September 14, 2010

SENT BY ELECTRONIC MAIL
Peter Swenson, Watersheds and Wetlands Branch Chief (swenson.peter@epa.gov)
Wendy Melgin, Deputy Branch Chief for Wetland Programs (melgin.wendy@epa.gov)
United States Environmental Protection Agency, Region 5
77 W. Jackson Blvd.
Chicago, Illinois 60604-3590

RE: PolyMet NorthMet Project

Dear Mr. Swenson and Ms. Melgin:

This letter and attached materials are submitted on behalf of WaterLegacy, a non-profit organization founded to protect Minnesota water resources and the communities who depend on them.

We are writing to request that the U.S. Environmental Protection Agency ("EPA") determine that any wetlands, mud flats and vegetated shallows of the Partridge River Watershed that would be impacted by discharge, and disposal of dredged or fill material as a result of the PolyMet NorthMet open pit copper sulfide mine ("PolyMet Project") be characterized as aquatic resources of national importance ("ARNI") under the Memorandum of Agreement ("MOA") reached by the EPA and the U.S. Army in 1992 pursuant to Section 404(q) of the Clean Water Act, 33 U.S.C. § 1344(q)(2010).

As explained in more detail in the following pages, these Partridge River Watershed resources provide important values related to sustaining rare and endangered species, biodiversity, downstream water quality - including municipal water quality, flood control, culturally significant wild rice and fishery resources. The Partridge River Watershed aquatic resources are also within the Lake Superior Watershed and the Great Lakes Basin, which are nationally and internationally significant under international agreements federal statutes and rules to protect water quality, habitat, fisheries and to limit release of bioaccumulative chemicals of concern. The wetlands and other water resources potentially impacted by the PolyMet project have further been designated as ecologically important by the Minnesota Department of Natural Resources. Their designation as ARNI is appropriate under 40 C.F.R. §§ 230.40-45(2010) and applicable precedent.

The letter from the EPA to the U.S. Army Corps of Engineers dated February 18, 2010 regarding the draft environmental impact statement for the PolyMet Project ("DEIS") provided notice that the EPA believes that the coniferous and open bogs within the Partridge River Watershed are an ARNI, as follows:

> EPA finds this project may have substantial and unacceptable adverse impacts on aquatic resources of national importance (ARNI). EPA believes the coniferous and open bogs, comprising a large percentage of the approximately 33,880 total wetland acres, within the Partridge River Watershed to be an ARNI due to the values they provide in terms of unique habitat, biodiversity, downstream water quality, and flood control specifically, to the Lake Superior Watershed and the Great Lakes Basin.[1]

Based on the legal authorities and factual information cited in the following pages, WaterLegacy suggests that, should the St. Paul District of the United States Army Corps of Engineers ("Army Corps") decide to issue a permit for the PolyMet Project, that permit should be subject to elevation for Department of the Army level review.

In addition, based on the DEIS and information received to date regarding the PolyMet Project, WaterLegacy believes that discharge of dredged and fill materials for the PolyMet open pit sulfide mine would have "an unacceptable adverse effect" on municipal water supplies, fishery areas and wildlife, pursuant to the Clean Water Act. 33 U.SC. § 1344(c)(2010). Should the Army Corps propose to issue a Section 404 permit for the PolyMet Project, the EPA should exercise its authority to veto the activities of this Project pursuant to its Section 404(c) jurisdiction.

The Army Corps informed WaterLegacy by letter dated January 19, 2010 that they intend to issue a second Section 404 Public Notice for the PolyMet Project, which was originally noticed in 2005.[2] Informal conversations with the Army Corps since January 2010 suggest that the re-issuance of the Section 404 notice will be provided when a "preferred" alternative for the Project is selected in conjunction with currently ongoing supplementation and revision of the DEIS.

Based on the DEIS, concerns expressed by the EPA in its February 18, 2010 comment letter and the information contained herein, WaterLegacy requests that when the Army Corps issues its second Section 404 notice, the EPA notify the Army Corps that the PolyMet sulfide metals mine would affect aquatic resources of national importance in the Partridge River Watershed, and unless the Project is dramatically different from any of the alternatives described in the DEIS, that the Project will have substantial and unacceptable impacts to special aquatic resources, municipal water supplies, fishery areas and wildlife, precluding issuance of a Section 404 permit.

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[1] Letter of Bharat Mathur, Acting Reg'l Adm'r, U.S. Envt'l Prot. Agency ("EPA") to Col. Jon L. Christensen, U. S. Army Corps of Eng'rs, p. 3 (Feb. 18, 2010) ("EPA DEIS Letter"), available at http://waterlegacy.org/sites/default/files/EPA_NorthMet_Rating.pdf

[2] Letter of Tamara E. Cameron, Chief Regulatory Branch, St. Paul Dist., U.S. Army Corps of Eng'rs, p. 1 (Jan. 19, 2010), *attached as Exhibit A, available at* http://waterlegacy.org/sites/default/files/USCorpsSection404.pdf

1. Water Resources of the Partridge River Watershed are Aquatic Resources of National Importance.

The 1992 Memorandum of Agreement between the EPA and the Army provides for the elevation of individual permit cases for Department of the Army review when the project, within the scope of impacts evaluated by the Army Corps, will result in unacceptable adverse effects to aquatic resources of national importance.[3] The types of resources that can be elevated as ARNIs are resources of concern under Section 404(c) of the Clean Water Act, which are identified as special aquatic sites in 40 C.F.R. §230.40-45(2010). Protection of special aquatic sites is a high national priority for the EPA:

> From a national perspective, the degradation or destruction of special aquatic sites, such as filling operations in wetlands, is considered to be among the most severe environmental impacts covered by these Guidelines. The guiding principle should be that degradation or destruction of special sites may represent an irreversible loss of valuable aquatic resources. 40 C.F.R. § 230.1(d)(2010).

Special aquatic sites may include wetlands (40 C.F.R. § 230.41), mud flats in riverine systems (40 C.F.R. § 230.42) and vegetated shallows in freshwater rivers (40 C.F.R. § 230.43). They may be large or small geographically, so long as they possess "special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values." These areas "are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region." 40 C.F.R. § 230.3(q-1)(2010).

Federal rules require consideration of both direct and secondary impacts on special aquatic resources. Potential impacts on wetlands can include but are not limited to smothering, dewatering, altering substrate elevation or water movement, destroying wetland vegetation, impairing nutrient exchange, degrading water quality by obstructing circulation, flushing wetland systems, interfering with filtration or changing aquifer recharge capability. Discharges can change wetland habitat value for fish and wildlife and modify the capacity of wetlands to retain and store floodwaters. 40 C.F.R. § 230.41(b).

Impacts to mud flats resulting in loss of values can include changes in water circulation patterns that may permanently flood or dewater the mud flat or disrupt periodic inundation, depleting mud flat biota, foraging areas, and nursery areas and changing productivity of habitat. 40 C.F.R. § 230.42(b). Vegetated shallows can be impacted when discharge of dredged or fill material creates unsuitable conditions for rooted aquatic vegetation or freshwater river species through changing water circulation patterns or by "releasing chemicals that adversely affect plants and animals," among other impacts. 40 C.F.R. § 230.43(b).

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[3] Clean Water Act Section 404(q) Memorandum of Agreement, Part IV (Aug. 11, 1992), http://www.epa.gov/wetlands/regs/dispmoa.html

The location of water resources affected by the PolyMet Project underscores their national importance. All of the wetlands and waters potentially impacted by discharge from the PolyMet NorthMet mine site and tailings basin, including watersheds of the Partridge River, Embarrass River and St. Louis River, are waters within the Lake Superior Watershed. (DEIS, pp. 4.1-33, 4.1-52).[4]

The national and international importance of waters within the Lake Superior Watershed is established by agreements entered into by the United States of America and Canada in 1972 and 1978 pertaining to Great Lakes Basin water quality,[5] agreements by governors of the states surrounding the Great Lakes[6] and by federal legislation enacted as the Great Lakes Critical Programs Act of 1990, which amended section 118 of the Clean Water Act and instructed the EPA to promulgate regulations to protect the Great Lakes System. 33 U.S.C. § 1268(2010).

Under these regulations, Great Lakes states and tribes, a well as other federal agencies, must comply with the statutes and rules protecting the Great Lakes, often referred to as the "Great Lakes Initiative." The Great Lakes Initiative specifically governs bioaccumulative chemicals of concern ("BCCs") and bioaccumulative substances of immediate concern ("BSICs"). Mercury is both. 40 C.F.R. § 132.2, Table 6 (BCC); app. E, II.A (BSIC)(2010). Not only the water resources potentially affected by the PolyMet Project, but specific pollutants of concern for this Project have been designated in international agreements and federal law to be of national and international importance.

In addition, the Minnesota Department of Natural Resources ("MDNR") has evaluated the ecological significance of the area proposed for the PolyMet Project. In 2007, the MDNR prepared a detailed report evaluating the ecological significance of the "Headwaters Site" in northern Minnesota as the source of four rivers that eventually reach two different oceans: Stony River, Dunka River, South Branch Partridge River and the St. Louis River, which is the second largest tributary to Lake Superior.[7] The MDNR described the ecological value of this area, which includes the PolyMet site, as follows:

> The Headwaters Site encompasses vast peatlands on its eastern side, unfragmented upland forests in the west, and broad transition zones between them. Within the Site are two distinct areas, referred to in the document as the "Extensive Peatlands" and the "Big Lake Area," which are linked hydrologically as part of the Upper St. Louis River watershed. . .

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[4] Minn. Dep't Natural Resources ("MDNR") & U. S. Army Corps of Eng'rs ("Army Corps"), NorthMet Project Draft Environmental Impact Statement (Oct. 2009), ("DEIS"), *available at* http://files.dnr.state.mn.us/input/environmentalreview/polymet/draft_eis/volume_i_text_and_tables_deis.pdf

[5] *See* Agreement on Great Lakes Water Quality, U.S.-Can., Nov. 22 1978, 30 U.S.T. 1383, *available at* http://www.epa.gov/glnpo/glwqa/1978/articles.html#AGREEMENT%20BETWEEN%20CANADA

[6] *See* The Great Lakes Charter (1985), *available at* http://www.cglg.org/projects/water/docs/GreatLakesCharter.pdf

[7] C. Anderson & E. Perry, MDNR, *An Evaluation of the Ecological Significance of the Headwaters Site Northern Superior Uplands Ecological Land Classification System Section; Laurentian Uplands Subsection Lake and St. Louis Counties,* p. 1 (March 2007), Exhibit B attached, *available at* http://files.dnr.state.mn.us/eco/mcbs/evaluations/lmf/headwaters/hw_1.pdf ("MDNR Headwaters Ecology")

> The Headwaters Site is unique in northeastern Minnesota in several ways. The size and complexity of the peatlands in the Extensive Peatlands are unmatched in the Northern Superior Uplands Ecological Land Classification System (ECS) Section.[8]

The PolyMet mine site contains a total of 1,302 acres of wetlands (DEIS, p. 4.2-9). The mine site is located in the Superior National Forest, within the 1854 Ceded Territory to which members of the Fond du Lac, Grand Portage and Bois Forte Bands of the Chippewa (also referred to as Ojibwe or Anishinaabe) tribe retain usufructuary rights. (DEIS, p. 4.2-53).

Tribal cooperating agencies participating in the PolyMet environmental review process state that many of the wetlands that have been identified during delineation as "perched bogs" are cedar swamps, northern wet ash swamps, forested rich peatlands and northern alder swamps. (DEIS, app. D, Tribal Positions, pp. 4.2-3, 4.2-4, 4.2-5; *see also* DEIS, pp. 4.2-4, 4.2-5). Tribal agencies have also pointed out that the wetland delineation study for the draft EIS (DEIS, RS14, app. A) identified over 390 acres of wetland community with a significant white cedar component on the PolyMet mine site. (DEIS, app. D, Tribal Positions, p. 4.2-9).

In its *Comprehensive Wildlife Conservation Strategy* for Minnesota, the MDNR has designated white cedar swamps, tamarack swamps and other lowland forested peatlands as habitat features important to sustain species in greatest conservation need, including various species of birds, butterflies and mammals.[9] White cedar swamps are a particularly important wetland community. Since the increase in white tail deer populations, cedar regeneration is close to zero and Minnesota county and state foresters no longer do cedar timber sales for that reason. According to ecological designations by the MDNR, peatlands and swamps impacted by the PolyMet Project are part of a "unique" and "unmatched" ecosystem and are important to Minnesota's *Comprehensive Wildlife Conservation Strategy.*[10]

In its *Comprehensive Wildlife Conservation Strategy,* the MDNR also determined that the Partridge River itself is a "key river" for wild and rare habitat to sustain wildlife.[11] A river system, including wetland areas, pools and vegetated shallows, may be considered an ARNI due its value as a habitat to support fish and wildlife. *See Hughes River Watershed v. Glickman*, 81 F. 3d 437, 440 (4th Cir. 1996).

The wetlands, mud flats, pools and vegetated shallows on the PolyMet mine site and in the Partridge River Watershed impacted by the Project are aquatic resources of national

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[8] *Id*.
[9] MDNR, *Tomorrow's Habitat for the Wild and Rare An Action Plan for Minnesota Wildlife Comprehensive Wildlife Conservation Strategy,* ("*Comprehensive Wildlife Conservation Strategy"), p. 240*, Exhibit B attached, *available at* http://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/cwcs/habitats/02.pdf.
[10] *MDNR Headwaters Ecology, supra, p. 1; Comprehensive Wildlife Conservation Strategy, supra, p.241.*
[11] *Comprehensive Wildlife Conservation Strategy, supra, app.1,* Exhibit D attached, *available at* http://files.dnr.state.mn.us/assistance/nrplanning/bigpicture/cwcs/chapters_appendix/appendix_i.pdf

importance, subject to an elevated level of concern and review under precedent and the EPA's MOA with the Army Corps.

2. The PolyMet Project Will Have Substantial and Unacceptable Impacts on Water Resources of National Importance.

a. Wetlands Destruction and Impairment

It is acknowledged in the DEIS that the PolyMet mine site would impact an estimated 1122.9 acres of wetlands in the Partridge River Watershed; directly impacting 804.3 acres through excavation and destruction of wetlands and impacting 318.6 additional acres through changes in hydrology, chemical inputs and other disruption (DEIS, pp. 4.2-9, 4.2-18).

The PolyMet mine site consists almost entirely of native vegetation and a majority of the site has been characterized by the Minnesota County Biological Survey ("MCBS") as a Site of High Biodiversity Significance. (DEIS, p. 4.3-2) A wetland delineation by Barr Engineering reported that approximately 91 percent of the wetlands potentially impacted at the PolyMet mine site were of high quality. (DEIS, p. 4.3-2) All but one coniferous bog community wetland, all shrub community wetlands and all forested swamp community wetlands are rated high quality. (DEIS, pp. 4.2-5 to 4.2-6).

The DEIS suggests that PolyMet Project would impact 3.4 percent of the total wetlands in the Partridge River Watershed, but acknowledges that, due to the high quality, relative isolation and lack of human disturbance of the wetlands impacted, "the function and values served by the wetlands in the watershed would be expected to be significantly affected" by the direct and indirect losses of wetlands from the PolyMet project. (DEIS, p. 4.2-48).

The PolyMet Project will have substantial impacts on habitat and biodiversity, downstream water quality and aquatic ecology, municipal water supplies, fisheries and wildlife.

b. Biodiversity, Habitat and Endangered Species

The wetlands on the PolyMet mine site provide important functions for vegetative diversity and integrity and for wildlife habitat. (DEIS, p. 4.2-8). The Project would result in the direct loss of 1,454 acres of vegetative cover at the Mine Site. (DEIS, p. S-10).

Although it does not document the full range of vegetative diversity, the DEIS acknowledges that the Project would result in direct impacts to the following plant species that are endangered, threatened or of special concern: Prairie moonwort (*Botrychium campestre*), pale moonwort (*B. pallidum*), least grapefern (*B. simplex*), neat spikerush *(Eleocharis nitida*), lapland buttercup (*Rununculus lapponicus*), clustered bur-reed (*Spartinum glomeratum*), and Torrey's manna-grass (*Torreyochloa pallida*). (DEIS, p. S-10, pp. 4.3-5 to 4.3-9).

The PolyMet project would also result in indirect impacts to the following endangered, threatened or species of special concern plants due to changes in hydrology: pale moonwort (*B. pallidum*), ternate grapefern (*B. regulosum*), least grapefern (*B. simplex*), floating marsh mallow (*Caltha natans*), neat spikerush *(Eleocharis nitida*), lapland buttercup (*Rununculus lapponicus*), and clustered bur-reed (*Spartinum glomeratum*). (DEIS, pp. S-10, 4.3-5 to 4.3-9).

For one particular state endangered species, the floating marsh marigold (*Caltha natans)*, the PolyMet mine would put all known Minnesota populations at risk. There are only 12 known populations of *Caltha natans* in the state of Minnesota. Five of these -- 42 percent of the *Caltha natans* population in the State -- occur on or near the PolyMet mine site and may be indirectly impacted by changes in hydrology, chemistry or other disturbance at the mine. (DEIS, p. 4.3-15, Table 4.3-9). The remaining populations of this endangered plant are located near the mine site along the Partridge River. (DEIS, p. 4.3-16). The floating marsh marigold "is found primarily in relatively undisturbed habitats and is not likely to be tolerant of disturbance." (DEIS, p. 4.3-16).

The MDNR has expressed concern about the survival of the marsh marigold and the vulnerability of this state endangered species to habitat disruption:

> *Caltha natans* is a circumboreal species that is generally rare or local throughout its North American range. This is especially true south of the Canadian border, where it has been found at only a few sites in St. Louis County, Minnesota, and at only one location in Wisconsin. An additional cause for concern in Minnesota is the local extirpations recently suffered by this species. The reason for the extirpations is largely habitat loss, which is a well-documented problem for aquatic species statewide. . .
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> Most populations discovered in the 1940s and 1950s have not been relocated. Despite the fact that there are many acres of apparently suitable habitat in northeastern Minnesota, only a handful of sites have been found since 1954. Several of these sites are at risk because of habitat alteration. *Caltha natans* was listed as an endangered species in Minnesota in 1996. . .
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> *Caltha natans* is very sensitive to habitat disturbances, especially alteration of naturally-occurring water level fluctuations, herbicides, nutrient enrichment, sedimentation, and nonnative species invasion such as *Lythrum salicaria (*purple loosestrife).[12]

In addition to affecting individual endangered species, the PolyMet Project would remove native wetland flora on the mine site and introduce non-native invasive plant species. The current mine site has few non-native plants, since wetland disturbance has been minimal. (DEIS, p. 4.3-3). However, a vegetation survey of mines in the Mesabi Iron Range

[12] MDNR, Rare Species Guide, *Caltha Natans* (2010), attached as Exhibit E, *available at* http://www.dnr.state.mn.us/rsg/profile.html? action=elementDetail&selectedElement=PDRAN06020

identified a large number of invasive non-native species that could invade the mine site (DEIS, pp. 4.3-3 to 4.3-4). Several of these non-native invasive species have been found within a few miles of the mine site, increasing the likelihood of propagation in the mine site area. (DEIS, p. 4.3-5).

As with the plant species, the DEIS does not provide a listing of the full range of wildlife supported by the wetlands at the mine site. However, the DEIS suggests that the Project is likely to impact the following species of greatest conservation need that are either wetland dependent or present in multiple habitats: Black Duck, American Bittern, Swamp Sparrow, Eastern Red-backed Salamander, Bog Copper, Disa Alpine, Marbled Godwit, Gray Wolf, Canada Lynx, Rosebreasted Grosbeak, Macoun's Arctic, Least Flycatcher, Connecticut Warbler, Olive-sided Flycatcher, Grizzled Skipper, Nabokov's Blue, Wood Turtle. (DEIS, p. 4.4-6, Table 4.4-1).

The DEIS documents the likelihood that mine site impacts will result in fragmentation of habitat for the Gray Wolf and the Canada Lynx, both of which are federal endangered species. At least 20 different lynx sightings have occurred within 18 miles of the project area, including reproductive individuals, (DEIS, pp. 4.4-3, 4.4-10), and portions of the PolyMet mine site are within the boundaries of federally designated lynx critical habitat. (DEIS, pp. 4.4-2, 4.4-3). The PolyMet project is located within Zone 2 of the designated critical habitat for the Gray Wolf. (DEIS, p. 4.4-3). Wolves have been documented to the north and northeast of the mine site and wolf tracks have repeatedly been observed on the mine site. (DEIS, p. 4.4-4). Cumulative impacts of the PolyMet Project and other mining and related actions have the potential to eliminate all but three of the 13 wildlife corridors identified by researchers as critical to species in the area, including wolf and lynx. (DEIS, pp. 4.4-31 to 4.4-33).

c. Downstream Water Quality, Wild Rice and Habitat Impacts

Dredging and fill at the PolyMet mine site along with waste rock stockpiling and release of acid rock drainage will also impact wild rice in vegetated shallows of the Partridge River and downstream in the lower St. Louis River due to sulfate chemical releases.

Wild rice requires relatively low-sulfate waters to thrive and Minnesota law prohibits concentrations above 10 mg/L in wild rice waters. Minn. R. 7050.0224, subp. 2 (2010). According to NPDES monitoring reports, stockpiles of "low sulfur" waste rock from Duluth Complex rock at the Dunka Mine have demonstrated uncontrolled average sulfate releases to Unnamed Creek ranging from 1000 to 2500 mg/L since 1976.[13]

As sulfates from the PolyMet mine site move downstream, they will increase sulfate levels in vegetated shallows of the Partridge and St. Louis Rivers. Impairment of wild

[13] MDNR, *Environmental Leaching of Duluth Gabbro Under Laboratory & Field Conditions: Oxidative Dissolution Of Metal Sulfide & Silicate Minerals* (1980) ("MDNR 1980") *available at* http://archive.leg.state.mn.us/docs/pre2003/other/810071.pdf; MPCA DMR Summary Reports for Cliffs Erie – Dunka Mining Area, NPDES/SDS Permit MN0042579, SD 005, SD 007, SD 009 for 2007 and 2008 ("MPCA Dunka Reports") *available from author on request.*

rice is virtually certain. Changes in the characteristic hydrologic regime may also adversely impact wild rice stands.

Field surveys have found wild rice along the Upper Partridge River and fairly dense stands in the Lower Partridge River as well as wild rice further downstream in the St. Louis River. (DEIS, p. 4.8-13 to 4.8-14) The St. Louis River is explicitly identified in Minnesota law as wild rice waters. Minn. R. 7050.0470 (192)(2010).

Minnesota rules provide that the quality of wild rice waters and the habitat necessary to support wild rice must not be degraded:

> Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subpart 1. The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. Minn. R. 7050.0224, subp. 1(2010).

There are few places in the world that have waters that naturally support self-sustaining stands of productive wild rice. The United States Forest Service has recognized the uniqueness of wild rice beds and their value for both fish and wildlife habitat:

> Wild Rice (Zizania aquatica) is a very valuable native aquatic plant, with high value as both wildlife and fish habitat, and for its cultural value to area tribes. Wild Rice once occurred extensively throughout much of Minnesota, northern Wisconsin and the Western U.P. of Michigan. Over time, many wild rice beds in our area have been lost.[14]

Many migrating birds use wild rice stands to build up reserves for their migration, and animals from moths to mammals depend on wild rice for habitat. The Great Lakes Indian Fish and Wildlife Commission explains the ecological significance of wild rice.

> Wild rice is important in the ecology of many lakes and streams. Its nutritious seeds have long been recognized as a valuable waterfowl food. Within its core range in Minnesota and northern Wisconsin there may be no food more important to waterfowl, being readily and heavily consumed by mallards, blue-winged teal, ring-necked ducks, wood ducks and other species. Wild rice also benefits breeding waterfowl, providing roosting and loafing areas to adults, and essential brood cover for the young.

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[14] L. Sybeldon, U.S. Forest Serv., *Success Stories, Ottawa Partners with Tribes to Restore Wild Rice*, (Sept. 9, 2007), *available at* http://www.fs.fed.us/r9/ssrs/story?id=3346.

> Wild rice's other ecological contributions are often less appreciated. From the muskrat that feeds on a tender spring shoot, to the invertebrate that lives on the fall's dying straw, wild rice benefits a wide range of species because of the food, cover, or physical structure it adds to the environment. The habitat it provides species ranging from moths to moose and snails to rails adds to the biological diversity of the wetlands where it is found.
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> Wild rice can also help maintain water quality by binding loose soils, tying-up nutrients and slowing winds across shallow wetlands. These factors can increase water clarity and reduce algae blooms. Wild rice is an ecological treasure.[15]

In addition to ecological harm, any impairment of wild rice creates unacceptable and disproportionate impacts on Indian tribal members, who gather rice at a rate greater than their census numbers and whose cultural, social and economic well-being will be affected by impairment of wild rice. Proceedings of the 1999 EPA Wild Rice Research and Management Conference recognize the deep cultural significance of wild rice to the Ojibway people:

> Because ricing is such a deeply rooted activity most Ojibway build harvest time into their annual schedules as a matter of course. Many urban Indians return to their reservations for ricing, others leave regular jobs in nearby towns for the harvest even though it can mean financial loss. It is not unusual during harvest to request time off from work or call in sick to get enough rice for the family table. Most who rice are culturally motivated.[16]

In Minnesota, more than 3,000 tribal members participate in wild rice harvesting statewide along with 1,500 non-tribal individuals (DEIS, p. 4.1-44). The rate of participation in wild rice harvest is far greater for tribal members, who represent only 1.2 percent of Minnesota's population. (DEIS, p. 4.10-14).

Any impacts to natural resources at the PolyMet mine site, including impacts to wetlands and vegetated shallows of the Partridge River Watershed will disproportionately affect tribes "due to their subsistence consumption of wild rice, fish, and other wildlife within the 1854 Ceded Territory." (DEIS, app. D, Tribal Positions, p. 4.10-15).

e. Mercury and Methylmercury

The PolyMet Project will adversely Partridge River Watershed wetlands functionality and downstream water quality. This impact is particularly salient for mercury, which is a

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[15] Great Lakes Indian Fish & Wildlife Comm'n, *Wild Rice Brochure*, Exhibit F, *available as of Sept.13, 2010 at* http://www.glifwc.org/publications/Wildrice_Brochure.pdf

[16] T. Vennum, *Traditional and Social Context of Ricing,* Keynote Address in Proceedings of the Wild Rice Research and Management Conference, Carlton, Minnesota (July 7-8, 1999) *available at* http://www.epa.gov/glnpo/archive/GL005322-01/index.html

bioaccumulative chemical of concern (BCC) and a bioaccumulative substance of immediate concern (BSIC) under the national Great Lakes Initiative.

The Partridge River and downstream waters affected by the PolyMet Project are waters within the Lake Superior Watershed that are impaired for mercury, either due to fish tissue testing for methylmercury, mercury concentrations in water or both. All segments of the St. Louis River downstream of the project, including segments fed by the Partridge River and the Colby Lake reservoir downstream from the PolyMet project on the Partridge River are specifically listed in Minnesota's inventory of section 303(d) impaired waters.[17] In addition, testing during environmental review has confirmed, on the basis of mercury concentrations in water exceeding the Great Lakes standard of 1.3 ng/L, that all of the receiving waters for the Project, including the Partridge River, are impaired for mercury. (DEIS, p. 4.1-36, Table 4.1-24; p. 4.1-42, Table 4.1-29; p. 4.1-48).

The DEIS acknowledges that the PolyMet project "may contribute to cumulative effects on methylmercury concentrations in downstream lakes that are already on the 303(d) list." (DEIS, p. 4.1-194). The DEIS identifies several sources of methylmercury formation from the project, including mercury discharge as a result of peat excavation and stockpiling at the mine site. (DEIS, p. 4.1-123). In addition to mercury loadings, the Project would increase sulfate loadings to wetlands and to the Partridge River. (DEIS, pp. 4.1-125, 4.1-159, 4.1-160, 4.1-188). The project would also result in water level fluctuations, including reduced flows in the Partridge River and increase fluctuations and drawdown in the Whitewater Reservoir. (DEIS, p. 4.1-127).[18]

These Project activities, within the scope of Army Corps Section 404 permitting, have the potential to increase and, perhaps double, mean methylmercury bioavailability:

> Sulfate mobilization, water level fluctuation, and mobilization and methylation of mercury sequestered in peat all tend to increase the potential for mercury bioaccumulation in fish. Finally, the effects of sulfate and mercury mobilization and their effects on mercury methylation are cumulative although not necessarily strictly additive. Individually and collectively these factors may significantly increase the potential for bioaccumulation in fish by increasing the production and bioavailability of methylmercury.
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> Increased sulfate can be expected to no more than double mean methylmercury bioavailability upstream of the USGS gage above Colby Lake, in the Embarrass River, and in the St. Louis River basin upstream of the Embarrass River confluence. (DEIS, app. D, CPDEIS, pp. 4.5-17 to 4.5-18).

Mercury and sulfate loadings from the PolyMet Project must be considered with

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[17] Minn. Pollution Control Agency ("MPCA"), *Inventory of all Impaired Waters* (2009) *available Sept. 13, 2010 at* http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/assessment-and-listing/303d-list-of-impaired-waters.html?menuid=&missing=0&redirect=1.

[18] The DEIS provides no data to support its statement that hydrologic fluctuations are not expected to result in "significant increases" in methylation. See DEIS, p. 4.1-127, fn 42.

cumulative sulfate loadings from other mining and minerals processing activities (DEIS, p. 4.1-188, Table 4.1-96; p. 4.1-192, Table 4.1-99) as applied to all downstream waters, including the St. Louis River and its estuary. Many studies have shown that wetlands are sinks for mercury ("Hg") and sources of methylmercury ("MeHg") to surrounding watersheds.[19] MDNR research and Minnesota Pollution Control Agency ("MPCA") guidance highlights the link between sulfates ("SO_4") and methylmercury:

> It has long been known that mining activities on the Iron Range result in release of SO_4 to the St. Louis River. While SO_4 is typically not toxic to aquatic organisms, a growing body of research supports a link between bacterial SO_4 reduction and conversion of mercury (Hg) to methylmercury (MeHg). MeHg is the type of Hg that accumulates in fish. High Hg concentrations in fish have led to issuance of fish consumption advisories throughout the state, including the St. Louis River. As a result, the MPCA has recently issued guidance that is to be used for permitting SO_4 discharges into the environment. This guidance attempts to eliminate or reduce SO_4 discharge to environments that bring SO_4 into contact with labile organic matter and Hg under reducing conditions, especially when SO_4 concentration is the limiting factor for SO_4 reduction.
>
> In the St. Louis River basin, situations that have the potential to increase Hg methylation might include SO_4 discharge to wetlands that drain to a river, discharge to streams where flooding may result in inundation of high organic wetlands, or SO_4 loading to lakes or impoundments in which anoxic conditions are produced within the water column or at the sediment/water interface. Until more detailed studies are conducted, virtually all SO_4 releases within the St. Louis River basin can be considered high risk since wetlands, flood plains, and lakes are common in the region.[20]

f. Additional Toxic Metals Release

Although the PolyMet DEIS included little discussion of the effects of the Project on toxic releases of copper ("Cu"), nickel ("Ni"), cobalt ("Co") and Zinc ("Zn") to aquatic ecosystems, the State of Minnesota spent millions of dollars in the 1970's on the Regional Copper-Nickel Study ("Cu-Ni Study"), a detailed study of a 500 square-mile area including the PolyMet NorthMet site. The Cu-Ni Study was based on over 180 technical reports prepared by the MDNR, MPCA, University of Minnesota, U.S. Bureau of Mines, EPA, and many other government agencies and contractors that provided analysis of the potential impacts of Cu-Ni mining in Minnesota; the Cu-Ni Study takes up 20 linear feet in Minnesota's Legislative Library.[21]

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[19] M. Berndt and T. Bavin, MDNR, Sulfate and Mercury Chemistry of the St. Louis River in Northeastern Minnesota, p. 9 (June 2009)(Draft Report) *available from author on request.*
[20] *Id*., p. 3, internal citations omitted.
[21] An index to the Minnesota Regional Copper Nickel Study is available on line at http://www.leg.state.mn.us/docs/pre2003/other/810476.pdf and an inventory of files is available at http://www.mnhs.org/library/findaids/eqb001.xml.

Former state agency staff who have consulted with WaterLegacy emphasize that the Cu-Ni Study is directly related to and timely for the PolyMet Project. Metallurgical extraction and toxicological and environmental data have not changed significantly since the time of the Cu-Ni Study.

Unlike many other copper (Cu) deposits in the nation, the PolyMet Duluth Complex deposit also includes significant quantities of nickel, cobalt, and zinc (Ni, Co, Zn) ore. Rock from the Duluth Complex in this area contains disseminated (unevenly distributed) mineralization, that may or may not produce acid leachate, and will still leach heavy metals far above surface water standards, at potentially toxic levels.[22] The release of Cu can be reduced with circumneutral pH (pH 6.7 to 7.2), such as limestone additions to waste rock piles, but this is not true for Ni, Co, and Zn, which are readily released in near neutral pH (+/- pH 7).[23] Unlike the PolyMet DEIS, which glossed over this issue, the Cu-Ni Study states that leachate impacts of nickel, cobalt and zinc are of great significance.[24]

Acid rock drainage related to copper and sulfur is not a sufficient indicator for leaching of toxic metals, since there are numerous reports on the Duluth Complex in the area demonstrating significant releases of Ni, Co, and Zn at circumneutral pH.[25] Toxic metal releases of Cu, Ni, Co, Zn have occurred from the Duluth Complex stockpiles and test plots at the LTV Dunka Taconite Mine (*a.k.a.* Cliffs Erie Dunka Mine), Amax test site and Spruce Road Bulk Sample Site at near neutral pH. Cliffs Erie required a variance from Minnesota water quality standards with respect to acute toxicity for its 2001 NPDES permit[26] and continues to request variances from toxicity water quality standards for metals releases from the Dunka Mine.

Minnesota's Cu-Ni Study data showed that Duluth Complex waste rock leachates have a high probability of aquatic toxicity.[27] The median trace metal concentrations (Ni, Cu, Zn and Co) from Dunka Mine stockpiles with circumneutral pH had leachate seepages that ranged from ten to 10,000 times the natural background levels of streams in the area.[28] In August 1988 MPCA determined all of these discharges to be acutely toxic. The leachates were found toxic to *Ceriodaphnia dubia* in as low as 3 to 14 percent dilutions. These

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[22] K. Lapakko & P. Eger, *Environmental Leaching of Trace Metals from Waste Rock and Lean Ore Stockpiles*, p. 3 (1980)("Lapakko 1980") *available from author on request*; MDNR 1980, *supra*, pp. 195-196.
[23] *Id*; *see also* M.J. Rinker, R. V. Nicholson, M.A. Venhuis, & B. Swarbrick, *Implications of Non-Acid Metal Leaching on Mine Rock Management at a Nickel Mine in Permafrost Terrain: 1-Mine Rock Evaluation* (1999), *available from author on request*; Minn. Envt'l Quality Bd., *Spruce Road Bulk Sample Site & Spruce Road Bulk Sample Site Monitoring Results*, Reports to Minn. Regional Copper-Nickel Study, p. 19 (1977)("MEQB 1977") *available at* http://archive.leg.state.mn.us/docs/pre2003/other/CN148.pdf; S. J. Eisenreich, M.R. Hoffman & I. Iwasaki, *Metal Sulfide Leaching Potential in the Duluth Gabbro Complex*, Report to MN Regional Copper-Nickel Study (1976)("Eisenreich 1976"); Lapakko 1980, *supra*, pp. 3-4.
[24] MN Regional Copper-Nickel Study, Executive Summary, p. 45, 48-49, *available at* http://www.leg.state.mn.us/docs/pre2003/other/792632.pdf
[25] S.J. Eisenreich, M.R. Hoffman, K. Lapakko, *Mechanism and Control of Metal Sulfide in Gabbro Mining-Related Solids*, Report to MN Regional Copper-Nickel Study, p, 27 (1977); Lapakko 1980, *supra*, p. 3; MDNR 1980, *supra*, *see e.g.* pp. 9-10. Pilot testing has demonstrated only a 10 percent reduction in Ni release by the use of limestone in a Dunka Mine Duluth Complex waste rock seepage.
[26] Dunka Mine NPDES Permit MN0042579, pp. 11, 12, 15.
[27] MDNR 1980, *supra*, see e.g. p. 197.
[28] Lapakko 1980, *supra*, p. 3.

discharges are the most acutely toxic discharges known in the state.[29] Copper, nickel, cobalt and zinc metals are all highly toxic to aquatic life at low levels (micrograms per liter), and may have negative human health effects at marginally higher levels. For example, ATSDR has stated Ni to be a potential carcinogen.[30]

Since the PolyMet mine will produce 200,000 to 300,000 tons of rock every two to three days (DEIS, p. 3-5) laboratory sulfur cutoff numbers are only marginally relevant. The disseminated nature of the Duluth Complex makes it impossible to identify with precision and accuracy the sulfur content of the waste rock, preventing segregation of millions of tons of Duluth Complex rock by sulfur content. Clearly there will be segments with greater than 0.5 percent sulfur contained in even "low" sulfur rock. A small quantity of higher sulfur rock in a low sulfur stockpile as well as variations in chemical composition or particle size can increase acid leachate.[31]

The average annual precipitation for the Project area is 28.4 inches. The 855.9 acres of stockpiles projected for the PolyMet mine site can be expected to receive 660,008,592 gallons of precipitation in an average year. Uncovered AMAX test plots indicated 50 to 60 percent of precipitation was released as leachate.[32] In an *average* year, a rough estimate would predict Polymet stockpiles will produce 330,000,000 to 396,000,000 gallons of leachate, containing metals and sulfides.

Acid and circumneutral leaching must be anticipated from all stockpiles of mineralized Duluth Complex waste rock.[33] This leaching would far exceed surface water standards and should be expected to be acutely toxic.[34] Experience suggests that toxic metal releases of Ni, Co and Zn exceeding surface water standards can be expected indefinitely, if not in perpetuity, in the Partridge River Watershed.

Mineralized mine pit sidewalls will also leach acid and metals orders of magnitude above surface water standards. This was documented in the Cu-Ni Study sampling of the U.S. Steel bulk sample pit at the Filson Creek bulk sample site. A 33-day laboratory test of the Duluth Complex Rock resulted in elevated metals releases in water, with increased release as the water's oxygen content increased.[35] In the Cu-Ni Study, the MDNR also expressed concerns over mine pit sidewall leaching.[36]

The EPA has noted in Detailed Comments attached with its February 18, 2010 letter from Bharat Mathur ("EPA Detailed DEIS Comments") that there are sufficient studies and data currently available to generate a water quality criterion for manganese based on

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[29] MDNR, *Bob Bay Study* (1983)("MDNR 1983"); B. Johnson, J. Strudell, MPCA Proposed Dunka Memorandum to Russell Felt (Mar. 28, 1989) ("Johnson 3/28/89") *available from author on request*; MPCA Dunka Reports, *supra*.
[30] Agency for Toxic Substances and Disease Registry ("ATSDR"), Nickel ToxFAQs CAS # 7440-02-0 *available at* http://www.atsdr.cdc.gov/tfacts15.pdf
[31] MDNR 1980, *supra*, *see e.g.* pp. 93, 105.
[32] P. Eger, B. Johnson, G. Hohensteen, DNR/*AMAX Leaching and Reclamation* (Jan. 29, 1979).
[33] *See* MDNR 1980, *supra*; MEQB 1977, *supra*; Eisenreich 1976, *supra*, p. 27; Lapakko, 1980, *supra*.
[34] *See* MPCA Dunka Reports, *supra*; MDNR 1983, *supra*; Johnson 3/28/89, *supra*.
[35] MDNR 1980, *supra*, pp. 108, 110.
[36] *Id*., p. 263.

toxicity to aquatic life. Applying the manganese aquatic life water quality standard used by the Illinois EPA, standards to protect aquatic ecosystems from manganese could also be exceeded in Colby Lake under PolyMet Project conditions.[37]

PolyMet mine site activities under Section 404 would impact downstream water quality and aquatic toxicity related to copper, nickel, cobalt, zinc and, possibly, manganese as well.

g. Water Level Fluctuations

Various aspects of the PolyMet project within the scope of a Section 404 permit have a potential for substantial impacts on water flows, levels and fluctuations. The mine site will remove surface runoff on 2.4 square miles draining to the Partridge River as a result of waste rock stockpiles and mine pits. (DEIS, p. 4.1-98). Mine dewatering will further reduce groundwater inflow to the Partridge River, as would installation of a seepage barrier at the tailings basin headwaters of Second Creek, a Partridge River tributary. (DEIS, pp. 4.1-98, 4.1-106).

A key assumption in the DEIS was the lack of strong hydraulic connectivity between bedrock and surface water at the mine site. (*See e.g.* DEIS, p. 4.1-57). This assumption may bias predictions of the impact of groundwater contamination at the mine site or predictions regarding the nature and extent of impacts to the surficial aquifer, wetlands and other surface waters. This assumption also affects of groundwater appropriations at the mine on wetlands, the Partridge River, Colby Lake and the Whitewater Reservoir.

Even with the DEIS' limiting assumptions, reduction in flow in the Upper Partridge River would range from 8 percent to 27 percent and minimum flows could be reduced by over 20 percent in some areas. (DEIS, pp. 4.1-100, 4.1-102). The surficial aquifer around the east and west pits would be lowered by 10 to 20 feet, reducing the base flow and velocity of the Upper Partridge River. (DEIS, p. 4.1-102). Withdrawal of water from Colby Lake for plant make-up water would further reduce water levels in the Whitewater Reservoir by 9.87 feet in low flow conditions and result in shoreline retreat of as much as 250 feet in coves under a demand scenario predicted to be exceeded at least 10 percent of the time. (DEIS, pp. 4.1-104, 4.1-105). Combined project impacts would reduce flows in the Lower Partridge River by an average of 9 percent. (DEIS, p. 4.1-106). The project could also reduce flows in the lower Partridge River downstream of Colby Lake. (DEIS, p. 4.1-106).

It is anticipated that the supplemental/revised environmental impact statement for the PolyMet Project will include more thorough hydrologic analysis of the mine site and the impacts of dredging and fill on water quantity and fluctuations within the Partridge River Watershed.

[37] EPA Detailed DEIS Comments, p.14.

3. PolyMet Project Section 404 Activities Will Have Substantial and Unacceptable Adverse Effects on Municipal Water Supplies, Fisheries and Wildlife.

Under the Clean Water Act, the Administrator of the EPA has the authority to prohibit the Secretary of the Army from issuing permits for the discharge or disposal of dredged or fill material into the navigable waters, as follows:

> The Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. 33 U.S.C. § 1344(c)(2010).

Federal regulations at 40 C.F.R. § 230.10(c)(2010) describe effects contributing to significant degradation precluding discharge under an Army Corps Section 404 permit:

1. Significantly adverse effects of the discharge of pollutants on human health or welfare, including but not limited to effects on municipal water supplies, plankton, fish, shellfish, wildlife, and special aquatic sites;

2. Significantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems, including the transfer, concentration, and spread of pollutants or their byproducts outside of the disposal site through biological, physical, and chemical processes;

3. Significantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability. Such effects may include, but are not limited to, loss of fish and wildlife habitat or loss of the capacity of a wetland to assimilate nutrients, purify water, or reduce wave energy; or

4. Significantly adverse effects of discharge of pollutants on recreational, aesthetic, and economic values.

Dredging and fill activities at the PolyMet mine site will contribute to significant degradation of navigable waters, including aquatic resources of national importance. The EPA has authority to prohibit this unacceptable harm.

a. <u>Municipal Water Supplies</u>

Downstream from the PolyMet mine site within the Partridge River Watershed, Colby Lake is the source of drinking water for the City of Hoyt Lakes. The PolyMet Project would have an unacceptable adverse effect on levels of arsenic, iron, manganese and aluminum in downstream municipal drinking water. Initial modeling performed for

Colby Lake predicted that the PolyMet project would result in exceedances of water quality standards for arsenic at 5.1 µg/L, more than twice the standard of 2.0 µg/L; iron at 1,713 µg/L, more than five times the 300 µg/L standard; and manganese at 149 µg/L, nearly three times the 50 µg/L standard. Aluminum concentrations were also predicted at 76 µg/L, exceeding screening levels. (DEIS, p. 4.1-116, Table 4.1-65).

For arsenic, the EPA commented in 2009 that modeling for the environmental impact statement had been altered by "readjusting variables to less conservative inputs," resulting in a prediction that arsenic in Colby Lake drinking water will be 1.9 µg/L, just below Minnesota's chronic water quality standard of 2.0 µg/L.[38] The EPA has continued to express concerns about the predicted arsenic concentration of 1.9 µg/L in Colby Lake and has suggested that mitigation be required to actually reduce arsenic levels.[39]

Minnesota's chronic human health standard for arsenic in water is 2 µg/L. Minn. R. 7050.0220, subp. 3a(B)(3)(2010). This standard is based on data suggesting that chronic exposure to similar low levels of arsenic increases the risk of cancer, particularly in the bladder and lungs, and can result in IQ deficits in children.[40] The federal Department of Health and Human Services ("DHHS") has determined that inorganic arsenic is known to be a human carcinogen.[41] The International Agency for Research on Cancer ("IARC") has determined that inorganic arsenic is carcinogenic to humans, and the U.S. EPA also has classified inorganic arsenic as a known human carcinogen.[42]

The DEIS states that the City of Hoyt Lakes is able to remove nearly all iron at its water treatment plant. (DEIS, p. 4.1-116). However, EPA has suggested that the methods used by Hoyt Lakes – open basin sedimentation, gravity sand filtration and corrosion control – are not the most effective in making significant reductions in metals concentration.[43]

Although the DEIS stated that iron exceedances should be considered only as an aesthetic issue (DEIS, p. 4.1-51), this may not be the case for the portion of the public with hemochromatosis, or "iron overload" disease. According to the Centers for Disease Control and Prevention ("CDC"), hemochromatosis is the most common genetic disease in the U.S.A. and can include symptoms of chronic fatigue, arthritis, heart disease, and liver problems including cirrhosis and cancer.[44]

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[38] Letter from Kenneth Westlake, Supervisor NEPA Implementation, U.S. EPA Region 5 to Jon Ahlness, U.S. Army Corps of Eng'rs, p. 4 (February 25, 2009) ("EPA CPDEIS Comments"), *available at* http://www.waterlegacy.org/sites/default/files/USEPA%20Comments%20on%20CPDEIS,%202-5-09_0.pdf; *see e.g.* DEIS, p. 4.1-115 for changes in modeling.
[39] EPA Detailed DEIS Comments, *supra*, p. 14.
[40] Minn. Dep't of Health, *Arsenic in Drinking Water and your Patients' Health*, pp. 3-4, *available at* http://www.health.state.mn.us/divs/eh/hazardous/topics/arsenicfct.pdf.
[41] ATSDR, Arsenic Tox FAQs CAS # 7440-38-2, p. 2, *available at* http://www.atsdr.cdc.gov/tfacts2.pdf.
[42] ATSDR, Arsenic Toxicological Profile, pp. 395-396, *available at* http://www.atsdr.cdc.gov/toxprofiles/tp2-c8.pdf.
[43] EPA Detailed DEIS Comments, *supra*, p.14.
[44] *See e.g.* Ctr. for Disease Control, *Iron Overload and Hemochromatosis: Frequently Asked Questions*, available at http://www.cdc.gov/ncbddd/hemochromatosis/faq.htm.

The method used by the Hoyt Lakes public water system to control iron may not be sufficient to control manganese levels. Hoyt Lakes has previously had problems with manganese in the water supply due to release from lake sediments in late summer. Although increasing the height of the intake valve has reduced manganese from this source (DEIS, p. 4.1-116), this method may not be effective to reduce manganese from upstream mining activities.

Manganese is classified by the Agency for Toxic Substances and Disease Registry ("ATSDR") as a toxic chemical. Ingestion of manganese has been found to cause kidney and urinary tract illnesses, impairments of fertility and sperm damage and nervous system dysfunction. Manganese can cross the blood-brain barrier and can cross the placenta during pregnancy, enabling it to reach a developing fetus. Several studies link manganese ingestion to neurological damage.[45]

Increased aluminum levels in Colby Lake from the PolyMet Project could also pose unacceptable health risks. The DEIS "presumed" that total aluminum levels would not result in dissolved aluminum violations. (*See* DEIS, p. 4.1-51). However, the EPA has expressed concern about increasing aluminum concentrations, based on recent studies showing various health effects related to aluminum.[46] Existing levels of aluminum in Colby Lake exceed Minnesota's chronic water quality standard for aluminum of 125 ug/L. Minn. R. 7050.0222, Subp. 4a(B)(1)(2010). EPA has noted that even with current insufficient data, the modeling results show concentrations in excess of water quality standards.[47]

The CDC's ATSDR toxicological profile states that, in some studies, oral exposure to aluminum has been associated with increased risk of Alzheimer's disease. It is well-established that persons with kidney disease who have difficulty removing aluminum from the body can develop bone disease or neurotoxicity attributable to excess aluminum.[48]

Potential arsenic, iron, manganese and aluminum exceedances in Hoyt Lakes' municipal drinking water pose unacceptable risks of human health effects.

Serious and unacceptable consequences to human health from methylmercury accumulation in fish are described in the next section of text.

b. Methylmercury in Fish

PolyMet Project activities under Section 404 of the Clean Water Act will pose serious and unacceptable impacts by contaminating fish with methylmercury. These impacts will result in significant adverse impacts to fisheries, human health and to piscivorous

[45] ATSDR Manganese Toxicological Profile (CAS#: 7439-96-5), *available at* http://www.atsdr.cdc.gov/toxprofiles/tp151-c3.pdf.
[46] EPA DEIS Detailed Comments, *supra*, pp. 14-15.
[47] EPA DEIS Detailed Comments, *supra*, p. 13.
[48] ATSDR, Aluminum Toxicological Profile, pp. 77-79, *available at* http://www.atsdr.cdc.gov/toxprofiles/tp22-c3.pdf.

wildlife.

Methylmercury is a highly toxic substance that, even in low dosages, is inimical to human health; for example, it attacks the nervous system, the kidneys, the immune system, and the reproductive system and is especially damaging to a developing fetus. The EPA has concluded that exposure to methylmercury can result in a variety of health effects in humans. Children exposed to low concentrations of methylmercury in the womb are at risk for neurodevelopment effects, including lowered performance in fine motor function, language skills, visual-spatial abilities and verbal memory. Elevated mercury levels impact health of animal predators, including otters, mink, snapping turtles, osprey, bald eagles and cormorants.[49]

The PolyMet mine site on the Partridge River is within the St. Louis River Watershed. A comprehensive study was done of the St. Louis River and its estuaries in 2006 by the Minnesota DNR and tribal authorities and is attached as Exhibit G.[50] The St. Louis River Study recognized that mining activities have impacted the St. Louis River in the area below the Partridge River,[51] that almost every fish taken from the St. Louis River was contaminated with mercury sufficient to trigger fish consumption advisories[52] that sulfate concentrations were highest in the middle section of the St. Louis correlated with drainage from areas with mining activities[53] and that sulfate levels were pertinent to mercury methylation. The St. Louis River Study found:

> The relationship between sulfate concentrations in the water column and methylation of mercury has become more clearly identified in recent years. This information should be considered in the context of management decisions that may alter sulfate concentrations in the river. Although total and filtered mercury concentrations were generally low, the positive correlation between mercury concentrations and discharge was significant . . . When sulfate-enhanced mercury methylation rates are considered in conjunction with known concentrations of mercury in fish tissue, it clear that protection of the health of human and aquatic life is dependent upon controlling those factors known to contribute to the bioaccumulation of mercury.[54]

Methylmercury contamination of fish is particularly salient in the St. Louis River fisheries downstream of the PolyMet Project, including the Fond du Lac fisheries. As the EPA pointed out in Comments on the PolyMet DEIS, the Tribe uses a higher fish consumption rate in numeric criteria calculations for water quality standards (60 grams/day compared to 30 grams/day for Minnesota) due to the prevalence of subsistence

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[49] *See* EPA, *Guidance for Implementing the January 2001 Methylmercury Water Quality Criterion* (2009), ("EPA Methylmercury Guidance") pp. 9-10 *available at* http://www.epa.gov/waterscience/criteria/methylmercury/pdf/guidance-final.pdf
[50] MDNR, *A Study of the St. Louis River* (2006), federally funded under F-29-R (P)-25, ("St. Louis River Study"), Exhibit G, *available at* http://files.dnr.state.mn.us/areas/fisheries/duluth/st_louis_river_study.pdf
[51] St. Louis River Study, *supra*, p. 15.
[52] *Id*. pp. 36, 40-41.
[53] *Id*., p. 40.
[54] *Id*., pp. 40-41.

fishing.[55]

The Grand Portage Band of Minnesota Chippewa, whose reservation is located northeast of the Project site, also calculates their EPA-approved water quality standards using a subsistence fish consumption rate (142 grams/day), so any additional mercury (either as direct discharges, or indirectly through the sulfate influence on methylation) to Lake Superior may have indirect impacts on the Grand Portage Band and their subsistence resources due to the bioaccumulation of mercury through the food chain. The DEIS acknowledges that mercury discharged to the Partridge River may eventually end up in Lake Superior.[56]

Increased methylmercury in fish would present both increased health risks and disproportionate and environmentally unjust adverse impacts to tribal subsistence fishers.

c. Aquatic Toxicity and Fisheries

In addition to unacceptable impacts from methylmercury contamination, issuance of a Section 404 permit for the PolyMet Project could impair the quality and quantity of fish from the Partridge River downstream to the St. Louis River as a result of toxic releases of copper, nickel, cobalt and zinc.

The St. Louis River is the largest U.S. tributary to Lake Superior and has long been considered a premier fishery.[57] Prior to 1900 it was a notable commercial fishery as well as a primary source of Ojibwe subsistence fishing.[58] Industrialization and development took a toll on water quality and fish for many years, but by 1979, after an upstream treatment of wastewater, angler interest resumed.[59]

The St. Louis River Study has documented 33 species of fish from minnow to sturgeon, with sport fish including Walleye, Northern Pike, Muskellunge, Smallmouth Bass and Channel Catfish.[60] A study performed by the St. Louis River Citizens Action Committee identified 45 species of fish.[61]

In the 1980's, environmental quality conditions prompted the designation of the lower St. Louis River by the International Joint Commission as an Area of Concern (AOC).[62] The St. Louis River Citizens Action Committee (CAC) completed a Habitat Plan in 2002 with the goal of restoring and protecting habitat in the St. Louis River estuary so that it may

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[55] EPA Detailed DEIS Comments, p. 15.
[56] EPA Detailed DEIS Comments, pp 15-16; *see e.g.* DEIS, p. 4.1-183.
[57] See e.g. *Arrowhead Fly Angler - Duluth Minnesota Fly Fishing Guides Service for Northern Minnesota and Northern Wisconsin*, *available as of Sept. 13, 2010 at* http://www.arrowheadflyangler.com/
[58] MDNR, *The Walleye Sport Fishery of the St. Louis River Estuary*, Investigational Report 412, p. 1 (1991), *available at* http://files.dnr.state.mn.us/publications/fisheries/investigational_reports/412.pdf
[59] *Id*.
[60] St. Louis River Study, *supra*, p. 23.
[61] St. Louis River Citizens Action Comm., *Lower St. Louis River Habitat Plan*, p. 15 (2002)("CAC Habitat Plan"), attached as Exhibit H, *available at* http://www.stlouisriver.org/habitatplan/habitatplan.pdf
[62] St. Louis River Study, *supra*, p. 14.

someday be delisted as an AOC.[63] In its Habitat Plan, the CAC explained the uniqueness and significance of the St. Louis River fisheries:

> The St. Louis River, draining approximately 3,634 square miles of northeastern Minnesota and northwestern Wisconsin, is the major U.S. tributary to Lake Superior—largest and deepest of the Great Lakes. The lower 21 river miles of the St. Louis River include a 12,000-acre freshwater estuary that supports unique ecosystems as well as the largest harbor and international port on the Great Lakes.
>
> The combination of ecosystems within the Lower St. Louis River area—estuarine wetland and aquatic habitats, baymouth bar complex, and surrounding upland forest—are very unusual in Lake Superior, the Upper Midwest, the Great Lakes region, and the world. Great Lakes wetland systems are unique from a global perspective, and the St. Louis River wetlands are the largest such complex on the Lake Superior shore, representing a significant source of productivity for the entire Lake Superior ecosystem. The estuary and its tributaries are unusual in having such a variety of habitat types supporting a large and diverse assemblage of native fish species. The baymouth bars are unusual in the Great Lakes—aside from Minnesota and Wisconsin Points, the only similar examples are Point Pelee and Long Point in Ontario and Long Island-Chequamegon Point in Wisconsin. The plant communities supported by these baymouth bars are endemic to the Great Lakes. The freshwater estuary and baymouth bar systems are virtually absent elsewhere in the interior of North America. In spite of human impacts, the Lower St. Louis River ecosystem is both regionally and globally significant and therefore warrants the consideration presented in this Habitat Plan.[64]

The MDNR's St. Louis River Study noted that the aquatic food chain in the St. Louis River may be more sensitive to pollution toxicity than in other rivers. More pollution-tolerant benthic macroinvertebrates were abundant throughout the River, while more sensitive taxa were only abundant in its upper sections, upstream of areas impacted by mining.[65] In general, the percent of benthic macroinvertebrates in the St. Louis that are pollution-intolerant rather than pollution-tolerant was significantly greater than in other rivers, such as the St. Croix and Wisconsin Rivers.[66]

Metals toxicity to benthic macroinvertebrates from the Partridge River downstream affects an aquatic food chain on which tribal members are dependent, fisheries identified by the International Joint Commission as an area of concern and a fishery ecosystem of regional and international significance.

c. Wildlife Habitat Impairment, Mercury and Sulfates

Wildlife will suffer adverse impacts from destruction and impairment of over 1122 acres

[63] *Id*.
[64] CAC Habitat Plan, *supra*, p. ix, Executive Summary.
[65] St. Louis River Study, *supra*, p. 33
[66] *Id*., p. 39.

of wetlands at the PolyMet mine site. As discussed previously, the mine site provides high quality habitat, is home to various endangered and threatened species and is one of the few remaining corridors for movement of endangered species in the area.

In addition, mercury and sulfate contamination from Section 404 mining activities, including creation of waste rock piles and mine pits in wetlands will also create unacceptable impacts on wildlife. EPA Methylmercury Guidance describes the adverse impacts of mercury contamination on wildlife[67] and the Great Lakes Initiative mercury standards limiting mercury concentrations in water to 0.0013 micrograms per liter (μg/L) are explicitly based on protection of wildlife from bioaccumulation of mercury in the food chain.[68] The Grand Portage Band of Minnesota Chippewa also has wildlife mercury standards to protect fish-eating birds (e.g., bald eagles, kingfishers, mergansers) as well as fish-eating mammals (e.g., otter and mink).[69]

The west pit lake at the PolyMet mine site in the Partridge River watershed is likely to exceed water quality for arsenic, cobalt, copper, nickel and mercury and contain significant sulfate levels. (Polymet DEIS, pp. 4.1-111, 4.1-114 -4.1-115). This pit lake could exceed surface water quality standards for thousands of years, if not in perpetuity. (DEIS, p. 4.1-144; *see also* DEIS app. D, Tribal Positions, pp. 3.39, 4.1-10).

The EPA has expressed concerns in previous mining cases regarding pit lake water quality and impacts of pollution from open pit lakes on waterfowl and wildlife.[70] Aquatic-dependent migratory birds may use the pit lakes as a stopover, exposing wildlife, including endangered species, to contaminants. The EPA has commented in connection with the PolyMet Project that the Endangered Species Act of 1973 ("ESA") mandates all federal departments and agencies to conserve listed species and utilize their authorities in furtherance of the purposes of the ESA. Given the potential for exposure near or at the West Pit, migration potential through the PolyMet Project area should also be considered for endangered species typically using this migration path (e.g., piping plover).[71]

As discussed previously, acid rock drainage from dredge and fill activities, including waste rock piles and mine pits, will increase sulfates downstream in Partridge River and St. Louis River shallows that support wild rice, exceeding Minnesota's wild rice water quality standard of 10 mg/L. Impairment to wild rice will result in a significant adverse impact on wildlife, including mammals as well as migratory birds that are dependant on wild rice for nutrition and habitat.

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[67] EPA Methylmercury Guidance, *supra*, pp. 1, 10.
[68] 40 C.F.R. § 132, Table 4 (2010).
[69] EPA Detailed DEIS Comments, p.16.
[70] See e.g. Ruby Hill Mine Expansion, 70 Fed. Reg. 25566 (EPA May 13, 2005) (EIS No. 20050087 notice); Newmont Gold Mining, South Operations Area Project Amendment, 72 Fed. Reg.72706 (EPA Dec. 21, 2007) (EIS 20070368 notice); Bald Mountain Mine Northern Operations Area Project, 74 Fed. Reg. 50964 (EPA Oct. 2, 2009) (EIS 20080518 notice).
[71] EPA Detailed DEIS Comments, p. 7.

4. Precedent Supports Both EPA's Designation of Waters Affected by the PolyMet Project as ARNI and EPA's Exercise of Section 404(c) Jurisdiction to Veto Any Army Corps Permit Issued for the Project.

Designation of waters affected by the PolyMet project is supported by EPA precedent as well as the extensive factual background detailed previously. The EPA has previously designated as ARNI 15 acres of the Klatt patterned peat bog that would be excavated and backfilled by a residential development,[72]17 acres of vernal pools and seasonal wetlands in Churchill Downs, California,[73] 2.4 acres of submerged aquatic vegetation in the Magothy River,[74] wetlands impacted by 9 acres of fill proposed by a resort in Diablo Grande,[75] 8.8 acres of wetlands and vegetated shallows and a riverine system that would be affected by a dam and reservoir in the Hughes River of West Virginia,[76] 241 acres of forested wetlands in the Hillsborough River potentially impacted by a power line,[77] a wetlands, salt march and mud flats area in Valdez, Alaska potentially impacted by a petroleum transfer facility[78] and 80 acres of wetlands on Point au Fer Island in Louisiana, potentially impacted by levees.[79]

The magnitude -- over 1122 acres of wetlands -- as well as the national and international significance of the water resources affected by the PolyMet project far exceed the levels previously found by the EPA to warrant ARNI designation. The designation of ARNI is neither difficult nor controversial in law.

This ARNI designation is critical to the elevation of concerns regarding the PolyMet Project under the EPA MOA with the Army Corps. ARNI designation would also support exercise of the EPA's authority under Section 404(c) of the Clean Water Act to veto a Section 404 permit due to unacceptable impacts on water quality, fisheries and wildlife.

Unless the scale, scope and impacts on wetlands of the PolyMet Project is dramatically different from *any* of the project alternatives described in the DEIS, EPA precedent and federal case law also support the EPA's exercise of authority to veto any Section 404 permit proposed to be issued by the Army Corps for the PolyMet open pit mine.

EPA has recently focused on the impacts of mining on hunting, fishing, drinking water quality and environmental quality. The EPA has proposed to veto a Section 404 permit for the Spruce No. 1 Surface Mine in West Virginia that would impact over two thousand acres, including several miles of headwater streams.[80] EPA noted that loss of benthic invertebrates could "cause or contribute to unacceptable degradation of this sensitive

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[72] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/KlattBogElevationRequest.pdf
[73] *See* EPA Elevation Request, http://www.epa.gov/wetlands/pdf/ChurchillDownsElevationRequest.pdf
[74] *See* Army Response, http://www.epa.gov/owow/wetlands/pdf/MagothyRiverArmyResponse.pdf
[75] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/DiabloGrandeElevationRequest.pdf follow up to Army Response, http://www.epa.gov/owow/wetlands/pdf/DiabloGrandeEPAFollow-up.pdf
[76] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/HughesRiverElevationRequest.pdf
[77] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/FloridaPowerElevationRequest.pdf
[78] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/Petro-StarElevationRequest.pdf
[79] *See* EPA Elevation Request, http://www.epa.gov/owow/wetlands/pdf/PointAuFerElevationRequest.pdf
[80] Spruce No. 1 Surface Mine, Logan County, WV, 75 Fed. Reg. 16788, 16789 (EPA April 2, 2010)(Proposed Determination) *available at* http://edocket.access.gpo.gov/2010/pdf/2010-7532.pdf

aquatic life and the ecosystem that depends on them"[81] and emphasized the risk of "not only removing the ecosystem functions performed by the impacted areas, but also turning the impacted areas into sources discharging pollutants and degradation into the downstream ecosystem."[82] The EPA also cited past experience with acid mine drainage:

> Applying the lessons of the past, we now know that failure to control mining practices has resulted in persistent environmental degradation in the form of acid mine drainage and other impacts that cost billions to remedy. While the Surface Mining Control and Reclamation Act (SMCRA), the CWA, and other laws have put in place controls addressing some environmental impacts, including acid mine drainage, recent studies and experience point to new environmental and health challenges that were largely unconsidered until more recently. We know the regulatory controls currently in place have not prevented adverse water quality and aquatic habitat impacts from other surface mining operations.[83]

The EPA cited impacts to wildlife and fish, including downstream impacts[84] and environmental justice impacts on nearby residents who may be affected by impacts on subsistence hunting and fishing as well as drinking water.[85] Legal action by the coal company to affirm its permits has been stayed to allow the EPA to complete review of the Spruce No. 1 permit under 404(c).[86]

The EPA has also initiated review of the proposed Big Branch surface mine in Pike County Kentucky under 404(c) due to concerns about unacceptable impacts on the aquatic ecosystem, water quality, fish and wildlife based on potential stream impacts.[87]

Litigation has upheld the EPA's authority to veto Army Corps permits. The Fourth Circuit Court of Appeals reversed a district court decision that had struck down the EPA's veto of a permit for the Ware Creek dam in James City County, Virginia on the grounds that no less environmentally damaging alternative was available.[88] The Court of Appeals cited legislative history, holding that even when there is no alternative available, and vetoing the site means stopping a project entirely, the loss of the 404(c) resource may still be so great as to be "unacceptable" under the Clean Water Act.[89] The construction of

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[81] *Id*., at 16795.
[82] *Id*., at 16798.
[83] *Id*., at 16789.
[84] *Id*., at 16805.
[85] *Id*., at 16806.
[86] *Ohio Valley Envtl. Coalition v. U.S. Army Corps of Eng'rs*, No. 3:05-0784, 3:06-0438 (S.D. W. Va), *which discusses the stay, is available at* http://www.wvsd.uscourts.gov/district/opinions/pdf/order%20granting%20mot%20to%20extend%20stay%204.22.10.pdf.
[87] April 2009 notification to the Corps of Engineers regarding 404(c) review *available at* http://www.epa.gov/owow/wetlands/pdf/BigBranch_15Day_4-28-09.pdf, see generally EPA, Clean Water Act Section 404(c): Veto Authority Recent Actions, http://www.epa.gov/404c/
[88] *James City County, VA v. EPA*, 12 F.3d 1330 (4th Cir. 1993), *writ of cert. denied* 513 U.S. 823, 115 S. Ct. 87 (1994)
[89] *Id*., at 1335.

the Ware Creek dam would have resulted in the loss of 381 acres of vegetated wetlands, 44 acres of open water systems, and 792 acres of adjacent forested uplands habitat.[90]

The Second Circuit Court of Appeals affirmed the EPA's veto of a proposed shopping mall development that would have had an unacceptable impact on 49 acres of forested wetlands at the Sweedens Swamp adjacent near Attleboro, Massachusetts.[91] The project would have resulted in the loss of 32 acres of wetlands, impairing wetland functions even though the developer proposed to recreate wetlands on site.[92] The Court of Appeals affirmed that an area not presently owned by the applicants could be considered a reasonable alternative and that the EPA could consider the availability of other sites at the time when the developer entered the market, not just when the developer applied for the permits.[93]

The EPA's determination to veto a permit for a dam and recreational impoundment affecting hardwood wetlands in the city of Alma, Georgia was affirmed by a federal district court in Georgia, even though the EPA had not opposed the project in previous litigation by environmental advocates.[94] The Georgia district court noted that the permit had been elevated for department level review due to concerns about loss of wetlands[95] and that the threat to 1,400 acres of swamp habitat supported the EPA's conclusions that impacts on wetlands and wildlife were unacceptable.[96] This ruling was not appealed.

Current legal challenges to Section 404(c) authority are on narrow grounds that would not be applicable to the PolyMet Project.[97]

Numerous EPA Section 404(c) vetoes of projects have not been challenged in the courts, including the EPA's 1991 veto of the Two Forks dam in Jefferson and Douglas Counties, Colorado;[98] the EPA's 1990 veto of the Big River dam and impoundment in Rhode

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[90] *Id*., at 1336, 1338 fn 5.
[91] *Bersani v. Robichaud*, 850 F.2d. 36 (2nd Cir. 1988), *writ of cert. denied sub nom Bersani v. U.S.* 489 U.S. 1089, 109 S. Ct. 1556 (1989)
[92] EPA Final Determination, 51 Fed. Reg. 22977 (June 24, 1986), available at http://www.epa.gov/owow/wetlands/pdf/Attleboro404(c)FinalFRN-1986.pdf
[93] *Bersani v. Robichaud*, *supra*, at 46-47, *affirming Bersani v. U.S. EPA*, 674 F. Supp. 405, 417-418 (N.D. NY. 1987).
[94] *Alma v. U.S. EPA*, 744 F. Supp. 1546, 1557 (S.D. Ga. 1990). The National Wildlife Federation had opposed the project and obtained a supplemental EIS in *National Wildlife Federation v. Marsh*, 721 F.2d 767 (11th Cir. 1983).
[95] *Alma v. U.S. EPA*, *supra*, at 1551.
[96] *Id*. at 1565-1566.
[97] The Mingo Logan coal company has filed suit in the District of Columbia to challenge the EPA's authority to invalidate a permit issued several years before, as noted in *Ohio Valley Envtl. Coalition v. U.S. Army Corps of Eng'rs, supra,* and the Board of Mississippi Levee Commissioners has alleged that the Yazoo Pumps flood control project is exempt from veto since it was a federal project authorized by Congress. *Bd. of Miss. Levee Comn'rs v. U.S. EP*A, No. 4:09-CV-81-SA-DAS (N.D. Miss., filed Aug. 11, 2009)(Order on Intervention) *available at* http://scholar.google.com/scholar_case?case=3287261130903310619&hl=en&as_sdt=2&as_vis=1&oi=scholarr
[98] Final Determination Concerning the Two Forks Water Supply Impoundments in Jefferson and Douglas Counties, Co, FRL-3895-3, 56 Fed. Reg. 76, 77 (EPA Jan. 2, 1991)(final determination notice), *available at* http://www.epa.gov/owow/wetlands/pdf/TwoForks404(c)FinalFRN-1991.pdf. See also *Alameda Water & Sanitation Dist. v. Reilly*, 930 F. Supp. 486 (D. Colo. 1996), granting the EPA motion for summary judgment.

Island;[99] the EPA's 1988 veto of a rockplowing project proposed for the Henry Rem Estates potentially affecting 432 acres of wetlands in the Florida Everglades;[100] the EPA's 1985 veto of a dam and impoundments at the Maybank Site at Jehossee Island, South Carolina to prevent direct loss of 30 acres of wetlands and impoundment of 900 acres of tidal marsh;[101] and the EPA's 1981 veto of the use of wetlands to expand a North Miami landfill.[102]

Other projects have been substantially modified as a result of an EPA determination to exercise Section 404(c) authority.[103]

The EPA has already given notice that the current record does not demonstrate that the PolyMet proposal is the least environmentally damaging practicable alternative ("LEDPA") under Section 404.[104]

> EPA believes that the DEIS does not support the Proposed Action as the least environmentally damaging practicable alternative (LEDPA). EPA is concerned that alternatives exist that would have less adverse impacts to the aquatic environment.[105]

The PolyMet Project neither represents the only deposit of copper and other minerals in the State of Minnesota, nor can it be construed as a "water-dependent" activity, requiring the destruction of high value wetlands. In *Sierra Club v. Antwerp*,[106] the Eleventh Circuit Court of Appeals recently overturned an Army Corps Section 404 permit for limestone mining in Florida wetlands, holding that mining activities were not "water dependent" even if a particular mining company seeks to extract minerals from a particular deposit located in a wetlands area.[107] The Court had previously explained in *Sierra Club v. Flowers* that the law presumes that practical, environmentally preferable alternatives exist if the activity proposed for discharge into a wetland is not water-dependent.[108]

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[99] Final Determination Of The U.S. Environmental Protection Agency's Assistant Administrator for Water Pursuant to Section 404(c) of the Clean Water Act Concerning the Proposed Big River Water Supply Impoundment Kent County, Rhode Island, (EPA Mar. 1, 1990) *available at* http://www.epa.gov/owow/wetlands/pdf/BigRiverFD.pdf

[100] See Notice of Final Determination 53 Fed. Reg. 30093 (EPA July 28, 1988)(final determination notice), *available at* http://www.epa.gov/owow/wetlands/pdf/HenryRemEstates404(c)FinalFRN-1988.pdf

[101] Notice of Final Determination, 50 Fed. Reg. 20291 (EPA Aug.10, 1985)(final determination notice) available at http://www.epa.gov/owow/wetlands/pdf/MaybankSite404(c)FinalFRN-1985.pdf

[102] Notice of Final Determination, 46 Fed. Reg. 10203 (EPA Feb. 2, 1981) (final determination notice) *available at* http://www.epa.gov/owow/wetlands/pdf/NorthMiami404(c)FinalFRN-1981.pdf

[103] *See e.g.* Notice of Modification of the March 21, 1988, Russo Development Corporation Section 404(c) Final Determination, 60 Fed. Reg. 47568 (EPA Sept. 13, 1985) (final determination notice) *available at* http://www.epa.gov/owow/wetlands/pdf/RussoCorp404(c)Final-amendedFRN-1995.pdf; Notice of Modification for the M.A. Norden site on August 29, 1994 reducing wetland impacts from 25 to 1.5 acres in 59 Fed. Reg. 46246, 46247 (EPA Sept. 7, 1994)(modification notice), *available at* http://www.epa.gov/owow/wetlands/pdf/NordenCo404(c)Final-amendedFRN-1994.pdf

[104] *See* 40 C.F.R. § 230.10(a)(2010).

[105] EPA Detailed DEIS Comments, *supra*, p. 17

[106] *Sierra Club v. Antwerp*, 362 Fed. Appx. 100 (11th Cir. 2010)

[107] *Id*., at 107.

[108] *Sierra Club v. Flowers*, 526 F. 3d 1353, 1366-1367 (11th Cir. 2008).

This summer, a Florida federal judge temporarily enjoined The Mosaic Company from mining phosphate in Florida wetlands, citing letters written by the regional EPA wetlands chief. The EPA had concluded that both Mosaic and the Army Corps had failed to adequately analyze alternatives to mining wetlands under the Clean Water Act.[109]

CONCLUSION

WaterLegacy appreciates the EPA's careful attention to the PolyMet Project in the environmental review and Section 404 permitting process. The factual materials referenced and attached, practice and policy within the Agency and legal precedent all support the designation of receiving wetlands and other waters for the PolyMet Project as aquatic resources of national importance (ARNI) and the elevation of any proposed Army Corps permit for department level review.

A PolyMet open pit sulfide mining project impacting Partridge River Watershed wetlands and other special water resources under a Section 404 permit would have unacceptable impacts on wetlands, municipal drinking water, fisheries and wildlife. It is suggested, if and when notice for such a Project is reissued, that the EPA should exercise its Section 404(c) veto authority to prevent degradation of wetlands, water resources, habitats and fisheries of national and international importance in violation of the Clean Water Act.

We would welcome the opportunity to discuss these issues and to provide further information, including copies of various references not available on line. Please do not hesitate to contact Paula Maccabee, attorney for WaterLegacy at 651-646-8890 (pmaccabee@visi.com).

Thank you very much for your consideration in this important matter.

Respectfully submitted,

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Enclosures

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[109] See G. Martin, "Federal judge ditches Mosaic Mine permit," BradentonHerald.com (Aug. 1, 2010), *available at* http://www.bradenton.com/2010/08/01/2473255/federal-judge-ditches-mosaic-mine.html