

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
Fact Sheet**

Permittee's Name: U.S. Fish and Wildlife Service - Alchesay National Fish Hatchery

Mailing Address: P. O. Box 2430
Pinetop, AZ 85935

Plant Location: 8602 North Alchesay NFH Rd. (in Navajo County)
Whiteriver, AZ 85941

Contact Person(s): Bruce Thompson
Project Leader (928) 338-4901

NPDES Permit No.: AZ0000116

I. Status of Permit

The Alchesay National Fish Hatchery submitted a timely reapplication for a National Pollutant Discharge Elimination System (NPDES) permit dated December 27, 2012 to allow a discharge from the hatchery to the North Fork White River. The previous NPDES permit was issued on July 1, 2008.

II. General Facility Information

The cold water trout hatchery raises approximately 91,000 pounds of trout per year (86,000 pounds of rainbow trout, 5,000 pounds of brown trout) for stocking streams on 18 Indian Reservations in Arizona and New Mexico under Department of Interior trust responsibilities. The hatchery is located approximately nine (9) miles north of Whiteriver, Arizona in Navajo County. The facility obtains intake water from the North Fork White River, runs it through the hatchery operations, and discharges back to the same river.

III. Receiving Water

In order to protect the designated uses of surface waters, the White Mountain Apache Tribe of the Fort Apache Indian Reservation has adopted water quality standards for different stream segments depending on the level of protection required. The White Mountain Apache Tribe Water Quality Protection Ordinance lists the North Fork White River below Alchesay hatchery as a marginal coldwater habitat. Additional designated uses include irrigation, domestic and industrial water supply, groundwater recharge, livestock and wildlife, primary contact, ceremonial primary contact, gathering of plants, and cultural significance.

IV. Effluent Limits and Rationale

A. Process Description

The following table describes the type of discharge flow volume and location of the various outfalls associated with this NPDES permit.

Outfall Information

Outfall Number and Types of Discharge	Average Flow	Location	Treatment
003 a. Effluent from fish ponds	9.28 MGD	North Fork White River in the Salt River Basin	None

The facility obtains intake water from the North Fork White River, where river water is settled in a settling tank prior to dispersion to the on-site ponds. Solids collected from the source water have historically been flushed back into the stream. However, the hatchery has reconfigured the influent treatment system, and instead of flushing solids back to the stream, the hatchery flushes solids into an unlined settling basin. The settling basin is periodically be cleaned, and solids sent off site.

Influent water gravity flows to each of the unlined ponds. Hatchlings are brought from the nearby Williams Creek hatchery and raised at the Alchesay site. Fish are harvested manually by slowly draining down the water levels in the pond thru the outfall weir prior to fish removal. Overflow from the ponds passes over a weir and is discharged directly to the North Fork White River. There is no treatment of the effluent.

The White Mountain Apache Tribe conducts surface water monitoring of the North Fork White River as part of their ambient water assessment. Representatives of the Tribe have noted algae growth in the stream downstream of the hatchery. It is not known if the algae growth is due to the hatchery effluent, if it is due to other non-point sources in the watershed, or some combination of the sources.

B. Previous Permit Limitations

The following summarizes the previous permit requirements for Outfall 003 from the Alchesay National Fish Hatchery. (Outfall 001 and 002 have been eliminated; i.e., no discharge from those sites due to re-directing water flow thru the hatchery.

Constituent	Current Limitations*	Monitoring Requirements	
		Measurement Frequency	Sample Type
Flow (m ³ /day)	No Numeric Standard	Twice/month	Continuous
Suspended Solids	10 mg/l monthly avg., 15 mg/l daily max.	Twice/month	Composite
Total Ammonia**	Summer = 1.2 mg/l monthly avg., 7.3 mg/l daily max. Winter = 2.3 mg/l monthly avg., 9.9 mg/l daily max.	Once/3 months	Composite

Constituent	Current Limitations*	Monitoring Requirements	
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Total Phosphorus (as P)	0.1 mg/l monthly avg., 0.8 mg/l daily max.	Once/3 months	Composite
pH	6.5 - 9.0 s.u.	Twice/month	Grab

* Note: the existing permit also contains mass limitations for suspended solids, total nitrogen, and total phosphorus based on a maximum flow of 14.4 MGD. The mass based limits are retained in this permit renewal.

**Ammonia refers to sum of dissolved un-ionized ammonia, represented as NH₃ and the ionized form, represented as NH₄⁺. Total ammonia limits are based on pH 7.75 and 22.0°C temperature and 1.0°C temperature for winter.

Net limitations for Total Suspended Solids may only be applied when the concentration of suspended solids in the influent exceeds daily maximum permit concentration limits. Calculate net limitations by subtracting the suspended solids concentration in the influent from the suspended solids concentration in the effluent, then compare net amount against permit limits. Report computation method used to derive suspended solids values in an addendum to the DMR.

C. Discharge Monitoring Report (DMR) Data

The EPA requires Alchesay National Fish Hatchery to monitor parameters either twice a month or once every three months and to report the results monthly. EPA reviewed DMR data from 2008 to May 2013 for purposes of developing this permit.

Total Suspended Solids. Since July 2008, effluent levels of TSS have ranged from 1 to 148 mg/l. However, intake TSS levels during this period ranged from 2 to over 335 mg/l. High effluent concentrations in the effluent correlated with high concentrations in the intake water, as indicated by the net TSS limitations allowance in the permit. In nearly all cases, the facility effluent was in compliance with the TSS limitations or the net effluent limitations. During periods when the intake concentration was low (i.e., in the 5 – 15 mg/l range) the hatchery generally added approximately 2 to 7 mg/L of TSS, although there were also a number of instances when effluent concentrations were decreased in the effluent by a similar amount. During periods when the intake sediment levels were high due to precipitation events, effluent concentrations were generally lower than influent concentrations due to settling in the ponds and in the distribution tank. For example, on August 23, 2012, effluent TSS level (148) was substantially lower than influent concentration (335 mg/L).

Total Phosphorus. Since July 2008, effluent levels of total phosphorus have ranged from 0.01 mg/l to 0.17 mg/l, all 63 samples were below the daily maximum effluent limit. The average level (0.05 mg/L) was below the monthly average effluent limit.

Total Ammonia. Since July 2008, effluent levels of ammonia have ranged from 0.02 mg/l to 0.21 mg/l and all samples were far below the daily maximum effluent limit.

Total Nitrogen. NOTE: the permit does not contain effluent limits for total nitrogen however monitoring and reporting is required to evaluate discharge levels. Since July 2008, effluent levels for Total Nitrogen have ranged from 0.21 mg/l to 3.13 mg/l. The maximum total Nitrogen

value (3.13) contained mostly Kjeldahl Nitrogen (3.10). Although the permit does not allow for net credits of Total Nitrogen, it should be noted that influent concentrations during this period ranged from 0.21 to 0.72 mg/l (influent samples not necessarily taken on the same days as effluent). From paired influent/effluent data, the average net increase in Total Nitrogen from the hatchery was 0.05 mg/l.

V. Justification for Numeric Effluent Limitations

EPA promulgated effluent limitation guidelines and standards for aquaculture facilities in June, 2004. (See 40 CFR Part 451.) The national technology-based regulation applies to the discharge of pollutants from a concentrated aquatic animal production facility that produces 100,000 pounds or more per year of aquatic animals in a flow-through or recirculating system. The Alchesay National Fish Hatchery produces less than 100,000 pounds per year, and is therefore not subject to the effluent limitations guidelines. EPA therefore establishes permit requirements based upon Best Professional Judgment, where the effluent limitation guidelines may be considered as guidance for best management practices. Due to the fact that the permittee is only slightly below the 100,000 pounds per year cutoff, EPA has decided to establish Best Professional Judgment (BPJ) limits generally consistent with the intention of 40 CFR Part 451 where applicable. The requirements are as follows and have been incorporated into the final permit:

A. Solids control. The permittee must:

(1) Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the U.S.

(2) In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, identify and implement procedures for routine cleaning of rearing units and off-line settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading and harvesting aquatic animals in the production system.

(3) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

B. Materials storage. The permittee must:

(1) Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.

(2) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

C. Structural maintenance. The permittee must:

(1) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

(2) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

D. Recordkeeping. The permittee must:

- (1) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.
- (2) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

E. Training. The permittee must:

- (1) In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.
- (2) Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

F. Chemical Usage. Additionally, EPA has retained the following requirement to document chemical usage at the site. EPA continues to believe that Whole Effluent Toxicity (WET) testing is not necessary due to the absence of a reasonable potential for the effluent to cause in stream toxicity. However, the reporting requirements for chemical usage may be evaluated in the future to determine if WET testing is required. The permittee must:

- (1) Submit annually by January 31st each year a list of all chemicals added to water in the fish hatchery during the preceding year.
- (2) The chemical list shall include antibiotics, fungicides, detergents, and other cleaning agents, disinfectants and any other chemicals added to the water. The submittal shall include information on frequency and duration of use, purpose, and amounts.

Unless otherwise noted, the following permit limitations must be met when discharging from Outfall 003.

pH: Limits are retained from the previous permit. These limits reflect White Mountain Apache Tribe water quality standards for marginal coldwater habitat.

Total Suspended Solids: Limits are retained from the previous permit, which in turn were based upon a determination made by the now-defunct Arizona Water Quality Control Council in 1976. This determination established specific suspended solids limitations for sensitive waters, including the White River and its tributaries.

Total Phosphorus. White Mountain Apache Tribe Standards include water quality standards for Total Phosphorus and do not include a standard for ortho-phosphate. Therefore, the permit has incorporated limits for total Phosphorus as specified in the White Mountain Apache Tribe Standards. The permittee had previously requested that EPA consider establishing a limit based on ortho-phosphate instead of total Phosphorus, however the permittee has not supplied enough information for EPA to evaluate in consideration of establishing limits for orthophosphate in place of total phosphorus. Although EPA would consider establishing ortho-phosphate limits, the relationship to total phosphorus is not understood well enough at this time to replace the limits for total phosphorus.

Total Ammonia: Ammonia limits have been added to the previous permit based on the White Mountain Apache Tribe Water Quality Protection Ordinance (Section 3.6) in accordance with the table for coldwater habitat in Appendix A. As a protective measure, the effluent limitation is based on the highest pH reading (7.8) and the summer and winter temperatures provided by

hatchery managers.

Summer: 22° C (72° F) Chronic: 1.20 mg/L Acute: 7.30 mg/L
Winter: 0.6° C (33° F): Chronic: 2.30 mg/L Acute: 9.90 mg/L

Total Nitrogen: White Mountain Apache Tribe Standards include water quality standards for Total Ammonia but do not include water quality standards for Total Nitrogen. Therefore, the permit has incorporated limits for Total Ammonia as specified in the White Mountain Apache Tribe Standards in place of limits for Total Nitrogen. Effluent limits for Total Nitrogen were not in the current permit, although the permit continues to require monitoring in order to assess potential downstream impacts.

Nitrate + Nitrite: The receiving water is designated as a source of domestic water supply. The Tribe indicated its plans to construct a dam downstream of the hatchery to provide drinking water to nearby residences. Therefore, EPA evaluated existing concentrations of nitrate from the hatchery effluent to compare to drinking water quality standards. The drinking water quality standard for nitrate is 10 mg/l. Since July 2008, effluent levels of nitrite+nitrate have ranged from 0.01 mg/l to 0.61 mg/l. All sample results were below the drinking water standard. EPA has concluded that the hatchery effluent does not have the reasonable potential to cause an exceedance of drinking water quality standards for nitrate.

Whole Effluent Toxicity (WET) – EPA does not believe that there is the reasonable potential for the effluent to cause or contribute to effluent toxicity. However, EPA is retaining a reporting condition in the permit that the permittee must submit annually by January 31st each year a list of all chemicals added to water in the fish hatchery during the preceding year. The chemical list shall include antibiotics, fungicides, detergents, and other cleaning agents, disinfectants and any other chemicals added to the water. The submittal shall include information on frequency and duration of use, purpose, and amounts. The information may be used to assess the need and specifications for possible WET testing or specific substance monitoring in the future.

As required in 40 CFR Part 122.45(b) and (f), mass-based effluent limitations are established for all parameters described above based on a design flow of 14.4 MGD.

VI. Narrative Water Quality Based Effluent Limitations

Based on the White Mountain Apache Tribe Narrative Water Quality Standards, the following narrative limitations have been included in the permit:

- A. Tribal waters shall be free of contaminants in such quantity and duration as may, with reasonable probability, injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, unless stricter standards are imposed.
 - 1. **BOTTOM DEPOSITS.** The bottoms of all Tribal waters shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota, including fish, or significantly alter the physical or chemical properties of the bottom.

2. **FLOATING SOLIDS, OIL, AND GREASE.** All waters shall be free from visible oils, scum, foam, grease and other floating materials and suspended substances of a persistent nature resulting from other than natural causes.
3. **COLOR.** Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor shall color impair the attainable uses of the water or harm aquatic life.
4. **ODOR AND TASTE.** Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.
5. **NUISANCE CONDITIONS.** Nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species in stream, or otherwise cause nuisance conditions.
6. **TURBIDITY.** Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less. When background turbidity is more than 50 NTU, there shall not be more than a 10% increase in turbidity. Background turbidity may be estimated by measuring levels upstream of the human-caused impacts or during zero runoff periods (greater than five (5) days after most recent event).
7. **TEMPERATURE.** The introduction of heat by other than natural causes shall not increase temperature outside mixing zones by more than 2.0^o C (5^o F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. Normal daily and seasonal variations of temperature that were present before the addition of heat from other than natural sources shall be maintained. In no case shall heat of artificial origin be permitted when the maximum temperature specified for the reach would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards. In cases where dissolved oxygen levels are within 0.5 mg/l of the limit, no increases in temperature will be allowed.
8. **SALINITY/MINERAL QUALITY** (total dissolved solids, chlorides, and sulfates). Existing mineral concentrations shall not be altered by municipal, industrial, or instream activities, or other waste discharges that would interfere with established designated uses. No increase exceeding 1/5 of naturally-occurring levels shall be permitted.
9. **pH.** The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes and shall be within a range of 6.5-9.0.
10. **DISSOLVED OXYGEN.** If a surface water body is capable of supporting aquatic life, dissolved oxygen concentration shall be maintained at a minimum of 6.0 mg/l.

11. TOXIC SUBSTANCES. Toxic substances, including, but not limited to pesticides, herbicides, heavy metals, and organic chemicals, shall not be present in Tribal waters above those levels identified in 40 CFR Part 131.36 as toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth, and survival of the aquatic biota, including fish. There shall be no acute toxicity. At the edge of the mixing zones there shall be no chronic toxicity.
12. PATHOGENS. Tribal water shall be virtually free from pathogens which include bacteria, viruses or parasites. In particular, waters used for irrigation of table crops shall be virtually free of *Salmonella* and *Shigella* species.

VII. Significant Changes to Previous Permit

As described in Section V, EPA has included influent monitoring of temperature and total nitrogen concentrations at upstream river that provides water to the hatchery facility. The goal is to assist with future assessment of influent (natural) nitrogen levels as compared to effluent nitrogen levels. EPA has continued the additional records and reporting requirements to report quantities of chemical usage, most likely for treating fish diseases.

VII. Special Conditions

As described in Section V, the final permit contains requirements generally consistent with the intention of 40 CFR Part 451 regarding control of solids, materials storage, structural maintenance, recordkeeping, training, and chemical usage.

VIII. Threatened and Endangered Species

EPA reviewed the publication: Endangered and Threatened Species of Arizona, 1998. Ecological Services Field Office, U.S. Fish and Wildlife Service; and an updated list of Federally Threatened and Endangered Species of Arizona (March 31, 1998), to determine whether the discharge would affect any endangered species or habitat. The review indicated that there are 7 bird and fish species of concern for Navajo County, including the Bald Eagle, Peregrine Falcon, Mexican Spotted Owl, Humpback Chub, Apache Trout, Little Colorado Spinedace, and Loach Minnow. The major reason for decline in these species is habitat destruction.

This NPDES permit continues to authorize the discharge of hatchery raceway and pond effluents into areas that are not habitat to the aforementioned threatened and endangered species. The permit contains provisions for monitoring conventional and nonconventional pollutants, and to ensure an appropriate level of water quality discharged by the facility. None of the listed species are impacted by water quality and therefore by the NPDES permit action. Re-opener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

The Alchesay National Fish Hatchery was constructed sometime ago, and no new construction or

modifications will be made to it due to the NPDES permit.

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 reissuance and statement of basis was sent to the Pinetop Office of the U.S. Fish and Wildlife Service Arizona Fishery Resources Office for review and comment.

IX. Affects on Historic Properties

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities nor changes to the operation are planned in the reissuance.

X. Permit Reopener

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

XI. Standard Conditions

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

XII. Administrative Information

A. Public Notice (40 CFR Part 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 Part 124.10)

Notice of the draft permit was placed in a local daily 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. No public comments were received.

C. Public Hearing (40 CFR Part 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 when 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. Certification (40 CFR Part 124.53 and 124.54)

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

XIII. Additional Information

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

U.S. Environmental Protection Agency, Region IX
NPDES Permits Office Mail Code: WTR-5
75 Hawthorne Street
San Francisco, CA 94105-3901
Attn: Peter Kozelka, Ph.D.
Telephone: (415) 972-3448

XIV. Information Sources

While developing effluent limitations, monitoring requirements and special conditions for the permit, the following information sources were used:

1. NPDES Permit Application Form 1 and Form 2B, dated June 21, 1999, reapplication forms submitted December 27, 2012.
2. Water Quality Protection Ordinance of the White Mountain Apache Tribe of the Fort Apache Indian Reservation. Adopted September 1, 1999.
3. Arizona Water Quality Standards for Surface Waters, Title 18, Chapter 11, Article 1. Adopted April 24, 1996.
4. 40 CFR Parts 122 and 125.
5. Endangered and Threatened Species of Arizona, 1998. Arizona Ecological Field Office, U.S. Fish and Wildlife Service.

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V. Justification for Numeric Effluent Limitations

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(3) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

B. Materials storage. The permittee must:

(1) Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.

(2) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

C. Structural maintenance. The permittee must:

(1) Inspect the production system and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

(2) Conduct regular maintenance of the production system and the wastewater treatment system in order to ensure that they are properly functioning.

D. Recordkeeping. The permittee must:

- (1) In order to calculate representative feed conversion ratios, maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of aquatic animals.
- (2) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

E. Training. The permittee must:

- (1) In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.
- (2) Train staff on the proper operation and cleaning of production and wastewater treatment systems including training in feeding procedures and proper use of equipment.

F. Chemical Usage. Additionally, EPA has retained the following requirement to document chemical usage at the site. EPA continues to believe that Whole Effluent Toxicity (WET) testing is not necessary due to the absence of a reasonable potential for the effluent to cause in stream toxicity. However, the reporting requirements for chemical usage may be evaluated in the future to determine if WET testing is required. The permittee must:

- (1) Submit annually by January 31st each year a list of all chemicals added to water in the fish hatchery during the preceding year.
- (2) The chemical list shall include antibiotics, fungicides, detergents, and other cleaning agents, disinfectants and any other chemicals added to the water. The submittal shall include information on frequency and duration of use, purpose, and amounts.

Unless otherwise noted, the following permit limitations must be met when discharging from Outfall 003.

pH: Limits are retained from the previous permit. These limits reflect White Mountain Apache Tribe water quality standards for marginal coldwater habitat.

Total Suspended Solids: Limits are retained from the previous permit, which in turn were based upon a determination made by the now-defunct Arizona Water Quality Control Council in 1976. This determination established specific suspended solids limitations for sensitive waters, including the White River and its tributaries.

Total Phosphorus. White Mountain Apache Tribe Standards include water quality standards for Total Phosphorus and do not include a standard for ortho-phosphate. Therefore, the permit has incorporated limits for total Phosphorus as specified in the White Mountain Apache Tribe Standards. The permittee had previously requested that EPA consider establishing a limit based on ortho-phosphate instead of total Phosphorus, however the permittee has not supplied enough information for EPA to evaluate in consideration of establishing limits for orthophosphate in place of total phosphorus. Although EPA would consider establishing ortho-phosphate limits, the relationship to total phosphorus is not understood well enough at this time to replace the limits for total phosphorus.

Total Ammonia: Ammonia limits have been added to the previous permit based on the White Mountain Apache Tribe Water Quality Protection Ordinance (Section 3.6) in accordance with the table for coldwater habitat in Appendix A. As a protective measure, the effluent limitation is based on the highest pH reading (7.8) and the summer and winter temperatures provided by

hatchery managers.

Summer: 22° C (72° F) Chronic: 1.20 mg/L Acute: 7.30 mg/L
Winter: 0.6° C (33° F): Chronic: 2.30 mg/L Acute: 9.90 mg/L

Total Nitrogen: White Mountain Apache Tribe Standards include water quality standards for Total Ammonia but do not include water quality standards for Total Nitrogen. Therefore, the permit has incorporated limits for Total Ammonia as specified in the White Mountain Apache Tribe Standards in place of limits for Total Nitrogen. Effluent limits for Total Nitrogen were not in the current permit, although the permit continues to require monitoring in order to assess potential downstream impacts.

Nitrate + Nitrite: The receiving water is designated as a source of domestic water supply. The Tribe indicated its plans to construct a dam downstream of the hatchery to provide drinking water to nearby residences. Therefore, EPA evaluated existing concentrations of nitrate from the hatchery effluent to compare to drinking water quality standards. The drinking water quality standard for nitrate is 10 mg/l. Since July 2008, effluent levels of nitrite+nitrate have ranged from 0.01 mg/l to 0.61 mg/l. All sample results were below the drinking water standard. EPA has concluded that the hatchery effluent does not have the reasonable potential to cause an exceedance of drinking water quality standards for nitrate.

Whole Effluent Toxicity (WET) – EPA does not believe that there is the reasonable potential for the effluent to cause or contribute to effluent toxicity. However, EPA is retaining a reporting condition in the permit that the permittee must submit annually by January 31st each year a list of all chemicals added to water in the fish hatchery during the preceding year. The chemical list shall include antibiotics, fungicides, detergents, and other cleaning agents, disinfectants and any other chemicals added to the water. The submittal shall include information on frequency and duration of use, purpose, and amounts. The information may be used to assess the need and specifications for possible WET testing or specific substance monitoring in the future.

As required in 40 CFR Part 122.45(b) and (f), mass-based effluent limitations are established for all parameters described above based on a design flow of 14.4 MGD.

VI. Narrative Water Quality Based Effluent Limitations

Based on the White Mountain Apache Tribe Narrative Water Quality Standards, the following narrative limitations have been included in the permit:

- A. Tribal waters shall be free of contaminants in such quantity and duration as may, with reasonable probability, injure human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property. In addition, the following narrative standards apply to all Tribal Waters, unless stricter standards are imposed.
 - 1. **BOTTOM DEPOSITS.** The bottoms of all Tribal waters shall be free from water contaminants from other than natural causes that will settle and cause deleterious effects to the aquatic biota, including fish, or significantly alter the physical or chemical properties of the bottom.

2. **FLOATING SOLIDS, OIL, AND GREASE.** All waters shall be free from visible oils, scum, foam, grease and other floating materials and suspended substances of a persistent nature resulting from other than natural causes.
3. **COLOR.** Materials producing true color resulting from other than natural causes shall not create an aesthetically undesirable condition; nor shall color impair the attainable uses of the water or harm aquatic life.
4. **ODOR AND TASTE.** Water contaminants from other than natural causes shall be limited to concentrations that will not impart unpalatable flavor to fish, result in offensive odor or taste arising from the water, or otherwise interfere with the existing and attainable uses of the water, nor shall taste and odor-producing substances of other than natural origin interfere with the production of a potable water supply by modern treatment methods.
5. **NUISANCE CONDITIONS.** Nutrients or other substances stimulating algal growth from other than natural causes shall not be present in concentrations that will produce objectionable algal densities, nuisance aquatic vegetation, result in a dominance of nuisance species in stream, or otherwise cause nuisance conditions.
6. **TURBIDITY.** Turbidity attributable to other than natural causes shall not reduce light transmission to the point that the aquatic biota is inhibited or that will cause an unaesthetic and substantial visible contrast with the natural appearance of the water. Specifically, turbidity shall not exceed 5 NTU over background when background turbidity is 50 NTU or less. When background turbidity is more than 50 NTU, there shall not be more than a 10% increase in turbidity. Background turbidity may be estimated by measuring levels upstream of the human-caused impacts or during zero runoff periods (greater than five (5) days after most recent event).
7. **TEMPERATURE.** The introduction of heat by other than natural causes shall not increase temperature outside mixing zones by more than 2.0^o C (5^o F), based upon the monthly average of the maximum daily temperatures measured at mid-depth or three feet (whichever is less) outside the mixing zone. Normal daily and seasonal variations of temperature that were present before the addition of heat from other than natural sources shall be maintained. In no case shall heat of artificial origin be permitted when the maximum temperature specified for the reach would thereby be exceeded. High water temperatures caused by unusually high ambient air temperatures are not violations of these standards. In cases where dissolved oxygen levels are within 0.5 mg/l of the limit, no increases in temperature will be allowed.
8. **SALINITY/MINERAL QUALITY** (total dissolved solids, chlorides, and sulfates). Existing mineral concentrations shall not be altered by municipal, industrial, or instream activities, or other waste discharges that would interfere with established designated uses. No increase exceeding 1/5 of naturally-occurring levels shall be permitted.
9. **pH.** The pH of a stream or a lake shall not fluctuate in excess of 1.0 pH unit over a period of 24 hours for other than natural causes and shall be within a range of 6.5-9.0.
10. **DISSOLVED OXYGEN.** If a surface water body is capable of supporting aquatic life, dissolved oxygen concentration shall be maintained at a minimum of 6.0 mg/l.

11. TOXIC SUBSTANCES. Toxic substances, including, but not limited to pesticides, herbicides, heavy metals, and organic chemicals, shall not be present in Tribal waters above those levels identified in 40 CFR Part 131.36 as toxic to human, animal, plant, or aquatic life, or to interfere with the normal propagation, growth, and survival of the aquatic biota, including fish. There shall be no acute toxicity. At the edge of the mixing zones there shall be no chronic toxicity.
12. PATHOGENS. Tribal water shall be virtually free from pathogens which include bacteria, viruses or parasites. In particular, waters used for irrigation of table crops shall be virtually free of *Salmonella* and *Shigella* species.

VII. Significant Changes to Previous Permit

As described in Section V, EPA has included influent monitoring of temperature and total nitrogen concentrations at upstream river that provides water to the hatchery facility. The goal is to assist with future assessment of influent (natural) nitrogen levels as compared to effluent nitrogen levels. EPA has continued the additional records and reporting requirements to report quantities of chemical usage, most likely for treating fish diseases.

VII. Special Conditions

As described in Section V, the final permit contains requirements generally consistent with the intention of 40 CFR Part 451 regarding control of solids, materials storage, structural maintenance, recordkeeping, training, and chemical usage.

VIII. Threatened and Endangered Species

EPA reviewed the publication: Endangered and Threatened Species of Arizona, 1998. Ecological Services Field Office, U.S. Fish and Wildlife Service; and an updated list of Federally Threatened and Endangered Species of Arizona (March 31, 1998), to determine whether the discharge would affect any endangered species or habitat. The review indicated that there are 7 bird and fish species of concern for Navajo County, including the Bald Eagle, Peregrine Falcon, Mexican Spotted Owl, Humpback Chub, Apache Trout, Little Colorado Spinedace, and Loach Minnow. The major reason for decline in these species is habitat destruction.

This NPDES permit continues to authorize the discharge of hatchery raceway and pond effluents into areas that are not habitat to the aforementioned threatened and endangered species. The permit contains provisions for monitoring conventional and nonconventional pollutants, and to ensure an appropriate level of water quality discharged by the facility. None of the listed species are impacted by water quality and therefore by the NPDES permit action. Re-opener clauses have been included should new information become available to indicate that the requirements of the permit need to be changed.

The Alchesay National Fish Hatchery was constructed sometime ago, and no new construction or

modifications will be made to it due to the NPDES permit.

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 reissuance and statement of basis was sent to the Pinetop Office of the U.S. Fish and Wildlife Service Arizona Fishery Resources Office for review and comment.

IX. Affects on Historic Properties

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities nor changes to the operation are planned in the reissuance.

X. Permit Reopener

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

XI. Standard Conditions

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

XII. Administrative Information

A. Public Notice (40 CFR Part 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 Part 124.10)

Notice of the draft permit was placed in a local daily 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. No public comments were received.

C. Public Hearing (40 CFR Part 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 when 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. Certification (40 CFR Part 124.53 and 124.54)

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

XIII. Additional Information

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

U.S. Environmental Protection Agency, Region IX
NPDES Permits Office Mail Code: WTR-5
75 Hawthorne Street
San Francisco, CA 94105-3901
Attn: Peter Kozelka, Ph.D.
Telephone: (415) 972-3448

XIV. Information Sources

While developing effluent limitations, monitoring requirements and special conditions for the permit, the following information sources were used:

1. NPDES Permit Application Form 1 and Form 2B, dated June 21, 1999, reapplication forms submitted December 27, 2012.
2. Water Quality Protection Ordinance of the White Mountain Apache Tribe of the Fort Apache Indian Reservation. Adopted September 1, 1999.
3. Arizona Water Quality Standards for Surface Waters, Title 18, Chapter 11, Article 1. Adopted April 24, 1996.
4. 40 CFR Parts 122 and 125.
5. Endangered and Threatened Species of Arizona, 1998. Arizona Ecological Field Office, U.S. Fish and Wildlife Service.