

EPA's Position on the Use of Onsite Material as General Fill at Butte Priority Soils Operable Unit of the Silver Bow Creek/Butte Area Superfund Site

EPA is committed to ensuring that any Butte Priority Soils Operable Unit (BPSOU) design decision will be (1) protective of human health and the environment, (2) reflective of transparent community engagement, (3) consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the National Contingency Plan (NCP), and (4) the BPSOU Consent Decree (CD).

How is material found onsite reused at Superfund sites?

Onsite material is soil or other natural material that exists within a Superfund site which is used to help with the cleanup efforts at the site in ways that are protective of human health and the environment. For example, at the Anaconda Superfund Site, material from portions of the site were placed on the tailings ponds to establish an evapotranspiration cover. This reduces the ability for precipitation such as rain or snow melt to contact the tailings below while providing habitat for elk and other grazing wildlife. Material found onsite has also been reused at other remediation and restoration projects in Montana, such as the Clark Fork River site and the Parrot Tailings project.

What is onsite material at BPSOU?

Under the BPSOU Consent Decree (CD), material that does not exceed identified metals criteria may be used on site under certain parameters. It is important to reiterate, onsite material can be used within certain project areas only if it is protective of human health and the environment. Onsite material at BPSOU may be suitable for use as general fill if it meets certain criteria as illustrated in the diagram below.

Why use onsite material as general fill?

It is common practice at Superfund sites across the country to use material found onsite at other portions of the site if these uses are protective. Using onsite material as general fill provides benefits such as increasing public safety by reducing haul truck traffic on public roads by approximately 6,000-14,000 truckloads. This increases the timeliness and efficiency of the cleanup while also reducing greenhouse gas emissions, which in turn improves the overall environmental sustainability of the remedy. The reuse of material found onsite also reduces the need to develop and reclaim additional source areas for imported fill.

How is onsite material characterized for potential use as general fill?

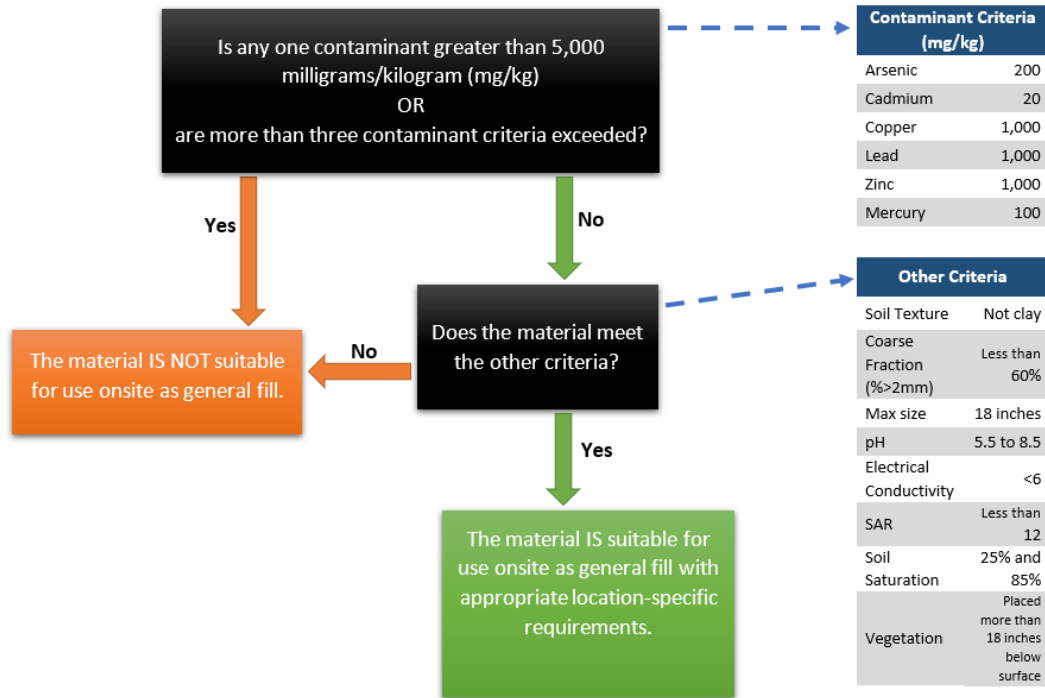
Initial characterization of materials located at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas was conducted between 2019-2023 to estimate the volume of waste that may need to be disposed in a repository and the volume of materials that could be suitable for use as general fill within the project areas depicted below.



During construction, any onsite material that is identified as potentially suitable for general fill will undergo extensive sampling and analysis to confirm that it meets the protective parameters and criteria in the flow diagram below and therefore is in fact suitable to be used as identified in project area work plans also described below. The BPSOU CD specifies if three of the six contaminant criteria listed are exceeded or any one contaminant is above 5,000 mg/kg, then the material is considered tailings, waste, or contaminated soil.¹ Any such material cannot be used as general fill. Preliminary design and modeling efforts indicate that onsite material could comprise roughly 25-35% of the general fill to be used at the Northside Tailings, East Buffalo Gulch, and Diggings East project areas. Estimates will continue to be updated as the project moves further through design.

¹ See Table 1 of Appendix 1 of Attachment C of Appendix D, Butte Priority Soils Operational Unit Consent Decree

BPSOU Onsite Material Flow Diagram



How Will EPA Ensure Any Use of Onsite Material is Protective of Human Health and the Environment?

Concerns have been raised about elevated metals concentrations in the onsite material that may be used as general fill. Protection of human health and the environment by managing surface water and controlling groundwater are core priorities in this cleanup, and EPA is committed to ensuring protectiveness of the remedy to meet the legal requirements under CERCLA as well as EPA’s responsibility to the Butte community. The proposed cleanup plan will prevent exposures to metals from historic mining activities by ensuring a cover is in place to eliminate potential exposure pathways.

It has been suggested that the risk of using onsite material as general fill is 3.5 times higher than the risk of using imported general fill because, in theory, the onsite material could have 3.5 times higher metals concentrations than the imported general fill. This suggestion is inaccurate; the initial data collected regarding the onsite material (available at Silver Bow Creek/Butte Area EPA website) shows that the onsite material potentially suitable as general fill does not contain metals concentrations that are 3.5 times higher than the metals concentrations applicable to imported general fill. In addition, risk from metals is not calculated by summation and so to add up metals concentrations and suggest that the risk automatically follows that cumulative number is not accurate; risk from each metal is determined individually based on toxicity profiles, dose, and effects on human health. Remedies address the risk of each metal because metals are most often co-located with each other, so addressing the metal with the highest risk also addresses other metals that may also be present.

Protection of Human Health

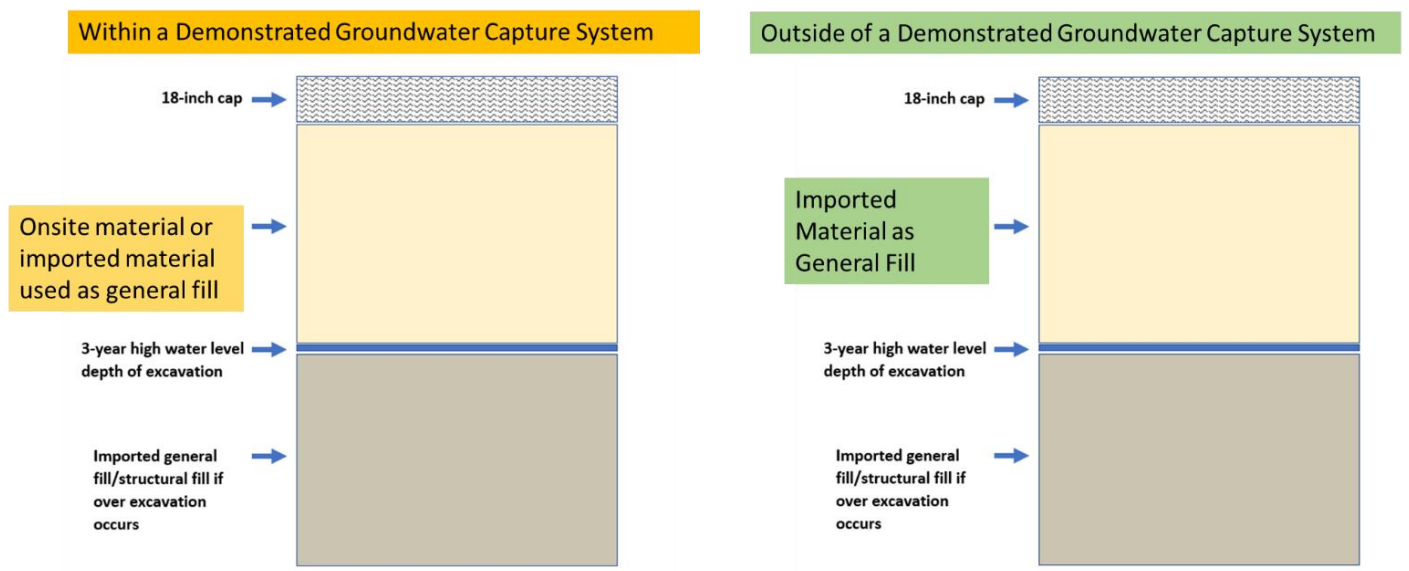
The remedy for BPSOU addresses potential risks to human health from metals in soil either by physical removal or by eliminating exposure pathways. A cover would be placed at the Diggings East, Northside Tailings, and Buffalo Gulch project areas to eliminate exposure pathways, to prevent potential metals in the onsite material from posing a risk to human health.

Protection of Groundwater

Proposed requirements would limit reuse of onsite material for general fill to areas above the 3-year high water table and within a current or future demonstrated groundwater capture zone where groundwater is collected and treated before discharge, thereby eliminating the groundwater to surface water pathway. Capping with cover soil, then revegetating or installing a hard surface such as a sidewalk or parking lot will reduce likelihood of erosion, movement of soils, and potential leaching. With these measures in place, reuse of onsite materials is not expected to impact current groundwater conditions. Additionally, there is currently a restriction on the use of groundwater in place.

The areas where onsite material may be used as general fill will be limited to areas within a current or future groundwater capture system. The figure below depicts onsite material use in relation to groundwater capture systems. It is anticipated that excavation will occur to the depth of the 3-year high groundwater level. Excavation below the groundwater level may occur in specific locations due to design details and imported fill material will be used to backfill below the groundwater level.

General Fill Cross Section



What specific EPA approved plans will guide the use of onsite material as general fill?

Backfill Material Characterization and Reuse Plans for each appropriate project area will be drafted by

Atlantic Richfield Company and submitted to EPA for review, in consultation with DEQ. The draft plans will be available to the public for review and input before they are finalized.

Where would onsite material be used as general fill?

The use of onsite material within certain protective parameters allows the remedy to be constructed in a timely manner while protecting human health and the environment now and into the future. Initial EPA proposed design parameters include:

- *Onsite Material can be used in areas outside of the stormwater basin's/sedimentation bay's wetted perimeter (i.e., the area of the basin/bay high water level).*
- *Onsite Material can only be placed above any groundwater elevation measured in the last 3-years.*
- *Onsite Material will not be located within any 100-year floodplain or channel/stream, including future channel alignments (i.e., ROCC's designated channel alignment), in riparian areas or within the stormwater or sediment ponds or inlet structures.*
- *Onsite Material can only be placed in areas within a demonstrated groundwater capture system.*

The project areas of Buffalo Gulch, Northside Tailings, and Diggings East have certain upland areas that meet the above criteria such that onsite material used as general fill is protective of human health and the environment. See general fill cross section above, where EPA is proposing onsite material would be used as general fill in relation to imported general fill.

The Backfill Material Characterization and Reuse Plans mentioned above will describe the additional location-specific requirements and any other appropriate design parameters for where onsite material may be used as general fill within the appropriate project areas.

Next Steps

- 1) EPA released this position paper to the public for review and comment on August 18, 2023.
- 2) EPA will convene a public meeting to share a presentation about the proposal, answer questions and hear feedback:
 Wednesday, August 30, 2023
 6 - 8 PM
 Butte Emergency Operations Center
 3619 Wynne Ave, Butte MT 59701
- 3) EPA will also accept written feedback for approximately one week after the public meeting.
- 4) EPA will publicly release a determination on the use of onsite material as general fill, considering the feedback received, in September.
- 5) Please address questions or comments to Charles Van Otten, vanotten.charles@epa.gov or by standard mail to Charles Van Otten, U.S. EPA, 1595 Wynkoop Street, Denver, Colorado, 80202.