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U.S. Fish and Wildlife Service
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AESO/SE
2-21-03-F-0014

December 4, 2002

Terry Oda, Manager
CWA Standards & Permits Office
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Oda:

This biological opinion (BO) responds to the Environmental Protection Agency (EPA) request for consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (ESA). Your request for formal consultation was dated October 17, 2002, and received by us on October 18, 2002. At issue are impacts that may result to the Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) (PPC) from the proposed issuance of a National Pollution Discharge Elimination System (NPDES) permit to Asarco, Inc. for the Mission Complex located near Sahuarita, Pima County, Arizona. Your letter states that the State of Arizona has requested delegation to administer the NPDES program and you have requested expedited consultation.

The EPA determined that this action will not affect the endangered cactus ferruginous pygmy-owl (CFPO) (*Glaucidium brasilianum cactorum*). We concur with EPA's finding based on the fact that Asarco has agreed to work outside the CFPO breeding season (February 1-July 31) to install their stormwater control facilities. Surveys for the CFPO were conducted in 2002, on TON lands, and no CFPO were detected. Surveys will be completed in 2003 for the stormwater control facilities on TON land before work is initiated. If a CFPO is detected in the 2003 surveys, depending on the location, all reasonable effort shall be made by EPA, Asarco, and TON to determine the breeding status, location, and extent of the territory. Construction may be delayed until the applicants coordinate with FWS and we determine whether the taking of CFPO is not likely to result. If we are unable to make such a determination, EPA will reinitiate consultation

on this action. The FWS shall work expeditiously with you, Asarco, and TON to resolve any issue that may arise from the detection and shall not unreasonably withhold authorization to proceed with the proposed action. We agree with Asarco that CFPO surveys are not needed on their private lands because of the insignificant amount of suitable habitat that is proposed for disturbance.

This BO is based on information provided in the September 23, 2002, draft biological assessment (BA), meetings, and other sources of information. Literature cited in this BO is not a complete bibliography of all literature available on the species of concern, general mining activities and its effects, the project area, or other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Arizona Ecological Services Field Office.

Consultation History

July 15, 2002: Staff from Asarco and FWS met to discuss issues related to the consultation.

October 4, 2002: FWS provided preliminary written review of draft BA to Asarco.

October 18, 2002: FWS received EPA's request for initiation of formal consultation.

October 31, 2002: Conference call with Asarco, EPA and FWS to discuss comments on the BA.

November 19, 2002: Asarco met with FWS to finalize conservation measures.

November 27, 2002: Asarco sent supplementary information and modification to the proposed action to EPA and FWS.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Mission mining operation is located approximately 20 miles southwest of Tucson, Arizona. The Proposed Action is located on the following Township and Range coordinates based on the Arizona Gila and Salt River Baseline and Meridian: T16S, R12E, Sections 13, 14, 23-25; T16S R13E, Sections 20, 21, 28-30; T17S, R12E, Sections 1-3, 10, 11, and T17S, R13E, Sections 3-10, and 15.

The BA (Gault Group, 2002) addresses two actions: the construction and maintenance of stormwater controls in compliance with the Asarco Mission Complex Stormwater Pollution Prevention Plan (SWPPP); and the ultimate footprint of mining operations on leased single allotments and district lands of the San Xavier District of the Tohono O'odham Nation (TON) as described in the Mine Plan of Operations (MPO) submitted to the Bureau of Land Management (BLM) in March of 2001. The NPDES permit for which EPA is seeking consultation would only

cover the stormwater controls. The proposed action will also require a section 404 permit from the U.S. Army Corps of Engineers. The expansion of mining operations would be a future Federal action to be authorized by the BLM or the Bureau of Indian Affairs and is therefore not included within the scope of this consultation.

Asarco is proposing to construct and maintain stormwater run-on and run-off controls in a corridor around the existing mine operation footprint on both privately owned and leased TON lands in compliance with the SWPPP. Mission Mine is in the process of determining specific engineering designs, however, the total width of the disturbed area would not exceed 50 feet. The proposed action would be located at the toe of waste rock dumps and tailing impoundments that surround the main Mission open pit mine and the San Xavier North and South open pit mines.

The stormwater controls would consist of a combination of excavated soil channels, berms, impoundments, and reclamation in conjunction with each other to:

1. Minimize the amount of stormwater run-on to the Mission mine facilities;
2. Minimize overland flow of stormwater collected by run-on controls by placing outfalls at existing discrete conveyances (washes); and
3. Collect, route, and store stormwater run-off from mine facilities from a 100-year, 24-hour storm event on mine-owned or leased property.

Controls would include energy dissipation structures and riprap to minimize erosion of channels. Maintenance activities would include the resizing and armoring of existing stormwater controls for a 100-year, 24-hour storm event. Future maintenance of existing and proposed stormwater controls will also include the repair of erosion of reclaimed benches, berms, and channels, and removal of sediment from impoundments on a routine basis to preserve the 100-year, 24-hour capacity. The approximate total area of disturbance from the construction and maintenance of these stormwater controls is 165 acres; 60 acres on TON and 105 acres on private land. There are 17 PPC that will be affected by the proposed action; 13 occur on San Xavier-leased land and 4 occur on private land. Not all of the area proposed for disturbance will be lost, only 58.5 acres will be permanently removed as PPC habitat; 23.5 acres on TON and 35 acres on private land.

Proposed Conservation Measures

EPA, Asarco, and TON propose the following measures to minimize potential adverse effects to PPC and its habitat:

1. Stormwater controls will be designed in such a way as to avoid individual PPC and areas of PPC concentration insofar as practicable while complying with the SWPPP.

2. The release of channelized run-on stormwater at SWPPP-designated outfalls will be directed into existing ephemeral drainages rather than as sheetwash dispersed over the general area. No PPC or suitable PPC on the Mission complex, or adjoining areas beyond the footprint of the Mission complex, will be adversely affected by discharge of stormwater or invasion of exotic plants as a result of excess water, erosion, or deposition of excessive amounts of silt or other materials.
3. TON has jurisdiction over PPC on their lands and the disposition of the 13 PPC located on TON lands will be determined by TON, San Xavier natural resources staff, and Asarco before removal
4. The proposed action will result in the permanent removal of 58.5 acres of PPC habitat. Asarco is going to expand their existing 877-acre conservation easement by 58.5 acres to compensate for the loss of PPC habitat. The location of this area will be within the Mission complex, but not necessarily adjacent to the existing easement. The location will be coordinated with the FWS within one year of the date of this opinion.
5. The four PPC that are on private lands within the Mission complex will be transplanted to Asarco's PPC conservation easement.

STATUS OF THE SPECIES

Pima Pineapple Cactus

Life History

The final rule listing Pima pineapple cactus as endangered was published September 23, 1993 (58 FR 49875). The rule became effective on October 25, 1993; critical habitat was not designated at that time. Factors that contributed to the listing include habitat loss and degradation, habitat modification and fragmentation, limited geographic distribution and plant species rareness, illegal collection, and difficulties in protecting areas large enough to maintain functioning populations. The biological information below is summarized from the proposed and final rules, and other sources.

Pima pineapple cactus is a low-growing hemispherical cactus with adults varying in stem diameter from 5.0 cm (2.0 inches) to 21.0 cm (8.3 inches) and height from 4.5 cm (1.8 inches) to 45.7 cm (18.0 inches). Individuals are considered adults when they reproduce sexually. Plants can be either single or multi-stemmed with yellow flowers blooming with the summer rains. Clusters of Pima pineapple cactus stems are formed primarily from vegetative clones produced at the plant base (Benson 1982, Roller 1996). The diagnostic field character of this taxon is the presence of one stout, straw-colored, hooked central spine. Radial spines extend laterally around the central spine and average 10 to 15 spines on large cacti and 6 on small cacti (Benson 1982).

Pima pineapple cactus occurs south of Tucson, in Pima and Santa Cruz counties, Arizona and adjacent northern Sonora, Mexico. It is distributed at very low densities throughout both the Altar and Santa Cruz Valleys, and in low-lying areas connecting the two valleys.

Groups of flowers begin to bloom for single day periods following five to seven days after the first monsoon rains. Flowering is triggered by as little precipitation as 3 mm (0.12 inches). Generally flowers begin opening midmorning and close at dusk (Roller 1996). Adult plants bloom one to three days each year; flowering is usually over by the end of August. Cross-pollination produces significantly more viable seeds than self-pollination. Fruits are mature within two weeks following successful pollination. Germination has been observed in the field during the summer monsoon rainy season (Roller 1996). Anecdotal observations indicate the species' flowers are visited by a variety of native bees and European honey bees, which have been observed to leave the flowers with their forehead and hind legs covered in Pima pineapple cactus pollen.

Habitat fragmentation and isolation may be an important factor limiting future seed set of this cactus. Recent data show that the species cannot successfully self pollinate in situ and is reliant on invertebrate pollinators. One hypothesis is that the spatial distribution pattern of individual Pima pineapple cacti within a given area may regulate pollinator visitations, thus resulting in more successful cross-pollination and subsequent seed set over the population (Roller 1996). If the pollinators are small insects, with limited ability to fly over large distances, habitat fragmentation may contribute to a decrease in pollinator effectiveness with a subsequent decrease in seed set and recruitment.

Population Stability

Extrapolations from recent (1992-1997) surveys of known Pima pineapple cactus locations suggest that the cactus may be more numerous than previously thought. Projections based only on known individuals may underestimate the total number of individuals. This in no way indicates that the cactus is not rare or endangered. Pima pineapple cactus is widely dispersed in very small clusters across land areas well suited for residential, commercial, or mining development. Field observations suggest a great deal of land area within the range boundaries would not support Pima pineapple cactus today due to historical human impacts. Thus, populations are already considerably isolated from each other in many portions of the range, and population size and apparent recruitment varies significantly across the range. On a more local scale, population variability may relate to habitat development, modification, and/or other environmental factors such as slope, vegetation, pollinators, dispersal mechanisms, etc.

The transition zone between the two regions of vegetation described by Brown (1982) as semidesert grassland and Sonoran desert-scrub contains denser populations, better recruitment, and individuals exhibiting greater plant vigor. Vegetation within this transition zone is dominated by mid-sized mesquite trees, half shrubs (snakeweed, burroweed, and desert zinnia), and patches of native grass and scattered succulents. Because populations are healthier in this

transition zone, conservation within these areas is very important (Roller and Halvorson 1997). However, this important habitat type is not uniformly distributed throughout the plant's range. Populations of Pima pineapple cacti are patchy, widely dispersed and highly variable in density. The higher population densities have only been documented at three sites. Compared to other surveys, two of these sites are very small in scale and range from 6.3-7.5 plants per ha (1-3 plants per acre). Other densities across the majority of the plant's range vary between one plant per 1.9 ha (4.6 acres) and one plant per 8.5 ha (21 acres) (Mills 1991, Ecosphere 1992, Roller 1996).

Land areas surrounding developed parts of Green Valley and Sahuarita, Arizona, (including adjacent areas of the San Xavier District of the Tohono O'odham Nation) may be important for the conservation of this species within its range. Analysis of surveys conducted from 1992 to 1995 with a multivariate statistical analysis documented a pattern of greater population densities, higher ranks of cactus vigor, and reproduction occurring within the transition vegetation type found in this area of the northern Santa Cruz Valley (Roller and Halvorson 1997). This area could be defined as an ecotone boundary between semidesert grassland and Sonoran desert scrub.

Seedling and sub-adult size classes are uncommon in documented populations across the range. However, this may be a function of the difficulty of finding such small, well-camouflaged plants in a large-scale survey, or because the establishment phase of the seedling may be limited in some unknown way. Research on Pima pineapple cactus reproduction has suggested that the establishment phase of Pima pineapple cactus life history may limit recruitment within populations (Roller 1996). Evidence presented to support this conclusion was the abundance of flowers, fruits, and viable seed, and the rarity of seedling presence at different sites spread throughout the plant's range (Roller 1996). Other research has confirmed that the establishment phase of other Sonoran cacti species may be critical for survival to reproductive maturity (Steenbergh and Lowe 1977).

Status and Distribution

Generally, the Pima pineapple cactus grows on gentle slopes of less than 10 percent and along the tops (upland areas) of alluvial bajadas nearest to the basins coming down from steep rocky slopes. The plant is found at elevations between 720 m (2,362 ft) and 1,440 m (4,593 ft) (Phillips et al. 1981, Benson 1982, Ecosphere 1992), in vegetation characterized as either or a combination of both the Arizona upland of the Sonoran desert scrub and semidesert grasslands (Brown 1982).

The acquisition of baseline information began with surveys documenting the presence of Pima pineapple cactus as early as 1935. More intensive surveys were initiated in 1991 and other research established in 1993 further investigated the reproductive biology, distribution, fire effects, and mortality associated with various threats. Therefore, the best available baseline information is relatively recent and may not represent actual changes in distribution since the decline in the status of the species began.

Widely scattered surveys have been conducted across sites that varied considerably in cacti density. Densities ranged between 0.1-7.5 plants per ha (0.05-3 plants per acre). Pima pineapple cactus occurs in 50 townships within its U.S. range. However, a considerable amount of land area within the range boundaries does not provide habitat for the species due to elevation, topography, hydrology, plant community type, and human degradation. To date, an estimated 22,959 ha (56,730 acres), (10 to 20 percent of the U.S. range) have been surveyed. Not all of this area has been intensively surveyed; some has only been partially surveyed using small land blocks to estimate densities rather than 100 percent ground surveys. A conservative estimate of total cacti located to date would be 3,800 individuals. The majority of those were located after 1991.

It is important to clarify that the above number represents the total number of locations ever found and not the current population size. It would be impossible to estimate densities over the remaining unsurveyed area because of the clumped and widely dispersed pattern of distribution of this species. Of the 3,800 individuals recorded to date, 2,203 (58 percent) of them have been removed throughout the range. This quantity includes observed and authorized mortalities and individuals transplanted since the species was listed in 1993 to present. A small portion of these mortalities were caused by natural factors (i.e., drought). Moreover, this figure does not take into account those cacti that are removed from private land or lost to other projects that have not undergone section 7 review.

Transplanted individuals are not considered as functioning within the context of a self-sustaining population. Efforts to transplant individual cacti to other locations have only had limited success and the mortality rate has been high, especially after the first year. Furthermore, once individuals are transplanted from a site it is considered to be extirpated as those individuals functioning in that habitat are irretrievably lost. We view transplanting cacti as a measure of last resort for conserving the species. Transplanting will be recommended only when on-site and off-site habitat conservation is not possible and the death of cacti is unavoidable.

The area of habitat reviewed under section 7 between 1987 and 2000 (i.e., habitat developed or significantly modified beyond the point where restoration would be a likely alternative) is approximately 9,886 ha (24,429 acres) which represents 43 percent of the total area surveyed to date. In 1998, more than 445.5 ha (1,100 acres) of Pima pineapple cactus were lost including 143 ha (353 acres) from the Las Campanas Housing Development project, and 304.6 ha (752 acres) from the ASARCO, Inc. Mission complex project. In 2000, 237.3 ha (586 acres) of habitat were lost with the expansion of a state prison in Tucson. In 2001, 71.7 ha (177 acres) of habitat were lost through development, but 375.8 ha (888 acres) of occupied and suitable habitat were conserved through conservation easements. We are aware of housing developments along Valencia Road, Pima County, Arizona, in the vicinity of T15S, R12E, Section 15 and surrounding areas, that support Pima pineapple cactus. These developments affect several hundred acres of habitat and have not been evaluated through the section 7 process. The number of acres lost through private actions, not subject to Federal jurisdiction, is not known but given the rate of urban development in Pima County, we believe that it is significant.

Most of the documented habitat loss has occurred south of Tucson down through the Santa Cruz Valley to the town of Amado. This area is critical for the future recovery of the species. The expansion of urban centers, human population, and mining activities will continue to eliminate habitat and individuals, and result in habitat fragmentation.

The protection of habitat and individuals is complicated by the varying land ownership within the range of this species. An estimated 10 percent of the potential habitat for Pima pineapple cactus is held in Federal ownership. The remaining 90 percent is on Tribal, State, and private lands. Most of the federally owned land is either at the edge of the species' range or in scattered parcels. The largest contiguous piece of federally owned land is the Buenos Aires National Wildlife Refuge, located at the southwestern edge of the species' range at higher elevations and lower plant densities.

Based on surveys and habitat analysis, areas south of Tucson through the Santa Cruz Valley to the town of Amado and surrounding developed parts of Green Valley and Sahuarita, and parts of the San Xavier District of the Tohono O'odham Nation, appear to support abundant populations, some recruitment, and units of extensive habitat still remain. However, the primary threat to the status of this species throughout its range is the accelerated rate (i.e., since 1993) at which this prime habitat is being developed, fragmented, or modified.

Under section 9 of the Act, the taking of listed animals is specifically prohibited, regardless of landownership status. For listed plants, these prohibitions and the protection they afford do not apply. Listed plant species are protected only from deliberate removal from Federal lands. There is no protection against removal from, or destruction of, plants on any non-Federal lands under the Act by a land owner. The Arizona Native Plant Law may delay vegetation clearing on private property for the salvage of specific plants species within a 30-day period. Although the Arizona State Native Plant Law does prohibit the illegal taking of this species on state and private lands without a permit for educational or research purposes, it does not provide for protection of plants in situ through restrictions on development activities.

Based on current knowledge, the following threats documented with this reduction in habitat alter the landscape in a manner that would be nearly irreversible in terms of supporting Pima pineapple cactus populations: urbanization, farm and crop development, and exotic species invasion. Prescribed fire can have a negative effect if not planned properly.

Other specific threats which have been previously documented (U.S. Fish and Wildlife Service 1993), such as overgrazing and mining, have not yet been analyzed to determine the extent of effects to this species. However, partial information does exist and can be applied. Mining has resulted in the loss of hundreds, if not thousands, of acres of potential habitat throughout the range of the species. Much of the mining activity has been occurring in the Green Valley area, which is the center of the species' distribution and the area known to support the highest densities of individuals. Overgrazing by livestock, illegal plant collection, and fire-related

interactions involving exotic Lehmann lovegrass (*Eragrostis lehmanniana*) may also negatively affect Pima pineapple cactus populations (U.S. Fish and Wildlife Service 1993).

Even with complete data on historical change related to Pima pineapple cactus distribution and abundance, we cannot reliably predict population status due to compounding factors such as climate change, urbanization, legal, and political complexities (McPherson 1995). We do not know if the majority of populations of Pima pineapple cactus can be sustainable under current reduced and fragmented conditions. Thus, there is a need to gather information on limits to the plant's distribution under current habitat conditions.

Based on monitoring results, the range-wide status of the Pima pineapple cactus appears to have been recently affected by threats that completely alter or considerably modify more than a third of the species' surveyed habitat, and have caused the elimination of nearly 60 percent of documented locations. These values are supplied to serve as an extrapolation of the situation which might be taking place across the rest of the entire population. Current information regarding the status of this species must be supplemented by more precise and thorough spatial analysis through the use of geographical information systems, databases, and on-the-ground surveys.

Dispersed, patchy clusters of individuals are becoming increasingly isolated as urban development, mining, and other commercial activities continue to detrimentally impact the habitat. The remaining habitat also is subject to degradation or modification from current land management practices, increased recreational use when adjacent to urban expansion (i.e., off-road vehicle use and illegal collection), and the continuing aggressive spread of nonnative grasses into habitat. Habitat fragmentation and degradation will likely continue into the foreseeable future based on historical data and growth projections produced by the Pima County Association of Governments (1996). There is very little Federal oversight on conservation measures that would protect or recover the majority of the potential habitat. Even some areas legally protected under the ESA have been modified and may not be able to support viable populations of the Pima pineapple cactus over the long-term.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform from which to assess the effects of the action now under consultation.

Surveys for PPC were conducted from August 9 through September 10, 2002, by Sage Landscape Architecture and Environmental, Inc., Tucson, Arizona. Surveys were conducted within potentially suitable PPC habitat following the FWS-approved protocol. The width of the area of disturbance

would not exceed 50 feet, however, a conservative, 150-foot wide corridor was surveyed around the perimeter of the Mission operation on both TON-leased lands and Mission fee lands.

The survey located 306 live PPC and 61 dead PPC within the survey area of 1,388 acres dictated by the maximum combined areas of stormwater controls and mine expansion (Sage Environmental 2002), representing a PPC density of 0.22 plants per acre that is within the normal range for the region (Mills 1991). The survey crew located 16 PPC that were either uprooted or trampled by cattle, and noted that some areas with high densities of PPC were impacted by heavy cattle grazing. Of all of the PPC located, 41% were in flower or had fruit, 45% had produced viable pups (offsets), and 27% had both pups and flowers or fruits. An unspecified number of plants were found in bottomland areas and along stream channels, usually considered unsuitable habitat for PPC, and suggesting a tolerance for disturbance (Sage 2002).

PPC have recolonized areas within the Mission complex that had been disturbed. During surveys conducted by Dames and Moore (1997) PPC were located in the bottoms of two stormwater detention basins, constructed in 1969. Sage (2002) also found PPC within roadways, on top of a stormwater control dike, and along stream channels. This indicates that not all areas that are disturbed become unsuitable for PPC. Based on these observations, Asarco estimates that only 58.5 acres (35%) of the 165 acres to be disturbed will be permanently removed as PPC habitat.

A previous biological opinion was issued for impacts to PPC on July 27, 1998, (2-21-97-F-328) for the construction and operation of tailing impoundment No. 4 at Mission. Construction of the impoundment directly affected 309 individual PPC. Conservation measures associated with the action resulted in the establishment of an 877-acre conservation easement. This site was used for transplantation of affected PPC. Survival rates are unknown.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

The proposed stormwater run-on and run-off controls construction and maintenance would disturb a maximum of 165 acres of potential PPC habitat. Of that, 58.5 acres will be permanently removed. The remaining acres, although disturbed during construction, will be available for PPC recolonization after construction. Although stormwater controls would not exceed 50 feet in width from the perimeter of the Mission operations, the BA assumed that any PPC within 100 feet of the facility perimeter would be affected. Accordingly, the proposed action would result in the permanent loss of 58.5 acres of habitat and the removal of up to 17 PPC. Density of cactus is

calculated to be 0.10 cactus/acre. This is well within the average for the species. Densities of approximately 0.40 cacti/acre are fairly common. This would indicate that the habitat is suitable for PPC.

To compensate for the permanent loss of PPC habitat, Asarco has agreed to add 58.5 additional acres to its existing 877-acre conservation easement. In addition, PPC on Mission fee lands that will be affected by the proposed action will be transplanted to the conservation easement. Although transplant success of PPC is low, there may be a few plants that survive. Setting aside additional acreage of occupied PPC habitat, with a similar density (0.10 cactus/acre), will result in additional conservation benefits for the species. A 1:1 ratio for replacement is adequate as the average density for cactus associated with the proposed action is below the average. PPC will not be able to survive in the long-term in small, fragmented areas surrounded by urban development. Large, contiguous blocks of habitat need to be managed for their natural values. All of the proposed conservation actions included in the biological assessment and supplement are critical to offset impacts to PPC and its habitat.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative impacts from private actions include potential future mining operations at Mission and Phelps Dodge Sierrita mines, future development activities at the Caterpillar Proving Grounds, urban development in areas around south Tucson, Green Valley, Nogales, Rio Rico, and along the Santa Cruz River. Much of this development will have little or no Federal nexus. Without any protection under the Act, the only protection available is through the Arizona Native Plant Law, which provides only for salvage for scientific and educational purposes. Regardless of salvaged PPC transplant success, the habitat would be lost.

CONCLUSION

After reviewing the current status of the PPC, the environmental baseline for the action area, the effects of the proposed action, and cumulative effects, it is the FWS's biological opinion that the issuance of the NPDES permit for the Mission Complex, as proposed, is not likely to jeopardize the continued existence of the PPC. No critical habitat has been designated for this species, therefore, none will be affected.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any conservation measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Sections 7(b)(4) and 7(o)(2) of the ESA do not apply to listed plant species. However, protection of listed plants is provided to the extent that the ESA requires a Federal permit for removal or reduction to possession of endangered plants from areas under Federal jurisdiction, or for any act that would remove, cut, dig up, or damage or destroy any such species on any other area in knowing violation of any regulation of any State or in the course of any violation of a State criminal trespass law. Neither incidental take nor recovery permits are needed from FWS for implementation of the proposed action.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

- 1) We recommend that EPA work with Asarco and FWS to expand the size of the PPC conservation area at the Mission complex.
- 2) We recommend that EPA work with Asarco and FWS to transplant affected PPC to the newly expanded segments of the conservation area.
- 3) We recommend that EPA participate on the stakeholder participation team developing the Pima pineapple cactus recovery plan and consider contributing to on-going survey efforts in Pima and Santa Cruz counties to determine the status of PPC on State lands.
- 4) We recommend that EPA, in cooperation with FWS, develop long-term conservation strategies for PPC and incorporate those strategies into the NPDES program.

In order that we be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the proposed action. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed

species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

We appreciate the EPA's efforts to identify and minimize effects to listed species from this project. For further information please contact Mima Falk at (520) 670-4550, or Mike Martinez at (602) 242-0210 (x224). Please refer to consultation number 2-21-03-F-0014 in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Director, Arizona Game and Fish Department, Phoenix, AZ
U.S. Army Corps Of Engineers, Tucson, AZ (Attn: Marjorie Blaine)
Asarco Inc, Tucson, AZ (Attn: Hal Richens)
Natural Resources Department, WVMP, Tohono O'odham Nation, Sells, AZ
(Attn: Scott Bailey)

Arizona Department of Agriculture, Phoenix, AZ (Attn: Jim McGinnis)
The Gault Group, Phoenix, AZ (Attn: Steve Glass)

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