



**DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, LOS ANGELES DISTRICT  
3636 N CENTRAL AVE, SUITE 900  
PHOENIX, ARIZONA 85012-1936**

December 2018

**RECORD OF DECISION**

**CORPS FILE NO. (ACTION ID): SPL-2011-01005-MWL**

**APPLICANT: ASARCO, LLC.**

**PROJECT NAME: Ray Mine Tailings Storage Facility**

I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning the permit application for the proposed action, as well as the stated views of interested agencies and the public. In doing so, I have considered the possible consequences of the proposed action in accordance with regulations published in 33 Code of Federal Regulations (CFR) Parts 320 through 332 and 40 C.F.R. Part 230.

As described in the final environmental impact statement (EIS), the proposed action is to construct a tailings storage facility (TSF) in support of continuing copper mining activities at the Ray Mine, including construction of the TSF and related infrastructure, relocation of a portion of the Florence-Kelvin Highway, relocation of a power line owned and operated by the San Carlos Irrigation Project/Bureau of Indian Affairs (SCIP), and relocation of a portion of the Arizona National Scenic Trail. The proposed action involves the discharge of dredged or fill material into 130.91 acres of waters of the United States, and an additional indirect impact from dewatering to 3.75 acres of waters of the U.S., under Section 404 of the Clean Water Act. As such, a Department of the Army (DA) permit under the Regulatory Program is required for the proposed action.

**I. Background**

An application for a DA permit under Section 404 of the Clean Water Act for the proposed action was originally received in March 2013. The U.S. Army Corps of Engineers, Los Angeles District (Corps), determined an EIS would be prepared. Scoping for the EIS began on August 26, 2013 with publication of a Notice of Intent to Prepare an EIS in the *Federal Register* (Volume 78, No. 165, Monday, August 26, 2013, page 52762). The Corps issued a public notice for scoping on August 26, 2013. Public scoping meetings were held on September 24, 2013 (Kearny, Arizona) and September 25, 2013 (Apache Junction, Arizona). Agency scoping

meetings were held with the Environmental Protection Agency (EPA), Region 9 (San Francisco, California) on September 10, 2013 and with other interested agencies on September 26, 2018 (Phoenix, Arizona). EPA, Region 9; SCIP; and the Bureau of Land Management (BLM), Tucson Field Office agreed to be cooperating agencies in the preparation of the EIS.

In January 2016, a draft EIS was issued by the Corps for a 45-day review period. A public notice for the draft EIS was issued on January 29, 2016. A Notice of Availability was published in the *Federal Register* on February 5, 2016 (Volume 81, No. 24, Friday, February 5, 2016, page 6258). A public meeting was held on February 24, 2016 at Kearny, Arizona. During the draft EIS public review period, 29 letters and emailed comments were received.

The Corps issued the final EIS in September 2018. A Notice of Availability was published in the *Federal Register* on September 7, 2018. A public notice announcing the availability of the final EIS was issued on September 7, 2018.

## **II. Project Purpose and Need**

a. Purpose: The purpose of this project is to create additional tailings storage for up to approximately 750 million tons of material (mill tailings produced by the Ray Mine Concentrator and required embankment material). Capacity to deposit approximately 750 million tons is required to allow for full utilization of the sulfide mineral resource at the Ray Mine.

b. Need: ASARCO operates an open-pit copper mine that generates tailings as a by-product of processing copper ore. Tailings are currently stored at both their Ray Operations adjacent to the Ray Mine and their Hayden Operations about 20 miles from the mine. With the Elder Gulch TSF nearing its capacity, and limited remaining capacity at the Hayden storage areas, ASARCO requires additional storage capacity for copper tailings to continue mining operations at this location. Based on current mine plans, ASARCO needs approximately 750 million tons of tailings storage capacity over the current projected remaining life of the mine (estimated at roughly 50 years based on the presently identified resources and production rates). A peak production rate of approximately 45,000 tons per day, representing the maximum design capacity of the current Ray Mine concentrator, has been used in analyzing tailings transport requirements. This storage capacity is based on a net future need (considering existing remaining tailings capacity) of 550 million tons of tailings capacity plus an additional 200 million tons for starter dam and embankment construction and for potential future contingencies.

## **III. Alternatives Considered**

a. No-Action Alternative: Under the No-Action Alternative, the Corps would deny the 404 permit or ASARCO would withdraw the application. Selection of the No-Action Alternative by the Corps would mean that the construction and operation of a new TSF would not proceed. ASARCO would cease to process sulfide ore resources at the Ray Concentrator

once the Elder Gulch TSF reaches its capacity. This is projected to occur between 2023 and 2024. No additional or new Section 404 permits or modifications would be required for the Ray Mine under this alternative. With cessation of tailings placement into the Elder Gulch TSF, ASARCO would continue to mine sulfide ore and ship this ore material, via rail, to the Hayden Concentrator.

In recent years, full-time employment at the Ray Mine has ranged from approximately 575 to 800 people. With shut-down of the Ray Concentrator operations and no ability to place tailings at the Elder Gulch TSF, full-time direct employment at the Ray Mine would decline to an estimated 280 employees. This would represent a reduction in employment at the Ray Mine of between 295 and 520 people.

Under the No-Action Alternative, it is assumed that sulfide ore mining at the Ray Mine (with associated crushing, waste rock generation and placement) could continue at a reduced production rate for approximately 32 years. In addition, under the No-Action Alternative (and all of the action alternatives), the mining of oxide ore at the Ray Mine would continue for a minimum of 15 years and associated leaching operations would continue for an estimated minimum of 25 years.

b. Ripsey Wash TSF Alternative (Proposed Action): The Ripsey Wash TSF presents the actions proposed by ASARCO in their 404 permit application. This proposed facility would be located within the valley or basin area created by Ripsey Wash (and its tributaries) south of its confluence with the Gila River and approximately four miles southwest of the existing Elder Gulch TSF.

Similar to the ongoing tailings disposal operations at the existing Elder Gulch TSF, the Ripsey Wash TSF would be designed and operated as a closed-circuit (zero surface water discharge) facility. ASARCO would continue to pump tailings material as slurry from the existing Ray Concentrator at the Ray Mine through an existing pipeline to the existing thickener, where the tailings would be “thickened”. This process would remain unchanged from the existing operation.

As part of pre-tailings disposal construction activities, ASARCO would construct two starter dams for the Ripsey Wash TSF. The first and largest of the starter dams would be approximately 150 feet high and located in Ripsey Wash near where the Florence-Kelvin highway currently crosses the wash; approximately 5.2 million cubic yards of alluvium and colluvium and Ruin Formation granite bedrock would be used to construct this starter dam. The second starter dam would be approximately 80 feet high and located in an unnamed drainage on the eastern side of the facility; approximately 400,000 cubic yards of alluvium/colluvium and Ruin granite material would also be used to construct this starter dam. Subsequent embankment construction over the life of the project, using centerline and upstream construction methods, would result in an ultimate embankment elevation of approximately 2,440 feet above mean sea level (amsl).

Two new pipelines (tailings slurry and reclaimed water) , pumping booster station, a lined drain-down tailings containment pond, a bridge across the Gila River, and other supporting infrastructure would be needed to transport tailings from the existing thickener to the Ripsey Wash TSF. Tailings would be discharged from spigots around the perimeter of the tailings areas, and water would accumulate at the rear of the TSF and would be pumped back to the Ray Concentrator via pipelines for reuse in the milling process.

A 6.8-mile segment of the Arizona National Scenic Trail (Arizona Trail) would need to be relocated to allow construction activities and operations of the Ripsey Wash TSF. A 6.4-mile bypass would be constructed to the east of the Ripsey Wash TSF.

A 69 kV power line operated by SCIP would need to be relocated. A segment of the Florence-Kelvin Highway would also need to be relocated through the project area.

Construction (full build out) of this alternative would permanently impact 130.91 acres of waters of the U.S (WOUS) (directly) and indirectly affect an additional 3.74 acres of WOUS from dewatering. Approximately 0.4 acre of WOUS would be temporarily impacted during construction. No wetlands or other special aquatic sites would be impacted. Compensatory mitigation would be partially implemented at four parcels along the lower San Pedro River with the remaining requirement satisfied through payment of a fee to the Lower San Pedro River Wildlife Area In-Lieu Fee Project.

c. Hackberry Gulch TSF Alternative: The Hackberry Gulch TSF Alternative would be located south-southeast of the existing Elder Gulch TSF. The Hackberry Gulch TSF would be designed and operated as a closed circuit (zero surface water discharge) facility. Most of the Hackberry Gulch TSF construction, operational, and closure techniques and practices would be the same or similar to those currently used at the existing Elder Gulch TSF or proposed for use at the Ripsey Wash TSF.

New pipelines would be needed to pump tailings from the existing thickener to the proposed Hackberry Gulch TSF and reclaimed water back to the thickener. In addition, a new service/access road would be required around the base of the existing Elder Gulch TSF to provide routing for the new pipeline and to access the new pumping booster station and lined drain-down containment pond, as well as the seepage trenches, reclaim ponds and related facilities located in the seven washes within the Hackberry Gulch TSF. A bypass road would be constructed to allow continued access to the Kane Spring Canyon. From the new pumping booster station, tailings would be pumped up to the TSF and discharged from spigots that surround the perimeter of the tailings areas, and decant water that accumulates at the back of the Hackberry Gulch TSF would be pumped back to the Ray Concentrator via pipelines for reuse in the milling process.

As part of pre-tailings storage construction activities, ASARCO would construct a large, elongated starter dam for the Hackberry Gulch TSF that would cross several washes. This long

starter dam would be required because the Hackberry Gulch TSF would be a “side-hill” facility (unlike the Ripsey Wash TSF which is essentially a “valley-fill” facility). Subsequent embankment construction over time, using centerline and upstream construction methods, would result in an ultimate embankment elevation of approximately 2,535 feet amsl.

This starter dam embankment would serve as the base to retain tailings materials for the centerline embankment construction. Approximately 8.2 million cubic yards of material would be used to construct this starter dam. Conventional construction equipment, such as front-end loaders, off-highway trucks, and bulldozers, would be used for starter dam construction. Due to the numerous washes that dissect the Hackberry Gulch TSF, multiple temporary haul roads would be needed within and external to, the footprint of the tailings impoundment for construction equipment and activity. To promote long-term safety and to minimize the ingress and egress of traffic from TSF development and operational onto State Route 177, an overpass bridge for State Route 177 would be constructed to link TSF project activities on the northeast and southeast sides of the highway. This overpass would allow highway traffic to continue without interference from ASARCO personnel and equipment as they access the planned four reclaim ponds and the monitoring/pumpback wells that would be located on the southwest side of the Hackberry Gulch TSF.

Construction (full build out) of this alternative would permanently impact 71.5 acres of waters of the U.S (WOUS) (directly) and indirectly affect an additional 19.8 acres of WOUS from dewatering. Approximately 0.62 acre of wetlands and 1.65 acres of perennial/intermittent drainages would be directly impacted by this project. Compensatory mitigation would be similar to that proposed for the Ripsey Wash TSF Alternative.

d. Environmentally Preferable Alternative: Within a National Environmental Policy Act (NEPA) context, the environmentally preferable alternative is the alternative considered in the EIS that will cause the least damage to the biological and physical environment and best protects, preserves, and enhances historic, cultural, and natural resources. In the case of this project, the No-Action Alternative would be considered the environmentally preferable alternative because there would be no permitting action by the Corps and no damage to the biological and physical environment when compared to the action alternatives. However, this alternative does not meet the project purpose and need.

Within a Clean Water Act context, a range of alternatives were evaluated and compared in a 404(b)(1) analysis. This analysis used the project purpose and need and screening criteria to determine whether alternatives are considered practicable. The two action alternatives described above met the criteria for practicability and were brought forward for detailed analysis in the EIS, along with the No-Action Alternative. Although the Hackberry Gulch TSF alternative would impact a smaller amount of WOUS (approximately 94 acres) compared to the Ripsey Wash TSF alternative (approximately 135 acres), as indicated in the EIS, the Hackberry Gulch TSF alternative would have much greater potential adverse effects to water quality and safety because of the inherently unsuitable underlying geological formations at this location.

Construction of a TSF at this location would require a much more complex facility design to control seepage under the facility and manage stormwater flows. This complexity greatly increases the potential for a seepage-based water quality impacts and potential failure of the TSF structures. For these reasons, the Ripsey Wash TSF alternative was selected as the Least Environmental Damaging Practicable Alternative (LEDPA).

#### **IV. Comments on the Final Environmental Impact Statement**

##### **a. Environmental Protection Agency, Region 9**

The respondent's letter restates the agency's positions on a number of topics on this project, the EIS, and 404 permitting-related issues. In general, these comments were previously addressed in detail in responses to comments prepared by the Corps throughout the EIS process in response to previous correspondence submitted for scoping, admin draft and public draft review, and final EIS review. The current letter provides a general narrative of the issues previously mentioned by this agency along with more detailed comments. These comments are addressed below.

General Comments. EPA's letter on the final EIS covers the following general topics:

- Significant degradation of the Gila River and Ripsey Wash
- Potential Safety Risks (need for a Failure Modes Effect Analysis [FMEA])
- The LEDPA was not correctly chosen by the Corps
- Geochemistry Issues/TSF Design and Operation
- Conformity with the State Implementation Plan (SIP)

Each of these issue areas have been brought up previously either during scoping, during cooperating agency coordination, or during reviews of one or more past iterations of the EIS and supporting documentation. In each instance, the Corps specifically addressed these comments in detail. The Corps (and the Corps's third-party contractor for the EIS) evaluated each comment submitted and consulted with the applicant where appropriate to get clarification and/or additional information on technical aspects of their project. In response to EPA's comments, the Corps either made changes to the EIS and 404 permitting documentation (404[b][1] Alternatives Analysis and Conceptual Mitigation Plan) or documented in responses to comments when changes were not incorporated. The manner in which the Corps responded to EPA's comments is fully documented. The Corps's position on EPA's general comments:

- The EIS fully describes the potential effects of this project on the Gila River and Ripsey Wash and does not concur with EPA's assertion with respect to significant degradation of aquatic resources.
- Safety of the TSF has been thoroughly assessed by the Corps, the third-party contractor, and Arizona Department of Environmental Quality (ADEQ) staff. In addition, the applicant has provided substantial information with respect to their tailings management framework and engineering design process that will continue to be used for engineering, construction, commissioning, operation, and closure of the TSF. The Corps does not support conducting an FMEA as part of this EIS or the 404 permit application review process. Additional information is provided below under detailed comments.
- The Corps has fully documented in a 404(b)(1) Alternatives Analysis the process for evaluating project alternatives within a Clean Water Act context. This analysis was included in the EIS. The selection of Ripsey Wash as the LEDPA is fully supported.
- ASARCO has been fully responsive to all requested data needs, sampling, and testing to support the conclusions contained in the EIS with respect to geochemistry concerns, including data requested by EPA during scoping. The Corps's third-party contractor has thoroughly examined all data provided for this facility, documented potential impacts involving geochemistry issues, and finds the EIS analysis fully supported as currently presented.
- Conformity with the SIP has been fully documented in the EIS; no criteria pollutants would be generated that exceed *de minimis* thresholds, thus, the project is presumed to conform. See additional discussion below.

Detailed Comments. Detailed comments contained in EPA's letter are addressed below.

- **Compensatory Mitigation:** EPA again commented on the inadequacy of the Conceptual Mitigation Plan provided in the EIS. The Corps reiterates its position that compensatory mitigation for the impacted aquatic resources has been developed consistent with the requirements of the Corps South Pacific Division's procedures as well as the Corps' Mitigation Rule at 33 CFR Part 332 and is adequate for this project. The Conceptual Mitigation Plan was provided in the EIS to describe how mitigation would be provided at a conceptual scale. The applicant has

submitted a Habitat Mitigation and Monitoring Plan (HMMP), which is a more detailed plan for implementation of mitigation. This plan has been reviewed and approved by the Corps and the implementation of this plan would be required as a special condition for the 404 permit. EPA also mentions that the in-lieu fee (ILF) portion of the mitigation is not acceptable because regular credits are not currently available. This is technically true, however, advance credits have already been approved for the ILF project and are being used. Regular credits are expected to be approved in the near future. The HMMP also provides a phasing schedule to match implementation of mitigation with the timing for impacts to waters of the U.S. The anticipated need for regular ILF credits will not occur until about Year 4 of the project implementation. A contingency has been provided in the mitigation plan in the form of permittee-responsible mitigation site that is currently owned by the applicant to cover the possibility of credits not being available. This contingency is also addressed in the HMMP for the 404 permit. The Corps finds the proposed mitigation plan to be adequate for mitigating the loss of waters of the U.S. for the reasons above and the reasons stated in previous responses to similar comments.

- Water Balance Model and Seepage Capture: EPA comments contain restated comments regarding the water balance model for the TSF and seepage issues. EPA has also commented on very specific aspects of the engineering designs that have been developed for the aquifer protection permit approved by ADEQ. As discussed above, every comment received during the EIS process on the technical aspects of the TSF design and supporting modeling have been reviewed by the Corps and the Corps's third-party contractor, provided to the applicant for consideration and response, and a response has been prepared and provided to the Corps by the applicant. This process has occurred once again with the final EIS comments and the Corps does not agree that additional analysis needs to occur.
- FMEA/Quality Assurance/Quality Control: EPA has repeatedly stated that a multi-stakeholder FMEA should be conducted for this project to identify all potential failure modes. The Corps disagrees with this position.
  - FMEAs for mining projects are conducted by experts in the mining profession, not by a range of stakeholders, most of which would lack any expertise in assessing failure modes for a TSF. The EIS process for this project has already included outreach to the general public and federal, state, local, and Tribal agencies during scoping

and during the review of the EIS iterations. A parallel regulatory process was conducted by ADEQ to specifically analyze the technical aspects of the TSF. These processes do not need to be duplicated in an FMEA that would cover similar ground and not add much additional information to this process.

- In 1986, the Council on Environmental Quality rescinded former requirements in regulations with respect to implementing NEPA related to analyzing worst-case scenarios, or “what-if’s” in NEPA documentation. Thus, an FMEA, which seeks to analyze worst case conditions and consequences, is not needed to satisfy NEPA requirements.
- Although FMEAs have been used in other situations for Corps regulatory EISs, notably the Donlin Mine project in Alaska, those assessments were not required by the Corps. Rather, they became part of the EIS administrative record through state-level requirements and parallel regulatory processes. FMEAs are also not performed by the Corps as a matter of standard practice for other mining projects, such as for coal mining, though they may be used for Corps water resources projects.
- Other federal agencies are not necessarily using FMEAs as a standard practice on mining projects, as asserted in previous EPA comments. In fact, a large mining project, including large scale TSF construction/operations in the same general vicinity of the Ray Mine for Resolution Mining Company, is currently being evaluated by Tonto National Forest and an EIS prepared. An FMEA is not being prepared as part of that evaluation. Other federal agencies, such as the Bureau of Reclamation, do use FMEAs for water resources projects, similar to how the Corps assesses those kinds of projects.
- The applicant has submitted a Tailings Management Framework and Engineering Design Process for the TSF that provides a description of the design approach, design standards, Engineer of Record qualifications and responsibilities, design review and quality control process, and management through the TSF life cycle. This process is meant to ensure best practices are followed and redundant reviews incorporated, in tandem with regulatory oversight by ADEQ and the State Mine Inspector.

- The EPA also asserts the need for an independent review of the impoundment structure under 33 CFR 325.1(d)(6). Independent review is one component included within the applicant's Tailings Management Framework and Engineering Design Process. Separate independent review was also conducted by ADEQ. Therefore the requirements of 33 CFR 325.1(d)(6) are met.

For these reasons, the Corps's position is that an FMEA is neither required as part of the EIS analysis nor necessary for a complete evaluation of the project considering the processes already in place as part of ADEQ oversight and the processes put in place by the applicant to ensure the overall quality and integrity of the engineering design process.

- Air Quality and General Conformity Applicability: EPA raised issues that focus on the estimated annual emissions of criteria pollutants that would result from the project and the determination by the Corps that these emissions do not exceed *de minimis* levels. Citing outdated emissions estimates data, EPA indicates that this determination is not accurate and that these levels would be exceeded. *De minimis* thresholds were developed as a tool for performing a screening-level analysis to assess conformity of federal projects with the provisions of the Clean Air Act. The thresholds are based on the level of attainment with ambient air quality standards for criteria pollutants. Because the project is located in a moderate nonattainment area for particulate matter less than 10 microns in diameter (PM10), the *de minimis* threshold for this pollutant is 100 tons per year. The final EIS documents a worst case emissions year for PM10 at a level of 94 tons per year (without considering mitigation measures that would reduce this estimate), which is below the *de minimis* threshold for this pollutant. For this reason, a general conformity determination is not required and the project is presumed to conform to the Clean Air Act. This information is documented in Section 3.1.2.2.4 of the EIS. Other issues raised by EPA are based on their assertion that *de minimis* levels would be exceeded, and thus do not require further discussion.

b. Western Mining Action Project

The respondent's letter mostly restates points raised in their comment letter on the draft EIS. Appendix L of the final EIS provides detailed responses to those comments; thus, those responses will not be duplicated here. The following summarizes the comments received from the respondent and the Corps's response and provides a response to new comments:

1. Reiteration of all previous comments submitted on the draft EIS

Comment noted. The Corps has provided a response to all comments submitted on the draft EIS. Those responses can be found in Appendix L of the final EIS.

2. Ray Mine and Hayden operations should be evaluated in the final EIS.

As clearly documented in the final EIS, current operations at the Ray Mine and Hayden are discussed within the context of the current and future baseline condition and have been included within the analysis of cumulative impacts. Continuing operations at these two areas generate no new effects to waters of the U.S. and operations at both locations are expected to continue into the future to some extent, with or without a new TSF. The final EIS provides an estimate of the timeframe for continued copper production under the No-Action Alternative (Section 2.2), where no 404 permit is issued. For these reasons, the Corps determined that Ray and Hayden Operations were not connected actions to the proposed TSF and were not analyzed in the final EIS beyond their inclusion in the cumulative impacts analysis. As documented in Appendix L of the final EIS, including a comprehensive analysis of Ray and Hayden operations is viewed by the Corps as being well beyond the extent of federal control and responsibility associated with the permitting action under evaluation.

3. The No-Action Alternative evaluation is inadequate.

The No-Action Alternative assumes that a 404 permit is not issued and that the Ray Mine would continue to excavate sulfide ore until such time there is no longer available storage space at the Elder Gulch or Hayden TSFs. Processing of oxide ore, which does not produce tailings, would continue. Thus, the No-Action Alternative provides a baseline condition on which to base an analysis of the proposed TSF alternatives. This baseline condition consists of the existing operations conducted by ASARCO at Ray and Hayden and the expected future operations that would occur if ASARCO is not issued a 404 permit. The environmental implications of the No-Action Alternative have been discussed and fully described throughout the final EIS.

4. The “Skunk Camp Alternative” Resolution Mine and Plans of Development (included in final EIS as appendices) have not been adequately addressed in the EIS.

Resolution Mine has been described in the cumulative analysis as one of the projects that should be included in the analysis. However, this project is currently undergoing a comprehensive environmental review and multiple alternatives are being considered for pipeline routes, TSF locations, etc. including the Skunk Camp Alternative for a TSF site. No decisions or indications of preference have been made by the lead agency with respect to siting. The final EIS has addressed the incremental contribution of Resolution Mine in this final EIS to the extent possible, considering the amount of information and analysis that is currently available.

The Plans of Development (PODs) included with the final EIS as appendices are not new aspects of this project. The PODS consist of more detailed documentation to satisfy BLM's internal needs related to issuance of rights-of-way and permits on federally managed lands. These are not new aspects of the project and the footprints and actions associated with these PODs have been fully analyzed in the draft EIS.

c. Hopi Tribe

This respondent indicated that they only support the No-Action Alternative as they do not want to see cultural resources sites destroyed. The Corps acknowledges this comment. They also requested to be included (as they have been to date) in any consultation activities regarding this project.

d. Pinal County

Air quality comment: The respondent clarified that a maximum 24-hour PM10 measurement provided in the final EIS was not an exceedance of the ambient air quality standard (AAQs). In addition, the respondent notes that Pinal County does not maintain independent local AAQs; rather, AAQs referenced in the final EIS are national standards. The Corps acknowledges these comments.

Open Space and Trails: The respondent indicates their support for the Hackberry Gulch TSF Alternative because of disruptions that would result to the Arizona Trail from the Ripsey Wash TSF Alternative. Numerous editorial comments related to the Arizona trail and a relocated trailhead facility have been provided. The Corps acknowledges these comments.

e. Arizona Game & Fish Department

The respondent noted that the Corps had addressed all comments previously submitted on the draft EIS. The respondent invited the Corps and ASARCO to

discuss development of best management practices for the project. The Corps acknowledges these comments.

f. Arizona Trail Association

The respondent noted their preference for the selection of the No-Action Alternative because the Ripsey Wash TSF Alternative will disrupt scenic views associated with a segment of the Arizona Trail. As a second option, the respondent prefers the Hackberry Gulch TSF Alternative because it does not require a reroute of the Arizona Trail.

The respondent noted that a visual resources inventory was completed in April 2-18 for the Pinal County portion of the Arizona Trail. This inventory classified the Ripsey Wash as having a high sensitivity level and VRM Class II. The final EIS indicates the area had been previously unevaluated and assumed to have a VRM III classification. The Corps acknowledges these comments.

The respondent objects to language in the final EIS stating that the Arizona Trail and trailhead relocation would be accomplished by ASARCO during initial construction of the TSF. The respondent wants the Corps to require trail work to be initiated within 60 days of the 404 permit being issued. The Corps disagrees with this comment; a special condition for the individual permit would require ASARCO to complete construction of the trail facilities such that there is no disruption to trail use or exposure of hikers to any safety issues associated with TSF construction.

g. Paul Finsness

This person comments on accessibility requirements for the Arizona National Scenic Trail. The route study did not specifically call out any issues with accessibility standards because the purpose of the study was to determine routing, not provide detailed engineering design information. Because it is located on federal land, BLM is responsible for ensuring the trail realignment is constructed in accordance with federal requirements, including accessibility standards.

h. Ronald Dorn

This respondent commented on heavy metal content in dust near the Ray Mine and the potential for increased exposure from construction and operation of a new TSF. The TSF site is located in an area that has long been used for copper mining. There are a number of such operations in this area that could be considered sources for dust that have nothing to do with Ray Operations. As indicated in the final EIS, ASARCO will be implementing dust control measures

to minimize fugitive dust during construction and operation of this facility. No further response is necessary.

i. Drew Smith

This person advocates for the selection of the No-Action Alternative and the Hackberry Gulch Alternative. Comment noted. The Corps acknowledges these comments.

j. Mark Mecikalski

This person advocates for the selection of the Hackberry Gulch TSF Alternative. Comment noted. The Corps acknowledges these comments.

k. Anne McGuffy

This respondent advocates for the selection of the eastern route for the Arizona National Scenic Trail realignment. The final EIS contains the Arizona Trail Relocation Study (Appendix G), which documents the review by and recommendations of the Arizona Trail Partner Group (ATPG). The ATPG recommended pursuing the eastern route, which will be constructed by ASARCO as mitigation for their project. The Corps acknowledges these comments.

l. Mike Ingram

This person expressed opposition to the project. In particular, this person does not believe the design standard (500-year, 24-hour event) is adequate for the stormwater detention facility on the upstream side of the TSF and that compensatory mitigation for the project is inadequate. Comments noted. The design for the detention basin has been reviewed by the Arizona Department of Environmental Quality and found to be adequate. Contingencies have been included in the design for events exceeding the maximum design event. Compensatory mitigation for this project has been developed consistent with current Corps procedures.

m. Jack San Felice

This person asked about road access to the Ripsey and Florence Lead Mines. These mines appear to be well east and south of the Ripsey TSF and would not be directly affected by TSF construction and operation.

1. Melanie Bell, Monika Leuenberger, Aaron McCombs, Marc Verhougstraete, Peter Feldman

These individuals expressed opposition to this project and did not submit comments on the content of the final EIS. The Corps notes their comments.

V. Consideration of Applicable Laws, Regulations, Executive Orders and Policies

a. National Environmental Policy Act (NEPA): Upon receipt of the 404 permit application and subsequent environmental review, the Corps determined that an EIS should be prepared to meet the requirements of NEPA. The EIS process has been completed.

b. Section 401 of the Clean Water Act Section 401 of the CWA: The proposed project is in compliance with the Section 401 of the CWA. The Water Quality Certificate/Waiver (WQC/W) was issued by ADEQ on September 23, 2016 and is included as an attachment to the permit document. Pursuant to 33 U.S.C. 1341(d), special conditions of the Section 401 WQC/W are special conditions of the DA permit and are included in the permit document.

c. Endangered Species Act of 1973: The proposed project is in compliance with the Endangered Species Act. On June 27, 2016, the Corps initiated consultation with the U.S. Fish and Wildlife Service (USFWS) with respect to potential effects to southwestern willow flycatcher (*Epidonax trailii extimus*) (SWFL) and its critical habitat, western yellow-billed cuckoo (*Coccyzus americanus*) (WYBC) and its proposed critical habitat, and northern Mexican garter snake (*Thamnophis eques megalops*) (NMGS) and its proposed critical habitat. The Corps determined that the project may affect SWFL and WYBC and designated critical habitat and proposed critical habitat respectively. The Corps also determined the project may affect, but is not likely to adversely affect, NMGS and its proposed critical habitat. The USFWS issued a Biological Opinion on May 11, 2018. With respect to SWFL and WYBC, USFWS determined the project is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat or, in conference, proposed critical habitat for the yellow-billed cuckoo. With respect to NMGS, USFWS concurred with the Corps's determination the project may affect, but is not likely to adversely affect, NMGS and its proposed critical habitat. The Biological Opinion included an incidental take statement.

d. Fish and Wildlife Coordination Act: The project is in compliance with the Fish and Wildlife Coordination Act. The Corps coordinated directly with both USFWS and the Arizona Game & Fish Department during scoping and throughout the NEPA and Endangered Species Act Section 7 consultation processes.

e. Magnuson-Stevens Fishery Conservation and Management Act: This Act is not applicable to this project because there is no Essential Fish Habitat present.

f. Section 106 of the National Historic Preservation Act: The proposed project is in compliance with Section 106 of the National Historic Preservation Act. The Corps consulted with BLM, SCIP, the State Historic Preservation Officer, Arizona State Land Department, and

Native American tribes regarding effects to nine historic properties eligible for listing on the National Register of Historic Places. A memorandum of agreement has been executed regarding implementation of a historic properties treatment plan that will mitigate adverse effects to these properties.

g. Section 176(C) of the Clean Air Act (CAA) General Conformity Rule Review: Because the project is located in a nonattainment area for PM10, the project was evaluated to determine whether issuance of a 404 permit and subsequent project implementation would result in an exceedance of *de minimis* levels for this criteria pollutant. The analysis indicated that *de minimis* levels would not be exceeded; therefore, a general conformity analysis is not required and the issuance of the 404 permit is presumed to conform to the State Implementation Plan.

h. Executive Order 11998: Floodplain Management: Executive Order 11988 requires federal agencies to prepare floodplain assessments for proposed actions located in or affecting floodplains. If an agency proposes to conduct an action in a floodplain, it must consider alternatives to avoid adverse effects and incompatible development in the floodplain. If the only practicable alternative involves siting in a floodplain, the agency must minimize potential harm to or in the floodplain and explain why the action is proposed there. This project would affect floodplains associated with Ripsey and Zelleweger Washes. The 404(b)(1) analysis provides a practicability analysis that satisfies the requirements of this executive order.

i. Executive Order 11990: Protection of Wetlands: Executive Order 11990 requires federal agencies to prepare wetland assessments for proposed actions located in or affecting wetlands. Agencies must avoid undertaking new construction in wetlands unless no practicable alternative is available and the proposed action includes all practicable measures to minimize harm to wetlands. The proposed project would not affect wetlands.

j. Executive Order 13175: Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians: The Corps consulted with Native American tribes regarding historic properties traditional cultural properties present on the project site and afforded tribes the opportunity to continue to participate in implementation of mitigation. The proposed project is in compliance with this Executive Order.

k. Environmental Justice (Title VI of the Civil Rights Act and Executive Order 12898): An analysis of environmental justice issues is provided in Section 3.11 of the EIS. The proposed action is not expected to negatively impact any community, and therefore is not expected to cause disproportionately high and adverse impacts to minority or low-income communities.

VI. Consideration of Mitigation Measures

The EIS described a number of “environmental protection measures”, which are standards, practices, and mitigation activities the applicant has committed to in order to limit the potential for adverse environmental impacts related construction and operation of the proposed project. These measures were incorporated into the alternative descriptions and are required as a special condition to the 404 permit. A copy of this appendix is attached to the permit.

The EIS also describes compensatory mitigation that is required to compensate for the loss of aquatic functions and values that would result from project implementation. Compensatory mitigation was developed by the Applicant in consultation with the Corps and will be required as a special condition for the 404 permit.

VII. Compliance with 404(b)(1) Guidelines

Based on the discussion in Appendix B of the final EIS, are there available, practicable alternatives having less adverse impact on the aquatic ecosystem and without other significant adverse environmental consequences that do not involve discharges into “waters of the U.S.” or at other locations within these waters?

Yes \_\_\_ No X

If the project is in a special aquatic site and is not water dependent, has the applicant clearly demonstrated that there are no practicable alternative sites available? Not applicable.

Yes \_\_\_ No \_\_\_

Will the discharge:

Violate state water quality standards?

Yes \_\_\_ No X

Violate toxic effluent standards under Section 307 of the Clean Water Act?

Yes \_\_\_ No X

Jeopardize endangered or threatened species or their critical habitat?

Yes \_\_\_ No X

Violate standards set by the Department of Commerce to protect marine sanctuaries? Not applicable.

Yes \_\_\_ No X

Evaluation of the information above indicates that the proposed discharge material meets testing exclusion criteria for the following reason(s):

based on the above information, the material is not a carrier of contaminants.

the levels of contaminants are substantially similar at the extraction and disposal sites and the discharge is not likely to result in degradation of the disposal site and pollutants will not be transported to less contaminated areas.

acceptable constraints are available and will be implemented to reduce contamination to acceptable levels within the disposal site and prevent contaminants from being transported beyond the boundaries of the disposal site.

Will the discharge contribute to significant degradation of "waters of the U.S." through adverse impacts to:

Human health or welfare, through pollution of municipal water supplies, fish, shellfish, wildlife and/or special aquatic sites?

Yes \_\_\_ No X

Life stages of aquatic life and/or wildlife?

Yes \_\_\_ No X

Diversity, productivity, and stability of the aquatic life and other wildlife? Or wildlife habitat or loss of the capacity of wetlands to assimilate nutrients, purify water or reduce wave energy?

Yes \_\_\_ No X

Recreational, aesthetic and economic values?

Yes \_\_\_ No X

Will all appropriate and practicable steps be taken to minimize adverse impacts of the discharge on the aquatic ecosystem? Does the proposal include satisfactory compensatory mitigation for losses of aquatic resources?

Yes X No \_\_\_

## VIII. Public Interest Review

a. The relative extent of the public and private need for the proposed work has been considered: The applicant's proposal to mine copper resources is intended to meet a need at a global market level for this metal. Because the applicant is a private business, the project will

generate revenue that will support or continue to support short and long term employment and tax revenue at the local, state, and federal level.

The following public interest factors were taken into account and both cumulative and secondary impacts were considered (Table 1). Further discussion is provided for factors that will receive an effect that is not negligible.

Table 1. Summary of All Public Interest Factors Considered for Alternatives:

				+ Beneficial effect
				0 Negligible effect
				- Adverse effect
				M Neutral as result of mitigation actions
+	0	-	M	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Conservation.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Economics.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Aesthetics.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	General environmental concerns.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wetlands.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Historic properties.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fish and wildlife values
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flood hazards.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floodplain values.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Land use.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Navigation.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shore erosion and accretion.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Recreation.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Water supply and conservation.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Water quality.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Energy needs.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Food and fiber production.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mineral needs.
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Considerations of property ownership.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Needs and welfare of the people.

1. Economics: The project will have a positive effect on direct and indirect economics by ensuring the continuation of the economic benefits derived from the mineral extraction activity. The mine provides metal products that are needed within the national economy and the mine provides direct and indirect benefits related to employment, local tax base, demand for housing, etc.

2. Aesthetics: The project will impact the visual quality of the project vicinity; however, large-scale mining activities have been in place in this region for over 100 years. As mentioned under “Recreation” below, the project will impact the Arizona National Scenic Trail, but the applicant is funding construction of a new trail segment and trailhead facilities to address this issue. The applicant has also committed to measures designed to reduce aesthetic impacts from this project.
3. General Environmental Concerns: This project would result in the expansion of a long term mining operation into new areas in a region that is known historically as a focal point for copper mining. Although projects such as this can generate environmental concerns, the applicant has committed to environmental protection measures to limit the impacts of the project.
4. Historic Properties: The project will adversely affect nine historic properties; however, the Applicant will be required to fully mitigate the effects on these properties.
5. Fish and Wildlife Values: The project may adversely affect two federally listed species. In consultation with USFWS, conservation measures have been developed to minimize those effects. In addition, the Applicant has made environmental commitments a part of this project that will limit potential effects to fish and wildlife.
6. Water Quality: The nature of mining operations is such that there is a potential for water quality issues with respect to both surface and groundwater resources. Potential water quality issues were analyzed in the EIS for this project. The Applicant is subject to state regulatory requirements that are specifically designed to minimize water quality impacts. An aquifer protection permit is required to minimize the potential for water quality effects to groundwater resources. A stormwater pollution prevention plan and Spill Prevention, Control, and Countermeasure Plan are required to minimize impacts to surface water resources. These related permitting actions, combined with implementation of environmental commitments by the applicant would minimize potential adverse effects. The water quality certification issued for this 404 permit by ADEQ contains a number of general and specific conditions that address water quality concerns. Compliance with these conditions will be included as a special condition for the 404 permit.
7. Recreation: The project would be constructed in an area where a segment of the Arizona National Scenic Trail exists. The applicant has worked with a local trails group to develop an alternative route segment in the vicinity of the project and has committed to constructing the new trail segment and trailhead facilities.

8. Mineral Needs: Ray Mine provides copper resources to the national and international marketplaces. Construction of a new TSF ensures the applicant can maintain continuous copper production without a reduction in the production process.
9. Needs and Welfare of the People: The project would have a beneficial effect with respect to the needs and welfare of the people. The project would provide continuing local employment and economic benefits and allow for a continuing stream of copper to meet market demands.

b. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work has been evaluated: A detailed analysis of the practicability of alternative locations and methods has been provided in the final EIS (Appendix B). The applicant's proposed project was determined to be the least environmentally damaging practical alternative.

c. The extent and permanence of the beneficial and/or detrimental effects that the proposed structures or work may have on the public and private uses which the area is suited has been reviewed:

The project consists of permanent structures that would be constructed with a total footprint of 2,636 acres. Currently, the affected footprint is an area of undeveloped open space, mostly within the Ripsey Wash watershed. This area has historically been used for recreation activities, such as hiking, hunting, bird watching, etc. A public road and a utility line corridor also exist within the project footprint. In addition, portions of the site have also been used for livestock grazing. Portions of the site were previously owned by the State of Arizona and recently purchased by ASARCO for this project. Some relatively small areas are managed by BLM and ASARCO will be required to secure rights-of-way as part of this project.

The project would have a permanent detrimental effect on some public uses that have existed historically in the project vicinity. Construction and operation of the project would affect the current alignment of a portion of the Arizona National Scenic Trail. As documented in the final EIS, ASARCO has worked with BLM and other trail stakeholders to identify a new trail section that bypasses the TSF site. ASARCO will be responsible for constructing this trail segment and related trail facilities, which ensures the continuity of this trail through the project area. The project would also remove a substantial area from recreational uses that have existed in this area in the past. However, because this land is almost entirely in private ownership, future use of this land by the general public for recreational purposes would likely be substantially restricted. Other public and private uses, such as the Florence-Kelvin Highway and the SCIP utility line corridor, will be relocated at ASARCO's expense and will continue to operate post-project.

As documented in the final EIS, this project site provides some specific physical features, such as the underlying site geology and the relatively remote location, that make this site very suitable

for use as a tailings storage facility. These features provide benefits to ASARCO with respect to the proposed private use of this site for tailings storage.

## IX. Special Conditions

The following special conditions will be included in the permit to ensure the project is not contrary to the public interest and complies with the 404 (b)(1) Guidelines:

a. The permittee shall comply with all the requirements and conditions in the state water quality certification issued by the Arizona Department of Environmental Quality on September 23, 2016. This certification demonstrates that the permittee has complied with Section 401(a) of the Clean Water Act. A copy of this certification is enclosed.

b. The permittee shall comply with all the requirements and conditions in the aquifer protection permit (Permit No. P-511395) issued by the Arizona Department of Environmental Quality on August 22, 2016 and any subsequent amendments to that permit.

c. The permittee shall implement the environmental commitments listed in Appendix I of the final EIS for this project. This appendix is enclosed.

d. The permittee shall not undertake any actions that may impact National Register-eligible historical sites or potentially eligible historical sites except under the terms of the executed Memorandum of Agreement (MOA) between the Corps, SHPO, Arizona State Land Department (ASLD), and the permittee titled "Memorandum of Agreement among U.S. Army Corps Of Engineers, Los Angeles District And the Arizona State Historic Preservation Officer And the Bureau of Land Management And Arizona State Land Department And ASARCO LLC Regarding the Proposed ASARCO LLC Ripsey Wash Tailings Storage Facility Project, Pinal County, Arizona", executed in November 2018. The Corps, SHPO, ASLD, and the permittee are signatories for the MOA. For the purposes of this special condition, Register-eligible or potentially eligible historical sites consist of the following: AZ U:16:21(ASM), AZ U:16:350(ASM), AZ U:16:351(ASM), AZ U:16:394(ASM), AZ U:16:428(ASM), AZ V:13:7(ASM), AZ V:13:33(ASM), AZ V:13:291(ASM), and AZ V:13:292(ASM). A 50-foot buffer shall be established around the outer boundary of the sites. No construction activities of any kind shall be conducted within the 50-foot wide buffer zone prior to obtaining written clearance from the Corps. The sites shall be managed in accordance with the MOA. The permittee shall adhere to all conditions and requirements of the MOA, including provide the necessary funding for all required studies and reports. A copy of this MOA is enclosed.

e. Compensatory Mitigation. The permittee shall mitigate for all adverse impacts to waters of the United States authorized under this permit by fully implementing the "Habitat Mitigation and Monitoring Plan for the Ripsey Wash Tailings Storage Facility Project" (HMMP) dated September 2018. Except as otherwise specified in the HMMP, the permittee is solely

responsible for funding, implementation, monitoring, and achieving the success criteria described in the HMMP. The terms of the HMMP may be modified with approval of the Corps without the need to modify this permit.

f. The enclosed Biological Opinion (BO) issued by the United States Fish and Wildlife Service (02EAAZ00-2016-F-0740) contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BO. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take in the attached BO, the terms and conditions of which are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take in the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit.

g. Vegetation removal associated with mitigation restoration activities at San Pedro River Site C along the San Pedro River shall only occur between October 1 and April 14, outside the breeding season(s) of southwestern willow flycatcher and yellow-billed cuckoo (April 15 to September 15 for the southwestern willow flycatcher and May 15 to September 30 for the yellow-billed cuckoo), unless specifically authorized in writing by the Corps and the U.S. Fish and Wildlife Service. Mitigation restoration activities at San Pedro River Site C (non-native species removal prior to replacement with native species) will be conducted in accordance with the Recommended Protection Measures for Pesticide Applications in Region 2 of the U.S. Fish and Wildlife Service (White/FWS 2007).

h. The permittee shall develop and implement an employee education and training program for employees/contractors who will be working on the project to address the Section 404 permit and its conditions prior to commencement of activities authorized by this permit.

i. The permittee shall allow Corps representatives to inspect the authorized activity and mitigation sites at any time deemed necessary to ensure compliance with permit conditions.

j. Prior to the initiation of construction, the permittee shall ensure the contractor(s) and/or field supervisor has been provided with a copy of this permit and special conditions. The contractor(s) and/or field supervisor shall read and agree to comply with the terms and conditions of this permit.

k. The permittee shall relocate the Arizona Trail and move the associated trailhead as part of initial construction activities for the Ripsey Wash TSF.

## X. Findings

a. The evaluation of the proposed action and alternatives was done in accordance with all applicable laws, executive orders, regulations, and agency regulations. The EIS and

supporting documents are adequate and contain sufficient information to make a reasoned permit decision.

b. The selected alternative is the Ripsey Wash TSF, and with appropriate and practicable mitigation measures to minimize environmental harm and potential adverse impacts of the discharges on the aquatic ecosystem and the human environment, the applicant's proposed project, as mitigated by these conditions, is considered the least environmentally damaging practicable alternative.

c. The discharge complies with the Section 404(b)(1) guidelines, with the inclusion of appropriate and practicable general and special conditions in the permit to minimize pollution or adverse effects to the affect ecosystem.

d. Issuance of a Department of the Army permit, with the inclusion of special conditions on the permit, as prescribed by regulations published in 33 C.F.R. Parts 320 to 332, and 40 C.F.R. Part 320 is not contrary to the public interest.

David J. Castanon,  
Chief, Regulatory Division