

## ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM (AZPDES)

This document gives pertinent information concerning the reissuance of the AZPDES permit listed below. This facility is a fish hatchery and has a maximum flow rate of 6.79 million gallons per day (mgd). However, due to the nature of the discharge, it has been determined to be a minor facility under the NPDES program. The discharge limitations contained in this permit will maintain the Water Quality Standards listed in Arizona Administrative Code (A.A.C.) R18-11-101 et. seq. This permit is proposed to be issued for a period of 5 years.

Permittee's Name:	United States Fish and Wildlife Service
Permittee's Mailing Address:	25808 North Willow Beach Road Willow Beach, Arizona 86445
Facility Name:	Willow Beach National Fish Hatchery (WBNFH)
Facility Address or Location:	4.5 miles west of mile post 14 off highway 93
County	Mohave
Contact Person(s): Phone/e-mail address	Mark Olson, Project Leader, (928) 767-3456 mark_olson@fws.gov
AZPDES Permit Number:	AZ0000132
Inventory Number:	101363

<b>I. STATUS OF PERMIT(s)</b>	
AZPDES permit applied for:	Renewal
Date application received:	November 16, 2015
Date application was determined administratively complete:	December 17, 2015
Previous permit number (if different):	N/A
Previous permit expiration date:	June 20, 2016
<b><u>208 Consistency:</u></b>	
208 Plan consistency is not required for industrial facilities.	

The United States Fish and Wildlife Service has the following permits issued by ADEQ applicable to the WBNFH:		
Type of Permit	Permit Number	Purpose
Aquifer Protection Permit (APP)	P-101363	Regulates discharges to the local aquifer
Reuse Permit	N/A	Regulates the practice of reusing treated wastewater for beneficial purposes
Multi-Sector General Permit (MSGP)	N/A	Regulates stormwater discharge

## II. GENERAL FACILITY INFORMATION

Type of Facility:	The WBNFH raises endangered warm water fish for the Lower Colorado Multi Species Conservation Plan. Rainbow trout are raised for recreational fishing in public and tribal waters.
Facility Location Description:	The facility is located approximately 14 miles south of Hoover Dam.
Estimated Design Flow:	Flow-through fish hatchery with a maximum flow rate of 8.64 million gallons per day (mgd)
Treatment Processes (include sludge handling and disposal/use):	The only treatment given to the water is partial screening of intake water for algae prior to routing through the hatchery. Fish waste is not considered biosolids under the 40 CFR 503 provisions.
Nature of facility discharge:	Water for this flow-through hatchery is obtained from the Colorado River and discharged back into the Colorado River via gravity flow through pipes.
Average flow per discharge:	7.63 mgd
Reuse / irrigation or other disposal method(s):	N/A
Continuous or intermittent discharge:	Continuous
Discharge pattern summary:	The average flow rate is approximately 7.63 mgd and discharge to the creek is continuous through a single outflow structure.

<b>III. RECEIVING WATER</b>	
The State of Arizona has adopted water quality standards to protect the designated uses of its surface waters. Streams have been divided into segments and designated uses assigned to these segments. The water quality standards vary by designated use depending on the level of protection required to maintain that use.	
Receiving Water :	Colorado River
River Basin:	Colorado River Basin
Outfall Location(s):	Outfall 001: Township 29 N, Range 22 W, Sections 20 & 29 Latitude 35° 52' 32", Longitude 114° 39' 54"
The outfall discharges to, or the discharge may reach, a surface water listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1.	
Designated uses for the receiving water listed above:	Aquatic and Wildlife cold water (A&Wc) Full Body Contact (FBC) Fish Consumption (FC) Agricultural Irrigation (AgI) Agricultural Livestock watering (AgL) Drinking Water Standards (DWS)
Is the receiving water on the 303(d) list?	Yes, the receiving water is listed as impaired for selenium. The Colorado River is listed in Appendix B of A.A.C. Title 18, Chapter 11, Article 1. The segment from Hoover Dam to Lake Mohave is on the 303(d) list as impaired for selenium. A Total Maximum Daily Load (TMDL) for selenium is planned but has not been initiated as of this writing.
Given the uses stated above, the applicable narrative water quality standards are described in A.A.C. R18-11-108, and the applicable numeric water quality standards are listed in A.A.C. R18-11-109 and in Appendix A thereof.	

In addition to the above, the Colorado River has a salinity standard. Per A.A.C. R18-11-110, the flow-weighted average annual concentration of total dissolved solids shall not exceed 723 milligrams per liter (mg/L) in the river below Hoover Dam and above Parker Dam.

**IV. DESCRIPTION OF DISCHARGE**

Because the facility is in operation and discharges have occurred, discharge monitoring data are available. The following is the measured discharge quality reported in the application.

Parameters	Units	Maximum Daily Discharge Concentration
Total Suspended Solids (TSS)	mg/L	14
Ammonia	mg/L	0.7
Selenium	µg/L	<2

**V. STATUS OF COMPLIANCE WITH THE EXISTING AZPDES PERMIT**

Date of most recent inspection:	June 14, 2011; no potential violations were noted as a result of this inspection.
DMR files reviewed:	January 2011 through September 2015
Lab reports reviewed:	April 2011 through April 2015
DMR Exceedances:	None
NOVs issued:	None
NOVs closed:	N/A
Compliance orders:	None

**VI. PROPOSED PERMIT CHANGES**

The following table lists the major changes from the previous permit in this draft permit.

Parameter	Existing Permit	Proposed permit	Reason for change
Reporting Location	Mail in hard copies of DMRs and other attachments	Mail in hard copies of DMRs and other attachments or submit by an alternative mode as specified by ADEQ.	Language added to support the NPDES electronic DMR reporting rule that became effective on December 21, 2015.
Ammonia	Monitoring with assessment level based on pH and temperature.	Monitoring with assessment level using an Ammonia Impact Ratio (AIR).	The AIR is a trackable numeric value. See Section VII for details.
pH	Monitoring at intake and Outfall 001.	Monitoring at Outfall 001.	Data indicate the intake values did not exceed the standard, therefore monitoring is no longer required.
Selenium	Monitoring with assessment levels.	No sampling required.	Data indicate levels are consistently below the standard therefore the fish hatchery is not contributing selenium to the Colorado River.

Anti-backsliding considerations – “Anti-backsliding” refers to statutory (Section 402(o) of the Clean Water Act) and regulatory (40 CFR 122.44(l)) requirements that prohibit the renewal, reissuance, or modification of an existing NPDES permit that contains discharge limits, permit conditions, or standards that are less stringent than those established in the previous permit. The rules and statutes do identify exceptions to these circumstances where backsliding is acceptable. This permit has been reviewed and drafted with consideration of anti-backsliding concerns.

No limits have been removed from the permit. Limits are retained in the draft permit for parameters where reasonable potential (RP) for an exceedance of a standard continues to exist or is indeterminate. In these cases, limits will be recalculated using the most current Arizona Water Quality Standards (WQS). If less stringent limits result due to a change in the WQS then backsliding is allowed in accordance with 303(d)(4) if the new limits are consistent with antidegradation requirements and the receiving water is in attainment of the new standard; see Section XII for information regarding antidegradation requirements. No limits are less stringent due to a change in the WQS in this permit.

**VII. DETERMINATION OF DISCHARGE LIMITATIONS and ASSESSMENT LEVELS**

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

**Technology-based Limitations:**

This fish hatchery is regulated under 40 CFR 122.24 as a concentrated aquatic animal production facility and is not an animal or concentrated animal feeding operation (AFO or CAFO, respectively). There are no promulgated technology-based limitations for fish hatcheries. The total suspended solids (TSS) discharge limitations in the current permit are based on best professional judgment (BPJ) and are included in this renewal permit.

The regulations at 40 CFR Part 451 became effective June 2004 and apply 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. WBFH indicated that since they may produce greater than 100,000 pounds per year in their flow-through system, they are continuing to adhere to the 40 CFR 451 discharge limitation guidelines (ELGs) that would be applicable. ADEQ has therefore established permit requirements based upon Best Practicable Technology (BPT) and Best Available Technology (BAT) discharge limitation guidelines which have been incorporated into the proposed permit.

**Numeric Water Quality Standards:**

As previously described, few contaminants are introduced in the rearing process (See Part II above). Based on the designated uses for this segment of the Colorado River as per Part III above, ammonia and TSS are considered to be the only pollutants of concern due to the fish feed and waste products. Monitoring for ammonia and TSS are proposed in the draft permit.

A.A.C. R18-11-110 sets the average annual salinity standard for the Colorado River segment below Hoover Dam at 723 milligrams per liter (mg/L) and incorporates by reference the plan of implementation adopted by the Colorado River Basin Salinity Control Forum. This plan includes the “*Policy for Implementation of Colorado River Salinity Standards Through the NPDES Permit Program for Fish Hatcheries*” and was adopted in October 2002. Consistent with the policy, the permittee is required to monitor and report both the intake water and the discharge for total dissolved solids and to calculate and report the difference as the net value. The difference between the two is the “incremental increase”, i.e. the increase between the intake source water and the discharge discharge. The policy requires that the incremental increase in dissolved solids not exceed 100 milligrams per liter.

**Mixing Zone:** The limits in this permit were determined without the use of a mixing zone. Arizona state water quality rules require that water quality standards be achieved without mixing zones unless the permittee applies for and is approved for a mixing zone. Since a mixing zone was not applied for or granted, all water quality criteria are applied at end-of-pipe.

**Assessment Levels (ALs):** ALs are listed in Part I.B of the permit. An AL differs from a discharge limit in that an exceedance of an AL is not a permit violation. Instead, ALs serve as triggers, alerting the permitting authority when there is cause for re-evaluation of RP for exceeding a water quality standard, which may result in new permit limitations. The AL numeric values also serve to advise the permittee of the analytical sensitivity needed for meaningful data collection. Trace substance monitoring

is required when there is uncertain RP (based on non-detect values or limited datasets) or a need to collect additional data or monitor treatment efficacy on some minimal basis. A reopener clause is included in the draft permit should future monitoring data indicate water quality standards are being exceeded.

Ammonia water quality criteria vary based on the discharge pH and temperature at the time of discharge sampling. As a result, no single ammonia concentration can be included as a permit limit. To overcome this, an Ammonia Impact Ratio (AIR) of one (1) has been established as the permit limit for ammonia. The AIR is calculated by dividing the ammonia concentration in the discharge by the applicable ammonia standard based on the discharge water pH and temperature at the time of sampling. AIR values will be reported on DMRs and on the Ammonia Data Log which is included as Appendix B in the permit. Any AIR value in excess of 1 will indicate an exceedance of an assessment level.

**Permit Limitations and Monitoring Requirements:**

The table that follows summarizes the parameters that are limited in the permit and the rationale for that decision. Also included are the parameters that require monitoring without any limitations or that have not been included in the permit at all and the basis for those decisions. The corresponding monitoring requirements are shown for each parameter. In general, the regulatory basis for monitoring requirements is per 40 CFR §122.44(i) *Monitoring requirements*, and 40 CFR §122.48(b), *Required monitoring*; all of which have been adopted by reference in A.A.C. R18-9-A905, *AZPDES Program Standards*.

Parameter	Lowest Standard / Designated Use	Maximum Reported Daily Value	No. of Samples	Estimated Maximum Value	RP Determination	Proposed Monitoring Requirement/ Rationale (1)
Total Suspended Solids (TSS)	10 mg/L 30-day average 15 mg/L daily maximum Best Professional Judgement (BPJ)	14 mg/L	48	N/A	N/A	A January 2002 EPA memo indicated that settleable solids monitoring is no longer required as long as TSS monitoring is required. A WQBEL is set in the permit based on BPJ.
pH	Minimum: 6.5 S.U. Maximum: 9.0 S.U. A&Wedw and PBC A.A.C. R18-11-109(B)	8.5 S.U.	48	N/A	N/A	pH is to be monitored using a discrete sample of the discharge and a WQBEL is set. 40 CFR Part 136 specifies that grab samples must be collected for pH. pH sampling must also coincide with ammonia sampling when required.
Temperature	No applicable numeric standard	22°C	24	N/A	N/A	Discharge temperature is to be monitored for discharge characterization by discrete sample. 40 CFR Part 136 specifies that discrete samples must be collected for temperature. Temperature sampling must also coincide with ammonia sampling when required.
Total Dissolved Solids (TDS)	Colorado River Basin Salinity Control Forum requirements apply above Imperial Dam	940 mg/L	48	N/A	N/A	Monitoring required and monitoring for both the source water and the discharge shall be monitored for TDS to determine compliance with Colorado River Basin Salinity Control Forum requirements.
Ammonia	Standard varies with temperature and pH	0.7 mg/L (< WQS)	24	N/A	RP Indeterminate	Ammonia is considered a potential contaminant of concern for fish hatcheries. It is to be monitored by discrete sample and an assessment level in the form of an ammonia impact ratio (AIR) of 1 is set in the permit (2). An ammonia data log with concurrent pH and temperature monitoring is also required.
Selenium	2 µg/L/ A&Wc chronic	<2 µg/L	24	<2 µg/L	No RP	Monitoring no longer required.

**Footnotes:**

- (1) The monitoring frequencies are as specified in the permit.
- (2) An AIR will be calculated by dividing discharge ammonia concentration by the applicable standard using the discharge water pH and temperature.

<p><b>VIII. NARRATIVE WATER QUALITY STANDARDS</b></p> <p>All narrative limitations in A.A.C. R18-11-108 that are applicable to the receiving water are included in Part I, Sections C and D of the draft permit.</p>
<p><b>IX. MONITORING AND REPORTING REQUIREMENTS (Part II of Permit)</b></p> <p>Section 308 of the Clean Water Act and 40 CFR Part 122.44(i) require that monitoring be included in permits to determine compliance with discharge limitations. Additionally, monitoring may be required to gather data for future discharge limitations or to monitor discharge impacts on receiving water quality.</p> <p>Monitoring frequencies are based on the nature and effect of the pollutant, as well as a determination of the minimum sampling necessary to adequately monitor the facility's performance. Data shall be reported on DMRs.</p> <p>For the purposes of this permit, discrete (i.e., grab) samples are specified in the permit for all parameters. The quality of the discharge is not expected to be highly variable.</p> <p>Monitoring locations are specified in the permit (Part I.H) in order to ensure that representative samples of the influent and discharge are consistently obtained.</p> <p>The requirements in the permit pertaining to Part II. Monitoring and Reporting, are included to ensure that the monitoring data submitted under this permit is accurate in accordance with 40 CFR 122.41(e). The permittee has the responsibility to determine that all data collected for purposes of this permit meet the requirements specified in this permit and is collected, analyzed, and properly reported to ADEQ.</p> <p>The permit (Part II.A.2) requires the permittee to keep a Quality Assurance (QA) manual at the facility, describing sample collection and analysis processes; the required elements of the QA manual are outlined.</p> <p>Reporting requirements for monitoring results are detailed in Part II, Section B. of the permit, including completion and submittal of Discharge Monitoring Reports (DMRs) and Ammonia Data Logs. The permittee is responsible for conducting all required monitoring and reporting the results to ADEQ on DMRs or as otherwise specified in the permit.</p> <p>The permit also requires annual submittal of an Ammonia Data Log that records the results for temperature, pH, and ammonia samples and date of sampling (Part II.B.3). Because the ammonia standards in 18 A.A.C. 11, Article 1, Appendix A are contingent upon the pH and temperature at the time of sampling for ammonia, the permittee must determine the applicable ammonia standard using the ammonia criteria table(s) and calculate the Ammonia Impact Ratio for that ammonia sample result. The AIR is recorded on the DMR.</p> <p><b>Electronic reporting.</b> The US EPA has published a final regulation that requires electronic reporting and sharing of Clean Water Act National Pollutant Discharge Elimination System (NPDES) program information instead of the current paper-based reporting (Federal Register, Vol. 80, No. 204, October 22, 2015). Beginning December 21, 2016 (one year after the effective date of the regulation), the Federal rule requires permittees to make electronic submittals of any monitoring reports and forms called for in their permits. ADEQ will provide advance notification about specific requirements and procedures for electronic reporting before these requirements take effect.</p> <p>Requirements for retention of monitoring records are detailed in Part II.D of the permit.</p>
<p><b>X. BIOSOLIDS REQUIREMENTS (Part III in Permit)</b></p> <p>Not applicable because fish wastes are not considered biosolids under the 40 CFR 503 provisions.</p>
<p><b>XI. SPECIAL CONDITIONS (Part IV in Permit)</b></p>

**Special Reporting**

The permittee shall submit an annual progress report to ADEQ by January 31<sup>st</sup> of each year which shall include information and actions regarding the following: solids control, materials storage, structural maintenance, recordkeeping, training, and chemical usage. These requirements are consistent with the requirements of 40 CFR 451, Subpart A, for the Concentrated Aquatic Animal Production Point Source Category. See Part IV in the permit.

**Permit Reopener**

This permit may be modified based on newly available information; to add conditions or limits to address demonstrated discharge toxicity; to implement any EPA-approved new Arizona water quality standard; or to re-evaluate reasonable potential (RP), if assessment levels in this permit are exceeded [A.A.C. R18-9-B906 and 40 CFR Part 122.62 (a) and (b)].

**XII. ANTIDegradation**

Antidegradation rules have been established under A.A.C. R18-11-107 to ensure that existing surface water quality is maintained and protected. The discharge of process water from WBNFH is to the Colorado River. Discharge limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. Discharge quality limitations and monitoring requirements have been established under the proposed permit to ensure that the discharge will meet the applicable water quality standards. As long as the permittee maintains consistent compliance with these provisions, the designated uses of the receiving water will be presumed protected, and the facility will be deemed to meet currently applicable antidegradation requirements under A.A.C. R18-11-107.

**XIII. STANDARD CONDITIONS**

Conditions applicable to all NPDES permits in accordance with 40 CFR, Part 122 are attached as an appendix to this permit.

**XIV. ADMINISTRATIVE INFORMATION**

**Public Notice (A.A.C. R18-9-A907)**

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

**Public Comment Period (A.A.C. R18-9-A908)**

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

**Public Hearing (A.A.C R18-9-A908(B))**

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

**EPA Review (A.A.C. R18-9-A908(C))**

A copy of this draft permit and any revisions made to this draft as a result of public comments received will be sent to EPA Region 9 for review. If EPA objects to a provision of the draft, ADEQ will not issue the permit until the objection is resolved.

**XV. ADDITIONAL INFORMATION**

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

Arizona Department of Environmental Quality  
Water Quality Division – AZPDES Individual Permits Unit  
Attn: Jacqueline Maye  
1110 West Washington Street – Mail Code 5415B-3  
Phoenix, Arizona 85007

Or by contacting Jacqueline Maye at (602) 771 – 4607 or by e-mail at [jpm@azdeq.gov](mailto:jpm@azdeq.gov).

**XVI. INFORMATION SOURCES**

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

1. AZPDES Permit Application Forms 1 and 2B received November 16, 2015, along with supporting data, facility diagram, and maps submitted by the applicant with the application forms.
2. ADEQ files on Willow Beach National Fish Hatchery.
3. Arizona Administrative Code (AAC) Title 18, Chapter 11, Article 1, *Water Quality Standards for Surface Waters*, adopted January 31, 2009.
8. A.A.C. Title 18, Chapter 9, Article 9. *Arizona Pollutant Discharge Elimination System* rules.
9. Code of Federal Regulations (CFR) Title 40:  
Part 122, *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System*.  
Part 124, *Procedures for Decision Making*.  
Part 133. *Secondary Treatment Regulation*.  
Part 503. *Standards for the Use or Disposal of Sewage Sludge*.
10. EPA Technical Support Document for Water Quality-based Toxics Control dated March 1991.
11. U.S. EPA NPDES Permit Writers' Manual, September 2010.