

STATE CAPITOL  
P.O. Box 110001  
Juneau, AK 99811-0001  
907-465-3500  
fax: 907-465-3532



550 West Seventh Avenue, Suite 1700  
Anchorage, AK 99501  
907-269-7450  
fax 907-269-7461  
www.Gov.Alaska.Gov  
Governor@Alaska.Gov

Governor Bill Walker  
STATE OF ALASKA

July 10, 2017

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

Mr. Kenneth E. Wagner  
Senior Advisor to the Administrator for Regional & State Affairs  
Office of the Administrator  
1200 Pennsylvania Avenue, NW  
MC 1101A Room 3309A WJCN  
Washington, DC  
Email: wagner.kenneth@epa.gov

Dear Administrator Pruitt and Mr. Wagner:

I have enclosed the State of Alaska's comments on the U.S. Environmental Protection Agency's (EPA) proposed regulations "Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry," published in the Federal Register Wednesday, January 11, 2017 (Proposed Rule).<sup>1</sup> These comments were prepared by the State of Alaska, Department of Natural Resources (ADNR), Department of Environmental Conservation (ADEC), and the Alaska Department of Law, who have decades of experience regulating hardrock mines.

Alaskans care very much about protecting water quality and fish habitat in our state. As such, we have built a strong, comprehensive regulatory system to assure the proper management and treatment of mine wastes. Multiple departments (including ADNR, ADEC, and the Alaska Department of Fish and Game) contribute their expertise to Alaska's regulatory program. They also work closely with federal land management agencies such as the United States Forest Service on the permitting, oversight, and closure of mines on federal land. For large mines, coordination between the State and federal agencies is typically facilitated by ADNR's Large Mine Permitting Team

---

<sup>1</sup> Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 Fed. Reg. 3388 (proposed Jan. 11, 2017) (to be codified at 40 C.F.R. pt. 320).

The Honorable Scott Pruitt  
Mr. Kenneth E. Wagner  
CERCLA § 108(b) Proposed Regulations  
July 10, 2017  
Page 2

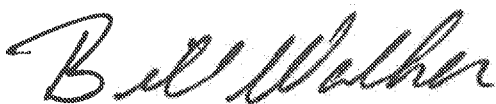
program. Alaska's State regulatory and financial assurance programs already minimize the risk of the release of contaminants from hardrock mining to the environment, calling into question the need for the Proposed Rule in states such as Alaska. I am concerned the Proposed Rule could add significant costs and hurt employment in a valuable industry sector in our state without comparable benefit.

We believe EPA would have greatly benefited in developing its proposal if it would have had more consultation with states, stakeholders, tribes, and federal land management agencies. Because of the lack of adequate consultation, the Proposed Rule does not properly consider or account for existing mine regulation in mining states such as Alaska.

With this submission, I urge the EPA to put aside the current rulemaking and to commence a process of cooperating with states, stakeholders, tribes, and federal land management agencies in order to assess the need for this rule in mining states such as Alaska. If EPA concludes that a rule is required, due consideration should be given to finding the most efficient way of accomplishing the objective of the rule, which might be by having some states supplement their existing regulatory programs rather than creating a new set of federal requirements. Any new federal rulemaking should not duplicate or preempt existing state regulatory programs for mining, and should contain a method for application of programmatic exemptions for mining operations in states with robust regulatory programs that already minimize the risk of a release of hazardous substances.

Most importantly, the State of Alaska maintains its previously articulated concerns that despite the EPA's stated intent in the rulemaking document, it has not fully addressed potential duplication of State programs and resulting unintended or unanticipated consequences to State interests due to the preemption of certain aspects of existing State regulatory programs through promulgation of the proposed rule.

Sincerely,



Bill Walker  
Governor

Enclosure

cc: The Honorable Lisa Murkowski, United States Senate  
The Honorable Dan Sullivan, United States Senate  
The Honorable Don Young, United States House of Representatives



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

Department of Environmental Conservation

Department of Law

Department of Natural Resources

THROUGH DNR COMMISSIONER'S OFFICE

550 West Seventh Avenue, Suite 1400

Anchorage, AK 99501

Main: 907.269.6431

Fax: 907.269.8918

July 10, 2017

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

Kenneth E. Wagner  
Senior Advisor to the Administrator for Regional & State Affairs  
Office of the Administrator  
1200 Pennsylvania Avenue, NW  
MC 1101A Room 3309A WJCN  
Washington, DC 20460  
Email: [wagner.kenneth@epa.gov](mailto:wagner.kenneth@epa.gov)

Re: State of Alaska Comments on Financial Responsibility Requirements  
Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining  
Industry.

Dear Administrator Pruitt:

This letter contains the comments of the State of Alaska, prepared by the Alaska Departments of Environmental Conservation (ADEC), Natural Resources (ADNR), and Law (ADOL) (collectively "the State of Alaska"), in response to the request for comments on the U.S. Environmental Protection Agency's (EPA) proposed regulations "Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry" ("Proposed Rule"), published in the Federal Register on January 11, 2017.<sup>1</sup>

---

<sup>1</sup> Financial Responsibility Requirements Under CERCLA § 108(b) for Classes of Facilities in the Hardrock Mining Industry, 82 Fed. Reg. 3388 (proposed Jan. 11, 2017) (to be codified at 40 C.F.R. pt. 320).

ADNR and ADEC have an interest in the Proposed Rule as regulators of mining activities in Alaska. ADNR regulates mineral exploration and mining projects through its Division of Mining, Land and Water (DMLW). ADNR also is interested in this rule because it serves as the land management agency for the state. ADNR manages significant state mineral resources that generate revenue for the state through rents, royalties, and taxes.<sup>2</sup> ADEC regulates mining in Alaska through the Division of Water, which includes the Alaska Pollutant Discharge Elimination System (APDES) Program and the Division of Environmental Health and its Solid Waste Program. ADOL advises ADNR and ADEC in the administration of these programs. ADNR and ADEC work together and coordinate with other relevant state or federal agencies<sup>3</sup> to regulate hardrock mines in Alaska through the Large Mine Project Team, a component of Alaska's Office of Project Management and Permitting (OPMP).

Alaska is one of the states that will be most affected by this rule. Mining claims and prospecting sites in Alaska covered approximately 3.8 million acres in 2015, with 6,074 active Federal and 42,454 active State mining claims.<sup>4</sup> The State of Alaska has significant concerns that requiring additional financial assurances for CERCLA § 108(b) liability for mine projects subject to the Proposed Rule may unreasonably affect mine project feasibility and reduce the opportunity for private, native, state and federal land owners to extract minerals from their lands and generate revenues. To the extent that Alaska's regulation of mining already reduces the risk of hazardous waste contamination and release, it appears that these potential negative impacts to the mining industry may not be balanced by an appreciable increase in protection of the environment and human health.

In addition to the comments below, the State of Alaska incorporates by reference and joins in the comments made by the Interstate Mining Compact Commission (IMCC). Particularly, the State of Alaska agrees with the IMCC that the Proposed Rule is convoluted, potentially duplicative of state and Federal Land Management Agency

---

<sup>2</sup> Alaska received \$11,849,585 in rents and royalties from hardrock mining on state claims and leases in 2015, and \$38,665,209 in mining license tax revenues from all mining operations in the state that year, as well as corporate income taxes from mining companies (\$17,320,051). Alaska's Mineral Industry Special Report 71, at 6, found at <http://dggs.alaska.gov/webpubs/dggs/sr/text/sr071.pdf>, attached as Attachment A (last accessed July 10, 2017).

<sup>3</sup> Relevant state and federal agencies include Alaska Fish and Game, United States Forest Service (USFS), and the Bureau of Land Management (BLM).

<sup>4</sup> State of Alaska Special Report 71, Alaska's Mineral Industry 2015, Executive Summary, attached as Attachment A.

(FLMA) programs, and is cause for concern regarding possible preemption of state programs. Further, as a result of unfortunately inadequate consultation with states and state regulatory agencies, the EPA did not properly consider the extent to which current state and FLMA programs have already reduced the degree and duration of risk of release of hazardous substances at hardrock mining facilities. As a result, the EPA has failed to demonstrate the need for a national CERCLA § 108(b) rule for hardrock mining, such that a “no action” determination is warranted.

However, if the EPA is compelled to implement a rule, it should withdraw the Proposed Rule and begin a rulemaking process that collaborates with the mining states, FLMAs, tribes, and stakeholders to explore a different approach—one that includes options such as exemptions for state and FLMA programs. Further, if EPA must proceed with a rulemaking, EPA should work to complete a gap analysis for existing state programs. If it does so, it should do it on a timeline that is adequate for a thoughtful and cooperative approach required to address the complex issues implicated by the rule, including federalism concerns, and the need for additional feedback from the states, the mining industry, and other stakeholders. The State of Alaska is concerned that the current timelines in this rulemaking are reactive and driven by litigation, instead of by the actual time necessary for considered rule development. Generally, such litigation-driven deadlines will not produce optimal result, and may have unintended consequences including failure to appreciably reduce risk of the release of hazardous materials, adverse economic impacts, and other negative results.

The State’s additional comments below are organized first by general topic area, then by the Proposed Rule subsection and/or Federal Register page.

**I. EPA’s consultation with States was inadequate and failed to fully consider and address the extent to which Alaska’s existing regulatory program already reduces the risk of CERCLA liabilities.**

The EPA’s consultation with the State during the drafting of its Proposed Rule was inadequate considering the federalism and preemption concerns, which the EPA acknowledged as being key issues for this rulemaking.<sup>5</sup> The lack of adequate consultation with the State of Alaska is particularly troubling because according to the EPA, approximately one-third of the universe of facilities potentially subject to the Proposed Rule are located in Alaska and Nevada, with approximately 60 of the 354 total potentially

---

<sup>5</sup> See preemption discussion, 82 Fed. Reg. at 3402-04.

subject facilities located in Alaska.<sup>6</sup> The EPA should have consulted extensively with both states as a result, given the large number of impacted facilities located in the two states.

This rulemaking implicated federalism and preemption concerns that required close cooperation with the states. Pursuant to Executive Order 13132, the EPA should consult with state governments where it considers creating policies with federalism or preemption implications.<sup>7</sup> Here, as discussed below, the EPA failed in its duties under the Executive Order to “consult[] with State and local officials early in the process of developing the proposed regulation,” and to “ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.”<sup>8</sup> Specifically, the EPA failed in its requirement regarding preemption that states “[w]hen an agency foresees the possibility of a conflict between State law and Federally protected interest within its area of regulatory responsibility, the agency shall consult, to the extent practicable, with appropriate State and local officials in an effort to avoid such a conflict.”<sup>9</sup> The EPA did not properly consult with the states to consider “alternatives that would limit the scope,”<sup>10</sup> of the proposed rule, or otherwise properly consult with states in order to avoid possibility of conflicts between state and federal law.<sup>11</sup>

While there were indications that the process would be more inclusive early in the EPA’s rule drafting process, the hope of collaboration did not ultimately come to fruition. Before the January 2017 publication of the Proposed Rule, the EPA held a webinar and two teleconferences with the States. Despite requests for more information during the May 17, 2016 Webinar regarding preemption on the EPA’s financial responsibility requirements, none was forthcoming. This lack of communication in turn made it difficult for states to provide helpful or particularly substantive comments to the EPA during the development of the Proposed Rule. Engaging more meaningfully with states would result in a better understanding of state mining regulatory programs and how these programs

---

<sup>6</sup> CERCLA 108(b) Financial Responsibility for Hardrock Mining Facilities Background Document—Peer Review Draft, Docket No. EPA-HQ-SFUND-2015-0781-0500, at pp. 3-6, 3-11 and Appendix E.

<sup>7</sup> Exec. Order No. 13132, 64 Fed. Reg. 43255 (Aug. 4, 1999).

<sup>8</sup> *Id.* at 43257 (Sec. 6, Consultation).

<sup>9</sup> *Id.* at 43257 (Sec. 4, Special Requirements for Preemption).

<sup>10</sup> *Id.* at 43527.

<sup>11</sup> *Id.*

already reduce CERCLA liability risk. States could provide EPA current expertise on issues such as the response categories and reduction criteria proposed.

The need for better consultation with states is evidenced by the proposed rulemaking itself, which provides a skeletal description of several key proposed rule elements such as programmatic deferral and how reduction criteria would be evaluated and applied. The idea of a programmatic deferral, or exemption for facilities in states that contained certain minimum management practice requirements that meet or exceed the Proposed Rule, is proposed by the EPA as a possibility, but there is no detail or specific proposal as to how such programmatic deferral would work in practice.<sup>12</sup> Similarly, while the EPA describes specific reduction criteria in the Proposed Rule, the rule, and EPA's narrative, are sparse on how reduction criteria will be evaluated to determine actual reductions "in whole or in part."<sup>13</sup> The EPA requested comment on the idea of a programmatic deferral, but it is difficult to comment in a meaningful way without more description of what programmatic deferral would entail. Elements such as programmatic deferral or reduction criteria would be key components of any final rule, further indicating that even if the EPA moves forward with a rulemaking, significant further discussion and consultation with the States is required.

Instead of close consultation with Alaska throughout the (approximately) 7 years of development of the Proposed Rule,<sup>14</sup> the extent of EPA's direct involvement with Alaska during the rulemaking was primarily to request the review of a "Summary of Alaska Financial Responsibility Requirements" document in 2010. This document is found in the "supporting documents" folder of the docket for the Proposed Rule, attached in draft form to the Final Report of the Small Business Advocacy Review Panel (SBAR Panel Report).<sup>15</sup> It is unclear how much the EPA ultimately considered this Summary, and the extent to which they considered the SBAR Panel Report in the rulemaking, as the SBAR Report is dated December 2016 (the date of the pre-publication distribution of the rule).<sup>16</sup> It appears that the EPA did not conduct any further detailed review of the broad regulatory requirements of the State of Alaska for reviewing applications for permits for

---

<sup>12</sup> 82 Fed. Reg. at 3468-70.

<sup>13</sup> Section 320.63(c) and (d) of proposed rule; 82 Fed. Reg. at 3505-09.

<sup>14</sup> The Priority Notice was published in 2009, the Proposed Rule was published in January 2017.

<sup>15</sup> Final Report of the Small Business Advocacy Review Panel on EPA's Planned Proposed Rule, dated December 1, 2016 ("SBAR Panel Report") (EPA-HQ-SFUND-2015-0781-1840) and attachments (Alaska State Summary).

<sup>16</sup> Docket No. EPA-HQ-SFUND-2015-0781-1840.

hard rock mines in Alaska, and how state agencies implement the relevant legal authorities.<sup>17</sup> Consequently, the EPA did not adequately consider resources available to them, let alone sufficiently consult with Alaska during development of the proposed rule, resulting in a “one-size fits all approach.”

The EPA’s Proposed Rule contains criteria which, if met, result in reductions to the response and natural resource damage components of financial responsibility of a facility. It appears these reductions could even reduce those portions of the financial responsibility formula to zero individual financial assurance required.<sup>18</sup> Thus, the EPA, in the text of its Proposed Rule itself appears to recognize the general concept that rigorous, enforceable state management and reclamation and closure standards, with accompanying financial assurances, reduce the level of risk of release of hazardous substances and resulting CERCLA liability at a facility such that CERCLA § 108(b) individual financial assurance is not required. This brings into question the necessity of this rulemaking at all, if the impact of substantive state and FLMA management is to already reduce the level of risk of release of hazardous substances at hardrock mining facilities such that it is minimal.<sup>19</sup>

In light of the significant regulatory oversight by both state and federal regulators in Alaska, the State urges the EPA to consider reassessing the need for the proposed rule. As noted by the SBAR Panel, while the EPA argues that its CERCLA § 108(b) rulemaking “fills the gap where other regulations fail to prevent releases or threatened releases of hazardous substances,” the EPA also states that “[a]t the same time ... EPA recognizes that existing closure and reclamation requirements that are supported by adequate financial assurance can reduce the level of risk at a facility.”<sup>20</sup> The SBAR Panel, in the context of FLMA programs, perceptively notes that while the EPA does account for the reduction of risk that results from FLMA programs, it does so through application of reductions in the *amount* of financial responsibility, but does not consider the reduction in risk as part of its assessment to “determin[e] whether CERCLA § 108(b)

---

<sup>17</sup> Elsewhere in the docket of Supporting Documents for the Proposed Rule is a shorter, less complete summary of Alaska’s regulatory requirements. Docket No. EPA-HQ-SFUND-2015-0781-2170. This summary contains omissions regarding the Alaska program, including the failure to address how ADNRR’s reclamation bonds for lode mines are not limited to \$750 per acre.

<sup>18</sup> Section 320.63(c) through (d) of Proposed Rule; 82 Fed. Reg. at 3504-09.

<sup>19</sup> Section 320.63(c) of proposed rule; 82 Fed. Reg. at 3505.

<sup>20</sup> SBAR Panel Report, Docket No. EPA-HQ-SFUND-2015-0781-1840, at 9.

requirements *apply*” in the first place (emphasis added).<sup>21</sup> The similar shortfall in consultation with states has resulted in a failure of the EPA to adequately demonstrate a need for a CERCLA § 108(b) individual financial responsibility program for hardrock mines in states such as Alaska that already have significant regulations and financial assurance requirements in place. The shortfall also further highlights the legitimacy of the State of Alaska’s preemption concerns (discussed *infra*). While the EPA concludes in its rulemaking that the Proposed Rule will not impact state regulatory and financial assurance programs, the Proposed Rule itself essentially contemplates the use of state program standards and requirements as a major aspect of its reduction criteria.<sup>22</sup>

**II. As a result of inadequate consultation, the EPA’s approach in the Proposed Rule is “one size fits all” and does not account for robust state programs such as Alaska’s regulation of hardrock mining.**

As a result of inadequate consultation with states, the EPA developed a “one-size-fits-all” rule and formula—an approach that does not adequately consider the fact that the climatic, geographic, geologic, and other environmental conditions at each mining facility are unique, particularly in a state such as Alaska. Mine development in Alaska presents a set of unique conditions and challenges to planning mine operation and reclamation and closure activities related to mine projects. Mines in Alaska vary in location from above the Arctic Circle to the Alexander Archipelago Islands in southeast Alaska. Few operations in Alaska have access to the public highway system, leaving them reliant on winter surface trails, air and/or water-based transportation to move needed supplies in and ore products out. The EPA would have benefitted from more substantial consultation with Alaska and other States in order to gain a firm understanding of the challenges faced by state regulators in Alaska and how regulators address these challenges. The Proposed Rule directly conflicts with the EPA statement on page 1 of its publication “EPA and Hardrock Mining: A Source Book for Industry in the Northwest and Alaska” (2003)<sup>23</sup> which states:

Given the unique character of each mining operation and the wide variety of environments in which they may operate, it is impractical for the Region to develop specific detailed instructions that would apply to all sites. Consequently, this document is general in nature

---

<sup>21</sup> *Id.*

<sup>22</sup> *See, e.g.,* Section 320.63(c) of Proposed Rule; 82 Fed. Reg. at 3505.

<sup>23</sup> EPA and Hardrock Mining: A Source Book for Industry in the Northwest and Alaska, U.S. Environmental Protection Agency, Region 10, at 1 (January 2013), Docket No. EPA-HQ-SFUND-2015-0781-0277.

and applicants should not view anything in this guidance as ‘mandatory’ or prescriptive.<sup>24</sup>

It is clear from the rulemaking and supporting documents that the EPA did not adequately consider how Alaska’s regulatory program already minimizes the degree and duration of risk of a release of hazardous materials associated with hardrock mining facilities. As described below, rigorous management of hardrock mining in Alaska by ADNR and ADEC (in conjunction with FLMAs such as the Forest Service or other state agencies such as Alaska Fish and Game or Alaska Department of Health and Social Services), reduces the risk of release of hazardous substances while maintaining the flexibility to address conditions at each mine with a site-specific approach.

**A. Background regarding Alaska State regulation of Hardrock mines.**

EPA’s early consultation with the State of Alaska was not continued or completed, and as a result the EPA appears to lack a thorough understanding of Alaska’s program and how it reduces risk. Alaska’s regulation of mining is composed of programs within ADNR and ADEC that are both robust and flexible. ADNR and ADEC both exercise bonding/financial assurance authority over mines operating in Alaska. Alaska sent a description of its financial assurance authority to the EPA in a letter dated February 11, 2011.<sup>25</sup> That letter provided an overview of the primary regulatory and financial assurance and bonding requirements applicable to Alaska mines. Additionally, as mentioned above, it appears based on the rule docket that the EPA began, but apparently did not complete, a very general descriptive overview of Alaska’s regulation of mines.<sup>26</sup> The EPA draft summary would have benefited from further discussion between the EPA and the State of Alaska regarding program implementation. In addition to the description below, attached to this comment letter is an additional narrative overview of Alaska’s mine regulation program (Attachment C), and a chart and narrative description regarding Alaska statutes and how state agencies, through relevant permit and authorization authority, supported by financial assurances, address the substance of everyday management and regulation regarding the response and reduction categories listed in the draft rule, minimizing risk of hazardous release (Attachment D).

**B. ADNR and ADEC regulatory and financial assurance programs.**

---

<sup>24</sup> *Id.*

<sup>25</sup> Letter from C. Leonard to J. Berlow, dated February 11, 2011, “Re: Potential Preemption Effects of CERCLA Bonding Rules,” Docket No. EPA-HQ-SFUND-2015-0781-0385; *see also* Attachment B, Letter from E. Fogels to A. Krueger, dated August 17, 2016.

<sup>26</sup> Docket No. EPA-HQ-SFUND-2015-0781-1840.

ADNR maintains reclamation regulatory and bonding and financial assurance authority over mines on state, private, municipal, and federal land and water pursuant to AS 27.19, the Alaska Mine Reclamation Act. The Act and its regulations, found at 11 AAC 97, provide broad discretion and authority to ADNR to enforce reclamation standards such that “[a] mining operation shall be conducted in a manner that prevents unnecessary and undue degradation of land and water resources, and the mining operation shall be reclaimed as contemporaneously as practicable with the mining operation to leave the site in a stable condition.”<sup>27</sup> Bonding authority is found specifically at AS 27.19.040 (reclamation financial assurance). Pursuant to AS 27.19.040(a), individual financial assurance is required in an amount “not to exceed an amount reasonably necessary to ensure the faithful performance of the requirements of the approved reclamation plan.” The amount of financial assurance is to reflect “the reasonable and probable costs of reclamation.” *Id.* Participation in a bond pool is available for certain operations that do not chemically process ore or have the potential to generate acid.<sup>28</sup> The amount of financial assurance may not exceed \$750 per acre, but this limitation does not apply to a lode mine.<sup>29</sup> Financial assurance may be submitted in a form approved by ADNR, and possible forms include a surety bond, letter of credit, certificate of deposit, payments into a statutorily established mine reclamation trust fund (AS 37.14.800), or any “other form of financial assurance that meets the financial test or other conditions set in regulations by the commissioner.”<sup>30</sup>

ADNR also requires a financial assurance where the mine plan includes a dam. Regulations for dams in Alaska include progressive design, construction, operation and closure requirements including financial assurance requirements for “the costs of safely breaching the dam at the end of the dam’s service life and restoring the stream channel and reservoir land to natural conditions, or for the costs of performing reclamation and post-closure monitoring and maintenance.”<sup>31</sup> If the dam has an indefinite service life, the financial assurance must be sufficient to pay for the cost of post-closure monitoring, operation, maintenance and inspection (11 AAC 93.172(a)(6)(C)) if the final configuration of a mine tailings dam constitutes a dam under AS 46.17.900 after mine

---

<sup>27</sup> AS 27.19.020.

<sup>28</sup> AS 27.19.040(b).

<sup>29</sup> A lode mine is defined as “a mining operation that removes the minerals from consolidated rock rather than from a placer deposit.” AS 27.19.100(1).

<sup>30</sup> AS 27.19.040(e)(1)-(6). Financial test regulations have not been established and therefore this option is not currently an option.

<sup>31</sup> 11 AAC 93.171(f)(2)(C)(ii).

closure (11 AAC 93.172(a)(5)(D)) and remains subject to the Alaska dam safety regulations. While the dam safety requirements do not specifically require financial assurance to cover a worst case scenario-style unplanned release, they require the operation and maintenance plans and financial resources to ensure that the facilities are not neglected and the dam remains in safe condition, thereby reducing the risk and preventing an unplanned release if hazardous materials are contained. The Alaska dam safety regulations also include requirements for contingencies in an emergency action plan (11 AAC 93.164). The necessary site reclamation work is covered under financial assurance requirements of AS 27.19 in the event the miner fails to meet reclamation obligations for other aspects of the mine.

ADEC regulates mining waste disposal facilities for an operation that “chemically processes ores or has the potential to generate acid.”<sup>32</sup> Essentially all large hard-rock mines in the state have facilities regulated under this authority because of the mill processes, although not all projects have to manage acid rock drainage (ARD). The associated financial assurance ensures that the facility is managed and closed “in a manner that the department finds will control or minimize the risk of the release of unauthorized levels of pollutants from the facility to waters.”<sup>33</sup>

Like ADNR, ADEC provides that financial assurance requirements may be satisfied by several different financial assurance mechanisms or instruments.<sup>34</sup>

Alaska also provides a mechanism for protecting the public interest in reclaiming mine sites through the “mine reclamation trust fund.”<sup>35</sup> The trust fund is another mechanism through which a miner and ADNR may outline a schedule of payments into the trust fund and outline the relationship of the payments and earnings to reclamation obligations under AS 27.19.040.

Inter-agency cooperation regarding regulation of mines is led by ADNR. ADNR administers a coordinated mine permitting program under Alaska Statutes (AS) 38.05.020(b)(9) and 27.05.010(b). For most large mines, ADNR coordinates with ADEC, federal and other state regulatory agencies to ensure that the various permitting processes, including bonding, are completed in a consistent manner with minimal duplication or contradiction. This includes seeking formal cooperating agency status under the National Environmental Policy Act (NEPA); facilitating the Large Mine

---

<sup>32</sup> AS 46.03.100(f).

<sup>33</sup> AS 46.03.100(f). “Waters” includes groundwater.

<sup>34</sup> See AS 27.19.040(e); AS 46.03.100(f), AS 27.19.060, AS 46.03.100(f).

<sup>35</sup> AS 37.14.800 et seq.

Permitting Team comprised of federal, state, and local government experts to review mine plans and technical information; maintaining project-specific authorizations, monitoring reports, and NEPA documents on the Large Mine Permitting website;<sup>36</sup> and providing a project coordinator for each large hardrock mine project, who functions as the primary point-of-contact for intergovernmental and public inquiries.

In addition to operational regulation of the hardrock mining industry, ADEC also manages a response account that may be used to finance the state's response to an oil or hazardous substance release disaster declared by the governor, or to address a release or threatened release that poses an imminent and substantial threat to the public health welfare, or to the environment.<sup>37</sup> The response account is funded through a surcharge on Alaskan crude oil production and is currently capped at \$50 million. ADEC authority to access the response account comes from AS 46.08.040(a)(1)(A), which states that "... the commissioner of environmental conservation may use money from the response account in the fund when authorized by AS 46.08.045, to . . . contain, clean up, and take other necessary actions, such as monitoring and assessing, to address a release or threatened release of oil or a hazardous substance that poses an imminent and substantial threat to the public health or welfare, or to the environment."

Under AS 46.09.020 the person causing a spill of a hazardous substance is responsible for promptly containing and cleaning up the release. If there is a catastrophic failure resulting in release of a hazardous substances at a hard rock mine, ADEC would expect the mine to conduct the response with the State providing regulatory oversight. If a hazardous substance release is determined by ADEC as posing an imminent and substantial threat, a response account for cost recovery would be created, which may include the costs of personnel, travel, equipment and contractors necessary to conduct the action. If ADEC determines that a Responsible Party's containment and cleanup efforts are inadequate to protect human health, safety, or welfare, or the environment ADEC can direct the Responsible party to take additional measures or the State can initiate cleanup activities or a combination of the two. In the event of an inadequate response by the responsible party, the State may take over the response action completely and track response action costs for cost recovery. Alaska regulation 18 AAC 75.320 outlines the criteria that the State must consider when making an inadequacy determination. Cost recovery authority for unauthorized hazardous release is provided by AS 46.03.822 which establishes strict liability for the release of hazardous substances by designating that persons are strictly liable, jointly and severally, for damages, for the costs of response, containment, removal, or remedial action and the costs of projects or activities

---

<sup>36</sup> <http://dnr.alaska.gov/mlw/mining/largemine/index.cfm>.

<sup>37</sup> AS 46.08.040.

that are delayed or lost resulting from an unpermitted release of a hazardous substance or the substantial threat of an unpermitted release of a hazardous substance.

Alaska's mining regulatory authorities are broad and flexible enough to be applied on an individual basis to each different mine to maximize stringent regulatory goals. Alaska's authorities result in a minimum degree and duration of risk associated with production, transportation, treatment, storage, or disposal of hazardous substances present at a hardrock mining facility, bringing into question the need for an additional CERCLA § 108(b) individual financial responsibility program as proposed by the EPA in a state such as Alaska.

### **III. The State of Alaska maintains its previously articulated preemption concerns.**

Alaska maintains its concerns that the proposed rule may preempt or otherwise seek to replace, account for, or otherwise dictate state law and regulatory requirements. Throughout the text of the rulemaking document, and particularly on pages 3402-3404 (Part V) the EPA consistently states that it "does not intend its CERCLA §108(b) regulations to result in widespread displacement of [state regulatory] programs, nor does [it] believe that such preemption is intended by CERCLA, nor necessary or appropriate."<sup>38</sup> Alaska agrees with this statement and appreciates the EPA's stated intent that its regulations do not preempt state bonding programs. However, Alaska remains concerned regarding possible unintended preemption of state programs and believes the EPA needs to work further with states regarding the issue.

CERCLA § 114(d) addresses financial responsibility of an owner or operator of facility under State or local law, rule, or regulation, and states that:

Except as provided in this subchapter, no owner or operator of a vessel or facility who establishes and maintains evidence of financial responsibility in accordance with this subchapter shall be required under any State or local law, rule, or regulation to establish or maintain any other evidence of financial responsibility in connection with liability for the release of a hazardous substance from such vessel or facility. Evidence of compliance with the financial responsibility requirements of this subchapter shall be accepted by a State in lieu of any other requirement of financial responsibility imposed by such State in connection with liability for the release of a hazardous substance from such vessel or facility.<sup>39</sup>

---

<sup>38</sup> 82 Fed. Reg. at 3403.

<sup>39</sup> 42 U.S.C. § 9614.

The EPA addresses its view of the potential effects of this provision on pages 3403 of the rulemaking. While the EPA asserts that CERCLA Section 114(d) does not give a broad preemptive effect to Section 108(b), the State of Alaska notes that that EPA itself acknowledges that many state programs with differing goals from those of CERCLA may “be connected with the release of hazardous substances.”<sup>40</sup> Alaska is one such state—its regulatory programs have numerous goals for responsible development of hardrock resources, but an obvious goal of any hardrock management program is to minimize any risk of potential release of hazardous materials. The State of Alaska remains concerned that unintended preemption effects could negatively impact Alaska and other state’s abilities to regulate mining operations and to encourage best practices. Such statements indicate that further consultation with states, including Alaska, is required to ensure that the EPA fully understands any potential unintended preemptive effects of its rulemaking. Alaska agrees with the IMCC, which notes that ultimately, it will be a court, not the EPA, which decides if there is preemption, and that therefore EPA’s general views on preemption, while appreciated, are not “particularly consoling” to states if a court ultimately rules that there is preemption, which could result in states funding reclamation and closure work, regardless of its relation to hazardous releases as a result of key regulatory and financial assurance elements of a state’s program being preempted.<sup>41</sup>

The potential preemption of state programs is especially concerning if the value of the financial assurance required by the EPA under CERCLA § 108(b) is less than the amount calculated under the current state and federal regulatory processes, and also because state programs address and attempt to minimize many risks besides the risk of release or contamination from hazardous substances. For any particular further action, the EPA should consult with states more closely than previously to ensure that it has a thorough understanding of state programs such that it can ensure avoidance of any preemptive effects.

#### **IV. Additional section-specific comments.**

The below section includes specific comments that are offered in the event that the EPA decides to move forward with the proposed rule, a path of action the State urges against.

---

<sup>40</sup> 82 Fed. Reg. at 3403.

<sup>41</sup> IMCC Comments.

**A. Executive summary and background information.**

**1. General comment.**

On page 3395, the EPA notes that it did not have “sufficient data to model and quantify the potential changes in mines’ employment levels as a result of the proposed regulation,” citing to existing fluctuations in the minerals industry. Such lack of information on the impact of the Proposed Rule indicates further research and consultation with states is needed on this topic. The impact of this rulemaking on jobs in the mining industries is extremely important for the State of Alaska. The EPA should attempt to conduct such an analysis and work with the states to ensure the impact is accurately understood.

**2. Discussion of the availability of CERCLA § 108(b) financial responsibility instruments required by the Proposed Rule.**

On page 3399 of the Federal Register announcement, the EPA stated that “the ultimate availability of CERCLA § 108(b) financial responsibility instruments cannot be predicted with certainty until the final rule has been promulgated.” This raises questions about the achievability of this rule given uncertainty regarding the ability to even obtain the financial responsibility instruments proposed.

**B. Proposed Rule text, Subparts A through C.**

**1. § 320.1-320.50.**

These sections describe the general financial responsibility requirements and the available financial instruments. The State questions the potential viability of the types of instruments dictated by the Proposed Rules.

The EPA indicates that its goal is that the Proposed Rule will “set up a regulatory program for multiple classes of facilities,” and that there are several basic provisions of the Proposed Rule “intended to be used in conjunction with the class-specific requirements in Subparts D-Z.”<sup>42</sup> Thus, these sections are intended to apply to not only hardrock facilities but other regulated facilities for which EPA will promulgate rules in the future. The EPA should consider leaving open future applicability of these sections to other industries, which might have different, individualized requirements. Further, industries and stakeholders might not have taken this opportunity to consider and

---

<sup>42</sup> 82 Fed. Reg. at 3399.

comment on these sections as part of this rulemaking, focused on hardrock mining facilities.

Section 320.1(b) states that the amount of financial responsibility under this part “must be consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances at their facilities.”<sup>43</sup> It is unclear how this provision would be enforced, given that provisions in Subpart H require financial assurances which may or may not be consistent with the degree and duration of risk where compliance with a robust state program has reduced the risk.

These sections reference Sections 300.25 and 300.27, which do not appear to exist.

## **2. § 320.9 Requirements for Public Notice.**

The EPA proposes two approaches for public notice procedures: first, requiring the owner operator to maintain a website to convey information regarding its compliance with Part 320; second, the EPA would provide information to the public on the Agency’s website. Public access to relevant information via the internet on various private websites could be confusing, inconsistent, and a barrier to public understanding and engagement. It is recommended that information that is required under the Proposed Rule and relevant to compliance by the owner or operator be made publicly available through the EPA’s website. Taking this approach will better serve the public interest by providing a single location (i.e. web portal) for the public to access information on all projects subject to the Proposed Rule, and provide the information in a consistent manner that complies with federal government internet protocols.

## **3. § 320.22 Maintenance of Instruments.**

The Proposed Rule would require the owner or operator to recalculate the financial responsibility level every three years. Given the scope and complexity of many modern mines the time to thoroughly evaluate the plan of operations, calculate financial responsibilities, submit them for review by the regulatory agencies, and allow completion of the administrative review process, requiring owners or operators to recalculate their financial responsibilities every three years will likely generate a never-ending cycle of analysis and revision. Moreover, the relatively short renewal period may cause the public to be less engaged over time, as it will appear that the bonding is continually under review and ever changing. A five-year minimum period between required updates of the financial responsibilities has proven to be practical and efficient in Alaska. However, the

---

<sup>43</sup> 82 Fed. Reg. at 3486.

Proposed Rule should allow for recalculation of the financial responsibilities if substantive changes to the approved plan of operations occur within the five-year period.

**4. § 320.27 Release from Financial responsibility requirements.**

It is explained that the financial responsibility requirements are released “when EPA makes a determination that the risks from the facility are minimal.”<sup>44</sup> However, there is no standard articulated which will be followed in making this determination. There is no clear discussion of whether there will be a release of responsibility at closure or whether it will continue post-closure. Although the discussion at pp. 3413-15 indicates that there will be responsibility continued after closure, it is not clear for what length of time. The standard articulated in the Proposed Rule is that the EPA must determine that the “degree and duration of risk” is “minimal.”<sup>45</sup> This is a subjective standard that provides little parameters for guidance. The risks of a release decrease significantly post-closure, as noted in Figure 7 in Bulletin 121 of “Tailings Dams—Risk of Dangerous Occurrences” published by the International Commission on Large Dams which shows that the number of incidents at “inactive” tailings dams is measurably less than for “active” tailings dams.<sup>46</sup>

**5. General comment: Intergovernmental coordination.**

The EPA’s proposed rule under CERCLA § 108(b) does not provide direction to the EPA to work cooperatively with states and FLMAs with regulatory authority over mining activities. The State of Alaska administers a coordinated mine permitting program under AS 38.05.020(b)(9) and 27.05.010(b) and often obtains formal cooperating status with federal agencies for environmental reviews of natural resource development projects administered under NEPA.

**C. Proposed Rule text, Subpart H - Hardrock mines.**

**1. § 320.60 Applicability.**

This section appears to be missing a section (b) which is referenced in section (a). The Proposed Rule appears to apply to hardrock mines less than five disturbed acres if

---

<sup>44</sup> 82 Fed. Reg. at 3389.

<sup>45</sup> 82 Fed. Reg. at 3415.

<sup>46</sup> International Commission on Large Dams, Bulletin 121 of “Tailings Dams—Risk of Dangerous Occurrences: Lessons learnt from practical experiences” (2001) at 72, attached as Attachment E.

they are located within one mile of another area of mine disturbance that occurred in the prior 10-year period. The reasoning for these restrictions is not adequately explained, and both the 1-mile requirement and the 10-year restriction appear arbitrary. Although the intent of the Proposed Rule is clearly to have it apply to “current owners or operators of facilities that manage hazardous substances,”<sup>47</sup> the definition of facilities that fall under the Proposed Rule is broad enough that it appears probable that facilities that do *not* manage hazardous substances or otherwise present any risk of CERCLA liability could fall under the Proposed Rule. The EPA estimates that approximately 60 mines in Alaska might be impacted by this assessment. Did the EPA assess whether any of these mines did or did not pose a probable risk for release of a hazardous material? The EPA requested comment on whether it would be feasible and appropriate to identify additional classes of hardrock mining facilities as presenting a lower level of risk of injury.<sup>48</sup> It appears it would be both feasible and appropriate to exclude additional classes from this rulemaking, as the EPA’s universe of regulated facilities is overly broad.

## **2. § 320.61 Timeframe for compliance.**

If the EPA considers working with the states and ultimately promulgating a rule which contains program exemption or deferrals, EPA should also include a timeframe for states to have the opportunity to amend programs as may be required for an exemption or deferral. *See also IMCC Comments.*

## **3. § 320.62 Definitions.**

The definition of “disturbed area” includes items such as roads. As the intent of the Proposed Rule is to address potential liability under CERCLA for hazardous waste spills, not general reclamation, it is unclear why items such as “roads” are included in the disturbed acreage. Further, the definition of exploration appears to exclude any instance where materials are sold, which is overly narrow, as small exploration projects might sell small amounts of minerals recovered, but still not present any CERCLA risk.

## **4. § 320.63 Determining the Financial Responsibility Amount.**

The EPA did not confer adequately with the states regarding data and information used to develop the financial responsibility formula (discussed, in part, at 82 Fed. Reg. 3474-80). The EPA should confer with states regarding the necessity of developing CERCLA § 108(b) financial responsibility at all, and if it does ultimately decide to require financial responsibility instruments, the EPA should work with states to develop

---

<sup>47</sup> 82 Fed. Reg. at 3389.

<sup>48</sup> 82 Fed. Reg. at 3456.

programmatic exemptions for states with robust programs which reduce the duration and degree of risk to be minimal as a result of regulation.

**5. § 320.63(c) and (d) Reductions to the response component amount.**

**a. General.**

The Proposed Rule allows for an owner or operator to reduce their financial responsibility by satisfying specific conditions for each of the thirteen response categories. In some instances, such reductions would likely be achievable for operators in Alaska through compliance with state statutes and regulations. But it is unclear as to the level of reduction an owner or operator would receive for satisfying the stated conditions for each response category. Section 320.63(c) states that owners and operators “may satisfy requirements of paragraph (b)(i) through (xiii) in *whole or in part*, by demonstrating that they are in compliance with requirements that “will result in a minimum degree and duration of risk associated with the production, transportation, treatment, storage, or disposal, as applicable, of all hazardous substances present at that site feature” (emphasis added). There is little explanation of exactly what standards are used to judge compliance with these reduction criteria, such that the response cost could be considered to be satisfied “in whole” by being subject to existing requirements. It appears that the EPA contemplates that response costs could conceivably be reduced to zero, as it is stated that “[o]wners and operators that meet the criteria for a formula component reduction would not have to calculate financial responsibility for that component.” Presumably, this means that if standards were satisfied “in whole” for each of the response categories, then the response cost could be zero. That result begs the question of whether *any* financial responsibility should be required in such a situation, if it has been determined that an operation has met enforceable requirements “that will result in a minimum degree and duration of risk.”<sup>49</sup>

There needs to be clarification regarding the reduction in financial responsibilities for each response category and how they would be proportional to the level of satisfying the conditions of Section 320.63(d), up to and including a full reduction for any given response category or combination thereof. Further, as discussed in the IMCC comments, the EPA’s discussion of program deferral indicates that a program exemption method would work better. More generally, by contemplating programmatic deferral, the EPA is acknowledging that there might not be a need for the CERCLA § 108(b) rules at all for hardrock mines where potential risks of CERCLA liability have already been mitigated by robust state management programs such as Alaska’s.

---

<sup>49</sup> § 320.63(c); 82 Fed. Reg. at 3505.

**b. EPA’s reduction criteria are overly specific and reflect a lack of consultation with the states.**

The reduction criteria articulated for the various response categories in Section 320.63(d) of the Proposed Rule are overly prescriptive and specific. As a result, the criteria do not reflect current standard of care, best available technology or best management practices. If this rulemaking were to go into effect, the criteria articulated would result in encouraging unnecessary requirements in some situations in order to meet the criteria, and inadequate requirements in others. The issues with EPA’s reduction criteria are a prime example of how the EPA could have benefited from meaningful consultation with the states. Alaska’s state mine regulatory programs recognize the broad variability in conditions at each mine site, and the need to have both performance and risk-based standards such that specific, binding approvals and authorizations for each mine can be tailored to the conditions at that location and for that operation in a manner that reduces the risk of undesirable consequences. A performance-based approach utilizing principles of “best available technology” (BAT) and “best management practices” (BMP), are more appropriate for reducing risk of problems (including hazardous release or contamination) than prescriptive standards, which may or may not reduce the risk as intended. For example, the ADNR “Guidelines for Cooperation with the Alaska Dam Safety Program” is a comprehensive review of state regulatory requirements that apply to dams in Alaska including tailings storage facilities, process and contact water containment systems and heap leach pads.<sup>50</sup> These guidelines outline the nationally recognized Alaska Dam Safety Program and describe the progressive regulatory process that includes requirements for early regulatory involvement in the application for a *Certificate of Approval to Construct a Dam*, agreement on design standards, methods of analysis, and level of detail based on the performance requirements and risk profile of the facility, operation, maintenance and monitoring requirements, emergency action planning and incident reporting, periodic safety inspections, financial assurance requirements and more.

State regulatory programs such as Alaska’s contain flexibility to address the geography, population, geology, minerology, weather, and other factors at each specific minesite in the state. As EPA indicates in the background section of the rulemaking, “EPA has policy concerns about overseeing other Federal and state programs’ financial responsibility requirements for adequacy, given other authorities’ expertise with mining

---

<sup>50</sup> An extensive description of guidance for compliance with the Alaska Dam Safety Program can be found at [http://dnr.alaska.gov/mlw/water/dams/AK\\_Dam\\_Safety\\_Guidelines062005.pdf](http://dnr.alaska.gov/mlw/water/dams/AK_Dam_Safety_Guidelines062005.pdf) and attached as Attachment F. A 2017 update of this document is pending.

regulation.”<sup>51</sup> But by making reduction criteria overly specific and prescriptive, the result is potential *de facto* oversight and/or control by the EPA of state and FLMA programs. If the EPA promulgates a rule for financial responsibility for hardrock mines, the EPA should work closely with states to develop an exemption program for states whose management programs meet certain performance-based requirements that reduce duration and degree of risk.

The EPA states that the reduction criteria are intended to allow reduced financial responsibility values based on the prescriptive application of standards to various aspects of a mining facility. However, many of the reduction criteria are unrelated to preventing the release of hazardous substances, contain incomplete guidance, or include requirements that have no meaningful effect on the reduction of the risk that a release of a hazardous substance may occur.

On a technical level, several of the reduction criteria do not appear to have a clear nexus to reducing the risk of a release of hazardous material. The proposed EPA reduction criteria include plans “to address public safety by prevention of public access” to open pits, underground mines, waste rock facilities and other features.<sup>52</sup> Personnel safety on mines is typically regulated under the authority of the federal Mining Safety and Health Administration and is completely unrelated to the release of hazardous materials. Section 320.63(d)(1)(i), requires use of security fencing or other methods to reduce public access. But in some situations in Alaska, it might be preferable to not have fencing. Public access to a remote mine in Alaska may be less of an immediate concern than the wildlife concerns that might result from lengthy fencing installation. Other reduction criteria may be more directly related to addressing risk of a release of hazardous material, but are unnecessarily specific to certain mine design aspects, without a correlating specific reduction in risk for the release of hazardous materials. For example, the hydrology specification of a “200-year return interval storm event” for features to manage “stormwater and sediment” does not appear to apply to tailings dams and does not meet State of Alaska requirements for a facility with high consequences of failure. In another example, a requirement that a treatment system meet a minimum 200-year life design criteria might be excessive in some situations, inadequate in others.<sup>53</sup> Examples of specific, technical concerns about the reduction criteria are described in further detail below.

---

<sup>51</sup> 82 Fed. Reg. at 3501.

<sup>52</sup> *See, inter alia, e.g.*, § 320.63(d)(2)(i); (d)(3)(i).

<sup>53</sup> *See* § 320.63(d)(1)(iv).

**c. Reduction criteria are unrelated to the prevention of hazardous releases.**

Reductions for “concurrent or sequential reclamation”<sup>54</sup> of waste rock or other disturbed areas may be considered as a BMP for mine reclamation and reduce the actual financial assurance requirements progressively as mine production proceeds, but may not have any bearing on the prevention of the release of hazardous materials from the mine, especially if there are no geochemically reactive materials involved, or other controls are in place. Similarly, surface runoff and sediment control structures broadly imply BMPs and are required under state requirements for stormwater pollution prevention plans, but may not have any direct effect on preventing the release of hazardous materials. Furthermore, the EPA reduction criteria include minimum safety factors for “critical structures” and “non-critical structures.”<sup>55</sup> Based on the definition of “critical structure” at Section 320.62 of the Proposed Rule, any failure of a “non-critical structure” appears unlikely to result in the release of a hazardous substance, regardless of safety factor. The inclusion of such criteria not clearly related to the prevention of a release of hazardous materials appears to be outside the scope of the EPA’s mandate driving the Proposed Rule.

Regarding safety factors and stability analyses, factors of safety are often used to imply a level of confidence in some aspect of a design. Loosely defined, a factor of safety is calculated as the quotient of the forces resisting failure divided by the forces driving failure.<sup>56</sup> Failure is assumed to be impending when the ratio is 1 (unity). The values of the factors of safety listed in the EPA reduction criteria are commonly used for geotechnical slope stability, but are of extremely limited value, absent specific references to explain the application and the inputs to the calculations. For example, in the technical paper, “Probability and Risk of Slope Failure,”<sup>57</sup> the authors specifically state that the safety factors for geotechnical slope stability discussed in their paper are defined as:

shear strength along the sliding surface divided by shear stress along the same surface, [determined] in a manner consistent with its development... [The information presented] should not be used with

---

<sup>54</sup> See, e.g., § 320.63(d)(2)(iv); (d)(7)(iv).

<sup>55</sup> See, e.g., § 320.63(d)(1)(ii)(C); (D).

<sup>56</sup> Karl Terzaghi, et al., *Soil Mechanics in Engineering Practice*, 241 (1996, John Wiley & Sons Inc., 3rd ed.)

<sup>57</sup> Francisco Silva, et al., *Probability and Risk of Slope Failure*, *Journal of Geotechnical and Geoenvironmental Engineering*, 2008.

a factor of safety defined as maximum allowable force divided by the applied force as this definition is not consistent with our method.

Safety factors are necessary because of the intrinsic uncertainties in the loading conditions, strengths of materials, friction factors, and other parameters that may be used in slope stability evaluations. For example, uncertainties in estimates of loading conditions such as the magnitude and effect of an earthquake; or the variability in natural materials in the foundation and used in construction, limits confidence in the precision of property values and design criteria used in an analysis. These “natural and epistemic uncertainties” translate into the safety factor during the calculations and will affect the probability of a failure in a risk assessment.<sup>58</sup> Safety factors are notoriously subject to the maxim “garbage in, garbage out” and provide no measurable reduction in risk when considered without substantial additional detail as discussed in the following section.

Furthermore, a pseudo-static safety factor of 1.1 does not provide any guarantee of seismic stability; in contrast, a pseudo-static safety factor of less than unity does not imply a catastrophic failure of an embankment. Current standard of care in engineering practice and BAT for designing dams is to conduct a deformation analysis for embankment dams subject to specific seismic events and ensure that the estimated deformations are within tolerable limits to prevent a catastrophic failure. Such limits are always based on other design features, such as the amount of freeboard above the normal or flood pool of the reservoir. The pseudo-static factor of safety is also completely dependent on the size and vicinity of the earthquake, and the EPA reduction criteria does not provide any guidance on that aspect.

Another concern is the time factor associated with “long term” included in the EPA reduction criteria. There is nothing inherent in a safety factor that is time dependent, although the input values could change from peak strength to residual strength for various reasons (e.g. earthquake induced strain or weathering.) Unless the input values to the calculation are appropriately evaluated, meeting a generic factor of safety gives a false sense of security and actually increases the risk of an undesirable consequence.

**d. Risk reduction and standard of care.**

To achieve reliable risk reduction, the level of detail in the engineering and construction has more influence on the reduction of risk than arbitrarily requiring a specific safety factor or even increasing the safety factor. For example, with a high level

---

<sup>58</sup> Luis Altarejos-Garcia, et al., *Practical risk assessment for embankments, dams, and slopes*, Chapter 11 Risk and Reliability in Geotechnical Engineering, CRC Press, (2015).

of detail in the engineering and construction typical of structure with extreme failure consequences, the annual probability of a slope failure with a safety factor of 1.5 is  $10^{-6}$  based on the subjective experience of expert engineers. In contrast, with a poor level of detail in the engineering, the annual probability of failure is  $10^{-1}$  at the same safety factor of 1.5.<sup>59</sup> Consequently, an ambiguous specification of a safety factor has limited value, and a lazy engineer could gain the same EPA reduction credit as the diligent engineer, with the probability of a slope failure being five orders of magnitude more likely to fail at the same factor of safety specified by a lazy regulator.

EPA reduction criteria include some reasonable and expected routine engineering requirements covered under state regulations, such as a stability analysis “as part of the original design, and as part of mine modifications during the active life of a mine.” However, the reduction criteria also include specific criteria, which may not have the intended effect of reducing the risk of the release of a hazardous material. For example, specifying “at a minimum, a store and release earthen cover system of at least 12 inches” may not provide for geochemical stability of a containment system for every application. Including such prescriptions in a regulation serves to discourage a higher standard of care or BAT that may be necessary to achieve an acceptable level of performance.

The hydrology standards included in the EPA reduction criteria represent a lower standard of care than Alaska state requirements. For example, EPA implies that new tailings storage facilities must be designed to “store the volume generated during a ... 200-year ... return interval storm event.”<sup>60</sup> The State of Alaska would require new tailings storage facilities without emergency spillways to store the Probable Maximum Flood (PMF). A 200-year return interval storm event has an annual exceedance probability (AEP) of 0.005 (0.5%). While the PMF is an extreme event that is not associated with an AEP, the respective precipitation typically eclipses a 1000-year return interval storm with an AEP of 0.001 (0.1%), resulting in an AEP more than 5 times lower than the EPA specification.

Based on the examples provided herein, the reduction criteria listed by EPA in the Proposed Rule may result in a facility with a higher probability of failure than under the existing state requirements. This represents a regressive standard of care from current BAT and BMP principles encouraged by the State of Alaska for modern hard rock mines.

---

<sup>59</sup> *Id.*

<sup>60</sup> § 320.63(d).

**6. Health assessment.**

Regarding the Health Assessment cost figure, the State of Alaska currently has a Health Impact Assessment (HIA) Program which is not required by state law but is considered a “best practices” approach to development, and is becoming more and more a required component of the EIS process. Current projects under the program include the Donlin Gold Mine. Funding of a Health Impact Assessment is voluntary. While the goals of the CERCLA § 108(b) rulemaking Health Assessment cost financial responsibility might be different than an Alaska HIA, the requirement to bond for a health assessment might create a disincentive for projects to participate in Alaska’s voluntary HIA program.

**7. Natural Resource damages.**

Regarding the calculation of the natural resource damage component of the formula, the EPA calculates this portion of the financial responsibility formula by using a multiplier of the response cost. However, the natural resource damage component will vary based on the location of a mining operation. The degree and duration of potential environmental harm (e.g., loss of ecological function) will differ depending on the site (e.g., wetlands may be more difficult and costly to restore than arid uplands).

**V. Conclusion.**

The State of Alaska urges the EPA to reconsider the need for this rule in states with robust regulation of hardrock mining facilities that reduces the risk of a hazardous material release. In any further action taken by the EPA, the State of Alaska requests that the EPA cooperate and consult in a meaningful and substantive manner with state regulatory agencies in mining states such as Alaska.

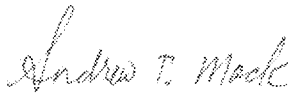
Sincerely,



Larry Hartig  
Commissioner, Alaska Department of Environmental Conservation



Janna Lindemuth  
Attorney General



Andrew T. Mack  
Commissioner, Department of Natural Resources

CC: Senator Lisa Murkowski  
Senator Daniel S. Sullivan  
Representative Don Young