UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

IN THE MATTER OF	)	PETITION FOR OBJECTION
Clean Air Act Title V Operating Permit No. 0050-OP24	)	Permit Number 0050-OP24
Issued to U.S. Steel Mon Valley Works-Irvin Plant	)	
Issued by the Allegheny County Health Department	)	

PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO THE ISSUANCE OF TITLE V PERMIT NO. 0050-OP24 FOR U.S. STEEL MON VALLEY WORKS-IRVIN PLANT

Pursuant to section 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and 40 C.F.R. § 70.8(d), the Environmental Integrity Project, Clean Air Council, and PennFuture (collectively, "Petitioners") respectfully petition the Administrator of the U.S. Environmental Protection Agency ("Administrator" or "EPA") to object to the Title V Operating Permit #0050-OP24 ("Renewal Permit") issued by the Allegheny County Health Department ("ACHD") on September 27, 2024 to the U.S. Steel Mon Valley Works-Irvin Plant ("Facility" or "Irvin") owned and operated by U.S. Steel, ("USS") in Allegheny County, Pennsylvania. As required, Petitioners are filing this Petition with the Administrator via the Central Data Exchange and providing copies via certified U.S. mail and via electronic mail to ACHD and USS. The Renewal Permit is attached as Exhibit 1 to this Petition.

As discussed further below, EPA must object to the Renewal Permit because the permit fails to include sufficient monitoring, testing, and reporting requirements sufficient to assure compliance with all applicable requirements of the Clean Air Act. Specifically, the Renewal Permit fails to

require adequate monitoring, testing, and reporting requirements to assure compliance with both short-term and long-term emission limits applicable to numerous emission units at the facility, including:

(1) Site Level Opacity;
(2) P001 (Hot Strip Mill);
(3) P009 (HPH Annealing Furnaces);
(4) P010 (Open Coil Annealing Furnaces No. 1 through No. 16);
(5) P011 (Continuous Annealing);
(6) Boiler Nos. 1 and 2; and
(7) P006 (64" Continuous Coil HCL Pickle Line)

The Renewal Permit also includes an unreasonably high emission limit for the Hot Strip Mill, that is likely due to a mathematical error. It was impracticable for Petitioners to raise this issue during the public comment period because this limit appeared for the first time in the Renewal Permit.

I. PETITIONERS

The Environmental Integrity Project ("EIP") is a non-profit, non-partisan watchdog organization founded to advocate for the effective enforcement of environmental laws, with a specific focus on the Clean Air Act and large stationary sources of air pollution such as the Facility. EIP has three goals: (1) to illustrate through objective facts and figures how the failure to enforce and implement environmental laws increases pollution and harms public health; (2) to hold federal and state agencies, as well as individual corporations accountable for failing to enforce or comply with environmental laws; and (3) to help local communities obtain protections guaranteed by environmental laws. EIP is headquartered in Washington, D.C. and has multiple program staff located in Pennsylvania.

Citizens for Pennsylvania's Future ("PennFuture") is a Pennsylvania-statewide environmental organization dedicated to leading the transition to a clean energy economy in

Pennsylvania and beyond. PennFuture strives to protect our air, water, and land, and to empower citizens to build sustainable communities for future generations. A main focus of PennFuture's work is to improve and protect air quality across Pennsylvania through public outreach and education, advocacy, and litigation.

Clean Air Council is a nonprofit environmental health organization with offices in Philadelphia and Pittsburgh, Pennsylvania. The Council has been working to protect everyone's right to a clean and healthy environment for over 50 years. The Council has members throughout Pennsylvania and the Mid-Atlantic region who support its mission, including many in Allegheny County.

II. FACILITY DESCRIPTION AND PERMITTING HISTORY

The USS Mon Valley Works – Irvin Plant is a secondary steel-processing facility in West Mifflin Borough, Allegheny County, Pennsylvania. The Irvin Plant is a major source for particulate matter, PM10, PM2.5, nitrogen oxides, sulfur oxides, carbon monoxide ("CO"), volatile organic compounds ("VOC"), hazardous air pollutants, and greenhouse gas emissions.[1] The original Title V Operating Permit for the Irvin Plant was issued on February 18, 2005, renewed on December 9, 2016, and amended in 2019 and 2020.[2] Although ACHD's Technical Support Document ("TSD") states that the Irvin Plant is not located in an environmental justice area, there are numerous environmental justice areas directly adjacent to the Irvin Plant and in neighboring communities, as well as many environmental justice areas throughout the Mon Valley that are impacted by the facility's emissions.[3]

[1] *See* Letter from Hafeez Ajenifuja to JoAnn Truchan (October 11, 2023), U.S. Steel Mon Valley Works-Irvin Plant, Title V Operating Permit No. 0050-OP23 [hereinafter "Irvin Technical Support Document"] at 2.
[2] *Id.*
[3] *See* PADEP, Environmental Justice Areas, PennEnviroScreen, https://gis.dep.pa.gov/PennEnviroScreen/ (last visited on Nov. 10, 2023).

On October 12, 2023 ACHD issued a draft renewal Title V Operating Permit for the Irvin Plant, with the public comment period ending on November 14, 2023. Petitioners timely submitted comments on the draft permit on November 14, 2023, which raised the same concerns stated in this Petition. Petitioners Comments on Proposed Renewal Permit 0050-OP24 (November 13, 2023) ("Petitioners' Comments") are attached as Exhibit 2. On September 27, 2024, ACHD issued the permit to USS. On October 7, 2024 ACHD sent the issued Title V Operating Permit to Petitioners, along with a Summary of Public Comments and Department Responses ("RTC" or "Response to Comments"), attached as Exhibit 3 to this Petition, and TSD, attached as Exhibit 4 to this Petition.

According to EPA Region 3's Title V petition tracking database,[4] ACHD submitted the proposed permit renewal to EPA for its review on August 1, 2024. EPA's 45-day review period of the proposed permit ended on September 16, 2024. On September 27, 2024, ACHD issued the permit to USS. According to EPA's website, the 60-day public petition period on the Title V permit began on September 17, 2024, and ends on November 15, 2024. Therefore, this Petition is timely. As required, Petitioners are filing this Petition and Exhibits with the Administrator via the Central Data Exchange and providing copies via certified U.S. mail and via electronic mail to ACHD and USS.

III. GENERAL TITLE V REQUIREMENTS

A. Contents of Title V Permits, Permitting Authority's Responsibility and EPA's Duty to Object

Title V permits, which must list and assure compliance with all federally enforceable requirements that apply to each major source of air pollution, are the primary method for

[4] EPA, Title V Operating Permit Public Petition Deadlines, *available at* https://www.epa.gov/caa-permitting/title-v-operating-permit-public-petition-deadlines (last updated October 30, 2024).

enforcing and assuring compliance with the Clean Air Act's pollution control requirements for major sources. 57 Fed. Reg. 32250, 32258 (July 21, 1992). One of the primary purposes of Title V is to "enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements. Increased source accountability and better enforcement should result." *Id*. at 32251.

It is the Title V permitting authority's responsibility to ensure that a proposed permit "set[s] forth" conditions sufficient "to assure compliance with all applicable requirements" of the Clean Air Act. *In the Matter of Sandy Creek Services, LLC, Sandy Creek Energy Station, McLennan County, TX*, Order on Petition No. III-2018-1 (June 30, 2021) ("*Sandy Creek Order*") at 12 (quoting 42 U.S.C. § 7661c(c)). The permitting authority's rationale for any proposed permit conditions must be clear and documented in the permit record, 40 C.F.R. § 70.7(a)(5), and "permitting authorities have a responsibility to respond to significant comments" received on a proposed permit. *In the Matter of CITGO Refining and Chemicals Co., L.P., West Plant, Corpus Christi, TX*, Order on Petition No. VI-2007-01 (May 28, 2009) ("*CITGO Order*") at 7.

EPA must object to any Title V permit that fails to include or assure compliance with all applicable requirements of the Clean Air Act. 40 C.F.R. § 70.8(c). "Applicable requirements" include any requirements of a federally enforceable SIP and any requirements from applicable preconstruction permits. 40 C.F.R. § 70.2. If EPA does not object to a Title V permit, "any person may petition the Administrator within 60 days after the expiration of the Administrator's 45-day review period to make such objection." 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). The Administrator "shall issue an objection" if the petitioner demonstrates "that the permit is not in compliance with the requirements of [the Clean Air Act], including the requirements of the applicable implementation plan." 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1). The

Administrator "shall grant or deny such petition within 60 days after the petition is filed." 42 U.S.C. § 7661d(b)(2).

B. Each permit issued under Part 70 must set forth testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with all of the permit's terms and conditions.

"Each permit issued under [Title V] shall set forth inspection, entry, monitoring, compliance certification, and reporting requirements to assure compliance with the permit terms and conditions." 42 U.S.C. § 7661c(c); *see also* 40 C.F.R. § 70.6(c)(1); ACHD Rules and Regulations Article XXI § 2103.12(h)(1). It is ACHD's responsibility, as the relevant permitting authority, "to ensure that the [T]itle v permit 'set[s] forth' monitoring to assure compliance with all applicable requirements." *Sandy Creek Order* at 12 (quoting 42 U.S.C. § 7661c(c)).

As a general matter, "the time period associated with monitoring or other compliance assurance provisions must bear a relationship to the limits with which the monitoring assures compliance." *In the Matter of United States Steel Corporation, Clairton Coke Works Permit No. 0052-OP22,* Order on Petition Nos. III-2023-5 and III-2023-6 (Sept. 18, 2023) ("*Clairton Order*") at 9; *see also* 40 C.F.R. § 70.6(a)(3)(i)(B). However, determining whether monitoring contained in a title V permit is sufficient to assure compliance with any term or condition is a context-specific, case-by-case inquiry. *Id*. To aid permitting authorities and the public in this fact-specific exercise, EPA has identified a non-exhaustive list of factors that that permitting authorities "may consider as a starting point in determining appropriate monitoring" for a facility, including: (1) the variability of emissions from the unit in question; (2) the likelihood of a violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring process, maintenance, or control equipment data

already available for the emission unit; and (5) the type and frequency of the monitoring requirements for similar emission units at other facilities. *Id.* (quoting CITGO Order at 7–8).

"In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record." *CITGO Order* at 7–8 (granting petition because permitting authority "did not articulate a rationale for its conclusions that the monitoring requirements… are sufficient to assure compliance"); *see also* 40 C.F.R. § 70 .7(a)(5). Further, "permitting authorities have a responsibility to respond to significant comments." *CITGO Order* at 7; *In the Matter of Onyx Environmental Services*, Petition V-2005-1 (February 1, 2006).

IV. GROUNDS FOR OBJECTION

EPA must object to the Renewal Permit because the permit fails to include adequate monitoring, testing, recordkeeping, and reporting requirements sufficient to assure compliance with all applicable requirements of the Clean Air Act. Specifically, the Renewal Permit fails to include adequate monitoring, testing, recordkeeping, and reporting requirements to assure compliance with both short-term and long-term emission limits applicable to numerous emission units at the facility, including:

(1) Site level continuous opacity limits;
(2) Units with hourly and annual emission limits for PM, NO_x, CO, VOC and SO_2 for units with annual tune-up requirements pursuant to RACT Order No. 258: the 80" Hot Strip Mill ("HSM"), HPH Annealing Furnaces ("HPHAF"), Open Coil Annealing Furnaces No. 1 through No. 16 ("OCAF"), Continuous Annealing ("CA"), and the boilers;
(3) Hourly and annual emission limits for HCl and PM for the 64" Continuous Coil HCL Pickle Line ("CPL"); and
(4) Hourly and annual emission limits for PM and VOC for the No. 3 Five Stand Cold Reduction Mill ("CRM").

EPA must also object to the Renewal Permit because ACHD has violated the public notice and comment provisions of Part 70.7(h) by approximately doubling emission limits for CO and VOCs for the HSM in Renewal Permit, based on a novel and incorrect equation that is not a logical

outgrowth of anything in the Draft Permit or the permit record, . It was impracticable for Petitioners to raise this issue during the public comment period because it arose only upon publication of the final version of the Renewal Permit and associated documents.

Most of the claims in this Petition address largely similar issues—namely, involving a lack of adequate testing, monitoring, recordkeeping, and reporting requirements to assure compliance with the short- and long-term emission limits applicable to each unit. Consequently, Section III above summarizes the relevant requirements under Part 70 that apply to each of the claims in Sections B through E, which address, for each of these groups of units in turn, how the Renewal Permit has failed to meet those Part 70 requirements. Finally, Section F will address Petitioners' inability to comment during the public comment period on ACHD's emission calculation errors for the VOC and PM limits for the HSM.

A. The Renewal Permit fails to include adequate testing, monitoring, recordkeeping or reporting requirements sufficient to assure continuous compliance with the site wide opacity limits.

1. Specific Grounds for Objection, Including Citation to Permit Terms

Section IV of the Renewal Permit contains Site Level Conditions. Condition IV.2. establishes the following site level opacity limits:

> Except as provided for by Article XXI §2108.01.d pertaining to a cold start, no person shall operate, or allow to be operated, any source in such manner that the opacity of visible emissions from a flue or process fugitive emissions from such source, excluding uncombined water:
> a. Equal or exceed an opacity of 20% for a period or periods aggregating more than three (3) minutes in any sixty (60) minute period; or,
> b. Equal or exceed an opacity of 60% at any time.

The Renewal Permit is deficient because it does not include any monitoring, testing, recordkeeping or reporting requirements to ensure compliance with the site level continuous opacity limit in Condition IV.2.

2. Part 70 Requirements Not Met, Issue Raised in Public Comment

The Clean Air Act requires that all permits "set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions." 42 U.S.C. § 7661c(c); *see* 40 C.F.R. § 70.6(c)(1); ACHD Rules and Regulations Article XXI § 2103.12(h)(1). "In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record." *CITGO Order* at 7-8. The Renewal Permit fails to meet the requirements of Part 70 because it fails to include any testing, monitoring, recordkeeping, or reporting requirements sufficient to assure continuous compliance with the site level opacity limits. Nor has ACHD explained how the permit's requirements can assure compliance with the site level opacity limits. 40 C.F.R. § 70.7(a)(5).

Petitioners raised this issue in Comment V, Ex. 2 at pages 11-12. The permit does not provide any monitoring requirements to assure compliance with the site level opacity limits. Ex. 2 at 11. ACHD should consider continuous opacity monitoring ("COMS") that would be operationally appropriate at the site-level to detect visible emissions after dark and in adverse weather conditions. Ex. 2 at 11-12. ACHD should also consider digital opacity monitoring[5] in the alternative of Method 9 and Method 22, which are too infrequent and limited to assure compliance with a continuous limit. *Id.*

3. Analysis of ACHD's Response

ACHD's response to this comment is identified as Response to Comment 47 on page 17 of the RTC document. ACHD's response simply states "[s]ee responses to Comments No. 45 and No. 46 above." RTC at 17. Comment 45 addresses applicable requirements for the Flares Nos. 1

[5] EPA has also approved Method Alt-082 as an alternative to Method 9, which allows the use of a digital camera to determine the opacity of visible emissions. Recent Postings of Broadly Applicable Alternative Test Methods, 77 Fed. Reg. 8865, 8866 (February 15, 2012), Tbl. 1 (Approved use the American Society for Testing and Materials (ASTM) D 7520– with specified limitations in lieu of Method 9).

to 3 and Peachtree A and B Flares ("Irvin flares"). ACHD's response to Comment 45 does not have anything to do with site level opacity and addresses a wholly unrelated argument regarding the Irvin flares. This response states:

> "See responses to comments No. 43 and No. 44 above. There is no specific RACT III NOX limit for the flares; however, the flare minimization requirements are considered RACT. The Department does not believe that numerical limits or fuel restrictions should apply to the flares because they are designed to combust excess gas not consumed by the facility. The Title V Permit includes the requirements to measure the sulfur concentration of all coke oven gas used for combustion or flaring. It also requires maintaining daily and twelve-month rolling totals of fuel usage, COG sulfur concentration (expressed as H2S), and hours of operation for Flare Nos. 1, 2, and 3, as well as the Peachtree Flare. The Irvin plant is not subject to NESHAP Part 63, Subparts CCCCC and L, as well as Part 61; therefore, these requirements are not applicable. However, the Department has incorporated additional restrictions and monitoring requirements to operate the flares with a flame present at all times and conduct EPA Method 22."

RTC at 16. To the extent that ACHD thinks revising the permit to require Method 22 observations for the Irvin flares relates to site level opacity monitoring, ACHD made no effort to explain this reasoning or connect the site level opacity limit to Method 22 monitoring for the Irvin flares. Therefore, ACHD's response to Comment 45 does not address the concerns raised in comments—especially with respect to the many units at this plant that are not flares.

Additionally, ACHD's response to Comment 46 states

> The Department does not see a reason to require digital opacity monitoring and there are no regulations concerning such equipment (use, placement, auditing, etc.). In addition, the Department believes that the recordkeeping, reporting, and work practice requirements combined with the EPA Method 22 weekly observations are sufficient to ensure proper operation and demonstrate compliance.

RTC at 16. ACHD's response to Comment 46 does not adequately address the concerns raised in comments.

First, Petitioners note that, similar to ACHD's response to Comment 45, the response to Comment 46 ACHD mentions "Method 22 weekly observations" that could be referencing Condition V.J.3.b., again, relating to the Irvin flares. Petitioners assume this because the only

requirement for Method 22 observations relates to the Irvin flares, and ACHD's response neither confirms nor rejects this assumption. ACHD's response to comment 47 (referencing only its responses to Comments 45 and 46) about site level opacity does not attempt to explain how the added Method 22 weekly observations or the recordkeeping, reporting and work practice requirements for the Irvin flares assure compliance with the site level opacity limit in Condition IV.2, which also applies to all the non-flare units at this facility. Because ACHD provides reasoning for a specific emission unit, the flares, and does not address the site level opacity limit at all, ACHD has not addressed Petitioners' concerns. *CITGO Order* at 7-8.

Finally, ACHD's response to Comment 46 also states that it does "not see a reason to require digital opacity monitoring and there are no regulations concerning such equipment (use, placement, auditing, etc." RTC at 16. ACHD has not addressed Petitioners' concerns. ACHD may not see the reason—that Title V permits must contain adequate monitoring to assure compliance with the limits therein—but ACHD's inability to see this requirement is not dispositive. Rather than explain what monitoring—other than a digital opacity monitor, which ACHD does not "see a reason" to require—will assure compliance with the continuous site level opacity limit, ACHD instead includes no monitoring and does not further explain itself, outside of inexplicably referencing monitoring requirements for the Irvin flares. ACHD's response does not address Petitioners' concern that the permit contains no monitoring requirements to assure compliance with the continuous site level opacity limit and merely reiterates ACHD's erroneous view that such monitoring is not required, with no further explanation, and neither the Response to Comments nor the TSD address any of the factors that EPA has identified as potential starting points for determining whether monitoring is appropriate. *CITGO Order* at 7–8. Even if ACHD decided not to adopt Petitioners' proposed fix (COMS) to the permit's inadequate opacity

monitoring, this did not absolve ACHD from its duty to include sufficient monitoring requirements in the Title V permit to ensure compliance with the opacity limits.

B. The Renewal Permit fails to include adequate testing, monitoring, recordkeeping or reporting requirements sufficient to assure continuous compliance with hourly and annual emission limits for various pollutants, including PM, NO_x, CO, VOC and SO_2 for units P001, P009, P010, P011 and Boilers No. 1 and 2.

1. Specific Grounds for Objection, Including Citation to Permit Terms

Hourly and annual emission limits apply to units P001 (HSM), P009 (HPHAF), P010 (OCAF), P011 (CA) and Boilers No. 1 and 2 as indicated in **Table 1** below:

Table 1: Emission Limits for Emission Units in Plant Irvin Draft Permit

Emission Unit	**Pollutant**	**Emission Limit**	**Testing and/or Monitoring Requirements**
P001-80" Hot Strip Mill (limits are per reheat furnace)- Tables V-A-1 and V-A-2	1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	1. 7.0 lb/hr; 18.25 tpy 2. 19.1 lb/hr ; 83.5 tpy 3. 12.88 lb/hr; 56.41 tpy 4. 0.28 lb/hr; .1.33 tpy 5. 30-day rolling average: 108.63 lb/hr; supplementary 24-hour limit: 118.75 lb/hr; 475.80 tpy.	All units must continuously monitor H_2S concentration of COG combusted (taken from Clairton); maintain records of fuel type and usage and H_2S concentration; and perform an annual tune-up of each furnace. To demonstrate compliance with the NO_x limit, required to perform an annual stack test; annual tune-up of each furnace. To demonstrate compliance with the SO_2 limit, must conduct a stack test every two years; and convert H_2S burned to fuel rate to determine lb/hr.

P009-HPH Annealing Furnaces (per unit)-Tables V-E-1 and V-E-2	1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	1. 0.10 lb/hr; .43 tpy 2. 0.74 lb/hr; 3.22 tpy 3. 0.47 lb/hr; 2.07 tpy 4. 0.03 lb/hr; 0.14 tpy 5. 12.0 lb/hr 30-day rolling average; 13.58 supplementary 24-hour limit; 52.56 tpy	All units must continuously monitor H_2S concentration of COG combusted (taken from Clairton); maintain records of fuel type and usage and H_2S concentration; calculate emissions on a monthly basis; and conduct a tune-up of the furnaces once every five years Additional monitoring, testing and recordkeeping requirements (or lack thereof) are included below. To demonstrate compliance with the SO_2 limit, must convert H_2S grain loading of fuel burned and fuel flow rate into lb/hr
P010-Open Coil Annealing Furnaces (per unit)-No. 1 to 9, Table V-F-1	1. PM 2. NO_x 3. CO 4. VOC	1. 0.14 lb/hr; .63 tpy 2. 2.88 lb/hr; 12.61 tpy 3. 0.70 lb/hr; 3.05 tpy 4. 0.05 lb/hr; 0.20 tpy	All units must continuously monitor H_2S concentration of COG combusted (taken from Clairton); maintain records of fuel type and usage and H_2S concentration; and conduct a tune-up of the furnaces once every two years
P010-Open Coil Annealing Furnaces (per unit)-No. 10-13, Table V-F-2	1. PM 2. NO_x 3. CO 4. VOC	1. 0.18 lb/hr; 0.79 tpy 2. 3.60 lb/hr; 15.77 tpy 3. 0.87 lb/hr; 3.81 tpy 4. 0.06 lb/hr; 0.25 tpy	
P010-Open Coil Annealing Furnaces (per unit)-No. 14, Table V-F-3	1. PM 2. NO_x 3. CO 4. VOC	1. 0.07 lb/hr; 0.30 tpy 2. 1.20 lb/hr; 5.20 tpy 3. 0.47 lb/hr; 2.10 tpy 4. 0.03 lb/hr; 0.13 tpy	

P010-Open Coil Annealing Furnaces (per unit)-No. 15 and 16, Tables V-F-4 and V-F-5	1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	1. 0.102 lb/hr; 0.45 tpy 2. 0.35 lb/hr; 1.52 tpy 3. 0.68 lb/hr, 2.96 tpy 4. 0.044 lb/hr; .19 tpy 5. 11.50 lb/hr 30-day rolling average; 13.02 lb/hr supplementary 24 hour; 50.37 tpy	All units must continuously monitor H_2S concentration of COG combusted (taken from Clairton); maintain records of fuel type and usage and H_2S concentration; and conduct a tune-up of the furnaces once every two years To demonstrate compliance with the SO_2 limit, required to Convert H_2S grain loading of fuel burned and fuel flow rate into lb/hr
P011-Continuous Annealing , Tables V-G-1 and V-G-2	1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	1. 0.90 lb/hr; 3.94 tpy 2. 18.00 lb/hr; 78.84 tpy 3. 4.35 lb/hr; 19.04 tpy 4. 0.28 lb/hr; 1.25 tpy 5. 30-day rolling average-8.07 lb/hr; supplementary 24-hour limit-9.14 lb/hr; 35.35 tpy	All units must measure monthly the quantity of natural gas and COG combusted in the annealing furnace; maintain records of fuel type and usage and H_2S concentration; and conduct an annual tune-up of the combustion process of the equipment. To demonstrate compliance with the SO_2 limit, required to Convert H_2S grain loading of fuel burned and fuel flow rate into lb/hr
Boilers No. 1 and 2, Tables V-K-1, V-K-2, V-L-1, V-L-2	Boiler 1 1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	Boiler 1 1. 1.60 lb/hr; 6.99 tpy 2. 12.77 lb/hr; 55.92 tpy 3. 7.71 lb/hr; 33.76 tpy 4. 0.51 lb/hr; 2.21 tpy	All units must continuously monitor H_2S concentration of COG combusted (taken from Clairton); maintain records of

	Boiler 2 1. PM 2. NO_x 3. CO 4. VOC 5. SO_2	5. 8.92 lb/hr; 34.51 tpy; 7.88 lb/hr 30-day rolling average Boiler 2 1. 1.69 lb/hr; 7.41 tpy 2. 13.54 lb/hr; 59.29 tpy 3. 8.17 lb/hr; 35.80 tpy 4. 0.65 lb/hr; 2.37 tpy 5. 9.46 lb/hr; 36.62 tpy; 8.36 lb/hr 30-day rolling average limit	fuel type and usage and H_2S concentration; and perform an annual tune-up of the boilers. To demonstrate compliance with the SO_2 limit, required to Convert H_2S grain loading of fuel burned and fuel flow rate into lb/hr

Several of these units—the HSM, boilers and CA—are subject to annual tune-up requirements pursuant to RACT Order No. 258 ("RACT Order"), attached as Exhibit 5 to this Petition. The RACT Order requires that these units conduct an annual adjustment of the

combustion processes that shall include:

a. 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;

b. Inspection of the flame pattern or characteristics and adjustments necessary to minimize total emissions of NO_x, and to the extent practicable minimize emissions of carbon monoxide (hereafter referred as "CO"; and

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

Irvin Plant shall maintain the following records of the for the subject equipment:

a. the date of the annual tune-up;
b. the name of the service company and/or individuals performing the annual tune-up;
c. the operating rate or load after the annual tune-up;
d. the CO and NO_x emission rate after the annual tune-up; and

RACT Order No. 258, Section 1.2 (December 30, 1996). Of the units in **Table 1**, only the HSM is required to conduct stack tests: Conditions V.A.2.a., c. require once every two years to

demonstrate compliance with the SO_2 limits and once every year to demonstrate compliance with the NO_x limits.

All of the units in **Table 1** are subject to continuous monitoring of hydrogen sulfide (H_2S) concentration requirements:

1. P001 HSM: Conditions V.A.3.a. and b.
2. P009 HPHAF: Conditions V.E.3.a. and b.
3. P010 OCAF: Conditions V.F.3.a. and b.
4. P011 CA: Conditions V.G.3.b. and c.
5. Boilers No. 1 and 2: Conditions V.L.3.a. and b.

Additionally, Condition V.G.3.a for Unit P011 (CA) requires USS to measure monthly the quantity of natural gas and coke oven gas combusted. Condition V.A.6.a. requires an annual tune up for Unit P001 (HSM). Condition V.E.6.a.-c., a for Unit P009, (HPHAF) requires a once every five year tune up to assure compliance with the NO_x and CO limits. This tune-up requires:

- Inspect the burner, and clean or replace any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.
- Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
- Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown.
- Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOX requirement to which the unit is subject;
- Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

This Condition also requires USS to maintain and operate the HPHAF in accordance with good combustion and air pollution control practices by performing regular maintenance and operating

the furnaces in accordance with the manufacturer's specifications at all times. The OCAF is also required to conduct a biennial tune-up of the furnaces. Condition V.F.6.a.-c. outlines the tune up requirements:

- As applicable, inspect the burner, and clean or replace any components of the burner as necessary (the permittee may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). At units where entry into a piece of process equipment or into a storage vessel is required to complete the tune-up inspections, inspections are required only during planned entries into the storage vessel or process equipment.
- Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available
- Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (the permittee may delay the inspection until the next scheduled unit shutdown).

This Condition also requires USS to maintain and operate the OCAF in accordance with good combustion and air pollution control practices by performing regular maintenance and operating the furnaces in accordance with the manufacturer's specifications at all times.

Finally, for Units P009 (HPHAF), P010 (OCAF), P011 (CA), and the boilers The Renewal Permit also require that emissions of SO_2 shall be determined by converting H_2S grain loading of the fuel burned and the fuel flow rate to pounds per hour to determine compliance with each units' SO_2 emissions limits.

The Renewal Permit does not include any other testing or monitoring requirements applicable to the units listed in **Table 1** above.

2. Part 70 Requirements Not Met, Issue Raised in Public Comment

The Clean Air Act requires that all permits "set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions." 42 U.S.C. § 7661c(c); *see* 40 C.F.R. § 70.6(c)(1); ACHD Rules and Regulations Article XXI § 2103.12(h)(1). "In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit

record." *CITGO Order* at 7-8. The Renewal Permit fails to meet the requirements of Part 70 both because it fails to include adequate testing, monitoring, recordkeeping, or reporting requirements sufficient to assure continuous compliance with the hourly and long-term emission limits applicable to units P001, P009, P010, P011 and the boilers and because neither the Renewal Permit nor ACHD's Response to Comments provide a clear rationale for why ACHD believes the monitoring requirements currently in place are sufficient.

*a. Generally for all units in **Table 1** the permit lacks adequate monitoring and testing requirements to assure compliance with hourly and annual limits.*

First, Petitioners generally argued in Comment VI.C., Ex. 2 at 15 that for units listed in **Table 1,** the permit lacked adequate monitoring and testing requirements to assure compliance with hourly and annual limits. Ex. 2 at 15. The monitoring is not reasonably related to the averaging time to determine compliance with the limits. 40 C.F.R. § 70.6(a)(3)(i)(B).[6] *Id.* Ex. 2 at 15. ACHD failed to explain how compliance would be demonstrated between stack tests and annual tune-ups for the units with these requirements. *Id; Clairton Order* at 16. ACHD failed to provide clear and documented rationale for why they have chosen this and the other annual (and less frequent) stack tests.

b. ACHD failed to explain how H2S Measurements taken at the USS Clairton Plant assures compliance with the annual and hourly limits PM, NO_x, CO, VOCs and SO^2 for Units P001, P009, P010, P011 and the boilers.

Second, addressing the continuous H_2S concentration monitoring requirement (taken from USS Clairton) for P001 (HSM), P009 (HPHAF), P010 (OCAF), P011 (CA) and the boilers, Petitioners raised in Comment VI.C.1., Ex. 2 at 18 that ACHD failed to include any assumptions about how the H_2S concentrations in COG taken from the USS Clairton Plant directly relate to

[6]*See also Sierra Club v. EPA*, 536 F.3d 673, 676-77 (D.C. Cir. 2008). Annual stack testing alone may be insufficient to assure compliance with an hourly emission limit. *In the Matter of Northeast Maryland Waste Disposal Authority*, Order on Petition No. III-2019-2 at 9 (December 11, 2020) [hereinafter "*MCRRF Order"*].

the COG used in operations at the units listed above. Specifically, ACHD failed to explain if the H_2S measurements taken continuously from Clairton are before or after the COG is processed until it is 50-60% hydrogen for use with natural gas at Irvin. Ex.2 at 18; Technical Support Document-Reasonably Available Control Technology for U.S. Steel-Irvin Works at 37 ("RACT I TSD"), attached as Exhibit 6. Thus, ACHD failed to demonstrate how continuous H_2S concentration monitoring, taken from the Clairton Plant, assures compliance with the annual and hourly limits for PM, NO_x, CO, VOCs and SO^2 for Units P001, P009, P010, P011 and the boilers.

c. ACHD failed to demonstrate how monthly measurements of the quantity of natural gas and COG assures compliance with annual and hourly SO_2 limits.

Third, for Units P010 and P011, Petitioners raised in Comment VI.C.1., Ex. 2 at 18 that ACHD has failed to demonstrate how monthly measurements of the quantity of natural gas and COG combusted in the annealing furnace assures compliance with the hourly SO_2 emissions limit. The time period associated with the monitoring must bear a relationship to limits (hourly and annual) with which the monitoring (monthly) assures compliance. Ex. 2 at 18; *Clairton Order* at 9.[7] ACHD failed to explain in the publicly available documents in the permit record its assumptions underlying their inclusion of these mismatched monthly monitoring requirements to the hourly and annual SO_2 limits for these units. Ex. 2 at 18.

d. Monitoring for the HSM is too infrequent to assure compliance with the hourly and annual limits.

Finally, for P001 (HSM), Petitioners raised in Comment VI.C.2., Ex. 2 at 19 that ACHD failed to explain how a stack test once every two years assures compliance with SO_2 annual and

[7] (*quoting* 40 C.F.R. 70.6(a)(3)(i)(B)). *See also In the Matter of Georgia-Pacific Consumer Operations LLC, Crossett Paper Operations*, Order on Petition Nos. VI-2018-3 and VI-2019-12 at 18-19 (February 22, 2023); *MCRRF Order* at 9 (December 11, 2020).

hourly limits and a stack test once every year assures compliance with hourly and annual NO_x limits. EPA has clearly stated that whether testing and monitoring is adequate in a particular circumstance is a case-by-case, context specific determination. *Clairton Order* at 9. ACHD failed to provide its underlying conclusions or clearly documented rationale for its assumptions that stack tests every two years (SO_2) and annually (NO_x) paired with an annual tune-up assure compliance with the hourly and annual emission limits for the HSM. Ex. 2 at 19. Specifically, whether testing and monitoring is adequate is a case-by-case and context specific determination that ACHD must clearly document its rationale for assuming that the monitoring requirements assure compliance with the emission limits for the HSM. *Clairton Order* at 9; 40 C.F.R. 70.7(a)(5). It is the permitting authority's responsibility to ensure that the Title V permit itself sets forth monitoring sufficient to assure compliance with the applicable requirements, which ACHD has failed to do. *Clairton Order* at 10.

3. Analysis of ACHD's Response

a. Summary of all of ACHD's responses to the issues identified with inadequate monitoring for the units and hourly and annual emission limits identified in ***Table 1.***

ACHD's response to the issues above is identified as Response to Comment No. 48. ACHD addresses the sufficiency of the tune-up requirement for the HPHAF (P009) stating that:

> The HPH Annealing Furnaces are each rated at 4.9 MMBtu/hr and have combined potential emissions of less than four tons per year. The facility is obligated to record and report hourly, monthly, and twelve-month rolling totals of fuel usage, hours of operation, and calculate emissions based on these details to demonstrate compliance with the specified limits. Additionally, a tune-up of the furnaces is required once every five years to ensure proper operation. In the US EPA's petition decision for the United States Steel Clairton Works (Petition Nos. III-2023-5 and III-2023-6, page 9), they state "EPA has not indicated that in all cases testing and monitoring must exactly mirror the averaging times of associated emission limits." Given this statement, and the relatively low potential emissions, ACHD believes that monthly calculation of actual emissions (in addition to the other parametric monitoring) is sufficient to demonstrate continuous compliance.

RTC at 18. ACHD then responds regarding the OCAF (P010) that:

> the potential emissions limits for all the furnaces were estimated based on fuel consumption and emissions factors. The facility is obligated to record and report hourly, monthly, and twelve-month rolling totals of fuel usage, hours of operation, and calculate emissions to demonstrate compliance with the specified limits. Additionally, biennial tune-ups of the furnaces are required as the units are below 10 MMBtu/hr. Consequently, the Department believes that the combination of recordkeeping, reporting, tune-up requirements to ensure proper operation of the units, and material balance emission calculations are sufficient to demonstrate compliance with the emission limits.

Id. ACHD responds regarding the CA (P011) and boilers that:

> the Department believes that the annual tune-up, designed to ensure efficient and proper operation of the units, along with recordkeeping of fuel usage and operating hours, is adequate to demonstrate compliance with the specified limits. Furthermore, the facility is required to document any corrective actions taken as part of the tune-up process. The Department has expanded conditions V.A.5.a, V.K.5.b, and V.L.5.b to include more detail in the reporting requirements.

Id. Next, ACHD concludes their response by addressing SO_2 limits by stating that:

> The SO2 emissions throughout the permit are based on SIP IP #0050-I008, issued on September 14, 2017, and the permit requires the permittee to maintain hourly records of the coke oven gas usage and hourly H2S concentration expressed in grains per 100 dscf. The SO2 emission factor was derived from the measured hourly H2S concentration of the coke oven gas (in gr-H2S/dscf) to lb/MMcf-COG [(gr-H2S/ccf) × (10,000 ccf/mmcf) × (64 lb-SO2/34 lb-H2S)] × (1 lb/7000 gr) = lb-SO2/mmcf] and multiply by the hourly coke oven gas consumed to comply with the specified limit.

Id. Finally, ACHD addresses the requirements for the HSM (P001) in its response to Comment 49:

> The potential emissions of the HSM (Hot Strip Mill) were estimated by multiplying the fuel consumed by established emission factors, and the facility is required to keep records of the hourly fuel consumed and multiply it by the emission factors established either through stack tests or based on AP-42 to demonstrate compliance with the hourly limits. In the US EPA's petition decision for the United States Steel Clairton Works (Petition Nos. III-2023-5 and III-2023-6, page 9), they state "EPA has not indicated that in all cases testing and monitoring must exactly mirror the averaging times of associated emission limits." The SO2 limit is based on the SIP IP #0050-I008, issued on September 14, 2017. The permit requires the facility to perform biennial testing and perform hourly SO2 calculation to demonstrate compliance. This involves converting the H2S grain loading of the burned fuel to lb/MMcf-COG and the fuel flow rate to pounds per hour. On the other hand, the NOX limit is based on IP #0050-I009, issued on September 12,

> 2023. The permit requires the facility to conduct annual testing and calculate NOX hourly emissions using the hourly fuel consumed to demonstrate compliance with the specified limit.

RTC at 19. ACHD's response explains how hourly calculations of SO_2 by converting H_2S grain loading of fuel burned and the fuel flow rate to pounds per hour demonstrates compliance with the limit. The Permit also contains this requirement in Condition V.A.2.b. However, all of ACHD's other responses to Comment 48 and 49 above do not adequately address the concerns raised in comments.

b. Analysis of ACHD Response regarding sufficiency of monitoring requirements generally

First, ACHD has not adequately responded to Petitioners' arguments that conditions requiring annual or less frequent stack tests, even when paired with annual (or less frequent) tune-up requirements are inadequate to assure compliance with hourly and annual limits.[8] ACHD also failed to explain how compliance would be demonstrated between stack tests and annual tune-ups. ACHD further failed to explain how monthly measurements of the quantity of natural gas and COG combusted in the annealing furnace assures compliance with the hourly SO_2 emissions limit for the OCAF (P010) and CA (P011). For the HPHAF (P009), ACHD simply argued that the testing and monitoring is not required to exactly mirror the averaging times of associated emission limits, and summarily states that the unit has "relatively low potential emissions" and "ACHD believes that monthly calculation of actual emissions (*in addition to other parametric monitoring*) is sufficient to demonstrate continuous compliance." RTC at 18 (emphasis added).

As an initial matter, there is no other parametric monitoring other than the tune-up once every five years and fuel usage recordkeeping for unit P009 (HPHAF). For all the units, ACHD

[8] This argument applies to all of the units and limits in **Table 1.**

repeats the response that fuel usage recordkeeping demonstrates compliance with the limits. A statement that the Department "believes" the requirements assure compliance without an explanation falls far short of what the Clean Air Act requires. ACHD fails to explain how monthly calculation of emissions can be used to ensure compliance with the hourly limits. *CITGO Order* at 7.[9] Additionally, ACHD does not explain in its RTC, revised TSD nor elsewhere that fuel consumption is the only relevant variable, nor do they explain how fuel usage relates to and/or compares to emissions. *In the Matter of U.S. Steel Edgar Thomson Plant*, Order on Petition No.III-2023-15 (February 7, 2024) at 18.

c. Analysis of ACHD's Responses regarding measuring concentrations of H_2S in the COG, which is measured at the Clairton Plant.

Second, Petitioners note that ACHD's response to comments does not specifically address Petitioners' comment that ACHD failed to include any assumptions about how the H_2S concentrations in COG taken from the USS Clairton Plant directly related to the COG used in operations at Units P001, P009, P010, P011 and the boilers. ACHD also does not address in its RTC how this continuous H_2S concentration monitoring assures compliance with the annual and hourly limits for PM, NO_x, CO, VOCs and SO^2 for the aforementioned units. ACHD addresses recordkeeping of "fuel usage" for the HPHAF (P009), OCAF (P010), CA (P011) and the boilers, but does not indicate that this has any relationship to the hourly monitoring of H_2S concentrations (taken from the Clairton Plant). The Department's response fails to adequately explain its rationale for assuming that H_2S concentration measurements taken from Clairton assure compliance with the limits at Irvin. 40 C.F.R. § 70.6(a)(3)(i)(B); 40 C.F.R. § 70.7(a)(5); *CITGO Order* at 7.

[9] "[P]ermitting authorities have a responsibility to respond to significant comments" received on a proposed permit.

d. Analysis of ACHD's response to comments addressing annual and biennial stack testing and annual tune-up requirements to assure compliance with NO_x and SO_2 limits for the HSM (P001).

Finally, Petitioners note that ACHD's response to comments does not specifically address Petitioners' comment that ACHD failed to explain how a stack test every two years assures compliance with SO_2 annual and hourly limits and a stack test once every year assures compliance with hourly and annual NO_x limits for the HSM (P001). ACHD does not directly address how the mismatch in monitoring requirements—annual and every two-year stack tests paired with annual tune-ups—assures compliance with annual and hourly limits. ACHD did not attempt to explain how USS can assure compliance with the hourly SO_2 and NO_x limits between the annual tune-up and biennial (SO_2) and annual (NO_x) stack tests. Therefore, ACHD failed to adequately respond to Petitioners' Comments. *CITGO Order* at 7.

Again, ACHD refers to fuel usage recordkeeping requirements without explaining in its RTC, revised TSD or elsewhere that fuel consumption is the only relevant variable, nor do they explain how fuel usage relates to and/or compares to emissions. *Edgar Thomson Order* at 18. ACHD further fails to explain the specific emission factor used—only that it is "established either through stack tests or based on AP-42." *Id*. at 23.[10] The Renewal Permit does not clearly identify the specific emission factor used. The Renewal Permit also does not require that the hourly, monthly and 12-month fuel records in Condition V.a.4.b. are to be multiplied by emission factors. *Id*. ACHD has not only failed to address Petitioners' arguments with this response, but the Permit itself does not even contain the requirements that the RTC indicates is

[10] "the Permit does not explain how the source will calculate emissions based on monthly monitoring and recordkeeping of fuel usage. Presumably, the facility will multiply this monthly fuel consumption data by emission factors (which may vary depending on the fuel used) in order to calculate emissions. But the Permit does not identify any such methodology or specify the emission factors used, and the permit record contains no justification for why such a methodology (and the specific emission factors used) would be sufficient or why other mechanisms (e.g., source-specific stack tests) are unnecessary or infeasible."

sufficient (fuel usage recordkeeping) to assure compliance with the hourly and annual SO_2 emission limits for the HSM (P001). *CITGO Order* at 7; *Sandy Creek Order* at 12 (quoting 42 U.S.C. §7661(c)).

Additionally, ACHD's last response explains that the SO_2 biennial testing and hourly SO_2 calculation, which "involves converting H_2S grain loading of the burned fuel to lb/MMcf-COG and the fuel flow rate to pounds per hour" demonstrates compliance with the SO_2 limit for the HSM (P001). RTC at 19. However, the Permit itself does not provide that the fuel usage and hourly H_2S concentration recordkeeping requirements in Conditions V.A.4.b. and V.A.4.d.1)-2) would be used to calculate SO_2 emissions. ACHD failed to address Petitioners' arguments with this response. The Permit itself also does not even contain the requirements that ACHD indicates explains the rationale that the biennial testing and fuel usage recordkeeping requirements are sufficient to assure compliance with the hourly and annual SO_2 emission limits for the HSM (P001). *CITGO Order* at 7; *Sandy Creek Order* at 12. At a minimum, ACHD should be required to state clearly on the record its justification for *how* monitoring monthly fuel usage alone is sufficient to assure compliance with these short- and long-term emission limits.

ACHD similarly fails to justify annual testing with an annual tune-up for the NO_x limit for the HSM (P001). Again, ACHD attempts to explain that hourly fuel consumed, which is a recordkeeping requirement in Conditions V.A.4.b., and V.A.4.d.1)-2), is used to calculate hourly NO_x emissions. However, unlike calculating SO_2 emissions, a mass balance equation of fuel used cannot similarly be used to calculate NO_x emissions, which would require an emissions factor. ACHD did not even mention an emissions factor, nor did ACHD address the fact that an emission factor would be used to calculate hourly NO_x emissions. *CITGO Order* at 7. ACHD further failed to include in the Permit the specific emission factor to be used, nor any condition

explaining how hourly NO_x emissions will be calculated to demonstrate compliance with the hourly limit. *Edgar Thomson Order* at 23. Again, related to the hourly and annual NO_x limits and insufficient monitoring to demonstrate compliance with the limits, ACHD has both failed to address Petitioners' arguments and include in the Permit the requirements that they indicate explains the rationale that the annual testing and fuel usage recordkeeping requirements are sufficient to assure compliance with the hourly and annual NO_x emission limits for the HSM (P001). *CITGO Order* at 7; *Sandy Creek Order* at 12 (quoting 42 U.S.C. §7661(c)).

C. The Renewal Permit fails to include adequate testing, monitoring, recordkeeping or reporting requirements sufficient to assure continuous compliance with hourly and annual emission limits for HCl and PM for the unit P006.

1. Specific Grounds for Objection, Including Citation to Permit Terms

Conditions V.B.1.g., V.B.1.h. and V.C.1.e. contain the PM and HCl hourly and annual emission limits for the 64" and 84" Continuous Pickle Lines ("CPL"), which are shown in **Table 2** below:

Table 2: PM, HCl Emission Limits for Continuous Pickling Lines

Emission Unit	Pollutant	Emission Limit
P006-64" Continuous Pickling Lines, Tables V-B-1 and V-B-2	1. PM 2. HCl	1. 0.41 lb/hr; 1.79 tpy; 2. 0.41 lb/hr; 1.79 tpy;
P007-84" Continuous Pickling Line, Tables V-C-1 and V-C-2	1. HCl	1. 2.9 lb/hr; 12.55 tpy;

For the 64" CPL, Condition V.B.1.i. provides that compliance with the HCl limits "shall be determined by initial and subsequent HCl emission testing as specified in Conditions V.B.2.a below. Compliance with the particulate emission limitation for the wet scrubber shall be determined by assuming all hydrochloric acid emissions are PM_{10} emissions." Condition V.B.2.a. requires conducting a performance test of the scrubber. Condition V.B.3.d. requires that the scrubber shall be provided with instrumentation that shall monitor the pressure drop across

the scrubber once per shift. Condition V.B.3.e. requires that USS install, operate and maintain systems for continuously measuring and recording the scrubber makeup water flow rate and recirculation water flow rate. Condition V.B.3.i. requires semi-annual inspections of HCl storage vessels to determine that closed-vent system and air pollution control device are installed and operating when required.

For the 84" CPL, Condition V.C.2.a. requires a performance test and Condition V.C.2.d. requires that performance tests to measure HCl mass flow rates at the control devices should be conducted at least every two and years. Condition V.C.3.a. also requires that the scrubber shall be provided with instrumentation that shall monitor the pressure drop across the scrubber once per shift. Condition V.C.3.b. also requires that USS install, operate and maintain systems for continuously measuring and recording the scrubber makeup water flow rate and recirculation water flow rate.

The Renewal Permit does not contain any other testing or monitoring requirements for the 64" CPL or the 84" CPL. The Renewal Permit does not include any annual tune-ups in addition to an annual performance test for the HCl scrubber to assure compliance with the annual and hourly PM and HCl limits. The Renewal Permit does not include any other parametric monitoring that would assure compliance with the hourly and annual HCl and PM limits.

2. Part 70 Requirements Not Met, Issue Raised in Public Comment

The Clean Air Act requires that all permits "set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions." 42 U.S.C. § 7661c(c); *see* 40 C.F.R. § 70.6(c)(1); ACHD Rules and Regulations Article XXI § 2103.12(h)(1). "In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record." *CITGO Order* at 7-8. The Renewal Permit fails to meet the requirements of Part 70 both

because it fails to include adequate testing, monitoring, recordkeeping, or reporting requirements sufficient to assure continuous compliance with the hourly and annual emission limits at the 64" and 84" CPL, and because neither the Renewal Permit nor ACHD's RTC provide a clear rationale for why ACHD believes the monitoring requirements currently in place are sufficient.

Petitioners raised this issue in Comments VI.C.3. and VI.C.4, Ex. 2 at 19-21. The biennial performance test for the HCl Scrubber is not reasonably related to hourly limits to demonstrate compliance for the 64" CPL. Ex. 2 at 20. The biennial performance test for the HCl Scrubber is inadequate to demonstrate compliance with the hourly and annual HCl emission limit for the 84" CPL. Additionally, the lack of an annual tune-up requirement further renders the monitoring requirements deficient. Ex. 2 at 20-21. Finally, the requirement of the instrument to measure the pressure drop once per shift, without explanation by ACHD how "once per shift" relates to an hourly limit, cannot assure compliance with an hourly HCl limit. Ex. 2 at 20-21.

3. Analysis of ACHD's Response

ACHD's response to this comment is identified as Response to Comment 50 on pages 19-20 of the RTC. ACHD's response stated the following:

> In the US EPA's petition decision for the United States Steel Clairton Works (Petition Nos. III-2023-5 and III-2023-6, page 9), they state "EPA has not indicated that in all cases testing and monitoring must exactly mirror the averaging times of associated emission limits." In the case of Continuous Coil HCl Pickle Lines, where the potential to emit limits is significantly below the major source threshold, the Department believes that biennial stack testing to demonstrate compliance with NESHAP HCl concentration and mass emissions, combined with the monitoring requirements such as continuous monitoring of the scrubbing liquid flow, recording at least once per shift while the scrubber is operating, immediate implementation of corrective action to correct any excursion from the minimum operating values, and monitoring the pressure drop across the scrubber once a shift with records and reports any deviation is sufficient to demonstrate compliance with pickling line emissions. The Department has also expanded Conditions V.A.5 to include more detail in the reporting requirements. In response to Comment 39 above, the Department has clarified the testing to be biennial.

RTC at 19-20. As an initial matter, it is unclear how expanding more detail in reporting requirements for the HSM in Condition V.A.5 is responsive to Petitioners' comments about the inadequate monitoring requirements for the 64" and 84" CPL. Moreover, ACHD's response does not adequately address the concerns raised in our comment because ACHD merely recites the requirements in the Renewal Permit without explaining the relationship between measuring the pressure drop once per shift and the hourly HCl and PM emission limits.

First, ACHD changed Conditions V.B.2.d. and V.C.2.d. to specifically require biennial testing. However, ACHD still has not justified that the biennial testing and continuous monitoring of the scrubbing liquid flow, recording at least once per shift while the scrubbers are operating are sufficient to assure compliance with the hourly and annual HCL and PM emission limits for the 64" and 84" CPL (P006 and P007). *Sandy Creek Order* at 12 (quoting 42 U.S.C. §7661(c)).

Next, ACHD's statement regarding EPA's statement from the Order on Petition Nos. III-2023-5 and III-2023-6 does not address Petitioners' concern, and Petitioners note that ACHD has taken EPA's quote from that order out of context. As a general matter, it is true that EPA has indicated that it is not always the case that testing and monitoring "must exactly mirror the averaging times of associated emission limits." *Clairton Order* at 9. However, the point of that statement is simply that "whether testing and monitoring is adequate in a particular circumstance is a case-by-case, context-specific determination," and that more infrequent monitoring or testing may be acceptable, so long as the permitting authority can adequately demonstrate that the more infrequent monitoring will assure continuous compliance with a shorter-term limit. *Id.*

ACHD has failed to explain how continuous monitoring of the scrubbing liquid flow recording at least once per shift while the scrubbers are operating constitutes sufficient

parametric monitoring between the biennial performance tests that can ensure compliance with the limits here. ACHD did not even attempt to address Petitioners' comment that neither the Permit, TSD nor underlying installation permit describe how monitoring the pressure drop once per shift while the scrubber is operating relate to hourly HCl and PM emission limits. *CITGO Order* at 7–8.

D. The Renewal Permit fails to include adequate testing, monitoring, recordkeeping or reporting requirements sufficient to assure continuous compliance with hourly and annual emission limits for PM and VOC for unit P008.

1. Specific Grounds for Objection, Including Citation to Permit Terms

Condition V.D.1.e. includes the emission limits for PM and VOCs for the No. 3 Five Stand Cold Reduction Mill ("CRM") as shown in **Table 3** below:

Table 3: Emission Limits for No. 3 Five Stand Cold Reduction Mill

Emission Unit	Pollutant	Emission Limit
P008-No. 3 Five Stand Cold Reduction Mill, Table V-D-1	1. PM 2. VOC	1. 13.12 lb/hr; 31.25 tpy 2. 13.12 lb/hr; 31.25 tpy

Condition V.D.2.a. requires emission testing once every five years to demonstrate compliance with the limits in **Table 3**. Condition V.D.3.a. requires that USS

> inspect the cold reduction mill capture system and control system specified in Condition V.D.1.a above to ensure 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 ensure compliance with Condition V.D.1.a above. The permittee shall inspect the cyclones a minimum of once every five weeks to ensure that the cyclones are clean and free of all material or corrosion that could decrease the efficiencies of the cyclones.

Condition V.D.3.b. requires that instrumentation shall be provided that can directly measure the inlet pressure of each of the collection and control system fans. Condition V.D.4.b. requires daily recordkeeping of rolling oils and percent of rolling oil in water-oil emulsion as applied and the amount of emulsion used. Condition V.D.4.d. requires that monitoring data shall be recorded weekly, with corrective action records summarized monthly.

The Renewal Permit contains no other testing or monitoring requirements to demonstrate compliance with any of the short- or long-term emission limits established in Condition V.D.1.e. The Renewal Permit's monitoring and other requirements cannot assure compliance with the relevant limits. Further, the RTC fails to explain how the monitoring and other requirements can assure compliance with the limits.

2. Part 70 Requirements Not Met, Issue Raised in Public Comment

The Clean Air Act requires that all permits "set forth . . . monitoring . . . requirements to assure compliance with the permit terms and conditions." 42 U.S.C. § 7661c(c); *see* 40 C.F.R. § 70.6(c)(1); ACHD Rules and Regulations Article XXI § 2103.12(h)(1). "In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record." *CITGO Order* at 7-8. The Renewal Permit fails to meet the requirements of Part 70 both because it fails to include adequate testing, monitoring, recordkeeping, or reporting requirements sufficient to assure continuous compliance with the hourly and annual emission limits applicable to the CRM and because neither the Renewal Permit nor ACHD's RTC provide a clear rationale for why ACHD believes the monitoring requirements currently in place (or lack thereof) are sufficient.

Petitioners raised this issue in Comments IV.C.5., Ex. 2 at 21-22. A stack test once every five years is insufficient to assure compliance with hourly or annual limits for PM and VOC. Ex. 2 at 21-22. Additionally, ACHD provided no rationale or reasoned explanation as to how a stack test once every five years is reasonably related to the averaging time: hourly and annual emission limits. Ex. 2 at 21. 40 C.F.R. § 70.7(a)(5); *Sierra Club v. EPA,* 536 f.3D 673, 676-77 (D.C. Cir. 2008). ACHD should require more testing and periodic monitoring to provide data from the relevant time period that are representative of the source's compliance with permit limits. Ex. 2

at 22. ACHD failed to provide rationale or underlying assumptions that an inspection once every five weeks assures compliance with hourly emission limits. Ex. 2 at 21. ACHD also failed to provide a reasoned explanation or explain the mismatch between weekly recordkeeping of the monitoring requirements (once every five weeks for inspections) and the hourly emission limits. Ex. 2 at 21.

3. Analysis of ACHD's Response

ACHD's response to this comment is identified as Response to Comment 51 on page 20 of the RTC document. ACHD's response states the following:

> The PM and VOC potential emission limit was calculated by multiplying the emissions factor by the hourly production limit. The facility is required to record the production and the hours of operation of the cold reduction mill daily and provide quarterly reports that contain monthly summaries of production, hours of operation, and maximum percent VOC content by weight. This monitoring, recordkeeping, and reporting records are used to demonstrate compliance with the hourly production limit and in turn the emissions limit. The Department added a requirement for the facility to calculate emissions on a monthly basis to demonstrate compliance. In the US EPA's petition decision for the United States Steel Clairton Works (Petition Nos. III-2023-5 and III-2023-6, page 9), they state "EPA has not indicated that in all cases testing and monitoring must exactly mirror the averaging times of associated emission limits." Additionally, as part of compliance demonstration, the facility is required to monitor the pressure drop, capture, and control system to ensure efficiency, proper operation and capture to certify that the cyclones are clean and free of all material or corrosion that could decrease the efficiencies.

RTC at 20. First, ACHD did not respond at all to Petitioners' comment that ACHD has failed to explain how inspection once every five weeks is sufficient to assure compliance with the hourly limit. *CITGO Order* at 7. Additionally, ACHD's RTC also fails to address how Condition V.D.4.d. requiring weekly recording of inspections relates to the requirement that inspections must occur once every five weeks. *Id.*

Next, ACHD has not sufficiently explained how these requirements—amounting to, at most, daily recordkeeping—demonstrates compliance with the hourly limits. ACHD failed to explain how the recordkeeping is representative of the units' performance. *Clairton Order* at 16. Additionally, ACHD replied that they "added a requirement to calculate emissions on a monthly basis to determine compliance." RTC at 20. This new requirement is included in Condition V.D.4.c. ACHD explains in the RTC that the limits were calculated by multiplying the emissions factor by hourly production limit, but fails to say what the emission factor is. ACHD further failed to include in the Permit the specific emission factor to be used, nor any condition explaining how PM and VOC emissions will be calculated to demonstrate compliance with the hourly limits. *Edgar Thomson Order* at 23. Again, related to the hourly and annual PM and VOC limits and insufficient monitoring to demonstrate compliance with the limits, ACHD has not only failed to address Petitioners' arguments, but the Permit itself does not even contain the requirements that ACHD indicates explains the rationale that the annual testing and recordkeeping requirements are sufficient to assure compliance with the limits for the CRM (P008). *CITGO Order* at 7; *Sandy Creek Order* at 12 (quoting 42 U.S.C. §7661(c)).

F. The Renewal Permit violates the public notice and comment requirements of Part 70 because it nearly doubles the emission limits for CO and VOCs for unit P001-based on ACHD's use of a novel and incorrect formula that was not a logical outgrowth of the Draft Permit or permit record.

1. Specific Grounds for Objection, Including Citation to Permit Terms

Condition V.A.1.f of the Renewal Permit states that the emissions limits for the HSM, unit P001, are set forth in **Table 4** as follows:

Table 4: Renewal Permit Emission Limits for the Hot Strip Mill, Unit P001, Table V-A-1

Pollutant	**Hourly Emission Limit (lb/hr)**	**Annual Emission Limit (tons/year)**
CO	12.88	56.41
VOC	0.28	1.33

In the Draft Permit, Condition V.A.1.f. contained different emission limits for CO and VOCs, as seen in **Table 5** below:

Table 5: Draft Permit Emission Limits for the Hot Strip Mill, Unit P001, Table V-A-1

Pollutant	**Hourly Emission Limit (lb/hr)**	**Annual Emission Limit (tons/year)**
CO	6.72	29.43
VOC	.14	.61

Part 70.8 requires that petitions for EPA to object to a Title V permit "shall be based only on objections to the permit that were raised with reasonable specificity during the public comment period provided for in § 70.7(h) of this part, unless the petitioner demonstrates that it was *impracticable to raise such objections within such period, or unless the grounds for such objection arose after such period*." 40 C.F.R. § 70.8(d) (emphasis added). As explained below, The increases in the emission limits ~~is~~ are based on ACHD's use of an incorrect equation introduced for the first time in the Renewal Permit. These unreasonably high limits were not included in the Draft Permit. Thus, it was impracticable for Petitioners to raise comments highlighting the error during the public comment period.

Moreover, the use of an incorrect novel equation is not a logical outgrowth of the Draft Permit or permit record, which means that for ACHD to apply the new equation, it would have needed to provide a new public notice and public comment period, during which members of the public would have had the opportunity to evaluate the equation and provide comments explaining that it is incorrect. Part 70.7(h). The error, the associated significant change in emission limits, and the violation of Part 70's public comment requirements arose after the initial public comment period, making it an appropriate issue for Petitioners to raise in this Petition.

2. Part 70 Requirements Not Met, Issue Arose after the Public Comment Period

Part 70.7 states that when issuing a Title V renewal permit the permitting agency "shall provide adequate procedures for public notice including offering an opportunity for public comment and a hearing on the draft permit. Part 70.7(h). In the context of notice-and-comment rulemaking, courts have explained that a final rule, or, here, a final permit, may differ from the draft noticed for public comment only to the extent that the final version is a "logical outgrowth" of the draft. *Envtl. Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) (citing *Shell Oil Co. V. EPA*, 950 F.2d 741, 750–51 (D.C. Cir. 1991)). A final agency action is a "logical outgrowth" of a proposed rule only if interested parties 'should have anticipated' that the change was possible, and thus reasonably should have filed their comments on the subject during the notice-and-comment period." *Id.*

Although ACHD reevaluated the CO and VOC limits for the HSM in response to a comment by U.S. Steel, neither U.S. Steel, ACHD, nor any other party suggested that ACHD employ an entirely novel equation which inappropriately calculates emissions, as detailed below. The public could not have anticipated that ACHD would introduce a new and incorrect equation which approximately doubled the emission limits from those in the Draft Permit. Therefore, the emission limits and method of calculation is not a logical outgrowth of the Draft Permit nor of any information in the permit record. Thus, ACHD was required to provide a second public comment period which provided the public with an opportunity to review the new mission limits and calculation method. By failing to do so, ACHD violated the public notice and comment provisions of Part 70.7(h).

3. Analysis of ACHD's Error

From the draft to the final version of the Renewal Permit, ACHD changed its method of calculating the emission limits for CO and VOC from the HSM in a manner which the public could not have anticipated. ACHD introduced a new, mathematically nonsensical equation that approximately doubled the emission limits.

For the Draft Permit, Petitioners deduced that ACHD calculated the emission limits for CO and VOC in the following manner:

$$140.0\frac{MMBtu}{hr} \times 0.048\frac{lbs}{MMBtu} = 6.72\frac{lbs}{hr}$$

In that equation, $0.048\frac{lbs}{MMBtu}$ is the average emission factor for natural gas generated by the 2017 HSM stack tests. Petitioners concluded that this is the means by which ACHD calculated the emission limit for CO in the Draft Permit because this calculation does not appear in the calculations spreadsheet that was supplemental to the Draft Permit's TSD.

During the public comment period, U.S. Steel commented on the proposed limits, objecting to ACHD basing the limits on data from stack testing rather than on the generic AP-42 emission factors that U.S. Steel applied in its Title V Renewal Application. RTC at 2. Petitioners note that ACHD was correct to apply site-specific stack test data based on clear EPA guidance which describes the use of AP-42 factors as a "last resort" for when better data is unavailable and explicitly lists "stack testing which measures emissions at a particular stack at the source...during normal operations" as significantly higher in EPA's "hierarchy of emissions estimation methods." EPA, *Best Practices for Estimating Emissions Using Emissions Factors for Clean Air Act Permitting* 1 (Nov. 2021) ("Emissions Factors Best Practices"), available at: https://www.epa.gov/system/files/documents/2022-02/Emissions-factors-best-practices_0.pdf.

Therefore, ACHD was correct to decline to change the emission factors in response to U.S. Steel's comment.

However, in its response to the comment, ACHD noted that it altered the emission limits in the Renewal Permit to account for the "inclusion of coke oven gas" in addition to natural gas as a potential fuel used in the HSM. RTC at 2. Perhaps the public could have reasonably anticipated the change if ACHD had simply applied the equations it used in the Draft Permit to calculate the HSM's CO and VOC potential to emit ("PTE") when using each potential fuel source, and then generated a final emission limit by either: (1) using a weighted average of the PTE for 100% natural gas and the PTE for 100% coke oven gas; or (2) selecting the higher of the PTEs for the two fuel sources.

Instead, ACHD used a bizarre and novel equation that members of the public could not have reasonably anticipated. ACHD's method of calculating new emission limits was not a logical outgrowth of anything in the Draft Permit or the permit record. The more in-depth explanation below of how ACHD improperly calculated the emission limits in the Renewal Permit and the proper methods ACHD should have used instead illustrates that the public could not have anticipated or commented on the method used by ACHD, nor on the resulting increase in the emission limits.

ACHD is correct to account for the composite nature of the fuel being used by the HSM. However, ACHD erred in how they derived the new limitations for CO and VOC in the supplemental spreadsheet to the TSD.

As best as Petitioners can surmise, ACHD took two stack test-derived average emission factors, one for coke oven gas (COG) and one for natural gas (NG), and added them together to create a new combined emission factor. They then multiplied this new combined emission factor

by the maximum hourly heat input of the HSM reheat furnaces to generate new hourly limits. These new hourly limits were then converted to annual limits by multiplying them by hours of operation and dividing by 2000 pounds per ton. This math would look as follows for CO:

$$Heat\ Input_{MAX} \times (EF_{COG} + EF_{NG}) = Hourly\ Limit$$

$$140.0\frac{MMBtu}{hr} \times \left(0.044\frac{lbs}{MMBtu} + 0.048\frac{lbs}{MMBtu}\right) = 12.88\frac{lbs}{hr}$$

This is not the proper way to account for a blended fuel flow. By adding the emission factors for COG and NG together ACHD has, in effect, nearly doubled what the limit actually should be by calculating the limit as if 140.0 MMBtu of COG AND 140.0 MMBtu of NG were being combusted per hour. This is simply not the case since the $140.0\frac{MMBtu}{hr}$ is the maximum hourly throughput.

The proper way to derive such a combined emission factor would be to derive a weighted average of the emissions factors based on the standard composition of the blend. According to the 2017 Stack Test Report used to generate the separate emissions factors, "The Hot Mill process… is typically fueled by a mixture of coke oven gas (COG) and natural gas (NG), (typically less than a 10% mixture)." This implies that the typical fuel blend will be composed of 90% COG and 10% NG. The weighted average limit for this composition would look as follows:

$$\frac{(Weight_{COG} \times EF_{COG} + Weight_{NG} \times EF_{NG})}{(Weight_{COG} + Weight_{NG})} = EF_{Weighted}$$

$$\frac{\left(90\% \times 0.044\frac{lbs}{MMBtu} + 10\% \times 0.048\frac{lbs}{MMBtu}\right)}{(90\% + 10\%)} = 0.0444\frac{lbs}{MMBtu}$$

$$140.0\frac{MMBtu}{hr} \times 0.0444\frac{lbs}{MMBtu} = 6.216\frac{lbs}{hr}$$

Petitioners do recognize that the language in the 2017 Stack Test Report is somewhat vague and could also be interpreted as the typical fuel mixture being 10% COG and 90% NG. In that case the weighted average emissions factor calculation would be as such:

$$\frac{(Weight_{COG} \times EF_{COG} + Weight_{NG} \times EF_{NG})}{(Weight_{COG} + Weight_{NG})} = EF_{Weighted}$$

$$\frac{\left(10\% \times 0.044\frac{lbs}{MMBtu} + 90\% \times 0.048\frac{lbs}{MMBtu}\right)}{(10\% + 90\%)} = 0.0476\frac{lbs}{MMBtu}$$

$$140.0\frac{MMBtu}{hr} \times 0.0476\frac{lbs}{MMBtu} = \ 6.664\frac{lbs}{hr}$$

In either case the calculated limit for CO is shown to be significantly lower than when calculated incorrectly as ACHD did. There is also a third case in which all fuel combusted is assumed to be the worst of the constituent fuels. In this case that would be NG. This would be considered the worst-case scenario as is often used as the potential to emit (PTE). Using this method the calculation would be as follows:

$$140.0\frac{MMBtu}{hr} \times 0.048\frac{lbs}{MMBtu} = \ 6.72\frac{lbs}{hr}$$

Even though this is the highest of the three ways in which this limit could be calculated it is still more than 6 lbs/hr less than the limit set in the Renewal Permit. As noted before, it appears that this was how ACHD set this limit in their 2023 draft version of this permit, as the hourly limit for CO there was also $6.72\frac{lbs}{hr}$.

ACHD used this same erroneous means of calculating emissions factors and hourly limits for VOC emissions from the HSM, as can be seen in the supplemental calculations spreadsheet for the TSD.

In sum, neither Petitioners nor other members of the public could have anticipated that, rather than using a logical and accurate equation to calculate CO and VOC emissions to account for the HSM potentially using a mixture of COG and natural gas, it would apply a novel and nonsensical equation in which it erroneously approximately doubled the emission limits. The new and faulty calculation method and emission limits are in no way a logical outgrowth from those provided or deducible from the Draft Permit and permit record. As such, by incorporating such a change in the final Renewal Permit without first providing opportunity for public comment violates Part 70.7(h).

Accordingly, Petitioners ask EPA to require ACHD to either: (1) recalculate these emissions factors and limits in a manner that would be reasonably anticipatable and correct, and to thereby generate appropriate emission limits that are approximately half those currently permitted; or (2) provide a second public comment period to allow members of the public to evaluate the significant changes in the Renewal Permit and notify ACHD of its error so that ACHD may correct it in an amended Renewal Permit.

V. Conclusion

For the reasons discussed above, EPA must object to the Renewal Permit. As clearly raised in Petitioner's Comments, the Renewal Permit fails to include adequate testing, monitoring, recordkeeping, or reporting requirements sufficient to assure continuous compliance with the hourly and annual limits for multiple pollutants applicable to numerous emission units located at the facility. Accordingly, Petitioners respectfully request that EPA object to the issuance of the Renewal Permit and require that:

(1) ACHD revise the permit to include adequate testing, monitoring, recordkeeping, or reporting requirements sufficient to assure compliance with the hourly and annual limits applicable to units identified above;

(2) Supplement the permit record to clearly provide the ACHD's rationale for the selected monitoring requirements that ACHD includes in an amended permit;

(3) ACHD address the miscalculation of the emission limits for the HSM by either correcting in the Renewal Permit or re-noticing the permit for public comment so that members of the public are able to comment on significant changes in the Renewal Permit and notify ACHD of its error so that ACHD may correct it in an amended Renewal Permit.

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Respectfully submitted,

Haley Lewis
Attorney
Environmental Integrity Project
888 17th Street NW, Suite 810
Washington, DC 20006
hleiws@environmentalintegrity.org

Angela M. Kilbert, Senior Attorney
PennFuture
200 First Avenue, Suite 101
Pittsburgh, PA 15222
kilbert@pennfuture.org

Alexander Bomstein
Executive Director
Clean Air Council
1617 JFK Boulevard, Suite 1130
Philadelphia, PA 19103
abomstein@cleanair.org