

## V. EMISSION UNIT LEVEL TERMS AND CONDITIONS

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### A. Process P001: 80-inch Hot Strip Mill

**Process Description:** 80" Hot Strip Mill Reheat Furnaces, Roughing and Finishing Mills  
**Facility ID:** P001 – P005 and P016  
**Max. Design Rate:** 140 mmBtu/hr maximum heat input, each reheat furnace  
**Capacity:** 3,000,000 tons of sheets per year  
**Raw Materials:** Steel Slabs, Natural Gas and Coke Oven Gas  
**Control Device:** None

As identified above, the 80" Hot Strip Mill includes five reheat furnaces (P001 – P005) and the roughing and finishing mills (P016).

#### 1. Restrictions:

- a. ~~Only coke oven gas and natural gas shall be combusted in reheat furnaces No. 1 through No. 5. [§2103.12.h.5.D]~~
- b. ~~The permittee shall not operate or, allow to be operated reheat furnaces No. 1 through No. 5 such a manner that the emissions of particulate matter exceeds 7 pounds in any 60 minute period or 100 pounds in any 24 hour period [§2104.02.b]~~
- c. ~~The permittee shall not operate or, allow to be operated the scale breaking/roughing and finishing mill stands in such a manner that the emissions of particulate matter exceeds 7 pounds in any 60 minute period or 100 pounds in any 24 hour period [§2104.02.b]~~
- d. The permittee shall operate the 80" Hot Strip Mill scale breaking/roughing and finishing mill stands (P016) with lubricating oil, which is an oil-water emulsion and does not exceed a maximum VOC content by weight, of 1%, at any time. [RACT Order No. 258; §2105.06; 25 PA Code §129.99]
- e. ~~Emissions from the Hot Strip Mill Reheat Furnaces No. 1 through No. 5 shall not exceed the emission limitations in Table V A 1. [§2104.02; §2104.03; §2101.02.c.4]~~

**TABLE V A 1  
Emission Limitations for each Hot Strip Mill Reheat Furnace**

Pollutant	<del>Coke Oven Gas</del> (lb/hr)	<del>Natural Gas</del> (lb/hr)	<del>Annual</del> <del>Emission Limit</del> (tons/year)*
<del>PM-10</del>	<del>7.0</del>	<del>7.0</del>	<del>18.25</del>

~~\*A year is defined as any consecutive 12-month period.~~

- f. ~~SO<sub>2</sub> emissions from the Hot Strip Mill Reheat Furnaces (aggregate) shall not exceed the limitations in Table V-A-2 below: [§§2105.21.h; SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.1.b]~~

**~~TABLE V-A-2~~**

**~~SO<sub>2</sub> Emission Limitations for the Hot Strip Mill Reheat Furnaces (Aggregate)~~**

<del>30-day rolling average limit (lb/hr)*</del>	<del>Supplementary 24-hr Limit* (lb/hr)</del>	<del>Tons/year**</del>
<del>108.63</del>	<del>118.75</del>	<del>475.80</del>

~~\*Limits are based on a rolling 30-day average of 24-hour (calendar day) averages, with an additional restriction of no more than 3 consecutive days above a supplementary 24-hour limit. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

~~\*\* Tons/year value is used to demonstrate the expected tons/year from these units. The value is derived by converting the 30-day rolling average limit lb/hr to an annual tons per year value. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

**2. ~~Testing Requirements:~~**

- a. ~~The permittee shall have sulfur dioxide (SO<sub>2</sub>) emissions tests performed on the stacks of reheat furnaces No. 1 through No. 5 at least once every two years to demonstrate compliance with the mass emission limitations for the reheat furnaces No. 2 through No. 5 in condition V.A.1.g above. The test shall be conducted according to Method 6, 6A, 6B, or 6B specified in 40 CFR 60, Appendix A, and as approved by the Department. The permittee shall submit a stack test protocol to the Department for approval at least 45 days prior to the test dates. [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.2.a; §2108.02.b & .e]~~
- b. ~~The permittee shall perform emissions tests and evaluations for NO<sub>x</sub>, CO, and VOC on the stacks of reheat furnaces No. 1 through No. 5 to develop emission factors that can be applied to quantify NO<sub>x</sub>, CO, and VOC emissions. Testing for NO<sub>x</sub>, CO, and VOCs shall be conducted in accordance with approved EPA Methods in Appendix A of 40 CFR 60, Article XXI §2108.02, and as approved by the Department. Reports of the evaluation and stack testing results shall be submitted to the Department within 90 days of the date of the stack test. If testing results indicate emissions in excess of the thresholds identified in §2108.02.b, testing shall be conducted biennially for the applicable pollutant.~~
- e. ~~The Department reserves the right to require additional emissions testing sufficient to assure compliance with the terms and conditions of this permit. Such testing shall be performed in accordance with Site Level Condition 12 entitled "Emissions Testing." (§2103.12.h.1)~~

**3. ~~Monitoring Requirements:~~**

- a. ~~Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the permittee shall continuously monitor and record the H<sub>2</sub>S concentration (in grains(gr)/100 dscf) of the COG combusted and the fuel flow rate required in Condition IV.26.b above. Continuously shall be defined as at least once every 15 minutes. [SIP IP 0050-1008, Condition V.A.3; §2103.12.i]~~
- b. ~~Measurements of hydrogen sulfide concentrations in coke oven gas required in condition V.A.3.a above shall be conducted according to Section §2107.08 of Article XXI. Under the current operating scenario coke oven gas measurements are taken at the Clairton Plant, and these measurements will satisfy condition V.A.3.a. However, if there is a change to the current operating~~

~~scenario, the sulfur concentration will be taken at the Irvin Plant. (§2103.12.h.5.B)~~

**4. Record Keeping Requirements:**

- a. The permittee shall maintain the following records of the annual tune-up for the subject equipment: [RACT Order No. 258; 25 PA Code §129.100]
  - 1) The date of the annual tune-up;
  - 2) The name of the service company and/or individuals performing the annual tune-up;
  - 3) The operating rate or load after the annual tune-up; and
  - 4) The CO and NO<sub>x</sub> emission rate before and after the annual tune-up
- b. The permittee shall maintain hourly, monthly and 12 month rolling totals of the fuel type (COG & natural gas), and fuel usage and hourly H<sub>2</sub>S concentration expressed in grains per 100 dscf for each 80" Hot Strip Mill reheat furnace. [§2103.12.h.5.B; §2103.12.j; SIP IP 0050-1008, Condition V.A.4.a; 25 PA Code §129.100]
- c. The permittee shall maintain sufficient documentation to demonstrate compliance with the VOC requirements in RACT Order No. 258 for the 80" Hot Strip Mill. Compliance with this RACT requirement may be demonstrated by documentation from all suppliers of oils for the 80" Hot Strip Mill that includes the VOC content of these oils. [§2103.12.j, 25 PA Code §129.100]
- d. All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. [§2103.12.j.2, 25 PA Code §129.100]

**~~5. Reporting Requirements:~~**

- ~~a. The permittee shall provide semi-annual reports, as specified in Condition III.15 above, of the type and amount of each fuel combusted in the reheat furnaces required by Condition V.A.4.a. [§2103.12.k]~~
- ~~b. The permittee shall report the concentration of H<sub>2</sub>S per 100 dscf of COG averaged over a calendar day to the Department on a quarterly basis, in accordance with General Condition III.15.e. All instances of non-compliance with the conditions of this permit along with all corrective action taken to restore the subject equipment to compliance shall be reported. [§2103.12.k; §2103.12.j; SIP IP 0050-1008, Condition V.A.5.a]~~
- ~~c. Reporting instances of non-compliance in accordance with Condition V.A.5.b above, does not relieve the permittee of the requirement to report breakdowns in accordance with Site Level Condition IV.7 above, if appropriate. [§2103.12.k]~~

**6. Work Practice Standards:**

- a. The permittee shall perform an annual adjustment or "tune-up" on each furnace once every twelve (12) months, (hereafter referred to as "annual tune-up"). Such annual tune-up shall include: [RACT Order No. 258; 25 PA Code §129.99]
  - 1) Inspection, adjustment, cleaning, or necessary replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer;
  - 2) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total

emissions of NO<sub>x</sub>, and to the extent practicable minimizes emissions of carbon monoxide (hereafter referred as "CO"); and

- 3) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

**~~7. Additional Requirements:~~**

~~None except as provided elsewhere.~~

***PERMIT SHIELD IN EFFECT***

**D. Process P008: No. 3 Five Stand Cold Reduction Mill**

**Pages 44 through 56 have  
been redacted.**

**Process Description:** Process P008 consists of steel roll uncoilers, cold reduction mill stands, steel roll hydraulic shear, and a roll coiler.

**Facility ID:** P008

**Max. Design Rate:** 3,767,676 tons of steel coils per year

**Capacity:** 2,500,000 tons of steel coils per year

**Raw Materials:** Steel Coils

**Control Device:** Cyclonic Mist Eliminator

As identified above, Process P008 consists of following types of equipment: steel roll uncoilers, cold reduction mill stands, steel coil hydraulic shear, and a roll coiler.

**1. Restrictions - Installation Permits, Standards for Issuance, BACT**

- a. The permittee shall not, operate or allow to be operated, the cold reduction mill unless the five mill stands are equipped with a capture system that exhausts to a mist eliminator control system. The collection and control system shall be properly maintained and operated, controlling oil mist emissions from the cold reduction mill, according to the following specifications while the line is in operation: [Installation Permit No. 0050-I002a, Condition VI.1.d, §2103.12.a.2.D and 25 PA Code §129.99]
  - 1) The capture system shall have a negative air flow into the system at all times and partially enclose the mill stands with openings for the steel sheet inlet and outlet and openings for observation and access to the rollers and steel.
  - 2) The mist eliminator control system shall be comprised of five identical cyclone mist eliminators, in parallel with a design minimum combined air flowrate of 200,000 ACFM.
  - 3) The North and South fans shall maintain an inlet static pressure that is no more negative than - 8.0" w.c.
- b. The permittee shall conduct cleaning of the cyclone mist eliminators specified in Condition V.D.1.a above once every four months. This cleaning will be conducted in such a way as to thoroughly remove all material or corrosion that could decrease the mist eliminator efficiencies. Notwithstanding the previous, cleaning shall be conducted immediately following any inspection of the mist eliminators as specified in Condition V.D.3.a below if warranted by the inspection findings or when a measured inlet pressure exceeds Condition V.D.1.a.3) above. [Installation Permit No. 0050-I002a, Condition VI.1.b, §2103.12.a.2.D and 25 Pa. Code §129.99]
- ~~e. The permittee shall not operate or allow to be operated, the cold reduction mill in such a manner that the production during any 12 consecutive months exceeds 2,500,000 tons of steel or the daily average hourly production rate exceeds 525 tons of steel per hour based on the number of hours of operation in a day. [Installation Permit No. 0050-I002a, Condition VI.1.c]~~
- d. The permittee shall operate the Cold Reduction Mill with a water-oil emulsion in which the oil content by volume is less than or equal to 7%. The lubricating oil used in the water-oil emulsion shall have a VOC content, by weight less than or equal to 2%. [Installation Permit No. 0050-I002a, Condition VI.1.d; RACT Order No. 258, §2105.06; 25 PA Code §129.99]

- e. ~~Emissions from the cold reduction mill shall not exceed the limitations in Table V-D-1 at any time: [Installation Permit No. 0050-I002a, Condition VI.1.e and §2103.12.a.2.D]~~

~~**Table V-D-1 No. 3 Five Stand Cold Reduction Mill Emission Limits**~~

<b>Pollutant</b>	<b>lbs/ton-steel rolled</b>	<b>lbs/hour</b>	<b>tons/year <sup>1</sup></b>
<del><b>Particulate Matter</b></del>	<del>0.025</del>	<del>13.12</del>	<del>31.25</del>
<del><b>PM-10</b></del>	<del>0.025</del>	<del>13.12</del>	<del>31.25</del>
<del><b>Volatile Organic Compound</b></del>	<del>0.025</del>	<del>13.12</del>	<del>31.25</del>

<sup>1</sup>A year is defined as any consecutive 12-month period

## **2. Testing Requirements:**

- a. ~~The permittee shall conduct emission testing for particulate matter on the cold reduction mill oil mist capture and control system in order to determine compliance with the emissions limitations of condition V.D.1.e above. Testing shall be at least once every 5 years thereafter. Such testing shall be performed according to EPA approved test methods No. 1, No. 2, No. 3, No. 4 and No. 5 as specified in 40 CFR 60, Appendix A and in accordance with Section §2108.02 of Article XXI, or as approved by the Department. [Installation Permit No. 0050-I002a, Condition VI.2.a and §2108.02.a.]~~
- b. ~~The Department reserves the right to require emissions testing sufficient to assure compliance with the terms and conditions of this permit. Such testing shall be performed in accordance with §2108.02. (§2103.12.h.1)~~

## **3. Monitoring Requirements:**

- a. The permittee shall inspect the cold reduction mill capture system and control system specified in Condition V.D.1.a above to insure the proper operation and physical integrity of all collection and control equipment and verify negative air flow into the collection and control system daily to insure compliance with Condition V.D.1.a above. The permittee shall inspect one cyclone per week so that each cyclone is inspected a minimum of once every five weeks to insure that the cyclones are clean and free of all material or corrosion that could decrease the efficiencies of the cyclones. Notwithstanding the previous, inspections of all other cyclones shall be conducted immediately following the specified monthly single cyclone inspection if the cyclone is found to be nonfunctional, in a condition that would reduce the operating efficiency or if a measured inlet pressure exceeds Condition V.D.1.a.3) above. Any excursions from Condition V.D.1.a above shall be corrected as soon as possible. [Installation Permit No. 0050-I002a, Condition VI.3.a; 40 C.F.R. §64.3 & 64.6; and 25 PA Code §129.100]
- b. Instrumentation shall be provided that can directly measure the inlet pressure of each of the collection and control system exhaust fans to within 1/10" w.c. The inlet pressure shall be measured for each fan weekly and after any cleaning conducted on the cyclones. [Installation Permit No. 0050-I002a, Condition VI.3.b; 40 C.F.R. §64.3 & §64.6; and 25 PA Code §129.100]

**4. Record Keeping Requirements:**

- a. ~~The permittee shall record the production and the hours of operation of the cold reduction mill on a daily basis. [Installation Permit No. 0050-I002a, Condition VI.4.a and §2103.12.j]~~
- b. The permittee shall record the type and VOC content of all rolling oils, the percent of rolling oil in the water-oil emulsion as applied and the amount of emulsion used for the cold reduction mill on a daily basis. In addition, all emission test data from tests required by Condition V.D.2.a above shall be retained at the facility as per Condition V.D.4.d below. [Installation Permit No. 0050-I002a, Condition VI.4.b and 40 C.F.R. §64.9(b); §2103.12.j; 25 PA Code §129.100]
- e. ~~The results of the inspections required by Condition V.D.3.a above shall be recorded weekly. The monitoring data specified Condition V.D.3.b above shall be recorded weekly and after every cyclone cleaning. Episodes of non-compliance with Conditions V.D.1.a, V.D.1.b or V.D.3.a above and corrective actions taken shall be recorded upon occurrence. All such records shall be summarized monthly. [Installation Permit No. 0050-I002a, Condition VI.4.c and 40 C.F.R. §64.9(b); §2103.12.j]~~
- d. All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. [Installation Permit No. 0050-I002a, Condition VI.1.d; §2103.12.j.2; ; 25 PA Code §129.100]

**5. Reporting Requirements:**

- a. ~~The permittee shall provide quarterly reports that contain monthly summaries of production, hours of operation, and maximum percent VOC content, by weight, of the rolling oil, and the maximum percent by volume of the rolling oil in the water oil emulsion. The due dates of these reports are prescribed in General Condition III.15.e above. [Installation Permit No. 0050-I002a, Condition VI.5.a; §2103.12.k.1; 40 C.F.R. §64.9(a)]~~
- b. ~~The permittee shall report the exhaust fans inlet pressures weekly measurements specified in Condition V.D.3.b above within thirty days of the end of each calendar half as required in General Condition III.15.d. [Installation Permit No. 0050-I002a, Condition VI.5.b; §2103.12.k.1; 40 C.F.R. §64.9(a)]~~
- e. ~~The permittee shall report all instances of non-compliance with Conditions V.D.1.a, V.D.1.b, V.D.1.c, V.D.1.d, V.D.1.e, V.D.3.a, and V.D.3.b above along with all corrective action taken to restore the subject equipment to compliance, to the Department every three months in accordance with General Condition III.15.e above. [§2103.12.k.1]~~
- d. ~~Reporting instances of non-compliance in accordance with Condition V.D.5.c above, does not relieve the permittee of the requirement to report breakdowns in accordance with Site Level Condition IV.7 above, if appropriate. [§2103.12.k.1]~~

**6. Work Practice Standard:**

- a. The permittee shall maintain and operate the cold rolling mill in accordance with good air pollution control practices, by performing regular maintenance as required by condition V.D.3, at all times with the exception of emergency or planned outages, repairs or maintenance. [RACT Order No. 258; 25 PA Code §129.99]



**EMISSION UNIT LEVEL  
TERMS AND CONDITIONS**

**U. S. Steel Mon Valley Works – Irvin Plant  
Title V Operating Permit No. 0050-OP16c**

**~~7. Additional Requirements:~~**

~~None except as provided elsewhere.~~

***PERMIT SHIELD IN EFFECT***



**J. Process P015: Coke Oven Gas Flares No. 1 through No. 3 and Peachtree A & B Flare**

**Process Description:** Four flares used for combusting excess coke oven gas.  
**Facility ID:** P015  
**Max. Discharge Rate:** 6.75 million cubic feet per day of COG, each  
**Capacity:** 27 million cubic feet per day for four flares  
**Raw Materials:** Coke oven gas  
**Control Device:** Flare minimization plan

Pages 61 through  
77 have been  
redacted.

**1. ~~Restrictions:~~**

~~None except as provided elsewhere~~

**2. ~~Testing Requirements:~~**

- ~~a. The Department reserves the right to require emissions testing sufficient to assure compliance with the terms and conditions of this permit. Such testing shall be performed in accordance with §2108.02. (§2103.12.h.1)~~

**3. ~~Monitoring Requirements:~~**

- ~~a. The permittee shall measure the sulfur concentration of all coke oven gas used for combustion or flaring at the facility, a minimum of once per each successive twenty-four hour time period. The sulfur concentration shall be expressed and recorded as hydrogen sulfide. Measurements of hydrogen sulfide concentrations in coke oven gas shall be conducted according to Section §2107.08 of Article XXI. Under the current operating scenario coke oven gas measurements are taken at the Clairton Plant, and these measurements will satisfy this condition (V.J.3.a). However, if there is a change to the current operating scenario, the sulfur concentration measurements required by this condition (V.J.3.a) will be taken at the Irvin Plant. [§2103.12.h.5.B]~~

**4. Record Keeping Requirements**

- a. The permittee shall maintain daily and 12 month rolling totals of the fuel usage, COG sulfur concentration (expressed as H<sub>2</sub>S) and hours of operation for Flares No.1, No. 2 and No. 3 and the Peachtree Flare: [§2103.12.h.5.B, 25 PA Code §129.100]
- b. All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. [§2103.12.j.2; 25 PA Code §129.100]

**5. ~~Reporting Requirements:~~**

- ~~a. The permittee shall report to the Department every six months, in accordance with General Condition III.15.d above, all instances of non-compliance with the conditions of this permit along with all corrective action taken to restore the subject equipment to compliance. [§2103.12.k]~~
- ~~b. Reporting instances of non-compliance in accordance with V.J.5.a above, does not relieve the permittee of the requirement to report breakdowns in accordance with Site Level Condition IV.7 above, if appropriate. [§2103.12.k]~~

**6. Work Practice Standards:**

- a. The permittee shall properly operate and maintain the four flares according to good engineering and air pollution control practices by performing regular maintenance with the exception of actions to mitigate emergency conditions. [25 Pa Code §129.99; §2102.04.b.5; §2105.03]
- b. The permittee shall maintain and operate the flares according to a flare minimization plan that includes [25 Pa Code §129.99; §2102.04.b.5]
  - 1) A listing of all process units and ancillary equipment connected to the flare for each affected flare,
  - 2) A description of the equipment, processes and procedures installed or implemented within the last five years to reduce flaring; and a description of any equipment, processes or procedures the owner or operator plans to install or implement to eliminate or reduce flaring from planned, turnarounds and other scheduled maintenance, based on an evaluation of these activities during the previous five years
  - 3) The facility must follow the flare minimization plan and operate all flares in such a manner that minimizes all flaring except during emergencies, shutdowns, startups, turnarounds or essential operational needs, and
  - 4) The plan should be updated periodically to account for changes in the operation of the flares, such as new connections to the flares or the installation of a flare gas recovery system.

**~~7. Additional requirements:~~**

~~None except as provided elsewhere.~~

***PERMIT SHIELD IN EFFECT***

**K. Boiler No. 1**

**Process Description:** One 79.8 MMBTUs/hr natural gas and coke oven gas fired boiler  
**Facility ID:** B001  
**Max. Design Rate:** 79.8 MMBtu/hr  
**Capacity:** 79.8 MMBtu/hr  
**Raw Materials:** Coke oven gas and natural gas  
**Control Device:** N/A

This emission unit is also subject to the following requirements and restrictions:

**1. Restrictions:**

- ~~a. Only coke oven gas and natural gas shall be combusted in Boiler No. 1. [2102.04.b.5]~~
- ~~b. The permittee shall not operate, or allow to be operated Boiler No. 1 fueled entirely by Natural Gas in such a manner that the emissions of particulate matter exceed 0.008 lbs./MMBTU of actual heat input, at any time. [§2104.02.a.1]~~
- ~~c. The permittee shall not operate, or allow to be operated Boiler No. 1 fueled entirely by Coke Oven Gas in such a manner that the emissions of particulate matter exceed 0.02 lbs./MMBTU of actual heat input, at any time. [§2104.02.a.1]~~
- ~~d. The permittee shall not operate or allow to be operated Boiler No. 1 fueled with Natural Gas and Coke Oven Gas, in such a manner that the emissions of particulate matter from Boiler No.1 exceeds the rate determined by the formula: [§2104.02.a.3]~~

~~$$A = \sum x_i a_i$$~~

~~Where: A = allowable emissions in pounds per million BTUs of actual heat input,~~

~~i = fuel type (i.e. natural gas and coke oven gas),~~

~~$x_i$  = fraction of total actual heat input in BTUs provided by fuel type i, and~~

~~$a_i$  = allowable emissions in pounds per million BTUs of actual heat input for fuel type i, where  $a_i$  = 0.008 for natural gas and 0.02 for coke oven gas.~~

- e. Emissions from Boiler No. 1, shall not exceed the limitations specified in Table V-K-1 below, at any time: [~~§2104.03, §2104.02.b, §2105.21.h.4~~]

~~Table V-K-1 Boiler No. 1 Emission Limitations~~

<del>Pollutant</del>	<del>lbs/hr (natural gas)</del>	<del>lbs/hr (coke oven gas)</del>	<del>tons/yr <sup>1</sup></del>
<del>Total Particulate</del>	<del>0.64</del>	<del>1.60</del>	<del>6.99</del>
<del>PM-10</del>	<del>0.64</del>	<del>1.60</del>	<del>6.99</del>
<del>NO<sub>x</sub></del>	<del>7.98</del>	<del>12.77</del>	<del>55.92</del>
<del>CO</del>	<del>7.71</del>	<del>3.38</del>	<del>33.76</del>
<del>VOC</del>	<del>0.51</del>	<del>0.22</del>	<del>2.21</del>

<sup>1</sup>A year is defined as any consecutive 12-month period

- f. SO<sub>2</sub> emissions from Boiler No. 1 shall not exceed the limitations in Table V-K-2 below: [~~§§2105.21.h, SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.1.b~~]

~~TABLE V-K-2  
SO<sub>2</sub> Emission Limitations for Boiler 1~~

<del>30-day rolling average limit (lb/hr)*</del>	<del>Supplementary 24-hr Limit* (lb/hr)</del>	<del>Tons/year**</del>
<del>7.88</del>	<del>8.92</del>	<del>34.51</del>

~~\*Limits are based on a rolling 30-day average of 24-hour (calendar day) averages, with an additional restriction of no more than 3 consecutive days above a supplementary 24-hour limit. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

~~\*\*Tons/year value is used to demonstrate the expected tons/year from this unit. The value is derived by converting the 30-day rolling average limit lb/hr to an annual tons per year value. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

## ~~2. Testing Requirements:~~

- a. Emissions of SO<sub>2</sub> shall be determined by converting the H<sub>2</sub>S grain loading of the fuel burned and the fuel flow rate, to pounds per hour to determine compliance with the emission limitations in condition V.K.1.f, Table V-K-2 above. [~~SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.2.b §2103.12.h~~]
- b. The Department reserves the right to require additional emissions testing sufficient to assure compliance with the terms and conditions of this permit. Such testing shall be performed in accordance with §2108.02. (~~§2103.12.h.1~~)

## ~~3. Monitoring Requirements:~~

- a. Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the permittee shall continuously monitor and record the H<sub>2</sub>S concentration (in grains(gr)/100 dscf) of the COG combusted and the fuel flow rate required in Site Level Condition IV.26.b. Continuously shall be defined as at least once every 15 minutes. [~~SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.3; §2103.12.h.5.B; §2103.12.i~~]
- b. Measurements of hydrogen sulfide concentrations in coke oven gas required in condition V.K.3.a above shall be conducted according to Section §2107.08 of Article XXI. Under the current

~~operating scenario coke oven gas measurements are taken at the Clairton Plant, and these measurements will satisfy condition V.K.3.a. However, if there is a change to the current operating scenario, the sulfur concentration will be taken at the Irvin Plant. (0050-1006, Condition V.A.3; §2103.12.h.5.B)~~

#### **4. Record Keeping Requirements:**

- a. The permittee shall maintain the following records of the annual tune-up for the subject equipment: [RACT Order No.0258, §2105.06, and §2103.12.j; 40 CFR 63, Subpart DDDDD; 25 PA Code §129.100]
  - 1) The date of the annual tune-up;
  - 2) The name of the service company and/or individuals performing the annual tune-up;
  - 3) The operating rate or load after the annual tune-up;
  - 4) The CO and NO<sub>x</sub> emission rate before and after the annual tune-up; and
  - 5) The excess oxygen rate after the annual tune-up.
- ~~b. The permittee shall maintain hourly, monthly, 12 month rolling totals of the following data for Boiler no. 1: [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.4.a; §2103.12.h.5.B]~~
  - ~~1) Fuel type, fuel usage, hours of operation and sulfur concentration expressed as H<sub>2</sub>S in grain per 100 dscf in coke oven gas used for combustion, for the subject boiler.~~
- c. All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. [§2103.12.j.2; 25 PA Code §129.100]

#### **5. Reporting Requirements:**

- ~~a. The permittee shall report the concentration of H<sub>2</sub>S per 100 dscf of COG averaged over a calendar day to the Department on a quarterly basis, in accordance with General III.15.e. All instances of non-compliance with the conditions of this permit along with all corrective action taken to restore the subject equipment to compliance shall be reported. [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.5.a; §2103.12.k]~~
- ~~b. Reporting instances of non-compliance in accordance with V.K.5.a above, does not relieve the permittee of the requirement to report breakdowns in accordance with Site Level Condition IV.7 above, if appropriate. [§2103.12.k]~~

#### **6. Work Practice Standards:**

- a. The permittee shall perform an annual adjustment or "tune-up" on Boiler No. 1 once every twelve (12) months, (hereafter referred to as "annual tune-up"). Such annual tune-up shall include: [RACT Order No. 258; 25 PA Code §129.99]
  - 1) Inspection, adjustment, cleaning, or necessary replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer;
  - 2) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO<sub>x</sub>, and to the extent practicable minimizes emissions of carbon monoxide (hereafter referred as "CO"); and

- 3) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

~~7. Additional Requirements:~~

~~None except as provided elsewhere~~

***PERMIT SHIELD IN EFFECT***

L. Boiler No. 2

**Process Description:** One 84.6 MMBTUs/Hr natural gas and coke oven gas fired boiler  
**Facility ID:** B002  
**Max. Design Rate:** 84.6 MMBtu/hr  
**Capacity:** 84.6 MMBtu/hr  
**Raw Materials:** Coke oven gas and natural gas  
**Control Device:** NA

~~1. Restrictions:~~

- ~~a. Only coke oven gas and natural gas shall be combusted in Boiler No. 2. [2102.04.b.5]~~
- ~~b. The permittee shall not operate, or allow to be operated Boiler No. 2 fueled entirely by Natural Gas in such a manner that the emissions of particulate matter from Boiler No. 1 exceeds 0.008 lbs./MMBTU of actual heat input, at any time. [§2104.02.a.1]~~
- ~~c. The permittee shall not operate, or allow to be operated Boiler No. 2 fueled entirely by Coke Oven Gas in such a manner that the emissions of particulate matter exceed 0.02 lbs./MMBTU of actual heat input, at any time. [§2104.02.a.1]~~
- ~~d. The permittee shall not operate or allow to be operated Boiler No. 2 fueled with Natural Gas and Coke Oven Gas, in such a manner that the emissions of particulate matter from Boiler No.2 exceeds the rate determined by the formula: [§2104.02.a.3]~~

~~$A = \sum x_i a_i$  where A = allowable emissions in pounds per million BTUs of actual heat input,  
i = fuel type (i.e. natural gas and coke oven gas),  
 $x_i$  = fraction of total actual heat input in BTUs provided by fuel type i, and  
 $a_i$  = allowable emissions in pounds per million BTUs of actual heat input for fuel type i, where  $a_i$  = 0.008 for natural gas and 0.02 for coke oven gas.~~

- e. ~~Emissions from Boiler No. 2, shall not exceed the limitations in Table V-L-1 below, at any time: [§2104.03, §2104.02.b, §2105.21.h.4]~~

~~Table V-L-1 Boiler No. 2 Emissions~~

<del>Pollutant</del>	<del>lbs/hr (natural gas)</del>	<del>lbs/hr (coke oven gas)</del>	<del>tons/yr <sup>1</sup></del>
<del>Total Particulate</del>	<del>0.68</del>	<del>1.69</del>	<del>7.41</del>
<del>PM-10</del>	<del>0.68</del>	<del>1.69</del>	<del>7.41</del>
<del>SO<sub>2</sub></del>	<del>0.05</del>	<del>18.20</del>	<del>45.90</del>
<del>NO<sub>x</sub></del>	<del>8.46</del>	<del>13.54</del>	<del>59.29</del>
<del>CO</del>	<del>8.17</del>	<del>3.58</del>	<del>35.80</del>
<del>VOC</del>	<del>0.54</del>	<del>0.23</del>	<del>2.37</del>

<sup>1</sup>A year is defined as any consecutive 12-month period

- f. ~~SO<sub>2</sub> emissions from Boiler No. 1 shall not exceed the limitations in Table V-L-2 below: [§§2105.21.h; SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.1.b]~~

~~TABLE V-L-2  
SO<sub>2</sub> Emission Limitations for Boiler 2~~

<del>30-day rolling average limit (lb/hr)*</del>	<del>Supplementary 24-hr Limit* (lb/hr)</del>	<del>Tons/year**</del>
<del>8.36</del>	<del>9.46</del>	<del>36.62</del>

~~\*Limits are based on a rolling 30-day average of 24-hour (calendar day) averages, with an additional restriction of no more than 3 consecutive days above a supplementary 24-hour limit. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

~~\*\*Tons/year value is used to demonstrate the expected tons/year from this unit. The value is derived by converting the 30-day rolling average limit lb/hr to an annual tons per year value. These limits are based on ACHD's SO<sub>2</sub> State Implementation Plan (SIP) Permit Revision and USEPA SO<sub>2</sub> Guidance dated September 14, 2017.~~

## ~~2. Testing Requirements:~~

- a. ~~Emissions of SO<sub>2</sub> shall be determined by converting the H<sub>2</sub>S grain loading of the fuel burned and the fuel flow rate, to pounds per hour to determine compliance with the emission limitations in condition V.L.1.f, Table V-L-2 above. [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.2.b, §2103.12.h]~~
- b. ~~The Department reserves the right to require additional emissions testing sufficient to assure compliance with the terms and conditions of this permit. Such testing shall be performed in accordance with §2108.02. (§2103.12.h.1)~~

## ~~3. Monitoring Requirements:~~

- a. ~~Except for monitor malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), the permittee shall continuously monitor and record the H<sub>2</sub>S concentration (in grains(gr)/100 dscf) of the COG combusted and the fuel flow rate required in Site Level Condition IV.26.b. Continuously shall be defined as at least once every 15 minutes. [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.3; §§2103.12.h.5.B; §2103.12.i]~~
- b. ~~Measurements of hydrogen sulfide concentrations in coke oven gas required in condition V.L.3.a~~



~~above shall be conducted according to Section §2107.08 of Article XXI. Under the current operating scenario coke oven gas measurements are taken at the Clairton Plant, and these measurements will satisfy condition V.L.3.a. However, if there is a change to the current operating scenario, the sulfur concentration will be taken at the Irvin Plant. (0050-1006, Condition V.A.3; §2103.12.h.5.B)~~

#### **4. Record Keeping Requirements:**

- a. The permittee shall maintain the following records of the annual tune-up for the subject equipment: [RACT Order No.0258 and §2103.12.j; 40 CFR 63, Subpart DDDDD; 25 PA Code §129.100]
  - 1) The date of the annual tune-up;
  - 2) The name of the service company and/or individuals performing the annual tune-up;
  - 3) The operating rate or load after the annual tune-up;
  - 4) The CO and NO<sub>x</sub> emission rate before and after the annual tune-up; and
  - 5) The excess oxygen rate after the annual tune-up.
- ~~b. The permittee shall maintain hourly, monthly and 12-month rolling totals of the following data for Boiler No. 2: [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.3; §2103.12.h.5.B]~~
  - ~~1) Fuel type (COG and natural gas), fuel usage, hours of operation and sulfur concentration expressed as H<sub>2</sub>S in grains per 100 dscf in coke oven gas used for combustion, for the subject boiler.~~
- c. All records shall be retained by the facility for at least five (5) years. These records shall be made available to the Department upon request for inspection and/or copying. [§2103.12.j.2; 25 PA Code §129.100]

#### **5. Reporting Requirements:**

- ~~a. The permittee shall report the concentration of H<sub>2</sub>S per 100 dscf of COG averaged over a calendar day to the Department on a quarterly basis, in accordance with General III.15.c. All instances of non-compliance with the conditions of this permit along with all corrective action taken to restore the subject equipment to compliance shall be reported. [SO<sub>2</sub> SIP IP 0050-1008, Condition V.A.5.a; §2103.12.k]~~
- ~~b. Reporting instances of non-compliance in accordance with V.L.5.a above, does not relieve the permittee of the requirement to report breakdowns in accordance with Site Level Condition IV.7 above, if appropriate. [§2103.12.k]~~

#### **6. Work Practice Standards:**

- a. The permittee shall perform an annual adjustment or "tune-up" on Boiler No. 2 once every twelve (12) months, (hereafter referred to as "annual tune-up"). Such annual tune-up shall include: [RACT Order No.0258; 25 PA Code §129.99]
  - 1) Inspection, adjustment, cleaning, or necessary replacement of fuel-burning equipment, including the burners and moving parts necessary for proper operation as specified by the manufacturer;
  - 2) Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO<sub>x</sub>, and to the extent practicable minimize emissions of carbon monoxide

(hereafter referred as "CO"); and

- 3) Inspection of the air-to-fuel ratio control system and adjustments necessary to ensure proper calibration and operation as specified by the manufacturer.

**~~7. Additional Requirements:~~**

~~None except as provided elsewhere.~~

***PERMIT SHIELD IN EFFECT***

Pages 88 through 100 have  
been redacted.