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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10 – Hanford/INL Project Office
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Memorandum

To: Bunker Hill Superfund Site Operable Units 1-3 Site Files

Signatories:

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RE: Policy Statement and Technical Specifications for development and construction of Limited Use Repositories in the Bunker Hill Superfund Site

Purpose

The United States Environmental Protection Agency (USEPA) issued Records of Decision (RODs) outlining remedial actions for the Bunker Hill Mining and Metallurgical Complex Superfund Site (Site) in 1991, 1992 and 2002. A ROD Amendment was issued in 2012. The Site consists of three Operable Units (OU-1 and OU-2, populated and non-populated areas of the Bunker Hill Box, respectively) and OU-3 (all areas of the Coeur d'Alene Basin outside of the Bunker Hill Box). This policy applies to areas within the Institutional Controls Program Administrative Boundary as described in Idaho Code IDAPA 41.01.01 et seq which may be found at http://panhandlehealthdistrict.org/environmental-health/icp. The policy focuses mainly on areas within that boundary that are in proximity to road segments remediated under the Paved Roadway Surface Remediation program (Paved Roads program). Generally, the chosen remedy for the cleanup of contaminated properties has relied upon removal and/or capping of contaminated materials where they pose unacceptable risks to human health. The resulting waste is disposed of in engineered repositories for which clean materials are brought in to cap and provide closure of the facilities. Constructed repositories are used for contaminated material

disposal at this and many other Superfund sites since they employ engineering and institutional controls, require long term operation and maintenance, and are monitored to ensure long term protection and integrity of the remedy.

Since the remedy for residential yards, paved roads, and commercial properties is typically only a partial removal and contaminated materials lie beneath the clean barriers throughout most communities, the respective RODs call for an institutional controls program as an integral part of the remedy to ensure that barriers are protected and constructed as development and re-development occurs within the Site. Because of geographic and jurisdictional considerations, the Idaho Department of Environmental Quality (IDEQ) called upon Panhandle Health District (PHD), acting through its local board of health, to create criteria and requirements designed to govern long-term Site-related contaminant management. The State's statutory rules are collectively known as the "Institutional Control Program" (ICP) and were codified for application on properties and actions within the ICP Administrative Boundary. The ICP requires implementation and enforcement of practices that establish and sustain barriers to prevent human exposure to contaminants, and maintain records of compliance with the remedy prescribed by the respective RODs.

The effect of the ICP is that contaminated materials are managed and disposed of in a variety of ways across the Site. In some cases, materials qualifying as remedial waste according to the Bunker Hill Mining and Metallurgical Complex Waste Acceptance Criteria (DEQ/EPA April 2013) are transported to and disposed of at repositories by Remedial Action contractors. In other cases, contaminated qualifying wastes are hauled by homeowners and private contractors to repositories or placed in other areas on their property and capped in compliance with the ICP. All of these methods are designed to protect human health and prevent contaminant migration into areas that were not previously contaminated. Currently, there are three repositories accepting the bulk of remedial action waste (Page Repository in the Box and Big Creek and East Mission Flats repositories in the Basin). These repositories were authorized by the RODs for the three OUs and were designed specifically for their uses and locations and were sited to promote shorter haul distances; especially for members of the public who transport ICP waste to them.

In 2013 EPA, IDEQ and PHD implemented the Community Fill Plan (CFP) and identified procedures to be required when greater than 500 cubic yards of contaminated materials will be moved from property to property within the ICP Administrative Boundary. The CFP also acknowledged the jurisdiction of USEPA and the State of Idaho in implementation of the ICP as a portion of the selected remedy of the RODs, and recognized that larger scale fills may warrant additional evaluation due to their size and potential impact to human health and the environment. The CFP states that contaminated materials that result from remedial actions implemented by USEPA, IDEQ, or other agencies, shall not be used in the CFP; these materials are intended to be disposed of at repositories. Under the terms of the CFP, excavated ICP materials including soils, mine waste rock, concrete and asphalt grindings with lead concentrations greater than 20,000 parts per million (ppm) are not eligible for use in community fill locations within the ICP Administrative Boundary.

The development of a Limited Use Repository (LUR) as described under this policy has evolved from the CFP process and the more formal process of siting and operation of long-term repositories. The LURs provide an alternative for disposal of pavement materials from the Paved Roadway Surface Remediation program and other remedial actions in order to reserve

capacity in those existing Box and Basin repositories for longer term cleanup activities and ICP waste. Cleanup actions conducted by EPA or IDEQ as part of remedy implementation may occur over extended periods of time and in some cases contain significant volumes of highly contaminated material. For these reasons this material will continue to go to constructed repositories which are sited in accordance with a four-step process identified in the 2002 ROD. The continued use of existing, full-scale repositories in combination with CFP and LUR projects will help preserve space in existing, full-scale repositories for both cleanup and ICP material for the long-term while helping the local community maximize the opportunity to create developable land.

Background

In 2014, existing full-scale repositories in the Box and Basin received large quantities of waste from various remedial actions. The Page Repository received 5,141 dump truck loads of remedial action wastes including waste from Remedy Protection and Paved Roads programs within the Box. Estimates based on truck counts for waste delivery add up to about 51,410 loose cubic yards assuming 10 yards per truck. Page received 3,577 loads of Paved Roads waste which amounts to 70% of the total remedial action waste. In the same year, the Basin's Big Creek Repository received 5,275 loads of remedial action waste and 2,102 loads of Paved Roads waste. Paved Roads waste there amounted to 39.8% of the total remedial action waste (assuming the trucks are loaded roughly the same). Other remedial actions in the Basin included the Basin Property Remediation Program and Remedy Protection.

The high percentages of Paved Roads waste going to existing, full-scale repositories limits the amount of repository space for more contaminated waste streams that these repositories were designed and built to receive. Thus, EPA, IDEQ and Panhandle Health began to consider alternative disposal for paved roads waste generated by remedial projects. The CFP was considered as a program that might be able to dispose of this waste. However, it has long been policy at the Site that remedial action waste goes to a repository. Remedial Action materials below cleanup levels might not be considered remedial action waste and thus could be disposed of at CFP sites without violating the policy.

Two steps were taken to evaluate the potential levels of contamination that might be in roads wastes. An analysis of Box and Basin property, ROW and road base sampling data was conducted to evaluate what concentrations of metals may exist within base material alongside or beneath roads being remediated. A mass balance calculation was conducted to determine how concentrations in base material translate into an average concentration for the entire waste mass of road waste containing the inert asphaltic cement plus base materials. These two steps resulted in EPA establishing a trigger concentration for adhering soil of approximately 3,000 ppm lead. The percentage of properties from Box communities exceeding this concentration for soil samples ranged from 4% to 38% (average soil concentration from each property) to 11% to 56% (maximum soil concentration from each property). The Basin communities had a range from 13% to 25% (average soil concentration from each property) and 42% to 49% (maximum soil concentration from each property) of properties exceeding 3,000 ppm lead in soil. Much of this data is pre-remediation, however, base materials in the roads have generally not been remediated.

It was clear from the data query that much of the road base in the communities could be above action levels and meet Repository Waste Acceptance Criteria. This combined with the fact that waste would come from the Paved Roads program which is a remedial action eliminated using the CFP for a disposal option. The agencies decided to investigate options similar to the CFP that met the needs of remedial action waste disposal for what is mostly inert asphalt concrete waste and also supported redevelopment similar to the CFP. The Limited Use Repository concept was developed. Limited Use Repositories (LURs) would satisfy the need for stricter design and operational controls for disposal of remedial action waste, but with criteria appropriate for the less contaminated waste stream represented by Paved Roads waste where a high percentage of the waste is inert asphalt.

IDEQ and their contactors will design and operate Box LURs while the Coeur d' Alene Trust and their contractors will design and operate Basin LURs. A screening of Applicable or Relevant and Appropriate Requirements from laws other than the Superfund law will be performed for each individual property considered for a LUR. The LURs would receive only concrete waste from paved roads from the Box and Basin roads jurisdictions and other remedial actions. Material in the LURs would be routinely and adequately compacted and, eventually, they would be closed out to meet ICP, storm water and redevelopment requirements. An environmental covenant may be placed on a LUR to provide for EPA and State of Idaho review and approval of any plan to change use from commercial or industrial to residential use on the property.

Authorities

General authority for establishing disposal or repository facilities as part of a remedial action is found in CERCLA Section 104(a) (42 U.S.C. 9604(a)). A list of the criteria to be used by the USEPA and IDEQ to evaluate sites is described below. Many of the criteria come from the CFP site evaluation process as well as additional criteria established under CERCLA for remedial actions. This list may be modified in the future as determined to be appropriate by the agencies.

Policy Statement

The LUR concept was developed to deal with a very specific waste disposal need associated with the remedial programs where paved roadway waste is generating through demolition of the surface. It is therefore limited to asphalt and associated road base materials and any non-contaminated fill in order to facilitate compaction and close out within three years. However, paved road waste from other remedial actions is also acceptable waste for LURs as long as it conforms to the standards provided in this memorandum and waste acceptance criteria and designs for each facility. Therefore, the following conditions apply to the disposal of materials in these locations: a) waste is limited to asphalt and other materials (generally within the upper 6" of the road, but could be up to 12") that may have adhered to the asphalt, b) all LURs will be closed in a manner and timeframe in accordance with the approved design once filled and no LUR shall remain open for more than three years, c) all LURs will be designed and/or operated by IDEQ (in the Box) and the Trust (Basin) until closed, and d) require record keeping that includes the geographic source of the material in each LUR, volume of material hauled from

that source, and listing of source areas by road segment, contaminant levels in the source materials (this likely would come from surrounding property and ROW sampling data.

Engineering Controls and Technical Standards for Construction, Operations and Closure

1. Initial Site Screening
    a. Must meet the applicable site screening criteria from the CFP
    b. Preferred to be Government (Local, State or Federal) owned and controlled
    c. Consider local planning and zoning (particularly for properties that may be sold or conveyed in the future)
    d. Must be within ICP Administration Boundary
    e. Site must have a capacity of greater than 20,000 cubic yards to have an economy of scale worth pursuing
    f. Must have projects that are capable of delivering to this site and meet Waste Acceptance Criteria developed as part of the design and that comply with the constraints spelled out in this memorandum.

2. Critical Site Characterization Information and Documentation
    a. Signed statement of Owner's willingness to participate.
    b. File Memoranda documenting:
        i. The site was selected according to the CFP siting criteria
        ii. A LUR sited at the location will not be prone to erosion and transport of contaminated materials by surface water
        iii. Soils characterization
        iv. Geotechnical investigations and determinations
        v. Potential impacts to:
            Surface and groundwater systems
            Floodway
            Wetlands
        vi. Topography
        vii. Potential fill capacity.

3. Waste Acceptance Criteria
    These criteria will be developed during the design, but will comply with the restrictions on waste type and allowable maximum contaminant levels spelled out in this memorandum.
    a. **Materials Accepted**
    Incidental (to a depth of less than 12 inches) sub base soils, sands, or gravels excavated along with asphalt or concrete resulting solely from Paved Roads program projects) including:
        i. Soil contaminated by heavy metals from mine waste.
        ii. Natural rock $\leq$ 24 inches, in any one dimension, that is in contact with soils that contain COCs.

iii. Concrete, asphalt and road base ≤ 24 inches, in any one dimension, that contains COCs.

iv. Concrete, brick or cinder block materials ≤ 12 inches thick when laid flat on the ground and ≤ 2 feet in any other dimension. Asphalt ≤ 12 inches thick when laid flat on the ground and ≤ 2 feet in any other dimension.

b. Materials Not Accepted

i. ICP Wastes
ii. Materials over 20,000 ppm lead (existing data or new sampling and analysis may be required to demonstrate compliance for waste)
iii. Principal Threat Material (PTM)
iv. Petroleum Contaminated Soils (PCS)
v. Building Demolition or Remodeling Wastes including carpeting, insulation, siding, shingles, pipes and other solid wastes.
vi. Wood or organic wastes
vii. Metal Waste, including rebar, pipes, culverts, metals bridgeworks. (Reinforced concrete containing rebar may be accepted if the rebar is cut so that no particle dimension exceeds 24")
viii. Putrifiable solid wastes and trash
ix. Liquid wastes (Including Street Sweeping for Sewer Cleanout Wastes.

4. Compliance with ARARs
   a. An ARARs screening will be completed for each LUR relative to site specific conditions and conceptual management plans.
   b. Prior to construction, documentation will be generated demonstrating compliance with ARARs.

5. Engineering Design and Operating Plans
   a. Site Development and Construction Access Controls
   b. Waste Placement and Compaction Timing
   c. Waste Placement and Compaction Criteria
   d. Lift Thickness
   e. Compaction Criteria and Testing Requirements
   f. Storm Water Pollution Prevention Plans
   g. Environmental Monitoring as determined to be appropriate for the site and conditions.
   h. Contaminant Tracking Controls
   i. Post Fill Cap and Cover
      i. Residential 12" Clean Soil or 12" base and pavement (if Residential use plan is approved by EPA in compliance with the environmental covenant)
      ii. Commercial II Cover Requirements Equates to 6" Clean Soil, Gravel or Pavement (w/ clean base).

6. Post LUR Closure Storm Water Management

7. Post LUR Record Keeping
    a. ICP Property Files
    b. Compliance inspections for Environmental Covenant (if such a covenant is deemed necessary - frequency described in covenant)
    c. Incorporation into CERCLA Five Year Review.

8. Repository Contact Information

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9. Institutional Controls and Environmental Covenants. An environmental covenant or covenants will be put in place, if appropriate, along with the existing ICP rules, to help ensure that any plans for residential use are approved by EPA prior to redevelopment or land use changes.

Community Outreach

The EPA and IDEQ will provide information to the public on the proposed locations and period of operation prior to development of any LUR site. EPA and IDEQ will periodically evaluate this process and any input received to ensure the effectiveness of these outreach efforts. The agencies will work with local jurisdictions during selection and development of LURs. The agencies will also work with any local residents who may be impacted by construction activity or other nuisance issues during development of LURs.

REFERENCES

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DEQ (Idaho Department of Environmental Quality) and EPA (U.S. Environmental Protection Agency). 2013. Bunker Hill Mining and Metallurgical Complex Waste Acceptance Criteria. April

EPA (U.S. Environmental Protection Agency) 1991. EPA Superfund Record of Decision: Bunker Hill Mining & Metallurgical Complex; EPA ID: IDD048340921; OU 01; Smelterville, ID; 08/30/1991. EPA/ROD/R10-91/028. August.

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IDAPA (Idaho Administrative Procedures Act) 41.01.01.500 Rules of Idaho Public Health District #1, Contaminant Management in the Bunker Hill Superfund Site, Shoshone, County, Idaho.

IDAPA (Idaho Administrative Procedures Act) 41.01.01.511 Rules of Idaho Public Health District #1, Contaminant Management Rules in the Bunker Hill Superfund Site Operable Unit #3 Institutional Controls Administrative Area, Shoshone and Kootenai Counties, Idaho.

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