

OARM-2006-0249, by one of the following methods:

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[obrien.johnt@epa.gov](mailto:obrien.johnt@epa.gov).

- Hand Delivery: Office of Environmental Information Docket, Environmental Protection Agency, EPA West Building, Room B102, 1301 Constitution Ave., NW., Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

**Instructions:** Direct your comments to Docket ID No. EPA-HQ-OARM-2006-0249. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through FDMS or e-mail. FDMS is an "anonymous access" system. This means that the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to the EPA without going through FDMS, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. The EPA recommends that you include your name and other contact information in the body of your electronic comment with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

**Docket:** All documents in the docket are listed in FDMS at <http://www.regulations.gov>. Although listed in the index, some information is not publicly available, *i.e.*, CBI or other information whose disclosure is

restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in FDMS or in hard copy at the Office of Environmental Information Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Office of Environmental Information Docket is (202) 566-1752.

**FOR FURTHER INFORMATION CONTACT:** For further information, please contact John O'Brien at (202) 564-7876, Office of Human Resources/Office of Administration and Resources Management, Mail Code 3631M, Room 1136 EPA-East, United States Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; e-mail address: [obrien.johnt@epa.gov](mailto:obrien.johnt@epa.gov). You may also contact William Ocampo at (202) 564-0987 or Robert Stevens at (202) 564-5703, Office of Research and Development, Mail Code 8102R, United States Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460; e-mail addresses: [ocampo.william@epa.gov](mailto:ocampo.william@epa.gov) and [stevens.robert@epa.gov](mailto:stevens.robert@epa.gov).

**SUPPLEMENTARY INFORMATION:** This document concerns the EPA's authority under 42 U.S.C. 209 to (1) establish fellowships in environmental protection research and appoint fellows to conduct this research and (2) appoint environmental protection special consultants to advise on environmental protection research. The provisions proposed here are identical to those contained in the Direct Final Rule located in the "Rules and Regulations" section of this **Federal Register** publication. Please refer to the preamble and regulatory text of the direct final action for further information and the actual text of the revisions. Additionally, all information regarding Statutory and Executive Orders for this proposed rule can be found in the Statutory and Executive Order Review section of the direct final action.

Dated: March 27, 2006.

**Stephen L. Johnson,**  
*Administrator.*

[FR Doc. 06-3205 Filed 4-3-06; 8:45 am]

**BILLING CODE 6560-50-P**

## ENVIRONMENTAL PROTECTION AGENCY

### 40 CFR Part 278

[EPA-HQ-RCRA-2006-0097; FRL-8050-8]

RIN 2050-AG27

### Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as "Chat"

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Proposed rule.

**SUMMARY:** The Environmental Protection Agency (EPA or Agency) is proposing mandatory criteria for the environmentally protective use of chat for transportation construction projects carried out in whole or in part with Federal funds, and a certification requirement. Chat used in transportation projects must be encapsulated in hot mix asphalt concrete or Portland cement concrete unless the use of chat is otherwise authorized by a State or Federal response action undertaken pursuant to applicable Federal or State environmental laws. Such response actions are undertaken with consideration of risk assessments developed in accordance with State and Federal laws, regulations, and guidance. EPA is also proposing to establish recommended criteria as guidance on the environmentally protective use of chat for non-transportation cement and concrete projects. The chat covered by this proposal is from the lead and zinc mining area of Oklahoma, Kansas and Missouri, known as the Tri-State Mining District.

**DATES:** Submit comments on or before May 4, 2006.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA-HQ-RCRA-2006-0097, by one of the following methods:

- <http://www.regulations.gov>: Follow the online instructions for submitting comments.

- *E-mail:* Comments may be sent by electronic mail (e-mail) to [rcra-docket@epa.gov](mailto:rcra-docket@epa.gov), Attention Docket ID No. EPA-HQ-RCRA-2006-0097. In contrast to EPA's electronic public docket, EPA's e-mail system is not an "anonymous access" system. If you send an e-mail comment directly to the Docket without going through EPA's electronic public docket, EPA's e-mail system automatically captures your e-mail address. E-mail addresses that are automatically captured by EPA's e-mail system are included as part of the

comment that is placed in the official public docket, and made available in EPA's electronic public docket.

- *Fax:* Comments may be faxed to 202-566-0272.
- *Mail:* Send two copies of your comments to Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as Chat, Environmental Protection Agency, Mailcode: 5305T, 1200 Pennsylvania Ave., NW., Washington, DC 20460.

- *Hand Delivery:* Deliver two copies of your comments to the Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as Chat Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC 20460. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

*Instructions:* Direct your comments to Docket ID No. EPA-HQ-RCRA-2006-0097. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov>, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/epahome/dockets.htm>. For additional instructions on submitting comments, go to the

**SUPPLEMENTARY INFORMATION** section of this document.

*Docket:* All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as Chat Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. This Docket Facility is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The Docket telephone number is (202) 566-0270. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Criteria for the Safe and Environmentally Protective Use of Granular Mine Tailings Known as Chat Docket is (202) 566-0270.

**FOR FURTHER INFORMATION CONTACT:** Stephen Hoffman, Office of Solid Waste (5306W), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0002, telephone (703) 308-8413, e-mail address [hoffman.stephen@epa.gov](mailto:hoffman.stephen@epa.gov). For more information on this rulemaking, please visit <http://www.epa.gov/epaoswer/other/mining/chat/>.

#### **SUPPLEMENTARY INFORMATION:**

##### **I. Does This Action Apply To Me?**

These proposed criteria may affect the following entities: Aggregate, asphalt, cement, and concrete facilities, likely limited to the tri-state mining area. Other types of entities not listed could also be affected. To determine whether your facility, company, business, organization, etc., is affected by this action, you should examine the applicability criteria in Section I.B.6 of this preamble. If you have any questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

##### **II. What Should I Consider as I Prepare My Comments for EPA?**

1. *Tips for Preparing Your Comments.* When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying information (subject heading, **Federal Register** date and page number).
- Follow directions—The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns, and suggest alternatives.
- Explain your views as clearly as possible.
- Make sure to submit your comments by the comment period deadline identified.

2. *Docket Copying Costs.* The first 100 copies are free. Thereafter, the charge for making copies of Docket materials is 15 cents per page.

##### **III. How Should I Submit CBI to the Agency?**

Do not submit information that you consider to be CBI electronically through <http://www.regulations.gov> or by e-mail. Send or deliver information identified as CBI only to the following address: RCRA CBI Document Control Officer, Office of Solid Waste (5305W), U.S. EPA, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, Attention Docket ID No. EPA-HQ-RCRA-2006-0097. You may claim information that you submit to EPA as CBI by marking any part or all of that information as CBI (if you submit CBI on disk or CD ROM, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is CBI). Information so marked will not be disclosed, except in accordance with procedures set forth in 40 CFR Part 2.

In addition to one complete version of the comment that includes any information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket and EPA's electronic public docket. If you submit the copy that does not contain CBI on disk or CD ROM, mark the outside of the disk or CD ROM clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and EPA's electronic public docket without prior

notice. If you have any questions about CBI or the procedures for claiming CBI, please contact: LaShan Haynes, Office of Solid Waste (5305W), U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, DC 20460-0002, telephone (703) 605-0516, e-mail address [haynes.lashan@epa.gov](mailto:haynes.lashan@epa.gov).

The contents of the **SUPPLEMENTARY INFORMATION** are listed in the following outline:

- I. Background Information
    - A. What Is the Statutory Authority for This Action?
    - B. What Action Is EPA Taking?
      1. What Is Chat?
      2. What Is the Areal Scope for This Action?
      3. Are There Any Current Regulations or Criteria for the Management or Use of Chat?
      4. Physical and Chemical Characteristics of Chat.
      5. What Are the Environmental and Health Effects Associated with Pollutants Released From Raw Chat?
      6. Who Is Affected by This Action?
    - C. What Was the Process EPA Used in Developing This Action?
  - II. Summary of the Proposed Rule
    - A. What Criteria Are EPA Establishing for the Use of Chat?
      1. Transportation Construction Uses
        - a. What is our proposed action?
        - b. What is the rationale for the Proposed Rule?
      - c. Is the EPA soliciting comments on specific issues?
    2. Non-Transportation Uses—Cement and Concrete Projects
      - a. What is our proposed approach?
      - b. What is the rationale for the Proposed Rule?
    - c. Is the EPA soliciting comments on specific issues?
  - B. Relationship of Proposed Criteria to Other State and Federal Regulations and Guidance
  - C. How Does This Proposal Affect Chat Sales From Lands Administered by the U.S. Bureau of Indian Affairs or Directly from Tribal Lands?
  - D. How Does This Proposal Affect CERCLA Liability, Records of Decision, and Removal Decisions?
- III. Impacts of the Proposed Rule
  - A. What Are the Potential Environmental and Public Health Impacts From the Use of Chat?
  - B. What Are the Economic Impacts?
- IV. Executive Orders and Laws Addressed in This Action
  - A. Executive Order 12866: Regulatory Planning and Review
  - B. Paperwork Reduction Act
  - C. Regulatory Flexibility Act
  - D. Unfunded Mandates Reform Act of 1995
  - E. Executive Order 13132: Federalism
  - F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments
  - G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

I. National Technology Transfer and Advancement Act

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

For the purposes of this action, the Agency defines the following terms as follows:

- *Encapsulated*—incorporated into hot mix asphalt concrete or Portland cement concrete (PCC).
- *Hot mix asphalt*—a hot mixture of asphalt binder and size-graded aggregate, which can be compacted into a uniform dense mass.
- *Pozzolanic*—a silica and lime containing material which, in the presence of moisture, forms a strong cement.
- *State or Federal remediation action*—State or federal response action undertaken pursuant to applicable federal or state environmental laws. Such response actions are undertaken with consideration of risk assessments developed in accordance with state and or federal laws, regulations, and guidance.
- *Raw chat*—unmodified lead-zinc ore milling waste.
- *Washed chat*—lead-zinc ore milling waste that has been wet-screened to remove the fine-grained fraction and which is sized so as not to pass through a number 40 sieve (0.425 mm opening size) or smaller.
- *Sized chat*—lead-zinc ore milling waste that has been wet-screened (washed) or dry sieved to remove the fine-grained fraction smaller than a number 40 sieve (0.425 mm opening size).
- *Non-transportation cement and concrete projects* are:—Construction uses of cement and concrete for non-residential structural uses limited to weight bearing purposes such as foundations, slabs, and concrete wall panels. Other uses include commercial/industrial parking and sidewalk areas. Uses do not include the residential use of cement or concrete (e.g., concrete counter tops).
- *Transportation construction uses*<sup>1</sup> are:

—*Asphalt concrete*—pavement consists of a combination of layers, which include an asphalt surface constructed over an asphalt base and

an asphalt subbase. The entire pavement structure is constructed over the subgrade. Pavements, bases, and subbases must be constructed using hot mix asphalt.

—*Portland cement concrete*—(PCC) pavements consisting of a PCC slab that is usually supported by a granular (made of compacted aggregate) or stabilized base and a subbase. In some cases, the PCC slab may be overlaid with a layer of asphalt concrete. Uses include bridge supports, bridge decking, abutments, highway sound barriers, jersey walls, and non-residential side walks adjacent to highways.

—*Flowable fill*—refers to a cementitious slurry consisting of a mixture of fine aggregate or filler, water, and cementitious materials which is used primarily as a backfill in lieu of compacted earth. This mixture is capable of filling all voids in irregular excavations, is self leveling, and hardens in a matter of a few hours without the need of compaction in layers. Most applications for flowable fill involve unconfined compressive strengths of 2.1 MPa (300 lb/in<sup>2</sup>) or less.

—*Stabilized base*—refers to a class of paving materials that are mixtures of one or more sources of aggregate and cementitious materials blended with a sufficient amount of water that result in the mixture having a moist nonplastic consistency that can be compacted to form a dense mass and gain strength. The class of base and subbase materials is not meant to include stabilization of soils or aggregates using asphalt cement or emulsified asphalt.

—*Granular bases*—are typically constructed by spreading aggregates in thin layers of 150 mm (6 inches) to 200 mm (8 inches) and compacting each layer by rolling over it with heavy compaction equipment. The aggregate base layers serve a variety of purposes, including reducing the stress applied to the subgrade layer and providing drainage for the pavement structure. The granular subbase forms the lowest (bottom) layer of the pavement structure and acts as the principal foundation for the subsequent road profile.

—*Embankment*—refers to a volume of earthen material that is placed and compacted for the purpose of raising the grade of a roadway above the level of the existing surrounding ground surface.

- *Unencapsulated*—material that is not incorporated into hot mix asphalt concrete or Portland cement concrete.

<sup>1</sup>User Guidelines for Waste and By-Product Materials in Pavement Construction Publication No. FHWA-RD-97-148 April 1998, U.S. Department of Transportation, Federal Highway Administration.

## Abbreviations and Acronyms Used in This Document

CAA—Clean Air Act (42 USCA 7401).  
 CERCLA—Comprehensive Environmental Response Compensation and Liability Act (42 USCA 9601).  
 CFR—Code of Federal Regulations.  
 CWA—Clean Water Act (33 USCA 1251).  
 EPA—Environmental Protection Agency.  
 FHWA—Federal Highway Administration.  
 FR—Federal Register.  
 ICR—Information Collection Request.  
 MCL—Maximum Contaminant Level (Safe Drinking Water Act).  
 NPL—National Priorities List.  
 ppmv—parts per million by volume.  
 ppmw—parts per million by weight.  
 Pub. L.—Public Law.  
 RCRA—Resource Conservation and Recovery Act (42 USCA 6901).  
 SMCL—Secondary Maximum Contaminant Level (Safe Drinking Water Act).  
 SPLP—Synthetic Precipitation Leaching Procedure (SW 846 Method 1312).  
 TCLP—Toxicity Characteristic Leaching Procedure (SW 846 Method 1311).  
 U.S.C.—United States Code.  
 DOT—United States Department of Transportation.

### I. Background Information

#### A. What Is the Statutory Authority for This Action?

Through Title VI, Section 6018 of the Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2005 (H.R. 3 or “the Act”), Congress amended Subtitle F of the Solid Waste Disposal Act (42 U.S.C. 6961 *et seq.*) by adding Sec. 6006. This provision requires the Agency to develop environmentally protective criteria (including an evaluation of whether to establish a numerical standard for concentration of lead and other hazardous substances) for the safe use of granular mine tailings from the Tar Creek, Oklahoma Mining District, known as ‘chat,’ in cement and concrete projects and in transportation construction projects that are carried out, in whole or in part, using Federal funds. Section 6006(a)(4) requires that any use of the granular mine tailings in a transportation project that is carried out, in whole or in part, using Federal funds, meet EPA’s established criteria.

In establishing these criteria, Congress directed EPA to consider the current and previous uses of granular mine tailings as an aggregate for asphalt and any environmental and public health risks from the removal, transportation,

and use in transportation projects of granular mine tailings; *i.e.*, chat. The Act also directs EPA to solicit and consider comments from the public, and to consult with the Secretary of Transportation and the heads of other Federal agencies in establishing the criteria.

#### B. What Action Is EPA Taking?

In today’s action, we are proposing, and requesting comment on, criteria requiring encapsulation in hot mix asphalt concrete or Portland cement concrete, for granular mine tailings, known as ‘chat,’ from the Tri-State lead and zinc mining area of Oklahoma, Kansas and Missouri, used in transportation construction projects that are carried out, in whole or in part, using Federal funds. EPA is also proposing that the requirement of encapsulation in asphalt concrete or Portland cement concrete would not apply if the use of chat is otherwise authorized by a State or federal response action undertaken pursuant to applicable federal or state environmental laws. Such response actions are undertaken with consideration of risk assessments developed in accordance with state and federal laws, regulations, and guidance. For example, unencapsulated uses of chat may be authorized in a State or federal remediation action. EPA is proposing that these criteria would apply to the use of chat derived from the Tri-State area, wherever the use occurs, including outside of the Tri-state area. Section 6006(a)(4) mandates that transportation construction projects, carried out in whole or in part, using Federal funds, must comply with these criteria.

The Agency is also proposing recommended criteria as guidance on the encapsulation of chat in non-transportation uses, to identify those uses that EPA believes are environmentally protective. Such uses would be limited to those where the Agency has reasonable assurances that such uses inherently limit direct exposure. It should be pointed out that the Agency has reviewed the literature and conducted interviews with Oklahoma, Kansas, and Missouri regulatory officials and Tribes and has determined that there is no evidence that chat is currently being used in non-transportation construction projects.

#### 1. What Is Chat?

Chat is the waste material that was formed in the course of milling operations employed to recover lead and zinc from metal-bearing ore minerals in the Tri-State mining district

of Southwest Missouri, Southeast Kansas and Northeast Oklahoma. Chat is primarily composed of chert, a very hard rock. The primary properties that make chat useful in asphalt and concrete are grain size distribution, durability, non-polishing, and low absorption.

#### 2. What Is the Areal Scope for This Action?

The Act directed EPA to develop criteria for chat from the Tar Creek, Oklahoma Mining District. There is no definition of the term “Tar Creek Oklahoma Mining District.” Available literature references the “Tar Creek Superfund site,” which is in Oklahoma, but the term “mining district” is only used in reference to the “Tri-State Mining District.” For purposes of today’s action, the Agency is proposing the areal scope to include chat originating from the Tri-State mining district of Ottawa County, Oklahoma, Cherokee County of southeast Kansas and Jasper and Newton Counties of southwest Missouri, regardless of where it is used.

In 1979, the U.S. Bureau of Mines completed a study to identify all mined areas and mine-related hazards which confirmed that lead-zinc mining covers a portion of each of the States of Kansas, Missouri, and Oklahoma. This area is the same area known as the Tri-State mining district.

Chat located in the Tri-State historical mining district is a product of similar mineralization processes that sets it aside from related lead-zinc mineralization districts elsewhere in the United States. The Tri-State mineralization is specifically associated with wall rock alteration into dolomite and microcrystalline silica (chert). The term chat is derived from the word ‘chert,’ which is from the cherty wallrock found in this mining district. The lead/zinc ore and its related waste, chat, in this district also have a well defined lead to zinc ratio.

During close to one hundred years of activity ending in 1970, the Tri-State mining district has been the source of a major share of all the lead and zinc mined in the United States. Surface piles of chat, as well as underground mining areas, extend uninterrupted across the Oklahoma-Kansas state line. In communications with Kansas, Missouri, and Oklahoma environmental regulatory agencies and the departments of transportation and Tribes, government experts confirmed that there is no real factual distinction between chat derived from these three areas, and agreed that it would be reasonable to apply today’s proposal to

the areal extent of the Tri-State mining district. Therefore, in today's action, the Agency is proposing criteria that extends to all chat generated and currently located in the following counties: Ottawa county, Oklahoma, Cherokee county, Kansas, and Newton and Jasper counties in Missouri.

Given the ambiguity in the term "Tar Creek Oklahoma Mining District," the Agency is soliciting comment on whether it should limit the scope of today's action to chat only located in Oklahoma. There is also some uncertainty regarding the exact boundary of the Tri-State mining district. The Agency is therefore soliciting comments on whether additional counties, such as Lawrence and Barry Counties in southwest Missouri, should be added to the scope.

### 3. Are There Any Current Regulations or Criteria for the Management or Use of Chat?

During the preparation of this proposal, the Agency assessed existing regulations in Oklahoma, Kansas, and Missouri for hot mix asphalt plants, and cement plants to determine whether residual chat wastes from those operations are adequately managed. (See memorandum entitled: "Evaluation of State Regulations" in the docket.) Those regulations set standards for point and fugitive air emission sources and also set requirements for water discharges from point and non-point discharges. Each State also has fugitive dust and point source particulate emission permitting requirements for both hot mix asphalt plants and ready mix concrete plants.

- Kansas air quality regulations require a Class II point source particulate operating permit for hot mix asphalt and ready mix concrete plants (K.A.R. 28-19-500). Operators must comply with all applicable air quality regulations whether or not addressed in the permit. Missouri requires an operating permit for all facilities with the potential to emit any point source particulate matter of 25 tons per year or more, or particulate matter with a diameter less than or equal to 10 micrometers (PM<sub>10</sub>) in the amount of 10 tons per year or more (10 CSR 10-6.065). Missouri regulations require operators to comply with the State's air quality control requirements, including restrictions on point source particulate emissions beyond the premises of origin (10 CSR 10-6.170). Oklahoma requires a point source air pollution control operating permit for new minor facilities (OAC 252:100-7) and all facilities with the potential to emit 100 tons per year, or more, of any criteria

pollutant (which includes particulate matter), or 10 tons per year of any hazardous air pollutant or 25 tons per year of any combination of hazardous air pollutants (OAC 252:100-8). Oklahoma regulations require that operators not exceed ambient air quality standards (OAC 252:100-29).

- In Oklahoma and Missouri, stormwater runoff is regulated through stormwater discharge permits (OAC 252:606-5-5, 10 CSR 20-6.200). Oklahoma's Pollutant Discharge Elimination System Standards incorporate the National Pollutant Discharge Elimination System (NPDES) standards. Oklahoma also has a general permit for stationary and mobile concrete batch plants. In Kansas, stormwater discharges are regulated under the State's water quality regulations (K.A.R. 28-16). The regulations prohibit degradation of surface and groundwater and set effluent limitations for aquatic, livestock, and domestic uses. Kansas has not finalized its General Permit for Stormwater Discharges Associated from Industrial Activity; however, facility operators are required to file a Notice of Intent to discharge under the NPDES requesting coverage under the State's general water pollution control permit. Operators are also required to develop and implement a Stormwater Pollution Prevention plan. Permittees are obligated to comply with the general permit which sets effluent limitations and monitoring requirements.

- The Agency also assessed existing regulations in Oklahoma, Kansas, and Missouri for chat washing facilities to determine whether residual chat wastes from those operations are adequately managed. The Agency found that the States do not have regulations specific to chat washing facilities. However, these facilities are covered under the States' general fugitive air and general non-point source discharge regulations. These state general permits require that fugitive dusts and runoff be controlled in a fashion so that dusts do not leave the property line or the boundary of the construction activity. Additionally, the Bureau of Indian Affairs (BIA) is establishing air and water standards for chat washing facilities for chat originating on Tribal lands and lands administered by BIA. BIA's requirements include that the chat washing facility manage waste water discharges so that they do not exceed state standards, that fugitive dusts be controlled, and that fines are handled and disposed of so that they do not contaminate ground water.

- BIA is requiring all purchasers of chat from Tribal lands, or lands

administered by BIA, to certify that the chat will be used in accordance with authorized uses set forth in EPA fact sheets and other guidance. (See report titled, *Chat Sales Treatability Study Workplan for the Sale of Indian-owned Chat within the Tar Creek Superfund Site, Ottawa County, Oklahoma*, June 23, 2005.) BIA also requires that trucks transporting chat from Tribal lands be covered to prevent blowing dust from the chat.

- The Oklahoma Department of Environmental Quality (ODEQ) has determined that the following transportation uses of chat are inappropriate: Use in residential driveways and use as gravel or unencapsulated surface material in parking lots, alleyways, or roadways (See *A Laboratory Study to Optimize the Use of Raw Chat in Hot Mix Asphalt for Pavement Application: Final Report, August 2005*<sup>2</sup>). The ODEQ report also identified the following non-transportation uses of raw chat that are deemed inappropriate:

- Fill material in yards, playgrounds, parks, and ball fields.
- Playground sand or surface material in play areas.
- Vegetable gardening in locations with contaminated chat.
- Surface material for vehicular traffic (e.g., roadways, alleyways, driveways, or parking lots).
- Sanding of icy roads.
- Sandblasting with sand from tailings ponds or other chat sources.
- Bedding material under a slab in a building that has underfloor air conditioning or heating ducts.
- Development of land for residential use (e.g., for houses or for children's play areas, such as parks or playgrounds) where visible chat is present or where the Pb concentration in the soil is equal to or greater than 500 mg/kg unless the direct human contact health threat is eliminated by engineering controls (e.g., removing the contaminated soil or capping the contaminated soil with at least 18 inches of clean soil).

<sup>2</sup> The University of Oklahoma 2005 study entitled, *A Laboratory Study to Optimize the Use of Raw Chat in Hot Mix Asphalt for Pavement Application*, was reviewed internally by Drs. Tom Landers, Robert Knox, and Joakim Laguros and externally reviewed by various Oklahoma Department of Environmental Quality personnel. This report was designed to meet USEPA 1994 Data Quality Objectives which assure proper study design, sample collection and sample analyses. A separate Sampling and Analysis Plan was prepared for this effort which includes a QA/QC plan which was managed by a OU Quality Assurance Officer. Samples were collected and analyzed in accordance with EPA methods and lab results were verified by outside laboratories.

- EPA Region 6 issued a Tar Creek Mining Waste Fact Sheet on June 28, 2002 that identified the following as acceptable uses of chat: (1) Applications that bind (encapsulate) the chat into a durable product (e.g., concrete and asphalt), (2) applications that use the chat as a material for manufacturing a safe product where all waste byproducts are properly disposed, and (3) applications that use the chat as sub-grade or base material for highways (concrete and asphalt) designed and constructed to sustain heavy vehicular traffic. This fact sheet also incorporated the ODEQ list of unacceptable uses of chat. The Region 6 fact sheet is available at [http://www.epa.gov/Arkansas/6sf/pdffiles/tar\\_creek\\_june\\_2002\\_waste.pdf](http://www.epa.gov/Arkansas/6sf/pdffiles/tar_creek_june_2002_waste.pdf).

- EPA Region 7 issued a Mine Waste Fact Sheet in 2003 that identified uses of chat that are not likely to present a threat to human health or the environment. Those uses are: (1) Applications that bind material into a durable product; these would include its use as an aggregate in batch plants preparing asphalt and concrete, (2) applications below paving on asphalt or concrete roads and parking lots, (3) applications that cover the material with clean material, particularly in areas that are not likely to ever be used for residential or public area development, and (4) applications that use the material as a raw product for manufacturing a safe product. The fact sheet also lists mine waste (chat) uses that may present a threat to human health or the environment which are similar to those listed by ODEQ and the Region 6 fact sheet. However, the Region 7 fact sheet also lists use as an agricultural soil amendment to adjust soil alkalinity as a use that may present a threat to human health or the environment. The Region 7 fact sheet is available at [http://www.epa.gov/Region7/news\\_events/factsheets/fs\\_minewaste\\_moks\\_0203.pdf](http://www.epa.gov/Region7/news_events/factsheets/fs_minewaste_moks_0203.pdf).

A copy of these regulations/reports/fact sheets are available in the Docket to today's rulemaking.

Based on the review of the States' regulations, EPA concludes that today's proposal does not need to establish additional criteria to address any environmental concerns arising from hot mix asphalt and batch concrete facilities or from chat washing facilities. The Agency believes that potential fugitive dust emissions and stormwater runoff from chat piles are adequately addressed by existing State regulations. Additionally, as stated previously, BIA requires covers on trucks transporting chat from Tribal lands to prevent blowing of chat dust. However, the Agency seeks information and comment

on the adequacy of state and BIA requirements and solicits comment on requiring truck covers for transportation of chat. To address potential leaching to groundwater and runoff to surface streams, the Agency solicits comment on whether to require storage to be designed to control run-on and run-off, leachate to ground water, fugitive dusts, and that chat be stored in a building, or on a concrete, clay, or synthetic lined pad, or covered, if storage exceeds 90 days.<sup>3</sup>

Furthermore, as discussed later in the preamble, the Agency expects that most chat used will be used within the Tri-state area because of transportation costs. Thus, the Agency has only evaluated the air and water rules in Oklahoma, Missouri and Kansas. However, there is nothing in this rule that would limit its use in these three states. Therefore, the Agency solicits comment on whether it should adopt general criteria for the management of chat in today's rule if the chat is managed in other states or whether other states would have similar types of controls that Oklahoma, Missouri and Kansas have in place.

Today's action would require that chat used in Federally funded transportation projects be encapsulated in hot mix asphalt or concrete, unless the use is otherwise authorized by a State or federal response action. Such response actions are undertaken with consideration of risk assessments developed in accordance with state and federal laws, regulations, and guidance. This mandatory criteria is more restrictive than the guidances issued by Regions 6 and 7 since it is the Agency's current belief that the use of unencapsulated chat should be restricted to state or federal remediation actions, where a regulatory agency exerts oversight. This position was taken because the data generally lead EPA to believe that unencapsulated uses are not protective of human health and the environment. However, because state and federal remediation actions are based on site specific determinations that take into account a wide variety of factors at the site, EPA believes that such assessments provide sufficient safeguards that would ensure that any unencapsulated uses of chat authorized through this mechanism would be protective of human health and the environment.

<sup>3</sup> While the Agency is not proposing that chat be sized before it is encapsulated, we are aware that chat is sized before it is beneficially used in certain instances. In these instances, we would expect that any residuals that are generated would be handled in connection with the remediation plans at the site.

#### 4. Physical and Chemical Characteristics of Chat

Some of the important physical properties of chat include hardness, soundness (durability), gradation, shape and surface texture. Bulk raw chat includes both large and small particle sizes.

##### Physical Characteristics

In a University of Oklahoma (OU) study (*A Laboratory Study to Optimize the Use of Raw Chat in Hot Mix Asphalt for Pavement Application: Final Report (August 2005)*), the specific gravity of the raw chat was found to be 2.67, which is similar to some commonly used aggregates such as limestone and sandstone.

According to an ODEQ study ("Summary of Washed and Unwashed Mining Tailings (Chat) from Two Piles at the Tar Creek Superfund Site, Ottawa County Oklahoma," Revised June 2003), chat consists of materials ranging in diameter from 15.875 mm ( $5/8$  inch) to less than 0.075 mm (the size fraction that passes the No. 200 sieve).

Since raw chat is a crushed material from mining operations, raw chat particles have fractured faces. Raw chat also has numerous voids in the loose aggregate form. The more angular the aggregate the higher the amount of voids. The uncompacted void content or the fine aggregate angularity of raw chat was found to be 46%. Raw chat has higher fine aggregate angularity than required by most state DOTs.

Raw chat is harder than some other aggregates such as limestone. The L.A. abrasion value (determined by the Test for Resistance to Degradation of Aggregate by Abrasion and Impact in the Los Angeles Abrasion Machine) of raw chat was found to be 18% which is lower than that of limestone (23%) used in the OU study.

Cubical shape is a desirable property of a good aggregate. The coarse aggregate in raw chat (particles retained on a 4.75 mm (#4) sieve) has less than 5% flat or elongated particles. Therefore, chat is viewed as a desirable aggregate material.

State DOTs specify minimum aggregate durability indices of approximately 40%. In the OU study, the aggregate durability index of raw chat was found to be 78%. The insoluble residue of raw chat was found to be 98%. The minimum requirement for insoluble residue is 40%.

State DOTs also specify aggregate requirements for hot mix asphalt and Portland cement concrete. Most State DOTs, including Kansas, Oklahoma and Missouri, have adopted aggregate standards developed by the American

Association of State Highway and Transportation Officials (AASHTO). According to AASHTO, the 0.075 mm (#200) sieve size is the dividing line between sand-size particles and the finer silts and clays. These finer particles often adhere to larger sand and gravel particles and can adversely affect the quality of hot mix asphalt cement and Portland cement concrete. The AASHTO standards for Fine Aggregate for Bituminous Paving Mixtures (M 29–03) and Fine Aggregate for Portland Cement Concrete (M 6–03) specify limits for the amount of aggregate, on a percent mass basis, in hot mix asphalt cement and Portland cement concrete according to aggregate size and gradation. The aggregate sizes included in the AASHTO standards range from .075 mm to 9.5 mm which is within the range of particles found in raw chat. The AASHTO standards do not preclude the use of fine chat particles in hot mix asphalt or Portland cement concrete. Depending on the designated grading, AASHTO limits particles finer than sieve size #50 in the range of 7 to 60% for aggregate in asphalt. Fine aggregate for use in concrete is limited by the States of Oklahoma and Missouri to 5 to 30% for particles less than sieve size #50, while the values are 7 to 30% in Kansas.

#### Chemical Characteristics

Two studies [Dames and Moore, 1993 and 1995; “Sampling and Metal Analysis of Chat Piles in the Tar Creek Superfund sites for the Oklahoma Department of Environmental Quality,” 2002; Datin and Cates; “Summary of Washed and Unwashed Mining Tailings (Chat) from Two Piles at the Tar Creek Superfund Site, Ottawa County Oklahoma, Revised June 2003,” ODEQ] provide data on metals concentrations in washed and unwashed (or raw) chat. The Dames and Moore study indicated total lead concentrations in the raw chat ranged from 100 mg/kg to 1,660 mg/kg, while the Datin and Cates study noted that lead concentrations from piles located throughout the Tri-State area had mean total lead concentrations of 476 to 971 mg/kg. The Site Characterization report [AATA International, Inc. December 2005; Draft: Remedial Investigation Report for Tar Creek OU4 RI/FS Program] notes, however, that the concentration of lead in the raw chat ranged from 210 mg/kg to 4,980 mg/kg with an average of 1,461 mg/kg; cadmium ranged from 43.1 mg/kg to 199.0 mg/kg with an average of 94.0 mg/kg; and zinc ranged from 10,200 mg/kg to 40,300 mg/kg with an average of 23,790 mg/kg.

These studies also showed that as chat sizes become smaller, the metals content increases. The Datin and Cates report, “Summary of Washed and Unwashed Mining Tailings (Chat) from Two Piles at the Tar Creek Superfund Site, Ottawa County Oklahoma, Revised June 2003,” noted TCLP testing of all dry sieve sizes greater than 40 do not exceed 5mg/l and could be classified as non-hazardous under RCRA.<sup>4</sup> This same study also shows that total metals testing of wet screened material (larger fractions) resulting from chat washing have lead concentrations which range from 116 to 642 mg/kg, while TCLP testing of the same materials have lead concentrations of 1.028 to 3.938 mg/l (also well below 5mg/l). Therefore, the data show that either dry physical sieving of raw chat or chat washing generate chat aggregate (greater than sieve size 40) with considerably lower metals concentrations than raw chat.

#### 5. What Are the Environmental and Health Effects Associated With Pollutants Released From Raw Chat?

The Tri-State mining district includes four National Priority List (NPL) Superfund sites that became contaminated from the mining, milling, and transportation of ore and the management practices for chat. These sites are located in Tar Creek in Ottawa County, Oklahoma, Cherokee County in southeast Kansas, and Jasper and Newton Counties in southwest Missouri. Cleanup activities related to the millions of tons of mining waste that were deposited on the surface of the ground at these sites have been designated as Operable Units (OUs). OUs are groupings of individual waste units at NPL sites based primarily on geographic areas and common waste sources.

Raw chat has caused threats to human health and the environment as a result of the concentrations of lead present in the chat. Evaluation of raw chat, noted above, also indicates that this waste in unencapsulated uses has the potential to leach lead into the environment at levels which may cause threats to humans (elevated blood lead concentrations in area children). Such threats have been fully documented in Records of Decision (RODs) for the OUs at these NPL sites (See Tri-State Mining District RODs in the docket to this action). Copies of Site Profiles and RODs can be searched at [http://](http://www.epa.gov/superfund/sites/rods/index.htm)

<sup>4</sup> Since chat is a mining waste covered by the Bevill Amendment to the Solid Waste Disposal Act, it is not subject to the hazardous waste regulations under RCRA Subtitle C. However, we are using the TCLP leachate value for lead simply as a comparative measure.

[www.epa.gov/superfund/sites/rods/index.htm](http://www.epa.gov/superfund/sites/rods/index.htm).

Lead toxicity targets the nervous system, both in adults and children. Long-term exposure of adults can result in decreased performance of the nervous system. It may also cause weakness in the fingers, wrists, or ankles. Lead exposure also causes small increases in blood pressure, particularly in middle-aged and older people and can cause anemia. Exposure to high lead levels can severely damage the brain and kidneys in adults or children and ultimately cause death. (Agency for Toxic Substances and Disease Registry (ATSDR) Fact Sheet for Lead, September 2005.)

Recent risk assessments conducted at the Tar Creek NPL site indicate that cadmium and zinc may not pose a human health risk. Nevertheless, breathing high levels of cadmium may severely damage the lungs and can cause death. Eating food or drinking water with high levels of cadmium may severely irritate the stomach, leading to vomiting and diarrhea. Long-term exposure to lower levels of cadmium in air, food, or water may lead to a buildup of cadmium in the kidneys and possible kidney disease. Other long-term effects are lung damage and fragile bones. (ATSDR Fact Sheet for Cadmium, June 1999.)

Zinc in the aquatic environment is of particular importance because the gills of fish are physically damaged by high concentrations of zinc (NAS1979). Harmful human health effects from zinc generally begin at levels from 10–15 times the recommended daily allowance (in the 100 to 250 mg/day range). Long-term exposure may cause anemia, pancreas damage, and reduced levels of high density lipoprotein cholesterol (the good form of cholesterol). Breathing large amounts of zinc (as dust or fumes) may cause a specific short-term disease called metal fume fever. (ATSDR Fact Sheet for Zinc, September 1995.)

#### 6. Who Is Affected by This Action?

When promulgated, the proposed criteria will affect users of chat used in transportation construction projects that are carried out, in whole or in part, using federal funds. In addition, unencapsulated chat can be used provided it is part of and otherwise authorized by a State or federal response action undertaken pursuant to applicable federal or state environmental laws. Such response actions are undertaken with consideration of risk assessments developed in accordance with state and federal laws, regulations, and guidance. The Agency is also proposing



recommended criteria as guidance that will be applicable to the use of chat in non-residential non-transportation uses.

### *C. What Was the Process EPA Used To Develop This Action?*

The Agency initially reviewed information concerning the environmental effects of the improper placement and disposal of chat found in the Records of Decision cited above for the four NPL sites located in the Tri-State mining district (Tar Creek, Jasper County, Cherokee County, Newton County). The Agency then reviewed reports which identified current or past uses of chat, primarily studies prepared to support Governor Keating's Taskforce (Governor Frank Keating's Tar Creek Superfund Task Force, Chat Usage Subcommittee Final Report, September 2000) and research on chat uses conducted by the University of Oklahoma (*A Laboratory Study to Optimize the Use of Raw Chat in Hot Mix Asphalt for Pavement Application: Final Report August 2005*). The Agency interviewed the principal authors of the University of Oklahoma studies to further evaluate their findings and representatives of the Departments of Transportation in Oklahoma, Kansas, and Missouri. The Agency met with the U.S. Department of Transportation, Federal Highway Administration to discuss the use of aggregate substitutes in road surfaces and relied on the joint EPA/FHWA document of the use of wastes in highway construction [User Guidelines for Waste and Byproduct Material in Pavement Construction, FHWA, 1997 (<http://www.rmrc.unh.edu/Partners/UserGuide/begin.htm>)]. Additionally, EPA met with the BIA to discuss BIA requirements for the sale of chat on Tribal lands. The Agency also conducted a series of interviews with the environmental regulatory agencies in the three states to further identify acceptable versus unacceptable uses of chat. Moreover, the Agency conducted interviews with companies currently washing and selling chat and with asphalt and cement companies which either were currently using or had used chat. EPA visited the Tri-State area to observe the condition of chat piles and confirm the location of chat washing and asphalt companies in the area. The Agency has communicated with the tribal members in the Tri-State area to inform them about this action and seek information about current uses and has met the requirements of Executive Order 13175. In the spirit of Executive Order 13175, and consistent with EPA policy to promote communications between EPA and tribal governments, EPA

specifically solicits any additional comment on this proposed rule from tribal officials.

## **II. Summary of the Proposed Rule**

### *A. What Criteria Are EPA Establishing for the Use of Chat?*

EPA views chat uses in two basic categories: Unencapsulated and encapsulated. Unencapsulated uses of chat have contributed to human health and environmental risks resulting in EPA placing four sites on the NPL. Additionally, the use of unencapsulated chat in driveways and as fill material has contributed to lead contamination of soils in residential property that has resulted in elevated blood lead concentrations in area children. Therefore, EPA cannot establish specific criteria for individual unencapsulated uses of chat that are safe and environmentally protective. However, EPA has established a criterion that such uses will be safe and environmentally protective if they are part of, and otherwise authorized by a State or federal response action undertaken pursuant to applicable federal or state environmental laws. Such response actions are undertaken with consideration of risk assessments developed in accordance with state and federal laws, regulations, and guidance. By contrast, uses that encapsulate chat limit the release of the constituents of concern. Therefore, encapsulation of chat forms the basic criterion in today's proposal.

#### **1. Transportation Construction Uses**

Transportation construction uses of chat are transportation construction projects funded, wholly or in part, with federal funds. The Agency has evaluated all the transportation construction uses defined previously and has concluded that the only transportation construction uses that are safe and environmentally protective are uses which encapsulate chat in hot mix asphalt concrete or in Portland cement concrete.

##### **a. What is our proposed action?**

Today's action, if finalized as proposed, would require that chat used in transportation construction projects funded, wholly or in part, with Federal funds be encapsulated in asphalt concrete or Portland cement concrete, unless the use is authorized by a State or Federal response action undertaken pursuant to applicable Federal or State environmental laws.

In addition, for all chat used in transportation construction projects funded in whole or in part using Federal funds that is not subject to the U.S.

Department of Interior, Bureau of Indian Affairs Chat Use Certification requirements described in Section I.B.3. above, the Agency is proposing a certification requirement similar to that required by BIA. Specifically, EPA proposes that the acquirer of the chat would submit a signed, written certification that the chat will be used in accordance with EPA's criteria. The certification will also include the location of origin of the chat and the amount of chat acquired.

EPA proposes that the certification be provided to the environmental regulatory agency in the State where the chat is acquired, except for chat acquired on lands administered by the BIA which is subject to the BIA certification requirements. The Agency also proposes that if the acquirer sells or otherwise transfers the chat, the new owner of the chat must also submit a signed, written certification as described in this section. Finally, the Agency proposes that the acquirer, or any other person that receives a copy of the certification, maintain a copy of the certification in its files for three years following transmittal to the State environmental regulatory agency.

Today's action does not, in itself, modify or limit any existing state or Federal policies (including EPA Regions 6 and 7 guidances on chat use), positions, or decisions, nor any existing agreements or contracts among private or governmental entities. Because this action is a proposed rulemaking, provisions of the proposal, as well as EPA's assumptions and rationale leading to them, are subject to public notice and comment. Therefore, until a final rule governing these materials is issued, EPA's policies, positions or decisions regarding the use of chat remain unchanged.

##### **b. What is the rationale for the Proposed Rule?**

The Agency is basing this action on our review of various studies and data that show that certain encapsulated uses of chat are reasonably expected to be environmentally safe.

##### **i. Asphalt**

There are a number of factors which lead us to conclude that the encapsulation of chat into hot mix asphalt is safe and environmentally protective:

- Several studies have been conducted on the use of chat in hot mix asphalt. The most comprehensive study was conducted by the University of Oklahoma (OU) School of Civil Engineering and Environmental Science. OU published their findings in



a report titled, *A Laboratory Study to Optimize the Use of Raw Chat in Hot Mix Asphalt for Pavement Application: Final Report (August 2005)*. OU tested the durability and leaching potential of a variety of mixtures of hot mix asphalt with raw chat for road surfaces and for road bases. In addition, OU milled (sawed) samples to simulate weathering. The Agency relied on these findings as one of the principal sources of data supporting the use of chat in hot mix asphalt. This study confirms an earlier study conducted by the U.S. Army Corps of Engineers (Tar Creek Superfund Site, Ottawa County, Oklahoma, Final Summary Report: Chat-Asphalt Paved Road Study U.S. Army Corps of Engineers—Tulsa District, February 2000).

- Comparison of the Synthetic Precipitation Leaching Procedure (SPLP) results of milled (weathered) chat asphalt samples in the OU study with the National Primary and Secondary Drinking Water Standards (<http://www.epa.gov/safewater/mcl.html>), without dilution and attenuation, show that milled surface and road base mixtures did not exceed the primary drinking water standard for lead (0.015 mg/l) or cadmium (0.005 mg/l). The OU results also show that milled asphalt road bases and surfaces did not exceed the secondary drinking water standard for zinc (5 mg/l).<sup>5</sup>

- The TCLP test was designed as a screening test to simulate leaching of materials in a municipal solid waste landfill. The SPLP test is also a screening test, and was designed to simulate leaching of materials when exposed to acid rain. It is highly unlikely that road surfaces would be

exposed to leaching conditions found in municipal solid waste landfills. Therefore, the Agency believes that of these two tests, the SPLP tests on raw chat asphalt samples is likely to better mimic the leaching potential of such mixtures when they are to be used in road construction.

- The OU study tested unweathered and milled samples. The Agency believes milled samples represent worst case scenarios because milling exposes more surface area to leaching.

- In a dissertation submitted to the University of New Hampshire titled “Contributions to Predicting Contaminant Leaching from Secondary Material Used in Roads,” Defne S. Apul, September 2004, the author noted that if pavement is built on highly adsorbing soils, the concentrations of contaminants reaching groundwater are more than several orders of magnitude lower than the MCLs. Moreover, the Agency considered in its Report on Potential Risks that it is highly unlikely that leachate would be ingested directly by humans.

The report entitled “Summary of Washed and Unwashed Mining Tailings (Chat) from Two Piles at the Tar Creek Superfund Site, Ottawa County Oklahoma, Revised June 2003,” ODEQ, also evaluated leachate from asphalt containing chat removed from the Will Rogers Turnpike located near Quapaw, Oklahoma. This evaluation was conducted to determine if asphalt that used chat as an aggregate removed at the end of its useful life posed threats from metals leaching into the environment. TCLP results for lead ranged from less than 0.050 mg/l to 0.221 mg/l. There are no SPLP test data in this report. Based

on best professional judgement and review of TCLP versus SPLP results, EPA believes that there would be a reduction in lead concentrations of approximately one order of magnitude. Therefore, we believe that SPLP results would not exceed the MCL for lead. Based on these results, EPA does not believe the disposal of chat asphalt should present risks to the environment.

The Agency therefore concludes that the use of chat in hot mix asphalt for pavement (which accounts for about 95% of the current chat usage), base, and sub base is an environmentally protective use. EPA does not believe that it is necessary to establish specifications of what constitutes “hot mix asphalt” because transportation construction uses are required to comply with federal and state Department of Transportation material specifications. These specifications delineate requirements which ensure that when chat is used in hot mix asphalt, the resulting product will be structurally stable.

ii. Concrete

The Agency also believes that the encapsulation of chat into Portland cement concrete is safe and environmentally protective:

- An undated University of Oklahoma Surbec-Art Environmental study<sup>6</sup> and a 2000 University of Oklahoma Study<sup>7</sup> conducted the only known assessments of the total metals and TCLP on concrete matrices mixed with raw chat. The 2000 OU results are also presented in the 2005 OU study. Following are the results from those studies.

	S1		S2		C40	
	Total (mg/kg)	TCLP (mg/l)	Total (mg/kg)	TCLP (mg/l)	Total (mg/kg)	TCLP (mg/l)
Lead .....	178	0.92	379	0.17	150	1
Cadmium .....	30 (R)	0.09	35 (R)	0.12	35	0.1
Zinc .....	4200	0.23	4400	0.16	4100	.....

(R) = rounded to nearest whole number.

- While not a direct measure of the leaching potential of Portland cement concrete, waste stabilization technologies and their effectiveness are well defined in the Agency’s Final Best Demonstrated Available Technology

(BDAT) Background Document for Universal Standards, Volume A, July 1994 and Proposed Best Demonstrated Available Technology (BDAT) Background Document for Toxicity Characteristic Metal Wastes D004–D011,

July 1995. One of those technologies is stabilization, such as encapsulation in a cement matrix, to reduce the mobility of the metal in the waste. The metals are chemically bound into a solid matrix that resists leaching when water or a

<sup>5</sup> Several hot mix asphalt samples were also tested in the OU study using the toxicity characteristic leaching procedure (TCLP). For surface samples, TCLP average concentrations for lead ranged from <0.005 to a high of 0.46 mg/l. TCLP average concentrations for cadmium ranged from <0.010 to 0.223 mg/l and zinc concentration averages ranged from 11.3 to 28.53 mg/l. Road base

samples usually have higher metals concentrations than do surface samples. For road base samples, average TCLP lead concentrations ranged from 0.069 to 2.008 mg/l, while average TCLP cadmium concentrations ranged from 0.011 to 0.087 mg/l and average TCLP zinc concentrations ranged from 19.9 to 41.33 mg/l.

<sup>6</sup> “Preliminary Report on the Findings of Environmental and Engineering Tests Performed on Mine Residual Materials from Ottawa County, Oklahoma.”

<sup>7</sup> “Development of Holistic Remediation Alternatives for the Catholic 40 and Beaver Creek.”

mild acid comes into contact with the waste. The Agency evaluated contaminant levels in unstabilized versus stabilized wastes to determine the reduction in mobility of metals, including lead and cadmium, when those wastes were stabilized in a cement matrix. These results indicate that stabilization with cement generally reduced lead and cadmium mobility by two to three orders of magnitude (See Table A4 of the July 1994 document cited above).

- Although chat was not specifically discussed in the BDAT Background Documents, the data and information contained in the technical background documents cited in the previous bullet leads us to believe that chat added to concrete will bind a significant amount of metals and therefore limit the leaching potential of chat concrete. While limited leaching of metals from concrete may still occur, we believe metals in chat can be encapsulated in an environmentally protective manner for the following reasons:

- As shown in the table above, TCLP levels from raw chat contained in concrete, as measured in the undated and 2000 OU studies, for lead (0.17 to 1.0 mg/l) and cadmium (0.01 to 0.12 mg/l) are within the TCLP levels from the 2005 OU study for weathered (milled) hot mix asphalt (<0.005 to 2.008 mg/l for lead and <0.010 to 0.223 mg/l for cadmium).

- The Agency does not have SPLP data for concrete. In hot mix asphalt, the SPLP concentrations for both lead and cadmium were <0.01 mg/l, significantly below the TCLP levels for the same constituents. Should additional environmental release studies of chat used in concrete be performed, use of SPLP would be preferred over TCLP, since SPLP would better replicate the environmental conditions of the chat reuse.

- Because the Agency believes that it is highly unlikely that the leachate would be directly ingested by humans, applying a dilution and attenuation factor would lead to even lower metals concentrations.

- In a dissertation submitted to the University of New Hampshire titled “Contributions to Predicting Contaminant Leaching from Secondary Material Used in Roads,” Defne S. Apul, September 2004, the author noted that if pavement is built on highly adsorbing soils, the concentrations of contaminants reaching groundwater are more than several orders of magnitude lower than the MCLs. Moreover, the Agency considered in its Report on

Potential Risks that it is highly unlikely that leachate would be ingested directly by humans.

- The Agency evaluated highway design specifications; *i.e.*, layering of compacted material (Apul) and the movement of water through concrete (hydraulic conductivity),<sup>8</sup> and concludes that such designs in general retard the movement of rainwater through concrete and into groundwater.

- The University of Oklahoma (OU) 2005 study summarized previous uses of raw chat in concrete and also noted that in the past chat had been used for concrete pavement. During interviews with the Ottawa County Roads Department (Memo to File: Interviews with the Ottawa County, Oklahoma Roads Department found in the docket to today’s action), it was noted that chat had been used in concrete pavement, although that use had stopped at least 15 years ago. The discontinuance of the use of chat in concrete in the Tri-State area is likely due to the fact that cheaper sand is locally available, that chat used as a silica substitute is difficult to grind, and that such use may have resulted in the past with poorer quality material.

### iii. Unencapsulated Uses of Chat

As already noted, the Agency is concerned that unencapsulated uses of chat allow leachate to form which may contain metals concentrations that could cause environmental threats. Unencapsulated chat has contributed to the contamination at four NPL sites, and use of chat in driveways and as fill material has contributed to lead contamination of soils in residential property which resulted in elevated blood lead concentrations in area children (See Tri-State Mining District RODs which are available in the docket to today’s action). EPA expects that using this material in an unencapsulated manner would generally pose unacceptable risks. (See Section III. A. below, “What Are the Environmental and Health Impacts?”) One exception is use of unencapsulated chat that is otherwise authorized by a State or Federal response action undertaken pursuant to applicable Federal or State environmental laws. Such remedial actions are undertaken after site specific risk evaluations are completed which account for the full variety of conditions at the site, such as existing contamination, in assessing risks to human health and the environment. For example, Region 7 assessed the protectiveness of using

unencapsulated chat as road base for a proposed highway bypass within the Tar Creek Superfund Site boundary and, as a result of a site specific assessment, determined that such use, compared to other alternatives, was a more protective action (USEPA Region 7, Engineering/Cost Analysis—Highway 71, Jasper County, Missouri, August 2000).

In today’s action, EPA is also proposing a certification requirement because the Agency believes it is important that the acquirer of chat that is not part of demolished asphalt or concrete certify that the chat will be used in accordance with authorized uses which are environmentally protective. This certification will assure that chat is not used in a manner likely to cause substantial environmental contamination that would necessitate federal or state clean up actions. The Agency is proposing this action to be consistent with the BIA Chat Use Certification requirements.

c. Is the EPA soliciting comments on specific issues?

*The Agency is soliciting comments on all aspects of today’s proposal. In particular:*

- The Agency has defined the term “Tar Creek Mining District” to include chat piles located in the Tri-State Mining District—that is, Ottawa County, Oklahoma, Cherokee County in Southeast Kansas and Jasper and Newton Counties in Southwest Missouri. The Agency is soliciting comment on whether it should limit the scope of today’s action to chat currently located in Oklahoma. Also, the Agency is soliciting comment on whether additional counties, such as Lawrence and Barry Counties in southwest Missouri, should be added to the scope.

- In today’s notice, EPA has tentatively concluded that the use of chat in concrete (both hot mix asphalt concrete and Portland cement concrete) in transportation projects is environmentally protective. EPA solicits comments on whether users of chat encapsulated concrete should be required to conduct leach testing prior to use. If the Agency were to require leach testing, the Agency solicits comments on whether the TCLP or SPLP test method, as described in Methods 1311 and 1312 of EPA’s SW-846 analytical methods, or some other leach testing procedure should be used.

- If the Agency were to require leachate testing, the Agency would need to establish specific criteria. For example, the Agency could specify that the results of testing would need to meet the Primary and Secondary Drinking Water Standards for lead, cadmium, and

<sup>8</sup> According to the Portland Cement Association, the hydraulic conductivity of a typical Portland cement concrete is  $1 \times 10^{-12}$  cm/sec.

zinc. The Agency also solicits comment on whether the leachate should be measured against the National Recommended Water Quality Criteria which address acute and chronic biological effects. In addressing this issue, commenters will need to provide the rationale for any levels suggested.

- Additionally, the Agency could develop leach test criteria with the use of a Dilution and Attenuation Factor (DAF). Test results using DAFs could reflect how contaminant concentrations may change as they move through the environment. If commenters believe that a DAF should be applied, the Agency requests comment on what DAF should be applied and what is the rationale for its use.

- While the Agency is not proposing to require that chat be sized before it is encapsulated, the Agency is soliciting comment on whether chat should be limited to particles that exceed a specific sieve size (via physical or washing methods). Based on available data, particles finer than sieve size #40 in unencapsulated raw chat tend to have a TCLP for lead of greater than 5mg/l, while larger particles in the raw chat tend to have a TCLP for lead of less than 5 mg/l. By establishing a minimum size of chat that can be used, the Agency would possibly be limiting the amount of metals in the chat, as well as the leaching potential of these uses. Specifically, the Agency seeks comment on whether the binding properties of the encapsulation are sufficient to prevent undue environmental risks associated with leaching, whether dust control practices associated with demolition adequately address the higher metal concentrations of the fine particulates, and whether subsequent recycling or disposal options could pose undue risks due to the higher metal levels in the fine particles. While it is the goal of the Agency to balance the beneficial use and reuse of materials, while also limiting the introduction back into the environment of materials with high metals loadings, we seek comment on whether it is appropriate to require the sizing of chat to limit the addition of lead bearing materials into use and their related exposure in the environment. There are a series of factors which should be considered in submitting comments on these issues:

- As identified in consultation with the Quapaw tribe, the tests conducted by the University of Oklahoma on asphalt containing “pile run” or raw chat, did not show problematic leaching levels. AASHTO standards for aggregate in asphalt limit fines less than sieve size #50 to 7 to 60%,

depending on the grading. There are, however, no direct measurements on the use of raw chat for 100% of the aggregate in asphalt—in the University of Oklahoma study, chat comprised 30 to 80% of the aggregate.

- The limited data that exists for concrete involves raw chat, but there is no direct data on the use of chat for cement manufacturing.
- With regard to demolition, the fugitive dust controls are a routine requirement for demolition projects.
- For post demolition recycling and disposal, approximately 90% of the asphalt is recycled into new asphalt, while 70% of concrete from transportation projects is recycled as fill or base. Recycling of concrete from residential buildings is about 60% versus 88% for commercial buildings.
- Requiring sizing would result in the generation of some chat fines, which would not be used in concrete or asphalt and thus, would be a waste stream that would need to be managed. Based on the review of the States’ regulations, however, EPA concludes that additional criteria would not be needed to address any environmental concerns arising from the handling and disposal of fines generated by the sizing of chat.

- Today’s criterion does not include the use of chat in cold mix asphalt (CMA) or slurry seals. It is the Agency’s understanding that CMA or slurry seals are typically used for temporary repairs. At least one State, Kansas, has specifications for CMA using chat; however, EPA has no information that chat is being used in CMA or slurry seals. The Agency solicits comments on the following: (1) Whether chat is being used in cold mix asphalt or slurry seals and, (2) whether the existing data would support the inclusion of chat used in cold mix asphalt or slurry seals in the criteria proposed today. The Agency also solicits data on the ability of CMA or slurry seals to bind metals.

- Another possible use of chat is in a stabilized road base. A stabilized base has the advantage of using a pozzolanic material which should reduce the mobility of the metals. However, the stabilized road base could use cement in amounts 4 to 6 percent by weight which is less than that used in concrete. While the nature of this binding may not be as great as concrete, the fact that the stabilized base is covered by an asphalt concrete or Portland cement concrete road surface reduces the level of leachate. Capillary effects along the road’s edge will still cause considerable wetting of the base, and EPA solicits comment on whether the combination

of stabilization and coverage by the road surface adequately limits metals releases. EPA therefore solicits comment on whether the use of chat as stabilized road base would be an environmentally protective use of chat and whether this use should be allowed in federally funded transportation projects.

- Material like chat is also sometimes used as flowable fill. While flowable fill involves the use of a pozzolanic material, the binding may not be as sound as that for concrete. Like a stabilized road base, flowable fill could use cement in amounts as little as 3 to 5 percent by weight. The EPA solicits comments on the degree to which flowable fill matches the binding characteristics of concrete or stabilization practices associated with waste management, and whether use of flowable fill would be appropriate for chat. If use as flowable fill were allowed, should leachate testing and compliance with some standard (e.g., MCLs) (with or without consideration of dilution and attenuation) be required?

- Today’s criterion does not include the use of unencapsulated chat as road bed beneath asphalt or concrete pavement. Use of unencapsulated chat as a free-draining subbase capped with an asphalt concrete or Portland cement concrete pavement may be an environmentally protective use. However, the Agency has no data on whether use of unencapsulated chat in this manner would prevent leaching of metals found in chat into the environment. Therefore, the Agency requests comments and supporting data on whether the use of unencapsulated chat as road bed, capped with an asphalt concrete or Portland cement concrete pavement, would be an environmentally protective use.

- In today’s action, EPA is proposing that certification be provided to the environmental agency in the State where the chat is acquired. The Agency is soliciting comments on whether certification should also be provided to the environmental agency in the State where the material is ultimately used.

- Today’s proposal allows the use of unencapsulated chat where it has been authorized by a State or Federal response action undertaken pursuant to applicable Federal or State environmental laws. It has also been suggested that unencapsulated uses be allowed if data are presented to EPA that demonstrate that the proposed use will be environmentally benign. EPA takes comment on this option, as well as the possibility that this function be deferred to the relevant state authority.

## 2. Non-Transportation Uses—Cement and Concrete Projects

Non-transportation uses of chat include its use as a raw material in the manufacture of cement, and as an aggregate in Portland cement concrete. Based on its analysis on the possible use of chat in concrete in roads (discussed above), EPA believes that health and environmental concerns would be minimal for chat used in concrete in non-transportation, non-residential construction projects and for structural purposes.

### a. What is our proposed approach?

The Agency is proposing to establish a criterion that would recommend the encapsulation of chat into cement and concrete for non-transportation, non-residential uses, as defined above, such as for non-residential structural uses limited to weight bearing purposes and for commercial/industrial parking and sidewalk areas.

### b. What is the rationale for the Proposed Rule?

In the past, chat had been used in the manufacture of cement and used in concrete for building foundations and roads. Ash Grove Cement, in a communication with EPA (Memo to File: Conversation with Ash Grove Cement Regarding Use of Chat, which is available in the docket to today's action), indicated that it had produced cement clinker in 2001–2003 using chat as a silica substitute. According to Ash Grove, the clinker produced with chat met American Society for Testing and Materials (ASTM) standards for clinker. However, Ash Grove is no longer producing cement with chat. The Agency also reviewed published data and conducted interviews with chat sellers and state regulators and determined that chat is not currently being used in cement manufacturing or non-transportation Portland cement concrete projects.<sup>9</sup>

Pursuant to section 6006(a)(1), the Agency reviewed the possible use of chat as aggregate in concrete, and as it did in its transportation evaluations, concludes that certain uses of chat in concrete are environmentally protective. The criterion being considered would recommend that chat be encapsulated in concrete and recommend that only those uses be allowed where exposure to chat concrete would be limited to workers installing and maintaining

<sup>9</sup> The Agency is aware of proposals to use unencapsulated chat as mine backfill. The Agency has conducted a study to determine if chat mixed with cement or concrete is being used for this purpose and found that it is not. See Memo to File: Mine backfill.

projects. To meet this goal, the Agency is recommending that non-transportation, non-residential cement and concrete projects be limited to weight bearing structural uses such as non-residential foundations, slabs, and concrete wall panels. Other uses include non-residential retaining walls, commercial/industrial parking and sidewalk areas. Uses would not include any use of cement or concrete inside or adjacent to residences (*e.g.*, concrete countertops, sidewalks, driveways). This guidance is somewhat more restrictive than current guidance issued by Regions 6 and 7. The Agency is taking this more restrictive approach in limiting its criterion since there is little information the Agency can use to determine if residential uses of chat cement or concrete are environmentally protective. Depending on what the Agency finally promulgates and issues as guidance, the Agency may modify those Fact Sheets. However, EPA solicits data to demonstrate this possible use would be environmentally benign.

The Agency has reviewed OSHA standards governing worker health and safety related to the construction and demolition of non-residential non-transportation uses of cement and concrete and concludes that existing standards adequately protect those workers from dusts and metals found in chat. It should be noted that when chat is used as an aggregate in concrete, worker exposures would be limited since the metals would already be bound.

### c. Is the EPA soliciting comments on specific issues?

The Agency is soliciting comments on all aspects of today's proposal. In particular:

- The Agency solicits comments on whether the available information supports the establishment of criteria in determining that the use of chat contained in cement or concrete in non-residential, non-transportation uses is environmentally protective.
- Today's action would recommend that uses be limited to non-residential non-transportation uses. The Agency is soliciting comment on whether the data support expanding the criteria to include some structural residential uses. Today's action does not include the use of chat in non-structural residential uses; *e.g.*, concrete countertops, sidewalks, and driveways. The Agency also solicits comments and supporting data on whether non-structural residential uses would be environmentally protective.
- Today's action does not require non-transportation users of

encapsulated chat in cement or Portland cement concrete to conduct leach testing prior to use. The Agency is, however, soliciting comments on whether leachate testing should be conducted prior to each encapsulated use. If the Agency were to recommend leach testing, the Agency solicits comments on whether the TCLP or SPLP test method, as described in Methods 1311 and 1312 of EPA's SW-846 analytical methods, or some other leach testing procedure would be appropriate.

- If the Agency were to require leachate testing, the Agency would need to establish specific criteria, either with or without the use of a Dilution and Attenuation Factor (DAF). Test results using DAFs could reflect how contaminant concentrations may change as they move through the environment. The Agency solicits comment on what the criteria would be, whether or not a DAF should be applied, and what the rationale would be for their use.
- The Agency solicits comment on whether chat users should provide certification to the environmental agency in the state(s) where the material is acquired. The agency is further soliciting comment on whether the certification should also be provided to the environmental agency in the state(s) where the chat is ultimately used.

## B. Relationship of Proposed Criteria to Other State, Tribal and Federal Regulations and Guidance

For all uses of chat in transportation construction projects carried out in whole or in part with federal funds that is affected by this action, users must meet the relevant specifications (*e.g.*, for durability, granularity) established by the relevant state departments of transportation and the Federal Highway Administration (FHWA), prior to it being used in transportation projects. This proposal would not change that—that is, EPA is not setting different specifications and is only informing users that other agencies already have established specifications and engineering testing requirements that must continue to be met.<sup>10</sup>

The FHWA established minimum standards at 23 CFR 626 for Highways (including references to the AASHTO Standard Specifications for Transportation Materials and Methods

<sup>10</sup> The Agency also explored whether the use of chat in concrete had the potential to cause alkali-silica reactions. The Agency has reviewed studies on the use of zinc slags in concrete (A.M. Dunster, *et al.*, 2005) which indicate that zinc slags with zinc concentrations from 90,000 to 120,000 ppm have successfully been incorporated in concrete without detrimental engineering effects.

of Sampling and Testing) and at 23 CFR 633 Required Contract Provisions. Aggregate requirements for Concrete include AASHTO—6 Fine Aggregate for Portland Cement Concrete and AASHTO—80 Coarse Aggregates for Portland Cement Concrete. Technical requirements for Hot Mix Asphalt include AASHTO—29 Fine Aggregate For Bituminous Paving Mixtures and ASTM D6155 Standard Specification for Nontraditional Coarse Aggregates for Bituminous Paving Mixtures. FHWA National Highway *Standard Specifications and Supplements* is divided into topic areas corresponding to the divisions used in the “Guide Specifications for Highway Construction” Manual published by the AASHTO and can be accessed at (<http://fhwapap04.fhwa.dot.gov/nhswp/servlet/LookUpAgency?category=Standard+Specifications+and+Supplements>).<sup>11</sup>

ASTM Standard C–33 restricts the amount of chert that may be mixed into Portland cement concrete when the chert has a specific gravity (ratio of its density to the density of water) less than 2.4. Chat in the Tri-State area, a form of chert, has a specific gravity greater than 2.4. Therefore, ASTM Standard C–33 would not be applicable to the use of chat in Portland cement concrete.

The Agency also considered potential risks posed by the release of fine particles, principally into the air, during road resurfacing and replacement operations. Milling (grinding prior to resurfacing) and demolition of chat-containing asphalt and Portland cement may result in the release of fine chat particles. The Agency considered two scenarios: (1) Storage or disposal of asphalt or Portland cement concrete containing chat in piles from milling and demolition activities and, (2) a continuous milling, remixing, and resurfacing process. Under the first scenario, the potential risks would be posed by leachate from piles. As noted previously, based on leach tests of asphalt containing chat removed from the Will Rogers Turnpike, EPA does not believe storage in piles or disposal of chat asphalt should present risks to the environment. EPA concludes that it is not necessary to propose additional standards to address this issue. Under both scenarios, exposure to fine particles released during milling and

demolition operations would be limited to on-site workers (for the basis of this conclusion, see Section III. A). The Occupational Safety and Health Administration has established limits for worker exposure to the metals found in chat (29 CFR 1926.55—Safety and Health Regulations for Construction, Gases, Vapors, Fumes, Dusts, and Mists, available at: [http://www.osha.gov/pls/oshaweb/owastand.display\\_standard\\_group?p\\_toc\\_level=1&p\\_part\\_number=1926](http://www.osha.gov/pls/oshaweb/owastand.display_standard_group?p_toc_level=1&p_part_number=1926)). EPA has reviewed the OSHA standards (See Section III. A. below, “What Are the Environmental and Health Impacts?”) and concludes that it is not necessary to propose additional standards to address this issue.

Oklahoma, Kansas, and Missouri currently regulates chat washing facilities to assure that those operations do not further contaminate the environment (Memo to File: Evaluation of Chat Washing, found in the docket to this action). These regulations set standards for point and fugitive air emissions, as well as for point and non-point water discharges. In addition, these regulations specifically address fine grained wastes (fines) from these operations. The Agency’s review of these regulations leads us to conclude that today’s proposal does not need to address these activities, since existing state regulations are deemed adequate.

Oklahoma, Kansas, and Missouri also currently regulates hot mix asphalt plant operations. The Agency reviewed these regulations to determine if the storage of chat (and potential run-on/runoff and dust impacts) at such facilities are covered by those regulations. These regulations set standards for point and fugitive air emissions, as well as standards for point and non-point water discharges. The Agency concludes that the existing state regulations are adequate and, consequently, today’s proposal does not need to address them.

USEPA Regions 6 and 7 have issued guidance on chat use (Region 6 Tar Creek Mining Waste Fact Sheet, June 28, 2002 and Region 7 Mine Waste Fact Sheet, 2003). The Region 6 and 7 guidances note that acceptable uses of chat in transportation include applications that bind (encapsulate) the chat into a durable product (asphalt and concrete) and applications that use chat as a sub-base or base material for highways (asphalt and concrete). This proposal establishes criteria for chat used in transportation construction projects funded, wholly or in part, with federal funds and proposes recommended criteria as guidance for non-transportation uses of chat. As

noted earlier in the preamble, the proposed mandatory criteria and guidance in today’s notice is more restrictive than the guidance issued by Regions 6 and 7. Depending on what the Agency finally promulgates and issues as guidance, the Agency may modify those Fact Sheets.

#### *C. How Does This Proposal Affect Chat Sales From Lands Administered by the U.S. Bureau of Indian Affairs or Directly From Tribal Lands?*

The Bureau of Indian Affairs (BIA) signed a Memorandum of Agreement with EPA Region 6 in February 2005 which is designed to lead to the renewed sale of chat from tribal lands and from lands administered by the BIA. EPA’s proposal does not prevent chat sales, nor is it intended to delay such sales. Today’s proposal is consistent with BIA chat sales requirements.

The draft sales agreement prepared by BIA, a copy of which is available in the Docket for today’s proposal, includes an end use certification which requires buyers of chat to certify that when they sell their chat into commerce, the buyer must use the chat in a fashion which is deemed acceptable by EPA. This proposal is consistent with the end use provision in BIA’s model contract, since this proposal will require a similar end use certification for the use of chat, regardless of its source (tribal or private).

#### *D. How Does This Proposal Affect CERCLA Liability, Records of Decision, and Removal Decisions?*

If waste material, such as chat, is used in a way that creates a threat to human health or the environment, the owner of the property and the party responsible for creating the hazardous situation could be liable for a cleanup under CERCLA or a State response action.

In today’s action, EPA establishes criteria for chat use in federally funded transportation projects. However, such federal funding does not include compensation for removal and disposal of chat or other hazardous substances undertaken in accordance with State or Federal response actions.

Finally, nothing in this proposal shall affect existing Records of Decision issued at EPA National Priorities List sites or Removal Decisions associated with chat nor does the proposal affect the determination of liability as noted in CERCLA Sections 104, 106, and 107 or State corrective action decisions.

<sup>11</sup> State highway construction specifications can be found at the following internet web sites for Oklahoma (<http://www.okladot.state.ok.us/materials/700index.htm>), Kansas (<http://www.ksdot.org/burMatrRes/specification/default.asp>), and Missouri ([http://www.modot.state.mo.us/business/standards\\_and\\_specs/highwayspecs.htm](http://www.modot.state.mo.us/business/standards_and_specs/highwayspecs.htm)).

### III. Impacts of the Proposed Rule

#### A. What Are the Potential Environmental and Public Health Impacts From the Use of Chat?

As noted above, two types of uses of chat, transportation uses and non-transportation uses, are covered by today's action. This section addresses potential risks and economic impacts associated with those uses, as well as end of life issues.

The Agency evaluated existing information related to the usage of chat throughout its life cycle in order to identify likely exposure pathways and receptors associated with various scenarios and to characterize the environmental and public health effects that may result from the release of metals from the use of chat in transportation construction projects. The types of information we considered include: total metal concentrations in raw chat and road construction products containing chat; leachable concentrations for metals in raw chat and road construction products containing chat; environmental sampling data for metals in the proximity of historical chat storage and usage sites; and existing evaluations of human health and wildlife impacts associated with metal contamination likely associated with mining activities. The goals of this effort were to determine if there are sufficient data: (1) To characterize the environmental releases (potential or demonstrated) of metals from chat during use applications; and (2) to evaluate the environmental and public health impacts (potential or demonstrated) from the transportation, storage, and use of chat in transportation applications.

##### 1. Transportation Uses and Demolition

As previously described in the preamble, chat can be managed or used directly in the environment or can be encapsulated before it is managed or used in the environment. Examples of unacceptable uses that we identified for unencapsulated chat in transportation applications are: gravel for county roads and driveways, and fill material. Transportation-related uses of encapsulated chat are primarily as aggregate for hot mix asphalt in asphalt surface mix, and for use as an aggregate in stabilized base for roadway construction. Chat was found to be allowed as an aggregate in cold mix asphalt for microsurfacing applications to an existing pavement surface; however, the Agency has no evidence that chat is used in this manner.

For encapsulated chat, we found that the reports and study data on health and

environmental effects focused almost exclusively on evaluating the leaching potential for various mix formulations used to develop asphalt products containing chat (e.g., hot mix asphalt). Data were available on the total metal concentrations and leaching characteristics of (1) Asphalt surface and base mix formulations prior to roadway application, (2) asphalt and stabilized base samples from roads currently in use, (3) spent asphalt samples that were broken up and stored in piles, and (4) milled asphalt samples intended to simulate weathering. Metals appear to be tightly bound in the encapsulated matrix when the total metals concentrations in asphalt samples are compared to corresponding TCLP and SPLP leachate concentrations. In particular, for asphalt surface mix and stabilized road base uses for all 4 categories above, the highest TCLP concentrations reported for lead and cadmium were below the toxicity characteristic (TC) regulatory limits (5 mg/L and 1 mg/L, respectively). In fact, when the metals were detected, in many cases, they were below the drinking water MCLs for lead and cadmium.<sup>12</sup> For zinc, when detected, the TCLP concentrations were found to be generally above the SMCL (5 mg/L) by up to a dilution and attenuation factor of 15. As we have noted earlier, however, we believe that use of the TCLP in evaluating the leaching potential of encapsulated uses of chat in transportation projects is inappropriate since it does not accurately reflect the environmental conditions of the management scenario. Rather, we believe the SPLP is a more representative test of the conditions expected to lead to leaching of metals from this material. In addition, where leachate testing was conducted using the TCLP and SPLP methods, in all cases, the concentrations of the metals were approximately an order-of-magnitude lower for the SPLP as compared to the TCLP. In most cases, the SPLP concentrations were below the MCLs for lead and cadmium and were always below the SMCL for zinc. As a result, based on the available data, we conclude that the use of chat in asphalt is likely to pose a negligible health risk through the groundwater pathway.

On the other hand, limited leaching data were available for encapsulated chat in Portland cement concrete (TCLP

<sup>12</sup> Comparisons of leachate concentrations with drinking water criteria assume that no dilution or attenuation occurs before the dissolved metals reach a drinking water well or surface water. The Agency believes this worst case scenario is highly unlikely to occur in the area of the country where chat use in asphalt is occurring.

only) and no data were found for flowable fill. For Portland cement concrete, the TCLP concentrations for lead and cadmium were below the TC limits yet above the MCLs. The concentrations for zinc were below the SMCL. However, as noted above, we believe that using the TCLP to evaluate the potential for environmental release is inappropriate. While no data were identified presenting the SPLP concentrations for chat encapsulated in Portland cement concrete or flowable fill, we believe the potential groundwater impacts from the use of chat in Portland cement concrete would be negligible as the metals binding capacity of Portland cement concrete is expected to be similar to asphalt because of similar pozzolanic characteristics.

Environmental quality information presented in several studies indicated that damages to streams had been documented for the Tri-State Mining Area; however, these studies were not specific to encapsulated chat uses, but were from multiple sources of contamination associated with lead and zinc mining, including subsurface sources (flooded mine shafts), surface sources (chat piles, tailing sites), and smelting operations. SPLP analyses for chat encapsulated in hot mix asphalt (OU, 2005) show that for zinc, when detected, concentrations were below EPA's National Recommended Water Quality Criteria ([www.epa.gov/waterscience/criteria/wqcriteria.html](http://www.epa.gov/waterscience/criteria/wqcriteria.html)) for the protection of aquatic life. This study did not find lead or cadmium in any leachate using the SPLP method. While the study's detection limits for lead and cadmium were at least an order of magnitude above EPA's National Recommended Water Quality for the protection of aquatic life, we do not believe this to be a concern. The environmental conditions would need to be extremely favorable for the metals to reach surface waters at levels of concern either through run-off to nearby soils which would have subsequent attenuation before reaching surface waters, or through additional attenuation and dilution in groundwater before reaching nearby receiving waters.

The transportation and storage of chat to be used as road construction aggregate could result in local environmental releases to various media (air, groundwater, soil). Agency review of existing regulations indicate that those transport and storage concerns are adequately addressed by existing State regulations.

The milling and demolition of chat-containing asphalt and Portland cement concrete would likely involve emissions

of fine chat particles, with subsequent dispersion and deposition to nearby soils. These emissions would occur episodically and infrequently (that is, at the end of the useful life of the pavement which could be on the order of 15 years). The Agency believes that, with regard to worker safety, these potential sources of releases are adequately regulated by the States or by OSHA. However, the potential exists for these fine chat particles to be dispersed into populated areas. As these emissions would be infrequent, the Agency believes that the potential exposure to a local population would be minimal.

In particular, during the demolition and resurfacing of asphalt road surfaces, it is often the practice to score, cut, and crush the old surface layer so that it may be fed directly into mobile equipment that heats this material (or mixes it with fresh asphalt) and immediately lay down a new asphalt surface. Any fugitive dust emissions from this process would occur episodically and infrequently (that is, at the end of the useful life of the pavement which could be on the order of 15 years). Oklahoma DOT regulations limit the amount of fine aggregate in hot mix asphalt because they have adopted the AASHTO aggregate asphalt standard. Aggregate makes up approximately 80 to 90 percent of HMA by weight. The OU (2005) study show that the total concentration of lead in surface mix asphalt blends is approximately 200 to 400 mg/kg. The percent of chat aggregate in the blends were 40 to 80 percent (by weight). EPA has found no emissions data during demolition and resurfacing of asphalt roads to evaluate potential exposures to workers. While the Agency does not believe this potential exposure poses a significant risk, we are asking for information on whether such dusts may present risks and seek comment on how to address such risks.

Road surfaces using a chat concrete mixture may also be demolished at the end of their useful life (like asphalt, the useful life could be on the order of 15 years). The demolition of road surfaces containing chat would likely involve low emissions of encapsulated chat dust particles, theoretically with subsequent dispersion and deposition to nearby soils. Based on discussions with demolition contractors, it is apparent that dusts from such demolitions are regulated under the state fugitive dust regulations. Exposure to such dusts probably would be limited to workers because existing State regulations require that dusts be contained within the area of origin. As noted above, OSHA has established exposure limits

for dusts and metals for workers in construction and demolition. Most if not all road concrete which is demolished is reused as fill or as road base. While the Agency also does not believe that exposure to chat concrete road demolition presents a significant risk, we are soliciting comment on whether this rule should require some form of notification to demolition workers since they may not be aware that chat had been used in the concrete.

## 2. Non-Transportation Uses and Demolition

Dusts during the demolition of nonresidential buildings which used chat concrete was also considered by the Agency.<sup>13</sup> For today's action, the Agency is assuming a use life for buildings of 30 years (based on the Internal Revenue Service allowable straight-line depreciation for non-residential real property of 31.5 years). Demolition therefore will likely occur only once every 30 years. The Agency determined that demolition practices, as noted by the National Association of Demolition Contractors, only generate dusts for periods rarely in excess of 20–30 minutes when buildings are imploded. Furthermore, the Agency has reviewed the fugitive dust demolition regulations (see above) in Oklahoma, Missouri, and Kansas and found that building demolition requires a general fugitive dust permit that mandates that demolition related dusts must be contained within the property line (most often through the use of water sprays). Based on this information, the Agency concludes that dusts from chat concrete demolition of nonresidential buildings is not likely to present a significant threat to human health.

Even if chat metal levels do not trigger OSHA requirements, other OSHA controls would still be utilized to address worker health risks from exposure to fine particulates, which indirectly addresses the issues associated with chat. In particular, demolition of concrete structures is known to produce extremely fine particles of crystalline silica. Breathing crystalline silica dust can lead to silicosis, a commonly known health hazard which has been associated historically with the inhalation of silica-containing dusts. Silicosis is a lung disease which can be progressive and disabling; it can lead to death. OSHA standards for exposure to dust, (29 CFR

1926.55) prohibit employee exposure to any material at concentrations above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970." OSHA has established for crystalline silica dust a Permissible Exposure Level (PEL) which is the maximum amount to which workers may be exposed during an 8-hour work shift. NIOSH has recommended an exposure limit of 0.05 mg/m<sup>3</sup> as a time-weighted average (TWA) for up to a 10-hour workday during a 40-hour workweek. Although the Agency has no reason to believe that chat in concrete would increase the levels of fine particulates, including crystalline silica, we believe the OSHA/NIOSH standards will provide adequate protection to workers from potential exposure to metals found in chat.

As noted earlier, the Agency concludes that dust generated during the demolition of chat concrete buildings or in the demolition of asphalt and Portland cement concrete pavement that contains chat would largely be limited to the immediate project area. The Agency has reached this conclusion based on its review (as noted above) of the Oklahoma, Missouri, and Kansas fugitive dust and particulate matter regulations, which mandate that demolition dusts be controlled within project sites. Therefore, if any risks exist due to exposure to demolition dusts from asphalt or Portland cement concrete that contains chat, they would most likely be limited to demolition workers at the site. The Occupational Safety and Health Administration (OSHA) has established worker health and safety standards specific to building demolition in 29 CFR 1926 Subpart T. These standards require an engineering survey of the building prior to demolition to identify any risks and implementation of project wide dust controls. The standards also require compliance with NIOSH respirable dust standards which essentially require the use of respirators, if standards noted in 29 CFR 1910 are exceeded. Based on the Agency's review of the OSHA standards, we conclude that these regulations provide adequate protection to onsite demolition workers and today's proposal does not include any additional worker health and safety requirements. The Agency is, however, seeking comment on whether reliance on OSHA/NIOSH standards are sufficient and seeks information on possible alternative approaches, if found necessary. The Agency is also seeking comment and information on the adequacy of existing controls for the disposal of demolition debris containing

<sup>13</sup> The American National Standards Institute ANSI A10.6–1983 American National Standard for Demolition Operations Safety Requirements recommends that no worker shall be permitted in any area that can be adversely affected when demolition operations are being performed.



chat or whether the Agency should establish additional criteria.

A more complete discussion of the Agency's evaluation of existing environmental and public health information associated with the use of chat is available in "Report on Potential Risks Associated with the Use of Chat from Tri-State Mining Area in Transportation Projects." This document can be found in the RCRA docket established for today's proposed rulemaking.

#### B. What Are the Economic Impacts?

This Part summarizes projected cost impacts, economic impacts, and benefits associated with today's proposal. A brief market profile is first discussed, followed by specification of the economic baseline. Costs and economic impacts are next discussed. These estimates are presented on an annualized basis. Finally, this Part presents a qualitative discussion of potential benefits associated with today's proposed action.

##### 1. Chat Market Profile

Chat is a byproduct of mining and milling operations that has been exempted from regulation as a "hazardous waste" under RCRA.<sup>14</sup> However, given the varying concentrations of lead (a hazardous substance) present in chat, and the risks posed to human health and the environment, it is subject to CERCLA regulations. Currently, chat in the Tri-State mining area is found in above-ground piles of varying sizes, reflecting the different types of mining operations that occurred in each area. The total quantity of chat in the Tri-State mining area is roughly 100 million tons. A relatively small percentage of this total is currently used annually in road building or other beneficial use projects.

A small, but well-established market for chat in transportation applications currently exists. The preparation and use of chat is dominated by a few small operations that purchase, process, and distribute chat to area highway departments, primarily for use as an aggregate in asphalt. Approximately 95 percent of all current chat use is for aggregate in asphalt. A wide range of different projects comprise the remaining 5 percent.<sup>15</sup> We have no evidence there is any current use of chat in cement or concrete.

The demand for chat as aggregate in transportation uses is price sensitive

and is limited by various technical and performance standards. However, consistent demand exists as long as ready-use chat can be provided at prices that are competitive with other sources of aggregate. The key cost drivers for chat include raw material costs, processing and washing, if conducted, and transportation. The current market price for chat, and other forms of aggregate, is approximately five dollars per ton. This estimate excludes transport cost, but includes processing and washing, even though such operations are not included as part of the proposal.

A limited number of small companies act as brokers, processors and distributors (washers and haulers) of the chat in the Tri-State area. Chat haulers and washers buy chat from several owners, each typically owning only a small amount of the total quantity of chat. Chat is both privately and publicly owned, including chat piles located on land controlled by the Quapaw Tribe of Oklahoma.

Historical trends and information from regional chat suppliers suggest that the demand for chat for transportation-related uses is unlikely to change significantly over the next couple of decades. The currently viable market is well defined and transportation costs make chat economically unattractive beyond current market limits. Within the current market, rates of growth for new roads are modest (estimated at less than 2 percent per year) and population densities in areas surrounding the Superfund sites are low. We are not able to determine what, if any, impact the proposed rule may have on chat demand for use in asphalt. Significant chat use in other applications, such as concrete, does not appear to be economically viable at this time.

##### 2. Specification of the Analytical Baseline

Proper baseline specification is an important step to the accurate assessment of incremental costs, benefits, and other economic impacts associated with today's proposal. The baseline essentially describes the world absent the rule. The incremental impacts of today's proposal are evaluated by predicting post-rule responses with respect to the established baseline(s). The baseline, as applied in this analysis, is assumed to be the point at which today's proposal is finalized.

A clear baseline for this proposal is not known. Therefore, for today's action, we have developed our analysis relative to three alternative baseline

scenarios to be applied across all Tri-State sites. These are:

*Baseline 1:* Chat Removal and Disposal in On-Site Subsidence Pits (with continuing use of chat at approximately the same amount for transportation projects, while remediation continues);

*Baseline 2:* Chat Consolidation, In-Place Containment, and Revegetation (with continuing use of chat at approximately the same amount for transportation projects, while remediation continues); and,

*Baseline 3:* No Further Action, Except Monitoring of Water Quality (with continuing use of chat at approximately the same amount for transportation projects).

These scenarios are in no way reflective of final Superfund decisions and are used only for economic analyses performed for today's action. Today's action in no way supports or creates federal subsidies for chat use. Furthermore, the Agency wishes to restate its current policy that EPA does not compensate for the removal and disposal of hazardous substances as defined under CERCLA.

##### 3. Cost Impacts

The value of any regulatory action is traditionally measured by the net change in social welfare that it generates. Our economic assessment conducted in support of today's proposal evaluated compliance costs only. Social costs are not assessed due to data limitations and the lack of equilibrium modeling capabilities associated with this industry. The data applied in this analysis were the most recently available at the time of the analysis. Because our data and analytical techniques were limited, the cost impact findings presented here should be considered generalized estimates.

Our cost analysis examined the potential impact of the proposal based on the use of encapsulated chat stored at all four sites in the Tri-State area. Of the chat that is currently used at the four sites, ninety-five percent of it is used in asphalt transportation applications. Our cost analysis, therefore, focused on the use of chat as aggregate in asphalt. Chat may also be used for a variety of non-asphalt transportation products. However, available data appear to indicate that non-asphalt uses of chat from the Tri-State area generally are not economically attractive at this time.

The time frame we assume for chat disposal and/or removal for purposes of this rulemaking ranges from 10 to 20

<sup>14</sup> See 40 CFR 261.4(b)(7).

<sup>15</sup> Current non-transportation uses of chat include: component in non-skid surfaces, sand blasting material, and waste water treatment filters.

years.<sup>16</sup> Annualized costs under all scenarios incorporate a 3 percent interest rate for consistency with relevant Superfund analyses. Finally, all analytical scenarios assume that approximately 20 percent of the chat at each site would remain on-site because it is assumed that this amount may not present an unacceptable threat to human health or the environment. This assumption is solely used for this rule's economic evaluation and is not meant to reflect or signify Agency policy or final Superfund determinations.

Under all baseline scenarios, with no change in assumed market growth, our analysis indicates that annual incremental cost (beyond projected remediation costs) impacts associated with this proposal are approximately \$50,000. This estimate incorporates costs associated with certification, recordkeeping and reporting. Sampling and analysis costs are not included. The Agency has decided not to propose environmental testing at this time.

In order to estimate the potential scope of remediation cost savings that may occur should the rule stimulate expanded chat use, we conducted a sensitivity analysis based on a Geographic Information Systems (GIS) analysis. This GIS analysis suggested that current demand for asphalt within 200 miles of the Tar Creek site might accommodate up to a doubling of chat demand (from one million tons per year to about 1.9 million tons per year) over the next ten to twenty years. This sensitivity analysis found that baseline remediation cost savings may be as much as \$11.8 million/year and \$31.0 million/year, under Baseline Scenarios 1 and 2, respectively (assuming the 20 year clean-up scenario). These figures represent cost savings of 29 percent and 33 percent of the total annual baseline 1 and 2 projected remediation costs.

Overall, our findings indicate that today's proposal is unlikely to result in chat management cost savings without increased demand for chat use in economically viable transportation projects. Additional "expanded use" scenarios are examined in the economic support document prepared for this action: *Assessment of Potential Costs, Benefits, and Other Impacts of Chat Use in Transportation Projects*, January 2006. This document is available in the docket established for today's action.

<sup>16</sup> This time frame is established as a generalized estimate for the greatest quantity. The Agency recognizes that selected sites may be addressed in less time (See *Assessment of Potential Costs, Benefits, and Other Impacts of Chat Use in Transportation Projects*, November 2005).

#### 4. Economic Impacts

The potential economic impacts associated with the proposed rulemaking may include moderate effects on local companies resulting from changes in the use of chat. Our analysis indicates that the impact of the proposal on chat use over the next ten to twenty years is unknown. As a result, it is difficult to determine whether the regional or local companies will experience any significant economic impacts.

#### 5. Benefits

Today's proposal is designed to establish standards that would clarify and facilitate the increased safe use of chat in transportation applications carried out in whole or in part with federal funds. The social benefits of this proposed action fall into two categories: reduced costs associated with remediation of Tri-State mining sites and reduced human health and environmental damage in the Tri-State area related to the timely removal of chat. The extent of these benefits is largely driven by the additional quantity of chat that can be used in transportation projects and the extent to which transportation uses result in reduced risks to human health and the environment, as compared to the remediation (baseline) options.

Avoided disposal and remediation costs are dependent upon the extent of the incremental increase in chat use over the assumed remediation period. Our analysis suggests that societal benefits may occur in the form of net cost savings under the expanded market scenario.

Should the rule, as proposed, fail to stimulate any accelerated use of chat in transportation projects above the current annual rate, human health and environmental benefits would be equivalent to those expected under the relevant baseline scenario(s). However, even under the more accelerated transportation use scenarios, the extent of our current knowledge indicates that the remediation of chat piles at the Tri-State sites is likely to result in human health and environmental risk reductions similar to baseline scenarios one or two.

#### IV. Executive Orders and Laws Addressed in This Action

##### A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 [58 FR 51735 (October 4, 1993)], the Agency, in conjunction with the Office of Management and Budget's (OMB's) Office of Information and Regulatory

Affairs (OIRA), must determine whether a regulatory action is "significant" and therefore subject to OMB review and the full 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 legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order. As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations are documented in the public record. The proposed rule is unlikely to result in any significant chat management costs or cost savings. Thus, the \$100 million threshold for economic significance, as established under point number one above, is not relevant to this action. In addition, this rule is not expected to 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. Thus, this rule is not considered to be an economically significant action.

We have prepared an economic assessment in support of today's proposal. This document is entitled: *Assessment of Costs, Benefits, and Other Impacts of Chat Use in Transportation Projects*, January 2006. Findings from this document are summarized under section III. B above. Interested persons are encouraged to read and comment on all aspects of this document.

##### B. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget

(OMB) under the *Paperwork Reduction Act*, 44 U.S.C. 3501 *et seq.* The Information Collection Request (ICR) document prepared by EPA has been assigned EPA ICR number 2218.01.

The certification, reporting, and record keeping required under this proposal is necessary to ensure safe use of the product. Certification, recordkeeping and reporting requirements under this proposal are not voluntary and are not subject to confidentiality restrictions.

The burden associated with this proposal is projected to affect a limited number of entities. These include: three state governments (Oklahoma, Missouri, Kansas), possibly one Native American tribe (Quapaw Tribe of Oklahoma), and no more than fifty sand and gravel companies located in the states of Oklahoma, Missouri, and Kansas (NAICS 4233202).

The burden on respondents is estimated at 1,000 hours per year, with a total annual cost ranging from \$40,000

to \$60,000, depending upon labor costs. Although not directly required in the proposal, respondents would also need to read and understand the rule. The burden associated with reviewing the regulation is estimated at 100 hours, with a total annual cost estimated at \$5,000. The burden on governmental entities is expected to be minimal (see table below).

SUMMARY OF ESTIMATED BURDEN TO RESPONDENTS AND GOVERNMENT

Activity	Number of hours per project	Estimated cost per hour	Estimated number of affected projects per year	Estimated total annual burden (hours)	Estimated total annual cost
Burden to Respondents: Certification, Reporting, Recordkeeping .....	5	\$40–\$60	200	1,000	\$40,000–\$60,000
Burden to Government: Negligible.					

**Note:** The burden to respondents also associated with reviewing the regulation is estimated at 100 hours, with a total average annual cost estimated at \$5,000. This activity is not directly required by the proposal.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA’s regulations in 40 CFR are listed in 40 CFR part 9.

The Agency requests comment on the need for this information, the accuracy of the burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques.

*C. Regulatory Flexibility Act*

The Regulatory Flexibility Act (RFA) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 *et seq.*, generally requires an agency to prepare

a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act, or any other statute. This analysis must be completed unless the agency is able to certify that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small not-for-profit enterprises, and small governmental jurisdictions.

The RFA provides default definitions for each type of small entity. Small entities are defined as: (1) A small business as defined by the Small Business Administration’s (SBA) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today’s proposal on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This section summarizes whether the proposal establishing criteria for use of chat that is stored in the Tri-state mining area in transportation projects that are carried out in whole or in part with federal funds may adversely impact small entities. The market for both chat and “virgin” aggregate in asphalt production is mature and dominated by small businesses. In order

to have a significant economic impact on a substantial number of small businesses, the criteria for chat use would have to cause a significant change in the quantity of chat that is used in highway applications. Our analysis indicates that the current market area is not likely to experience any significant change in the demand for chat as a result of the proposal. That is, while many chat processors, distributors, and users of chat are small businesses, significant economic impacts on a substantial number of these entities is not expected.

Therefore, today’s rule is not expected to result in a significant impact on a substantial number of small entities. The reader is encouraged to review our regulatory flexibility screening analysis prepared in support of this determination. This analysis is incorporated into the “Assessment” document, as referenced above.

*D. Unfunded Mandates Reform Act of 1995*

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with “Federal mandates” that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million

or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. Thus, today's rule is not subject to the requirements of sections 202 and 205 of the UMRA.

EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments because the requirements proposed in today's action only apply to the private sector that uses chat in transportation construction projects funded wholly or in part using federal funds.

#### *E. Executive Order 13132: Federalism*

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the regulation.

This rule, as proposed, does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in the Order. The rule focuses on requirements for facilities processing and using chat in transportation projects. This rule, as proposed, does not affect the relationships between Federal and State governments. Thus, Executive Order 13132 does not apply to this rule.

#### *F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments*

Executive Order 13175: Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have tribal implications" is defined in the Executive Order to include regulations that have substantial direct effects on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

Under Executive Order 13175, EPA may not, to the extent practicable and permitted by law, issue a regulation that has tribal implications, that imposes substantial direct compliance costs, and that is not required by statute, unless, among other things, the Federal government provides the funds necessary to pay the direct compliance costs incurred by tribal governments, and EPA consults with State and local officials early in the process of developing the regulation. Similarly, to the extent practicable and permitted by law, EPA may not issue a regulation that has tribal implications and that preempts tribal law unless EPA, among other things, consults with tribal officials early in the process of developing the regulation.

EPA has concluded that this rule does not have tribal implications in that it does not have substantial direct effects as specified in the Executive Order. In particular, EPA notes that this rule does not impose substantial direct compliance costs or pre-empt tribal law. Some chat piles are located on Indian country lands. Allotted lands of the Quapaw Tribe of Oklahoma (Quapaw Tribe) are estimated to contain about half of the 29 chat piles located within the Picher Mining Field site. The Tribal government may own or operate chat processing facilities, but this is undetermined. The proposed rule, however, is not expected to significantly alter the costs or procedures associated with managing these sites. Nor is the rule expected to significantly change the demand for, and income from, chat use. Furthermore, the removal of chat piles are likely to improve the environment and human health in these areas.

Nevertheless, during the development of this proposal, Agency personnel consulted with representatives of the Quapaw tribe. In addition, a draft of the preamble and rule was provided to the Quapaw Tribe for review and comment; comments were submitted in a letter dated February 9, 2006, a copy of which is in the docket for today's rulemaking. EPA also consulted with tribal government representatives on the Tri-State Natural Resource Damage Partnership during a meeting on October 25, 2005 in Pittsburg, Kansas. At the meeting, Tribal representatives generally supported the proposal. In the spirit of Executive Order 13175, and consistent with EPA policy to promote communications between EPA and tribal governments, EPA specifically solicits any additional comment on this proposed rule from tribal officials.

#### *G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks*

Executive Order 13045: "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. Today's proposed rule is not subject to the

Executive Order because it is not economically significant as defined under point one of the Order, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

*H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use*

This rule is not subject to Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355 (May 22, 2001)). This rule, as proposed, will not seriously disrupt energy supply, distribution patterns, prices, imports or exports. Furthermore, this rule is not an economically significant action under Executive Order 12866.

*I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This proposal does not require the application of technical standards (e.g., materials specification, sampling, analyses). As such, the National Technology Transfer and Advancement Act does not pertain to this action.

*J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994) requires the Agency to complete an analysis of today's proposal with regard to equity considerations. The Order is designed to address the environmental and human health conditions of minority and low-income populations.

Our analysis indicates that chat piles in the Tri-State mining region are, in some cases, located near low-income populations. In addition, Quapaw allotted lands are located within the Picher Mining Field. Existing data on the human health and ecological impacts associated with chat suggests that these populations may be adversely affected by the presence of the chat piles. The removal of the chat from piles for transportation applications that are considered environmentally protective would likely have a positive impact on these communities. Therefore, we believe that today's proposal should not result in any adverse or disproportional health or safety effects on minority or low-income populations and, in fact, will likely improve environmental protection.

**List of Subjects in 40 CFR Part 278**

Environmental protection, Chat, Indians—lands, Mine tailings, Reporting and recordkeeping requirements, Waste.

Dated: March 23, 2006.

**Stephen L. Johnson,**  
*Administrator.*

For the reasons set out in the preamble, in title 40, chapter I of the Code of Federal Regulations, a new part 278 is proposed to be added as follows:

**PART 278—CRITERIA FOR THE MANAGEMENT OF GRANULAR MINE TAILINGS (CHAT) IN ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE IN TRANSPORTATION CONSTRUCTION PROJECTS FUNDED IN WHOLE OR IN PART BY FEDERAL FUNDS**

Sec.

- 278.1 Definitions.
- 278.2 Applicability.
- 278.3 Criteria.
- 278.4 Certification and recordkeeping requirements.

**Authority:** 42 U.S.C. 6961 *et seq.*

**§ 278.1 Definitions.**

The following definitions apply in this part:

(a) *Asphalt cement concrete* means pavement consisting of a combination of layers, which include an asphalt surface constructed over an asphalt base and an asphalt subbase. The entire pavement structure is constructed over the subgrade. Pavements, bases, and subbases must be constructed using hot mix asphalt.

(b) *Chat* means waste material that was formed in the course of milling operations employed to recover lead and zinc from metal-bearing ore minerals in the Tri-State mining district

of Southwest Missouri, Southeast Kansas and Northeast Oklahoma.

(c) *Encapsulation* means incorporation of chat into hot mix asphalt concrete or Portland cement concrete (PCC).

(d) *Hot mix asphalt* means a hot mixture of asphalt binder and size-graded aggregate, which can be compacted into a uniform dense mass.

(e) *Portland cement concrete (PCC)* means pavements consisting of a PCC slab that is usually supported by a granular (made of compacted aggregate) or stabilized base and a subbase.

(f) *Tri-State Mining District* means the lead-zinc mining areas of Ottawa County, Oklahoma, Cherokee County of southeast Kansas and Jasper and Newton Counties of southwest Missouri.

(g) *Federal or state remediation action* means State or federal actions undertaken pursuant to applicable federal or state environmental laws undertaken with consideration of risk assessments developed in accordance with state and federal laws, regulations, and guidance.

(h) *Transportation construction projects* means transportation construction projects which encapsulate chat in hot mix asphalt concrete or in Portland cement concrete.

**§ 278.2 Applicability.**

(a) These requirements apply to chat from the Tri-State Mining District used in transportation construction projects carried out in whole or in part using federal funds.

(b) [Reserved]

**§ 278.3 Criteria.**

(a) Chat must be encapsulated in hot mix asphalt concrete or Portland cement concrete; or

(b) Authorized for use by a State or federal response action undertaken pursuant to applicable federal or state environmental laws.

**§ 278.4 Certification and recordkeeping requirements.**

(a) *Certification.* For chat used under the jurisdiction of the U.S. Department of Interior, Bureau of Indian Affairs (BIA), the EPA certification below is not applicable. For all other chat, that is not part of demolished asphalt or concrete, the acquirer shall:

(1) Submit a signed, written certification to the environmental regulatory agency in the State where the chat is acquired within 30 days of the date of acquisition. The certification shall contain the following:

- (i) Location of origin of the chat;
- (ii) Amount of chat acquired; and
- (iii) Certification statement: I certify under penalty of law that the chat used

in this transportation project will meet EPA criteria found in § 278.3.

(2) *Transfer.* If the chat is sold or otherwise transferred to another party, the acquirer shall provide a copy of the certification to the new owner of the chat. The new owner shall submit a certification according to paragraph (a)(1) of this section. The new certification supersedes all previous certifications.

(3) *Recordkeeping.* The acquirer of chat, and any other person that receives the chat, will maintain a copy of the certification for three years following transmittal to the State department(s) of the environment.

(b) [Reserved]

[FR Doc. 06-3104 Filed 4-3-06; 8:45 am]

BILLING CODE 6560-50-P

**DEPARTMENT OF HOMELAND SECURITY**

**Federal Emergency Management Agency**

**44 CFR Part 67**

[Docket No. FEMA-B-7459]

**Proposed Flood Elevation Determinations**

**AGENCY:** Federal Emergency Management Agency (FEMA), Department of Homeland Security.

**ACTION:** Proposed rule.

**SUMMARY:** Technical information or comments are requested on the proposed Base (1% annual-chance) Flood Elevations (BFEs) and proposed BFE modifications for the communities listed below. The BFEs and modified BFEs are the basis for the floodplain management measures that the community is required either to adopt or to show evidence of being already in effect in order to qualify or remain

qualified for participation in the National Flood Insurance Program (NFIP).

**DATES:** The comment period is ninety (90) days following the second publication of this proposed rule in a newspaper of local circulation in each community.

**ADDRESSES:** The proposed BFEs for each community are available for inspection at the office of the Chief Executive Officer of each community. The respective addresses are listed in the table below.

**FOR FURTHER INFORMATION CONTACT:** Doug Bellomo, P.E., Hazard Identification Section, Mitigation Division, Federal Emergency Management Agency, 500 C Street SW., Washington, DC 20472, (202) 646-2903.

**SUPPLEMENTARY INFORMATION:** FEMA proposes to make determinations of BFEs and modified BFEs for each community listed below, in accordance with Section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed BFEs and modified BFEs, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own, or pursuant to policies established by other Federal, State, or regional entities. These proposed elevations are used to meet the floodplain management requirements of the NFIP and are also used to calculate the appropriate flood insurance premium rates for new buildings built after these elevations are made final, and for the contents in these buildings.

*National Environmental Policy Act.* This proposed rule is categorically excluded from the requirements of 44 CFR Part 10, Environmental Consideration. No environmental impact assessment has been prepared.

*Regulatory Flexibility Act.* The Mitigation Division Director of the Federal Emergency Management Agency certifies that this proposed rule is exempt from the requirements of the Regulatory Flexibility Act because proposed or modified BFEs are required by the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and are required to establish and maintain community eligibility in the NFIP. No regulatory flexibility analysis has been prepared.

*Regulatory Classification.* This proposed rule is not a significant regulatory action under the criteria of Section 3(f) of Executive Order 12866 of September 30, 1993, Regulatory Planning and Review, 58 FR 51735.

*Executive Order 13132, Federalism.* This rule involves no policies that have federalism implications under Executive Order 13132.

*Executive Order 12988, Civil Justice Reform.* This rule meets the applicable standards of Executive Order 12988.

**List of Subjects in 44 CFR Part 67**

Administrative practice and procedure, Flood insurance, Reporting and recordkeeping requirements.

Accordingly, 44 CFR Part 67 is proposed to be amended as follows:

**PART 67—[AMENDED]**

1. The authority citation for Part 67 continues to read as follows:

**Authority:** 42 U.S.C. 4001 et seq.; Reorganization Plan No. 3 of 1978, 3 CFR, 1978 Comp., p. 329; E.O. 12127, 44 FR 19367, 3 CFR, 1979 Comp., p. 376, § 67.4

2. The tables published under the authority of § 67.4 are proposed to be amended as follows:

Flooding source(s)	Location of referenced elevation	*Elevation in feet (NGVD) +Elevation in feet (NAVD) #Depth in feet above ground		Communities affected
		Effective	Modified	
<b>Shoshone County, Idaho and Incorporated Areas</b>				
Coeur d'Alene River: .....	At western Shoshone County boundary approximately 800 feet South of Interstate Highway 90.	None	+2149	Shoshone County Unincorporated Areas.
	At western Shoshone County boundary on the landward side of the levee at community of Cataldo.	*2150	+2155	
	Approximately 15,000 feet upstream from the western Shoshone County boundary.	None	+2164	
South Fork Coeur d'Alene River:	Approximately 1500 feet downstream of Theatre Road	*2221	2225	Shoshone County Unincorporated Areas.
	Just downstream of Elizabeth Park Road Bridge .....	*2343	+2343	