NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
DRAFT FACT SHEET

Permittee Name:	Whiteriver Sewage Lagoons
Mailing Address:	P.O. Box 517 Whiteriver, AZ 85941
Facility Location:	Canyon Day Whiteriver, AZ 85941
Contact Person(s):	Brando Pusher, Civil Engineer, Tribal Utility Authority
NPDES Permit No.:	AZ0024058

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 allow the discharge of treated effluent from the Whiteriver Sewage Lagoons to the white river located in Navajo County, Arizona. A complete application was submitted on April 8, 2013. EPA Region IX 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 issued on October 1, 2008. Pursuant to 40 CFR 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permit has been classified as a Minor discharger.

In December 2014, EPA Region 9, the White Mountain Apache Tribe, and the Tribal Utility Authority entered into an Administrative Order On Consent (Docket No. CWA-309(a)-15-001) to address shortcomings and compliance failures with the operations, maintenance, submission of data, and overall implementation of the NPDES permit issued in October 2008. The implementation of several modifications to facility operations and elements of the treatment system has been ongoing under the Administrative Order, therefore monitoring data may vary in how representative it is of current facility operations – this issue is further complicated by several significant gaps in the submission of monitoring data. As of the date of writing of this Fact Sheet, the facility remains subject to this Administrative Order and the corrective action requirements contained therein, in addition to the requirements specified in the reissued NPDES Permit.

II. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

- The new permit includes a requirement to develop a Best Management Practices (BMP) plan for the facility, including all the contents of the Operators' Manual being developed in response to the Administrative Order.
- Details and clarifying language have been added to the the standard permit requirements for Asset Management, Chronic Whole Effluent Toxicity testing, Biosolids management, and Sanitary Sewer Overflows, which are requirements this facility is subject to.
- Toxicity testing was required but not performed under previous permits. The language of the chronic toxicity testing requirement has therefore been clarified and a new one-time toxicity testing requirement added with a specific date range (during the first 6 months of the permit term). This testing will require multiple splits of a collected composite water sample to be tested by an accredited water chemistry laboratory in order to determine the type(s) of organism most sensitive to the contents of the discharge, and whether non-Ammonia sources of toxicity to fish are present in the discharge.
- An effluent temperature and pH monitoring requirement is retained to make it possible to analyze compliance with the Tribe's pH- and temperature-dependent ammonia standard.
- No Total Residual Chlorine monitoring has been added, on the understanding that the discharger does not intend to supplement disinfection performance with chlorine tablets as at the Hon-Dah treatment facility. Should that intent change, the Discharger must notify EPA and a Total Residual Chlorine monitoring requirement and limit based on the Tribal Water Quality Standards will be added to the permit.
- The Tribal points of contact for compliance issues with the facility have been updated.
- The permit includes a specific reopener provision to allow for updates to the permit in response to modifications made under the Administrative Order.

III. GENERAL DESCRIPTION OF FACILITY

The Whiteriver Sewage Lagoons treat wastewater in a series of facultative ponds. The treatment produces effluent that is roughly equivalent to secondary treatment, as defined under 40 CFR§133.105. This facility has a design capacity of 0.7 million gallons per day (2,649.8 m^3 per day). The facility has not consistently submitted flow data over the course of the previous permit term, therefore the only time period for which representative and reasonably complete flow data are available are the final two months of 2014 (0.6525 mgd), the first quarter of 2015 (0.647 mgd), and the second quarter of 2015 (0.393 mgd). The outfall is located at 33º 45' 45" N Latitude and 110º 03' 00" W Longitude in Navajo county.

Wastewater influent is received from the nearby towns of Whiteriver, East Fork, and Canyon Day, a total population of roughly 14,400 people, and is almost entirely residential in origin (no industrial discharges). The facility's initial operating plan was oriented towards wastewater reuse with occasional discharge during periods of low irrigation demand and low evaporation, however it has been operated as a more continuous-flow treatment system from prior to the beginning of the most recent permit cycle.

IV. DESCRIPTION OF RECEIVING WATER

In order to protect the designated uses of surface waters, the White Mountain Apache Tribe (WMAT) of the Fort Apache Indian Reservation has adopted water quality standards for

different stream segments depending on the level of protection required. The WMAT Water Quality Protection Ordinance lists the White River as a perennial stream with warmwater habitat. Designated uses of the White River include irrigation, domestic/industrial water supply, groundwater recharge, livestock & wildlife, primary contact, ceremonial primary contact, gathering of plants, and cultural significance.

V. DESCRIPTION OF DISCHARGE

A. Process Description

After passing through a bar screen, the influent to the wastewater lagoon system enters its series of 8 cells; 6 lagoons and 2 holding ponds respectively. Residence and treatment times are dependent on manual adjustment as discharge is from the second holding pond via a pipe fitted with a manually operated valve; this pipe is also the sampling location. Under the terms of the Administrative Order, the facility is required to reactivate a UV Disinfection system which has been inoperative for much of the previous permit term.

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, an indicator microorganism (*E. Coli*), total phosphorous, total nitrate (as Nitrogen), pH, and ammonia (as Nitrogen) at the start and immediately prior to the end of each discharge event or once a month, whichever is sooner; and to report results monthly. DMR data for the period between October 2008 and December 2015 was reviewed for the purpose of developing this permit, where such data were available. The following summarizes the DMR data for the discharge from the facility:

Flow: The nature of the treatment system, being based on lagoons with a large storage volume, gives the operator more capacity to manage and control the output flow rate than a typical municipal treatment system. Nevertheless, in light of the facility design flow of 0.7 million gallons per day (mgd), the reported flow values prior to April 2010 showed regular exceedences of that design flow rate. In the 4th quarter of 2008, the average flow was reported as 1.1 mgd, with the four quarters of 2009 reporting 0.76 mgd, 1.14 mgd, roughly 0.9 mgd (due to missing data), and 0.62 mgd respectively. The first quarter of 2010 reported average flow of 0.787 mgd, after which the facility began to report either no discharge or failed to submit monitoring reports for most of the following 5 years. It is noteworthy that other monitoring parameters such as BOD and nutrients were reported for some of the later months during which "no flow" was indicated, suggesting that there may have been some measurable / monitorable flow during those months.
Following issuance of the Administrative Order in December 2014, reported flows reduced to 0.647 mgd in the first quarter of 2015, and 0.393 mgd in the second quarter of 2015.

Temperature: Effluent temperature was reported for 24 of the 84 months in the review period; these values ranged from 4.5º Celsius to 25.3º Celsius. None of the reported values approach the WMAT warmwater habitat standard of 32.2º C.

Dissolved Oxygen: The White Mountain Apache Tribe Water Quality Standards specify a minimum dissolved oxygen of 5.0 mg/L for the discharge. Of the 36 reported values, only two did not meet this requirement, 4.8 mg/L in October 2014 and 4.88 mg/L in June 2015.

The fact that both of these non-compliant readings are relatively recent suggest an ongoing need to carefully manage and aerate the treatment lagoons to ensure sufficient dissolved oxygen.

BOD: Average concentration values ranged from 5.5 to 44 mg/L in the 28 reported values. The average monthly concentration limit of 45 mg/L was not exceeded. Values for the average weekly BOD concentration were not reported, therefore it is not possible to determine compliance with the permit limit of 65 mg/L for average weekly BOD concentration. Of the 6 monthly values reported since issuance of the Administrative Order, the lowest has been 5.1 mg/l and the greatest has been 25 mg/l, suggesting a general ability to comply with BOD limitations.

The preceding permit required collection of both average monthly and average weekly mass flow values for BOD, but only average monthly values were submitted, generally for the same months for which BOD concentrations were reported. Mass flows are dependent on overall facility flow rates, therefore the design-flow exceedances noted earlier could have exacerbated potential problems, particularly in conjunction with the missing weekly BOD data. However, no reported monthly average mass flow exceeded the permit limitation of 119.24 kg/day

In compliance with equivalent-to-secondary treatment requirements (40 CFR §133.105), the previous permit required removal of at least 65% of the influent BOD on a monthly average basis. Of the 24 months for which sufficient data were available to calculate BOD removal percentages, the permit requirement was not met over 45% of the time (11 months). This includes 4 of the 6 months after the issuance of the administrative order, suggesting ongoing problems with achieving the necessary removal effectiveness for BOD. It remains possible that low percent-removal performance for BOD is related to the relatively low reported influent BOD levels, which from July 2014 thru June 2015 averaged only 51.3 mg/L, as compared to typical wastewater concentrations of 200-300 mg/L BOD.

Total Suspended Solids (TSS): Average concentration values ranged between 10 and 52 mg/L in the 24 reported values, exceeding the average monthly permit limitation of 45 mg/L on only one occasion (February 2009). The average weekly concentration values were not reported as required, therefore it is not possible to determine compliance with the average weekly concentration limit of 65 mg/L.

Average mass flows were not reported consistently with concentration values; for some months only one value or the other was reported, despite the fact that it should be mathematically impossible to determine the mass flow without knowing the concentration. Of the 28 monthly mass flows reported (the weekly flows reporting requirement was again not met), 3 exceeded the permit limit of a monthly average of 119.24 kg/day. These reported exceedances of the mass flow value all date from 2010 or earlier. No exceedance of the TSS mass flow limit has been reported since issuance of the Administrative Order.

In compliance with equivalent-to-secondary treatment requirements (40 CFR §133.105), the previous permit required removal of at least 65% of the influent TSS on a monthly average basis. Of the 23 months for which sufficient data were available to calculate BOD removal percentages, the permit requirement was not met over 39% of the time (9 months). This includes 3 of the 5 months of data available after the issuance of the administrative order, suggesting ongoing problems with achieving the necessary removal effectiveness for TSS. It remains possible that low percent-removal performance for TSS is related to the relatively low reported influent TSS levels, which from July 2014 thru June 2015 averaged only 43.6

mg/L, less than the *effluent* standard, as compared to typical wastewater concentrations of 200-300 mg/L TSS.

Turbidity: The White Mountain Apache Tribe Water Quality Standards specify a maximum turbidity of 25 NTU (Nephelometric Turbidity Units) for the discharge. Of the 36 reported values, 3 did not meet the standard – 30 NTU in April 2009, 25.2 NTU in March 2015, and 37.5 NTU in April 2015. The relatively recent and nature of the latter two exceedances, and the fact they occurred in successive months, as well as the fairly high average turbidity since issuance of the Administrative Order (21.7 NTU against 10.7 NTU in the months before the Order) suggests a need to manage the facility carefully for turbidity control.

Effluent E. Coli Bacteria (indicator organism): Only 17 values for this indicator organism were reported out of the 84 monthly monitoring periods reviewed. The reported values range from 1 to over 2400 colony forming units (CFUs) per 100 mL, and 5 of the values exceed the WMAT maximum monthly geometric mean of 47 CFU/100 mL; 4 of these exceedences occurred in 2010 or earlier, but of the two data points reported since issuance of the Administrative Order, one is an exceedance, though it is the least severe bacteria exceedance recorded at 80 CFU / 100 mL. Only a single data point was reported for the daily maximum E. Coli count (of the 84 values required), in the month before the Administrative Order was finalized; no monthly value was reported for that month. The reported daily value is 101.4 CFU per 100 mL, which exceeds the permit limit of 88 CFU per 100 mL. Taken together, these data suggest an improvement in bacteria treatment performance but ongoing difficulties in meeting the Tribal Water Quality standard.

Oil and Grease: Of the 84 months in the review period, required daily maximum values for oil and grease were never reported, and monthly average monitoring data were submitted for only 3 months. This sparse data set makes it difficult to draw any conclusions on compliance with the EPA requirement for POTWs to remove oil and grease, however 2 of the 3 monthly averages did exceed the permit limit of 10 mg/L (13 in February 2010, and 78 in June 2014. No data on this parameter have been submitted since issuance of the Administrative Order, despite the ongoing requirement to submit such data.

Total Nitrate-Nitrogen: Of the 84 months in the review period, nitrate-nitrogen values were reported in 26 months. Reported values ranged from 0.1 mg/L to 88 mg/L, against a permit limitation of 10 mg/L as a daily maximum, only 2 exceedences of the permi limit were reported and both date to 2009 or earlier. The greatest reported nitrate-nitrogen concentration since issuance of the Administrative Order is 2 mg/L, with all other values 0.7 mg/L or below, suggesting a general ability to comply with this permit limit.

Total Phosphorous: The preceding permit did not set limits on Phosphorous discharges but did require monitoring of the monthly average and daily maximum values; the discharger only reported daily maximum values for 4 out of the 84 months of the review period and those reported daily maximums were exactly equal to the reported monthly averages for those months, suggesting an error in data collection. Of the monthly average values reported, the minimum was 1.1 mg/L and the maximum 3.5 mg/L. The second-greatest reported phosphorous concentration of 3.5 mg/L occurred after the Administrative Order became effective, and the other phosphorous concentrations recorded in that time frame were generally greater than 2 mg/L, which is at the upper end of the phosphorous values reported

under the previous permit term (2003-2008). These data suggest that no improvements in phosphorous removal effectiveness were achieved due to modifications under the Administrative Order.

pH: Of the 84 months in the review period, minimum and maximum pH values were reported for 24 months, An additional lone value (maximum) was reported for December 2014, bringing the total to 25. The White Mountain Apache Tribe Water Quality Standards specify that pH must remain within the range from 6.5 to 9.0 standard units at all times, but several exceedances have been reported. Prior to the 2010-2014 reporting gap, the pH was reported below 6.5 once (at 6.3) and above 9.0 four times (9.2, 9.7, 9.2, and 9.6); interestingly one month (February 2010) showed both the 6.3 and 9.6 values, suggesting very erratic changes in pH for a volume of water as large as that contained in the treatment lagoons. Following issuance of the Administrative Order, 4 of the 6 reported pH maximum values have exceeded the upper limit of 9.0 standard units, and the minimum pH values reported have also tended to be greater than 8.5 suggesting an overall elevation of the pH level at the facility. It is possible that this may have been caused by a temporary disinfection system using Calcium Hypochlorite tablets implemented to meet the requirements of the AO, and the most recent 2 months of monitoring data available are in the 7.7 to 8.4 range, suggesting the pH has declined back into an appropriate balance,

Total ammonia: The preceding permit set limits on Ammonia discharges based on the White Mountain Apache Tribe Water Quality Standards, which set a varying limit dependent on the temperature and pH of the discharge and/or waterbody. These limits will be detailed against the relevant post-Administrative Order data below.

The discharger reported daily maximum values for 7 out of the 84 months of the review period, but none of those values appear credible. 4 of those reported daily maximums were exactly equal to the reported monthly averages for those months, suggesting an error in data collection. Furthermore, all the values (monthly average/chronic and daily maximum/acute) reported for April thru June 2015 exactly equal the pH- and temperature-based limits in the standard, suggesting that the target values were reported instead of actual data.

The three monthly average ammonia levels reported after issuance of the Administrative Order and not subject to the apparent April-June 2015 reporting error show an increasing trend from 2.25 mg/L in April 2015 (exceeding the temperature- and pH-based limit of 0.15 mg/L), to 6.59 mg/L (exceeding the applicable limit of 0.16 mg/L), to 6.8 mg/L in June 2015 (again against an applicable limit of 0.16 mg/L). The increasing trend and inability to comply with the Tribal Water Quality Standards suggests that some of the revised management practices may be converting Nitrate-nitrogen (which is low and declining) into ammonia-nitrogen, rather than removing the ammonia as intended. Due to the potential toxicity of ammonia to aquatic organisms, this is a serious concern.

Whole Effluent Toxicity Testing: Testing was required once during the term of the existing permit, but this testing was not conducted. Therefore no recent data on Whole Effluent Toxicity were available for review.

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(s) (technology-based effluent limits) and

the water quality standards applicable to the receiving water (water quality-based effluent limits). For discharges from the Whiteriver Sewage Lagoons into the White River, it is additionally required that these discharges comply with the water quality standards limitations set forth in the White Mountain Apache Tribe's Water Quality Protection Ordinance. EPA has established the most stringent of applicable technology based or water quality based standards in the proposed 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 Clean Water Act. The applicable technology-based standards for a pond system such as that used at the Whiteriver Sewage 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:

Concentration Based Effluent Limits			
	30-day Average	7-day Average	30-day average Removal Efficiency
BOD_5	45 mg/l	65 mg/L	65 % minimum
TSS	45 mg/l	65 mg/L	65 % minimum
Mass Based Effluent Limits (based on 700,000 GPD flow)			
BOD_5	119.24 kg/day	172.24 kg/day	
TSS	119.24 kg/day	172.24 kg/day	
Additional Technology-Based Effluent Limitation(s)			
pH	Maintained within the limits of 6.0 to 9.0 standard units		

Note that the lower limit for pH will be superseded by the more stringent Tribal standard of 6.5 to 9.0 standard units.

B. Water Quality-Based Effluent Limitations ("WQBELs")

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 Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, 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 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 White River: Warmwater Habitat, Irrigation, Domestic/Industrial Water Supply, Ground-water Recharge, Livestock & Wildlife, Primary Contact, Ceremonial Primary Contact, Gathering of Plants, and Cultural Significance.

2. Dilution in the receiving water

Discharge from Outfall 001 is to an unnamed wash that flows across the surface to the White River. This wash may have no natural flow during certain times of the year, as was observed during an EPA site visit in late January 2008. 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 for discharges from a publicly-owned treatment works (POTW), namely untreated and treated domestic wastewater, include ammonia, nitrate, oxygen demand, pathogens, temperature, pH, oil and grease, and solids. Turbidity may also be of concern due to treatment plant operations.

Additional Concentration Based Effluent Limits			
	30-day Average	Daily Maximum	WMAT Water Quality Protection Ordinance reference
Total Ammonia	Determine from permit attachment D (warmwater chronic exposure)	Determine from permit attachment D (warmwater acute exposure)	Section 3.6 referencing to Warmwater Habitat tables in Appendix A
Total Nitrate		10.00 mg/L	Section 3.6, for Groundwater Recharge use
E. Coli	47 cfu/100 ml	88 cfu/100 ml	Section 3.6, for Primary Contact use
		Minimum	
Dissolved Oxygen		5.0 mg/L	Section 3.6, for

			Warmwater Habitat

Additional Effluent Limits and monitoring (based on the WMAT Water Quality Protection Ordinance section 3.6)	
pH	Must be in the range of 6.5 to 9.0 standard units
Temperature	Maximum of 32.2º Celsius (Warmwater Habitat standards); monitoring and reporting required to determine ammonia form and limit
Turbidity	25.00 NTU[(1)] (Primary Contact and Ceremonial Primary Contact standards)

[(1)] Nephelometric Turbidity Units

4. History of compliance problems and toxic impacts

See section IV for a summary of compliance problems noted for the previous 5-year permit term.

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.

In this case, the noted exceedences of limits set under the previous permit constitute evidence of reasonable potential, and no statistical analysis is necessary.

C. Rationale for Effluent Limits

EPA evaluated the pollutants expected to be present in the discharge effluent as described in the previous sections. In addition to the analysis performed above, guidance for the determination of reasonable potential to discharge toxic pollutants is included in both the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996).

EPA has selected the most stringent of applicable technology based standards or water quality based effluent limitations to be placed in the permit, based on the rationale as described below:

Flow. Under the proposed permit, there are no limits established for flow, but flow rates must be monitored and reported. Monitoring is required weekly.

BOD_5 and TSS. Concentration limits for BOD_5 and TSS are established for POTWs as described above and are incorporated into the permit. Under 40 CFR Section 122.45(f), mass

limits are also required for BOD_5 and TSS. Based on the design flow, the mass based limits are based on the following calculations:

Average Monthly Mass Limits:

Design Flow (daily average)	X Average Monthly Concentration Limit	X Conversion factor	= Weekly Average Mass Limit
0.70 mgd	45 mg/l	3.785	119.24 kg/day

Average Weekly Mass Limits:

Design Flow (daily maximum)	X Average Weekly Concentration Limit	X Conversion factor	= Weekly Average Mass Limit
0.70 mgd	65 mg/l	3.785	172.24 kg/day

E. Coli. In accordance with the White Mountain Apache Tribe Water Quality Protection Ordinance, the Tribe's stated emphasis on E. Coli standards, and especially in light of the importance of determining the effectiveness of the hypochlorite- and UV disinfection systems required to be implemented under the Administrative Order, the facility will be required to monitor the concentration of *E.Coli* in its effluent on a monthly basis.

pH. In order to support the tribe's established Ammonia standards, which vary with the pH of the effluent, and to ensure adherence to the minimum and maximum pH levels designated by the tribe for the receiving water, weekly pH monitoring is required in the permit.

Temperature. Also to support the tribe's established Ammonia standards and their dependence on temperature, as well as ensure adherence to the maximum temperature established for the Designated Use of Warmwater Habitat, the permit requires weekly temperature monitoring.

Turbidity. In order to implement the Tribal standard for Primary Contact use in the receiving water, the permit includes a turbidity standard with monthly monitoring requirement.

Total Nitrate and Total Phosphorous. Because of the importance of nutrient removal for protection of tribal waters and the noted issues with ammonia in the facility (which nitrate can be converted into by certain bacteria), this permit retains the Phosphorous monitoring requirements and adds a Nitrate limit as specified in the Tribe's designated uses of Domestic/Industrial Water Supply and Groundwater Recharge.

Total Ammonia. Due to the high concentrations of ammonia reported in recent DMR's (suspected to have exceeded the limits set forth in the White Mountain Apache Water Quality Protection Ordinance in all recent reports which do not have apparent data flaws), the proposed permit contains effluent limitations for total ammonia.

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.

Oil and Grease, total recoverable. In accordance with standard EPA water quality protection requirements for a Publicly-Owned Treatment Works (POTW), an oil and grease standard has been incorporated into the permit.

Whole-Effluent Toxicity. Whole-Effluent Toxicity testing is intended to demonstrate that there are no unexpected toxic components of the discharge escaping to the receiving water undetected, and to prompt a response if they are present. It is therefore generally required of all first-time permittees, and as needed thereafter. In the absence of the data collection that has been required under each previous issuance of this permit, the proposed permit requires chronic toxicity testing to be conducted once during the first 6 months of this permit term.

D. 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 establishes less stringent mass- and concentration-based limits for BOD_5 and TSS based on the application of the "Equivalent to Secondary Treatment" designation for pond and lagoon systems (required under 33 USC Section 1314 paragraph (4) and detailed at 40 CFR 133.101(g)), applying the standards at 40 CFR 133.105 under the authority granted at 33 USC Section 1342 paragraph (2)(ii).

E. Antidegradation Policy

EPA's antidegradation policy at 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 the low levels of toxic pollutants present in the effluent, high level of treatment being obtained, and water quality based effluent limitations, it is not expected that the discharge will adversely affect receiving water bodies.

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 proposed permit incorporates applicable narrative water quality standards.

VIII. MONITORING AND REPORTING REQUIREMENTS

The permit requires the permittee to monitor for pollutants or parameters with technology-based effluent limits and water quality-based effluent limits in the effluent for the duration of the permit term. Additionally, where effluent concentrations of toxic parameters are unknown or where data is insufficient to determine reasonable potential, EPA may establish monitoring requirements in the permit. These data will be re-evaluated and the permit re-opened to incorporate effluent limitations if necessary.

A. Effluent Monitoring and Reporting

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed 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 proposed permit. All monitoring data shall be reported on monthly DMR forms and submitted quarterly as specified in the proposed permit.

Composite samples will be required for BOD_5, suspended solids, total ammonia, dissolved oxygen, total phosphorous, and total nitrate; which should allow for proper characterization of the effluent. Grab samples will be required for pH, temperature, turbidity, oil and grease, and *E. Coli*.

IX. OTHER CONSIDERATIONS UNDER FEDERAL LAW

A. 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. Since the issuance of NPDES permits by the 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.

To determine whether the discharge would affect any endangered species or habitat, EPA reviewed a list of threatened and endangered species associated with aquatic habitats in the White Mountain Apache Reservation. The U.S. Fish and Wildlife Service provides an online tool to check lists of threatened and endangered species in the project area, based on data managed by the Arizona Ecological Field Services office . The review indicated that there are three bird, three fish, one mammal, one reptile, and one amphibian species of concern for the area surrounding the facility, including the Yellow-Billed Cuckoo (*Coccyzus americanus*), Mexican spotted owl (*Strix occidentalis lucida*), Southwestern willow flycatcher (*Empidonax traillii extimus*), Apache trout (*Oncorhynchus apache*), Headwater chub (*Gila nigra*), Roundtail chub (*Gila robusta*), Mexican gray wolf (*Canis lupus baileyi*), Northern Mexican gartersnake (*Thamnophis eques megalops*), and Chiricahua leopard frog (*Rana chiricahuensis*). The major reason for decline of these species of concern is habitat destruction.

This NPDES Permit authorizes the discharge of effluent from the Whiteriver Sewage Lagoons into receiving water that could be a habitat for some of the aforementioned threatened and endangered species. However, the discharge is not known to contain toxics or bioaccumulative substances. Additionally, this NPDES permit only authorizes discharge of treated municipal waste into the White River and contains provisions for monitoring conventional pollutants and conducting toxicity testing to ensure an appropriate level of water quality discharged from the facility. Re-opener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

In considering all information available during the drafting of this permit, EPA believes that a NO EFFECT determination is appropriate for this federal action. A copy of the draft permit and statement of basis were forwarded to the WMAT Wildlife and Outdoor Recreation Division for

review and comment during the pre-public notice review period and 30-day public review period.

B. 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 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.

C. 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 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.

D. 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 proposed 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.

X. 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 exceedences of water quality standards.

B. Standard Provisions

The draft permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

XI. 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. The basic intent of this requirement is to ensure that all interested parties have an opportunity to comment on significant actions of the permitting agency with respect to a permit application or permit.

B. Public Comment Period (40 CFR 124.10)

Notice of the draft permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, 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 the Director 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.

D. 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.

After the draft permit has been revised to include any relevant comments from the 30-day public comment period, it is forwarded to WMAT for CWA Section 401 certification. This certification ensures that the permit will comply with applicable Federal CWA standards as well as with the WMAT Water Quality Protection Ordinance. EPA Region 9 will not issue this permit until a 401 certification is received.

XII. CONTACT INFORMATION

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

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415-972-3786

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OR

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White Mountain Apache Tribe
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Fort Apache, AZ 85926
Telephone: (928) 338-4325 ext. 221

XIII. REFERENCES

EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Prepared by EPA, Office of Water Enforcement and Permits, in March 1991. EPA/505/2-90-001.

EPA. 1996. *Regions IX & X Guidance for Implementing Whole Effluent Toxicity Testing Programs*, Interim Final, May 31. 1996.

EPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* - Fifth Edition. Office of Water, EPA. EPA-821-R-02-012.

EPA. 2002b. *National Recommended Water Quality Criteria*. Office of Water, EPA. EPA-822-R-02-047.

EPA. 1996. *U.S. EPA NPDES Basic Permit Writers Manual*. EPA. EPA-833-B-96-003.

White Mountain Apache Tribe, 2001. *Water Quality Protection Ordinance of the White Mountain Apache Tribe of the Fort Apache Indian Reservation.*