAR AND 125°F AFTER THE MASS COOLER
3. HIGH OPERATING TEMPERATURE IS 600°F @ HOOD CAR AND 250°F AFTER THE MASS COOLER
4. GROSS AIR-TO-CLOTH RATIO IS ALL MODULES ON-LINE PER TRAIN
5. NET AIR-TO-CLOTH RATIO IS ONE MODULE OFF-LINE PER TRAIN



ON ORIGINAL

GCT
4953 N. O'CONNOR BLVD.
IRVING, TEXAS 75062 USA
PH: (214) 613-1785
FAX: (214) 613-1786

ISSUED FOR:
FINAL REVIEW
BY: MAX TICKMAN DATE: 06/09/20

DATE		REVISION	CHECKED BY
06/09/20	A	ISSUED FOR FINAL REVIEW	MT

United States Steel Corporation
CLAIRTON WORKS

UNIT 2 OVENS PUSHING EMISSIONS UPGRADE
13-15 & 19-20 BATTERIES
PUSHING EMISSIONS CONTROL SYSTEM
PROCESS FLOW DIAGRAM

DRAWN	DATE	CHECKED	DATE	APPROVED SAFETY	APPROVED CHIEF ENG'R
MT	02/25/20				

APPROP. NO.
JOB NO.
SCALE
CLASSIFICATION
NO. W-110700

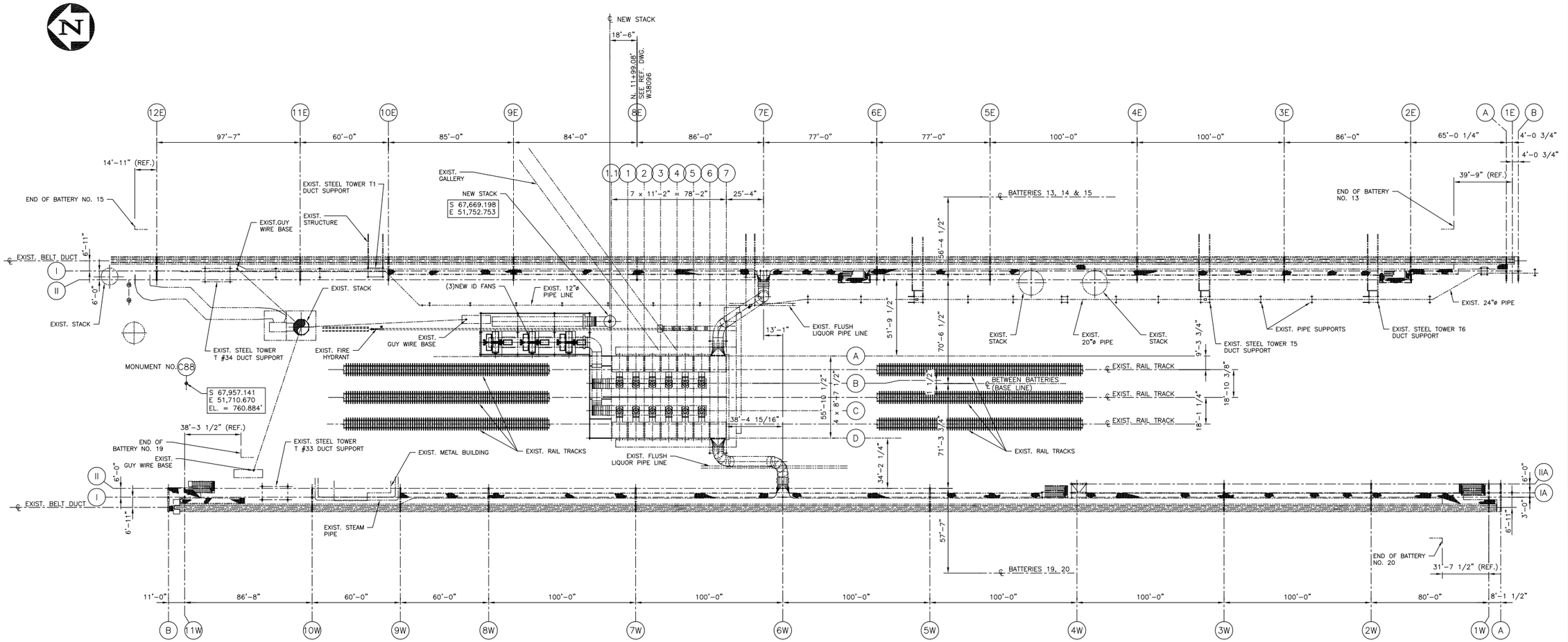
W110700

APPENDIX E. SITE MAP


PEC Baghouse Modification
1537 ft
©2020 Europa Technologies
©2020 Google
Google Earth

W-110810

BILL OF MATERIAL							
MARK	REQ'D	DESCRIPTION	MAT'L	REMARKS	WEIGHT EA.	WEIGHT TOTAL	ORDER NO.



PLAN

SCALE: 1/32=1'-0"

ON ORIGINAL 0" 1" 2" 3" 0 1 2 3 4 5 6 7 8 CM

GCT 4953 N. O'CONNOR BLVD. IRVING, TEXAS 75062 USA PH: (214) 613-1785 FAX: (214) 613-1786

PRELIMINARY NOT FOR CONSTRUCTION

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ISSUED FOR: **REVIEW**

BY: B. ALBERT DATE: 06/09/20

GCT

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DATE	REVISION	CHECKED BY
06/09/20	(A) ISSUED FOR REVIEW	GE

United States Steel Corporation

CLAIRTON WORKS (USS)

UNIT 2 OVENS PUSHING EMISSIONS UPGRADE
13-15 & 19-20 BATTERIES
STRUCTURAL – GENERAL ARRANGEMENT
OVERALL PLAN

DRAWN	DATE	CHECKED	DATE	APPROVED SAFETY	APPROVED CHIEF ENG'R
MS	06/01/20				

APPROP. NO.

JOB NO.

SCALE 1/32"=1'-0"

CLASSIFICATION

NO. W-110810

W110810