Asarco Mission Complex
FACT SHEET
Final September 22 , 2008
EPA PERMIT NO. AZ0024635

This document gives pertinent information concerning the issuance of the NPDES permit listed below. The effluent limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (AAC.) R18-11-101 et. seq. This permit, for a Minor facility as specified in 40 CFR 122.2, is proposed to be issued for a period of 5 years.

Permittee's Name:	ASARCO LLC - Mission Complex
Mailing Address:	4201 West Pima Mine Road Sahuarita, AZ 85629
Plant Location:	4201 West Pima Mine Road Sahuarita, AZ 85629
Contact Person:	Jamie Ekholm, (520) 393-4671 Environmental Engineer
NPDES Permit No.	AZ0024635

I. STATUS OF PERMIT(s)

The NPDES permit for the ASARCO Mission Complex was issued on April 1, 2003.

ASARCO has submitted a re-application (Forms 1 and 2F) for its NPDES permit (dated October 10, 2007). Asarco provided a revision to application Form 2F on December 7, 2007 which included revised DMR data.

The ASARCO Mission Complex is located on both private and tribal lands, and therefore the Mission Complex is subject to the jurisdiction of both the U.S. Environmental Protection Agency (EPA) and the Arizona Department of Environmental Quality (ADEQ). Therefore, EPA is issuing a NPDES permit for the discharges located on Tribal Lands, and ADEQ is issuing a AZPDES permit for discharges not located on Tribal Lands. The existing AZPDES permit issued by ADEQ is AZ0024597.

Asarco had filed a Notice of Intent (NOI) for coverage under the Multi-Sector Stormwater General Permit (AZRO5A72F) dated January 25, 2001. Discharges of stormwater from the facility were covered under a multi-sector general stormwater permit ID Number AZRO5A72F. Previous NOIs were dated January 26, 1999 (ID number AZRO5A51F) and February 3, 1993 (ID number AZR00A14F).

As the result of an inspection report (dated May 3, 2002 prepared by EPA), Asarco was issued a Finding of Violation and Order for Compliance on June 20, 2002. Due to potential for exceeding water quality standards and due to non-compliance with components of the MSGP, EPA determined that Asarco Mission Complex was no longer eligible for coverage under the MSGP. As part of the order, EPA required that the Asarco Mission Complex apply for an individual NDPES permit by August 5, 2002.

The U.S. Environmental Protection Agency (EPA) and the Arizona Department of Environmental Quality (ADEQ) have prepared draft National Pollutant Discharge Elimination System (NPDES) permits for the discharge of mine drainage and stormwater from the Asarco Mission Complex located in Pima County, Arizona. The State of Arizona obtained primacy for the NPDES program on December 5, 2002. Permit conditions in the two permits are largely identical, with limited exceptions such as the discharge points authorized by each permit; the inclusion in the AZPDES permit of several conditions related to activities occurring solely on non-Tribal land; the requirement in the AZPDES permit to submit discharge flow records; and the requirements to comply with the federal Endangered Species Act contained in the EPA NPDES permit.

II. GENERAL FACILITY INFORMATION

The Mission Complex is a commercial open pit copper mine and underground copper mine. The facility is located near Sahuarita, Arizona (18 miles south of Tucson). The mine site is spread out over an area of approximately 19,000 acres (29.7 square miles) and includes an open pit (measuring approximately 2.5 miles long by 1.5 miles across), associated crushing, grinding and flotation facilities, tailings facilities, waste rock dumps, and warehouse, maintenance and administrative areas. The underground mine (not currently in use) is accessed through declines from within the pit. The area of the Mission Complex north of Pima Mine Road is located on Tribal land of the San Xavier district of the Tohono O'Odham Nation while the area south of the Pima Mine Road is primarily owned by ASARCO.

Copper mining has been conducted on the site beginning with prospectors in the 1900s. Mining continued with vertical and decline shafts in the 1920s, 1930s and 1940s. During WWII, the mine area also produced tungsten due to the high demand and price for tungsten. Open pit stripping began in 1959.

The facility has a production capacity of 400,000 tons per year of copper concentrate. The mill has processed up to 60,000 tons of ore per day; the facility is currently processing approximately 53,700 tons of ore per day. Future production rates are likely to depend on copper prices. Ore is crushed via the primary gyrotory crusher, rod mill and ball mill. The ground ore is pumped as a slurry to froth flotation cells, where chalcopyrite is separated from non-copper bearing minerals. Lime, xanthates (a biodegradable additive that serves as a collecting agent), pine oil (a frothing agent), and methyl isobutyl carbonal are added to the mixture to facilitate separation of the copper mineral. In the flotation stage, the chalcopyrite attaches to the air bubbles and is skimmed off. The first stage, "roughing," removes approximately 88% of chalcopyrite. The skimmed materials from the roughing stages are re-ground and sent to secondary froth flotation cells (two stages). Tailings are collected from the roughing and secondary flotation cells and gravity-fed to the tailings ponds. None of the tailings facilities have been permanently reclaimed. For final

processing, the copper concentrate (containing approximately 27% copper) is sent off-site for smelting.

From 1973 to 1978, a leaching plant was operated at the facility to acid leach copper from the oxide ore. However, the very high carbonate content of the orebody, and consequently the acid requirements for leaching made recovery from this orebody via leaching uneconomic, and leaching ceased. A typical copper porphyry deposit, such as that found at the Mission Complex can contain other minerals including silver, molybdenum, lead, zinc and manganese, and other elements such as traces of arsenic and tungsten. The Mission Complex currently operates a molybdenum recovery circuit.

III. RECEIVING WATER

The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by the designated use depending on the level of protection required to maintain that use.

Outfalls from the Mission Complex discharge to unnamed tributaries of the Santa Cruz River. All tributaries in the vicinity of the Mission Complex are ephemeral washes that only flow during a storm event. These tributaries eventually reach the Santa Cruz River in an ephemeral segment located between the Tubac bridge and the Roger Road WWTP. Pursuant to Arizona's water quality standards, unlisted ephemeral tributaries (such as those that would receive any discharge from the outfalls at the Mission Complex) are protected by the Aquatic and Wildlife ephemeral (A&We) and Partial Body Contact (PBC) designated uses. See A.A.C. R18-11-105.

The Status of Water Quality in Arizona - 2004 (Integreated 305(b) Assessment and 303(d)Listing) does not list as impaired the ephemeral washes near Mission or the portion of the Santa Cruz River into which these washes could flow. Thus, the receiving waters are considered "Tier 2" water bodies with respect to Arizona Water Quality Standards at Arizona Administrative Code (A.A.C.) R18-11-107.

The numeric effluent limitations in the EPA permit apply only to the discharges from the following NPDES discharge points:

Outfall No.	**Description of discharge**	**Location of discharge**
Outfall 001A	runoff from roadway next to San Xavier North Oxide dump	Latitude: 32E 1' 30" N Longitude: 111E 4' 30" W
Outfall 002D	runoff from Tailings No. 2, 3, and North Dump	Latitude: 32E 1' 45" N Longitude: 111E 1' 0" W
Outfall 006L	runoff from San Xavier Dump	Latitude: 32E 2' 30" N Longitude: 111E 4 ' 30" W

The numeric effluent limitations in the ADEQ permit apply only to the discharges from the

following AZPDES discharge points:

Outfall No.	Description of discharge	Location of discharge
Outfall 003G	runoff from Tailings No. 6 and 7	Latitude: 31E 58' 15" N Longitude: 111E 0 ' 0 " W
Outfall 004I	runoff from Tailings No. 8	Latitude: 31E 57' 30" N Longitude: 110E 59' 45" W
Outfall 005K	runoff from South Pima Dump and Mineral Hill Dump; stormwater run-on from west of facility	Latitude: 31E 57' 30" N Longitude: 111E 3' 45" W

IV. DESCRIPTION OF DISCHARGE

Potential pollutants at the Mission Complex are found in the following: process solutions, tailings reclaim water, tailings, waste rock and stormwater contaminated by contact with tailings and acid-generating waste rock. Based on data provided for the aquifer protection permit, the majority of waste rock generated at the Mission Complex is not acid-generating.

Data from DMR sampling over the past permit term demonstrates that, due to retention pond containment of stormwater, no discharge was observed at outfall 002D. Outfall 006L was identified in the 2003 permit as a future outfall tied to construction of Retention Basin 24, located at the northeast corner of the San Xavier North dump, and associated storm water controls around that dump. The controls envisioned in the 2003 permit have not yet been completed in this area, for the reasons discussed below in the next section of this Fact Sheet, and no data is therefore available for this outfall. Current plans call for a revised system of controls that will eliminate the need for outfall 006L when completed.

Discharge samples were collected from Outfall 001A for up to 9 sampling events. Sample point 001A is runoff from roadway and rock dumps next to San Xavier North Oxide dump.

The following table is a summary of sampling data:

Parameter	Maximum Concentration	Number of Samples
Oil and Grease	ND	NA
BOD_5	ND	NA
COD	170	9
TSS	19,000	9

Total N	1.6	8
Total P	ND	NA
Antimony	ND < 0.050	1
Arsenic	(Total) ND < 0.1 (Dissolved) ND< 0.1	9
Beryllium	(Total) <0.0050	1
Cadmium	(Total) ND < 0.050 (Dissolved) ND < 0.050	9
Copper	(Total) 12.00 (Dissolved) 0.130	9
Iron	(Total) 160	9
Lead	(Total) 0.45 (Dissolved) ND < 0.15	9
Manganese	(Total) 7.5 (Dissolved) 0.15	9
Mercury	(Total) ND < 0.001 (Dissolved) ND <.0001	9
Nickel	(total) ND < 0.050	9
Selenium	(Total) ND < 0.10 (Dissolved) ND < 0.10	9
Silver	(total) ND < 0.005	9
Zinc	(Total) 2.1 (Dissolved) ND < 0.050	9

V. STATUS OF COMPLIANCE

As the result of an inspection report (dated May 3, 2002 prepared by EPA), ASARCO was issued a Finding of Violation and Order for Compliance on June 20, 2002. Part of the order required that Asarco apply for an individual NPDES permit. The activities to comply with the Order were incorporated into the new NPDES permit, issued April 1, 2003. Attachment 2 to the permit included a list of specific construction and maintenance activities to be performed, and included a compliance schedule to perform these activities.

The permit incorporated a compliance schedule to allow up to 6 months to comply with effluent limitations for Outfalls 001A and 002D, and 3 years to comply with effluent limitations for Outfall 006L.

The permit incorporated a compliance schedule to allow up to 24 months to perform maintenance

and construction activities that included construction/maintenance of berms, run-off controls, run-on diversion controls, sediment removal, monitoring devices, and other activities to protect surface water. The permit incorporated a compliance schedule to allow up to 36 months to perform maintenance and construction activities specific to the San Xavier North Dump that included construction/maintenance of berms, run-off controls, run-on diversion controls, sediment removal, monitoring devices, and other activities to protect surface water.

Asarco provided Attachment 1 to the permit application which details the activities performed for each of the compliance elements. All activities related to the North Dump, Tailings # 1, 2, and 3, and the 19 dump have been completed. However, no activities have been completed related to the San Xavier North Dump due to lack of a Section 404 permit. The activities at the San Xavier North Oxide Dump are directly related to the control of runoff from Outfall 001A. As noted previously, data supplied during the permit term for Outfall 001 indicates significant non-compliance for copper and lead. While effluent limits for Copper were established at 0.086 mg/l, the average copper concentration out of 9 samples was 2.5 mg/l, and the maximum was 12 mg/l, several orders of magnitude above the effluent limit. It should be noted that the dissolved fraction during this same time period was a maximum of 0.130 mg/l and an average of 0.090 mg/l, indicating that the vast majority of the copper in the discharge was associated with total suspended solids. Data for a similar time period indicates TSS concentrations at up to 19,000 mg/L. Similarly, effluent data for lead showed a maximum concentration of 0.45 mg/l (total) and an average of 0.114 mg/l (total) while the dissolved fractions were all non-detect at < 0.15 mg/l.

The compliance schedule in Attachment 2 of the permit did allow the dates to be extended for construction and maintenance elements by EPA for good cause, when the permittee requests and obtains written approval from EPA for any extension. The permittee provided a letter to EPA on May 8, 2006 explaining to EPA that Asarco "did not have enough information on the final, general physical characteristics of the mine site on the Reservation, including the final sloping of waste rock dumps and tailings, flow routing, grading and filling which could impact jurisdictional waters, to apply for a Section 404 Permit." This was because the final form of the mine reclamation plan has not yet been finalized, and there was an ongoing dispute regarding the standards that governed any reclamation. In addition, Asarco's lease for a large portion of the San Xavier North Dump was terminated, denying it lawful access to these areas for several years and precluding it from obtaining a Section 404 permit to conduct the remaining stormwater control work. The reclamation and lease issues were resolved earlier this year, and Asarco is currently engaged in discussions with the U.S. Army Corps of Engineers regarding a Section 404 permit.

Although EPA recognizes that there would be benefits to Asarco only applying for and receiving one, final, 404 Permit for work to be done both in this area and the remainder of the Mission Complex, and that issuing a single Section 404 permit would be consistent with the policy and practices of the U.S. Army Corps of Engineers, EPA believes that the remaining work needs to be completed expeditiously. As noted above, discharges from Outfall 001A contain significant levels of copper and lead, and TSS, which have been out of compliance since October, 2003.

Therefore, EPA has included in the proposed permit a revised compliance schedule that requires the permittee to apply for a Section 404 Permit within 60 days of permit issuance. The activities detailed in Appendix B to the permit then must be completed within 9 months of receipt of the Section 404 Permit. Appendix B contains essentially the same provisions that were in the

previous permit that have not been completed. One small change to the previous permit is that EPA has approved an alternative approach where Asarco will construct BMPs, including diversion channels, regrading haul roads, and containment cells that would eliminate the discharge from Outfalls 006L and 001A from the San Xavier North dump areas. These outfall locations would instead be diverted to containment structures. When construction has been completed, EPA may issue a minor modification to eliminate these outfall locations from the permit.

VI. DETERMINATION OF EFFLUENT LIMITATIONS

When determining what parameters need monitoring and or limits included in the draft ASARCO Mission Complex permit, both technology-based and water quality-based criteria were compared and the more stringent criteria applied.

Technology-based Limitations:

The Mission Complex operates a copper concentrator that utilizes the froth flotation process. Process wastewater discharged from the froth flotation process and mine drainage is subject to the effluent limitations at 40 CFR Part 440 Ore Mining and Dressing Point Source Category. Subpart J, the Copper, Lead, Zinc, Gold, Silver, and Molybdenum Ores Subcategory, applies to mines that produce copper, lead, zinc, gold, silver or molybdenum ores, singly or in combination, from open-pit, or underground operations.

The Mission Complex does not discharge wastewater from its froth flotation process due to recycle and containment of the effluent. The reject from the froth flotation process is gravity-fed to large tailing impoundments where the tails settle out. The decanted water is recycled and pumped back to the concentrator for re-use. Additionally, process wastewater generated at the mill location is contained in impoundments designed to contain the 100 year 24 hour storm event. These locations include the South Mill and the North Mill. The South Mill drainage, consisting of a combination of tailings reclaim water, mine drainage and stormwater run-off from process areas not covered under the multi-sector general stormwater permit are contained in sedimentation basin RB9 and any overflow would be directed to a series of impoundments with containment designed to hold the 100 year 24 hour storm event. RB9 is unlined. There is no proposed discharge location from this area.

The North Mill drainage, consisting of a combination of tailings reclaim water, process solution, mine drainage and stormwater run-off from process areas not covered under the multi-sector general stormwater permit are contained in sedimentation basins RB23 and Mission 1. The containment pond RB23 is not lined. These impoundments are designed to contain the 100 year 24 hour storm event and do not have a discharge point.

Any discharge of mine drainage subject to Part 440 Subpart J may qualify for the *Storm exemption for facilities permitted to discharge* as permitted in 40 CFR Part 440.131 (b). This storm exemption allows a source with an allowable discharge under 40 CFR Part 440 to have an overflow as a result of a storm event that does not meet the limitations established in 40 CFR Part 440 if that facility (1) is designed, constructed and maintained to contain the maximum volume of wastewater which would be generated by the 10-year, 24 hour storm event and (2) has taken all

reasonable steps to maintain treatment and minimize overflow and (3) provides notification of such discharges.

The Mission Complex will control all areas of mine drainage and areas of potential mine drainage within containment designed to contain the 24 hour, 100-year storm event. Therefore, discharges from the Mission Complex qualify for the stormwater exemption. The requirements for containment, maintenance, and sampling of runoff are detailed in Part III of the permit requiring that ASARCO establish Best Management Practices and submit a Stormwater Pollution Prevention Plan (SWPPP) for approval of the permitting authority.

Numeric Water Quality Standards: As outlined in A.A.C. R18-11-109 and Appendix A:

Per 40 CFR 122.44(d)(1)(ii), (iii) and (iv), limits have been included in the permit for parameters with 'reasonable potential', that is, those known to be or expected to be present in the effluent at a level that could potentially cause any applicable numeric water quality standard to be exceeded. The procedures used to determine reasonable potential are outlined in the *Technical Support Document for Water Quality-based Toxics Control (TSD)* (EPA/505/2-90-001).

Permit Limitations:

Guidance for the determination of reasonable potential to discharge toxic pollutants is included in both the *Technical Support Document for Water Quality Based Toxics Control (TSD)* - Office of Water Enforcement and Permits, U.S. EPA, dated March 1991 and the *U.S.EPA NPDES Permit Writers Manual* - Office of Water, U.S. EPA, dated December 1996.

EPA's technical support document contains guidance for determining the need for permit limits. In doing so, the regulatory authority must satisfy all the requirements of 40 CFR 122.44(d)(1)(ii). In determining whether the discharge causes, has the reasonable potential to cause or contributes to an excursion of a numeric or narrative water quality criterion for individual toxicants, the regulatory authority must consider a variety of factors. These factors include the following:

X Dilution in the receiving water,
X Type of industry,
X Existing data on toxic pollutants,
X History of compliance problems and toxic impacts,
X Type of receiving water and designated use.

A. Dilution in the receiving water

All discharges from outfalls in the Mission Complex are to ephemeral washes that are tributaries to the Santa Cruz River, itself an ephemeral waterbody in this area. Discharges from the mine site through the NPDES permitted outfalls will only occur during major storm events or during very wet seasons. Discharges during these conditions would be subject to an unknown amount of dilution in the receiving water. Reasonable potential to exceed surface water quality standards in the receiving water would exist if discharges occurred from the facility during dry weather when dilution is not available, but such dry weather discharges should not occur. However, determining reasonable potential to exceed standards during wet weather cannot be accomplished

unless the in-stream flow rate is known and the dilution factor can be determined.

B. Type of Industry

The Mission Complex is a copper mine employing the froth flotation process to extract copper. Effluent limitations under Part 440 Subpart J have been developed for copper mines to regulate the following metals: copper, zinc, cadmium, lead and mercury. Copper mines are assigned the highest total toxicity number for discharges under the 1987 Standard Industrial Classification (SIC) code. Reasonable potential exists for discharges from an open-pit copper mine and associated stormwater runoff to exceed surface water quality standards by nature of the type of industry.

C. Determination of Reasonable Potential

Effluent monitoring data for the Mission Complex demonstrated hardness levels up to 1140 mg/l. Arizona water quality standards allow a maximum hardness of 400 mg/l to be used in developing water quality standards.

Water quality standards for ephemeral washes are meant to be protective of acute effects, since stormwater is only present for short periods of time. If effluent meets the daily maximum standard, it will be protective of the acute toxics affect on organisms. Therefore, only Daily Maximum Discharge Limits (MDLs) were determined for this permit and were set at the lowest applicable Arizona standard. (Note: The statistical TSD procedures for setting Maximum Daily Discharge Limits and Average Monthly Limits were not used for this permit. The TSD method would only apply when both monthly and daily limits are set.)

The reported maximum effluent value or the statistically estimated maximum effluent value is compared to the lowest applicable water quality criterion to determine the potential for an exceedance of that criterion and the need for an effluent limit. If one of the effluent values is greater than the water quality criterion, then an effluent limit is included in the draft permit.

The following table is a summary of sampling data provided in the permit application.

Parameter	**Maximum Concentration**	**Statistical maximum concentration**	**Most Stringent water quality standards (total)**	**Reasonable Potential**
Arsenic	< 100	<320	420 ug/l PBC	No
Cadmium	< 50	<160	181 ug/l A&We	No
Copper	12,000	<max above standard>	57 ug/l A&We	Yes
Iron	160,000	-	None	No
Lead	450	<max above standard>	15 ug/l PBC	Yes

Manganese	7,500	24,000	196,000 ug/l PBC	No
Mercury	< 1	<3.2	5.0 ug/l A&We	No
Nickel	< 50	<160	13436 ug/L A&We	No
Selenium	< 100	<320	33 A&We	Indeterminate:
Silver	< 5	<16	37.4 ug/l A&We	No
Zinc	2,100	6720	2,491 ug/l A&We	Yes

Based on the above factors, EPA has determined that discharges from NPDES outfalls 001A, 002D, and 006L have the reasonable potential to exceed surface water quality standards for the following metals: copper, lead, and zinc. EPA found indeterminate reasonable potential for selenium due to the detection level (100 ug/l) being higher than the water quality standard (33 ug/l) and has established monitoring for selenium. EPA found no reasonable potential for arsenic, cadmium, iron, manganese, mercury, nickel, and silver.

D. Establishing Daily Maximum Permit Effluent Limitations Based on Hardness

The permit includes daily maximum permit effluent limitations for metals based on the aquatic and wildlife (ephemeral) acute toxicity criteria for copper and zinc.

The March 31, 2002, revisions to the Arizona Surface Water Quality Standards incorporated footnotes *k.1 and k.2* to Appendix A, Table 2 establishing a hardness 'cap' of 400 mg/l as calcium carbonate. The 400 mg/l 'cap' is applicable to all designated cold-water and warm-water fisheries, effluent dominated water bodies and ephemeral water bodies in Arizona. Footnotes *k.1 and k.2* require that hardness be based on the hardness of the effluent from a sample taken at the same time as the metal sample.

The average hardness values measured in effluent from the Mission Complex was 259 mg/L. Therefore, EPA used 259 mg/L for the calculation of effluent limitations. The permit includes single value effluent limitations for copper and zinc that have been calculated using the equations in the footnotes to Appendix A, Table 2 of the Arizona Surface Water Quality Standards and an upper limit hardness value of 259 mg/l.

The lead limit is based on the PBC standard rather than the A&We standard. The PBC standard is not hardness dependent.

E. Establishing Total Recoverable Metals Effluent Limitations from Water Quality Criteria

Arizona's NPDES Permit Writer's Process Guidance Workbook (Appendix L, Water Quality-based Effluent Limitations for Metals and Translator Studies) states that when developing total recoverable effluent limitations for metals, the permit writer should assume that the relationship between total recoverable and dissolved is 1:1 (i.e., translator = 1). Therefore, limitations for

copper, lead and zinc have been incorporated into the permit as total recoverable limitations.

F. Final Limitations Summary

For pollutants with demonstrated reasonable potential to exceed surface water quality standards, this permit retains effluent limitations based on the most stringent state water quality standards. Permit effluent limitations based on the aquatic and wildlife, ephemeral beneficial use, were calculated using the foot-noted equations to Table 2 of the Arizona surface water quality standards and a single value hardness of 259 mg/l.

TABLE 4 - Basis For Final Permit Limitations

Parameter	**Basis Daily Max.**
pH	6.5 to 9 - A&We (1), PBC (2)
Copper (3)	AZ WQS - A&We (1), acute
Lead (3)	PBC (2)
Zinc (3)	AZ WQS - A&We (1) , acute

Footnotes:
(1) AZ WQS - A&We = Arizona Surface Water Quality Standard - Aquatic and Wildlife, ephemeral
(2) AZ WQS PBC = Arizona Surface Water Quality Standard - Partial Body Contact
(3) These standards are written for total dissolved metals so a translator of one to one dissolved to total recoverable is assumed. The final permit effluent limitations for these metals are listed as total recoverable metals.

VII. NARRATIVE WATER QUALITY STANDARDS

All applicable narrative limitations in A.A.C. R-11-108 are included in the permit**.**

VIII . MONITORING REQUIREMENTS

Additional monitoring at discharge outfalls

The Mission complex had been regulated by the Multi Sector General Permit for stormwater associated with mining activities. Tables G-1, G-2 and G-3 establish benchmark monitoring parameters for active and inactive stormwater runoff.

Based on data submitted in the permit application, this permit identifies several pollutants with the reasonable potential to cause or contribute to a water quality violation. This permit establishes effluent limitations for all discharge points for pH, copper, lead, and zinc.

The previous permit required monitoring at all outfalls for those parameters listed in Tables G-1, G-2, and G-3 where EPA requires more data to determine reasonable potential. These are the same monitoring requirements that were required in the Findings of Violation and Order for Compliance and that were addressed in ASARCO's sampling plan submitted to EPA on August 2, 2002. The Order required monitoring for these parameters through June 2006. Monitoring requirements included the following parameters:

Flow Rate
Total Suspended Solids
Chemical Oxygen Demand
Nitrogen as Nitrate plus Nitrite
Hardness
Turbidity
pH

Metals
Arsenic (Total recoverable and Dissolved)
Cadmium (Total recoverable and Dissolved)
Copper (Total recoverable and Dissolved)
Iron (Total recoverable)
Lead (Total recoverable)
Manganese (Total recoverable and Dissolved)
Mercury (Total recoverable and Dissolved)
Selenium (Total recoverable and Dissolved)
Silver (Total recoverable)
Zinc (Total recoverable and Dissolved)

Based on the data submitted in the permit application and the reasonable potential analysis conducted above, EPA concluded that many pollutants do not have the reasonable potential to cause or contribute to a violation of water quality standards. Therefore monitoring has been discontinued for those parameters. The permit requires continued monitoring of Total Suspended Solids (TSS), Chemical Oxygen Demand (COD), Nitrate/Nitrite (as Total N), Hardness (CaCO3), Arsenic (Total Recoverable), Cadmium (Total Recoverable), Chromium (Total Recoverable), Chromium VI (Dissolved), Mercury (Total Recoverable), and Selenium (Total Recoverable) to characterize the discharge.

IX. SPECIAL CONDITIONS

Conditions for development of Best Management Practices (BMPs) and a Stormwater Pollution Prevention Plan (SWPPP) are retained from the previous permit due to additional work that remains. The permittee shall review and make any changes as necessary the BMPs and SWPPP to reflect exiting and ongoing operations.

Development of Best Management Practices

The ASARCO Mission Complex filed its Notice of Intent (NOI) for coverage under the Multi-Sector Stormwater General Permit dated January 25, 2001. The MSGP requires the preparation and maintenance of a SWPPP as indicated in Part 4 and Part 6.G.6.1 of the MSGP.

As the result of an inspection report (dated May 3, 2002 prepared by EPA), ASARCO was issued a Finding of Violation and Order for Compliance on June 20, 2002. As part of this order, EPA found that the Mission Complex SWPPP was inadequate and required that the ASARCO Mission Complex submit a revised SWPPP for approval by EPA. The Order for compliance included the following specific requirements for compliance with the SWPPP:

"a. Conduct a drainage basin assessment to determine the outline of each basin, and its BMP(s) and designated outfall, or termination (if controlled by evapotransportation or infiltration. Describe assumptions and methods used to determine the position of drainage divides. The method must include field verification. Present this data on the site map.

b. Assess all facilities according to Table G-4 of the MSGP and categorize which facilities and discharges are eligible for coverage under the MSGP, and which facilities and discharges- include process fluids, mine drainage or other pollutants that may cause or contribute to violations of water quality standards- are ineligible for coverage under the MSGP. Process fluid facilities must be designated as such, and represented on the site map. Facilities with a potential to discharge process solution are subject to effluent limitation guidelines under 40 CFR 440. Containment or control must be demonstrated for all disturbed areas of the mine.

c. Determine stormwater capacities for all MSGP and non-MSGP retention basins and conveyance structures around the site. Diversion and conveyance structures must be able to contain expected monsoon-type flows. Calculations must be provided.

d. Describe structures that will prevent commingling of MSGP stormwater runoff and process fluids.

e. Describe appropriate BMPs that you will use to control pollutants in stormwater discharges for areas where BMPs are not currently in place or for ones that need modification. Include performance standards. Design all MSGP appropriate facilities to be as close to the source of pollutants as possible.

f. Revise the site map and show all features required in Part 6.G.6.1.2. and Part 4.2.2.3. of the MSGP. Include the mine feature (such as topographic lines representing tailings facility 4) to which the BMPs are applied. Include process water controls, and storage facilities, drainage area boundary lines and outfall or termination points.

g. Describe a method to implement repairs to facility deficiencies found during regular maintenance inspections at all stormwater facilities. Implement monthly inspections and monitoring to insure that inspection maintenance related repairs are being done in accordance with the MSGP."

To date, ASARCO has complied with the requirements of the order and the activities are ongoing at the Mission Complex. ASARCO submitted a revised SWPPP (dated August 2, 2002) to EPA for approval. A modified version of this SWPPP was approved by EPA on July 16, 2003.

Permit SWPPP requirements

As noted in Section V, EPA determined in the Compliance Order that the Mission Complex is no longer eligible for coverage under the MSGP. Therefore, the draft permit identifies specific BMP requirements to be included in the SWPPP. Some of the requirements of the SWPPP (such as providing a description of the facility and a facility site map) will be completed within three months

of the permit issuance, while other requirements of the SWPPP (such as maintenance and employee training) will require ongoing actions throughout the life of the permit.

The permit contains specific requirements for the SWPPP based on the required components of the MSGP and on ASARCO's proposed SWPPP. Specific components to be included in the SWPPP are a site description, evaluation of potential pollution sources, methods for the control of mine drainage, construction of stormwater diversions, stormwater containment controls, stormwater source controls, corrective measures, site inspection and maintenance, employee training, and requirements for a site map.

Due to the potential for runoff generated from the mine site to cause or contribute to a violation of water quality standards, the SWPPP will include provisions for stormwater management.

All stormwater at the Mission Complex will be controlled through one or a combination of the following four methods:

1. Stormwater run-off will be diverted through berms, channels, or dikes designed to convey the 100 year, 6 hour storm event to containment areas where no discharge of water occurs;

2. Stormwater run-off will be diverted through berms, channels, or dikes designed to convey the 100 year, 6 hour storm event to containment areas designed to hold the 100 year 24 hour storm event;

3. Stormwater run-on (generated from off-site) will be diverted around mining activities to prevent contact with areas disturbed by mining; or

4. Potential stormwater contaminants will be controlled at the source by capping, removing all exposed mineralized materials, or other reclamation and by stabilizing and protecting surface areas to effectively control erosion or leaching of contaminants.

When the permittee completes the work required by the permit and the compliance order, the Mission Complex will provide 100-year, 24-hour containment for virtually all stormwater at the facility. At that point, most of the outfalls identified in this permit would not discharge except during storm events exceeding the 100-year, 24-hour event. In some cases, EPA and ADEQ have considered facilities providing physical containment (not including pumping) sufficient to contain the 100-year, 24-hour storm event as zero discharge facilities. However, the enhanced containment at Mission has not been completed at the time of drafting this permit, so all of the existing discharge points are identified as outfalls in the permit. At the time of permit renewal, the permittee may raise with the permitting authority the necessity of permitting outfalls that are capable of containing runoff associated with the 100-year, 24-hour storm event.

Regulatory Basis for Best Management Practices Program

The regulations at 40 CFR 122.44(k)(4) state that:

"In addition to the conditions established under § 122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable.

(k) Best management practices (BMPs) to control or abate the discharge of pollutants when:

(4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA."

The development of BMP plans and individual best management practices for mining operations is supported by the nature of mining operations in general. Disturbance of the overburden due to surface mining causes significant changes in the physical and chemical nature of the mined area, and BMPs are designed to avoid or control discharges which may cause or contribute to violations of water quality standards.

Compliance Schedule

The requirements for schedules of compliance are stated in the Arizona surface water quality standards at A.A.C. R18-11-121. The requirements of A.A.C. R18-11-121 allow a compliance schedule to be established to bring a point source discharge of stormwater into compliance with a water quality standard.

Pursuant to Compliance Order No. CWA 402-9-02-31, the Permittee has developed a work plan for compliance with the Order and the existing NPDES permit. The work plan established a schedule to implement the construction and maintenance activities necessary to provide the stormwater containment and control mandated by the Order and the permit. This schedule was incorporated into a compliance schedule in the existing permit, and much of the work has been completed. However, as described above, some of these activities likely require a federal Section 404 permit prior to construction. In addition, as discussed above, there were uncertainties regarding reclamation standards in some areas, and Asarco was denied legal access to the San Xavier North area for several years as a result of a lease termination, which prevented it from seeking a Section 404 permit for all remaining compliance schedule work. Therefore, some of the required control work has not yet been completed. Therefore, EPA has included in the permit a revised compliance schedule that requires the permittee to apply for a Section 404 Permit within 60 days of permit issuance. The activities detailed in the revised compliance schedule must then be completed within 9 months of receipt of the Section 404 Permit.

X. ENDANGERED AND THREATENED SPECIES

A. Biological Evaluation

Biological surveys were conducted in 1995 and 1997 in connection with a proposed expansion of the Mission Complex. The 1995 and 1997 surveys indicated the presence of the Pima pineapple cactus (PPC) in and around the Mission Complex.

The SWPPP submitted to EPA as part of the Order for Compliance requires Asarco to construct additional stormwater containment facilities for the control of runoff. Due to the known presence of endangered species, Asarco conducted a biological survey to evaluate the potential effects of construction on endangered species.

A new biological survey was conducted in 2002 for the Pygmy Owl and the PPC. No pygmy owl was found on private lands (although a second survey is required on tribal lands). The construction of stormwater controls will affect the PPC. Construction of the stormwater controls is expected to disturb approximately 165 acres, and a survey for PPC was done for 150' around the perimeter. The biological assessment assumed a 100' disturbance (although actual disturbance may be down to 50' in some areas). The survey found 70 PPC, of which 17 PPC will be directly affected by constructing the stormwater controls.

A formal endangered species consultation with the U.S. Fish and Wildlife service was conducted regarding the PPC. EPA, ASARCO, and the Tohono O'Odham propose the following measures to minimize potential adverse effects to the PPC and its habitat:

1. Stormwater controls will be designed in such as 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. Tohono O'Odham has jurisdiction over PPC on their lands and the disposition of the 13 PPC located on Tohono O'Odham lands will be determined by Tohono O'Odham, 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 its existing 877-acre conservation area by 58.5 acres to compensate for the loss of PPC habitat. The location of this additional acreage will be within the Mission Complex, but not necessarily adjacent to the existing conservation area. The location will be coordinated with the FWS.

5. The four PPC that are on private lands within the Mission complex will be transplanted to Asarco's existing PPC conservation area.

The consultation was concluded and the following are the recommendations from the Biological Opinion:

1) EPA would work with Asarco and FWS to expand the size of the PPC conservation area at the Mission complex.

2) EPA would work with Asarco and FWS to transplant affected PPC to the newly expanded segments of the conservation area.

3) EPA would 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) EPA, in cooperation with FWS, would develop long-term conservation strategies for PPC and incorporate those strategies into the NPDES program.

XI. PERMIT REOPENER

The draft permit contains a reopener clause to allow for modification of the permit if reasonable potential is demonstrated during the life of the permit.

XII. STANDARD CONDITIONS

Conditions applicable to all NPDES permits are included in accordance with 40 CFR Part 122.

XIII. ADMINISTRATIVE INFORMATION

Public Notice (A.A.C. R18-9-A907)
The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit. This permit will be public noticed in a local newspaper after a pre-notice review by the applicant and other affected agencies.

Public Comment Period (A.A.C. R18-9-A908)
Rules require that permits be public noticed in a newspaper of general circulation within the area affected by the facility or activity and provide a minimum of 30 calendar days for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

Public Hearing (A.A.C R18-9-A908(B))
A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if the Director determines there is a significant amount of interest expressed during the 30-day public comment period, or if significant new issues arise that were not considered during the permitting process.

XIV. Additional Information

Additional information relating to this proposed permit may be obtained from the following locations:

U.S. Environmental Protection Agency, Region IX
CWA Standards & Permits Office Mail Code: WTR-5
75 Hawthorne Street
San Francisco, California 94105-3901
Telephone: (415) 972-3518
Attn: John Tinger

ADEQ
Water Quality Division - Surface Water Permits Unit Mail Code: 5415B-3
Attn: Marnie Greenbie
1110 W. Washington Street

Phoenix, Arizona 85007
Telephone:(602) 771-4675