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June 13, 2018

**VIA EMAIL**

Department of Public Health  
Attn: Environmental Permitting and Inspection  
333 South State St., Room 200  
Chicago, IL 60604

Re: AZR's Comments Regarding the Department of Public Health's April 18, 2018  
Proposed Amendments to the Bulk Solid Materials Rules

Dear Sir or Madam:

American Zinc Recycling Corp. ("AZR")<sup>1</sup> respectfully submits the following comments on the City of Chicago Department of Public Health's (the "Department") proposed April 18, 2018 amendments (the "Amendments") to the Rules and Regulations for Control of Emissions from the Handling and Storage of Bulk Solid Materials (the "BSM Rules"). The Amendments primarily address additional requirements relating to the defined term of "Manganese-Bearing Materials." AZR has invested approximately \$2 million to comply with the existing BSM Rules. The Amendments threaten to impose even more costs upon AZR without justification considering that AZR's operations do not contribute to the public health risks which the Amendments are intended to address. AZR has been a good neighbor within its community. It has not caused fugitive dust problems. It has not created threats to the public health due to manganese or any other toxic substances. What it does do is provide good jobs to its employees and provides an environmentally beneficial operation that uses waste material which would otherwise go to a landfill and turns that material into useful products.

AZR appreciates that at other locations within the City of Chicago, there have been developments that warranted regulating certain businesses to address identified problems that presented a risk to the public health or environment. But AZR's facility is not one of those locations. The Department needs to refine its regulatory approach to these problems so that businesses which do not need to be regulated because they do not contribute to these problems are not unduly burdened. The Amendments throw out too broad of a net and will ensnare

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<sup>1</sup> On May 1, 2017, the corporate name "Horsehead Corporation" was changed to "American Zinc Recycling Corp." The change was limited to a change in the name of the corporation.

operations like AZR's without a rational justification. AZR's comments are intended to refine the Amendments so that they regulate what needs to be regulated and do not impose additional, unnecessary burdens on operations that are not contributing to the problems the Amendments seek to address.

### **A. Description of AZR's Facility and Operations**

AZR's Chicago facility is located at 2701 E 114th St, in the Calumet area of Chicago, on the west side of the Calumet River (the "Facility"), within a district that is zoned for manufacturing use under the City of Chicago Zoning Ordinance. To the north and south are other industrial facilities, a warehouse to the north and a grain facility to the south. To the west, there are railroad tracks between the Facility and Torrence Avenue, and an abandoned property that was formerly used for coke production. The Facility's eastern boundary is the Calumet River. Across the river, there are industrial properties used for storage of bulk materials and scrap metal operations. The community of the East Side lies further east of these industrial operations. There are no residential properties in the immediate vicinity of the Facility. The closest residential property is located to the southwest on Torrence Avenue, approximately ¼ mile distance from the Facility. The Facility has not caused any dust conditions beyond its boundaries and has not been the subject of any verified or even unverified dust complaints by its residential, commercial or industrial neighbors.

The Facility uses and produces only two materials which contain manganese at very low levels, but which would nevertheless be regulated under the Amendments because they contain slightly more than 1% of manganese.<sup>2</sup> Neither of these materials warrants the additional regulation proposed by the Amendments because they are either already handled in an enclosed manner or when stored outside, there is not a risk of off-site manganese-containing fugitive emissions at levels that would present a risk to human health or the environment.

### **B. Description of the Facility's Two "Manganese-Bearing Materials"**

One of the Facility materials which the Amendments would regulate is known as Electric Arc Furnace ("EAF") dust. EAF dust is used to make products produced at the Facility. AZR's re-use of EAF material prevents this material from winding up in landfills and instead turns it into valuable commercial products.<sup>3</sup> The manganese concentration (by weighted average) in

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<sup>2</sup> Another material produced at the Facility is Waelz Oxide ("WOX"). The manganese content of WOX is below 1% and hence, would not fall within the Amendments' definition of "manganese-bearing material." Further, the way in which the Facility handles WOX satisfies the enclosure requirements of the Amendments. WOX is conveyed from the product collectors via an enclosed conveyor to a loading chute that extends into closed, pressure differential rail cars for off-site shipment. These railcars also are in an enclosed building which utilizes a permitted air pollution control system. WOX is never exposed to the outdoors at the Facility.

<sup>3</sup> The United States Environmental Protection Agency ("U.S. EPA") has encouraged, and looks upon favorably, AZR's use of the EAF dust because it (i) recovers metals from materials that would otherwise become a waste and allows them "to be used in a beneficial and environmentally sound way;" and encourages the recycling of scrap metal by helping reduce the costs that result from the treatment and disposal of the EAF. See "Standards for the Management and Use of Slag Residues Derived from HTMR Treatment of K061, K062 and F006 Wastes," Proposed Rules, 59 Fed.Reg. 67256 (December 29, 1994), a copy of which is attached as Exhibit B. Similarly, the Illinois Pollution Control Board has found that: "Horsehead [n/k/a AZR] changes EAF dust, a product with negative value [because "generators of EAF dust pay for it to be either disposed or recycled"], into Waelz Oxide and IRM,

EAF is approximately 2-3%. The Facility's receipt and use of EAF dust as a feed material to its manufacturing process has been conducted in a fully enclosed process. The EAF dust and other zinc-bearing feedstock materials (collectively, the "feedstock material") arrive at the Facility via enclosed railcar or truck. The railcar or truck enters a Facility building, known as the "C&B Building" which provides full enclosure for the receipt and handling of the feedstock material. EAF dust is placed directly into the process from trucks and railcars which are offloaded indoors. All handling of this material is done indoors or within enclosed structures, which are equipped with particulate matter (PM) pollution control equipment. Thus, the AZR Facility's use of EAF dust does not present a threat of unacceptable off-site emissions either during transport to or after arrival at the Facility. Because EAF dust is not stored or otherwise handled outdoors, the use and handling of EAF dust does not trigger any additional enclosure or monitoring requirements under the Amendments.

However, the other manganese-bearing material, known as Iron Rich Material ("IRM"), is not and cannot feasibly be handled in a totally enclosed manner like EAF. AZR produces approximately 76,000 cu. yds. of IRM annually. IRM consists of approximately 45-50% iron. IRM is used as an iron source in cement production, as an aggregate in asphalt production and as a passive water treatment medium, among other uses. IRM at the AZR facility would be regulated under the Amendments even though it contains only approximately 4% manganese.

At any given time, there are several piles of IRM stored outside at the Facility in compliance with the 30-ft. height restriction in the BSM Rules. The cost to enclose these piles would be prohibitively expensive. It has cost AZR over \$1.5 million just to build an enclosure for the relatively small amount of coke material it stores for use in its production process. Under the terms of the July 2, 2015 Provisional Administrative Order Pertaining to Coke & Coal Bulk Material Uses issued to AZR (f/k/a Horsehead) by the City's Commissioner of Planning and Development, the total daily amount of coke or coal materials present at the Chicago Plant "shall not exceed 4,516 tons at any one time" and the annual receipt of coke materials is limited to 52,808 tons. Given that the amount of IRM stored outside is typically about 15 times the maximum 4,516 tons of coke stored at any one time, the cost to enclose the IRM piles is reasonably estimated to exceed \$10 million dollars. In addition to what it has already spent to comply with the BSM Rules, AZR cannot afford such an additional exorbitant expenditure. Nor is it feasible to tarp or similarly cover the IRM piles. Their size and the need to work the piles relatively frequently to transfer IRM makes the use of tarps impractical. Applying tarps to the IRM piles would also create a potential safety hazard for Facility employees working at the IRM piles.

Because AZR cannot feasibly enclose the IRM piles it stores outside at the Facility, the Amendments would require AZR to perform the proposed metals monitoring, revise its Fugitive Dust Control Plan and comply with the recordkeeping requirements imposed by the

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products with substantial positive values. *In the Matter of Petition of Horsehead Resource and Development Company, Inc. for an Adjusted Standards Under 35 Ill. Adm. Code 720.131(c)*, AS 00-2 (February 17, 2000), at p. 12. Horsehead's "recycling of EAF dust conserves natural resources by decreasing the need to mine non-renewable zinc ores. In addition, Horsehead's recycling process means that less EAF dust is sent to landfills." (*Id.* at p. 15).

Amendments. AZR appreciates that the Department recognized that an absolute enclosure requirement without the metals monitoring alternative would not be reasonable. But to impose these additional monitoring requirements on a material like IRM that poses no public health risk is still an arbitrary and capricious regulation because IRM does not have a reasonable potential to cause fugitive dust emissions containing unsafe levels of manganese or any other metal. To address this problem with the Amendments, they should be revised to eliminate the monitoring requirements for materials like IRM. This could be accomplished by limiting the monitoring requirement to materials that contain greater than 4% of manganese by weight.

### **C. Why IRM Need Not be Enclosed or Monitored**

IRM by its very nature is not susceptible to windborne dispersion. It is heavy, due to its iron-rich nature, weighing upward of 100 lbs. per cu. ft., and its large and dense grain size inhibits windborne dispersion of IRM dust. Its surface forms a hard, concrete-like crust, typically about 4-5 inches thick, when stored outside due to the content of the EAF dust used to make it. The crust is so hard that the IRM surface cannot be broken through with a shovel. A photo of the IRM showing its crusted surface is attached in Exhibit A. This naturally occurring crust on the surface of IRM stored outside prevents unacceptable fugitive dust emissions due to outside storage or handling.

IRM simply does not create a risk of off-site exposure to PM-10, including manganese, emissions. Even when IRM is handled during truck loading or barge loading operations, the heavy weight of the IRM alone prevents windborne dispersion over any significant area and certainly not as far as the quarter mile distance to the nearest residence to the Facility. AZR's quarterly opacity testing results in the areas of the Facility where IRM is handled or stored show either no opacity or minimal levels well below 10% even when IRM is being removed from or added to the piles.

Most importantly, given the Department's concerns about human health risks posed by manganese-containing bulk solid materials, is the fact that the United States Environmental Protection Agency (U.S. EPA) has already studied the potential health risks posed by outdoor storage and transport of materials like IRM and even based on what U.S. EPA described as a "very conservative risk assessment," the Agency found that they do not pose any significant health risks. As AZR has advised the Department in its prior variance submission under the BSM Rules, the IRM produced by AZR falls into a category of materials which the U.S. EPA refers to generally as "high temperature metals recovery" slag residue or "HTMR." In the 1990's, the U.S. EPA conducted a risk assessment on HTMR materials to determine the potential human and ecological health impacts from placing HTMR materials on land.<sup>4</sup> The risk assessment specifically included an evaluation of AZR's IRM, because AZR (then known as Horsehead)

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<sup>4</sup> See Proposed Rules, "Standards for the Management and Use of Slag Residues Derived from HTMR Treatment of K061, K062, and F006 Wastes," 59 Fed.Reg. 67256 (December 29, 1994) ("1994 Proposed HTMR Rules"), a copy of which is attached as Exhibit B; See also "Assessment of Potential Risks to Human Health and the Environment from Management and Uses of HTMR Slag," Draft Report, U.S. EPA, November 30, 1994 ("1994 HTMR USEPA Report").

was and is one of the major producers of this material.<sup>5</sup> The U.S. EPA's risk assessment evaluated a number of potential release and exposure scenarios associated with the generation and management of storage piles of HTMR, including the potential for particulate matter emissions, releases to groundwater, releases that are deposited onto a neighboring residential area, and releases deposited into neighboring surface waters from : (1) outdoor pile storage directly on the ground; (2) the process of adding HTMR slag residuals to the outdoor storage pile; and (3) loading/unloading operations associated with transport of the HTMR slag.<sup>6</sup> The U.S. EPA reported on the results of this assessment as follows:

The results from EPA's very conservative risk assessment for the relevant management practices and uses of HTMR slags indicate that constituents of concern in HTMR slags pose little or no risk to human health or the environment. Based on this assessment, no significant risks were found for storage, transport, disposal, and encapsulated uses of HTMR slags (use as subbase, as an ingredient in cement or concrete/asphalt) that meet the [proposed "generic exclusion levels" in the U.S. EPA rules].

59 Fed. Reg. 67256, 67261 (December 29, 1994) (copy attached as Exhibit B).

The Amendments should be revised to exclude materials, such as IRM, for which the U.S. EPA has conducted a risk assessment study and concluded that the material does not present any significant risk to human health or the environment when stored outside or transported.

Further, the Facility has complied with the BSM Rules' requirements regarding the use of water application when handling IRM at Transfer Points, as defined under those rules, to suppress dust. AZR applies water to its IRM prior to removing it from any of the staging or storage areas. The application of water accelerates the formation of the crust on the surface of the IRM and ensures that fugitive dust emissions are controlled during IRM loading or transfer activities. Since the effective date of the BSM Rules, in accordance with the requirements of Section 3.0(13), the conveyor used to load the IRM onto barges has been covered and is equipped with an enclosed chute that extends down from the covered conveyor to transfer the IRM onto a barge. The nature of the IRM and AZR's fugitive dust controls further serve to prevent unacceptable fugitive emissions at or from the AZR facility.

There is simply no reasonable justification to require enclosure, tarping or monitoring for the IRM piles. At another similarly sized comparable facility owned by AZR in Rockwood, Tennessee ("Rockwood Facility"), which also produces IRM, it has conducted PM-10 monitoring since the 1990's. The Rockwood Facility is comparable to the Facility here both in terms of processing rate of IRM and overall operations. Both facilities operate two kilns, with similar reserves of IRM stockpiles on site. The Rockwood Facility's PM-10 monitoring results are consistently well below the PM-10 150 ug/m<sup>3</sup> National Ambient Air Quality Standard

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<sup>5</sup> 1994 HTMR USEPA Report at p. 25.

<sup>6</sup> 1994 HTMR USEPA Report at pp. 25-27

("NAAQS"). The two Rockwood Facility PM-10 monitors address the predominate, prevailing wind directions (southwest and northeast) at the facility, with one monitor located to the northeast and the other to the southwest. Even when the wind blows from either the southwest or the northeast, the PM-10 monitoring data show that the levels of PM-10 are well below the NAAQS 24-hour average standard of 150 µg/m<sup>3</sup>. Further, the differential between the PM-10 monitored at the two monitors is generally only a few micrograms per cubic meter. AZR recently has submitted a detailed review of the Rockwood Facility's PM-10 monitoring results to the Department in further support of its pending variance request related to the BSM Rules' requirements for continuous PM-10 monitoring and that submission is incorporated by reference here. Thus, the empirical data provided by the Rockwood Facility's PM-10 monitors shows that IRM production, storage and handling at the Facility does not present a risk of off-site fugitive dust emissions that warrant the additional regulation in the Amendments.

The Department may ask why, if AZR has and is conducting monitoring at its Rockwood Facility, it is challenging the Amendments' requirement to do so at its Chicago facility. AZR has learned from the Rockwood Facility results that such monitoring is an unnecessary expense and effort. The results consistently show compliance with the PM-10 NAAQS - - at very low levels that should not require continued monitoring. AZR has not challenged this continued but limited permit monitoring requirement at Rockwood because the existence of this data has been used to defend the company successfully against unjustified allegations that the Rockwood Facility may emit unacceptable levels of PM-10. But unlike the Rockwood Facility, the Chicago Facility has not been the subject of any allegations or complaints regarding fugitive dust emissions and hence, it should not have to incur the cost of this monitoring when there is no reasonable justification for it and no accusations which need to be disproved by such empirical data. AZR submits that this empirical PM-10 data showing that the AZR Facility operations do not cause elevated PM-10 air emissions are sufficient to show the Department that the AZR Facility should not be subject to the additional manganese and other metals monitoring requirements proposed in Section 6.0 of Part D of the Amendments.

#### **D. Proposed Revisions to the Manganese-Bearing Bulk Materials Amendments**

To appropriately address the continued outside storage of IRM, the Amendments should be revised in the following ways. First, the following new paragraph (g) should be added to proposed Section 5.0(2) of the Amendments to allow outside storage without additional monitoring but with appropriate controls:

“(g) For Manganese Bearing Bulk Materials where the material contains an amount of manganese less than 5 percent by weight and the Facility Owner or Operator has demonstrated by the results of a United States Environmental Protection Agency risk assessment study or by representative ambient air monitoring data showing that the material does not create unacceptable manganese fugitive dust emissions, the Facility Owner or Operator may achieve compliance with outdoor storage, provided that the outdoor storage meets one of the following requirements, and the requirement is identified in the approved Fugitive Dust Plan:

- (i) Installation and maintenance of a three-sided barrier equal to the height of the Manganese Bearing Bulk Material and having no more than fifty percent porosity to provide wind sheltering;
- (ii) Maintenance and operation of a water application system to apply water to the Manganese Bearing Bulk Material to control Fugitive Dust emissions;
- (iii) Application of Chemical Stabilizers to control fugitive dust emissions;
- (iv) Installation of a temporary cover to the Manganese Bearing Bulk Material;  
or
- (v) Other equivalent measures in an approved Fugitive Dust Plan.”

This proposed further amendment to the BSM Rules appropriately controls Manganese-Bearing Bulk Materials while allowing a facility to demonstrate that the relatively low level of manganese in its BSM warrants this approach. It relies upon either a U.S. EPA risk assessment study and/or actual air monitoring data to establish that the subject type of BSM does not create a risk of unacceptable manganese fugitive dust emissions.

The BSM Rules already require IRM to be loaded onto barges or ships in an enclosed manner, which AZR has complied with by installing an enclosed loading chute. However, if the Department is concerned that a specific provision relating to the loading of Manganese Bearing Bulk Materials is necessary, AZR suggests that the following new paragraph (h) be added to Section 5.0(2) of the Amendments:

“(h) For Manganese Bearing Bulk Materials where the material contains an amount of manganese less than 5 percent by weight, the Facility Owner or Operator shall only load manganese bearing Bulk Materials to a barge or ship through a loading system that is enclosed, has the ability to apply water to the Manganese Bearing Bulk Material, or utilizes a permitted air pollution control system, sufficient to control fugitive dust emissions, and this requirement is identified in the approved Fugitive Dust Plan.”

With the above revisions, the Amendments would appropriately control the outside storage and handling of low-manganese content materials like IRM which do not present any risk of creating unsafe levels of manganese-containing fugitive dust emissions. AZR encourages the Department to incorporate these revisions into the Amendments to protect the Facility from unnecessary, additional operating costs that will not serve to protect either the environment or the public health. The above revisions properly distinguish the level and extent of regulation based on the actual level of risk presented by a specific manganese-bearing material. For IRM-type materials, the proposed revisions more than adequately address the Department’s effort to protect the environment and public health.

Similarly, the Amendments need to further distinguish between “Moist Material,” as defined in the existing BSM Rules, and material which is not Moist Material. “Moist Material” is defined as “material with a moisture content of 3% by weight as determined by ASTM analysis....” Only those Manganese-Bearing Materials which do not qualify as “Moist Material” should be subject to the requirements in proposed section 5.0(2)(e) regarding the use of an air pollution control system and/or the ability to apply water. Further, the meaning of the undefined

term “designed vents” in this paragraph is unclear. It should be clarified by substituting “exhaust vents of the structure” for the term “designed vents.” Therefore, proposed section 5.0(2)(e) should be revised as follows:

(2) Enclosure Requirements. Fully enclosed structures for all Manganese-Bearing Bulk Material handling, storage, and transfer operations must meet the following requirements:

(e) Structures used to store, handle, or transfer Manganese-Bearing Bulk Material shall be properly maintained. Except for Moist Material, material within a structure shall be equipped with and use a permitted air pollution control system and/or the ability to apply water to materials within a structure sufficient to control Fugitive Dust emissions at exhaust vents of the structure and at any other openings, including entrances and exits; and”

Finally, the Amendments do not state what manganese air emissions standard will be applied by the Department to evaluate the results from the FRM monitoring requirements. Basic due process notice rights require that a standard be specified in the Amendments if it is intended that the FRM monitoring results may trigger further obligations on the facility or enforcement action by the Department. Otherwise, a regulated party has no way to determine with reasonable certainty whether the manganese results it obtains are or are not acceptable under the Amendments. It also has no means of knowing what corrective action may be required in response to the monitoring results.

**E. The Proposed Manganese FRM Monitoring Requirement should Expressly Allow for Termination by Department Approval where Monitoring Data Warrants it.**

The Amendments do not provide any means for a regulated facility to apply to the Department to obtain its approval to terminate the FRM monitoring for manganese. They should. Under the Amendments, a facility is required to indefinitely monitor for manganese even where its monitoring results show either no manganese-containing particulate matter or at levels that are sufficiently below the applicable standard so as not to present any risk of potential exceedance of that standard. A regulated facility should not have to go through the laborious and uncertain process of pursuing a variance from the continued manganese monitoring requirement. Many of the variance requirements are ill-suited to a simple request, backed up by adequate manganese monitoring data, to terminate further manganese monitoring. It should be built into the Amendments that if a facility has conducted sufficient manganese monitoring to demonstrate that its facility does not present a risk of unacceptable manganese emissions, the facility may submit its monitoring data to the Department for approval to terminate further monitoring. The Department may reasonably condition the approval of the cessation of manganese monitoring and provide that the termination of continued monitoring will be invalid and of no further effect if the facility commences use of manganese-bearing materials that were not present during the period of monitoring upon which the Department’s approval was based. A monitoring termination provision is particularly needed here where the Department has no evidence that every facility subject to the manganese monitoring requirements should be required



to monitor to protect the environment and public health. If the Department intends to pursue this “dragnet” approach to regulating BSM facilities that handle Manganese-Bearing Materials, it should at least provide for a reasonable “off-ramp” once a facility has conducted the monitoring and shown that its existing operations do not create a risk of unacceptable manganese emissions.

**F. The Amendments Proposed Monitoring Requirements for Metals is Arbitrary & Capricious because it Bears no Relation to the Metal Content of Facility Materials.**

Proposed section 6.0(d) provides for FRM monitoring of not only manganese but all “toxic metals,” citing arsenic, cadmium, chromium, nickel and vanadium. The Amendments arbitrarily include this required broad range of metals analysis of samples collected by PM-10 monitors without regard to whether any of these metals are even present in the BSM at a facility. There is absolutely no rational basis for requiring such extensive metals monitoring where a facility does not handle materials containing these metals in more than trace amounts. The arbitrariness of this “toxic metals” monitoring requirement is clear when compared to the Department’s recognition that only material containing greater than 1% of manganese by weight are subject to the Amendments. There is no similar de minimis exception applied to all other “toxic metals.” Hence, all facilities regulated by the Amendments will have to conduct broad metals monitoring even where their materials either do not contain such metals or do so at minimal levels that could not reasonably warrant such continued monitoring. To insert the additional metals into the section of the Amendments that deals solely with Manganese-Bearing Materials does not constitute reasonable and rational regulation to protect the public health. Accordingly, proposed section 6.0(d) should be revised as follows”

“The PM10 filters collected will undergo both gravimetric analysis and determination of other compounds (as determined by the Department based on the nature of Processing of Bulk Solid Material) and manganese following a current FRM/FEM laboratory method listed by the U.S. Environmental Protection Agency;”

**G. Certain of the Amendments Lack Clarity, have Unreasonable Effective Dates and Contain Typographical Errors**

There are certain provisions of the Amendments which lack clarity and hence are ambiguous. These include the following:

1. **Section 3.0(5):** In Section 3.0, a new subparagraph (5) requires filter-based monitoring “[i]n circumstances where PM10 monitoring described in Section 3.0(4), above, does not provide sufficient information regarding fugitive dust for the Commissioner to adequately assess health impacts of such emissions.” The phrase “sufficient information regarding fugitive dust” is impermissibly vague. It does not describe what criteria or standard(s) the Commissioner will apply to decide that PM-10 monitoring information is not “sufficient” nor what constitutes “sufficient information.” PM-10 monitoring results should be compared to the NAAQS or the Reportable Action Levels in the existing BSM Rules. Only if that comparison provides a reasonable basis to require FRM monitoring should the Commissioner be authorized to require it. Section 3.0(5) should be revised as follows:

“In circumstances where PM10 monitoring described in Section 3.0(4), above, exceeds the National Ambient Air Quality Standard, or when PM10 exceeds the Reportable Action Level as defined in Section 2.0 above, the Department may require the Facility Owner or Operator to install (given a reasonable time period for equipment installation), operate, and maintain, according to manufacturer’s specifications, one (1) Federal Reference Method (FRM) PM10 filter-based monitoring site at the Facility in accordance with the requirements specified below:

**2. Sections 3.0(3), 6.0(a) and Part F Effective Date Issues:** In Section 3.0(3)(f), for Manganese-Bearing Bulk Material at a facility that has not fully enclosed all Non-Package Manganese-Bearing Bulk Material, the facility’s Fugitive Dust Control Plan is required to include “the placement, operation, and maintenance of the FRM monitor required under paragraph 6.0.” As to the placement of the FRM monitor, paragraph 6.0(a) provides: “The FRM monitor shall be placed at a location specified in the approved fugitive dust plan required under 3.0(3).” It appears that for an existing facility which already has a Fugitive Dust Plan, the Amendments intend that the facility is to submit to the Department a revised Fugitive Dust Plan with a proposed location for the FRM monitor. However, this is not clearly stated in the Amendments. Assuming this is the intended meaning, then the FRM monitor cannot be placed at the facility until approval of the revised Fugitive Dust Plan is obtained from the Department.

Further, the effective dates for the various Amendments’ do not adequately account for the time necessary to effectuate the preparation, submission and approval of a revised Fugitive Dust Plan with the new FRM monitor requirements (e.g., placement, operation and maintenance). Part F, paragraph 8.0(1) provides that except for the Amendments in Part D (relating to Manganese-Bearing Material), all other Amendments are effective immediately. Thus, because the requirement to include the FRM monitor requirements in the Fugitive Dust Plan are in Part B, it is not reasonable to require such changes to existing Fugitive Dust Control Plans immediately upon the effective date of the Amendments. Further, while Part F, paragraph 8.0(2) provides for a 90-day effective date from the issuance of the Rules, this means that a facility only has 90 days to revise its Plan, receive approval of the revised Plan from the Department and install the FRM monitor all within 90 days. If the facility does not receive the Department’s approval of its proposed placement of the FRM monitor within a sufficient amount of time to meet the 90-day installation deadline, it will be in violation of the Rules. Because a facility cannot control the amount of time the Department takes to approve a revised Dust Control Plan, and the Department has taken more than 90 days to approve such plans, the Amendments provisions regarding the approval of a FRM monitor’s placement and the effective date with regard to the FRM monitor’s installation is unreasonable.

The Amendments should instead eliminate the reference to FRM monitors in the Part B provisions that apply to BSM generally rather than to Manganese-Bearing Materials specifically. It is sufficient to reference the requirement to include the FRM placement, operation and maintenance in a Dust Control Plan within Part D and include a cross-reference to these Part D requirements in the general Fugitive Dust Plan requirements in Part B. By moving the

Manganese-Bearing Materials Dust Plan requirements to Part D, all of the applicable requirements to these types of materials are contained in one part of the Rules, making it easier for a regulated party to identify the applicable requirements depending upon the type of material it handles. The Part D provision should allow a reasonable time for a facility to submit a revised Fugitive Dust Plan, such as 60 days, that addresses the new Part D provisions. The Part D requirement to install the FRM monitor at an approved location should specifically provide that the deadline for the monitor's installation is within 60 days of the Department's approval of the location specified in the Fugitive Dust Plan. This revision will allow a facility sufficient time to install the FRM monitor at the approved location.

**3. Section 3.0(18) Indefinite Recordkeeping Duration:** The Amendments include various revisions to the existing BSM Rules which improve the clarity of the existing Rules. For this same reason, the Amendments to section 3.0(18) should include adding a maximum time period for retaining the required records. At present, the requirement is open-ended and appears to require a facility to retain these records forever because no definite time period for their retention is provided in Section 3.0(18) or anywhere else. It is unreasonable to require such records to be kept indefinitely. The Department should specify a reasonable period for records retention, such as the three-year period required for hazardous waste manifests, but certainly not longer than five years.

**4. Sections 3.0(4)(a), 3.0(5)(a) and 6.0(a) –Monitor Locations Protocols/Guidance:** The Amendments should specify that the monitoring locations are to be consistent with the U.S. EPA's protocols and guidance for ambient air quality monitoring siting criteria. The proposed additional language at the end of Section 3.0(4) should be amended as follows:

“...with monitor locations subject to approval of the Department and consistent with current U.S. Environmental Protection Agency protocols and guidance for ambient air quality monitoring siting criteria.”

For the same reason, the same revision should be made to the similar language in the Amendments at sections 3.0(5) and 6.0 (a), as follows:

“The FRM monitor shall be placed at a location specified in the approved fugitive dust plan required under 3.0(3), and consistent with current U.S. Environmental Protection Agency protocols and guidance for ambient air quality monitoring siting criteria.”

**5. Sections 5.0(1)(b)(ii) and (iv) Typographical Errors:** The following typographical errors should be corrected:

(ii) A site map, drawn to scale, depicting the boundaries of any associated Manganese-Bearing Bulk Material Facility owned or operated by the Owner or Operator at which the Owner or Operator intends to temporarily store Manganese-Bearing Bulk Material during implementation of the Enclosure Plan, and including all the information required in 5.0(1)(b)(i) above;

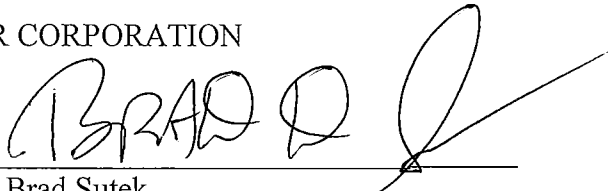
(iv) A description of all control measures, devices, and technologies to be used to minimize and control Fugitive Dust during transport to and from the Facility and any associated Manganese-Bearing Bulk Material Facility while materials are staged, loaded, unloaded, Processed, or otherwise handled at the Facility and any associated Manganese-Bearing Bulk Material Facility;”

AZR appreciates the notice and comment opportunity on the Amendments afforded by the Department. AZR appreciates that public health concerns have been raised by the findings of studies conducted by the Department and others and agrees that such concerns need to be appropriately addressed to protect the public health and welfare. AZR submits that its comments are consistent with achieving those goals but without arbitrarily burdening companies like AZR that have fully cooperated with the Department’s efforts to control fugitive dust emissions and whose Facility does not present a risk to the public health and welfare.

Respectfully submitted,

AZR CORPORATION

By:

  
Brad Sutek

AZR Chicago Plant Manager

# **EXHIBIT A**

APPENDIX A  
HORSEHEAD CHICAGO PLANT  
IRM CRUSTED SURFACE



# **EXHIBIT B**

**Horsehead Corporation's Comments Regarding the  
Department of Public Health – Rules and Regulations for  
Bulk Materials Storage Piles Proposed December 17, 2013**

**ATTACHMENT 1**



**List of Subjects in 40 CFR Part 170**

Administrative Practice and Procedures, Occupational Safety and Health, Pesticides and Pests.

Dated: December 16, 1994.

**Daniel M. Barolo,**

*Director, Office of Pesticide Programs.*

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**40 CFR Parts 261, 266, and 268**

[SW-FRL-5127-2]

RIN 2050-AE15

**Standards for the Management and Use of Slag Residues Derived From HTMR Treatment of K061, K062, and F006 Wastes**

**AGENCY:** Environmental Protection Agency.

**ACTION:** Proposed rule and request for comment.

**SUMMARY:** The Environmental Protection Agency (EPA or the Agency) is proposing to allow materials resulting from the treatment of certain hazardous wastes to be used as a product in road construction and as an anti-skid/deicing material on road surfaces. These materials are residues ("slags") generated from the treatment of pollution control dusts resulting from scrap metal recycling (electric arc furnace dust). The Agency evaluated the potential risks that might arise from the use of these "slags" and determined that these uses do not present a significant risk. This action would reclassify these treated materials as nonhazardous and allow these uses, but only if the toxic metals in the waste are reduced to safe levels by treatment.

The Agency is proposing this action to clarify two seemingly inconsistent parts of the regulations governing residual materials generated from the treatment of hazardous wastes. This rule clarifies what uses of the treatment residues are allowed, and specifies what conditions must be met for these materials to be used in this manner. Furthermore, this action partially fulfills a settlement agreement entered into by the Agency with the Natural Resources Defense Council (NRDC) and the Hazardous Waste Treatment Council (HWTC) to resolve the apparent inconsistency in the regulations.

The Agency believes these proposed actions will promote recycling and resource recovery in two ways. This action will directly encourage the recovery of metals from the hazardous

electric arc furnace dust and other metal wastes by allowing the "slag" residuals to be used in a beneficial and environmentally sound way.

Furthermore, this proposed rule will encourage the recycling of scrap metal by helping to reduce the costs that result from the treatment and disposal of the electric arc furnace dust. The Agency believes that this rule would satisfy the goals of resource recovery, while also ensuring protection of human health and the environment.

**DATES:** EPA will accept public comments on this proposed rule until February 13, 1995. Comments postmarked after this date will be marked "late" and may not be considered.

**ADDRESSES:** The public must send an original and two copies of their comments to EPA RCRA Docket Number F-94-SRTP-FFFFF room 2616 (Mail Code 5305), 401 M Street S.W., Washington, DC 20460. The docket is open from 9:00 a.m. to 4:00 p.m., Monday through Friday, except on Federal holidays. The public must make an appointment to review docket materials by calling (202) 260-9327. A maximum of 100 pages may be copied at no cost. Additional copies cost \$0.15 per page.

**FOR FURTHER INFORMATION CONTACT:** For general information contact the RCRA Hotline, toll free at (800) 424-9346, or at (703) 412-9810. For specific questions concerning this notice, contact Narendra Chaudhari, Office of Solid Waste (Mail Code 5304), U.S. Environmental Protection Agency 401 M Street, S.W., Washington, DC 20460, (202) 260-4787.

**SUPPLEMENTARY INFORMATION:**

**I. Background**

*A. Existing Regulations for Hazardous Wastes Used in a Manner Constituting Disposal*

Currently, hazardous wastes that are used in a manner constituting disposal (applied to or placed on land), including waste-derived products that are produced in whole or in part from hazardous wastes and used in a manner constituting disposal, are not subject to hazardous waste disposal regulations provided the products produced meet two conditions. First, the hazardous wastes must undergo a chemical reaction in the course of becoming products so as to be inseparable by physical means (see § 266.20(b)). A second condition for exemption is that the waste-derived products must meet best demonstrated available technology (BDAT) treatment standards under the

land disposal restrictions program for every prohibited hazardous waste that they contain before they are placed on land (see § 266.20(b)).

The exemption in § 266.20 is used for slag residues (slags) generated from the treatment of hazardous waste K061 (and, to a limited extent, K062 and F006) using high temperature metal recovery (HTMR) processes. Section 266.20 is applicable because the majority of this slag is used in highway construction materials (e.g., as road subbase), and a limited amount is also used by directly applying it to road surfaces (i.e., top grade and as an anti-skid or deicing agent). (See 56 FR 15020, April 12, 1991.)

On August 19, 1991 and August 18, 1992 (see 56 FR 41164 and 57 FR 37194), EPA finalized "generic exclusions" for nonwastewater slag residues generated from the HTMR treatment of several metal-bearing hazardous wastes (K061, K062, and F006). These HTMR slag residues are excluded from the hazardous waste regulations provided they meet designated concentration levels (generic exclusion levels) for 13 metals, are disposed of in Subtitle D units, and exhibit no characteristics of hazardous waste (see § 261.3(c)(2)(ii)(C)). The generic exclusion levels for the metals were based on the use of the EPA Composite Model for Landfills (EPACML), which predicts the potential for groundwater contamination from wastes that are placed in a landfill. EPA limited the generic exclusion to residues disposed of in a Subtitle D unit because, at that time, the Agency could not properly evaluate concerns over potential releases to other media resulting from uses of the HTMR slag as product, especially as an anti-skid material on road surfaces (see 56 FR 41164, August 19, 1991).

As EPA noted in the final rule for the initial generic exclusion for K061 residues (see 56 FR 41164, August 19, 1991), the use of HTMR residues as anti-skid material was not prohibited, provided the residue meets the exemption conditions given in § 266.20. EPA also noted in the same notice that it would further evaluate the uses of K061 HTMR residues that constitute disposal, and would consider amendments to § 266.20 for HTMR slags that might require further controls on such uses.

*B. Summary of Petition and Settlement Agreement*

The Natural Resources Defense Council (NRDC) and the Hazardous Waste Treatment Council (HWTC) filed a petition for review challenging EPA's

decision not to apply "generic exclusion levels"—levels at which K061 slags are deemed nonhazardous—to K061 slags used as waste-derived "products" and applied to or placed on land. The generic exclusion levels established for some metals in the K061 HTMR slags are lower than the BDAT standards that apply to K061. Therefore, while the generic exclusion requires that the nonhazardous K061 slag that meets exclusion levels be disposed of in a Subtitle D unit, K061 HTMR slag that may exhibit metal levels above the exclusion levels (but below BDAT) may be used as a product in a manner constituting disposal under the exemption in § 266.20(b). The petitioners pointed out the seeming anomaly of the slag used in an uncontrolled manner being effectively subject to lesser standards than slag disposed in a controlled landfill.

On August 13, 1993, EPA entered into a settlement agreement with these petitioners which would address their concerns through two separate notice-and-comment rulemakings. EPA agreed to propose the first rule within 6 months of the settlement date (and issue a final rule within 12 months) to either establish generic exclusion levels for "non-encapsulated" uses of K061 slags, or effectively prohibit such uses of K061 slags on the land. EPA also agreed to propose a second rule within 16 months of the settlement date (and issue a final rule within 28 months), to establish generic exclusion levels for encapsulated uses of K061 slags on the land. The agreement specified that the generic exclusion levels for K061 slags will be based on an evaluation of the potential risks to human health and the environment from the use of K061 slags as waste-derived products, taking into account all relevant pathways of exposure.

### C. Implementation of Settlement Agreement

This action represents the second proposed rule required under the settlement agreement. EPA has promulgated the first rules required under the settlement agreement. (See 59 FR 8583, February 23, 1994 (proposed) and 59 FR 43496, August 24, 1994 (final)). The final rule will effectively prohibit, beginning on February 24, 1995, anti-skid/deicing uses of HTMR slags derived from K061, K062, and F006, as waste-derived products placed on land. Today's proposal contains EPA's risk-based determinations for all major K061, K062, and F006 HTMR slag uses, including anti-skid/deicing uses, and thus implements the remaining portion of the agreement.

## II. Overview of Production, Processing, and Uses

### A. Production of HTMR Slags

According to information available to EPA, HTMR slags are by-products of metal recovery operations (which involve recovery of metals from metal-bearing hazardous wastes) produced primarily at two facilities, Horsehead Resource Development Company Inc. (HRD) and International Metal Reclamation Company (Inmetco). HRD is currently the major generator of HTMR slags which are at issue in this proposed rule. In 1992, HRD processed 376,000 tons of electric arc furnace (EAF) dust, which is reportedly 68 percent of the EAF dust generated domestically. From this amount of EAF dust, HRD produced 120,000 tons of zinc calcine, 19,000 tons of lead concentrate, and 237,000 tons of slag (see EPA's Report to Congress on Metal Recovery, Environmental Regulation & Hazardous Waste; EPA 530-R-93-018). Inmetco provided information that it processed a total of 58,100 tons of wastes in 1993, recovering 22,196 tons of metals and producing 15,000 tons of slag (See docket for information submitted by Inmetco at a meeting with EPA on March 10, 1994).

### B. Process Description

There are a number of HTMR processes, all of which are multi-step processes. The rotary kiln is the HTMR process primarily used to recover metals from K061, K062, and F006 wastes. The process steps are generally these: (1) wastes are mixed with coal or coke and fluxes to prepare feed materials, (2) high temperature processing is used to reduce metal oxides to their metallic form, (3) volatile metals (primarily cadmium, zinc, and lead) are recovered by collection systems, and (4) residual materials are discharged from the process and cooled to form a slag (see BDAT Background Document for K061). It should be noted that not all metal-bearing hazardous wastes are amenable to recovery by HTMR processes, possibly because their metal content is too low or because of significant quantities of impurities or contaminants that cannot be removed due either to economic or technical limitations. Therefore, metal reclaimers usually set specifications for materials that they will accept for processing (see EPA's Report to Congress on Metal Recovery Environmental Regulation & Hazardous Waste; EPA 530-R-93-018).

### C. Properties and Uses of HTMR Slags

According to information provided by the generators on the physical/chemical

properties of HTMR slags (see RCRA docket), these slags are highly dense, chemically stable (inert), and highly durable (resistant to breakdown). These are all properties which the generators claim make HTMR slags desirable construction materials.

HTMR slags are primarily used as subbase materials (e.g., in construction of roads, parking lots, and driveways) and as additive ingredients in cement or concrete/asphalt mixtures. Because the subbase is covered by a relatively hard/impermeable material and cement or concrete/asphalt mixtures lock in any additive ingredients, EPA considers these uses of HTMR slags to be "encapsulated" uses. A smaller portion of HTMR slags (believed to be less than 25 percent) are used as anti-skid/deicing materials, as top grade or surfacing materials (e.g., in construction of roads), and for other similar uses. Because anti-skid/deicing materials are dispersed freely on roads (during icy or snowy conditions to provide traction for vehicles) and top grade materials result in uncovered (unpaved) roads, parking lots, driveways, and the like, EPA considers these uses of HTMR slags to be "non-encapsulated" uses.

## III. Proposed Standards for the Management and Use of HTMR Slags

EPA is proposing that risk-based generic exclusion levels in § 261.3(c)(2)(ii)(C), in addition to being exclusion standards for disposing HTMR slags derived from hazardous wastes K061, K062, and F006 in a Subtitle D unit, also become exclusion standards for managing these slags and for using these slags as follows: 1) covered subbase materials (e.g., in construction of paved roads, parking lots, and driveways), 2) additive ingredients in cement or concrete/asphalt mixtures, 3) top grade or surfacing materials (e.g., in construction of roads, parking lots, and driveways), and 4) anti-skid/deicing materials.

The Agency is proposing this action for the following reasons. Based on the results of a very conservative risk assessment completed by EPA for the relevant management practices and end-uses of HTMR slags (see Section IV for details), EPA has tentatively determined that the wastepile, transport, road subbase, and landfill waste management scenarios for HTMR-derived slags do not require regulation in order to protect human health and the environment, if these slags meet the generic exclusion levels. In addition, EPA is proposing that use of HTMR slags as additive ingredients in cement or concrete/asphalt mixtures would also not require regulation, if these slags meet the

generic exclusion levels. This is primarily because the cement or concrete/asphalt mixtures would mix with and chemically bind or encapsulate the portion of HTMR slags that are added, and any significant releases of slag constituents into the environment are unlikely. Finally, the risk assessment results, which are based on very conservative release and exposure assumptions, indicated little potential risk for the top grade and anti-skid/deicing end-uses of HTMR slags that meet the generic exclusion levels. Therefore, EPA is also proposing that uses of HTMR slags as top grade and anti-skid/deicing materials would also not require regulation, if these slags meet the generic exclusion levels.

As a consequence of the above proposed changes, EPA is also proposing to amend the existing regulations under § 266.20 that conditionally exempt hazardous waste-derived products used in a manner constituting disposal from RCRA Subtitle C regulation. Specifically the language of § 266.20 would be revised to prohibit the uses of products containing HTMR slags derived from hazardous wastes K061, K062, and F006 when these slags are still hazardous wastes, i.e., contain hazardous constituents at concentrations exceeding the exclusion levels. This prohibition implements RCRA section 3004(g)(5) and 3004(m), which require EPA to prohibit land disposal of hazardous wastes that have not been pre-treated so as to minimize the short-term and long-term threats posed by their land disposal. In addition, EPA is including a cross-reference in the table "Treatment Standards for Hazardous Wastes" in § 268.40 (the Land Disposal Restriction treatment standards) which notes the changes concerning utilization of HTMR slags in §§ 261.3 and 266.20.

As described in section IV.C, the Agency is also taking this opportunity to update the generic exclusion levels to reflect the changes in the drinking water Maximum Contaminant Levels (MCLs) for some of the metals of concern. Therefore, the Agency is proposing to amend the generic exclusion levels for antimony, beryllium, and nickel.

EPA requests comments on the proposed changes. EPA also requests comments on the data used in the risk assessment, the methodology and

assumptions used in the risk assessment, and other analysis supporting the proposed rule. Further, EPA requests comments on whether the uses of HTMR slags identified in this proposal are the only uses in practice or whether there are other uses practiced or planned. If EPA is alerted to other significant uses, the Agency could use the information to determine whether or not further analysis of those uses would be required.

#### IV Overview of Risk Assessment Supporting This Proposal

EPA performed a very conservative assessment of the potential risks to human health and the environment from the relevant management practices and uses of K061, K062, and F006 HTMR slags. This section summarizes the methods and results of EPA's risk assessment. A more detailed presentation of the risk assessment and uncertainties involved is provided in a technical background document entitled "Assessment of Potential Risks to Human Health and the Environment from Management and Uses of HTMR Slags," which is included in the docket for this proposed rulemaking.

##### A. Methodology of Risk Assessment

EPA's methodology consisted of four primary steps. First, a lifecycle analysis for the HTMR slags was performed, starting from the point of manufacture and ending at the point of disposal, to identify potential contaminant release scenarios (air, ground water, surface water, and soil) associated with slag management, use, and disposal practices. Second, based on the release scenarios, exposure pathways and receptor locations relevant to contaminants in HTMR slags were identified. Third, appropriate release, fate, and transport models were used to compute contaminant concentrations at receptor points for each release and exposure pathway. Finally the media-specific concentrations for air, ground water, surface water, and soil were compared to the appropriate human health and ecological effects reference concentrations to determine the quantitative risks from exposures to contaminants in HTMR slags.

EPA focused on selecting high-end values for use in the models to estimate the individual risk for those persons at

the upper end (>90th percentile of the population distribution) of the risk distribution. The Agency chose this very conservative approach in order to identify any pathways or chemicals which would warrant a more in depth risk assessment and characterization. A summary of the data sources and risk assessment methodology for HTMR slags is provided below.

##### 1. Sources of Constituents Data for HTMR Slags

The constituents of concern in HTMR slags were identified in the Land Disposal Restrictions for Electric Arc Furnace Dust (K061) Final Rule (56 FR No. 160, p 41164) and supported by the Best Demonstrated Available Technology (BDAT) Background Document for K061 (US EPA, 1988). Specifically the K061 Final Rule identified fourteen metals requiring BDAT treatment standards for K061, including: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, vanadium, and zinc. However for various reasons discussed in the K061 Final Rule, EPA promulgated the standard for vanadium as "reserved."

For the purposes of the risk assessment, total concentrations of constituents of concern in HTMR residuals were based on the EPA-collected data base presented in the BDAT Background Document for K061 (US EPA, 1988). For each constituent of concern, the 95th percentile upper confidence limit of the mean (95th UCLM) was calculated for the total metal concentration (in ppm or, equivalently mg constituent per kg HTMR residual). EPA selected this value to represent a reasonable high-end measure of constituent concentrations in HTMR residuals. Table 1 presents the total concentrations and summary statistics for that data set, including maximum concentration, mean, and the range of concentrations.

For exposure scenarios involving HTMR leachate (e.g., landfilling of HTMR-derived slag), the leachate concentration was assumed to be equal to the maximum levels allowed under the generic exclusion established in the K061 final rule. Table 1 also presents the generic exclusion levels (in mg/L).

TABLE 1 — SUMMARY STATISTICS FOR CONSTITUENT CONCENTRATIONS FOR HTMR RESIDUALS

Constituent	Total constituent concentrations in HTMR residuals from rotary kiln incinerator			Generic exclusion levels for leachate (mg/L)
	Range (ppm)	Mean (ppm)	95% UCLM (ppm)	
Antimony .....	111-405	195	266	0.10

TABLE 1.—SUMMARY STATISTICS FOR CONSTITUENT CONCENTRATIONS FOR HTMR RESIDUALS—Continued

Constituent	Total constituent concentrations in HTMR residuals from rotary kiln incinerator			Generic exclusion levels for leachate (mg/L)
	Range (ppm)	Mean (ppm)	95% UCLM (ppm)	
Arsenic .....	75-113	86	98	0.50
Barium .....	331-467	374	408	7.6
Beryllium .....	1.7-4	2	3	0.01
Cadmium .....	<15	<15	<15	0.05
Total Chromium .....	205-978	612	797	0.33
Lead .....	365-4270	1926	2863	0.15
Mercury .....	<0.1	<0.1	<0.1	0.009
Nickel .....	422-952	588	727	1.0
Selenium .....	2.5-8.8	5	6	0.16
Silver .....	32-59	39	46	0.30
Thallium .....	<0.5-1.0	<1	<1	0.02
Zinc .....	4550-27400	14634	22117	70

Note: Concentration of chromium VI was estimated to be 1% of total chromium, based on leaching data for total chromium.

2. Release, Fate, and Transport Models

To assess the risks from relevant management practices and uses of HTMR slags, EPA used fate and transport models to compute contaminant concentrations at exposure points for each release and exposure scenario. EPA used the appropriate algorithms from the MMSOILS model, a multimedia contaminant fate, transport, and exposure model, to simulate fate and transport of metals in HTMR slags through overland and subsurface transport. The overland transport of metals in HTMR slags incorporated transport to nearby soils and surface water (including dissolved contaminants and contaminants sorbed to slag particles). EPA used the Fugitive Dust Model (FDM) to compute dispersion and transport of particulates in air from ground-based sources. FDM is a computerized air quality model which was specifically designed to calculate air concentrations from fugitive dust sources. The model is based on the Gaussian plume algorithm for computing air concentrations, adapted to incorporate a gradient-transfer deposition algorithm. The MINTEQ metals speciation model was used to estimate soil adsorption coefficients for the metal constituents in HTMR slags whenever possible. The MINTEQ model is an aqueous speciation geochemical model which estimates metal adsorption as a function of Ph, metal concentrations in the dissolved phase, iron oxide content of potential sorbents, organic matter content of potential sorbents, pore water chemistry, and temperature. Further details of the models used are provided in the docket for this proposed rulemaking.

3. Sources of Environmental Releases

EPA identified the potential sources of metals releases from HTMR slags based on known management practices and end-uses of HTMR slags: disposal in landfills, storage in wastepiles, transportation in trucks, use as road construction material underlying pavement (subbase or base material), use as additive ingredient in cement or aggregate in concrete/asphalt mixtures, use as road surface material (top grade), and use as anti-skid/deicing agent on road surfaces. Potential releases under these scenarios are described below.

*a. Wastepile*—Four practices associated with the generation and management of wastepiles of HTMR slags may result in potential releases to the environment: (1) outdoor storage of an uncovered wastepile, (2) adding HTMR slags to the wastepile, (3) loading/unloading operations associated with transport of the wastepile, and (4) transport of slags from the facility to points of use.

The HTMR slags generated at the manufacturing facility may be stored outside in an uncovered wastepile at the facility until it is transported offsite. Since the wastepiles are uncovered, air releases may occur if particulates from the wastepile become entrained in the atmosphere. The slag particulates also may be eroded from the wastepile as a result of wind and rain. In addition, since the slags could be stored directly on top of the soil (i.e., no liner), release to the ground water may occur if metals from the slags leach as a result of precipitation.

As slags are added to the wastepile, the resulting disturbance may cause particles to become entrained in the atmosphere. Particulate emissions of slag material may also be caused by the loading/unloading operations associated with transport vehicles. Finally,

particulate emissions of slag material may result from the transport of the wastepile, assuming that the transport vehicles are not fully covered.

*b. Road Subbase*—The HTMR slags may be transported from the manufacturing facility to a site for use as a road subbase material. The subbase layer is then covered by a relatively impermeable road surfacing material, typically asphalt. Although there is potential for environmental releases from the subbase material prior to road surfacing and when road surfaces are broken up for repair, such releases are expected to be short-term, temporary events, and any releases would be relatively minor. Therefore, atmospheric and erosion releases were not modeled for the use of HTMR slags as a road subbase material. However, even while the subbase is covered, the metals in the slag could potentially be released during a high water table event. In this circumstance, the water table may become elevated to the extent that it contacts and saturates the road subbase layer. The metals in the slag could leach from the road subbase, pass through the unsaturated soil zone, and discharge into the groundwater.

*c. Additives in Cement or Concrete/Asphalt Mixtures*—HTMR slag material may also be used as an ingredient in the production of cement (as a source of iron in cement kilns). Alternatively, the slag may be used as aggregate in the production of concrete or asphalt. In these uses, the cement or concrete/asphalt mixtures would mix with and chemically bind or encapsulate the portion of HTMR slags that are added. Therefore, there is not likely to be any significant releases from this use by any scenario. There is the possibility, if pieces of cement or concrete/asphalt are ultimately disposed in a landfill, that environmental releases may occur. This

type of scenario was considered under disposal of HTMR slags directly in a landfill; this represents a "worst case" for the concrete/asphalt mixtures because the landfill was assumed to contain the HTMR slags, and not slags mixed with or encapsulated in concrete or asphalt.

*d. Top Grade*—The HTMR slags may be used as a top grade material, as the surface material for an unpaved road. Atmospheric releases of the slag particulate as a result of vehicular traffic, particulate releases resulting from both wind erosion and surface runoff, and contaminant releases from the top grade layer resulting from leaching processes are all possible release pathways, and were considered in the Agency's assessment.

*e. Anti-Skid/Deicing*—The HTMR slags can be used as anti-skid/deicing agents on ice and/or snow covered roads. A thin layer of the slag material is spread over the road surface in an effort to provide better traction for vehicle tires. During warm periods in which the snow and ice melt, the metals present in the slag material may leach from an unpaved road through the unsaturated zone and into the surficial aquifer. In addition, the slag material may erode from the site by wind and rain and be deposited on adjacent property. Lastly, slag particulates may become entrained in the atmosphere as a result of vehicle traffic, and may result in atmospheric emissions similar to that of the top grade scenario.

*f. Disposal in Landfill*—One of the lifecycle phases considered in this analysis involves disposal of slag in a solid waste landfill. The potential

leaching of constituents from the slag in the landfill into groundwater was evaluated previously in the rulemaking that established the generic exclusion levels for HTMR slag (see August 18, 1992, 57 FR 37194). Other potential release scenarios from the landfill that were identified include: (1) erosion of particulates from the landfill, and (2) air releases and deposition to nearby soils. Particulates from slag may be eroded from the landfill as a result of the forces of wind and rain. The eroded material may ultimately be deposited onto a nearby residential plot of land or into a nearby surface water body. Particulates entrained in the atmosphere as a result of waste management activities at the landfill may also be transported to off-site receptors.

4. Exposure Pathways

EPA considered various direct and indirect exposure pathways for HTMR slag materials and believes that the potential for risk from most indirect pathways (e.g., food chain pathways) would not be significant. The comparison of risks associated with direct and indirect exposure pathways for metals suggested that the direct pathways typically present higher risks due to the: (1) weak uptake of soil-bound metals in plants, (2) limited ability of metals to bioaccumulate on a whole-body basis (with the exception of mercury; however levels of mercury in HTMR slags, as presented in table 1, are not significant), and (3) tendency of metals to remain bound in the slag matrix in a form that further reduces their bioavailability.

Therefore, EPA evaluated four direct exposure pathways that were identified

as being relevant based on the presence of metal contaminants in HTMR slags and the uses of the material. The four direct exposure pathways of concern are:

- air pathway: emission and dispersion of respirable particulates (<10 microns in size);
- groundwater pathway: release of contaminants to subsurface soils and subsequent leaching into groundwater;
- surface water pathway: overland transport (via runoff and soil erosion) of contaminants to surface water; and
- soil pathway: overland transport of contaminants via soil erosion to offsite residential soils.

In addition to these direct exposure pathways, EPA identified one indirect exposure pathway with respect to potential release scenarios, i.e., release of nonrespirable particulates (30 microns in size) followed by deposition to soil.

EPA did not model each of these four pathways for every source of HTMR slags. The exposure pathways evaluated by EPA for each exposure source/scenario are summarized in matrix form in Table 2. Only those pathways relevant to a given source scenario were modeled for that scenario. For example, as noted previously, direct air pathways for the road subbase scenario were not evaluated because the subbase is essentially a covered source that is not subject to wind erosion, overland transport, or air dispersion. Similarly EPA did not explicitly include HTMR slags contained in cement or concrete/asphalt mixtures for any of the exposure scenarios of concern.

TABLE 2.—EXPOSURE PATHWAYS EVALUATED FOR SOURCES/SCENARIOS ASSOCIATED WITH THE USE OR DISPOSAL OF HTMR SLAG

Exposure pathway	Exposure source/scenario				
	Wastepile	Top grade and anti-skid	Slag landfill	Subbase	Transportation
Ground Water Ingestion .....	X	X	X	X	
Surface Water .....	X	X	X		
Soil Ingestion .....	X	X	X		
Air Deposition to Soil and Ingestion .....	X	X	X		
Particulate Inhalation .....	X	X	X		X

<sup>1</sup> Evaluated previously (see 57 FR 37194; August 18, 1992)

5. Evaluation Criteria

EPA used human health and ecological (aquatic) effects criteria to evaluate levels of hazardous constituents in various media.

*a. Human Health*—The human health reference values for the constituents of concern includes carcinogenic slope

factors (CSFs), reference doses (RfDs), and reference concentrations (RfCs). The CSFs, a measure of carcinogenic potency were used for both the inhalation and ingestion routes of exposure. The RfD is an estimate of the daily intake of a substance, within an order of magnitude, to which the adult

human population (including sensitive subgroups) may be exposed without any adverse noncarcinogenic effects. The RfC is the analog to the RfD for inhalation exposure, although the RfC units are typically converted to concentration (mg/m<sup>3</sup>), using default exposure assumptions for breathing rate

and body weight. Virtually all the reference values (i.e., CSFs, RfDs, and RfCs) were obtained from the Integrated Risk Information System (IRIS), EPA's primary source for verified human health reference values. Reference values were also identified in the Health Effects Assessment Summary Tables (HEAST). When no verified RfC values were available, the RfC values were extrapolated from RfDs, assuming that a 70 kg adult inhales 20 m<sup>3</sup> of air per day. Based on the human health reference values, the Agency calculated the reference concentrations in Table 3 for soil, drinking water, and air. The table includes Maximum Contaminant Levels (MCLs) for drinking water, when available. The human health reference values, and the methods used to calculate the reference concentrations, are summarized in the docket for today's rule. Two constituents of concern, thallium and lead, did not have reference values for ingestion or inhalation in either IRIS or HEAST. The reference value (i.e., RfD) for thallium

was estimated from the lowest reference value of the thallium salts (e.g., thallium sulfate, thallium nitrate). A reference value for lead is not available at this time since Agency consensus has not been reached on how an RfD or RfC should be calculated for lead. However, EPA has established regulatory and recommended levels for lead in the various media, and these are included in Table 3.

*b. Ecological (Aquatic) Receptors*—A comparison of chemical concentrations in surface water to their aquatic benchmarks was used to determine if any given constituent would pose a threat to aquatic organisms. Those chemicals whose surface water concentrations exceeded their aquatic water quality criteria would be identified as constituents of concern. The National Ambient Water Quality Criteria (NAWQC) were selected as the ecological reference concentrations for the protection of aquatic organisms (e.g., fish and daphnids). Since NAWQC were not available for all constituents, alternate criteria or advisory values

were identified in the open literature. A complete description of the methods used to estimate the advisory NAWQC may be found in *Toxicological Benchmarks for Screening of Potential Contaminants of Concern for Effects on Aquatic Biota on the Oak Ridge Reservation, Oak Ridge, Tennessee* (Suter et al., 1992). Table 3 provides the NAWQC and advisory NAWQC for aquatic organisms for each of the constituents of concern.

6. Characterization of Risk

The modeling results for the ground-water, surface water, soil, and air pathways were compared to the reference concentrations for the different media to assess the potential risk to human health and aquatic receptors. The resulting risk ratios (i.e., media concentration divided by reference concentration) were then evaluated to determine whether any of the metals of concern in HTMR slag would pose significant risks to humans or aquatic receptors for any of the exposure scenarios evaluated.

TABLE 3.—REFERENCE CONCENTRATIONS FOR SOIL, WATER, AND AIR FOR THE HTMR CONSTITUENTS OF CONCERN

Constituent	Reference Soil Concentration (mg/kg)	Reference Drinking Water Concentrations <sup>2</sup> (mg/L)	Reference Air Concentrations <sup>3</sup> (ug/m <sup>3</sup> )	Reference Surface Water Concentrations <sup>4</sup> (mg/)
Antimony .....	3.2E+01	0.006	1.4E+00	0.018
Arsenic .....	9.7E-01	0.05	5.7E-04	0.190
Barium .....	5.6E+03	2	5.0E-01	0.109
Beryllium .....	4.0E+02	0.004	1.0E-03	0.00061
Cadmium .....	8.0E+01	0.005	1.4E-03	0.0011
Chromium III .....	8.0E+04	0.1	3.5E+03	0.210
Chromium VI .....	4.0E+02	0.1	2.0E-04	0.011
Lead .....	4.0E+02	0.015	1.5E-01	0.0032
Mercury .....	2.4E+01	0.002	3.0E-01	0.000012
Nickel .....	1.6E+03	0.1	7.0E+01	0.160
Selenium .....	4.0E+02	0.05	1.8E+01	0.035
Silver .....	4.0E+02	0.18	1.8E+01	0.00039
Thallium .....	6.4E+00	0.002	2.8E-01	0.0025
Zinc .....	2.4E+04	10	1.1E+03	0.110

<sup>1</sup> RfDs and CSFs were used to calculate reference soil values, except for lead; the value for lead is a recommended screening level for lead in soil for residential land use which is contained in the Agency's interim soil lead guidance (this guidance suggests use of this screening level to identify sites that do not require further study, and not as a clean up goal).

<sup>2</sup> Reference values for drinking water are MCLs, when available; the values for thallium and zinc are based on RfDs, and the value for lead is the action level.

<sup>3</sup> Air reference values are based on CSFs or RfCs, when available; other values extrapolated from oral RfDs, except for lead, which is based on 10% of the existing National Ambient Air Quality Standard.

<sup>4</sup> Reference values are National Ambient water Quality Criteria (NAWQC) for aquatic toxicity, except for antimony, barium, beryllium, silver, and thallium, which are based on advisory NAWQC (see Section IV.A.5.b.)

B. Results of Risk Assessment

The results from EPA's very conservative risk assessment for the relevant management practices and uses of HTMR slags indicate that constituents of concern in HTMR slags pose little or no risk to human health or the environment. Based on this assessment, no significant risks were found for storage, transport, disposal, and

encapsulated uses of HTMR slags (use as subbase, as an ingredient in cement or concrete/asphalt) that meet the generic exclusion levels. The non-encapsulated uses of HTMR slags (top grade and anti-skid uses) that meet the generic exclusion levels showed the potential for some excess risk (i.e., risk above 1x10<sup>-6</sup>). The risk analysis indicates that direct inhalation exposure

to arsenic from non-encapsulated uses may present an excess risk of cancer of 2.9x10<sup>-6</sup>. In other words, a maximum of approximately 3 additional cases of cancer would be predicted per million people exposed to the arsenic in the slag used in this manner. The results also suggest that areal deposition of arsenic from these non-encapsulated uses and subsequent ingestion of contaminated



soil may also present a comparable excess risk of cancer ( $2.7 \times 10^{-6}$ ). None of the other metals evaluated posed any significant increase in risk for these uses.

These risks (from non-encapsulated uses) are at the low end of EPA's risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$ . Furthermore, for this assessment, EPA selected very conservative values for use in fate and transport models and for exposure scenarios. If the risk assessment had used a central tendency value (instead of a high-end value) for one of the high-end exposure assumptions, then the calculated risks from these uses would drop below the  $1 \times 10^{-6}$  level. For example, had the Agency used a 9 year exposure period for an individual exposed instead of the 30 year exposure period used in this risk calculation, the risk from non-encapsulated uses would have dropped to  $8.7 \times 10^{-7}$  cancer risk. This risk level is below the typical level of concern used by the Agency.

### C. Changes to the Generic Exclusion Levels

The generic exclusion levels promulgated for HTMR slags derived from K061, K062, and F006 were based on the health-based levels and MCLs in effect when the rule was put into place. Since then, the drinking water standards (i.e., MCLs) for some constituents have changed somewhat (see July 17, 1992, 57 FR 231776). Therefore, the Agency is taking this opportunity to propose to update the exclusion levels to reflect these changes. The original exclusion levels were calculated by multiplying the MCLs by a dilution-attenuation factor of 10 (see August 18, 1992, 57 FR 37194). This factor is based on the EPACML model (see July 18, 1991, 56 FR 32993 for a description of the model used). Using this same factor, the new MCLs for antimony (0.006 mg/L) and beryllium (0.004 mg/L) would result in new generic exclusion levels of 0.06 mg/L and 0.04 mg/L for antimony and beryllium, respectively. Therefore, the Agency is proposing to replace the existing exclusion levels in § 261.3(c)(2)(ii)(C) for antimony and beryllium with these values as part of today's rule. The Agency promulgated an MCL for nickel in 1992. That regulatory standard was challenged by a coalition of industry groups in a lawsuit filed in September, 1992. See *Nickel Development Institute et al. v. EPA*, No. 92-1407, 1410, 1416 (D.C. Cir.). For the past two years, the Agency has been involved in discussions with these industry parties in an effort to resolve this litigation. Because of the uncertainties that currently surround the outcome of this litigation over the

nickel MCL, EPA believes it is appropriate to consider alternative criteria to establish the generic exclusion level for nickel. EPA considered using the health-based level for nickel (0.7 mg/L) which is derived from the existing RFD for nickel of 0.02 mg/kg/day (see IRIS). Based on the calculations described in the above paragraph, this would result in a generic exclusion level of 7 mg/L for nickel. The existing BDAT treatment standard for nickel contained in the slags derived from HTMR processing of K061, K062, and F006 wastes is 5 mg/L. Between these two alternative criteria, EPA believes that it is appropriate to use the lower (more conservative) BDAT standard at this time. Therefore, EPA is proposing to replace the existing exclusion level in § 261.3(c)(2)(ii)(C) for nickel with the nickel BDAT treatment standard of 5 mg/L.

### V. Conclusions

Based on the results of the risk assessment, EPA is proposing that HTMR slags that meet the generic exclusion levels in § 261.3(c)(2)(ii)(C) will be classified as nonhazardous waste, and also allowed to be managed or used as described in this proposal.

Furthermore, the Agency is also proposing to amend § 266.20 so that all uses constituting disposal of hazardous HTMR slag (i.e., HTMR slag that does not meet the generic exclusion levels) are no longer exempt from RCRA Subtitle C regulation. Because it is highly unlikely that users of hazardous HTMR slag will choose to meet the stringent requirements of Subtitle C, this change would effectively prohibit all uses of slags that do not meet the generic exclusion levels. As a consequence of the proposed changes to the generic exclusion in § 261.3(c)(2)(ii)(C), HTMR slags that are used as described in this proposal would not be affected by the changes in § 266.20, because the HTMR slags used in these ways would not be hazardous waste (provided the slags meet the generic exclusion levels and all of the other requirements specified in § 261.3(c)(2)(ii)(C)).

Finally as described in section IV.C above, the Agency is also proposing to update the generic exclusion levels for changes in MCLs for antimony, beryllium, and nickel.

### VI. Effective Date

The Agency is proposing that this rule be effective six months after the date of publication of the final rule. (See RCRA section 3010(a)). The Agency believes that this would provide sufficient time

for affected parties to comply with the proposed changes.

### VII. State Authority

#### A. Applicability of Rule in Authorized States

Under section 3006 of RCRA, EPA may authorize qualified States to administer and enforce the RCRA program within the State. Following authorization, EPA retains enforcement authority under sections 3008, 3013, and 7003 of RCRA, although authorized States have primary enforcement responsibility. The standards and requirements for authorization are found in 40 CFR part 271.

Prior to the Hazardous and Solid Waste Amendments (HSWA) of 1984, a State with final authorization administered its hazardous waste program in lieu of EPA administering the Federal program in that State. The Federal requirements no longer applied in the authorized State; and EPA could not issue permits for any facilities that the State was authorized to permit. When new more stringent Federal requirements were promulgated or enacted, the State was obliged to enact equivalent authority within specified time frames. New Federal requirements did not take effect in an authorized State until the State adopted the requirements as State law.

In contrast, under RCRA section 3006(g), new requirements and prohibitions imposed by HSWA take effect in authorized States at the same time that they take effect in nonauthorized States. EPA is directed to carry out these requirements and prohibitions in authorized States, including the issuance of permits, until the State is granted authorization to do so. While States must still adopt HSWA-related provisions as State law to retain final authorization, HSWA applies in authorized States in the interim.

#### B. Effect on State Authorization

EPA views today's proposed rule as a HSWA regulation. The proposed rule can be viewed as part of the process of establishing land disposal prohibitions and treatment standards for K061, K062, and F006 hazardous wastes. (See 56 FR 41175). The ultimate goal of the land disposal prohibition provisions is to establish standards which minimize short-term and long-term threats to human health and the environment posed by hazardous waste land disposal. (See RCRA section 3004(m)(1)). In addition, EPA must ensure that land disposal of hazardous wastes K061, K062, and F006 are ultimately protective. (See RCRA § 3004(g)(5)). The

proposed exclusion levels would implement these provisions by assuring that these types of land disposal are ultimately protective and establish levels at which pretreatment minimizes the threats to human health and the environment posed by these types of land disposal.

Today's proposed rule will result in more stringent Federal standards under § 266.20, since it prohibits uses of hazardous HTMR slags. Section 271.21(e)(2) requires that States that have final authorization must modify their programs to reflect Federal program changes and must subsequently submit the modifications to EPA for approval.

Authorized States are only required to modify their programs when EPA promulgates Federal regulations that are more stringent or broader in scope than the existing Federal regulations. For those Federal program changes that are less stringent or reduce the scope of the Federal program, States are not required to modify their programs. This is a result of section 3009 of RCRA, which allows States to impose regulations in addition to those in the Federal program. EPA has determined that the proposed changes to the generic exclusion are less stringent or reduce the scope of the Federal program. Therefore, authorized States are not required to modify their programs to adopt regulations that are equivalent or substantially equivalent.

States with authorized RCRA programs may already have requirements similar to those in today's proposed rule. These State regulations have not been assessed against the Federal regulations being proposed today to determine whether they meet the tests for authorization. Thus, a State is not authorized to implement these requirements in lieu of EPA until the State program modifications are approved. Of course, States with existing standards could continue to administer and enforce their standards as a matter of State law. In implementing the Federal program, EPA will work with States under agreements to minimize duplication of efforts. In many cases, EPA will be able to defer to the States in their efforts to implement their programs rather than take separate actions under Federal authority.

## VIII. Regulatory Impact

### A. Executive Order 12866

Under Executive Order 12866 (see 58 FR 51735, October 4, 1993), EPA must determine whether the regulatory action is "significant" and therefore subject to

OMB review and the requirements of the Executive Order. The order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy a sector of the economy productivity competition, jobs, the environment, public health or safety or State, local, or tribal governments or communities;

(2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a "significant regulatory action" because it raises novel policy issues in terms of defining when products used in a manner constituting disposal should be regulated. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

### B. Regulatory Flexibility Act

Under the Regulatory Flexibility Act, 5 U.S.C. 601 et seq., whenever an Agency is required to issue a general notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the impact of the rule on small entities (i.e., small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required, however, if the head of the Agency certifies that the rule will not have any impact on any small entities.

This proposed rule will not have any impact on any small entities, since the regulated community will continue to have readily available options for using and managing HTMR slags. Therefore, pursuant to section 605(b) of the Regulatory Flexibility Act, the Administrator certifies that this regulation will not have a significant economic impact on a substantial number of small entities. This regulation, therefore, does not require a regulatory flexibility analysis.

### C. Paperwork Reduction Act

The Agency has determined that there are no additional reporting, notification,

or recordkeeping provisions associated with this proposed rule. Such provisions, were they included, would be submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

### List of Subjects

#### 40 CFR Part 261

Environmental protection; Hazardous waste, Recycling, Reporting and recordkeeping requirements.

#### 40 CFR Part 266

Energy Hazardous waste, Recycling, Reporting and recordkeeping requirements.

#### 40 CFR Part 268

Hazardous waste, Reporting and recordkeeping requirements.

Dated: December 16, 1994.

Carol M. Browner,  
Administrator.

For the reasons set forth in the preamble, 40 CFR Chapter I is amended as follows:

## PART 261—IDENTIFICATION AND LISTING OF HAZARDOUS WASTE

1. The authority citation for part 261 continues to read as follows:

**Authority:** 42 U.S.C. 6905, 6912(a), 6921, 6922, and 6938.

2. Section 261.3 paragraphs (c)(2)(ii)(C)(1) and (c)(2)(ii)(C)(2) are revised as follows:

### § 261.3 Definition of hazardous waste.

(c)  
(2)  
(ii)

(C)(1) Nonwastewater residues, such as slag, resulting from high temperature metals recovery (HTMR) processing of K061, K062, and F006 waste, in units identified as rotary kilns, flame reactors, electric furnaces, plasma arc furnaces, slag reactors, rotary hearth furnace/electric furnace combinations or industrial furnaces (as defined in paragraphs (6), (7), and (13) of the definition for "Industrial furnace" in 40 CFR 260.10)—provided that these residues meet the generic exclusion levels identified in the tables in this paragraph for all constituents, and exhibit no characteristics of hazardous waste and are disposed in Subtitle D units, or used as covered subbase materials (e.g., in construction of paved roads, parking lots, and driveways) or as additive ingredients in cement or concrete/asphalt mixtures, or as top-grade (e.g., surfacing material for roads, parking lots, and driveways), or as anti-skid/deicing materials. Testing



requirements must be incorporated in a facility's waste analysis plan or a generator's self-implementing waste analysis plan; at a minimum, composite samples of residues must be collected and analyzed quarterly and/or when the process or operation generating the waste changes. Persons claiming this exclusion in an enforcement action will have the burden of proving by clear and convincing evidence that the material meets all of the exclusion requirements.

Constituent	Maximum for any single composite sample-TCLP (mg/l)
Generic exclusion level for K061 and K062 nonwastewater HTMR residues	
Antimony .....	0.06
Arsenic .....	0.50
Barium .....	7.6
Beryllium .....	0.04
Cadmium .....	0.05
Chromium (total) .....	0.33
Lead .....	0.15
Mercury .....	0.009
Nickel .....	5
Selenium .....	0.16
Silver .....	0.30
Thallium .....	0.02
Zinc .....	70

Generic exclusion level for F006 nonwastewater HTMR residues.	
Antimony .....	0.06
Arsenic .....	0.50
Barium .....	7.6
Beryllium .....	0.04
Cadmium .....	0.05
Chromium (total) .....	0.33
Cyanide (total) (mg/kg) .....	1.8
Lead .....	0.15
Mercury .....	0.009
Nickel .....	5
Selenium .....	0.16
Silver .....	0.30
Thallium .....	0.02
Zinc .....	70

(2) A one-time notification and certification must be placed in the facility's files and sent to the EPA region or authorized state for K061, K062, or F006 HTMR residues that meet the generic exclusion levels for all constituents and do not exhibit any characteristics that are sent to Subtitle D units, or used as described in paragraph (c)(2)(ii)(C)(1). The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the subtitle D unit receiving the waste changes. However, the generator or treater need only notify the EPA region or an authorized state on an annual basis if such changes occur. Such

notification and certification should be sent to the EPA region or authorized state by the end of the calendar year, but no later than December 31. The notification must include the following information: The name and address of the subtitle D unit receiving the waste shipments; the EPA Hazardous Waste Number(s) and treatability group(s) at the initial point of generation; and, the treatment standards applicable to the waste at the initial point of generation. The certification must be signed by an authorized representative and must state as follows: "I certify under penalty of law that the generic exclusion levels for all constituents have been met without impermissible dilution and that no characteristic of hazardous waste is exhibited. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

**PART 266—STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES**

3. The authority citation for part 266 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6924, and 6934.

**Subpart C—Recyclable Materials Used in a Manner Constituting Disposal**

4. Section 266.20 is amended by revising paragraph (c) to read as follows:

**§ 266.20 Applicability.**

(c) Slags generated from high-temperature metals recovery (HTMR) processing of hazardous waste K061, K062, and F006, that are used in a manner constituting disposal are not covered by the exemption in paragraph (b) of this section and remain subject to regulation. However, these slags are not hazardous wastes if they meet the concentration levels as specified in § 261.3(c)(2)(ii)(C) and are used or disposed of as specified in § 261.3(c)(2)(ii)(C);

**PART 268—LAND DISPOSAL RESTRICTIONS**

5. The authority citation for part 268 continues to read as follows:

Authority: 42 U.S.C. 6905, 6912(a), 6921, and 6924.

6. Table "Treatment Standards for Hazardous Wastes" in § 268.40 is amended by adding a footnote "8" at the end of the table and in the second column in the table, "Waste Description

and Treatment/Regulatory Subcategory" for waste codes F006, K061, and K062 to read as follows:

**§ 268.40 Applicability of treatment standards.**

<sup>8</sup> See also restrictions on use of slags in § 261.3(c)(2)(ii)(C) and § 266.20(c).

[FR Doc: 94-31617 Filed 12-28-94; 8:45 am]

BILLING CODE 6560-50-P

**DEPARTMENT OF HEALTH AND HUMAN SERVICES**

**Health Care Financing Administration**

**42 CFR Chapter IV**

[BPD-822-N]

**Medicare Program; Hospice Wage Index.**

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Notice of Establishment of a Negotiated Rulemaking Advisory Committee.

**SUMMARY:** The Health Care Financing Administration announces the establishment of the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will negotiate the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. A new wage index is needed because the index currently used is based on 1981 wage and employment data.

**FOR FURTHER INFORMATION CONTACT:** Janice Flaherty, (410) 966-4637

**SUPPLEMENTARY INFORMATION:** Under the authority of the Negotiated Rulemaking Act of 1990 (Pub. Law 101-648, 5 U.S.C. 581-590), the Secretary of the Department of Health and Human Services has established the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will provide advice and make recommendations with respect to the content of a proposed rule on the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. The Committee consists of representatives of interests that are likely to be significantly affected by the proposed rule.

Hospice care was included as a Medicare benefit in the Tax Equity and Fiscal Responsibility Act of 1982, and implemented effective November 1, 1983. The statutory authority for payment of hospice care under

Medicare is contained in section 1814(i) of the Social Security Act.

On October 14, 1994, we published a notice of intent in which we requested public comment on use of the negotiated rulemaking process to develop a wage index for hospice care (59 FR 52129). As a result, we received 8 public comments. The commenters supported our decision to establish a negotiating committee and utilize the negotiated rulemaking process for this purpose.

All Committee meetings are open to the public. The dates, locations, and agendas for the meetings will be announced in the **Federal Register** in accordance with the requirements of the Federal Advisory Committee Act and 45 CFR 11.4(c)(3).

(Section 9(a) of Public Law 92-463 (5 U.S.C. App 2, section 9(a)); 45 C.F.R. Part 11 )

(Catalog of Federal Domestic Assistance Program No. 93.773 Medicare—Hospital Insurance Program)

Dated: December 21, 1994.

**Bruce C. Vladeck,**

*Administrator, Health Care Financing Administration.*

[FR Doc. 94-32069 Filed 12-28-94; 8:45 am]

BILLING CODE 4120-01-P

**42 CFR Chapter IV**

[BPD-823-N]

**Medicare Program; Hospice Wage Index**

**AGENCY:** Health Care Financing Administration (HCFA), HHS.

**ACTION:** Notice of meeting.

**SUMMARY:** In accordance with section 10(a) of the Federal Advisory Committee Act (FACA), this notice announces a meeting of the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The meeting is open to the public.

**DATES:** The meeting is scheduled for January 17-18, 1995, from 9 a.m. until 5 p.m. e.s.t.

**ADDRESSES:** The meeting will be held at the Comfort Inn, 6921 Baltimore-Annapolis Blvd., Baltimore, MD 21225.

**FOR FURTHER INFORMATION CONTACT:** Janice Flaherty, (410) 966-4637

**SUPPLEMENTARY INFORMATION:** Under the authority of the Negotiated Rulemaking Act of 1990 (Pub. Law 101-648, 5 U.S.C. 581-590), the Secretary of the Department of Health and Human Services has established the Negotiated Rulemaking Advisory Committee on the Medicare Hospice Wage Index. The Committee will make recommendations with respect to the content of a

proposed rule on the wage index used to adjust payment rates for hospice care under the Medicare program to reflect local differences in area wage levels. The Committee consists of representatives of interests that are likely to be significantly affected by the proposed rule.

A meeting of the Committee will be held on January 17-18, 1995. The following topics will be discussed:

- Presentation of information on possible sources of wage and employment data including discussion of the wage indexes currently applied elsewhere in the Medicare program.

Implementation options. Individuals or organizations who wish to make oral presentations may do so. However, the number of presentations may be limited by the time available. Individuals may also submit written statements for the Committee's consideration. For information on how to do this, please contact the committee facilitator, Judy Ballard at (202) 690-7419.

(Section 10(a) of Public Law 92-463 (5 U.S.C. App. 2, section 10(a)); 45 C.F.R. Part 11)

(Catalog of Federal Domestic Assistance Program No. 93.773 Medicare—Hospital Insurance Program)

Dated: December 21, 1994.

**Bruce C. Vladeck,**

*Administrator, Health Care Financing Administration.*

[FR Doc. 94-32068 Filed 12-28-94; 8:45 am]

BILLING CODE 4120-01-P

**DEPARTMENT OF THE INTERIOR**

**Bureau of Reclamation**

**43 CFR Part 432**

RIN 1006-AA34

**Fish and Wildlife Service**

**50 CFR Chapter I**

**Central Valley Project—Purposes, Uses, and Allocation of Water Supplies**

**AGENCY:** Department of the Interior, Bureau of Reclamation and Fish and Wildlife Service.

**ACTION:** Advance notice of proposed rulemaking.

**SUMMARY:** The Bureau of Reclamation (Reclamation) and the Fish and Wildlife Service (Service) have initiated the preparation of proposed rules and regulations concerning implementation of certain provisions of the Central Valley Project Improvement Act (CVPIA). The CVPIA applies to the Central Valley Project (CVP), California,

and to the use and allocation of CVP water. Comments are invited at this time on what the substantive content of proposed rules and regulations should be.

**DATES:** The deadline for receiving written comments is February 1, 1995.

**ADDRESSES:** Written comments should be sent to Gary Sackett, Attention: MP-400, Mid-Pacific Region, Bureau of Reclamation, 2800 Cottage Way Sacramento, CA 95825.

**FOR FURTHER INFORMATION CONTACT:** Ron Brockman at (916) 979-2323 or Gary Sackett at (916) 979-2317

**SUPPLEMENTARY INFORMATION:** The CVPIA (Title XXXIV of P.L. 102-575, 106 Stat. 4706) provides for a number of changes in the purposes and operation of the CVP and in the use and allocation of CVP water. Subsection 3408(a) of the CVPIA authorizes the Secretary of the Interior to promulgate “\* such regulations as may be necessary to implement the intent, purposes and provisions \*” of the CVPIA. Reclamation and the Service have been authorized by the Secretary to act on his behalf in this regard.

The Service and Reclamation published a notice in the **Federal Register**, 59 FR 39316, Aug. 2, 1994, which stated that they had tentatively concluded that the following provisions of the CVPIA should be considered for rulemaking:

Subsection	Title
3404(c) .....	Renewal of Long-Term Contracts.
3405(a) .....	Transfer of CVP Water.
3405(d) .....	Water Pricing.
3405(e) .....	Water Conservation Standards.
3406(b)(2) .....	800,000 Acre-Feet for Fish, Wildlife, and Habitat Restoration.
3406(b)(22) .....	Incentives to Flood Fields for Waterfowl Habitat.
3407(a)-(d) .....	Restoration Fund.
3408(c)-(d) .....	Exchanges, Storage, Conveyance, and Banking.
3408(h) .....	Land Retirement.
3408(i) .....	Cost Sharing of Water Conservation Projects.

This notice also announced public meetings, and invited written comment, on the questions of: (1) whether these are appropriate provisions of the CVPIA to address through rulemaking, and (2) whether there are other provisions of the CVPIA that should be addressed.

The public comments received have suggested that, in addition to the above identified provisions of the CVPIA, rules and regulations should be considered for the following seven subsections:

**Horsehead Corporation's Comments Regarding the  
Department of Public Health – Rules and Regulations for  
Bulk Materials Storage Piles Proposed December 17, 2013**

**ATTACHMENT 2**

ILLINOIS POLLUTION CONTROL BOARD  
February 17, 2000

IN THE MATTER OF: )  
)  
PETITION OF HORSEHEAD RESOURCE ) AS 00-2  
AND DEVELOPMENT COMPANY, INC. ) (Adjusted Standard - RCRA)  
FOR AN ADJUSTED STANDARD UNDER)  
35 ILL. ADM. CODE 720.131(c) )

JOHN N. MOORE OF THE LAW OFFICES OF JOHN N. MOORE, P.C. AND PAUL E. GUTERMANN OF AKIN, GUMP, STRAUSS, HAUER & FELD, L.L.P. APPEARED ON BEHALF OF PETITIONER; and

PETER E. ORLINSKY APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by N.J. Melas):

Petitioner Horsehead Resource and Development Company, Inc. (Horsehead) operates a permitted solid waste management facility at 2701 E. 114th St. in Chicago, Cook County, Illinois. Horsehead recycles a hazardous waste, which is a byproduct of steel production, to make zinc-bearing materials. Horsehead has petitioned the Board to determine that its crude zinc oxide (CZO) product from the Chicago facility be classified as a commodity-like material rather than a "solid waste" or "hazardous waste" under the Resource Conservation and Recovery Act (RCRA) and corresponding Illinois hazardous waste rules and regulations<sup>1</sup>. Horsehead wants to sell CZO without being subject to Illinois hazardous waste requirements.

Horsehead has filed a petition for an adjusted standard pursuant to 35 Ill. Adm. Code 720.131(c). Section 720.131(c) allows the Board to determine that certain materials are excepted from the definition of solid wastes (and therefore not hazardous wastes) if the materials meet certain criteria. Horsehead claims that its CZO recovered from electric arc furnace dust (EAF dust) by a high temperature metals recovery (HTMR) process meets the criteria. The Illinois Environmental Protection Agency (Agency) has recommended that the Board grant Horsehead's petition for an adjusted standard.

The Board finds that CZO is excepted from the definition of solid waste. The Board therefore grants Horsehead's petition for an adjusted standard subject to the conditions set forth in this order.

PROCEDURAL HISTORY

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<sup>1</sup> RCRA is the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended, 42 U.S.C. 6901 *et seq.* Board regulations at issue in the instant opinion and order are nearly identical to US Environmental Protection Agency (USEPA) regulations promulgated pursuant to RCRA.

On July 20, 1999, Horsehead filed a petition for an adjusted standard (petition) with the Board under 35 Ill. Adm. Code 720.131(c). However, Horsehead failed to timely cause publication of the required notice. As a result, the Board dismissed the petition, but allowed Horsehead leave to refile the petition. See In re Horsehead Resource and Development Company, Inc. (August 5, 1999), AS 00-1.

On August 6, 1999, Horsehead refiled the petition for the adjusted standard with the Board. On that same date, Horsehead filed a motion requesting that the Board incorporate the record from docket AS 00-1 into a new docket which the Board numbered docket AS 00-2. Pursuant to Board regulations, Horsehead caused timely publication of the required notice on August 7, 1999, and filed a certificate of publication with the Board on August 11, 1999. See 35 Ill. Adm. Code 106.711 and 106.712.

On July 20, 1999, the Board received a motion to appear *pro hac vice* from attorney John N. Moore, and on September 7, 1999, the Board received a motion to appear *pro hac vice* from attorney Paul E. Gutermann.

Also on July 20, 1999, Horsehead filed an application for non-disclosure of confidential data (non-disclosure application). Horsehead sought to protect certain confidential financial data in the petition pursuant to Section 101.161 of the Board's procedural rules. See 35 Ill. Adm. Code 101.161. Horsehead asked for non-disclosure of certain financial data in its petition pursuant to 35 Ill. Adm. Code 101.161(a)(3) which provides that confidential data may be protected in a Board non-disclosure order. Specifically, Horsehead sought to prevent disclosing the prices that it charges for CZO to two of its customers, Zinc Nacional and Zinc Corporation of America (ZCA). Horsehead also sought to protect certain information on CZO's economic value. App. at 2. Horsehead claimed that disclosure of the information would inhibit its ability to competitively market CZO. App. at 3.

On September 9, 1999, the Board accepted Horsehead's refiled petition for the adjusted standard, granted Horsehead's request to incorporate the record from docket AS 00-1 into docket AS 00-2, granted motions from attorneys John N. Moore and Paul E. Gutermann to appear *pro hac vice*, and granted Horsehead's non-disclosure application. See In re Horsehead Resource and Development Company, Inc. (September 9, 1999), AS 00-2.

On August 27, 1999, the Illinois Environmental Protection Agency timely filed its response to Horsehead's petition. In the response, the Agency recommended that the Board grant the petition assuming that Horsehead provided more information on chlorine content in CZO and Horsehead's response in the event of an accidental release of raw material or CZO.

On September 10, 1999, Horsehead filed its reply to the Agency's response. In the reply, Horsehead addressed the Agency's concerns regarding chlorine and procedures in the event of an accidental release.

On October 28, 1999, Board Hearing Officer John Knittle held the required hearing in this matter. See 35 Ill. Adm. Code 106.415(a). Horsehead presented one witness, James M.

Hanrahan, one of its corporate vice presidents. Tr. at 8-10.<sup>2</sup> Knittle found Hanrahan to be credible. Tr. at 34. Horsehead also introduced three exhibits, and Knittle admitted all of them. Tr. at 6-7. At hearing, Hanrahan further addressed the Agency's concerns regarding accidental releases. He also answered Agency questions on the value of CZO and Horsehead's internal manufacturing processes. Tr. at 27-32. At hearing, counsel for the Agency stated that the questions raised in the response had been answered and recommended that the Board grant the requested adjusted standard to Horsehead. Tr. at 34. The Agency offered no exhibits, and the parties chose not to file posthearing briefs.

### LEGAL FRAMEWORK

Under Subtitle C of RCRA and corresponding Illinois laws and regulations, hazardous wastes are a subset of solid wastes. A material that is not a solid waste cannot be regulated as a hazardous waste. Illinois hazardous waste regulations govern those who generate, treat, store, dispose, recycle, or transport hazardous waste. See 35 Ill. Adm. Code 722-726, 728.

A solid waste is generally "any discarded material". See 35 Ill. Adm. Code 721.102. A solid waste can become a hazardous waste in two ways. A solid waste can exhibit a "characteristic" of hazardous waste (i.e., toxic, corrosive, ignitable, or reactive). Secondly, the solid waste can be a "listed" hazardous waste if, for example, it comes from a certain type of process such as electroplating. 35 Ill. Adm. Code 721.103; also see generally 35 Ill. Adm. Code 721 Subparts C and D.

Board regulations at 35 Ill. Adm. Code 720.131(c)<sup>3</sup> establish criteria that allow the Board to make exceptions for certain partially-reclaimed materials that would otherwise be considered solid or hazardous wastes. If the partially-reclaimed material in question meets these criteria, then it is not considered a solid or hazardous waste. Section 720.131(c) provides that:

The Board will determine that those materials that have been reclaimed but must be reclaimed further before recovery is completed are not solid wastes if, after initial reclamation, the resulting material is commodity-like (even though it is not yet a commercial product, and has to be reclaimed further). This determination will be based on the following criteria:

- 1) The degree of processing the material has undergone and the degree of further processing that is required;
- 2) The value of the material after it has been reclaimed;
- 3) The degree to which the reclaimed material is like an analogous raw material;

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<sup>2</sup> The transcript of the hearing is cited as "Tr. at \_\_."

<sup>3</sup> The corresponding federal rule is 40 CFR § 260.31(c) (1998).

- 4) The extent to which an end market for the reclaimed material is guaranteed;
- 5) The extent to which the reclaimed material is handled to minimize loss; and
- 6) Other relevant factors. 35 Ill. Adm. Code 720.131(c).

Horsehead claims that its CZO product is not a solid nor hazardous waste. It claims that CZO, which is partially reclaimed from EAF dust, is commodity-like pursuant to the criteria in 35 Ill. Adm. Code 720.131(c). Exh. 1 at 5.<sup>4</sup>

### FINDINGS OF FACT

Horsehead is the largest operator of HTMR facilities and the primary recycler of EAF dust in the United States. Tr. at 7, 11; Exh. 1 at 6. Horsehead has traditionally used Waelz rotary kilns to produce zinc products from zinc ores and other materials containing zinc. In the 1970s, operators of Waelz kilns discovered that EAF dust was an effective alternative feedstock to zinc ores. Exh. 1 at 6. Horsehead operates two Waelz rotary kiln HTMR units at its Chicago facility. Tr. at 14; Exh. 1 at 7.

### EAF Dust

Most EAF dust is an airborne byproduct of a process in which scrap steel (usually coated with zinc) is melted in an electric arc furnace or mini mill and recycled to form new steel products. The EAF dust is collected in baghouses at the steel plants. Tr. at 11; Exh. 1 at 6, Att. 13; 35 Ill. Adm. Code 721.132. EAF dust contains zinc, in addition to recoverable quantities of cadmium and lead. Tr. at 11; Exh. 1 at 6. In the past, most EAF dust was disposed. Exh. 2 at 3.

### Horsehead's Production Process

Horsehead produces CZO by recycling a mixture which is about 90% EAF dust and about 10% hazardous and non-hazardous zinc-bearing feedstocks. Tr. at 12; Exh. 1 at 1, 7. The EAF dust and other feedstocks arrive at Horsehead via enclosed railcar or truck. Upon arrival, Horsehead tests the feedstocks including generator-specific tests for metal content. Tr. at 13; Exh. 1 at 7, Att. 1.

Feedstocks are then introduced directly into the curing and blending (C&B) building without being stored. Tr. at 13, 28-29; Exh. 1 at 7-8, Att. 1. Water is added to the feedstocks before they are cured, blended, and then sent by conveyor belt to a feed hopper. The feedstocks now have a uniform feed composition which allows for optimal efficiency once the feedstocks are introduced into the Waelz kiln HTMR units. Tr. at 13, 28; Exh. 1 at 8. From the feed bins, another conveyor belt supplies the

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<sup>4</sup> Horsehead's petition, which was entered into evidence at hearing as an exhibit, is cited as "Exh. 1 at \_." Likewise, the Agency's response is cited as "Exh. 2 at \_.", and Horsehead's reply is cited as "Exh. 3 at \_."

Waelz kilns. Just before the feedstocks enter the Waelz kilns, a carbon source (such as coke) is added. Tr. at 13-14, 28; Exh. 1 at 8, Att. 1.

During the HTMR process, the feedstocks are heated to 1200 degrees Celsius in order to chemically reduce nonferrous metals. Waelz kilns are essentially long rotating tubes with one end higher than the other. As the feedstock flows down the length of the tube, the zinc material is reduced. As it volatilizes, it rises up from the feedstocks into a countercurrent airstream. This airstream carries the zinc material out of the upper end of the Waelz kiln. Tr. at 14; Exh. 1 at 8-9, Att. 1.

The HTMR process results in no waste nor water discharges. Exh. 1 at 8; Exh. 2 at 4; Exh. 3 at 3.

### CZO and IRM

The resulting zinc material from the upper end of the Waelz kiln is CZO. It is cooled and collected in Agency-permitted product collectors. An enclosed screw conveyor then transfers the CZO to fully-enclosed pressure differential railcars for shipment. Tr. at 14; Exh. 1 at 8-9, Att. 1; Exh. 3 at 5.

CZO has a much higher zinc content and much lower in iron content than the EAF dust. CZO is approximately 60% zinc as opposed to the HTMR feedstocks which are only about 15% zinc. Tr. at 16; Exh. 1 at 11. The chart below details the change in the constituency from the Waelz kiln HTMR feedstock to CZO.

<u>Major Constituents</u>	<u>HTMR Feedstock (% weight)</u>	<u>CZO (% weight)</u>
Zinc	14.9	58.8
Iron	26.5	5.3
Calcium	5.0	1.0
Manganese	2.2	0.5
Magnesium	2.0	0.4



Silicon	1.5	0.4
Sulfur	1.1	0.9
Chlorine	0.9	4.5
Lead	0.8	3.6
Sodium	0.7	1.7
Potassium	0.6	2.1
Aluminum	0.5	0.1
Fluorine	0.3	0.3

Exh. 1 at 12.

At the lower end of the Waelz kiln, Iron-Rich Material (IRM) is collected. The IRM is about 50% iron, which is double the percentage of iron in the feedstock. IRM is sold for use in asphalt aggregate, cement production, or construction aggregate. Tr. at 11-12, 14-15, 16; Exh. 1 at 8, Att. 1.

#### Value of CZO

Horsehead changes EAF dust, a product with negative value, into CZO and IRM, products with substantial positive values. EAF dust has a negative value because generators of EAF dust pay for it to be either disposed or recycled. Tr. at 11, 22, 27-28; Exh. 1 at 18, 22. CZO is valuable because it is high in zinc and low in constituents such as iron that cannot be processed at zinc production plants. Exh. 1 at 18, 22-23. Demand for Horsehead's CZO is strong, and, as a result, Horsehead has never stored or stockpiled CZO. Tr. at 20, 24; Exh. 1 at 25.

Worldwide zinc prices are set on the London Metals Exchange (LME). The value of CZO is based on its zinc percentage and the fluctuating price of zinc set by the LME. Zinc purchasers, such as ZCA and Zinc Nacional, may revise this equation and deduct a processing charge from CZO. The value of non-zinc constituents in CZO also affect its price. Exh. 1 at 18-19, 25.

Although the Board determined that Horsehead was not required to disclose the prices that it charges its customers for CZO (See In re Horsehead Resource and Development Company, Inc. (September 9, 1999), AS 00-2), Horsehead's adjusted standard petition included prices that other CZO manufacturers have charged to their customers. Although Horsehead did not disclose its CZO prices in its petition, at hearing Hanrahan admitted that Horsehead's prices for its CZO are "in the same range" as the price that AmeriSteel charged to Big River Zinc (BRZ) for a zinc product virtually identical CZO. Hanrahan also admitted that the value of CZO is comparable to roasted zinc concentrates produced from mined ore. Tr. at 20-21, 25; Exh. 1 at 21, 22; Exh. 2 at 3; In re Big River Zinc Corporation (April 15, 1999), AS 99-3, slip op. at 13.

#### CZO Compared to Roasted Zinc Concentrates

Sulfide zinc ores extracted from the ground are typically 3% to 5% zinc. Before zinc ores can reach the quality of CZO, they must be mined, crushed, and milled. The ores are then

subject to sequential floatation/separation, dewatering, and drying which results in a zinc concentrate. Although CZO contains more salts, iron, and lead than zinc concentrates, zinc concentrates contain more sulfur than CZO. Exh. 1 at 24. Zinc concentrates must be roasted to produce roasted zinc concentrates and recover sulfur in the form of sulfur dioxide gas. Exh. 1 at 14, 24, Att. 4. Roasted zinc concentrates are similar enough to CZO that both are suitable as a feedstock in zinc production. Exh. 1 at 23-24.

### Markets for CZO

Zinc refineries are not able to process EAF dust, but they are able to process CZO. Exh. 1 at 11, 18. Plants in Japan, Germany, Italy, Spain, France, Mexico, and the United States produce hundreds of thousands of tons of CZO annually. If the plant is an integrated zinc manufacturing complex, the CZO is used on site. If not, the CZO is sold to other companies that manufacture zinc. The Commodities Research Unit, a London-based research firm, issued a report predicting that demand for CZO will continue to grow. In fact, CZO is increasingly replacing the need for zinc ores in European smelters. Exh. 1 at 19-21, 25, Att. 7.

### Zinc and Zinc Calcine Production

Horsehead sells CZO to ZCA for use as a feedstock in zinc production at ZCA's plant in Monaca, Pennsylvania.<sup>5</sup> Exh. 1 at 13.

Horsehead also sends CZO to its facility in Palmerton, Pennsylvania to be used as a feedstock for calcining. Tr. at 17; Exh. 1 at 6, 13, 15; Exh. 3 at 3. Calcining further purifies the CZO by washing out salts and removing lead. This washing results in a product called zinc calcine. Compared to CZO which is a little less than 60% zinc, zinc calcine is about 60% to 65% zinc. Horsehead then sells zinc calcine to ZCA. Tr. at 17-18; Exh. 1 at 15, Att. 6; Exh. 3 at 3.

To ensure efficiency in the zinc manufacturing process, ZCA blends CZO, zinc calcine, roasted zinc concentrates, and other zinc-bearing materials into a uniform feedstock. Exh. 1 at 15; Exh. 3 at 3. This uniform feedstock requires some additional processing at a zinc refinery - namely sintering and thermal reduction. Exh. 1 at 13, 14, Att. 4.

Sintering densifies and hardens the zinc oxides and reduces some of the other constituents in the zinc feed. The zinc oxides are mixed with a carbon source (for fuel) and a silica (to bind the materials together). The sintering machine heats the materials to 900 - 1,200 degrees Celsius. Sintering produces zinc sinter and lead concentrate. The lead concentrate is a feedstock for another process. The zinc sinter is feedstock for an electrothermic furnace. Tr. at 19; Exh. 1 at 13, 14, Att. 4; Exh. 3 at 2.

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<sup>5</sup> Horsehead and ZCA are separate companies both owned by Horsehead Industries, Inc. Tr. at 32; Exh. 1 at 13.

The electrothermic furnace removes oxygen and minor constituents of the zinc sinter. The furnace vaporizes and condenses the zinc sinter which produces zinc metal and non-hazardous slag. Exh. 1 at 14, Att. 4. ZCA makes zinc metal slabs and ingots from the zinc metal. Exh. 1 at 13, Att. 4.

Removing Salts. The Agency asked Horsehead to comment on the higher chlorine content in CZO compared to mined concentrates and also asked if the chlorine posed any pollution control problems. Exh. 2 at 3. Horsehead responded that although CZO requires additional processing because it has more salts (the source of the chlorine) than zinc concentrates, zinc concentrates require additional processing because they have far more sulfur than CZO. CZO is a more predictable and uniform feedstock than zinc concentrates because the percentage of zinc in CZO is less variable than in zinc concentrates. Tr. at 22-24; Exh. 1 at 13, 24, Att. 10.

Salts in CZO are removed after CZO has left Horsehead's Chicago facility - both during the calcining process and during the zinc production process. Calcining is essentially a purifying step that increases zinc concentration and reduces the salt content in CZO. As a result, calcining also leads to a reduction in the amount of salts charged to ZCA's sinter machine. Exh. 1 at 16. The salts removed during the calcining process attach to a lead concentrate material which is shipped to another facility in Oklahoma. Tr. at 18. That facility processes the lead concentrate to recover metals. The salts are removed from the lead concentrate into a non-hazardous water stream. This stream is injected into a permitted non-hazardous deep well in Oklahoma for disposal. Tr. at 18-19; Exh. 3 at 3.

Even though most salts are removed from zinc calcine, there are salts in the other zinc-bearing feedstocks (including CZO) prior to sintering. During sintering, much like during calcining, the salts primarily attach to a lead concentrate. Incidental salts in water from this part of the process are sent to an NPDES permitted outfall at the ZCA facility. Tr. at 19; Exh. 3 at 2-3.

### Micronutrient Production

CZO is also suitable as an ingredient in the production of micronutrients. Tr. at 17; Exh. 1 at 13. Horsehead sells CZO to Zinc Nacional, a pyrometallurgical facility in Monterey, Mexico. Horsehead transports CZO to the Mexican border where Zinc Nacional takes title to it. Zinc Nacional pelletizes the CZO. The pellets are then subject to a two step calcining process which volatilizes certain metal compounds, washes out salts, and produces zinc oxide. Zinc Nacional sells the zinc oxide to agricultural firms which use it as a micronutrient in animal feed. Tr. at 17; Exh. 1 at 17-18.

### Loss Minimization and Emergency Procedures

Horsehead claims to have equipment which eliminates, wherever possible, loss of the product into the environment during the manufacturing and shipping processes. Exh. 1 at 26 -28. Horsehead manages its feedstocks in an enclosed negative pressure environment. All transfer points have collection equipment and Agency-permitted baghouses to prevent loss of the material and to recycle any material that is collected. Exh. 1 at 7, 8, 26; Exh. 2 at 4; Exh. 3 at 3. CZO is pneumatically conveyed from permitted product collectors through pipes that extend into enclosed pressure differential rail cars. The rail car loading tank is in an enclosed building. These cars leave Horsehead immediately after CZO is

produced. Off-site transport of CZO must comply with U.S. Department of Transportation regulations. Exh. 1 at 25, 26; Exh. 2 at 4; Exh. 3 at 3, 5.

Horsehead has two Agency-permitted product collectors. Each collector has several compartments, and each compartment has several bags. A compartment or bag can be repaired without interrupting the work of the other compartments. Exh. 3 at 5. Horsehead also has a 24 hour opacity monitors to measure gases exiting from the product collectors. An alarm connected to the opacity monitor alters the Waelz kiln operator if opacity levels increase. Exh. 3 at 4.

To quote Hanrahan, CZO “never sees the light of day”. Tr. at 25.

The Agency asked that Horsehead explain its procedures for loss minimization and explain its plans to address an accidental spill, ruptured baghouse, or other loss of CZO. Exh. 2 at 4. Horsehead has implemented several programs that aim to prevent the accidental release of CZO or its constituents. These include: employee training, inspection and monitoring, preventative maintenance, and comprehensive housekeeping. Tr. at 29-30; Exh. 3 at 4. One of the preventative maintenance programs involves constant temperature monitoring of the Waelz kilns. Tr. at 29-30.

Horsehead is also prepared to handle an accidental release. If a release were to occur, trained Horsehead personnel would respond. The area where CZO is managed is completely paved with either asphalt or concrete which would contain a CZO spill. The paved surface also allows for easier cleanup of the spilled material with vacuum trucks, road sweepers, or other equipment. Horsehead has also made arrangements with the proper regulatory agencies, fire departments, hospitals, and third party vacuum companies. The recovered CZO would be returned to the recycling process. Tr. at 30-31; Exh. 3 at 4.

## DISCUSSION

In this section, the Board will first address whether CZO is a solid waste. Next, the Board discusses if the provision at 35 Ill. Adm. Code 720.131(c) is available to Horsehead. Lastly, the Board evaluates the factors at 35 Ill. Adm. Code 720.131(c).

### Is CZO a Solid Waste?

Section 720.131(c) of the Board’s rules allows the Board to except materials that would otherwise be defined as solid wastes<sup>6</sup>. The Board must first determine if CZO is a solid waste. If CZO is not a solid waste, Horsehead does not need an adjusted standard.

A “solid waste” is any “discarded material” which the regulations do not otherwise exclude. See 35 Ill. Adm. Code 721.102(a)(1). One way that a material may be deemed “discarded” is by being “recycled” in a manner described at Section 721.102(c) of the Board’s rules. See 35 Ill. Adm.

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<sup>6</sup> As previously noted, hazardous wastes are a subset of solid wastes pursuant to RCRA Subpart C.

Code 721.102(a)(2). Section 721.102(c)(3) and Appendix Z to Part 721 of the Board's rules provide that if a "listed sludge" is "recycled" by being "reclaimed", it is a solid waste.<sup>7</sup>

Employing the definition set forth above, the Board finds that CZO is a solid waste. CZO is considered a "listed sludge." A "sludge" is defined as a "solid . . . waste generated from [an] . . . air pollution control facility . . ." 35 Ill. Adm. Code 721.101(c)(2); 35 Ill. Adm. Code 720.110. Horsehead recovers CZO from EAF dust. EAF dust is collected in air pollution control facilities at steel plants and is therefore a sludge. EAF dust is "listed" because it is listed as a hazardous waste from a specific source. EAF dust is listed as code K061, "emission control dust/sludge from the primary production of steel in electric furnaces". 35 Ill. Adm. Code 721.132.

While this listing applies to EAF dust rather than CZO, a material derived from the treatment of a listed hazardous waste is itself also a listed hazardous waste. 35 Ill. Adm. Code 721.103(c)(2)(A), (d)(2). In promulgating the federal RCRA regulations which are the basis for these State regulations, USEPA emphasized that "all of the residues from treating the original listed wastes are likewise considered to be the listed waste . . ." 54 Fed. Reg. 1,056, 1,063 (Jan. 11, 1989). Thus, CZO is also considered a listed sludge.

Next, the Board finds that EAF dust and the resulting CZO are being recycled by reclamation. USEPA stated that materials are considered reclaimed if "material values . . . are recovered as an end-product of a process (as in metal recovery from secondary materials)" or if they are "processed to remove contaminants in a way that restores them to their original usable condition." 50 Fed. Reg. 614, 633 (Jan. 4, 1985). Horsehead processes EAF dust via HTMR to remove contaminants and recover CZO. After further treatment of CZO including further removal of contaminants, the resulting zinc materials can be processed into zinc metal or used in animal feed.

CZO is a listed sludge that is recycled by being reclaimed. Therefore, CZO is a solid waste.

#### Applicability of Section 720.131(c)

USEPA stated that, generally, a waste which is being reclaimed remains a waste until the entire reclamation process is completed. 50 Fed. Reg. 614, 620, 633, 634, 655 (Jan. 4, 1985). Section 720.131(c) of the Board's rules is an exception to this principle. USEPA explains that the federal counterpart to Section 720.131(c) is for those situations in which "the initial reclamation step is so substantial that the resulting material is more commodity-like than waste-like even though no end-product has been recovered." 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

The Board finds that EAF dust that has been processed in the Waelz kiln HTMR units has been initially reclaimed but not fully reclaimed. After treatment in the Waelz kilns, CZO contains much more

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<sup>7</sup> A detailed discussion of how materials becomes solid waste can be found at Petition of Chemetco, Inc. for an Adjusted Standard From 35 Ill. Adm. Code. 720.131(a) and (c) (March 19, 1998), AS 97-2, slip op. at 11-12.

zinc that EAF dust contains. In addition, the Waelz kilns decrease the amount of IRM and contaminants such as calcium and manganese. Exh. 1 at 12.

However, CZO requires further processing in order to recover end products. Salts are removed from the CZO that is sent to Horsehead's Pennsylvania facility to make zinc calcine. ZCA blends CZO, zinc calcine, and other materials; sinters these blended materials; and then send them to an electrothermic furnace. The finished products are zinc slabs and zinc ingots. The CZO that Horsehead sends to Zinc Nacional is pelletized and calcined before it suitable as a micronutrient in animal feed.

The Board finds that Section 720.131(c) of the Board's rules is applicable in this case. Once EAF dust has been initially processed in a Waelz kiln HTMR unit, it has only been initially reclaimed, not fully reclaimed.

#### Section 720.131(c) Factors

The Board must determine whether CZO is commodity-like based on the factors at Section 720.131(c) of the Board's rules. Based on the analysis of the factors below, the Board finds that CZO is commodity-like. The Board addresses each of the factors herein.

#### The Degree of Processing the Material has Undergone and the Degree of Further Processing that is Required

USEPA has explained the federal counterpart to each of the Section 720.131(c) factors. In explaining this factor, USEPA stated "the more substantial the initial processing, the more likely the resulting material is to be commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). In the instant case, the initial processing of the EAF dust begins in the C&B building at Horsehead's Chicago facility where EAF dust is blended with small amounts of other zinc bearing materials and treated in order to provide a uniform composition for the Waelz kiln HTMR units. Tr. at 13, 28-29; Exh. 1 at 7-8, Att. 1. The primary initial processing occurs in the Waelz kilns, where the HTMR process separates out IRM and contaminants from the EAF dust to form CZO. HTMR increases the percentage of zinc from about 15% in EAF dust to nearly 60% in CZO. Tr. at 14; Exh. 1 at 8-9, 12, Att. 1. The primary input into the Waelz HTMR kiln unit is EAF dust, a material that generally cannot be used as a feedstock in zinc production. After treatment in the Waelz kiln HTMR units, two of the resulting products are IRM and CZO. CZO can be used a feedstock in zinc production.

As discussed above, despite the initial processing at the Horsehead Chicago facility, CZO must undergo further processing before it becomes either zinc ingots, zinc slabs, or a micronutrient in animal feed.

The Board need not determine whether all of the subsequent processing constitutes reclamation under RCRA. The Board finds that the processing at Horsehead's Chicago facility which turns EAF dust into CZO is substantial. The Board therefore finds that this factor supports Horsehead's claim that CZO is commodity-like.

### The Value of the Material After it has been Reclaimed

USEPA stated that “the more valuable a material is after initial processing, the more likely it is to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985). EAF dust has a negative value because generators typically pay others to take it away. Tr. at 11, 22, 27-28; Exh. 1 at 18-22. Although Horsehead’s contract terms for CZO are protected by non-disclosure, at hearing and in its petition Horsehead indicated that CZO is valuable. Tr. at 20-21, 25; Exh. 1 at 2, 21. Horsehead claimed and the Agency agreed that the sales price for CZO is similar to the sales price for roasted zinc concentrates. Tr. at 20-21, 25; Exh. 1 at 21; Exh. 2 at 3.

The Board finds that CZO has significant value.

### The Degree to which the Reclaimed Material is Like an Analogous Raw Material

USEPA stated “[i]f the initially-reclaimed material can substitute for a virgin material, for instance as a feedstock to a primary process, it is more likely to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

A good deal of processing, notably HTMR, is required before EAF dust becomes CZO. Likewise, a good deal of processing is required before mined sulfide zinc ores become roasted zinc concentrates, which have a constituency similar to CZO. Such processing includes crushing, milling, sequential flotation/separation, dewatering, drying, and roasting. Exh. 1 at 14, Att. 4.

Although they are not identical, both CZO and roasted zinc concentrates are suitable as feedstock for zinc production processes such as the ones described above at ZCA and Zinc Nacional. CZO has the advantage of containing a narrower range of zinc (56% to 61%) than zinc concentrates (48% to 61%) which makes CZO a more predictable and uniform feedstock. CZO contains more salts than zinc concentrates, and, as a result, much CZO is calcined before the sintering step at a zinc refinery. However, zinc concentrates contain more sulfur than CZO, and, as a result, zinc concentrates must be roasted before sintering. Exh. 1 at 16, 24.

The Board finds that CZO is similar to mined zinc concentrates and can be substituted for roasted zinc concentrates in zinc production processes.

### The Extent to which an End Market for the Reclaimed Material is Guaranteed

USEPA stated “[i]f the [petitioner] can show that there is an existing and guaranteed end market for the initially reclaimed material (for instance, value, traditional usage or contractual arrangements), the material is more likely to be commodity-like.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

Horsehead currently has contracts with ZCA and Zinc Nacional for the sale of its CZO. Exh. 1 at 22, Att. 8, Att. 9. Horsehead’s CZO is sent either to its facility in Palmerton, Pennsylvania, ZCA, or Zinc Nacional. Horsehead has never stored or stockpiled CZO. Tr. at 20, 24; Exh. 1 at 25. Horsehead either transfers or sells all of the CZO that it produces.

At least a dozen plants all over the world produce hundreds of thousands of pounds of CZO every year. Exh. 1 at 20. Obviously, such large scale production indicates that markets exist for CZO.

In its response to Horsehead's petition, the Agency stated that end markets for CZO appear to be guaranteed. Exh. 2 at 3. The Board agrees and finds that there is an end market for Horsehead's CZO and an end market for CZO in general.

#### The Extent to which the Reclaimed Material is Handled to Minimize Loss

USEPA stated that "the more carefully a material is handled, the more it is commodity-like." 50 Fed. Reg. 614, 655 (Jan. 4, 1985). When a material is handled to minimize loss, it indicates that the material has value. Loss minimization methods also reduce environmental hazards because they aim to prevent releases of material. Exh. 2 at 3.

All transfer points in Horsehead's Chicago facility have collection equipment and baghouses which allow Horsehead to collect released material and return it to the CZO manufacturing process. Exh. 1 at 7, 8, 26; Exh. 2 at 4; Exh. 3 at 3. Immediately after CZO is produced, Horsehead conveys it from product collectors via a pipe that extends into closed pressure differential rail cars for off-site shipment. These railcars are in an enclosed building. Tr. at 25; Exh. 1 at 18, 26. Horsehead has 24-hour opacity monitors to measure if any gases escape from the product collectors. Alarms alert plant personnel if there is a release, and the affected part of the product collector can be shut down for repairs to minimize further losses. Exh. 3 at 4.

In the event of an accidental release, Horsehead is prepared to clean up any spilled CZO and return it to the recycling process. In the event of a spill, trained personnel would use vacuum trucks, road sweepers, and other equipment to gather the CZO. Any area in which a CZO spill could occur is paved. Paved surfaces allow for an easier and much more complete cleanup of spilled CZO than non-paved surfaces. Tr. at 30-31; Exh. 3 at 4.

The Board finds that Horsehead handles CZO in order to minimize loss.

#### Other Relevant Factors

BRZ's Adjusted Standard. Horsehead claims that the Board's recently-granted adjusted standard for the Big River Zinc Corporation (BRZ) supports its petition for an adjusted standard. See In re Big River Zinc Corporation (April 15, 1999), AS 99-3; In re Big River Zinc Corporation (May 6, 1999), AS 99-3. In that adjusted standard, the Board held that the EAF zinc oxide to be received by BRZ for further processing was commodity-like instead of a solid waste. Horsehead claims that the EAF zinc oxide received and processed by BRZ is virtually identical to the CZO produced by Horsehead. Both EAF zinc oxide and CZO are produced from EAF dust in an HTMR process, contain very similar concentrations of zinc, and are used as a primary feedstock in the production of zinc products. Tr. at 8, 26; Exh. 1 at 2, 10, 28, 33, Att. 11; Exh. 3 at 1-2. Furthermore, in the BRZ opinion, the Board examined EAF zinc oxide and engaged in a nearly identical analysis - including



consideration of the factors at Section 720.131(c) of the Board rules - to determine that the EAF zinc oxide that BRZ was to receive and process was excepted from the definition of solid waste. In re Big River Zinc Corporation (April 15, 1999), AS 99-3, slip op. at 9-15.

There is one difference between BRZ's petition for an adjusted standard and Horsehead's petition. BRZ is a zinc refinery. It petitioned to have EAF zinc oxide declassified as an input to its production process. Horsehead, on the other hand, is seeking to have CZO declassified as an output of its production process. According to USEPA

“[a]pplicable regulatory requirements for the waste before initial reclamation are unaffected. The initial reclaimer will thus be a RCRA storage facility, and have to obtain a permit to store the wastes before reclaiming them. If a variance should be granted, however, the recovered material is not a waste and the subsequent reclaimer is not a RCRA facility.” 50 Fed. Reg. 614, 655 (Jan. 4, 1985).

In other words, Horsehead is an initial reclaimer and BRZ is a subsequent reclaimer. The Board finds it irrelevant whether the initial reclaimer or the subsequent reclaimer is asking for the adjusted standard. The adjusted standard does not relieve the initial reclaimer from complying with RCRA. Thus, the Board's adjusted standard for BRZ's EAF zinc oxide is a relevant factor supporting Horsehead's contention that CZO is commodity-like.

AmeriSteel Variance. Horsehead points out that in 1998 the Tennessee Department of Environmental Conservation (TDEC) provided AmeriSteel a variance from the definition of solid waste for its EAF zinc oxide product. AmeriSteel supplies this product to BRZ. Tr. at 26-27; Exh. 1 at 30-31, Att. 12. In its petition Horsehead cites a letter signed by the Director of TDEC's Division of Solid Waste Management attesting that AmeriSteel's EAF zinc oxide is granted a variance from classification of a solid and hazardous waste for five years, beginning September 11, 1998. Exh. 1 at Att. 12. TDEC determined that the EAF zinc oxide satisfied the Tennessee regulations for a variance from the classification of hazardous waste. The Tennessee regulations are nearly identical to federal and Illinois regulations. Exh. 1 at Att. 12; Tenn. Comp. R. & Regs. tit. 1200, ch. 1-11-.01(4)(a)(3), ch. 1-11-.01(4)(b) (1999). However, Horsehead does not provide any evidence of TDEC's analysis of Tennessee's regulations. There is no discussion of the factors that Tennessee should have applied in making the variance determination. As a result, the Board will not cite to TDEC's variance for AmeriSteel as a relevant factor.

SCDR Exclusion. Horsehead also states that USEPA excluded a material called splash condenser dross residue (SCDR) from the definition of solid waste. Horsehead claims that this should also be a relevant factor. Exh. 1 at 31; 56 Fed. Reg. 41164, 41173-41174 (Aug. 19, 1991). SCDR is the partially reclaimed small-volume byproduct of certain HTMR processes which use K061 hazardous waste as an input. SCDR is collected from a splash condenser and stored for up to two weeks before being sold to either zinc refiners or reused on-site in the HTMR process. SCDR also contains a significant amount of zinc (50% to 60%). USEPA did not grant a variance for SCDR, but

instead excluded it by rule from the definition of solid waste. In doing so, USEPA applied the federal equivalent of the Section 720.131(c) factors. 40 C.F.R. § 260.31(c); 56 Fed. Reg. 41164, 41174 (Aug. 19, 1991). The analysis, however, is cursory at best. The Board finds that the SCDR exclusion is not a relevant factor.

Conserving Natural Resources. Horsehead correctly points out that recycling EAF dust conserves natural resources by decreasing the need to mine non-renewable zinc ores. In addition, Horsehead's recycling process means that less EAF dust is sent to landfills. Tr. at 27; Exh. 1 at 1, 2, 28, 32, Att. 13; Exh. 2 at 4. Although the Board encourages increased recycling, it cannot be classified as a "relevant factor" because it is not relevant to the determination that CZO is commodity-like.

The Board finds that the only "other relevant factor" which supports the commodity-like nature of CZO is the Board's 1999 adjusted standard for BRZ's EAF dust zinc oxide.

#### Conditions on the Adjusted Standard

The Board is setting conditions on Horsehead's adjusted standard. The conditions are similar to those placed on BRZ for its adjusted standard. See In re Big River Zinc Corporation (May 6, 1999), AS 99-3.

The adjusted standard only applies to CZO produced from EAF dust via HTMR at Horsehead's Chicago facility and only applies to the CZO while it remains in Illinois.

As noted above, Horsehead claims that the EAF zinc oxide that BRZ receives and processes is virtually identical to the CZO that Horsehead produces. As the Board did with BRZ, the Board will require Horsehead to sample and test the material as a condition of the adjusted standard. Horsehead must test the CZO it produces for its percentage by weight of zinc, lead, iron, total gangue materials (silica plus calcium plus magnesium), and chloride. These are the same constituents for which BRZ must test its EAF zinc oxide under its adjusted standard. See In re Big River Zinc Corporation (May 6, 1999), AS 99-3, slip op. at 6. As a result, the Board mandates that Horsehead regularly test samples of its CZO for content according to generally accepted practices such as procedures outlined by USEPA. The Board also mandates that Horsehead maintain records of the sampling and test results. This will allow the Agency to assess whether Horsehead is indeed processing EAF dust via HTMR.

The Board wants to ensure that the adjusted standard only applies to CZO that is destined to undergo processing for recovery of an end product at either another Horsehead facility or another entity's facility. In addition, the Board also wants to ensure that Horsehead will not accumulate CZO at its Chicago facility. Section 720.131(c) of the Board's rules only applies to situations in which initial reclamation has taken place and further reclamation must take place in order to recover an end product. Thus, the adjusted standard only applies to CZO that (1) is destined for or has arrived at another Horsehead facility, (2) is under a legally binding contract for sale from Horsehead to another entity, or (3) has been acquired by another entity under a legally binding contract for sale from Horsehead. The Board also mandates that Horsehead maintain records regarding the destination of all CZO that it

produces under this adjusted standard. These conditions are similar to conditions that the Board placed on BRZ's adjusted standard, but have been tailored to the facts of this case.

Horsehead has several options if it objects to the conditions that the Board has placed on its adjusted standard. First, under the Board's procedural rules, Horsehead may file a motion to reconsider with the Board. Second, Horsehead may appeal the adjusted standard to the Illinois Appellate Court. Third, Horsehead may consider CZO a solid waste instead of handling the material under the conditions of the adjusted standard.

### CONCLUSION

The Board finds that Horsehead has established that CZO, which is produced by subjecting EAF dust to an HTMR process, is commodity-like. Thus, the Board finds that CZO is excepted from the definition of solid waste. The Board grants Horsehead's petition for an adjusted standard pursuant to Section 720.131(c) of the Board's regulations subject to the conditions set forth in this order.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

### ORDER

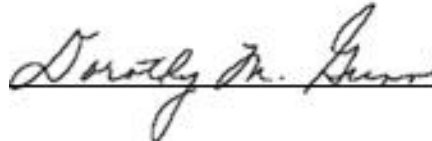
1. The Board finds that crude zinc oxide (CZO), which is produced by subjecting electric arc furnace (EAF) dust from the primary production of steel (K061 under 35 Ill. Adm. Code 721.132) to a high temperature metals recovery (HTMR) process, is excepted from the definition of solid waste and grants Horsehead Resource Development Company (Horsehead) an adjusted standard pursuant to 35 Ill Adm. Code 720.131(c).
2. The adjusted standard is subject to the following conditions:
  - a. The determination described in paragraph one of the order applies only to CZO:
    - (1) that has been subject to Horsehead's HTMR process at its facility in Chicago, Illinois and that will undergo further processing for the eventual recovery of an end product;
    - (2) that is in Illinois; and
    - (3) that will depart or has departed from Horsehead's Chicago facility and that:
      - (a) is destined for or has arrived at another Horsehead facility;
      - (b) is under a legally binding contract for sale from Horsehead to another entity; or

- (c) has been acquired by another entity under a legally binding contract for sale from Horsehead ;
- b. Horsehead must maintain records identifying the destinations, including purchasers, of all CZO that Horsehead produces under this adjusted standard;
- c. Each month, Horsehead must take representative samples of the CZO that it produces. Horsehead may composite the samples. Horsehead must test each sample on a monthly basis to determine the percentage by weight of zinc, lead, iron, total gangue materials (silica plus calcium plus magnesium), and chloride in the sample. Each sample must be collected and tested in accordance with generally accepted practices, such as those specified in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," USEPA Publication No. SW-846 (Third Edition, Updates I, II, IIA, IIB, and III); and
- d. Horsehead must maintain records of the information required in paragraphs 2(b) and 2(c) of this order for a period of three years and must make them available for the Illinois Environmental Protection Agency (Agency) to inspect and copy at any reasonable time during normal business hours upon the Agency's request.

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act (415 ILCS 5/41 (1998)) provides for the appeal of final Board orders to the Illinois Appellate Court within 35 days of service of this order. Illinois Supreme Court Rule 335 establishes such filing requirements. See 172 Ill. 2d R. 335; see also 35 Ill. Adm. Code 101.246, Motions for Reconsideration.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 17th day of February 2000 by a vote of 6-0.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board