ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 15-1487 (and consolidated case Nos. 15-1492, 15-1493, 15-1496, 16-1179)

SIERRA CLUB, *et al.*,
Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*,
Respondents.

Petition for Review of Final Administrative Action of the
United States Environmental Protection Agency

PROOF OPENING BRIEF OF ENVIRONMENTAL PETITIONERS

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DATED: November 14, 2016

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FOR THE DISTRICT OF COLUMBIA CIRCUIT

SIERRA CLUB, *et al.*, *Petitioners*, v. U.S. ENVIRONMENTAL PROTECTION AGENCY, *et al.*, *Respondents*.	Case No. 15-1487 (and consolidated cases)

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit Rule 28(a)(1), Sierra Club and Natural Resources Defense Council (collectively, "Environmental Petitioners") submit this certificate as to parties, rulings, and related cases.

(A) Parties and *Amici*

(i) Parties, Intervenors, and *Amici* Who Appeared in the District Court

This case is a petition for review of final agency action, not an appeal from the ruling of a district court.

(ii) Parties to This Case

Petitioners:

15-1487 Sierra Club and Natural Resources Defense Council

15-1492 Brick Industry Association

15-1493 Kohler Company

15-1496 Tile Council of North America, Inc.

16-1179 Brick Industry Association

Respondent:

The respondent in all cases is the United States Environmental Protection Agency. Also named as a respondent in case numbers 15-1487, 15-1493, and 15-1496 is Gina McCarthy, in her official capacity as Administrator of the United States Environmental Protection Agency.

Intervenors:

15-1487 Tile Council of North America, Inc. and Brick Industry Association have been granted leave to intervene on behalf of Respondents United States Environmental Protection Agency and Gina McCarthy (collectively, "EPA"). Kohler Company has moved for leave to intervene on behalf of Respondent EPA.

15-1492 Sierra Club and Natural Resources Defense Council have been granted leave to intervene on behalf of Respondent United States Environmental Protection Agency.

15-1493 Sierra Club and Natural Resources Defense Council have been granted leave to intervene on behalf of Respondent EPA.

15-1496 Sierra Club and Natural Resources Defense Council have been granted leave to intervene on behalf of Respondent EPA

16-1179 Sierra Club has been granted leave to intervene on behalf of Respondent United States Environmental Protection Agency.

(iii) *Amici* in This Case

None at present.

(iv) Circuit Rule 26.1 Disclosures

See disclosure form filed separately.

(B) Rulings Under Review

Petitioners seek review of the final action taken by EPA at 80 Fed. Reg. 65,470 (Oct. 26, 2015) and entitled "NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing."

Petitioner Brick Industry Association also seeks review of the final action taken by EPA at 81 Fed. Reg. 31,234 (May 18, 2016) and entitled "NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing."

(C) Related Cases

Environmental Petitioners are not aware of any related cases not already consolidated in this matter.

DATED: November 14, 2016

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RULE 26.1 DISCLOSURE STATEMENT

Pursuant to Federal Rules of Appellate Procedure 26.1 and 28(a)(1) and D.C. Circuit Rules 26.1 and 28(a)(1)(A), Sierra Club and Natural Resources Defense Council (collectively, "Environmental Petitioners") make the following disclosures:

Sierra Club

Non-Governmental Corporate Party to this Action: Sierra Club.

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: Sierra Club, a corporation organized and existing under the laws of the State of California, is a national nonprofit organization dedicated to the protection and enjoyment of the environment.

Natural Resources Defense Council

Non-Governmental Corporate Party to this Action: Natural Resources Defense Council ("NRDC").

Parent Corporations: None.

Publicly Held Company that Owns 10% or More of Party's Stock: None.

Party's General Nature and Purpose: NRDC, a corporation organized and existing under the laws of the State of New York, is a national nonprofit organization dedicated to improving the quality of the human environment and protecting the nation's endangered natural resources.

DATED: November 14, 2016

Respectfully submitted,

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GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Pursuant to Circuit Rule 28(a)(3), the following is a glossary of acronyms and abbreviations used in this brief:

AEGL	Acute exposure guideline level
ATSDR	Agency for Toxic Substances and Disease Registry
CalEPA	California Environmental Protection Agency
DIFF	Dry injection fabric filter
DLS/FF	Dry lime scrubber with a fabric filter
EPA or the Agency	U.S. Environmental Protection Agency and Gina McCarthy
HAP	Hazardous air pollutant
IARC	International Agency for Research on Cancer
IRIS	Integrated Risk Information System
MACT	Maximum achievable control technology
NACWA	National Association of Clean Water Agencies
OECD	Organisation for Economic Co-operation and Development
PM	Particulate matter
RfC	Reference concentration

JURISDICTIONAL STATEMENT

Respondents U.S. Environmental Protection Agency and Gina McCarthy, Administrator (collectively "EPA" or "the agency"), have jurisdiction over the promulgation of emission standards and other requirements for brick and structural clay products manufacturers ("brick kilns") and clay ceramics manufacturers ("ceramics kilns") under § 112 of the Clean Air Act, 42 U.S.C. § 7412.

Pursuant to Clean Air Act § 307(b)(1), *id.* § 7607(b)(1), this Court has jurisdiction to review the final action taken by EPA at 80 Fed. Reg. 65,470 (Oct. 26, 2015), JA____, and entitled "NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing." Environmental Petitioners filed a timely petition for review of this action on December 22, 2015.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are in a separate addendum.

STATEMENT OF ISSUES

1. Whether EPA violated the Clean Air Act or acted arbitrarily by setting standards under a provision reserved only for threshold pollutants, 42 U.S.C. § 7412(d)(4), without meeting that subsection's requirements that a "health threshold has been established" and that the standards include "an ample margin of safety."

2. Whether EPA acted arbitrarily by setting minimum stringency emission standards ("floors") for kilns for which EPA had "limited" emissions data at levels that do not reflect the emissions levels achieved by the relevant best-performing kiln or kilns. *Id.* § 7412(d)(3).

3. Whether EPA violated the Clean Air Act or acted arbitrarily by setting not one, but three "alternative" emission floors under 42 U.S.C. § 7412(d)(2), and allowing kilns to choose which floor to meet.

STATEMENT OF THE CASE

I. INTRODUCTION

Brick and ceramics kilns emit extremely hazardous air pollutants. The Clean Air Act requires EPA to set standards that control such pollution. The last time EPA issued standards for these industries, this Court found them unlawful and vacated them in their entirety. *Sierra Club v. EPA*, 479 F.3d 875 (D.C. Cir. 2007). After extended delay, and only when ordered to act by a district court, EPA adopted the rules challenged here to replace those invalidated nearly a decade ago.

Unfortunately, EPA has yet again disregarded the plain requirements of the Clean Air Act and set standards far weaker than the Act mandates. As a consequence of EPA's unwillingness to follow the law, people living near brick and ceramics kilns continue to be deprived of the needed health protections the Act

guarantees them. Environmental Petitioners seek an order that EPA correct the unlawful aspects of its rules and finally issue lawful standards.

II. FACTUAL BACKGROUND

Each year, according to EPA, brick and ceramics kilns located across the country release thousands of tons of hazardous air pollutants, including highly corrosive acid gases and dangerous heavy metals such as arsenic, lead, and mercury. 80 Fed. Reg. at 65,473/2-3, 65,504/2, JA____, ____; EPA-HQ-OAR-2013-0291-0665 at 4-27, JA____ ("Regulatory Impact Analysis"); EPA-HQ-OAR-2013-0291-0664 at A-16 to A-19, JA____-__ ("Cost Memo"). The acid gases include hydrogen chloride (also called hydrochloric acid or HCl), hydrogen fluoride (HF), and chlorine (Cl_2), and account for more than 99 percent of hazardous air pollutants released by kilns. 80 Fed. Reg. at 65,473/2, JA____.

Long-term exposure to hydrogen chloride can induce asthma and cause other respiratory problems, as well as irritation to the throat, eyes, and skin; short-term exposure to elevated levels can cause respiratory distress, severe burns, and even death. Regulatory Impact Analysis at 4-29, JA____. Hydrogen fluoride is a highly corrosive systemic poison that can burn skin or lungs on contact and, when inhaled, can cause coughing and narrowing of bronchi in the lungs, low blood pressure, skeletal damage, and, in severe cases, lung collapse or death. *Id.* at 4-29 to 4-30, JA____-__; 79 Fed. Reg. 75,622, 75,640/2 (Dec. 18, 2014), JA____;

Agency for Toxic Substances and Disease Registry ("ATSDR"), ToxFAQs for Fluorides, Hydrogen Fluoride, and Fluorine at 32-72 (Sept. 2003), JA____-__. Used as a chemical weapon in World War I, chlorine gas is a skin and lung irritant that can exacerbate asthma and cause other severe breathing difficulties. Regulatory Impact Analysis at 4-28, JA____. *See also* EPA-HQ-OAR-2013-0291-0554[1] at 6-7, 13, 17-18, JA____-__, ____, ____-__ ("Sierra Club Comments").

Mercury, lead, and the other heavy metals released from kilns can cause neurological damage, respiratory harms, cancer, and other serious health problems. 80 Fed. Reg. at 65,473/2-3, JA____; Regulatory Impact Analysis at 4-27 to 4-33, JA____-__. Some of these metals, such as mercury, are deposited on the water and land and can bioaccumulate in the aquatic food chain and contaminate fish, other living organisms, and the natural environment. EPA-HQ-OAR-2013-0291-0004 at 399, 401, 404, 427-28, JA____, ____, ____, ____-__.

People living near brick and ceramics kilns face harms to their health as a result of these facilities' hazardous air emissions. Children may be more vulnerable than adults to exposure to hydrogen chloride, hydrogen fluoride, and certain heavy metals released from kilns. *See* Regulatory Impact Analysis at 4-29 to 4-31, JA____-__; Sierra Club Comments at 7, 13, JA____, ____.

[1] The same comments also appear at EPA-HQ-OAR-2013-0290-0248.

Once EPA listed brick kilns and ceramics kilns as categories of major sources of hazardous air pollutants, the Clean Air Act mandated that EPA adopt emission standards for these sources by November 15, 2000. 42 U.S.C. § 7412(e)(1)(E); 79 Fed. Reg. at 75,627/1, JA____. EPA did not adopt those standards until 2003, and upon challenge by Sierra Club, this Court found them unlawful and vacated them in their entirety. *Sierra Club*, 479 F.3d at 876, 879-80. When EPA failed to timely promulgate a rule on remand, Sierra Club sued EPA and obtained a consent decree requiring EPA to act. 80 Fed. Reg. at 65,473/1-2, JA____; *see also Sierra Club v. EPA*, 850 F. Supp. 2d 300 (D.D.C. 2012) (denying EPA's motion to dismiss the suit Sierra Club brought to compel EPA to respond to this Court's remand). Pursuant to the consent decree deadline, EPA finally issued replacement standards for brick and ceramics kilns in 2015, more than fifteen years after the date by which Congress required the standards to be in place. 80 Fed. Reg. 65,470, JA____.

III. STATUTORY BACKGROUND

Prior to its substantial amendment in 1990, the Clean Air Act mandated that EPA set standards for hazardous air pollutants at a level that provides "an ample margin of safety to protect public health." S. Rep. No. 101-228, at 128 (1989). EPA's implementation of this requirement was a failure, resulting in standards for

only "a small fraction" of toxic pollutants. H.R. Rep. No. 101-490, pt.1, at 151-54 (1990); *see also* S. Rep. No. 101-228, at 128 ("The law has worked poorly.").

Congress responded by overhauling the statutory framework. To avoid the "lengthy study and debate" about the health risks of each pollutant that had "crippled" EPA's earlier standard-setting efforts, Congress replaced the health-based framework with technology-based requirements called "Maximum Achievable Control Technology" ("MACT"). S. Rep. No. 101-228, at 167-68, 171; *see also Sierra Club*, 479 F.3d at 877-81, 883; *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 633-34 (D.C. Cir. 2000); Hon. Henry A. Waxman, An Overview of the Clean Air Act Amendments of 1990, 21 Envtl. L. 1721, 1746, 1773-76 (1991).

Under the technology-based requirements, EPA must set standards that require the "maximum" degree of reduction in emissions that is "achievable" considering cost and other factors. 42 U.S.C. § 7412(d)(2); *Sierra Club*, 479 F.3d at 877. Regardless of cost, standards for new sources must be no "less stringent than the emission control that is achieved in practice by the best controlled similar source." 42 U.S.C. § 7412(d)(3). Similarly, standards for existing sources in categories or subcategories with 30 or more sources must be no less stringent than the "average emission limitation achieved by the best performing 12 percent of the existing sources (for which the Administrator has emissions information)," and standards for existing sources in categories or subcategories with fewer than 30

sources must be no less stringent than "the average emission limitation achieved by the best performing 5 sources (for which the Administrator has or could reasonably obtain emissions information)." *Id.* § 7412(d)(3)(A), (B).

These minimum stringency requirements unambiguously "require[] floors based on the emission level actually *achieved* by the best performers (those with the lowest emission levels)." *Sierra Club*, 479 F.3d at 880-81. EPA may not override the floor requirements with its own notions about what is "achievable." *Id.* at 877-81; *Cement Kiln Recycling Coal. v. EPA*, 255 F.3d 855, 861 (D.C. Cir. 2001). Each hazardous air pollutant that a source category emits must be controlled by an emission standard. 42 U.S.C. § 7412(d)(1)-(2). *See Sierra Club*, 479 F.3d at 883 (quoting *Nat'l Lime Ass'n*, 233 F.3d at 633-34).

EPA may depart from this technology-based approach in very limited and rare circumstances. Under § 7412(d)(4), "[w]ith respect to pollutants for which a health threshold has been established, the Administrator may consider such threshold level, with an ample margin of safety, when establishing emission standards under this subsection." 42 U.S.C. § 7412(d)(4). Thus, to set a § 7412(d)(4) emission standard for a hazardous air pollutant, EPA must show that pollutant has a "health threshold" that "has been established" and must set a standard that provides "an ample margin of safety" beyond that established threshold. *Id.*

The legislative history makes clear that Congress intended for § 7412(d)(4) to provide only an exceedingly narrow exception to the ordinary requirement to set MACT emission standards. The Senate Report provided that EPA may set emission standards using a health threshold only where "the pollutant presents no risk of other adverse health effects, including cancer, for which no threshold can be established." S. Rep. No. 101-228, at 171 (emphasis added). The Senate Report described the "health threshold" as a "safety level" and emphasized that it must have been "well-established." *Id.* Many pollutants do not have a safe health threshold. Indeed, the Senate Report underscored that a threshold only exists where the pollutant "presents no risk of … cancer." *Id.*

IV. REGULATORY BACKGROUND

A. Decision To Set § 7412(d)(4) Emission Standards Rather Than MACT Standards For Hydrogen Chloride, Hydrogen Fluoride, And Chlorine.

In lieu of MACT standards, EPA adopted emission standards for hydrogen chloride, hydrogen fluoride, and chlorine under § 7412(d)(4)—the first time EPA has done so for hydrogen fluoride and chlorine.[2] 80 Fed. Reg. at 65,471/2-3, JA____; 79 Fed. Reg. at 75,639/2, JA____. Pollution control technology that can

[2] The § 7412(d)(4) standards apply to new and existing brick tunnel kilns and all ceramics kilns except sanitaryware shuttle kilns. 80 Fed. Reg. at 65,474/3 & tbl.4, 65,478/3 & tbl.5, JA____, ____. Although EPA adopted a risk-based standard for chlorine from brick kilns, it set no standards for chlorine from ceramics kilns.

reduce emissions for these pollutants to extremely low levels has long been in use on kilns. Cost Memo at 2-3, JA____-__ (EPA estimates that use of a dry injection fabric filter ("DIFF") or a dry lime scrubber with a fabric filter ("DLS/FF") cuts acid gas emissions by 82 percent to 98 percent at large and small brick kilns). This protective technology is currently in use at roughly ten percent of brick tunnel kiln stacks. *Id.* at 4, JA____ (of 147 stacks, 15 use DIFF and 1 uses DLS/FF).

The acid gas standards EPA adopted are so weak that of the more than 80 major source brick kiln facilities, EPA expects only one will need to install pollution controls to comply with the limits, and that facility can meet the standards by controlling emissions from only 3 of its 10 kiln stacks. *Id.* at 5, 7-8, JA____, ____-__. None of the ceramics kilns are expected to add pollution controls. EPA-HQ-OAR-2013-0290-0298 at 8, JA____. Had EPA set MACT standards—*i.e.*, standards based on the performance of kilns using pollution control technology—those standards would have forced higher-polluting kilns without any emissions controls to take measures to reduce their emissions to the levels already being achieved by their cleaner competitors.

1. Failure To Find That Hydrogen Chloride, Hydrogen Fluoride, And Chlorine Present No Risk Of Cancer.

EPA uses its "Integrated Risk Information System" ("IRIS") program to evaluate cancer risks. EPA generally then assigns pollutants one of five cancer

classifications in accordance with its Guidelines for Carcinogen Risk Assessment: "carcinogenic to humans" (Group A), "likely to be carcinogenic to humans" (Group B), "suggestive evidence of carcinogenic potential" (Group C), "inadequate information to assess carcinogenic potential" (Group D), and "not likely to be carcinogenic to humans" (Group E). 79 Fed. Reg. at 75,639/1 n.6, JA____; EPA, Guidelines for Carcinogen Risk Assessment 1-1 to 1-2 (2005), JA____-__ ("EPA believes that the cancer guidelines represent a sound and up-to-date approach to cancer risk assessment").

EPA has not classified hydrogen chloride, hydrogen fluoride, or chlorine as to their carcinogenicity. 80 Fed. Reg. at 65,488/2, JA____; 79 Fed. Reg. at 75,639-40, JA____-__. Indeed, EPA has not even evaluated the hazardous air pollutants under its "IRIS program for evidence of human carcinogenic potential." EPA, IRIS: Hydrogen Chloride, JA____; EPA, IRIS: Fluorine, JA____; *accord* EPA, IRIS: Chlorine, JA____. Moreover, EPA acknowledged that no other expert scientific or regulatory body has ever determined that hydrogen chloride, hydrogen fluoride, and chlorine gas do not cause cancer. 80 Fed. Reg. at 65,488/2, JA____ (no determination as to carcinogenicity made by EPA, California Environmental Protection Agency ("CalEPA"), International Agency for Research on Cancer ("IARC"), Organisation for Economic Co-operation and Development ("OECD"), or European Community). Significantly, EPA has classified other pollutants as not

carcinogenic. For example, EPA classified as not carcinogenic bentazon, ethylene glycol monobutyl ether, hexachlorocyclopentadiene, and methyl methacrylate. Sierra Club Comments at 6, JA____. Thus, where EPA has evidence to support a finding that a pollutant does not cause cancer, EPA uses that information to classify the pollutant as not carcinogenic. EPA admits that it lacks information to classify hydrogen chloride, hydrogen fluoride, or chlorine as not carcinogenic. For example, with respect to hydrogen chloride, EPA found that "[l]ittle research has been conducted on its carcinogenicity." 79 Fed. Reg. at 75,639/3, JA____; *accord* 80 Fed. Reg. at 65,488/2, JA____ ("There are limited studies on the carcinogenic potential of HCl in humans."); *cf.* 71 Fed. Reg. 76,518, 76,542/1 (Dec. 20, 2006), JA____ ("The data are inadequate to make a determination as to whether HCl is carcinogenic in either humans or animals."). As Environmental Petitioners pointed out in their comments, EPA's website communicated to the public at the time of the rulemakings that "no information" exists on the carcinogenicity of hydrogen chloride in humans. Sierra Club Comments at 7, JA____ (citing and attaching EPA, Technology Transfer Network - Air Toxics Web Site: Hydrochloric Acid (Hydrogen Chloride), JA____).

Of the three hazardous acid gases emitted by brick kilns, the only one for which EPA even considered a classification was hydrogen chloride. After

examining a single occupational study of cancer incidence in humans,[3] EPA stated in its proposal that it "believes" it would be "reasonable to classify HCl as a Group D pollutant." 79 Fed. Reg. at 75,639/3, JA____ (citing a 1994 "preliminary draft" finding that "[n]o data are available on possible mutagenic, teratogenic, or carcinogenic effects of hydrogen chloride in humans," *see* EPA-HQ-OAR-2013-0291-0161 at 1-8, JA____). A pollutant classified in Group D is a "pollutant[] for which there is not enough evidence to make a conclusion on carcinogenicity."

For hydrogen fluoride, EPA did not even consider a classification. Instead, EPA found that "[t]here are a limited number of studies" on its potential to cause cancer, and that those few studies "are unreliable on the issue of possible carcinogenicity of HF and/or fluorides." 80 Fed. Reg. at 65,488/3, JA____; *see also id.* at 65,493/1-2 & n.52, JA____ ("Carcinogenicity studies, in which HF has been tested, are not available."). Elaborating on this finding, EPA noted that the ATSDR identified studies showing "elevated cancer rates," but those studies suffered from design flaws. *Id.* at 65,493/1-2 & n.52, JA____. EPA also noted that the IARC "determined that the carcinogenicity of fluoride to humans is not classifiable." *Id.* In summary, EPA determined that the overall evidence as to

[3] EPA cited additional data from animal tests in its final rule. 80 Fed. Reg. at 65,488/3, 65,489/3-90/1, JA____, ____-__.

carcinogenicity of hydrogen fluoride is "limited/equivocal." 79 Fed. Reg. at 75,641, JA____; 80 Fed. Reg. at 65,488/3, JA____.[4]

Finally, EPA neither found that chlorine does not cause cancer nor identified findings to that effect by any other scientific or regulatory body. For chlorine, EPA satisfied itself with a statement that some "existing studies" of workers and animals do not affirmatively establish evidence of carcinogenicity. 80 Fed. Reg. at 65,489/1, JA____; 79 Fed. Reg. at 75,640/1, JA____. EPA never cited any specific studies. Based on this lack of evidence, EPA stated that it "presumptively considers [chlorine]" to have a health threshold with respect to cancer risk. 79 Fed. Reg. at 75,640/2, JA____ (emphasis added).

Remarkably, EPA took the position that, because the evidence in the record does not establish one way or the other whether hydrogen chloride, hydrogen fluoride, and chlorine gas cause cancer, and in the absence of any "classif[ication]" of these pollutants' potential to cause cancer by authoritative bodies, the agency may presume that hydrogen chloride, hydrogen fluoride, and chlorine do not cause

[4] In comments, Environmental Petitioners cited and attached a report by the National Research Council of the National Academies finding that "the overall evidence from human animal studies is mixed" on the question of fluoride's carcinogenicity. Sierra Club Comments at 14, JA____ (attaching National Research Council of the National Academies, Emergency and Continuous Exposure Guidance Levels for Selected Submarine Contaminants vol.3 at 93 (2009), JA____ ("National Research Council Report")).

cancer. 80 Fed. Reg. at 65,495/2-3, JA____ (citing "the absence of evidence of carcinogenic risk").

2. Failure To Determine Thresholds For Non-Cancer Health Effects.

To determine whether a threshold has been established for health effects other than cancer, such as respiratory harms, EPA looked first for EPA-derived risk values. For hydrogen chloride, EPA located a 1995 EPA "reference concentration" ("RfC"), and asserted it represented hydrogen chloride's threshold without investigating other available information on pollutant risk levels. 79 Fed. Reg. at 75,643/3 & tbl.7, JA____; EPA-HQ-OAR-2013-0291-0132 at 11-12 & tbl.4, JA____ ("Brick Risk Assessment").

This 1995 number, 20 µg/m^3,(micrograms per cubic meter) was extrapolated from a single study on chronic health effects in rats that did not find a level of exposure at which no health effects were observed. 79 Fed. Reg. at 75,639/2-3, JA____; IRIS: Hydrogen Chloride at 2-3; JA____-__. In the IRIS entry (authored in 1995), EPA described significant limitations in basing the reference concentration solely on the study: it was the only chronic study available and "used only one dose and limited toxicological measurements." IRIS: Hydrogen Chloride at 4, JA____. EPA also expressed reservations about the total database of studies on hydrogen chloride's health effects, which lacked "any additional chronic or

reproductive studies." *Id.* In light of these quality issues, when it released the reference concentration, EPA also found that it had "low confidence" in the rat study, "low confidence" in the database, and "low confidence" in the reference concentration itself. *Id.*; *see also* 80 Fed. Reg. at 65,490/2, JA____ (EPA "assign[s] confidence levels of high, medium, and low").

In 1999, CalEPA considered the same study and established a far more protective exposure level, 9 µg/m^3.[5] Cal. Office of Envtl. Health Hazard Assessment, Chronic RELs and Toxicity Summaries Using the Previous Version of the Hot Spots Risk Assessment Guidelines at 311 (1999), JA____. Only in response to Environmental Petitioners' comments did EPA acknowledge the existence of this more protective CalEPA level, and then only to state that EPA "favor[s] EPA benchmarks (when they exist)" over CalEPA levels. 80 Fed. Reg. at 65,491/3, JA____.

For hydrogen fluoride and chlorine, EPA could not locate an EPA-derived risk level, and instead chose a CalEPA level for hydrogen fluoride and an Agency for Toxic Substances and Disease Registry level for chlorine. 79 Fed. Reg. at 75,643, JA____.

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[5] An REL represents "the concentration level at or below which no health effects are anticipated in the general human population." Brick Risk Assessment at 12, JA____. According to EPA, CalEPA derives an REL through a "rigorous" process incorporating "significant external scientific peer review." *Id.*; 80 Fed. Reg. at 65,489/2-3, JA____.

3. Failure To Set § 7412(d)(4) Standards With An Ample Margin Of Safety.

After picking chronic risk values for hydrogen chloride, hydrogen fluoride, and chlorine gas with respect to non-cancer health effects, EPA asserted those numbers are "thresholds" for each of these pollutants. EPA then adopted standards that permit a facility to release any combination of these pollutants right up to the supposed threshold level. 80 Fed. Reg. at 65,500/3-01/1; 79 Fed. Reg. at 75,643-44, JA____-__; Sierra Club Comments at 27-28, JA____-__. EPA did not increase the level of the standards to provide a margin of safety beyond the alleged threshold. Sierra Club Comments at 27-44, JA____-__.

Because EPA calculated the standards using chronic risk levels, they do not account for threats to people from acute (*i.e.*, short-term) exposures. Brick Risk Assessment at 2, JA____; EPA-HQ-OAR-2013-0290-0213 at 2, JA____ ("Ceramics Risk Assessment"). EPA found that at multiple kilns, people (including children) face acute health risks when exposed to hydrogen fluoride at the level allowed by the standards. Brick Risk Assessment at 16-17, JA____-__; Ceramics Risk Assessment at 12-13, JA____-__. Nevertheless, EPA did not tighten the standards to guard against the health risks it found.

B. MACT Emission Floors For Mercury And Non-Mercury Metals Emissions.

1. Setting Floors At The Upper Prediction Limit.

Where EPA set technology-based standards, it used the same upper prediction limit approach that this Court reviewed in *U.S. Sugar Corp. v. EPA*, 830 F.3d 579 (D.C. Cir. 2016), and *National Association of Clean Water Agencies v. EPA*, 734 F.3d 1115 (D.C. Cir. 2013) ("*NACWA*"). Under this approach, EPA applies a statistical formula to the emissions data it has for the best performing sources to determine an emission level these sources will fall below in 99 out of 100 future tests. 79 Fed. Reg. at 75,635/3, JA____. EPA claims that this number reflects the "average" emission limitation achieved by the best performing sources even though the agency recognizes that every one of these sources will have emissions below this level at all times. *Id.*

In *NACWA*, the Court expressed strong doubt about the rationality of applying this approach to small data sets:

> As EPA stated …, a smaller dataset may have greater variability, and thus a higher upper prediction limit. But if the upper prediction limit can vary so much depending on the size of the dataset, EPA should explain on remand why the upper prediction limit is a reasonable estimate of what an incinerator would achieve under the worst foreseeable conditions for incinerators with smaller datasets. Put differently, if collecting more data has such a significant effect on the upper prediction limit, presumably producing a more accurate estimate of what that incinerator would "achieve in practice," EPA should explain why the upper prediction limit could still be considered accurate given a small dataset.

734 F.3d at 1144-45; *see also id.* at 1145 ("[T]he MACT floor datasets … demonstrate flaws in the formula.").

In this rulemaking, EPA conceded that its UPL becomes so "uncertain" at "limited datasets" of 3-6 samples that it cannot reliably apply the formula without taking further steps to verify the floors' accuracy. EPA-HQ-OAR-2013-0291-0661at 6, JA____ (further consideration needed so that "the uncertainty associated with a limited dataset does not cause the calculated emission limit to be so high that it does not reflect" the relevant emissions performance) ("Brick Limited Datasets Memo"). Nonetheless, despite having small datasets for a majority of its standards, EPA elected to use the UPL approach. *Id.* at 11, JA____; EPA-HQ-OAR-2013-0290-0295 at 9, JA____ ("Ceramics Limited Datasets Memo").

2. Setting Alternative MACT Floors Within Each Brick Kilns Subcategory.

Before setting the MACT floors, EPA divided brick tunnel kilns into subcategories of large kilns and small kilns to "provide[] additional flexibility for small tunnel kilns," which would not have to match the same level of emissions control as their larger counterparts. 80 Fed. Reg. at 65,474/2-3, 65,485/2, JA____, ____. Then EPA adopted three "alternative" MACT floor emission standards for each subcategory of kilns to limit mercury and non-mercury metals emissions from new and existing sources. *Id.* EPA gave each tunnel kiln the "option[]" to choose

which floor to comply with. *Id.* at 65,474/2-3, 65,530-31 , JA____, ____-__ (40 C.F.R. Part 63, Subpart JJJJJ, tbl.1, rows 2-5).

A kiln may comply with a limit on: (1) the pounds of emissions per ton of fired product made (lb/ton of fired product); (2) the concentration of emissions, as measured by the mass of pollutant per dry standard cubic meter at 17 percent oxygen concentration (µg/dscm at 17% O_2); or (3) the rate of emissions, as measured by the pounds of emissions in an hour (lb/hr). *Id.*

Although EPA refers to the floors as "equivalent," they are not numerically "equivalent." EPA did not derive them by converting one unit of measure into another, such as by translating a limit on pounds of emissions into one on kilograms of emissions. Nor is each alternative based on the performance of the same best controlled source or group of best performing sources. Quite the opposite—EPA based each of its different floors on a different set of sources that it claimed was best performing "for that unit of measurement." *Id.* at 65,485/2, JA____.

This methodology resulted in EPA ranking different sources as the top performing source or sources within the same subcategory. *See* EPA-HQ-OAR-2013-0291-0660 at A-2 to A-13, JA____-__ ("Brick Floor Memo"). For example, the top-ranked large tunnel kiln for controlling non-mercury metal emissions is kiln 514 when measured by production rate (lb/ton of fired product), kiln 508 when

measured by concentration (µg/dscm at 17% O_2), and kiln 526 when measured by hourly rate (lb/hr). *Id.* at A-2, A-5, A-9, JA____, ____, ____. These kilns—all of which EPA calls the best controlled source—do not have identical emissions levels. Emissions level data by production rate differ by nearly an order of magnitude: kiln 514, 0.00757 lb/ton; kiln 508, 0.01003 lb/ton; and kiln, 526 0.06969 lb/ton. The same kilns are also not identical when examining data in pollutant concentration: kiln 514, 0.000697 µg/dscm at 17% O_2; kiln 508, 0.000614 µg/dscm at 17% O_2; and kiln 526, 0.004072 µg/dscm at 17% O_2.[6]

Because each kiln can choose the floor that is easiest for it to satisfy, fewer kilns need to take any steps to control their toxic pollution. As a consequence, the rule does not reduce emissions as much as it would if EPA set only one floor for each subcategory. EPA's own estimates show this to be the case. *See* Cost Memo at 9 tbl.5, JA____. For example, EPA projects that only 34.8% of large tunnel kilns with available data and equipped with DIFF or DLS/FF controls already meet the lb/ton of fired product limit on non-mercury metal emissions (PM), and only 40.9% of such kilns already meet the concentration-based limit, but 60.9% of such kilns already meet at least one of the two limits. *Id.*

[6] Only the alternative floors for mercury emissions from small tunnel kilns—for which EPA had just two kilns with emissions data—have the same kilns as best performers. Brick Floor Memo at A-13, JA____.

SUMMARY OF ARGUMENT

Emission standards under § 7412(d)(4). EPA contravened the Clean Air Act and acted arbitrarily by setting do-nothing standards for emissions of hydrogen chloride, hydrogen fluoride, and chlorine under § 7412(d)(4) without meeting this provision's requirement for an established health threshold. 42 U.S.C. § 7412(d)(4). The record shows that EPA does not know whether the pollutants present a cancer risk, and the agency's claim that the absence of available health evidence authorizes such standards is unlawful under *Chevron* analysis and arbitrary. Further, EPA unlawfully and arbitrarily relied on a hydrogen chloride risk value and study in which it has "low confidence" while ignoring a more recent and health protective risk determination, and ignored its own finding that the standards allow harmful short-term exposures to hydrogen fluoride. Finally, EPA did not include the "ample margin of safety" that the Clean Air Act mandates. *Id.*

Use of flawed upper prediction limit for MACT emission floors. EPA set MACT emission floors at an "upper prediction limit" for floors with "limited" emissions information without showing those standards represent the emission levels actually achieved by the relevant best-performing kilns. *Id.* § 7412(d)(3). The agency's failure to rationally explain how a method that distorts floors at small sample sizes actually produced representative floors was unlawful and arbitrary.

Decision to provide alternative MACT emission floors. Allowing each kiln to choose the floor it would like to comply with from three possible alternatives violates EPA's well-established obligation to set a floor at the level achieved by the "best" performing sources in the category or subcategory, "those with the lowest emissions." *Sierra Club*, 479 F.3d at 880-81. The standards also fail *Chevron* step two because EPA did not even attempt to reconcile them with § 7412(d) requirements. Moreover, EPA lacked substantial evidence showing such floors are equivalent when the record instead shows they are not equally stringent and will permit kilns to avoid taking any steps to control their toxic pollution.

STANDARD OF REVIEW

Under *Chevron U.S.A. Inc. v. Natural Resources Defense Council*, this Court rejects agency statutory interpretations that are either contrary to the "unambiguously expressed intent of Congress" or unreasonable. 467 U.S. 837, 842-43 (1984). Under *Chevron*, EPA's interpretation of ambiguous statutory provisions must be rejected as unreasonable, *see id.* at 843, if the agency has not "offered a reasoned explanation for why it chose that interpretation," *Village Of Barrington, Ill. v. Surface Transportation Board*, 636 F.3d 650, 660 (D.C. Cir. 2011), or the interpretation "frustrate[s] the policy that Congress sought to implement," *Shays v. FEC*, 528 F.3d 914, 925 (D.C. Cir. 2008) (internal quotation marks and citation omitted).

The Court reviews agency actions and decisions under the "arbitrary and capricious" standard. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). EPA's actions and decisions are arbitrary and capricious if the agency has not "examine[d] the relevant data and articulate[d] a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'" *Id.* (quoting *Burlington Truck Lines v. United States*, 371 U.S. 156, 168 (1962)). An agency's action is also arbitrary if it is not supported by substantial evidence. *Ne. Md. Waste Disposal Auth. v. EPA*, 358 F.3d 936, 954 (D.C. Cir. 2004).

STANDING

Environmental Petitioners have standing to bring this suit on behalf of their members. *See Friends of the Earth v. Laidlaw Envtl. Servs. (TOC)*, 528 U.S. 167, 181 (2000). Environmental Petitioners' members live, work, and recreate near brick and ceramics kilns regulated by the rules. They are harmed by their exposure to emissions of hazardous air pollutants from these kilns through the air they breathe and other pathways. They also suffer other harm including additional health risks and a diminished ability to engage in and enjoy recreational and aesthetic interests. *See* Declarations. Because EPA's standards do not reduce these emissions as required by the Clean Air Act, they prolong and increase this harm. The Court may redress these injuries by ordering EPA to follow the Clean Air Act

on remand. *See, e.g.*, *Natural Res. Def. Council v. EPA*, 749 F.3d 1055, 1062 (D.C. Cir. 2014); *Ass'n of Battery Recyclers v. EPA*, 716 F.3d 667, 672-73 (D.C. Cir. 2013); *Sierra Club v. EPA*, 699 F.3d 530, 533 (D.C. Cir. 2012).

ARGUMENT

I. EPA'S DECISION TO SET § 7412(D) STANDARDS WITHOUT IDENTIFYING AN ESTABLISHED HEALTH THRESHOLD OR PROVIDING AN AMPLE MARGIN OF SAFETY WAS UNLAWFUL AND ARBITRARY.

A. EPA Failed To Show The Pollutants At Issue Do Not Cause Cancer.

1. EPA's Standards Violate § 7412(d)(4).

Congress authorized standards under § 7412(d)(4) only for pollutants for which a "health threshold has been established." 42 U.S.C. § 7412(d)(4). Because there is no safe level of exposure to a carcinogen, Congress limited EPA's authority to act under § 7412(d)(4) to circumstances where it has been "well-established" that a pollutant "presents no risk of … cancer." S. Rep. No. 101-228, at 171 (authorizing standards only where "the pollutant presents no risk of … cancer" and technology-based standards would "secure no public health or environmental benefit" (emphasis added)); 136 Cong. Rec. 36,064/2 (1990) (statement of Sen. Durenberger: "With respect to carcinogens and other nonthreshold pollutants, no such authority [to set a standard less stringent than the maximum achievable control technology] exists in [§ 7412(d)]."). Indeed, the

Senate Report emphasized that where a pollutant's health effects are subject to continued "study and debate," it lacks a "threshold." S. Rep. No. 101-228, at 171.

EPA did not purport to find that hydrogen chloride, hydrogen fluoride, or chlorine present no risk of cancer. Nor did EPA determine that any other regulatory or scientific body has ever found that these pollutants do not cause cancer. 80 Fed. Reg. at 65,488/2, 65,493/1-2, JA____, ____; 79 Fed. Reg. at 75,639/1-41/1, JA____-__. Because EPA did not show that these pollutants do not cause cancer and cannot claim there are established health thresholds in the absence of such a showing, EPA exceeded its authority by setting § 7412(d)(4) standards for these pollutants. 42 U.S.C. § 7412(d)(4). *Lamie v. U.S. Trustee*, 540 U.S. 526, 534 (2004) ("It is well established that when the statute's language is plain, the sole function of the courts—at least where the disposition required by the text is not absurd—is to enforce it according to its terms.") (internal quotation marks and citation omitted).

2. EPA's Claim That It Can Proceed Under § 7412(d)(4) When It Does Not Know Whether A Pollutant Causes Cancer Contravenes Congress's Plainly Expressed Intent.

EPA takes the position that it can set § 7412(d)(4) standards for hydrogen chloride, hydrogen fluoride, and chlorine because it does not know whether these pollutants cause cancer. EPA asserts the lack of any expert classification of the pollutants as carcinogenic or potentially carcinogenic as "sufficient" to

demonstrate safety from cancer. 80 Fed. Reg. at 65,488/1-89/3, JA____-__. Similarly EPA asserts that the absence of evidence that hydrogen chloride and chlorine cause cancer "is sufficient." 80 Fed. Reg. at 65,489/3, 65,494/3, JA____, ____; 79 Fed. Reg. at 75,639/1-41/1, JA____-__.

The Clean Air Act's text makes clear that § 7412(d)(4) does not authorize EPA to set standards under it unless the agency identifies an "established" "health threshold" at which people can breathe that pollutant without any risk of cancer. 42 U.S.C. § 7412(d)(4). First, "establish" means "to put beyond doubt: prove." Webster's Seventh New Collegiate Dictionary at 284 (1971). *Sandifer v. U.S. Steel Corp.*, 134 S. Ct. 870, 876 (2014) ("[U]nless otherwise defined, words will be interpreted as taking their ordinary, contemporary, common meaning."). EPA's reading that the mere lack of knowledge about a pollutant's cancer effects "established" its safety deprives the term "established" of meaning. *See Norfolk S. Rwy. Co. v. Kirby*, 543 U.S. 14, 31-32 (2004) (when a word has "a plain and obvious meaning, all construction, in hostility with such meaning, is excluded").

Second, the term "health threshold" signifies the need for EPA to affirmatively identify a specific level of pollution that is without health risk. Contrary to EPA's belief, a lack of evidence showing that a pollutant does cause cancer does not prove that pollutant does not cause cancer. Thus, EPA's claim that it can set § 7412(d)(4) standards based only on such a lack of evidence drains

meaning from the term health threshold and rewrites the statute to allow EPA to set weak standards based on nothing more than its own ignorance about health risks. *See Leocal v. Ashcroft*, 543 U.S. 1, 12 (2004) ("we must give effect to every word of a statute wherever possible"); *Barnhart v. Sigmon Coal Co.*, 534 U.S. 438, 462 (2003) ("when the words of a statute are unambiguous, … judicial inquiry is complete" and courts "will not alter the text in order to satisfy the policy preferences of the [agency]").

The legislative history confirms that Congress did not intend EPA to set § 7412(d)(4) standards instead of MACT standards when it does not know whether a pollutant causes cancer. According to the Senate Report, Congress intended to withhold authority to set standards under § 7412(d)(4) unless it had been "well-established" that a pollutant "presents no risk of … cancer," and its potential health effects are no longer subject to "study and debate." S. Rep. No. 101-228, at 171 (emphasis added); *see also* 136 Cong. Rec. 36,064/2 ("no such authority" to set standards under § 7412(d)(4) exists "[w]ith respect to carcinogens and other nonthreshold pollutants"). A pollutant for which EPA lacks understanding of its cancer risk is consistent with one in need of further "study"—precisely the situation in which the Senate Report specified that EPA lacks authority. S. Rep. No. 101-228, at 171.

Indeed, EPA's claim that a lack of evidence suffices to show an established threshold under § 7412(d)(4) would allow EPA to evade the usual requirement to set MACT standards just by staying ignorant about the health effects of hazardous air pollutants and then claiming – as it does here – that because it does not know whether they cause cancer it can issue do-nothing standards for them under § 7412(d)(4) instead of the highly protective standards that § 7412(d)(2)-(3) require. Courts have widely recognized that Congress intended the 1990 Amendments to replace the prior, poorly functioning health-based regulatory framework with standards based instead on control technology. *See, e.g.*, *Cement Kiln Recycling Coal.*, 255 F.3d at 857-58. The interpretation of § 7412(d)(4) that EPA advances here would open the door to setting health-based, not technology-based, standards for any of the 187 listed hazardous air pollutants for which EPA lacks information about cancer risks, and thereby upend the framework Congress adopted. *See* 42 U.S.C. § 7412(b)(1).

If EPA wishes to invoke § 7412(d)(4) for a hazardous air pollutant, it must show that pollutant does not cause cancer. EPA is quite capable of making such showings, and has done so for other pollutants. Sierra Club Comments at 6, JA____.

3. EPA's Decision To Set § 7412(d)(4) Standards Without Showing The Pollutants Do Not Cause Cancer Is Unlawful Under *Chevron* Step Two And Arbitrary.

Because absence of evidence is not evidence of absence, EPA's position that the "absence" of evidence of cancer is sufficient under the statute to establish the pollutants do not cause cancer is illogical on its face. *Siegel v. SEC*, 592 F.3d 147, 161 (D.C. Cir. 2010) (agency decision "must be logical and rational"); *Intercollegiate Broadcast Sys., Inc. v. Copyright Royalty Bd.*, 574 F.3d 748, 767 (D.C. Cir. 2009) ("rational decisionmaking … requires more than an absence of contrary evidence; it requires substantial evidence to support a decision."); *State Farm*, 463 U.S. at 43 (agency must articulate a "rational connection between the facts found and the choice made"). EPA offered no explanation as to how a safe level of a pollutant can be "established" without evidence of its safety. *See Mountain Commc'ns, Inc. v. FCC*, 355 F.3d 644, 648-49 (D.C. Cir. 2004). Nor did EPA attempt to square its view—which would allow EPA to set standards more lenient than MACT requires even where EPA does not know if the standards assure safety—with the intent of Congress, expressed in the legislative history, that the pollutant present no cancer risk. 42 U.S.C. § 7412(d)(4); S. Rep. No. 101-228, at 171 (safety must be "well-established" and no longer subject to "study and debate").

Further, by endorsing a view that the agency's authority under § 7412(d)(4) is not limited to the rare case of a pollutant that is widely known to be safe to breathe at certain concentrations but instead reaches any pollutant for which EPA lacks information of cancer risk, EPA would open the door to regulating any of the 187 listed hazardous air pollutants with unknown cancer risks outside of the technology-based regulatory structure that Congress intended to provide for hazardous air pollutants in the Clean Air Act Amendments of 1990. *See* S. Rep. No. 101-228, at 167-68; *Cement Kiln Recycling Coal.*, 255 F.3d at 857-58; *Shays*, 528 F.3d at 919 (interpretation is unreasonable if it "frustrate[s] the policy that Congress sought to implement") it.

EPA's position is also inconsistent with its own system for classifying pollutants' cancer risk, under which an "absence" of evidence does not suffice. Rather, EPA's criteria demand a finding that "the available data are considered robust for deciding that there is no basis for human health concern" to classify a pollutant as "not likely to be carcinogenic" (Group E). Guidelines for Carcinogen Risk Assessment at 2-57 to 2-58, JA____-__ (emphasis added). EPA has located "robust" data to support classifications of other pollutants as Group E non-carcinogens, Sierra Club Comments at 6, JA____, but it proceeded without "robust" data here. Indeed, EPA found that the total body of evidence on the carcinogenicity of hydrogen chloride, hydrogen fluoride, and chlorine is "very

limited" and that "[l]ittle research has been conducted" on these hazardous air pollutants. 80 Fed. Reg. at 65,488/2, 65,493/1-2 nn.52-53, JA____, ____; 79 Fed. Reg. at 75,639/2-41/1, JA____; *see also* Technology Transfer Network - Air Toxics Web Site: Hydrochloric Acid (Hydrogen Chloride), JA____ (EPA's website informed public that "no information" exists on hydrogen chloride's cancer risk). EPA did not explain why § 7412(d)(4) allows a lesser evidentiary showing than normal EPA science practice, particularly given the statutory prerequisite for an "established" "threshold." *See State Farm*, 463 U.S. at 43.

EPA's reasoning from the limited body of evidence on cancer risk is also contradictory and flawed, and not supported by the scant information available. Indeed, EPA stated in these rulemakings that "it is reasonable to classify" hydrogen chloride as a pollutant "for which there is not enough evidence to make a conclusion on carcinogenicity." 79 Fed. Reg. at 75,639/1-3, JA____. It is "internally inconsistent and therefore arbitrary" to first state that "there is not enough evidence" to draw a conclusion about cancer risk, and then to conclude that this very lack of evidence is "sufficient" for finding "health thresholds." *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1153 (D.C. Cir. 2011). Similarly, EPA relied on the ATSDR's cancer assessment of hydrogen fluoride, 80 Fed. Reg. at 65,493/1-2 & n.52, JA____, but ATSDR's finding that it is "not classifiable" as to

carcinogenicity only confirms that EPA does not know if it causes cancer. ATSDR, ToxFAQS for Fluorides, Hydrogen Fluoride, and Fluorine at 8, JA____.

Not only is the information on cancer risk "very limited," it is also "equivocal," as EPA found for hydrogen fluoride. 79 Fed. Reg. at 75,641/1, JA____; *see also id.* at 75,640/2-41/1, JA____-__ (twice citing the Agency for Toxic Substances and Disease Registry observation that researchers disagree as to hydrogen fluoride's potential to cause cancer). Indeed, the National Research Council of the National Academies found the "overall evidence" of fluoride's potential for cancer "is mixed." National Research Council Report at 93, JA____. Thus, EPA's claim that evidence of cancer risk is "absen[t]" is not only insufficient to justify its decision, *see supra*, 26-28, but at odds with EPA's own findings in the record. *State Farm*, 463 U.S. at 43.

4. The Standards For Hydrogen Chloride, Hydrogen Fluoride, And Chlorine Violate § 7412(d)(4) And Are Unreasonable Because It Has Not Already Been Established That They Do Not Cause Cancer.

EPA's interpretation of § 7412(d)(4) fails *Chevron* analysis for another reason: it asserted authority to issue § 7412(d)(4) standards based on rule-specific findings about cancer risk and thereby bypass the requirement that safety from cancer "has been established" in the scientific and regulatory community, which follow widely accepted standards for quality and impartiality in judging cancer

risks. *See* 80 Fed. Reg. at 65,488/2, 65,491/2-3, JA____, ____. Such an interpretation contravenes the statute's requirement that the pollutant's safety from cancer "has been established," which means that safety must have already been established prior to invoking § 7412(d)(4). 42 U.S.C. § 7412(d)(4) (emphasis added).

This distinction is important: the text evinces Congress' intent that EPA neither cut corners nor make rule-specific claims about a pollutant's health effects but, instead, invoke § 7412(d)(4) only where a "threshold" for the pollutant "has been established" by a showing applicable in all circumstances that the pollutant presents no cancer risk and has a specific exposure level below which it does not cause other adverse effects. *See id.*; S. Rep. No. 101-228, at 171. Assessments establishing a pollutant's safety with that kind of showing "are widely vetted through the scientific community," "undergo rigorous peer review processes," and "are published" so that they become part of the general body of scientific knowledge. 80 Fed. Reg. at 65,488/2, JA____. EPA follows similar safeguards and rigor when it formally classifies pollutants under its cancer criteria, such as use of impartial, non-regulatory EPA staff located in the Office of Research and Development to perform the assessment, and inclusion of mandatory peer review by external scientists. *See, e.g.*, EPA, IRIS: Methyl Methacrylate, JA____. Congress fully appreciated that "lengthy study" of a pollutant's health effects must

precede standard-setting, such that only once a threshold is "well-established" can EPA then use it to justify standards other than MACT standards. S. Rep. No. 101-228, at 171.

Congress made its intent that EPA not make rule-specific judgments about cancer risk clear by phrasing the relevant phrase, "has been established," in the present perfect tense—which is used to describe an action that took place in the past—Congress made plain that the establishment of the threshold must have occurred in the past. *Barrett v. United States*, 423 U.S. 212, 216 (1976) (statute "is in the present perfect tense, denoting an act that has been completed"). The verb tense chosen by Congress "is significant in construing statutes." *United States v. Bombardier Corp.*, 380 F.3d 488, 493 (D.C. Cir. 2004) (rejecting reading of "provides" as equivalent to "has provided") (quoting *United States v. Wilson*, 503 U.S. 329, 333 (1992)).

Indeed, when interpreting statutes, courts have recognized that an action that "has been" performed is one that "already" happened. *See, e.g.*, *Barrett*, 423 U.S. at 216-17 (statute requiring firearm which "has been shipped or transported in interstate … commerce" is "without ambiguity" and means "a firearm that already has completed its interstate journey"); *Diamen v. United States*, 604 F.3d 653, 657 (D.C. Cir. 2010) (where statute requires finding a conviction "has been reversed or set aside," court must look to see if conviction "already" has been set aside, and

lacks authority "to proceed to set it aside in the … proceeding itself"). Any other interpretation would drain the phrase "has been" of its ordinary meaning. *See Leocal*, 543 U.S. at 12 ("we must give effect to every word of a statute wherever possible").

Confirming that Congress used the past tense deliberately when it required an "established threshold" is Congress's use of the present tense in the rest of § 7412(d)(4). 42 U.S.C. § 7412(d)(4) ("EPA may consider such threshold … when establishing" standards (emphasis added)). This selective use of verb tense underscores that Congress chose the tense carefully and deliberately. *Barrett*, 423 U.S. at 216-17 (use of present perfect tense and present tense in same provision showed choice of tense was intentional). The contrast in tenses conveys a coherent and unmistakable direction to EPA: if and only if a threshold that presents no risk of cancer has already been established for the pollutant, then EPA may elect to establish standards under § 7412(d)(4) which "consider such threshold." 42 U.S.C. § 7412(d)(4).

The legislative history bolsters this unambiguous meaning. An earlier, unenacted version of § 7412(d)(4) would have authorized standards under it so long as a threshold "can be established." *See* S. 1630, 101st Cong. § 112(d)(4)(A), (as reported 1990) (emphasis added). This formulation might have allowed EPA to move forward under § 7412(d)(4) without an already-established threshold. But

Congress declined to enact that language, instead favoring the narrower "has been established" requirement. *See Warger v. Shauers*, 135 S. Ct. 521, 527 (2014) (rejection of prior version of Federal Rule "confirms that … choice of language" in rule "was no accident"). This change in language is consistent with Congress's intent that EPA use § 7412(d)(4) sparingly, and only where the safety of the pollutant is "well-established" and not subject to further "study and debate." S. Rep. No. 101-228, at 171.

For these reasons, EPA's interpretation of the Act as allowing it to set § 7412(d)(4) standards based on nothing more than rule-specific claims about the risks of cancer and other adverse health effects that it advances now—in the same rulemaking as the § 7412(d)(4) standards themselves—contravenes the plain meaning of the statute. *Chevron*, 467 U.S. at 842-43. It is also unreasonable at *Chevron* step two because EPA made no attempt to explain how its approach of offering whatever take on the health effects evidence it finds convenient in each rule squares with Congress's deliberate use of a tense reserved for describing past actions. *See Vill. of Barrington*, 636 F.3d at 660 (court defers to agency interpretation under *Chevron* "only if the agency has offered a reasoned explanation for why it chose that interpretation").

B. EPA's Alleged Thresholds For Health Risks Other Than Cancer Are Unlawful And Arbitrary.

1. EPA's Decision To Repurpose A Less Protective Risk Estimate As A Health Threshold For Hydrogen Chloride, Despite Having Low Confidence In It, Was Unlawful And Arbitrary.

For health risks other than cancer, including asthma and irritation of the throat, eyes, and skin, the supposed threshold EPA determined for hydrogen chloride is also unlawful because it is not an established "health threshold" at which hydrogen chloride presents no health risks.[7] 42 U.S.C. § 7412(d)(4).

EPA's claim that a risk estimate that was so uncertain when it was developed that EPA assigned it "low confidence"—the lowest of three possible confidence levels—may nonetheless represent an "established" threshold disregards the plain meaning of "established." *See* Webster's Seventh New Collegiate Dictionary at 284 ("establish" means "to put beyond doubt: prove"). The legislative history makes clear that an established "threshold" is not one that is subject to uncertainty, like a "low confidence" estimate, but instead must be "well-established" and not subject to "debate." S. Rep. No. 101-228, at 171. EPA's view

[7] Because EPA set one health-based standard to control any combination of hydrogen chloride, hydrogen fluoride, and chlorine emissions from brick kilns (and also a single acid gas standard for ceramics kilns), if the Court finds any aspect of the brick or ceramics standard unlawful, the entire standard must be remanded. *See MD/DC/DE Broadcasters Ass'n v. FCC*, 236 F.3d 13, 22 (D.C. Cir. 2011) (portion of regulation not severable where remainder could not "function sensibly without the stricken provision").

that a threshold need not be "well-established," but rather any risk value, even an uncertain "low confidence" level, will do is contrary to the language of § 7412(d)(4) and Congress's intent, and therefore unlawful under *Chevron* step one.

EPA's position that an established threshold under § 7412(d)(4) may be one in which EPA has "low confidence" due to its low quality and high uncertainty, is also unreasonable under *Chevron* step two. Congress could not have intended its requirement of an "established" "health threshold" which "presents no risks" to encompass a low-quality, low-confidence risk estimate. *See id.* One of the flaws EPA identified in the sole study that formed the basis for the 1995 risk estimate was that the study "used only one dose," and it observed adverse health effects at that level. IRIS: Hydrogen Chloride at 4, JA____. Relying on a risk estimate extrapolated from such an uncertain test was unreasonable, and EPA failed to explain why the risk estimate represents the "no observable effects" level that Congress intended § 7412(d)(4) standards to be built on. S. Rep. No. 101-228, at 171 (need for a "no observable effects level"); *see also* 79 Fed. Reg. at 75,641/3, JA____ (acknowledging legislative history); *State Farm*, 463 U.S. at 43 (requiring reasoned decision-making). In addition, EPA did not provide a reasoned basis for using a risk estimate of such uncertain and low quality that EPA has "low confidence" in it, nor did EPA support its chosen risk level with substantial

evidence. *NACWA*, 734 F.3d at 1131 (agency determination "must [be] demonstrate[d] with substantial evidence").

EPA claims that all reference concentrations, regardless of EPA's confidence in them, "are appropriate for regulatory use." 80 Fed. Reg. at 65,490/3, JA____. That response does not speak to the statute's requirement for an "established" threshold, let alone explain how a "low confidence" risk estimate can be an "established" "health threshold" under § 7412(d)(4). EPA also asserts now that when it ranked the level's confidence as "low" twenty years ago, it was referring only to "the completeness of the supporting database." *Id.* at 65,490/2, JA____. The language of the risk assessment refutes that claim, demonstrating that "low confidence" reflected EPA's evaluation of the quality of the study and the risk estimate, as well as the database. IRIS: Hydrogen Chloride at 4, JA____ (specifying flaws in study design).[8] By disregarding information about the quality of the risk estimate it used, the agency failed to "address contrary evidence" of the estimate's suitability "in more than a cursory fashion." *Transmission Agency of N. Cal. v. FERC*, 628 F.3d 538, 543-44 (D.C. Cir. 2010).

[8] IRIS entries for other chemicals reinforce the fact that EPA's "confidence" ranking takes into account the reliability of the scientific information. *See, e.g.*, EPA, IRIS: Ethylene Glycol Monobutyl Ether at 8, JA____ (finding "high" confidence in study "because it was a chronic study, employed both male and female rats and mice, had a wide range of exposure levels, and animals were observed twice daily").

EPA's use of the 1995 risk estimate as the hydrogen chloride threshold is also arbitrary because EPA failed to consider whether a competing and more conservative CalEPA level instead represented the established "health threshold." *State Farm*, 463 U.S. at 43 ("agency must examine the relevant data and articulate a satisfactory explanation for its action"). EPA's only stated reason for using the weaker EPA level instead of the CalEPA level—that EPA prefers its own risk values to those of other agencies—did not provide a satisfactory explanation for its decision to use a less protective level. *See* 80 Fed. Reg. at 65,491/3, JA____. Despite EPA's "general" preference, EPA "uses other values, as appropriate." *Id.* at 65,490/2-91/3, JA____-__. For example, EPA relied on the CalEPA risk levels for hydrogen chloride's acute (as opposed to chronic) health effects and for the supposed threshold for hydrogen fluoride. Given that its only stated policy is to use values established by other authorities "as appropriate," EPA needed to explain, at a minimum, why using CalEPA's level was not "appropriate" here. Merely reasserting its "general" preference did not satisfy this Court's precedents, which require an administrative agency to "explain and expose every step of its reasoning," especially where, "as here, Congress has delegated … the power to make decisions of national import in which individuals' lives and welfare hang in the balance." *Am. Lung Ass'n v. EPA*, 134 F.3d 388, 392 (D.C. Cir. 1998); *see also Bluewater Network v. EPA*, 370 F.3d 1, 21 (D.C. Cir. 2004); *Transactive Corp. v.*

United States, 91 F.3d 232, 237 (D.C. Cir. 1996) ("A long line of precedent has established that an agency action is arbitrary when the agency offered insufficient reasons for treating similar situations differently.").

2. By Ignoring The Alleged Threshold For Acute Health Risks For Hydrogen Fluoride When Setting § 7412(d)(4) Standards, And Expressly Allowing Pollution That Poses Health Risks, EPA Violated § 7412(d)(4) And Acted Arbitrarily.

EPA found that its § 7412(d)(4) standards, which it based on a chronic risk level, did not shield people from harmful acute exposures to hydrogen fluoride at multiple kilns . *See* Brick Risk Assessment at 16-17, JA____-__ (finding presence of acute health risks); Ceramics Risk Assessment at 12, JA____ (same). By ignoring these health risks and the supposed acute health threshold, and setting standards that do not protect people at the threshold level, EPA plainly violated the statutory command that it "establish[] emission standards" accounting for a pollutant's "threshold level." 42 U.S.C. § 7412(d)(4); *Chevron*, 467 U.S. at 842-43; *see also* 79 Fed. Reg. at 75,642/3-43/1, JA____-__ (EPA conceded that, at minimum, § 7412(d)(4) standards must "at least assure[] that … persons exposed to emissions of the pollutant would not experience … adverse health effects").

None of the four reasons EPA gave to disregard the health risks it found are satisfactory, and all of them are thinly veiled attempts to undermine the very screens for acute health risks it designed and conducted. First, EPA claimed it

could ignore the health risks because the approach it chose to use was "conservative." 80 Fed. Reg. at 65,503/1, JA____. Under both screens, EPA assumed that "there is a person"—for example, a child—"present at the location and time where the maximum HQ value occurs." Brick Risk Assessment at 17, JA____. But after finding that this child would be exposed to potentially harmful levels of pollution, EPA insisted that the child could be ignored because assuming she was "present" to breathe the pollution was "conservative." *Id.* EPA's approach can hardly be considered "conservative" if EPA chooses to disregard the conclusions that allegedly make it conservative. EPA gave no reason to doubt that the child would be exposed to maximum levels of hydrogen fluoride pollution—levels that would cause harm to her health by EPA's own admission. Nor did EPA reevaluate the risks to the child or any other person using a less "conservative" assumption (as EPA did for the 100-meter distance from the facility). By ignoring the results of its own approach, EPA failed to show with substantial evidence that it set standards preventing exposures above the so-called threshold. 42 U.S.C. § 7412(d)(4); *see also Clark Cnty. v. FAA*, 522 F.3d 437, 442 (D.C. Cir. 2008) (agency's conclusion arbitrary where its own reports "actually support[] the *opposite* conclusion[]"); *Ne. Md.*, 358 F.3d at 954.

Second, EPA irrationally claimed that its results did not indicate risk because they exceeded the hazard quotient "only by a factor of two." 80 Fed. Reg.

at 65,503/1, JA____. Any results above "1," according to EPA's own criteria, indicate health risks. Brick Risk Assessment at 10, JA____ (only values below "1" qualify as "low potential for acute risk"). EPA did not explain or support why a finding of twice the hazard quotient is not of concern.

Third, EPA contended that had it replaced the CalEPA reference exposure level with an Acute Exposure Guideline Level ("AEGL") that is three times higher (*i.e.*, less protective), the acute exposures would no longer register as dangerous. *Id.* at 13-15 tbl.5, 16-17, JA____-__; Ceramics Risk Assessment at 10 tbl.5, 12, JA____, ____. If EPA believed the AEGL-1 provides a more appropriate risk level than the CalEPA level, EPA could have used it. EPA chose the CalEPA level, and its finding that there are health risks is in no way diminished by the possibility that its analysis might be manipulated to show less risk under some other hypothetical scenario.

Finally, even though EPA's approach was to evaluate the acute risks posed by the full amount of each pollutant that the standards would allow, upon finding hydrogen fluoride threats to health, EPA asserted that "it is unlikely that a facility would emit only [hydrogen fluoride]." Brick Risk Assessment at 17, JA____. Yet EPA's standards expressly allow this possibility, and EPA pointed to no evidence that it will not happen. *See id.*; Ceramics Risk Assessment at 12, JA____. Nor did

EPA attempt to evaluate whether a combination of hydrogen fluoride and the other two acid gases would present acute health risks.

C. EPA's Failure To Protect People With An Ample Margin Of Safety In Setting § 7412(d)(4) Standards Was Unlawful and Arbitrary.

1. EPA Did Not Include Any Margin Of Safety, In Violation of § 7412(d)(4).

EPA set the numerical limits for the § 7412(d)(4) standards for hydrogen chloride, hydrogen fluoride, and chlorine such that the standards permit people to be exposed to concentrations of those pollutants right up to the levels at which, by EPA's own account, people are in danger of adverse health effects. *See* 80 Fed. Reg. at 65,500/3-01/1, JA____-__; 79 Fed. Reg. at 75,643-44, JA____-__. By definition, those limits do not include any "margin of safety." The statute requires a "threshold level, with an ample margin of safety," which plainly means the margin of safety must be in addition to the threshold level, to provide for increased safety. 42 U.S.C. § 7412(d)(4) (emphasis added). Congress's choice of the word "margin" denotes that the standards must include extra room for safety to account for uncertainty and variability that might result in harm, not zero room for safety as EPA did here. *See* Webster's Seventh New Collegiate Dictionary at 517 (defining "margin" as "a spare amount or measure or degree allowed or given for contingencies or special situations").

EPA claims that the method it used to translate the alleged thresholds into numerical pollution limits included some "conservative" aspects that are "consistent with" a margin of safety. 80 Fed. Reg. at 65,501/3, JA____. Whatever the merit of EPA's claim that its approach was "conservative" might be, *see supra*, 41-42, the statute requires an ample margin of safety beyond the established threshold, not just EPA's assurances that its approach to setting the standards is "conservative." 42 U.S.C. § 7412(d)(4). *See Chevron*, 467 U.S. at 842-43; *Barnhart*, 534 U.S. at 462 ("when the words of a statute are unambiguous, … judicial inquiry is complete" and courts "will not alter the text in order to satisfy the policy preferences of the [agency]") (internal quotations omitted); *Envtl. Defense v. EPA*, 467 F.3d 1329, 1336 (D.C. Cir. 2006) ("EPA may not avoid the Congressional intent clearly expressed in the text simply by asserting that its preferred approach would be better policy.") (internal quotation marks and citation omitted).

EPA's position is also unreasonable at *Chevron* step two and arbitrary. Even if using a conservative approach excused EPA from adding a margin of safety, EPA's claim that its approach was conservative is refuted by the record. First, EPA's decision to set standards allowing pollution right up to the alleged threshold levels (*i.e.*, to the concentrations at which the pollutants would start causing adverse health effects)—an approach that scarcely incorporates a margin of safety.

See 80 Fed. Reg. at 65,501/3, JA____. Second, EPA's contention that standards provide a margin of additional safety to the subset of people who do not face maximum exposures is irrelevant and merely confirms they do not provide a margin of safety for all people. *See id.* Third, it is not conservative to assume kilns will not emit as much pollution as the standards allow; rather, it is a recognition of reality that its standards allow that much pollution. *See id.* Indeed, the notion that kilns emit no more pollution than allowed ignores that kilns can and do malfunction. *See* 79 Fed. Reg. 75,626/3, JA____. Finally, EPA failed to explain how using ambient concentrations—which estimate exposures to a person who spends her days at home where she faces greater exposures—is "conservative" with respect to those people who spend most, if not all, of their time at home. *See* 80 Fed. Reg. at 65,501/3, JA____.

EPA also failed to explain how its process produced standards that provide room for error given that EPA did not account for other aspects of its approach that were far from conservative. With respect to hydrogen chloride, for example, EPA's selection of a threshold underestimated health risk for hydrogen chloride in at least three ways. First, EPA used a risk level that is only an "estimate" of a level without an appreciable risk of health effects with "uncertainty spanning perhaps an order of magnitude." IRIS: Hydrogen Chloride at 2, JA____. Although EPA acknowledged that adverse health effects could occur at levels 10 times higher than estimated,

EPA never made adjustments for this uncertainty. Second, EPA has "low confidence" in this already uncertain risk estimate, and has "low confidence" in the study and database on which it was based, which creates additional uncertainty as to whether it represents a safe level. *See supra*, 37-38. Third, EPA's use of the weaker and less protective of the two risk levels that had been developed, without evaluating whether CalEPA's more conservative level instead represented the threshold, was the very opposite of a conservative approach and subtracted from the net safety of the standards, rather than adding to it. *See supra*, 40-41. Although EPA needed to explain, at minimum, how whatever conservative assumptions it made were not overwhelmed by factors that underestimated risk, it did not do so. *State Farm*, 463 U.S. at 43. Because § 7412(d)(4) standards may be set at more lenient limits than MACT standards, EPA has a heightened responsibility to assure that the standards are safe, which its reliance on vague assertions that it has been conservative did not meet. *See Am. Lung Ass'n*, 134 F.3d at 392 (agency must "explain and expose every step of its reasoning," especially for "decisions … in which individuals' lives and welfare hang in the balance").

EPA's own finding of the presence of acute health risks from hydrogen fluoride exposures at multiple kilns further refutes its claims that it built a margin of safety into its standards. *See supra*, 41-44; Brick Risk Assessment at 16-17, JA____-__; Ceramics Risk Assessment at 12, JA____. If the standards allow

exposures at levels at which people suffer adverse health effects, then the standards do not provide a "margin of safety." 42 U.S.C. § 7412(d)(4). By ignoring the fact that it found health risks from acute exposures, EPA failed to show with substantial evidence that its standards provide "an ample margin of safety," as § 7412(d)(4) requires. *See Clark Cnty.*, 522 F.3d at 442 (agency's conclusion arbitrary where its own reports "actually support[] the *opposite* conclusion[]"); *Ne. Md.*, 358 F.3d at 954 ("mere assertions" that standards meet Clean Air Act requirements do not constitute "substantial evidence").

2. EPA Did Not Provide A Margin Of Safety That Was Ample.

Even if EPA's allegedly conservative approach to setting standards for hydrogen chloride, hydrogen fluoride, and chlorine could reasonably be deemed a margin of safety beyond the thresholds, *but see supra*, 44-48, that margin was not "ample," and EPA failed to show that it was. 42 U.S.C. § 7412(d)(4). EPA needed to demonstrate with substantial evidence that the margin is "ample," not just assert that some undefined margin of safety built into the standards was ample. *Ne. Md.*, 358 F.3d at 954. Nowhere in the record does EPA make that showing.

In particular, EPA did not attempt to explain why its method of calculating the standards would produce a margin of safety that was "ample," rather than minimal. *See Vill. of Barrington*, 636 F.3d at 660; *Mountain Commc'ns*, 355 F.3d at 648-49. Even if some elements of EPA's standard-setting approach were

conservative (which they were not), those elements would only account for the small number of specific uncertainties about the place, time, and duration of maximum exposure and kiln operations to which they were directed. EPA offered no reason to believe they would be ample—*i.e.*, more than adequate to account for other sources of uncertainty regarding the standards, including the inherent "uncertainty" in the type of risk value EPA selected for hydrogen chloride, the "low confidence" EPA reported in the hydrogen chloride risk value and its scientific foundation, and the possibility that the CalEPA risk level represented the hydrogen chloride threshold, not the EPA risk value. *See supra*, 37-41.

II. EPA'S FLOOR APPROACH IS UNLAWFUL AND ARBITRARY.

A. Setting Floors At The Upper Prediction Limit With Limited Data Is Unlawful And Arbitrary.

EPA did exactly what the *NACWA* Court found irrational: it used the same upper prediction limit method to set floors where data were limited. Even though the Court doubted the UPL's capability to make accurate and reliable predictions on limited data, *NACWA*, 734 F.3d at 1144-45, EPA did not make any changes to the UPL formula, despite having limited data for most of the floors. Nowhere in the record did EPA answer the Court's fundamental question as to how the UPL "could still be considered accurate given a small dataset." *Id.* Remarkably, EPA stuck with its UPL even while agreeing with the Court that sample size has an

outsize influence on nearly every component of the UPL, causing "disproportionate[]" and problematic distortions at small sample sizes. Brick Limited Datasets Memo at 1-2, 4, 6, 8, JA____-__, ____, ____, ____ ("the uncertainty associated with a limited dataset" can "cause the calculated emission limit to be so high that it does not reflect" emissions performance).

Because EPA did not show with substantial evidence that the UPL reflects the emission levels achieved in practice by the best performing kiln or kilns when EPA has "limited datasets," EPA's decision to nonetheless set floors with "limited datasets" at the UPL is arbitrary. *See NACWA*, 734 F.3d at 1131 (accuracy of floors "must [be] demonstrate[d] with substantial evidence"); *Ne. Md.*, 358 F.3d at 954 (same); *see also Appalachian Power Co. v. EPA*, 251 F.3d 1026, 1035 (D.C. Cir. 2001) ("[T]his Court cannot excuse the EPA's reliance upon a methodology that generates apparently arbitrary results particularly where, as here, the agency has failed to justify its choice."). It is up to EPA to devise an approach "capable of producing floors that satisfy the Clean Air Act," *Cement Kiln Recycling Coal.*, 255 F.3d at 865, and it has not done so.[9]

[9] The Court in *U.S. Sugar* found the UPL approach permissible under the Clean Air Act, but that case involved only large sample sizes and did not address the issue here whether use of the UPL with small datasets is arbitrary. *See U.S. Sugar*, 830 F.3d at 639. Following *NACWA*, EPA sought and obtained a voluntary remand in *U.S. Sugar* of all of the standards where it had applied the UPL approach to datasets containing 9 or fewer emission test results. EPA's Motion for Partial Voluntary Remand Without Vacatur at 4-5, Dkt#1482092, Am. Chemistry Council

Rather than demonstrate that the UPL yielded reasonable estimates at small sample sizes, EPA simply asserts that 34 floors derived from "limited datasets" were "reasonable." Brick Limited Datasets Memo at 8-11, JA____-__; Ceramics Limited Datasets Memo at 8-9, JA____-__. EPA did not explain why it believes they are "reasonable" or how it could even tell if they were "reasonable" and would not be lower and more representative floors with more samples. *See NACWA*, 734 F.3d at 1144-45; *Mo. Pub. Serv. Comm'n v. FERC*, 234 F.3d 36, 41 (D.C. Cir. 2000) (agency must "fully articulate the basis for its decision," and "a passing reference to relevant factors … is not sufficient to satisfy the [agency]'s obligation to carry out 'reasoned' and 'principled' decisionmaking.") (internal citation omitted). Taking a second look at the floors and eyeballing their "reasonableness" did nothing to address the inherent flaws in the statistical technique, or explain why those flaws did not produce excessively high numbers. *NACWA*, 734 F.3d at 1131 ("mere assertions" that the floors are reasonable do not constitute "substantial evidence"); *Ne. Md.*, 358 F.3d at 954 (same).

It does not help that EPA leaves one to guess as to what, exactly, it evaluated. EPA stated that it reviewed the data "on a case-by-case basis" in "one or more of the following" ways: "confirming that the data distribution was selected correctly," "ensuring that we use the most appropriate UPL equation," or

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v. EPA, No. 11-1141 (D.C. Cir. Feb. 28, 2014), JA____; Order, Dkt#1493182, Am. Chemistry Council v. EPA, No. 11-1141 (D.C. Cir. May 15, 2014), JA____.

"comparing" the UPL for new kilns with the corresponding UPL for existing kilns "to determine if our identification of the best unit is reasonable." Brick Limited Datasets Memo at 6, 8, JA____, ____; *see also* EPA-HQ-OAR-2013-0291-0685 at 40, JA____ (appropriate to reassess "all factors used in the UPL calculations"). None of these steps, even if taken, address the question of whether the UPL formula has produced irrationally high numbers again. *See NACWA*, 734 F.3d at 1144-45.

EPA did make adjustments to five of the floors. Yet the agency did not explain its method for altering the senseless levels the UPL produced, or why its alterations would result in floors that represent emissions levels achieved. *See id.* Moreover, EPA's adjustments resulted in higher and less stringent floors for two of the five floors it reviewed. *Compare* Brick Floor Memo at D-1, JA____ (adjusted floors: "Large Kilns New Hg = 2.8E-05 lb/ton" and "Large Kilns New Hg = 3.4E-04 lb/hr"), *with* 79 Fed. Reg. at 75,683 tbl.1, JA____ (proposed floors: "2.0 E-05 lb/ton" and "2.4 E-04 lb/hr" for mercury emissions from new, large kilns). That outcome is contrary to EPA's stated purpose in further evaluating the data: to ensure uncertainty does not cause the floor "to be so high that it does not reflect" the emissions levels actually achieved. Brick Limited Datasets Memo at 6, JA____ (emphasis added). Further, EPA's decision to weaken those two floors did not follow from its reasoning or the additional statistical tests it conducted, and was

arbitrary. *Id.* at 10, JA____ (conducting three tests, which "all … suggest the data might best fit a normal distribution," yet determining to use a "lognormal distribution" "upon further evaluation"); *Clark Cnty.*, 522 F.3d at 442 (agency's conclusion arbitrary where its own reports "actually support[] the *opposite* conclusion[]").

B. EPA's Alternative MACT Floors Violate § 7412(d) And Are Unreasonable And Arbitrary.

The Clean Air Act does not authorize EPA to adopt "alternative" emission floors and allow regulated facilities to choose the least stringent floor with which to comply. This unduly permissive take on air toxics regulation contravenes well-established § 7412 requirements for standard-setting and is unlawful under *Chevron* step one. 42 U.S.C. § 7412(d)(2), (3); *Chevron*, 467 U.S. at 842-43 ("the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.").

EPA's approach fails to fulfill its unambiguous duty to adopt a MACT floor that is no less stringent than the emission levels achieved by the "best controlled similar source" for new sources and the "the best performing 12 percent of the existing sources" for existing sources. 42 U.S.C. § 7412(d)(3). The plain language of the statute calls for EPA to base the floor on pollution control achieved by the "best" performing source or group of sources, not the best, the second-best, and the

third-best. *Id.* The "best" source or group of sources is the one that "surpass[es] all others." Am. Heritage Dictionary, 3rd ed., at 131 (1997). Consistent with that ordinary meaning, this Court defined the "best performers" as "those with the lowest emission levels." *Sierra Club*, 479 F.3d at 880 (emphasis added).

Because the floors were not based on identical emission levels and are not equal, two of the three alternative floors are "less stringent" than the other floor. 42 U.S.C. § 7412(d)(3). Several sources or groups of sources cannot all be the "best," unless their emission levels are identical, which EPA did not claim and the record does not support. *See supra*, 19-20. To take the alternative floors for non-mercury metal emissions from new, large tunnel kilns as an example, kiln 514, kiln 508, and kiln 526 have different emission levels and cannot all be the "best" controlled similar source, as EPA determined. *See supra,* 19-20. By treating them as such, EPA flouted Congress's command to develop limits that reflect the "best" pollution levels achieved. 42 U.S.C. § 7412(d)(3). EPA's reading of the statute would drain the term "best" of its significance. *See Leocal*, 543 U.S. at 12 ("we must give effect to every word of a statute wherever possible"); *see also* S. Rep. No. 101-228, at 167 (EPA must impose "at a minimum, the most stringent level of control achieved in practice by a source of a similar size, type, and character" (emphasis added)).

The sole rationale offered by EPA for offering alternative floors is that they provide "flexibility for the regulated community by allowing a regulated source to choose any control technology or technique to meet the emission limits." 79 Fed. Reg. at 75,633/2-3, JA____. The statute, however, does not exempt EPA from the standard-setting requirements of § 7412(d) where EPA wishes to allow additional "flexibility" for polluting sources. *See Envtl. Defense*, 467 F.3d at 1336 ("EPA may not 'avoid the Congressional intent clearly expressed in the text simply by asserting that its preferred approach would be better policy.'") (internal citation omitted). Furthermore, Congress already specifically provided EPA with limited discretion to "distinguish among classes, types, and sizes of sources within a category or subcategory," and then set a separate floor for each category or subcategory. 42 U.S.C. § 7412(d)(1); *see also Sierra Club v. EPA*, 551 F.3d 1019, 1028 (D.C. Cir. 2008). EPA exercised the discretion to create subcategories here for the purpose of affording sources "additional flexibility." 80 Fed. Reg. at 65,485/2, JA____. Allowing EPA to set more than one MACT floor for each subcategory to further accommodate differences among sources would upset the careful boundaries Congress placed on EPA's discretion to do so through § 7412(d)(1). *See Ivy Sports Medicine v. Burwell*, 767 F.3d 81, 87 (D.C. Cir. 2014) (court will not infer agency authority "to short-circuit or end-run the carefully prescribed statutory" scheme).

The alternative standards are also unreasonable under *Chevron* step two and arbitrary because EPA has not even attempted to reconcile its approach with the statutory requirement. *See Vill. of Barrington*, 636 F.3d at 660 (court defers to agency interpretation under *Chevron* "only if the agency has offered a reasoned explanation for why it chose that interpretation"); *Mountain Commc'ns*, 355 F.3d at 648-49 (action arbitrary where agency "has not even tried to explain how its position can be reconciled with the statutory provision"). Although Environmental Petitioners commented that alternative floors are contrary to § 7412(d), Sierra Club Comments at 58-61, JA____-__, EPA failed to respond. 80 Fed. Reg. at 65,507/1, JA____. EPA did not otherwise articulate how alternative floors could be a reasonable means of satisfying the requirements of § 7412(d). EPA set three floors for each subcategory and pollutant here, but in its view, it could develop even more alternatives and nevertheless fulfill the statute's minimum stringency requirements. EPA needs to rationally explain how these floors reflect the levels of the "best" performers, when each additional alternative increases the likelihood that one or more sources could meet at least one floor without reducing toxic pollution at all, or by making smaller pollution cuts than any of the other floors would require, and in that way undermine health protection.

The alternative floors are also arbitrary because EPA did not rationally explain how floors based on different "best" performing sources and groups of

sources, with different and, in some cases, widely varying emission levels among sources, are "equivalent." *See supra*, 19-20; *State Farm*, 463 U.S. at 43. Nor did EPA demonstrate with substantial evidence that the alternative floors require "equivalent" emission levels. *Cement Kiln Recycling Coal.*, 255 F.3d at 866 (remanding where EPA had not "demonstrate[d]" relevant point with "substantial evidence"); *Intercollegiate Broadcast Sys.*, 574 F.3d at 767 ("rational decisionmaking … requires substantial evidence to support a decision"). To the contrary, EPA projected that some kilns will find it easier to comply with one of the floors than the others—in fact, the agency's very purpose for creating alternative floors was to provide kilns with greater "flexibility … to meet the emission limits." 79 Fed. Reg. at 75,633/2-3, JA____; Cost Memo at 9, JA____ (when given a choice among floors, a larger number of kilns would already meet the requirements without needing to reduce pollution at all). And the data EPA collected on the emission levels achieved by the kilns selected as best performers show that the kilns' levels are not identical. Brick Floor Memo at A-2 to A-12, JA____-__. Thus, the record evidence shows that the floors are not "equivalent" to each other, and that by offering kilns a choice of floors, kilns will be able to choose a "less stringent" floor to meet. 42 U.S.C. § 7412(d)(3). EPA's own analysis and data seem to disprove any claim of equivalency. *See State Farm*, 463 U.S. at 43 (a decision that "runs counter to the evidence before the agency" is arbitrary).

CONCLUSION

Environmental Petitioners respectfully request that the challenged rules be remanded with instruction that EPA issue revised rules free of the defects identified above.

DATED: November 14, 2016

Respectfully submitted,

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CERTIFICATE REGARDING WORD LIMITATION

Counsel hereby certifies, in accordance with Federal Rule of Appellate Procedure 32(a)(7)(C), that the foregoing **Proof Opening Brief of Environmental Petitioners** contains 13,397 words, as counted by counsel's word processing system, and thus complies with the applicable word limit established by the Court.

DATED: November 14, 2016

/s/ Nicholas Morales
Nicholas Morales

CERTIFICATE OF SERVICE

I hereby certify that on this 14th day of November, 2016, I have served the foregoing **Proof Opening Brief of Environmental Petitioners** on all registered counsel through the Court's electronic filing system (ECF).

/s/ Nicholas Morales
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