

**FINAL**  
**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**  
**FACT SHEET**  
**March 2019**

Permittee and Mailing Address: Cyprus Tohono Corporation  
P.O. Box 15009  
Casa Grande, AZ 85130-5009

Plant Location: Cyprus Tohono Mine site  
32 miles south of Casa Grande on HW 15  
Casa Grande, AZ 85122

Contact Person: Ray Romero, Operations Manager  
(520) 361-3111

NPDES Permit No.: AZ0024601

**I. STATUS OF PERMIT**

The Cyprus Tohono Corporation (“CTC” or the “permittee”) has applied for renewal of its National Pollutant Discharge Elimination System (“NPDES”) permit pursuant to U.S. Environmental Protection Agency (“EPA”) regulations set forth in Title 40, U.S. Code of Federal Regulations (“CFR”), Part 122.21. CTC filed an initial application and was issued an NPDES permit in 2003 for the temporary discharge of treated pit water. The facility treated and discharged pit water for a limited time and has not discharged since March of 2005. However, CTC would like to maintain permit coverage in the event that it becomes necessary for CTC to begin treating and discharging additional pit water. The permittee is currently covered under NPDES Permit No. AZ0024601, which became effective on December 1, 2013, and expired on November 30, 2018. CTC submitted a timely application for a permit renewal on May 30, 2018. Pursuant to 40 CFR § 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit. This permittee has been classified as a minor discharger.

Discharges of stormwater from the facility are currently covered under a multi-sector general stormwater permit ID Number AZR05I300. The facility is also covered by RCRA permit AZD094524097.

EPA has prepared a draft NPDES permit for the discharge of treated pit water from the Cyprus Tohono Corporation Mine located in Pinal County, Arizona. The mine site is located on tribal lands and is therefore subject to the jurisdiction of the EPA.

## II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2013-2018)	Re-issued permit (2019-2024)	Reason for change
DMR submittal	Hardcopy accepted	Switch to e-reporting	EPA e-reporting rule
Add Best Management Practices (BMP) Requirements	Not included	Requires BMP for erosion control at discharge outfall	EPA policy

## III. GENERAL FACILITY INFORMATION

Cyprus Tohono Corporation operates a mine on lands leased from the Tohono O’odham Nation (“TON”). CTC is currently in care and maintenance status.

The Cyprus Tohono Mine (formerly referred to as the Casa Grande Mine and as the Lakeshore Mine) is located approximately 32 miles south of Casa Grande, Pinal County, Arizona. Initial development of the mine began in the early 1880s when low grade oxide ore was mined from surface outcrops. Although sporadic mining occurred after this period, no large scale or continuous mining of the property occurred until the 1950s. From 1956 through 1962, Trans Arizona Resources, Inc. operated a small open pit (referred to as the El Paso Pit). Mining of the pit also was carried out by El Paso Natural Gas Company in the late 1960s and resulted in removal of approximately 350,000 tons of oxide ore. In 1970, a joint venture between El Paso and Hecla Mining Company defined a deeper area of sulfide mineralization and began development of an underground mine referred to as the Lakeshore Mine. As part of that development, two primary access/ore haulage declines were constructed, block cave mining took place and a surface processing plant was completed. From 1979 to 1987, Noranda operated the property following Hecla’s and El Paso’s operation. And in 1983, underground mining operations ceased when it became uneconomic and in-situ leaching was implemented.

In July 1987, CTC entered into a lease with TON to operate the property, known at that time as the Casa Grande Mine. In-situ solution mining was continued by CTC and existing roasters on the property were restarted to process concentrate from other mining operations. In late 1993, the two roasters associated with the plant area were removed from service and placed on care and maintenance and subsequently dismantled. Also during 1993, CTC was given approval to operate an interim open pit mining and heap leaching operation. Processing of solutions with the recovery of cathode copper took place in the existing solution extraction/electrowinning (“SW/EW”) plant facilities. The in-situ leach operation was discontinued the following year. During 1995, CTC completed a Mine Plan of Operations and an Environmental Impact Statement (“EIS”) for an expanded open pit mining and heap leaching operation and received a Record of Decision (“ROD”) as approval of the expanded project. However, open pit mining ceased in 1997 when the copper prices and declining copper recoveries resulted in the cessation of the SX/EW operations. In 1999, CTC was transitioned into a care and maintenance facility and subsequently dismantled in 2000. In 2004, CTC initiated a project to refurbish the SX/EW facility and initiate recovery of the residual copper within the heap leach

pad, and copper cathode production began in January 2005. CTC ceased these residual copper recovery operations in December 2008 and initiated tasks to again transition the property to care and maintenance status. The activities to transition the property were completed in 2009.

To date, the facility continues to operate in care and maintenance status, with no active production occurring. Although CTC has not discharged treated mine pit water as authorized by the permit since March of 2005, the company intends to maintain an active NPDES permit in the event it becomes necessary to begin treating and discharging wastewater in the future. The proposed permit requires that CTC notify EPA and the Tohono O’odham Nation’s Environmental Protection Office at least 60 days prior to the commencement of discharge of treated pit water.

#### **IV. DESCRIPTION OF RECEIVING WATER**

Outfall 001 from the Cyprus Tohono mine discharges to an unnamed ephemeral tributary to the Santa Rosa Wash located on the Tohono O’odham Nation. This is an ephemeral wash that only flows during a storm event.

The Tribe does not have EPA-approved water quality standards for discharges to waters located on the Nation. However, the Santa Rosa Wash, at the point where it leaves the boundary of the Tohono O’odham Nation, is a water for which the state of Arizona has established water quality standards (“WQS”). Therefore, Arizona WQS for the Santa Rosa Wash and its tributaries are applicable to the discharge at the point where the discharge enters the State waters. Arizona has adopted WQS to protect the designated uses of its surface waters at *Arizona Administrative Code, Title 18, Chapter 11 for Tributaries* (A.A.C. R18-11-105). Streams have been divided into segments and designated uses assigned to these segments. The WQS vary by the designated use depending on the level of protection required to maintain that use.

The Santa Rosa Wash at the point where it leaves the boundary of the Tohono O’odham Nation has designated uses of Aquatic and Wildlife ephemeral (A&We) and Partial Body Contact (PBC). The outfall is approximately 2 to 3 miles upstream of the Santa Rosa Wash, and CTC does not expect its discharge to reach the Santa Rosa Wash during normal operating conditions. Pursuant to the Arizona WQS, unlisted ephemeral tributaries are protected by the A&We and PBC designated uses.

*Arizona’s 2016 Integrated 305(b) Assessment and 2018 303(d) List of Impaired Waters* do not list as impaired the ephemeral washes near the Cyprus Tohono mine or any portion of the Santa Rosa Wash into which these washes could flow. Thus, the receiving waters are considered “Tier 2” water bodies with respect to its criteria for antidegradation protection. (A.A.C. R18-11-107).

## **V. DESCRIPTION OF DISCHARGE**

### **A. Wastewater characteristics**

The wastewater discharged from the CTC mine site consists of treated pit water. The total volume of the pit was estimated at 110 million gallons (April 2013 estimate). The pit lake covers approximately 6 acres and reaches a depth of 80 to 90 feet. The pit began filling with groundwater and surface runoff starting in 1997 when active mining was stopped. Overflow of an estimated 12 million gallons of solution from the heap leach pads to the open pit has occurred during storm events in July 1998, December 1998, July 1999, and August 2000. As a result, the pit lake water is characterized by low pH and high concentrations of dissolved metals and other contaminants, notably aluminum, cadmium, copper, iron, manganese, magnesium, and zinc.

The permittee has provided data on the characteristics of the pit water in their permit application. Sampling data indicate that the concentrations of pollutants in the pit lake vary with depth. In general, the highest concentrations of pollutants have been found at the 60-foot depth.

All the pit water was treated by the on-site temporary treatment system during the initial permit term in 2004 and 2005. Based on the process flow diagram provided in the May 30, 2018 application, if treatment were to be resumed approximately 80-90% of the treated wastewater would be discharged at 450 to 1,000 gallons per minute through Outfall 001 with a daily average flow of 1.37 million gallons per day. The remainder of the wastewater would be recycled back through the heap leach pad evaporative system.

Since the last discharge of treated mine pit water occurred in 2005, the pit has been slowly refilling with infiltrated groundwater. Additional data characterizing the existing pit lake water quality was provided in the first permit re-application based on sample analysis conducted on January 21, 2008. Additional characterizations of the pit lake were conducted on February 18, 2013 and January 16, 2018. Discharges in the future, if they occur, due to rising water levels in the pit lake, from natural or manmade sources would be expected to be treated and have similar characteristics to that observed during the initial permit term.

### **B. Wastewater Treatment**

Pit water is treated as necessary in a two-stage chemical precipitation unit. The first stage involves raising the pH to 7.0 with the addition of lime primarily to target aluminum removal. Solids resulting from pit pollutants are retained in a 9-million-gallon geosynthetic-lined pond, with an initial retention time of approximately 6 days (based on an average flow rate of 1.15 mgd). The second stage involves raising the pH to 11 primarily to target magnesium removal. Solids are retained in a 14 million-gallon geosynthetic-lined pond.

Effluent from the second pond is softened with soda ash to remove calcium then adjusted to neutral pH after solids are settled out and retained in the 1.5 million-gallon geosynthetic-lined pond.

CTC projected that treatment required 4,000 tons of lime and generated approximately 15,000 tons (dry weight) of solids. These solids remain in the lined impoundments which are located on or adjacent to the 8S - 11S heap piles.

A pilot wastewater treatment system was run to determine treatment efficiency and optimize chemical addition rates. For the pilot study, water was pumped from the pit at the 6-foot depth to represent the most concentrated level of pollutants. The pilot test was run over a period of time to optimize the treatment and several sampling episodes were conducted to evaluate the data. The data that was provided in the permit application is from one sampling event that represents predicted performance of the system.

After softening and sedimentation, the pilot treatment system achieved the following removal rates, and the majority of pollutants were treated to non-detect.

Pollutant Removal Rates	
Total Dissolved Solids (TDS)	78%
Magnesium	>99%
Aluminum	>99%
Cadmium	>99%
Manganese	>99%
Zinc	>99%
Iron	>99%

Effluent from the softening stage is filtered and sent to a membrane filtration unit to provide an additional level of treatment and to remove remaining dissolved solids prior to discharge. The membrane filtration increased the TDS removal rate to greater than or equal to 94%. Further reductions of many other pollutants were not measurable due to achieving non-detect levels prior to membrane filtration.

The concentrate from the membrane filtration step is managed in the heap leach system. Based on a rough calculation, the concentrate is estimated to contain approximately 30,000 to 40,000 mg/L dissolved solids.

## VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

The Clean Water Act requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States. The control of pollutants is established through effluent limitations and other requirements in NPDES permits. When determining effluent

limitations, EPA must consider limitations based on the technology used to treat the pollutant(s) (i.e., technology-based effluent limits) and limitations that are protective of water quality standards (i.e., water quality-based effluent limits).

### **A. Water Quality-Based Effluent Limitations**

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an exceedance of any water quality standard. (40 CFR § 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria within a State water quality standard, the EPA shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR § 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* ("TSD") (March 1991) and *NPDES Permit Writers Manual* (December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential analysis

1. Applicable Standards, Designated Uses and Impairments of Receiving Water

The December 23, 2016 revisions to the Arizona Surface Water Quality Standards established water quality standards for acute effects for discharges to ephemeral washes for the protection of aquatic and wildlife (A&We) and for the protection of partial-body contact (PBC) recreation.

2. Dilution in the receiving water

The discharge from CTC will be to an ephemeral wash that is a tributary to the Santa Rosa Wash, itself an ephemeral waterbody in this area. Therefore, the discharge will largely be to a dry wash and there is no dilution available in the receiving waterbody.

3. Type of Industry

The CTC mine is an inactive copper mine that has employed various techniques to extract copper including in situ leach and heap leach extraction. Copper mines are assigned the

highest total toxicity number for discharges under the 1987 Standard Industrial Classification (SIC) code.

4. History of compliance problems and toxic impacts

EPA conducted a compliance evaluation inspection at the facility on January 28, 2016 and observed no discharge at the outfall. Photographs showed dry ground and no vegetation along the path of pipeline discharge or in the channel looking downstream to where discharge would occur. EPA is unable to evaluate toxic impacts at the facility.

5. Existing data on toxic pollutants - Reasonable Potential (“RP”) Analysis

The treatment system is no longer in operation, CTC has no plans to resume it, and there has not been any discharge of treated pit water since 2005. Given the absence of recent data, the RP analysis for the initial 2003 permit is being retained for this permit renewal. The analysis was based on data CTC submitted on the then-proposed treatment system and the pilot plant treatability study in the permit application.

EPA first conducted an RP evaluation based on the effluent discharge data from the pilot plant. The reported maximum effluent value is multiplied by the “Reasonable Potential Multiplying Factor” provided in Table 3-2 of the 1991 TSD, using a 95% confidence level, a 95% probability basis, and a coefficient of variation assumed to be 0.6 based on guidance for small data sets (i.e. less than 10 data points). 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. Where the effluent value was non-detect, ½ of the detection limit was used as the maximum reported effluent value.

The only parameters where there was a detectable concentration in the projected effluent to compare to a water quality standard were flouride and boron.

Based on past performance data and discharge data when the treatment unit was in operation, EPA had concluded that the treatment system had operated as expected, with the treatment operation achieving high pollutant removal efficiencies. All effluent standards were achievable, and the majority of the constituents were treated to non-detect levels prior to discharge.

However, while EPA has a reasonable expectation that the designed treatment system would perform as demonstrated by the pilot plant, EPA concludes that the proposed permit should retain all the existing effluent limitations due to the potential to discharge high volumes of wastewater and the potentially high concentrations of pollutants present in the raw wastewater if the treatment system were in use.

Therefore, EPA evaluated other factors as allowed in 40 CFR § 122.44(d)(1)(ii). For this analysis, EPA included all raw wastewater sampling data used for the initial 2003 permit application and added an evaluation of most recent laboratory analysis of the existing pit lake water characteristics (January 16, 2018 sample date), as provided in Table 1.

EPA believes this is a reasonable approach due to (1) the high concentration of certain parameters and their potential toxicity(ies) in the pit lake water; and, (2) the large volume of wastewater that may be discharged in a short period of time should a discharge occur. Therefore, for this draft permit, EPA concluded that Reasonable Potential for any parameter where the raw wastewater concentrations were found to be 10 times higher than the applicable water quality standard.

Note that the updated pit lake characterization results (January 2018 sampling) demonstrate much lower concentrations of all pollutants than were initially evaluated. Additionally, the effluent monitoring data obtained during actual discharge demonstrated very effective treatment with almost no constituents present at detectable concentrations. However, due to potential uncertainties of future discharges, EPA has decided to maintain a conservative approach to reasonable potential and has decided to maintain limits in the permit for all constituents which have demonstrated reasonable potential based on any past sampling data. EPA believes it is appropriate to consider all data collected from the pit lake in its assessment in order to establish appropriate limits for any pollutant that may be present in the effluent.

EPA is not revising this table for the proposed permit because EPA has already decided to retain all effluent limits that were included in the previous permit.

An analysis of additional data (from laboratory analyses of the existing pit lake water characteristics performed on January 21, 2008, February 18, 2013 and January 16, 2018) all demonstrates that there are no additional pollutants with the reasonable potential to cause or contribute to an exceedance of water quality standards. Therefore, EPA is retaining the existing effluent limits and monitoring requirements from the previous permit. Based on the above factors, EPA has determined that discharges from NPDES Outfall 001 has the reasonable potential to exceed surface water quality standards for the following metals: cadmium, copper, lead, silver, and zinc.



**Table 1 – Initial Reasonable Potential Determination (ug/L)**

Parameter	Raw Wastewater (ug/L)	Maximum Effluent Concentration (ug/L)	Statistical Maximum Concentration (ug/L)	Most Stringent WQS (ug/L)	Basis	Reasonable Potential <sup>2</sup>
Arsenic	135 ug/L	< 10 (total)	31 <sup>(1)</sup>	280	PBC (total)	1) no 2) no
Boron	1,008	170 (total)	--	186,667	PBC (total)	1) no 2) no
Barium	88.7	< 2 (total)	--	98,000	PBC (total)	1) no 2) no
Beryllium	58.4	< 2 (total)	--	1,867	PBC (total)	1) no 2) no
<b>Cadmium</b>	<b>317</b>	<b>&lt; 2 (total)</b>	<b>6.2 <sup>(1)</sup></b>	<b>11.3</b>	<b>A&amp;We acute (dissolved)</b>	<b>1) no 2) yes</b>
Chromium VI	13	< 6 (total)	18.6 <sup>(1)</sup>	34	A&We acute (dissolved)	1) no 2) no
<b>Copper</b>	<b>260,000</b>	<b>&lt; 3 (total)</b>	<b>9.3 <sup>(1)</sup></b>	<b>5.1</b>	<b>A&amp;We acute (dissolved)</b>	<b>1) yes 2) yes</b>
Fluoride	37,500	500	1550	140,000	PBC (total)	1) no 2) no
Mercury	<0.2	< 0.2 (total)	0.62 <sup>(1)</sup>	5	A&We acute (dissolved)	1) no 2) no
Manganese	135,000	< 2 (total)	--	130,667	PBC (total)	1) no 2) no
Nickel	1,680	< 10 (total)	31 <sup>(1)</sup>	1,066	A&We acute (dissolved)	1) no 2) no
<b>Lead</b>	<b>&lt;50</b>	<b>&lt; 5 (total)</b>	<b>15.5 <sup>(1)</sup></b>	<b>15</b>	<b>PBC (total)</b>	<b>1) yes 2) no</b>
Selenium	52	< 10 (total)	31 <sup>(1)</sup>	33	A&We acute (dissolved)	1) no 2) no
<b>Silver</b>	<b>15</b>	<b>&lt; 5</b>	<b>15.5 <sup>(1)</sup></b>	<b>0.20 (dissolved)</b>	<b>A&amp;We acute (dissolved)</b>	<b>1) yes 2) yes</b>
Thallium	<100	< 1 (total)	3.1 <sup>(1)</sup>	75	PBC (total)	1) no 2) no
<b>Zinc</b>	<b>40,800</b>	<b>&lt; 5 (total)</b>	<b>15.5 <sup>(1)</sup></b>	<b>284</b>	<b>A&amp;We acute (dissolved)</b>	<b>1) no 2) yes</b>

**Footnotes:**

<sup>(1)</sup> Based on using ½ the detection limit

<sup>(2)</sup> For Reasonable Potential determinations: 1) based on pit lake data from 2018 application  
2) based on raw wastewater data from 2003

**B. Establishing Daily Maximum Permit Effluent Limitations Based on Hardness**

The 2016 revisions to the Arizona WQS incorporated footnotes *k.1 and k.2* to Appendix A, Table 2 establishing that for discharges to waterbodies designated A&We, that hardness be based on the hardness of the effluent from a sample taken at the same time as the metal sample.

Hardness values are minimal in the effluent from the treatment system, and are expected to be less than 5 mg/L. Therefore, the Acute WQS for the lowest calculated value of hardness of 20 mg/L in the Tables to Appendix A were used to determine applicable A&We standards.

**C. 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 and lead have been incorporated into the permit as total recoverable limitations.

**D. 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 of either technology-based limitations or 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 WQS and a single value hardness of 25 mg/l.

The 2016 revisions to the Arizona WQS established criteria for acute effects for discharges to ephemeral washes for the protection of aquatic wildlife (“A&We”) and partial body contact (“PBC”).

If effluent meets the daily maximum standard, it will be protective of the acute toxics effect 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 MDLs and average monthly limits were not used for this permit. The TSD method would only apply when both monthly and daily limits are set.)

**Table 2 – Basis for Final Permit Limitations**

Pollutant Parameters	Daily Maximum Discharge Limits
pH	6.5 to 9 - A&We <sup>(1)</sup> , PBC <sup>(2)</sup>
Cadmium <sup>(3)</sup>	AZ WQS - A&We <sup>(1)</sup> , acute
Copper <sup>(3)</sup>	AZ WQS - A&We <sup>(1)</sup> , acute
Lead <sup>(3)</sup>	PBC <sup>(2)</sup>
Silver <sup>(3)</sup>	AZ WQS - A&We <sup>(1)</sup> , acute
Zinc <sup>(3)</sup>	AZ WQS - A&We <sup>(1)</sup> , acute

Footnotes:

- <sup>(1)</sup> AZ WQS - A&We = Arizona Surface Water Quality Standard - Aquatic and Wildlife, ephemeral
- <sup>(2)</sup> AZ WQS PBC = Arizona Surface Water Quality Standard - Partial Body Contact
- <sup>(3)</sup> 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.

### **E. Anti-Backsliding**

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute. The proposed permit does not establish any effluent limits less stringent than those in the previous permit and therefore does not allow backsliding.

### **F. Antidegradation Policy**

EPA's antidegradation policy at 40 CFR § 131.12 and A.A.C. R18-11-107 require that existing water uses and the level of water quality necessary to protect the existing uses be maintained. As described in this fact sheet, the proposed permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The proposed permit does not include a mixing zone; therefore, these limits will apply at the end of pipe without consideration of dilution in the receiving water. Therefore, due to the low levels of pollutants present in the effluent, high level of treatment being obtained, and water quality-based effluent limitations, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

## **VII. NARRATIVE WATER QUALITY STANDARDS**

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

## **VIII. SPECIAL CONDITIONS**

### **A. Outfall Erosion Protection**

In order to prevent erosion and scouring of the channel due to any discharge flow, the permittee must establish erosion protection and/or energy dissipation at the outfall location. The permittee must develop (or update) a plan that describes preventive measures or Best Management Practices ("BMPs") that specifically apply to the outfall location. This may include BMPs such as rip rap, perforated pipe, construction of a splash pool, diffuser, or other means that will slow down the velocity of the discharge and maintain a stable channel.

### **B. Outfall Monitoring Inspection**

Due to concerns that the volume of discharge may cause problems in the wash, such as flooding or erosion, the Permittee must establish a monitoring procedure to evaluate the effects of the discharge on the wash. The monitoring procedure must consist of daily visual monitoring at the discharge point and at the unnamed wash crossing at Indian Road 15, and visually monitoring the distance that it takes for the discharge to infiltrate into the wash for a limiting time at the start of the discharge. If significant erosion or potential flooding is observed, the permittee must notify EPA and the Tohono O'odham EPA within 24 hours. If it is determined that a

problem exists, a solution to the erosion problem may involve reducing the allowable volume of discharge.

### **C. Regulatory Basis for Best Management Practices Program**

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

*“In addition to the conditions established under 40 CFR § 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 BMPs 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.

### **D. Notification Requirements for Discharge**

The permittee has no immediate plans to begin discharge and must provide notification to EPA and the Tohono O’odham Nation EPO at least 60 days prior to the commencement of discharge.

## **IX. MONITORING REQUIREMENTS**

Due to the high concentration of pollutants present in the raw wastewater and the need to control these pollutants in the event of a discharge, which is estimated to be over one million gallons per day, EPA is establishing the following monitoring requirements for non-regulated pollutants in the effluent discharge:

- Daily monitoring for Field pH and Field Total Acidity, and
- Weekly monitoring for Aluminum, Manganese, Selenium, and Zinc.

If no discharge occurs during the reporting period, the permittee shall specify “No discharge” on the DMRs. During the time that the treatment plant is not in operation, the permittee must submit DMRs on an annual basis, due on January 28th of each year.

## X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

### A. Consideration of Environmental Justice Impact

EPA conducted a screening level evaluation of vulnerabilities in the community posed to local residents near the vicinity of the permitted facility using EPA’s EJSCREEN tool. The purpose of the screening is to identify areas disproportionately burdened by pollutant loadings and to consider demographic characteristics of the population living in the vicinity of the discharge when drafting permit conditions. On February 22, 2019, EPA conducted the analysis and found that the area is too small or sparsely populated to generate an EJSCREEN report.

### B. Impact to Threatened and Endangered Species

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. §1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed endangered, threatened or candidate species, or result in the destruction or adverse modification of its habitat. 16 U.S.C. § 1536(a)(1). A federal agency must consult with the relevant Service, either U.S. Fish and Wildlife Service (“USFWS”) or the National Marine Fisheries Service, if it determines that an endangered or threatened species is present in the area affected by the federal action and that the implementation of such action will likely affect the species. ESA § 7(a)(3); 16 U.S.C. § 1536(a)(3).

To identify the endangered and threatened species that are present in the action area, EPA used USFWS website (<https://ecos.fws.gov/ipac/>) to define the project geographical area and generate a list of species within the CTC mine site. (E = endangered, T = threatened, P = Proposed). EPA found the following species listing as well as a determination that there are no critical habitats at this location.

<u>Status</u>	<u>Species/Listing Name</u>
T	Yellow-billed Cuckoo ( <i>Coccyzus americanus</i> )
T	Northern Mexican Gartersnake ( <i>Thamnophis eques megalops</i> )

Since the issuance of NPDES permits by EPA is a federal action, consideration of a permitted discharge and its effect on any listed species or their critical habitat is appropriate. EPA has determined that this proposed action will have no effect on threatened and endangered species based on the following findings:

(1) First, the facility has not discharged since March of 2005 and to date, the facility continues to operate in care and maintenance status, with no active production occurring.

(2) The permitted discharge that occurred prior to March 2005 have previously met, and must continue to meet, all water quality standards which have been set at a level necessary to protect aquatic life.

(3) In a February 4, 2003 correspondence to Mr. Jay Fumusa of CTC, Scott Jay Bailey of the Tohono O’odham Nation stated that the general area of the discharge is known to contain

habitat and sightings of the federally endangered cactus ferruginous pygmy owl<sup>1</sup> and that no other federally endangered or threatened species have been identified in proximity to the project and none are expected to occur.

(4) In the time since the 2003 correspondence, a verification Section 7 Consultation was conducted by CTC with the USFWS. In 2014, this consultation resulted in a Technical Assistance Letter (“TAL”) stating that CTC remains in compliance with current regulatory requirements for the biological resources existing within the area.

(5) The permitted discharge to surface waters would be located in an ephemeral wash that does not contain endangered or threatened aquatic species.

EPA has determined that issuance of the NPDES permit for the CTC mine site will have no negative effect on species that are commonly affected by NPDES discharges. The site of the pipeline for the discharge of the treated pit water had been selected so as to minimize any potential negative effect on wildlife habitat and the pygmy owl. The pipeline is located aboveground on disturbed lands and along existing roads and did not involve any construction of new roads nor clearing of vegetation.

In considering all information available, EPA concluded that a determination of no effect is appropriate for renewal of this federal action. EPA will provide USFWS and Arizona Game and Fish Department with copies of the draft fact sheet and the draft permit during the public notice period and initiate informal consultation(s).

### **C. Impact to Coastal Zones**

The Coastal Zone Management Act (“CZMA”) requires that federal activities and licenses, including federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR Part 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The proposed permit does not affect land or water use in the coastal zone, thus CZMA does not apply to this federally issued permit.

### **D. Impact to Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (“MSA”) set forth new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and

---

<sup>1</sup> The cactus ferruginous pygmy owl was “delisted” in April of 2005 from the federal endangered or threatened species listing (Federal Register Doc. 06-3533, Vol 71, No 72).

anadromous fish species and habitat. The MSA requires federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat (“EFH”).

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permit does not directly discharge to areas of essential fish habitat. Therefore, EPA has determined that the proposed permit will not adversely affect essential fish habitat.

### **E. Impact to National Historic Properties**

Section 106 of the National Historic Preservation Act (“NHPA”) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. From 2014 through 2015, under the direction of the Tohono O’odham Nation Tribal Historical Preservation Office (“TPHO”), CTC performed a Cultural Survey and Landscape Study which resulted in an approval memorandum from TPHO in 2016. Therefore, pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA makes a determination that reissuing this NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

### **F. Water Quality Certification Requirements (40 CFR §§ 124.53 and 124.54)**

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Territory law.

This permit is being issued by EPA and there is no corresponding State, Territory, or Tribal jurisdiction for the discharge location. Therefore, EPA will be deemed to have waived certification prior to the final issuance of the permit.

## **XI. STANDARD CONDITIONS**

### **A. Reopener Provision**

In accordance with 40 CFR Parts 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

## **B. Standard Provisions**

The permit requires the permittee to comply with EPA Region 9 Standard Federal NPDES Permit Conditions.

## **XII. ADMINISTRATIVE INFORMATION**

### **A. Public Notice (40 CFR § 124.10)**

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.

### **B. Public Comment Period (40 CFR § 124.10)**

Notice of the draft permit will be placed on EPA Region 9 website at <https://www.epa.gov/aboutepa/public-notice-meetings-and-events-pacific-southwest> on April 5, 2019, with a minimum of 30 days provided 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.

### **C. Public Hearing (40 CFR § 124.12(c))**

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 EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

## **XIII. CONTACT INFORMATION**

Comments, submittals and additional information relating to this proposal may be directed to:

Linh Tran (415) 972-3511 or [Tran.Linh@epa.gov](mailto:Tran.Linh@epa.gov)

Or

Linh Tran  
U.S. EPA Region 9, WTR 2-3  
75 Hawthorne Street  
San Francisco, CA 94105



#### **XIV. REFERENCES**

NPDES Permit Application (Forms 1 and 2C), dated May 30, 2018. (Discharge data from previous applications dated February 10, 2003, March 19, 2008, and April 1, 2013.)

Arizona Surface Water Quality Standards, Title 18, Chapter 11, Article 1. December 31, 2016.

Arizona's 2016 Water Quality Limited Waters List, Arizona Department of Environmental Quality and Arizona's Integrated 305(b) Water Quality Assessment and 303(d) Listing Report 2018 (EQR 02-04).

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA. EPA/505/2-90-001.

EPA. 2010. *U.S. EPA NPDES Permit Writers' Manual*. Office of Water, EPA. EPA-833-K-10-001.

EPA. 2013. *National Recommended Water Quality Criteria*. Office of Water, EPA. Aquatic Life Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table#table>

EPA. 2015. *National Recommended Water Quality Criteria*. Office of Water, EPA. Human Health Criteria Table. <https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table>