

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DRAFT PERMIT FACT SHEET**

October 2021

Permittee Name: Hon-Dah Regional Wastewater Treatment Facility

Mailing Address: P.O. Box 517
Whiteriver, AZ 85941Facility Location: Hon-Dah
McNary, AZ 85941

Contact Person(s): Alfred Walker, Director, Tribal Utility Authority

NPDES Permit No.: AZ0024589

Federal Identification code (FRS): 110012810299

I. STATUS OF PERMIT

The White Mountain Apache Tribe (the “permittee”) has applied for the renewal of their National Pollutant Discharge Elimination System (“NPDES”) permit to authorize the discharge of treated effluent from the Hon-Dah Regional Wastewater Treatment Facility to a wash flowing into Bootleg Lake located in Navajo County, Arizona. A complete application was submitted on March 25, 2021. EPA Region 9 has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit AZ0024058. The previous permit was effective until June 1, 2016 and administratively extended on March 30, 2021, pursuant to 40 CFR 122.6.

This permit has been classified as a Minor discharger.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2016 – 2021)	Re-issued permit (2021 – 2026)	Reason for change
Toxicity – chronic	Monitoring required	Effluent limitation	Analysis of previous permit results demonstrate reasonable potential for toxicity in effluent. Fish species (fathead minnow) is most sensitive.
Sampling method for dissolved oxygen, total residual chlorine, temperature, oil and grease	Sampling method was composite	Sampling method must be grab.	40 CFR Part 136

BOD5 and TSS limits	Kilograms/day	Pounds/day	Change unit of measure to more common expression.
Metals, hardness and cyanide	Monitoring not required	Monitoring is required one time during permit term.	Information gathering about possible pollutants within discharge.
Operators Manual and Asset Management Plan	Not required	Required	Permittee must create these useful documents and retain up-to-date files on site.

III. GENERAL DESCRIPTION OF FACILITY

The Hon-Dah Regional Wastewater Treatment Facility uses a set of four parallel anaerobic/facultative digestion ponds for treatment, also known as Advanced Facultative Ponds. These ponds are modifications of the first component of an Advanced Integrated Wastewater Pond System (AIWPS), followed by an artificial wetland for additional nutrient removal and an ultraviolet disinfection system. The treatment system produces effluent that is “equivalent to secondary” treatment, as defined under 40 CFR§133.105. As for the biosolids, these facultative ponds include integrated fermentation pits, which degrade biosolids and minimize the need for sludge removal; thus, there is no need for biosolids removal plan.

This facility has a design capacity of 0.4 million gallons per day. Average flows since 2017 have been around 0.13 million gallons per day as reported on Discharge Monitoring Reports. The facility discharges through outfall-001, located at 34° 03’ 49” N Latitude and 109° 55’ 26” W Longitude in Navajo County, Arizona, on the Fort Apache Indian Reservation.

Wastewater influent is received from the communities of Hon-Dah Homesites and McNary, and the Hon-Dah Resort-Casino and Conference Center facility, and the adjacent RV park for a total population served of roughly 1,500 people and is almost entirely residential in origin. There are no significant contributions from industrial discharges.

IV. DESCRIPTION OF RECEIVING WATER

The discharge from this facility flows into nearby Bootleg Lake on the Fort Apache Indian Reservation. The White Mountain Apache Tribe (WMAT) has adopted water quality standards for different stream segments depending on the level of protection required. The WMAT Water Quality Protection Ordinance lists Bootleg Lake as a lake with warmwater habitat. Other designated uses of Bootleg Lake include, irrigation, groundwater recharge, livestock & wildlife, primary contact, secondary contact, ceremonial primary contact, cultural significance, and flood control.

No impairments nor TMDLs are applicable to water quality conditions in Bootleg Lake.

V. DESCRIPTION OF DISCHARGE

A. Process Description

Upon entering the plant, influent flows through a series of influent splitter manholes intended to result in four parallel flows of nominally equal volume. No screening for large objects or grit removal is performed beyond incidental removal of debris occurring at the influent manhole orifice. Each of the 4 flows enters the deep, clay-lined central fermentation pit of an AIWPS pond, where organic solids undergo anaerobic decomposition. By design, the wastewater then diffuses upward and outward to the much shallower and wider (aerobic and anaerobic) facultative bacteria section of the pond which is lined with high-density polyethylene. The partially-treated wastewater discharges from the upper part of the ponds, via flow-measurement flumes, to a 2-track constructed wetland where plants and their associated microbial communities consume remaining excess nutrients. The wetland discharge passes through a narrow channel in which UV disinfection is applied before discharge into a shallow wash that flows approximately 750 ft into Bootleg Lake.

B. Discharge Monitoring Report (DMR) Data and Permit Compliance

The existing permit requires the permittee to sample at the outfall for flow, temperature, biochemical oxygen demand (BOD), total suspended solids (TSS), oil and grease, bacteria (*E. Coli*), total phosphorous, total nitrate (as Nitrogen), pH, and ammonia (as Nitrogen) once a month, and to report results monthly. DMR data for the period between June 2016 and December 2020 was reviewed for the purpose of developing this permit, where such data were available.

Table 1 shows data related to discharge from Outfall 001 based on permittee's NPDES renewal application and supplemental data as well as data reported on discharge monitoring reports. More information, including discharge monitoring report results, are available on Enforcement and Compliance History Online (ECHO) at <https://echo.epa.gov/detailed-facility-report>.

Pollutants believed to be absent or never detected in the effluent are not included. The 2016-2020 data shows elevated concentrations of ammonia, BOD₅ (mg/L and percent removal), *E. coli* bacteria, total suspended solids (mg/L and percent removal), total residual chlorine, and nitrate and total phosphorus. All exceedances are discussed further in Part VI.B.4.

Table 1. Effluent Results for Outfall 001 from 2016 to 2020.

Parameter	Units	Current Permit Effluent Limitations			Facility Effluent Results		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Maximum Daily	Number of Samples
Flow Rate	MGD	(1)	(1)	(1)	0.386	N/A	
Oil & Grease	Ratio	10	--	15	N/A	5.5 ⁽²⁾	46
Biochemical Oxygen Demand; (BOD ₅)	mg/L	45	65	--	100	1800	46
Total Suspended Solids (TSS)	mg/L	45	65	--	23	1100	46
Ammonia (as N)	mg/L	(1)	(1)	(1)	N/A	21.5	46
Nitrate (as N)	mg/L	(1)	(1)	10	4.5	23.3	46
Phosphorus total	mg/L	(1)	(1)	(1)	4.3	23.3	4.6
E. coli	MPN/ 100mL	47 ⁽³⁾		88	N/A	>2419	46
Total Residual Chlorine	mg/L	0.1	--	0.1	N/A	0.51	42
Temperature	°C	--	--	32.2	N/A	18.1	42
Turbidity	NTU	--	--	25	N/A	18.5	42
pH	S.U.	btwn 6.5 and 9.0 at all times			5.9 – 9.5		
Toxicity	Pass or Fail	--	--	Pass ⁽⁴⁾	Fail (n=2; 2016)		

(1) No effluent limit exists for this parameter; monitoring and reporting is required.

(2) Oil & Grease show one anomously high result (1050 mg/L) which occurred on November 2020.

(3) E. coli average monthly effluent limit value is geometric mean of one month's data

(4) All chronic WET tests must be "Pass," and no test may be "Fail." "Pass" constitutes a rejection of the null hypothesis. Toxicity results exist for two dates, August 2016 & October 2016, and show "Pass" for *Selenastrum capricornutum* (algae); however, "Fail" for *Ceriodaphnia dubia* (water flea) and "Fail" *Pimphales promelas* (fish).

VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (i.e., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (i.e., “water quality-based effluent limits”). EPA has established the most stringent of applicable technology-based or water quality-based standards in the draft permit, as described below.

A. Applicable Technology-Based Effluent Limitations

Publicly Owned Wastewater Treatment Systems (POTWs)

EPA developed technology-based treatment standards for municipal wastewater treatment plants in accordance with Section 301(b)(1)(B) of the CWA. The applicable technology-based standards for a pond system such as that used at the Hon-dah facility Lagoons are those of the category known as “Equivalent to Secondary Treatment”. The minimum levels of effluent quality attainable by equivalent-to-secondary treatment for Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), and pH, as defined in 40 CFR 133.105, are listed below and are incorporated into the permit:

BOD₅

Concentration-based Limits

30-day average – 45 mg/L

7-day average – 65 mg/L

Removal Efficiency – minimum of 65%

Mass-based Limits

30-day average – (45 mg/L)(0.4 MGD)(8.345 conversion factor) = 150.2 lbs/day

7-day average – (65 mg/L)(0.4 MGD)(8.345 conversion factor) = 217 lbs/day

TSS

Concentration-based Limits

30-day average – 45 mg/L

7-day average – 65 mg/L

Removal efficiency – Minimum of 65%

Mass-based Limits

30-day average – (45 mg/L)(0.4 MGD)(8.345 conversion factor) = 150.2 lbs/day

7-day average – (65 mg/L)(0.4 MGD)(8.345 conversion factor) = 217 lbs/day

pH

Instantaneous Measurement: 6.0 – 9.0 standard units (S.U.)

Technology-based treatment requirements may be imposed on a case-by-case basis under Section 402(a)(1) of the CWA, to the extent that EPA promulgated effluent limitations are inapplicable (i.e., the regulation allows the permit writer to consider the appropriate technology

for the category or class of point sources and any unique factors relating to the applicant) (40 CFR § 125.3(c)(2)).

B. Water Quality-Based Effluent Limitations

Water quality-based effluent limitations, or WQBELs, are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above 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, the permitting authority 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 the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers' Manual* (Office of Water, U.S. EPA, September 2010). 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 Water Quality Protection Ordinance of the White Mountain Apache Tribe of the Fort Apache Indian Reservation establishes water quality criteria for the following beneficial uses in the receiving water of Bootleg Lake: Warmwater Habitat, Irrigation, Groundwater Recharge, Livestock & Wildlife, Primary Contact, Secondary Contact, Ceremonial Primary Contact, Cultural Significance, and Flood Control.

Bootleg Lake is not listed as impaired according to the CWA § 303(d) List of Water Quality Limited Segments for any parameters.

2. Dilution in the Receiving Water

Discharge from Outfall 001 is to an unnamed shallow wash that flows across the surface to Bootleg Lake. This wash may have no natural flow during certain times of the year. Therefore, no dilution of the effluent has been considered in the development of water quality based effluent limits applicable to the discharge.

3. Type of Industry

Typical pollutants of concern in untreated and treated domestic wastewater include ammonia, nitrate, dissolved oxygen demand, bacteria/pathogens, temperature, pH, oil and grease, and solids. Chlorine and turbidity may also be of concern due to treatment plant operations.

4. History of Compliance Problems and Toxic Impacts

EPA Enforcement and Compliance staff inspected the Hon-dah facility on June 18, 2019. Several minor findings were identified. WMAT TUA responded on October 4, 2019 and described the UV treatment lamps were now operating and therefore the UV disinfection system was working properly.

5. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on statistical procedures outlined in EPA's *Technical Support Document for Water Quality-based Toxics Control* herein after referred to as EPA's TSD (EPA 1991). These statistical procedures result in the calculation of the projected maximum effluent concentration based on monitoring data to account for effluent variability and a limited data set. The projected maximum effluent concentrations were estimated assuming a coefficient of variation of 0.6 and the 99 percent confidence interval of the 99th percentile based on an assumed lognormal distribution of daily effluent values (sections 3.3.2 and 5.5.2 of EPA's TSD). EPA calculated the projected maximum effluent concentration for each pollutant using the following equation:

$$\text{Projected maximum concentration} = C_e \times \text{reasonable potential multiplier factor.}$$

Where, "C_e" is the reported maximum effluent value and the multiplier factor is obtained from Table 3-1 of the TSD.

Table 2. Summary of Reasonable Potential Statistical Analysis

Parameter ⁽¹⁾	Maximum Observed Concentration	<i>n</i>	RP Multiplier	Projected Maximum Effluent Concentration	Most Stringent Water Quality Criterion	Statistical Reasonable Potential?
Oil & Grease	5.5 mg/L	46	1.76	9.68	10	Y
Ammonia	21.5 mg/L	46	1.76	37.8	n/a	Y
Nitrate (as N)	23.3 mg/L	46	1.76	41	10	Y
Phosphorus (total)	23.3 mg/L	46	1.76	41	n/a	Y
E. coli	>2419 cfu/100mL	46	1.76	4257	88	Y
Total Residual Chlorine	0.51 mg/L	42	1.8	0.9	0.1	Y
Temperature	18.1 °C	42	1.8	32.6	32.2	Y
Turbidity	18.5 NTU	42	1.8	33	25	Y

⁽¹⁾ For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only pollutants detected are included in this analysis.

C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

Flow

No limits established for flow, but flow rates must be monitored and reported. Monitoring is required weekly.

BOD₅ and TSS

Limits for BOD₅ and TSS are established for POTWs in the category “Equivalent to Secondary treatment” as described above and are incorporated into the permit. Under 40 CFR § 122.45(f), mass limits are also required for BOD₅ and TSS. Based on the design flow (0.4 MGD), the mass-based limits are included in the permit.

pH

Limits for pH are established for POTWs in the category “Equivalent to Secondary treatment” as described above. The White Mountain Apache Tribe Water Quality Standards contain pH standards that are slightly more stringent in the receiving water, thus these water quality-based effluent limitations are included in the permit. Weekly pH monitoring is required in the permit.

Ammonia and Ammonia Impact Ratio

Treated and untreated domestic wastewater may contain levels of ammonia that are toxic to aquatic organisms. Ammonia is converted to nitrate during biological nitrification process, and then nitrate is converted to nitrogen gas through biological denitrification process. Due to the potential for ammonia to be present in sanitary wastewater at toxic levels and due to the conversion of ammonia to nitrate, effluent limitations are established using the Ammonia Impact Ratio (“AIR”) for this facility.

The AIR is calculated as the ratio of the ammonia value in the effluent to the applicable ammonia water quality standard. The White Mountain Apache Tribe Water Quality Standards contain ammonia criteria which are pH and temperature dependent. Therefore, pH, temperature and ammonia sampling must be concurrent. See Attachment E of the permit for a sample log to help calculate and record the AIR values and Attachment D for applicable Water Quality Standards.

The permittee also must monitor and report ammonia effluent values in addition to the AIR value. AIR provides more flexibility than a specific, fixed effluent concentration and is protective of water quality standards since the value is set relative to the water quality standard,

with consideration of dilution. If the reported value exceeds the AIR limitation, then the effluent ammonia-N concentration exceeded the ammonia water quality criterion.

Nitrate (as N) and Total Phosphorus

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for nitrate. Therefore, the permit contains an effluent limit for nitrate, based on water quality standards for protection of human health/domestic water supply and aquatic life, respectively. Monitoring is required monthly.

Because of the importance of nutrient removal for protection of tribal waters, this permit retains the Phosphorous monitoring requirements as specified in the Tribe's designated uses of Domestic/Industrial Water Supply and Groundwater Recharge.

Oil & Grease

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for oil and grease. Therefore, the permit contains an effluent limit for oil and grease based on chronic and acute water quality standards for protection of aquatic life. Monitoring is required monthly.

E. coli (bacteria)

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for *E. coli*. Therefore, the permit contains an effluent limit for *E. coli* based on water quality standards for protection of recreational uses; e.g., swimming, wading, etc. Monitoring is required monthly.

Total Residual Chlorine

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for total residual chlorine. Therefore, the permit contains an effluent limit for total residual chlorine based on chronic and acute water quality standards for protection of aquatic life. Monitoring is required monthly.

Temperature

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for temperature. Therefore, the permit contains an effluent limit for temperature based on chronic water quality standards for protection of aquatic life. Monitoring is required monthly.

Turbidity

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for turbidity. Therefore, the permit contains an effluent limit for turbidity based on chronic and acute water quality standards for protection of aquatic life. If the facility is applying chlorination for disinfection (and not relying on UV lamps), then monitoring is required weekly.

Dissolved Oxygen

In order to evaluate the secondary effects of discharged nutrients, and to comply with the tribal standards for a designated use of Warmwater Habitat, a minimum standard for dissolved oxygen has been incorporated into the permit.

Toxicity

In order to evaluate the secondary effects of discharged nutrients, and to comply with the tribal standards for a designated use of chronic water quality standards for protection of aquatic life, a minimum standard for chronic toxicity has been incorporated into the permit. During the past permit term, the facility completed species sensitivity testing and the results indicate the fathead minnow (*Pimphales promelas*) is the most sensitive species. Monitoring is required annually.

D. Anti-Backsliding

Section 402(o) and 303(d)(4) of the CWA and 40 CFR § 122.44(l)(1) prohibits the renewal or reissuance of an NPDES permit that contains effluent limits and permit conditions less stringent than those established in the previous permit, except as provided in the statute and regulation.

The permit does not establish any effluent limits less stringent than those in the previous permit and does not allow backsliding.

E. Antidegradation Policy

EPA's antidegradation policy under CWA § 303(d)(4) and 40 CFR § 131.12 and the White Mountain Apache Tribe Water Quality Protection Ordinance require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The 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 low likelihood of toxic pollutants present in the effluent, level of treatment being obtained, and requirements to meet 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-BASED EFFLUENT LIMITS

Section 3.5 of the White Mountain Apache Tribe Water Quality Protection Ordinance contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR § 136, unless otherwise specified in the draft permit. All monitoring data shall be reported on monthly DMRs and submitted quarterly as specified in the draft permit. All DMRs are to be submitted electronically to EPA using NetDMR.

B. Whole Effluent Toxicity (WET) Requirements

Aquatic life is a public resource protected in surface waters covered by the CWA. As evidence that CWA requirements protecting aquatic life from chronic and acute toxicity are met in surface waters receiving the NPDES discharge, samples are collected from the effluent and tested for toxicity in a laboratory using EPA's WET methods. These aquatic toxicity test results are used to determine if the NPDES effluent causes toxicity to aquatic organisms. Toxicity testing is important because for scores of individual chemicals and compounds, chemical-specific environmentally protective levels for toxicity to aquatic life have not been developed, or set as water quality standards. In due course, some such chemicals and compounds can eventually make their way into effluents and their receiving surface waters. When this happens, toxicity tests of effluents may demonstrate toxicity due to present, but unknown, toxicants (including possible synergistic and additive effects), signaling a water quality problem for aquatic life.

EPA's WET methods are systematically-designed instructions for laboratory experiments that expose sensitive life stages of a test species (e.g., fish, invertebrate, algae) to both an NPDES effluent sample and a negative control sample. During the toxicity test, each exposed test organism can show a difference in biological response; some will be undesirable differences. Examples of undesirable biological responses include, but are not limited to, eggs not fertilized, early life stages that grow too slowly or abnormally, or death. At the end of a toxicity test, the different biological responses of the organisms in the effluent group and the organisms in the control group are summarized using common descriptive statistics (e.g., means, standard deviations, coefficients of variation). The effluent and control groups are then compared using an applicable inferential statistical approach (i.e., hypothesis testing or point estimate model) chosen by the permitting authority and specified in the NPDES permit. The chosen statistical approach is compatible with both the experimental design of the WET method and the applicable toxicity water quality standard. Based on this statistical comparison, a toxicity test will demonstrate that the effluent is either toxic or not toxic, in relation to the permit's toxicity level for the effluent, which is set to protect the quality of surface waters receiving the NPDES discharge. EPA's WET methods are specified under 40 CFR § 136 and/or in applicable water quality standards.

EPA recommends inferential statistical approaches that a permitting authority chooses from to set a protective level for toxicity in an NPDES discharge. The statistical approach chosen for this permit is based on bioequivalence hypothesis testing and is called the Test of Significant Toxicity (TST) statistical approach. It is described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document* (EPA 833-R-10-004, 2010; TST Technical Document) and Denton DL, Diamond J, and Zheng L. 2011. Test of significant toxicity: A statistical application for assessing whether an effluent or site water is truly toxic. *Environ Toxicol Chem* 30:1117-1126. This statistical approach supports important choices made within a toxicity laboratory which favor quality data and EPA's intended levels for statistical power when true toxicity is statistically determined to be unacceptably high (≥ 25 PE, Percent (%) Effect), or acceptably low (< 10 PE). Example choices are practices supporting healthy test organisms, increasing the minimum recommended replication component of the WET method's experimental design (if needed), technician training, etc. TST results do not often differ from other EPA-recommended statistical approaches using hypothesis testing (Diamond D, Denton D, Roberts J, Zheng L. 2013. Evaluation of the Test of Significant Toxicity for determining the toxicity of effluents and ambient water samples. *Environ Toxicol Chem* 32:1101-1108.). The TST maintains EPA's desired low false positive rate for WET methods—the probability of declaring toxicity when true toxicity is acceptably low $\leq 5\%$ —when quality toxicity laboratories conduct toxicity tests (TST Technical Document; Fox JF, Denton DL, Diamond J, and Stuber R. 2019. Comparison of false-positive rates of 2 hypothesis-test approaches in relation to laboratory toxicity test performance. *Environ Toxicol Chem* 38:511-523.). Note: The false positive rate is a long-run property for the toxicity laboratory conducting a WET method. A low false positive rate is indicted by a low long-run toxicity laboratory control coefficient of variation for the test species/WET method, using a minimum of 30 to 50 toxicity tests.

The following chronic toxicity test results are DMR submissions representative of the effluent discharge monitored during the previous permit term. Results are analyzed using the TST statistical approach described in Appendix B of the TST Technical Document.

Table 3. Chronic Toxicity Data (2016-2017) Summary and Reasonable Potential Analysis.

Toxicity test initiation & completion dates	Test species/WET method	Chronic toxicity test did not reject (Fail "1"), or rejected (Pass "0"), TST null hypothesis	Associated PE (percent effect)	Number of replicates (n)	Reasonable potential if Fail (1) or associated PE ≥ 10
Aug 2016	Algae/96 hr Chronic	0= pass	-2%	4	no
Aug 2016	Invertebrate/7 static renewal	1= fail	100%	10	Yes
Aug 2016	Fish/7 day chronic	1= fail	100%	10	Yes
Oct 2016	Algae/96 hr Chronic	0= pass	-9%	4	no
Oct 2016	Invertebrate/7 static renewal	1= fail	80%	10	Yes
Oct 2016	Fish/7 day	1= fail	100%	10	Yes

	chronic				
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In accordance with 40 CFR § 122.44(d)(1), reasonable potential for chronic toxicity has been established. This is because at least one chronic toxicity test result is Fail (1) indicating unacceptable toxicity is present in the effluent and/or at least one associated PE (Percent (%) Effect) value is ≥ 10 indicating toxicity at a level higher than acceptable is present in the effluent (see Table 3 and section 1.4 in TST Technical Document). Thus, chronic toxicity WQBELs are required for the permitted discharge (40 CFR § 122.44(d)(1)). As a result, monitoring and reporting for compliance with median monthly and maximum daily effluent limits for the parameter of chronic toxicity are required, so that effluent toxicity can be assessed in relation to these WQBELs for the permitted discharge (see Part I, Table 2 in NPDES permit).

In accordance with 40 CFR § 122.44(d)(1)(ii), in setting the permit's levels for chronic toxicity and conditions for discharge, EPA is using a test species/chronic short-term WET method and a discharge Instream Waste Concentration (IWC) representing conservative assumptions for effluent dilution necessary to protect receiving water quality. The IWC is a discharge-specific term based on the permit's authorized mixing zone or initial dilution. Generally, the dilution model result "S" from Visual Plumes/Cormix is used. S is the volumetric dilution factor, i.e. 1 volume effluent is diluted with S - 1 volumes surface water) = $[(V_e + V_a) / V_e]$. Following the mass balance equation, if the dilution ratio $D = Q_s / Q_e$, then $[(Q_e + Q_s) / Q_e] = 1 + D = S$.

For this discharge, $S = 1$ (i.e., no authorized dilution). The discharge-specific IWC = 1 to 1 dilution (1:1, 1/1) = 100% effluent. The IWC made by the toxicity laboratory is mixed as 1 part solute (i.e., effluent) to 0 parts dilutant (1: (1 - 1)) for a total of 1 part.

The TST's null hypothesis for chronic toxicity (H_0) is: In-stream Waste Concentration (IWC) mean response (% effluent) ≤ 0.75 Control mean response. The TST's alternative hypothesis is (H_a): IWC mean response (% effluent) > 0.75 Control mean response. For this permit, results obtained from a single chronic toxicity test are analyzed using the TST statistical approach, where the required chronic toxicity IWC for Discharge Point Number-001 is 100% effluent.

For NPDES samples for toxicity testing, the sample hold time begins when the 24-hour composite sampling period is completed (or the last grab sample in a series of grab samples is taken) and ends at the first time of sample use (initiation of toxicity test). 40 CFR § 136.3(e) states that the WET method's 36-hour hold time cannot be exceeded unless a variance of up to 72-hours is authorized by EPA.

For this discharge, EPA has set a median monthly effluent limit and a maximum daily effluent limit (40 CFR § 122.45(d)) for chronic toxicity. These limits are set to restrict the discharge of toxic pollutants in toxic amounts and protect both applicable aquatic life water quality standards, including standards downstream of the discharge, and existing aquatic life beneficial uses in receiving waters (CWA §§ 101(a)(3), 301(b)(1)(C)). The median monthly WQBEL, of no more than 1 of a maximum of 3 chronic toxicity tests with unacceptably high toxicity declared by the TST statistical approach, ensures a high probability of declaring such discharges toxic. The maximum daily WQBEL, of 1 toxicity test rejecting the TST null hypothesis and an associated chronic biological endpoint PE < 50 (2x the TST's chronic toxicity Regulatory Management Decision (RMD) of 25 PE), ensures the restriction of highly toxic

(chronic, acute) discharges. Both effluent limits take into account that, on occasion, quality toxicity laboratories conducting effluent toxicity tests can incorrectly declare a sample with acceptable toxicity “toxic” ($\leq 5\%$ of the time when the true toxicity of the discharge is < 10 PE).

For POTWs, it is not practicable (40 CFR § 122.45(d)) for EPA to set an average (median) weekly effluent limit, in lieu of a maximum daily effluent limit. This is because discharges of unacceptable toxicity—true chronic toxicity ≥ 25 PE, the TST’s chronic toxicity RMD—are not adequately restricted by two effluent limits (median weekly and median monthly) each using a median of up to 3 toxicity test results. Under such limits, a highly toxic (chronic, acute) discharge could occur with no restriction. Moreover, using two such median limits further decreases the probability that an effluent with unacceptable toxicity will be caught, resulting in a permitted discharge which under-protects the aquatic life from unacceptable chronic toxicity.

Based on the toxicity results from 2016, summarized in Table 3 above, this permit does not require another species sensitivity screening for chronic toxicity. Rather the 2016 results demonstrated that the fish species was most sensitive (highest percent effect) and thus it is required for chronic toxicity testing in this permit.

IX. SPECIAL CONDITIONS

A. Biosolids

Standard requirements for the monitoring, reporting, recordkeeping, and handling of biosolids in accordance with 40 CFR § 503 are incorporated into the permit. The permit also includes, for dischargers who are required to submit biosolids annual reports, which include major POTWs that prepare sewage sludge and other facilities designated as “Class 1 sludge management facilities”, electronic reporting requirements. Permittee shall submit biosolids annual reports using EPA’s NPDES Electronic Reporting Tool (“NeT”) by February 19th of the following year.

B. Pretreatment

EPA has established pretreatment standards to prevent the introduction of pollutants into POTWs which will interfere with or pass through the treatment works, and to improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges (Section 307 of the CWA). EPA requires any POTW (or combination of POTWs operated by the same authority) with a total design flow greater than 5 MGD and receiving from nondomestic sources pollutants which pass through or interfere with the operations of the POTW or are otherwise subject to pretreatment standards to establish a pretreatment program.

There are only domestic (no industrial) facilities discharging pollutants which pass through or interfere with the operations of this facility, or which are otherwise subject to pretreatment standards. Therefore, there are no pretreatment requirements in this permit.

C. Capacity Attainment and Planning

The permit requires that a written report be filed within ninety (90) days if the average dry-weather wastewater treatment flow for any month exceeds 90 percent of the annual dry weather design capacity of the waste treatment and/or disposal facilities.

D. Development and Implementation of Best Management Practices

Pursuant to 40 CFR § 122.44(k)(4), EPA may impose Best Management Practices (BMPs) which are “reasonably necessary...to carry out the purposes of the Act.” The pollution prevention requirements or BMPs in the draft permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the draft permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering Bootleg Lake and other surface waters while performing normal processing operations at the facility.

E. Asset Management

40 CFR § 122.41(e) requires permittees to properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the permittee has sufficient financial and technical resources to continually maintain a targeted level of service. Asset management requirements have been established in the permit to ensure compliance with the provisions of 40 CFR § 122.41(e).

X. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. Consideration of Environmental Justice

EPA conducted a screening level evaluation of vulnerabilities in the community posed to local residents near the vicinity of the permitted wastewater treatment 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.

In March 2021, EPA conducted an EJSCREEN analysis of the community near the vicinity of the outfall. Of the 11 environmental indicators screened through EJSCREEN, the evaluation determined elevated indicator scores for the following factors: Ozone.

As a result of the analysis, EPA is aware of the potential for cumulative burden of the permitted discharge on the impacted community and will issue this permit in consideration of White Mountain Apache Tribe and consistent with the CWA, which is protective of all beneficial uses of the receiving water, including human health.

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 or candidate species, or result in the destruction or adverse modification of its habitat. The issuance of NPDES permits by EPA is a federal action, consideration of the permitted discharge and its effect on any listed or candidate species or their critical habitat is appropriate.

The website for the U.S. Fish and Wildlife Service's (USFWS) Arizona Ecological Services Field Office generated an official species list (known as the IPaC Report) on February 17, 2021. Additionally, the White Mountain Apache Tribe Game and Fish Department provided a species list on June 21, 2021. These two lists identify the following threatened (T), endangered (E), and tribally sensitive (TS) species and their critical habitat that may occur in the vicinity of the White River.

To determine whether the discharge would affect any endangered, threatened, or tribally sensitive species, EPA reviewed a list of 15 species associated with habitats in Navajo County and coordinated with the Tribe's Wildlife and Outdoor Recreation Division. Based on this review, three species may occur within the action area.

<u>Status</u>	Species/Listing Name	Critical Habitat
FT	Mexican Spotted Owl (<i>Strix occidentalis lucida</i>)	Yes ²
EXP	Mexican Gray wolf (<i>Canis lupus baileyi</i>)	No
TS	Bald Eagle (<i>Haliaeetus leucocephalus</i>)	No

FT = federally threatened; EXP = proposed non-essential, experimental population;
TS = tribally sensitive

- (1) Mexican Spotted Owl critical habitat has been designed east of the action area within Apache National Forest and northwest of the action area near Payson, AZ. This critical habitat is not located in the action area.

The action area is defined as the wastewater treatment facility, the stretch of shallow drainage to Bootleg Lake and the entirety of Bootleg Lake; all these areas are located in Navajo County, Arizona. The action area does not include any other water bodies since Bootleg lake is a terminal waterbody. Elevation is approximately 6900 ft. The proposed permit contains effluent limitations that protect designated uses of the receiving waters, including protection of aquatic life and wildlife habitat associated with warm waterbodies and this permit renewal does not involve physical habitat alteration or change in discharge flows.

Mexican Spotted Owl

Mexican spotted owls are territorial, and are typically found in old-growth forests with over 40 percent canopy cover near some type of water source. Mexican spotted owls feed mainly on mammals, but may also eat birds, bats, reptiles, and arthropods. The two activities that significantly impact spotted owls are the removal or opening of old-growth forests that results in forest fragmentation and human activity that may cause owls to abandon a foraging, nesting, or roosting area.

Based on information from White Mountain Apache Game and Fish Department, there are no Mexican spotted owl territories within the action area and there is no preferred habitat for Mexican spotted owls within the action area. Based on best available information, this species does not occur within the action area. Thus, EPA has determined that the action will not affect this species.

Mexican Gray Wolf

Mexican wolves are an endangered subspecies of gray wolf found in the Southwestern United States. A non-essential, experimental population of Mexican Gray wolves exists on Tribal lands. According to federal regulations at (50 C.F.R. 17.83(a)), a listed species determined not to be essential to the survival of that species and not occurring within the National Park System or National Wildlife Refuge System shall be treated as a species proposed to be listed under the ESA as a threatened species. EPA is required to confer with the Service on any action which is likely to jeopardize the continued existence of any proposed species. (50 C.F.R. 402.10(a)). Therefore, EPA is required to confer with FWS on any action which is likely to jeopardize the continued existence of the Mexican Gray Wolf.

Wolves were released off-Reservation in March of 1998 and were first documented on the Reservation in June of the same year. They have since been allowed by the Tribe to establish home range territories on the Reservation. Mexican wolves are managed under the White Mountain Apache Tribe-Mexican Wolf Management Plan and a Cooperative Agreement with USFWS.

Habitat for this species is primarily associated with forested mountainous terrain generally occurring above 4,500 ft. in elevation in or near woodlands of pine, oak or pinyon-juniper, interspersed with grasslands. Based on this information, the non-essential, experimental population of Mexican wolves may occur in the action area, specifically around Bootleg Lake.

Mexican wolves could be exposed to treated effluent directly through drinking from the receiving waters, although such exposure is minimal since this treated effluent would have mixed with water within Bootleg Lake. Effects from ingestion of the receiving waters would be also be minimal, as the treated effluent does not contain levels of toxic pollutants that would be toxic to large animals such as wolves. The wolves would not be exposed to untreated effluent since the facility, including treatment ponds and wetlands, is surrounded by a fence. Due to the unlikelihood of exposure to untreated effluent, and minimal effects expected if exposure were to occur, EPA has determined that the action will not jeopardize the continued existence of the Mexican gray wolf.

Bald Eagle

Bald eagles are no longer listed as threatened or endangered under the ESA. Bald eagles are identified as a tribally sensitive species and actions on the White Mountain Apache Reservation that may affect bald eagles may affect tribal interests. It is EPA's policy to coordinate with tribes and to consult on a government-to-government basis when EPA actions and decisions may affect tribal interests. EPA has coordinated with the White Mountain Apache Tribe Wildlife and Outdoor Recreation Division to evaluate potential effects of the permit on bald eagles.

The White Mountain Apache Reservation is within the wintering range of the bald eagle with a small resident and nesting population within the Salt River Canyon and other tributaries. Bald eagle populations on the reservation are highly variable depending upon the severity of the winter season and availability of prey. The bald eagle has a large territory range with most feeding associated with foraging near lakes, streams, and ponds. Some foraging of carrion is also observed away from water sources.

The Wildlife and Outdoor Recreation Division has concluded that the permit is highly unlikely to cause adverse effects to bald eagles and has not requested any revisions for protection of bald eagles.

Conclusions

EPA has determined the reissuance of the NPDES permit for Hon-dah WWTP facility will not affect the Mexican Spotted Owl and will not jeopardize the continued existence of the Mexican Gray Wolf.

EPA has also determined reissuance of the NPDES permit for the Hon-dah WWTP facility will not affect critical habitat for the Mexican spotted owl because there is no critical habitat within the WMAT reservation.

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 §§ 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR § 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 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 permit does not affect land or water use in the coastal zone.

D. Impact to Essential Fish Habitat

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and 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 does not directly discharge to areas of essential fish habitat in marine waters. Therefore, EPA has determined that the 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. Pursuant to the NHPA and 36 CFR § 800.3(a)(1), EPA is making a determination that issuing this draft 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 must request certification under section 401 of the CWA. 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. EPA cannot issue the permit until the certifying State, Territory, or Tribe has granted certification under 40 CFR § 124.53 or waived its right to certify.

On August 24, 2021, EPA requested certification from the White Mountain Apache Tribe that the permit will meet all applicable water quality standards. On September 30, 2021, The White Mountain Apache Tribe provided 401 certification indicating the permit will meet all applicable water quality standards. The WMAT's 401 certification included some conditions; those conditions have been included as special conditions within the final permit.

XI. STANDARD CONDITIONS

A. Reopener Provision

In accordance with 40 CFR §§ 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 IX 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)

On August 23, 2021, notice of the draft permit and factsheet were placed on the EPA website, with 30 days provided for interested parties to respond in writing to EPA. The draft permit and fact sheet were posted on the EPA website for the duration of the public comment period. 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. No comments were received during the public comment period.

C. Public Hearing (40 CFR § 124.12)

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:

Peter Kozelka, (415) 972-3448
kozelka.peter@epa.gov

EPA Region 9
Water Division
San Francisco, CA

XIV. REFERENCES

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White Mountain Apache Tribe, 2021. Tribal sensitive species information provided by Tribal Wildlife and Outdoor Recreation Division staff via email in June-July-August 2021.

White Mountain Apache Tribe, 2021. Clean Water Act Section 401 certification letter provided to EPA via email, dated September 30, 2021.

US Fish and Wildlife Service (IPAC) website report on endangered and threatened Species within the action area. Report dated February 17, 2021.