From: Black, Ned <Black.Ned@epa.gov>
Sent: Friday, August 26, 2022 5:27 PM
To: Dhont, Jeffrey <Dhont.Jeff@epa.gov>
Cc: Iyer, Shradha-Nicole <Iyer.ShradhaNicole@epa.gov>; Serda, Sophia <Serda.Sophia@epa.gov>
Subject: Ecological risk outcomes in the Agua Fria River of the proposed remedies at the Iron King/Humboldt Smelter site

Hi Jeff,
I recommend you remove the words "monitored natural recovery" in reference to the Agua Fria River itself in your Feasibility Study for the Iron King/Humboldt Smelter (IKHS) site. Monitored natural recovery in rivers, while not as strictly defined as monitored natural attenuation of a contaminated groundwater aquifer, still implies an active remedy to address unacceptable exposures to contaminants left in place. After reviewing your data on sediments and surface water in the Agua Fria, I do not feel that an active remedy is necessary in the river. Instead, the appropriate activity for the Agua Fria is simply monitoring of surface water and sediments during and after your proposed actions to remove tailings in Chapparal Gulch and slag adjacent to the Smelter that might serve as a contaminant source to the river. That includes your plans to remove the large chunks of slag that have fallen down into the riparian zone or are sitting in the river bed immediately downhill from the smelter.

Agua Fria sediments: The overall pattern of sediment sampling locations that have hits exceeding the screening criteria in river reaches AF-02 and AF-03 (the reaches of the Agua Fria adjacent to or downstream of the IKHS site) does not support taking a remedial action in the river. Of the approximately 20 sampling locations within reaches AF-02 and AF-03, only 3 had any hits exceeding screening criteria in all the sampling done prior to 2020. In the 2020 sampling there were only two samples out of 12 locations with hits above the screening criteria and in those two instances the hazard quotients were 1.46 and 1.17 respectively. The data simply do not indicate unacceptable risk.

Agua Fria surface water: With regard to surface water in the Agua Fria, the situation is more complex but the data again do not support taking an action in the river itself. In the data from sampling prior to 2020, there are numerous sampling locations with results greater than the screening criteria and greater than detections in reach AF-01 and background locations upstream from the IKHS site. The first point to consider is that for aluminum, barium, cyanide and iron, there are concentrations in background and upstream (reach AF-01) samples that are higher than many of the detections in reaches AF-02 and AF-03. Of greater import, all of the sample locations with concentrations that exceed the screening criteria or background/upstream concentrations by more than a factor of two are at or downstream of the confluence of Chapparal Gulch with the Agua Fria. The data from samples taken in Chapparal Gulch itself clearly indicate that the flow coming over and through the tailings dam is heavily contaminated. Thus, it is completely predictable that contaminants detected in Agua Fria water samples below Chapparal Gulch will be above screening criteria. Based on the discussion of sediments above and on the surface water concentrations observed in the Agua Fria above the confluence with Chapparal Gulch, there does not appear to be any source of water column contamination to the Agua Fria other than flow out of Chapparal Gulch. That flow of contaminants comes from the materials behind the tailings dam. Finally, it must be noted that in the 2020 sampling there were no hits above screening levels in surface water. As such, although there arguably is unacceptable risk in the Agua Fria below the confluence with Chapparal Gulch, the action to ameliorate that risk will be the removal of tailings from the Gulch. Again, the appropriate activity in the Agua Fria River is simply monitoring of water and sediments during and after the actions proposed for Chapparal Gulch and the slag near the smelter.

Please let me know if you have any further questions.

V/r,
ned

ned black, ph.d.
us epa r9
regional cercla ecologist
415-972-3055
(he, his, hmm)