WESTERN RESOURCE
ADVOCATES

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VIA Email and U.S. Mail

Re: Public Comments Relative to Public Notice SPK-2009-01213-UO – Proposed 1,992-acre Expansion of the Kennecott Tailings Impoundment

Dear John,

Thank you for the opportunity to provide the U.S Army Corps of Engineers (Army Corps or Corps) with comments relative to Public Notice SPK-2009-01213-UO – Proposed 1,992-acre Expansion of the Kennecott Utah Copper (KUC) Tailings Impoundment (KUC Tailings Expansion or Proposal). I make these comments on behalf of FRIENDS of Great Salt Lake, Utah Audubon Council, Utah Waterfowl Association, Utah Airboat Association, Utah Rivers Council, League of Women Voters of Salt Lake, League of Women Voters of Utah, Western Wildlife Conservancy, Physicians for a Healthy Environment, Maunsel B. Pierce, M.D. and Bruce Waddell, USFWS Retired (collectively "FRIENDS"). We hope that you will gather the data necessary to carefully consider the following issues and concerns as you undertake your statutory and regulatory obligations in reviewing KUC's Proposal.

I. Introduction

The KUC Tailings Expansion would completely destroy approximately 721 acres of waters of the United State, including wetlands, adjacent to Great Salt Lake. The local, national and international value of Great Salt Lake, its islands, and its wetlands, including adjacent wetlands, cannot be overstated. Overall, 257 avian species use the Great Salt Lake ecosystem. Of these, 112 species are exclusively associated with the Lake's varied wetland areas, while 117 species reportedly nest on the Lake's periphery or on its islands. At least 33 species of shorebirds representing 2 to 5 million individuals use Great Salt Lake annually, stopping along routes that take them elsewhere in North, Central or South America. In addition, up to 5 million waterfowl migrate through the Lake each year.

KUC's Proposal is directly associated with, and is necessary for, what the company refers to as its Cornerstone Project. Cornerstone is KUC's plan for expanding the life of the Bingham Canyon Mine through 2039 and beyond. According to the company, the Cornerstone Project will require it to update about 25 of the 70 existing environmental permits currently associated with its operations, including several associated with the tailings impoundment. The expansion

will extend the southern wall of the Bingham Canyon Mine (Mine) an additional 1,000 feet, and will increase the depth of the mine by 300 feet. The amount of material that will be processed by the Mine will increase from 197 million tons per year to 260 million tons per year and will disturb approximately 565 acres per year.

Not addressed in the public notice, but required to be considered in the environmental analysis, is the origin of the waste streams that contribute to the tailings. These waste streams are associated with almost every aspect of the mining operation, and will be integral to the Cornerstone Project. *See* January 2011Ground Water Quality Discharge Permit Statement of Basis. Specifically, the waste streams include:

- Copper tailings from the Copperton Concentrator;
- Slag tailings from the slag concentrator at the Smelter;
- Power plant ash slurry;
- Smelter process waters;
- Wastewater effluent slurry from the Hydrometallurgical Plant at the Smelter;
- Mine leach water and meteoric contact water that have been partially treated in the tailings pipeline;
- Wastewater effluent concentrate from the reverse osmosis treatment of acid/metals sulfate-contaminated waters;
- Neutralization of acid-mine contaminated waters;
- Barneys Canyon mine pit dewatering and heap leach pad draindown waters;
- Construction, maintenance and lunchroom trash; and,
- Treated effluent from the sewage treatment plant.

Also not addressed, but required to be considered, is the impact that the proposed tailings impoundment expansion will have on water quality of Great Salt Lake. During the majority of the year, excess water contained within the tailings impoundment is discharged into the Lake under a Utah Pollutant Discharge Elimination System (UPDES) permit granted by the Utah Division of Water Quality (DWQ). This discharge contains significant amounts of toxic metals, such as selenium, that are harmful to the Lake's ecosystem. At this time, EPA has not approved Utah's draft numeric standard for selenium for Great Salt Lake as it is likely in violation of the Migratory Bird Treaty Act.

II. Legal Framework

A. The Clean Water Act

Section 404 of the Clean Water Act, 33 U.S.C. § 1344, prohibits the filling or dredging of waters of the United States without first receiving a § 404(b) permit from the Army Corps. 33 U.S.C. § 1344(a), (d) (2007). A permit may not be issued if (i) there is a practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences, (ii) the discharge will result in significant degradation, (iii) the discharge does not include all appropriate and practicable measures to minimize potential harm, **or** (iv) "there does

not exist sufficient information to make a reasonable judgment as to whether the proposed discharge will comply" with the Army Corps guidelines for permit issuance. 40 C.F.R. § 230.12(a)(3)(i)-(iv) (2010).

For non-water dependent projects, such as this one, it is presumed that a practicable alternative exists that does not involve aquatic sites, and the burden to clearly demonstrate otherwise is on the applicant. *Id*. § 230.10(a)(3); *Resource Inv's, Inc. v. United States Army Corps of Eng'rs*, 151 F.3d 1162, 1167 (9th Cir. 1998). "Practicable" is defined at 40 C.F.R. § 230.10(a)(2) as "available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes." The presumption for a non-water dependent project that a practicable alternative exists requires that an applicant make a persuasive showing concerning the lack of alternatives. *Sylvester v. United States Army Corps of Eng'rs*, 882 F.2d 407, 409 (9th Cir. 1989) (internal citation omitted). Finally, a permit may not be issued "unless appropriate and practicable steps have been taken which will minimize potential adverse impacts of the discharge on the aquatic ecosystem." 40 C.F.R. § 230.10(d).

Further, Army Corps regulations require that KUC include a statement in its § 404 application that describes how impacts to waters of the United States are to be avoided or minimized. 33 C.F.R. § 325.1(d)(7). In this context, the application must include either a statement showing how anticipated impacts are to be compensated for or why such compensation should not be required. *Id*. However, nothing in the scoping material provided to the public indicates that KUC's application includes this material. Therefore, to the extent that KUC's application was not in compliance with § 325.1, the Corps was obligated within 15 days of receipt of the application to request this information from KUC and was further required to withhold public notice until these deficiencies were corrected. 33 C.F.R. § 325.2(a)(1) & (2). Additionally, we request that the Corps fully address, and provide a detailed explanation of, KUC's proposal to mitigate each of the impacts listed below. It is insufficient for the Corps to merely mention that mitigation measures will be enacted, or to label the impact insignificant.

B. NEPA

The National Environmental Policy Act (NEPA) requires federal agencies to prepare an Environmental Impact Statement (EIS) prior to taking major federal action. 42 U.S.C. §§ 4321-4370(d). In the present instance, the Army Corps considers the issuance of a § 404 permit for the KUC Tailings Expansion to be a major federal action. The purpose of NEPA is to require agencies to consider environmentally significant aspects of a proposed action, and, in so doing, inform the public of the environmental concerns and considerations that affected the agency's decisionmaking process. In conducting the EIS, the Corps must create an administrative record that demonstrates that it followed NEPA procedures. As part of these procedures, the Corps is required to take a "hard look" at the environmental consequences of KUC's Proposal, including all actions connected to the Proposal. 40 C.F.R. § 1508.25(a)(1). In this case, almost all aspects of the mining operation contribute to the tailings waste streams. Therefore, the Corps must incorporate into the EIS a detailed analysis of all of the environmental impacts of Kennecott's Cornerstone Project because the tailings expansion proposal would not proceed but for the

Cornerstone expansion. *Id*. As discussed in detail below, this analysis must include impacts from the Cornerstone Project associated with air quality, water consumption, surface water quality, ground water quality, and land disturbance.

In line with that, the U.S. Environmental Protection Agency (EPA) also requires a complete analysis of the purpose and need for the proposed project, 40 C.F.R. § 1502.13, along with a full and fair analysis of all reasonable project alternatives. 42 U.S.C. § 4332(2)(C)(iii), (E); 40 C.F.R. § 1502.1. In fact, the regulations implementing NEPA refer to the comparison of alternatives as the "heart of the environmental impact statement." 40 C.F.R. § 1502.14. Agencies must "rigorously explore and objectively evaluate all reasonable alternatives," then "[d]evote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits," and explain why other alternatives were eliminated from detailed consideration. *Id.*

An EIS must provide detailed explanation and "rigorous analysis" of "all reasonable alternatives" and comparative analysis of the environmental impacts of all alternatives considered. 40 C.F.R. § 1502.14. The Corps must not dismiss alternatives, without the required rigorous analysis, by simply saying that it "dismissed them due to economic, technical, logistical, and purpose and need criteria." The Corps must rigorously evaluate all reasonable alternatives, determine their viability, and place that information in the record. The final decision to grant or deny the permit should be informed by the record produced through such scientific analyses.

C. NHPA

Congress enacted the National Historic Preservation Act (NHPA) in 1966 because it found that "historic properties significant to the Nation's heritage [were] being lost or substantially altered, often inadvertently, with increasing frequency[.]" 16 U.S.C. § 470(b)(3); *see Nat'l Mining Ass'n v. Slater*, 167 F.Supp.2d 265, 271 (D.D.C. 2001) (*reversed on other grounds*; *see also Nat'l Mining Ass'n v. Fowler*, 324 F.3d 752 (D.C.Cir. 2003)). As discussed below, the shores of Great Salt Lake are rich in prehistoric archeological sites. To serve the public interest in "the preservation of this irreplaceable heritage," Congress declared as the goal of the Act, the maintenance and enrichment of this "vital legacy" for future generations of Americans. 16 U.S.C. § 470(b)(4); *see Southern Utah Wilderness Alliance v . Norton*, 326 F.Supp.2d 102, 108 (D.D.C. 2004).

NHPA accomplishes its purposes by "requir[ing] each federal agency to take responsibility for the impact that its activities may have upon historic resources . . . ." *City of Grapevine v. Dep't of Transp.,* 17 F.3d 1502, 1508 (D.C.Cir. 1994). Specifically a federal agency "shall, prior to the approval of . . . any license . . . take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register." NHPA, § 106, 16 U.S.C. § 470f. An undertaking is any "project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including . . . those requiring a federal permit, license or approval." 36 C.F.R. § 800.16(y). Section 106 also requires that the agency afford the Advisory Council on

Historic Preservation (Advisory Council) "a reasonable opportunity to comment" on the undertaking. 16 U.S.C. § 470f.

The Advisory Council has promulgated regulations setting forth how federal agencies must comply with section 106. *See* 36 C.F.R. § 800. First, an agency official "shall make a reasonable and good faith effort" to identify historic properties[1] that may be affected by the undertaking, and evaluate whether these properties are eligible for the National Register. 36 C.F.R. § 800.4(b)(1) & (c); *see* 36 C.F.R. § 60.4 (criteria for assessing eligibility). The agency will next assess the possible effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(d)(2), 800.5(a), and determine whether any effects will be adverse. 36 C.F.R. § 800.5. "An adverse effect is found when an undertaking **may** alter, directly or indirectly, **any** of the characteristics of a historic property that qualify the property for inclusion in the National Register . . . ." 36 C.F.R. § 800.5(a)(1) (emphasis added).[2] If the agency finds potential adverse effects, it must seek ways to avoid or mitigate those adverse effects. 36 C.F.R. § 800.6. If the agency is unable to resolve the adverse effects of the undertaking, it must obtain comments by the Advisory Council and consider these in any decision to approve the undertaking. 36 C.F.R. § 800.7.

Importantly, at each step, section 106 requires consultation and communication among agency officials, the relevant State Historic Preservation Officer (SHPO), affected tribes and other interested persons, including the public.[3] *See* 36 C.F.R. § 800.2; *see also SUWA v. Norton*, 326 F.Supp.2d. at 108.[4] The purpose of this consultation is to involve agency officials and other interested parties together in the identification of "historic properties potentially affected by the undertaking, [the] assess[ment of] its effects and [the] seek[ing of] ways to avoid, minimize or mitigate any adverse effects on historic properties." 36 C.F.R. § 800.1(a); *see also SUWA v. Norton*, 326 F.Supp.2d. at 108.

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[1] Historic properties are defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior." 36 C.F.R. § 800.16(l)(1).

[2] "Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative." 36 C.F.R. § 800.5(a)(1).

[3] As the regulations make clear "[t]he views of the public are essential to informed Federal decision-making in the section 106 process. The agency official shall seek and consider the views of the public in a manner that reflects the nature and complexity of the undertaking and its effect on historic properties . . . ." 36 C.F.R. § 800.2(d)(1). In addition, "[t]he agency official must . . . provide the public with information about an undertaking and its effect on historic properties and seek public comment and input." 36 C.F.R. § 800.2(d)(2).

[4] The Advisory Council regulations require consultation at every step of the section 106 process, including, for example, the scope of identification efforts, § 800.4(a)(3), the identification of historic properties, § 800.4(b); the evaluation whether a property is eligible for listing, § 800.4(c), a finding of non historic properties effected, § 800.4(d), 800.5(c), the application of the criteria of adverse effect, § 800.5(a)(1), and the resolution of adverse effects. § 800.6(a).

Finally, section 106 requires the agency to document its compliance with the process sufficiently "to enable any reviewing parties to understand" the basis of agency "determination, finding, or agreement" under the regulations. 36 C.F.R. § 800.11(a); *see also, e.g.* § 800.11(d) (documentation requirements for finding of no historic properties affected); § 800.11(e) (documentation requirements for finding or no adverse effect or adverse effect).

D. Migratory Bird Treaty Act

Pursuant to 16 U.S.C. §§ 703-718, the Corps is prohibited from approving an action that would result in the "take" of migratory birds protected under the Act unless permitted by regulations. When analyzing the impacts of KUC's Proposal, the Corps must ensure that the destruction of the wetlands would not violated the terms of the Migratory Bird Treaty Act, and the applicant must address in the EIS how it will avoid the take of migratory birds.

E. Army Corps General Regulatory Policies

Pursuant to 33 C.F.R. § 320.4, the Corps must consider the cumulative impacts of the proposed activity and its intended use on the public interest. For activities involving § 404 permits, such as KUC's Proposal, the Corps may not issue the discharge permit unless the discharge complies with the Environmental Protections Agency's (EPA) § 404(b)(1) guidelines. 33 C.F.R. § 320.4(a)(1).

III. General Comments

A. Project Alternatives

EPA regulations note that dredged or fill material should not be discharged into an aquatic ecosystem unless it can be demonstrated that such actions will not have an unacceptable adverse impact. 40 C.F.R. § 230.1. Additionally, no discharge of dredged or fill material will be permitted if there is a practicable alternative that would have less impact on the aquatic ecosystem. 40 C.F.R. § 230.10(a). In keeping with this, the Corps has indicated that it will consider a less damaging alternative for that portion of the expansion proposed to occupy waters of the United States. Because KUC's Proposal is a non-water dependent project,[5] the presumption is such a practicable alternative exists. This presumption holds unless clearly demonstrated otherwise. Indeed, the Army Corps may not issue a § 404 permit unless the agency has independently verified all relevant information and provided detailed, clear and convincing information **proving** that an alternative with less adverse impact is impracticable.

[5] KUC's Proposal is not water dependent. The relevant regulations state that where a project "does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose," it is not water-dependent. 40 C.F.R. § 230.10(a)(3). Plainly, KUC's mining operation need not occur within the wetlands – it can occur on dry land.

In 1995, environmental analysis associated with possible alternatives to expansion of the impoundment has been conducted through the EIS process. Aspects of this analysis are relevant to the current expansion proposal and should be considered by the Corps. Specifically, a review of the alternatives suggested in that analysis should be analyzed. Additionally, as one of several practical alternatives to the proposed destruction of the wetlands, the Corps should consider deposition of the tailings in the abandoned Barneys Canyon and/or Melco Gold mines, west of the Copperton Concentrator.

B. Mitigation

Mitigation should be as close to in-place and in-kind as possible. KUC's proposal to use credits related to the Inland Sea Shorebird Reserve is insufficient because those credits would not fulfill the type of in-place and in-kind mitigation needed to replace the higher elevation and more natural wetland system that the Proposal would impact. Even if these credits exist – and an inventory should be conducted to ensure that they do, in fact, exist – the applicant must demonstrate why taking these wetlands is necessary. Further, it is inappropriate and premature to discuss mitigation measures prior to demonstrating avoidance and minimization under §404. Such an approach implies that approval of the destruction of the wetlands is a foregone conclusion.

C. Surface Water Quality

The Corps must evaluate the effect of existing and proposed additional discharges of waste materials on water quality on the South Arm of Great Salt Lake. In order to accomplish this, the Corps should sample sediments in and near the vicinity of the current discharge to establish baseline data for mercury, methyl mercury, selenium, and other potential contaminants. The Corps should also evaluate the potential uptake, bioaccumulation, and biomagnifications of the above-mentioned metals and other contaminants in macroinvertebrates and in birds and other species.

Since water of high quality is necessary to keep the Lake's ecosystem functioning properly and in a sustainable manner sufficient to ensure an ample safe food supply for the millions of birds that depend on it, the Corps must analyze the impact of KUC's proposal on the Lake. Further, since clean water is necessary to protect human recreation in and around the Lake, the Corps must analyze the impact of the proposed expansion on the continued availability of recreation opportunities.

The Corps must consider the following factors in addressing the cumulative and individual impacts of the proposed project on water quality:

- Utah's narrative water quality standard for the Great Salt Lake;
- Utah's selenium standard for Gilbert Bay (not approved by EPA);
- the achievement and protection of all designated beneficial uses of Great Salt Lake;
- significant mercury and selenium contamination within the South Arm of the Lake

and the potential of the project to exacerbate this contamination;

- the groundwater plume occurring along the south shore of the Lake – in the vicinity of KUC's discharge – that appears to constitute a significant, previously unknown source of selenium contamination.
- potential catastrophic pollution of lake waters by an earth-quake-induced spill or other contamination;
- cumulative loss of wetlands and other ecosystem components that help to maintain or improve water quality.
- Impacts on bird populations protected by the Migratory Bird Treaty Act.

The Corps must also quantify, qualify and fully understand the impacts to water quality stemming from existing discharges into the Lake and analyze these impacts cumulatively, including the total load into the Lake of toxic metals such as selenium.

D. Groundwater Quality

KUC portrays the clay beneath both the current impoundment and the proposed expansion as impermeable and thus sufficient to protect against possible groundwater contamination. However, the clay under the impoundment is neither homogenous nor continuous, especially in the impacted wetland area. Springs occur in the wetlands from time to time, and it is therefore probable that contaminated water from the impacted wetlands will leak out of the impoundment area and into local groundwater aquifers. There are indications that a groundwater plume, contaminated with selenium, exists along the south shore of Gilbert Bay, adjacent to KUC's operations. The presence of such a plume suggests that the assumption of impermeability is not necessarily true.

Because of this permeability, and specifically while KUC is re-watering the entire tailings impoundment, KUC will add head and mass to the tailings, and huge flows from the impoundment area will occur into the Lake, both downward and laterally, through the collection ditch and Outfall 012. These downward flows will be progressively greater the lower the Lake's water level falls. As this occurs, the contaminated groundwater will interact with the water that flows into the Lake and many soluble elements will mix with Lake water. Specifically, contamination from selenium, manganese and aluminum could result. The applicant has not demonstrated that the impoundment is adequately controlling contaminants such as selenium and should be required to both monitor leakage from past, present and future impoundments, and protect against future contamination of groundwater sources. The Corps should analyze the flow-through nature of the impoundment as a conduit for transport of contaminants to Great Salt Lake, especially for selenium, manganese and aluminum.

E. Significant Degradation of Lake Wetlands

KUC's Proposal, if granted, would constitute one more reduction of what can only be described as already significantly reduced wetlands surrounding Great Salt Lake. Therefore, the

Corps must, at the minimum, consider individually and cumulatively, the impacts of KUC's proposed and existing projects on all the values detailed in 40 C.F.R. § 230.10(c).

F. Aquatic Environment, Wildlife, Recreation, and the Public Interest

With regard to the aquatic environment, the Corps must consider the significant cumulative adverse impacts that the proposed project will have on special aquatic sites and ecosystem values under 40 C.F.R. § 230.10(d). To that end, the Corps must make factual findings that quantify and qualify the short and long-term effects of the planned project on "the physical, chemical, and biological components of the aquatic environment." 40 C.F.R. § 230.11.

KUC's discharge of selenium changes the chemistry of the waters of Great Salt Lake, at the very least, on a local level. Although dramatic increases of selenium and mercury were documented by U.S. Fish and Wildlife Service in eared grebes feeding on brine shrimp, these changes and the impacts they may have on the biota of the Lake have never been analyzed or investigated further. Changes to water chemistry, both due to KUC's current discharge and the impacts of continued or increased discharge should be addressed, particularly as these changes impact algae, brine shrimp and water birds.

"Suspended particulates in the aquatic ecosystem consist of fine-grained mineral particles . . . and organic particles." 40 C.F.R. § 230.21. The discharge emanating from KUC's Proposal could result in changing levels of suspended particulates, at the expense of ecosystem health. 40 C.F.R. § 230.21(b). Therefore, in analyzing KUC's Proposal, the Army Corps must evaluate the "extent and persistence" of any resulting individual and cumulative adverse impacts to the physical and chemical characteristics of the aquatic ecosystem – including changes in suspended particulates resulting from discharge from the tailings impoundment into the Lake. *Id.*

The Corps must also consider both the past and the future cumulative impacts of not only KUC's Proposal, but the entirety of the Cornerstone Project. These impacts include many years of impact to ground water, surface water, air quality, as well as the various impacts resulting from significant land disturbance

Tied to these impacts is evidence of deformities found in the 2010 selenium egg monitoring study conducted near Saltair at the outflow of Lee Creek. In that study, two out of 11 shorebird eggs showed abnormalities, although selenium levels were at the designated "no effect" level. Other contaminants were not measured and no explanation is given but this is clearly a worrisome finding and should be reason for more data collection to assess the presence of toxics from existing discharges. *See* www.deq.utah.gov/issues/GSL_WQSC/ eggmonitoring.htm. It should be noted that Lee Creek has been associated with discharges form the tailings impoundment and possibly represents a hazard associated with unaccounted for discharges from the impoundment area.

A full evaluation of the habitat and wildlife values of the wetlands in the proposed expansion area must be conducted. Specifically, this evaluation should include:

- An understanding of how these wetlands were formed.
- An inventory of the wetlands values associated with these wetlands
- An understanding of the type of higher elevation wetlands impacted by this proposal, and how many of these types of wetlands have been lost throughout the Great Salt Lake watershed. The Proposal will destroy a significant portion of a natural and intact wetland that is part of an ever diminishing upland wetlands surrounding the Lake.
- The value of upland wetlands during high Lake periods, particularly for providing bird habitat that is becoming increasingly scarce due to development pressures along the Lake shoreline.
- The value of this area for floodplain, including an evaluation of how much impact the filling of the floodplain areas might have in flooding other nearby areas during high water years.
- The value of Lee Creek and other stream channels to the ecosystem and specifically to wetlands functions and values.

The following additional factors must also be considered:

- What impact the continuation of transforming the south side of the Lake into a significant industrial zone, with resultant loss of wetlands, will have on the Great Salt Lake ecosystem.
- To adequately and effectively determine the individual, cumulative and indirect impacts of KUC's proposal, the Corps must base its analysis on the total amount of wetlands impacted by industrial activity within and on the periphery of the Lake.
- To what extent the discharge of dredge or fill material will adversely affect water birds and wildlife, as well as scenic values, recreation, aesthetics, and the public interest.
- The cumulative effects of past, present and future discharges of dredged or fill material. As indicated by the relevant regulations, "the cumulative effect of numerous such piecemeal changes can result in major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems." 40 C.F.R. § 230.11(g)(1). For that reason, the Corps must determine the secondary effect on the aquatic ecosystem that will result from KUC's Proposal.
- To what extent the proposed expansion has the potential to impact adversely other bird life.
- The Corps must evaluate the "extent and persistence" of any resulting individual and cumulative adverse impacts to the physical and chemical characteristics of the aquatic ecosystem. 40 C.F.R. § 230.21(b). More specifically, the Corps must determine the negative impacts of the planned project on water "clarity, color, and odor," as well as a reduction in or elimination of the "suitability" of Lake waters for aquatic organisms, recreation and aesthetics. 40 C.F.R. §230.22(b).

- The Corps must analyze the impact of the planned project on "[l]ocation, structure, and dynamics of aquatic communities; shoreline and substrate erosion and deposition rates; the deposition of suspended particulates; the rate and extent of mixing of dissolved and suspended components of the water body; and water stratification." 40 C.F.R. § 230.23(b).
- The Corps must analyze the impact of the proposed project on changes in salinity patterns, erosion or sedimentation rates, water temperature extremes, and nutrient and dissolved oxygen balance of the aquatic ecosystem. 40 C.F.R. § 230.24(b).
- The impact this expansion will have on the viewshed coming into the Salt Lake Valley from the west. Specifically, models should be developed that show the impacts on the viewshed that the increased height of the tailings impoundment will have from various locations along the I-80 corridor and the Lake's shore.
- The Corps must thoroughly investigate all likely impacts of KUC's Proposal on biological characteristics of the aquatic ecosystem, and must specifically address:
    - Threatened and endangered species. § 230.30;
    - Aquatic organisms in the food web. § 230.31; and,
    - Other wildlife. § 230.32.

G. Cultural Resources

The area of the Lake on which KUC proposes to expand its tailing impoundment must be analyzed for any possible impact on archaeological sites. There is ample evidence of historic sites along the shorelines of the Lake dating back to the Late Prehistoric period (post-A.D. 1300). These sites have been linked to the Northwestern Band of the Shoshone Nation. Given that it is possible that any ground disturbance in the areas bordering the current impoundment may encounter cultural resources significant for their scientific value and significant to the heritage and religious values of living Native American peoples, the Corps must make a concerted effort to seek input from the State's Native American peoples in order to make certain that the EIS includes adequate analysis of the impact of the proposed projects on cultural resources. So that the Terms of Reference (TORs) for the EIS include and adequately cover issues important and relevant to Native Americans and their cultural resources, their full and effective participation in the scoping process is critical.

H. Air Quality

The Kennecott mine is located in a nonattainment area for PM_{10} as well as $PM_{2.5}$, and is in an area that will almost certainly be designated as not attaining the 8-hour standard for ozone. Of critical importance is that Kennecott's mining activities, **including the tailings impoundment**, have been identified as significant source of particulate emissions, as well as other criteria pollutants. This means that the proposed action, which will almost certainly increase PM_{10} and NO_x emissions, will further cause or contribute to violations of National

Ambient Air Quality Standards (NAAQS), thereby adding to a serious public health crisis in the Salt Lake Valley.[6]

In Salt Lake County, ammonium nitrate comprises more than 50 percent of the measured $PM_{2.5}$ on days that exceed the 24-hour $PM_{2.5}$ NAAQS. Increased NOx emissions resulting from the Kennecott expansion will contribute to increased ambient concentrations of ammonium nitrate in the valley. The result will be an increase in $PM_{2.5}$ concentrations in a nonattainment area, thereby frustrating efforts to bring the area into compliance with NAAQS and to secure the health benefits associated with meeting these standards. By the same token, increased NOx emissions will exacerbate the creation of ozone in Salt Lake County and likewise undermine efforts to reduce ozone concentrations in this densely populated area. It should also be noted that $PM_{2.5}$ has been linked to the aerial deposition of mercury into Great Salt Lake in recent sampling by the State.

Moreover, EPA recently proposed to disapprove Utah's request to redesignate the Salt Lake County, Utah County and Ogden City PM_{10} nonattainment areas as attainment and to disapprove other associated SIP revisions. This means that these areas are still nonattainment for PM_{10} and that EPA has determined that air quality in the Salt Lake area is not meeting health-based standards.

Finally, both EPA and Kennecott admit that the company's PM_{10} air quality monitor only records air quality every three days and is **not** located in the area that measures the highest impact. This means the current air quality monitor does not accurately reflect ambient air quality near the mine.

In considering the proposed project, including the connected action of the expansion of Kennecott's mining operations, the Corps must consider the direct, indirect and cumulative impacts on air quality of:

- the existing tailings impoundment;
- the proposed expanded tailings impoundment;
- other existing mining activities;
- other proposed, expanded mining activities.

Importantly, air quality impacts must be addressed in terms of impacts to human health, sensitive vegetation, wetland function and health, and water quality, as well as other environmental impacts. In assessing air quality impacts, the Corps should consider EPA analysis of and proposed action relative to Utah's PM_{10} SIP and comments on the Kennecott Approval Order. The agency should also consider that Utah has failed to properly consider the Kennecott

[6] While the State of Utah denies that Kennecott's expansion plan will lead to increases in emissions of these criteria pollutants, EPA takes issue with this conclusion and has stated that the State and the company have failed to undertake the necessary modeling to show that proposed expansion would not cause or contribute to violations of national air quality standards.

Mine and Tailings Pile as a major source, as defined by the Clean Air Act, when properly aggregated with the Kennecott Smelter. *See* 40 C.F.R. Parts 51 and 52. Finally, the Corps may not conclude that regulation of Kennecott mining activities will be mitigated or eliminated by regulation under the Clean Air Act. This is because regulation of these activities and others in the Salt Lake Valley has not brought air quality in the Valley into compliance with national standards. Moreover, various loopholes in the relevant regulations (particularly dealing with fugitive dust) and monitoring failures mean that the Clean Air Act is not functioning to protect human health and the environment from air pollution generally, or from the adverse effects of Kennecott's existing and proposed mining operations specifically.

I. Solid and Hazardous Waste

Records from the Utah Division of Water Quality state that Kennecott is authorized to and does deposit the following waste streams into the existing Tailings Pile:

- Copper tailings from the Copperton Concentrator;
- Slag tailings from the slag concentrator at the Smelter;
- Power plant ash slurry;
- Smelter process waters;
- Wastewater effluent slurry from the Hydrometallurgical Plant at the Smelter;
- Mine leach water and meteoric contact water;
- Wastewater effluent from the Reverse Osmosis treatment of sulfate contaminated waters;
- Neutralization of acid-mine contaminated waters;
- Barneys Canyon mine pit dewatering and heap leach pad draindown waters;
- Construction, maintenance and lunchroom trash;
- Treated effluent from the sewage treatment plant; and
- Other, unidentified inflows.

Most of these waste streams are **not** Bevill wastes. Bevill wastes are solid wastes resulting from the extraction, beneficiation, and processing of ores and minerals that are excluded from the requirements of the EPA **Hazardous** – but not **Solid** – Waste Program under the Resource Conservation and Recovery Act (RCRA). Non-Bevill wastes are not exempt from RCRA. In the context of copper mining, particular attention must be paid to the disposal of flue dust, acid wastes and other metal bearing wastes, which, when comingled with exempt wastes, has been identified by EPA as "frequently resulting in environmental damage."

The Corps must identify and provide an in-depth analysis of the exact makeup of the waste stream inflows that are **proposed for placement** in the tailings impoundment. Each element and/or component of the waste stream must be analyzed to determine whether it:

- is a hazardous waste as defined by RCRA
- is a solid waste as defined by RCRA

- poses a threat to air quality, given the quantity to be disposed
- constitutes a threat to human health, wildlife, water quality or other aspects of the environment
- has a cumulative or synergistic effect on human health or the environment

The Corps must identify and provide an in-depth analysis of the exact makeup of the **existing wastes** in the tailings impoundment. Each element and/or component of the existing accumulated wastes must be analyzed to determine whether it:

- is a hazardous waste as defined by RCRA;
- is a solid waste as defined by RCRA;
- poses a threat to air quality, given the quantity to be disposed;
- constitutes a threat to human health, wildlife, water quality or other aspects of the environment;
- has a cumulative or synergistic effect on human health or the environment.

The Corps must consider the fact that the State of Utah has exempted from its Solid and Hazardous Waste Program any regulation of "solid wastes from the extraction, beneficiation and processing of ores and minerals[.]" Utah Code Ann. § 19-6-108(18)(b)(iv). In other words, not only has the State defined these mining wastes as non-hazardous – but it has also defined them as not being solid wastes and has therefore determined that these wastes are exempt from regulation under RCRA. Moreover, record requests indicate that the Utah Division of Solid and Hazardous Waste does not now regulate the existing tailings impoundment and almost certainly will not regulate the impoundment in the future. As a result, in analyzing the environmental impacts of the proposed action, the Corps may not rely on any such State regulation or oversight to mitigate or reduce the impacts of the enormous existing and proposed waste piles on public health, surface and groundwater quality, wetland integrity and function, ecosystem health and other natural resource values. The direct, indirect and cumulative consequences of these impacts must all be examined in depth.

The Corps must acknowledge and consider that past – and even recent – mining activity, including the storage of mining and other waste in the tailings impoundment, overburden piles and elsewhere on Kennecott property, has contaminated groundwater, surface water and Great Salt Lake. The Corps must consider the cumulative impacts of this contamination. Moreover, the agency must examine the likelihood that wastes resulting from the proposed action and the accompanying mine expansion will likewise contaminate groundwater, surface water and Great Salt Lake from a combination of causes associated with the impoundment areas.

J. Seismic Concerns

Five submerged segments of the Great Salt Lake fault system have generated magnitude 6.8 - 7.2 earthquakes in the past and will do so in the future. As part of KUC's Proposal, the company intends to raise the height of its current impoundment, bringing into question the

stability of this structure in the event of an earthquake. Controversy over the height of the tailings impoundment in the event of a major earthquake has been an issue in the past, and the Corps must ensure that an independent engineering analysis is conducted on the safety of the expanded impoundment structure.

K. General

The following general comments are offered for consideration:

- The Corps must take a species-specific approach to habitat availability and loss.
- The Corps must base its analysis on up-to-date information of the existing condition of the Lake.
- The Corps' cumulative analysis must be based on a pre-determined geographical area.
- The analysis should address the cumulative habitat loss from the proposed, existing, and reasonably foreseeable wetland loss within the Great Salt Lake ecosystem, including the cumulative impacts of industrialization of Lake resources.
- The Corps' analysis must include a thorough and independent consideration of all less damaging, practicable alternatives to the proposed project, including those that do not involve discharge into the waters of the United States and do not involve special aquatic sites.
- The Corps must analyze how climate change may alter Great Salt Lake resources in the future and exacerbate the effects of this project.

IV. Conclusion

Thank you for your full consideration of the critical points we raise in these comments. Please do not hesitate to contact me with any questions or concerns regarding the issues we raise herein. Thank you for all you do to protect the waters of the United States and the aquatic communities, recreation and aesthetic values that depend upon them. Please keep us informed as to any further opportunity for public participation relative to the Mining Company Proposal and please send or email us all relevant documents and other materials. We also request that public hearings be held at every opportunity while you consider the planned project and that we receive notice of these hearings.

Yours,

Rob Dubuc
ATTORNEY FOR FRIENDS