

Section 11 Principal Threat Wastes

The NCP establishes an expectation that EPA will use treatment to address the principal threats posed by a site wherever practicable (NCP §300.430(a)(1)(iii)(A)). Identifying principal threat wastes combines concepts of both hazard and risk. In general, principal threat wastes are those source materials considered to be highly toxic or highly mobile that generally cannot be contained in a reliable manner or would present a significant risk to human health or the environment should exposure occur. Conversely, non-principal threat wastes are those source materials that generally can be reliably contained and that would present only a low risk in the event of exposure. The manner in which principal threats are addressed generally will determine whether the statutory preference for treatment as a principal element is satisfied.

The concept of principal threat waste and non-principal threat waste, as developed by EPA in the NCP and guidance, is to be applied on a site-specific basis when defining source materials. "Source materials" are defined as material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration or contamination to groundwater, to surface water, to air, or act as a source for direct exposure. Mining and ore-processing wastes in the BPSOU come in several different forms, including mill tailings, waste rock, slag, smelter fallout, and mixed combinations of each. Arsenic and metals contained in these wastes can be released to soil, surface water, and groundwater. For the BPSOU, source materials are identified as those solid media (i.e., mining-related wastes and contaminated soils) that exceed remedial requirements for human health or have a potential or actual impact to aquatic environmental receptors, surface water quality, or groundwater quality. By definition, contaminated surface water, or groundwater are generally not considered source materials.

EPA has previously required the removal of the large volume of source material at Lower Area One, highly toxic mercury contamination, and other mobile and toxic source areas as part of these prior response actions. EPA has required, and will continue to require, the removal of contaminated yard and indoor dust material above health based action levels. Some additional removal of other source material may be required during remedial design or as otherwise described in Part 2, Section 12 of this ROD. Generally, however, remaining wastes can be effectively managed and controlled in-place. Thus, remaining source materials within the OU are not considered to be "principal threat wastes". Although present in large volumes, source materials within the BPSOU are low in toxicity, can be reliably contained, and present only a relatively low risk in the event of exposure. Arsenic, lead, and mercury exposure pathways are readily mitigated and managed through source controls and the Residential Metals Abatement Program.

The principal/non-principal threat concept and the NCP expectations were established to help streamline and focus the remedy selection process for a site. Independent of this determination, selected remedies must be protective of human

Section 11
Principal Threat Wastes

health and the environment, ARARs-compliant, cost-effective, and use permanent solutions or treatment to the maximum extent practicable. Engineering controls, such as capping of source materials, were found to be suitable for reliably containing source materials and limiting exposure. Treatment options were retained, however, for groundwater and surface water. The Selected Remedy utilizes a combination of engineering controls, treatment methods, and institutional controls, as appropriate, to achieve protection of human health and the environment.