



By FED EX

November 28, 2017

Colonel D. Peter Helmlinger, Division Commander  
South Pacific Division  
U.S. Army Corps of Engineers  
1455 Market Street  
San Francisco, CA 94103-1398

**Re: Request for Government-to-Government Consultation Regarding Clean Water Act  
Section 404 Permit for the Rosemont Open Pit Copper Mine**

Dear Colonel Helmlinger:

We write on behalf of the Tohono O'odham Nation (Nation) to request government-to-government consultation with the South Pacific Division regarding the Clean Water Act Section 404 Permit for the Rosemont Open Pit Copper Mine. The Nation has a deep cultural and spiritual connection to the lands that would be destroyed by the proposed Rosemont Mine. As Art Wilson, a Tohono O'odham Legislative Council member, movingly explained in the documentary film *Ours is the Land*:

Our ancestors roamed in those areas and their bones are buried there and to us we consider those sacred places where our people have fallen and they left this world and went into the spirit world and we are taught not to bother them, to leave them alone.<sup>1</sup>

The Rosemont Mine would devastate this cultural landscape, causing "severe, irreversible, and irretrievable" impacts to the cultural identity of the Nation.<sup>2</sup>

The Los Angeles District issued a final decision in July of 2016 recommending denial of the 404 Permit. "The key CWA 404(b)(1) factors identified by the District that support a permit denial are determinations that the proposed Rosemont Mine will cause or contribute to violations of state water quality standards and significant degradation of waters of the United States,

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<sup>1</sup> *Ours is the Land* is available at <https://vimeo.com/223976575>. This short film was produced by the Nation and depicts in powerful detail the spiritual, cultural and physical connection of the Tohono O'odham people of Arizona to *Ce:wi Duag* or the Santa Rita Mountains, which is imperiled by the proposed creation of the mile-wide, half mile deep Rosemont open pit copper mine.

<sup>2</sup> Final Environmental Impact Statement for the Rosemont Copper Project 1036 (Dec. 2013) [hereinafter FEIS].

including shortfalls in the proposed compensatory mitigation.”<sup>3</sup> The District also concluded that the Habitat Mitigation and Monitoring Plan proposed by Hudbay would not offset the adverse impacts of the mine on aquatic ecosystems. Finally, the district concluded that implementation of the proposed project would be contrary to the public interest. “Among the key public interest concerns are adverse affects to cultural resources and traditional cultural properties important to tribes.”<sup>4</sup> The South Pacific Division is currently reviewing the Los Angeles District’s decision and recommendation.

In our prior letter sent on November 8, 2017, we summarized the Corps’ obligation to engage in consultation with the Nation before a decision is made by the South Pacific Division regarding the 404 Permit for the Rosemont Mine. We also summarized the Nation’s significant concerns with the proposed Rosemont Mine. We expand on each of these points in this letter.

The Corps must engage in government-to-government consultation with the Nation to address new undertakings and elements of the Rosemont Mine that have yet to be considered by the Corps. During the preparation of the FEIS, the Forest Service led the consultation process with tribal nations, but consistently refused to acknowledge the full scope of its authority to regulate the proposed mine, and even deny the permit on unpatented claims, to protect the Nation’s cultural and religious interests. This self-imposed limitation resulted in a truncated consultation under the National Historic Preservation Act (NHPA). Moreover, the Forest Service terminated the consultation in 2013, leaving a gap in the consultation process during the Corps’ Section 404 review. The Corps must consult with the Nation regarding its ongoing review of the permit, including all of the reasons articulated in the Los Angeles District’s decision recommending denial of the permit.

The Corps may not issue a permit without a full analysis of the impacts of the Rosemont Mine on waters of the United States. To date, the Corps has refused to analyze or disclose to the public the effects of mine-driven groundwater drawdown on hydrologically-connected waters of the United States. These impacts fall within the Corps’ regulatory jurisdiction and must be analyzed to comply with the Clean Water Act and reach an informed decision under the National Environmental Policy Act (NEPA). The Corps must therefore prepare a supplemental Environmental Impact Statement (EIS) analyzing the impacts of mine-driven groundwater drawdown. Pursuant to its NEPA regulations, the Corps must provide the public with a draft supplemental EIS and a meaningful opportunity to submit public comments.

The Corps cannot issue a decision approving the Rosemont Mine until it has complied with these procedural obligations. Indeed, there is no need to rush ahead without the requisite analysis as Hudbay has consistently set aside the Rosemont Mine for future development when

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<sup>3</sup> Letter from Colonel Helmlinger, U.S. Army Corps of Engineers, to Patrick Merrin, Hudbay 1 (Dec. 28, 2016) (summarizing Los Angeles District’s decision), attached as Ex. 1 [hereinafter Helmlinger Letter].

<sup>4</sup> *Id.* at 2.

“market conditions [] improve.”<sup>5</sup> The Corps must therefore take a hard look at the full impacts of the Rosemont mine on jurisdictional waters of the United States before it makes any decision.

In addition to these procedural flaws, the Corps must deny the 404 Permit for four substantive reasons. First, the 404 Permit must be denied because the Rosemont Mine will cause significant degradation to waters of the United States. The Los Angeles District determined that the project would contribute to degradation of Outstanding Arizona Waters and, among other things, adversely affect sediment delivery, hydrological functions, surface water quality, and use by wildlife and humans. The mine will also significantly adversely affect the life stages of aquatic life as well as the diversity, productivity, and stability of the aquatic ecosystem.

Second, the Rosemont Mine fails to include all appropriate and practicable measures to minimize potential harm to aquatic ecosystems. Hudbay Minerals Inc. (Hudbay) has submitted multiple Habitat Mitigation and Monitoring Plans (HMMPs), all of which are insufficient to compensate for aquatic resource functions that will be lost as a result of the Rosemont Mine. The most recent HMMP, submitted in September of 2017, is wholly inadequate and will cause even greater harm to the environment than Hudbay’s prior HMMP, which the Los Angeles District found insufficient.

Third, Hudbay has not clearly demonstrated that Rosemont Mine is the least environmentally damaging practicable alternative. The Corps may not, therefore, issue the permit.

Fourth, issuing a 404 Permit would be contrary to the public interest, as recognized by the Los Angeles District. One of the key factors militating against issuance of a permit is the significant, permanent, and adverse impacts of the Rosemont Mine on tribal cultural properties and sacred sites. The mine will also cause substantial impacts to wetlands; violate state water quality standards; adversely affect fish and wildlife; irreversibly impact aesthetic, scenic, and recreational values; burden the federal government’s property rights; and fail to mitigate permanent impacts to the aquatic ecosystem, fish and wildlife, and tribal cultural properties. All of these factors require denial of the 404 Permit as contrary to the public interest.

## **BACKGROUND**

Hudbay proposes to develop an open pit copper mine in a high-functioning, undisturbed landscape just below the ridgeline of the Santa Rita Mountains. Mine operations would disturb approximately 5,431 acres of habitat.<sup>6</sup> Hudbay would excavate approximately 1.2 billion tons of material from the earth through a combination of blasting, drilling, and excavation. These activities would create a mile-wide by half-mile deep mine pit.<sup>7</sup> Hudbay would dispose of waste

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<sup>5</sup> See <http://www.rosemontminetruth.com/hudbays-debt-low-copper-prices-puts-rosemont-on-back-burner/> (last visited Nov. 27, 2017).

<sup>6</sup> Record of Decision Rosemont Copper Project and Amendment of the Coronado Land and Resource Management Plan 17 (June 2017) [hereinafter ROD].

<sup>7</sup> Final Biological and Conference Opinion for the Rosemont Copper Mine 19 [hereinafter 2013 BiOp].

materials on National Forest System Lands in waste rock storage areas and dry stack tailings piles that occupy upper Barrel, Trail, and Wasp Canyons.

The mine would impact high-functioning, unique, and outstanding aquatic resources within the region. Construction of the mine pit and waste piles would destroy approximately 40 acres of waters of the United States, including a largely undisturbed network of streams comprised of up to 154 drainages.<sup>8</sup> These facilities would reduce surface runoff into Barrel Canyon, indirectly impacting an additional 28.4 acres of waters of the United States located downstream from the mine.<sup>9</sup>

Construction of the mine will also result in a pit lake that acts like a hydraulic sink, drawing groundwater into the pit lake into perpetuity.<sup>10</sup> These groundwater resources would then be permanently lost through evaporation.<sup>11</sup> As a result of this process, the mine pit will dewater the regional aquifer, effecting hundreds of acres of hydrologically connected riparian habitat and wetlands in Empire Gulch, Davidson Canyon, Cienega Creek, and around associated seeps and springs. Many of these riparian areas likely qualify as waters of the United States.<sup>12</sup>

In addition to impacts to waters of the United States, the mine would likely violate water quality standards in downstream Outstanding Arizona Waters (OAWs). The State of Arizona designated portions of Davidson Canyon and Cienega Creek as OAWs due to their perennial nature and exceptional ecological and recreational significance.<sup>13</sup> The Rosemont Mine will curtail water inputs (e.g., stormwater runoff and baseflows) to Davidson Canyon, thereby reducing the assimilative capacity and geomorphology of downstream OAWs.<sup>14</sup> Mine-driven dewatering of the regional aquifer will exacerbate these impacts to OAWs. Dewatering will also cause Empire Gulch to transition from a hydriparian to xeriparian corridor,<sup>15</sup> violating Arizona's perennial/wadeable standard.

The EPA repeatedly objected to the project on the grounds that the mine would significantly degrade waters of the United States and violate state water quality standards.<sup>16</sup>

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<sup>8</sup> FEIS at 463.

<sup>9</sup> *Id.*

<sup>10</sup> *Id.* at 339.

<sup>11</sup> *Id.* at 353.

<sup>12</sup> Letter from Jane Diamond, Environmental Protection Agency to Colonel Colloton, U.S. Army (Nov. 7, 2013), attached as Ex. 2 [hereinafter EPA Mitigation Letter].

<sup>13</sup> FEIS at 453; *see also id.* at 411 Fig. 62 (Outstanding Arizona Waters and stock tanks).

<sup>14</sup> Letter from Jared Blumenfeld, EPA Region IX, to Colonel Colloton, U.S. Army Corps of Engineers (Apr. 14, 2015), enclosing EPA Region 9 comments on the Draft Section 401 Water Quality Certification for the Rosemont Copper Project dated February 21, 2014 (Draft 401 Certification), and the Basis for State 401 Certification Decision Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB, 3, attached as Ex. 3 [hereinafter EPA 401 Letter]

<sup>15</sup> FEIS at 528.

<sup>16</sup> *See* EPA 401 Letter, Ex. 3.

Furthermore, EPA repeatedly objected to the mitigation measures proposed by Hudbay, finding they were inadequate to compensate for the adverse effects of the mine.<sup>17</sup>

The Nation objected to the severe, adverse, and permanent impacts of the Rosemont Mine on Traditional Cultural Properties. The Nation documented its spiritual connection to the lands underlying the mine site, including *Ce;wi Duag*.<sup>18</sup> The Tribe repeatedly voiced its concerns that the magnitude of impacts caused by the mine could not be mitigated. Throughout the consultation process, however, the Forest Service took the unfounded position that it lacked the authority to deny mining activities on unpatented lands surrounding the open pit. The Forest Service terminated the consultation process in October of 2013 by signing a Memorandum of Understanding and subsequently signed a Record of Decision on June 6, 2017 approving the Barrel Alternative.

On July 25, 2016, the Los Angeles District issued a final decision recommending denial of the 404 Permit. The District found that the Rosemont Mine would significantly degrade waters of the United States and that Hudbay had failed to adequately mitigate the adverse impacts of the mine on aquatic ecosystems. Furthermore, the district concluded that implementation of the proposed project would be contrary to the public interest. The South Pacific Division is currently reviewing the District's decision recommending denial of the permit.<sup>19</sup>

As part of its review, the South Pacific Division invited Hudbay to respond to the Los Angeles District's denial of the permit.<sup>20</sup> Hudbay submitted a new HMMP in September of 2017.<sup>21</sup> The HMMP proposes to mitigate the direct impacts of the mine on waters of the United States by filling an additional 8.9 acres of waters of the United States along Sonoita Creek. The proposal makes no effort to mitigate the indirect impacts of the Rosemont Mine on waters of the United States. Due to the proposed destruction of Sonoita Creek, Hudbay submitted an addendum to the Arizona Department of Environmental Quality (ADEQ) for its Clean Water Act Section 401 Water Quality Certification. It has yet to request an addendum to its 404 Permit application.

## ANALYSIS

### **I. The Corps Must Consult with the Nation to Comply with the NHPA.**

The Corps should engage in government-to-government consultation with the Nation so that it can reach an informed decision about the severe and irreversible impacts of the Rosemont

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<sup>17</sup> EPA Mitigation Letter, Ex. 2 at 2; *Id.* at Attachment 2 (EPA Letter to Corps Los Angeles District dated January 25, 2013).

<sup>18</sup> Tohono O'odham Nation, Objection to Rosemont Copper Project Final Environmental Impact Statement and Proposed Record of Decision (Feb. 14, 2014), attached as Ex. 4 (hereinafter Nation's Objection).

<sup>19</sup> Helmlinger Letter, Ex. 1.

<sup>20</sup> *Id.*

<sup>21</sup> Final Habitat Mitigation and Monitoring Plan (September 12, 2017) [hereinafter 2017 HMMP].

Mine on sacred properties and sites. The Corps must engage in government-to-government consultation with the Nation to address new undertakings and unconsidered elements of the Rosemont Mine. And the Corps may not defer to the Forest Service's prior consultation with the Nation, which was fundamentally flawed and unilaterally terminated by the Forest Service with the October 22, 2013 Memorandum of Agreement.

Section 106 of the NHPA imposes an obligation on federal agencies to consult with tribal nations *before* a decision is made on a federal undertaking. *See Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 805 (9th Cir. 1999) ("Section 106 of NHPA is a 'stop, look, and listen' provision that requires each federal agency to consider the effects of its programs."). The purpose of consultation with Indian tribes under the NHPA is "to ensure that all types of historic properties and all public interests in such properties are given due consideration." *Te-Moak Tribe v. U.S. Dep't of Interior*, 608 F.3d 592, 609 (9th Cir. 2010). Courts routinely set aside agency decisions that fail to comply with the NHPA and its implementing regulations. *See Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 787 (9th Cir. 2006) (reversing summary judgment in favor of Government, and ordering summary judgment in favor of tribe, in part because it was "undisputed that no consultation or consideration of historical sites occurred").

The Corps should consult with the Nation so that it can reach an informed decision about the impacts of the Rosemont Mine on the public interest, as required by the Clean Water Act. A "[f]ull evaluation of the general public interest requires" the Corps to give "due consideration" to archaeological resources, "including Indian religious or cultural sites." 33 C.F.R. § 320.4(e). This analysis is essential in this case due to the profound and permanent effects of the Rosemont Mine on the Nation, as discussed in greater detail below. Consultation with the Nation ensures that the South Pacific Division is fully informed about the breadth and depth of impacts to the Nation's cultural identity, which warrant denial of the 404 Permit. *See Muckleshoot Indian Tribe*, 177 F.3d at 805 (a federal agency must make a "reasonable and good faith effort" to identify historic properties, assess the effects of the undertaking on any eligible historic properties found, determine whether the effect will be adverse, and avoid or mitigate any adverse effects). Indeed, the Corp's Tribal Consultation Policy recognizes the need for "leader to leader" meetings, which is especially appropriate here given the substantial, and indeed eternal, impacts of the Rosemont Mine on cultural and traditional properties.<sup>22</sup>

The Corps must consult with the Nation regarding new undertakings that have been proposed since the Forest Service terminated consultation in 2013. In particular, Hudbay submitted a HMMP to the Corps in September of 2017 that purports to mitigate the impacts of the Rosemont Mine on waters of the United States, and does so by destroying additional waters of the United States. This is a dubious proposition, and one that is entirely inadequate, as discussed below. It also constitutes a new "undertaking" within the meaning of the NHPA as Hudbay is now requesting a 404 Permit to fill an additional 8.9 acres of waters of the United States. *See* 36 C.F.R. 800.16(y) ("Undertaking means a project, activity, or program . . . requiring a Federal Permit, license, or approval.").

The Corps must also consult with the Nation regarding unconsidered elements of the Rosemont Mine. "[I]f a project has previously satisfied the § 106 process, then nothing would be

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<sup>22</sup> *See* U.S. Army Corps of Engineers Tribal Consultation Policy § 5(c)(3)(2012).

gained by further review if there are no new, unconsidered elements presented by the project.” *McMillan Park Comm. v. Nat’l Capital Planning Comm’n*, 968 F.2d 1283, 1288 (D.C. Cir. 1992). Conversely, consultation is required where there are new, unconsidered elements presented by the project. Here, there are at least three elements of the Rosemont Mine that were not considered in the prior consultation process.

First, during the prior consultation, the Forest Service refused to consider the no action alternative (denying the mining plan of operations), taking the unfounded position that it lacked the authority to deny mining activities on unpatented lands surrounding the open pit. This self-imposed limitation resulted in a truncated review under NEPA and skewed the consultation under the NHPA. There is no dispute the Corps has the authority to deny the permit, and the Los Angeles District recommended denial of the permit based on multiple violations of the Clean Water Act and the Corps’ public interest requirements. The Nation is entitled to a reasonable and good-faith consultation with the Corps on the need to deny the permit for all of the reasons set forth in the Los Angeles District’s decision.

Second, the Nation is entitled to consultation with the Corps regarding alternatives to the Rosemont Mine that were not considered in the prior consultation. *See* 36 C.F.R. § 800.1(c)(the purpose of consultation is to ensure “that a broad range of alternatives may be considered during the planning process for the undertaking.”). As explained in greater detail below, the Corps rejected a number of off-site alternatives to the Rosemont Mine based on an analysis of Augusta Resources’ acquisition of the mine in 2007 and its limited capitalization (\$37 million dollars). Hudbay subsequently acquired the mine in July of 2014 and has a market capitalization of \$1.5 billion. The Corps must consult with the Nation regarding practicable alternatives to the Rosemont Mine, including investment options elsewhere, that reduce impacts to cultural resources.

Third, the Corps must consult with the Nation regarding fundamental changes in the Fish and Wildlife Service’s (FWS) Biological Opinion. In multiple prior drafts of the Biological Opinion, the FWS took the position that the Rosemont Mine would adversely modify critical habitat for the jaguar, a species sacred to the Nation. The FWS reversed course on these findings in its October 30, 2013 Biological Opinion based on an impermissible interpretation of the Endangered Species Act.<sup>23</sup> The FWS thus refused to require any reasonably prudent alternatives to offset the adverse modification of critical habitat on the conservation of the species. Consultation is required to address these unconsidered elements of the project, which would minimize impacts to the Corp’s cultural and religious beliefs.

The Corps may not escape its obligation to consult with the Nation with respect to the 404 Permit by claiming that the Forest Service is the lead federal agency on this project. The Forest Service is not an appropriate lead for consultation because it is laboring under the false impression that it must approve the mine plan of operations. In addition, the Forest Service concluded the consultation process in October of 2013 by signing a Memorandum of Understanding, despite the Nation’s objections. Finally, the Forest Service has already issued a record of decision approving the mine, and thus is not in a position to consult with the Nation *before* a decision is made.

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<sup>23</sup> 2013 BiOp at 146.

On a final note, the South Pacific Division has been in close communication with Hudbay regarding the Los Angeles District's decision recommending denial of the permit. The Division selectively requested Hudbay's opinion on the Los Angeles District's decision and offered to provide the company with advance notice of any forthcoming permit decision.<sup>24</sup> This continuing conversation concerns the Nation as it raises the specter of a biased decision by the Division based on one-sided information, despite the Corps' obligation to consult with the Nation about the significant, adverse, and permanent impacts of the proposed mine on the Nation's cultural, historical, and religious beliefs.

For these reasons, the Nation respectfully requests full, comprehensive consultation with Colonel Helmlinger before any decision is made. This process is necessary to comply with the requirements of the NHPA and the Corps' Tribal Consultation Policy.

## **II. The Corps Must Analyze the Secondary Effects of the Project on Waters of the United States to Comply with the Clean Water Act and NEPA.**

The proposed Rosemont Mine will result in a mile-wide by half-mile deep open pit that would act like a huge groundwater sink. The best available groundwater models demonstrate that this hydraulic sink will dewater the regional aquifer, indirectly impacting hydrologically connected surface waters of the United States. The Corps must undertake a full analysis of these impacts in a supplemental EIS to comply with its obligations under the Clean Water Act and NEPA.

### **A. The Corps Must Evaluate Impacts to Hydrologically Connected Groundwater to Comply with the Clean Water Act.**

The Corps has jurisdiction under the Clean Water Act to regulate impacts to groundwater that are hydrologically connected to surface waters of the United States. The best available data establishes a connection between the regional aquifer underlying the Rosemont Mine and surface flows along Empire Gulch, Davidson Canyon, Cienega Creek, and multiple seeps, springs, and wetlands in the area. At least a subset of these riparian areas likely qualifies as waters of the United States. Accordingly, the Corps must fully analyze the indirect effects of the Rosemont Mine on these jurisdictional waters of the United States.

#### **i. The Corps Must Regulate Impacts to Hydrologically Connected Groundwater.**

Congress enacted the Clean Water Act "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a); *see also* 40 C.F.R. § 230.1. Section 404 of the act prohibits the discharge of dredged or fill material into waters of the United States without a permit from Corps. *See* 33 U.S.C. § 1344(a). The 404(b)(1) Guidelines prohibit the Corps from issuing a permit if it "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. § 230.10(c).

Multiple courts have held that the Clean Water Act extends federal jurisdiction to impacts on groundwaters that are hydrologically connected to surface waters of the United States. *See*,

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<sup>24</sup> Helmlinger Letter, Ex. 1 at 1.



*e.g.*, *Hawai'i Wildlife Fund v. Cty. of Maui*, 24 F. Supp. 3d 980, 995 (D. Haw. 2014) (inferring “that Congress sought to include sufficiently ‘confined and discrete’ groundwater conduits as ‘point sources’ under the Act”); *Nw. Envtl. Def. Ctr. v. Grabhorn, Inc.*, No. CV–08–548–ST, 2009 WL 3672895, at \*11 (D. Or. Oct. 30, 2009) (concluding, in light of the EPA’s regulatory pronouncements, that “the CWA covers discharges to navigable surface waters via hydrologically connected groundwater”); *Idaho Rural Council v. Bosma*, 143 F.Supp.2d 1169, 1180 (D. Idaho 2001) (finding that “the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States”); *Wash. Wilderness Coal. v. Hecla Mining Co.*, 870 F. Supp. 983, 990 (E.D. Wash. 1994) (reasoning that “since the goal of the CWA is to protect the quality of surface waters, any pollutant which enters such waters, whether directly or through groundwater, is subject to regulation by NPDES permit”); *Yadkin Riverkeeper, Inc. v. Duke Energy Carolinas, LLC*, 141 F. Supp. 3d 428, 444 (M.D.N.C. 2015) (“affirming CWA jurisdiction over the discharge of pollutants to navigable surface waters via hydrologically connected groundwater, which serves as a conduit between the point source and the navigable waters.”); *Hernandez v. Esso Standard Oil Co. (P.R.)*, 599 F.Supp.2d 175, 181 (D.P.R. 2009) (holding that “the CWA extends federal jurisdiction over groundwater that is hydrologically connected to surface waters that are themselves waters of the United States”); *Williams Pipe Line Co. v. Bayer Corp.*, 964 F. Supp. 1300, 1319 (S.D. Iowa 1997) (observing that “[t]he majority of courts have held that groundwaters that are hydrologically connected to surface waters are regulated waters of the United States, and that unpermitted discharges into such groundwaters are prohibited under section 1311”); *Sierra Club v. Colorado Refining Co.*, 838 F.Supp. 1428 (D. Colo. 1993) (“discharge of any pollutant into ‘navigable waters’ includes such discharge which reaches ‘navigable waters’ through groundwater”). These cases stand for the proposition that the Corps can and must regulate the discharge of fill material that degrades surface waters of the United States via hydrologically connected groundwater.

Before issuing a 404 permit, the Corps must determine whether groundwaters are hydrologically connected to surface waters and if so, whether impacts to those groundwaters from the discharge of fill material comply with the Clean Water Act. For example, in *Town of Norfolk v. United States Army Corps of Engineers*, 968 F.2d 1438 (1st Cir. 1992), the court held that “[a]lthough other courts have questioned whether the term ‘waters of the United States’ should include groundwaters connected to surface waters—we agree with the Corps that since such a determination ultimately involves an ecological judgment about the relationship between surface waters and groundwaters, it should be left in the first instance to the discretion of the EPA and the Corps.” *Id.* at 1451 (citations omitted).

The 404(b)(1) Guidelines confirm the Corps’ duty to consider the indirect effects of a project on hydrologically connected groundwater. Section 230.11 requires the Corps to analyze “the potential short-term or long-term effects of a proposed discharge of dredged or fill material,” including secondary (indirect) effects. *Id.* § 230.11. Secondary effects are defined as “effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material.” *Id.* § 230.11(h)(1). Dewatering of a groundwater aquifer that impacts hydrologically connected surface waters of the United States meets the definition of secondary or indirect effects. *See, e.g., Riverside Irr. Dist. v. Andrews*, 758 F.2d 508, 512 (10th Cir. 1985) (“[T]he depletion of water is an indirect effect of

the discharge, in that it results from the increased consumptive use of water facilitated by the discharge.”).

Impacts to groundwater are not categorically excluded from regulation under Section 404 of the Clean Water Act. Some courts have declined to exercise jurisdiction over hydrologically connected groundwater claims “under the theory that the groundwater is not *itself* ‘water of the United States.’” *Hawai’i Wildlife Fund*, 24 F.Supp.3d at 996 (pondering that the split in authority “may largely flow from a lack of clarity by courts as to whether they are determining that groundwater itself may or may not be regulated under the Clean Water Act or are determining that groundwater may or may not be regulated when it serves as a conduit to water that is indeed regulated”); *see, e.g., Cape Fear River Watch v. Duke Energy Progress, Inc.*, 25 F.Supp.3d 798, 810 (E.D.N.C. 2014); *Umatilla*, 962 F. Supp. at 1320. But the relevant issue is not whether groundwater itself qualifies as a water of the United States; rather, the issue is whether impacts to groundwater adversely affect hydrologically connected surface waters of the United States and thus must be regulated under the Clean Water Act.

Other courts have reasoned that Congress decided not to attempt the general regulation of discharges to groundwater when it enacted the Clean Water Act. *See Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 965–66 (7th Cir. 1994). But “the decision not to comprehensively regulate groundwater as part of the [Clean Water Act] does not require the conclusion that Congress intended to exempt groundwater from all regulation, particularly when the introduction of pollutants into the groundwater adversely affects adjoining river surface water.” *Hernandez*, 599 F. Supp. 2d at 181. Indeed, excluding impacts to hydrologically connected groundwater leads to absurd results, as persuasively explained by one court:

[I]t would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater.

*N. Cal. River Watch v. Mercer Fraser Co.*, No. C–04–4620 SC, 2005 WL 2122052, at \*2 (N.D. Cal. Sept. 1, 2005). The same logic applies to the discharge of fill material that impacts surface waters of the United States, whether those impacts occur directly or indirectly via hydrologically connected groundwater. Indeed, given that the goal of the Clean Water Act is to protect the quality of the nation’s waters, the Corps must analyze impacts to groundwater where those impacts indirectly result in an adverse effect to surface waters of the United States.

ii. The Best Available Data Establishes a Hydrologic Connection Between the Regional Aquifer and Surface Waters of the United States.

There is no clear test for determining whether groundwaters are hydrologically connected to surface waters of the United States. Rather, this is an “ecological judgment” that must be made based on the available evidence in the record. *Town of Norfolk*, 968 F.2d at 1451. Here, multiple lines of evidence establish a hydrological connection between the regional aquifer and Empire Gulch, Davidson Canyon, Cienega Creek, and seeps, springs and wetlands in the area.

At the most fundamental level, the persistence of these streams, seeps, springs, and wetlands “suggests there is some hydraulic connection to a larger regional source of water.”<sup>25</sup> For example, the presence of the surface flows along upper Empire Gulch, in an area where most drainages at similar elevations are ephemeral without spring flow, “suggests there is indeed a unique connection to the regional aquifer at this location,” as recognized by Hudbay’s own contractor.<sup>26</sup> Likewise, experts have recognized that the shallow alluvial aquifer supporting surface flows along Cienega Creek “likely is recharged by multiple sources of water, including a hydraulic connection with the regional aquifer and periodic recharge by storm flows.”<sup>27</sup> Long-term observations confirm a hydrological connection between the regional aquifer and multiple springs and seeps in the area. The Forest Service monitored 23 springs over several years and different seasons, concluding that “10 of these were found to be perennial springs likely tied to the regional aquifer.”<sup>28</sup>

Isotopic testing of water samples further establishes the presence of a hydrological connection between surface flows and the regional aquifer for these streams, seeps, and springs. “[I]sotopic signatures suggest – like many of the water sources in the area – that a mix of both regional and local water sources supports Upper Empire Gulch Springs.”<sup>29</sup> The same holds true for Davidson Canyon, where recent natural tracer studies demonstrate that baseflows contain a mixture of winter and summer recharge, as well as a mixture of old and young water.<sup>30</sup> These results further establish a connection between baseflows along Davidson Canyon and the regional aquifer. Finally, isotopic tests for seeps and springs in the area also “suggest a variety of water sources from both the regional aquifer and more localized sources,” further confirming a hydrological connection.<sup>31</sup> In fact, “Questa Spring exhibited a signature that suggests a strong regional source of water.”<sup>32</sup>

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<sup>25</sup> Supplemental Information Report Rosemont Copper Project 68 (Rev. June 2015) [hereinafter June SIR].

<sup>26</sup> *Id.* at 71

<sup>27</sup> Amended Final Reinitiated Biological and Conference Opinion for the Rosemont Copper Mine, Pima County, Arizona (April 28, 2016) at 272 [hereinafter Am. BiOp]. In addition to the impacts of groundwater drawdown from the open pit, Cienega Creek is also impacted by the reduction in contributing surface flows from upstream tributaries like Empire Gulch. *Id.* These flow losses would then propagate downstream through the alluvial system, further establishing the indirect effects of groundwater drawdown on surface waters of the United States.

<sup>28</sup> FEIS at 492.

<sup>29</sup> June SIR at 71; *see also* Letter from Dr. Jennifer McIntosh to Kerwin Dewberry (June 1, 2017), attached as Ex. 5.

<sup>30</sup> Letter from Huckleberry, C.H. to Colonel Helmlinger, Attachment 5 at 1-2 (June 6, 2017).

<sup>31</sup> FEIS at 493. *See also* Tetra Tech, 2010, Davidson Canyon hydrogeologic conceptual model and assessment of spring impacts, Rosemont Copper Project; unpublished report prepared for Rosemont Copper Company, July 2010 (documenting wells and springs in the upper reaches of Davidson Canyon with isotopic values indicating that winter recharge from precipitation is a significant source of water; this suggests that the regional aquifer is a significant component of the surface flows); Letter from Pima County Administrator’s Office to Robert Scalamera, Project Manager, Arizona Department of Environmental Quality (ADEQ) (April 4, 2014).

<sup>32</sup> FEIS at 493.

Powell *et al.* (2014) quantified the relationship between surface flows along Davidson Canyon and groundwater levels.<sup>33</sup> They modeled the depth of water in wells, baseflow and total length of streamflows at two sites along Cienega Creek and Davidson Canyon. The results of this statistical analysis “provide very convincing evidence” of hydrological connectivity between Davidson Canyon, Cienega Creek, and the regional aquifer.<sup>34</sup>

By contrast, there is no data clearly ruling out a hydrological connection between the regional aquifer and upper Empire Gulch, Cienega Creek, Davidson Canyon, or numerous seeps, springs, and wetlands in the area.<sup>35</sup> The FEIS reasoned that Davidson Canyon may not be connected to the regional aquifer based on various assumptions made by Tetra Tech in 2010.<sup>36</sup> But Powell *et al.* (2014) demonstrated the clear errors in this analysis.<sup>37</sup> Furthermore, the FEIS did not consider new isotopic tracer samples establishing connectivity between Davidson Canyon and the regional aquifer.<sup>38</sup>

iii. The Rosemont Mine Will Dewater the Regional Aquifer, Impacting Hydrologically Connected Surface Waters of the United States.

The Forest Service developed and refined three groundwater models to assess the impacts of the open pit on surface and subsurface flows downstream from the mine. These “groundwater models remain the best available science for predicting theoretical impacts to a complex hydrological system.”<sup>39</sup>

All of the models demonstrate that the open pit will deplete surface flows along Empire Gulch, negatively impacting associated wetlands and riparian habitat.<sup>40</sup> The best-fit modeling scenarios predict a shift from perennial to intermittent in Empire Gulch between 50 to 300 years

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<sup>33</sup> Powell, B., *et al.* Impacts of the Rosemont Mine on Hydrology and Threatened and Endangered Species of the Cienega Creek Natural Preserve (July 14, 2014).

<sup>34</sup> *Id.* at 11. Additionally, the work of Montgomery and Associates (2010) supports a connection to the regional aquifer in lower Davidson Canyon. See Montgomery and Associates Inc. 2010. Revised report: Groundwater flow modeling conducted for simulation of proposed Rosemont pit dewatering and post-closure, Vol. 1: Text and tables. Prepared for Rosemont Copper. Tucson, Arizona. The model produced results for both discharge and streamflow length that approximately matches past observations of flows and the extent of the Davidson perennial reach. If the regional aquifer was disconnected from the perennial reach, or so far below it that it does not impact surface flows, then one would expect that to be reflected in the model simulation showing a dry reach. It does not, confirming the connectivity between the regional aquifer and lower Davidson Canyon.

<sup>35</sup> Tetra Tech, 2010, Davidson Canyon hydrogeologic conceptual model and assessment of spring impacts, Rosemont Copper Project; unpublished report prepared for Rosemont Copper Company, July 2010.

<sup>36</sup> FEIS at 536.

<sup>37</sup> Powell *et al.* (2014).

<sup>38</sup> See Letter from Huckleberry, C.H. to Colonel Helmlinger, Attachment 5 at 1-2 (June 6, 2017); see also McIntosh Letter, Ex. 5.

<sup>39</sup> June SIR at 60.

<sup>40</sup> FEIS at 528.

after mine closure. The worst-case scenarios have this shift occurring as early as 20 years after mine closure. Ultimately, Empire Gulch will transition from a perennial to ephemeral spring, losing all or most of its pools and riparian vegetation.<sup>41</sup> Thus, while “[a]n important question for [Empire Gulch] is how early predicted effects could occur,”<sup>42</sup> the level of drawdown is “within the ability of the models to accurately predict.”<sup>43</sup>

The groundwater models also predict impacts to surface flows along Cienega Creek caused by mine-driven groundwater drawdown, especially when considered in combination with the lack of contributing flow from upper Empire Gulch and the exacerbating impacts of climate change. Currently, dry conditions only occur 3 days per year along Cienega Creek, and low-flow conditions only occur 4 days per year.<sup>44</sup> Near term impacts from the mine (within 50-years), however, could result in 141 low-flow days per year, nearly half the time. Long-term impacts are even more severe, potentially leading to a dry stream 351 days per year.<sup>45</sup> When these indirect effects are superimposed on top of climate change and reduced flows from upper Empire Gulch, the mine drawdown changes flow status from perennial to intermittent for at least two reaches of Cienega Creek, totaling 1.1 miles of perennial stream that supports at least 20 pools.<sup>46</sup> As discussed in greater detail below, these drawdowns will significantly impair the aquatic ecosystem.

Groundwater impacts to Davidson Canyon also would be noticeable, significant, and adverse. In the near term, the highest estimates predict that groundwater drawdown could likely cause widespread absence of surface flows for large portions of the year.<sup>47</sup> For example, Dr. Myers estimated the potential reduction in discharge as a result of drawdown in the regional aquifer to be 6.4 percent.<sup>48</sup> The best fit models over the longer term corroborate these impacts, concluding that there would be noticeable reductions in stream sections.<sup>49</sup>

There is a high probability that groundwater drawdown will severely impair 10 springs within the analysis area (in addition to seven springs directly impacted by the footprint of the mine).<sup>50</sup> An additional 59 springs could be impacted by reductions in groundwater flows as they lie within the area expected to see groundwater drawdown of at least five feet.<sup>51</sup> Riparian habitats adjacent to these springs would be adversely impacted with similar degrees of certainty.<sup>52</sup>

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<sup>41</sup> June SIR at 140. *See also id.* at 61 (Table 6. Summary of stream flow analysis in FEIS).

<sup>42</sup> *Id.* at 131.

<sup>43</sup> FEIS at 528.

<sup>44</sup> FEIS at 531.

<sup>45</sup> *Id.* at 532.

<sup>46</sup> June SIR at 139.

<sup>47</sup> FEIS at 537.

<sup>48</sup> *Id.* at 355.

<sup>49</sup> *Id.* at 537.

<sup>50</sup> *Id.* at 562.

<sup>51</sup> *Id.*

<sup>52</sup> *Id.*

The Corps must consider the impacts of the open pit on the regional aquifer because they adversely affect surface waters of the United States. *See Mingo Logan Coal Co. Inc. v. U.S. Envtl. Prot. Agency*, 70 F. Supp. 3d 151, 178–79 (D.D.C. 2014) (An agency’s analysis of secondary effects “should not be limited in geographic scope as long as it can connect the identified adverse effects to the upstream discharge.”).

Multiple federal agencies have relied on the existing groundwater models to assess the indirect effects of the mine on aquatic ecosystems. EPA concluded that “the drawdown at Upper Empire Gulch Spring is within the accuracy of the models to predict, and therefore we believe impacts to stream flows and wetlands from drawdown within Empire Gulch are reasonably certain and will be significant.”<sup>53</sup> EPA also believed there was a “high potential” for many other additional waters of the United States, including Cienega Creek, to be adversely impacted by mine pit drawdown.<sup>54</sup>

Likewise, FWS relied on the 95<sup>th</sup> percentile model results in its analysis of endangered species and critical habitat, lending further support to the credibility of the models. “Our analyses of the effects of the proposed action will therefore rely primarily on the 95<sup>th</sup> percentile analyses from the May 2015 [Biological Assessment], which reflect a reasonable certainty that the effects will occur.”<sup>55</sup> FWS believed this approach was appropriate “because of the irreversibility of the proposed action’s possible effects at the higher end of the 95<sup>th</sup> percentile analyses.” *Id.* at 31.

The Corps may not forego an analysis of the indirect effects to waters of the United States on the grounds that it has not delineated all of the downstream waters of the United States. The EPA estimated “the presence of tens to hundreds of acres of jurisdictional waters/wetlands in the assessment area likely to be impacted by groundwater drawdown.”<sup>56</sup> The Corps has completed jurisdictional determinations for the mine and Barrel Canyon; it has the tools to complete similar determinations for the assessment area, as urged by the EPA. These preliminary determinations will enable the Corps to assess the full scope of indirect impacts to waters of the United States, as required by the Clean Water Act.

In sum, the available models accurately predict the impacts of mine-driven groundwater drawdown on surface flows, and all forecast that the impacts of groundwater drawdown will increase over time. The Corps must assess these impacts to both determine whether the Rosemont Mine will significantly degrade waters of the United States and whether these adverse effects can be adequately mitigated. If the Corps does not undertake this analysis, it must deny the permit for lack of sufficient information regarding a crucial aspect of the permitting decision – indirect effects to waters of the United States. *See* 40 C.F.R. § 230.12(a)(iv).

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<sup>53</sup> EPA Mitigation Letter, Ex. 2 Attachment 1 at 5.

<sup>54</sup> *Id.*

<sup>55</sup> Am. BiOp at 30.

<sup>56</sup> Letter from Jane Diamond, Environmental Protection Agency to Colonel Colloton, U.S. Army (Nov. 7, 2013), Attachment at 4 n.6.

**B. The Corps Must Analyze Indirect Effects to Waters of the United States to Reach an Informed Decision Under NEPA.**

The Corps must prepare a supplement EIS analyzing the full impacts of the mine on jurisdictional waters of the United States. These impacts are reasonably foreseeable, significant, and essential to an informed decision under NEPA.

NEPA requires agencies to evaluate not just the direct effects of an agency action but also those indirect effects that “are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Indirect effects are “reasonably foreseeable” where there is “a reasonably close causal relationship” between the agency action and the indirect effect. *Dept. of Trans. v. Public Citizen*, 541 U.S. 752, 767 (2004).

Here, the impacts of the open pit on surface waters of the United States are reasonably foreseeable. There is no dispute the open pit will dewater the regional aquifer.<sup>57</sup> The best available data, summarized above, establishes a “reasonably close causal relationship” between impacts to the regional aquifer and subsequent impacts to surface waters of the United States. *Public Citizen*, 541 U.S. at 767. While these indirect impacts to surface waters will take place “later in time” and at a “farther removed distance,” they are within the calibration of the models and thus must be analyzed by the Corps. *See City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975) (“we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as ‘crystal ball inquiry.’”).

The indirect effects of the open pit are significant, further warranting a thorough analysis under NEPA. *See* 40 C.F.R. § 1502.2(b) (“[i]mpacts shall be discussed in proportion to their significance.”). The Los Angeles District recommended denial of the permit due to the significant adverse effects of the Rosemont Mine on surface waters of the United States. Those direct impacts are compounded by the indirect effects to surface waters caused by dewatering of the regional aquifer. As the EPA emphasized, groundwater drawdown will indirectly impact up to 70 springs, an additional 39 riparian areas, and up to 1,071 acres of riparian vegetation along Empire Gulch.<sup>58</sup> Subsets of these riparian areas contain jurisdictional wetlands and other waters of the United States. Unless and until the Corps analyzes these impacts, it may not conclude the Rosemont Mine does not significantly degrade waters of the United States. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1987) (agencies must assure that “the adverse environmental effects of the proposed action are adequately identified and evaluated”).

In addition, the Corps must undertake an analysis of indirect effects to waters of the United States so that it can evaluate whether these impacts can be mitigated, as required by NEPA. *See South Fork Band Council of W. Shoshone of Nev. v. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009) (“An essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective.”).

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<sup>57</sup> During active mining, the pit will cause significant losses to recharge of groundwater between 18,000-26,000 acre-feet, or about 900-1300 acre-feet annually. Following mine closure, the pit lake will continue to divert, capture and evaporate 35-127 acre-feet of mountain-front groundwater recharge. *Id.* at 3.

<sup>58</sup> *Id.* at 4.

The mitigation measures proposed by Hudbay fail to discuss indirect effects to waters of the United States, and thus necessarily fail to satisfy NEPA's requirements. *See Ctr. for Biological Diversity v. United States Bureau of Land Mgmt.*, 2017 WL 3667700, at \*14 (D. Nev. Aug. 23, 2017) (finding analysis of mitigation measures inadequate because agency failed to consider how it "would replace or restore wetlands impacted by the project (or even whether compensating for thousands of acres of destroyed wetlands is possible in the first place).").

Finally, an analysis of indirect effects to waters of the United States is central to the Corps' public interest review. As discussed below, 33 C.F.R. § 320.4(a) requires the Corps to consider "the probable impacts" of the proposed Rosemont Copper mine on "[a]ll factors which may be relevant to the proposal." Indirect effects to jurisdictional waters of the United States fall within this inquiry, and thus must be analyzed to reach an informed decision under NEPA.

The Corps may not rely on the Forest Service's prior preparation of an EIS to satisfy the Corps' obligations under NEPA. In the FEIS, the Forest Service analyzed direct impacts to waters of the United States and a subset of indirect effects caused by reduced surface runoff from the mine. But the Forest Service refused to analyze impacts caused by dewatering of the regional aquifer on waters of the United States, essentially claiming the Corps would conduct its own independent analysis of this issue.<sup>59</sup> The Forest Service also refused to propose, let alone consider, mitigation measures to offset indirect effects to waters of the United States along Empire Gulch, Cienega Creek, and any other areas beyond National Forest System Lands.<sup>60</sup> These glaring holes in the analysis must be addressed by the Corps in a supplemental EIS before any decision is made. *See Robertson*, 490 U.S. at 349 (The EIS requirement "ensures that important effects will not be overlooked or underestimated only to be discovered after resources have been committed or the die otherwise cast."); *see also Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983) (requiring "that the agency take a 'hard look' at the environmental consequences *before taking a major action.*") (emphasis added).

The Corps must engage the public in the preparation of a supplemental EIS that thoroughly analyzes the impacts of mine-driven groundwater drawdown. *See* 33 C.F.R. § 230.13(b) ("A supplement to a final EIS should be prepared and filed first as a draft supplement and then as a final supplement"). This public process "permits the public and other government agencies to react to the effects of a proposed action at a meaningful time" and "ensures that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 371 (1989).

In sum, to comply with NEPA and the 404(b)(1) Guidelines, the Corps must prepare a supplemental EIS that analyzes impacts to jurisdictional waters of the United States. The Corps must provide the public with a draft version of this supplemental EIS and a meaningful opportunity to provide comments.

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<sup>59</sup> FEIS at 496.

<sup>60</sup> *Id.* at 546. According to the FEIS: "[T]he Forest Service does not have authority to require mitigations for surface resources beyond the boundaries of the Forest Service, such as those requested by the objectors."<sup>60</sup> The Corps faces no such jurisdictional constraint and must analyze mitigation measures to offset the indirect effects of the mine on jurisdictional waters of the United States.



### **III. The Corps Must Deny the Permit Because The Rosemont Mine Will Cause Significant Degradation to Waters of the United States.**

The 404(b)(1) Guidelines prohibit the discharge of fill material which result in significant degradation to waters of the United States. 40 C.F.R. § 230.10(c). A discharge is deemed to contribute to significant degradation if it results, either individually or collectively, in significant adverse effects on the life stages of aquatic life and other wildlife dependent on aquatic ecosystems or the diversity, productivity, and stability of the aquatic ecosystem. 40 C.F.R. § 230.10(c)(2)-(3).

Here, the Rosemont Mine will discharge fill material into waters of the United States through the construction of a mine pit and associated waste rock piles and tailings storage facilities.<sup>61</sup> These facilities will permanently destroy or degrade aquatic habitat that is crucial to the survival of multiple aquatic-dependent endangered species. They will also precipitate an ecological regime shift, severely impacting hundreds of acres of unique and high-functioning riparian habitats. These significant adverse effects require denial of the permit.

#### **A. The Rosemont Mine Will Cause Significant Adverse Effects to Aquatic Life and Wildlife Dependent on Aquatic Ecosystems.**

The Rosemont Mine will impact multiple aquatic obligate species, including threatened and endangered species, causing “impairment or destruction of habitat to which these species are limited.” 40 C.F.R. § 230.30(b)(2). The ecosystem cannot afford these losses. The Corps must therefore deny the permit due to the “[s]ignificantly adverse effects of the discharge of pollutants on life stages of aquatic life and other wildlife dependent on aquatic ecosystems.” 40 C.F.R. § 230.10(c)(2).

The Rosemont Mine will adversely affect the endangered Chiricahua leopard frog, including meta-sites crucial to the species. Physical construction and operation of the mine will destroy sites that support the species, including the Lower Stock Tank site.<sup>62</sup> Mine-driven groundwater drawdown will “will permanently remove the longest standing and most prolific site occupied by the Chiricahua leopard frog in Las Cienegas NCA and likely within [Recovery Unit 2] for the frog” – the Empire Spring source population.<sup>63</sup> This population serves an “important disease-buffering role” by providing frogs infected with the skin fungus *Batrachochytrium dendrobatidis* to persist.<sup>64</sup> Loss of Empire Gulch will have dire consequences

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<sup>61</sup> Constructing the mine pit is equivalent to “the building of any structure, infrastructure, or impoundment requiring rock, sand, dirt, or other material for its construction” in waters of the United States, and thus constitutes a discharge of fill material under the Corps’ regulations. 33 C.F.R. § 323.2(f). Likewise, the “[p]lacement” of tailings and waste material into jurisdictional waters adjacent to the mine pit constitutes a discharge of fill material. *Id.*

<sup>62</sup> 2013 BiOp at 214-15.

<sup>63</sup> Am. BiOp at 143-44, 150

<sup>64</sup> *Id.* at 188. *Batrachochytrium dendrobatidis* considered the greatest threat to the survival and recovery of the Chiricahua leopard frog. 2013 BiOp at 200-201.

for the conservation of the species, which depends on the existence of “at least one isolated and robust population in each [Recovery Unit],” an outcome that will no longer be attainable for Recovery Unit 2.<sup>65</sup>

In addition to the Chiricahua leopard frog, the Rosemont Mine will affect three aquatic obligate species protected by the Endangered Species Act. First, the mine will adversely affect a “high priority” population of Gila chub in Cienega Creek.<sup>66</sup> The Gila chub depends on surface flows year-round, especially during the crucial dry season in May and June. Cienega Creek Reach 7, however, would transition from perennial to intermittent in dry months, eliminating this reach of critical habitat.<sup>67</sup> These adverse impacts presents a “problematic picture” for the chub,<sup>68</sup> a species already “likely to become extinct throughout all or a significant portion of its range.”<sup>69</sup>

Second, the mine will adversely affect the only extant population of Gila topminnow on public lands – the last (albeit small) remaining population along Cienega Creek.<sup>70</sup> The impacts of groundwater drawdown are more severe for this species than the Gila chub due to the topminnow’s dependence on deeper pools, especially those along upper Cienega Creek.<sup>71</sup> By dewatering these pools, the Rosemont Mine will adversely affect the species.<sup>72</sup> FWS avoided a jeopardy conclusion by relying on the conservation measures at Sonoita Creek, which it deemed “essential to partially offset expected effects to Gila topminnow and its habitat.”<sup>73</sup> The topminnow has yet, however, to be successfully reestablished at Sonoita Creek Ranch, calling into question FWS’s reliance on this essential conservation measure and potentially triggering a jeopardy finding that would foreclose issuance of the permit. *See* 40 C.F.R. § 230.10(b)(3).

Third, the mine will adversely affect desert pupfish that rely on habitat in upper Cienega Creek for their survival. Groundwater drawdown will negatively impact many components of the upper watershed and will reduce the volume of surface water at Cieneguita Wetlands by sixty-seven percent, significantly reducing the habitat for the desert pupfish and adversely affecting the species.<sup>74</sup>

The loss of all of these species will have a significant impact on the northern Mexican garter snake, which preys upon ranid frogs (Chiricahua and lowland leopard frogs) and fish (Gila chub, desert pupfish, Gila topminnow, and longfin dace).<sup>75</sup> The complete loss of the Chiricahua leopard population at Empire Gulch will “place significant nutritional strain on northern Mexican garter snakes and weaken the functionality of the habitat for recovery as a whole for northern

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<sup>65</sup> Am. BiOp at 140.

<sup>66</sup> Am. BiOp at 75. Of the five extant populations of Gila chub within the Santa Cruz watershed, only the Cienega creek population is considered stable-secure. *Id.* at 176.

<sup>67</sup> *Id.* at 86.

<sup>68</sup> *Id.* at 86.

<sup>69</sup> *Id.* at 72.

<sup>70</sup> *Id.* at 110.

<sup>71</sup> *Id.* at 112.

<sup>72</sup> *Id.* at 115.

<sup>73</sup> *Id.* at 117.

<sup>74</sup> *Id.* at 134.

<sup>75</sup> *Id.* at 181.

Mexican garter snakes, in perpetuity.”<sup>76</sup> Furthermore, there will be a loss of lentic habitats around seeps, springs, and stock tanks impacted by groundwater drawdown.<sup>77</sup>

The mine will also significantly impact the Huachuca water umbel, an aquatic plant that is restricted to cienegas, streams, and springs with permanently wet soils.<sup>78</sup> The Cienega creek subwatershed is crucial to the sustainability of the umbel as it supports roughly 12 percent of the species’ remaining plant material, is centrally located, and boasts significant genetic variability.<sup>79</sup> Groundwater drawdown will substantially decrease surface pool area along the occupied reaches of Cienega Creek and Cieneguita Wetlands, adversely impacting a 423-acre area central to the species’ survival.<sup>80</sup>

Climate change will exacerbates the significant impacts of the Rosemont Mine on all of these endangered or threatened species. Climate change models predict that over time, the southwest is likely to become hotter and drier, punctuated with more extreme droughts and intense flooding.<sup>81</sup> These models predict increased water temperatures, decreased streamflow, and changes in the hydrologic cycle, all of which threaten at-risk aquatic species, such as the Chirichaua leopard frog, Gila chub, Gila topminnow, and desert pupfish discussed above.<sup>82</sup>

In sum, the Rosemont Mine will cause significant adverse effects to aquatic life dependent on ecosystems, foreclosing issuance of the 404 Permit.

**B. The Rosemont Mine Will Cause Significant Adverse Effects to the Diversity, Productivity, and Stability of the Aquatic Ecosystem.**

The Rosemont Mine will severely degrade hundreds of acres of high functioning riparian habitat, including designated critical habitat for multiple aquatic species. This permanent loss of fish and wildlife habitat rises to the level of an ecological regime shift. The Corps must deny the permit due to the “[s]ignificantly adverse effects of the discharge of pollutants on aquatic ecosystem diversity, productivity, and stability.” 40 C.F.R. § 230.10(c)(3).

The proposed mine will directly impact high-functioning upland aquatic habitat within the footprint of the mine, including five known springs or seeps. The mine will sever what was once a continuous hydrological unit, reducing mountain-front recharge by approximately 35 to 127 acre-feet per year<sup>83</sup> and curtailing stormwater runoff by 242-acre feet per year.<sup>84</sup> This adverse effect will alter downstream aquatic ecosystem by changing channel geomorphology and

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<sup>76</sup> *Id.* at 182-83.

<sup>77</sup> *Id.* at 183.

<sup>78</sup> *Id.* at 198.

<sup>79</sup> *Id.* at 203.

<sup>80</sup> *Id.* at 204-210.

<sup>81</sup> 2013 BiOp at 258-62.

<sup>82</sup> *Id.* at 261-62; *Id.* at 222 (discussing anticipated take of Chiricahua leopard frog); *Id.* at 290 (highlighting impacts of climate change on Gila topminnow).

<sup>83</sup> FEIS at 354.

<sup>84</sup> FEIS at 463.

reducing flows in downstream OAWs.<sup>85</sup> The FEIS estimates the destruction of 68.4 acres of waters of the United States.

Mine-driven groundwater drawdown will also affect “the structure and function” of aquatic ecosystems throughout the analysis area. 40 C.F.R. § 230.11(e). Currently, the analysis area contains a number of sensitive aquatic environments, including Las Cienegas National Conservation Area, OAWs, and multiple seeps, springs, and wetlands. The best available groundwater models predict drawdown in surface flows at these critical sites, impacting the riparian vegetation.

For example, 403 acres of upper Empire Gulch would transition from a hydriparian corridor with a large cottonwood gallery that supports aquatic and wildlife species to a xeriparian corridor with tamarisk and mesquite.<sup>86</sup> In the long term, wetland complexes within the hydriparian zone would likely experience drying and mortality.<sup>87</sup> This transition would impact multiple species that depend on hydriparian habitat, including native fish and aquatic species (e.g., the Chiricahua leopard frog,<sup>88</sup> northern Mexican garter snake,<sup>89</sup> and Gila chub,<sup>90</sup> to name just a few).

The quantitative models don’t capture the full extent of the “loss of environmental value” caused by the mine. 40 C.F.R. § 230.11(e). Changes in pool volume constrict pool size, adversely affecting the life cycles of species such as the Huachuca water umbel and Gila topminnow, as discussed above. Even small surface water drawdowns can have dire consequences for ecosystems during the driest months of the year.

The “persistence and permanence” of these impacts underscores their significance. 40 C.F.R. § 230.10(c)(1). All of the expert agencies agree that mine-driven groundwater will lead to greater and greater impacts over time. These impacts cannot be reversed; they constitute an “ecological regime shift” to a drier, more inhospitable environment.<sup>91</sup> Moreover, these impacts are exacerbated by climate change, which is highly likely to negatively impact aquatic ecosystem and the species that depend on these environments for survival.<sup>92</sup> These significant adverse impacts to aquatic ecosystems require denial of the permit

#### **IV. The Rosemont Mine Does Not Include All Appropriate and Practicable Measures to Minimize Potential Harm to the Aquatic Ecosystem.**

The Los Angeles District found that Hubday’s previous HMMP failed to compensate for aquatic resource functions that would be lost as a result of the Rosemont Mine. The 2017 HMMP is even more inadequate. It fails to adequately compensate for the direct effects of the

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<sup>85</sup> FEIS at 404 (Table 76).

<sup>86</sup> FEIS at 542.

<sup>87</sup> *Id.* at 542.

<sup>88</sup> June SIR at 159-60

<sup>89</sup> *Id.* at 168

<sup>90</sup> FEIS at 690.

<sup>91</sup> EPA Mitigation Letter, Ex. 2 Enclosure at 2.

<sup>92</sup> 2013 BiOp at 261-62.

Rosemont Mine and wholly disregards the indirect effects of the Rosemont Mine on aquatic resource functions. The Corps must deny the 404 Permit due to the extensive, unmitigated impacts on waters of the United States. *See* 40 C.F.R. § 230.93(a).

**A. The 2017 HMMP Fails to Mitigate the Significant Resource Losses Caused by the Rosemont Mine.**

The purpose of the Corps' compensatory mitigation program is to "offset unavoidable impacts to waters of the United States authorized through the issuance of permits by the U.S. Army Corps of Engineers pursuant to section 404 of the Clean Water Act." 40 C.F.R. § 230.91(a)(1). The district engineer "must determine the compensatory mitigation to be required in a DA permit, based on what is practicable and capable of compensating for aquatic resource functions that will be lost as a result of the permitted activity." *Id.* § 230.93(a).

As detailed above, construction of the Rosemont Mine, reduced surface water-runoff, and mine-driven groundwater drawdown will cause "significant resource losses which are specifically identifiable, reasonably likely to occur, and of importance to the human or aquatic environment." 33 C.F.R. § 320.4(r)(2). These adverse effects to aquatic resource functions, whether direct or indirect, must be mitigated. *Id.*; 40 C.F.R. § 230.93(a). In fact, "[t]he requirement that secondary impacts be fully compensated is consistent with standard practice for projects of this magnitude and essential given that the range, extent, and severity of secondary adverse impacts upon aquatic resources are as significant as the direct impacts."<sup>93</sup>

Yet, the most recent HMMP makes absolutely no effort to mitigate the indirect impacts of the Rosemont Mine. The failure to even consider these effects to waters of the United States renders the HMMP inadequate on its face. *See Env'tl. Def. v. U.S. Army Corps of Engineers*, 515 F. Supp. 2d 69, 81 (D.D.C. 2007) ("The agency cannot reliably conclude that the selected project has minimized adverse impacts on aquatic ecosystems to the extent practicable when its habitat mitigation calculations are infected with an underestimate of the floodplain habitat impacted.").

The approach taken by Hudbay in the 2017 HMMP reflects a sharp, unexplained departure from the prior HMMP. In 2014, Hudbay recognized that "all Project impacts must be mitigated, there is no special class of mitigation for varying impacts."<sup>94</sup> Hudbay thus submitted a HMMP to compensate for impacts to 69.9 acres (40.4 direct, 28.4 indirect, and 1.1 temporary) of jurisdictional waters of the United States.<sup>95</sup> Hudbay thus recognized that it was "required to mitigate for 28.4 acres of downstream impacts," even if it grossly underestimated the true extent of those secondary impacts.<sup>96</sup> Hudbay offers no explanation for entirely omitting any mitigation measures for indirect effects in its most recent HMMP.

For these reasons, the Corps should reject the HMMP as entirely inadequate on its face.

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<sup>93</sup> EPA Mitigation Letter, Ex. 2 Enclosure at 2.

<sup>94</sup> September 2014 HMMP at 8.

<sup>95</sup> September 2014 HMMP at 1.

<sup>96</sup> Habitat Mitigation and Monitoring Plan (April 1, 2014), Response to Comments Addendum at 21-22.

## **B. The 2017 HMMP Fails to Mitigate the Direct Impacts of the Mine on Waters of the United States.**

The Los Angeles District rejected the prior HMMP submitted by Hudbay on the grounds that “the permanent loss of 40.4 acres of waters [of the United States] would not be mitigated by the proposed re-establishment at Sonoita Creek Ranch, along with the proposed mitigation on Davidson Canyon parcels and on proposed mitigation parcels, located outside of the impacted watershed.”<sup>97</sup> Hudbay now claims to have adopted a simpler design in the 2017 HMMP to mitigate these impacts. But this pared down HMMP fails to generate adequate mitigation credits and causes even more damage than the prior HMMP. In fact, the 2017 HMMP simply repackages many of the deficiencies identified by the Los Angeles District, EPA, and Pima County. The HMMP fails to comply with the 404(b)(1) guidelines or the Compensatory Mitigation Rule,<sup>98</sup> and must be rejected.

The 2017 HMMP leads from the proposition that destroying Sonoita Creek is the simplest way to maximize mitigation credits. This proposition is doubly flawed. First, it rests on the misconception that Sonoita Creek is in dire straits and non-functioning for much of its length. But that is not the case. Sonoita Creek has achieved a state of equilibrium since it was channelized in the 1940s. Significant portions of Sonoita Creek are “especially active and complex,” including the lower 6,000 feet of the Sonoita Spring Ranch property (Lots 1 through 8) and Lot 7 of the Rail X Ranch property.<sup>99</sup> Altering flows in upstream portions of Sonoita Creek – such as those targeted by Hudbay – could significantly impair these high-functioning downstream reaches, causing even more harm to high-functioning waters of the United States.<sup>100</sup>

Second, destroying additional waters of the United States in no way mitigates the significant adverse effects of the Rosemont Mine. Every prior HMMP strained to maximize mitigation credits by constructing (not destroying) additional stream reaches and creating as much sinuosity as possible. But even that approach was deemed insufficient to mitigate the oversized impacts of the Rosemont Mine. Specifically, the Los Angeles District found that the construction of 17,091 linear feet of channels under the prior HMMP was insufficient to offset the 40.4 acres of direct effects to waters of the United States. It defies sense to suggest that the current HMMP, which proposes the destruction of an additional 8.9 acres of waters of the United States while significantly paring down the amount of linear feet purportedly restored (only 13,841 linear feet), even remotely offsets the direct impacts of the Rosemont Mine on waters of the United States, let alone the indirect effects of the mine, which are even more significant.

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<sup>97</sup> Letter from Colonel Helmlinger, U.S. Army Corps of Engineers, to Patrick Merrin, Hudbay 2 (Dec. 28, 2016).

<sup>98</sup> See Compensatory Mitigation for Losses of Aquatic Resources, 73 Fed. Reg. 19594 (Apr. 10, 2018) [hereinafter Compensatory Mitigation Rule].

<sup>99</sup> Leidy, Robert and Kondolf, Matthias. Technical Memorandum: Conceptual Design for Sonoita Creek, AZ, Technical Review Support (Order Number EP-G149-00241) 9 (July 27, 2015), attached as Ex. 6 [hereinafter EPA Technical Memo].

<sup>100</sup> This, of course, would mean that the filling of Sonoita Creek indirectly impacts downstream jurisdictional waters of the United States (in addition to the 8.9 acres directly impacted). The Corps must analyze these downstream impacts and ensure they are properly accounted for and mitigated by Hudbay.

The HMMP violates numerous requirements of the 404(b)(1) Guidelines and the Compensatory Mitigation Rule. As an initial matter, the HMMP fails to accurately assess the necessary compensatory mitigation for the Rosemont Mine. Per the Compensatory Mitigation Rule, “[f]unctional assessments will be used to determine compensatory mitigation amounts in cases where such methods are available, appropriate, and practicable for use.”<sup>101</sup> Where these tools are not available, the Corps must use “condition assessment methods or other appropriate metrics for determining the amount of compensatory mitigation that is to be required for DA permits.”<sup>102</sup> Here, the HMMP acknowledges the lack of an available functional assessment for the area, but then proceeds to provide a condition assessment that undervalues the impacts of the mine and overvalues the compensatory mitigation measures.<sup>103</sup>

There are a number of inaccuracies in the conditional assessment undertaken by Hudbay that impermissibly skew the analysis. It is not “scientifically valid” to directly compare functional gain and loss between the different stream classes on the Rosemont mine site (1<sup>st</sup> and 2<sup>nd</sup> order riverine waters) and the Sonoita Creek Ranch site (4<sup>th</sup> and 5<sup>th</sup> order riverine waters).<sup>104</sup> Hudbay fails to acknowledge this principle and, as a result, “the headwater streams at the mine impact site are functionally undervalued when compared to the broad low-level floodplain site at [Sonoita Creek Ranch].”<sup>105</sup> For example, the HMMP argues that the Sonoita Creek Ranch floodplain is much broader and underlain by more alluvium than the mine impact site, and therefore the proposed mitigation measures will provide increased functional gain as compared to the impacted mine site. But this is an inappropriate comparison. The mine site drainages are “part of an interconnected stream network totaling over 100 acres of waters that function together as a water source area which maintains functions critical to the health of the broader Cienega Creek watershed.”<sup>106</sup> The mitigation at Sonoita Creek Ranch will do nothing to compensate for these lost values.

Indeed, the mitigation measures at Sonoita Creek Ranch are located within a different watershed, undercutting their effectiveness. This is problematic because “the required compensatory mitigation should be located within the same watershed as the impact site, and should be located where it is most likely to successfully replace lost functions and services.” 40 C.F.R. § 230.93(b)(1).<sup>107</sup> The proposed mitigations at Sonoita Creek do not offset the mine’s direct impacts to Davidson Canyon or Cienega Creek, as Sonoita Creek is located in a different watershed. Nor do the proposed mitigation measures address indirect impacts to Empire Gulch,

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<sup>101</sup> Compensatory Mitigation Rule, 73 Fed. Reg. at 19634 (

<sup>102</sup> *Id.*; 40 C.F.R. § 230.93(f)(1).

<sup>103</sup> 2017 HMMP at 36-43.

<sup>104</sup> EPA Comments on Rosemont Copper Project – response to Corps staff comments of April 16, 2014 on Habitat Mitigation and Monitoring Plan 16 (April 28, 2014), attached as Ex. 7 [hereinafter EPA HMMP Comments].

<sup>105</sup> *Id.*

<sup>106</sup> *Id.* at 16-17.

<sup>107</sup> The Compensatory Mitigation Rule emphasizes the importance of a “watershed approach” to mitigation, which “involves consideration of watershed needs, and how the location and types of compensatory mitigation projects address those needs.” 73 Fed. Reg. at 19690.

Davidson Canyon, or Cienega Creek as “groundwater at Sonoita Creek Ranch moves towards Patagonia, not the Cienega Creek watershed.”<sup>108</sup>

In addition to being misplaced, the HMMP is not “likely to be successful and sustainable” due to the dynamic hydrology of Sonoita Creek. 40 C.F.R. § 230.93(b)(4). The reestablishment of Sonoita Creek is premised on the assumption that the new channel will replicate the historical characteristics of Sonoita Creek. But the HMMP fails to verify the very historical conditions it is attempting to replicate.<sup>109</sup> The HMMP cannot make up for this deficit by relying on the Walnut Gulch Experimental Watershed as a “reference site.”<sup>110</sup> That project is an inappropriate reference point for multiple reasons, including the fact that it is not located within the same 8-digit Hydrologic Unit Code (it’s located near Tombstone, AZ) and differs significantly from the characteristics of Sonoita Creek.<sup>111</sup> The HMMP’s reliance on Walnut Gulch thus underscores the untested and unverified approach proposed by Hudbay that call into question its proposed mitigation.

Furthermore, the HMMP fails to take into account the fact that new channels, such as the one Hudbay proposes to construct for Sonoita Creek, are prone to failure.<sup>112</sup> Any alleged “benefits” of Hudbay’s proposal are speculative. *See* 40 C.F.R. § 230.93(a)(1) (“the district engineer must assess the likelihood for ecological success and sustainability”). There are also serious concerns about the feasibility of relocating Sonoita Creek along this stretch given the Kinder Morgan Pipeline, which runs alongside the current location of the creek and burdens the Sonoita Creek project area.<sup>113</sup>

Moreover, the proposed relocation of the Sonoita Creek may not be “ecologically suitable for providing the desired aquatic resource functions.” 40 C.F.R. § 230.93(d)(1). According to Hudbay, the success of the proposed mitigation depends on an adequate supply of water to “drive ecological function.”<sup>114</sup> But the Sonoita Creek valley bottom is characterized by soils with high infiltration rates, low runoff potential, and a high rate of water transmission.<sup>115</sup> The EPA and Corps have consistently and repeatedly raised significant concerns about the availability of

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<sup>108</sup> EPA HMMP Comments, Ex. 7 at 17.

<sup>109</sup> *Id.* at 22.

<sup>110</sup> Final Design of the Sonoita Creek Mitigation Project 5-6 (Sept. 8, 2017).

<sup>111</sup> EPA HMMP Comments, Ex. 7 at 16-17.

<sup>112</sup> *See, e.g.*, G. Nagle, “Evaluating ‘Natural Channel Design’ Stream Projects,” *Hydrological Processes* 21 (July 17, 2007) (describing 70% failure rate in 40 projects evaluated in North Carolina); G.M. Kondolf, “River Restoration and Meanders,” *Ecology & Society* (Vol. 11, Issue 2) (2006) (describing project failure in Cuneo and Uvas Creeks, California); S.M. Smith & K.L. Prestergaard, “Hydraulic Performance of a Morphology-Based Stream Channel Design,” *Water Resources Research* 41 (Nov. 10, 2005) (describing project failure in Deep Run, Maryland).

<sup>113</sup> EPA HMP Comments, Ex. 7 at 16. Indeed, the Corps previously rejected relocation of Sonoita Creek along this stretch due to these very concerns. It is unclear why Hudbay now believes this approach is feasible as it has not offered any plan or proposal to successfully relocate the pipeline.

<sup>114</sup> Letter from Katherine Arnold, Hudbay to William James, U.S. Army Corps of Engineers 4 (Sept. 22, 2017).

<sup>115</sup> EPA Technical Memo, Ex. 6 at 6.



adequate water supplies to maintain the new channel.<sup>116</sup> While Hudbay now claims that it has an adequate water supply at Monkey Springs to maintain flows in the new creek, it does not provide its monitoring data for this water supply. Instead, it cautions that its data may be overstated due to the potential capture of water flows from another source.<sup>117</sup> Hudbay has not therefore demonstrated that there will be adequate water supply to “provid[e] the desired aquatic resource functions.” 40 C.F.R. § 230.93(d)(1).

Even assuming the 2017 HMMP might be ecologically successful and sustainable, something that has yet to be demonstrated, it wholly fails to generate the mitigation credits needed by Hudbay to offset the significant impacts of the Rosemont Mine on waters of the United States. As noted above, the 2014 HMMP attempted to construct 17,091 linear feet to offset impacts, an approach that was deemed inadequate by the Los Angeles District. There is no clear explanation for how the current paired-down approach will mitigate an even greater acreage of impacts to waters of the United States. And, there is absolutely no explanation for how Hudbay proposes to mitigate indirect impacts to waters of the United States.

There are multiple instances where Hudbay claims credit, where no credit is due. For example, Hudbay claims 57.4 acres for its proposed restoration of 13,841 linear feet of Sonoita Creek. But this result is not ecologically justified. At most, a 50-foot riparian buffer is ecologically justified along both sides of the constructed channels.<sup>118</sup> Applying this buffer to 13,841 linear feet of reestablished channel equates to 37.77 total acres of reestablished riparian buffers. Hudbay also overinflates (or miscalculates) the size of its mitigation for the rehabilitation of 2,511 linear feet of Sonoita Creek. Applying 50-foot buffers to this rehabilitation equates to 5.76 acres, at most. This acreage is far less than the 12.1 acres claimed by Hudbay, further undervaluing the mitigation potential of the HMMP.<sup>119</sup>

Hudbay also claims compensation for the pond mitigation, but credit for those measures would constitute impermissible double-counting. As the preamble to the 2008 Rule states, “Resources that are restored, established, enhanced, or preserved to satisfy the requirements of other federal programs may not also be used for compensatory mitigation for DA permits . . . .”<sup>120</sup> The FWS Biological Opinion stresses the importance of the mitigation ponds as conservation measures to avoid jeopardy to multiple species, such as the Chiricahua leopard frog, Gila Chub, Gila topminnow, and Huachuca water umbel. Hudbay may not claim these same mitigation activities to offset the adverse effects of the Rosemont Mine on waters of the United States.

Ultimately, the 2017 HMMP is a dubious proposal that does not stand up to the 404(b)(1) Guidelines, the Compensatory Mitigation Rule, or the EPA and Corps’ prior concerns with the proposal that remain largely applicable. The inadequacies in the 2017 HMMP are particularly apparent given that it makes no attempt to mitigate the indirect effects of the project on waters of

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<sup>116</sup> *Id.*

<sup>117</sup> 2017 HMMP at 25.

<sup>118</sup> EPA HMMP Comments, Ex. 7 at 2. Hudbay claims to have applied a 50-foot buffer to Sonoita Creek, HMMP at 42, but its calculations nonetheless appear overinflated.

<sup>119</sup> 2017 HMMP at ES-5.

<sup>120</sup> 73 Fed. Reg. at 19608.

the United States, which are just as substantial (if not more substantial) than the direct impacts of the Rosemont Mine. The Corps should therefore reject the proposal as insufficient and deny the 404 permit, consistent with the Los Angeles District's final recommendation.

**V. Hudbay Must Clearly Demonstrate that the Rosemont Mine is the Least Environmentally Damaging Practicable Alternative.**

The Corps may not issue a Section 404 Permit for the Rosemont Mine if there is a less environmentally damaging practicable alternative. 40 C.F.R. § 230.10(a). Where, as here, the proposed project is not water dependent, the guidelines place the burden on the applicant to “clearly demonstrate[ ]” that there are no practicable, less damaging sites. 40 C.F.R. § 230.10(a)(3). Hudbay has not made this required showing since it acquired the Rosemont Mine in July of 2014. It may not rely on the Corps’ prior analysis of alternatives, which was suspect from the start, does not apply to Hudbay’s acquisition of the mine in 2014, and fails to consider changed circumstances over the past ten years.

The Corps undertook an analysis of alternative sites to the Rosemont Mine based on a snapshot of the copper industry in 2005 when Augusta bought the Rosemont Property. At that moment in time, “the price of copper had increased 29.5 percent over the previous year due to increased domestic and international demand, and was continuing to rise.”<sup>121</sup> Due to the booming market, the Corps ruled out ten alternate mine sites, concluding those mines were not available for sale in 2005 due to market conditions.<sup>122</sup> The Corps ruled out 11 more sites (which were available) on the grounds they were not practicable. For example, the Corps ruled out the Resolution Copper Mine in Superior, Arizona, finding it “readily apparent that Augusta Resource Corporation, with such limited financial capitalization, could not have participated in the Resolution Copper Project.”<sup>123</sup>

This analysis was suspect from the start and does not satisfy the Corps obligation to independently evaluate practicable alternatives to the proposed project. *See Sierra Club v. Van Antwerp*, 709 F. Supp. 2d 1254, 1263 (S.D. Fla. 2009), *aff’d*, 362 F. App’x 100 (11th Cir. 2010) (finding that Corps failed to exercise independent judgment when evaluating a mining company’s claims about the practicability of alternate sites). During the month of March 2005, Augusta Resources’ market capitalization ranged between \$37 and \$61 million dollars; its revenues were essentially nil; and, it had no track record of actually operating a mine.<sup>124</sup> It was thus apparent that Augusta Resources was not going to operate *any* mine; it was going to sell the Rosemont Mine to a much bigger investor. The Corps should not therefore have eliminated any alternative sites based on Augusta’s limited capitalization. Otherwise, holding companies with limited capital could proceed through the permitting process, render toothless the requirement to analyze alternative sites, and then sell the permitted mine to a much larger entity.

The Corps must analyze alternatives to the Rosemont Mine site based on Hudbay’s acquisition of the property in 2014. Just as the Corps directed Augusta Resources “to evaluate

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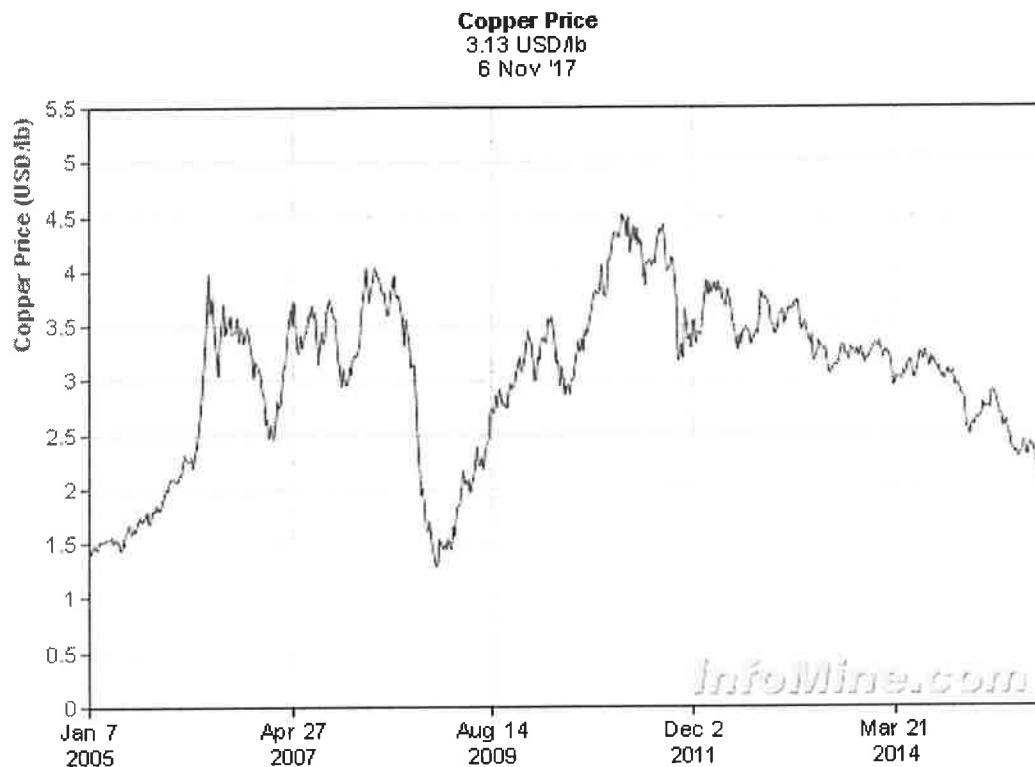
<sup>121</sup> FEIS Appx. A at 11.

<sup>122</sup> *Id.*

<sup>123</sup> *Id.* at 18.

<sup>124</sup> *Id.*

availability [of alternate mine sites] as of the date of acquisition of the Rosemont Project, in 2005,”<sup>125</sup> the Corps must direct Hudbay to evaluate availability as of the date of acquisition of the Rosemont Project in 2014. This analysis is especially important due to the vastly changed circumstances between 2005 and 2014. As depicted below, whereas copper prices were rapidly rising in 2007, they were in a steady state of decline in 2014:



This makes it much more likely that there were other available mines in 2014 that might be less environmentally damaging. Moreover, HudBay had a market capitalization of \$1.5 billion in 2014, making it 24 and 41 times better financed than Augusta Resources, and thus much more capable of purchasing alternate mines.<sup>126</sup> HudBay has not “clearly demonstrate[ ]” that there are no practicable, less damaging sites to the Rosemont Mine. 40 C.F.R. § 230.10(a)(3).

Furthermore, the Corps must evaluate any changed circumstances since 2007 that would alter the availability of offsite or onsite alternatives to the Rosemont Mine. As made clear by the 404(b)(1) Guidelines, the analysis of practicable alternatives turns on “available” alternatives in light of “existing technology” and conditions. 40 C.F.R. § 230.10(a)(2) (emphasis added). The Corps must therefore analyze how current circumstances impact the practicability of alternatives. For example, there may be other copper mines available for purchase, either in 2014 or more recently. Alternatively, there may be new technologies that require consideration of alternative sites or a smaller project footprint.

<sup>125</sup> *Id.* at 9.

<sup>126</sup> <https://www.macroaxis.com/invest/ratioPatterns/HBM/Market-Capitalization>

As parts of its alternatives analysis, the Corps must consider options for backfilling the pit. The 404(b)(1) analysis rejected backfilling based on the rationale that the mine pit (a hydraulic sink) provided a “passive containment system” contemplated by ADEQ and its removal would not alter the loss of waters of the United States.<sup>127</sup> Neither point holds true. There is no need to maintain a hydraulic sink, according to the Forest Service.<sup>128</sup> Furthermore, backfilling the pit will prevent the permanent drawdown of groundwater, thereby minimizing the indirect impacts to waters of the United States discussed in detail above. This environmental benefit weighs heavily in favor of backfilling and cannot be ignored by the Corps. *See All. to Save the Mattaponi v. U.S. Army Corps of Engr’s*, 606 F. Supp. 2d 121, 130 (D.D.C. 2009) (“The Corps must adequately explain why there is no less damaging practicable alternative. If it cannot so explain based on the record before it, it must reconsider its determination based on an adequate analysis of the alternatives.”).

Because Hudbay has not clearly demonstrated that the Rosemont Mine is the least environmentally damaging practicable alternative, the Corps must deny the 404 Permit.

## **VI. The Division Must Deny the Permit Because It is Contrary to the Public Interest.**

The Corps’ public-interest requirement prohibits issuance of the 404 Permit if the “district engineer determines that it would be contrary to the public interest.” 33 C.F.R. § 320.4(a).<sup>129</sup> This far-reaching inquiry requires the Corps to consider “the probable impacts” of the proposed Rosemont Copper mine on “[a]ll factors which may be relevant to the proposal,” including historic, cultural, scenic and recreational values; effects on wetlands; water quality; floodplain management; water supply and conservation; fish and wildlife; considerations of property ownership; and, mitigation. *Id.* Here, the Los Angeles District has already concluded “that implementation of the proposed project would be contrary to the public interest.” The Division should affirm the District’s decision recommending denial of the permit.

### **A. The Rosemont Mine Will Significantly, Permanently, and Adversely Impact Traditional Cultural Properties and Sacred Sites.**

A “[f]ull evaluation of the general public interest requires” the Corps to give “due consideration” to archaeological resources, “including Indian religious or cultural sites.” 33 C.F.R. § 320.4(e). Any action on permit applications should “avoid significant adverse effects on the values or purposes for which those classifications, controls, or policies were established.” *Id.* Here, the Los Angeles District highlighted the adverse impacts of the Rosemont Mine on tribes, finding that “[a]mong the key public interest concerns are adverse effects to cultural resources and traditional cultural properties important to tribes.”<sup>130</sup> Due to these “significant adverse effects,” 33 C.F.R. § 320.4(e), the Los Angeles District decided to recommend denial of

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<sup>127</sup> FEIS Appx. A at 29.

<sup>128</sup> FEIS at 105.

<sup>129</sup> The Corps has a substantive obligation to deny any permit contrary to the public interest, which exists in addition to its procedural obligation to analyze impacts to the public interest under NEPA. *See* 33 C.F.R. § 320.4(a).

<sup>130</sup> Helmlinger Letter, Ex. 1 at 2.

the 404 Permit application. The Nation fully concurs with this determination given the profound impacts of the Rosemont Mine on the Nation's cultural identity.

The Nation has a deep cultural and spiritual connection to the lands that would be destroyed by the proposed Rosemont Copper Mine. The mine is located within *Ce;wi Duag*, a historical and spiritual center of the Nation that was designated as a Traditional Cultural Property.<sup>131</sup> The Rosemont Mine would devastate this cultural landscape, as documented in chilling detail in the FEIS. Construction of the mine would directly disturb six prehistoric sites with known human remains, 24 prehistoric sites with the potential to have human remains, and three historic sites with the potential to have human remains.<sup>132</sup> The mine could also disturb "unmarked and unrecognized graves outside known sites and cemetery areas."<sup>133</sup>

Mine operations will burden this landscape with growing, rising, and laterally expanding waste rock piles and tailings facilities. These monolithic, flat-topped benches would unnaturally contrast or entirely obscure the Santa Rita Mountains ridgeline, irreparably altering the scenic quality of *Ce;wi Duag*.<sup>134</sup>

At the same time, the open pit will extend half-a-mile down into the earth, creating a groundwater sink that negatively impacts 16 springs that are power-laden loci and provide sacred ceremonial functions.<sup>135</sup> Groundwater models predict that many of the springs in the analysis area will run dry with a high level of certainty. The Corps may not ignore these impacts on the technical grounds that these springs are not designated traditional cultural places. They are central feature of *Ce;wi Duag* and must be considered by the Corps in its public interest review.

Additionally, the mine will disturb traditional gathering practices that take place within *Ce;wi Duag*, including the collection of essential basket weaving materials. As explained by Rhonda Wilson, one of the Nation's basket weavers, basket weaving is "part of who we are as O'odham people; it's a way of life . . . it's something that is sacred for us, for me, and that is something I have taught our children."<sup>136</sup> The mine would destroy or degrade sites within the Santa Ritas that have been used for the collection of materials essential to this livelihood.

Furthermore, the Rosemont Mine will adversely modify critical habitat for the jaguar, an animal of special importance to the Nation that relies on the Santa Rita Mountains. The jaguar is a powerful symbol to the Nation, and many other tribes. The mine will severely restrict connectivity between multiple critical habitat units and Mexico, effecting the conservation of the species as discussed in greater detail below.

The loss of these cultural resources and religious places is devastating on its own, but when added to past losses, results in the destruction of cultural identity itself. For example, the prior ANAMAX copper mine, which was located in approximately the same areas as the current

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<sup>131</sup> FEIS at 1033-34.

<sup>132</sup> *Id.* at 1040 (Table 203).

<sup>133</sup> *Id.* at 1039.

<sup>134</sup> *Id.* at 798-800.

<sup>135</sup> FEIS at 1040.

<sup>136</sup> <https://vimeo.com/223976575>.

proposed project, uncovered 193 Native Americans were uncovered in twelve burial sites. Not only was the Nation impacted by this cultural desecration, it was left with the burden of repatriating its own tribal ancestors, a process that continues to this day. The proposed Rosemont Mine will reopen these wounds, causing further damage to the Tribe's cultural identity.

The FEIS does not mince words: "These impacts are severe, irreversible, and irretrievable."<sup>137</sup> The physical and spiritual landscape of *Ce;wi Duag* may not be reconstructed if the Corps allows its destruction. Such destruction would have negative consequences for the health and vitality of the Nation's culture, as powerfully articulated by tribal elder Joseph Joaquin:

To them [Rosemont Copper], maybe what are our concerns is just a little thing. But to us, it's a big thing. Because again, the land has always been us, and we have always been a part of this land. We are a part of this land. And that goes way back in our creation story of how we got here and how these lands are supposed to be taken care of; how this stewardship was awarded to the people living in these lands, to manage these lands the way they see fit.

This is our ancestral land. We need to be involved, and we need to be part of some of these decision making things and we need to be at the table.

The Rosemont Mine will irrevocably alter the cultural landscape of *Ce;wi Duag*. The mine will destroy sacred seeps and springs traditional cultural properties, including sites with documented human remains. These severe, irreversible, and irretrievable impacts militate against the issuance of a 404 Permit.

## **B. The Rosemont Mine Will Destroy Wetlands.**

The Rosemont Mine will directly and indirectly impact multiple wetlands that are crucial to ecosystem function and diversity. This destruction is directly contrary to the public interest. See 33 C.F.R. § 320.4(b)(1) ("Most wetlands constitute a productive and valuable public resource, the unnecessary alteration or destruction of which should be discouraged as contrary to the public interest.").

The Forest Service summarized the acreage of riparian habitat in the analysis area, including hydriparian habitat along Cienega Creek, Empire Gulch, and the multiple seeps and springs in the area.<sup>138</sup> The BLM also conducted wetlands inventories within Las Cienegas National Conservation Area and identified more than 30 perennial or seasonal wetlands, many of

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<sup>137</sup> FEIS at 1036.

<sup>138</sup> FEIS at 514 (Table 109); *id.* at 520 (Table 110).

which occur around the confluence with Empire Gulch.<sup>139</sup> Many of these areas likely qualify as jurisdictional waters of the United States.<sup>140</sup>

The Rosemont Mine will directly impact five springs located within the mine footprint and their associated wetlands.<sup>141</sup> In addition, the Rosemont Mine will indirectly impact potential wetlands throughout the analysis areas. The models predict that Empire Gulch, and especially upper Empire Gulch, will transition from a perennial to ephemeral stream due to groundwater drawdown, causing likely mortality to 407 acres of hydriparian habitat and any associated wetlands.<sup>142</sup> Similarly, groundwater drawdown will impact riparian habitat around 69 seeps or springs in the area (in addition to the five springs directly impacted by the footprint of the mine), including any associated wetlands.<sup>143</sup>

These wetlands “serve significant natural biological functions” that are important to the public interest, including providing habitat for multiple listed and endangered species. The FWS documented at least five aquatic-obligate endangered species that depend on wetlands and perennial stream flows in the analysis area for their survival, including the Chiricahua leopard frog, Gila chub, Gila topminnow, desert pupfish, and fort Huachuca water umbel. Wetlands also provide essential habitat for the northern Mexican garter snake, which preys on ranids (frogs) and fish within these wetlands, as well as the western yellow-billed cuckoo and southwestern willow flycatcher, both of which depend on riparian habitat along perennial streams. The Rosemont Mine will severely impact the function of wetlands throughout the assessment area, adversely affecting multiple endangered species, as discussed above in Section III.A and III.B, as well as below in Section VI.D.

Based on this evidence, the EPA concluded that the mine would “cause permanent regional drawdown of groundwater that currently sustains hundreds of acres of springs, seeps, streams, and wetlands, and their aquatic and wetland dependent fish, wildlife, and plant species.”<sup>144</sup> Furthermore, the Forest Service concluded that the Rosemont Mine would impact Las Cienegas NCA, causing a number of unmitigated impacts that conflicted with the Bureau of Land Managements’ plan for the Conservation Area.<sup>145</sup> The magnitude and extent of these impacts – an ecological regime shift – weigh heavily against issuance of a 404 Permit.

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<sup>139</sup> *Id.* at 496.

<sup>140</sup> The Forest Service declined to determine whether these wetlands were jurisdictional, thereby omitting any analysis of indirect effects on waters of the United States. *Id.* at 496. The EPA, in its comments on the Administrative EIS, opined that “[m]any of these wetlands and aquatic features would likely qualify as jurisdictional waters of the United States” based on observations. EPA Comments on Admin. EIS at 10 (Aug. 1, 2013).

<sup>141</sup> See WestLand Resources Inc. 2010. Onsite Riparian Habitat Assessment, Rosemont Project. Project No. 1049.14. Prepared for Rosemont Copper Company. Tucson, Arizona: WestLand Resources, Inc. April.

<sup>142</sup> FEIS at 541.

<sup>143</sup> *Id.* at 562.

<sup>144</sup> EPA Mitigation Letter, Ex. 2 at 1.

<sup>145</sup> ROD at 77.

### C. The Rosemont Mine Will Violate State Water Quality Standards.

Typically, a state's certification of compliance under Section 401 is "conclusive with respect to water quality considerations," unless the EPA advises otherwise. 33 C.F.R. § 320.4(d); *Bering Strait Citizens for Responsible Res. Develop. v. U.S. Army Corps of Eng'rs*, 524 F.3d 938, 949–50 (9th Cir. 2008). Here, the EPA strenuously objected to Arizona's Certification of Compliance under Section 401 and advised the Corps of "other water quality aspects" to be taken into consideration under the Corps' regulations.<sup>146</sup> The Corps must therefore make its own independent determination regarding the impacts of the Rosemont Mine on state water quality standards. See 33 C.F.R. § 320.4(d). Indeed, the Los Angeles District informed ADEQ that "any granted state Section 401 certification [is] 'not conclusive' regarding water quality considerations, and necessitates the DE to make 'independent judgments regarding compliance with 40 CFR 230.10(b)(1) and the consideration of water quality issues in the public interest reviews.'"<sup>147</sup>

The Los Angeles District made an independent judgment and concluded that the Rosemont Mine would cause or contribute to state water quality violations.<sup>148</sup> This determination finds support in the record for at least three reasons. First, surface runoff from the Rosemont Mine will degrade Outstanding Arizona Waters (OAWs). Second, groundwater drawdown will dewater Empire Gulch and Cienega Creek, violating Arizona's perennial/wadeable standards. Finally, the HMMP will destroy any designated uses along Sonoita Creek. These water quality violations are directly contrary to the Corp's public interest requirement, 33 C.F.R. § 320.4(d), and independently require denial of the permit under the 404(b)(1) Guidelines. See 40 C.F.R. § 230.10(b)(1) (requiring denial of a 404 permit where the discharge of fill material "causes or contributes . . . to violations of applicable State water quality standards.").

#### i. Surface Runoff from the Rosemont Mine Will Degrade Outstanding Arizona Waters.

Arizona has designated various reaches of Davidson Canyon and Cienega Creek as OAWs due to their perennial nature and exceptional ecological and recreational significance. These OAW designations require, and are based on, intermittent or perennial baseflows, which sustain aquatic habitat and other wildlife in the OAWs during the times when washes would

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<sup>146</sup> Letter from Jared Blumenfeld, EPA Region IX, to Colonel Colloton, U.S. Army Corps of Engineers 1 (April 14, 2015).

<sup>147</sup> Letter from Castanon, David J., U.S. Army Corps of Engineers, to Mr. Robert Scalamera, ADEQ (April 7, 2014). The Corps must independently evaluate state water quality standards for two additional reasons. First, the Arizona Department of Environmental Quality (ADEQ) deferred to the Corps to include measures in its 404 Permit to protect water quality standards. The only way to read the 401 Certification is a delegation from ADEQ to the Corps to protect surface water quality. Second, ADEQ has yet to certify the Habitat Mitigation and Monitoring Plan, which proposes to destroy 8.9 acres of Sonoita Creek Ranch, eliminating any designated uses along this stretch in clear violation of state water quality standards.

<sup>148</sup> Helmlinger Letter, Ex. 1 at 1-2.



otherwise be dry.<sup>149</sup> Any degradation of these OAWs is prohibited under state law. *See* R18-11-107.01 (Under the “Antidegradation” provisions of Arizona water quality standards, discharges are prohibited unless they “will not degrade existing water quality in the downstream OAW.”).

The Rosemont Mine will likely violate these antidegradation standards by curtailing water inputs (e.g., stormwater runoff and baseflows) to Davidson Canyon. As documented by Pima County, the mine will reduce surface runoff between 30 and 40 percent during early mining operations.<sup>150</sup> The mine will permanently reduce stormflow in Barrel Canyon by approximately 242-acre feet per year, which equates to a 17.2% change in postclosure runoff volumes.<sup>151</sup> Estimated reductions in surface flow in lower Davidson Canyon (approximately 12 miles downstream) exceed 4.3 percent.<sup>152</sup> This reduction would result in the loss of assimilative capacity in downstream OAWs (i.e., the ability of those waters to receive waste waters or toxic substances without deleterious effects and without damage to aquatic life or humans who consume the water). It would also alter sediment yields and thus change downstream geomorphology (and water quality). These impacts are exacerbated by groundwater drawdown at the Davidson Canyon/lower Cienega Creek Confluence, which is expected to be as much as 0.35 feet within 150-years of mine closure.<sup>153</sup>

EPA raised all of these concerns (and more) in its criticism of the basis for ADEQ’s 401 Certification. The EPA, like the Corps, determined that the reduction in runoff would impact assimilative capacity of downstream OAWs.<sup>154</sup> The EPA explicitly rejected Rosemont’s estimate that only 2.2 acres of Davidson Canyon would be impacted, concluding that the entire wetted channel would be adversely affected.<sup>155</sup> Furthermore, EPA raised concerns with alterations in sediment yield and the downstream impacts to water quality,<sup>156</sup> all of which violate the antidegradation standard.

ADEQ has not proposed any specific and verifiable measures to prevent degradation of OAWs before it occurs, as is required by the antidegradation standards. ADEQ proposed a monitoring program for discharge into Cienega Creek, but that mitigation relies on lagging indicators that won’t detect harm until it is too late.<sup>157</sup> ADEQ’s approach could therefore result in unacceptable long-term impacts to OAWs.

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<sup>149</sup> Letter from Huckelberry, C.H. to James, William, U.S. Army Corps of Engineers at 5 (Sept. 18, 2017).

<sup>150</sup> Letter from Huckelberry, C.H. to Ms. Rosi Sherrill, 2017 Addendum to Water Quality Permit, Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB (Nov. 17, 2017) at 5 (attached as Ex. 8) [hereinafter Pima County Letter].

<sup>151</sup> FEIS at 435 (Table 94).

<sup>152</sup> *Id.* at 404 (Table 76); Letter from Huckleberry, C.H. to Colonel Helmlinger, U.S. Army Corps of Engineers, Attachment 1 at 1-2 (June 6, 2017).

<sup>153</sup> Am. BiOp at 247.

<sup>154</sup> EPA 401 Letter, Ex. 3, Enclosure at 3.

<sup>155</sup> *Id.* at 4.

<sup>156</sup> *Id.* at 2-3.

<sup>157</sup> *Id.* at 5.

The most recent HMMP fails to mitigate impacts to OAWs due to decreased stormwater runoff in Barrel Canyon. The HMMP acknowledges that the mine will curtail an estimated 242 acre-feet-per year for surface water flowing to Davidson Canyon, a calculation based on the difference between pre-mining and post-mining flow rates (1,404 acre feet versus 1,162 acre feet at USGS Gage 09484580). The HMMP then attempts to zero-out this loss by taking credit for 240 acres of surface water runoff caught by stock tanks and catchments within the project area.<sup>158</sup> But there are no paper gains to be had here. These tanks and catchments also exist under post-mining conditions, and thus do not alter the calculations regarding the amount of runoff impounded by the mine.<sup>159</sup> Balancing the books, so to speak, demonstrates there are no gains to be had here, contrary to Hudbay's calculus.

In addition, the proposed mitigation measures in the HMMP cannot be verified and appear wholly speculative. The HMMP sets forth a "Stock Tank Removal Plan" and claims surface water credit for the removal of four tanks located within the immediate vicinity of the mine. But there is no evidence these tanks actually retain the quantity of waters assumed by the HMMP. To the contrary, the evidence demonstrates that at least two of these tanks are dry for the majority of the year, and none of them likely capture all upstream water.<sup>160</sup> Moreover, Hudbay never evaluated the future condition of the stock tanks to determine if they would continue to function once mining operations commence. It seems highly unlikely that the removal of Barrel Canyon/East Dam Tank can provide any verifiable surface water credit given that any upgradient surface flows will be captured by the open pit mine and associated rock storage facilities. The HMMP appears to acknowledge as much.<sup>161</sup> If the remaining stock tanks are directly or indirectly impaired by the mine, then there is no mitigation value (or discounted mitigation value) for the removal of the berms associated with the tanks. Hudbay has thus failed to demonstrate that its proposed mitigation measures will provide any verifiable benefits to surface water flows. The fact thus remains that the proposed mine will reduce surface water runoff, altering the water quality of Davidson Canyon and Cienega Creek in violation of Arizona's Tier 3 antidegradation standard.

ii. The Rosemont Mine Will Violate Arizona's Perennial and Wadeable Standard for Upper Empire Gulch and Cienega Creek.

The Rosemont Mine will dewater the regional aquifer, adversely impacting surface and subsurface flows along Empire Gulch, Cienega Creek, and Davidson Canyon. These indirect impacts would violate Arizona's narrative standard for perennial/wadeable streams. ADEQ refused to analyze these effects, underscoring the incomplete and flawed basis for its 401 Certification.

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<sup>158</sup> 2017 HMMP 6-7.

<sup>159</sup> To the extent the mine itself destroys any stock tanks or catchments, the surface flows contributing to those features would simply be captured by the mine itself, and thus would not contribute anything to downstream flows. Such a result would only increase the drawdown of surface runoff caused by the mine.

<sup>160</sup> Pima County Letter, Ex. 8 at 6-7.

<sup>161</sup> 2017 HMMP at 9.

Arizona regulations designate specific uses for a “wadeable, perennial stream with either an aquatic and wildlife (cold water) or an aquatic and wildlife (warm water) designated use.” R-18-11-108.01.A. According to the standard, “[a] wadeable, perennial stream *shall* support and maintain a community of organisms having a taxa richness, species composition, tolerance, and functional organization comparable to that of a stream with reference conditions in Arizona.” R18-11-108.E (emphasis added). Upper Empire Gulch, portions of Davidson Canyon, and two sections of Cienega creek are wadeable, perennial streams with designated uses for aquatic and wildlife, full body contact, and fish consumption.<sup>162</sup>

As discussed above, groundwater drawdown would cause Empire Gulch to transition from a perennial to ephemeral stream, potentially losing all or most of its pools and riparian vegetation.<sup>163</sup> This stream segment would switch from a hydriparian corridor with a large cottonwood gallery that supports aquatic and wildlife species to a xeriparian corridor with tamarisk and mesquite.<sup>164</sup> Wetland complexes within the hydriparian zone would likely experience drying and mortality.<sup>165</sup> This transition would impact multiple species that depend on hydriparian habitat, including native fish and multiple listed species (e.g., the Chiricahua leopard frog,<sup>166</sup> northern Mexican garter snake,<sup>167</sup> and Gila chub,<sup>168</sup> to name just a few). For example, the loss of flows “would permanently remove the longest standing and most prolific site occupied by the Chiricahua leopard frog in the Las Cienegas NCA metapopulation and likely within RU2 for the frog.”<sup>169</sup> Such a drastic change to upper Empire Gulch would violate Arizona’s wadeable/perennial water quality standard as this stream segment would no longer support a community of organisms “comparable to that of a stream with reference conditions in Arizona.” R-18-11-108.E.

For Cienega Creek, the FEIS concludes that changes in flow condition would “increase water temperatures, increase nutrient loads, and decrease the assimilative capacity of the stream,” thereby having an effect on the functional organization of the stream as compared to reference conditions in Arizona.”<sup>170</sup> Furthermore, the mine will reduce surface flows along Davidson Canyon and drawdown the underlying aquifer, which will likely cause widespread absence of surface flows for large portions of the year.<sup>171</sup> These effects along Davidson Canyon and Cienega Creek violate the wadeable, perennial standard. R-18-11-108.E.

ADEQ failed to analyze the groundwater drawdown on surface waters, claiming that it was limited to an analysis of the “direct results of the fill activities.”<sup>172</sup> This self-imposed restriction violates the Clean Water Act as it ignores the impacts of groundwater drawdown on

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<sup>162</sup> FEIS at 522.

<sup>163</sup> June SIR at 140. *See also id.* at 61 (Table 6. Summary of stream flow analysis in FEIS).

<sup>164</sup> FEIS at 542.

<sup>165</sup> *Id.* at 542.

<sup>166</sup> June SIR at 159-60

<sup>167</sup> *Id.* at 168

<sup>168</sup> FEIS at 690.

<sup>169</sup> Am. BiOp at 150.

<sup>170</sup> FEIS at 554-555.

<sup>171</sup> FEIS at 537.

<sup>172</sup> Basis for 401 Certification Decision, Rosemont Copper Project 2.

hydrologically connected surface waters. As discussed above, these indirect impacts fall squarely within the regulatory jurisdiction of the Clean Water Act. Moreover, “it is important for the §401 certification authority to consider all potential water quality impacts of the project, both direct and indirect, over the life of the project.”<sup>173</sup> ADEQ’s failure to consider the full adverse effects on water quality from the Rosemont Project renders its 401 Certification invalid or, at the very least, inconclusive. The Corps must therefore consider the impacts of the project on water quality, as urged by the EPA.

iii. The Habitat Mitigation and Monitoring Plan Will Destroy Designated Uses Along Sonoita Creek.

Sonoita Creek, from its headwaters downstream to the Town of Patagonia’s wastewater treatment plant, is an ephemeral creek with designated aquatic, wildlife, and human health uses. *See* Title 18 AAC, Chap. 11, Appendix B. Along this reach, Sonoita Creek is currently designated for the following existing uses: aquatic use by animals, plants, or other organisms (excluding fish) for habitation, growth, or propagation; and for human recreational use involving partial-body contact. *See id.* Sonoita Creek is thus a Tier 1 water, meaning that its existing uses must be maintained and protected. 18 AAC R18-11-107(B); *id.* at 107.1(A)(1)(c).

Despite the legal requirement to protect Sonoita Creek’s existing uses, Hudbay proposes to completely fill 8.9 acres of waters of the United States along Sonoita Creek, obliterating *any* existing uses along those 8.9 acres. Hudbay’s proposed mitigation—by definition—would degrade existing water quality in Sonoita Creek because it would eliminate *all of the water in the 8.9 acres of Sonoita Creek that Hudbay proposes to fill*. Moreover, because the 8.9-acre reach is proposed to be completely filled, it is impossible that the proposed mitigation work will maintain Sonoita Creek’s designated uses, as required by Arizona law. In other words, animals, plants, and other organisms will not be able to use Sonoita Creek (at least in this 8.9-acre reach) for any habitation or propagation, and people will not be able to use it for recreation. At a minimum, this would violate the narrative water quality standard laid out in R18-11-108, which prohibits pollutants in surface waters “in amounts or combination that settle to form bottom deposits that inhibit or prohibit the habitation, growth, or propagation of aquatic life.”

There will likely be downstream impacts to surface water quality caused by the proposed mitigation measures. Yet, neither Hudbay nor ADEQ has analyzed the downstream impacts of filling 8.9 acres of Sonoita Creek at the Sonoita Creek and Rail X Ranches. This data gap must be filled by the Corps as part of its independent evaluation to ensure there are no “violations of any applicable State water quality standard” requiring denial of the 404 Permit. *See* 40 C.F.R. § 230.10(b)(1).

Ultimately, the Rosemont Mine will cause or contribute to multiple violations of state water quality standards. These violations are highly relevant to the Corps’ public interest review, 33 C.F.R. § 320.4(a), and independently require denial of the permit, 40 C.F.R. § 230.10(b)(1).

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<sup>173</sup> *See* Clean Water Act Section 401 Water Quality Certification: A Water Quality Protection Tool For States and Tribes (2010) (“EPA 401 Handbook”), at 17, available at <http://water.epa.gov/lawsregs/guidance/cwa/upload/cwa-401-handbook-2010-interim.pdf>.

#### **D. The Rosemont Mine Will Adversely Affect Fish and Wildlife.**

The Corps' public interest guidance emphasizes the importance of "the conservation of wildlife resources by prevention of their direct and indirect loss and damage due to the activity proposed in a permit application." 33 C.F.R. § 320.4. The Rosemont Mine will directly and indirectly affect multiple species that depend in part or entirely on aquatic environments for their survival. The mine will also result in adverse modification of jaguar critical habitat, significantly impairing the recovery of the species.

The Rosemont Mine will result in the loss of multiple endangered species that depend on aquatic environments for their survival. The FWS anticipates the take of Gila Chub,<sup>174</sup> Gila topminnow,<sup>175</sup> desert pupfish,<sup>176</sup> Chirichahua leopard frog,<sup>177</sup> and northern Mexican garter snake.<sup>178</sup> Furthermore, the Rosemont Mine will adversely affect the Huachuca water umbel. While the FWS identified essential conservation measures to prevent jeopardy, such as introduction of these species as Sonoita Creek Ranch, many of these species have never been successfully reestablished at Sonoita Creek Ranch, calling into question FWS's reliance on these conservation measures.

The Rosemont Mine will also result in the loss of multiple species protected by the ESA that depend on riparian habitat, such as the threatened western yellow-billed cuckoo and southwestern willow flycatcher. Cuckoos depend on large expanses of riparian woodland (hydroriparian) habitat,<sup>179</sup> and also rely on mesquite and oak woodlands some distance from riparian woodland galleries.<sup>180</sup> Cuckoos likely use the high-functioning upland habitat in Barrel, McCleary, and Wasp Canyons as breeding habitat,<sup>181</sup> and also rely heavily on riparian habitat in Empire Gulch, Davidson Canyon, and Cienega Creek.<sup>182</sup> Construction of the mine, reduced stormwater runoff, and groundwater drawdown will adversely affect 1,289.2 acres of cuckoo habitat, a staggering sum that would lead to the loss of cuckoo across the landscape.<sup>183</sup>

Rather than providing a numerical estimate of cuckoos that would be taken by the Rosemont Mine, the FWS used habitat as a surrogate. Specifically, the FWS anticipated direct impacts to 6 miles and 345.6 acres of occupied xeroriparian vegetation in Barrel, McCleary, and Wasp Canyons; indirect effect to 0.6 miles and 38.3 acres of xeroriparian habitat in Davidson Canyon; indirect effects to 0.7 miles and 44.6 acres of xeroriparian habitat in Cienega Creek; and

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<sup>174</sup> Am. BiOp at 101-102.

<sup>175</sup> *Id.* at 118.

<sup>176</sup> *Id.* at 137.

<sup>177</sup> *Id.* at 160-61.

<sup>178</sup> *Id.* at 193.

<sup>179</sup> *Id.* at 227.

<sup>180</sup> *Id.* at 225.

<sup>181</sup> *Id.* at 240.

<sup>182</sup> *Id.* at 247-48.

<sup>183</sup> *Id.* at 250-51.

indirect effects to 3.3 miles and 860.5 acres of hydroriparian habitat in Empire Gulch and lower Cienega Creek.<sup>184</sup>

The FWS claimed these severe impacts to the western yellow-billed cuckoo would not jeopardize the species, however, because conservation measures at Sonoita Creek, Davidson Canyon, and the Hydroriparian Conservation Fund minimize the effects of the action.<sup>185</sup> But Hudbay has since taken a drastic turn in its most recent HMMP, opting to completely destroy 8.9 acres of waters of the United States along Sonoita Creek, wiping out the very habitat FWS cited as available to mitigate impacts to Cuckoos. As FWS cautioned, “[i]f the miles and acreage anticipated to be enhanced at Sonoita Creek Ranch and/or under the Hydroriparian Conservation Fund are not met, the adverse effects to xero- and hydroriparian vegetation will be greater than analyzed in this [BiOp], thus necessitating consideration of reinitiation by the USFS and Corps.”<sup>186</sup> The Corps must therefore either deny the permit or reinitiate consultation with FWS. See 50 C.F.R. § 402.16(c) (requiring reinitiation “If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion”).

In addition to impacting the western yellow-billed cuckoo, the mine will adversely affect 303.8 acres of hydroriparian critical habitat for the southwestern willow flycatcher.<sup>187</sup> This will result in the extirpation of sites in Empire Gulch and increase the likelihood of extirpation in Cienega Creek.<sup>188</sup>

The mine will also result in the adverse modification of critical habitat for the jaguar, a significant loss that weighs heavily against issuance of the permit. In multiple draft biological opinions, the FWS staff concluded that the Rosemont Mine would severely restrict connectivity between multiple critical habitat units and Mexico, significantly affecting the recovery of the species. The FWS ultimately reversed this finding on the grounds that the evidence did not establish a “very probable” or “high probability” of adverse modification to critical habitat.<sup>189</sup> But that reversal was based on a flawed reading of Section 7 of the ESA, which requires Federal agencies to ensure that their activities are “not likely to . . . result in the destruction or adverse modification of critical habitat.” 16 U.S.C. § 1536(a)(2). The FWS’s “high probability” standard turns this protection on its head and fails to “give the benefit of the doubt to the species.” *Conner v. Burford*, 848 F.2d 1441, 1454 (9th Cir. 1988). A “high probability” standard is also contrary to the institutionalized caution required by the ESA. See *TVA v. Hill*, 437 U.S. 153, 194 (1978) (“Congress has spoken in the plainest of words, making it abundantly clear that the balance has been struck in favor of affording endangered species the highest of priorities, thereby adopting a policy which it described as ‘institutionalized caution’”). The Corps is under no obligation to defer to the FWS’s flawed interpretation of the ESA, and instead must factor the adverse modification of jaguar critical habitat into its public interest review,

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<sup>184</sup> *Id.* at 259.

<sup>185</sup> *Id.* at 249.

<sup>186</sup> *Id.*

<sup>187</sup> *Id.* at 277

<sup>188</sup> *Id.* at 281

<sup>189</sup> Spangle, Steve. Draft Analysis of the Draft Biological Opinion Regarding Effects of the Rosemont Mine on the Jaguar and its Critical Habitat (June 24, 2013).

especially as any “likelihood of the destruction or adverse modification” of critical habitat requires denial of the 404 Permit. 40 C.F.R. § 230.10(b)(3).

The impacts of the mine on threatened and endangered fish and wildlife counsel strongly against granting a 404 Permit.

#### **E. The Rosemont Mine Will Impact Aesthetic, Scenic, and Recreational Values.**

Southeastern Arizona is characterized by a series of mountain ranges, separated by deserts, that rise above the arid landscape and are known as “sky islands.”<sup>190</sup> The Santa Rita Mountains are one such series of sky islands due to their peaks that reach an elevation of 9,453 feet.<sup>191</sup> The Rosemont Mine would be located just below the ridgeline of the Santa Rita Mountains in an area of aesthetic and scenic value. The following picture by Gooch Goodwin captures the beauty of this stunning landscape.



This vista of rolling hills, canyons, and ridgelines would be permanently and irrevocably destroyed by the Rosemont Mine, which would produce an open pit (6,500 feet in diameter and over 2,000 feet deep), towering waste rock piles and tailings storage facility in the foreground of the above picture. This vista would be transformed into an industrial mining operation with the associated transportation networks, infrastructure corridors, and staging facilities.<sup>192</sup> These impacts dwarf any prior development in the area, which currently has “high scenic integrity.”<sup>193</sup>

The footprint of the Rosemont Mine would also impact recreational values. The mine would directly remove up to 6,990 acres of land from public entry, transforming “the existing, undeveloped, semiprimitive recreation setting on lands surrounding the project area to a developed, industrialized setting.”<sup>194</sup> The mine would also force relocation of 13 miles of the Arizona Trail that are characterized by unobstructed views of the Santa Rita Mountains to a location on the other side of State Highway 83.<sup>195</sup> The Arizona Game and Fish Department summarized these impacts as follows: “the project will render the northern portion of the Santa

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<sup>190</sup> FEIS at 786.

<sup>191</sup> *Id.* at 787.

<sup>192</sup> FEIS at 798-80 (summarizing “wide-ranging impacts to scenic quality that would be evident from a variety of viewpoints.”).

<sup>193</sup> FEIS at 790.

<sup>194</sup> FEIS at 862.

<sup>195</sup> FEIS at 793-794.

Rita Mountains virtually worthless as wildlife habitat and as a functioning ecosystem, and thus also worthless for wildlife recreation.”<sup>196</sup>

These impacts to scenic and recreational values raised concerns for a wide-sector of the public. Tribal communities expressed serious reservations about the impacts of the mine on the Santa Rita Mountains.<sup>197</sup> So too, the communities of Tucson, Green Valley, Sonoita, Sauarita, Vail, and Corona de Tucson,<sup>198</sup> as well as rural residents in Corona de Tucson, Sonoita, Fellows Ranch, Empire Ranch, Hilton Ranch, and Sycamore Estates expressed concerns about visual impacts, as detailed above.<sup>199</sup> And recreationists along the Arizona Trail, Las Cienegas National Conservation Area, and Saguaro National Park expressed concerns.<sup>200</sup> These broadly shared public concerns counsel against issuance of a 404 Permit.

#### **F. Considerations of Property Ownership Weigh Heavily Against the Mine.**

The Rosemont Mine will adversely impact federal public lands and federal water rights, both of which weigh heavily against issuing a permit. *See* 33 C.F.R. § 320.4(a).

The vast majority of the Rosemont Mine (3,656 acres) will occupy federal lands managed by the Coronado National Forest. Huidbay will bury these lands under approximately 1.2 billion tons of waste rock and tailings, if the mine goes forward. Huidbay does not, however, have an absolute right to conduct mining-related activities on these federally-owned lands. While it currently maintains unpatented mining claims on these public lands, it has not proved up their validity. Where there is no valid claim, “there are no rights under the Mining Law that must be respected, [and the government] has wide discretion in deciding whether to approve or disapprove of a miner’s proposed plan of operations.” *Mineral Policy Ctr. v. Norton*, 292 F. Supp. 2d 30, 48 (D.D.C. 2003). Safeguarding these public lands from destruction weighs heavily against permitting the Rosemont Mine.

Mine-driven groundwater drawdown will also adversely affect federal water rights. The Bureau of Land Management (BLM) owns federal reserved water rights throughout Las Cienegas National Conservation Area, as well as water rights associated with three springs on the west side of the Santa Rita Mountains (Helevita, Zackendorf, and Chavez Springs), four springs associated with Cienega Creek, and 13 springs associated with Empire Gulch.<sup>201</sup> “Helevita is believed to derive water from the regional aquifer and therefore there is a high likelihood of [the Rosemont Mine] impacting the BLM water right.”<sup>202</sup> Moreover, “[w]ater rights along Empire Gulch would likely be impacted by the changes described” in the

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<sup>196</sup> Letter from Joan E. Scott, Arizona Game and Fish Department, to Beverley Everson, Coronado National Forest at 1 (July 8, 2008).

<sup>197</sup> FEIS at 1036 (“the mining project would introduce visual, atmospheric, and audible elements that would diminish the integrity of even the physically undisturbed parts of the *Ce;wi Duag*” or long mountains).

<sup>198</sup> FEIS at 791.

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> FEIS at 422.

<sup>202</sup> FEIS at 562.



groundwater models.<sup>203</sup> The BLM “does not relinquish existing BLM surface water and groundwater rights” and requested an opportunity to provide a dissenting opinion to the project.<sup>204</sup> These impacts to public lands and water rights weigh against the 404 Permit.

**G. Hudbay Has Failed to Mitigate the Impacts of the Rosemont Mine.**

The Los Angeles District “concluded that mitigation proposed to offset the project would be inadequate.”<sup>205</sup> The district determined that “the 40.4 acres of waters [of the United States] would not be mitigated by the proposed re-establishment at Sonoita Creek Ranch, along with the proposed mitigation on Davidson Canyon parcels and on proposed mitigation parcels, located outside of the impacted watershed.”<sup>206</sup> This determination is even more apt given that Hudbay now proposes to destroy an additional 8.9 acres of waters of the United States and refuses to offset the indirect effects to waters of the United States caused by groundwater drawdown. Hudbay has thus failed to adequately mitigate the impacts of the project, as discussed in greater detail below. The lack of adequate mitigation weighs heavily against granting a 404 Permit under the Corp’s public interest analysis.

In conclusion, there are multiple procedural and substantive grounds requiring denial of the 404 Permit for the Rosemont Mine. We look forward to discussing these issues with you as part of a formal government-to-government consultation.

Sincerely,



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<sup>203</sup> *Id.* at 529.

<sup>204</sup> Letter from David Baker, Tucson Field Office Manager, BLM, to Jim Upchurch, Forest Supervisor, Coronado National Forest, Aug. 15, 2013.

<sup>205</sup> Letter from Colonel Helmlinger, U.S. Army Corps of Engineers, to Patrick Merrin, Hudbay 2 (Dec. 28, 2016).

<sup>206</sup> *Id.*

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### **List of Exhibits**

1. Letter from Colonel Helmlinger, U.S. Army Corps of Engineers, to Patrick Merrin, Hudbay (Dec. 28, 2016)
2. Letter from Jane Diamond, EPA, to Colonel Colloton, U.S. Army (Nov. 7, 2013)
3. Letter from Jared Blumenfeld, EPA Region IX, to Colonel Colloton, U.S. Army Corps of Engineers (Apr. 14, 2015), enclosing EPA Region 9 comments on the Draft Section 401 Water Quality Certification for the Rosemont Copper Project dated February 21, 2014 (Draft 401 Certification), and the Basis for State 401 Certification Decision Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB
4. Tohono O'odham Nation, Objection to Rosemont Copper Project Final Environmental Impact Statement and Proposed Record of Decision (Feb. 14, 2014)
5. Letter from Dr. Jennifer McIntosh to Kerwin Dewberry (June 1, 2017)
6. Leidy, Robert and Kondolf, Matthias. Technical Memorandum: Conceptual Design for Sonoita Creek, AZ, Technical Review Support (Order Number EP-G149-00241) 9 (July 27, 2015)
7. EPA Comments on Rosemont Copper Project – response to Corps staff comments of April 16, 2014 on Habitat Mitigation and Monitoring Plan 16 (April 28, 2014)
8. Letter from Huckelberry, C.H. to Ms. Rosi Sherrill, 2017 Addendum to Water Quality Permit, Rosemont Copper Project ACOE Application No. SPL-2008-00816-MB (Nov. 17, 2017)