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July 11, 2017

The Honorable Scott Pruitt, Administrator
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Re: Proposed Rule; Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 Fed. Reg. 3,338 (Jan. 11, 2017); Docket ID EPA-HQ-SFUND-2015-0781

Administrator Pruitt:

The American Iron and Steel Institute (AISI) appreciates this opportunity to comment on the Environmental Protection Agency's proposal to include iron ore mining as a form of "hardrock mining" requiring financial responsibility regulation pursuant to CERCLA § 108(b) (Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining, 82 Fed. Reg. 3,388 (Jan. 11, 2017)).

For over 150 years, AISI has sought to effectively influence public policy, educate, and shape public opinion in support of a strong, sustainable U.S. and North American steel industry committed to manufacturing products that meet society's needs. AISI serves as the voice of the North American steel industry in the public policy arena and advances the case for steel in the marketplace as the material of choice. AISI also plays a lead role in the development and application of new steels and steelmaking technology. AISI comprises 19 member companies, including integrated and electric furnace steelmakers, and approximately 120 associate members who are suppliers to or customers of the steel industry. AISI members have a direct interest in the Proposed Rule, which, as currently drafted, would impose onerous and financially crippling new requirements on their operations with no resulting benefit to the public. As explained below, these proposed new requirements are unwarranted for the iron ore mining sector.

AISI's goals are manifold: to optimize the North American steel industry operations in an expanding market and secure market share from competing materials and imports; to maintain the steel industry's favorable environmental, health, and safety performance; and to support steel producers and investment in manufacturing technologies that support a strong steel demand. Historically, the iron ore mining operations of the steel industry have demonstrated very low environmental and public health risks, as evidenced by the negligible hazardous chemicals involved in iron ore mining and related operations, the lack of listings of iron ore mining sites on the CERCLA National Priorities List over the life of the program, and the breadth of regulatory controls over this industry that effectively manage any existing risks. In fact, the inclusion of iron ore mines and associated operations in the proposal appears largely to have been the result of EPA's inappropriate attribution to the iron ore mining sector characteristics of a separate sector (Iron and Steel Mills) that has a notably different environmental footprint, toxic release inventory (TRI) profile, and hazardous waste output. To impose such unnecessary financial assurance requirements on the iron ore mining industry now would not only hinder AISI's larger mission, but would also pose a threat to a critical U.S. industry that is at that core of this country's productivity, security, and potential for economic growth.

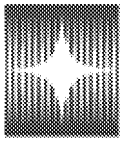
Please contact me (pbalserak@steel.org, **Ex. 6** if you or members of your team have any questions regarding AISI's comments.

Sincerely,

Paul Balserak

Paul Balserak
Vice President, Environment
American Iron and Steel Institute

Attachment



American Iron and Steel Institute

Comments of the American Iron and Steel Institute on Financial Responsibility Requirements under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Proposed Rule

Docket ID No. EPA–HQ–SFUND–2015–0781

July 11, 2017

I. Introduction

The American Iron and Steel Institute (AISI) respectfully submits these comments to urge EPA to reconsider and reject its unwarranted proposal to include "iron ore" mining as one of the classes of "hardrock mining" that should be subject to new financial responsibility regulation under CERCLA § 108(b), 42 U.S.C. § 9608(b). Iron ore mining is a centuries-old,[1] well-regulated, and safe enterprise that has never before been subjected to federal financial assurance requirements, and nothing has changed that makes such regulation necessary now. "Iron ore is the source of primary iron for the world's iron and steel industries . . . [and] is therefore essential for the production of steel, which in turn is essential to maintain a strong industrial base" in the United States.[2] EPA's proposal to include iron ore mining in this regulation is based on inappropriate data, and the Agency's estimate for financial assurance liability to be borne by the hardrock mining industry exceeds the iron ore mining industry's entire annual revenue twice over. As such, requiring financial assurance for the iron ore industry is inappropriate, would impose an undue burden on the industry not necessitated by any risk posed by iron ore mining or associated operations, and would run afoul of the Administration's commitment to revitalizing the American steel industry and examining how depressed domestic steel production threatens national security.[3]

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[1] F.L. Klinger, *Iron Ore,* Mineral Facts and Problems, 675 Bureau of Mines Bulletin 385 (1985).

[2] *Id.*

[3] *President Donald J. Trump: Standing up to Unfair Steel Practices,* Office of the Press Secretary, The White House (Apr. 20, 2017), https://www.whitehouse.gov/the-press-office/2017/04/20/president-donald-j-trump-standing-unfair-steel-trade-practices.

A. Iron ore mining was inappropriately included under "hardrock mining," and should now be removed from the new rule.

Relying heavily on the June 2009 Hoffman and Mahmud Memorandum listing 59 "commodity classes of hardrock mining" to be excluded from financial responsibility requirements under CERCLA § 108(b),[4] EPA proceeded to affirmatively identify hardrock mining as the class for which it would first develop financial responsibility requirements. Iron ore was not listed among the 59 excluded commodity classes, and thus it ended up being captured by the proposal, but without any apparent analytical basis to accurately justify its inclusion as a high risk mining category. In a *Federal Register* notice dated July 28, 2009 (2009 Priority Notice), EPA provided a general definition of "hardrock mining" and has refined that general definition for purposes of this proposal. Significantly, the public was ***not*** provided the opportunity to offer comment on the hardrock mining definition stated in this 2009 Priority Notice, or to review any data sources that EPA relied on in developing this definition. Given the clear significance of this definition of hardrock mining for purposes of establishing these financial assurance requirements, this lack of public comment represents a major flaw in EPA's efforts. Therefore, we believe that EPA should place heightened focus on the public comment received on this point in the current proposal under review.

To provide context, this proposed rule "would apply to certain classes of facilities that engage in the extraction, beneficiation, and processing of metals (*e.g.*, copper, gold, iron, lead, magnesium, molybdenum, silver, uranium, and zinc) and non-metallic, non-fuel minerals (*e.g.*,

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[4] *See* Stephen Hoffman and Shahid Mahmud, EPA Memorandum to The Record, *Mining Classes Not Included in Identified Classes of Hardrock Mining* (June 29, 2009).

asbestos, phosphate rock, and sulfur)."[5] EPA now "further solicits comment on whether classes of mines identified by commenters as presenting a lower level of risk of injury based on facility characteristics and operations could potentially encompass iron ore, phosphate, and uranium mines."[6] AISI urges EPA to determine that iron ore mining facilities have been improperly included in this proposed rule,[7] and "iron ore mining" should, therefore, be removed from the definition of hardrock mining in any final rule. As presented in greater detail below, iron ore mining presents far less significant environmental risks and hazards than other types of mining that EPA classifies as "hardrock mining" in the Identification of Priority Classes of Facilities for Development of CERCLA § 108(b) Financial Requirements Notice.[8] These minimal environmental risks and hazards warrant this exclusion.

More specifically, none of EPA's stated reasons for proposing that CERCLA financial responsibility requirements cover certain classes of hardrock mines and associated mineral processing facilities actually applies to iron ore mining. In proposing to require such assurance of *hardrock* mines and associated facilities, EPA states that its "research indicated that the hardrock mining and mineral processing industry typically operates on a large scale, and, in some situations, subsequent exposure of humans, organisms, and ecosystems to hazardous substances

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[5] Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining, 82 Fed. Reg. 3,388-3389 (Jan. 11, 2017).

[6] *Id.* at 3456.

[7] *Id.* at 3390.

[8] Identification of Priority Classes of Facilities for Development of CERCLA Section 108(b) Financial Responsibility Requirements, 74 Fed. Reg. 37213 (July 28, 2009).

occurs on a similarly large scale. Hardrock mining facilities generate an enormous volume of waste, which may increase the risk of hazardous substance release."[9]

Iron ore mining is notably different from other categories of high risk hardrock mining. Like sand, gravel, and limestone mining,[10] which have been properly excluded from EPA's definition of "hardrock mining," iron ore mining presents far fewer environmental risks and hazards than other types of mining that EPA classified as "hardrock mining" in the Identification of Priority Classes of Facilities for Development of CERCLA § 108(b) Financial Requirements Notice.[11] Indeed, most of the risks EPA identifies in its proposal appear to relate to Iron and Steel Mills (NAICS code 331110), a *separate* category of facilities and activities that involve the making of metallic iron for use in steel-making, not the mere beneficiation of iron ore. In contrast, iron ore mines (NAICS code 212210) are merely a provider of feedstock to the downstream processes that go into the production of steel. Notably, EPA has not considered the downstream uses of, or processes involving, other exempt mined materials (*e.g.*, limestone) when determining whether the mining of that material constitutes a risk, and it has given no reason for treating iron ore mining differently. It is clearly inappropriate to require one class of facilities, iron ore mines, to undertake financial responsibility for a wholly distinct and separate class of facility, iron and steel mills. EPA's decision to employ release data from "Iron and Steel Mills" to characterize iron ore mining for purposes of assessing the risks associated with the

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[9] *Requirements for the Hardrock Mining and Mineral Processing Industry,* EPA, https://www.epa.gov/superfund/superfund-financial-responsibility.

[10] *See* Stephen Hoffman and Shahid Mahmud EPA Memorandum to The Record, *Mining Classes Not Included in Identified Classes of Hardrock Mining* (June 29, 2009).

[11] 74 Fed. Reg. 37213 (July 28, 2009).

former is therefore arbitrary and capricious. While the CERCLA definition of "facility" is expansive, it is not expansive enough to cover facilities that are wholly separate and, in most cases, located hundreds of miles away from any iron ore mine. On those grounds, iron ore mining should be excluded from the definition of "hardrock mining" in relation to the proposed financial responsibility regulation under CERCLA § 108(b).

In addition to our comments on why iron ore mining is a low risk activity and should be excluded as a covered class under the definition of hardrock mining, we are also concerned with the proposed rule's definition of "Mineral Processing." The definition, when read together with the 2009 Priority Notice's characterization of processing, suggests that blast furnace operations may fall under the definition of "mineral processing." EPA's proposed rule defines "Mineral Processing" as:

> the *sequence of activities following extraction* of metallic or non-fuel non-metallic minerals to: (1) Separate and concentrate a target metallic or non-fuel non-metallic mineral from the ore, and/or (2) to refine ores or mineral concentrates to extract a target metallic or non-fuel non-metallic material. *Mineral processing includes the mechanical, thermal, and/or chemical treatment of naturally occurring earthen materials*, either solid or liquid (e.g., rock, ore, mineral or extracted subsurface brine) to recover, purify or create a final mineral product (e.g., dimension stone, expanded vermiculite, or refractory clay) or a feedstock of sufficient purity that it can then be used in further industrial or manufacturing operations.[12]

And the 2009 Priority Notice's following characterization of processing also indicates that blast furnace operations may fall under the definition of "mineral processing":

> the refining of ores or mineral concentrates after beneficiation to extract the target material. . . . For example, *mineral processing operations can use pyrometallurgical techniques (the use of higher*

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[12] 82 Fed. Reg. 3504 (Jan. 11, 2017) (emphasis added).

> *temperatures as in smelting)*, to produce a metal or high grade metallic mixture. *Smelting generates a waste product called slag.* Slag is initially placed directly on the ground to cool, and is often subsequently managed into a wide range of construction materials (*e.g.*, road bed or foundation bedding). Both because of the ways that the facilities covered by this notice fit together, and because of the range of activities that they cover, EPA believes hardrock mining is properly identified as a group and considered to include multiple classes of facilities.[13]

Blast furnace operations are associated with iron and steel mills (NAICS code 331110) and are a separate and distinct activity from iron ore mining (NAICS code 212210). Further, blast furnaces are not co-located with iron ore mining facilities—in fact they are hundreds of miles apart in different states. Accordingly, AISI urges that EPA clarify that blast furnaces are not included under the rule's definition of "mineral processing facility" and are not subject to the financial responsibility regulation under the current CERCLA § 108(b) hardrock mining action.

B. The President and EPA are afforded significant discretion in determining whether an industrial sector should be subject to financial assurance regulation under CERCLA § 108(b).

CERCLA § 108(b) does not require financial assurance of all industrial categories, and the categories themselves need not be defined to be all-inclusive. The statute instead requires EPA to limit its action to the mandate Congress provided and administrative record before the agency. Specifically, financial assurance is required only to the extent "consistent with the *degree and duration* of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances" from an industrial category.[14] This language calls upon the

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[13] 74 Fed. Reg. 37,215 (July 28, 2009) (emphasis added).

[14] 42 U.S.C. § 9608(b)(1) (emphasis added).

Administrator to exercise his judgment for each industrial classification, to determine whether *any* financial assurance is required under Section 108(b).

That the level of this discretion is significant finds further evidence in Section 108(b)(2), which states that "[t]he level of financial responsibility shall be initially established, and, when necessary, adjusted to protect against the level of risk which the President *in his discretion believes is appropriate* based on the payment experience of the Fund, commercial insurers, courts settlements and judgments, and voluntary claims satisfaction."[15]

Here, the risks "associated with the production, transportation, treatment, storage, or disposal of hazardous substances" from iron ore mining operations are negligible at best. Indeed, as presented in more depth below, almost all of the risks EPA incorrectly associates with iron ore mining in its proposal come from Iron and Steel Mills, not from iron ore mining.[16] Moreover, "the payment experience [associated with] the [Superfund program], commercial insurers, court settlements and judgments, and voluntary claims satisfaction" [17] in connection with potential

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[15] *Id.* at § 9608(b)(2) (emphasis added).

[16] Separate and apart from the general unsuitability of the TRI data as a surrogate for risk, EPA has erroneously relied on the TRI data from "Iron and Steel Mills" (NAICS code 331110) as a surrogate for hazardous pollutant releases to the environment from the iron ore mining industry (NAICS code 212210). The TRI reports from Iron and Steel Mills identified every U.S. steel mill (including integrated, electric arc furnace mini-mills, coke, finishing mills, service centers, etc.) as falling within the iron ore mining category, and inaccurately estimated 52 million pounds of chemical releases, including numerous chemicals that are simply not associated with the iron mining process. Had EPA actually assessed TRI reporting for the iron ore mining sector, it would have found that iron ore mining was excluded by EPA after the industry demonstrated that releases were below reporting thresholds.

[17] Financial Responsibility Requirements for Facilities in the Chemical, Petroleum and Electric Power Industries, 82 Fed. Reg. 3512 (Jan. 11, 2017).

releases of hazardous substances associated with iron ore mining also demonstrates that no financial assurance should be required.

Ultimately, EPA's proposal to require financial assurance regulation of iron ore mining operations results from EPA's own, deeply-flawed risk analysis. In that faulty analysis, EPA imputes risks to the iron ore mining industry that simply do not exist or that are grossly overstated, and it entirely ignores state and federal regulations that already govern and have substantially reduced any risk from the iron ore industry—regulations that have exponentially grown in number and complexity since CERCLA's enactment in 1980. Under CERCLA, EPA must conduct a risk analysis that reviews all current operating practices and regulatory regimes, including but not limited to those related to permitting, operating, release containment and response, closure, and financial assurance. *Based on this thorough analysis*, EPA is to determine whether a risk exists, the degree of that risk, and whether that risk could give rise to a release that would result in clean-up activity necessitating some unfunded expenditure. EPA, however, has done none of that here. Its Proposed Rule, which seeks to address "all potential risk" [18] rather than the limited, identifiable risks discussed just above, is impermissibly overreaching and overbroad. All this, combined with EPA's failure to collaborate or consult with relevant state agencies, AISI, or AISI member companies, to develop this Proposed Rule further highlights the Rule's flawed foundation.

In short, based on the actual information from the iron ore mining sector, EPA would be would be responsibly concluding, and would be doing so well within its discretion, that *no* financial assurance should be required of iron ore mines and that they therefore should not be

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[18] 82 Fed. Reg. 3405.

included within the definition of hardrock mining. The clear statutory language in fact shows that the need to impose financial assurance requirements is discretionary and limited, and the Proposed Rule fails to meet these simple criteria for iron ore mining as it relies upon flawed historical data for a separate sector category. As a result the Proposed Rule exaggerates the risk from iron ore mining and would require the sector to maintain financial assurances significantly in excess of the risk actually presented and any likely costs for remediation activities. AISI, therefore, firmly believes that any conclusion contrary to excluding iron ore mining from the definition of hardrock mining and requiring no financial assurance under CERCLA 108(b) would be arbitrary and capricious, as the record simply does not support the need for such assurance from iron ore mines or blast furnaces.

AISI further endorses and incorporates by reference the comments on EPA's statutory mandate submitted under separate cover by a coalition of industry associations, including AISI, the National Association of Manufacturers, the National Mining Association, and the U.S. Chamber of Commerce amongst others, on this proposal.

II. Analysis

A. EPA's traditional, eight-factor test for assessing necessity of financial assurance points to no need for financial assurance for iron ore mining.

In its Proposed Rule, EPA points to eight factors that it has historically considered in identifying the risk profile of an industry and determining whether financial assurance regulation of that industry is required. The eight factors are:

> (1) annual amounts of hazardous substances released to the environment; (2) the number of facilities in active operation and production; (3) the physical size of the operation; (4) the extent of environmental contamination; (5) the number of sites on the CERCLA site inventory (including both NPL sites and non-NPL sites); (6) government expenditures;

(7) projected clean-up expenditures; and (8) corporate structure and bankruptcy potential.[19]

Separately and together, these eight factors weigh strongly if not irrefutably in favor of *not* including iron ore mining and associated operations among the classes of hardrock mining facilities subject to the proposed financial responsibility requirements under CERCLA § 108(b):

1) By erroneously relying on data related to "Iron and Steel Mills" (NAICS code 331110), which are distinct from iron ore mines (NAICS code 212210), *EPA has miscalculated and grossly overestimated the annual amount of hazardous substances potentially released to the environment as a result of iron ore mining*. The evidence provided below shows EPA grossly overestimated the hazardous chemical releases associated with iron ore mining and that iron ore mining does not rely on large amounts of hazardous chemicals.

2) *A total of only ten active iron ore mining sites exist in the United States*,[20] located in just two states: Michigan and Minnesota. The iron ore mining industry therefore presents a very low and geographically confined risk from a CERCLA perspective.

3) *Although iron ore mines can be relatively large, they mostly involve the movement of benign earthen material*, similar to large limestone and gravel rock quarries which are found around the nation and which EPA is correctly excluding from the scope of this Proposed Rule. While size of a facility is a factor in determining the need for financial assurance, it should be of little relevance where, as with iron ore mines, the facilities themselves use few hazardous chemicals and produce little hazardous waste.

4) *There is a miniscule environmental contamination risk from iron ore mining and associated operations*. Iron ore mining is a physical (rather than chemical) process, much like gravel and limestone mining. Furthermore, not only is iron mining historically and

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[19] 82 Fed. Reg. 3398 n. 34 (citing 74 Fed. Reg. 37214 (July 28, 2009)).

[20] The Regulatory Impact Analysis (RIA) that accompanies this new proposed rule lists 12 iron ore surface mines that are currently active; however, the CML Iron Mountain mine (Facility No. 64 on RIA) in Utah is no longer operational (*see* Tracy Sullivan, *CML Mines Suspend Production, Layoff More Than 100 Workers*, The Spectrum (Oct. 27, 2014, 9:57 PM), http://www.thespectrum.com/story/news/local/cedar-city/2014/10/17/cml-mines-suspend-production-layoff-workers/17482735/), and the Penn Mag Plant 1 (Facility No. 256 on RIA) is no longer an active or even permitted mining operation (*see* Pennsylvania Department of Environmental Protection, *Industrial Minerals Surface/Underground Mines Reporting Productions* (2015)).

heavily regulated, thereby reducing overall risk, but (like gravel and limestone mining) open pits once used for iron ore mining are currently used for activities such as recreation and as safe, reliable public drinking water sources, thus providing ample evidence that there is little to no risk associated with such mines.

5) *There are no iron ore mining related sites on EPA's National Priorities List* (NPL), despite the listing of thousands of NPL sites in the U.S. since 1983.

6) There have been *no federal government expenditures* related to CERCLA remediation of iron ore mining sites.

7) *CERCLA clean-up expenditures are projected to be zero* for this low-risk industry.

8) *The iron ore mining sector is quite stable* at present; ironically, this proposed EPA rule would threaten that stability.

We discuss each of the eight factors in detail below, demonstrating how each supports the conclusion that iron ore mining is a small and low-risk industry; is already heavily monitored and well-regulated; and no financial assurance is warranted.

i. Iron ore mining does not use or generate significant amounts of hazardous substances, and financial assurance regulation is therefore unwarranted.

Iron ore is mined from large open pits by progressive extraction along steps or benches using *physical* (not chemical) methods to separate the product from overburden. The iron ore beneficiation process primarily involves *physical* separation of materials using water, magnets, and similar physical mechanisms, together with the use of some low-risk chemicals. Waste materials generated as a result of open pit mining include overburden, excess rock, and mine water containing suspended solids and dissolved materials (not acidic in nature).

From an environmental perspective, iron ore mining is quite safe, involving processes that rely on substances that are largely inert. The evidence on which EPA relied in proposing to subject iron ore mines to this new rule is inaccurate and mischaracterizes the risks from iron ore mining. Simply put, EPA shirks its mandated responsibility to accurately assess the types and

degrees of risks by ignoring the well-established evidence that iron ore mining is a longstanding and safe enterprise that does not suddenly warrant financial assurance that has never previously been required. In fact, EPA must assess factors that both contribute to and mitigate against any risks that a specific industry poses before regulating it. Even the language of 108(b) emphasizes that EPA should only promulgate new regulations for operations that are not subject to heavy regulation already.[21] EPA has not done this here: it ignores the current regulatory framework—both state and federal—that already minimizes environmental risk from iron ore mining. For example, and as discussed in further detail below, iron ore mining operations already require several state and federal permits specific to air, water, wetlands, waste, and of course, mining.

These permitting requirements provide additional existing assurances that iron ore mining operations are already conducted in a way that minimizes risks. EPA and the States of Minnesota and Michigan have previously determined that iron ore mining involves, at most, *de minimis* releases of hazardous substances. As a consequence, EPA has excluded the iron ore mining industry from reporting requirements under the Emergency Planning and Community Right-To-Know Act (EPCRA) Section 313 Toxic Release Inventory (TRI). In reaching that determination, EPA concluded: 1) the extraction and beneficiation of iron ore do not routinely use hazardous substances to produce a final product, and toxic chemical releases and transfers are not of sufficient quantities to warrant reporting; 2) no facilities were expected to meet the threshold reporting levels under EPCRA; and 3) iron ore mining and associated facilities do not make

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[21] *See* S. Rep. No. 96-848, at 92 (1980) (It "is not the intention of the Committee that operators of facilities . . . be subject to two financial responsibility requirements for the same dangers. The purpose of [the provision that became § 108(b)] is . . . to extend financial responsibility requirements to facilities and transporters who are not now covered by any [financial responsibility] requirements . . . .").

extensive use of toxic chemicals for processing their product.[22] Iron ore mining is in fact the only metal mining industry specifically excluded from TRI reporting, while other metal mining industries, such as gold, copper, nickel, lead and zinc must report the chemicals used in their processes.

Submissions made by industry to both Minnesota and EPA to support the exclusion of iron ore mining from the EPCRA Section 313 TRI program included information on a number of bulk metals sent off-site for recycling (chromium, copper, manganese, nickel, zinc), as well as propene used on-site and ammonia used in blasting agents.[23] In addition, EPA's 1994 "Technical Resource Document on the Extraction and Beneficiation of Ores and Minerals" contains chemical analyses indicating that these non-target metals (Ni, Ti, Cu, Mn, Zn, S, and P) are below *de minimis* concentrations for TRI reporting.[24] Ultimately, the TRI reports were amended in the mid-1990s to demonstrate that releases were below reporting thresholds. This compelling

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[22] *Section 313 of the Emergency Planning and Community Right-to-Know Act, Toxic Chemical Release Inventory*, Office of Pollution Prevention and Toxics, EPA 745-B-99-005 (Jan. 1999); *see, e.g.*, Hibbing Taconite Co., Depart of Public Safety, State of Minnesota, Emergency Response Commission Facility Verification Report for the 1993 Reporting Year (1993) (including related correspondence); *see also* LTV Steel Mining Company, Depart of Public Safety, State of Minnesota, Toxic Chemical Release Inventory Report Form R (1993) (including related correspondence).

[23] Ammonia is not a dissolved constituent and thus is not reportable under the TRI. Chromium, copper, manganese, and nickel are constituents of grinding media that meet rule exemptions and thus are not reportable under the TRI. Zinc dust/fume generation was below TRI reportable thresholds, and propene is exempt from TRI reporting under the facility maintenance exemption.

[24] *Technical Resource Document: Extraction and Beneficiation of Ores and Minerals, Vol. 3: Iron*, Office of Solid Waste, EPA 530-R-94-030 (Aug. 1994) [hereinafter *Technical Resource Document: Ores and Minerals*] (Section 1.4.2.3, including support for water from mining generally being recovered to the mill and any unutilized flotation reagent adhering to tailings particles; Section 1.5.1.7, characterizing mine water as having low pollutant levels).

TRI data in EPA's files demonstrates conclusively that the entire basis for this rulemaking proposal as it relates to the iron ore sector rests on a fatally flawed foundation.

a. Iron ore mines are "small quantity generators" of hazardous wastes, obviating the need for financial assurance under CERCLA § 108(b).

Because iron ore mines and the associated beneficiation and agglomeration processes do not themselves generate any hazardous wastes, iron ore mines are "small quantity generators" (SQG) of hazardous wastes. The small amount of hazardous waste generated in association with iron ore mining is primarily associated with maintenance and laboratory operations, and is managed in accordance with the Resource Conservation and Recovery Act (RCRA).[25] Those wastes are neither stored nor disposed of on-site. These small volumes of wastes are transported off-site for recycling, treatment, or disposal. Among the waste types produced at the various active iron ore mining sites are small quantities of hydrochloric acid, waste flammable liquids, waste aerosols, paint waste, hazardous liquids, waste lab acid, and waste solvents. Moreover, in 1980, through the Bevill Amendment, Congress expressly exempted from regulation as hazardous waste "mining and mineral processing waste . . . generated by extraction, beneficiation, and processing activities."[26] This amendment, and EPA's subsequent confirmation of such exemptions in 2000, further underscores the low-risk nature of iron ore mining wastes and the absence of any need for financial assurance regulation under CERCLA § 108(b).

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[25] 42 U.S.C. § 6901 – 6992k.

[26] *Special Wastes,* EPA, https://www.epa.gov/hw/special-wastes [hereinafter *Special Wastes*]; 42 U.S.C. § 6921(b)(3)(A)(ii); *see generally* Van E. Housman, *The Scope of the Bevill Exclusion for Mining Wastes*, 24 Envt'l. Law Rep. 10657 (Nov. 1994).

The characterization of iron ore mining facilities as "small quantity generators," combined with the fact that any hazardous wastes are not processed, stored, or disposed of on-site, supports the exclusion of iron ore mines from financial responsibility regulation pursuant to CERCLA § 108(b).

b. Iron ore mines manage and use low-risk chemicals in their processes.

Iron ore mining uses minimal amounts of hazardous chemicals, and those that are used in the process already require regulatory approval. For example, the Minnesota Pollution Control Agency has a chemical additive review process.[27] In Minnesota, prior to using a new chemical, increasing dosage, or changing a chemical, a submittal is required with specific information for the agency to evaluate the request. The chemical cannot be used until authorization is received. The review could result in approval, disapproval, or approval with additional monitoring requirements. The iron ore industry has thus actively worked to reduce or eliminate many traditional industrial hazardous substances from properties (*e.g.*, PCB transformers, mercury-containing devices, etc.).

The iron ore beneficiation process also relies on low-risk chemical and physical processes, as it primarily involves physical separation of materials using water, magnets, and similar physical mechanisms, together with the use of some low-risk chemicals that are commonly used throughout industrial settings, not specific to mining, across the United States. Water is frequently used as a dust suppressant to limit nuisance dust, and in some cases, chemical dust suppressants, such as calcium or magnesium chloride, are utilized. Such low-risk

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[27] *See Wastewater: Chemical Additive Approvals*, Minnesota Pollution Control Agency, https://www.pca.state.mn.us/water/wastewater-chemical-additive-approvals.

chemicals as calcium, magnesium chloride, and ammonium nitrate/fuel oil are used for various processes, including dust suppressants and blasting at iron ore mine facilities.

These facilities also require the use of various low-risk chemicals for processes other than beneficiation, such as water treatment solutions and sodium hypochloride for drinking water treatment; flocculant, corrosion inhibitors, and microbiocides for process improvement/control, equipment protection, health protection, and scrubber pH control; and frother, amine, flocculant, freeze conditioner scrubber treatment, and sodium hypochlorite for process improvement/control, dry hydrated lime, and potable water treatment. Notably, none of the Material Safety Data Sheets for the foregoing chemicals identifies any constituents of concern for CERCLA.[28] As such, and because iron ore mining and beneficiation is a low-risk process, AISI urges EPA to agree that financial assurance is not needed for iron ore mining.

There is also minimal risk from airborne substances associated with iron ore mines. For example, the National Emission Standards for Hazardous Air Pollutants (NESHAP) Taconite MACT Petition to Delist[29] demonstrates that residual trace elements contained in the iron ore present a very low air emissions-based risk.

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[28] *See, e.g.*, Culligan International Co., *Water Softener Salt Solar Extra Coarse Material Safety Data Sheet* (Mar. 5, 2009); *see, e.g.,* Health, Safety, and Environment Department, Hawkins Inc., *Aqua Hawk D2707 Safety Data Sheet* (Oct. 8, 2012); *see, e.g.,* U.S. Water Services, *CWT 1004 Safety Data Sheet* (Mar. 18, 2015).

[29] *See generally Fact Sheet – Taconite Iron Ore Processing: National Emission Standards for Hazardous Air Pollutants (NESHAP),* EPA (Aug. 25, 2003), https://www.epa.gov/stationary-sources-air-pollution/fact-sheet-taconite-iron-ore-processing-national-emission-standards; *see also Pakootas v. Teck Cominco Metals*, No. 15-35228 (9th Cir. July 27, 2016) (holding that air emissions do not constitute 'disposal' under CERCLA); *see generally Potential Impacts of the Federal Regional Haze and Best Available Retrofit Technology Rules on the Taconite Industry in Minnesota, Final Report for the Minnesota Pollution Control Agency,* Barr Engineering Company (Sept. 30, 2003), https://www.pca.state.mn.us/sites/default/files/aq1-27.pdf; *see*

c. Iron ore mines use largely neutral, inert materials.

Because iron ore geology is different from some other mineralized ore bodies, acid-rock drainage (ARD) is not a concern with the iron ore bodies in Michigan and Minnesota. The lack of ARD potential at iron ore mines is a highly relevant factor that warrants EPA dropping this sector from the Proposed Rule. Moreover, EPA itself describes the iron ore mining and beneficiation process as generating wastes that are merely "earthen in character."[30] Chemical constituents from iron ore mining include iron oxide, silica, crystalline silica, calcium oxide, and magnesium oxide—none of which is a CERCLA hazardous substance.[31] The acid-neutralizing potential of carbonates in iron ore offsets any residual acid rock drainage risks, leading to pit water that naturally stabilizes at a pH of 7.5-8.5. Again, nothing in the wastes suggests any hazard to the environment and public health.

d. EPA relies on inaccurate and improper evidence to support the inclusion of iron ore mines under CERCLA § 108(b).

Perhaps most glaringly incorrect, EPA has erroneously relied on the Toxic Release Inventory (TRI) data from Iron and Steel Mills (NAICS code 331110) as a surrogate for hazardous pollutant releases to the environment from the iron ore mining industry (NAICS code

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generally Section 112(c)(9) Petition to Delist Taconite Iron Ore Processing From the EPA's List of Source Categories Under Section 112(B) of the Clean Air, Cleveland-Cliffs, Inc. and Ispat-Inland Mining Co. (Dec. 15, 2003).

[30] EPA, Office of Solid Waste, *Final Technical Background Document, Identification and Description of Mineral Processing Sectors and Waste Streams, Iron and Steel* Chapter, Section B.4 (Aug. 1998) https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/part5.pdf [hereinafter *Final Technical Document: Mineral Processing and Waste Streams*].

[31] *See, e.g.,* Cliffs Natural Resources, CliffsNR Iron Ore Concentrate Safety Data Sheet (Feb. 26, 2015) at 2; *see, e.g.,* Cliffs Mining Co. Safety and Workers Compensation Department, Hibbing Taconite Co. Total Tails, Material Safety Data Sheet (Sept. 27, 2001) at 1.

212210).[32] The TRI reports from Iron and Steel Mills identified *every* U.S. steel mill (including integrated, electric arc furnace mini-mills, coke, finishing mills, service centers, etc.) as falling within the iron ore mining category, and inaccurately estimated 52 million pounds of chemical releases, including numerous chemicals that are simply not associated with the iron ore mining process. This contradicts EPA's own previous findings. For example, in an EPA Report on Environmental and Human Health Damages from Mining Wastes, dated April 1998, EPA discussed state-by-state damages resulting from 25 different types of metal mining, but did not identify *any* damages resulting from iron ore mining.[33] EPA also erroneously listed a ferrochromium (chromite) smelter under the iron and steel category, further exacerbating the inaccuracies that flowed from treating the Iron and Steel Mill category as part of the iron ore mining category.

Ultimately, EPA's proposal provides no information supporting a conclusion that iron ore mining and associated operations should now be subject to onerous CERCLA § 108(b) requirements, when no historical iron ore mining CERCLA sites have ever been listed.[34] EPA has not identified any specific risks associated with ferrous mining. Instead, its proposal to include iron ore mining and associated operations in the rule is apparently based on an inappropriate consideration of the risks associated with a separate category, Iron and Steel Mills.

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[32] *2014 TRI National Analysis: Introduction,* EPA, https://www.epa.gov/sites/production/files/2017-01/documents/tri_na_2014_complete_english.pdf.

[33] *Technical Background Document Supporting the Final Rule Applying Phase IV Land Disposal Restrictions to Newly Identified Mineral Processing Wastes: Human Health and Environmental Damages from Mining and Mineral Processing Wastes*, EPA 530-R-99-037 (Apr. 1998).

[34] *See, e.g.*, EPA, ORCR and OSRTI, *Evidence of CERCLA Hazardous Substances and Potential Exposures at CERCLA § 108(b) Mining and Mineral Processing Sites* (2016).

Applying this new rule to iron ore mines is further inappropriate where the public was not provided the opportunity to offer comment on the hardrock mining definition stated in the 2009 Priority Notice, or to review any data sources that EPA relied on in developing this definition.[35]

ii. The number of iron ore facilities in active operation and production is insignificant, and financial assurance is therefore unnecessary.

Iron ore mining in the United States comprises a small and localized business sector, further supporting a low risk profile from a CERCLA perspective. The majority of iron ore operations are confined to two states: Michigan and Minnesota,[36] and only the following eight[37] iron ore mines are correctly listed as "active" on EPA's Regulatory Impact Analysis (RIA) supporting this rule:

Michigan	Minnesota
1. Cliffs Natural Resources – Empire (No. 62) 2. Cliffs Natural Resources – Tilden (No. 63)	3. ArcelorMittal Minorca (No. 20) 4. Hibbing Taconite (No. 142) 5. Northshore Mining Babbitt – Silver Bay (No. 237) 6. United Tacontie Thunderbird Mine (No. 328) 7. USSteel Keetac (No. 340) 8. USSteel Minntac (No. 341)

Moreover, while the physical size of these mines may be considered large, ample existing regulations and requirements already minimize the physical impact of such operations. For

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[35] *See* 74 Fed. Reg. 37213 (July 28, 2009).

[36] *See, e.g.,* Klinger, *supra* note 1, at 386.

[37] The Regulatory Impact Analysis (RIA) that accompanies this new proposed rule lists 12 iron ore surface mines as currently active; however, the CML Iron Mountain mine (Facility No. 64 on RIA) in Utah is no longer operational (Sullivan, *supra* note 20, *available at* http://www.thespectrum.com/story/news/local/cedar-city/2014/10/17/cml-mines-suspend-production-layoff-workers/17482735/), and the Penn Mag. Plant 1 (Facility No. 256 on RIA) is no longer an active or even permitted mining operation (*See*, PA Dep't Envt'l Protection, *Industrial Minerals Surface/Underground Mines Reporting Productions* (2015)).

instance, best practices are in place to minimize the facility footprint by utilizing techniques such as in-pit stockpiling, under which overburden stockpiles are constructed, where feasible, in mined-out areas of a pit, rather than creating a new stockpile outside the existing footprint that would increase the facility size.[38]

Given the fact that there are very few facilities in the category and that those that remain active already take steps to minimize their footprint and potential releases, requiring financial assurance under CERCLA § 108(b) is unwarranted.

iii. The minimal evidence of historical environmental contamination at iron ore mining sites and the current use of former iron ore mining sites for public purposes further indicate that financial assurance is unnecessary.

Many open pits historically used for iron ore mining have been reclaimed successfully and are currently used as safe and reliable public resources, such as recreational lakes and drinking water sources.[39] For example, the Minnesota Department of Health identifies five communities and two mining companies that rely on water drawn from historic iron ore mine pits as safe and reliable drinking water.[40] To date, many historic iron mining pits are used as drinking water sources, public beaches, recreation areas, campsites, scuba diving areas, and prime, state-stocked fishing areas for lake trout, rainbow trout, and other fish.[41] The fact that

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[39] *See, e.g.*, Klinger, *supra* note 1, at 399.

[40] *Community Public Water Supply,* Minnesota Department of Health, http://www.health.state.mn.us/divs/eh/water/com/.

[41] The Laurentian Vision Partnership is a regional coalition that promotes the development of productive post-mining landscapes on the Mesabi Iron Range in NE Minnesota (listing (Embarrass Pit, Mott Pitt, Lake Ore Be Gone, Geneva Pit, Schley Pit, Petit Pit, etc.)); *see, e.g.*, Michael E. Berndt, *Mercury and Mining in Minnesota, Minerals Coordinating Committee Final*

these common and long-standing uses for former iron ore mining sites exist at many locations is further evidence that they pose little or no risk and that financial assurance for operational sites is not necessary.

In fact, many communities and organizations have actively welcomed the reclamation of land that was once the site of iron ore mining operations. The University of Minnesota's Department of Landscape Architecture, for example, has joined with various stakeholders to reclaim and repurpose such land.[42] In finding that "[b]yproducts and resources removed from mining can . . . be used as building blocks for future reclamation," these organizations are proactively seeking to set the precedent for land reclamation.[43]

iv. The existing federal and state regulatory framework governing iron ore mining operations is rigorous and thorough, obviating the need for additional financial assurance requirements.

Before imposing new financial assurance requirements, EPA should consider current regulatory requirements when evaluating the risk an industry poses to the environment and human health. Iron ore mining is a heavily-regulated industry, and such regulations already adequately reduce and manage associated long-term risks. Federal and state environmental review programs are robust and rigorous, and they already consider potential environmental

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Report, Minnesota Department of Natural Resources (Oct. 15, 2003); *see generally, Technical Resource Document: Ores and Minerals*.

[42] Jim Romsaas, *Recycle the Range*, Mesabi Daily News (Jun. 28, 2017), http://www.virginiamn.com/mine/recycle-the-range/article_86e1408c-5bc2-11e7-95b4-6fe1a929a696.html.

[43] *Id.*

impacts from major projects prior to authorizing development and to inform environmental permitting.[44]

In addition, at the state level, Michigan already imposes certain financial responsibility requirements on ferrous (iron) mineral mining.[45] According to the relevant Michigan statute, "the amount of financial responsibility must equal the expected cost of reclamation for each acre, or fraction thereof, of the area subjected to mining. In determining the amount . . . the MDEQ must take into consideration the character and nature of the lands to be reclaimed, the future suitable use of the land involved, and the cost of the reclamation to be required."[46] The relevant Michigan statute acknowledges that land used for ferrous mining can later be repurposed, further supporting the conclusion that iron ore mining is an inherently low-risk activity from a hazardous substance perspective. In Minnesota, financial assurance for "metallic mineral mining operations from which iron is the predominant metal extracted . . . only requires financial responsibility when the MDNR Commissioner" makes certain site-specific determinations related to compliance with the underlying permitting structure.[47]

At the federal level, as discussed above, iron ore mining processes are already exempt from RCRA regulation under the Bevill Amendment. This strongly indicates that Congress itself would not find necessary any requirement for financial assurance under CERCLA for such

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[44] *See, e.g.*, *Essar Steel Minnesota Modifications Project*, Minnesota Department of Natural Resources, http://www.dnr.state.mn.us/input/environmentalreview/essar/index.html.

[45] EPA, EPA-HQ-SFUND-2015-0781-2041, Summary of Michigan Financial Responsibility Requirements (Feb. 6, 2017).

[46] *Id.* at 2.

[47] EPA, EPA-HQ-SFUND-2015-0781-2101, Summary of Michigan Financial Responsibility Requirements (Feb. 6, 2017) at 1.

facilities. In addition, the following permits, authorizations, and regulations are currently applicable, at a minimum, for mining: **Air** (Title V, PSD, National Ambient Air Quality Standards, National Emission Standards for Hazardous Air Pollutants, New Source Performance Standards, etc.); **Water** (National Pollution Discharge Elimination System, State Disposal System, Stormwater, Water Appropriations, Clean Water Act Section 401); **Wetlands** (Clean Water Act Section 404, Wetland Conservation Act (MN)); **Waste** (Solid Waste, Resource Conservation and Recovery Act); **Mining** (State Permits to Mine (MN)[48], Mineland Reclamation Rules (MN), Part 631 (MI)). These extensive and significant permitting requirements provide additional existing assurances that iron ore mining operations will be conducted in such a way as to minimize risks.

To date, formal environmental review (*e.g.*, EA, EIS) exercises conducted for the iron ore mining industry under NEPA[49] and Minnesota Environmental Protection Act (MEPA)[50] have not revealed any material risks associated with those projects.[51] The low-risk nature of iron ore mining led EPA to include a very narrow list of effluent characteristics—only iron, total suspended solids (TSS), and pH—for the iron ore mining effluent limitation guidelines (ELGs) in Subpart A of 40 CFR §§ 440.10 – 440.15.[52] In addition, not even a single taconite facility is

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[48] Ferrous Metallic Mineral Mining, Minn. R. 6130.

[49] 42 U.S.C. § 4321 *et seq.*; *see also* Minn. R. 4410.0200-4410.6500.

[50] Environmental Impact Statements, Minn. Stat. § 116D.04 (2016).

[51] *See, e.g.*, Minnesota Department of Natural Resources, *supra* note 44, *available at* http://www.dnr.state.mn.us/input/environmentalreview/essar/index.html.

[52] *See* 40 CFR §§ 440.10 – 440.15.

listed in EPA's National Enforcement Initiative: Reducing Pollution from Mineral Processing Operations.[53]

v. The absence of any iron ore mining sites on EPA's CERCLA Site Inventory (National Priority List (NPL))—despite their longstanding history of operations—further indicates that there is insufficient risk to justify financial assurance requirements.

Iron ore mining-related sites do not present long-term legacy cleanup risks, as evidenced by their longstanding absence from EPA's CERCLA National Priorities List since 1983 (active, proposed, or deleted sites).[54] No iron ore mining sites are contained on the proposed list either.[55] The lack of any historical federal governmental expenditure on the clean-up of iron ore mining facilities strongly demonstrates that there is no need for additional financial assurance for such sites and associated operations. For over 35 years, EPA has employed a risk-based process through the Hazard Ranking System to evaluate potential NPL sites in every state in the U.S. and EPA has listed over 1,600 NPL sites around the Nation in every state. The absences of a single iron ore mine (active or inactive) strongly attests to the lack of any need for this Proposed Rule for the iron ore sector.

vi. The projected clean-up expenditures for iron ore sites are minimal to non-existent, further obviating the need for financial assurance.

As discussed, iron ore mining is already effectively regulated under both federal and state law, already adequately reducing and managing any associated long-term risks. Because they do

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[53] *See National Enforcement Initiative: Reducing Pollution from Mineral Processing* Operations, EPA, https://www.epa.gov/enforcement/national-enforcement-initiative-reducing-pollution-mineral-processing-operations.

[54] *See National Priorities List (NPL) Sites – by State*, EPA (July 7, 2017), https://www.epa.gov/superfund/national-priorities-list-npl-sites-state.

[55] *Id.*

not use any uniquely hazardous materials, and because they generate only negligible amounts and types of hazardous wastes, iron ore mines present extremely low risk of triggering a CERCLA clean-up response, and CERCLA clean-up expenditures are, therefore, projected to be zero or near zero.

vii. Corporate structure and bankruptcy potential

The iron ore mining sector has recently begun stabilizing; ironically, this proposed EPA rule would threaten that fragile stability by imposing costs on the industry that exceed its revenue, for the misguided purpose of assuring against risks that simply do not exist or are already protected against.

B. Blast furnaces should also be excluded from new CERCLA § 108(b) financial assurance requirements.

AISI strongly believes that EPA should explicitly exclude blast furnaces from the "mineral processing facility" definition in the rule because blast furnaces are a separate and distinct activity from hardrock mining, which is the focus of the rule. Further, blast furnaces should be excluded from the new CERCLA § 108(b) financial assurance requirements because they represent a low-risk activity, as described in the following sections.[56] In fact, based on

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[56] At a minimum, AISI urges EPA to conclude that blast furnaces should be considered *separately* from iron ore mining operations in determining whether financial assurance regulation is necessary. A review of the technical documents supporting the proposed rule shows that blast furnaces may trigger the "mineral processing" definition as set forth in the proposed rule. For example, the *Iron and Steel* chapter of *Identification and Description of Mineral Processing Sectors and Waste Streams* (Section B.4) clearly delineates the boundary between beneficiation and processing. It notes that EPA determined that "for this specific mineral commodity sector, the beneficiation/processing line occurs *between* agglomeration (sintering, pelletizing, and briquetting) and reduction of iron ore in a blast furnace." *Final Technical Document: Mineral Processing and Waste Streams* at *Iron and Steel* Chapter, B.4, *available at* https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/part5.pdf. In contrast to the beneficiation process, in which there are no chemical changes to the mineral properties of iron

comments from AISI and the National Slag Association in the 1980s, EPA has previously deemed blast furnace slag as non-hazardous.[57]

First, blast furnaces are not co-located with iron ore mines; often, they are not even located in the same state as the iron ore mine. It thus makes no sense to consider them to be part of the same facility as the iron ore mine. Second, and similar to iron ore mining facilities, blast furnaces use minimal hazardous substances and do not produce hazardous waste. What substances they do use or waste they do generate is, moreover, already adequately regulated at the state and federal level. Further, the co-product of blast furnace operations, blast furnace slag, has long had various practical uses ranging from construction of roadways to application as a key ingredient in cement manufacturing. Studies have even demonstrated that blast furnace slag can help neutralize pH levels in soil. No new blast furnaces have been constructed since the 1960s, and many of those that remain in operation have been modernized, further minimizing any harmful impact they may have on the environment.

Thus, the locations of blast furnaces, combined with their heavily regulated operations and their use of minimally hazardous materials and the lack of generation of hazardous wastes, require that EPA not consider blast furnaces to be parts of the iron ore mines associated with

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ore, EPA identified the starting point of mineral processing as the point at which "a significant chemical change to the iron ore occurs." *Id.* Finally, in EPA's Nov. 30, 2016, Technical Support Document for this proposed rule, EPA specifically explained that slag piles from "[i]ron smelting using a blast furnace" are "[p]otential sources and releases of CERCLA hazardous substances." *See* Office of Land and Emergency Management *Technical Support Document: Financial Responsibility Requirements under CERCLA 108(b) Hardrock Mining Industry Proposed Rule: Financial Responsibility Reductions*, EPA (Dec. 1, 2016) at 65, A-6.

[57] *See* National Slag Association, *Iron and Steel Slags – Non-hazards* 1, 2 (1980), http://www.nationalslag.org/sites/nationalslag/files/documents/nsa_194-5_slag_a_non-hazard%20%281%29.pdf.

them and exclude those blast furnaces from being subject to financial assurance regulation under CERCLA § 108(b).

i. Blast furnace operations are also distinct from "Iron and Steel Mills," obviating the need for financial assurance.

Blast furnaces are a type of metallurgical furnace used to produce industrial metals such as iron—essentially, they reduce iron ore to metallic iron. "The purpose of a blast furnace is to chemically reduce and physically convert iron oxides into liquid iron called 'hot metal.' The blast furnace is a huge, steel stack lined with refractory brick, where iron ore, coke and limestone are dumped into the top and preheated air is blown into the bottom."[58] Blast furnaces process the nonhazardous metallic minerals produced by the iron ore mining industry and likewise present minimal risks to health and the environment.[59] Further, EPA did not consider downstream uses of other exempt mining operations. Doing so here is unreasonable and obviates a level playing field.

a. Blast furnaces do not produce hazardous waste.

Blast furnace slag and associated air pollution control dusts and sludges are, like iron ores, low-hazard materials. To start, like with iron ore mining processes, blast furnace processes are excluded from regulation as hazardous waste under RCRA pursuant to the Bevill Amendment.[60] Notably, the co-products from blast furnaces also have been shown to pass the

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[58] *See* John Ricketts, *How a Blast Furnace Works*, American Iron and Steel Institute, http://www.steel.org/making-steel/how-its-made/processes/how-a-blast-furnace-works.aspx.

[59] *See e.g.*, George C. Wang, The Utilization of Slag in Civil Infrastructure Construction, (Woodhead Publ'g. 2017).

[60] *See Special Wastes*, *available at* https://www.epa.gov/hw/special-wastes.

Toxicity Characteristic Leaching Procedure (TCLP) test.[61] In fact, rigorous scientific studies have been conducted to demonstrate that blast furnace slag does not pose a human or ecological health risk, and therefore should not be characterized as "hazardous waste."[62]

From a processing perspective, blast furnaces manage waters from gas cleaning systems through recycle water treatment systems. These water systems are either closed loop or involve a blowdown from the system that is then further treated and discharged under a NPDES permit.[63] Further, blast furnace air pollution control dusts and sludges are disposed of in secure landfills or recycled back to the iron and steel making process.[64] In short, blast furnaces are already well-regulated, and there is no apparent reason for requiring additional financial assurance.

Moreover, blast furnace slag is considered to be a useful *co-product* of the iron-making process.[65] It is managed as a commodity aggregate and used in construction of roadways and as an ingredient in cement manufacturing. It is not considered a waste.[66]

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[61] *See generally* Proctor *et al.*, *Physical and Chemical Characteristics of Blast Furnace, Basic Oxygen Furnace, and Electric Arc Furnace Steel Industry Slags*, 34 Envt'l. Sci. & Tech. 1576-1582 (2000).

[62] *See Id.* at 1581.

[63] *See* EPA, ORCR and OSRTI, *supra* note 34.

[64] *User Guidelines for Waste and Byproduct Materials in Pavement Construction, Current Management Options,* FHWA, https://www.fhwa.dot.gov/publications/research/infrastructure/structures/97148/ssa1.cfm; *see* EPA, ORCR and OSRTI, *supra* note 34; *see generally Technical Resource Document: Ores and Minerals*; *see also Final Technical Document: Mineral Processing and Waste Streams* at *Iron and Steel* and *Elemental Phosphorous* chapters, *available at* https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/part5.pdf.

[65] *Where Does Slag Come From?*, National Slag Association, http://www.nationalslag.org/faq/where-does-slag-come; *see generally Final Technical Document: Mineral Processing and Waste Streams, available at* https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/part5.pdf.

b. Blast furnaces utilize little to no hazardous chemicals.

In addition, no blast furnaces are independently identified as the cause of a RCRA Corrective Action or are listed on the CERCLA NPL, although several lead, copper, and zinc smelters are. Again, this indicates that blast furnaces are low-risk operations from a hazardous waste perspective and that no financial assurance under CERCLA § 108(b) is necessary or should be required.

c. Blast furnace slag has many useful, everyday non-hazardous uses.

Blast furnace slag is one of the key products from blast furnaces, and "consists principally of silicates and alumino-silicates of lime and other bases developed simultaneously with iron in a blast furnace."[67] Blast furnace slag can be cooled in different ways to create different blast furnace slag products that are most often used in connection with subbase construction.[68] The National Slag Association enumerates the following types of slag and their significant uses:

- Granulated Slag: Granulated slag is rapidly cooled by large quantities of water to produce a sand-like granule that is primarily ground into a cement commonly known as GGBS (Ground Granulated Blast FurnaceSlag), or Type S slag cement. It is also mixed with Portland cement clinker to make a blended Type 1S cement.

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[66] *See, e.g., "Whitetopping" Thin Concrete Overlays us Blast Furnace Slag in Wayne County*, National Slag Association., http://www.nationalslag.org/sites/nationalslag/files/nsa_205-1_bf_slag_whitetopping.pdf.

[67] *See Blast Furnace Slag Base and Subbase Aggregates Product Information*, National Slag Association, http://www.nationalslag.org/sites/nationalslag/files/documents/bf_prod_info_sheet.pdf.

[68] *Id.*; *see also Blast Furnace Slag*, National Slag Association, http://www.nationalslag.org/blast-furnace-slag.

- Air-cooled Slag: Blast furnace slag is allowed to slowly cool by ambient air, is processed through a screening and crushing plant and is processed into many sizes for use primarily as a construction aggregate. Common uses are as aggregates in ready-mix concrete, precast concrete, hot mix asphalt aggregate, septic drain fields and pipe backfill.

- Pelletized or Expanded Slag: Pelletized or Expanded Slag is quickly cooled using water or steam to produce a lightweight aggregate that can be used for high fire-rated concrete masonry and lightweight fill applications over marginal soils. Due to its reduced weight, it is perfectly suited for aggregate in lightweight concrete masonry, lightweight ready-mix concrete and lightweight precast concrete.

- Air-cooled Blast Furnace Quote: This smaller sized aggregate is primarily used in chip and seal applications, also known as "Chip Seal" or "Aggregate Seal" Coating", applied to existing pavement surfaces. The primary purpose for Chip and Seal is to achieve a skid resistance on rural pavements and to maximize driving safety. It is also used in concrete masonry, concrete pavement, and hot mix asphalt.

- Air-cooled Blast Furnace Slag rip rap: The largest slag aggregate, riprap is a permanent cover of rock used to stabilize shorelines and streambanks, and prevent erosion along slopes and embankments. It is also used in gabion baskets, Mineral Wool manufacture (insulation), and lightweight fill.

- Slag Cement: Slag cement is commonly found in ready-mix concrete, precast concrete, masonry, soil cement, concrete wallboard, floor leveling compounds and high temperature resistant building products. Its measurable benefits in concrete include improved workability and finishability, high compressive and flexural strengths, and resistance to aggressive chemicals.[69]

These varied and common uses for blast furnace slag further demonstrate the low risk that blast furnaces and their byproducts pose and, therefore, support the exclusion of blast furnaces from requiring financial assurance under CERCLA § 108(b).

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[69] *Id.*

ii. The number of blast furnaces are small and diminishing, and financial assurance is therefore unnecessary.

Blast furnaces support a low risk profile from a CERCLA perspective, especially as there are only 23 blast furnace sites in the United States.[70] Further, the fact that "no new blast furnace has been built in [the United States] since the 1960s"[71] again demonstrates that financial assurance is unnecessary.

iii. The minimal evidence of historical environmental contamination by blast furnaces or blast furnace slag and the modernization of old blast furnace technology further indicate that financial assurance is unnecessary.

In addition to those construction-based uses enumerated above, blast furnace slag has long provided many natural and agricultural benefits.[72] For instance, blast furnace slag has chemical properties that make it "suitable as liming material . . . [serving] not only as a liming agent, neutralizing soil acids, but . . . contain[ing] important micro-nutrients often lacking in soils."[73] Blast furnace slag can also be "used as a permeable reactive barrier to remove contaminants from water."[74]

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[70] *See* General Material Requirements; Buy American Requirements, 60 Fed. Reg. 15478, at 15479 (Mar. 24, 1995).

[71] *See* John W. Miller, *'Times Have Changed': New Plan for a Century-Old U.S. Steel Mill*, Wall Street Journal (Jan. 28, 2014, 7:45 PM), https://blogs.wsj.com/corporate-intelligence/2014/01/28/times-have-changed-new-plan-for-a-century-old-u-s-steel-mill/.

[72] *See, e.g., Iron and Steel Making Slag – Environmentally Responsible Construction Aggregates,* National Slag Association, http://www.nationalslag.org/sites/nationalslag/files/documents/nsa_202-3_environmental_tech_bulletin.pdf.

[73] *See Benefits of Slag Products*, National Slag Association, http://www.nationalslag.org/benefits-slag-products.

[74] *Id.*

And even though new blast furnaces have not been built since the 1960s, many of those still in operation have undergone modernization with heavy investment, necessarily leading to technological updates that continue to minimize any harmful environmental impacts blast furnaces could have.[75]

iv. The existing federal and state regulatory framework governing blast furnace operations is rigorous and thorough, obviating the need for additional financial assurance requirements.

As discussed above, before imposing new financial assurance requirements, EPA should consider current regulatory requirements when evaluating the risk an industry poses to the environment and human health. Blast furnace operations are regulated to adequately reduce and manage associated long-term risks. For example, the Occupational Safety and Health Administration regulates blast furnace products, [76] as does the Federal Highway Administration.[77] And both the states of Michigan and Minnesota impose various regulations on blast furnace operations.[78] And again, both "Air pollution control dust/sludge from iron blast

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[75] *See* Miller, *supra* note 71, *available at* https://blogs.wsj.com/corporate-intelligence/2014/01/28/times-have-changed-new-plan-for-a-century-old-u-s-steel-mill/.

[76] *See Description for 3312: Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills*, OSHA, https://www.osha.gov/pls/imis/sic_manual.display?id=683&tab=description.

[77] *See* Kurt Smith, *Use of Air-Cooled Blast Furnace Slag as Coarse Aggregate in Concrete Pavements*, FHWA, ACPT (Mar. 2012), https://www.fhwa.dot.gov/pavement/concrete/pubs/hif12031.pdf; *see also* 60 Fed. Reg. 15478-15479 (Mar. 24, 1995).

[78] *See* Minn. R. 7045.0120; *see also Section One: Environmental Regulations,* Department of Environmental Quality, State of Michigan, http://www.michigan.gov/documents/deq/deq-ess-caap-manufguide-chap1_313400_7.pdf.

furnaces" and "Iron blast furnace slag" are excluded from regulation as hazardous waste under RCRA pursuant to the Bevill Amendment.[79]

v. The projected clean-up expenditures for blast furnaces are minimal to non-existent, further obviating the need for financial assurance.

As discussed, iron ore blast furnaces are already heavily regulated under both federal and state law, thus already adequately reducing and managing any associated long-term risks. They neither use uniquely hazardous materials, nor produce more than negligible amounts and types of hazardous wastes. And there are numerous productive, non-hazardous uses for blast furnace slag. Accordingly, blast furnaces present extremely low risk of triggering a CERCLA clean-up response, and CERCLA clean-up expenditures are, therefore, projected to be zero or near zero.

vi. Corporate structure and bankruptcy potential

Blast furnace operations are stable. Thus, this factor provides no reason to impose financial assurance requirements on them.

III. Conclusion

In sum, AISI believes that EPA's risk factors, assessed correctly, must result in iron ore mining being excluded from the CERCLA § 108(b) "hardrock mining" definition and from any final financial assurance rule. The historical and current data regarding the iron ore mining industry demonstrate that iron ore mining is a small, well-regulated industry that poses very little risk to human health or the environment. Iron ore mining and the resultant land forms and pit lakes provide a variety of sustainable benefits to surrounding communities, including as drinking water reservoirs, recreational areas, and fisheries for sensitive trout species. The existing federal and state regulatory frameworks adequately address potential CERCLA liabilities from occurring

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[79] *See Special Wastes, available at* https://www.epa.gov/hw/special-wastes.

at these low-risk facilities. Subjecting the iron ore mining industry to new regulation for financial responsibility under CERCLA § 108(b) will yield no benefit to the public and will substantially, unduly burden the industry and surrounding communities that benefit from the jobs created and investments made by the industry.

In addition, AISI urges that EPA clarify that blast furnaces are not included under the Proposed Rule's definition of "mineral processing facility" and are not subject to the financial responsibility regulation under the current CERCLA § 108(b) hardrock mining action. Blast furnace operations are associated with iron and steel mills (NAICS code 331110), are a separate and distinct activity from iron ore mining (NAICS code 212210), and are not co-located with iron ore mines. Further, blast furnaces themselves represent a low-risk activity for the reasons described in previous sections; are already adequately regulated at the state and federal level; and produce a co-product—blast furnace slag—that has numerous practical and common uses that are not only non-hazardous, but can be beneficial to the environment. EPA must, therefore, determine *not* to include blast furnaces in the CERCLA § 108(b) hardrock mining regulation.

AISI thanks EPA for its consideration of these comments.